

# DIGITALLY ENCODED SECURITY SYSTEM (DESS)

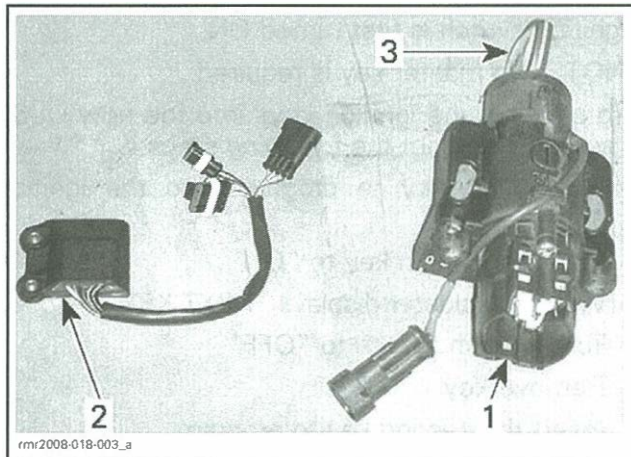
## SERVICE TOOLS

Description	Part Number	Page
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## GENERAL

### SYSTEM DESCRIPTION

The DESS system is an electronic anti-start system that allows engine starting only with a programmed key.



1. Ignition switch
2. DESS module
3. Ignition key with a ROM chip

The ignition key contains a ROM chip that includes a digital type code.

The 2 keys that come with the Roadster have been programmed at the factory. Up to 4 keys can be programmed on the Roadster.

### SYSTEM OPERATION

When the ignition switch is turned to the ON position, the DESS module is energized and a signal is sent by radio wave to an antenna located on the ignition switch. If the DESS module recognizes the ignition key code, it sends a run signal to the ECM which allows engine cranking to take place. If the DESS module does not recognize the code, the cluster will display "BAD KEY" (it can take up to 40 seconds before the message displays).

If all vehicle keys have been lost, the ignition switch AND DESS module must be replaced.

## PROCEDURES

### KEYS

#### General Information on Programming Keys

The DESS module is programmed to recognize the digital code in the key.

A master key is used to program keys.

The cluster will display guiding tips during key programming.

During the programming process, all keys will be erased (the first key installed after removal of the master key will erase the previous key(s) and this key will be the first newly programmed key).

If you want to reuse previously programmed keys, you must reprogram them.

A minimum of 2 keys **MUST** be programmed.

The second key must be programmed within 2 minutes. Otherwise, the DESS module will remain in programming mode and the following conditions will occur:

- Engine will start, then stop after 2 minutes.
- When the ignition is turned OFF, current drain will be higher than usual and the battery will completely discharge within 1-2 weeks if the vehicle is not used.

If key programming was successful, the cluster will display a "SUCCESS" message. If the cluster does not display this message, the new key programming will not be stored. The entire procedure must be repeated from the beginning.

If the programming session is not correctly completed, no changes are saved in the DESS module.

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### Subsection 04 (DIGITALLY ENCODED SECURITY SYSTEM (DESS))

#### Adding/Reprogramming Keys

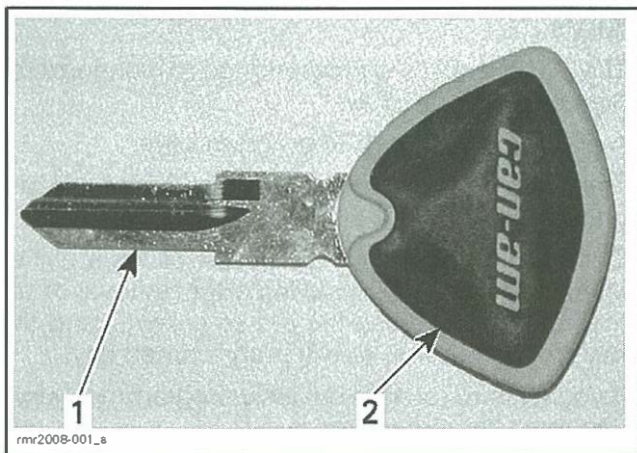
The following procedures describe how to program keys on a vehicle that has already at least one programmed functional key.

**NOTE:** Additional keys to program must be precut to the ignition switch.

To add or reprogram a key, carry out the following steps:

- Insert an already programmed functional key into the ignition switch.
- Turn the ignition key to "ON".
- Turn the ignition key to "OFF".
- Wait five (5) seconds.
- Remove programmed key.
- Insert master key (P/N 529 036 106).

**NOTE:** The master key is purposely "not cut" and will not turn in the ignition switch.



**MASTER KEY**  
1. No notches  
2. RED colored

- Wait until the cluster displays "MASTER".
- Remove the master key.
- Insert a key to program.
- Turn ignition switch to "ON".
- Wait until cluster displays "NEXT KEY".
- Turn ignition switch to "OFF".
- Remove key.
- Insert next key to program.
- Turn ignition switch to "ON".
- Wait until cluster displays "NEXT KEY".

**NOTE:** If there are at least two keys programmed and you do not wish to program more keys (4 maximum), leave the last programmed key in the ignition switch. If you wish to program another key, repeat the previous five steps.

- Wait until cluster displays "SUCCESS".
- Turn ignition switch to "OFF".
- Remove key.

Key programming procedure is complete.

**NOTE:** When the maximum of four keys are programmed, the cluster will display "SUCCESS".

Start engine and let run for more than 2 minutes. If engine does not stop on its own after 2 minutes, programming mode is complete.

#### Programming Keys with a New DESS Module

The following procedures describe how to program keys on a vehicle when the DESS module has been replaced.

After installation of a new DESS module (with or without a new ignition switch), the module will automatically go into programming mode when the ignition switch is first turned ON.

**NOTE:** No master key is required.

To program the ignition keys into the new DESS module, carry out the following steps:

- Insert first key to program into the ignition switch.
- Turn the ignition key to "ON".
- Wait until cluster displays "NEXT KEY".
- Turn ignition switch to "OFF".
- Remove key.
- Insert the second key to program.

**NOTE:** A new DESS module will allow programming of two keys initially. If you wish to program more than two keys, refer to *ADDING/REPROGRAMMING KEYS* after this procedure is completed.

- Turn ignition switch to "ON".
- Wait until cluster displays "SUCCESS".
- Turn ignition switch to "OFF".
- Remove key.

Key programming procedure is complete.

Start engine and let run for more than 2 minutes. If engine does not stop on its own after 2 minutes, programming mode is complete.

#### Programming Keys with a New Ignition Switch

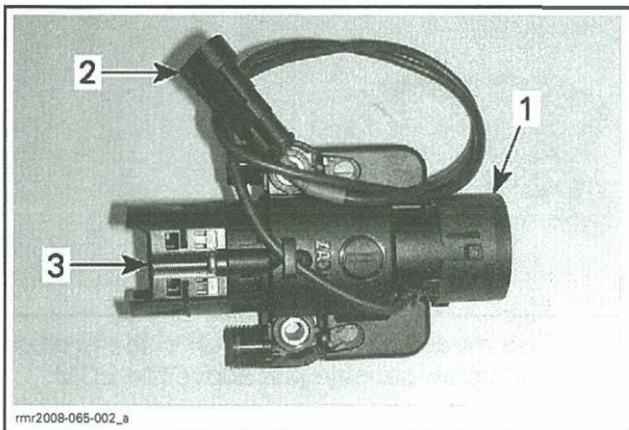
The following procedure describes how to program keys when **only** the ignition switch has been replaced.

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**NOTE:** You must have at least the top portion of an ignition key containing the electronic chip programmed to the vehicle and in good working order to carry out this procedure. If not, both the ignition switch and DESS module must be replaced.

Replace the ignition switch according to the removal and installation procedures in the *IGNITION SYSTEM* section. However, do not install the upper console assembly or other panels removed for access.

Connect only the large ignition switch connector to the new switch at this time. The DESS antenna on the old ignition switch must remain connected to the DESS module.

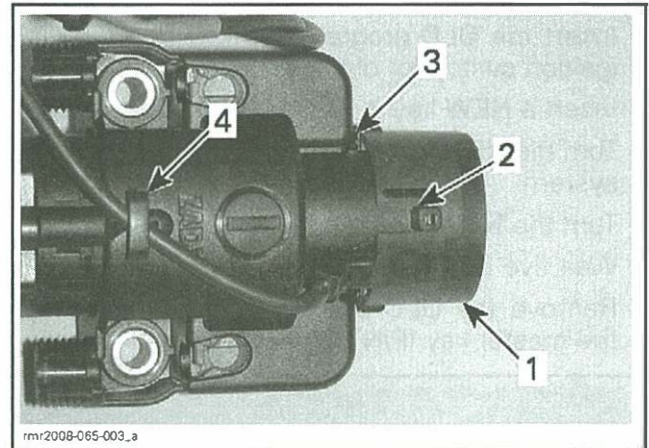


**IGNITION SWITCH ASSEMBLY**

1. DESS antenna ring
2. DESS antenna connector
3. Ignition switch connector

**NOTE:** The new ignition switch will be used to power ON the vehicle but the old ignition key and antenna must be used for recognition by the DESS module.

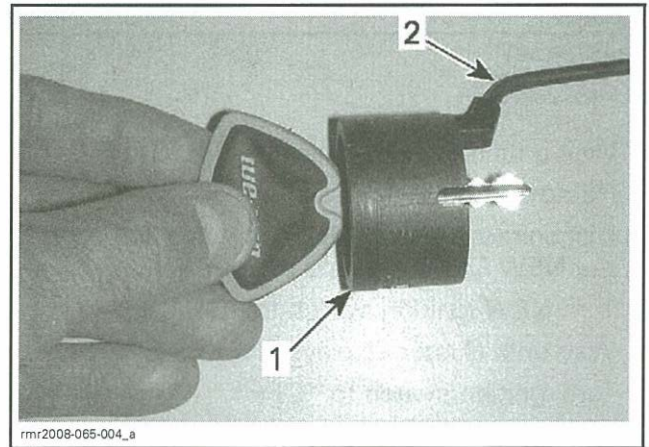
**NOTE:** If a key cannot be inserted in the old ignition switch, carefully pry off the DESS antenna from the top of the old switch assembly. It will be used during the key programming procedure.



1. Antenna ring
2. Antenna locking pin (one each side)
3. Carefully pry here (each side)
4. Squeeze this clip in to remove from switch assembly

Reconnect the DESS antenna connector from the old ignition switch to the DESS module connector.

**NOTE:** The following illustration shows how to use the old DESS antenna for recognition of the old ignition key and master key to put the DESS module into programming mode.



**KEY HELD AS IF IN IGNITION SWITCH**

1. Antenna ring
2. Antenna wire connected to DESS module connector

When the cluster displays "MASTER" once the module has recognized the keys and put itself in programming mode, quickly disconnect the old antenna from the DESS module and connect the antenna connector on the new switch to the DESS module connector.

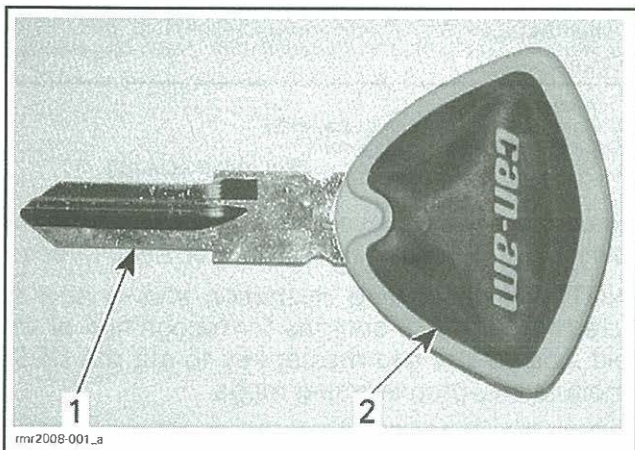
**NOTE:** If too much time is used to switch the antenna connectors, the programming may fail and the procedure will have to be repeated from the beginning.

To program the ignition keys from the new switch into the old DESS module, carry out the following steps:

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- Insert the **OLD** programmed key into the **OLD** ignition switch (or old antenna).
- Insert a **NEW** key in the **NEW** ignition switch.
- Turn the **NEW** ignition key to "ON" to power the system.
- Turn the **NEW** ignition key to "OFF".
- Wait five (5) seconds.
- Remove the **OLD** programmed key and insert the master key (P/N 529 036 106) in its place.



**MASTER KEY**  
1. No notches  
2. RED colored

- Wait until the cluster displays "MASTER".
- Remove the master key.
- Disconnect the **OLD** DESS antenna and connect the **NEW** DESS antenna to the DESS module.
- Turn **NEW** ignition switch to "ON".
- Wait until cluster displays "NEXT KEY".
- Turn ignition switch to "OFF".
- Remove key.
- Insert next key to program.
- Turn ignition switch to "ON".
- Wait until cluster displays "NEXT KEY".

**NOTE:** If there are at least two keys programmed and you do not wish to program more keys (4 maximum), leave the last programmed key in the ignition switch.

- Wait until cluster displays "SUCCESS".
- Turn ignition switch to "OFF".
- Remove key.

Key programming procedure is complete.

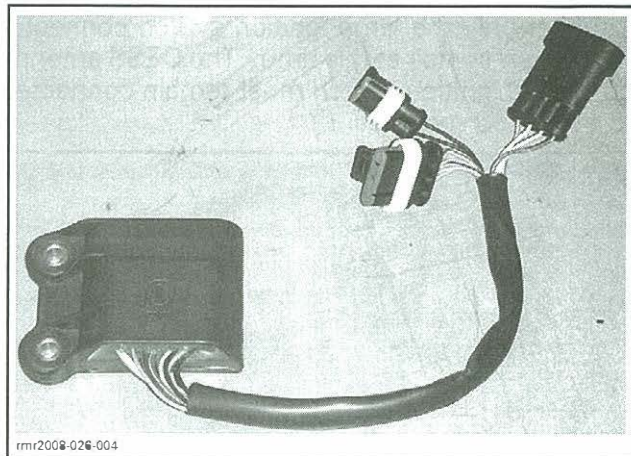
Start engine and let run for more than 2 minutes. If engine does not stop on its own after 2 minutes, programming mode is complete.

Ensure wiring is properly routed and all connectors properly connected to new switch and DESS module.

**NOTE:** Do not apply dielectric grease in the DESS module connectors.

Install the remaining parts, refer to applicable sections.

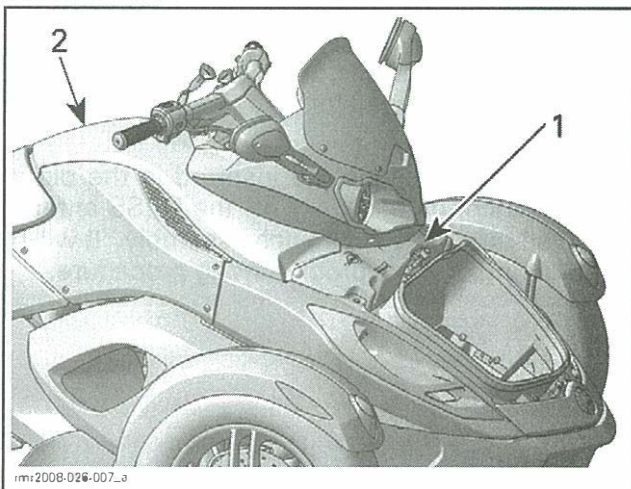
## DESS MODULE



The DESS module is located on LH side of vehicle under the upper console just above the ECM.

## DESS Module Replacement

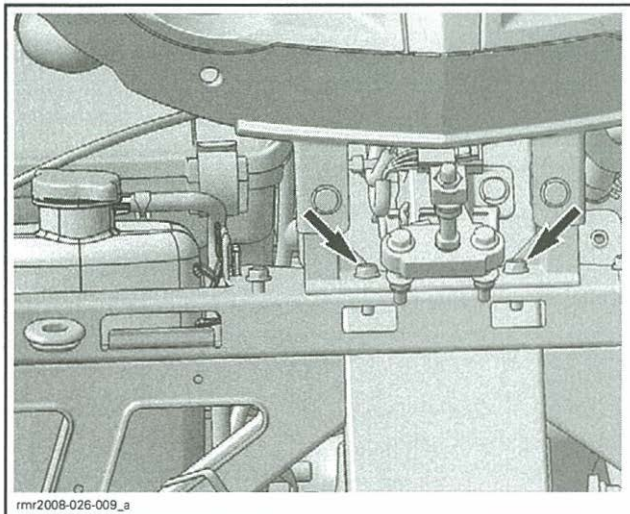
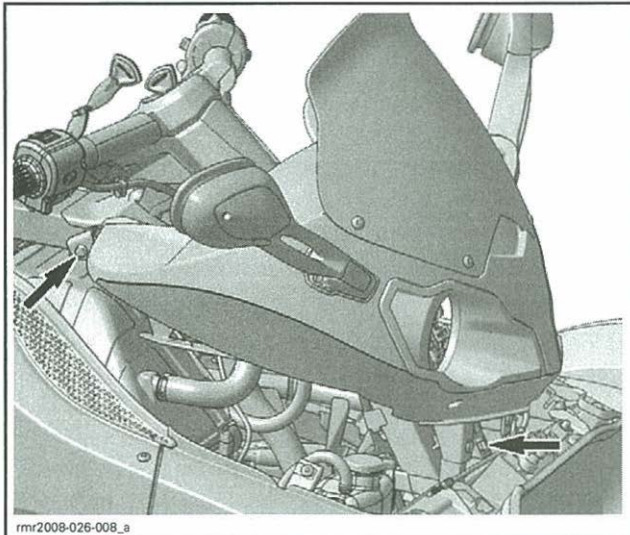
Remove service cover and central panel. Refer to the *BODY* section.



1. Service cover  
2. Central panel

Remove upper console retaining screws.

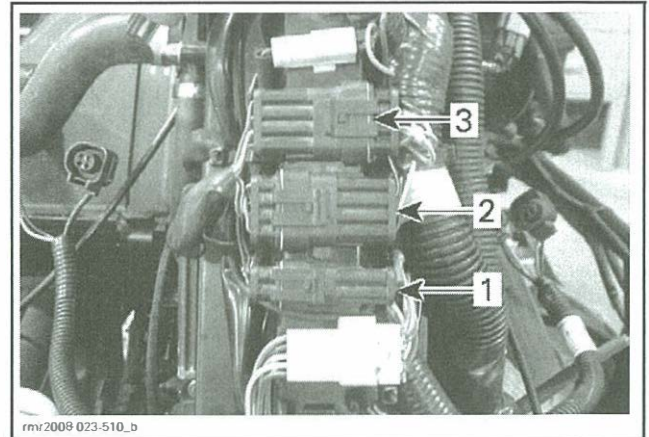
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**DETAIL OF FRONT SCREWS**

Lift upper console sufficiently high as to provide access to components.

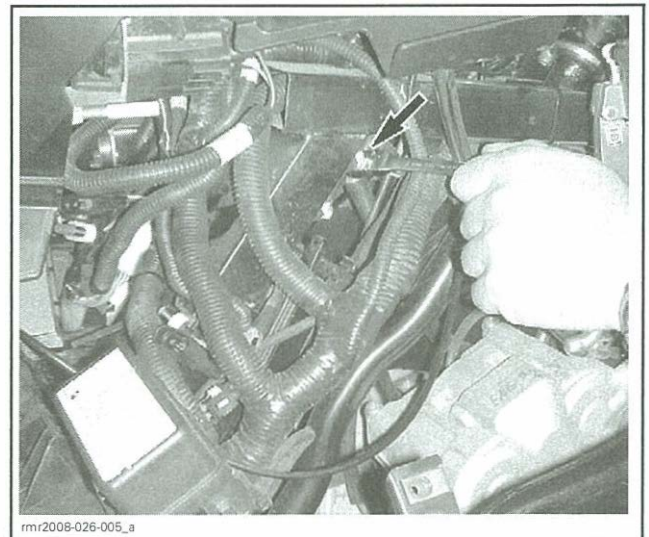
Disconnect the DESS module connectors on the front connector support.



**TYPICAL – DESS CONNECTORS**

1. DESS antenna connector
2. VM1 connector
3. VM2 connector

Remove the DESS module retaining screws.



Remove the DESS module.

For installation, reverse the removal procedures.

**NOTICE** Do not apply any dielectric grease in the DESS module connectors.

Program a minimum of 2 keys into the new module. See *PROGRAMMING KEYS WITH A NEW DESS MODULE* in this section.