REPORT NUMBER 118-GTL-08-005

# SAFETY COMPLIANCE TESTING FOR FMVSS NO. 118 POWER-OPERATED WINDOW, PARTITION AND ROOF PANEL SYSTEMS

## GENERAL MOTORS DE MEXICO, S. DE R.L. DE C.V.
## 2008 SATURN VUE, MPV
## NHTSA NO. C80113

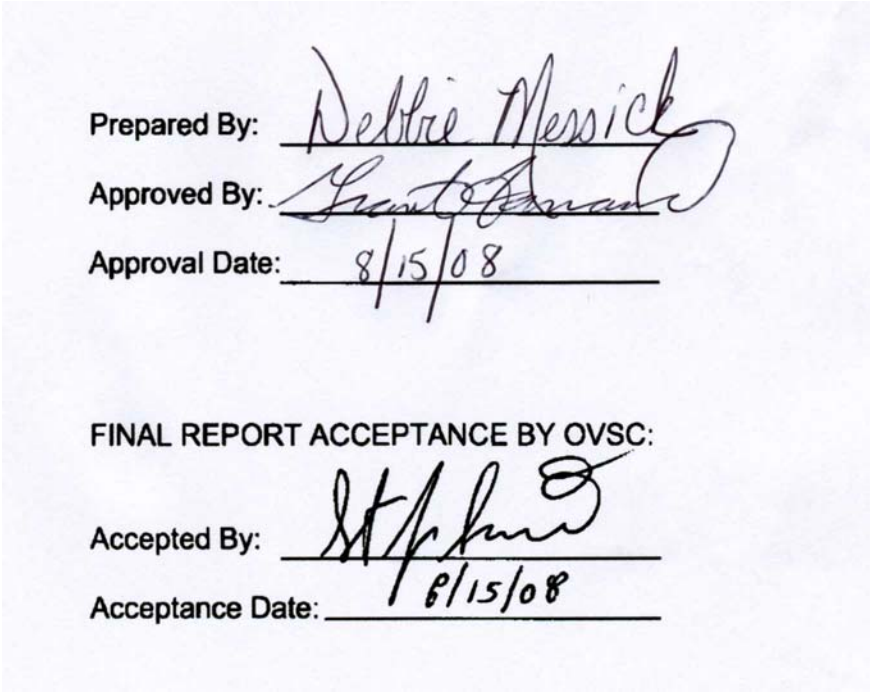
## GENERAL TESTING LABORATORIES, INC.
## 1623 LEEDSTOWN ROAD
## COLONIAL BEACH, VIRGINIA 22443

AUGUST 15, 2008

**FINAL REPORT**

**PREPARED FOR**

**U. S. DEPARTMENT OF TRANSPORTATION**
**NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION**
**ENFORCEMENT**
**OFFICE OF VEHICLE SAFETY COMPLIANCE**
**1200 NEW JERSEY AVE., SE**
**WASHINGTON, D.C. 20590**



Technical Report Documentation Page

| | | |
|---|---|---|
| 1. Report No.<br>118-GTL-08-005 | 2. Government Accession No.<br>N/A | 3. Recipient's Catalog No.<br>N/A |
| 4. Title and Subtitle<br>Final Report of FMVSS 118 Compliance Testing of a 2008 SATURN VUE MPV<br>NHTSA No. C80113 | | 5. Report Date<br>August 15, 2008<br>6. Performing Organ. Code<br>GTL |
| 7. Author(s)<br>Grant Farrand, Project Engineer<br>Debbie Messick, Project Manager | | 8. Performing Organ. Rep#<br>GTL-DOT-08-118-005 |
| 9. Performing Organization Name and Address<br>General Testing Laboratories, Inc.<br>1623 Leedstown Road<br>Colonial Beach, Va 22443 | | 10. Work Unit No. (TRAIS)<br>N/A<br>11. Contract or Grant No.<br>DTNH22-06-C-00032 |
| 12. Sponsoring Agency Name and Address<br>U.S. Department of Transportation<br>National Highway Traffic Safety Admin. Enforcement<br>Office of Vehicle Safety Compliance (NVS-220)<br>1200 New Jersey Ave., S.E.,<br>Washington, DC 20590 | | 13. Type of Report and Period Covered<br>Final Test Report<br>August 6, 2008<br>14. Sponsoring Agency Code<br>NVS-221 |
| 15. Supplementary Notes | | |
| 16. Abstract<br>Compliance tests were conducted on the subject 2008 SATURN VUE 4-door MPV in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-118-06 for the determination of FMVSS 118 compliance.<br><br>Test failures identified were as follows:<br>None | | |
| 17. Key Words<br>Compliance Testing<br>Safety Engineering<br>FMVSS 118 | 18. Distribution Statement<br>Copies of this report are available from NHTSA Technical Information Services (TIS)<br>Room W45-212 (NPO-411)<br>1200 New Jersey Ave., S.E.<br>Washington, DC 20590<br>Telephone No. (202) 366-4947 | |
| 19. Security Classif. (of this report)<br>UNCLASSIFIED | 21. No. of Pages<br>33 | 22. Price |
| 20. Security Classif. (of this page)<br>UNCLASSIFIED | | |

Form DOT F 1700.7 (8-72)

TABLE OF CONTENTS

# SECTION 1

# PURPOSE OF COMPLIANCE TEST

## 1.0 PURPOSE OF TEST

A model year 2008 Saturn Vue MPV was subjected to Federal Motor Vehicle Safety Standard (FMVSS) No. 118 testing to determine if the vehicle was in compliance with the requirements of the standard. FMVSS 118 specifies requirements for power-operated window, partition, and roof panel systems to minimize the likelihood of death or injury from their accidental operation.

1.1 The test vehicle was a 2008 Saturn Vue MPV. The vehicle was identified as follows:

A. Vehicle Identification Number: 3GSCL33P08S593009

B. NHTSA No.: C80113

C. Manufacturer: GENERAL MOTORS DE MEXICO, S. DE R.L. DE C.V.

D. Manufacture Date: 10/07

E. Color: White

## 1.2 TEST DATE

The test vehicle was subjected to FMVSS No. 118 testing on August 6, 2008.

SECTION 2

TEST PROCEDURE AND SUMMARY OF RESULTS

## 2.0 TEST PROCEDURE

All tests were conducted in accordance with NHTSA, Office of Vehicle Safety Compliance (OVSC) Laboratory Procedure TP-118-06 dated 12 April 2006 and General Testing Laboratories, Inc. (GTL) Test Procedure, TP-118-03A, “Power Operated Window, Partition and Roof Panel Systems”.

FMVSS 118 Compliance Testing was performed in the following sequence:

A. Test Vehicle Identification/Documentation
B. Power Window, partition and roof panel identification/documentation
C. Interior, exterior and remote control switch identification/documentation
D. Pre-test operation of all power windows, partitions and roof panels
E. Photograph vehicle and interior, exterior and remote control devices
F. Perform Interior Locking System Off Test
G. Perform Interior Locking System with Key Removed Test
H. Perform Exterior Locking System Test
I. Perform Remote Actuation Device Test
J. Perform Occupant Compartment Actuation Device Test(Sphere Test/Pull up or Pull Out Test)
K. Perform Automatic Reversal System Test

Above tests H, I, and K were not required on this vehicle due to no exterior or remote actuation devices. Test J was performed for information purposes only.

## 2.1 SUMMARY OF RESULTS

The power window operational test resulted in no anomalies being noted. Test data indicate the FMVSS 118 requirements appear to have been satisfied. All test data resulting from the tests were recorded on test data sheets in Section 3.

SECTION 3

TEST DATA

## 3.0 TEST RESULTS

The following data sheets document the results of FMVSS 118 testing on the 2008 Saturn Vue.

FMVSS 118
COMPLIANCE DATA SUMMARY SHEET

VEHICLE MAKE/MODEL/BODY STYLE: 2008 SATURN VUE

VEHICLE NHTSA NO: C80113 VIN: 3GSCL33P08S593009

VEHICLE TYPE: MPV DATE OF MANUFACTURE: 10/07

LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 08/06/08

| REQUIREMENT | PASS | FAIL | N/A |
|---|---|---|---|
| S4<br>Interior Locking system in Off Position(s) | X | | |
| S4<br>Interior Locking System with Key Removed | X | | |
| S4<br>Exterior Locking System | | | X |
| S4<br>Remote Actuation Device | | | X |
| S6<br>Occupant Compartment Actuation Devices (Sphere Test/Pull Up or Pull Out Test) | X* | | |
| S5<br>Automatic Reversal System | | | X |

**REMARKS: *** Compliance not required

RECORDED BY: G. Farrand DATE: 08/06/08

APPROVED BY: D. Messick

# WPRP PRE-OPERATIONAL CHECK

VEHICLE MAKE/MODEL/BODY STYLE: 2008 SATURN VUE

VEHICLE NHTSA NO: C80113 VIN: 3GSCL33P08S593009

VEHICLE TYPE: MPV DATE OF MANUFACTURE: 10/07

LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 08/06/08

Identify power-operated WPRP and WPRP actuation devices

| | LEFT FRONT | LEFT REAR | RIGHT FRONT | RIGHT REAR | TAIL GATE | LEFT VENT | RIGHT VENT | ROOF PANEL |
|---|---|---|---|---|---|---|---|---|
| Power WPRP Installed | X | X | X | X | | | | |
| Individual Interior Actuation Devices | X | X | X | X | | | | |
| Master Control Panel Actuation Devices | X | | | | | | | |
| WPRP Operated by Exterior Locking System | | | | | | | | |
| WPRP Operated by Remote Control | | | | | | | | |
| WPRP with Auto-Reverse Capability | | | | | | | | |
| WPRP with Express-Up Capability | | | | | | | | |

Master Control Panel Location: DRIVER'S DOOR PANEL

Exterior Locking System Location:

Remote Control Type: ( ) Line of Sight ( ) Non-line of Sight

WPRP Actuation Device Design (Toggle, Rocker, Push/Pull (Lever) or describe other):

Master Control Panel Push/Pull
Individual Window Push/Pull
Roof Panel
Vents

Interior Locking System Key Positions (clockwise): OFF/LOCK, ACC, RUN, START

All WPRP open/close cycles are satisfactory with key in "ON" position:
(X) YES ( ) NO

All WPRP open/close cycles are satisfactory with key in "ACCESSORY" position:
(X) YES ( ) Not Applicable –No power to WPRP's

REMARKS:

RECORDED BY: G. Farrand DATE: 08/06/08
APPROVED BY: D. Messick

# DATA SHEET 1
# INTERIOR LOCKING SYSTEM TEST

VEHICLE MAKE/MODEL/BODY STYLE: 2008 SATURN VUE

VEHICLE NHTSA NO: C80113 VIN: 3GSCL33P08S593009

VEHICLE TYPE: MPV DATE OF MANUFACTURE: 10/07

LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 08/06/08

Key lock position at start of test execution: (X) ON ( ) ACCESSORY, Then to:
Key lock off position during test execution: (X) LOCK (X) OFF ( ) ACCESSORY

| ACTUATION DEVICES | DOORS CLOSED | | LEFT DOOR OPEN | | RIGHT DOOR OPEN | | PASS/ FAIL |
|---|---|---|---|---|---|---|---|
| | INOP. | OPER. | INOP. | OPER. | INOP. | OPER. | |
| MASTER CONTROL PANEL ACTUATION DEVICES | | | | | | | |
| Left Front (LF) | | X | X | | X | | P |
| Right Front (RF) | | X | X | | X | | P |
| Left Rear (LR) | | X | X | | X | | P |
| Right Rear (RR) | | X | X | | X | | P |
| Tail Gate (TG) | | | | | | | |
| Vents | | | | | | | |
| Roof Panel (RP) | | | | | | | |
| INDIVIDUAL ACTUATION DEVICES | | | | | | | |
| Left Front (LF) | | X | X | | X | | P |
| Right Front (RF) | | X | X | | X | | P |
| Left Rear (LR) | | X | X | | X | | P |
| Right Rear (RR) | | X | X | | X | | P |
| Tail Gate (TG) | | | | | | | |
| Vents | | | | | | | |
| Roof Panel (RP) | | | | | | | |

REMARKS:

RECORDED BY: G. Farrand DATE: 08/06/08

APPROVED BY: D. Messick

DATA SHEET 2
INTERIOR LOCKING SYSTEM WITH KEY REMOVED TEST

VEHICLE MAKE/MODEL/BODY STYLE: 2008 SATURN VUE

VEHICLE NHTSA NO: C80113 VIN: 3GSCL33P08S593009

VEHICLE TYPE: MPV DATE OF MANUFACTURE: 10/07

LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 08/06/08

Key lock position at start of test execution: (X) ON ( ) ACCESSORY, Then to:
Key lock off position during test execution: (X) LOCK ( ) OFF ( ) ACCESSORY

| ACTUATION DEVICES | DOORS CLOSED | | LEFT DOOR OPEN | | RIGHT DOOR OPEN | | PASS/ FAIL |
|---|---|---|---|---|---|---|---|
| | INOP. | OPER. | INOP. | OPER. | INOP. | OPER. | |
| MASTER CONTROL PANEL ACTUATION DEVICES | | | | | | | |
| Left Front (LF) | | X | X | | X | | P |
| Right Front (RF) | | X | X | | X | | P |
| Left Rear (LR) | | X | X | | X | | P |
| Right Rear (RR) | | X | X | | X | | P |
| Tail Gate (TG) | | | | | | | |
| Vents | | | | | | | |
| Roof Panel (RP) | | | | | | | |
| INDIVIDUAL ACTUATION DEVICES | | | | | | | |
| Left Front (LF) | | X | X | | X | | P |
| Right Front (RF) | | X | X | | X | | P |
| Left Rear (LR) | | X | X | | X | | P |
| Right Rear (RR) | | X | X | | X | | P |
| Tail Gate (TG) | | | | | | | |
| Vents | | | | | | | |
| Roof Panel (RP) | | | | | | | |

REMARKS:

RECORDED BY: G. Farrand DATE: 08/06/08

APPROVED BY: D. Messick

# DATA SHEET 3
# OCCUPANT COMPARTMENT ACTUATION DEVICE TEST
## SPHERE TEST

VEHICLE MAKE/MODEL/BODY STYLE: 2008 SATURN VUE
VEHICLE NHTSA NO: C80113 VIN: 3GSCL33P08S593009
VEHICLE TYPE: MPV DATE OF MANUFACTURE: 10/07
LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 08/06/08

| ACTUATION DEVICES | APPLICABLE (YES/NO*) | SPHERE ACTIVATED ACTUATION DEVICE CLOSES WPRP (YES/NO) | TEST RESULT PASS/FAIL | COMPLIANCE REQUIRED (Y/N**) |
|---|---|---|---|---|
| MASTER CONTROL PANEL ACTUATION DEVICES | | | | |
| Left Front (LF) | Yes | No | Pass | No |
| Right Front (RF) | Yes | No | Pass | No |
| Left Rear (LR) | Yes | No | Pass | No |
| Right Rear (RR) | Yes | No | Pass | No |
| Tail Gate (TG) | | | | |
| Vent Window(s) | | | | |
| Partition (P) | | | | |
| Roof Panel (RP) | | | | |
| INDIVIDUAL ACTUATION DEVICES | | | | |
| Left Front (LF) | Yes | No | Pass | No |
| Right Front (RF) | Yes | No | Pass | No |
| Left Rear (LR) | Yes | No | Pass | No |
| Right Rear (RR) | Yes | No | Pass | No |
| Tail Gate (TG) | | | | |
| Vent Window (s) | | | | |
| Partition(P) | | | | |
| Roof Panel (RP) | | | | |

*This requirement does not apply to actuation devices that are mounted in a vehicle's roof, headliner, or overhead console and that can close a window, partition, or roof panel only by continuous rather than momentary switch actuation or actuation devices that comply with the reversing requirement of FMVSS 118, S5.
** Requirement is effective 1 October 2008. Early compliance is voluntary and test results are used for information only.

RECORDED BY: G. Farrand DATE: 08/06/08
APPROVED BY: D. Messick

# DATA SHEET 4
# OCCUPANT COMPARTMENT ACTUATION DEVICE TEST
# FOR POWER-OPERATED WINDOWS ONLY
# PULL UP OR PULL OUT TEST

VEHICLE MAKE/MODEL/BODY STYLE: 2008 SATURN VUE
VEHICLE NHTSA NO: C80113 VIN: 3GSCL33P08S593009
VEHICLE TYPE: MPV DATE OF MANUFACTURE: 10/07
LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 08/06/08

| ACTUATION DEVICES | SWITCH ORIENTATION<br>A – horizontal<br>B – vertical<br>C - angled | CLOSES POWER-OPERATED WINDOW ONLY IF:<br>PULL UP OR PULL OUT | TEST RESULT<br>PASS/FAIL | COMPLIANCE REQUIRED<br>(Y/N**) |
|---|---|---|---|---|
| MASTER CONTROL PANEL ACTUATION DEVICES | | | | |
| Left Front (LF) | A | Pull Up | Pass | No |
| Right Front (RF) | A | Pull Up | Pass | No |
| Left Rear (LR) | A | Pull Up | Pass | No |
| Right Rear (RR) | A | Pull Up | Pass | No |
| Vent Window(s) | | | | |
| INDIVIDUAL ACTUATION DEVICES | | | | |
| Left Front (LF) | A | Pull Up | Pass | No |
| Right Front (RF) | A | Pull Up | Pass | No |
| Left Rear (LR) | A | Pull Up | Pass | No |
| Right Rear (RR) | A | Pull Up | Pass | No |
| Vent Window(s) | | | | |

** Requirement is effective 1 October 2008. Early compliance is voluntary and test results are used for information only.

RECORDED BY: G. Farrand DATE: 08/06/08
APPROVED BY: D. Messick

# SECTION 4
# TEST EQUIPMENT LIST

VEHICLE MAKE/MODEL/BODY STYLE: 2008 SATURN VUE
VEHICLE NHTSA NO: C80113 VIN: 3GSCL33P08S593009
VEHICLE TYPE: MPV DATE OF MANUFACTURE: 10/07
LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 08/06/08

| ITEM | MFR | MODEL | S/N | CAL. PERIOD | DATE OF LAST CALIB. | REMARKS |
|---|---|---|---|---|---|---|
| SLR DIGITAL CAMERA | NIKON | D50 | N/A | N/A | N/A | |
| PINCH FORCE SENSOR | SENSOR DEVELOPMENTS, INC. | 10293 | 179104 | 12 MO. | 06/08 | |

REMARKS:

RECORDED BY: G. FARRAND DATE: 08/06/08

APPROVED BY: D. MESSICK

# SECTION 5

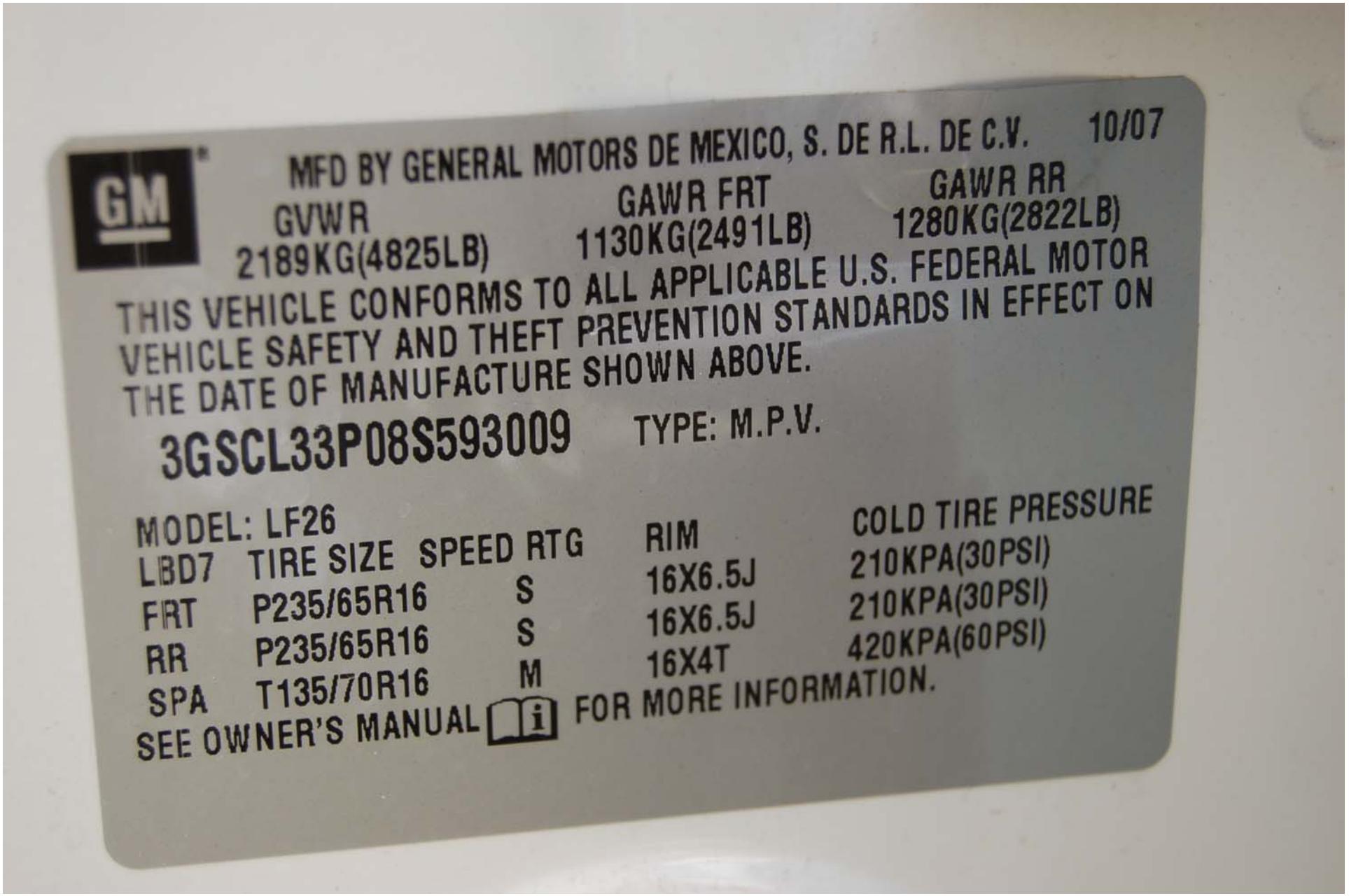
# PHOTOGRAPHS

2008 SATURN VUE
NHTSA NO. C80113
FMVSS NO. 118

FIGURE 5.1
¾ FRONTAL VIEW FROM RIGHT SIDE OF VEHICLE

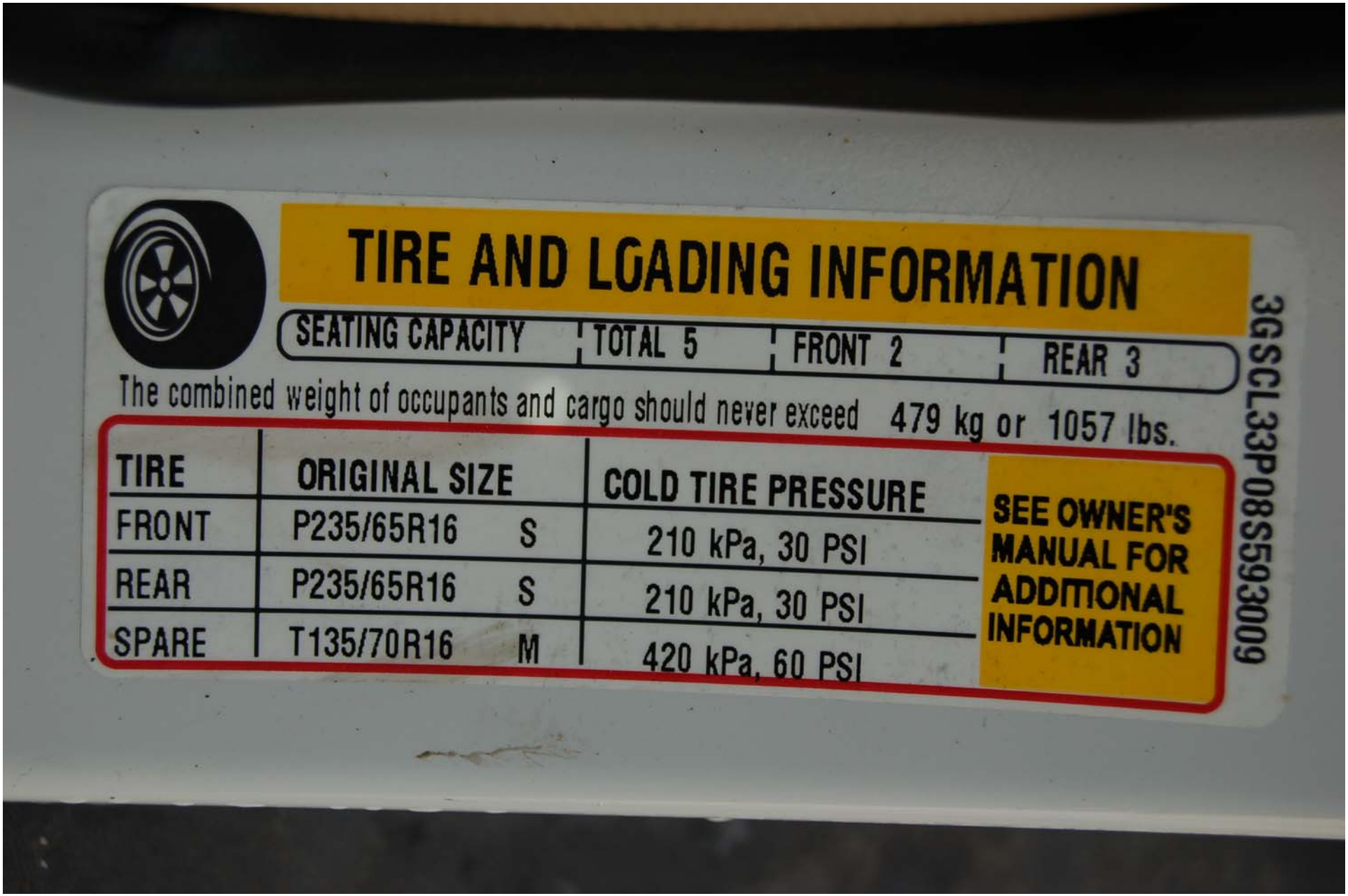

2008 SATURN VUE
NHTSA NO. C80113
FMVSS NO. 118

FIGURE 5.2
¾ REARWARD VIEW FROM LEFT SIDE OF VEHICLE




2008 SATURN VUE
NHTSA NO. C80113
FMVSS NO. 118

FIGURE 5.3
CLOSE-UP VIEW OF VEHICLE CERTIFICATION LABEL




2008 SATURN VUE
NHTSA NO. C80113
FMVSS NO. 118

FIGURE 5.4
CLOSE-UP VIEW OF TIRE INFORMATION LABEL


2008 SATURN VUE
NHTSA NO. C80113
FMVSS NO. 118

FIGURE 5.5
MASTER CONTROL SWITCH


2008 SATURN VUE
NHTSA NO. C80113
FMVSS NO. 118

FIGURE 5.6
LEFT FRONT CONTROL SWITCH


2008 SATURN VUE
NHTSA NO. C80113
FMVSS NO. 118

FIGURE 5.7
LEFT REAR CONTROL SWITCH


2008 SATURN VUE
NHTSA NO. C80113
FMVSS NO. 118

FIGURE 5.8
RIGHT FRONT CONTROL SWITCH


2008 SATURN VUE
NHTSA NO. C80113
FMVSS NO. 118

FIGURE 5.9
RIGHT REAR CONTROL SWITCH


2008 SATURN VUE
NHTSA NO. C80113
FMVSS NO. 118

FIGURE 5.10
KEY SWITCH POSITIONS


2008 SATURN VUE
NHTSA NO. C80113
FMVSS NO. 118

FIGURE 5.11
SPHERE TEST ON SWITCH

# SECTION 6
# OWNER'S MANUAL INFORMATION

## Keys

**⚠ CAUTION:**

**Leaving children in a vehicle with the ignition key is dangerous for many reasons, children or others could be badly injured or even killed. They could operate the power windows or other controls or even make the vehicle move. The windows will function with the keys in the ignition and they could be seriously injured or killed if caught in the path of a closing window. Do not leave the keys in a vehicle with children.**

The two keys that come with your vehicle can be used for the ignition, and all locks.

The key code is stamped on the key number plate. These code numbers can be used to make new keys. Additional keys that are needed can be made at any dealer/retailer provided you have the key code information. Store this information in a safe place, but not in your vehicle.

***Notice:*** **If you ever lock your keys in your vehicle, you may have to damage the vehicle to get in. Be sure you have spare keys.**

If you are locked out of your vehicle, contact Roadside Assistance. See *Roadside Assistance Program on page 7-7* for more information.

## Remote Keyless Entry (RKE) System

If the vehicle has the Remote Keyless Entry (RKE) system, it operates on a radio frequency subject to Federal Communications Commission (FCC) Rules and with Industry Canada.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

This device complies with RSS-210 of Industry Canada. Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

Changes or modifications to this system by other than an authorized service facility could void authorization to use this equipment.

At times you may notice a decrease in range. This is normal for any RKE system. If the transmitter does not work or if you have to stand closer to your vehicle for the transmitter to work, try this:

- Check the distance. You may be too far from your vehicle. You may need to stand closer during rainy or snowy weather.
- Check the location. Other vehicles or objects may be blocking the signal. Take a few steps to the left or right, hold the transmitter higher, and try again.
- Check to determine if battery replacement is necessary. See "Battery Replacement" under *Remote Keyless Entry (RKE) System Operation on page 2-5.*
- If you are still having trouble, see your dealer/retailer or a qualified technician for service.



## Remote Keyless Entry (RKE) System Operation

The vehicle's doors can be locked and unlocked from about 3 feet (1 m) up to 65 feet (20 m) away with the Remote Keyless Entry (RKE) transmitter.

If your vehicle has the remote start feature you can also start your vehicle with the RKE transmitter. The RKE transmitter, with the remote start button, provides an increased operating range of 195 feet (60 m) away. However, the operating range may be less while the vehicle is running. As a result, you may need to be closer to your vehicle to turn it off than you were to start it.

There are other conditions which can affect the performance of the transmitter. See *Remote Keyless Entry (RKE) System on page 2-4.*

**Without Remote Start Shown (With Remote Start Similar)**

The following functions may be available if your vehicle has the RKE system:

**(Remote Vehicle Start):** If your vehicle has this feature, you will be able to remote start your vehicle. See *Remote Vehicle Start on page 2-7* for additional information.

**(Lock):** Press the lock button to lock all the doors, including the liftgate.

**(Unlock):** Press the unlock button to unlock the driver's door. If the button is pressed again within five seconds, all remaining doors will unlock. The interior lamps will come on and stay on for 20 seconds or until the ignition is turned on.

**(Vehicle Locator/Panic Alarm):** Press and release this button to locate your vehicle. The turn signal lamps will flash and the horn will sound three times. Press and hold this button for more than two seconds to activate the panic alarm. The turn signal lamps will flash and the horn will sound repeatedly for 30 seconds. The alarm will turn off when the ignition is moved to ON/RUN or the alarm button is pressed again. The ignition must be in LOCK/OFF for the panic alarm to work.

## Matching Transmitter(s) to Your Vehicle

Each RKE transmitter is coded to prevent another transmitter from unlocking your vehicle. If a transmitter is lost or stolen, a replacement can be purchased through your dealer/retailer. Remember to bring any additional transmitters so they can also be re-coded to match the new transmitter. Once your dealer/retailer has coded the new transmitter, the lost transmitter will not unlock your vehicle. The vehicle can have a maximum of eight transmitters matched to it.

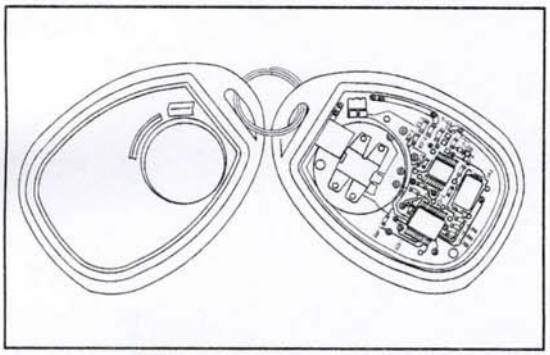
## Battery Replacement

Under normal use, the battery in the RKE transmitter should last about four years.

The battery is weak if the transmitter will not work at the normal range in any location. If you have to get close to your vehicle before the transmitter works, it is probably time to change the battery.

***Notice:*** **When replacing the battery, use care not to touch any of the circuitry. Static from your body transferred to these surfaces may damage the transmitter.**





To replace the battery in the RKE transmitter:

1. Insert a flat object with a thin edge into the notch on the side of the transmitter and separate the bottom half from the top half.
2. Remove the old battery, but do not use a metal object to do this.
3. Slide the new battery into the transmitter with the positive side of the battery facing down. Use a type CR2032 battery, or equivalent type. Make sure the cover is on tightly, so water will not get in.
4. Snap the front and the back of the transmitter together.
5. Test the operation of the transmitter with the vehicle.

## Remote Vehicle Start

Your vehicle may have a remote starting feature. This feature allows you to start the engine from outside of the vehicle. It may also start up the vehicle's heating or air conditioning systems and rear window defogger. Normal operation of the system will return after the key is turned to the ON/RUN position.

If your vehicle has an automatic climate control system, during remote start, the climate control system will default to a heating mode during colder outside temperatures and a cooling mode during warmer outside temperatures. If your vehicle does not have an automatic climate control system, during remote start, the climate control system will turn on at the setting the vehicle was set to when the vehicle was last turned off.

Laws in some communities may restrict the use of remote starters. For example, some laws may require a person using the remote start to have the vehicle in view when doing so. Check local regulations for any requirements on remote starting of vehicles.

If your vehicle is low on fuel, only one 10 minute remote start is allowed to help avoid running out of fuel.

The RKE transmitter with the remote start button, provides an increased range of operation. However, the range may be less while the vehicle is running. As a result, you may need to be closer to your vehicle to turn it off, than you were to turn it on.

There are other conditions which can affect the performance of the transmitter, see *Remote Keyless Entry (RKE) System on page 2-4* for additional information.

**(Remote Start):** This button will be on the RKE transmitter if you have remote start.

To start your vehicle:

1. Aim the transmitter at the vehicle.
2. Press and release the transmitter's lock button, then immediately press and hold the transmitter's remote start button until the turn signal lights flash. If you cannot see the vehicle's lights, press and hold the remote start button for at least two seconds. The vehicle's doors will lock. Pressing the remote start button again after the vehicle has started will turn off the ignition.

   When the vehicle starts, the parking lamps will turn on and remain on while the vehicle is running.
3. If it is the vehicle's first remote start since it was last driven, repeat these steps while the engine is still running to give a 10 minute time extension. Remote start can be extended one time.

When you enter the vehicle during a remote start, and the engine is still running, turn the key to the ON/RUN position to drive the vehicle.

If the vehicle is left running it will automatically shut off after 10 minutes unless a time extension has been done.

To manually shut off a remote start:

- Aim the RKE transmitter at the vehicle and press the remote start button until the parking lamps turn off.
- Turn on the hazard warning flashers.
- Turn the ignition switch on and then off.

The vehicle can be remote started two separate times between driving sequences. The engine will run for 10 minutes after each remote start.

Or, you can extend the engine run time by another 10 minutes within the first 10 minute remote start time frame, and before the engine stops.

For example, if the lock button and then the remote start buttons are pressed again after the vehicle has been running for five minutes, 10 minutes are added, allowing the engine to run for 15 minutes.



The additional ten minutes are considered a second remote vehicle start.

Once two remote starts, or a single remote start with one time extension has been done, the vehicle must be started with the key.

After the key is removed from the ignition, the vehicle can be remote started again.

The vehicle cannot be remote started if the key is in the ignition, the hood is not closed, or if there is an emission control system malfunction.

Also, the engine will turn off during a remote vehicle start if the coolant temperature gets too high or if the oil pressure gets low.

## Remote Start Ready

If your vehicle does not have the remote vehicle start feature, it may have the remote start ready feature. This feature allows your dealer/retailer to add the manufacturer's remote vehicle start feature.

If your vehicle has the remote start ready feature, the RKE transmitter will have an extended range that allows locking or unlocking of the vehicle from approximately 195 feet (60 m) away.

See your dealer/retailer if you would like to add the manufacturer's remote vehicle start feature to your vehicle.

## Windows

**⚠ CAUTION:**

**Leaving children, helpless adults, or pets in a vehicle with the windows closed is dangerous. They can be overcome by the extreme heat and suffer permanent injuries or even death from heat stroke. Never leave a child, a helpless adult, or a pet alone in a vehicle, especially with the windows closed in warm or hot weather.**



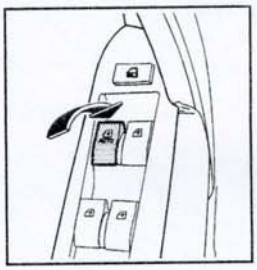
## Power Windows

**⚠ CAUTION:**

**Leaving children, helpless adults, or pets in a vehicle with the windows closed is dangerous. They can be overcome from extreme heat in warm or hot weather and suffer permanent injuries or even death from heat stroke.**

**Leaving children in a vehicle with the ignition key is dangerous for many reasons, children or others could be badly injured or even killed. They could operate the power windows or other controls or even make the vehicle move. The windows will function with the keys in the ignition and they could be seriously injured or killed if caught in the path of a closing window. Do not leave keys in a vehicle with children.**

**When there are children in the rear seat use the window lockout button to prevent unintentional operation of the windows.**



The window switches for all doors are located on the driver's door.

Each door also has a switch for its own window.

To open a window, pull up on the switch. To close a window, press the switch.

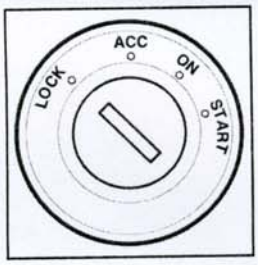
The power windows operate when the ignition is RUN or ACC (Accessory), or while in Retained Accessory Power (RAP). See *Retained Accessory Power (RAP) on page 2-22.*

### Express-Down Window

The driver's window switch has an express-down feature that allows the window to be lowered without holding the switch. Press the switch part way, and the driver's window will open a small amount. Press the switch down all the way and release it and the window will go down automatically.

To stop the window while it is lowering, press and release the switch.

## Ignition Positions




The ignition switch can be turned to four different positions with the key.

To shift out of PARK (P), the ignition must be in ON/RUN and the brake pedal must be pressed.

***Notice:*** **Using a tool to force the key from the ignition switch could cause damage or break the key. Use the correct key and turn the key only with your hand. Make sure the key is in all the way. If none of this works, then your vehicle needs service.**

**LOCK/OFF:** This position locks the steering wheel, ignition, shift lever and transmission. This is the only position in which you can insert or remove the key. If the steering wheel is locked, move it from right to left and turn the key to ACC/ACCESSORY. If none of this works, then your vehicle needs service.

**ACC (ACC/ACCESSORY):** This position operates some of the electrical accessories, such as the radio, but not the climate control system.

Use ACC/ACCESSORY if you must have your vehicle in motion while the engine is off, for example, if your vehicle is being pushed or towed.

**ON/RUN:** This is the position the switch returns after you start the engine and release the key. The switch stays in ON/RUN when the engine is running. But even when the engine is not running, you can use ON/RUN to operate the electrical accessories, and to display some instrument panel warning lights.

The battery could be drained if you leave the key in the ACC/ACCESSORY or ON/RUN position with the engine off. You may not be able to start your vehicle if the battery is allowed to drain for an extended period of time.

**START:** This position starts the engine. When the engine starts, release the key. The switch returns to ON/RUN for normal driving. Do not turn the key to START if the engine is running.

Even if the engine is not running, ACC/ACCESSORY and ON/RUN allow you to operate electrical accessories, such as the radio.