VEHICLE THEFT SECURITY

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VEHICLE THEFT SECURITY - ELECTRICAL DIAGNOSTICS

DIAGNOSIS AND TESTING

INTERMITTENT CONDITION

For the Engine circuit diagrams (Refer to 9 - ENGINE - SCHEMATICS AND DIAGRAMS).

For a complete wiring diagram **Refer to Section 8W**.

POSSIBLE CAUSES
INTERMITTENT CONDITION

Diagnostic Test

1. INTERMITTENT CONDITION

NOTE: The conditions that set the DTC are not present at this time. The following list may help in identifying the intermittent condition.

WARNING: When the engine is operating, do not stand in direct line with the fan. Do not put your hands near the pulleys, belts, or fan. Do not wear loose clothing. Failure to follow these instructions can result in personal injury or death.

Refer to any Technical Service Bulletins (TSBs) that may apply.

Review the scan tool Freeze Frame information. If possible, try to duplicate the conditions under which the DTC set.

With the engine running at normal operating temperature, monitor the scan tool parameters related to the DTC while wiggling the wire harness. Look for parameter values to change and/or a DTC to set.

Turn the ignition off.

Visually inspect the related wire harness. Disconnect all the related harness connectors. Look for any chafed, pierced, pinched, partially broken wires and broken, bent, pushed out, or corroded terminals.

Perform a voltage drop test on the related circuits between the suspected faulty component and the PCM.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install Miller Special Tool #8815 to perform diagnosis.

Inspect and clean all PCM, engine, and chassis grounds that are related to the most current DTC.

If numerous trouble codes were set, use a wire schematic and look for any common ground or supply circuits.

For any Relay DTCs, actuate the Relay with the scan tool and wiggle the related wire harness to try to interrupt the actuation.

For intermittent Evaporative Emission trouble codes perform a visual and physical inspection of the related parts including hoses and the Fuel Filler cap.

For intermittent Misfire DTC's check for restrictions in the Intake and Exhaust system, proper installation of Sensors, vacuum leaks, and binding components that are run by the accessory drive belt.

Use the scan tool to perform a System Test if one applies to failing component.

A co-pilot, data recorder, and/or lab scope should be used to help diagnose intermittent conditions.

Were any problems found during the above inspections?

Yes >> Perform the necessary repairs.
Perform the POWERTRAIN VERIFICATION TEST. (Refer to 9 - ENGINE - STANDARD PROCEDURE)

No >> Test Complete.

ANTENNA FAILURE

For a complete wiring diagram **Refer to Section 8W**.

- **When Monitored:**
  Every 250 milliseconds with the ignition on.
- **Set Condition:**
  The SKIM's microcontroller determines that an antenna circuit fault has occurred for 2.0 consecutive seconds.

Possible Causes
SKIM INTERNAL DTC FAILURE

Diagnostic Test

1. SKIM INTERNAL DTC PRESENT

NOTE: Note: This trouble code indicates an internal SKIM fault.
With the scan tool, read and record the SKIM DTCs and then erase the SKIM DTCs
Perform 5 ignition key cycles, leaving the ignition key on for a minimum of 90 seconds per cycle.
With the scan tool, read the SKIM DTCs.

Did the same SKIM DTC return?

Yes >> Replace and program the Sentry Key Immobilizer Module in per Service Information.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

No >> Test complete, the conditions that set this DTC are not present at this time.

COP FAILURE

For a complete wiring diagram **Refer to Section 8W**.

- **When Monitored:**
  With the ignition on.
- **Set Condition:**
  The COP timer is not reset by the micro controller every 65.5 milliseconds.

Possible Causes
SKIM INTERNAL DTC FAILURE

Diagnostic Test

1. SKIM INTERNAL DTC PRESENT

NOTE: Note: This trouble code indicates an internal SKIM fault.
With the scan tool, read and record the SKIM DTCs and then erase the SKIM DTCs
Perform 5 ignition key cycles, leaving the ignition key on for a minimum of 90 seconds per cycle.
With the scan tool, read the SKIM DTCs.

Did the same SKIM DTC return?

Yes >> Replace and program the Sentry Key Immobilizer Module in per Service Information.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

No >> Test complete, the conditions that set this DTC are not present at this time.

EEPROM FAILURE

For a complete wiring diagram **Refer to Section 8W**.

- **When Monitored:**
  With the ignition on.
- **Set Condition:**
  When the value written to EEPROM memory does not equal the value read back after the write operation.

Possible Causes
SKIM INTERNAL DTC FAILURE

Diagnostic Test

1. SKIM INTERNAL DTC PRESENT

NOTE: Note: This trouble code indicates an internal SKIM fault.
With the scan tool, read and record the SKIM DTCs and then erase the SKIM DTCs
Perform 5 ignition key cycles, leaving the ignition key on for a minimum of 90 seconds per cycle.
With the scan tool, read the SKIM DTCs.

Did the same SKIM DTC return?

Yes >> Replace and program the Sentry Key Immobilizer Module in per Service Information.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

No >> Test complete, the conditions that set this DTC are not present at this time.

INTERNAL FAULT

For a complete wiring diagram **Refer to Section 8W**.

- **When Monitored:**
  With the ignition on.
- **Set Condition:**
  The SKIM has detected a fault during an internal self test.

Possible Causes
SKIM INTERNAL DTC FAILURE

Diagnostic Test

1. SKIM INTERNAL DTC PRESENT

NOTE: Note: This trouble code indicates an internal SKIM fault.
With the scan tool, read and record the SKIM DTCs and then erase the SKIM DTCs
Perform 5 ignition key cycles, leaving the ignition key on for a minimum of 90 seconds per cycle.
With the scan tool, read the SKIM DTCs.

Did the same SKIM DTC return?

Yes >> Replace and program the Sentry Key Immobilizer Module in per Service Information.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

No >> Test complete, the conditions that set this DTC are not present at this time.

RAM FAILURE

For a complete wiring diagram **Refer to Section 8W**.

- **When Monitored:**
  With the ignition on.
- **Set Condition:**
  The RAM fails a test that checks the RAM's ability to retain memory.

Possible Causes
SKIM INTERNAL DTC FAILURE

Diagnostic Test

1. SKIM INTERNAL DTC PRESENT

NOTE: Note: This trouble code indicates an internal SKIM fault.
With the scan tool, read and record the SKIM DTCs and then erase the SKIM DTCs
Perform 5 ignition key cycles, leaving the ignition key on for a minimum of 90 seconds per cycle.
With the scan tool, read the SKIM DTCs.

Did the same SKIM DTC return?

Yes >> Replace and program the Sentry Key Immobilizer Module in per Service Information.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

No >> Test complete, the conditions that set this DTC are not present at this time.

SERIAL LINK INTERNAL FAULT

For a complete wiring diagram **Refer to Section 8W**.

- **When Monitored:**
  With the ignition on.
- **Set Condition:**
  The SKIM fails an internal J1850 communication self test.

Possible Causes
SKIM INTERNAL DTC FAILURE

Diagnostic Test

1. SKIM INTERNAL DTC PRESENT

NOTE: Note: This trouble code indicates an internal SKIM fault.
With the scan tool, read and record the SKIM DTCs and then erase the SKIM DTCs
Perform 5 ignition key cycles, leaving the ignition key on for a minimum of 90 seconds per cycle.
With the scan tool, read the SKIM DTCs.

Did the same SKIM DTC return?

Yes >> Replace and program the Sentry Key Immobilizer Module in per Service Information.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

No >> Test complete, the conditions that set this DTC are not present at this time.

STOCK OVERFLOW FAILURE

For a complete wiring diagram **Refer to Section 8W**.

- **When Monitored:**
  With the ignition on.
- **Set Condition:**
  The micro controller has exceeded its stack space limit.

Possible Causes
SKIM INTERNAL DTC FAILURE

Diagnostic Test

1. SKIM INTERNAL DTC PRESENT

NOTE: Note: This trouble code indicates an internal SKIM fault.
With the scan tool, read and record the SKIM DTCs and then erase the SKIM DTCs
Perform 5 ignition key cycles, leaving the ignition key on for a minimum of 90 seconds per cycle.
With the scan tool, read the SKIM DTCs.

Did the same SKIM DTC return?

Yes >> Replace and program the Sentry Key Immobilizer Module in per Service Information.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

No >> Test complete, the conditions that set this DTC are not present at this time.

PCM STATUS FAILURE

For a complete wiring diagram **Refer to Section 8W**.

- **When Monitored:**
  With the ignition on.
- **Set Condition:**
  This DTC exists when a PCM STATUS message was not received from the PCM for at least 20.0 consecutive seconds.

Possible Causes
WIRE HARNESS FAILURE
SKIM
PCM

Diagnostic Test

1. ACTIVE DTC

NOTE: make sure the PCM has proper power and ground connections before continuing.
With the scan tool, read and record the SKIM DTCs then erase the SKIM DTCs.
Turn the ignition off.
Wait 2 minutes.
Turn the ignition on.
With the scan tool, read the SKIM DTCs.

Is the DTC active at this time?

Yes >> Go To 2

No >> Refer to the INTERMITTENT CONDITION Diagnostic Procedure.

---

2. INTERMITTENT WIRING PROBLEM

Turn the ignition off.

NOTE: Visually inspect the related wiring harness and PCI Bus circuits. Look for any chafed, pierced, pinched, or partially broken wires.

NOTE: Visually inspect the related wiring harness connectors. Look for broken, bent, pushed out, or corroded terminals.

NOTE: Refer to any Technical Service Bulletins (TSB) that may apply.

Were any problems found?

Yes >> Repair as necessary.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

No >> Go To 3

PCM STATUS FAILURE (CONTINUED)

3. **SKIM/PCM**

NOTE: NOTE: Before proceeding it will be necessary to obtain the SKIM PIN.

Turn the ignition on.

With the scan tool, display and erase all PCM and SKIM DTC's.

Perform 5 ignition key cycles, leaving the ignition key on for a minimum of 90 seconds per cycle.

With the scan tool, read the SKIM DTCs.

Does the code appear?

Yes >> Replace and program the Powertrain Control Module per Service Information.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

No >> Test complete, the conditions that set this DTC are not present at this time.

SERIAL LINK EXTERNAL FAULT

For a complete wiring diagram **Refer to Section 8W**.

- **When Monitored:**
  At ignition on, after ignition on during any rolling code handshake that occurs with the PCM due to a SKIM reset, or during SECRET KEY transfers to the PCM.
- **Set Condition:**
  When the SKIM does not receive an expected PCI BUS message transmission acknowledgement from the PCM after 3 transmit attempts.

Possible Causes
WIRE HARNESS FAILURE
SKIM
PCM

Diagnostic Test

1. ACTIVE DTC

NOTE: make sure the PCM has proper power and ground connections before continuing.
With the scan tool, read and record the SKIM DTCs then erase the SKIM DTCs.
Turn the ignition off.
Wait 2 minutes.
Turn the ignition on.
With the scan tool, read the SKIM DTCs.

Is the DTC active at this time?

Yes >> Go To 2

No >> Refer to the INTERMITTENT CONDITION Diagnostic Procedure.

---

2. INTERMITTENT WIRING PROBLEM

Turn the ignition off.

NOTE: Visually inspect the related wiring harness and PCI Bus circuits. Look for any chafed, pierced, pinched, or partially broken wires.

NOTE: Visually inspect the related wiring harness connectors. Look for broken, bent, pushed out, or corroded terminals.

NOTE: Refer to any Technical Service Bulletins (TSB) that may apply.

Were any problems found?

Yes >> Repair as necessary.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

No >> Go To 3

SERIAL LINK EXTERNAL FAULT (CONTINUED)

3. SKIM/PCM

NOTE: NOTE: Before proceeding it will be necessary to obtain the SKIM PIN.

Turn the ignition on.

With the scan tool, display and erase all PCM and SKIM DTC's.

Perform 5 ignition key cycles, leaving the ignition key on for a minimum of 90 seconds per cycle.

With the scan tool, read the SKIM DTCs.

Does the code appear?

Yes >> Replace and program the Powertrain Control Module per Service Information.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

No >> Test complete, the conditions that set this DTC are not present at this time.

ROLLING CODE FAILURE

For a complete wiring diagram **Refer to Section 8W**.

- **When Monitored:**
  At ignition on, after ignition on during any rolling code handshake that occurs with the PCM due to a SKIM or PCM reset.
- **Set Condition:**
  When a PCM STATUS message with a Valid Key status is not received by the SKIM within 3.5 seconds of transmitting the last Valid Key Code message to the PCM.

Possible Causes
WIRE HARNESS OPEN OR SHORTED
SKIM
PCM

Diagnostic Test

1. ACTIVE DTC

With the scan tool, erase the SKIM DTCs.
Turn the ignition off.
Wait 10 seconds.
Turn the ignition on and wait 2 minutes.
With the scan tool, read the SKIM DTCs.

Is the DTC active at this time?

Yes >> Go To 2

No >> Refer to the INTERMITTENT CONDITION Diagnostic Procedure.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

---

2. CORRECT VIN IN THE PCM

Turn the ignition on.
With the scan tool, select Engine system from the main menu.
Display and record the Vehicle Identification Number.

NOTE: Make sure that a VIN has been programmed into the PCM. If a VIN is not displayed, attempt to program the PCM with the correct vehicle VIN before continuing.

Does the VIN recorded from the PCM match the VIN of the vehicle?

Yes >> Go To 3

No >> Perform the PCM replaced to update the VIN in the PCM.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

ROLLING CODE FAILURE (CONTINUED)

3. SKIM

Turn the ignition off.

Replace and program the Sentry Key Immobilizer Module in accordance with the Service Information.

Turn the ignition on.

With the scan tool, display and clear all PCM and SKIM DTC's.

Perform 5 ignition key cycles leaving the ignition key on for 90 seconds per cycle.

With the scan tool, check for SKIM DTCs.

Does the scan tool display the same DTC?

Yes >> Replace and program the Powertrain Control Module per Service Information.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

No >> The repair is complete.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

VIN MISMATCH

For a complete wiring diagram **Refer to Section 8W**.

- **When Monitored:**
  With the ignition on.
- **Set Condition:**
  When the VIN received from the PCM does not match the VIN stored in the SKIM's EEPROM.

Possible Causes
WIRE HARNESS OPEN OR SHORTED
SKIM
PCM

Diagnostic Test

1. ACTIVE DTC

With the scan tool, erase the SKIM DTCs.
Turn the ignition off.
Wait 10 seconds.
Turn the ignition on and wait 2 minutes.
With the scan tool, read the SKIM DTCs.

Is the DTC active at this time?

Yes >> Go To 2

No >> Refer to the INTERMITTENT CONDITION Diagnostic Procedure.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

---

2. CORRECT VIN IN THE PCM

Turn the ignition on.
With the scan tool, select Engine system from the main menu.
Display and record the Vehicle Identification Number.

NOTE: Make sure that a VIN has been programmed into the PCM. If a VIN is not displayed, attempt to program the PCM with the correct vehicle VIN before continuing.

Does the VIN recorded from the PCM match the VIN of the vehicle?

Yes >> Go To 3

No >> Perform the PCM replaced to update the VIN in the PCM.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

VIN MISMATCH (CONTINUED)

3. SKIM

Turn the ignition off.

Replace and program the Sentry Key Immobilizer Module in accordance with the Service Information.

Turn the ignition on.

With the scan tool, display and clear all PCM and SKIM DTC's.

Perform 5 ignition key cycles leaving the ignition key on for 90 seconds per cycle.

With the scan tool, check for SKIM DTCs.

Does the scan tool display the same DTC?

Yes >> Replace and program the Powertrain Control Module per Service Information.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

No >> The repair is complete.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

TRANSPONDER CYCLIC REDUNDANCY CHECK (CRC) FAILURE

For a complete wiring diagram **Refer to Section 8W**.

- **When Monitored:**
  At ignition on and during Key Programming Mode.
- **Set Condition:**
  When 5 consecutive transponder signal transmissions are sent to the SKIM with the correct message format but with invalid data.

Possible Causes
IGNITION KEY
SKIM

Diagnostic Test

1. ACTIVE DTC

With the scan tool, read and record the SKIM DTCs.

With the scan tool, erase the SKIM DTCs.

NOTE: Perform the following test several times to make sure the DTC is current.

Turn the ignition off.

Wait 10 seconds.

Turn the ignition on.

With the scan tool, read the SKIM DTCs.

Is the DTC active at this time?

Yes >> Go To 2

No >> Refer to the INTERMITTENT CONDITION Diagnostic Procedure.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

---

2. AVAILABILITY OF MULTIPLE KEYS

Are there multiple vehicle ignition keys available?

Yes >> Go To 3

No >> Go To 4

TRANSPONDER CYCLIC REDUNDANCY CHECK (CRC) FAILURE (CONTINUED)

3. CHECKING KEY OPERATION

NOTE: Perform the following steps using one of the vehicle ignition keys. When finished, repeat the procedure using each of the other vehicle keys one at a time.

With the scan tool, erase the SKIM DTCs.
Turn the ignition off.
Wait 10 seconds.
Turn the ignition on.
With the scan tool, read the SKIM DTCs.

Is the DTC present for all ignition keys?

Yes >> Replace and program the Sentry Key Immobilizer Module per Service Information.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

No >> Replace the ignition key(s) that cause the SKIM DTC.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

---

4. REPROGRAM KEYS

With the scan tool, attempt to reprogram the ignition keys to the SKIM.
With the scan tool, erase the SKIM DTCs.
Wait 10 seconds.
Turn the ignition on.
With the scan tool, read the SKIM DTCs.

Does the DTC set again?

Yes >> Go To 5

No >> Test Complete.

---

5. PROGRAM NEW IGNITION KEY

Replace the ignition key with a new key.
With the scan tool, program the new ignition key to the SKIM.
With the scan tool, erase the SKIM DTCs.
Turn the ignition off.
Wait 10 seconds.
Turn the ignition on.
With the scan tool, read the SKIM DTCs.

Does the DTC set again?

Yes >> Go To 6

No >> Test Complete.

TRANSPONDER CYCLIC REDUNDANCY CHECK (CRC) FAILURE (CONTINUED)

6. SKIM

If there are no possible causes remaining, view repair.

Repair

Replace and program the Sentry Key Immobilizer Module per Service Information.

Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

TRANSPONDER COMMUNICATION FAILURE

For a complete wiring diagram **Refer to Section 8W**.

- **When Monitored:**
  At ignition on and during Key Programming Mode.
- **Set Condition:**
  When the SKIM does not receive a transponder response after 8 consecutive transponder read attempts within 2.0 seconds.

Possible Causes
IGNITION KEY
SKIM

Diagnostic Test

1. ACTIVE DTC

With the scan tool, read and record the SKIM DTCs.

With the scan tool, erase the SKIM DTCs.

NOTE: Perform the following test several times to make sure the DTC is current.

Turn the ignition off.

Wait 10 seconds.

Turn the ignition on.

With the scan tool, read the SKIM DTCs.

Is the DTC active at this time?

Yes >> Go To 2

No >> Refer to the INTERMITTENT CONDITION Diagnostic Procedure.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

---

2. AVAILABILITY OF MULTIPLE KEYS

Are there multiple vehicle ignition keys available?

Yes >> Go To 3

No >> Go To 4

TRANSPONDER COMMUNICATION FAILURE (CONTINUED)

3. CHECKING KEY OPERATION

NOTE: Perform the following steps using one of the vehicle ignition keys. When finished, repeat the procedure using each of the other vehicle keys one at a time.

With the scan tool, erase the SKIM DTCs.

Turn the ignition off.

Wait 10 seconds.

Turn the ignition on.

With the scan tool, read the SKIM DTCs.

Is the DTC present for all ignition keys?

Yes >> Replace and program the Sentry Key Immobilizer Module per Service Information.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

No >> Replace the ignition key(s) that cause the SKIM DTC.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

---

4. REPROGRAM KEYS

With the scan tool, attempt to reprogram the ignition keys to the SKIM.

With the scan tool, erase the SKIM DTCs.

Wait 10 seconds.

Turn the ignition on.

With the scan tool, read the SKIM DTCs.

Does the DTC set again?

Yes >> Go To 5

No >> Test Complete.

---

5. PROGRAM NEW IGNITION KEY

Replace the ignition key with a new key.

With the scan tool, program the new ignition key to the SKIM.

With the scan tool, erase the SKIM DTCs.

Turn the ignition off.

Wait 10 seconds.

Turn the ignition on.

With the scan tool, read the SKIM DTCs.

Does the DTC set again?

Yes >> Go To 6

No >> Test Complete.

TRANSPONDER COMMUNICATION FAILURE (CONTINUED)

6. **SKIM**

If there are no possible causes remaining, view repair.

Repair

Replace and program the Sentry Key Immobilizer Module per Service Information.

Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

TRANSPONDER ID MISMATCH

For a complete wiring diagram **Refer to Section 8W**.

- **When Monitored:**
  At ignition on and during Key Programming Mode.
- **Set Condition:**
  When the transponder ID read by the SKIM does not match any of the transponder ID's stored in the SKIM's memory.

Possible Causes
IGNITION KEY
SKIM

Diagnostic Test

1. ACTIVE DTC

With the scan tool, read and record the SKIM DTCs.

With the scan tool, erase the SKIM DTCs.

NOTE: Perform the following test several times to make sure the DTC is current.

Turn the ignition off.

Wait 10 seconds.

Turn the ignition on.

With the scan tool, read the SKIM DTCs.

Is the DTC active at this time?

Yes >> Go To 2

No >> Refer to the INTERMITTENT CONDITION Diagnostic Procedure.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

---

2. AVAILABILITY OF MULTIPLE KEYS

Are there multiple vehicle ignition keys available?

Yes >> Go To 3

No >> Go To 4

TRANSPONDER ID MISMATCH (CONTINUED)

3. CHECKING KEY OPERATION

NOTE: Perform the following steps using one of the vehicle ignition keys. When finished, repeat the procedure using each of the other vehicle keys one at a time.

With the scan tool, erase the SKIM DTCs.
Turn the ignition off.
Wait 10 seconds.
Turn the ignition on.
With the scan tool, read the SKIM DTCs.

Is the DTC present for all ignition keys?

Yes >> Replace and program the Sentry Key Immobilizer Module per Service Information.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

No >> Replace the ignition key(s) that cause the SKIM DTC.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

---

4. REPROGRAM KEYS

With the scan tool, attempt to reprogram the ignition keys to the SKIM.
With the scan tool, erase the SKIM DTCs.
Wait 10 seconds.
Turn the ignition on.
With the scan tool, read the SKIM DTCs.

Does the DTC set again?

Yes >> Go To 5

No >> Test Complete.

---

5. PROGRAM NEW IGNITION KEY

Replace the ignition key with a new key.
With the scan tool, program the new ignition key to the SKIM.
With the scan tool, erase the SKIM DTCs.
Turn the ignition off.
Wait 10 seconds.
Turn the ignition on.
With the scan tool, read the SKIM DTCs.

Does the DTC set again?

Yes >> Go To 6

No >> Test Complete.

TRANSPONDER ID MISMATCH (CONTINUED)

6. **SKIM**

If there are no possible causes remaining, view repair.

Repair

Replace and program the Sentry Key Immobilizer Module per Service Information.

Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

TRANSPONDER RESPONSE MISMATCH

For a complete wiring diagram **Refer to Section 8W**.

- **When Monitored:**
  At ignition on and during Key Programming Mode.
- **Set Condition:**
  When the transponder's crypt algorithm result fails to match the SKIM's result.

Possible Causes
IGNITION KEY
SKIM

Diagnostic Test

1. ACTIVE DTC

With the scan tool, erase the SKIM DTCs.

NOTE: Perform the following test several times to make sure the DTC is current.
Turn the ignition off.
Wait 10 seconds.
Turn the ignition on.
With the scan tool, read the SKIM DTCs.

Is the DTC active at this time?

Yes >> Go To 2

No >> Refer to the INTERMITTENT CONDITION Diagnostic Procedure.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

---

2. AVAILABILITY OF MULTIPLE KEYS

Are there multiple vehicle ignition keys available?

Yes >> Go To 3

No >> Go To 4

TRANSPONDER RESPONSE MISMATCH (CONTINUED)

3. CHECKING KEY OPERATION

NOTE: Perform the following steps using one of the vehicle ignition keys. When finished, repeat the procedure using each of the other vehicle keys one at a time.

With the scan tool, erase the SKIM DTCs.
Turn the ignition off.
Wait 10 seconds.
Turn the ignition on.
With the scan tool, read the SKIM DTCs.

Is the DTC present for all ignition keys?

Yes >> Replace and program the Sentry Key Immobilizer Module per Service Information.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

No >> Replace the ignition key(s) that cause the SKIM DTC.
Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

---

4. REPROGRAM KEYS

With the scan tool, attempt to reprogram the ignition keys to the SKIM.
With the scan tool, erase the SKIM DTCs.
Wait 10 seconds.
Turn the ignition on.
With the scan tool, read the SKIM DTCs.

Does the DTC set again?

Yes >> Go To 5

No >> Test Complete.

---

5. PROGRAM NEW IGNITION KEY

Replace the ignition key with a new key.
With the scan tool, program the new ignition key to the SKIM.
With the scan tool, erase the SKIM DTCs.
Turn the ignition off.
Wait 10 seconds.
Turn the ignition on.
With the scan tool, read the SKIM DTCs.

Does the DTC set again?

Yes >> Go To 6

No >> Test Complete.

TRANSPONDER RESPONSE MISMATCH (CONTINUED)

6. **SKIM**

If there are no possible causes remaining, view repair.

Repair

Replace and program the Sentry Key Immobilizer Module per Service Information.

Perform SKIS VERIFICATION. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

SKIS VERIFICATION TEST

Diagnostic Test

1. SKIS VERIFICATION TEST

1. Reconnect all previously disconnected components and connectors.

2. Obtain the vehicle's unique Personal Identification Number (PIN) assigned to it's original SKIM. This number can be obtained from the vehicle's invoice or Chrysler's Customer Center (1-800-992-1997).

NOTE: 3. When entering the PIN, care should be taken because the SKIM will only allow 3 consecutive attempts to enter the correct PIN. If 3 consecutive incorrect PINs are entered, the SKIM will Lock Out the scan tool for 1 hour.

4. To exit Lock Out mode, the ignition key must remain in the Run position continually for 1 hour. Turn off all accessories and connect a battery charger if necessary.

5. With the scan tool, select Theft Alarm, SKIM and Miscellaneous. Then, select the desired procedure and follow the steps that will be displayed.

6. If the SKIM has been replaced, make sure all of the vehicle ignition keys are programmed to the new SKIM.

NOTE: 7. Prior to returning vehicle to the customer, perform a module scan to be sure that all DTCs are erased. Erase any DTCs that are found.

8. With the scan tool, erase all DTCs. Perform 5 ignition key cycles leaving the key on for at least 90 seconds per cycle.

9. With the scan tool, read the SKIM DTCs.

Are there any SKIM DTCs?

Yes >> Repair is not complete, refer to appropriate diagnostic procedure.

No >> Repair is complete.

*ALARM TRIPS ON ITS OWN

For the Vehicle Theft Security circuit diagram (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - SCHEMATICS AND DIAGRAMS)

For a complete wiring diagram **Refer to Section 8W**.

Diagnostic Test

1. LAST VTSS CAUSE

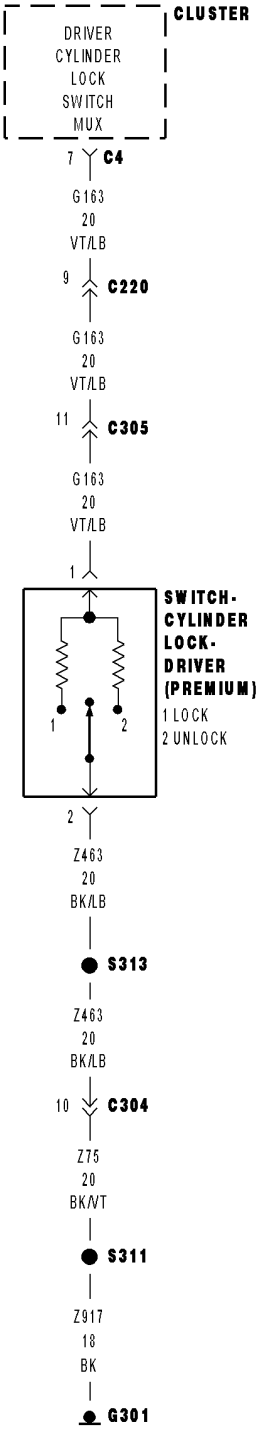
With the DRBIII® in Inputs/Outputs, read the Last VTSS Cause state.

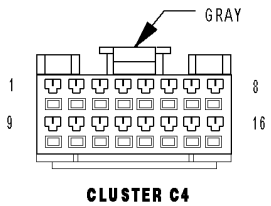
Were there any causes displayed?

Yes >> Check for a possible intermittent condition with the circuit indicated by the DRBIII®.
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

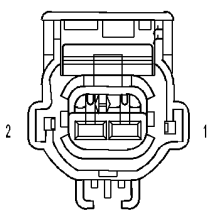
No >> The condition that caused this symptom is currently not present. Inspect the related wiring harness for a possible intermittent condition. Look for any chafed, pierced, pinched or partially broken wires.
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

*CYLINDER LOCK SWITCH INOP





CLUSTER C4



SWITCH- CYLINDER LOCK- DRIVER (PREMIUM)

813e1098

***CYLINDER LOCK SWITCH INOP (CONTINUED)**

For the Power Door Lock circuit diagram (Refer to 8 - ELECTRICAL/POWER LOCKS - SCHEMATICS AND DIAGRAMS).

For a complete wiring diagram **Refer to Section 8W**.

Possible Causes
DTC PRESENT
(Z463) CYLINDER LOCK SWITCH GROUND OPEN
(G163) CYLINDER LOCK SWITCH MUX CIRCUIT OPEN
(G163) CYLINDER LOCK SWITCH MUX WIRE SHORT TO GROUND
CYLINDER LOCK SWITCH
INSTRUMENT CLUSTER

Diagnostic Test

1. DTC PRESENT

Turn the ignition on.

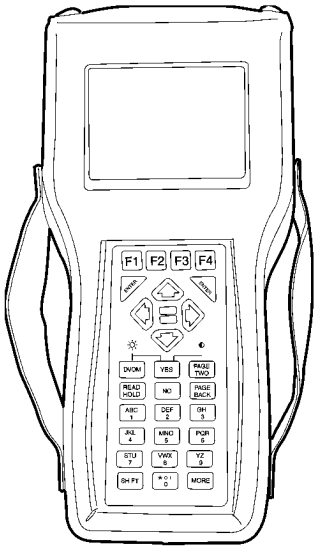
With the DRBIII®, read DTC's.

Are there any Power Door Lock related trouble codes?

Yes >> Refer to symptom list for problems related to Power Door Locks.

Perform BODY VERIFICATION TEST - VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/FRONT CONTROL MODULE - DIAGNOSIS AND TESTING)

No >> Go To 2



*CYLINDER LOCK SWITCH INOP (CONTINUED)

2. CYLINDER LOCK SWITCH VOLTAGE LOW

Turn the ignition off.

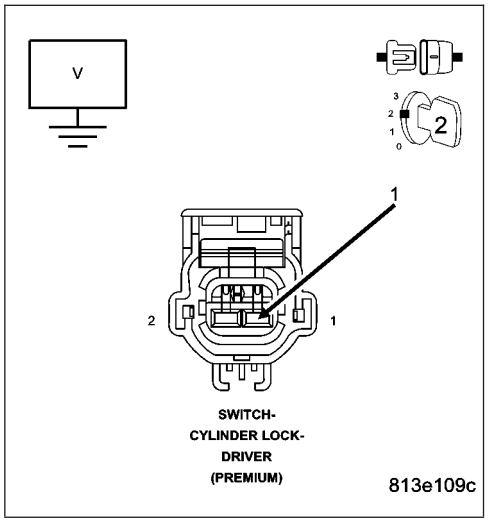
Disconnect the Cylinder Lock Switch connector.

Measure the voltage between (G163) Cylinder Lock Switch Mux circuit and ground.

Is the voltage between 4.6 and 5.2 volts?

Yes >> Go To 3

No >> Go To 4



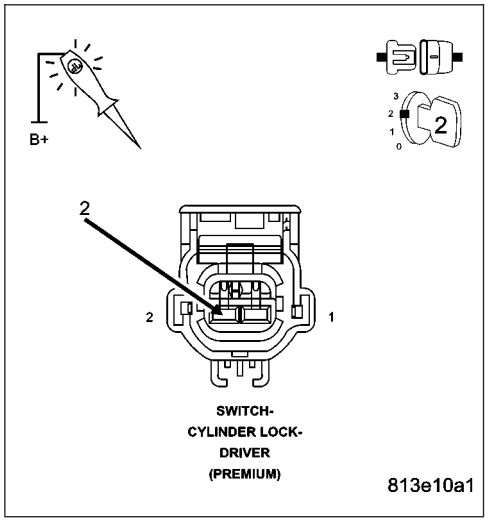
3. (Z463) CYLINDER LOCK SWITCH GROUND OPEN

Using a 12-volt test light connected to 12-volts, check the (Z463) Ground circuit.

Does the test light illuminate brightly?

Yes >> Replace the Cylinder Lock Switch.
Perform BODY VERIFICATION TEST - VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/ FRONT CONTROL MODULE - DIAGNOSIS AND TESTING)

No >> Repair the (Z463) Ground circuit for an open.
Perform BODY VERIFICATION TEST - VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/ FRONT CONTROL MODULE - DIAGNOSIS AND TESTING)



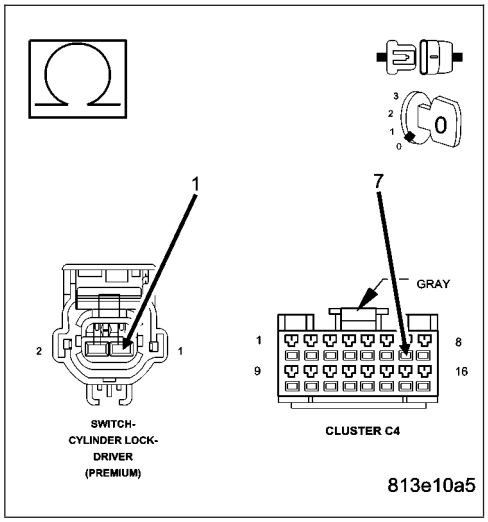
***CYLINDER LOCK SWITCH INOP (CONTINUED)**

4. (G163) CYLINDER LOCK SWITCH MUX OPEN

Turn the ignition off.

Disconnect the Instrument Cluster C4 connector.

Measure the resistance of the (G163) Cylinder Lock Switch Mux circuit between the Switch connector and the Instrument Cluster connector.



Is the resistance below 5.0 ohms?

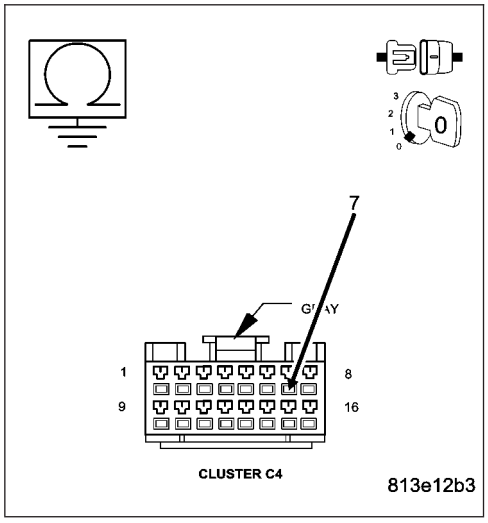
Yes >> Go To 5

No >> Repair the (G163) Cylinder Lock Switch Mux circuit for an open.

Perform BODY VERIFICATION TEST - VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/ FRONT CONTROL MODULE - DIAGNOSIS AND TESTING)

5. (G163) CYLINDER LOCK SWITCH MUX WIRE SHORT TO GROUND

Measure the resistance between Ground and the (G163) Cylinder Lock Switch Mux circuit in the Cluster C4 connector.



Is the resistance below 1000.0 ohms?

No >> Replace the Instrument Cluster.

Perform BODY VERIFICATION TEST - VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/ FRONT CONTROL MODULE - DIAGNOSIS AND TESTING)

Yes >> Repair the (G163) Cylinder Lock Switch Mux circuit for a short to ground.

Perform BODY VERIFICATION TEST - VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/ FRONT CONTROL MODULE - DIAGNOSIS AND TESTING)

*DRIVER DOOR DOES NOT TRIP VTSS

For the Vehicle Theft Security circuit diagram (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - SCHEMATICS AND DIAGRAMS)

For a complete wiring diagram **Refer to Section 8W**.

Possible Causes
DRIVER DOOR AJAR CIRCUIT
VERIFY VTSS OPERATION
VTSS NOT ENABLED IN FCM
INSTRUMENT CLUSTER

1. DOOR AJAR STATE

With the DRBIII®, read the DRVR DOOR AJAR SW status.

Open the driver door.

Does the DRBIII® display CLOSED?

Yes >> Go To 2

No >> Refer to symptom DRIVER DOOR AJAR CIRCUIT OPEN in the LAMPS/LIGHTING - INTERIOR section. (Refer to 8 - ELECTRICAL/LAMPS/LIGHTING - INTERIOR - DIAGNOSIS AND TESTING)
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

---

2. ATTEMPT TO TRIP VTSS

Open the driver's door window.

Remove key from ignition switch.

Use the RKE or power door lock switch to lock the doors then close all doors.

Wait approximately 15 seconds for the VTSS indicator to flash at a slower rate indicating the Vehicle Theft Security System is armed.

Manually unlock the driver door lock.

Attempt to trip the VTSS by opening the drivers door.

Did the VTSS trip when the door was opened?

Yes >> Test complete.
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

No >> Go To 3

***DRIVER DOOR DOES NOT TRIP VTSS (CONTINUED)**

3. DISCONNECT BATTERY TO RESET FCM

Turn the ignition Off to the lock position.

Disconnect the negative battery cable wait 5 seconds then reconnect.

Turn the ignition to the On position for 10 seconds then back Off to the lock position and remove key.

Arm the VTSS and attempt to trip to alarming state by manually unlocking door and opening.

Did the VTSS trip to the alarming state when the door was opened?

Yes >> Test complete.
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

No >> Replace and program the Instrument Cluster in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/FRONT CONTROL MODULE - DIAGNOSIS AND TESTING)

*HEADLAMPS FAIL TO FLASH WHEN ALARM IS TRIPPED

For the Vehicle Theft Security circuit diagram (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - SCHEMATICS AND DIAGRAMS)

For a complete wiring diagram **Refer to Section 8W**.

Possible Causes
FCM DTCS OR EXTERIOR LAMP OPERATION
INSTRUMENT CLUSTER

1. CHECK FCM DTCS AND HIGH BEAM HEADLAMP OPERATION

Attempt to operate the exterior lamps with the headlamp switch.
With the DRBIII®, read FCM DTCs.

Were there any problems found?

Yes >> Refer to symptom list for problems related to Exterior Lighting.
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

No >> Replace and program the Instrument Cluster in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/FRONT CONTROL MODULE - DIAGNOSIS AND TESTING)

*HORN FAILS TO SOUND WHEN ALARM IS TRIPPED

For the Vehicle Theft Security circuit diagram (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - SCHEMATICS AND DIAGRAMS)

For a complete wiring diagram **Refer to Section 8W**.

Possible Causes
DTC PRESENT
HORN CIRCUIT
INSTRUMENT CLUSTER

1. HORN RELAY CONTROL CIRCUIT DTC ACTIVE

Turn the ignition on.

With the DRBIII®, read FCM DTC's.

Does the DRBIII® display a HORN RELAY CONTROL CIRCUIT DTC active?

Yes >> Refer to the Ignition, Power, Accessory category for the related symptom(s).
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

No >> Go To 2

---

2. HORN CIRCUIT DIAGNOSTICS

Does the horn operate from the horn button?

Yes >> Replace and program the Instrument Cluster in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/FRONT CONTROL MODULE - DIAGNOSIS AND TESTING)

No >> Refer to symptom Horns Inoperative in the Ignition, Power, Accessory category.
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

---

*LEFT REAR DOOR DOES NOT TRIP VTSS (4 DOOR)

For the Vehicle Theft Security circuit diagram (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - SCHEMATICS AND DIAGRAMS)

For a complete wiring diagram **Refer to Section 8W**.

Possible Causes
PASSENGER DOOR AJAR CIRCUIT
VERIFY VTSS OPERATION
VTSS NOT ENABLED IN FCM
INSTRUMENT CLUSTER

1. DOOR AJAR STATE

With the DRBIII®, read the PASS DOOR AJAR SW status.

Open the Left Rear door.

Does the DRBIII® display CLOSED?

Yes >> Go To 2

No >> Refer to symptom LEFT REAR AJAR CIRCUIT OPEN in the LAMPS/LIGHTING - INTERIOR section. (Refer to 8 - ELECTRICAL/LAMPS/LIGHTING - INTERIOR - DIAGNOSIS AND TESTING)
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

---

2. ATTEMPT TO TRIP VTSS

Open the left rear door window.

Remove key from ignition switch.

Use the RKE or power door lock switch to lock the doors then close all doors.

Wait approximately 15 seconds for the VTSS indicator to flash at a slower rate indicating the Vehicle Theft Security System is armed.

Manually unlock the left rear door lock.

Attempt to trip the VTSS by opening the left rear door.

Did the VTSS trip when the door was opened?

Yes >> Test complete.
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

No >> Go To 3

***LEFT REAR DOOR DOES NOT TRIP VTSS (4 DOOR) (CONTINUED)**

3. **DISCONNECT BATTERY TO RESET FCM**

Turn the ignition Off to the lock position.

Disconnect the negative battery cable wait 5 seconds then reconnect.

Turn the ignition to the On position for 10 seconds then back Off to the lock position and remove key.

Arm the VTSS and attempt to trip to alarming state by manually unlocking door and opening.

Did the VTSS trip to the alarming state when the door was opened?

Yes >> Test complete.
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

No >> Replace and program the Instrument Cluster in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/FRONT CONTROL MODULE - DIAGNOSIS AND TESTING)

*PASSENGER DOOR DOES NOT TRIP VTSS

For the Vehicle Theft Security circuit diagram (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - SCHEMATICS AND DIAGRAMS)

For a complete wiring diagram **Refer to Section 8W**.

Possible Causes
PASSENGER DOOR AJAR CIRCUIT
VERIFY VTSS OPERATION
VTSS NOT ENABLED IN FCM
INSTRUMENT CLUSTER

1. DOOR AJAR STATE

With the DRBIII®, read the PASS DOOR AJAR SW status.

Open the passenger door.

Does the DRBIII® display CLOSED?

Yes >> Go To 2

No >> Refer to symptom PASSENGER DOOR AJAR CIRCUIT OPEN in the LAMPS/LIGHTING - INTERIOR section. (Refer to 8 - ELECTRICAL/LAMPS/LIGHTING - INTERIOR - DIAGNOSIS AND TESTING)
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

---

2. ATTEMPT TO TRIP VTSS

Open the passenger door window.

Remove key from ignition switch.

Use the RKE or power door lock switch to lock the doors then close all doors.

Wait approximately 15 seconds for the VTSS indicator to flash at a slower rate indicating the Vehicle Theft Security System is armed.

Manually unlock the passenger door lock.

Attempt to trip the VTSS by opening the passenger door.

Did the VTSS trip when the door was opened?

Yes >> Test complete.
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

No >> Go To 3

***PASSENGER DOOR DOES NOT TRIP VTSS (CONTINUED)**

3. DISCONNECT BATTERY TO RESET FCM

Turn the ignition Off to the lock position.

Disconnect the negative battery cable wait 5 seconds then reconnect.

Turn the ignition to the On position for 10 seconds then back Off to the lock position and remove key.

Arm the VTSS and attempt to trip to alarming state by manually unlocking door and opening.

Did the VTSS trip to the alarming state when the door was opened?

Yes >> Test complete.
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

No >> Replace and program the Instrument Cluster in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/FRONT CONTROL MODULE - DIAGNOSIS AND TESTING)

*RIGHT REAR DOOR DOES NOT TRIP VTSS (4 DOOR)

For the Vehicle Theft Security circuit diagram (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - SCHEMATICS AND DIAGRAMS)

For a complete wiring diagram **Refer to Section 8W**.

Possible Causes
PASSENGER DOOR AJAR CIRCUIT
VERIFY VTSS OPERATION
VTSS NOT ENABLED IN FCM
INSTRUMENT CLUSTER

1. DOOR AJAR STATE

With the DRBIII®, read the PASS DOOR AJAR SW status.

Open the Right Rear door.

Does the DRBIII® display CLOSED?

Yes >> Go To 2

No >> Refer to symptom RIGHT REAR AJAR CIRCUIT OPEN in the LAMPS/LIGHTING - INTERIOR section. (Refer to 8 - ELECTRICAL/LAMPS/LIGHTING - INTERIOR - DIAGNOSIS AND TESTING)
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

---

2. ATTEMPT TO TRIP VTSS

Open the right rear door window.

Remove key from ignition switch.

Use the RKE or power door lock switch to lock the doors then close all doors.

Wait approximately 15 seconds for the VTSS indicator to flash at a slower rate indicating the Vehicle Theft Security System is armed.

Manually unlock the right rear door lock.

Attempt to trip the VTSS by opening the right rear door.

Did the VTSS trip when the door was opened?

Yes >> Test complete.
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

No >> Go To 3

***RIGHT REAR DOOR DOES NOT TRIP VTSS (4 DOOR) (CONTINUED)**

3. DISCONNECT BATTERY TO RESET FCM

Turn the ignition Off to the lock position.

Disconnect the negative battery cable wait 5 seconds then reconnect.

Turn the ignition to the On position for 10 seconds then back Off to the lock position and remove key.

Arm the VTSS and attempt to trip to alarming state by manually unlocking door and opening.

Did the VTSS trip to the alarming state when the door was opened?

Yes >> Test complete.
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

No >> Replace and program the Instrument Cluster in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/FRONT CONTROL MODULE - DIAGNOSIS AND TESTING)

*VTSS WILL NOT ARM PROPERLY

For the Vehicle Theft Security circuit diagram (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - SCHEMATICS AND DIAGRAMS)

For a complete wiring diagram **Refer to Section 8W**.

Possible Causes
VTSS NOT ENABLED
CHECK FOR DTCS AND VTSS ARMING INHIBITORS
CHECK FOR SKIM NO RESPONSE
CYLINDER LOCK SWITCH GROUND OPEN
CYLINDER LOCK SWITCH MUX CIRCUIT OPEN
CYLINDER LOCK SWITCH OPEN
INSTRUMENT CLUSTER

1. ATTEMPT TO ENABLE THE VTSS

Turn the ignition Off to the lock position.
Disconnect the battery negative cable wait 5 seconds then reconnect battery cable.
Turn the ignition to the On position for 10 seconds, then back Off to the lock position and remove key.
Close all doors.
Using the key, lock the vehicle with the Driver Door Cylinder Lock Switch and observe the VTSS indicator.

Did the VTSS indicator flash rapidly, then flash at a slower rate indicating the VTSS is armed?

Yes >> Go To 2

No >> Go To 3

---

2. VTSS NOT ENABLED

Unlock the vehicle to disarm the VTSS.
Ensure all doors are closed.
Using the RKE key fob, lock the vehicle and observe the VTSS indicator.

Did the VTSS indicator flash rapidly, then flash at a slower rate indicating the VTSS is armed?

Yes >> Test Complete.
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

No >> Replace and program the Instrument Cluster in accordance with the service information.
Perform BODY VERIFICATION TEST - VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/FRONT CONTROL MODULE - DIAGNOSIS AND TESTING)

***VTSS WILL NOT ARM PROPERLY (CONTINUED)**

3. USE DRB TO COMMUNICATE WITH THE SKIM

With the DRBIII®, attempt to communicate with the SKIM.

Does the DRBIII® communicate with the SKIM?

Yes >> Go To 4

No >> Refer to communication category for the related symptom(s).
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

---

4. DTC OR VTSS INHIBITORS

Ensure the doors are closed.

With the DRBIII®, read the active DTC's and the ajar switch states.

Does the DRBIII® display any closed switches or related DTC's?

Yes >> Refer to the Symptom List and diagnose the appropriate symptom in the DOOR AJAR or related category.
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

No >> Go To 5

---

5. CYLINDER LOCK SWITCH CIRCUIT OPEN

Turn the ignition on.

With the DRBIII®, read the Driver Cylinder Lock Switch MUX volts while turning the key in the driver door lock cylinder.

Did the MUX voltage change from approximately 5.0 volts to 4.0 for lock and 2.4 for unlock?

Yes >> Replace and program the Instrument Cluster in accordance with the service information.
Perform BODY VERIFICATION TEST - VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/FRONT CONTROL MODULE - DIAGNOSIS AND TESTING)

No >> Go To 6

***VTSS WILL NOT ARM PROPERLY (CONTINUED)**

6. INSTRUMENT CLUSTER CYLINDER LOCK SWITCH VOLTAGE LOW

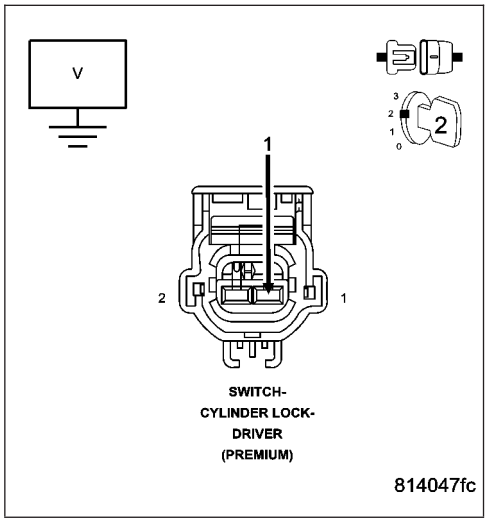
Disconnect the Cylinder Lock Switch connector.

Measure the voltage between Cylinder Lock Switch Mux circuit and ground.

Is the voltage between 4.6 and 5.2 volts?

Yes >> Go To 7

No >> Go To 8



7. CYLINDER LOCK SWITCH GROUND OPEN

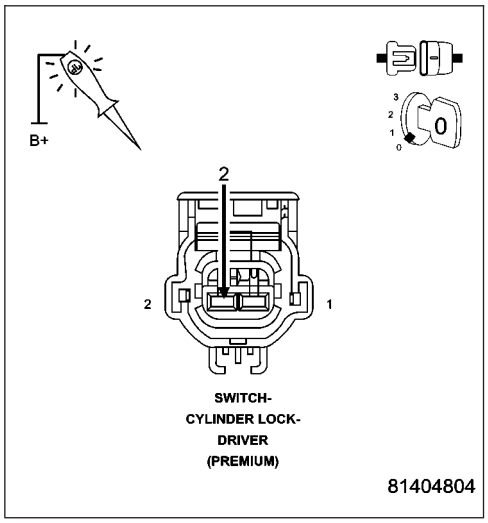
Disconnect the Cylinder Lock Switch connector.

Using a 12-volt test light connected to 12-volts, check the Ground circuit.

Does the test light illuminate brightly?

Yes >> Replace the Cylinder Lock Switch.
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

No >> Repair the Ground circuit for an open.
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)



***VTSS WILL NOT ARM PROPERLY (CONTINUED)**

8. CYLINDER LOCK SWITCH MUX OPEN

Disconnect the Cylinder Lock Switch connector.

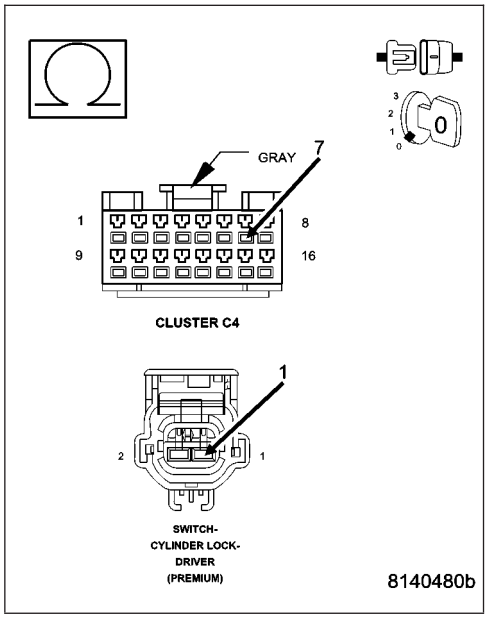
Disconnect the Instrument Cluster C2 connector.

Measure the resistance of the Cylinder Lock Switch Mux circuit between the Switch connector and the Instrument Cluster connector.

Is the resistance below 5.0 ohms?

Yes >> Replace the Instrument Cluster.
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)

No >> Repair the Cylinder Lock Switch Mux circuit for an open.
Perform VTSS VERIFICATION TEST - 1A. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - DIAGNOSIS AND TESTING)



VTSS VERIFICATION TEST - 1A

Diagnostic Test

1. VTSS VERIFICATION TEST - 1A

1. Open the driver door and roll down the window.
2. Remove the ignition key (but keep in hand).
3. Lock the doors with RKE transmitter or power door lock switch.
4. Close all doors and observe the VTSS Indicator lamp.
5. - If the VTSS Indicator Lamp flashes rapidly and then after approximately 15 seconds changes to a slower flash, indicates the system is armed.
6. - If the indicator fails to flash as described, there is a problem with the system. Select the Identifying VTSS symptom from the Symptom List to troubleshoot.
7. - Manually unlock the driver's door and open door to verify the alarm will trip to the alarming state.

Does the VTSS Indicator Lamp flash as specified and does the alarm trip and operate properly?

Yes >> Repair is complete.

No >> Repair is not complete, refer to appropriate symptom.

STANDARD PROCEDURE

SKIS VERIFICATION TEST

Diagnostic Test

1. SKIS VERIFICATION TEST

1. Reconnect all previously disconnected components and connectors.

2. Obtain the vehicle's unique Personal Identification Number (PIN) assigned to it's original SKIM. This number can be obtained from the vehicle's invoice or Chrysler's Customer Center (1-800-992-1997).

NOTE: 3. When entering the PIN, care should be taken because the SKIM will only allow 3 consecutive attempts to enter the correct PIN. If 3 consecutive incorrect PINs are entered, the SKIM will Lock Out the scan tool for 1 hour.

4. To exit Lock Out mode, the ignition key must remain in the Run position continually for 1 hour. Turn off all accessories and connect a battery charger if necessary.

5. With the scan tool, select Theft Alarm, SKIM and Miscellaneous. Then, select the desired procedure and follow the steps that will be displayed.

6. If the SKIM has been replaced, make sure all of the vehicle ignition keys are programmed to the new SKIM.

NOTE: 7. Prior to returning vehicle to the customer, perform a module scan to be sure that all DTCs are erased. Erase any DTCs that are found.

8. With the scan tool, erase all DTCs. Perform 5 ignition key cycles leaving the key on for at least 90 seconds per cycle.

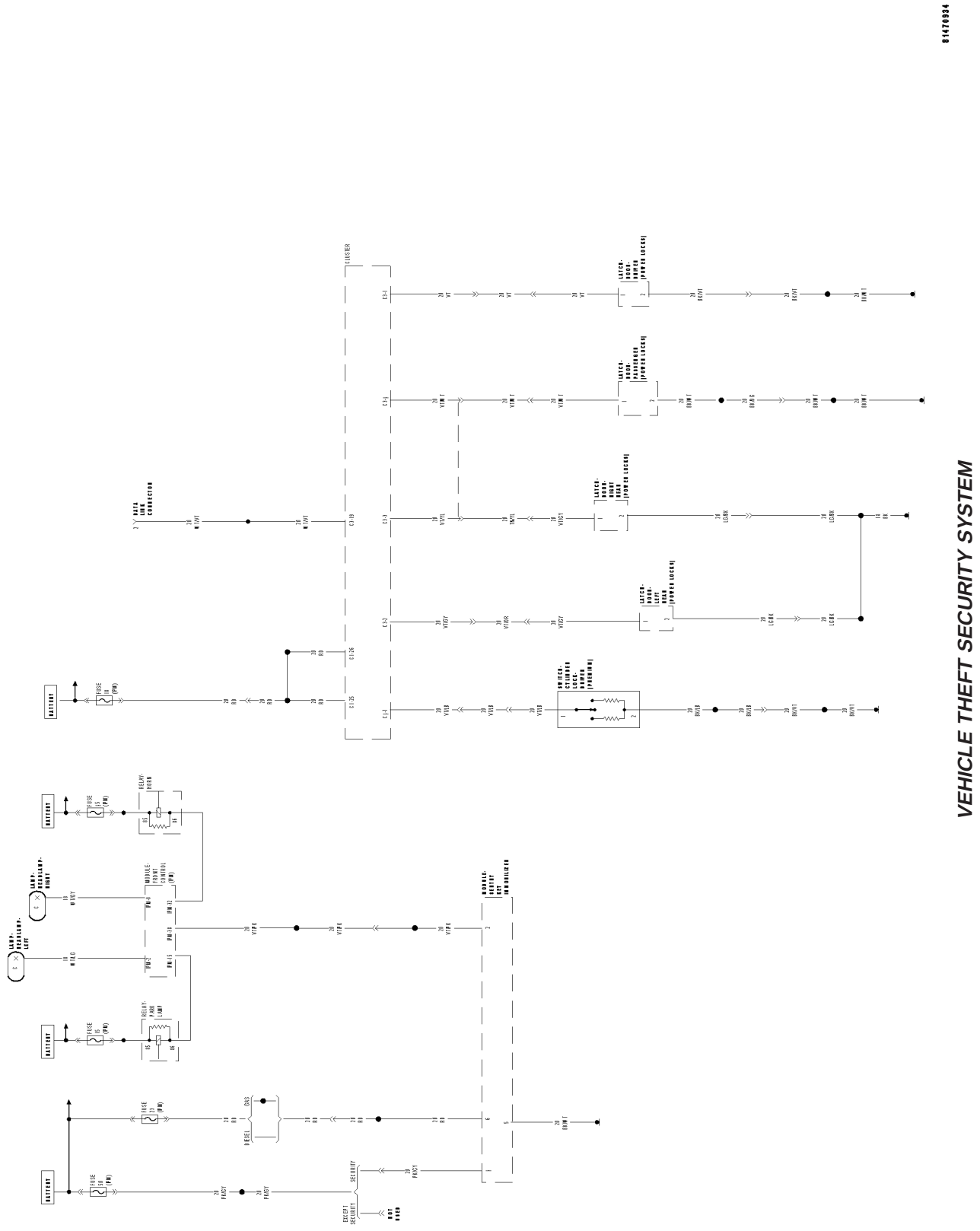
9. With the scan tool, read the SKIM DTCs.

Are there any SKIM DTCs?

Yes >> Repair is not complete, refer to appropriate diagnostic procedure.

No >> Repair is complete.

SCHEMATICS AND DIAGRAMS



VEHICLE THEFT SECURITY - SERVICE INFORMATION

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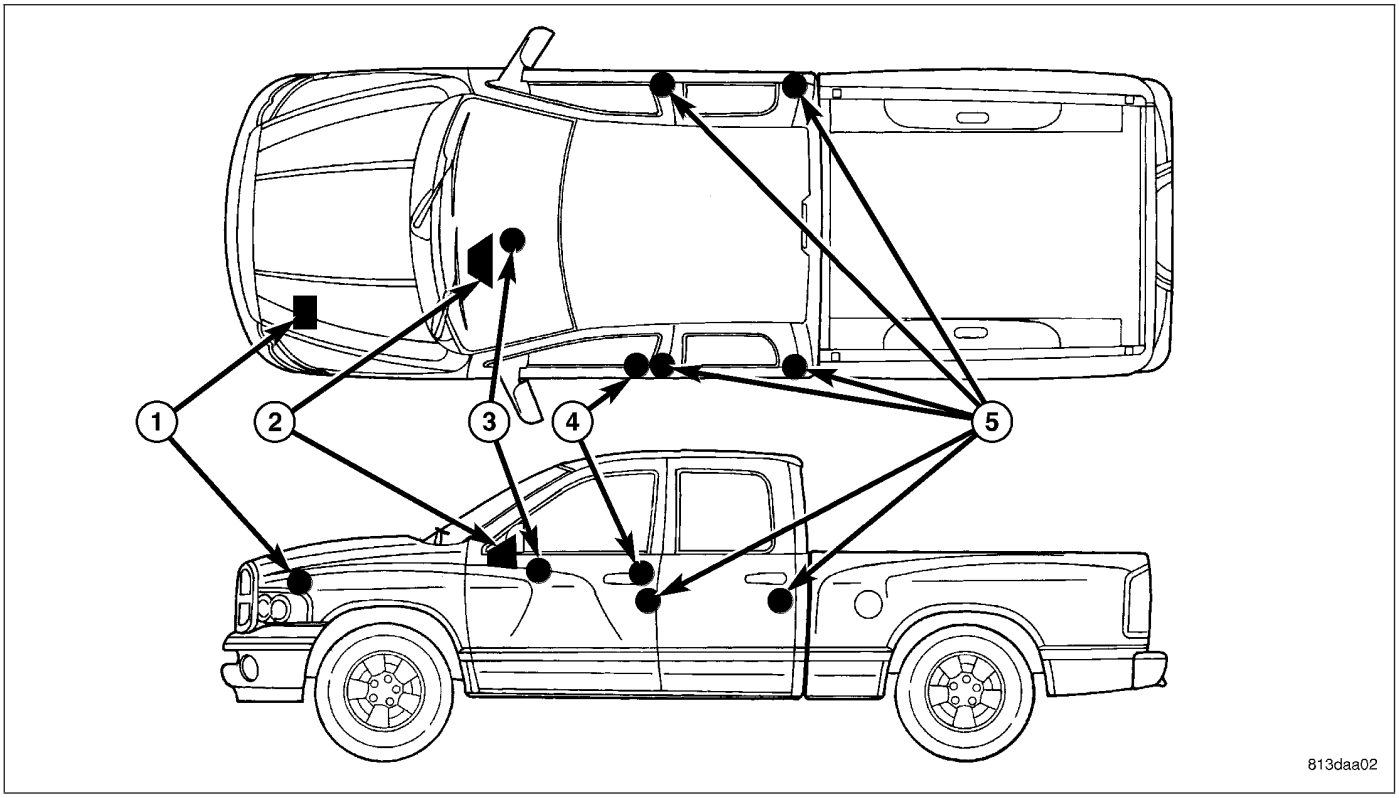
VEHICLE THEFT SECURITY - SERVICE INFORMATION

DESCRIPTION

VEHICLE THEFT SECURITY SYSTEM



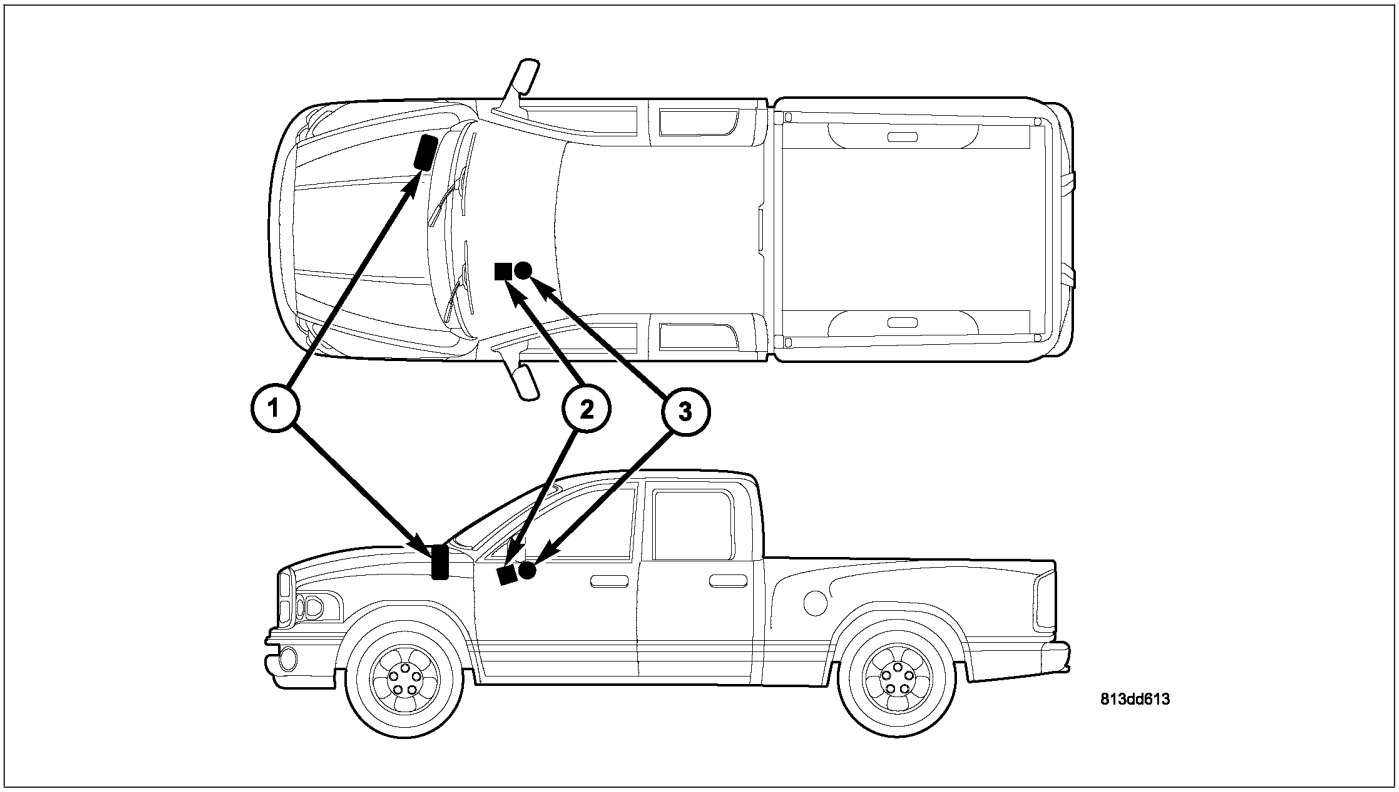
The Vehicle Theft Security System (VTSS) is designed to provide perimeter protection against unauthorized use or tampering by monitoring the vehicle door ajar circuits, the driver side front door cylinder lock switch circuit, the power lock and unlock circuits, and the ignition switch circuit. If unauthorized use or tampering is detected, the system responds by pulsing the horn for up to about three minutes and flashing the hazard warning lamps for up to about eighteen minutes.

The VTSS includes the following major components, which are described in further detail elsewhere in this service information:

- **Door Cylinder Lock Switch (4)** - A cylinder lock switch is located on the back of the lock cylinder on the driver side front door. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY/DOOR CYLINDER LOCK SWITCH - DESCRIPTION).
- **Door Ajar Switches (5)** - A door ajar switch is integral to the door latch mechanism of each front and rear door. (Refer to 8 - ELECTRICAL/LAMPS/LIGHTING - INTERIOR/DOOR AJAR SWITCH - DESCRIPTION).
- **Front Control Module (1)** - The Front Control Module (FCM) is integral to the Integrated Power Module (IPM). The FCM/IPM is located in the engine compartment, near the battery and the Power Distribution Center (PDC). (Refer to 8 - ELECTRICAL/POWER DISTRIBUTION - DESCRIPTION).
- **Horn Relay** - The horn relay is located in the Power Distribution Center (PDC) in the engine compartment near the battery. (Refer to 8 - ELECTRICAL/HORN/HORN RELAY - DESCRIPTION).
- **Ignition Switch (3)** - The ignition switch is located on the steering column in the passenger compartment. (Refer to 8 - ELECTRICAL/IGNITION CONTROL/IGNITION SWITCH - DESCRIPTION).
- **Instrument Cluster (2)** - The ElectroMechanical Instrument Cluster (EMIC) is also known as the Cab Control Node (CCN) in this vehicle. The EMIC/CCN is located in the instrument panel above the steering column opening, directly in front of the driver. (Refer to 8 - ELECTRICAL/INSTRUMENT CLUSTER - DESCRIPTION).
- **Security Indicator** - The security indicator is integral to the instrument cluster. (Refer to 8 - ELECTRICAL/ INSTRUMENT CLUSTER/SECURITY INDICATOR - DESCRIPTION).

Hard wired circuitry connects the VTSS components to the electrical system of the vehicle. These hard wired circuits are integral to several wire harnesses, which are routed throughout the vehicle and retained by many different methods. These circuits may be connected to each other, to the VTSS components through the use of a combination of soldered splices, splice block connectors, and many different types of wire harness terminal connectors and insulators. Refer to the appropriate wiring information. The wiring information includes wiring diagrams, proper wire and connector repair procedures, further details on wire harness routing and retention, as well as pin-out and location views for the various wire harness connectors, splices and grounds.

SENTRY KEY IMMOBILIZER SYSTEM



The Sentry Key Immobilizer System (SKIS) is available as a factory-installed option on this model. Vehicles equipped with this option can be readily identified by the illumination of the security indicator in the instrument cluster for about three seconds after the ignition switch is turned to the On position as a SKIS bulb test.

The SKIS includes the following major components, which are described in further detail elsewhere in this service information:

- **Powertrain Control Module (1)** - The Powertrain Control Module (PCM) is located in the engine compartment.
- **Sentry Key Immobilizer Module (2)** - The Sentry Key Immobilizer Module (SKIM) is located on the right side of the steering column near the ignition lock cylinder housing and an integral molded plastic antenna ring circles the ignition lock cylinder like a halo. The SKIM and its antenna are concealed beneath the steering column shrouds.
- **Sentry Key Transponder (3)** - The Sentry Key transponder is molded into the head of the ignition key, where it is concealed beneath the molded rubber cap on the head of the key.
- **Security Indicator** - The security indicator is integral to the ElectroMechanical Instrument Cluster. (Refer to 8 - ELECTRICAL/INSTRUMENT CLUSTER/SECURITY INDICATOR - DESCRIPTION).

Except for the Sentry Key transponders, which rely upon Radio Frequency (RF) communication, hard wired circuitry connects the SKIS components to the electrical system of the vehicle. These hard wired circuits are integral to several wire harnesses, which are routed throughout the vehicle and retained by many different methods. These circuits may be connected to each other, to the vehicle electrical system and to the SKIS components through the use of a combination of soldered splices, splice block connectors, and many different types of wire harness terminal connectors and insulators. Refer to the appropriate wiring information. The wiring information includes wiring diagrams, proper wire and connector repair procedures, further details on wire harness routing and retention, as well as pin-out and location views for the various wire harness connectors, splices and grounds.

OPERATION

VEHICLE THEFT SECURITY SYSTEM

The ElectroMechanical Instrument Cluster (EMIC) is used on this model to control and integrate many of the functions and features included in the Vehicle Theft Security System (VTSS). In the VTSS, the EMIC receives inputs

indicating the status of the door ajar switches, the door cylinder lock switch and the ignition switch. The EMIC will process the information from all of these inputs, internally control the security indicator as appropriate, and send electronic messages to the Front Control Module (FCM) over the Programmable Communications Interface (PCI) data bus. The FCM internally controls the output to the hazard warning lamps and sends a control output to energize or de-energize the horn relay as appropriate.

Following are paragraphs describing the operation of each of the VTSS features.

ENABLING

The EMIC must have the VTSS function electronically enabled in order for the VTSS to perform as designed. The logic in the EMIC keeps its VTSS function dormant until it is enabled using a diagnostic scan tool. The VTSS function of the EMIC is enabled on vehicles equipped with the VTSS option at the factory, but a service replacement EMIC must be VTSS-enabled by the dealer using a diagnostic scan tool. Refer to the appropriate diagnostic information.

ARMING

Passive arming of the VTSS occurs when the vehicle is exited with the key removed from the ignition switch, the headlamps are turned off, and the doors are locked while they are open using the power lock switch, or locked after they are closed by turning the driver side front door lock cylinder to the lock position using the key. Active arming occurs when the “Lock” button on the Remote Keyless Entry (RKE) transmitter is depressed to lock the vehicle. For active arming to occur, the doors must be closed and the ignition switch must be in the Off position when the RKE transmitter “Lock” button is depressed. The power lock switch will not function if the key is in the ignition switch or the headlamps are turned on with the driver side front door open.

Pre-arming of the VTSS is initiated when a door is open when the vehicle is locked using a power door lock switch or when the RKE transmitter “Lock” button is depressed. Pre-arming will not occur if the key is in the ignition switch or the headlamps are turned on with the driver side front door open. When the VTSS is pre-armed, the arming sequence is delayed until all of the doors have been closed. The VTSS will remain in “Pre-Armed” mode for up to seventeen seconds after all of the doors have been closed.

Once the VTSS begins the passive or active arming sequence, the security indicator in the instrument cluster will flash rapidly for about seventeen seconds. This indicates that VTSS arming is in progress. If the ignition switch is turned to the On position, a door is opened, a door is unlocked by any means, or the RKE “Panic” button is depressed during the seventeen second arming process, the security indicator will stop flashing and the arming process will abort. Once the seventeen second arming sequence is successfully completed, the security indicator will flash at a slower rate, indicating that the VTSS is armed.

DISARMING

Passive disarming of the VTSS occurs when the vehicle is unlocked using the key to unlock the driver side front door. If the vehicle is equipped with the optional Sentry Key Immobilizer System (SKIS), passive disarming will also occur by turning the ignition switch to the On position using a valid SKIS key. Active disarming of the VTSS occurs when the vehicle is unlocked by depressing the “Unlock” button of the RKE transmitter. Once the alarm has been activated, either disarming method will also deactivate the alarm. Depressing the “Panic” button on the RKE transmitter will **not** disarm the VTSS.

POWER-UP MODE

When the armed VTSS senses that the battery has been disconnected and reconnected, it enters its power-up mode. In the power-up mode the alarm system remains armed following a battery failure or disconnect. If the VTSS was armed prior to a battery disconnect or failure, the technician or vehicle operator will have to actively or passively disarm the alarm system after the battery is reconnected. The power-up mode will also apply if the battery goes dead while the system is armed, and battery jump-starting is attempted. The VTSS will be armed until the technician or vehicle operator has actively or passively disarmed the alarm system. If the VTSS is in the disarmed mode prior to a battery disconnect or failure, it will remain disarmed after the battery is reconnected or replaced, or if jump-starting is attempted.

TAMPER ALERT

The VTSS tamper alert feature will sound the horn three times upon disarming, if the alarm was triggered and has since timed-out (about eighteen minutes) or if the battery has been disconnected and reconnected. This feature alerts the vehicle operator that the VTSS alarm was activated while the vehicle was unattended.

SENTRY KEY IMMOBILIZER SYSTEM

The Sentry Key Immobilizer System (SKIS) is designed to provide passive protection against unauthorized vehicle use by disabling the engine after about two seconds of running, whenever any method other than a valid Sentry Key is used to start the vehicle. The SKIS is considered a passive protection system because it is always active when the ignition system is energized and does not require any customer intervention. The SKIS uses Radio Frequency (RF) communication to obtain confirmation that the key in the ignition switch is a valid key for operating the vehicle. The microprocessor-based SKIS hardware and software also uses electronic messages to communicate with other electronic modules in the vehicle over the Programmable Communications Interface (PCI) data bus. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/COMMUNICATION - OPERATION).

Pre-programmed Sentry Key transponders are provided with the vehicle from the factory. Each Sentry Key Immobilizer Module (SKIM) will recognize a maximum of eight Sentry Keys. If the customer would like additional keys other than those provided with the vehicle, they may be purchased from any authorized dealer. These additional keys must be programmed to the SKIM in the vehicle in order for the system to recognize them as valid keys. This can be done by the dealer using a diagnostic scan tool or, if Customer Learn programming is an available SKIS feature in the market where the vehicle was purchased, the customer can program the additional keys, as long as at least two valid Sentry Keys are already available. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE - TRANSPONDER PROGRAMMING).

The SKIM performs a self-test of the SKIS each time the ignition switch is turned to the On position, and will store fault information in the form of a Diagnostic Trouble Code (DTC) if a system malfunction is detected. The SKIS can be diagnosed, and any stored DTC can be retrieved using a diagnostic scan tool. Refer to the appropriate diagnostic information.

DIAGNOSIS AND TESTING

VEHICLE THEFT SECURITY SYSTEM

WARNING: To avoid personal injury or death, on vehicles equipped with airbags, disable the supplemental restraint system before attempting any steering wheel, steering column, airbag, seat belt tensioner, impact sensor, or instrument panel component diagnosis or service. Disconnect and isolate the battery negative (ground) cable, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the supplemental restraint system. Failure to take the proper precautions could result in accidental airbag deployment.

The hard wired Vehicle Theft Security System (VTSS) components and circuits may be diagnosed and tested using conventional diagnostic tools and methods. Refer to the appropriate wiring information. The wiring information includes wiring diagrams, proper wire and connector repair procedures, details of wire harness routing and retention, connector pin-out information and location views for the various wire harness connectors, splices and grounds.

However, conventional diagnostic methods may not prove conclusive in the diagnosis of the ElectroMechanical Instrument Cluster (EMIC), the Front Control Module (FCM), the Programmable Communications Interface (PCI) data bus, or the electronic message inputs used to provide the electronic features of the VTSS. The most reliable, efficient, and accurate means to diagnose the EMIC, the FCM, the PCI data bus, and the electronic message inputs for the VTSS requires the use of a diagnostic scan tool. See the “Vehicle Theft Security System” menu item on the scan tool. Refer to the appropriate diagnostic information.

SENTRY KEY IMMOBILIZER SYSTEM

WARNING: To avoid personal injury or death, on vehicles equipped with airbags, disable the supplemental restraint system before attempting any steering wheel, steering column, airbag, seat belt tensioner, impact sensor, or instrument panel component diagnosis or service. Disconnect and isolate the battery negative (ground) cable, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the supplemental restraint system. Failure to take the proper precautions could result in accidental airbag deployment.

The hard wired Sentry Key Immobilizer System (SKIS) components and circuits may be diagnosed and tested using conventional diagnostic tools and methods. Refer to the appropriate wiring information. The wiring information includes wiring diagrams, proper wire and connector repair procedures, details of wire harness routing and retention, connector pin-out information and location views for the various wire harness connectors, splices and grounds.

However, conventional diagnostic methods may not prove conclusive in the diagnosis of the Sentry Key Immobilizer Module (SKIM), the ElectroMechanical Instrument Cluster (EMIC), the Powertrain Control Module (PCM), the Programmable Communications Interface (PCI) data bus, or the electronic message inputs used to provide the electronic features of the SKIS. The most reliable, efficient, and accurate means to diagnose the SKIM, the EMIC, the PCM, the PCI data bus, and the electronic message inputs for the SKIS requires the use of a diagnostic scan tool. Refer to the appropriate diagnostic information.

CONDITION	POSSIBLE CAUSES	CORRECTION
SECURITY INDICATOR FAILS TO LIGHT DURING BULB TEST	1. Light-Emitting Diode (LED) faulty.	1. Perform the instrument cluster actuator test. (Refer to 8 - ELECTRICAL/ INSTRUMENT CLUSTER - DIAGNOSIS AND TESTING - ACTUATOR TEST)..
	2. Fuse faulty.	2. Check the SKIM fused B(+) fuse and the fused ignition switch output (run-start) fuse in the Junction Block (JB). Replace fuses, if required.
	3. Ground path faulty.	3. Check for continuity to ground at the connector for the SKIM. Repair wiring, if required.
	4. Battery feed faulty.	4. Check for battery voltage at the connector for the SKIM. Repair wiring, if required.
	5. Ignition feed faulty.	5. Check for battery voltage at the connector for the SKIM with the ignition switch in the On position. Repair wiring, if required.
SECURITY INDICATOR FLASHES FOLLOWING BULB TEST	1. Invalid key in ignition switch lock cylinder.	1. Replace the key with a known valid key.
	2. Key-related fault.	2. Use a diagnostic scan tool and the appropriate diagnostic information for further diagnosis.
SECURITY INDICATOR LIGHTS SOLID FOLLOWING BULB TEST	1. SKIS system malfunction/ fault detected.	1. Use a diagnostic scan tool and the appropriate diagnostic information for further diagnosis.
	2. SKIS system inoperative.	2. Use a diagnostic scan tool and the appropriate diagnostic information for further diagnosis.

STANDARD PROCEDURE

SKIS INITIALIZATION

The Sentry Key Immobilizer System (SKIS) must be initialized following a Sentry Key Immobilizer Module (SKIM) replacement. SKIS initialization requires the use of a diagnostic scan tool. Initialization will also require that you have access to the unique four-digit PIN code that was assigned to the original SKIM. The PIN code **must** be used to enter the Secured Access Mode in the SKIM. This PIN number may be obtained from the vehicle owner, from the original vehicle invoice, or from the DaimlerChrysler Customer Center. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE - PCM/SKIM PROGRAMMING).

NOTE: If a Powertrain Control Module (PCM) is replaced on a vehicle equipped with the Sentry Key Immobilizer System (SKIS), the unique Secret Key data must be transferred from the Sentry Key Immobilizer Module (SKIM) to the new PCM using the PCM replacement procedure. This procedure also requires the use of a diagnostic scan tool and the unique four-digit PIN code to enter the Secured Access Mode in the SKIM. Refer to the appropriate diagnostic information for the proper PCM replacement procedures.

SENTRY KEY TRANSPONDER PROGRAMMING

All Sentry Keys included with the vehicle are pre-programmed to work with the Sentry Key Immobilizer System (SKIS) when it is shipped from the factory. The Sentry Key Immobilizer Module (SKIM) can be programmed to recognize up to a total of eight Sentry Keys. When programming a blank Sentry Key transponder, the key must first be cut to match the ignition switch lock cylinder in the vehicle for which it will be used. Once the additional or new key has been cut, the SKIM must be programmed to recognize it as a valid key. There are two possible methods to program the SKIM to recognize a new or additional valid key, the Secured Access Method and the Customer Learn Method. Following are the details of these two programming methods.

SECURED ACCESS METHOD

The Secured Access method applies to all vehicles. This method requires the use of a diagnostic scan tool. This method will also require that you have access to the unique four-digit PIN code that was assigned to the original SKIM. The PIN code **must** be used to enter the Secured Access Mode in the SKIM. This PIN number may be obtained from the vehicle owner, from the original vehicle invoice, or from the DaimlerChrysler Customer Center. Refer to the appropriate diagnostic information for the proper Secured Access method programming procedures.

CUSTOMER LEARN METHOD

NOTE: The Customer Learn feature is only available on domestic vehicles, or those vehicles which have a U.S. country code designator. This programming method also requires access to at least two valid Sentry Keys. If two valid Sentry Keys are not available, or if the vehicle does not have a U.S. country code designator, the Secured Access Method MUST be used to program new or additional valid keys to the SKIM.

The Customer Learn programming method procedures are as follows:

1. Obtain the blank Sentry Key(s) that are to be programmed as valid keys for the vehicle. Cut the blank key(s) to match the ignition switch lock cylinder mechanical key codes.
2. Insert one of the two valid Sentry Keys into the ignition switch and turn the ignition switch to the On position.
3. After the ignition switch has been in the On position for longer than three seconds, but no more than fifteen seconds, cycle the ignition switch back to the Off position. Replace the first valid Sentry Key in the ignition switch lock cylinder with the second valid Sentry Key and turn the ignition switch back to the On position. The second valid Sentry Key must be inserted in the lock cylinder within fifteen seconds of removing the first valid key.
4. About ten seconds after the completion of Step 3, the security indicator in the instrument cluster will start to flash to indicate that the system has entered the Customer Learn programming mode.
5. Within sixty seconds of entering the Customer Learn programming mode, turn the ignition switch to the Off position, replace the valid Sentry Key with a blank Sentry Key transponder, and turn the ignition switch back to the On position.

6. About ten seconds after the completion of Step 5, the security indicator will stop flashing, stay on solid for three seconds, then turn off to indicate that the blank Sentry Key has been successfully programmed. The SKIS will immediately exit the Customer Learn programming mode. After the ignition is cycled the vehicle may be started using the newly programmed valid Sentry Key.

Each of these steps must be repeated and completed in their entirety for each additional Sentry Key that is to be programmed. If the above steps are not completed in the given sequence, or within the allotted time, the SKIM will exit the Customer Learn programming mode and the programming will be unsuccessful. The SKIM will also automatically exit the Customer Learn programming mode if it sees a non-blank Sentry Key transponder when it should see a blank, if it has already programmed eight (8) valid Sentry Keys, or if the ignition switch is turned to the Off position for more than about fifty seconds.

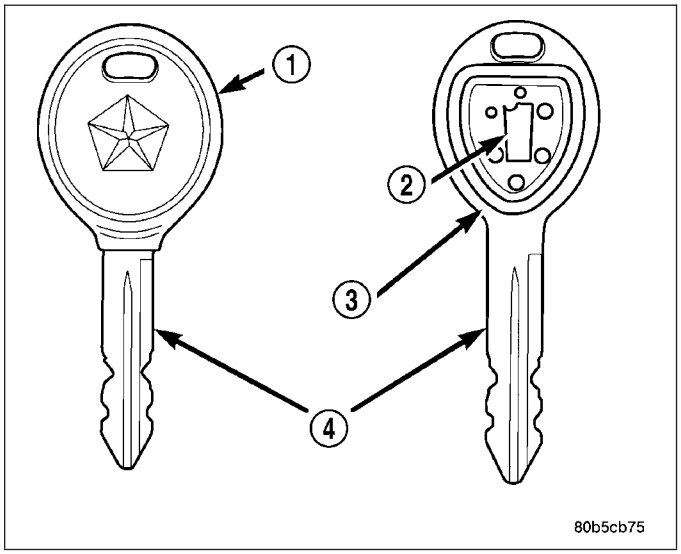
NOTE: If an attempt is made to start the vehicle while in the Customer Learn mode (security indicator flashing), the SKIS will respond as though the vehicle were being started with an invalid key. In other words, the engine will stall after about two seconds of operation. No faults will be set.

NOTE: Once a Sentry Key has been programmed as a valid key to a vehicle, it cannot be programmed as a valid key for use on any other vehicle.

TRANSPONDER KEY

DESCRIPTION

Each ignition key (4) used in the Sentry Key Immobilizer System (SKIS) has an integral transponder chip (2) concealed beneath the molded rubber cap (1), where it is secured within a plastic mount in the head (3) of the metal key. In addition to having to be cut to match the mechanical coding of the ignition lock cylinder, each new Sentry Key has a unique transponder identification code that is permanently programmed into it by the manufacturer, and which must be programmed into the Sentry Key Immobilizer Module (SKIM) to be recognized as a valid key. The Sentry Key transponder cannot be adjusted or repaired. If faulty or damaged, the entire key and transponder unit must be replaced.



OPERATION

When the ignition switch is turned to the On position, the Sentry Key Immobilizer Module (SKIM) communicates through its antenna with the Sentry Key transponder using a Radio Frequency (RF) signal. The SKIM then listens for a RF response from the transponder through the same antenna. The Sentry Key transponder chip is within the range of the SKIM transceiver antenna ring when it is inserted into the ignition lock cylinder. The SKIM determines whether a valid key is present in the ignition lock cylinder based upon the response from the transponder. If a valid key is detected, that fact is communicated by the SKIM to the Powertrain Control Module (PCM) over the Programmable Communications Interface (PCI) data bus, and the PCM allows the engine to continue running. If the PCM receives an invalid key message, or receives no message from the SKIM over the PCI data bus, the engine will be disabled after about two seconds of operation. The ElectroMechanical Instrument Cluster (EMIC) will also respond to the invalid key message on the PCI data bus by flashing the security indicator on and off.

Each Sentry Key has a unique transponder identification code permanently programmed into it by the manufacturer. Likewise, the SKIM has a unique Secret Key code programmed into it by the manufacturer. When a Sentry Key is programmed into the memory of the SKIM, the SKIM stores the transponder identification code from the Sentry Key, and the Sentry Key learns the Secret Key code from the SKIM. Once the Sentry Key learns the Secret Key code of

the SKIM, it is permanently stored in the memory of the transponder. Therefore, once a Sentry Key has been programmed to a particular vehicle, it cannot be used on any other vehicle. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE - TRANSPONDER PROGRAMMING).

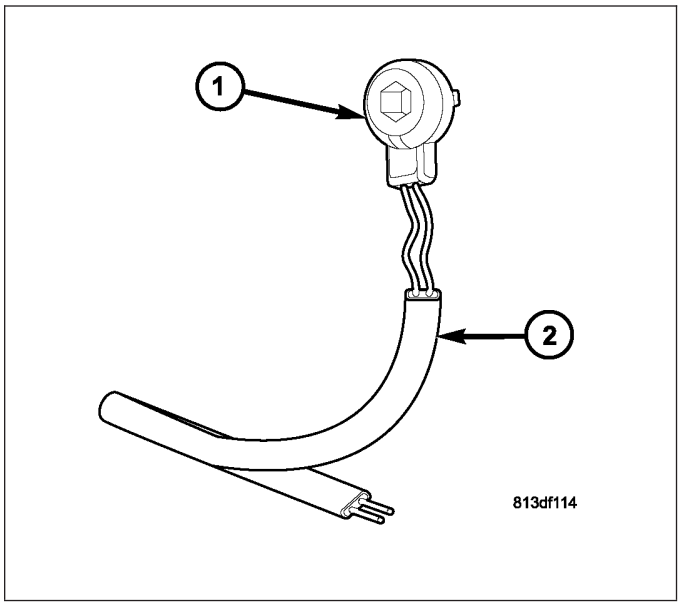
The SKIS performs a self-test each time the ignition switch is turned to the On position, and will store key-related fault information in the form of Diagnostic Trouble Code (DTC) in SKIM memory if a Sentry Key transponder problem is detected. The Sentry Key transponder chip can be diagnosed, and any stored DTC can be retrieved using a diagnostic scan tool. Refer to the appropriate diagnostic information.

SWITCH-DOOR KEY POSITION

DESCRIPTION

Vehicles that are equipped with the optional Vehicle Theft Security System (VTSS) have a door cylinder lock switch (1) secured to the back of the key lock cylinder inside the driver side front door. The door cylinder lock switch is a resistor multiplexed momentary switch that is hard wired in series between ground and the cylinder lock switch mux circuit input to the ElectroMechanical Instrument Cluster (EMIC) through a pigtail wire (2) connected to the left front door wire harness. The door cylinder lock switch is driven by the key lock cylinder and contains two internal resistors. One resistor value is used for the Lock position, and one for the Unlock position.

The door cylinder lock switch cannot be adjusted or repaired and, if faulty or damaged, it must be replaced.



OPERATION

The door cylinder lock switch is actuated by the key lock cylinder when the key is inserted in the lock cylinder and turned to the lock or unlock positions. The door cylinder lock switch closes a circuit between ground and the cylinder lock switch mux circuit through one of two internal resistors for the ElectroMechanical Instrument Cluster (EMIC) when the driver side front door key lock cylinder is in the Lock, or Unlock positions. The EMIC reads the switch status through an internal pull-up, then uses this information as an input for the Vehicle Theft Security System (VTSS) operation, as well as for control of a central locking feature for the power lock system.

The door cylinder lock switch and circuit may be diagnosed using conventional diagnostic tools and methods. Refer to the appropriate wiring information. However, conventional diagnostic methods may not prove conclusive in the diagnosis of the EMIC or its responses to the cylinder lock switch inputs. The most reliable, efficient, and accurate means to diagnose the door cylinder lock switch, the EMIC, and both the hard wired and electronic message inputs and outputs affected by the door cylinder lock switch inputs requires the use of a diagnostic scan tool. Refer to the appropriate diagnostic information.

DIAGNOSIS AND TESTING

DOOR CYLINDER LOCK SWITCH

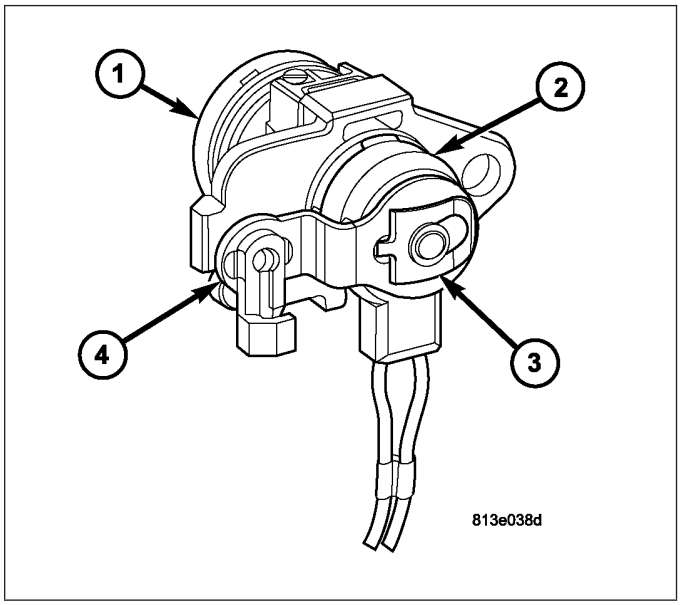
1. Disconnect and isolate the battery negative cable.
2. Disconnect the door cylinder lock switch pigtail wire connector from the door wire harness connector.
3. Using an ohmmeter, perform the resistance tests between the two pins in the door cylinder lock switch pigtail wire connector. Actuate the switch by rotating the key in the door lock cylinder to test for the proper resistance values in each of the three switch positions, as shown in the Door Cylinder Lock Switch Tests table.

DOOR CYLINDER LOCK SWITCH TESTS	
SWITCH POSITION	**RESISTANCE**
Neutral	12 Kilohms
Lock (Counterclockwise)	644 Ohms
Unlock (Clockwise)	1565 Ohms

4. If the switch fails any of the resistance tests, replace the faulty door cylinder lock switch as required.

REMOVAL

1. Disconnect and isolate the battery negative cable.
2. Remove the exterior handle and lock cylinder (1) from the outside of the driver side front door as a unit. (Refer to 23 - BODY/DOOR - FRONT/EXTERIOR HANDLE - REMOVAL).
3. Remove the bowed clip (3) that secures the lever arm (4) to the shaft on the back of the lock cylinder.
4. Remove the lever arm from the lock cylinder shaft.
5. Remove the door cylinder lock switch (2) from the back of the lock cylinder.



INSTALLATION

1. Position the door cylinder lock switch (2) over the shaft on the back of the lock cylinder (1).
2. Position the lever arm (4) onto the shaft over the switch.
3. Install the bowed clip (3) that secures the lever arm to the shaft.
4. Reinstall the exterior handle and lock cylinder onto the outside of the driver side front door as a unit. (Refer to 23 - BODY/DOOR - FRONT/EXTERIOR HANDLE - INSTALLATION).
5. Reconnect the battery negative cable.