

VEHICLE THEFT SECURITY SYSTEM

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GENERAL INFORMATION

INTRODUCTION

Vehicles equipped with the Vehicle Theft Security System (VTSS) system, the doors, liftgate, hood and ignition circuit are monitored by the Body Control Module (BCM) when the system is armed. The VTSS will prevent the engine from starting until the BCM receives a disarm signal. If the VTSS is triggered, the horn will pulse, headlamps/marker lamps will flash, and the VTSS warning lamp will flash. If BCM determines the threat to be false and the VTSS is not triggered again, the system will shut down and rearm itself after three minutes. The VTSS monitoring portion of the system is split into two sections. The engine compartment section and the passenger compartment section. If a malfunction occurs in the engine compartment section, the passenger compartment section would still arm and function normally. If an electrical malfunction occurs in either section of the system a Diagnostic Trouble Code (DTC) would be stored the BCM memory to aid system repair. DTCs can be retrieved using scan tool (DRB) attached to the diagnostic connector above the accelerator pedal.

ENABLING

To initialize the VTSS feature the operator must, with the engine compartment hood open, cycle the key in the liftgate key cylinder to the unlock position giving the BCM a disarm signal. At this time the visual alarm outputs the headlamps and marker lamps will function. However the audio alarm output the horn and engine disable portion of the VTSS will not function until there has been twenty consecutive engine run cycles. When this has occurred the total VTSS will function.

If during alarm being set the BCM receives a request from the RKE module to enter PANIC mode the BCM will cancel the alarm, return VTSS armed state and then perform the RKE PANIC feature.

DESCRIPTION AND OPERATION

ARMING PROCEDURE

METHOD-A

(1) With the key removed from the ignition lock and any door open, actuate one of the following:

- Power door lock button to LOCK,
- Key fob LOCK button
- Door lock key cylinder to locked position.

(2) Close all opened doors.

(3) After the last door is closed, an arming time-out period of sixteen seconds will start, then the VTSS will become armed.

METHOD-B

Actuating the key fob transmitter LOCK button, key locking the front doors or liftgate with the doors closed and the ignition locked will begin the arming time-out period. If method-A, 16 second time-out sequence was in process when method-B was actuated, the 16 second time-out will restart from the time of the second actuation.

If the security lamp does not illuminate at all upon final door closure, it indicates that the system is not arming.

The current VTSS status armed or disarmed shall be maintained in memory to prevent battery disconnects from disarming the system.

DESCRIPTION AND OPERATION (Continued)

TIME-OUT PERIOD

The VTSS requires 16 consecutive seconds to time-out and arm the alarm. If a door is key unlocked, key fob unlocked, or the ignition is switched ON, the VTSS will cancel out. To reset the VTSS, perform methods A or B.

TRIGGERING THE VTSS

After the VTSS is armed, following actions will trigger the alarm:

- Opening any door.
- Opening the hood
- Turning the ignition to the ON or unlock position.
- The ignition switch can be turned to the accessory position without triggering alarm system.

DIAGNOSIS AND TESTING**DIAGNOSTIC PROCEDURES**

Refer to Group 8W, Wiring Diagrams for circuit information and component locations. Using a scan tool (DRB). Refer to the proper Body Diagnostic Procedures manual for test procedures.

REMOVAL AND INSTALLATION**BODY CONTROL MODULE****REMOVAL**

- (1) Disconnect the battery negative cable.
- (2) Remove the lower steering column cover and the knee blocker reinforcement.
- (3) Disconnect the two wire connectors from the bottom of the Body Control Module (BCM) (Fig. 1).
- (4) Remove the bolts holding the Junction Block to the dash panel mounting bracket.
- (5) Remove the Junction Block from the mounting bracket.
- (6) Remove the screws holding BCM to Junction Block.
- (7) Slide the BCM downward to disengage guide studs on Junction Block from the channels on the BCM mounting bracket.
- (8) Remove the BCM from Junction Block.

INSTALLATION

For installation, reverse the above procedure.

DOOR LOCK CYLINDER SWITCH**REMOVAL**

- (1) Remove the door trim and water shield.
- (2) Close the door window.

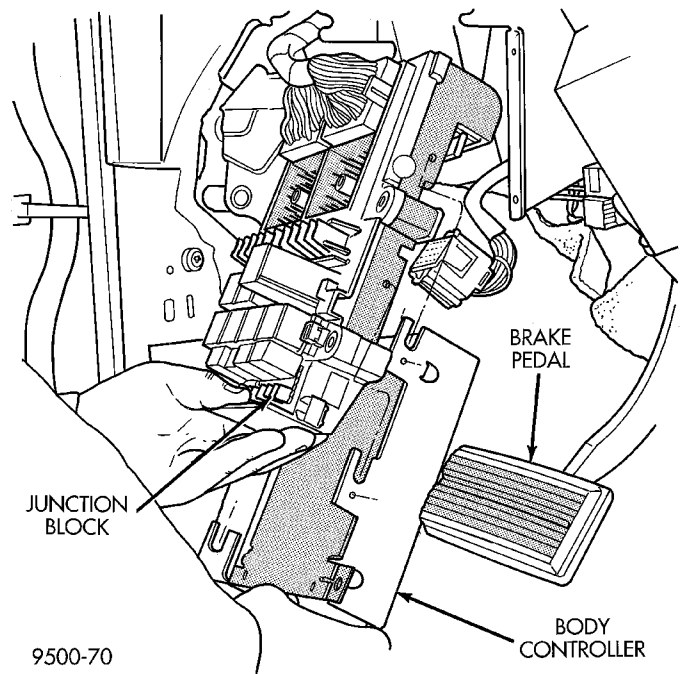
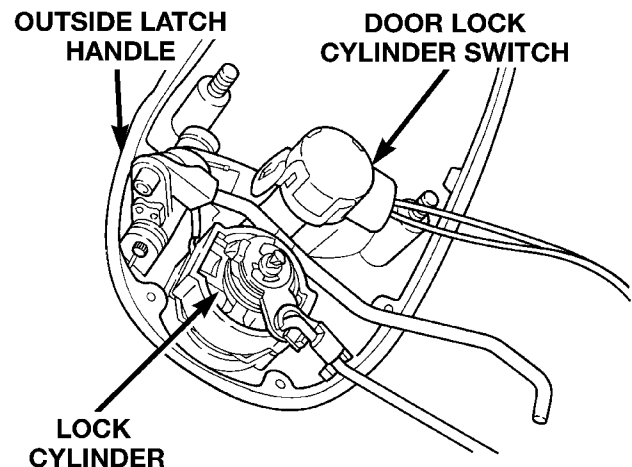


Fig. 1 Body Control Module

- (3) Disconnect the door lock cylinder switch wire connector from the door harness and wiring clip from the impact beam.
- (4) Remove the outer handle from the door.
- (5) Disengage the lock tab holding switch to the back of the lock cylinder (Fig. 2).
- (6) Remove the switch from the door handle.

INSTALLATION

For installation, reverse the above procedure.



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Fig. 2 Door Lock Cylinder Switch

REMOVAL AND INSTALLATION (Continued)

FRONT DOOR AJAR (VTSS TRIGGER) SWITCH

REMOVAL

- (1) Open the front door.
- (2) Remove the screw holding the door ajar switch to the door B-pillar (Fig. 3).

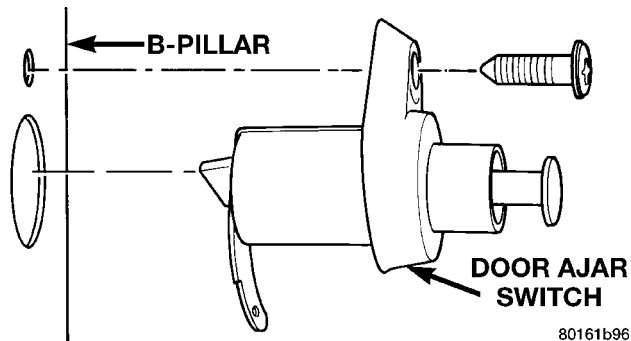


Fig. 3 Front Door Ajar Switch

- (3) Remove the door ajar switch from the B-pillar.
- (4) Disconnect the wire connector from the back of the ajar switch and remove the switch.

INSTALLATION

For installation, reverse the above procedure.

HOOD AJAR (VTSS TRIGGER) SWITCH

REMOVAL

- (1) Release the hood latch and open the hood.
- (2) Using a small flat blade screws driver, pry trigger switch from top of the radiator closure panel.
- (3) Disconnect the trigger switch from the wire connector and remove the switch (Fig. 4).

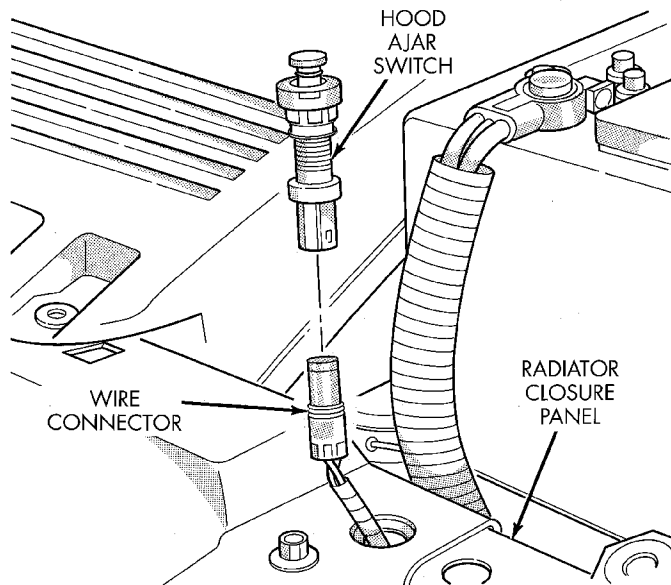


Fig. 4 Hood Ajar Switch

INSTALLATION

For installation, reverse the above procedure.

LIFTGATE AJAR (VTSS TRIGGER) SWITCH

REMOVAL

- (1) Remove the liftgate latch from the vehicle. Refer to group 23, Body for proper procedures.
- (2) Disconnect the wire connector from the liftgate ajar switch.
- (3) Remove the screw holding the ajar switch to the liftgate latch and remove the switch (Fig. 5).

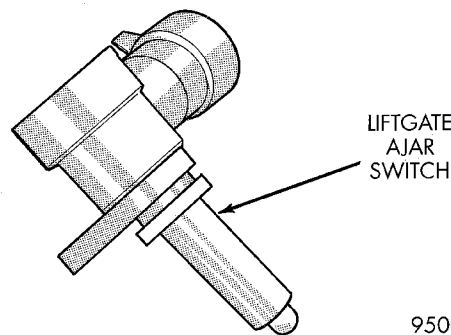


Fig. 5 Liftgate Ajar switch

- (2) Disconnect the door lock cylinder switch wire connector from the liftgate harness and clip from the liftgate inner panel.
- (3) Remove the outside latch release handle.
- (4) Disconnect the lock tab holding the switch to the back of lock cylinder and remove the switch (Fig. 6).

INSTALLATION

For installation, reverse the above procedure.

INSTALLATION

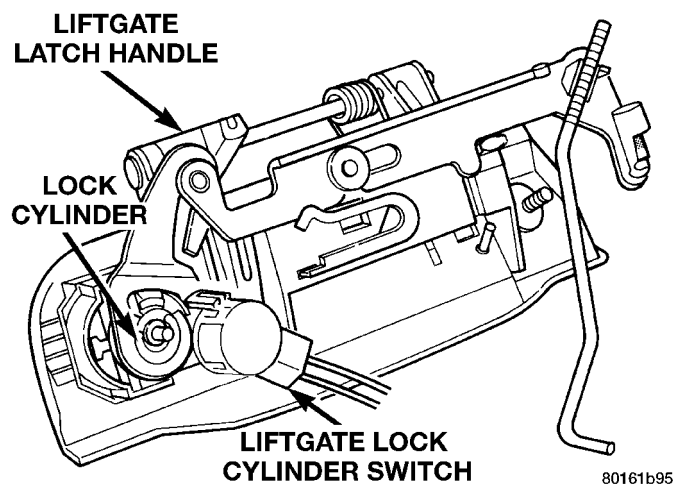
For installation, Reverse the above procedure.

LIFTGATE LOCK CYLINDER SWITCH

REMOVAL

- (1) Remove the inner trim panel from the liftgate. Refer to Group 23, Body for proper procedure.

REMOVAL AND INSTALLATION (Continued)



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Fig. 6 Liftgate Lock Cylinder Switch**SLIDING DOOR AJAR (VTSS TRIGGER) SWITCH****REMOVAL**

(1) Release the sliding door latch and allow back of the door to pop open.

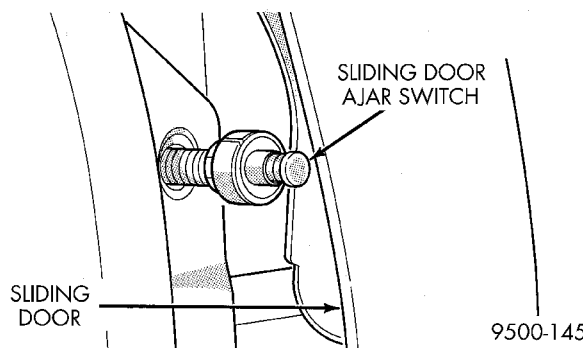
(2) Through opening at the rear edge of the sliding door on outside of the vehicle, pry door ajar switch from quarter panel opening (Fig. 7).

(3) Disconnect the wire connector from the back of the ajar switch.

(4) Remove the sliding door ajar switch.

INSTALLATION

For installation, reverse the above procedure.



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Fig. 7 Sliding Door Ajar Switch

IMMOBILIZER SYSTEM

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DESCRIPTION AND OPERATION

IMMOBILIZER SYSTEM

The Immobilizer System prevents unauthorized operation of the vehicle by disabling the engine. The system will NOT allow the vehicle to start unless the UNLOCK button on the RKE transmitter is pressed. The system will be activated after turning the ignition switch to the OFF position and using one of the following methods.

(1) Press the LOCK button on the RKE transmitter.

(2) LOCK the doors by pressing a power lock button switch.

(3) LOCK the driver or passenger door using the key.

- The Security light will flash, for about 16 seconds, indicating that the engine will be disabled.

- The Security light remaining on, indicates the system is not operational.

- The Immobilizer will activate automatically within 10 minutes of the ignition switch being in the OFF position, whether the vehicle has been locked or unlocked.

- An attempt to start the vehicle without pressing the UNLOCK button on the RKE transmitter will result in a warning chime and the Security light flashing.

NOTE: The ignition switch must be in the OFF position in order for the system to be activated, whether the doors are closed or not.

IMMOBILIZER RECEIVER

The immobilizer receiver is programmed to respond to the Lock and Unlock radio signals issued by the immobilizer transmitters. The receiver will only respond to the radio signals of transmitters (up to four) whose vehicle access codes have been stored in the receiver's electronic memory. The receiver is programmed at the assembly plant with the vehicle

access codes of the two transmitters that are shipped with the vehicle.

The immobilizer receiver also has a central processing unit, which contains the immobilizer system logic. The programming in the immobilizer receiver allows the system to learn and retain transmitter vehicle access codes, as well as to communicate with the Powertrain Control Module (PCM) and/or the DRB scan tool on the Chrysler Collision Detection (CCD) data bus network.

The CCD data bus network allows the sharing of sensor information. This helps to reduce wiring harness complexity, reduce internal controller hardware, and reduce component sensor current loads. At the same time, the CCD data bus network provides increased reliability and enhanced diagnostic capabilities.

Each immobilizer transmitter has a different vehicle access code, which must be programmed into the memory of the immobilizer receiver in the vehicle in order to operate the immobilizer system. A DRB scan tool must be used to program new or additional transmitter vehicle access codes into the memory of the immobilizer receiver. Refer to the Vehicle Theft Security System menu item on the DRB scan tool for the procedures.

The immobilizer receiver recognizes the Lock and Unlock signals received from the programmed immobilizer transmitters. The receiver then uses the programmed immobilizer system logic to decide whether other monitored conditions are proper for an engine Lock or Unlock message to be sent. If the programmed conditions are met, the receiver responds by sending the proper message to the PCM on the CCD data bus. The PCM responds to the message by disabling or enabling the fuel injector driver circuitry within the PCM, which will inhibit engine operation.

The immobilizer receiver is mounted to the dash panel with a hook and loop fastener patch. It is located behind the instrument cluster and above the driver side end of the heater-A/C housing. The receiver is connected to the dash panel cross-body wiring harness.

DESCRIPTION AND OPERATION (Continued)

For diagnosis of the vehicle immobilizer receiver or the CCD data bus, a DRB scan tool is required. Refer to the Vehicle Theft Security System menu item of the DRB scan tool for the procedures. The immobilizer receiver cannot be repaired and, if faulty, the unit must be replaced.

IMMOBILIZER TRANSMITTER

The vehicle immobilizer system includes two transmitters that are supplied with the vehicle when it is shipped from the factory. Each of the two transmitters is equipped with two buttons labeled with International Standards Organization (ISO) symbols for Lock, and Unlock. Two spare batteries (enough for one transmitter) are also shipped with the transmitters. The transmitters are equipped with a key ring and are designed to serve as a key fob. The operating range of the radio frequency transmitter signal is up to 7 meters (23 feet) from the immobilizer receiver.

Each transmitter has a different vehicle access code, which must be programmed into the memory of the immobilizer receiver in the vehicle in order to operate the immobilizer system. The two transmitters shipped with the vehicle have their vehicle access codes programmed into the receiver at the factory. A DRB scan tool must be used to program new or additional transmitter vehicle access codes into the memory of the immobilizer receiver. Refer to the Vehicle Theft Security System menu item on the DRB scan tool for the procedures.

Each transmitter operates on two Duracell DL2016 (or equivalent) batteries. Typical battery life is from one to two years.

POWER-UP MODE

When the vehicle immobilizer system senses that the vehicle battery has been disconnected and reconnected, it enters its power-up mode. If the immobilizer system was armed prior to the battery disconnect, the system remains armed when the battery is reconnected.

If the immobilizer system was disarmed prior to the battery disconnect, the system will remain disarmed if the battery is reconnected within five minutes. The system will passively arm itself when the battery is reconnected more than five minutes after a battery disconnect or failure. After any passive arming, the system will have to be actively disarmed using one of the transmitters.

The power-up mode logic also applies if the battery goes dead, and battery jump-starting is attempted. The engine no-run feature will prevent the engine from operating until the vehicle immobilizer system has been actively disarmed.

SERVICE PROCEDURES**VEHICLE IMMOBILIZER SYSTEM**

WARNING: ON VEHICLES EQUIPPED WITH AIR-BAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING ANY STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIR-BAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

NOTE: The following tests may not prove conclusive in the diagnosis of this system. The most reliable, efficient, and accurate means to diagnose the Vehicle Immobilizer System involves the use of a DRB scan tool. Refer to the Vehicle Theft Security System menu item on the DRB scan tool for the procedures.

The vehicle immobilizer system and the Chrysler Collision Detection (CCD) data bus network should be diagnosed using the DRB scan tool. The DRB will allow confirmation that the CCD data bus is functional, that the immobilizer receiver is placing the proper messages on the CCD data bus, and that the Powertrain Control Module (PCM) is receiving the CCD data bus messages. Refer to the Vehicle Theft Security System menu item on the DRB scan tool for the procedures. Refer to 8W-39 - Vehicle Theft Security System in Group 8W - Wiring Diagrams for complete circuit descriptions and diagrams.

(1) With the ignition switch in the Off position, depress the Lock or Unlock button of the immobilizer transmitter. Listen for the immobilizer receiver to issue an audible chirp (Unlock) or chirps (Lock). If OK, go to Step 2. If not OK, replace the transmitter batteries with known good units and repeat Step 1. If still not OK, go to Step 2.

(2) Check the fuse in the Power Distribution Center (PDC). If OK, go to Step 3. If not OK, repair the shorted circuit or component as required and replace the faulty fuse.

(3) Disconnect and isolate the battery negative cable. Unplug the wire harness connector at the immobilizer receiver. Check for continuity between the ground circuit cavity of the immobilizer receiver wire harness connector and a good ground. There should be continuity. If OK, go to Step 4. If not OK, repair the open circuit to ground as required.

(4) Connect the battery negative cable. Check for battery voltage at the fused B(+) circuit cavity of the immobilizer receiver wire harness connector. If OK, refer to the Vehicle Theft Security System menu item

SERVICE PROCEDURES (Continued)

on the DRB scan tool for further diagnosis. If not OK, repair the open circuit to the PDC fuse as required.

ENABLING

The vehicle immobilizer system is disabled when it is shipped from the factory. This is done by programming within the Powertrain Control Module (PCM). The logic in the PCM prevents the immobilizer system from arming until the engine start counter within the PCM sees twenty engine starts. The system must be enabled when the vehicle is received from the assembly plant.

The preferred method for enabling the immobilizer system is to electronically advance the PCM engine start counter using a DRB scan tool. Refer to the Vehicle Theft Security System menu item on the DRB scan tool for the procedures. Once this condition has been met, the PCM will allow the immobilizer system to arm.

If a DRB scan tool is not available, the immobilizer system can be enabled manually, as follows:

(1) If five minutes or more have elapsed since the last previous engine start, or if the vehicle immobilizer receiver has been actively armed, depress the vehicle immobilizer transmitter Unlock button. Listen for a single chirp from the immobilizer receiver to confirm the Unlock message has been received.

(2) Start the engine. Each engine start must be followed by a minimum engine run duration of ten seconds.

(3) Allowing a cool-down period between starts, go back to Step 1 a total of twenty times. After twenty cycles, confirm that the vehicle immobilizer system is enabled by actively arming the receiver and attempting to start the engine. The engine may start momentarily, but should stall above about 500 rpm.

CAUTION: Repeated sequential starts of the engine to run up the PCM engine start counter and enable the immobilizer system must be avoided. Overheating and damage to the starting system components and wiring can result.

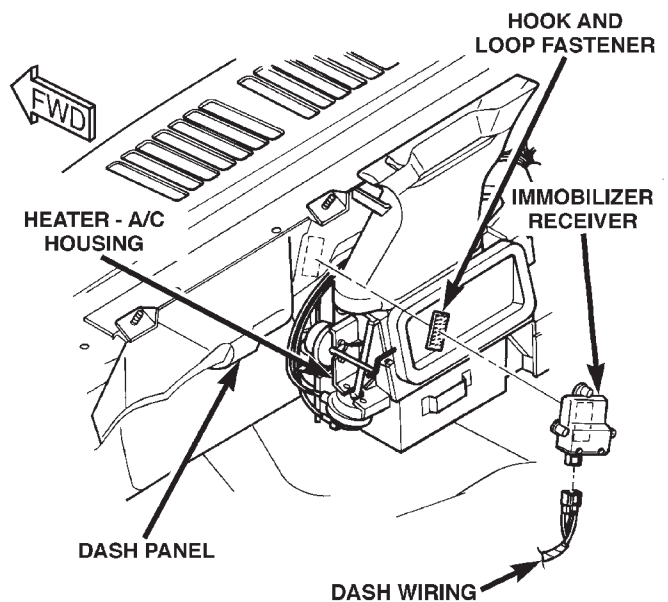
The same immobilizer system enable logic will apply anytime the PCM is replaced with a new unit.

REMOVAL AND INSTALLATION

IMMOBILIZER RECEIVER

WARNING: ON VEHICLES EQUIPPED WITH AIR-BAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING ANY STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIR-BAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

- (1) Disconnect and isolate the battery negative cable.
- (2) Remove the instrument cluster as described in Group 8E - Instrument Panel Systems.
- (3) Reach through the inboard side of the instrument cluster opening and remove the receiver by pulling it off of the hook and loop fastener patch on the dash panel above the heater-A/C housing (Fig. 1).



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Fig. 1 Immobilizer Receiver Remove/Install

- (4) Unplug the immobilizer receiver from the wire harness connector.
- (5) Reverse the removal procedures to install.
- (6) Refer to the Vehicle Theft Security System menu item on the DRB scan tool for the procedures to program transmitter vehicle access codes into the memory of the new immobilizer receiver.

