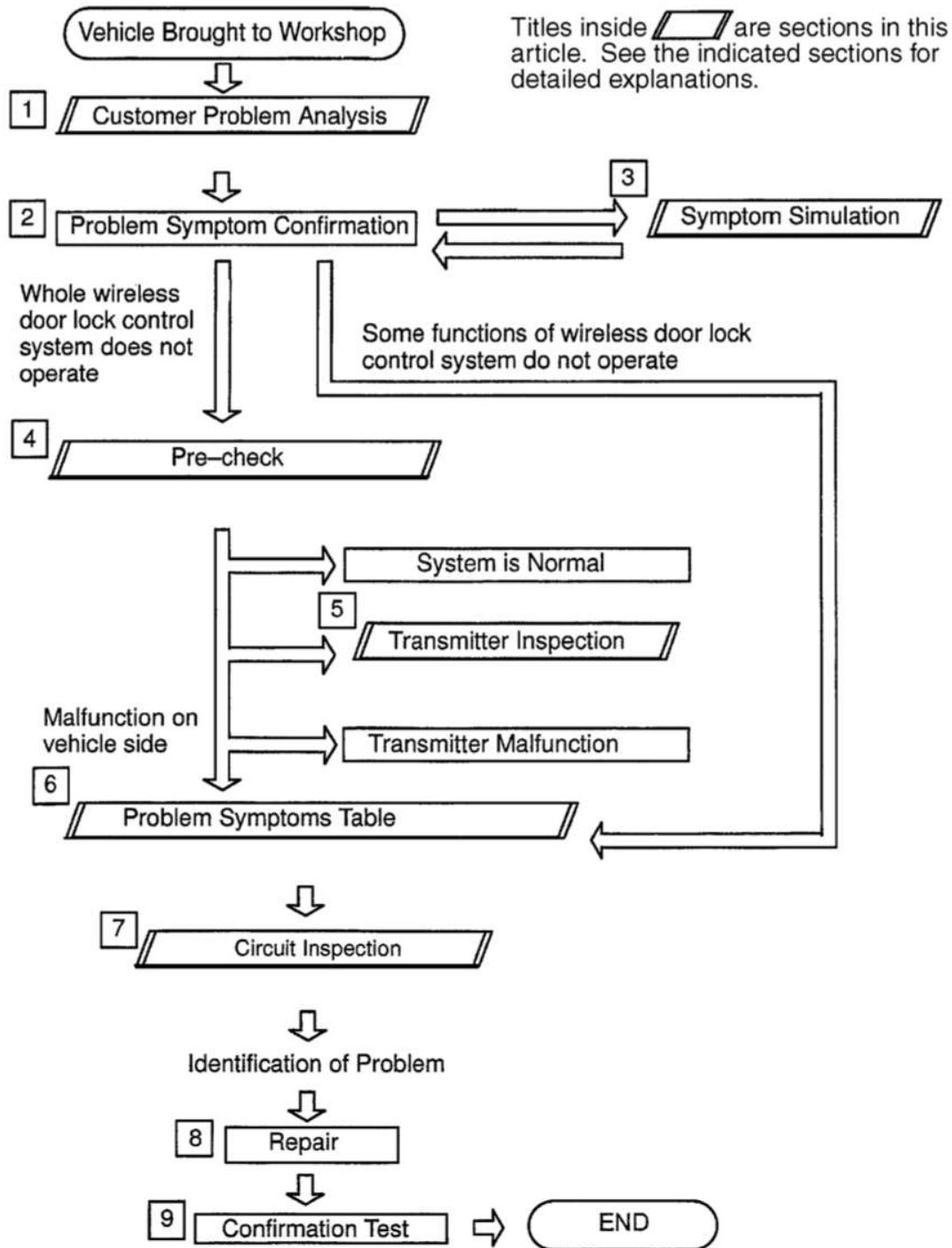


2002 ACCESSORIES & EQUIPMENT

Wireless Door Lock Control System - Diagnostics - RAV4

HOW TO PROCEED WITH TROUBLESHOOTING

NOTE: Troubleshooting of the wireless door lock control system is based on the premise that the door lock control system is operating normally. Accordingly, before troubleshooting the wireless door lock control system, first make certain that the door lock control system is operating normally. Then perform the troubleshooting in accordance with the procedures in CUSTOMER PROBLEM ANALYSIS CHECK .



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Fig. 1: Displaying Troubleshooting Flow Chart
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

CUSTOMER PROBLEM ANALYSIS CHECK

WIRELESS DOOR LOCK CONTROL System Check Sheet

Inspector's
Name _____

Customer's Name		Registration No.	
		Registration Year	/ /
		Frame No.	
Date Vehicle Brought In	/ /	Odometer Reading	km Miles

Date Problem First Occurred		/ /
Frequency Problem Occurs		☐ Constant ☐ Sometimes (times/per day, month) ☐ Once only
Weather Conditions When Problem Oc- curred	Weather	☐ Fine ☐ Cloudy ☐ Rainy ☐ Snowy ☐ Various/Others
	Outdoor Temperature	☐ Hot ☐ Warm ☐ Cool ☐ Cold (Approx. °F (°C))
	Place	☐ Everywhere ☐ Specific Locality()
Date Transmitter Battery Last Replaced		/ /

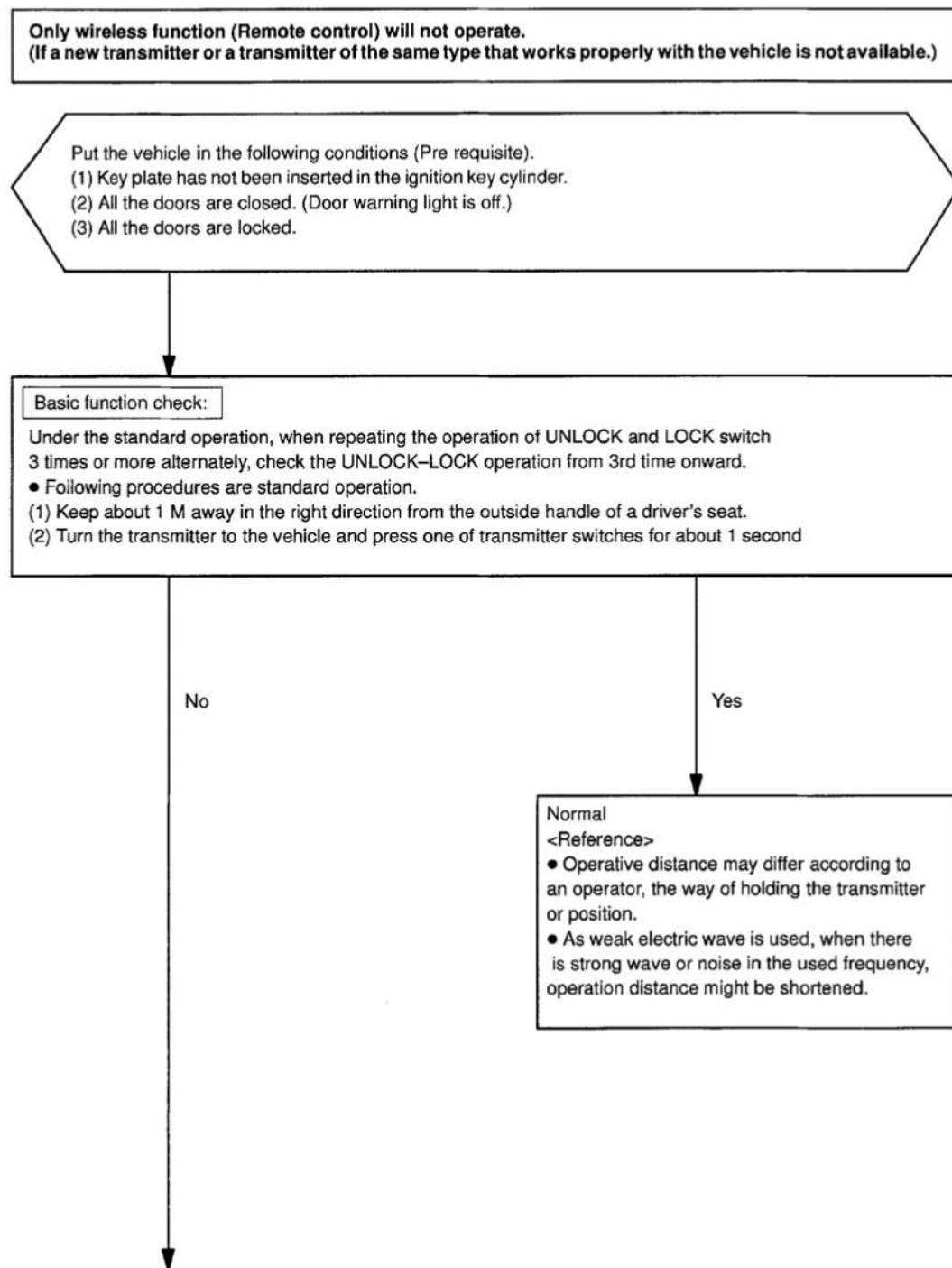
Problem Symptom	☐ Whole wireless door lock control system does not operate.	
	☐ Only door unlock operation is not possible.	
	☐ Only door lock operation is not possible.	
	☐ Only key confinement prevention function is not possible.	
	☐ Wireless door lock function operates even when each door is opened.	
	☐ Wireless door lock functions incorrectly. (Although one door is unlocked, when the transmit- ter switch is pressed, all doors become unlocked.)	☐ When RH door is unlocked ☐ When LH door is unlocked
	☐ Others	

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Fig. 2: Displaying Customer Problem Analysis Check
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

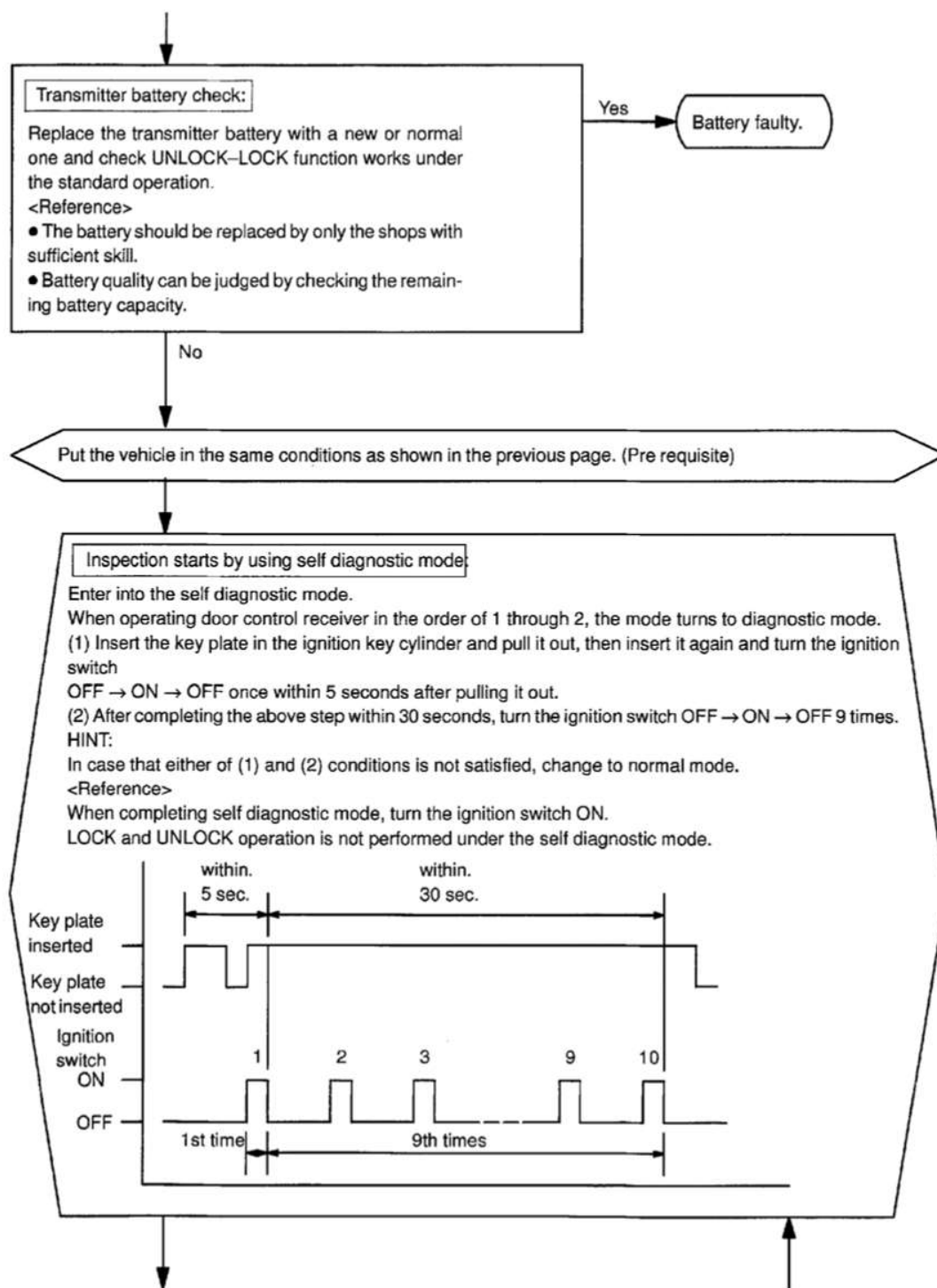
PRE-CHECK

Only wireless function (Remote control) will not operate. (If a new transmitter or a transmitter of the same type that works properly with the vehicle is not available.)



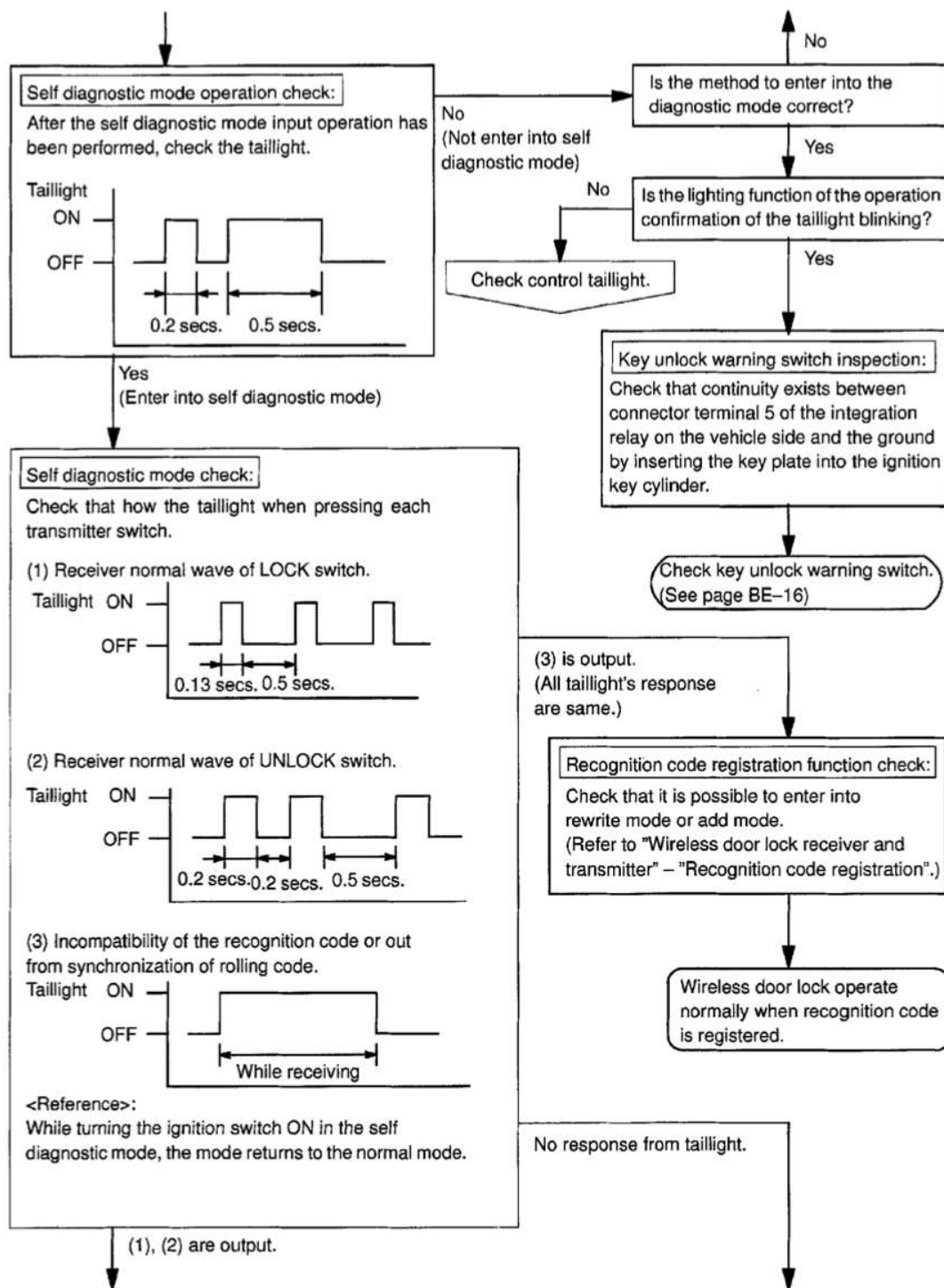
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Fig. 3: Displaying Pre-Check Flow Chart (1 Of 5)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



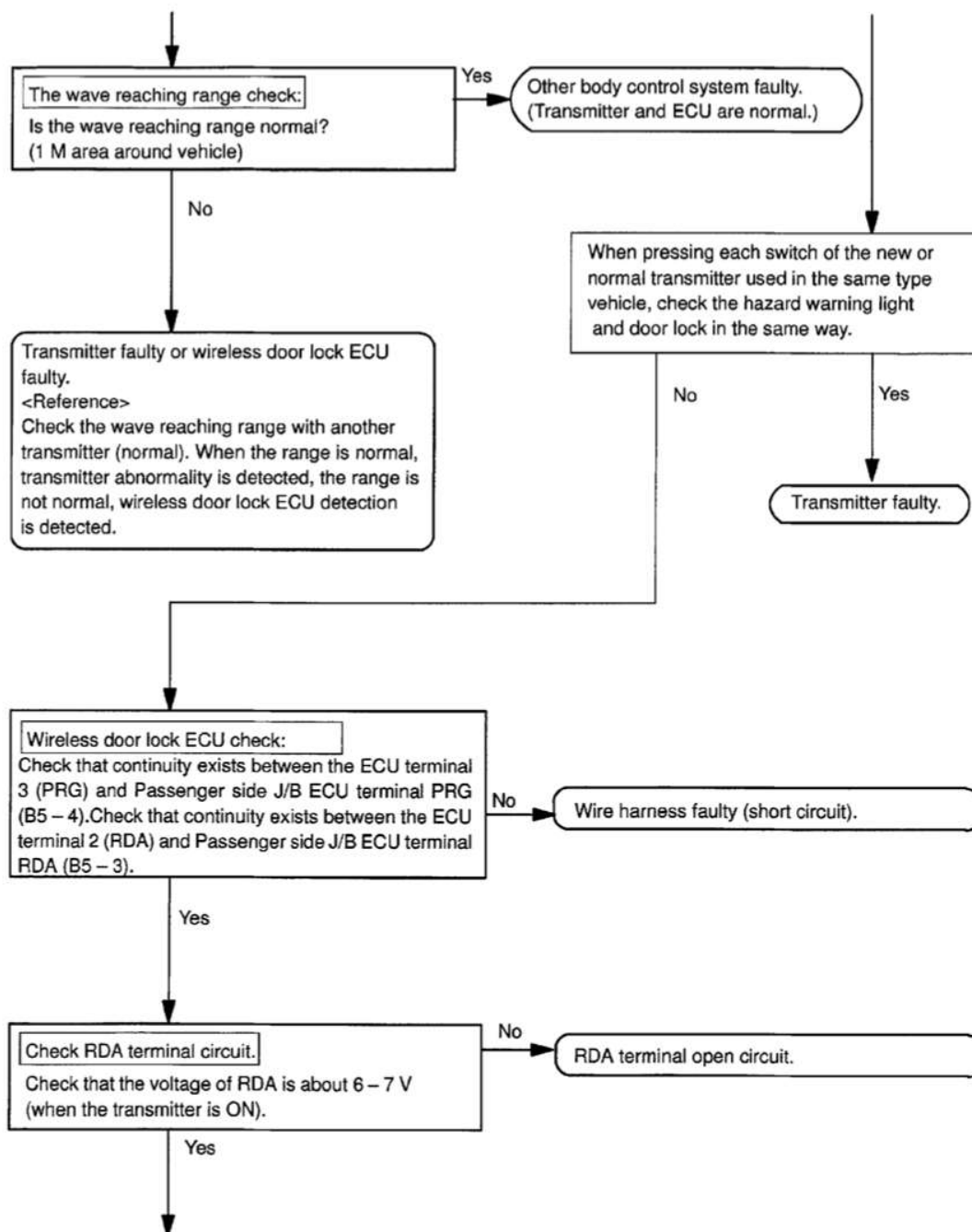
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Fig. 4: Displaying Pre-Check Flow Chart (2 Of 5)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



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Fig. 5: Displaying Pre-Check Flow Chart (3 Of 5)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



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Fig. 6: Displaying Pre-Check Flow Chart (4 Of 5)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

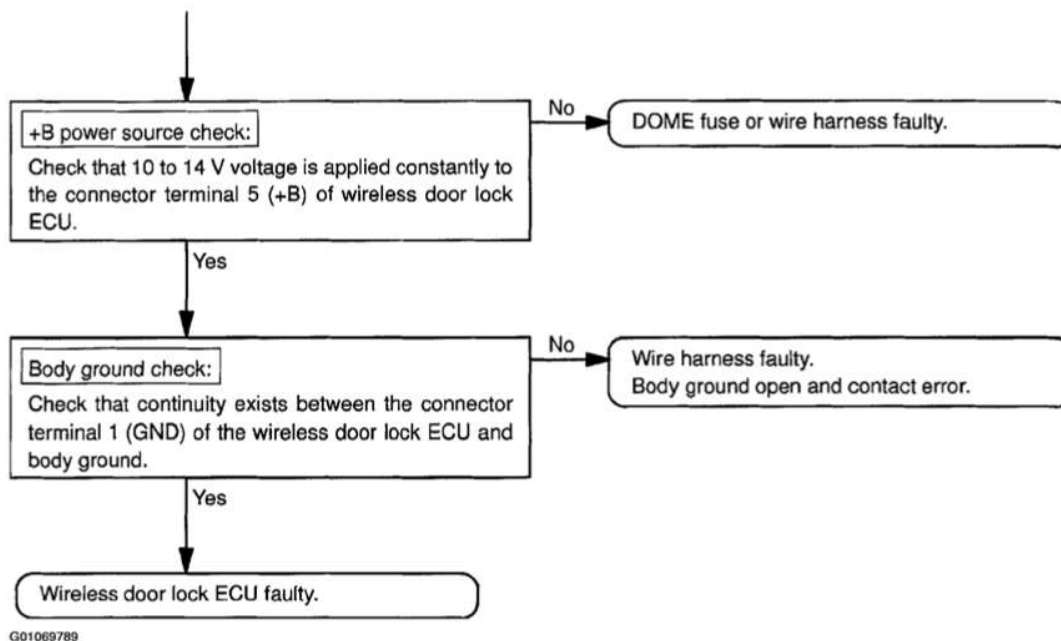
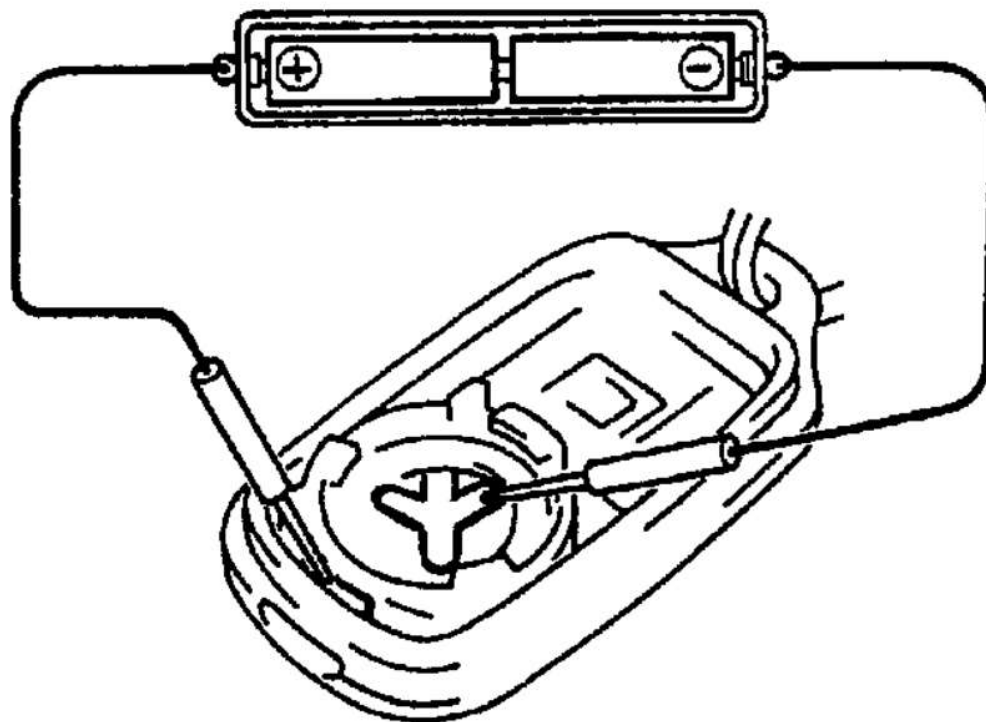


Fig. 7: Displaying Pre-Check Flow Chart (5 Of 5)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. **Inspect wireless door lock transmitter operation .**
 - a. Using a screwdriver, remove the screw and cover.
 - b. Remove the battery (lithium battery).
 - c. Install a new or normal battery (lithium battery).

NOTE: When a new or normal battery is not available, connect 2 new 1.5 V batteries in series, connect the battery (+) to the battery receptacle side terminal and battery (-) to the bottom terminal, then apply 3 V to the transmitter.



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Fig. 8: Connecting 1.5 V Batteries To Transmitter
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- d. In the location which is approximately 1 M away from the driver's outside handle in the right direction, check the transmitter operation by pressing the transmission switch on the surface of the transmitter body.

Standard: Remote control of vehicle door lock can be operated.

NOTE:

- The minimum operation distance varies according to an operator, the way of holding and location.
- As weak electric wave is used, when there is strong wave or noise in the used frequency, operation distance might be shortened.

- e. Install the battery (lithium battery).

- f. Install a cover so that the O-ring is not distorted or slipped off.
- g. Using a screwdriver, tighten the screw.

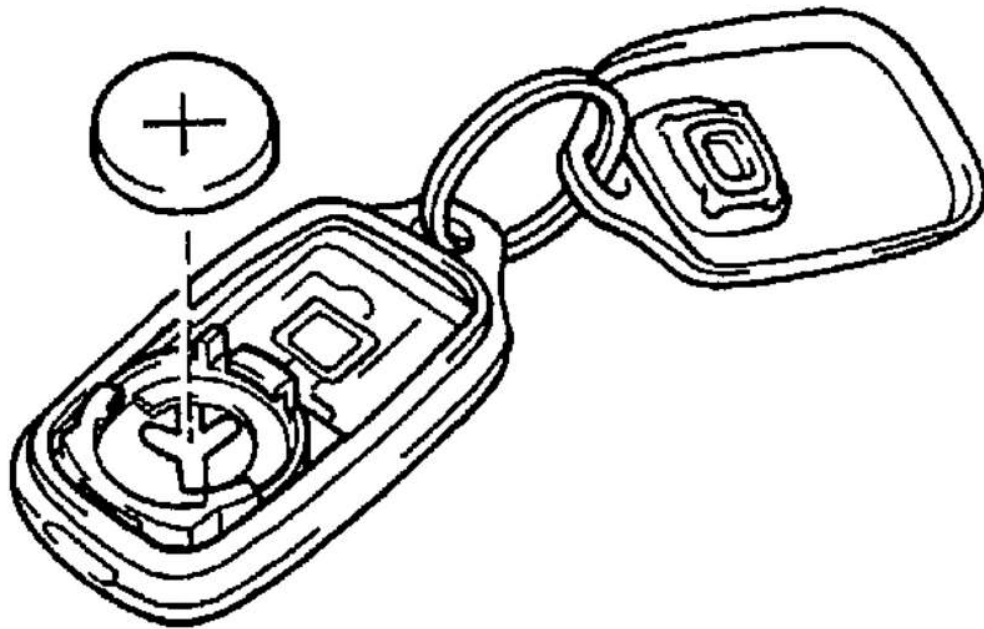
2. Check battery capacity .

NOTE:

- Make sure to use the TOYOTA electrical tester.
- With the battery unloaded, whether the battery is available or not cannot be determined on the test.
- When the transmitter is faulty, the remaining battery capacity might not be checked correctly.
- On the lithium battery used for the transmitter, the voltage at more than 2.5 V with the battery unloaded is shown on the tester until the battery is completely consumed.

Accordingly when inspecting the remaining battery capacity in the battery, it is necessary to measure the voltage with the battery loaded (1.2 kohm).

- a. Remove the cover by using a screwdriver.
- b. Remove the battery (lithium battery) from the transmitter.



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Fig. 9: Removing Battery From Transmitter

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Connect the lead to the (-) terminal of the transmitter and install the battery.
- d. Connect the (+) tester to the (+) battery (lithium battery), and (-) tester to the lead respectively.

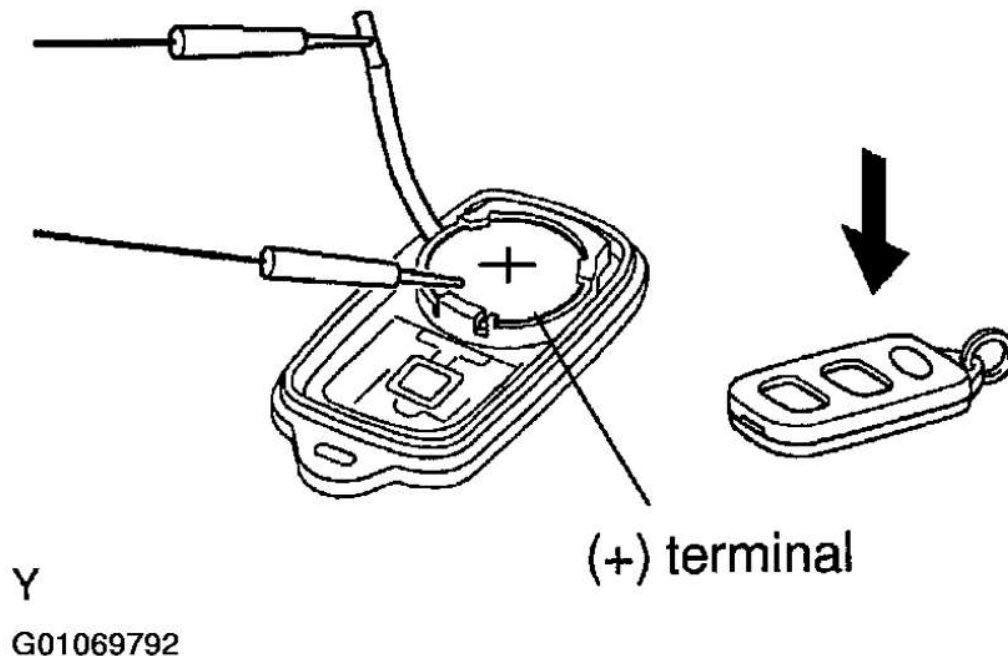


Fig. 10: Connecting Tester To Battery

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- e. Press one of the transmitting switches on the transmitter for approximately 1 second.
- f. Press the transmitting switch on the transmitter again to check the voltage.

Standard: 2.1 V or more

NOTE:

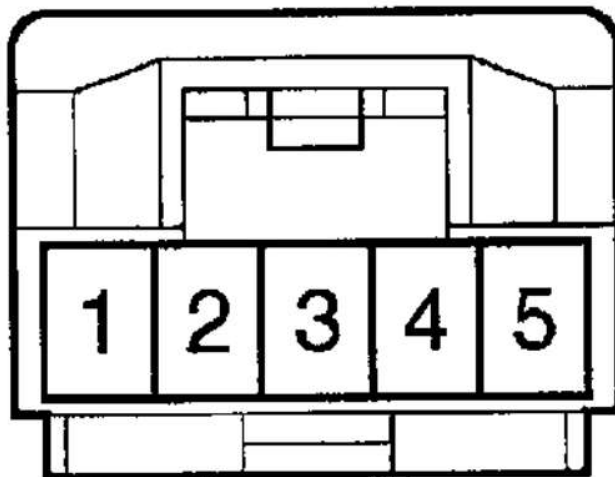
- If the temperature of the battery is low, the precise measurement is impossible.

If the test result indicates less than 2.1 V, conduct the test again after leaving the battery on the place where its surrounding temperature is at 18° C for more than 30 minutes.

- By auto power off function, the voltage becomes no load (more than 2.5 V) in 20 seconds after the switch was pressed. So be sure to read the voltage before 20 seconds.
- As high voltage might be shown once or twice after leaving the battery, a judgement should be made with the voltage shown from 3rd time onward.

- g. Disconnect the lead.
 - h. Set the battery (lithium battery) in the transmitter.
 - i. Install the cover so that the O-ring is not distorted or slipped off.
3. **Inspect wireless door lock ECU circuit .**
- a. Disconnect the connector from the ECU and inspect the connector on the wire harness side as shown in **Fig. 12** .

Wire harness side:



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Fig. 11: Displaying Wire Harness Side Of Wireless Door Lock
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Tester connection	Condition	Specified condition
1 – Ground	Constant	Continuity
5 – Ground	Constant	Battery voltage

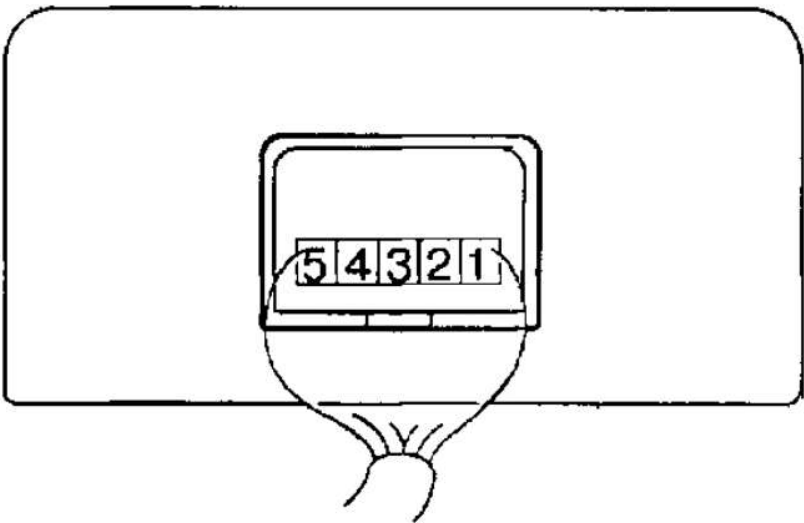
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Fig. 12: Displaying Connection Conditions
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

If the circuit is not as specified, inspect the other circuit connected to other parts.

- b. Connect the wire harness side connector to the ECU and inspect the wire harness side connector from the back side as shown in **Fig. 14** .

From back side



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Fig. 13: Displaying Back Side Of Wire Harness Connector
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Tester connection	Condition	Specified condition
3 – Ground	Normal mode	10 – 14 V
2 – Ground	Ignition switch position OFF Key removed Transmitter ON	About 6 – 7 V

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Fig. 14: Displaying Connection Conditions

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

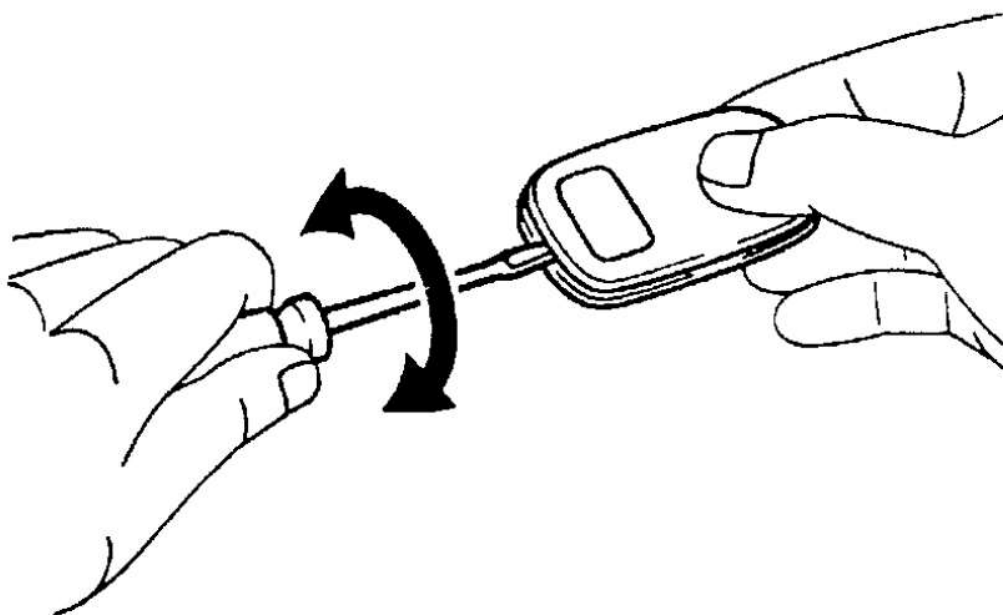
If the circuit is as specified, replace the ECU.

If the circuit is not as specified, inspect the other circuit connected to other parts.

4. Replace transmitter (lithium) battery .

CAUTION: Special caution should be taken when handling each component, as they are precision electronic components.

- a. Using a screwdriver, remove the cover.



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Fig. 15: Removing Cover

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

CAUTION: Do not pry out the cover forcibly.

NOTE: Push the cover with a finger as shown in Fig. 15 so that there makes a clearance, then pry out the cover from that clearance.

- b. Remove the transmitter.
- c. Remove the battery (lithium battery).

CAUTION:

- Do not push the terminals with a finger.
- If prying out the battery (lithium battery) forcibly to remove it, the terminals will be deformed.

- d. Install a battery (lithium battery) as shown in Fig. 16 .

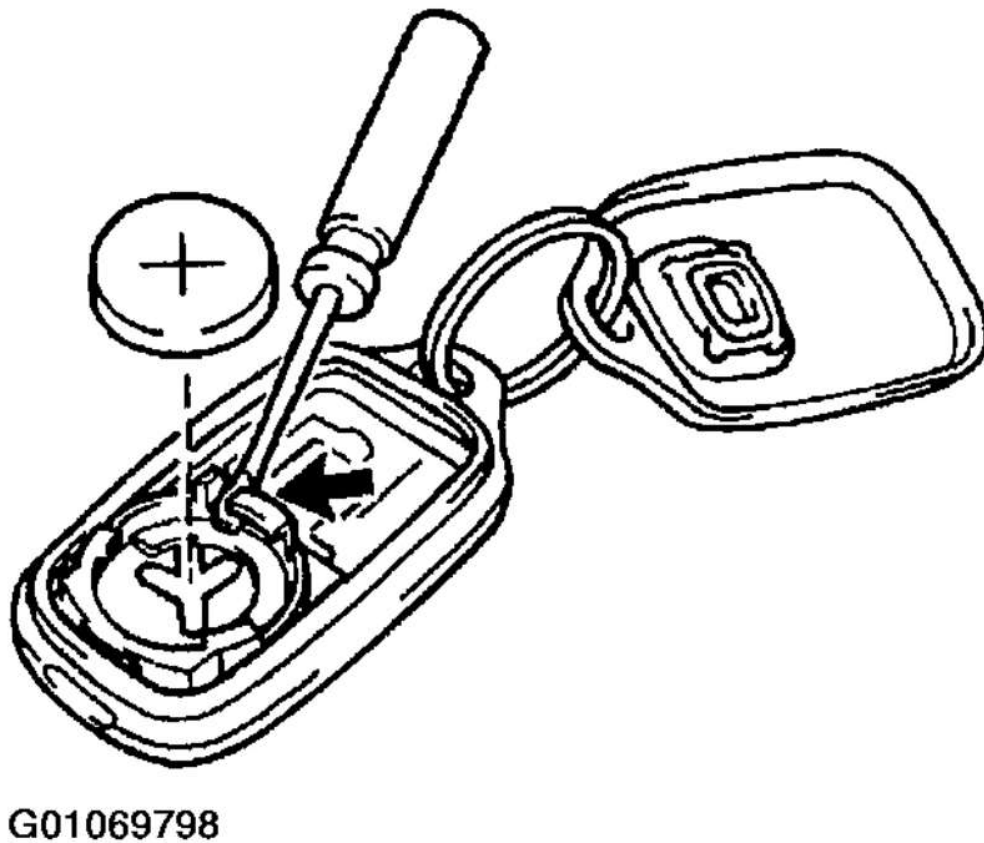


Fig. 16: Installing Battery

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

CAUTION: Face the battery upward. Take care not to deform the terminals.

- e. Assemble the transmitter to the key plate and cover.
- 5. Replace door lock ECU and transmitter .

CAUTION: When replacing the door lock ECU and transmitter, registration of recognition code is necessary, because they are provided as a single component.

- a. Select which operation mode should be performed out of the following modes.

- Add mode
- Rewrite mode
- Prohibition mode
- Confirmation mode

NOTE:

- The add mode is used to retain codes which are already registered when you register new recognition codes. This mode is used when adding a transmitter. If the number of registered codes exceeds 4 old registered codes are erased one by one in the order of code being registered.
- The rewrite mode is used to erase all registered codes and register only new recognition codes.
- The prohibition mode is used to erase all registered codes and cancels the wireless door lock function. Use this mode when the transmitter is lost.
- The confirmation mode to confirm how many recognition codes are already registered before you register additional recognition codes.

- b. Follow the chart in **Fig. 17** , **Fig. 18** and **Fig. 19** to register the transmitter recognition code at the wireless door lock ECU.

NOTE:

- When procedure is not as specified, the operation returns to normal.
- Maximum 4 recognition codes can be registered.

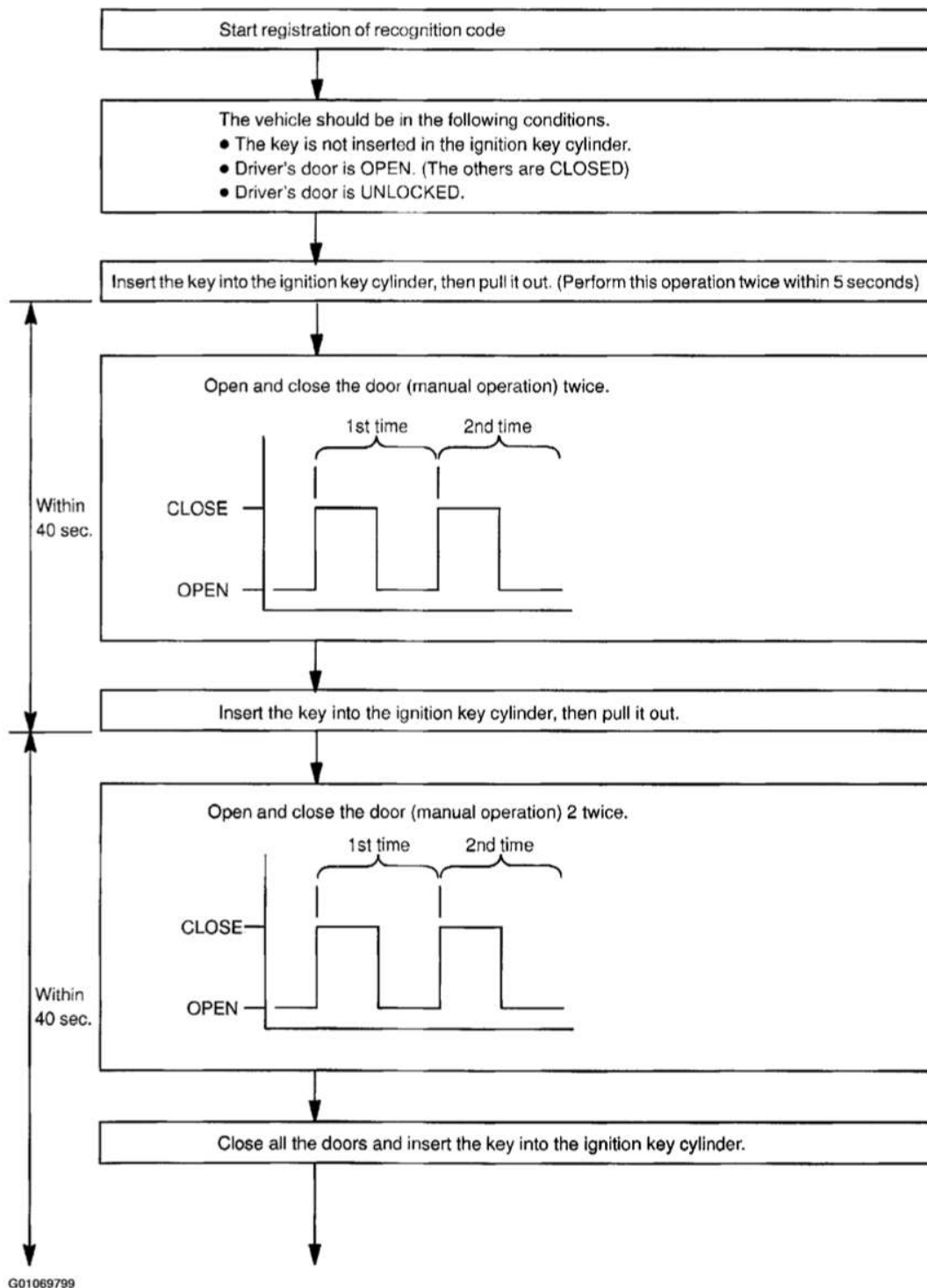


Fig. 17: Displaying Transmitter Registration Flow Chart (1 Of 3)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

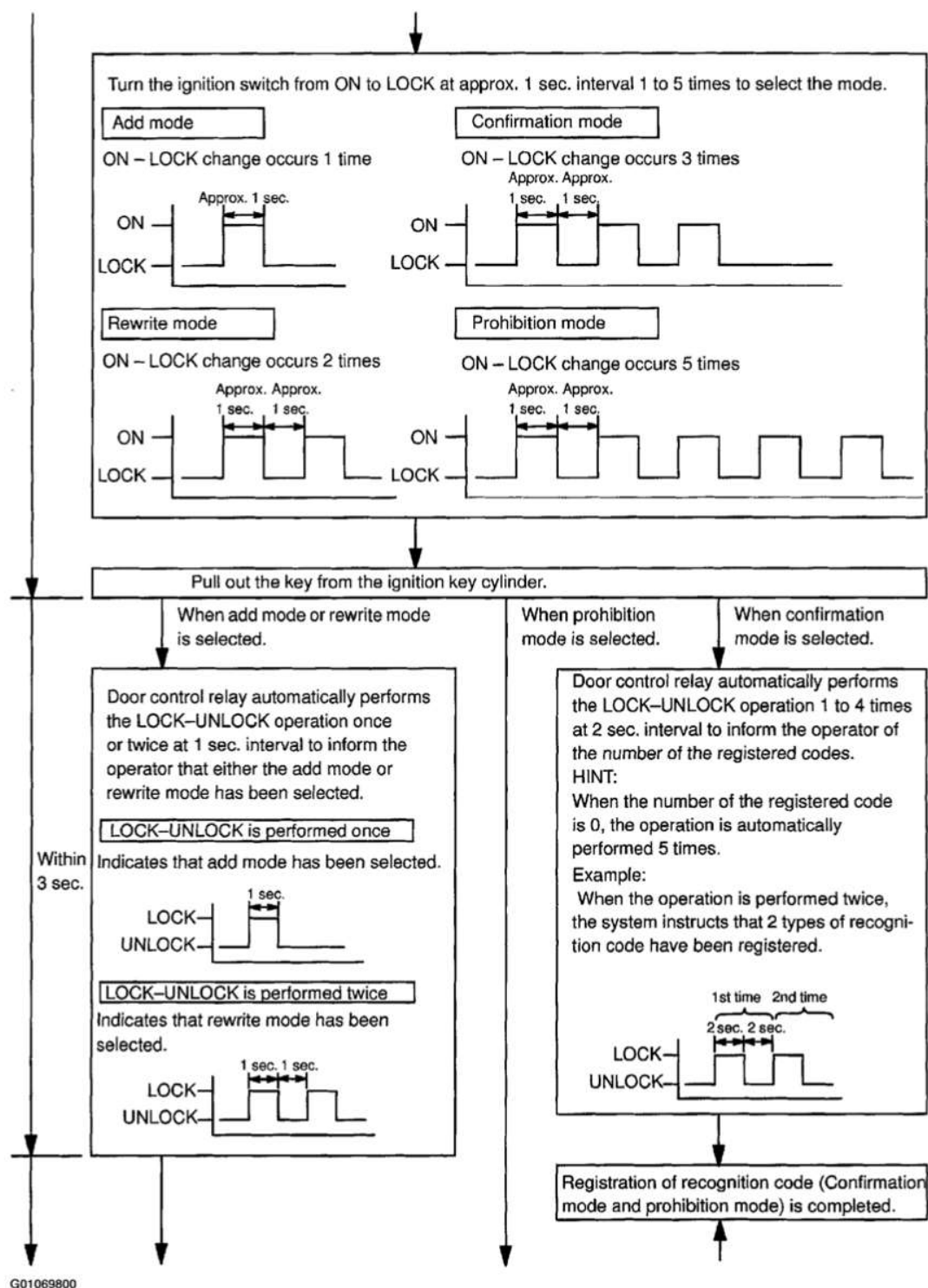
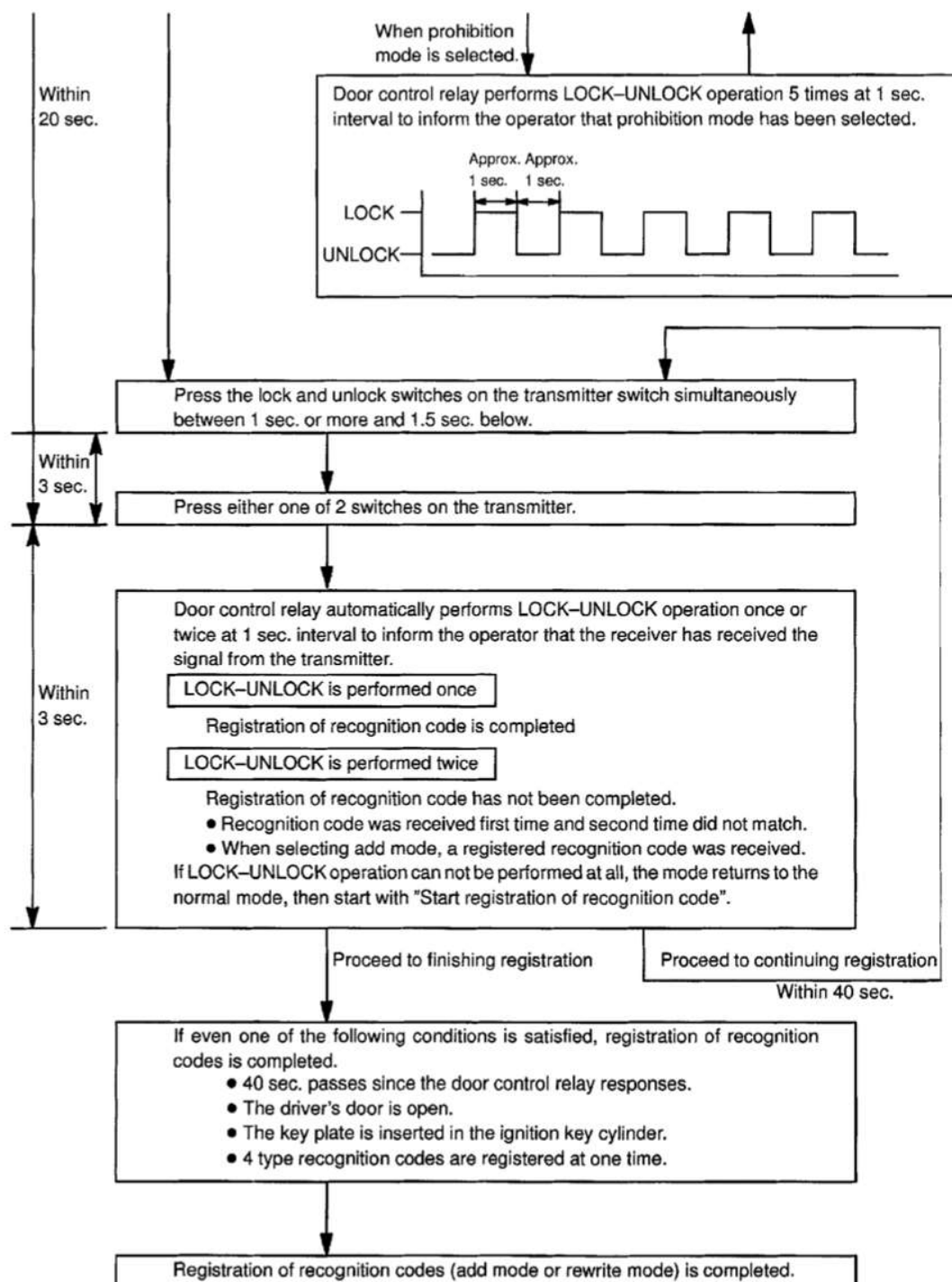


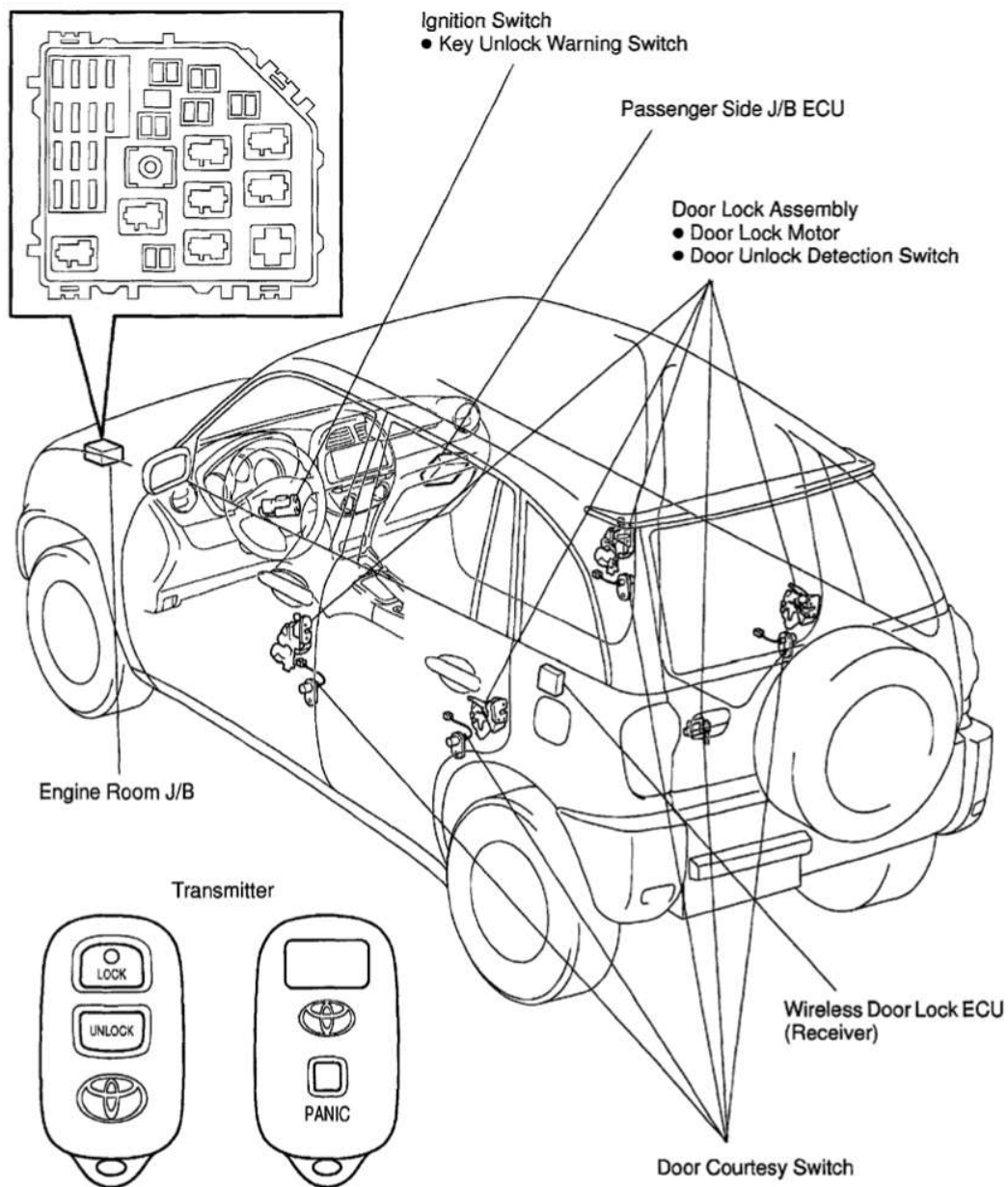
Fig. 18: Displaying Transmitter Registration Flow Chart (2 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



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Fig. 19: Displaying Transmitter Registration Flow Chart (3 Of 3)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

PARTS LOCATION



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Fig. 20: Identifying Wireless Door Lock Control System Parts Location
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

PROBLEM SYMPTOMS

Perform the troubleshooting of the circuit for the applicable problem symptom in the order given in the chart below. Proceed to the page of each circuit.

NOTE:

- Troubleshooting the wireless door lock control system is based on the premise that the door lock control system is operating normally. Accordingly, before troubleshooting the wireless door lock control system, first make certain that the door lock control system is operating normally.
- If the trouble still occurs even though there are no abnormalities in any of the other circuits, check and replace the Wireless Door Lock ECU as the last step.

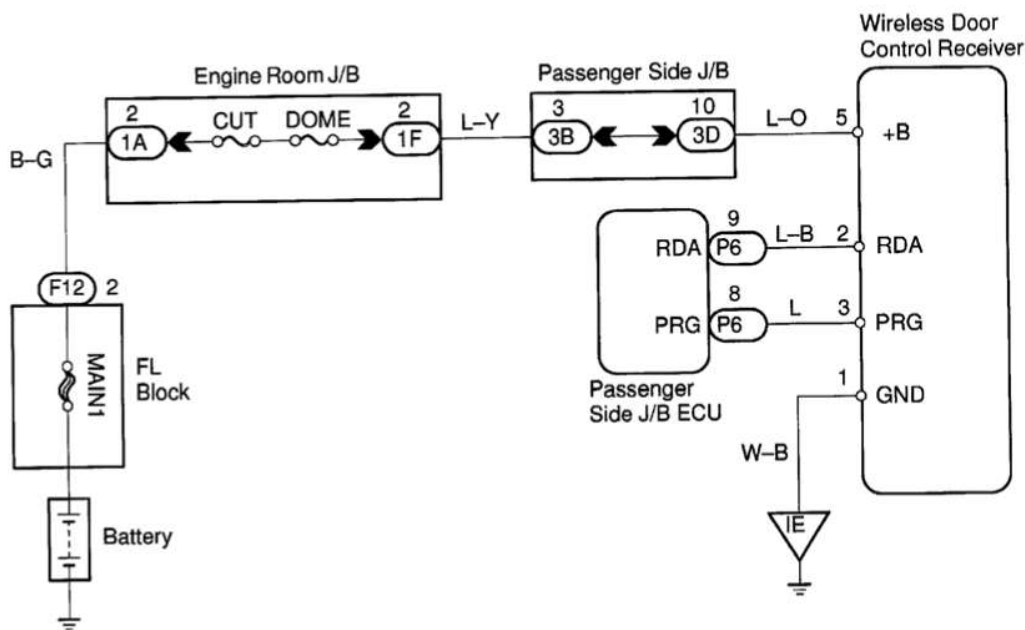
PROBLEM SYMPTOMS

Symptom/Suspected Area	See
All Functions Of Wireless Door Lock Control System Do Not Operate	
Passenger Side J/B ECU	TERMINALS OF ECU
Transmitter	Step 1 under PRE-CHECK.
Wireless Door Lock ECU	Step 3 Under PRE-CHECK.
Wire Harness	

CIRCUIT INSPECTION**WIRELESS DOOR LOCK ECU CIRCUIT****Circuit Description**

The signal from the wireless door lock ECU is input to the passenger side J/B ECU through RDA line.
The RDA line is diagnosed by the passenger side J/B ECU.

Wiring Diagram



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Fig. 21: Displaying Wireless Door Circuitry

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Inspection Procedure

1. **Check for harness between wireless door lock ECU and passenger side J/B ECU. See HOW TO USE THE DIAGNOSTIC CHART AND INSPECTION PROCEDURE.**

OK: Go to next step.

NG: Repair or replace harness or connector.

2. **Check wireless door lock ECU .**

CHECK:

Replace the wireless door lock ECU and check if it recovers normally.

OK: It recovers normally.

OK: Failure of the original wireless door lock ECU.

NG: Proceed to next circuit inspection shown in problem symptoms table. See **PROBLEM SYMPTOMS TABLE** .