

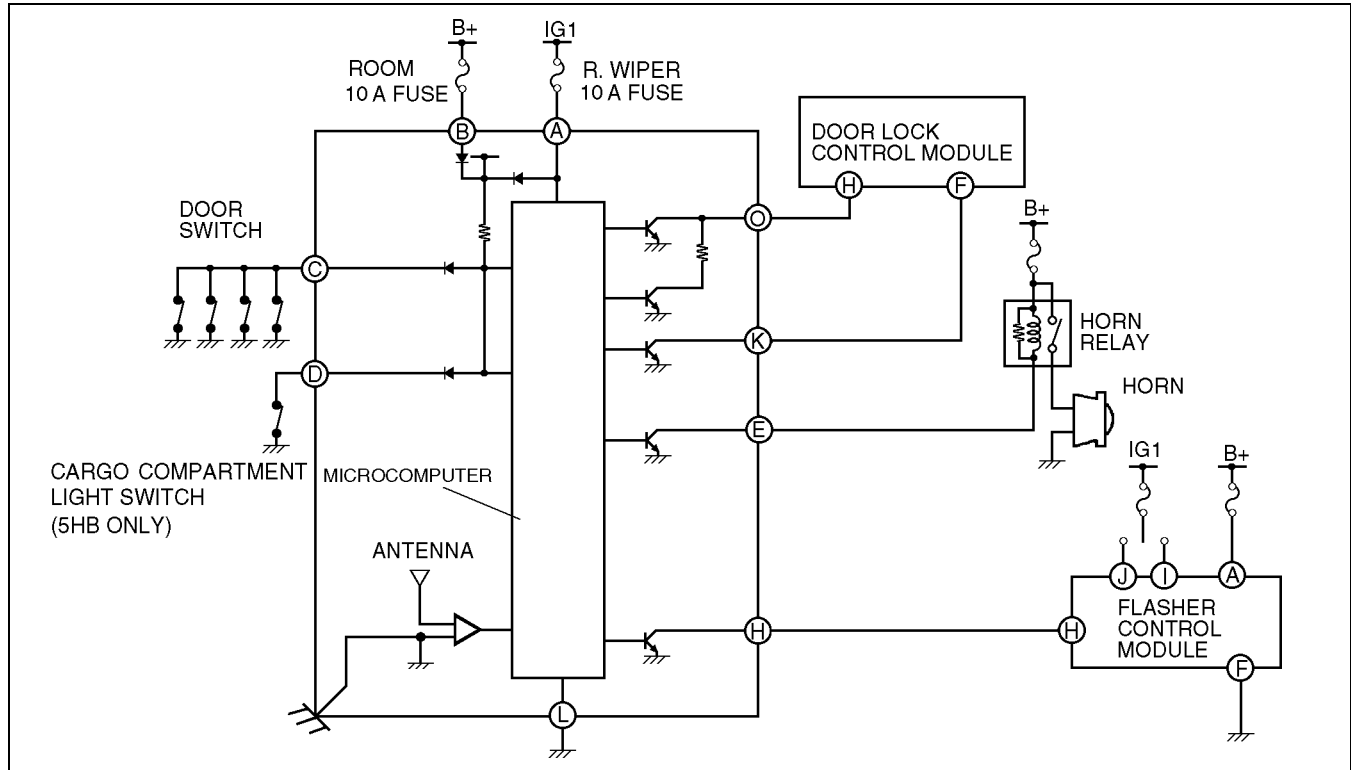
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KEYLESS ENTRY SYSTEM WIRING DIAGRAM

A3U09036900W01

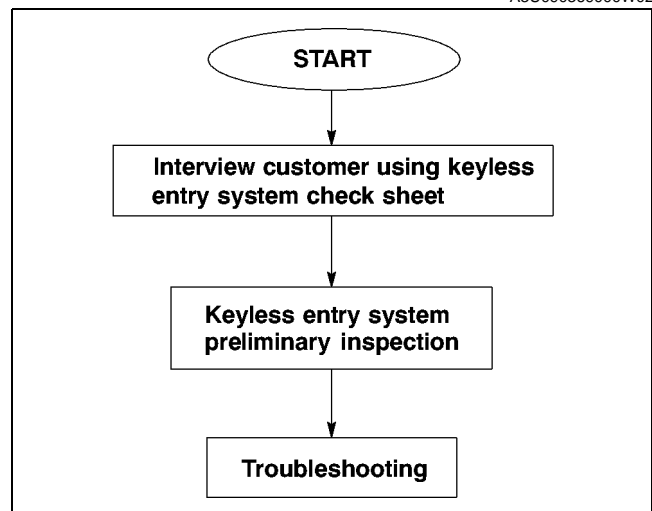


A3U0903W01

FOREWORD

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

A3U09036900W02



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SYMPTOM TROUBLESHOOTING

KEYLESS ENTRY SYSTEM CHECK SHEET

A3U090369000W03

Note

- 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.

Perform the following inspection with customer:

Q1. 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.
- After-market system
→ Perform troubleshooting according to after-market keyless entry system manual.

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
→ Explain the following to the customer:
 - Keyless entry system does not work when ignition switch is in the ON position.
 - Keyless entry system does not work from excessive distances (**more than 2.5 m {8.2 ft}** away from center of vehicle).
- No
→ 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 _____
- No

Perform the keyless entry system preinspection.

Z3U0903W003

SYMPTOM TROUBLESHOOTING

KEYLESS ENTRY SYSTEM PREINSPECTION

A3U090369000W04

1. Perform the following pre-inspection before troubleshooting.

STEP	INSPECTION	ACTION	
1	<ul style="list-style-type: none"> Is the system an after-market one? 	Yes	Perform troubleshooting according to after-market keyless entry system manual.
		No	Go to next step.
2	<ul style="list-style-type: none"> Did customer activate keyless entry system when ignition switch was in LOCK position? 	Yes	Go to next step.
		No	Explain to customer that system does not work when ignition switch is in ON position. Turn ignition switch to LOCK position, then go to next step.
3	<ul style="list-style-type: none"> Did customer use keyless entry system in particular area, such as being near TV towers, power plants, power lines or factories? 	Yes	Attempt to lock/unlock doors with transmitter in non-interference area. <ul style="list-style-type: none"> If system operates: <ul style="list-style-type: none"> Area of operation is bad. Explain effect of outside interference on transmitter to customer. If system does not operate: <ul style="list-style-type: none"> Go to next step.
		No	Go to next step.
4	<ul style="list-style-type: none"> Are any of the following after-market electrical parts on the vehicle? <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> If system operates: <ul style="list-style-type: none"> After-market electrical parts are interfering with keyless entry system. If system does not operate: <ul style="list-style-type: none"> Go to next step.
		No	Go to next step.
5	<ul style="list-style-type: none"> Perform on-board diagnostic function. (See 09-02A-2 ON-BOARD DIAGNOSTIC FUNCTION [KEYLESS ENTRY SYSTEM]) Does on-board diagnostic function work? 	Yes	Go to next step.
		No	Go to Step 7.
6	<ul style="list-style-type: none"> Attempt to reprogram keyless control module ID code. Can keyless control module ID code be reprogrammed? 	Yes	System is normal now.
		No	Go to Step 1 of troubleshooting No.3.
7	<ul style="list-style-type: none"> Did any on-board diagnostic functions work? 	Yes	Go to Step 1 of troubleshooting No.1.
		No	Go to Step 1 of troubleshooting No.2.

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TROUBLESHOOTING INDEX

A3U090369000W05

No.	TROUBLESHOOTING ITEM	DESCRIPTION	PAGE
1	One or more on-board diagnostic functions inoperative.	<ul style="list-style-type: none"> Malfunction in horn system, hazard warning light system, door lock linkage system, door lock switch system or driver's door key cylinder switch system. 	(See 09-03-4 NO.1 ONE OR MORE ON-BOARD DIAGNOSTIC FUNCTIONS INOPERATIVE)
2	All on-board diagnostic functions inoperative.	<ul style="list-style-type: none"> Malfunction in keyless control module power supply circuit, door switch circuit, cargo compartment light switch circuit (5HB) or keyless control module ground circuit. 	(See 09-03-6 NO.2 ALL ON-BOARD DIAGNOSTIC FUNCTIONS INOPERATIVE)
3	Transmitter ID code cannot be reprogrammed.	<ul style="list-style-type: none"> Malfunction in transmitter battery, transmitter, keyless control module bracket, keyless control module bracket ground screw or keyless control module circuit. 	(See 09-03-7 NO.3 TRANSMITTER ID CODE CANNOT BE REPROGRAMMED)

SYMPTOM TROUBLESHOOTING

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

A3U090369000W06

- 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, make sure connectors, terminals and wiring harnesses are connected correctly and undamaged.

1	One or more on-board diagnostic functions inoperative
DESCRIPTION	<ul style="list-style-type: none"> Malfunction in horn system, hazard light system, door lock linkage system, door lock switch system or driver's door key cylinder switch system.
POSSIBLE CAUSE	<ul style="list-style-type: none"> Malfunction in horn system <ul style="list-style-type: none"> Horn circuit malfunction Keyless control module malfunction Malfunction in wiring harness between keyless control module and horn relay Malfunction in hazard light system <ul style="list-style-type: none"> Hazard light circuit Keyless control module malfunction Malfunction in wiring harness between keyless control module and flasher control module Malfunction in door lock linkage Malfunction in door lock switch system Malfunction in keyless control module door unlock signal circuit <ul style="list-style-type: none"> Keyless control module malfunction Malfunction in wiring harness between keyless control module and door lock control module Malfunction in driver-side door key cylinder switch system Malfunction in keyless control module door lock/unlock signal circuit <ul style="list-style-type: none"> Keyless control module malfunction Malfunction in wiring harness between keyless control module and door lock control module

Diagnostic procedure

STEP	INSPECTION	ACTION	
1	CHECK HORN, AND HAZARD WARNING LIGHT OPERATION DURING ON-BOARD DIAGNOSIS <ul style="list-style-type: none"> Did all of the following items work during on-board diagnostic function operation? <ul style="list-style-type: none"> Horns sounded intermittently Hazard warning lights flashed 	Yes	Go to Step 8.
		No	Go to next step.
2	CHECK HORN OPERATION DURING ON-BOARD DIAGNOSIS <ul style="list-style-type: none"> Did horns sound intermittently during on-board diagnostic function operation? 	Yes	Go to Step 5.
		No	Go to next step.
3	INSPECT HORN CIRCUIT <ul style="list-style-type: none"> Do horns sound when depressing horn switch on vehicle? 	Yes	Go to next step.
		No	Inspect horn circuit.
*4	CHECK TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (BETWEEN KEYLESS CONTROL MODULE AND HORN RELAY) OR KEYLESS CONTROL MODULE <ul style="list-style-type: none"> Measure voltage at keyless control module connector terminal E during on-board diagnostic function operation. <ul style="list-style-type: none"> B+ → below 1.0 V → B+ → below 1.0 V → B+ Is voltage as above? 	Yes	Recheck malfunction symptoms, then repeat from Step 1 if malfunction recurs.
		No	Inspect wiring harness between keyless control module and horn relay. <ul style="list-style-type: none"> If wiring harness is OK, replace keyless control module and reprogram transmitter ID code, then go to Step 16. If wiring harness malfunctions, repair wiring harness, then go to Step 16.
5	CHECK HAZARD WARNING LIGHT OPERATION DURING ON-BOARD DIAGNOSIS <ul style="list-style-type: none"> Did hazard warning lights flash during on-board diagnostic function operation? 	Yes	Recheck malfunction symptoms, then repeat from Step 1 if malfunction recurs.
		No	Go to next step.
6	INSPECT HAZARD WARNING LIGHT CIRCUIT <ul style="list-style-type: none"> Do hazard warning lights flash when hazard warning switch is on? 	Yes	Go to next step.
		No	Inspect hazard light circuit.
*7	CHECK TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (BETWEEN KEYLESS CONTROL MODULE AND FLASHER CONTROL MODULE) OR KEYLESS CONTROL MODULE <ul style="list-style-type: none"> Measure voltage at keyless control module connector terminal H during on-board diagnostic function operation. <ul style="list-style-type: none"> Alternates between B+ and below 1.0 V Is voltage as above? 	Yes	Recheck malfunction symptoms, then repeat from Step 1 if malfunction recurs.
		No	Inspect wiring harness between keyless control module and flasher control module. <ul style="list-style-type: none"> If wiring harness is OK, replace keyless control module and reprogram transmitter ID code, then go to Step 16. If wiring harness malfunctions, repair wiring harness, then go to Step 16.

SYMPTOM TROUBLESHOOTING

STEP	INSPECTION	ACTION	
8	MAKE SURE THAT ALL DOORS LOCK AND UNLOCK DURING ON-BOARD DIAGNOSIS <ul style="list-style-type: none"> • Did all of the following items work during on-board diagnostic function operation? <ul style="list-style-type: none"> — All doors unlocked and locked — Driver-side door unlocked 	Yes	Recheck malfunction symptoms, then repeat from Step 1 if malfunction recurs.
		No	Go to next step.
9	INSPECT DOOR LOCK LINKAGE <ul style="list-style-type: none"> • Operate inner door lock knob and make sure door locks and unlocks manually. • Does every door lock system work? 	Yes	Go to next step.
		No	Inspect door lock linkage.
10	MAKE SURE THAT ALL DOORS UNLOCK DURING ON-BOARD DIAGNOSIS <ul style="list-style-type: none"> • Did all doors unlock during on-board diagnostic function operation? 	Yes	Go to Step 13.
		No	Go to next step.
11	CHECK TO SEE WHETHER MALFUNCTION IS IN DRIVER'S DOOR LOCK SWITCH SYSTEM OR ELSEWHERE <ul style="list-style-type: none"> • Do all doors unlock when door lock switch UNLOCK button is pressed? 	Yes	Go to next step.
		No	Inspect power door lock system.
*12	CHECK TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (BETWEEN KEYLESS CONTROL MODULE AND DOOR LOCK CONTROL MODULE) OR KEYLESS CONTROL MODULE <ul style="list-style-type: none"> • Measure voltage at keyless control module connector terminal K during on-board diagnostic function operation. <ul style="list-style-type: none"> — All doors unlocked: 5 V→below 1.0 V→5 V • Is voltage as above? 	Yes	Recheck malfunction symptoms, then repeat from Step 1 if malfunction recurs.
		No	Inspect wiring harness between keyless control module and door lock control module. <ul style="list-style-type: none"> • If wiring harness is OK, replace keyless control module and reprogram transmitter ID code, then go to Step 16. • If wiring harness malfunctions, repair wiring harness, then go to Step 16.
13	MAKE SURE THAT ALL DOORS LOCK AND DRIVER'S DOOR UNLOCKS DURING ON-BOARD DIAGNOSIS <ul style="list-style-type: none"> • Did all of the following items work during on-board diagnostic function operation? <ul style="list-style-type: none"> — All doors locked — Driver-side door unlocked 	Yes	Recheck malfunction symptoms, then repeat from Step 1 if malfunction recurs.
		No	Go to next step.
14	CHECK TO SEE WHETHER MALFUNCTION IS IN DRIVER'S DOOR KEY CYLINDER SWITCH SYSTEM OR ELSEWHERE <ul style="list-style-type: none"> • Do all of the following items work when inserting ignition key into driver-side door key cylinder and operating ignition key? <ul style="list-style-type: none"> — All doors locked — Driver-side door unlocked 	Yes	Go to next step.
		No	Inspect power door lock system.
*15	CHECK TO SEE WHETHER MALFUNCTION IS IN WIRING HARNESS (BETWEEN KEYLESS CONTROL MODULE AND DOOR LOCK CONTROL MODULE) OR KEYLESS CONTROL MODULE <ul style="list-style-type: none"> • Measure voltage at keyless control module connector terminal O during on-board diagnostic function operation. <ul style="list-style-type: none"> — All doors locked: 5 V→2.5 V→5 V — Driver-side door unlocked: 5 V→below 1.0 V→5 V • Is voltage as above? 	Yes	Recheck malfunction symptoms, then repeat from Step 1 if malfunction recurs.
		No	Inspect wiring harness between keyless control module and door lock control module. <ul style="list-style-type: none"> • If wiring harness is OK, replace keyless control module and reprogram transmitter ID code, then go to next step. • If wiring harness malfunction, repair wiring harness, then go to next step.
16	RECHECK MALFUNCTION SYMPTOM AFTER REPAIR <ul style="list-style-type: none"> • 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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SYMPTOM TROUBLESHOOTING

NO.2 ALL ON-BOARD DIAGNOSTIC FUNCTIONS INOPERATIVE

A3U090369000W07

- 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, make sure connectors, terminals and wiring harnesses are connected correctly and undamaged.

2	All on-board diagnostic functions inoperative
DESCRIPTION	<ul style="list-style-type: none"> Malfunction in keyless control module power supply circuit, door switch circuit, cargo compartment light switch circuit (5HB) or keyless control module ground circuit.
POSSIBLE CAUSE	<ul style="list-style-type: none"> Malfunction in IG1, B+ signal circuit of keyless control module <ul style="list-style-type: none"> Keyless control module power supply fuse malfunction Malfunction in wiring harness between keyless control module power supply fuse(s) and keyless control module itself Malfunction in keyless control module door open/closed signal circuit <ul style="list-style-type: none"> Door switch system malfunction Keyless control module malfunction Malfunction in wiring harness between keyless control module and door switch Malfunction in keyless control module's liftgate open/closed signal circuit (5HB) <ul style="list-style-type: none"> Cargo compartment light switch system malfunction Keyless control module malfunction Malfunction in wiring harness between keyless control module and cargo compartment light switch Malfunction in keyless control module GND signal circuit <ul style="list-style-type: none"> Malfunction in wiring harness between keyless control module and ground

Diagnostic procedure

STEP	INSPECTION		ACTION
1	INSPECT KEYLESS CONTROL MODULE POWER SUPPLY FUSES <ul style="list-style-type: none"> Are keyless control module power supply fuses okay? 	Yes	Go to next step.
		No	Check for a short to ground on blown fuse circuit. Repair or replace as necessary. Install appropriate amperage fuse.
2	INSPECT DOOR SWITCH INSTALLATION <ul style="list-style-type: none"> Are door switches installed securely? 	Yes	Go to next step.
		No	Install door switches 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 <ul style="list-style-type: none"> Turn ignition switch to ON position. Measure voltage at following keyless control module terminals: <ul style="list-style-type: none"> IG1 signal (Terminal A) B+ signal (Terminal B) Is voltage approximately 12 V? 	Yes	Go to next step.
		No	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 <ul style="list-style-type: none"> Turn ignition switch to LOCK position. Disconnect keyless control module connector. Measure voltage at following keyless control module connector terminal: <ul style="list-style-type: none"> IG1 signal (Terminal A) Is voltage approximately 12 V? 	Yes	Repair malfunctioning wiring harness, then go to Step 8.
		No	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 <ul style="list-style-type: none"> Is there continuity between keyless control module connector terminal L and ground? 	Yes	Go to next step.
		No	Repair wiring harness between keyless control module and ground, then go to Step 8.
6	CHECK FOR CHECK CODE 04 IN INSTRUMENT CLUSTER <ul style="list-style-type: none"> 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? 	Yes	Go to next step.
		No	Repair door switch system using DTC 04 inspection procedure, then go to Step 8.

SYMPTOM TROUBLESHOOTING

STEP	INSPECTION		ACTION
7	INSPECT KEYLESS CONTROL MODULE OR WIRING HARNESS (BETWEEN KEYLESS CONTROL MODULE AND DOOR SWITCHES, CARGO COMPARTMENT LIGHT SWITCH FOR CONTINUITY) <ul style="list-style-type: none"> Open the driver-side door. Open the liftgate. Is there continuity between keyless control module connector terminal C, D and ground? 	Yes	Replace keyless control module and reprogram keyless control module ID code, then go to next step.
		No	Repair wiring harness between keyless control module and door switches, cargo compartment light switch then go to next step.
8	RECHECK MALFUNCTION SYMPTOM AFTER REPAIR <ul style="list-style-type: none"> 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.

NO.3 TRANSMITTER ID CODE CANNOT BE REPROGRAMMED

A3U090369000W08

3	Transmitter ID code cannot be reprogrammed
DESCRIPTION	<ul style="list-style-type: none"> Malfunction in transmitter battery, transmitter keyless control module bracket, keyless control module bracket ground screw or keyless control module circuit.
POSSIBLE CAUSE	<ul style="list-style-type: none"> Malfunction in transmitter battery, transmitter, keyless control module bracket, keyless control module bracket ground screw or keyless control module circuit <ul style="list-style-type: none"> — 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 INSTALLATION AND TYPE <ul style="list-style-type: none"> Visually inspect transmitter battery. Are below items okay? <ul style="list-style-type: none"> — Transmitter battery installation (correct polarity) — Battery type (CR2025) 	Yes	Go to next step.
		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 CONNECTION <ul style="list-style-type: none"> Visually inspect transmitter. <ul style="list-style-type: none"> — Is there rust on transmitter battery terminals (positive or negative pole)? — Is there poor connection between terminals and battery? 	Yes	Replace transmitter battery or repair transmitter battery terminal, then go to Step 8.
		No	Go to next step.
3	INSPECT TRANSMITTER BATTERY <ul style="list-style-type: none"> Inspect transmitter battery. Is battery voltage normal? 	Yes	Go to next step.
		No	Replace transmitter battery, then go to Step 8.
4	INSPECT KEYLESS CONTROL MODULE BRACKET INSTALLATION <ul style="list-style-type: none"> Is keyless control module bracket installed securely? 	Yes	Go to next step.
		No	Install bracket securely, then go back to Step 6 of keyless entry system preliminary inspection.
5	INSPECT GROUND SCREW INSTALLATION BETWEEN KEYLESS CONTROL MODULE AND KEYLESS CONTROL MODULE BRACKET <ul style="list-style-type: none"> Are keyless control module and keyless control module bracket connected securely to ground screw? 	Yes	Go to next step.
		No	Install screw securely, then go back to Step 6 of keyless entry system preliminary inspection.
6	CHECK TO SEE WHETHER MALFUNCTION IS IN TRANSMITTER BATTERY OR ELSEWHERE <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> Reprogram keyless control module ID code using another known good transmitter. Does keyless entry system operate properly? 	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 <ul style="list-style-type: none"> 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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