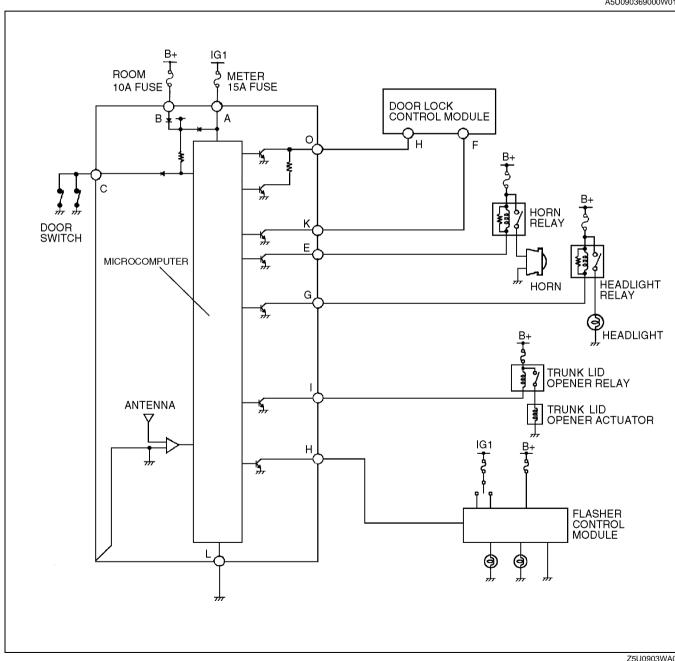
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#### **KEYLESS ENTRY SYSTEM WIRING DIAGRAM**

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09-03A-1

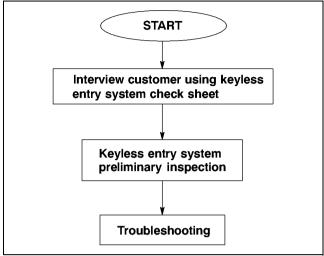
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#### **FOREWORD**

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• Go to troubleshooting after identifying the specific malfunction by performing a keyless entry system preliminary inspection.

#### Flowchart



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## 09-03A

#### **KEYLESS ENTRY SYSTEM CHECK SHEET**

- Use the sheet below as a customer interview sheet when accepting a vehicle for service.
- If the symptom is "Power door lock system does not operate with transmitter at all," find out how the customer uses the keyless entry system by following the check sheet below.

SYMPTOM TROUBLESHOOTING [POWER DOOR LOCK SYSTEM]

	orm the following inspection with customer:  What's the customer's complaint?  Power door lock system does not operate with transmitter (door does not lock/unlock).  Other
Q2.	Is system factory-installed or after-market?  ☐ Factory-installed system  → Go to Q3.
	<ul> <li>☐ After-market system</li> <li>→ Perform troubleshooting according to after-market keyless entry system manual.</li> </ul>
Q3.	Operate transmitter with customer from 2.5 m {8.2 ft} away from center of vehicle. (Make sure the ignition key is either in the LOCK position or removed.)  Does keyless entry system work?  Yes
	<ul> <li>Explain the following to the customer:</li> <li>Keyless entry system does not work when ignition switch is in ON position.</li> <li>Keyless entry system does not work from excessive distances (more than 2.5 m {8.2 ft} away from center of vehicle).</li> </ul>
	→ Go to Q4.
Q4.	Check location where customer uses keyless entry system.  Does a particular area, such as being near TV towers, power plants, power lines, or factories, have an effect on malfunction?  ☐ Yes Place  →Area of operation is bad. Explain effect of outside interference on transmitter to customer.
	□ No → Go to Q5.
Q5.	Make sure there are no after-market electrical parts installed on vehicle.  Are there any of the following present?  • Cellular phone  • Radio-wave equipment  • Remote engine starter  • TV, etc.  □ Yes Parts
Perf	□ No orm the keyless entry system preliminary inspection.

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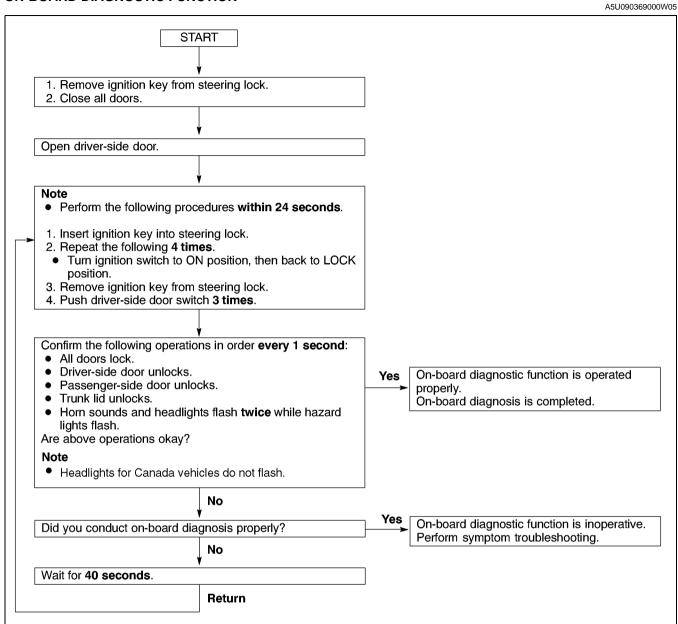
#### **KEYLESS ENTRY SYSTEM PRELIMINARY INSPECTION**

• Perform the following preliminary inspection before troubleshooting.

A5U090369000W04

STEP	INSPECTION		ACTION
1	Is system an after-market one?	Yes	Perform troubleshooting according to after-market keyless entry system manual.
		No	Go to next step.
2	Did customer activate keyless entry system	Yes	Go to next step.
	when ignition switch was in LOCK position?	No	<ul> <li>Explain to customer that system does not work when ignition is in ON position.</li> <li>Turn ignition switch to LOCK position, then go to next step.</li> </ul>
3	<ul> <li>Did customer use keyless entry system in particular area, such as being near TV towers, power plants, power lines, or factories?</li> </ul>	Yes	Attempt to lock/unlock doors with transmitter in non-interference area.  If system operates:  • Area of operation is bad. Explain effect of outside
			interference on transmitter to customer.
			If system does not operate:  • Go to next step.
		No	Go to next step.
4	Are any of the following after-market electrical parts on the vehicle?     — Cellular phone     — Radio-wave equipment     — Remote engine starter     — TV, etc.	Yes	Disconnect after-market electrical part connectors and attempt to lock/unlock doors with transmitter.  If system operates:  After-market electrical parts are interfering with keyless entry system.  If system does not operate:  Go to next step.
		No	Go to next step.
5	Perform on-board diagnostic function.	Yes	Go to next step.
	(See 09–03A–5 ON-BOARD DIAGNOSTIC FUNCTION.)  • Does on-board diagnostic function work?	No	Go to Step 1 of NO. 1 ON-BOARD DIAGNOSTIC FUNCTION INOPERATIVE.
6	Attempt to reprogram transmitter ID code.	Yes	System is normal now.
	Can transmitter ID code be reprogrammed?	No	Go to Step 1 of troubleshooting NO. 2 TRANSMITTER ID CODE CANNOT BE REPROGRAMMED.

#### ON-BOARD DIAGNOSTIC FUNCTION



A5U0903W001

#### TROUBLESHOOTING INDEX

A5U090369000W06

No.	TROUBLESHOOTING ITEM	DESCRIPTION	PAGE
1	One or more on-board diagnostic functions inoperative.	Malfunction in trunk lid lock and opener system, horn system, headlight system (except for Canada), hazard warning light system, door lock linkage system, door lock switch system or driver's door key cylinder switch system.	(See 09–03A–6 NO. 1 ONE OR MORE ON-BOARD DIAGNOSTIC FUNCTIONS INOPERATIVE)
2	All on-board diagnostic functions inoperative.	Malfunction in keyless control module power supply circuit, door switch circuit or keyless control module ground circuit.	(See 09–03A–9 NO. 2 ALL ON-BOARD DIAGNOSTIC FUNCTIONS INOPERATIVE)
3	Transmitter ID code cannot be reprogrammed.	Malfunction in transmitter battery, transmitter, keyless control module bracket, keyless control module bracket ground screw or keyless control module circuit.	(See 09–03A–10 NO. 3 TRANSMITTER ID CODE CANNOT BE REPROGRAMMED)

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#### NO. 1 ONE OR MORE ON-BOARD DIAGNOSTIC FUNCTIONS INOPERATIVE

A5U090369000W07

When performing an asterisked (\*) troubleshooting inspection, shake the wiring harness and connectors while
performing the inspection to discover whether poor contact points are the cause of any intermittent
malfunctions. If there is a problem, check to make sure connectors, terminals and wiring harnesses are
connected correctly and undamaged.

1	One or more on-board diagnostic functions inoperative
DESCRIPTION	<ul> <li>Malfunction in trunk lid lock and opener system, horn system, headlight system (except for Canada), hazard warning light system, door lock linkage system, door lock switch system or driver's door key cylinder switch system.</li> </ul>
POSSIBLE CAUSE	<ul> <li>Malfunction in trunk lid lock and opener system         — Trunk lid opener relay circuit malfunction</li> <li>Keyless control module malfunction</li> <li>Malfunction in horn system         — Horn circuit malfunction</li> <li>— Keyless control module malfunction</li> <li>— Malfunction in wiring harness between keyless control module and horn relay</li> <li>Malfunction in headlight system (except for Canada)</li> <li>— Headlight circuit</li> <li>— Keyless control module malfunction</li> <li>— Malfunction in wiring harness between keyless control module and headlight relay</li> <li>Malfunction in hazard warning light system</li> <li>— Hazard warning light circuit</li> <li>— Keyless control module malfunction</li> <li>— Malfunction in wiring harness between keyless control module and hazard warning lights</li> <li>— Malfunction in wiring harness between keyless control module and flasher control module</li> <li>Malfunction in door lock linkage</li> <li>Malfunction in door lock switch system</li> <li>Malfunction in keyless control module door unlock signal circuit</li> <li>— Keyless control module malfunction</li> <li>— Malfunction in wiring harness between keyless control module and door lock control module</li> <li>Malfunction in keyless control module door lock/unlock signal circuit</li> <li>— Keyless control module malfunction</li> <li>— Malfunction in wiring harness between keyless control module and door lock control module</li> <li>Malfunction in wiring harness between keyless control module and door lock control module</li> <li>Malfunction in wiring harness between keyless control module and door lock control module</li> </ul>

Diagnostic procedure

STEP	INSPECTION		ACTION
1	CHECK HORN, HEADLIGHT AND HAZARD	Yes	Go to Step 11.
	WARNING LIGHT OPERATION DURING ON- BOARD DIAGNOSIS  Did all of the following items work during on-	No	Go to next step.
	board diagnostic function operation?  — Horns sounded intermittently  — Headlights flashed (except for Canada)  — Hazard warning lights flashed		
2	CHECK HORN OPERATION DURING ON- BOARD DIAGNOSIS	Yes	Go to Step 5. (except for Canada) Go to Step 8. (for Canada)
	Did horns sound intermittently during on- board diagnostic function operation?	No	Go to next step.
3	INSPECT HORN CIRCUIT	Yes	Go to next step.
	<ul> <li>Do horns sound when depressing horn switch on vehicle?</li> </ul>	No	Inspect horn circuit.
*4	CHECK TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (LACK OF	Yes	Replace keyless control module and reprogram keyless control module ID code, then go to Step 22.
	CONTINUITY BETWEEN KEYLESS CONTROL MODULE AND HORN RELAY) OR KEYLESS CONTROL MODULE  Turn ignition switch to LOCK position.  Disconnect keyless control module connector and horn relay connector.  Is there continuity between keyless control module connector terminal E and horn relay connector?	No	Repair wiring harness between keyless control module and horn relay, then go to Step 22.
5	CHECK HEADLIGHT OPERATION DURING	Yes	Go to Step 8.
	Did headlights flash during on-board diagnostic function operation?	No	Go to next step.

## 09-03A

# SYMPTOM TROUBLESHOOTING [POWER DOOR LOCK SYSTEM]

STEP	INSPECTION		ACTION
6	INSPECT HEADLIGHT CIRCUIT	Yes	Go to next step.
	<ul> <li>Do headlights illuminate when light switch is on?</li> </ul>	No	Inspect headlight circuit.
*7	CHECK TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (LACK OF	Yes	Replace and reprogram keyless control module ID code, then go to Step 22.
	CONTINUITY BETWEEN KEYLESS CONTROL MODULE AND HEADLIGHT RELAY) OR KEYLESS CONTROL MODULE  Turn ignition switch to LOCK position.  Disconnect keyless control module connector and headlight relay connector.  Is there continuity between keyless control module connector terminal G and headlight relay connector?	No	Repair wiring harness between keyless control module and headlight relay, then go to Step 22.
8	CHECK HAZARD WARNING LIGHT OPERATION DURING ON-BOARD	Yes	Recheck malfunction symptoms, then repeat from Step 1 if malfunction reoccurs.
	DIAGNOSIS     Did hazard warning lights flash during onboard diagnostic function operation?	No	Go to next step.
9	INSPECT HAZARD WARNING LIGHT	Yes	Go to next step.
	<ul><li>CIRCUIT</li><li>Do hazard warning lights flash when hazard warning switch is on?</li></ul>	No	Inspect hazard warning light circuit.
*10	INSPECT WIRING HARNESS BETWEEN KEYLESS CONTROL MODULE AND HAZARD	Yes	Replace keyless control module and reprogram transmitter ID code, then go to Step 22.
	<ul> <li>WARNING LIGHTS FOR CONTINUITY</li> <li>Turn ignition switch to LOCK position.</li> <li>Disconnect keyless control module connector and flasher control module connector.</li> <li>Is there continuity between keyless control module connector terminal H and flasher control module connector?</li> </ul>	No	Repair wiring harness between keyless control module and flasher control module, then go to Step 22.
11	CHECK TRUNK LID OPERATION DURING	Yes	Go to Step 14.
	Does trunk lid unlock during on-board diagnostic function operation?	No	Go to next step.
12	INSPECT TRUNK LID LOCK AND OPENER	Yes	Go to next step.
	SYSTEM     Does trunk lid unlock when operating trunk lid opener lever?	No	Inspect trunk lid lock and opener system.
*13	CHECK TO SEE WHETHER MALFUNCTION IS IN TRUNK LID OPENER RELAY CIRCUIT	Yes	Replace keyless control module and reprogram transmitter ID code, then go to Step 22.
	<ul> <li>OR KEYLESS CONTROL MODULE</li> <li>Disconnect keyless control module connector,</li> <li>Measure voltage at keyless control module connector terminal I.</li> <li>Is voltage approximately 12 V?</li> </ul>	No	Inspect trunk lid opener relay circuit.
14	MAKE SURE THAT ALL DOORS LOCK AND UNLOCK DURING ON-BOARD DIAGNOSIS	Yes	Recheck malfunction symptoms, then repeat from Step 1 if malfunction reoccurs.
	<ul> <li>Did all of the following items work during on- board diagnostic function operation?</li> <li>All doors unlocked and locked</li> <li>Driver-side door unlocked</li> </ul>	No	Go to next step.
15	INSPECT DOOR LOCK LINKAGE	Yes	Go to next step.
	<ul> <li>Operate inner door lock knob and make sure door locks and unlocks manually.</li> <li>Does every door lock system work?</li> </ul>	No	Inspect door lock linkage.
16	MAKE SURE THAT ALL DOORS UNLOCK	Yes	Go to Step 19.
	<ul> <li>DURING ON-BOARD DIAGNOSIS</li> <li>Did all doors unlock during on-board diagnostic function operation?</li> </ul>	No	Go to next step.

STEP	INSPECTION		ACTION
17	CHECK TO SEE WHETHER MALFUNCTION	Yes	Go to next step.
	IS IN DRIVER'S DOOR LOCK SWITCH SYSTEM OR ELSEWHERE  • Do all doors unlock when driver-side door	No	Inspect door lock switch system circuit.
*10	lock switch is unlocked?	.,	
*18	CHECK TO SEE WHETHER MALFUNCTION (LACK OF CONTINUITY OR SHORT TO B+/	Yes	Replace keyless control module and reprogram keyless control module ID code, then go to Step 22.
	GROUND) IS IN KEYLESS CONTROL MODULE OR WIRING HARNESS (BETWEEN KEYLESS CONTROL MODULE AND DOOR LOCK CONTROL MODULE)  Turn ignition switch to LOCK position. Disconnect keyless control module connector. Measure voltage at keyless control module connector terminal K. Is voltage approximately 5 V?	No	Repair wiring harness between keyless control module and door lock control module, then go to Step 22.
19	MAKE SURE THAT ALL DOORS LOCK AND DRIVER'S DOOR UNLOCKS DURING ON-	Yes	Recheck malfunction symptoms, then repeat from Step 1 if malfunction recurs.
	Did all of the following items work during onboard diagnostic function operation?     — All doors locked     — Driver-side door unlocked	No	Go to next step.
20	CHECK TO SEE WHETHER MALFUNCTION	Yes	Go to next step.
	IS IN DRIVER'S DOOR KEY CYLINDER SWITCH SYSTEM OR ELSEWHERE  • Do all of the following items work when inserting ignition key into driver-side door key cylinder and operating ignition key?  — All doors locked  — Driver-side door unlocked	No	Inspect driver-side door key cylinder switch system circuit.
*21	CHECK TO SEE WHETHER MALFUNCTION (LACK OF CONTINUITY OR SHORT TO B+/	Yes	Replace keyless control module and reprogram keyless control module ID code, then go to next step.
	GROUND) IS IN KEYLESS CONTROL MODULE OR WIRING HARNESS (BETWEEN KEYLESS CONTROL MODULE AND DOOR LOCK CONTROL MODULE)  Turn ignition switch to LOCK position. Disconnect keyless control module connector. Measure voltage at keyless control module connector terminal O. Is voltage approximately 5 V?	No	Repair wiring harness between keyless control module and door lock control module, then go to next step.
22	RECHECK MALFUNCTION SYMPTOM AFTER REPAIR	Yes	Troubleshooting completed. Explain repairs to customer.
	<ul> <li>Does keyless entry system operate properly?</li> </ul>	No	Recheck malfunction symptoms, then repeat from Step 1 if malfunction recurs.

#### NO. 2 ALL ON-BOARD DIAGNOSTIC FUNCTIONS INOPERATIVE

A5U090369000W08

When performing an asterisked (\*) troubleshooting inspection, shake the wiring harness and connectors while
doing the inspection to discover whether poor contact points are the cause of any intermittent malfunctions. If
there is a problem, check to make sure connectors, terminals and wiring harnesses are connected correctly
and undamaged.

2	All on-board diagnostic functions inoperative			
DESCRIPTION	Malfunction in keyless control module power supply circuit, door switch circuit or keyless control module ground circuit.			
POSSIBLE CAUSE	<ul> <li>Malfunction in IG1, B+ signal circuit of keyless control module         <ul> <li>Keyless control module power supply fuse malfunction</li> <li>Malfunction in wiring harness between keyless control module power supply fuse(s) and keyless control module itself</li> </ul> </li> <li>Malfunction in keyless control module's door open/closed signal circuit         <ul> <li>Door switch system malfunction</li> <li>Keyless control module malfunction</li> <li>Malfunction in wiring harness between keyless control module and door switch</li> </ul> </li> <li>Malfunction in keyless control module GND signal circuit         <ul> <li>Malfunction in wiring harness between keyless control module and ground</li> </ul> </li> </ul>			

Diagnostic procedure

STEP	INSPECTION		ACTION
1	INSPECT KEYLESS CONTROL MODULE POWER SUPPLY FUSES  • Are keyless control module power supply fuses okay?	Yes No	Go to next step.  Check for a short to ground on blown fuse's circuit. Repair or replace if necessary.  Install appropriate amperage fuse.
2	<ul><li>INSPECT DOOR SWITCH INSTALLATION</li><li>Are door switches installed securely?</li></ul>	Yes No	Go to next step.  Install door switch(es) securely, then go back to Step 5 of keyless entry system preliminary inspection.
*3	CHECK TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (LACK OF CONTINUITY BETWEEN FUSE BLOCK AND KEYLESS CONTROL MODULE) OR ELSEWHERE  • Turn ignition switch to ON position. • Measure voltage at following keyless control module terminals: — IG1 signal (Terminal A) — B+ signal (Terminal B) • Is voltage approximately 12 V?	Yes No	Go to next step.  Repair wiring harness between fuse block and keyless control module, then go to Step 8.
*4	CHECK TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (SHORT TO B+ BETWEEN FUSE BLOCK AND KEYLESS CONTROL MODULE, OR BETWEEN KEYLESS CONTROL MODULE AND GROUND) OR ELSEWHERE  Turn ignition switch to LOCK position. Disconnect keyless control module connector. Measure voltage at following keyless control module connector terminals: — IG1 signal (Terminal A) — Ground signal (Terminal L) Is voltage approximately 12 V?	Yes No	Repair malfunctioning wiring harness, then go to Step 8.  Go to next step.
*5	CHECK TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (LACK OF CONTINUITY BETWEEN KEYLESS CONTROL MODULE AND GROUND) OR ELSEWHERE  Is there continuity between keyless control module connector terminal L and ground?	Yes No	Go to next step.  Repair wiring harness between keyless control module and ground, then go to Step 8.

STEP	INSPECTION		ACTION
6	CHECK FOR CHECK CODE 04 IN	Yes	Go to next step.
	Instrument cluster     Inspect door switch using instrument cluster input/output check mode.     (See 09–22–5 INSTRUMENT CLUSTER INPUT/OUTPUT CHECK MODE)     Does DTC 04 function properly?	No	Repair door switch system using DTC 04 inspection procedure, then go to Step 8.
7	7 INSPECT KEYLESS CONTROL MODULE OR WIRING HARNESS (BETWEEN KEYLESS	Yes	Replace keyless control module and reprogram keyless control module ID code, then go to next step.
	<ul> <li>CONTROL MODULE AND DOOR SWITCHES</li> <li>FOR CONTINUITY)</li> <li>Open the driver-side door.</li> <li>Is there continuity between keyless control module connector terminal C and ground?</li> </ul>	No	Repair wiring harness between keyless control module and door switch(es), then go to next step.
8	8 RECHECK MALFUNCTION SYMPTOM AFTER REPAIR	Yes	Troubleshooting completed. Explain repairs to customer.
	Does keyless entry system operate properly?	No	Recheck malfunction symptoms, then repeat from Step 1 if malfunction recurs.

#### NO. 3 TRANSMITTER ID CODE CANNOT BE REPROGRAMMED

A5U090369000W09

3	Transmitter ID code cannot be reprogrammed		
DESCRIPTION	Malfunction in transmitter battery, transmitter keyless control module bracket, keyless control module bracket ground screw or keyless control module circuit.		
POSSIBLE CAUSE	Malfunction in transmitter battery, transmitter, keyless control module bracket, keyless control module bracket ground screw or keyless control module circuit     Transmitter battery, transmitter, keyless control module bracket, keyless control module bracket ground screw or keyless control module malfunction		

#### Diagnostic procedure

STEP	INSPECTION		ACTION
1	INSPECT TRANSMITTER BATTERY	Yes	Go to next step.
	Visually inspect transmitter battery.     Are below items okay?     Transmitter battery installation (correct polarity)     Battery type (CR2025)	No	Set transmitter battery properly or replace with specified transmitter battery (CR2025), then go to Step 8.
2	INSPECT TRANSMITTER BATTERY TERMINALS FOR RUST AND POOR		Replace transmitter battery or repair transmitter battery terminal, then go to Step 8.
	Visually inspect transmitter.     Is there rust on transmitter battery terminals (positive or negative pole)?     Is there poor connection between terminals and battery?	No	Go to next step.
3	<ul><li>INSPECT TRANSMITTER BATTERY</li><li>Inspect transmitter battery.</li><li>Is battery voltage normal?</li></ul>	Yes	Go to next step.
		No	Replace transmitter battery, then go to Step 8.
4	INSPECT KEYLESS CONTROL MODULE		Go to next step.
	<ul> <li>Is keyless control module bracket installed securely?</li> </ul>	No	Install bracket securely, then go back to Step 6 of keyless entry system preliminary inspection.
5	INSPECT GROUND SCREW INSTALLATION		Go to next step.
	BETWEEN KEYLESS CONTROL MODULE AND KEYLESS CONTROL MODULE BRACKET  • Are keyless control module and keyless control module bracket connected securely to ground screw?	No	Install screw securely, then go back to Step 6 of keyless entry system preliminary inspection.

STEP	INSPECTION		ACTION
6	CHECK TO SEE WHETHER MALFUNCTION IS IN TRANSMITTER BATTERY OR ELSEWHERE  Replace with a known good transmitter battery.  Does keyless entry system operate properly?	Yes	Replace transmitter battery, then go to Step 8.
		No	Go to next step.
7	CHECK TO SEE WHETHER MALFUNCTION IS IN TRANSMITTER OR KEYLESS CONTROL MODULE  Reprogram keyless control module ID code by using another known good transmitter.  Does keyless entry system operate okay?	Yes	Replace transmitter and reprogram transmitter ID code, then go to next step.
		No	Replace keyless control module and reprogram keyless control module ID code, then go to next step.
8	RECHECK MALFUNCTION SYMPTOM AFTER REPAIR  Does keyless entry system operate properly?	Yes	Troubleshooting completed. Explain repairs to customer.
		No	Recheck malfunction symptoms, then repeat from Step 1 if malfunction recurs.

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