

POWER LOCK SYSTEMS

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POWER DOOR LOCKS

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DESCRIPTION AND OPERATION

INTRODUCTION

All doors can be locked or unlocked electrically by operating the switch on either front door panel. When the door lock switch is activated the Remote Keyless Entry Module provides power to the door lock motors through relays internal to the module.

The Remote Keyless Entry (RKE) Module also controls the Vehicle Theft Security System (VTSS).

All doors can be locked or unlocked mechanically and independently with their respective locking knobs. The front doors can also be unlocked by actuation of the inside remote door handle.

The RKE Module has three modes of operation including customer usage mode, dealer lot storage mode, and shipping mode. The customer usage mode provides full functionality of the module and is the mode in which the RKE module should be operating when used by the customer. Dealer lot storage mode and shipping modes are reduced power modes meant to extend vehicle battery life during shipping and storage in the dealer lot. Dealer lot storage mode provides limited VTSS and power door lock functions, but disables the Remote Keyless Entry (RKE) functions. This mode is intended to be used when the vehicle is on the dealer lot to provide VTSS coverage

of the vehicle while minimizing battery drain. Shipping mode disables all normal functions (i.e. power door locks, RKE, and VTSS) of the module, and is intended to be used when the vehicle is shipped from the assembly plant.

NOTE: The dealer must remove the module from “Ship Mode” and place the RKE Module into either the “Dealer Lot” storage or “Customer Usage” modes of operation after receiving the vehicle from the assembly plant. Refer to Group 8Q-Vehicle Theft/Security Systems, Switching Operating Modes/Configuring a New Module under Service Procedures.

CENTRAL LOCKING/UNLOCKING

The door locks can be locked or unlocked electrically via the exterior door key cylinders to provide the central locking/unlocking feature. The central locking/unlocking feature incorporates a customer programmable “Double activation unlock” feature which operates in the following manner: When enabled, the first turn of the key cylinder to the UNLOCK position (toward the front of the vehicle) will mechanically unlock the door whose key cylinder is being turned. A second turn of the key cylinder to the UNLOCK position (within five seconds of the

DESCRIPTION AND OPERATION (Continued)

first turn) will cause all vehicle doors to unlock electrically. When this feature is disabled, all vehicle doors will be unlocked electrically upon the first turn of a key cylinder to the UNLOCK position. The vehicle is locked electrically by turning the key cylinder to the LOCK position once, regardless of the state of the double activation unlock feature.

POWER DOOR LOCKS

The Remote Keyless Entry (RKE) Module actuates the power door lock relays when a door lock switch is activated. If the door lock switch is pressed for longer than eight consecutive seconds, the RKE module will de-energize the door lock motors.

The system includes the rolling door locking feature. The vehicle is shipped with the system enabled. When the system is disabled the door locks will work by use of the door lock switches and the Remote Keyless Entry system only. When the rolling door lock system is enabled, the RKE module will automatically lock all the vehicle doors when all of the following conditions are met:

- All doors are closed
- The vehicle speed exceeds 15 +/- 1 mph.
- The throttle position sensor tip-in is greater than 10 +/- 2 degrees.

The RKE module will automatically re-lock all doors if the above conditions are met and if any of the doors become ajar and then closed again.

The enabling/disabling of the rolling door lock feature is customer programmable, as well as programmable with the DRB III® scan tool.

The power lock motors are also equipped with a thermal protection system which prevents the motors from burning out. The motors may chatter if they are continuously activated.

CHILD PROTECTION LOCKS

The child protection locks are on the rear doors only. The lock, when engaged, will disable the inside door handle from opening the door. The lock is part of the latch/lock assembly. The lock is engaged by moving a lever that is located on the rearward inside edge of the door.

DOOR LOCK INHIBIT

With the key in the ignition switch and the driver door open, the Remote Keyless Entry (RKE) Module

will ignore the command to lock the power door locks via the interior driver door lock switch. Once the key is removed, or the driver door is closed, the RKE module will allow the power door locks to lock via the interior door lock switches.

DIAGNOSIS AND TESTING**DOOR LOCK MOTOR**

(1) Make certain battery is in normal condition and fuses powering the RKE module aren't blown before circuits are tested.

(2) To determine which motor is faulty, check each individual door for electrical lock and unlock or disconnect the motor connectors one at a time, while operating the door lock switch.

(3) In the event that none of the motors work, the problem maybe caused by a shorted motor, a bad switch or a bad relay internal to the RKE module. Disconnecting a defective motor will allow the others to work.

(4) To test an individual door lock motor, disconnect the electrical connector from the motor.

(5) To lock the door, connect a 12 volt power source to one pin of the lock motor and a ground wire to the other pin.

(6) To unlock the door, reverse the wire connections at the motor pin terminals.

(7) If these results are NOT obtained, replace the motor.

DOOR LOCK SWITCH

(1) Remove the switch from its mounting location, and disconnect from vehicle wiring harness. Refer to Door Lock Switch Removal and Installation in this section.

(2) Using an ohmmeter, refer to Door Lock Switch Resistance Test table to determine if switch resistance is correct in the Lock and Unlock switch positions. Refer to Group 8W-Wiring Diagrams for harness connector pin-outs.

DOOR LOCK SWITCH RESISTANCE

SWITCH POSITION	CONTINUITY BETWEEN	RESISTANCE VALUE
LOCK	2 AND 3	1000Ω
UNLOCK	2 AND 3	249Ω

SERVICE PROCEDURES

DOUBLE ACTIVATION UNLOCK

The toggling of the double activation unlock feature (between enabled and disabled) can be performed with the use of the DRB III® scan tool, or by the customer.

DRB III® PROGRAMMING

When using the DRB III® scan tool, select:

- (1) "Theft Alarm"
 - (2) "VTSS"
 - (3) "Miscellaneous"
- and then the desired function.

CUSTOMER PROGRAMMING

(1) Open the driver door, sit in the driver seat, and close the driver door.

(2) Turn the ignition switch to the RUN position (without starting the vehicle) and then back to OFF. Repeat this step three additional times (for a total of four key ON/OFF cycles).

(3) Within ten seconds of switching the ignition switch to the OFF position for the last time (at the end of the fourth cycle in the above step), press the driver interior door lock switch to UNLOCK.

(4) A single chime will be heard to verify that the customer programmable toggle of the double activation unlock was successfully completed.

NOTE: When toggling the double activation unlock feature (customer programmable), the toggle that happens will be from the last state of the double activation unlock. If the double activation unlock feature was enabled, after the toggle process, it will now be disabled and vice versa. There is no telltale to inform you of which state the double activation unlock feature is in.

ROLLING DOOR LOCKS

The toggling of the rolling door lock feature (between enabled and disabled) can be performed with the use of the DRB III® scan tool or by the customer.

DRB III® PROGRAMMING

When using the DRB III® scan tool, select:

- (1) "Theft Alarm"
- (2) "VTSS"

- (3) "Miscellaneous"
- and then the desired function.

CUSTOMER PROGRAMMING

(1) Open the driver door, sit in the driver seat, and close the driver door.

(2) Turn the ignition switch to the RUN position (without starting the vehicle) and then back to OFF. Repeat this step three additional times (for a total of four key ON/OFF cycles).

(3) Within ten seconds of switching the ignition switch to the OFF position for the last time (at the end of the fourth cycle in the above step), press the driver interior door lock switch to LOCK.

(4) A single chime will be heard to verify that the customer programmable toggle of the rolling door locks was successfully completed.

NOTE: When toggling the rolling door locks (customer programmable), the toggle that happens will be from the last state of the rolling door locks. If the rolling door locks were enabled, after the toggle process, they will now be disabled and vice versa. There is no telltale to inform you of which state the rolling door locks are in.

REMOVAL AND INSTALLATION

DOOR LOCK MOTOR/LATCH

Refer to Group 23-Body, Front Door Latch Removal and Installation.

DOOR LOCK SWITCH

REMOVAL

(1) Remove front door trim panel, refer to Group 23-Body, for Front Door Trim Panel Removal and Installation.

- (2) Disconnect wire connector.
- (3) Remove two attaching screws.
- (4) Remove the switch.

INSTALLATION

For installation, reverse the above procedures.

REMOTE KEYLESS ENTRY (RKE) MODULE

Refer to RKE Module Removal and Installation under Remote Keyless Entry in this section.

REMOTE KEYLESS ENTRY (RKE)

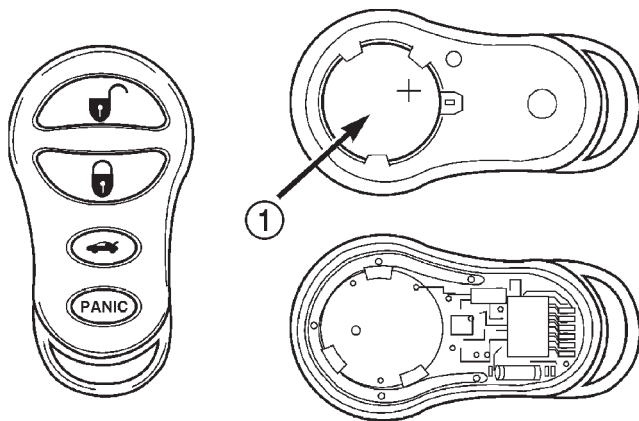
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DESCRIPTION AND OPERATION

INTRODUCTION

The system allows locking and unlocking of vehicle door(s), deck lid release, and panic by remote control using a hand held radio frequency transmitter (Fig. 1). The module must be in the customer usage mode of operation for the remote keyless entry system to function.



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Fig. 1 Remote Keyless Entry (Key Fob) Transmitter
1 - BATTERIES

The receiver may receive signals from up to four transmitters. Each transmitter has its own code, and the code is programmed and stored into RKE module memory. If a transmitter is replaced or additional transmitters are added, the codes for all units have to be reprogrammed into the RKE module memory. If a receiver module is replaced, the transmitter codes must be stored in the new receiver memory (by performing the steps for programming transmitters).

The RKE module is capable of retaining all transmitter codes when power is removed from the module.

Operation of the Remote Keyless Entry system works in a similar manner to the central locking/unlocking feature. With the double activation unlock feature enabled, the first press of the transmitter UNLOCK button will electrically unlock the driver door, and a second press of the UNLOCK button (within five seconds of the first) will unlock all vehicle doors. With the double activation feature disabled, all vehicle doors will unlock upon the first press of the transmitter UNLOCK button. The vehicle is locked electrically by pressing the transmitter LOCK button once, regardless of the state of the double activation unlock feature. The vehicle is shipped with the double activation unlock feature enabled.

The deck lid can be unlatched manually via the key cylinder from outside the vehicle, or by depressing the deck lid release button on the RKE transmitter twice (within five seconds).

The RKE module has three modes of operation including customer usage mode, dealer lot storage mode, and shipping mode. The customer usage mode provides full functionality of the module and is the mode in which the RKE module should be operating when used by the customer. Dealer lot storage mode and shipping modes are reduced power modes meant to extend vehicle battery life during shipping and storage in the dealer lot. Dealer lot storage mode provides limited VTSS and power door lock functions, but disables the Remote Keyless Entry (RKE) functions. This mode is intended to be used when the vehicle is on the dealer lot to provide VTSS coverage of the vehicle while minimizing battery drain. Shipping mode disables all normal functions (i.e. power door locks, RKE, and VTSS) of the module, and is intended to be used when the vehicle is shipped from the assembly plant.

DESCRIPTION AND OPERATION (Continued)

NOTE: The dealer must remove the module from “Ship Mode” and place the RKE Module into either the “Dealer Lot” storage or “Customer Usage” modes of operation after receiving the vehicle from the assembly plant. Refer to Group 8Q-Vehicle Theft/Security Systems, Switching Operating Modes/Configuring a New Module under Service Procedures.

REMOTE KEYLESS ENTRY SYSTEM

The system allows locking and unlock of vehicle door(s) and deck lid by remote control using a hand held radio frequency (RF) transmitter. The vehicle speed must be less than five miles per hour before the deck lid can be unlatched with the transmitter. The receiver may receive signals from four transmitters. Each transmitter has its own code and the code has been stored in memory. If the transmitter is replaced or other transmitters are added, the code for each unit must be learned.

REMOTE KEYLESS ENTRY TRANSMITTER

The transmitter has four buttons for operation (Fig. 1). They are LOCK, UNLOCK, DECK LID RELEASE, and PANIC.

- The UNLOCK button will unlock the driver door and enable illuminated entry. Pushing and releasing the button once will unlock the driver door. Pushing and releasing the button two times within a five second period will unlock all doors (double unlock activation enabled).

- Upon pressing the LOCK button, the horn will sound a short chirp (if enabled) and flash the park lamps to notify that the all door lock signal was received and acted upon. Illuminated entry is cancelled and the interior lamps are faded to off.

- Pushing and releasing the DECK LID RELEASE button twice within a five second period will actuate the decklid release solenoid, causing the deck lid to be slightly ajar. If so desired, the decklid may be set to release after one button push by the dealer. For procedures on programming with the DRB III® scan tool, refer to the proper Body Diagnostic Procedures Manual.

- Pushing the PANIC button will cause the panic alarm to sound for three minutes, until the panic button is pressed a second time, or until the vehicle reaches a speed of 15 mph.

HORN CHIRP TOGGLE

Once the transmitters have been programmed, the horn chirp can be enabled/disabled by sending the horn chirp toggle operation code to the RKE Module. This can be done using a DRB III® scan tool or by the customer. The horn chirp will enter the opposite

state of its current programmed state by receiving this operation code. The RKE module is responsible for keeping track of the horn chirp status.

DIAGNOSIS AND TESTING

REMOTE KEYLESS ENTRY MODULE

For procedures on diagnosing and testing the RKE Module's RKE functions, refer to the proper Body Diagnostic Procedures Manual.

DECKLID RELEASE SOLENOID

(1) Confirm operation of RKE transmitter(s) by actuating Lock and Unlock functions.

(2) Confirm lead is connected to deck lid release solenoid.

(3) Unplug lead, and use an ohmmeter to verify continuity of connection between pin 2 of the harness connector and ground. Refer to Group 8W-Wiring Diagrams for Connector Pin-Outs.

(4) Connect test light to pin 1 of the harness connector and actuate decklid release button on transmitter. Refer to Group 8W-Wiring Diagrams for Connector Pin-Outs.

(5) If test light comes on, the wiring circuit between the RKE module and the solenoid is functional, and the decklid solenoid should be replaced.

(6) If test light does not come on, refer to the proper Body Diagnostic Procedures Manual for further troubleshooting information.

SERVICE PROCEDURES

HORN CHIRP TOGGLE

The toggling of the horn chirp (between enabled and disabled) can be performed with the use of the DRB III® scan tool or by the customer.

DRB III® PROGRAMMING

When using the DRB III® scan tool, select:

- (1) “Theft Alarm”
- (2) “VTSS”
- (3) “Miscellaneous”

and then the desired function.

CUSTOMER PROGRAMMING

Using a transmitter programmed to the RKE Module, the status of the horn chirp may be toggled by the customer.

NOTE: The RKE Module is responsible for keeping track of the horn chirp status; thus this procedure does not need to be repeated for each transmitter programmed to the system.

SERVICE PROCEDURES (Continued)

(1) With the ignition switch in RUN position, press and hold the transmitter Unlock button (Fig. 1) for a minimum of 4 seconds to a maximum of 10 seconds.

(2) Within the 4-10 second range, depress the transmitter Lock button (Fig. 1). A chime will be heard to indicate a successful toggle, at which time the buttons may be released.

SWITCHING OPERATING MODES/ CONFIGURING A NEW MODULE

Refer to Group 8Q-Vehicle Theft/Security Systems, Switching Operating Modes/Configuring A New Module under Service Procedures.

TRANSMITTER PROGRAMMING

The Remote Keyless Entry transmitters can be programmed with the use of the DRB III® scan tool or by the customer.

DRB III® PROGRAMMING

When using the DRB III® scan tool, select:

- (1) "Theft Alarm"
- (2) "VTSS"
- (3) "Miscellaneous"

and then the desired function.

CUSTOMER PROGRAMMING

For a customer to be able to program RKE transmitters themselves, at least one RKE transmitter must be programmed already. This procedure is to add additional transmitters. If all transmitters are lost, the DRB III® scan tool must be used to program the new transmitters.

(1) With the ignition switch in RUN position, press and hold the transmitter Unlock button (Fig. 1) for a minimum of 4 seconds to a maximum of 10 seconds.

(2) Within the 4-10 second range, depress the transmitter Lock button (Fig. 1). A chime will be heard to indicate successful toggle, at which time the buttons may be released.

(3) Turn the ignition switch off to exist transmitter programming mode.

REMOVAL AND INSTALLATION

DECK LID RELEASE SOLENOID

REMOVAL

- (1) Disconnect and isolate the battery negative cable (Fig. 2).
- (2) Raise deck lid to the full up position.
- (3) Unplug connector from solenoid.
- (4) Remove two solenoid mounting screws.
- (5) Remove solenoid from vehicle.

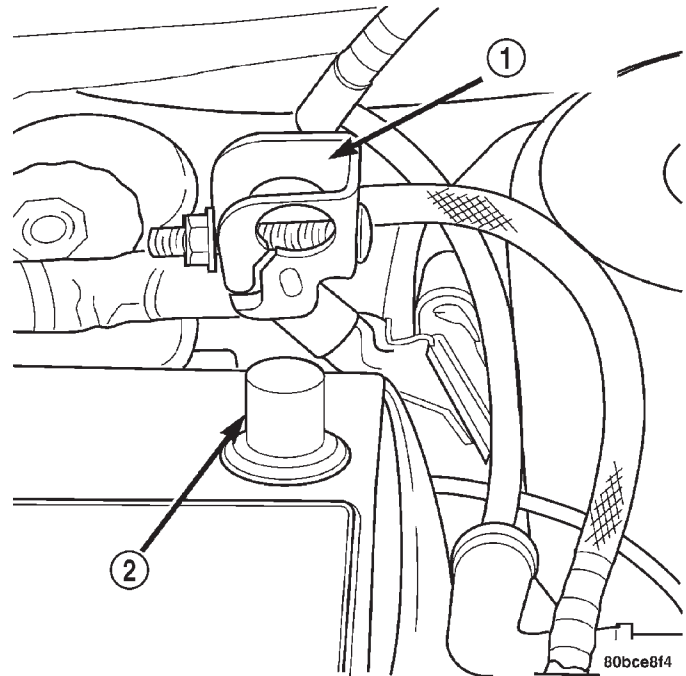


Fig. 2 Battery Negative Cable Remove/Install

- 1 - NEGATIVE CABLE
2 - NEGATIVE BATTERY POST

INSTALLATION

For installation, reverse the above procedures. Adjust the deck lid latch and striker so that the deck lid latches with a moderate slam, and so that the deck lid releases properly whenever the power deck lid release is activated.

REMOTE KEYLESS ENTRY MODULE

REMOVAL

- (1) Disconnect and isolate the battery negative cable (Fig. 2).
- (2) Remove the instrument panel top cover. Refer to Group 8E-Instrument Panel and Systems, Instrument Panel Top Cover Removal and Installation.
- (3) Remove the two screws holding the RKE module to the instrument panel assembly (Fig. 3).
- (4) Slide locking tab of the wiring connector sideways to unlock tab, and remove connector from RKE module.
- (5) Remove RKE module from vehicle.

NOTE: When replacing a faulty RKE Module, the replacement module must be configured with the DRB III® scan tool for proper operation. Refer to Group 8Q-Vehicle Theft/Security Systems, Switching Operating Modes/Configuring a New Module under Service Procedures. Additionally, all transmitters must be reprogrammed to the new RKE module.

REMOVAL AND INSTALLATION (Continued)

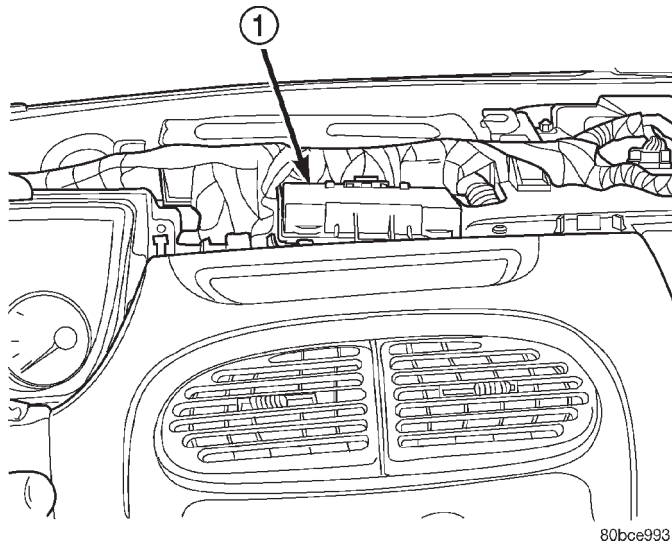


Fig. 3 RKE Module Location

1 - RKE MODULE

SPECIFICATIONS

TRANSMITTER BATTERY

The transmitter has two 3 volt batteries, which can be removed and replaced without special tools. Insert a dime in the side slot of the transmitter and twist. The halves should separate and the batteries are stacked on top of each other (Fig. 1). The batteries are available at local retail stores. Recommended batteries are Panasonic CR 2016 or equivalent. Battery life is approximately two years. Transmitter programming is not necessary after replacement of the transmitter batteries.

TRANSMITTER RANGE

Operation range is within 7 meters (23 ft.) of the module/receiver.

INSTALLATION

For installation, reverse above the procedures.

