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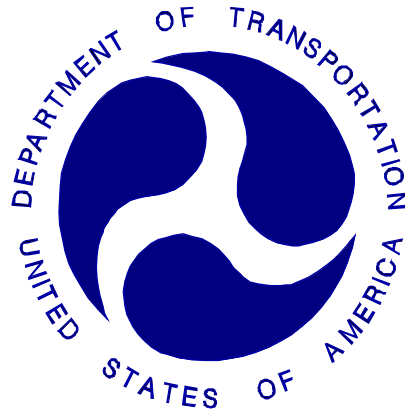
**SAFETY COMPLIANCE TESTING FOR
FMVSS No. 114
THEFT PROTECTION AND ROLLOVER PREVENTION**

MAZDA MOTOR CORPORATION
2008 MAZDA CX-9 MPV

NHTSA NUMBER: C85401

CALSPAN TEST NUMBER: 8858-F114-02

CALSPAN CORPORATION
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April 23, 2008

FINAL REPORT

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
ENFORCEMENT
Office of Vehicle Safety Compliance
Room W43-481, NVS-220
1200 New Jersey Avenue, SE
Washington, DC 20590

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16. Abstract Compliance tests were conducted on the subject 2008 Mazda CX-9 MPV in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-114-03 for the determination of FMVSS 114 compliance. Test failures were identified as follows: None					
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SECTION 1

PURPOSE OF COMPLIANCE TEST

This test is part of the Federal Motor Vehicle Safety Standard (FMVSS) 114 Compliance Test Program conducted for the National Highway Traffic Safety Administration (NHTSA) by General Dynamics Advanced Information Engineering Services under Contract No. DTNH22-06-C-00031. The purpose of this test was to determine if the subject vehicle, a 2008 Mazda CX-9 MPV, was in compliance with FMVSS No. 114, Theft Protection and Rollaway Prevention. The purpose of this standard is to reduce the incidence of crashes resulting from unauthorized operation of vehicles by specifying requirements for theft protection. Additionally, FMVSS No. 114 specifies requirements to reduce the incidents of crashes from rollaway of parked vehicles with automatic transmissions as a result of children moving the shift mechanism out of the “park” position. This standard applies to passenger cars, trucks and multipurpose passenger vehicles having a Gross Vehicle Weight Rating (GVWR) of 4536 kilograms or less. This compliance test was conducted using the requirements found in the OVSC Laboratory Test Procedure No. TP-114-03, dated May 2, 2008.

SECTION 2

TEST PROCEDURE AND DISCUSSION OF RESULTS

A 2008 Mazda CX-9 MPV with an automatic transmission was subjected to FMVSS No. 114 testing in accordance with the NHTSA Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedure TP-114-03, dated May 2, 2008. This test was performed by General Dynamics Advanced Information Engineering Services on April 23, 2008.

The test equipment used for this test included a standard metric tape ruler, a digital inclinometer with digital clinometer function, weight scales and a digital manometer. Testing was performed in the following sequence:

STARTING SYSTEM REQUIREMENT (S5.1.1):

Normal activation of the vehicle engine was prevented with the key removed from the starting system. Both steering and forward self-mobility were also prevented.

AUDIBLE ALARM REQUIREMENT (S5.1.3):

With the key left in the vehicle starting system and the driver's door opened, an audible alarm was activated. This "warning to the driver" was verified in all ignition switch positions except "on" and "start".

"PARK" POSITION REQUIREMENT (S5.1.4)

With the vehicle key in the ignition and not in the "LOCK" position and the engine shut off, the steering wheel was able to rotate in both directions without locking and the vehicle was free to roll forward in all transmission positions except "park" .

ROLLAWAY PREVENTION REQUIREMENT (S5.2.1)

With the vehicle key in the ignition and the engine shut off, the starting system prevented key removal in all transmission positions other than "park." This vehicle was not equipped with an advanced key and the transmission could not be placed in locations between locking gear selector positions. The vehicle was not equipped with a mechanism that will lock the transmission in "park" as a result of removing the key in a transmission position other than "park."

GEAR SELECTION REQUIREMENT (S5.2.2):

With the vehicle ignition key removed, the gear control could not be moved from the "park" position. With the vehicle ignition key in the "ON" position and the vehicle engine running, the transmission could be moved to the "drive" position by depressing the brake pedal.

KEY REMOVAL OVERRRIDE REQUIREMENT (S5.2.3):

This vehicle was not equipped with a key removal override option.

GEAR SELECTION CONTROL OVERRRIDE REQUIREMENT (S5.2.4):

This vehicle was not equipped with a gear selection control override device.

TEN PERCENT GRADE “PARK” REQUIREMENT (S5.2.5)

The vehicle was driven forward and stopped with the service brakes on a 10.3% grade. The parking brake was fully applied and the transmission lever was placed in “park”. When the service and parking brakes were released the vehicle moved 29 mm (150 mm maximum is allowed on a 10% grade). Since the available test grade was more stringent than the specified condition, the subject vehicle appeared to perform within the safety performance requirements.

The vehicle was driven in reverse and stopped with the service brakes on a 10.3% grade. The parking brake was fully applied and the transmission lever was placed in “park”. When the service and parking brakes were released the vehicle moved 65 mm (150 mm maximum is allowed on a 10% grade). Since the available test grade was more stringent than the specified condition, the subject vehicle appeared to perform within the safety performance requirements.

BRAKE TRANSMISSION SHIFT INTERLOCK REQUIREMENT (S5.3)

With the vehicle key in the starting system, the vehicle transmission was unable to be shifted from the “park” position without depressing the brake pedal for each of the starting system key positions.

SECTION 3

TEST DATA

FMVSS 114, THEFT PROTECTION

DATA SHEET 1 – ALL VEHICLES

TEST DATE: April 23, 2008 LAB: Calspan
CONTRACT: DTNH22-06-C-00031 VEHICLE NHTSA NUMBER: C85401
VIN: JM3TB28A180123650 BUILD DATE: 07/07
MY/MAKE/MODEL/BODY STYLE: 2008 Mazda CX-9 MPV

TRANSMISSION TYPE:

Automatic X ; Manual - ; Other (describe: Not Applicable)

DRIVE TRAIN TYPE:

Front Wheel X ; Rear Wheel - ; Four Wheel -

OPTIONAL RELEASE DEVICES:

Key - ; Transmission - ; None X

VEHICLE STARTING SYSTEM:

Location of the starting system: The vehicle ignition system is located on the right side of the steering column. There is a mechanical key and lock cylinder with four positions.

Selectable settings: ,“LOCK”, “ACC”, “ON” and “START”

Activation of starting system: Place ignition key in ignition switch, and turn to the “START” position.

KEY:

Description of key: There is a traditional mechanical key with a remote transmitter for lock, unlock and panic alarm functions.

STARTING SYSTEM ACTIVATION:

Insertion of key into starting system: Place the key in the ignition switch

Activation of starting system with key: Place the key in the ignition switch, depress the brake pedal and rotate to clockwise the “start” position.

Removal of key from starting system: Place the vehicle transmission in park, rotate the key to the “LOCK” position and remove key.

GEAR SELECTION CONTROL:

Gear selection control: Located in the center console between the driver and front passenger seats.

Activation of gear selection control: Place ignition key in lock cylinder and start engine, depress brake pedal with foot to select gears.

Selectable settings: “PARK”, “REVERSE” “NEUTRAL”, “DRIVE” and manual slot for electronic drive gear selection.

FMVSS 114, THEFT PROTECTION

DATA SHEET 1 (Continued)

IMMOBILIZER:

Is the vehicle equipped with an immobilizer: Yes X No -

Description of Immobilizer and how it prevents vehicle theft The engine can only start with a key the system recognizes.

OPTIONAL RELEASE DEVICES:

Key Removal - Gear selection Control - None X Other -

If other, Explain: Not applicable

TIRE PRESSURE:

Vehicle Manufacturer Recommended (kPa): Front 250 ; Rear 250

Measured (kPa): LF 250 ; LR 250 ; RF 250 ; RR 250

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

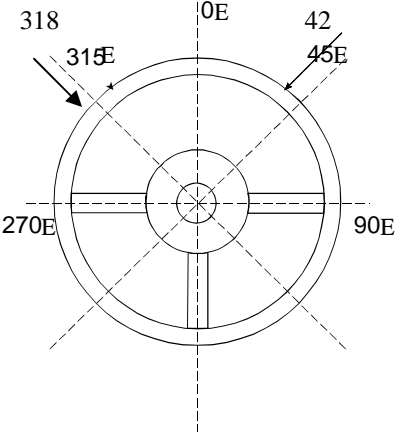
	LEFT SIDE (kg)	RIGHT SIDE (kg)	TOTAL (kg)	PERCENT
FRONT =	585.5	569.0	1154.5	56.8%
REAR =	461.5	416.0	877.5	43.2%

TOTAL DELIVERED WEIGHT (UDW) : 2032.0 kg

FMVSS 114, THEFT PROTECTION

DATA SHEET 2 – THEFT PROTECTION

TEST DATE: April 23, 2008 LAB: Calspan
 CONTRACT: DTNH22-06-C-00031 VEHICLE NHTSA NUMBER: C85401
 VIN: JM3TB28A180123650 BUILD DATE: 07/07
 MY/MAKE/MODEL/BODY STYLE: 2008 Mazda CX-9 MPV

REQUIREMENT S5.1.1	PASS	FAIL
Engine cannot be started without using the key. Yes <u>X</u> No <u> </u>	<u>X</u>	<u>--</u>
With key removed, steering locks: Yes <u>X</u> No <u>-</u> <div style="text-align: center;">  </div> Identify the steering wheel locking position(s) on the circle using arrows Clockwise: <u>42</u> (degrees) Counterclockwise: <u>318</u> (degrees)		
Key removal prevents forward self-mobility: Yes <u>X</u> No <u>-</u> If <u>yes</u> , describe: Transmission indicator can not be moved from "Park" position with key removed.	<u>X</u>	<u>--</u>
When the key is removed from the starting system, starting of the engine or motor and either steering or self mobility is prevented	<u>X</u>	<u>--</u>

FMVSS 114, THEFT PROTECTION

DATA SHEET 2 – THEFT PROTECTION

REQUIREMENT S5.1.3	PASS	FAIL
<p>An audible warning is activated whenever the key is in any starting system position with the exception of ‘ON’ and ‘START’ and the door closest to the driver’s designated seating position is opened.</p> <p align="right">Yes <u> X </u> No <u> - </u></p>	<u> X </u>	<u> -- </u>
<p>Identify ALL key/starting system position settings:</p> <div align="center"> <p>The diagram shows a circular key starting system with a vertical bar in the center. Five positions are marked with blue circles and labels: 'Lock' (left), 'Accessory' (top), 'On' (top-right), 'Start' (right), and an unlabeled position (bottom-right).</p> </div>		

REQUIREMENT S5.1.4	PASS	FAIL
<p>With the vehicle engine or motor shut down and the transmission gear selection control in any position other than “park”;</p> <p>The steering wheel can rotate without locking?</p> <p align="right">Yes <u> X </u> No <u> - </u></p>	<u> X </u>	<u> -- </u>
<p>The vehicle is free to roll forward?</p> <p align="right">Yes <u> X </u> No <u> - </u></p>	<u> X </u>	<u> -- </u>

Remarks:

RECORDED BY: Vincent M. Paolini DATE: April 23, 2008
 APPROVED BY: David Travale

FMVSS 114, ROLLAWAY PREVENTION

DATA SHEET 3 – ROLLAWAY PREVENTION
(For vehicles equipped with automatic transmission with a 'PARK' position)

TEST DATE: April 23, 2008 LAB: Calspan
 CONTRACT: DTNH22-06-C-00031 VEHICLE NHTSA NUMBER: C85401
 VIN: JM3TB28A180123650 BUILD DATE: 07/07
 MY/MAKE/MODEL/BODY STYLE: 2008 Mazda CX-9 MPV

REQUIREMENT S5.2.1	PASS	FAIL
The starting system prevents key removal in ALL gear selection control positions except "park". Yes <u> X </u> No <u> - </u>		
Can the gear selection control be placed between each gear selection position and will it remain there without assistance? Yes <u> </u> No <u> X </u>		
If <u>yes</u> , can the key be removed from the starting system? Yes <u> - </u> No <u> - </u>	<u> X </u>	<u> -- </u>
If the key can be removed from the vehicle starting system when the gear selection control is not locked in "park", a mechanism shall exist which, upon key removal, the vehicle's transmission or gear selection control shall become locked in "park" as the direct result of removing the key. If such a mechanism exists, <u>describe the mechanism and its function:</u> Not Applicable		

REQUIREMENT S5.2.2	PASS	FAIL
The gear selection control is locked in the "park" position when the key is removed from the starting system. Yes <u> X </u> No <u> - </u>	<u> X </u>	<u> -- </u>

FMVSS 114, ROLLAWAY PREVENTION

DATA SHEET 3 – ROLLAWAY PREVENTION
 (For vehicles equipped with automatic transmission with a 'PARK' position)

REQUIREMENT S5.2.3	PASS	FAIL
<p><u>ELECTRICAL FAILURE (Battery Discharge)</u></p> <p>In the event of an electrical failure, key removal from the starting system when the transmission or gear selection control is not locked in "park" is permitted. Yes <u> X </u> No <u> - </u></p> <p>The vehicle is equipped with an override device that permits key removal from the starting system when the transmission or gear selection control is not locked in "park". Yes <u> - </u> No <u> X </u></p> <p>If <u>yes</u>, select the type of override device that is equipped: Override operated with a: Opaque Cover <u> -- </u> No cover <u> -- </u></p>	<u> X </u>	<u> --- </u>
<p><u>FILL IN THE SECTION BELOW THAT APPLIES:</u></p> <p><u>OVERRIDE WITH AN OPAQUE COVER:</u></p> <p>The opaque surface cover prevents sight of and use of the override device Yes <u> - </u> No <u> - </u></p> <p>The opaque surface cover can be removed only by using a screwdriver or other tool. Yes <u> - </u> No <u> - </u></p> <p>As a direct result of removing the key from the starting system, the following is prevented: Steering <u> - </u> self mobility <u> - </u></p>	<u> N/A </u>	<u> N/A </u>
<p><u>OVERRIDE WITH NO COVER:</u></p> <p>The override device requires the use of a tool to activate. Yes <u> - </u> No <u> - </u></p> <p>Simultaneous activation of the override device and removal of the key from the starting system is required. Yes <u> - </u> No <u> - </u></p> <p>As a direct result of removing the key from the starting system, the following is prevented: Steering <u> - </u> self mobility <u> - </u></p>	<u> N/A </u>	<u> N/A </u>

FMVSS 114, ROLLAWAY PREVENTION

DATA SHEET 3 – ROLLAWAY PREVENTION
(For vehicles equipped with automatic transmission with a 'PARK' position)

REQUIREMENT S5.2.4	PASS	FAIL
<p><u>GEAR SELECTION CONTROL OVERRIDE DEVICE</u></p> <p>The vehicle is equipped with an override device that allows the user to move the gear selection control from “park” after the key has been removed from the starting system.</p> <p>Yes <u> - </u> No <u> X </u></p> <p>If <u>yes</u>, select the type of override device that is equipped: Override operated with a: Key <u> -- </u> Opaque Cover <u> - </u> No cover <u> -- </u></p> <p>Describe the device design and mode of activation (if equipped):</p>		
<p><u>FILL IN THE SECTION BELOW THAT APPLIES:</u></p> <p><u>OVERRIDE OPERATED WITH A KEY:</u></p> <p>A key is required to operate the override device that allows the user to move the gear selection control from “park” after the key has been removed from the starting system</p> <p>Yes <u> -- </u> No <u> -- </u></p>	<u> N/A </u>	<u> N/A </u>
<p><u>OVERRIDE WITH AN OPAQUE COVER:</u></p> <p>The opaque surface cover prevents sight of and use of the override device</p> <p>Yes <u> - </u> No <u> - </u></p> <p>The opaque surface cover can be removed only by using a screwdriver or other tool.</p> <p>Yes <u> - </u> No <u> - </u></p> <p>As a direct result of removing the key from the starting system, the following is prevented:</p> <p>Steering <u> - </u> self mobility <u> - </u></p>	<u> N/A </u>	<u> N/A </u>
<p><u>OVERRIDE WITH NO COVER:</u></p> <p>The override device requires the use of a tool to activate.</p> <p>Yes <u> - </u> No <u> - </u></p> <p>Simultaneous activation of the override device and removal of the key from the starting system is required.</p> <p>Yes <u> - </u> No <u> - </u></p> <p>As a direct result of removing the key from the starting system, the following is prevented:</p> <p>Steering <u> - </u> self mobility <u> - </u></p>	<u> N/A </u>	<u> N/A </u>

FMVSS 114, ROLLAWAY PREVENTION

DATA SHEET 3 – ROLLAWAY PREVENTION

(For vehicles equipped with automatic transmission with a 'PARK' position)

REQUIREMENTS S5.2.5	PASS	FAIL
<p><u>Vehicle facing uphill on 10% Grade:</u> With the gear selection control in "park", measure movement of the vehicle down the slope upon releasing the service brake.</p> <p>Test grade: <u>10.3</u> % (9% to 15%) Measured movement: <u>29</u> mm (150mm maximum)</p> <p>NOTE: Repeat procedure if vehicle fails on grade in excess of 10%.</p> <p>Test grade: <u>N/A</u> % (9% to 10%) Measured movement: <u>N/A</u> mm (150 mm maximum)</p> <p><u>Vehicle facing downhill on 10% Grade:</u> With the gear selection control in "park", measure movement of the vehicle down the slope upon releasing the service brake.</p> <p>Test grade: <u>10.3</u> % (9% to 15%) Measured movement: <u>65</u> mm (150 mm maximum)</p> <p>NOTE: Repeat procedure if vehicle fails on grade in excess of 10%.</p> <p>Test grade: <u>N/A</u> % (9% to 10%) Measured movement: <u>N/A</u> mm (150 mm maximum)</p>	<p><u>X</u></p>	<p><u>--</u></p>

Remarks: None

RECORDED BY: Vincent M. Paolini DATE: April 23, 2008
 APPROVED BY: David Travale

FMVSS 114, ROLLAWAY PREVENTION
 DATA SHEET 3 – ROLLAWAY PREVENTION
 (For vehicles equipped with automatic transmission with a 'PARK' position)

REQUIREMENTS S5.3	PASS	FAIL
With the key in the "off" position, the transmission will shift out of "park" without the service brake being applied <p style="text-align: center;">Yes <u> </u> - No <u> X </u></p>	<u> X </u>	<u> -- </u>
With the key in the "acc" position, the transmission will shift out of "park" without the service brake being applied <p style="text-align: center;">Yes <u> </u> - No <u> X </u></p>	<u> X </u>	<u> -- </u>
With the key in the "on" position (<i>engine off</i>), the transmission will shift out of "park" without the service brake being applied <p style="text-align: center;">Yes <u> </u> - No <u> X </u></p>	<u> X </u>	<u> -- </u>
With the key in the "on" position (<i>engine running</i>), the transmission will shift out of "park" without the service brake being applied <p style="text-align: center;">Yes <u> </u> - No <u> X </u></p>	<u> X </u>	<u> -- </u>
With the key in the "start" position, the transmission will shift out of "park" without the service brake being applied <p style="text-align: center;">Yes <u> </u> - No <u> X </u></p>	<u> X </u>	<u> -- </u>
With the key in the "other" position (<i>please specify</i>), the transmission will shift out of "park" without the service brake being applied <p style="text-align: center;">Yes <u> </u> - No <u> </u></p>	<u> N/A </u>	<u> N/A </u>
Does the key stay between starting system positions without being held by operator? If so, please describe <u> Not Applicable </u>	<u> N/A </u>	<u> N/A </u>
Brake force readings (force required to allow the transmission to shift out of "park"): Reading 1 <u> 13.0 </u> lbf Reading 2 <u> 12.0 </u> lbf Reading 3 <u> 12.0 </u> lbf Reading 4 <u> 11.0 </u> lbf Reading 5 <u> 11.0 </u> lbf Average <u> 11.8 </u> lbf	<u> N/A </u>	<u> N/A </u>

Remarks:

RECORDED BY: Vincent M. Paolini DATE: April 23, 2008

APPROVED BY: David Travale

SECTION 4

TEST EQUIPMENT LIST AND CALIBRATION DATES

Equipment	Manufacturer	Name	Range	Accuracy	Calibration Date	Calibration Due
Clinometer	MD	Smart Level	0-100%	0.1%	04/2008	04/2009
Steel Tape	Stanley	Stanley 3137	3 meters	0.5mm	N/A	N/A
Weight Scales	Long Acre	Computer Scales 2000	0-12,000lbs.	0.2%	03/2008	03/2009
Manometer	Meriam Instrument Co.	350 Smart Manometer	0-200 psi.	0.05%	02/2008	02/2009
Plumb Bob	Stanley	Plumb bob	N/A	N/A	N/A	N/A

SECTION 5

PHOTOGRAPHS

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Figure 1: Vehicle Left Front Three-Quarter View

2008 Mazda CX-9 MPV
NHTSA No.: C85401

C85401

MFD. BY MAZDA MOTOR CORPORATION

DATE 07/07

FRONT GAWR/PNBE AU 2813 LB 1276 KG

WITH/AVEC P245/60R18 104H TIRES/PNEUS

18X7 1/2J RIMS/JANTES

250 KPA/36 PSI COLD/A FROID

GVWR/PNBV 5831 LB 2645 KG

REAR GAWR/PNBE AR 3086 LB 1400 KG

WITH/AVEC P245/60R18 104H TIRES/PNEUS

18X7 1/2J RIMS/JANTES

250 KPA/36 PSI COLD/A FROID

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY AND THEFT PREVENTION STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

VIN: JM3TB28A180123650 TYPE:MPV

COLOR CODE:30S

MADE IN JAPAN



(TD11A)

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Figure 2: Vehicle Certification Placard

2008 Mazda CX-9 MPV
NHTSA No.: C85401

C85401



TIRE AND LOADING INFORMATION

SEATING CAPACITY : TOTAL 7 : FRONT 2 : REAR 5

The combined weight of occupants and cargo should never exceed 539kg or 1188lbs.

TIRE	SIZE	COLD TIRE PRESSURE
FRONT	P245/60 R18	250KPA , 36PSI
REAR	P245/60 R18	250KPA , 36PSI
SPARE	T155/90 D18	420KPA , 60PSI

**SEE OWNER'S
MANUAL FOR
ADDITIONAL
INFORMATION**

(TD11A)

Figure 3: Vehicle Tire Placard

2008 Mazda CX-9 MPV
NHTSA No.: C85401



Figure 4: Close-Up of Ignition Switch

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Figure 5: Close-Up of Transmission Shift Lever Mechanism

2008 Mazda CX-9 MPV
NHTSA No.: C85401

Not Applicable

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Figure 6: Close-Up of Special Device Which Allows For Key Removal

2008 Mazda CX-9 MPV
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Not Applicable

5-8

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Figure 7: Close-Up of Special Device Which Allows Moving of Shift Lever

2008 Mazda CX-9 MPV
NHTSA No.: C85401

SECTION 6

VEHICLE OWNER'S MANUAL

2008 Mazda CX-9 MPV
NHTSA No.: C85401

Advanced Keyless Entry and Start System

Advanced Keys*

The advanced keyless functions (advanced keyless entry and start system) enables the following operations while the advanced key is being carried (page 3-7).

- Locking/unlocking the doors and the liftgate without operating the key.
- Starting the engine without operating the key.

The advanced key enables additional functions other than those with the advanced keyless functions (page 3-13).

- The following operations are possible using the transmitter of the keyless entry system from a distance (Lock/Unlock/Panic/Liftgate* button):
 - Locking/unlocking the doors and the liftgate.
 - Opening/closing the power liftgate*.
 - Opening the power windows and the moonroof.
 - Operating the theft-deterrent system*.
 - Turning on the alarm.
- Locking/unlocking the doors or starting the engine using the auxiliary key.

⚠ WARNING

Do not leave the keys in your vehicle with children and keep them in a place where your children will not find or play with them:

Leaving children in a vehicle with the key is dangerous. This could result in someone being badly injured or even killed. These new kinds of keys are fascinating to children. They could play with power windows or other controls, or even make the vehicle move.

Radio waves from the advanced key may affect medical equipment such as pacemakers:

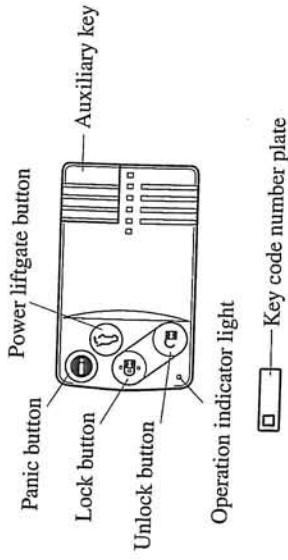
Before using the advanced key near people who use medical equipment, ask the medical equipment manufacturer or your physician if radio waves from the advanced key will affect the equipment.

NOTE

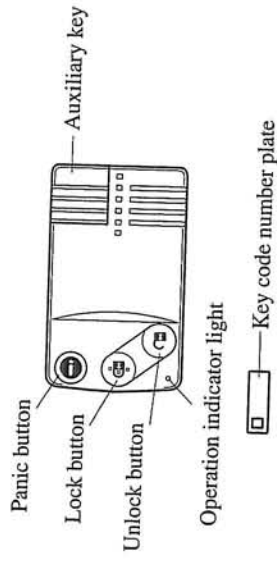
- The driver must carry the advanced key to ensure the system functions properly.
- Refer to Immobilizer System (page 3-50) for information regarding keys and engine starting.
- **(With theft-deterrent system)**
Refer to Theft-Deterrent System (page 3-55) for information regarding keys and the prevention of vehicle and vehicle contents theft.

Advanced Keyless Entry and Start System

With power liftgate button



Without power liftgate button



A code number is stamped on the plate attached to the key set; detach this plate and store it in a safe place (not in the vehicle) for use if you need to make a replacement key.

Also write down the code number and keep it in another safe and handy place, but not in the vehicle.

If your key is lost, consult your Authorized Mazda Dealer with the code number ready.

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Advanced Keyless Entry and Start System

CAUTION

- Because the advanced key uses low-intensity radio waves, it may not function correctly under the following conditions:
 - The advanced key is carried with communication devices such as cellular phones.
 - The advanced key contacts or is covered by a metal object.
 - The advanced key is near electronic devices such as personal computers.
 - Non-Mazda genuine electronic equipment is installed in the vehicle.
 - There is equipment which discharges radio waves near the vehicle.
 - If the vehicle is near equipment such as wireless pay devices installed at certain gas stations.
- The advanced key may consume battery power excessively if it receives high-intensity radio waves. Do not place the advanced key near electronic devices such as televisions or personal computers.
- To avoid damage to the advanced key, DO NOT:
 - Drop the advanced key wet.
 - Get the advanced key wet.
 - Disassemble the advanced key.
 - Expose the advanced key to high temperatures on places such as the dashboard or hood, under direct sunlight.
 - Place heavy objects on the advanced key.
 - Put the advanced key in an ultrasonic cleaner.
 - Put any magnetized objects close to the advanced key.

NOTE

- Battery life is about one year. Replace the battery when the KEY indicator light (green) flashes in the instrument cluster.
- Additional advanced Key Battery Dead Warning on page 3-17.
- Refer to Advanced Key Battery Dead Warning on page 3-17.
- Additional advanced keys can be obtained at an Authorized Mazda Dealer. Up to 6 advanced keys can be used with the advanced keyless functions per vehicle.

Advanced Keyless Entry and Start System

▼ Advanced Key Maintenance

CAUTION

- Make sure the battery is installed with the correct pole facing upward. Battery leakage could occur if it is not installed correctly.
- When replacing the battery, be careful not to bend the electrical terminals or get oil on them. Also be careful not to get dirt in the transmitter as it could be damaged.
- There is the danger of explosion if the battery is not correctly replaced.
- Replace only with the same type battery (CR2025 or equivalent).
- Dispose of used batteries according to the following instructions.
 - Insulate the plus and minus terminals of the battery using cellophane or equivalent tape.
 - Never disassemble.
 - Never throw the battery into fire or water.
 - Never deform or crush.

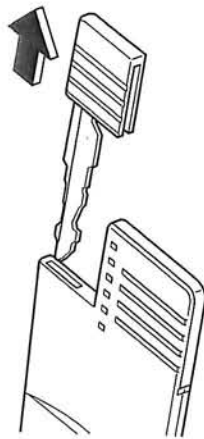
The following conditions indicate that the battery power is low:

- The KEY indicator light (green) flashes in the instrument cluster when the engine is turned off.
- The system does not operate and the operation indicator light on the transmitter does not flash when the buttons are pressed.
- The system's operational range is reduced.

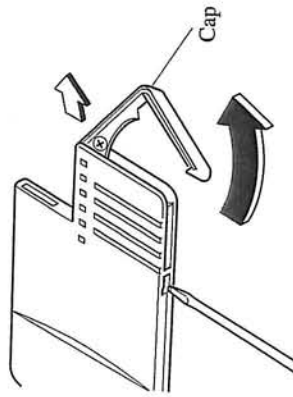
Replacing the battery at an Authorized Mazda Dealer is recommended to prevent damage to the advanced key. If replacing the battery by yourself, follow the instruction below.

Replacing the advanced key battery

1. Pull out the auxiliary key.



2. Release the cap using a flathead screwdriver, then rotate and remove the cap.

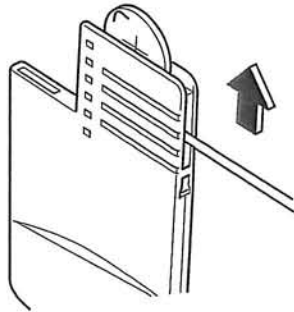
**CAUTION**

Do not turn the cap excessively. The cap may be damaged.

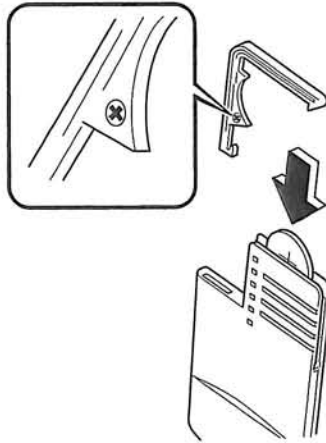
C85401

Advanced Keyless Entry and Start System

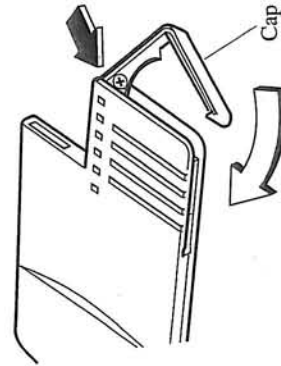
3. Insert a flathead screwdriver into the crack and press the battery out.



4. Insert the new battery (CR2025 or equivalent) with the positive pole (+) facing the (+) mark on the cap.



5. Rotate and close the cap.



6. Reinsert the auxiliary key.

Advanced Keyless Entry and Start System

Operation Using Advanced Keyless Functions

▼ Operational Range

The system operates only when the driver is in the vehicle or within operational range while the advanced key is being carried.

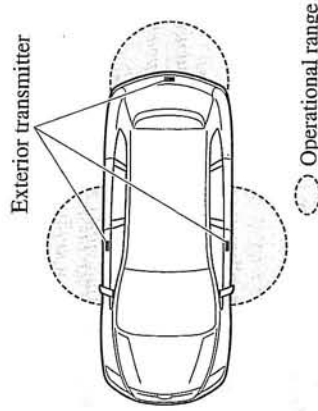
NOTE

When the battery power is low, or in places where there are high-intensity radio waves or noise, the operational range may become narrower or the system may not operate.

Locking, unlocking the doors and the liftgate

The operational range for locking/unlocking the doors is an area of up to 80 cm (2.6 ft) from the center of the front door handles.

The operational range for locking/unlocking the liftgate is an area of up to 80 cm (2.6 ft) from the center of the liftgate.

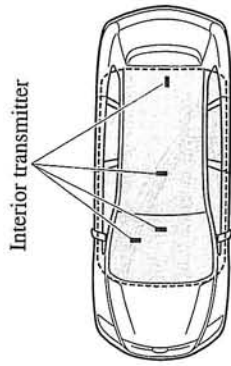


NOTE

The system may not operate if you are too close to the windows, door handles, or liftgate.

Starting the engine

The operational range for starting the engine includes nearly the entire cabin area except for the luggage compartment.



NOTE

- The luggage compartment is out of the operational range, however, starting the engine may be possible.
 - The engine may not start if the advanced key is placed in the following areas:
 - Around the dashboard
 - In the storage compartments such as the glove box
 - Starting the engine may be possible even if the advanced key is outside of the vehicle and extremely close to a door and window, however, always start the engine from the driver's seat.
- If the vehicle is started and the advanced key is not in the vehicle, the vehicle will not restart after it is shut off and the ignition switch is turned to the lock position.*
- If the advanced key is detected within operational range, the operation indicator light located in the instrument cluster flashes momentarily.

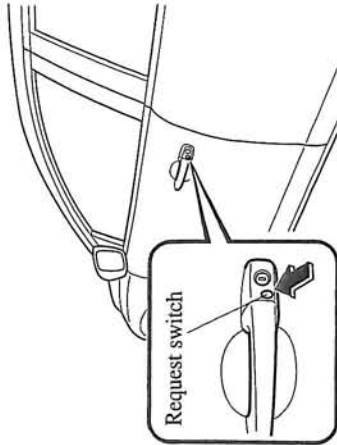
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Advanced Keyless Entry and Start System

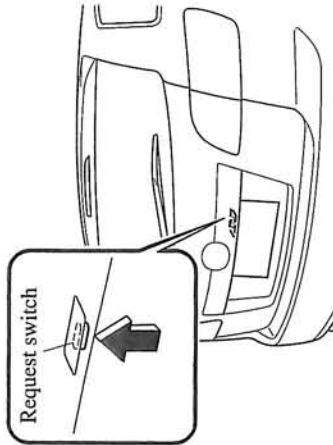
Locking, Unlocking with Request Switch

All doors and the liftgate can be locked/unlocked by pressing the request switch on the front doors or the liftgate while the advanced key is being carried.

Front doors



Liftgate



To lock

To lock the doors and the liftgate, press the request switch. A beep sound will be heard once and the hazard warning lights will flash once.

NOTE

(Without theft-deterrent system)

The hazard warning lights will flash once to indicate that the doors and the liftgate are locked.

(With theft-deterrent system)

- The hazard warning lights will not flash.
- The hazard warning lights only flash when the theft deterrent system is armed or turned off; refer to the theft-deterrent system (page 3-55).

To unlock

Driver's door request switch

To unlock the driver's door, press the request switch. A beep sound will be heard twice and the hazard warning lights will flash twice.

To unlock all doors and the liftgate, press the request switch again within 3 seconds and two more beep sounds will be heard.

NOTE

(Without theft-deterrent system)

The hazard warning lights will flash twice to indicate that the doors and the liftgate are unlocked.

(With theft-deterrent system)

- The hazard warning lights will not flash.
- The hazard warning lights only flash when the theft deterrent system is armed or turned off; refer to the theft-deterrent system (page 3-55).

Front passenger door/liftgate request switch

To unlock the doors and the liftgate, press the request switch. A beep sound will be heard twice and the hazard warning lights will flash twice.

NOTE

The request switch on the driver's door can be used to close the power windows and the moonroof.

Refer to the following pages:

Opening/Closing the Power Windows (page 3-39)

Opening/Closing the Moonroof (page 3-46)

- Confirm that all doors and the liftgate are securely locked.
- All doors and the liftgate cannot be locked when any door or the liftgate is open.
- A beep sound is heard for confirmation when the doors and the liftgate are locked/unlocked using the request switch. If your prefer, the beep sound can be turned off (page 3-19).

- The setting can be changed so that the doors and the liftgate are locked automatically without pressing the request switch (page 3-19).
- A beep sound is heard when all doors and the liftgate are closed while the advanced key is being carried. All doors and the liftgate are locked automatically after about 3 seconds when the advanced key is out of the operational range. Also, the hazard warning lights flash once. (Even if the driver is in the operational range, all doors and the liftgate are locked automatically after about 30 seconds.)

If you are out of the operational range before the doors and the liftgate are completely closed or another advanced key is left in the vehicle, the auto-lock function will not work. Always make sure that all doors and the liftgate are closed and locked before leaving the vehicle.

Advanced Keyless Entry and Start System

• (Auto re-lock function)

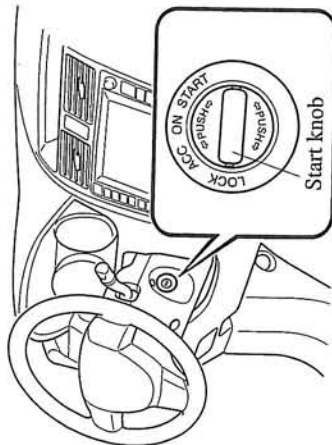
After unlocking doors and the liftgate by pressing the request switch, all doors and the liftgate will automatically lock if any of the following operations are not performed within about 30 seconds. If your vehicle has a theft-deterrent system, the hazard warning lights will flash for confirmation.

- A door or the liftgate is opened.
- The auxiliary key is inserted into the ignition switch.
- The start knob is pushed.

Starting the Engine

Ignition switch positions

Without a traditional key, some of the ignition switch functions are different.



LOCK (Released)

The steering wheel locks to help protect against theft.

LOCK (Depressed)

The ignition switch can be turned to the ACC position when the KEY indicator light (green) illuminates in the instrument cluster.

Advanced Keyless Entry and Start System

WARNING

Before leaving the driver's seat, always put the key or start knob to LOCK position, set the parking brake and make sure the shift lever is in P:

Intentionally placing the key or start knob into LOCK position is much more important where you will not be removing the key to leave the vehicle and because leaving it in other positions will disable some of the vehicle security systems and run the battery down.

Leaving the driver's seat without putting the ignition switch in LOCK position, setting the parking brake and the shift lever is in P is dangerous. Unexpected vehicle movement could occur. This could cause an accident.

NOTE

- If turning the ignition switch is difficult, jiggle the steering wheel from side to side.
- The ignition switch cannot be turned from the ACC position to the LOCK position when the shift lever is not in P.

ACC (Accessory)

The steering wheel unlocks and some electrical accessories will operate.

NOTE

The Advanced Keyless Entry System does not function in the ACC position, and the doors will not lock/unlock using the transmitter or request switches even if the advanced key is carried away from the vehicle.

ON

This is the normal running position after the engine is started. The warning lights (except brakes) should be inspected before the engine is started (page 5-41).

NOTE

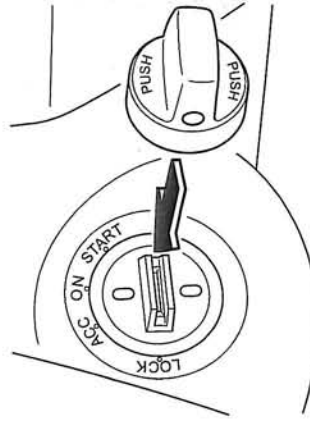
When the ignition switch is turned to the ON position, the sound of the fuel pump motor operating near the fuel tank can be heard. This does not indicate an abnormality.

START

The engine is started in this position. It will crank until you release the start knob; then it returns to the ON position. The brake warning light can be checked after the engine is started (page 5-41).

Starting the engine**NOTE**

- Engine-starting is controlled by the spark ignition system.
- This system meets all Canadian Interference-Causing Equipment Standard requirements regulating the impulse electrical field strength of radio noise.
- The advanced key must be carried because the advanced key carries an immobilizer chip that must communicate with the engine controls at short range.
- When starting the engine, be sure the start knob is securely attached before trying to operate it. If the knob becomes detached from the ignition switch, re-attach it by pushing it on to the ignition switch.



1. Make sure the advanced key is being carried.

2. Occupants should fasten their seat belts.

3. Make sure the parking brake is on.

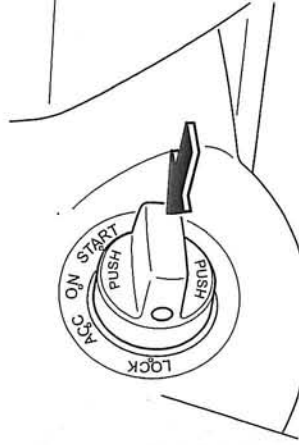
4. Depress the brake pedal.

5. Put the vehicle in park (P). If you must restart the engine while the vehicle is moving, shift into neutral (N).

NOTE

The starter will not operate if the shift lever is not in P or N.

6. Push the start knob slowly all the way in.



7. Verify that the KEY indicator light (green) illuminates in the instrument cluster. The KEY warning light (red) means you cannot continue to start the engine using the Advanced Keyless System. You may have to use the auxiliary key instead (page 3-20).

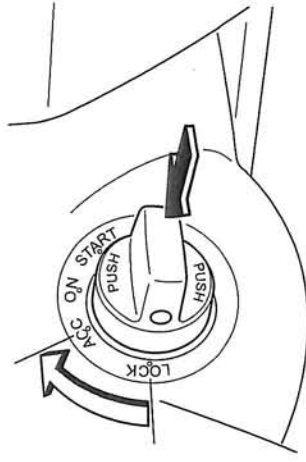
KEY**NOTE**

In the following cases, the KEY warning light (red) illuminates and the engine will not start.

- The advanced key battery is dead.
- The advanced key is out of operational range.

- The advanced key is placed in areas where it is difficult for the system to detect the signal (page 3-7).
- A key from another manufacturer similar to the advanced key is in the operational range.

8. Turn the ignition switch to the ACC position while pushing the start knob in.



9. Turn the ignition switch from the ACC position to the START position and hold (up to 10 seconds at a time) until the engine starts.

CAUTION

Don't try the starter for more than 10 seconds at a time. If the engine stalls or fails to start, wait 10 seconds before trying again. Otherwise, you may damage the starter and drain the battery.

10. After starting the engine, let it idle for about 10 seconds.

Advanced Keyless Entry and Start System

NOTE

- In extremely cold weather, below -18°C (0°F), or after the vehicle has not been driven in several days, let the engine warm up without operating the accelerator.
- Whether the engine is cold or warm, it should be started without use of the accelerator.

Turning off the engine

1. Move the shift lever to the P position.
2. Turn the ignition switch from the ON position to the ACC position.

NOTE

When the engine is turned off and the ignition switch is turned from the ACC position to the LOCK position, the KEY indicator light (green) flashes in the instrument cluster for about 30 seconds if the battery power of the advanced key is low. Replace the battery with a new one.

Refer to *Battery Replacement* (page 3-6).

3. Push in the start knob from the ACC position and turn it to the LOCK position.

CAUTION

When leaving the vehicle, make sure the ignition switch is turned to the LOCK position.

NOTE

- When turning the ignition switch to the LOCK position, the ignition switch has to be pushed in from the ACC position and turned. Without being pushed in, the ignition switch stops at the ACC position and the vehicle battery may be discharged if the ignition switch is left in the ACC position. When leaving the vehicle, make sure the ignition switch is turned to the LOCK position.
 - If the vehicle is left with the ignition switch not in the LOCK position, a beep sound is heard and the indicator light flashes to notify the driver.
- Refer to *Warning Beep* (page 3-16).

Operation Using Advanced Key Functions

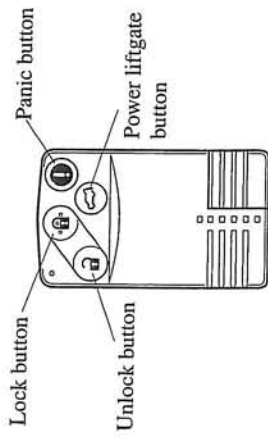
▼ Keyless Entry System

This system uses the more traditional key buttons to remotely lock and unlock the doors and the liftgate, and opens the power windows and the moonroof. It can also help you signal for attention. Press the buttons slowly and carefully.

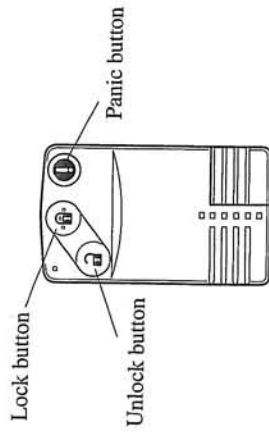
NOTE

- The keyless entry system is designed to operate up to about 2.5 m (8 ft) from the center of the vehicle, but this may vary due to local conditions.
- The system does not operate when the ignition switch is not in the LOCK position or the start knob is pushed in.
- With the start knob installed in the LOCK position, the system is fully operational. If the ignition switch is not in the LOCK position or the start knob is pushed in, the system does not operate.
- All doors and the liftgate cannot be locked by pressing the lock button while any door or the liftgate is open. The hazard warning lights will also not flash.
- If the transmitter does not operate when pressing a button or the operational range becomes too small, the battery may be dead. To install a new battery, refer to *Maintenance* (page 3-5).

Transmitter with power liftgate



without power liftgate



Advanced Key Suspend Function

If one advanced key is left in the vehicle and a second advanced key is used to lock it, the functions of the advanced key left in the vehicle is temporarily suspended to prevent theft of the vehicle.

- The following are inoperable:
- Starting the engine using the start knob.
 - Operating the request switches.
- To restore these functions, perform any one of the following:
- Press the lock or unlock button on the advanced key which has had its functions temporarily suspended.
 - While carrying another advanced key, push in the start knob until the KEY indicator light (green) illuminates.
 - Insert the auxiliary key and turn the ignition switch to the ON position.

Warning and Beep Sounds

- ▼ **System Malfunction Warning Beep**
If any malfunction occurs in the advanced keyless function, the KEY warning light (red) in the instrument cluster illuminates continuously and beep sounds will be heard.

CAUTION

If the KEY warning light (red) remains illuminated, do not continue to drive the vehicle with the advanced keyless function. Park the vehicle in a safe place and use the auxiliary key to continue driving the vehicle. Have the vehicle inspected at an Authorized Mazda Dealer as soon as possible. Refer to Ignition Switch (page 5-2).

- ▼ **Start Knob Not in LOCK Warning Beep**

If the start knob is in the ACC position and the driver's door is opened, a continuous beep sound will be heard to notify the driver that the start knob has not been returned to the LOCK position. In this case, the keyless entry system does not operate, the car cannot be locked, and the battery will run down.

- ▼ **Advanced Key Removed from Vehicle Warning Beep**

Under the following conditions, a beep sound will be heard and the KEY warning light (red) will flash continuously when the start knob has not been returned to the LOCK position to notify the driver that the advanced key has been removed. The KEY warning light (red) will stop flashing when the advanced key is back inside the vehicle:

- The start knob has not been returned to the LOCK position, the driver's door is open, and the advanced key is removed from the vehicle. (A beep sound will be heard 3 times.)
However the beep sound will be heard continuously when the start knob is in the ACC position and the door is open due to the activation of the warning beep sound indicating that the start knob is not in the LOCK position.
- The start knob has not been returned to the LOCK position and all the doors are closed after removing the advanced key from the vehicle. (A beep sound will be heard 6 times.)

NOTE

Because the advanced key utilizes low-intensity radio waves, the Advanced Key Removed From Vehicle Warning may activate if the advanced key is carried together with a metal object or it is placed in a poor signal reception area.

- ▼ **Request Switch Inoperable Warning Beep**

Under the following conditions, if the request switch for a front door or the liftgate is pressed while the advanced key is being carried, a beep will be heard 6 times to indicate that the front doors and the liftgate cannot be locked.

- A door or the liftgate is open (door ajar included).
- The start knob has not been returned to the LOCK position.
- The auxiliary key is inserted into the ignition switch.

- ▼ **Advanced Key Battery Dead Warning**

When the start knob is returned to the ACC or LOCK position from the ON position, the KEY indicator light (green) flashes for approximately 30 seconds indicating that the remaining battery power is low. Replace with a new battery before the advanced key becomes unusable.
Refer to Advanced Key Maintenance (page 3-5).

NOTE

*The advanced key can be set so that the KEY indicator light (green) does not flash even if the battery power is low.
Refer to Setting Change (page 3-19).*

- ▼ **Engine Start Not Permitted Warning**

Under the following conditions, the KEY warning light (red) flashes to inform the driver that the start knob will not rotate to the ACC position even if it is pushed in from the LOCK position.

- The advanced key battery is dead.

Advanced Keyless Entry and Start System

- The advanced key is not within operational range.
- The advanced key is placed in areas where it is difficult for the system to detect the signal (page 3-7).
- A key from another manufacturer similar to the advanced key is in the operational range.

▼ Advanced Key Left-in-vehicle Warning Beep

If an advanced key is left in the vehicle cabin and all the doors and the liftgate are locked using a separate advanced key, a beep sound is heard for about 10 seconds to remind the driver that the advanced key has been left in the vehicle cabin. If this happens, the doors and the liftgate lock but the functions of the advanced key left in the vehicle cabin may be temporarily suspended. Perform the following procedure to restore the functions of the advanced key (page 3-16).

Setting Change (Function Customization)

The following function settings are possible. These settings can only be changed by an Authorized Mazda Dealer.

Setting	Function	At Initial Setting	After Setting Change
Advanced key battery dead indicator	KEY indicator light (green) flashes to indicate that the advanced key battery power is low.	Activated	Deactivated
Lock/unlock operation confirmation beep sound*1	A beep sound is heard to confirm that all doors or the liftgate have been locked/unlocked.	Activated	Deactivated
Autolock function*2	When all doors and the liftgate are closed and the advanced key is being carried and out of operational range, all the doors and the liftgate automatically lock after 3 seconds. (Even if the driver is in the operational range, all doors and the liftgate are locked automatically after about 30 seconds.)	Deactivated	Activated

*1: When the autolock function is operating, the warning sound will be heard regardless of the setting.

*2: When Autolock function is enabled, windows will not automatically close. You must close before leaving vehicle.

Advanced Keyless Entry and Start System

When Warning Indicator/Beep is Activated

Under the following conditions, warning beeps are heard and a warning/indicator light in the instrument cluster illuminates to notify the driver of improper operation of the advanced key to prevent theft of the vehicle (page 3-16).

Warning	How to check
When a door is open, a continuous beep sound will be heard.	Check whether the start knob has been returned to the LOCK position.
When a door is open, 3 beep sounds are heard, and the KEY warning light (red) in the instrument cluster flashes.	Check whether the advanced key has been removed from the vehicle.
When a door is closed, a beep sound is heard 6 times, and the KEY warning light (red) in the instrument cluster flashes.	Check whether the advanced key has been removed from the vehicle.
When locking the doors, the chime sounds for about 10 seconds.	Check whether the advanced key has been left in the vehicle.
When attempting to lock the doors, a beep sound is heard 6 times.	Check whether the advanced key has been left in the vehicle. Check whether the start knob has been returned to the LOCK position. Check whether a door or the liftgate is open.
When the KEY indicator light (green) flashes in the instrument cluster.	The advanced key battery power is low. Replace the battery with a new one. Refer to Advanced Key Maintenance on page 3-5.
When the KEY warning light (red) remains illuminated in the instrument cluster.	The advanced key is malfunctioning. Park the vehicle in a safe place, and use the auxiliary key to continue driving the vehicle. Have the vehicle inspected at an Authorized Mazda Dealer as soon as possible.

Doors and Locks

A code number is stamped on the plate attached to the key set; detach this plate and store it in a safe place (not in the vehicle) for use if you need to make a replacement key.

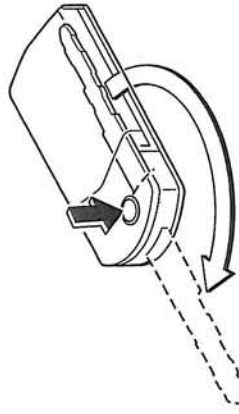
NOTE

Write down the code number and keep it in a separate safe and convenient place, but not in the vehicle.

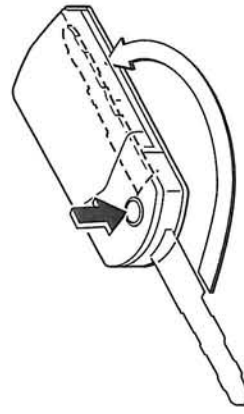
If your key is lost, consult your Authorized Mazda Dealer and have your code number ready.

Key extend/retract method (Retractable type key)

To extend the key, press the release button.



To retract the key, rotate it into the holder while pressing the release button.



Keys

WARNING

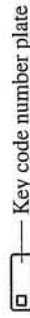
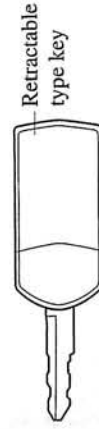
Do not leave the keys in your vehicle with children and keep them in a place where your children will not find or play with them:

Leaving children in a vehicle with the key is dangerous. This could result in someone being badly injured or even killed. These new kinds of keys are fascinating to children. They could play with power windows or other controls, or even make the vehicle move.

NOTE

- Refer to Immobilizer System (page 3-52) for information regarding keys and engine starting.
- (With theft-deterrent system) Refer to Theft-Deterrent System (page 3-55) for information regarding keys and the prevention of vehicle and vehicle contents theft.

The keys operate all locks.



CBS401

Keyless Entry System*

This system remotely locks and unlocks the doors and the liftgate, and opens the power windows and the moonroof. It can also help you signal for attention. Press the buttons slowly and carefully.

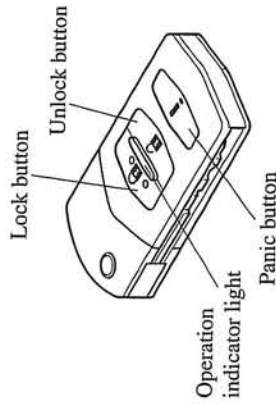
CAUTION

- To avoid damage to the transmitter, do not:
 - Drop the transmitter.
 - Get the transmitter wet.
 - Disassemble the transmitter.
 - Expose the transmitter to any kind of magnetic field.
 - Expose the transmitter to high temperatures on places such as the dashboard or hood, under direct sunlight.

NOTE

- The keyless entry system is designed to operate up to about 2.5 m (8 ft) from the center of the vehicle, but this may vary due to local conditions.
- The system doesn't operate when the key is in the ignition switch.
- Doors and the liftgate cannot be locked by pressing the lock button while any other door or the liftgate is open. Also, the hazard warning lights will not flash.
- If the transmitter does not operate when pressing a button or the operation range becomes too small, the battery may be dead. To install a new battery, refer to Maintenance (page 3-24).
- Additional transmitters can be obtained at an Authorized Mazda Dealer. Up to 3 transmitters can be used with the keyless entry system per vehicle. Bring all transmitters to an Authorized Mazda Dealer when additional transmitters are required.

Transmitter



NOTE

- (U.S.A.) This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- (CANADA) This device complies with RSS-210 of Industry CANADA. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

NOTE

The unlock button can be used to open the power windows and the moonroof, but the lock button cannot be used to close the power windows and the moonroof. Refer to the following pages: Opening/Closing the Power Windows (page 3-39) Opening/Closing the Moonroof (page 3-46)

The operation indicator light flashes when the buttons are pressed.

Lock button

To lock the doors and the liftgate, press the lock button and the hazard warning lights will flash once.

To confirm that all doors and the liftgate have been locked, press the lock button again within 5 seconds. If they are closed and locked, the horn will sound.

NOTE

- (Without theft-deterrent system) The hazard warning lights will flash once to indicate that all doors and the liftgate are locked.
- (With theft-deterrent system)
 - The hazard warning lights will not flash.
 - The hazard warning lights only flash when the theft deterrent system is armed or turned off, refer to the theft-deterrent system (page 3-55).

NOTE

- All doors and the liftgate cannot be locked when any door or the liftgate is open and the key is in the ignition switch.
- Confirm that all doors and the liftgate are locked visually or audibly by use of the double click.

Unlock button

To unlock the driver's door, press the unlock button and the hazard warning lights will flash twice.

To unlock all doors and the liftgate, press the unlock button again within 3 seconds.

NOTE

(Without theft-deterrent system) The hazard warning lights will flash twice to indicate that all doors and the liftgate are unlocked.

- The hazard warning lights will not flash.
- The hazard warning lights only flash when the theft deterrent system is armed or turned off, refer to the theft-deterrent system (page 3-55).

NOTE

Auto re-lock function

After unlocking with the transmitter, all doors and the liftgate will automatically lock if one of the doors or the liftgate is not opened within about 30 seconds.

Panic button

If you witness from a distance someone attempting to break into or damage your vehicle, pressing the panic button will activate the vehicle's alarm.

NOTE

The panic button will work whether any door or the liftgate is open or closed.

Turning on the alarm

Pressing the panic button once will trigger the alarm for about 2 minutes and 30 seconds, and the following will occur:

- The horn sounds intermittently.
- The hazard warning lights flash.

Turning off the alarm

Press any button on the transmitter.

Doors and Locks

▼ Transmitter Maintenance

If the buttons on the transmitter are inoperable and the operation indicator light does not flash, the battery may be dead.

Replace with a new battery before the transmitter becomes unusable.

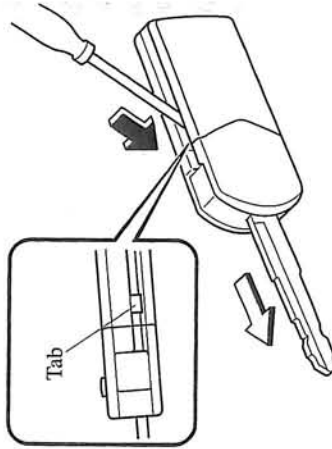
▲ CAUTION

- Install the battery with the positive pole (+) facing down. Battery leakage could occur if it is not installed correctly.
- When replacing the battery, be careful not to bend the electrical terminals or get oil on them. Also be careful not to get dirt in the transmitter as it could be damaged.
- There is the danger of explosion if the battery is not correctly replaced.
- Replace only with the same type battery (CR1620 or equivalent).
- Dispose of used batteries according to the following instructions.
 - Insulate the plus and minus terminals of the battery using cellophane or equivalent tape.
 - Never disassemble.
 - Never throw the battery into fire and/or water.
 - Never deform or crush.

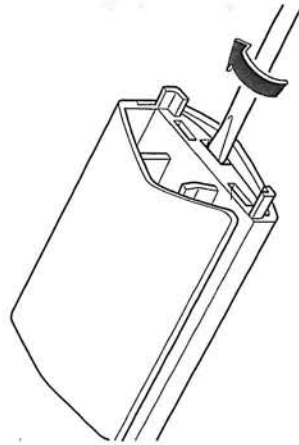
Replacing the transmitter battery

1. Unfold the key (page 3-21).

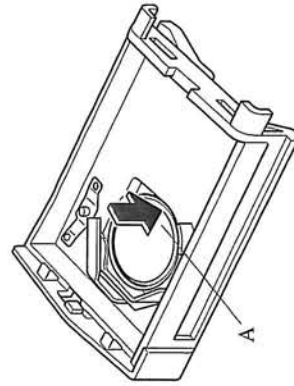
2. Insert a screwdriver into the slot and push the tab to remove the key from the transmitter.



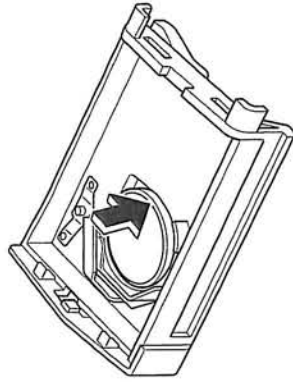
3. Insert a screwdriver into the slot and gently pry open the transmitter.



4. Remove the battery.



5. Put in the new battery (CR1620 or equivalent) with the positive pole (+) facing down.



6. Align the front and back covers and snap the transmitter shut.

7. Install the key to the transmitter.

▼ Service

If you have a problem with the keyless entry system, consult an Authorized Mazda Dealer.

If your transmitter is lost or stolen, bring all remaining transmitters to an Authorized Mazda Dealer as soon as possible for a replacement and to make the lost or stolen transmitter inoperative.

▲ CAUTION

Radio equipment like this is governed by laws in the United States. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Doors and Locks

Door Locks

▲ WARNING

Always take all children and pets with you or leave a responsible person with them:

Leaving a child or a pet unattended in a parked vehicle is dangerous. In hot weather, temperatures inside a vehicle can become high enough to cause brain damage or even death.

Do not leave the keys in your vehicle with children and keep them in a place where your children will not find or play with them:

Leaving children in a vehicle with the key is dangerous. This could result in someone being badly injured or even killed. They could play with power windows or other controls, or even make the vehicle move.

Keep all doors locked when driving:

Unlocked doors in a moving vehicle are dangerous. Passengers can fall out if a door is accidentally opened and can more easily be thrown out in an accident.

Always close all the windows, lock the doors and take the key with you when leaving your vehicle unattended:

Immobilizer System (with Advanced Key)

The immobilizer system allows the engine to start only with an advanced key the system recognizes.

If someone attempts to start the engine with an unrecognized key, the engine will not start, thereby helping to prevent the theft of your vehicle.

CAUTION

- Radio equipment like this is governed by laws in the United States.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

- To avoid damage to the key, do not:

- Drop the key.
- Get the key wet.
- Expose the key to any kind of magnetic field.
- Expose the key to high temperatures on places such as the dashboard or hood, under direct sunlight.

CAUTION

Do not allow the following when starting the engine with the auxiliary key due to an advanced key dead battery or other malfunction. Otherwise the signal from the auxiliary key will not be received correctly and the engine may not start.

- Metal parts of other keys or metal objects touch the key grip.
- Spare auxiliary keys or keys for other vehicles equipped with an immobilizer system touch or come near the auxiliary key.
- Equipment containing electronic components or cards with magnetic strips such as credit cards come near the auxiliary key.

NOTE

- (U.S.A.) This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- (CANADA) This device complies with RSS-210 of Industry CANADA. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Operation

Arming

The system is armed when the ignition switch is turned from the ON position to the ACC or LOCK position. The security indicator light in the instrument cluster flashes every 2 seconds until the system is disarmed.



Disarming

The system is disarmed when the ignition switch is turned to the ON position with the registered advanced key.

The security indicator light illuminates for about 3 seconds and goes out.

If the engine doesn't start with the correct ignition key, and the security indicator light keeps illuminating or flashing, the system may have a malfunction. Consult an Authorized Mazda Dealer.

NOTE

- The engine may not start and the security indicator light may illuminate or flash if the advanced key is placed in an area where it is difficult for the system to detect the signal, such as on the dashboard, or in the glove box. Move the advanced key to another place, turn the ignition switch to the LOCK position, and then restart the engine.
- Signals from a TV or radio station, or from a transceiver or a mobile telephone could interfere with your immobilizer system. If you are using the proper advanced key and the engine fails to start, check the security indicator light. If the indicator light is flashing, turn the ignition switch to the ACC or LOCK position and wait for a while, then restart the engine. If it doesn't start after 3 or more tries, contact an Authorized Mazda Dealer.
- If the security indicator light flashes continuously while you are driving, don't shut off the engine. Go to an Authorized Mazda Dealer and have it checked. If the engine is shut off while the indicator light is flashing, you won't be able to restart it.
- Since the electronic codes are reset when repairing the immobilizer system, the advanced key (including auxiliary key) are needed. Bring all the advanced keys (including auxiliary keys) to an Authorized Mazda Dealer.

▼ Maintenance

If you have a problem with the immobilizer system or the key, consult an Authorized Mazda Dealer.

NOTE

- The advanced keys (including auxiliary key) carry a unique electronic code. For this reason, and to assure your safety, obtaining a replacement advanced key (including auxiliary key) requires some waiting time. They are only available through an Authorized Mazda Dealer.
 - Always keep a spare advanced key in case one is lost. If an advanced key is lost, consult an Authorized Mazda Dealer as soon as possible.
 - If you lose an advanced key (including auxiliary key), an Authorized Mazda Dealer will reset the electronic codes of your remaining advanced keys (including auxiliary keys) and immobilizer system. Bring all the remaining advanced keys (including auxiliary keys) to an Authorized Mazda Dealer to reset.
- Starting the vehicle with a key that has not been reset is not possible.

▼ Modification and Add-On Equipment

Mazda cannot guarantee the immobilizer system's operation if the system has been modified or if any add-on equipment has been installed to it.

CAUTION

To avoid damage to your vehicle, do not modify the system or install any add-on equipment to the immobilizer system or the vehicle.

Immobilizer System (without Advanced Key)

The immobilizer system allows the engine to start only with a key the system recognizes.

If someone attempts to start the engine with an unrecognized key, the engine will not start, thereby helping to prevent the theft of your vehicle.

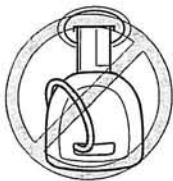
CAUTION

- Radio equipment like this is governed by laws in the United States. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- To avoid damage to the key, do not:
 - Drop the key.
 - Get the key wet.
 - Expose the key to any kind of magnetic field.
 - Expose the key to high temperatures on places such as the dashboard or hood, under direct sunlight.

CAUTION

When starting the engine do not allow the following, as the engine may not start due to the electronic signal from the ignition key not being transmitted correctly.

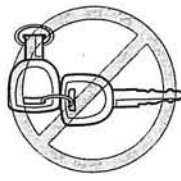
- A key ring rests on the key grip.



- Metal parts of other keys or metal objects touch the key grip.



- Spare keys or keys for other vehicles equipped with an immobilizer system touch or come near the key grip.



- Devices for electronic purchases, or security passage touch or come near the key.

NOTE

- (U.S.A.) This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- (CANADA) This device complies with RSS-210 of Industry CANADA. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

▼ Operation

Arming

The system is armed when the ignition switch is turned from the ON to the ACC position.

The security indicator light in the instrument panel flashes every 2 seconds until the system is disarmed.



Disarming

The system is disarmed when the ignition switch is turned to the ON position with the correct ignition key. The security indicator light illuminates for about 3 seconds and goes out.

If the engine doesn't start with the correct ignition key, and the security indicator light keeps illuminating or flashing, the system may have a malfunction. Consult an Authorized Mazda Dealer.

NOTE

- If the security indicator light comes on and stays on when the ignition switch is turned to the ON position, the engine will not start.
- Signals from a TV or radio station, or from a transceiver or a mobile telephone, could interfere with your immobilizer system. If you are using the proper key and your engine fails to start, check the security indicator light. If it is flashing, remove the ignition key and wait 2 seconds or more, then reinsert it and try starting the engine again. If it doesn't start after 3 or more tries, contact an Authorized Mazda Dealer.
- If the security indicator light flashes continuously while you are driving, don't shut off the engine. Go to an Authorized Mazda Dealer and have it checked. If you shut off the engine while the light is flashing you won't be able to restart it.
- Since the electronic codes are reset when repairing the immobilizer system, the keys are needed. Bring all the existing keys to an Authorized Mazda Dealer.

▼ Maintenance

If you have a problem with the immobilizer system or the key, consult an Authorized Mazda Dealer.

NOTE

- The keys carry a unique electronic code. For this reason, and to assure your safety, obtaining replacement key requires some waiting time. They are only available through an Authorized Mazda Dealer.
 - Always keep a spare key, in case one is lost. If a key is lost, contact an Authorized Mazda Dealer as soon as possible.
 - If you lose a key, an Authorized Mazda Dealer will reset the electronic codes of your remaining keys and immobilizer system. Bring all the remaining keys to an Authorized Mazda Dealer to reset.
- Starting the vehicle with a key that has not been reset is not possible.

▼ Modification and Add-On Equipment

Mazda cannot guarantee the immobilizer system's operation if the system has been modified or if any add-on equipment has been installed to it.

▲ CAUTION

To avoid damage to your vehicle, do not modify the system or install any add-on equipment to the immobilizer system or the vehicle.

Theft-Deterrent System *

The theft-deterrent system is designed to prevent your vehicle or its contents from being stolen when all doors, hood, and liftgate are locked. If forcible entry is attempted, the system sounds the horn and flashes the hazard warning lights.

NOTE

- The theft-deterrent system operates with the advanced keyless function, keyless entry system or the auxiliary key.
- The system operates only when the driver is in the vehicle or within operational range while the advanced key is being carried.
- The system will not function unless it is properly armed. To properly secure the vehicle, always make sure all windows are completely closed and all doors and the liftgate are locked before leaving the vehicle. Remember to take your advanced key.

▼ Operation

What turns it on:

- Forcing open a door, the hood or the liftgate.
- Opening a door or the hood by operating an inside door-lock knob or the hood release handle.

What it does:

- The horn sounds intermittently and the hazard warning lights flash.
 - The alarm continues for about 30 seconds, then stops.
- If the system is triggered again, the lights and horn will activate until a door or the liftgate is unlocked with the key or with the transmitter.

▼ How to Arm the System

1. Remove the key from the ignition switch.
(With advanced key)
Turn the start knob to the LOCK position.
 2. Make sure the hood is closed. Close and lock all doors and the liftgate from the outside using the key. If you have the keyless entry system, press the lock button on the transmitter.
(With advanced key)
Press a request switch or the lock button on the transmitter.
- The hazard warning lights will flash once to indicate that the system is armed.
- (Without advanced key)
The following method will also arm the theft-deterrent system:
Close the hood and the liftgate. Press the area on the door-lock switch marked "A" once. Close all doors.

▼ To Turn off an Armed System

- An armed system can be turned off by any one of the following methods:
- Unlock a door with the key.
 - Press the unlock button on the keyless entry system transmitter.
 - Insert the key into the ignition switch and turn it to the ON position.
 - (With advanced key)
 - Press a request switch or the unlock button on the transmitter.
 - Turn the start knob to the ON position.

The hazard warning lights will flash twice to indicate that the system is turned off.

Security System

▼ To Stop an Alarm

A triggered alarm can be turned off by any one of the following methods:

- Unlock a door or the liftgate with the key.
- Press the unlock button on the keyless entry system transmitter.
- **(With advanced key)**
 - Press a request switch.
 - Press the unlock button on the transmitter.

NOTE

If you have any problem with the theft-deterrent system, consult an Authorized Mazda Dealer.

▼ Theft-Deterrent Labels



A label indicating that your vehicle is equipped with a Theft-Deterrent System is in the glove box.

Mazda recommends that you affix it to the lower rear corner of a front door window.

Steering Wheel and Mirrors

Steering Wheel

▲ WARNING

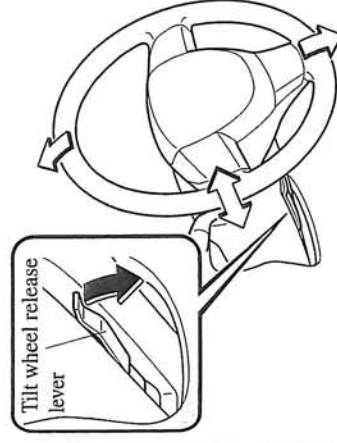
Never adjust the steering wheel while the vehicle is moving:

Adjusting the steering wheel while the vehicle is moving is dangerous. Moving it can very easily cause the driver to abruptly turn to the left or right. This can lead to loss of control or an accident.

▼ Steering Wheel Adjustment

To change the angle or length of the steering wheel:

1. Stop the vehicle, pull down the lock release lever under the steering column.



2. Tilt the steering wheel and/or adjust the steering column length to the desired positions, push the lever up to lock the column.

3. Push the wheel up and down to be certain it's locked before driving.

Mirrors

▼ Outside Mirrors

Check the mirror angles before driving.

Mirror type

Flat type (driver's side)

Flat surface mirror.

Convex type (front passenger side)

The mirror has single curvature on its surface.

▲ WARNING

Be sure to look over your shoulder before changing lanes:

Changing lanes without taking into account the actual distance of the vehicle in the convex mirror is dangerous. You could have a serious accident. What you see in the convex mirror is closer than it appears.

Power mirror

The ignition switch must be in the ACC or ON position.

To adjust:

1. Press the left or right side of the selector switch to choose the left or right side mirror.

Ignition Switch

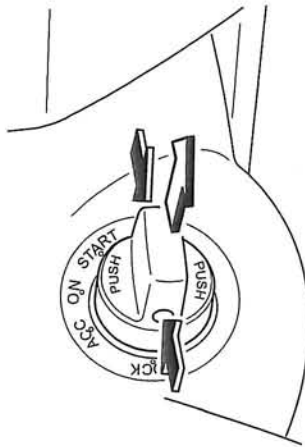
Auxiliary key (with advanced key)

NOTE

When starting the engine using the advanced key, refer to Starting the Engine (page 3-9).

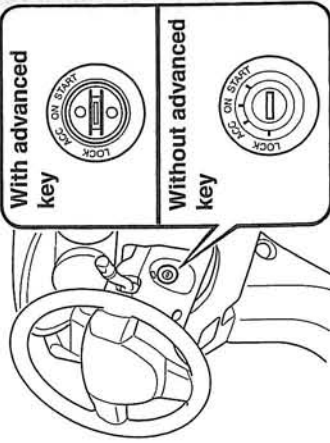
When starting the engine with the auxiliary key, perform the following procedure.

1. Remove the auxiliary key from the advanced key (page 3-15).
2. Make sure the start knob is in LOCK position.
3. Remove the start knob by pulling it outward while pressing the buttons on both the left and right sides.



4. Insert the auxiliary key in the ignition switch.

Ignition Switch Positions



LOCK

The steering wheel locks to protect against theft. Only in this position can the key be removed.

WARNING

Remove the key only when the vehicle is parked.

Removing the key from the ignition switch while the vehicle is moving is dangerous. Removing the key allows the steering wheel to lock. You will lose steering control and a serious accident could occur. (For vehicles equipped with the advanced key, the steering wheel locks when the starter knob is turned to the LOCK position.)

Before leaving the driver's seat, always put the key or start knob to LOCK position, set the parking brake and make sure the shift lever is in P:

Intentionally placing the key or start knob into LOCK position is much more important where you will not be removing the key to leave the vehicle and because leaving it in other positions will disable some of the vehicle security systems and run the battery down.

Leaving the driver's seat without putting the ignition switch in LOCK position, setting the parking brake and the shift lever in P is dangerous. Unexpected vehicle movement could occur. This could cause an accident.

NOTE

If turning the key is difficult, jiggle the steering wheel from side to side.

Leaving the key or start knob in any position but LOCK position also disables some of the security features and may run the battery down.

ACC (Accessory)

The steering wheel unlocks and some electrical accessories will operate.

ON

This is the normal running position after the engine is started. The warning lights (except brakes) should be inspected before the engine is started (page 5-41).

NOTE

When the ignition switch is turned to the ON position, the sound of the fuel pump motor operating near the fuel tank can be heard. This does not indicate an abnormality.

NOTE

Vibration of the brake pedal may be felt when the ignition switch is turned to the ON position, however, this is a normal operation of the DSC/RSC and does not indicate an abnormality.

START

The engine is started in this position. It will crank until you release the key; then it returns to the ON position. The brake warning light can be checked after the engine is started (page 5-41).

Ignition Key Reminder

If the ignition switch is in the LOCK or ACC position with the key inserted, a continuous beep sound will be heard when the driver's door is opened.

Starting and Driving

Starting the Engine

NOTE

Engine-starting is controlled by the spark ignition system. This system meets all Canadian Interference-Causing Equipment Standard requirements regulating the impulse electrical field strength of radio noise.

1. Occupants should fasten their seat belts.
2. Make sure the parking brake is on.
3. Depress the brake pedal.
4. Put the vehicle in park (P). If you must restart the engine while the vehicle is moving, shift into neutral (N).

NOTE

The starter will not operate if the shift lever is not in P or N.

5. Turn the ignition switch to the START position and hold (up to 10 seconds at a time) until the engine starts.

CAUTION

Don't try the starter for more than 10 seconds at a time. If the engine stalls or fails to start, wait 10 seconds before trying again. Otherwise, you may damage the starter and drain the battery.

6. After starting the engine, let it idle for about 10 seconds.

NOTE

- In extremely cold weather, below -18°C (0°F), or after the vehicle has not been driven in several days, let the engine warm up without operating the accelerator.
- Whether the engine is cold or warm, it should be started without use of the accelerator.

Brake System

▼ Foot Brake

Your Mazda has power-assisted brakes that adjust automatically through normal use.

Should power-assist fail, you can stop by applying greater force than normal to the brake pedal. But the distance required to stop will be greater than usual.

▲ WARNING

Do not coast with the engine stalled or turned off. Find a safe place to stop:

Coasting with the engine stalled or turned off is dangerous. Braking will require more effort, and the brake's power-assist could be depleted if you pump the brake. This will cause longer stopping distances or even an accident.

Shift to a lower gear when going down steep hills:

Driving with your foot continuously on the brake pedal or steadily applying the brakes for long distances is dangerous. This causes overheated brakes, resulting in longer stopping distances or even total brake failure. This could cause loss of vehicle control and a serious accident. Avoid continuous application of the brakes.

▲ WARNING

Dry brakes that have become wet by driving very slowly and applying the brakes lightly until brake performance is normal:

Driving with wet brakes is dangerous. Increased stopping distance or the vehicle pulling to one side when braking could result in a serious accident. Light braking will indicate whether the brakes have been affected.

▼ Parking Brake

▲ WARNING

Before leaving the driver's seat, always put the key or start knob to LOCK position, set the parking brake and make sure the shift lever is in P:

Intentionally placing the key or start knob into LOCK position is much more important where you will not be removing the key to leave the vehicle and because leaving it in other positions will disable some of the vehicle security systems and run the battery down.

Leaving the driver's seat without putting the ignition switch in LOCK position, setting the parking brake and the shift lever in P is dangerous. Unexpected vehicle movement could occur. This could cause an accident.

▲ CAUTION

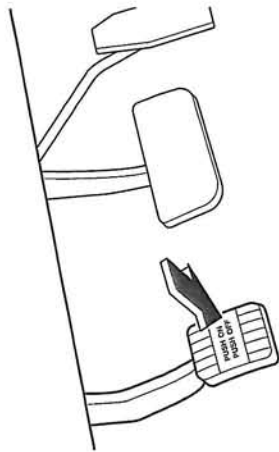
Driving with the parking brake on will cause excessive wear of the brake linings or pads.

NOTE

For parking in snow, refer to Winter Driving (page 4-9) regarding parking brake use.

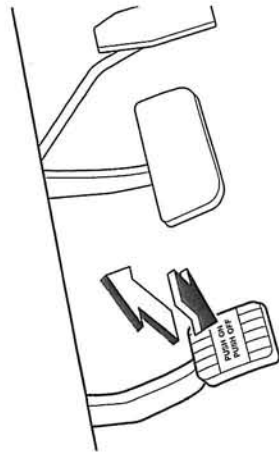
Setting the parking brake

Depress the brake pedal, then depress the parking brake pedal fully.



Releasing the parking brake

Depress the brake pedal, then depress the parking brake pedal until it releases. Gradually let up on the parking brake pedal.



NOTE

Release the parking brake pedal once before trying to reapply it.

▼ **Brake System Warning Light**



BRAKE

This warning has the following functions:

Parking brake warning

The light comes on when the parking brake is applied with the ignition switch in the START or ON position. It goes off when the parking brake is fully released.

Low brake fluid level warning

If the light stays on after the parking brake is fully released, you may have a brake problem.

Drive to the side of the road and park off the right-of-way.

You may notice that the pedal is harder to push or that it may go closer to the floor. In either case, it will take longer to stop the vehicle.

1. With the engine stopped, check the brake fluid level immediately and add fluid as required (page 8-23).
2. After adding fluid, check the light again.

If the warning light remains on, or if the brakes do not operate properly, do not drive the vehicle. Have it towed to an Authorized Mazda Dealer.

Even if the light goes out have your brake system inspected as soon as possible by an Authorized Mazda Dealer.

NOTE

Having to add brake fluid is sometimes an indicator of leakage. Consult an Authorized Mazda Dealer as soon as possible even if the brake light is no longer illuminated.

▲ **WARNING**

Do not drive with the brake system warning light illuminated. Contact an Authorized Mazda Dealer to have the brakes inspected as soon as possible:

Driving with the brake system warning light illuminated is dangerous. It indicates that your brakes may not work at all or that they could completely fail at any time. If this light remains illuminated, after checking that the parking brake is fully released, have the brakes inspected immediately.

▼ **Parking Brake Reminder**

If the parking brake has not been completely released and the vehicle is driven at about 5 km/h (3 mph) or faster, a continuous beep sound will be heard to notify the driver that the parking brake has not been released.

▼ **Anti-Lock Brake System (ABS)**

The ABS control unit continuously monitors the speed of each wheel. If one is about to lock up, the ABS responds by automatically releasing and reapplying that wheel's brake.

The driver will feel a slight vibration in the brake pedal and may hear a chattering noise from the brake system. This is normal when the ABS operates. Don't pump the brakes, continue to press down on the brake pedal.

▲ **WARNING**

Do not rely on ABS or RSC as a substitute for safe driving:

The ABS and RSC cannot compensate for unsafe and reckless driving, excessive speed, tailgating (following another vehicle too closely), driving on ice and snow, and hydroplaning (reduced tire friction and road contact because of water on the road surface). You can still have an accident.

NOTE

- Braking distances may be longer on loose surfaces (snow or gravel, for example) which usually have a hard foundation. A vehicle with a normal braking system may require less distance to stop under these conditions because the tires will build up a wedge of surface layer when the wheels skid.
- The sound of the ABS operating may be heard when starting the engine or immediately after starting the vehicle. However, it does not indicate a malfunction.

▼ **ABS Warning Light**



The warning light stays on for a few seconds when the ignition switch is turned to the ON position.

COS401

If the ABS warning light stays on while you're driving, the ABS control unit has detected a system malfunction. If this occurs, your brakes will function normally as if the vehicle had no ABS. Should this happen, consult an Authorized Mazda Dealer as soon as possible.

NOTE

When the engine is jump-started to charge the battery, uneven rpm occurs and the ABS warning light comes on. This is due to a weak battery, not a malfunction. Recharge the battery.

▼ Electronic Brake Force Distribution System Warning



BRAKE

If the electronic brake force distribution control unit determines that some components are operating incorrectly, the control unit may turn the brake system warning light and the ABS warning light on at the same time. The problem is likely to be the electronic brake force distribution system.

▲ WARNING

Do not drive with both the ABS warning light and brake warning light illuminated. Have the vehicle towed to an Authorized Mazda Dealer to have the brakes inspected as soon as possible:

Driving when the brake system warning light and ABS warning light are illuminated at the same time is dangerous. When both lights are illuminated, the rear wheels could lock more quickly in an emergency stop than under normal circumstances.

▼ Brake Assist

During emergency braking situations when it is necessary to depress the brake pedal with greater force, the brake assist system provides braking assistance, thus enhancing braking performance.

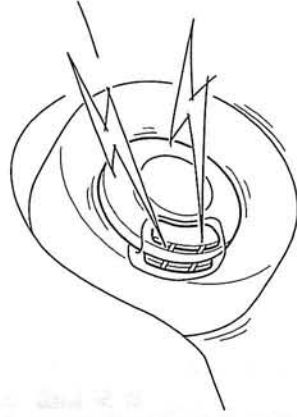
When the brake pedal is depressed hard or depressed more quickly, the brakes apply more firmly.

NOTE

- *When the brake pedal is depressed hard or depressed more quickly, the pedal will feel softer but the brakes will apply more firmly. This is a normal effect of the brake assist operation and does not indicate an abnormality.*
- *The brake assist equipment does not supersede the functionality of the vehicle's main braking system.*

▼ Brake Pad Wear Indicator

When the disc brake pads become worn, the built-in wear indicators contact the disc plates. This causes a screeching noise to warn that the pads should be replaced.

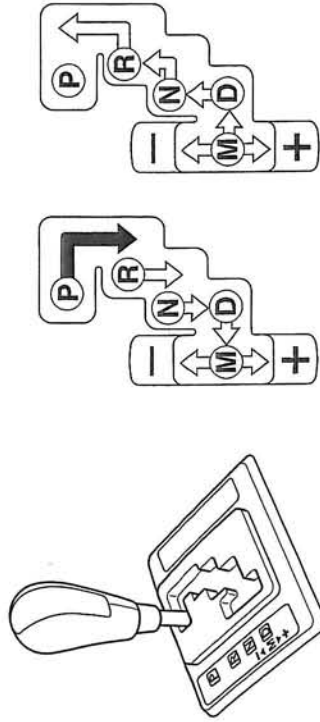


When you hear this noise, consult an Authorized Mazda Dealer as soon as possible.

▲ WARNING

Do not drive with worn disc pads: Driving with worn disc pads is dangerous. The brakes could fail and cause a serious accident. As soon as you hear a screeching noise consult an Authorized Mazda Dealer.

Automatic Transaxle Controls



Various Lockouts:

↑ Indicates that you must depress the brake pedal to shift. (The ignition switch must be in the ACC or ON position).

↑ Indicates the shift lever can be shifted freely into any position.

NOTE

This Sport AT has an option that is not included in traditional automatic transaxle - giving the driver the option of selecting each gear instead of leaving it to the transaxle to shift gears. Even if you intend to use the automatic transaxle functions as a traditional automatic, you should also be aware that you can inadvertently shift into manual shift mode and an inappropriate gear may be retained as you change speeds. If you notice the engine speed going higher or hear the engine racing, confirm you have not accidentally slipped into manual shift mode (page 5-12).

▼ Transaxle Ranges

The shift lever must be in P or N to operate the starter.

P (Park)

P locks the transaxle and prevents the front wheels from rotating.

▲ WARNING

Always set the shift lever to P and set the parking brake:

Only setting the shift lever to the P position without using the parking brake to hold the vehicle is dangerous. If P fails to hold, the vehicle could move and cause an accident.

▲ CAUTION

- Shifting into P, N or R while the vehicle is moving can damage your transaxle.
- Shifting into a driving gear or reverse when the engine is running faster than idle can damage the transaxle.

R (Reverse)

In position R, the vehicle moves only backward. You must be at a complete stop before shifting to or from R, except under rare circumstances as explained in Rocking the Vehicle (page 4-9).

N (Neutral)

In N, the wheels and transaxle are not locked. The vehicle will roll freely even on the slightest incline unless the parking brake or brakes are on.

▲ WARNING

If the engine is running faster than idle, do not shift from N or P into a driving gear:

it's dangerous to shift from N or P into a driving gear when the engine is running faster than idle. If this is done, the vehicle could move suddenly, causing an accident or serious injury.

Do not shift into N when driving the vehicle:

Shifting into N while driving is dangerous. Engine braking cannot be applied when decelerating which could lead to an accident or serious injury.

▲ CAUTION

Do not shift into N when driving the vehicle. Doing so can cause transaxle damage.

NOTE

Apply the parking brake or depress the brake pedal before moving the shift lever from N to prevent the vehicle from moving unexpectedly.

D (Drive)

D is the normal driving position. From a stop, the transaxle will automatically shift through a 6-gear sequence.

M (Manual)

M is the manual shift mode position. Gears can be shifted up or down by operating the shift lever. Refer to Manual Shift Mode (page 5-12).

▼ Active Adaptive Shift (AAS)

Active Adaptive Shift (AAS) automatically controls the transaxle shift points to best suit the road conditions and driver input. This optimizes engine performance and improves driving comfort. When cornering the vehicle, AAS mode will hold the transaxle in the gear the vehicle was in before entering the curve, allowing the vehicle to be accelerated from the same gear after exiting the curve.

If the driver accelerates rapidly, or accelerates and decelerates rapidly by operating the accelerator and brake pedal for a certain period of time while the selector lever is in the D position, AAS mode could activate. When this occurs, AAS mode will maintain the transaxle in the optimum gear and the driver may sense that the transaxle is not shifting, however this does not indicate an abnormality.

▼ Shift-Lock System

The shift-lock system prevents shifting out of P unless the brake pedal is depressed.

To shift from P:

1. Depress and hold the brake pedal.
2. Start the engine.
3. Move the shift lever.

NOTE

- When the ignition switch is in the LOCK position, the shift lever cannot be shifted from P.
- To be sure the vehicle is in park, the ignition key cannot be removed unless the shift lever is in P.
- (With Advanced Key)
The ignition switch cannot be turned from the ACC position to the LOCK position when the shift lever is not in P.

▼ Manual Shift Mode

This mode gives you the feel of driving a manual transaxle vehicle by operating the shift lever and allows you to control engine rpm and torque to the drive wheels much like a manual transaxle when more control is desired.

To change to manual shift mode, shift the lever from D to M.



To return to automatic shift mode, shift the lever from M to D.

NOTE

If you change to manual shift mode when the vehicle is stopped, the gear will shift to M1.

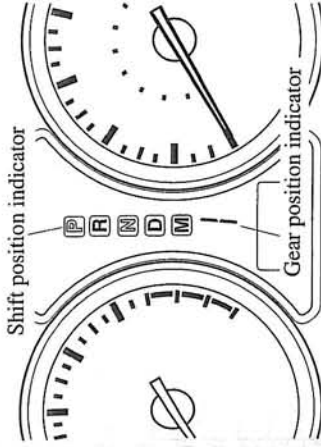
Indicators

Shift position indicator

In manual shift mode, the "M" of the shift position indicator in the instrument panel illuminates.

Gear position indicator

The numeral for the selected gear illuminates.



NOTE

If the gears cannot be shifted down when driving at higher speeds, the gear position indicator will flash twice to signal that the gears cannot be shifted down.

Shifting

Manually Shifting up

(M1 → M2 → M3 → M4 → M5 → M6)

To shift up to a higher gear, tap the shift lever back (+) once.



NOTE

- When driving slowly, the gears may not shift up depending on vehicle speed.
- In manual shift mode, gears do not shift up automatically. Don't run the engine with the tachometer needle in the RED ZONE. If the tachometer needle enters the RED ZONE, you may feel engine-braking because the fuel delivery will be stopped to protect the engine. However, this does not indicate an abnormality.
- When depressing the accelerator fully, the transaxle will shift to a lower gear, depending on vehicle speed.