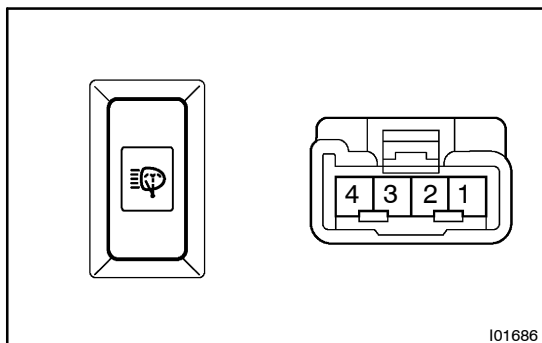


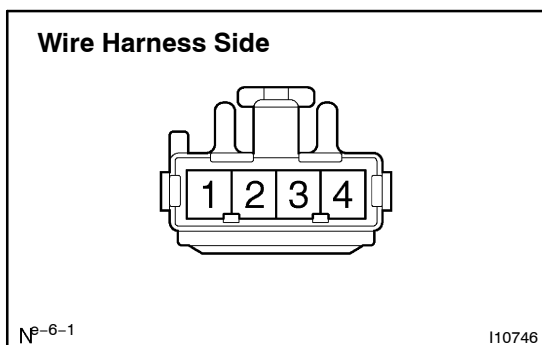


INSPECTION

1. INSPECT HEADLIGHT CLEANER SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF	-	No continuity
ON	1 - 4	Continuity
Illumination circuit	2 - 3	Continuity

If continuity is not as specified, replace the switch.

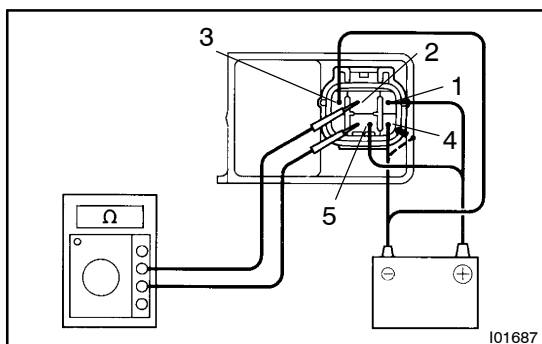


2. INSPECT HEADLIGHT CLEANER SWITCH CIRCUIT

Disconnect the switch connector and inspect the connector on wire harness side, as shown.

Tester connection	Condition	Specified condition
1 - Ground	Headlight ON	Continuity
1 - Ground	Headlight OFF	No continuity

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

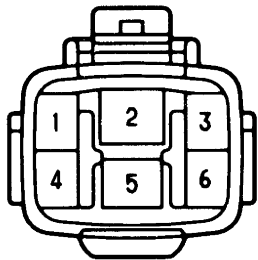


3. INSPECT HEADLIGHT CLEANER RELAY OPERATION

- Check that no continuity exists between terminals 2 and 5.
- Connect the positive (+) lead from the battery to terminals 1 and 5, and the negative (-) lead to terminal 3.
- Connect the negative (-) lead from the battery to terminal 4, and check that continuity exists between terminals 2 and 5 for 0.9 - 1.1 seconds, then no continuity exists.

If operation is not as specified, replace the motor.

Wire Harness Side



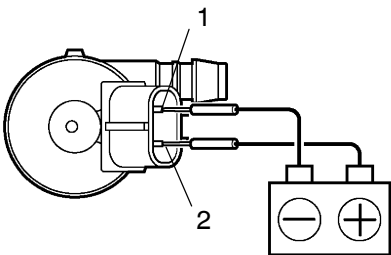
I04067

4. INSPECT HEADLIGHT CLEANER RELAY CIRCUIT

Disconnect the connector from the relay and inspect the connector on wire harness side, as shown.

Tester connection	Condition	Specified condition
2 – Ground 3 – Ground	Constant	Continuity
4 – Ground	Ignition switch ON, light control switch in HEAD and cleaner switch OFF	No continuity
4 – Ground	Ignition switch ON, light control switch in HEAD and cleaner switch ON or daytime running light system operating	Continuity
1 – Ground	Ignition switch OFF or ACC	No voltage
1 – Ground	Ignition switch ON	Battery voltage
5 – Ground	Constant	Battery voltage

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



I04068

5. INSPECT HEADLIGHT CLEANER MOTOR OPERATION

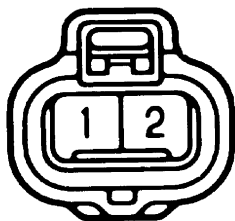
Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, check that the motor operates.

NOTICE:

These tests must be performed quickly (within 20 seconds) to prevent the coil from burning out.

If operation is not as specified, replace the motor.

Wire Harness Side



I04069

6. INSPECT HEADLIGHT CLEANER MOTOR CIRCUIT

Disconnect the connector from the cleaner motor and inspect the connector on wire harness side, as shown.

BODY ELECTRICAL - HEADLIGHT CLEANER SYSTEM

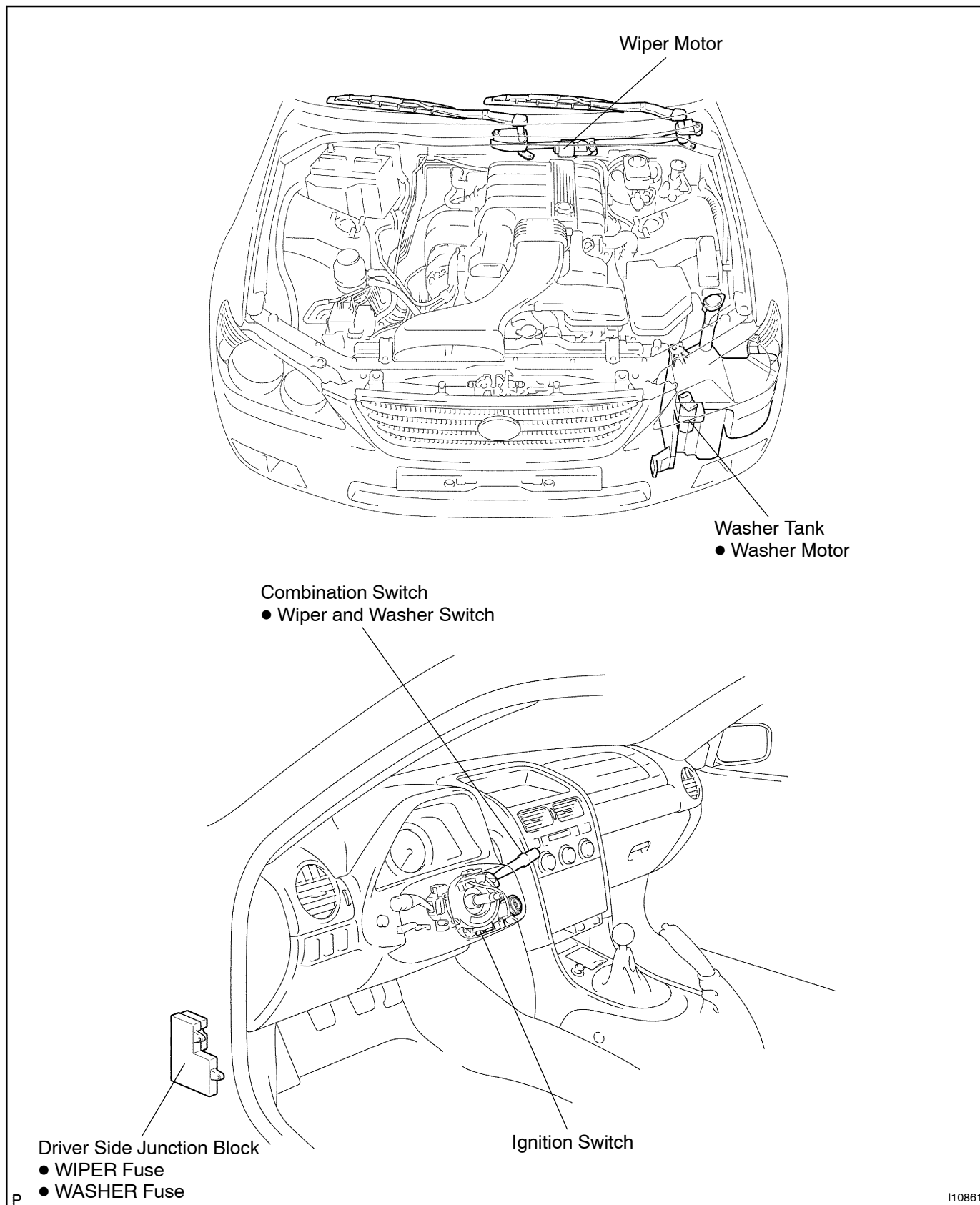
Tester connection	Condition	Specified condition
2 - Ground	Constant	Continuity

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

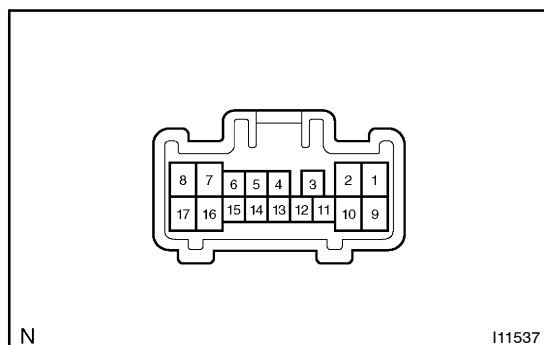
WIPER AND WASHER SYSTEM

LOCATION

BE0HN-06



I10861

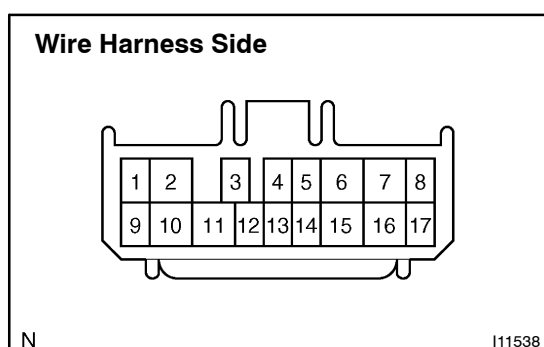


INSPECTION

1. LHD models: INSPECT WIPER AND WASHER SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF	7 – 16	Continuity
INT	7 – 16	Continuity
LO	7 – 17	Continuity
HI	8 – 17	Continuity
Washer OFF	–	No continuity
Washer ON	2 – 11	Continuity

If continuity is not as specified, replace the switch.

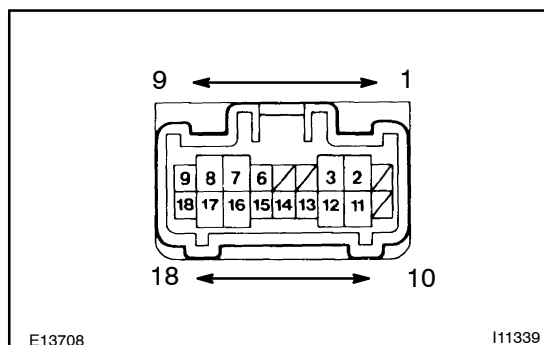


2. LHD models: INSPECT WIPER AND WASHER SWITCH CIRCUIT Connector disconnected:

Disconnect the connector from the motor and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
2 – Ground	Constant	Continuity
17 – Ground	Ignition switch LOCK or ACC	No voltage
17 – Ground	Ignition switch ON	Battery voltage

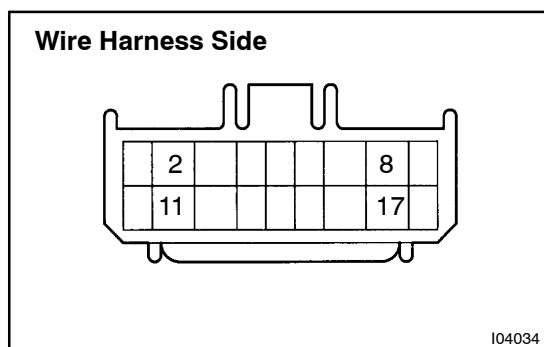
If circuit is not as specified, inspect the circuits connected to other parts.



3. RHD models: INSPECT WIPER AND WASHER SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF	3 – 12 (Australia) 7 – 16 (Europe)	Continuity
INT	3 – 12 (Australia) 7 – 16 (Europe)	Continuity
LO	3 – 11 (Australia) 7 – 17 (Europe)	Continuity
HI	2 – 11 (Australia) 8 – 17 (Europe)	Continuity
Washer OFF	–	No continuity
Washer ON	8 – 17 (Australia) 2 – 11 (Europe)	Continuity

If continuity is not as specified, replace the switch.

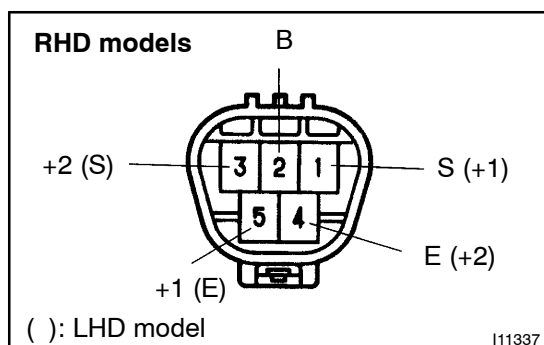


4. RHD models: INSPECT WIPER AND WASHER SWITCH CIRCUIT Connector disconnected:

Disconnect the connector from the motor and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
8 – Ground (Australia) 2 – Ground (Europe)	Constant	Continuity
11 – Ground (Australia) 17 – Ground (Europe)	Ignition switch LOCK or ACC	No voltage
11 – Ground (Australia) 17 – Ground (Europe)	Ignition switch ON	Battery voltage

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



5. INSPECT WIPER MOTOR OPERATION

Low speed:

(): LHD models

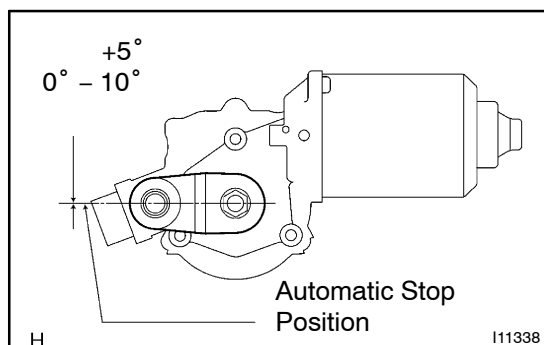
Connect the positive (+) lead from the battery to terminal 5 (1) and the negative (–) lead to terminal 4 (5), check that the motor operates at low speed.

If operation is not as specified, replace the motor.

6. INSPECT WIPER MOTOR OPERATION**High speed:****(): LHD models**

Connect the positive (+) lead from the battery to terminal 3 (4) and the negative (–) lead to terminal 4 (5), check that the motor operates at high speed.

If operation is not as specified, replace the motor.

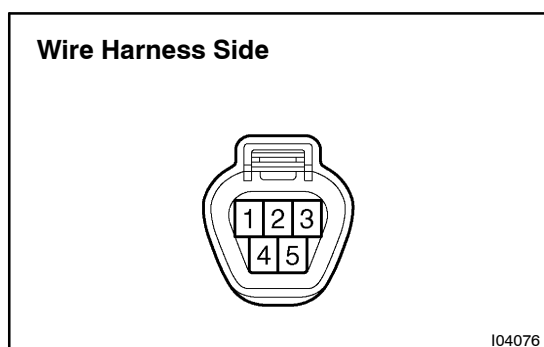
**7. INSPECT WIPER MOTOR OPERATION****Stopping at stop position:****(): LHD models**

- (a) Operate the motor at low speed and stop the motor operation anywhere except at the stop position by disconnecting positive (+) lead from terminal 5 (1).

- (b) Connect terminals 1 and 5 (3).

- (c) Connect the positive (+) lead from the battery to terminal 2 and negative (–) lead to terminal 4 (5), check that the motor stops running at the stop position after the motor operates again.

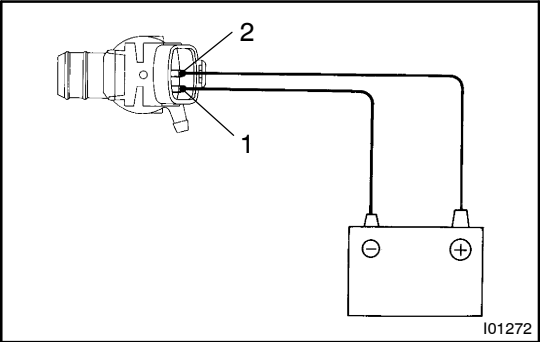
If operation is not as specified, replace the motor.

**8. INSPECT WIPER MOTOR CIRCUIT****Connector disconnected:**

Disconnect the connector from the motor and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
4 – Ground	Constant	Continuity
2 – Ground	Ignition switch LOCK or ACC	No voltage
2 – Ground	Ignition switch ON	Battery voltage

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



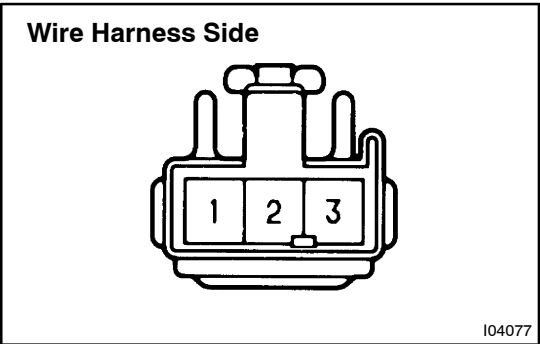
9. INSPECT WASHER MOTOR OPERATION

Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, check that the motor operates.

NOTICE:

These tests must be performed quickly (within 20 seconds) to prevent the coil from burning out.

If operation is not as specified, replace the motor.



10. INSPECT WASHER MOTOR CIRCUIT

Connector disconnected:

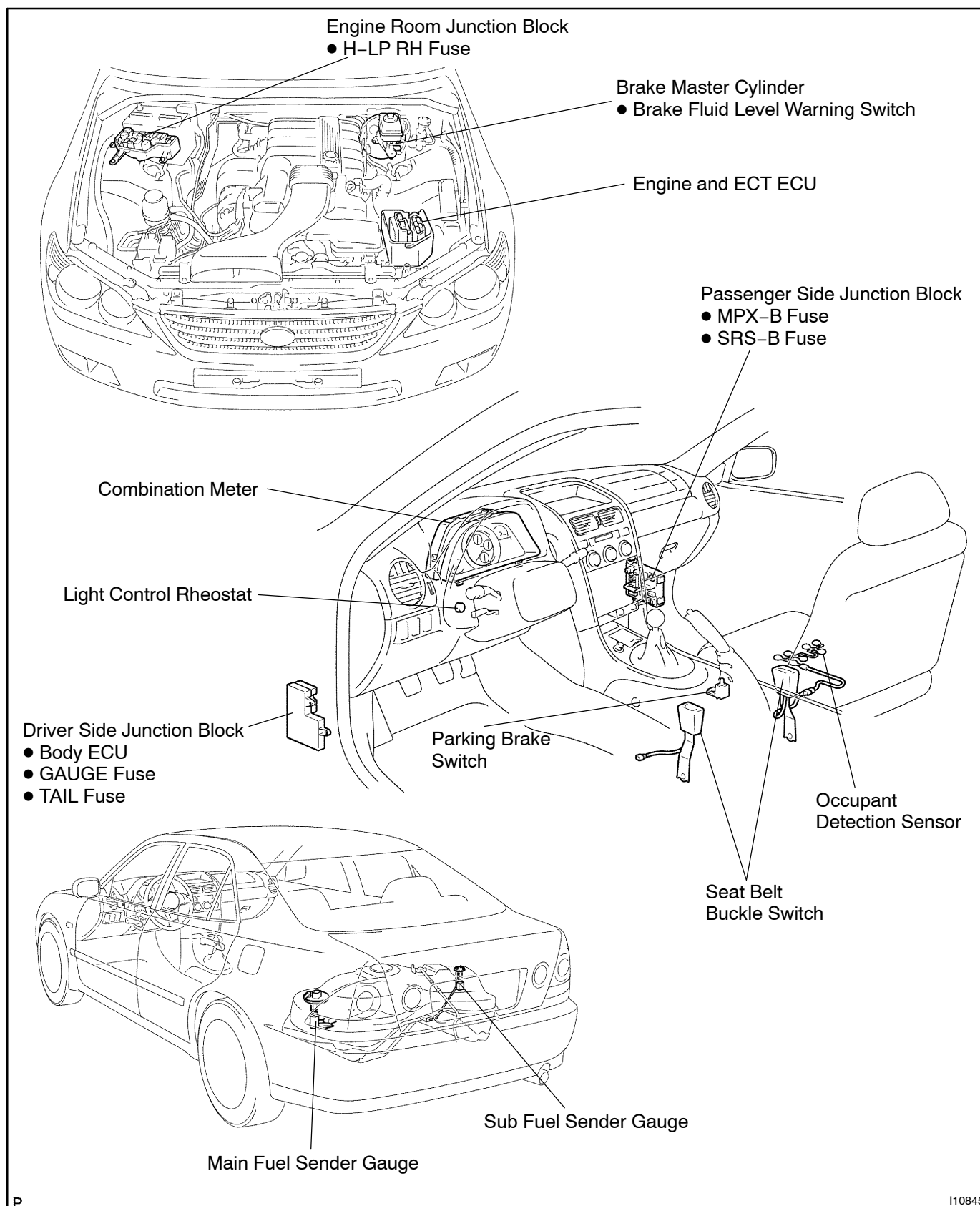
Disconnect the connector from the motor and inspect the connector on the wire harness side, as shown.

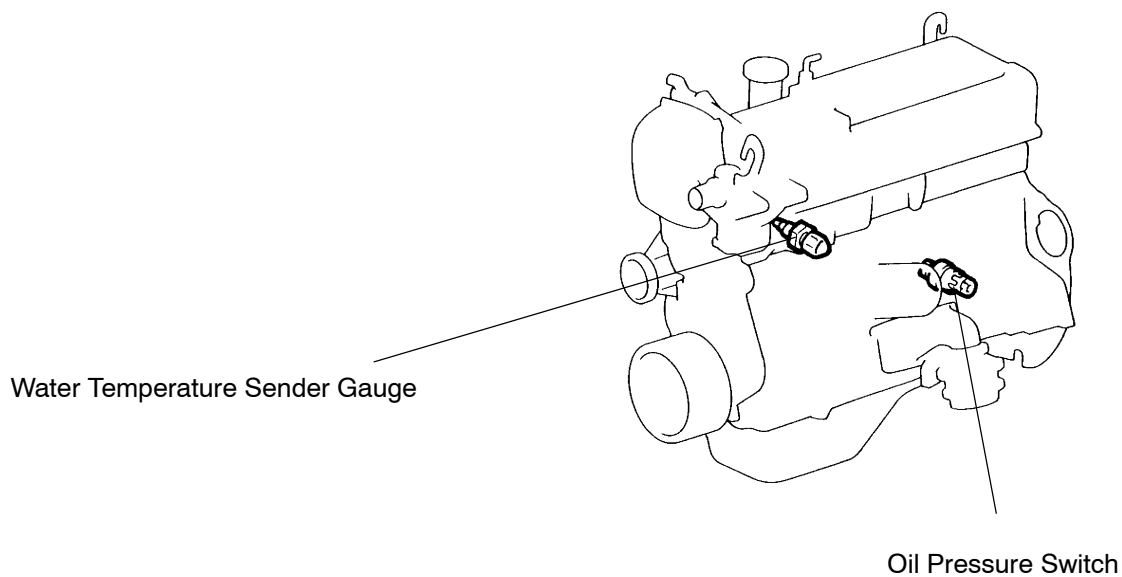
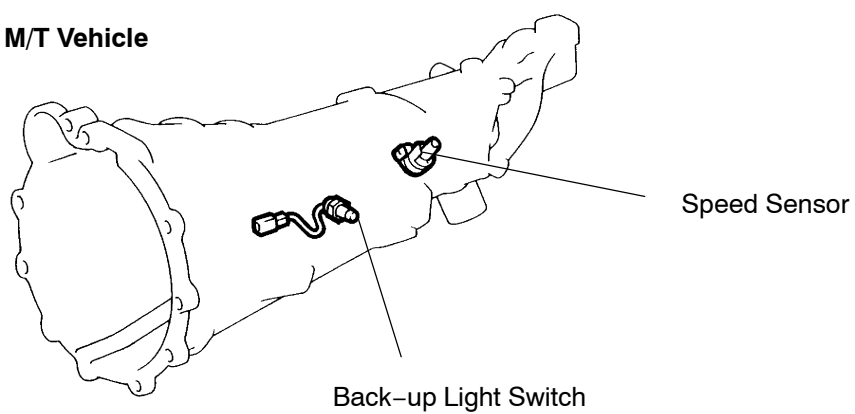
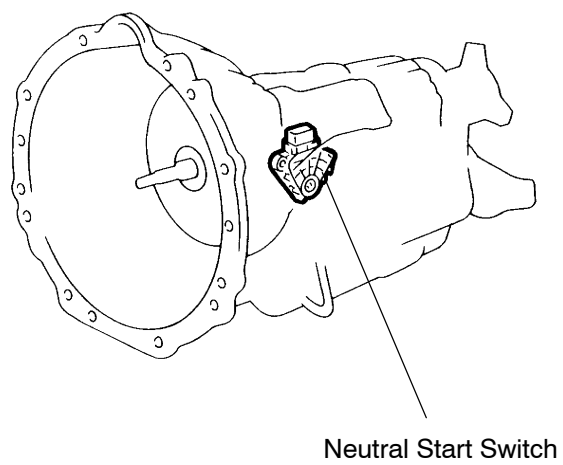
Tester connection	Condition	Specified condition
2 – Ground	Ignition switch ON	Battery voltage

If circuit is not as specified, inspect the power source, wire harness and wiper switch.

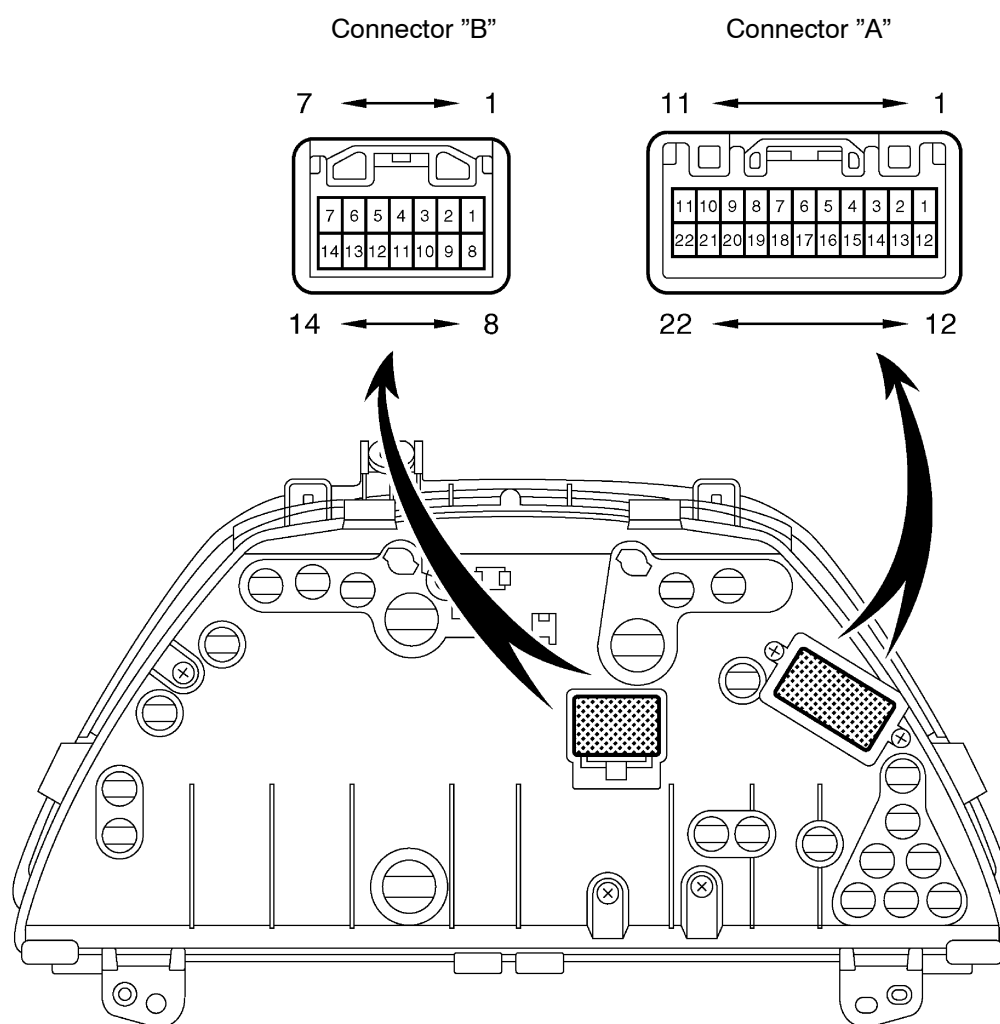
COMBINATION METER LOCATION

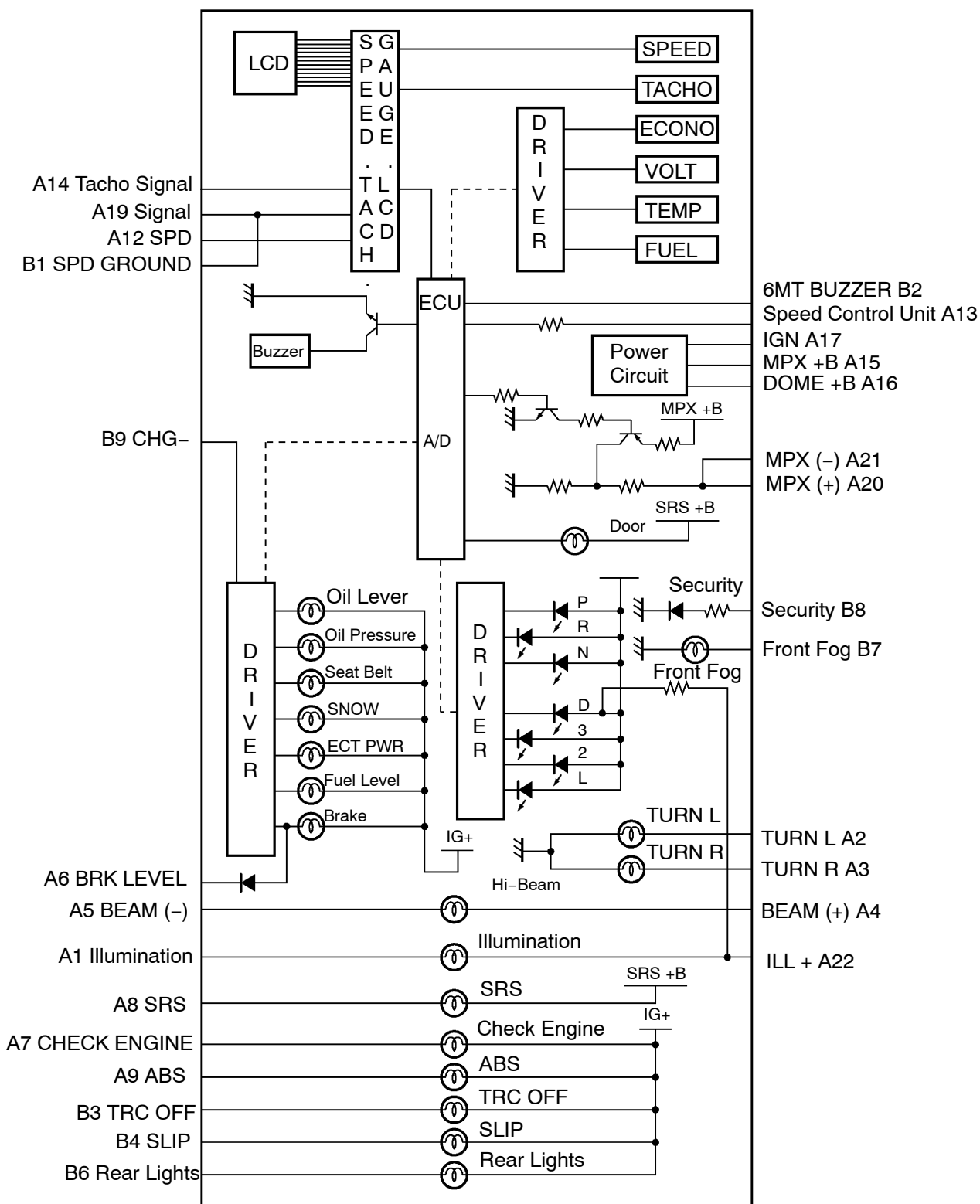
BE0HH-06



**M/T Vehicle****A/T Vehicle**

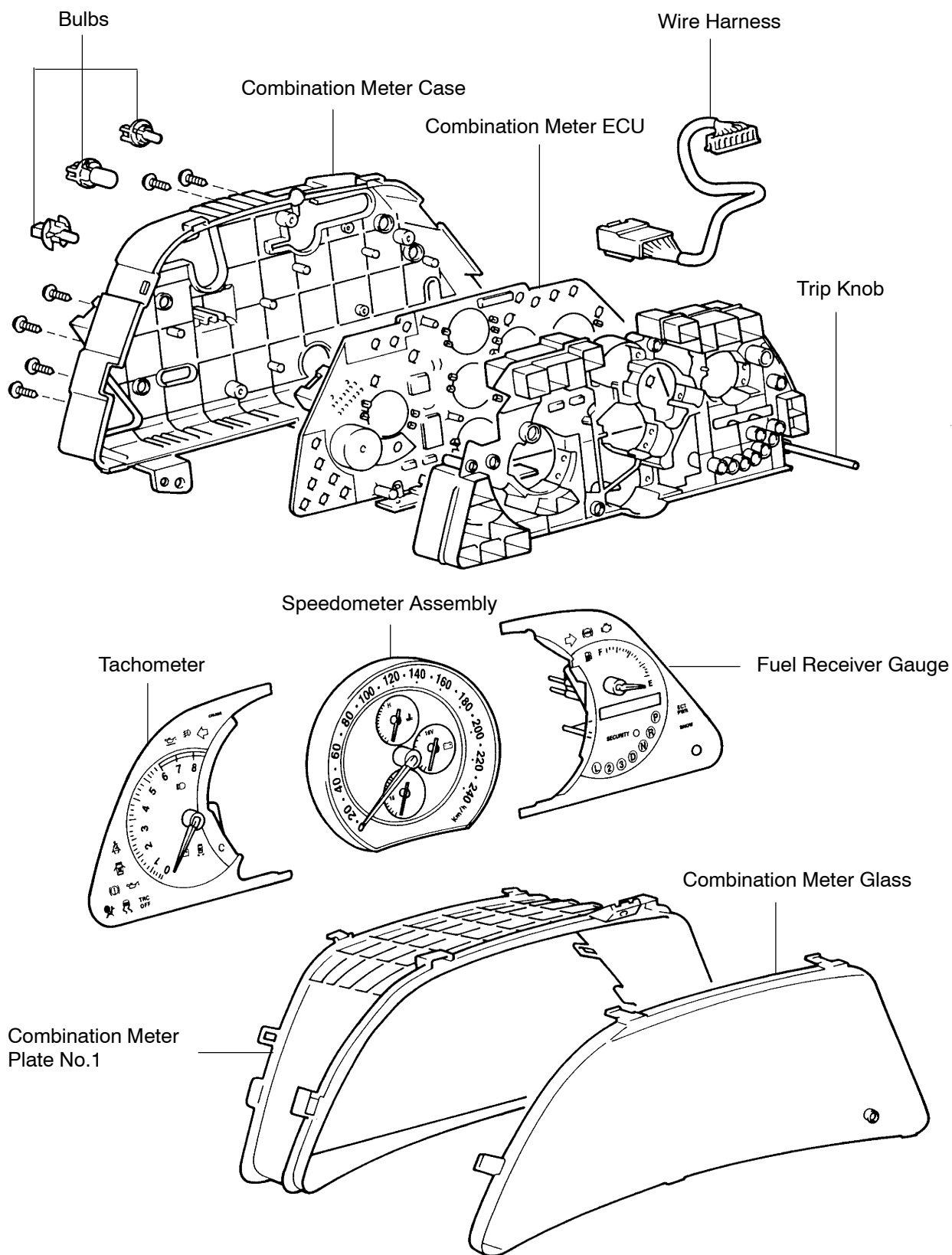
CIRCUIT





No.		Wiring connector side
A	1	Rheostat light control volume
	2	Turn signal light switch (Left)
	3	Turn signal light switch (Right)
	4	HEAD Fuse
	5	Headlight dimmer switch
	6	Brake fluid level warning switch
	7	Engine and ECT ECU
	8	Airbag sensor assembly
	9	ABS ECU
	12	Speed sensor (M/T) or ABS ECU (A/T)
	13	Speed control unit
	14	Engine and ECT ECU
	15	MPX+B Fuse
	16	DOME Fuse
	17	GAUGE Fuse
	18	Power ground
	19	Signal ground
	20	Multiplex communication circuit (MPX+)
	21	Multiplex communication circuit (MPX-)
	22	TAIL Fuse
B	1	Speed signal ground (M/T vehicle only)
	2	6M/T reverse buzzer (M/T vehicle only)
	3	ABS and TRC ECU
	4	ABS and TRC ECU
	5	Light failure relay
	6	Light failure relay
	7	Front fog light switch
	8	Transponder key ECU
	9	Daytime running light relay

COMPONENTS

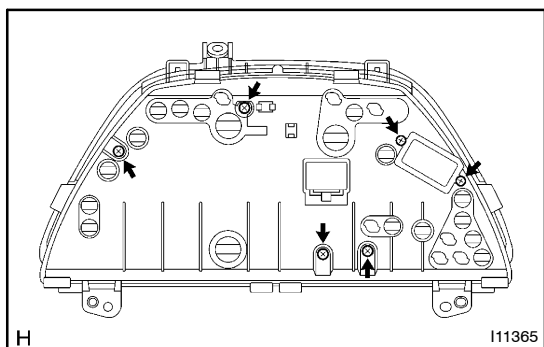


DISASSEMBLY

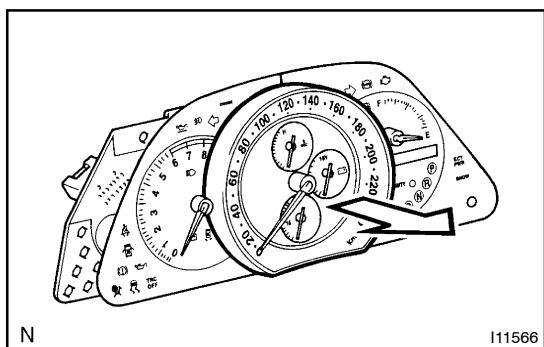
HINT:

Installation is in the reverse order of removal. Only if there is a specified procedure for installation it is shown.

1. **REMOVE INSTRUMENT PANEL LWR**
(See page BO-93)
2. **REMOVE INSTRUMENT CLUSTER FINISH PANEL**
3. **REMOVE COMBINATION METER ASSEMBLY**
4. **REMOVE COMBINATION METER GLASS**
5. **REMOVE COMBINATION METER PLATE NO.1**



6. **REMOVE COMBINATION METER CASE**
 - (a) Separate the wire harness connector at the upper side of the combination meter assembly from the combination meter computer.
 - (b) Remove the 6 screws as shown in the illustration, and remove the combination meter.
7. **REMOVE THE WIRE HARNESS**



8. **REMOVE SPEEDOMETER ASSEMBLY**
Pull the speed meter assembly in the direction indicated by the arrow in the illustration and disconnect the engagement of the combination meter computer assembly to remove the speed meter assembly.

NOTICE:

**Use gloves so as not to scratch or stain the panel surface.
Do not apply unnatural force.**

9. **REMOVE ENGINE TACHO METER ASSEMBLY**

HINT:

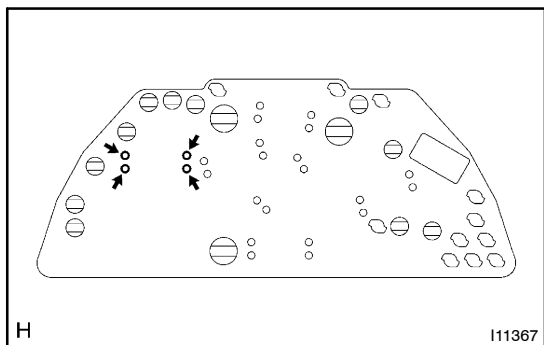
Remove it in the same procedure as for the speed meter assembly.

10. **REMOVE FUEL RECEIVER GAUGE.**

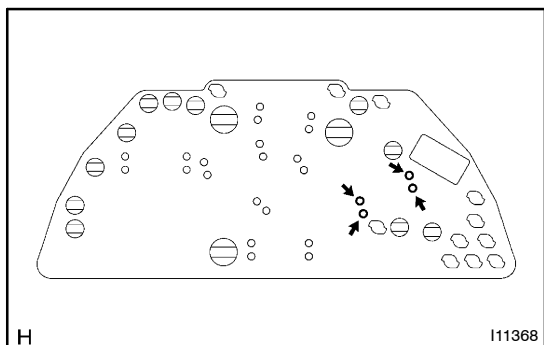
HINT:

Remove it in the same procedure as for the speed meter assembly.

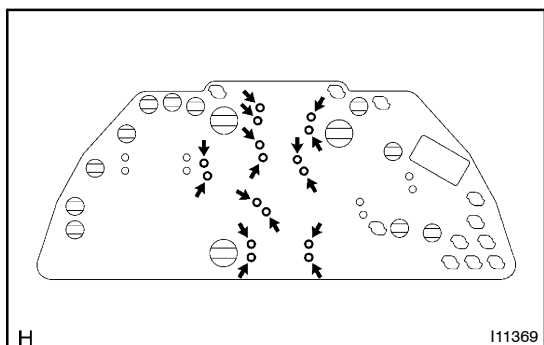
11. **REMOVE TRIP KNOB**
12. **REMOVE COMBINATION METER COMPUTER ASSEMBLY**

**13. INSTALL FUEL RECEIVER GAUGE**

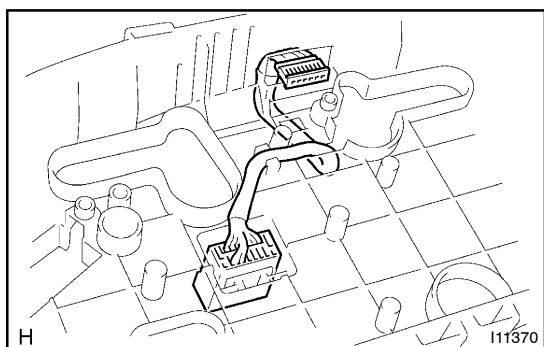
Install the fuel receiver gauge to the combination computer assembly, and check that the gauge terminal shown in the illustration are fitted in securely.

**14. INSTALL ENGINE TACHO METER ASSEMBLY**

Install the engine tachometer assembly to the combination meter assembly, and check that the gauge terminals shown in the illustration are fitted in securely.

**15. INSTALL SPEEDOMETER ASSEMBLY**

Install the speedometer assembly to the combination meter computer assembly, and check that the gauge terminals shown in the illustration are fitted in securely.

**16. INSTALL WIRE HARNESS**

Route the wire harness as shown in the illustration and install it to the combination meter case.

INSPECTION

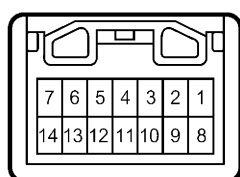
1. INSPECT COMBINATION METER CIRCUIT

Connector connected:

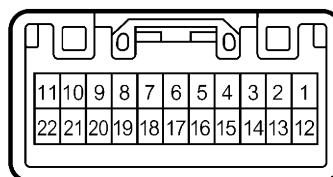
Connect connector "A" and "B" from the combination meter and inspect the connectors on the wire harness side as shown in the table.

Connector connected

Connector B"



Connector A"



I11995

Tester connection	Condition	Specified condition
A1 – Ground (ILL–)	Light control switch TAIL or HEAD	Continuity
A2 – Ground (Turn L)	Ignition switch ON and turn signal switch Left	Battery voltage
A3 – Ground (Turn R)	Ignition switch ON and turn signal switch Right	Battery voltage
A4 – Ground (Beam +)	Constant	Battery voltage
A5 – Ground (Beam –)	Headlight dimmer switch HI	Battery voltage
A6 – Ground (BRK level)	Ignition switch ON and Brake fluid level warning switch LO	Battery voltage
A7 – Ground (Check engine)	Ignition switch ON and engine running	Battery voltage
A8 – Ground (SRS)	SRS warning light does not light up	Battery voltage
A9 – Ground (ABS)	Ignition switch ON and ABS warning does not lights up	Battery voltage
A12 – Ground (Speed signal input)	Ignition switch ON and turn propeller shaft slowly	Battery voltage
A13 – Ground (Speed signal output)	Ignition switch ON and turn propeller shaft slowly	1 V to 4.5 – 5.5 V
A14 – Ground (Tachometer signal)	Engine running	Pulse generation *1
A15 – Ground (MPX +B)	Constant	Battery voltage
A16 – Ground (DOME +B)	Constant	Battery voltage

A17 – Ground (IGN)	Ignition switch ON	Battery voltage
A18 – Ground (Power ground)	Constant	Continuity
A19 – Ground (Signal ground)	Constant	Continuity
A20 – Ground (MPX+)	Ignition switch ON	Pulse generation
A21 – Ground (MPX-)	Ignition switch ON	Pulse generation
A22 – Ground (ILL+)	Light control switch TAIL or HEAD	Battery voltage
B1 – Ground (SP ground)	Constant	Continuity
B2 – Ground (6M/T R buzzer)	Ignition switch ON and shift lever except R range	Battery voltage
B3 – Ground (TRC OFF)	Ignition switch ON and TRC OFF indicator does not light up.	Battery voltage
B4 – Ground (SLIP)	Ignition switch ON and SLIP indicator does not light up	Battery voltage
B5 – Ground (BRAKE LIGHT LAILURE)	Ignition switch ON and Brake Fluid Level Warning Switch ON (Master Cylinder Float down)	Battery voltage
B6 – Ground (Rear Lights)	Ignition Switch ON and rear lights bulb is blown.	Battery voltage
B7 – Ground (Front Fog)	Light control switch TAIL and Front fog light Switch ON.	Battery voltage
B8 – Ground (Security)	Theft deterrent system is operating	Battery voltage
B9 – Ground (Alternator L terminal)	Engine running	Battery voltage

If circuit is not as specified, wiring diagram and inspect the circuits connected to other parts.

2. INSPECT SPEEDOMETER/ODOMETER

Using a speedometer tester, inspect the speedometer for allowable indication error and check the operation of the odometer.

HINT:

Tire wear and tire over or under inflation will increase the indication error.

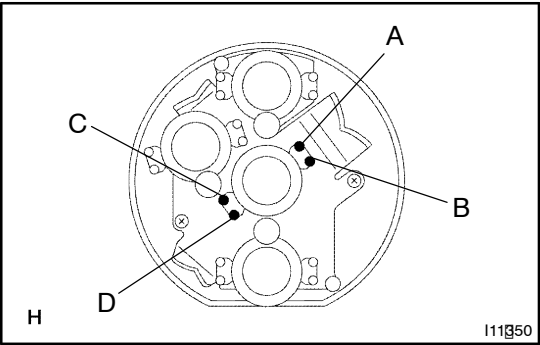
Europe Models

(mph)		(km/h)	
Standard Indication	Allowable Range	Standard Indication	Allowable Range
20	20 – 24.5	20	20 – 26
40	40 – 46.5	40	40 – 48
60	60 – 68.5	60	60 – 70
80	80 – 90.5	80	80 – 92
100	100 – 112.5	100	100 – 114
–	–	120	120 – 136
–	–	140	140 – 158
–	–	160	160 – 180

Australia

(mph)		(km/h)	
Standard Indication	Allowable Range	Standard Indication	Allowable Range
–	–	40	36 – 44
–	–	60	54 – 66
–	–	80	72 – 88
–	–	100	90 – 110
–	–	120	108 – 132
–	–	140	126 – 154
–	–	160	144 – 176

If error is excessive, replace the speedometer.



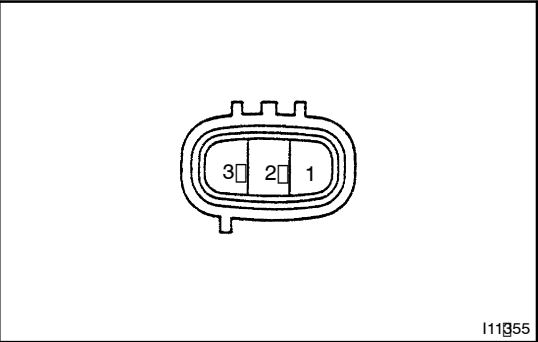
3. INSPECT SPEEDOMETER RESISTANCE

(See page DI-533)

Measure the resistance between terminals with fixing pointer to the stopper.

Tester connection	Resistance (Ω)
A – B	160
C – D	160

If resistance value is not as the specified, replace the meter.



4. M/T vehicle:
INSPECT VEHICLE SPEED SENSOR OPERATION
(See page DI-541)

- (a) Connect the positive (+) lead from battery to terminal 1 and negative (-) lead to terminal 2.
- (b) Connect the positive (+) lead from tester to terminal 3 and negative (-) lead to terminal 2.
- (c) Rotate shaft.
- (d) Check that there is a voltage change from approx. 0 V to 11 V or more between terminals 2 and 3.

HINT:
The voltage change should be 4 times for every revolution of the speed sensor shaft.
If operation is not as specified, replace the sensor.

5. INSPECT TACHOMETER/
ON-VEHICLE

- (a) Connect a tune-up test tachometer, and start the engine.
- NOTICE:

- Reversing the connection of the tachometer will damage the transistors and diodes inside.
- When removing or installing the tachometer, be careful not to drop or subject it to heavy shocks.

- (b) Compare the tester and tachometer indications.
DC 13.5 V 25 ° C at (77 ° F)

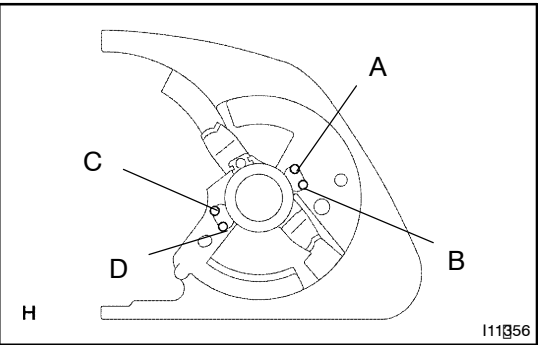
Standard indication	Allowable range
700	630 - 770
1,000	(900 - 1,100)
2,000	(1,850 - 2,150)
3,000	2,800 - 3,200
4,000	(3,800 - 4,200)
5,000	4,800 - 5,200
6,000	(5,750 - 6,250)
7,000	6,700 - 7,300

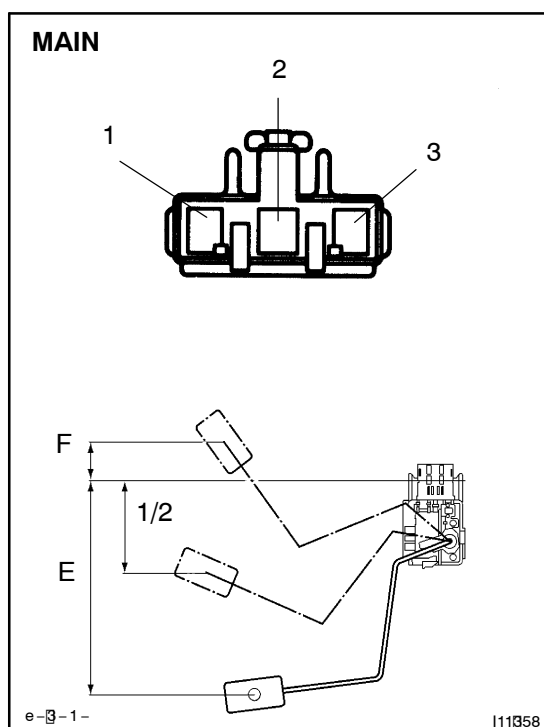
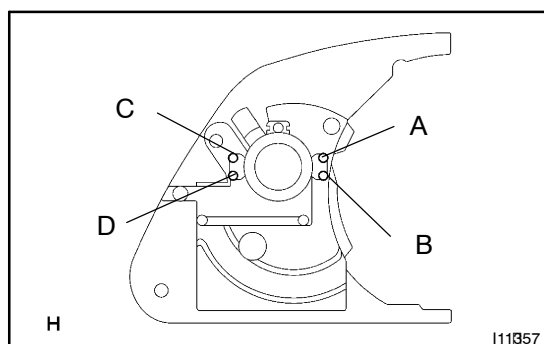
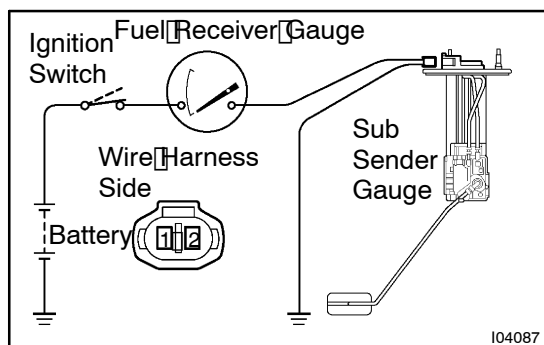
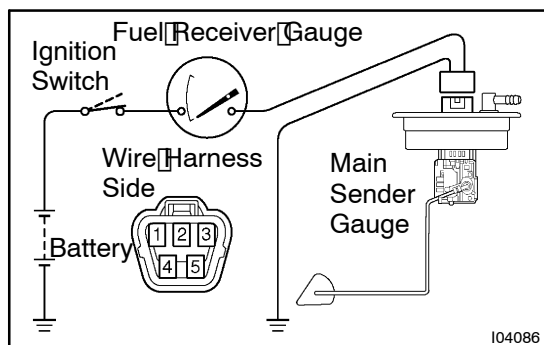
6. INSPECT TACHOMETER RESISTANCE
(See page DI-534)

Measure the resistance between terminals with fixing pointer to the stopper.

Tester connection	Resistance (Ω)
A - B	160
C - D	160

If resistance value is not as specified, replace the meter.





7. INSPECT FUEL RECEIVER GAUGE OPERATION (See page DI-581)

- Disconnect the connector from the main sender gauge.
- Turn the Ignition switch ON, check that the receiver gauge needle indicates EMPTY.

- Connect the main sender gauge.
- Disconnect the connector from the sub sender gauge.
- Turn the Ignition switch ON, check that the receiver gauge needle indicates EMPTY.

HINT:

Because of the silicon oil in the gauge, it will take a short time for needle to stabilize.

If operation is not as specified, inspect the receiver gauge resistance.

8. INSPECT FUEL RECEIVER GAUGE RESISTANCE (See page DI-535)

Measure the resistance between terminals with fixing pointer to the stopper.

Tester connection	Resistance (Ω)
A - B	160
C - D	160

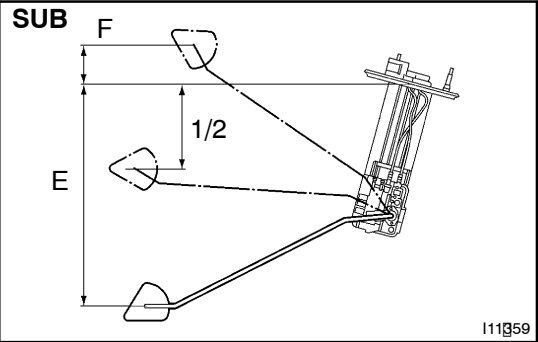
If resistance value is not as specified, replace the receiver gauge.

9. INSPECT FUEL MAIN SENDER GAUGE RESISTANCE

Measure the resistance between terminals 1 and 2 for each float position.

Float position (mm (in.))	Resistance (Ω)
F: Approx. 22.9 (0.90) ± 3 (0.12)	Approx. 2.0 ± 1.0
1/2: Approx. 58.3 (2.30) ± 3 (0.12)	Approx. 30.3 ± 3.0
E: Approx. 133.6 (5.26) ± 3 (0.12)	Approx. 55.0 ± 1.0

If resistance value is not as specified, replace the main sender gauge.

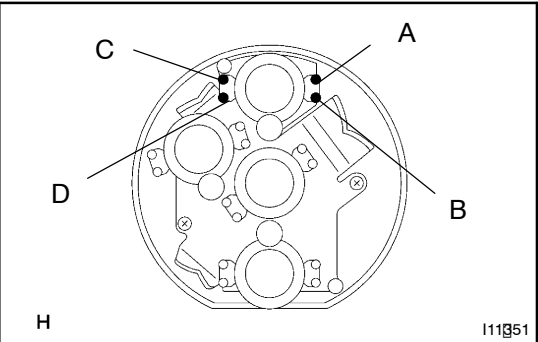


10. INSPECT FUEL SUBSENDER GAUGE RESISTANCE
Measure the resistance between terminals 1 and 2 for each float position.

Float position (mm (in.))	Resistance (Ω)
F: Approx. 29.1 (1.15) ± 3 (0.12)	Approx. 2.0 ± 1.0
1/2: Approx. 65.8 (2.59) ± 3 (0.12)	Approx. 29.7 ± 3.0
E: Approx. 169.5 (6.67) ± 3 (0.12)	Approx. 55 ± 1.0

If resistance value is not as specified, replace the sub sender gauge.

11. INSPECT WATER TEMPERATURE RECEIVER GAUGE OPERATION
(See page DI-537)



12. INSPECT WATER TEMPERATURE RECEIVER GAUGE RESISTANCE

Measure the resistance between terminals with fixing pointer to the stopper.

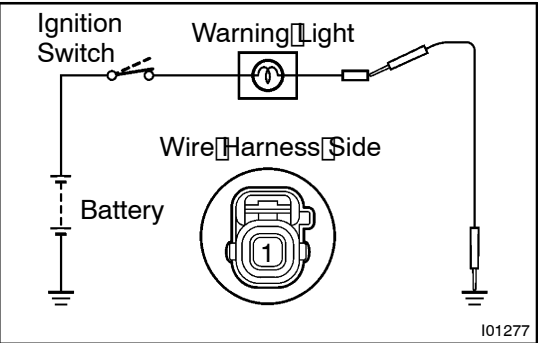
Tester connection	Resistance (Ω)
A – B	160
C – D	160

If resistance value is not as specified, replace the receiver gauge.

HINT:

This circuit includes the diode.

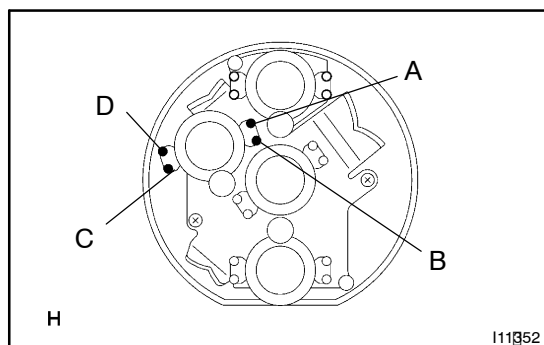
If resistance value is not as specified, replace the receiver gauge.



13. INSPECT LOW OIL PRESSURE WARNING LIGHT

- Disconnect the connector from the warning switch and ground terminal on the wire harness side connector.
- Turn the ignition switch ON and check that the warning light lights up.

If the warning light does not light up, test the bulb.



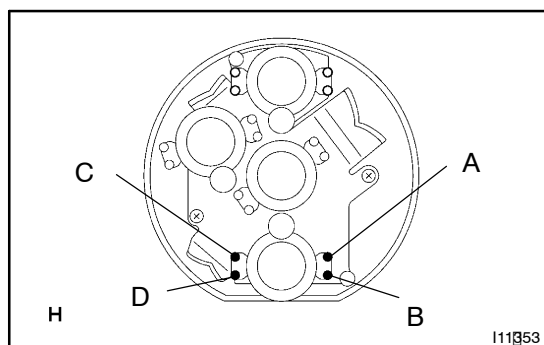
I11352

14. INSPECT VOLTAGE GAUGE RESISTANCE**(See page DI-539)**

Measure the resistance between terminals with fixing pointer to the stopper.

Tester connection	Resistance (Ω)
A - B	160
C - D	160

If resistance value is not as specified, replace the receiver gauge.



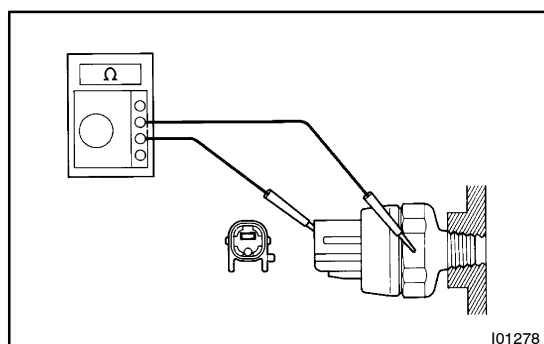
I11353

15. INSPECT SPECIFIC FUEL CONSUMPTION GAUGE RESISTANCE**(See page DI-540)**

Measure the resistance between terminals with fixing pointer to the stopper.

Tester connection	Resistance (Ω)
A - B	160
C - D	160

If resistance value is not as specified, replace the meter.



I01278

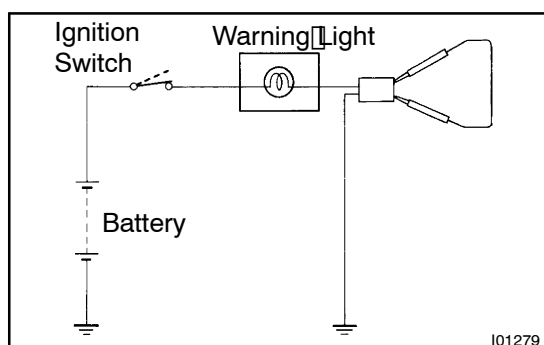
16. INSPECT OIL PRESSURE SENDER CONTINUITY

- Disconnect the connector from the oil pressure sender.
- Check that no continuity exists between terminal and ground with the engine stopped.
- Check that continuity exists between terminal and ground with the engine running.

HINT:

Oil pressure should be over 24.5 kPa (0.25 kgf/cm², 3.55 psi).

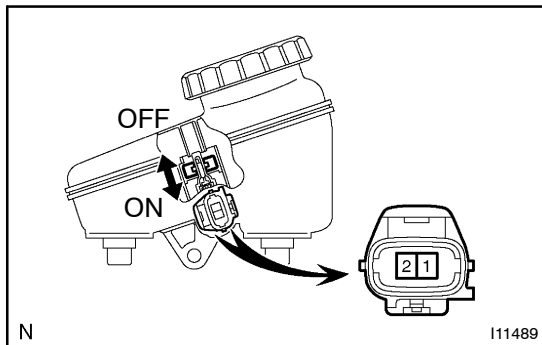
If operation is not as specified, replace the oil pressure sender.



I01279

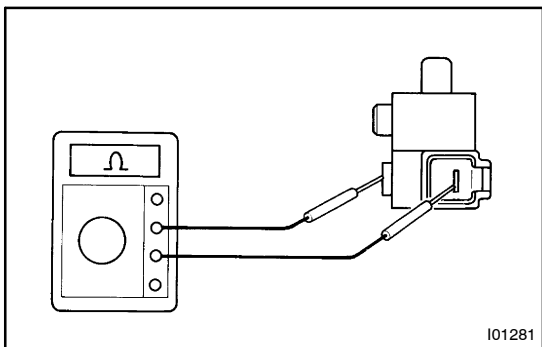
17. INSPECT BRAKE WARNING LIGHT

- Disconnect the connector from the brake fluid warning switch.
 - Release the parking brake pedal.
 - Connect the terminals on the wire harness side of the level warning switch connector.
 - Start the engine, check that the warning light lights up.
- If the warning light does not light up, test the bulb or wire harness.



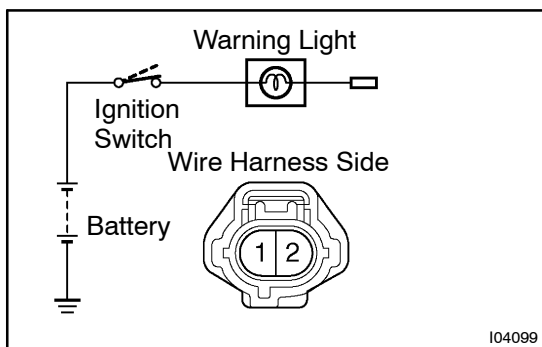
18. INSPECT BRAKE FLUID LEVEL WARNING SWITCH CONTINUITY

- Remove the reservoir tank cap and strainer.
 - Disconnect the connector.
 - Check that no continuity exists between the terminals with the switch OFF (float up).
 - Use siphon, etc. to take fluid out of the reservoir tank.
 - Check that continuity exists between the terminals with the switch ON (float down)
 - Pour the fluid back in the reservoir tank.
- If operation is not as specified, replace the switch.



19. INSPECT PARKING BRAKE SWITCH CONTINUITY

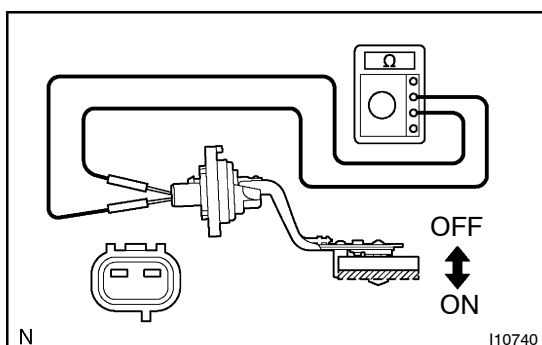
- Check that continuity exists between the terminal and switch body with the switch ON (switch pin released).
 - Check that no continuity exists between the terminal and switch body with the switch OFF (switch pin pushed in).
- If operation is not as specified, replace the switch or inspect ground point.



20. INSPECT ENGINE OIL LEVEL WARNING LIGHT

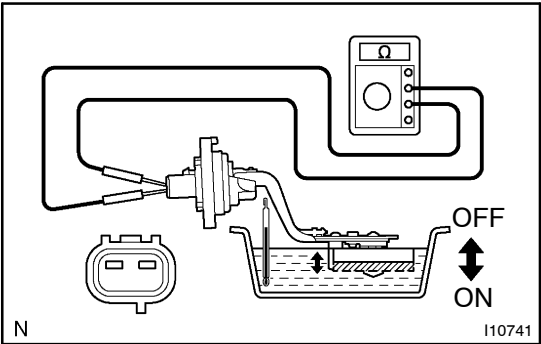
- Disconnect the connector from the switch.
- Run the engine.
- Turn the ignition switch ON, check that the warning light lights up approximately 40 seconds later.

If the warning light does not light up, inspect bulb or wire harness.

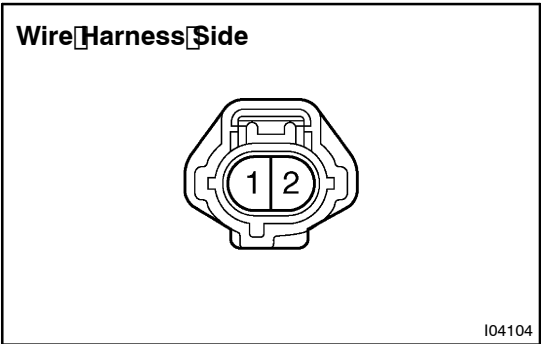


21. INSPECT ENGINE OIL LEVEL WARNING SENSOR

- Check that continuity exists between terminals with the switch to below 40 °C (104 °F). (Warning switch ON)
- Heat the switch to above 60 °C (140 °F) in an oil bath.



- (c) Check that there is continuity between terminals with the switch ON (float down).
- (d) Check that there is no continuity between terminals with the switch OFF (float up).
- If operation is not as specified, replace the switch.

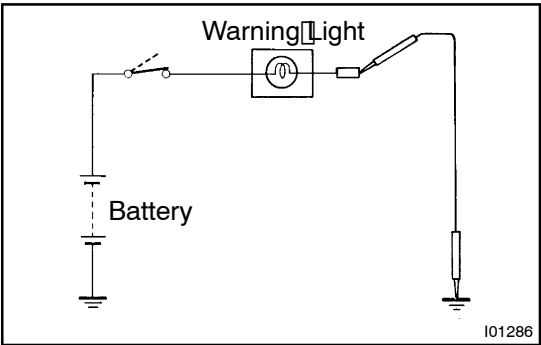


22. INSPECT ENGINE OIL LEVEL WARNING SENSOR CIRCUIT

Disconnect the switch connector and inspect the connector on wire harness side, as shown.

Tester Connection	Condition	Specified Condition
2 - Ground	Constant	Continuity

If continuity is not as specified, inspect the wire harness or ground point.



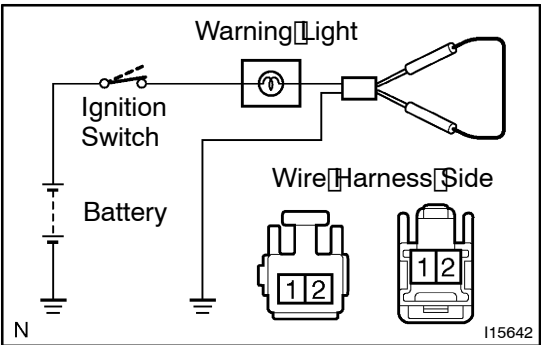
23. INSPECT OPEN DOOR WARNING LIGHT

Disconnect the connector from the door courtesy switch and ground terminal 1 on the wire harness side, and check that the warning light lights up.

If the warning light does not light up, inspect the bulb or wire harness.

24. INSPECT DOOR COURTESY SWITCH CONTINUITY AND CIRCUIT

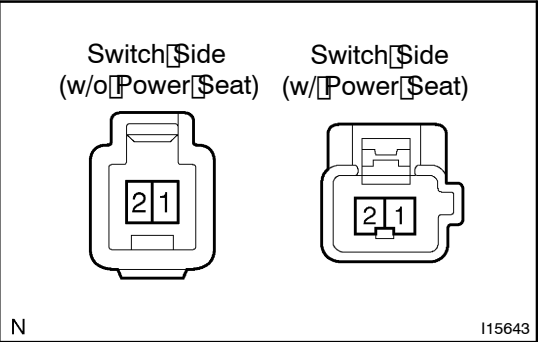
(See page DI-583)



25. INSPECT SEAT BELT WARNING LIGHT

- (a) Disconnect the connector from the buckle switch.
- (b) Connect terminal on the wire harness side of the buckle switch connector.
- (c) Turn the ignition switch ON and check that the warning light lights up.

If the warning light does not light up, inspect the bulb or wire harness.



26. INSPECT SEAT BELT BUCKLE SWITCH CONTINUITY

- (a) Check that continuity exists between the terminals 1 and 2 on the switch side connector with the switch ON (belt fastened).
- (b) Check that continuity exists between the terminals 1 and 2 on the switch side connector with the switch OFF (belt unfastened).

If operation is not as specified, replace the switch.

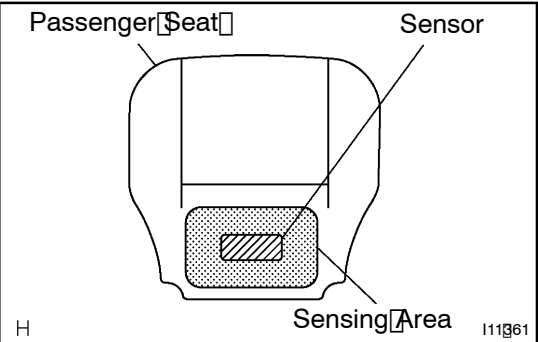
27. INSPECT SEAT BELT BUCKLE SWITCH CIRCUIT

(See page DI-578)

Disconnect the switch connector and inspect the connector on wire harness side, as shown.

Tester connection	Condition	Specified condition
2 - Ground	Constant	Continuity

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

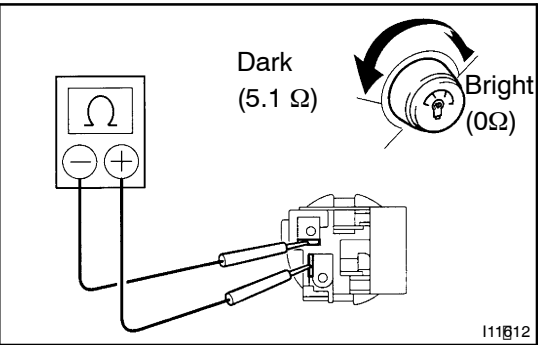


28. Passenger seat only:

INSPECT SEAT BELT WARNING OCCUPANT DETECTION SENSOR CONTINUITY

Check that continuity exists between the terminals 1 and 2 when pressing the sensing part.

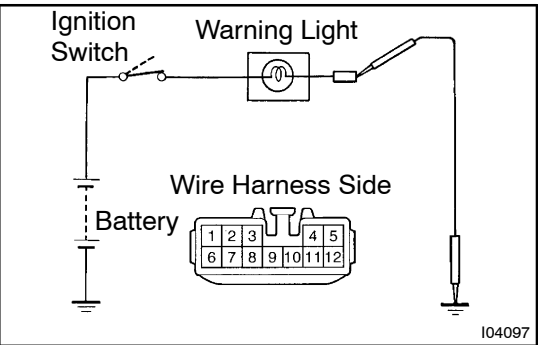
If operation is not as specified, replace the sensor.



29. INSPECT LIGHT CONTROL RHEOSTAT OPERATION

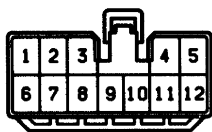
- (a) Turn the rheostat knob max. dark side and check that the resistance 5.1 Ω. (Rheostat knob turned to fully counter-clockwise)
- (b) Gradually, turn the rheostat knob from the dark side to bright side and check that the resistance decreases from 5.1 to 0 Ω. (Rheostat knob turned to clockwise)

If operation is not as specified, replace the rheostat light control.



30. INSPECT REAR LIGHTS WARNING LIGHT

- (a) Disconnect the connector from the light failure sensor and ground terminal 4, 5 or 9 on the wire harness side connector.
- (b) Start the engine, check that the warning light lights up. If the warning light does not light up, inspect the bulb or wire harness.

Wire Harness Side

S-12-1

Z06567

31. INSPECT LIGHT FAILURE SENSOR CIRCUIT

Disconnect the connector from the sensor and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
1 – Ground	Constant	* Continuity
2 – Ground	Constant	* Continuity
3 – Ground	Taillight ON	Battery voltage
5 – Ground (Europe)	Ignition switch ON	Battery voltage
9 – Ground	Constant	* Continuity
11 – Ground	Constant	Continuity
3 – Ground	Taillight or Headlight OFF	No voltage
3 – Ground	Taillight or Headlight ON	Battery voltage
4 – Ground	Ignition switch LOCK or ACC	No voltage
4 – Ground	Ignition switch ON	Battery voltage
7 – Ground	Stop light switch OFF	No voltage
7 – Ground	Stop light switch ON	Battery voltage
8 – Ground	Ignition switch LOCK or ACC	No voltage
8 – Ground	Ignition switch ON	Battery voltage

*: There is resistance because this circuit is grounded through the bulb.

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

Light
Control
Switch

TAIL

OFF

ON

Buzzer

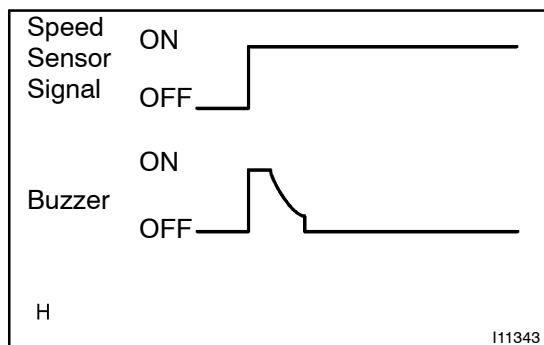
OFF

H

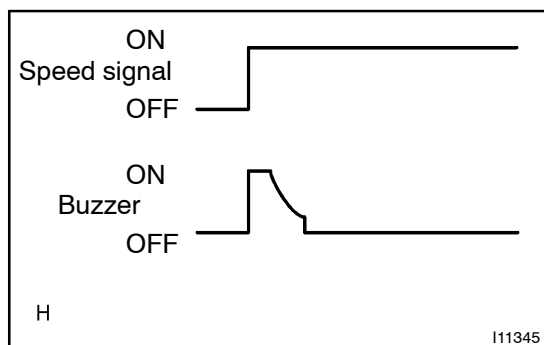
I11342

32. Europe models:**INSPECT LIGHT AUTO TURN OFF BUZZER**

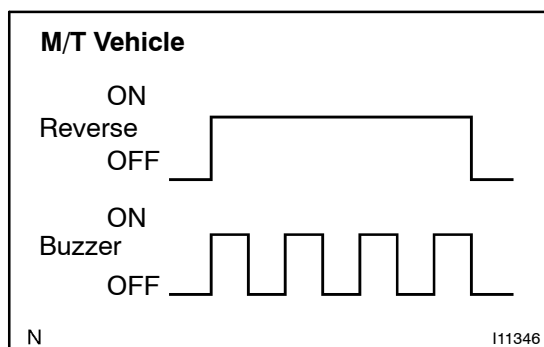
Check that the buzzer sound when driver's door is opened and turn light control switch position TAIL.

**33. INSPECT OPEN DOOR WARNING BUZZER**

Check that the buzzer sound when any door is opened and vehicle speed 5 km/h or more.

**34. INSPECT PARKING BRAKE WARNING BUZZER**

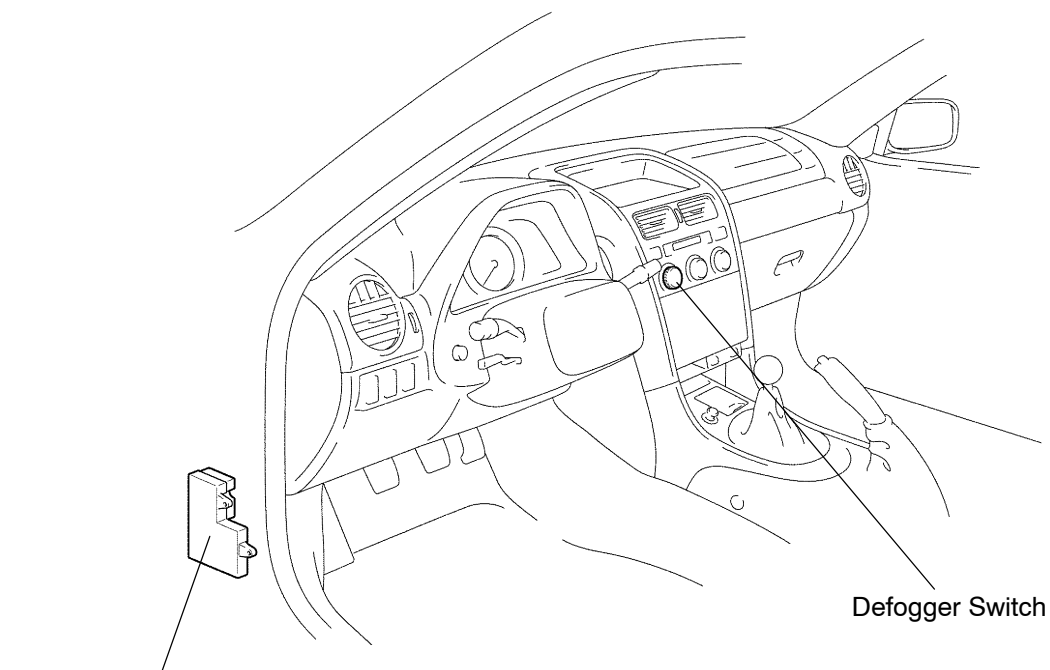
Check that the buzzer sound when parking brake lever released and vehicle speed 5 km/h or more.

**35. INSPECT REVERSE WARNING BUZZER**

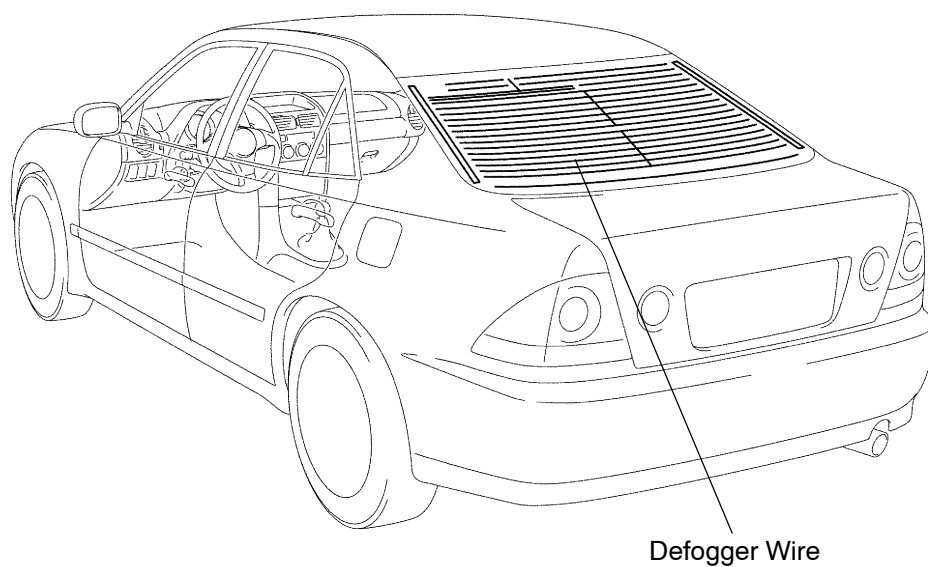
Check that the buzzer sound when ignition switch position ON and shift lever position R.

DEFOGGER SYSTEM LOCATION

BE0GS-09

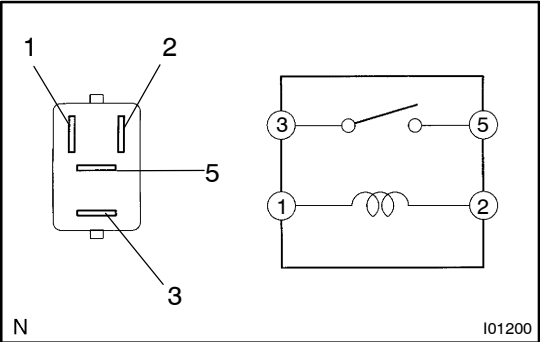


- Driver Side Junction Block
- Defogger Relay
 - DEFOG Fuse



INSPECTION

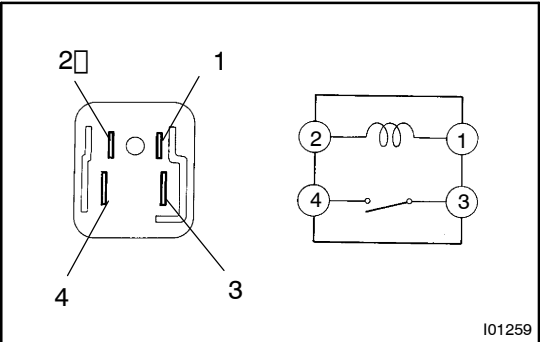
1. INSPECT DEFOGGER SWITCH (See page AC-91)



2. RHD models:
INSPECT DEFOGGER RELAY CONTINUITY

Condition	Tester connection	Specified condition
Constant	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 5	Continuity

If continuity is not as specified, replace the relay.

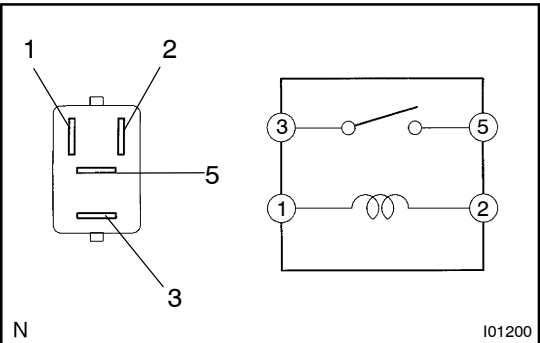


3. LHD models:
INSPECT DEFOGGER RELAY CONTINUITY

Condition	Tester connection	Specified condition
Constant	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 4	Continuity

If continuity is not as specified, replace the relay.

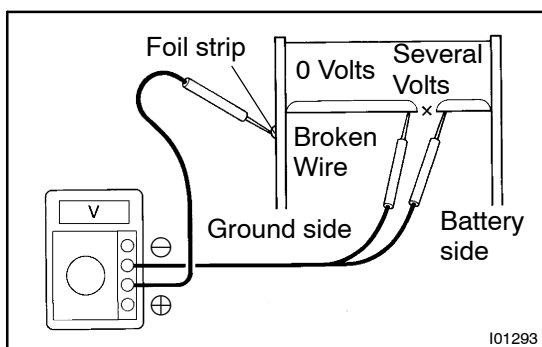
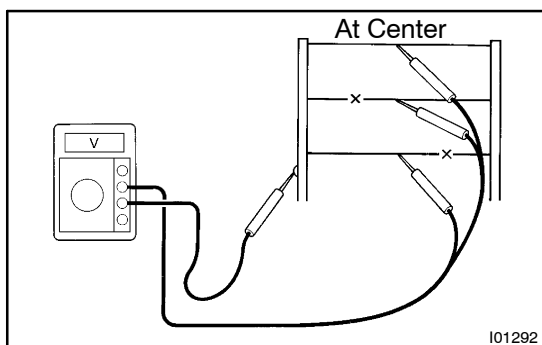
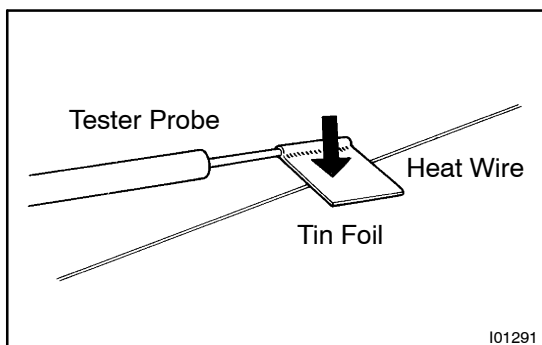
4. INSPECT DEFOGGER RELAY CIRCUIT
(See page DI-605)



5. INSPECT MIRROR DEFOGGER RELAY CONTINUITY

Condition	Tester connection	Specified condition
Constant	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 5	Continuity

If continuity is not as specified, replace the relay.



6. INSPECT DEFOGGER WIRE

NOTICE:

- When cleaning the glass, use a soft, dry cloth, and wipe the glass in the direction of the wire. Take care not to damage the wires.
- Do not use detergents or glass cleaners with abrasive ingredients.
- When measuring voltage, wrap a piece of tin foil around the tip of the negative probe and press the foil against the wire with your finger, as shown.

- Turn the ignition switch ON.
- Turn the defogger switch ON.
- Inspect the voltage at the center of each heat wire, as shown.

Voltage	Criteria
Approx. 5V	Okay (No break in wire)
Approx. 10V or 0V	Broken wire

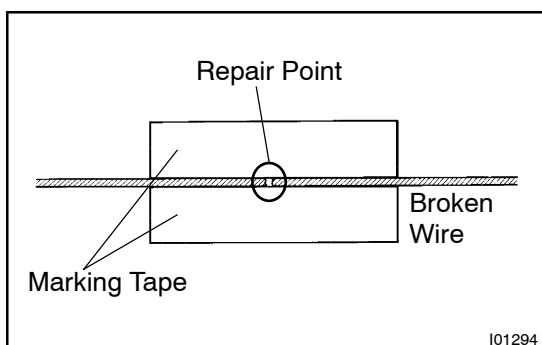
HINT:

If there is approximately 10 V, the wire is broken between the center of the wire and the positive (+) end. If there is no voltage, the wire is broken between the center of the wire and ground.

- Place the voltmeter positive (+) lead against the defogger wire on the battery side.
- Place the voltmeter negative (-) lead with the foil strip against the wire on the ground side.
- Slide the positive (+) lead from battery to ground side.
- The point where the voltmeter deflects from several V to zero V is the place where the defogger wire is broken.

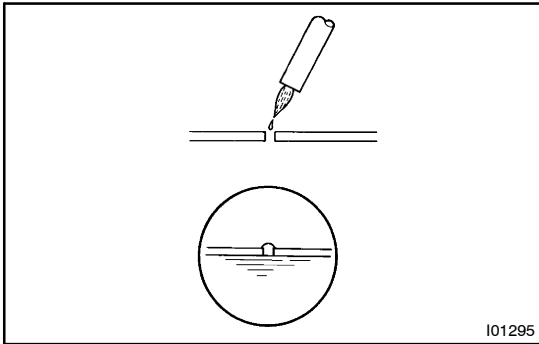
HINT:

If the heat wire is not broken, the voltmeter indicates 0 V at the positive (+) end of the heat wire but gradually increases to about 12 V as the meter probe moves to the other end.

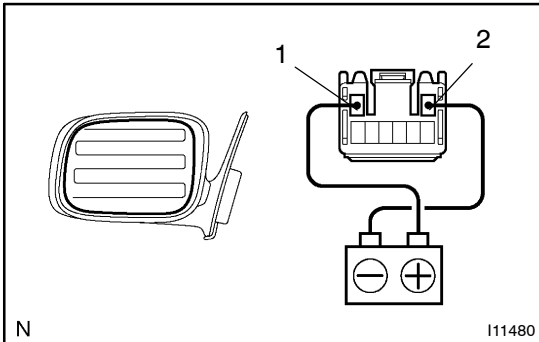


7. IF NECESSARY, REPAIR DEFOGGER WIRE

- Clean the broken wire tips with grease, wax and silicone remover.
- Place the masking tape along both sides of the wire for repair.
- Thoroughly mix the repair agent (Dupont paste No. 4817).



- (d) Using a fine tip brush, apply a small amount of the agent to the wire.
- (e) After a few minutes, remove the masking tape.
- (f) Do not repair the defogger wire for at least 24 hours.



8. w/ Mirror heater:

INSPECT MIRROR DEFOGGER OPERATION

- (a) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1.
- (b) Check that the mirror becomes warm.

HINT:

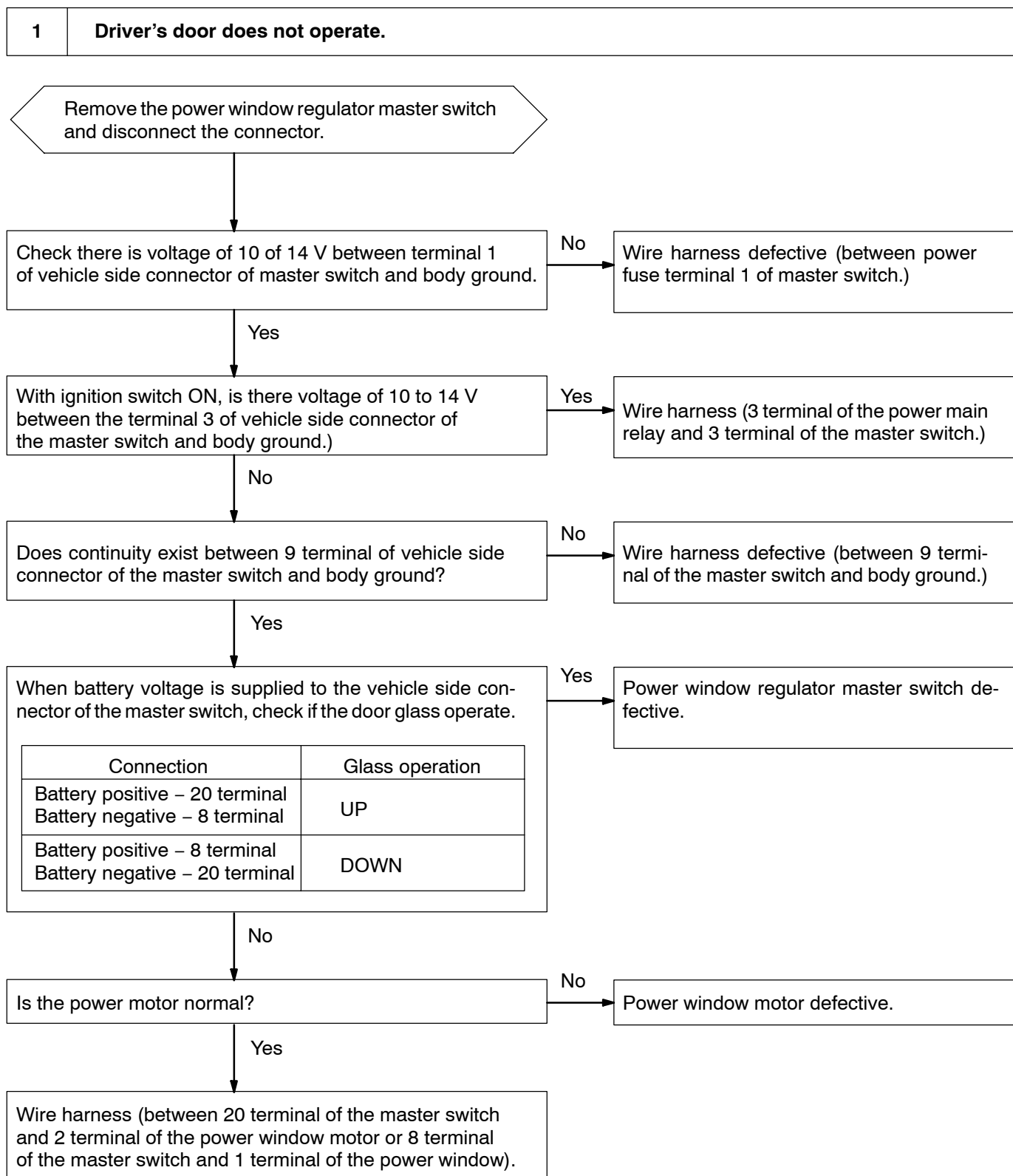
It will take a short time for the mirror to become warm.

POWER WINDOW CONTROL SYSTEM

TROUBLESHOOTING

BE02C-10

Malfunction symptoms	Applicable chart
Driver's door does not operate.	1
Passenger's and all rear doors do not operate by using the switches at each seat.	2
Any of passenger's and rear doors does not operate by using the switches of each seat.	3
Passenger's and all rear doors are not controlled remotely by using the master switch. (Switches of each door can be operated.)	4
AUTO UP and AUTO DOWN does not operate. (Prepare a normal master switch.)	5
DOWN operation operates during door glass AUTO UP operation.	6
Even though a foreign object is caught, DOWN operation does not function.	7
After ignition switch has been turned to OFF by using a key, power window function does not operate.	8



2

Passenger's and all rear doors do not operate by using the switches of each seat.

Remove the power window regulator master switch.
(with connectors connected)

With the ignition switch ON, is the voltage normal between 6
terminal of the master switch and body ground?

OK:

Window lock switch NORMAL -----10 to 14 V

Window lock switch LOCK -----0 V

No

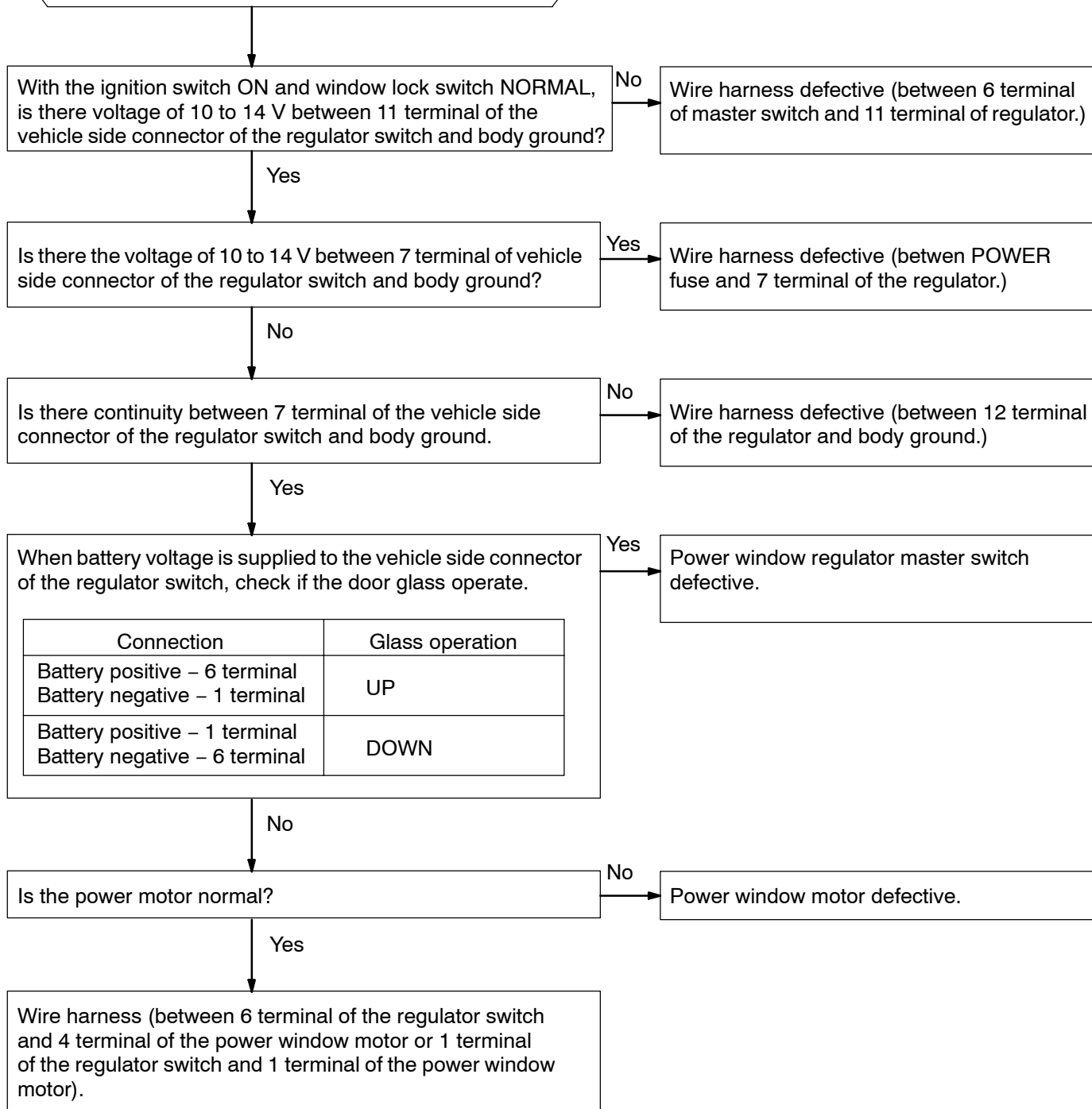
Power window regulator master switch
detecive.

Yes

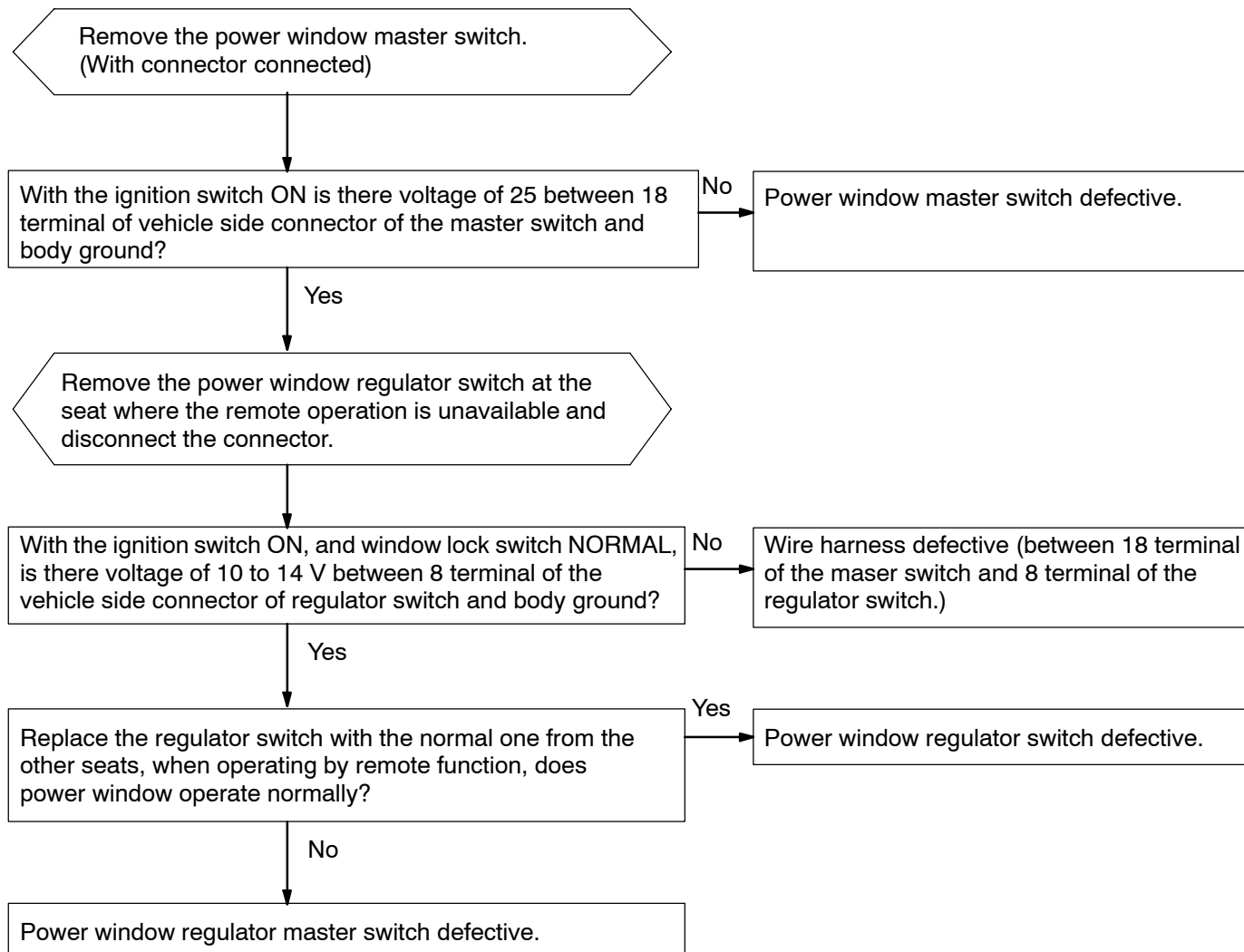
Go to chart 3

3 Any of passenger's and all rear doors does not operate by using the switches at each seat.

Remove the power window regulator switch at the seat where the operation is unavailable and disconnect the connector.



- 4** **Passenger's and all rear doors are not controlled remotely by using the master switch.**
(Switches at each door can be operated.)



5 AUTO UP and AUTO DOWN do not operate. (Prepare a normal master switch.)

Remove the master switch or regulator switch at the seat where AUTO UP and AUTO DOWN is unavailable. (With connectors connected)

Master of regulator switch inspection:

Are the voltage and continuity of the connectors connected to the master switch or regulator switch normal?

OK:

Terminal No.		Item	Inspection condition	Standard
13	3	Voltage	Fully open by manual operation → fully close → switch OFF	Less than 1 → 10 V to 14 → 0 V
12	4	Voltage	During power window operation	Approx. 5.5 V
10	2	Continuity	Constant	Continuity

No

Yes

Disconnect the connectors of the master switch or regulator switch and power window motor.

Master or regulator switch defective.

Does continuity exist between connectors of the following vehicle side connectors?

Switch side ↔ Motor side

13 (3) terminal ↔ 3 terminal

12 (4) terminal ↔ 4 terminal

10 (2) terminal ↔ 2 terminal

The number in parenthesis shows the terminal No.

No

Wire harness defective (Open circuit in each terminal)

Yes

Does continuity exist between 13 (3), 12 (4) and 10 (2) terminals on the switch side or 3, 4, 2 terminals and body ground?

No

Wire harness defective (Short circuit).

Yes

Connect the connector of power window motor.

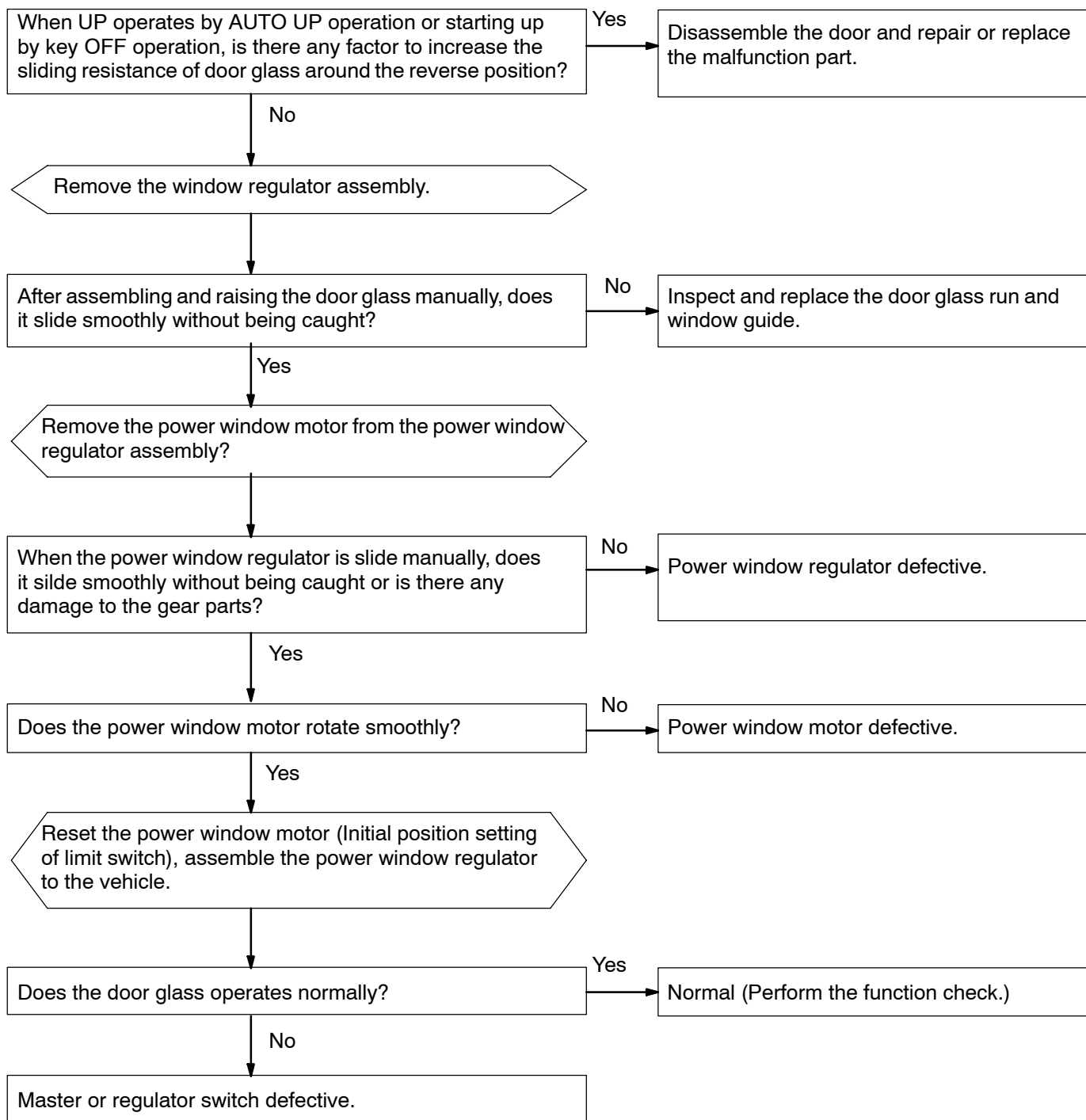
Connect the normal master switch or regulator switch and check if AUTO UP and DOWN operates.

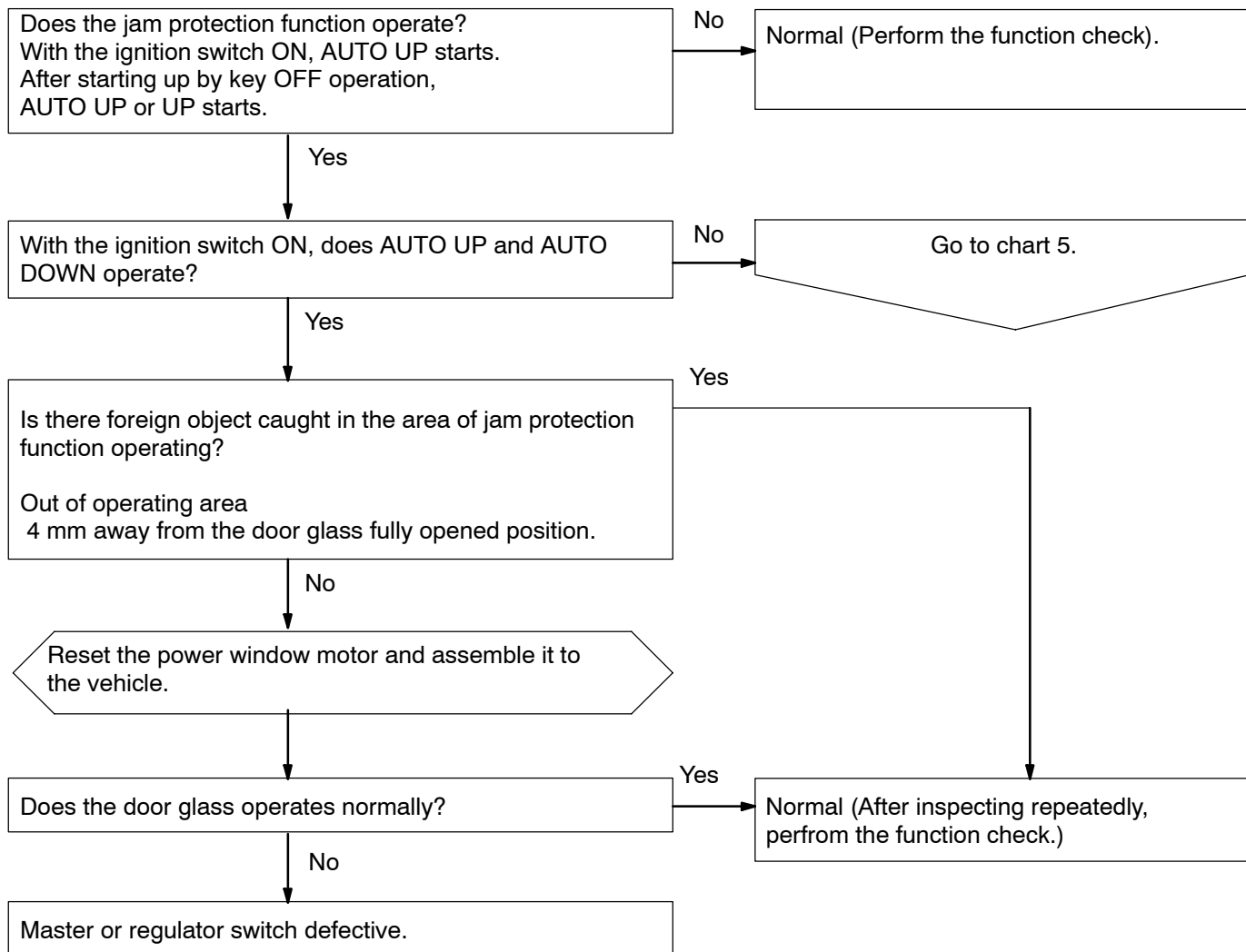
Yes

Master switch or regulator switch.

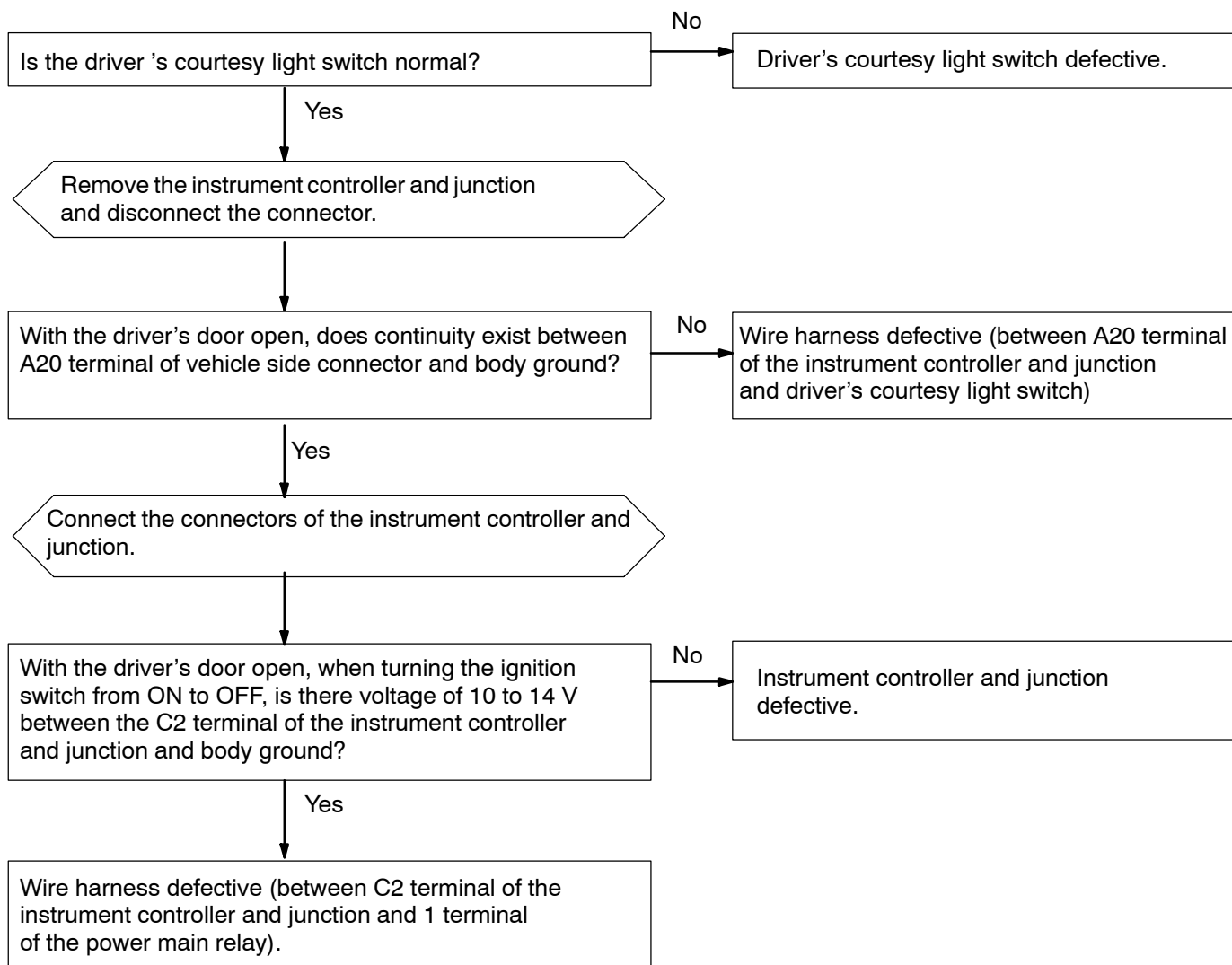
No

Power window motor defective.

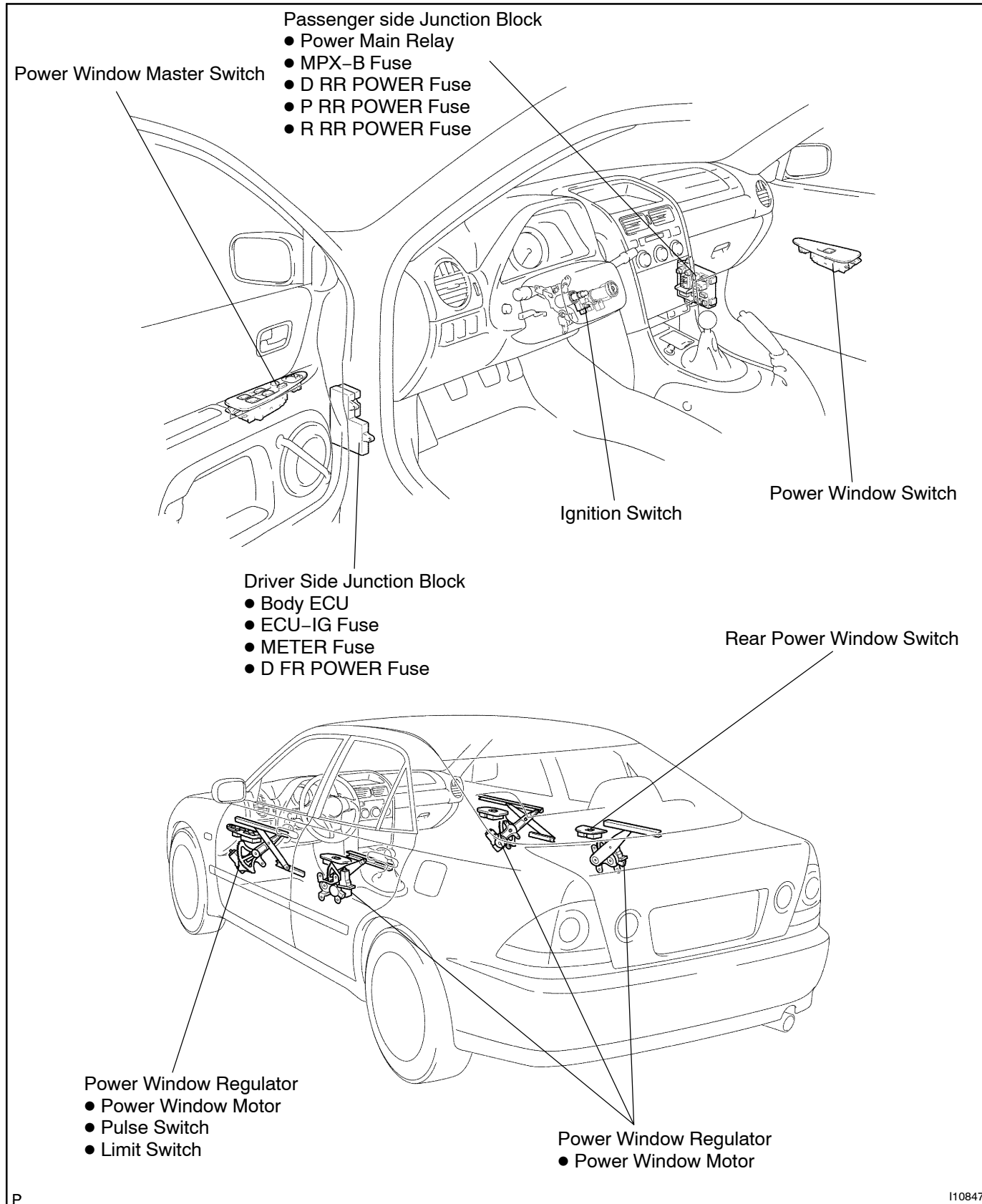
6 DOWN operates during door glass AUTO UP operation.


7 Even through a foreign object is caught, DOWN operation does not function.

8 After ignition switch has been turned OFF by using a key, power window function does not operate.



LOCATION



Timing diagram for the 11137 test protocol. The diagram shows a sequence of pulses and intervals. The first pulse is 1.5 min. long, followed by a 0.5 min. interval. This is followed by a 2.5 min. interval, then a 4.0 min. interval, then a 3.5 min. interval, and finally a 4.0 min. interval. The sequence is labeled 'Repeat'.

A diagram of a 20-slot rack. It has a central divider and two side dividers. The slots are numbered 1 through 20. The top row contains slots 1, 2, 3, 4, 5, 6, 7, 8. The bottom row contains slots 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20. The central divider is located between slots 4 and 5. The side dividers are located between slots 1 and 2, and between slots 19 and 20.

N

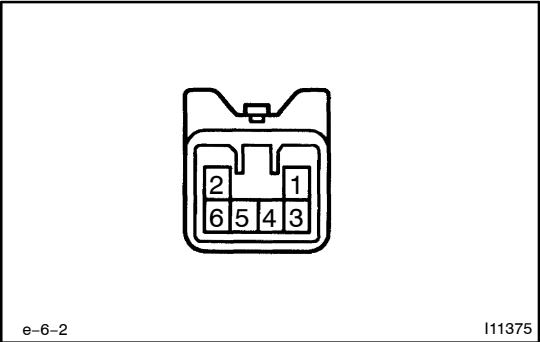
- Limit switch malfunction:
Even though the glass goes down from the fully closed position, the power window regulator switch assembly does not detect a change in limit switch signal within 2.0 secs. after the operation has started.
- Pulse sensor malfunction:
Even though the glass goes down from the fully closed position, the power window regulator switch assembly does not detect a change in pulse switch signal within 2.0 secs. after the operation has started.

Disconnect the connectors from the switch and inspect connector on the wire harness side.

Tester connection	Condition	Specified condition
9 – Ground	Constant	Continuity
1, 5 – Ground	Constant	Battery voltage
2, 4 – Ground	Ignition switch LOCK	No voltage
2, 4 – Ground	Ignition switch ACC or ON	Battery voltage

If circuit is not as specified, replace the switch.

3. INSPECT POWER WINDOW MASTER SWITCH CIRCUIT (See page DI-598)

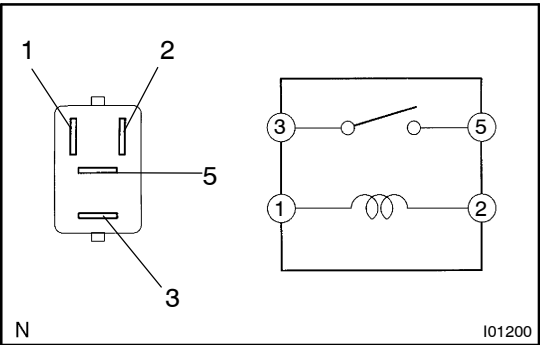


4. INSPECT POWER WINDOW SWITCH CONTINUITY
Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 6.

Switch position	Tester connection	Specified condition
UP	2 - 3 4 - 5	Continuity
OFF	-	No continuity
DOWN	2 - 4 3 - 5	Continuity

If continuity is not as specified, replace the switch.

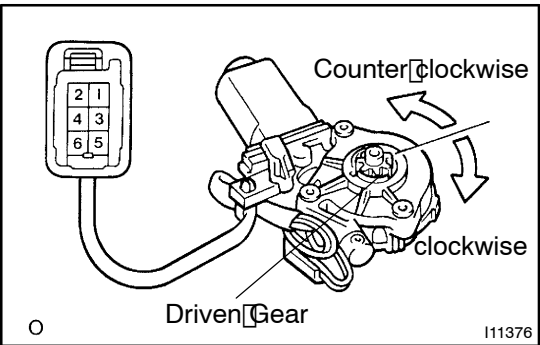
5. INSPECT POWER WINDOW SWITCH CIRCUIT (See page DI-602)



6. INSPECT POWER MAIN RELAY CONTINUITY

Condition	Tester connection	Specified condition
Constant	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 5	Continuity

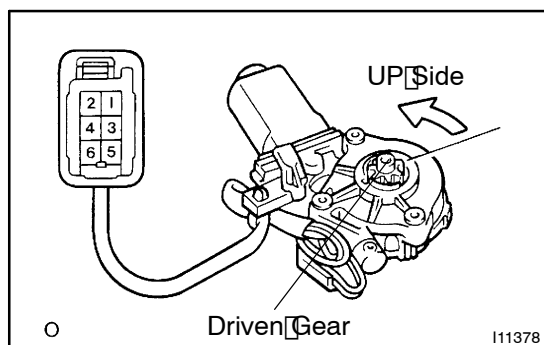
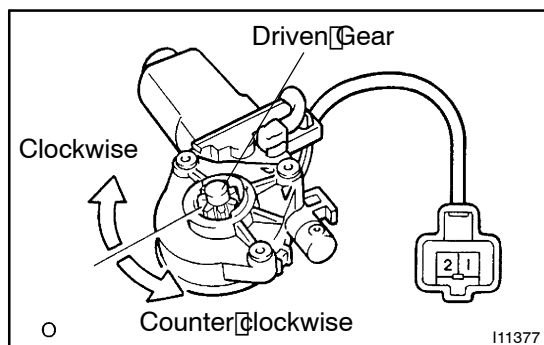
If continuity is not as specified, replace the relay.



7. Driver's door:
INSPECT POWER WINDOW MOTOR OPERATION

- (a) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, and check that the motor turns clockwise.
- (b) Reverse the polarity, check that the motor turns counter-clockwise.

If operation is not as specified, replace the motor.



8. Front passenger's door and rear door: INSPECT POWER WINDOW MOTOR OPERATION

- Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, and check that the motor turns clockwise.
- Reverse the polarity, check that the motor turns counter-clockwise.

If operation is not as specified, replace the motor.

9. INSPECT POWER WINDOW MOTOR CIRCUIT (See page DI-598)

10. INSPECT POWER WINDOW MOTOR PTC OPERATION

(): LHD models

- Disconnect the connector from the master switch.
- Connect the positive (+) lead from the battery to terminal 2 (1) and the negative (-) lead to terminal 1 (2) on the wire harness side connector and raise the window to full closed position.
- Continue to apply voltage, check that there is a PTC operation noise within approximately 4 to 90 seconds.
- Reverse the polarity, check that the window begins to descend within approximately 60 seconds.

If operation is not as specified, replace the motor.

11. INSPECT JAM PROTECTION FUNCTION

NOTICE:

Never, ever be caught any part of your body when checking.

HINT:

In case of performing resetting of the limit switch, do checking after repeating up and down of the glass with automatic operation.

- Confirmation of AUTO up operation:
Confirm that the window will be fully close with AUTO up operation.
- Checking of the operation of the jam protection function:
 - Move up the window with AUTO up operation and check that the window will go down when it touches the handle of the hammer studded.
 - Confirm that the window will then stop going down about 200 mm.

HINT:

In case of removing the glass, glass guide, regulator and etc. be sure to perform checking of the jam protection function.

If the jam protection is not functioned properly, adjust power window motor reset switch and pluse switch.

ADJUSTMENT

HOW TO RESET POWER WINDOW MOTOR (RESET SWITCH AND PULSE SWITCH)

If the jamprotection is not functioned properly, perform the following procedure.

HINT:

It is necessary to reset the power window motor (in initial position for the limit switch) when separating the window regulator from the power window motor or operating the window regulator with the door glass not installed.

- (a) Remove the power window motor.

HINT:

Place the matchmarks on the power window motor and window regulator gear.

- (b) Connect the power window motor and power window switch to wire harness of the vehicle.
(c) Turn the ignition switch ON and operate the power window switch to idle the power window motor in UP side direction for more than 6 rotations or less than 10 rotates (4 seconds or more).
(d) Assemble the power window motor and regulator.

HINT:

- Install the motor when the regulator arm is below the middle point.
 - Align the matchmarks on the power window motor and window regulator gear.
- (e) Assemble the power window regulator and door glass.

HINT:

Never rotate the motor to the down direction until the completion of the window glass installation.

- (f) Connect power window switch to wire harness and turn the ignition switch ON.
(g) Repeat UP and DOWN operation several times manually.
(h) Check if AUTO UP → AUTO DOWN operates in automatic operation.

HINT:

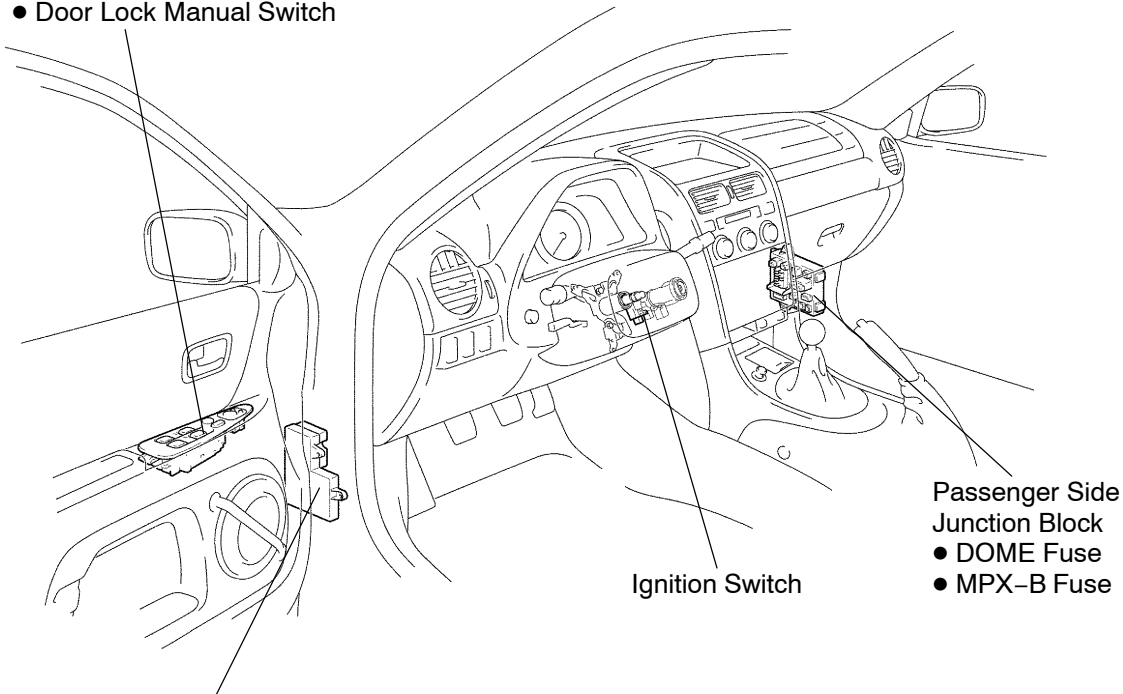
- Take care that the jam protection function does not operate just after resetting.
 - Reset the regulator again when performing the reverse operating after closing the window fully by AUTO UP operation.
- (i) Check the power window function.

POWER DOOR LOCK CONTROL SYSTEM

LOCATION

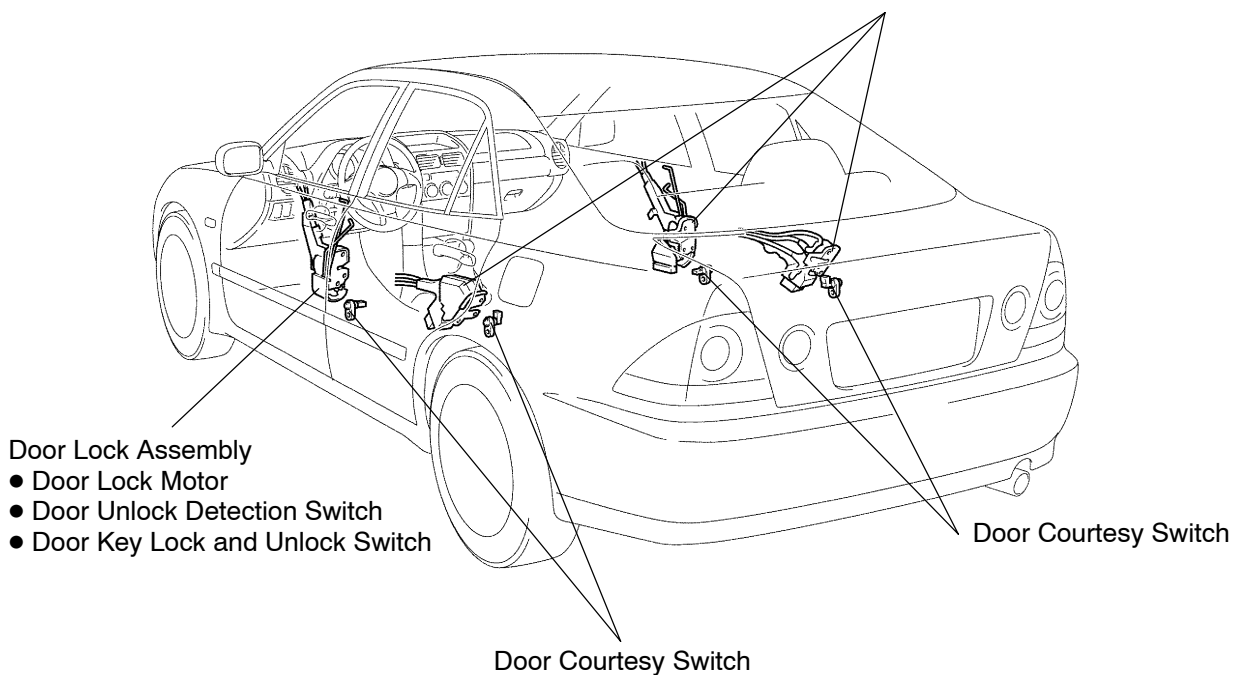
BE0HQ-10

- Power Window Master Switch
 • Door Lock Manual Switch

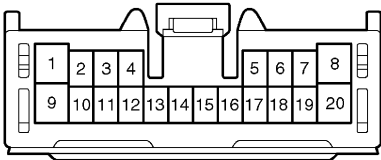


- Driver Side Junction Block
 • Body ECU
 • ECU-IG Fuse
 • DOOR Fuse

- Door Lock Assembly
 • Door Lock Motor
 • Door Unlock Detection Switch



Wire Harness Side



N

I11468

INSPECTION

1. INSPECT POWER WINDOW MASTER SWITCH CIRCUIT

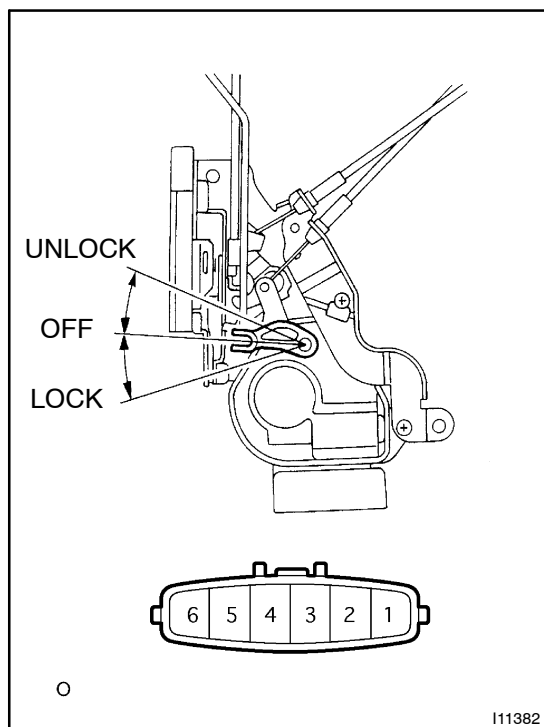
Connector disconnected:

Disconnect the connectors from the switch and inspect connector on the wire harness side.

Tester Connection	Condition	Specified Condition
9 - Ground	Constant	Continuity
1, 5 - Ground	Constant	Battery voltage
2, 4 - Ground	Ignition switch LOCK	No voltage
2, 4 - Ground	Ignition switch ACC or ON	Battery voltage
15 - Ground (LHD)	Driver's door key lock and unlock switch LOCK	No continuity
15 - Ground (LHD)	Driver's door key lock and unlock switch UNLOCK	Continuity
16 - Ground	Each door courtesy switch ON (door opened)	No continuity
16 - Ground	Each door courtesy switch OFF (door closed)	Continuity
6 - Ground (RHD)	Driver's door key lock and unlock switch LOCK	No continuity
6 - Ground (RHD)	Driver's door lock and unlock switch UNLOCK	Continuity

If circuit is not as specified, replace the switch.

2. INSPECT POWER WINDOW MASTER SWITCH CIRCUIT (See page DI-598)

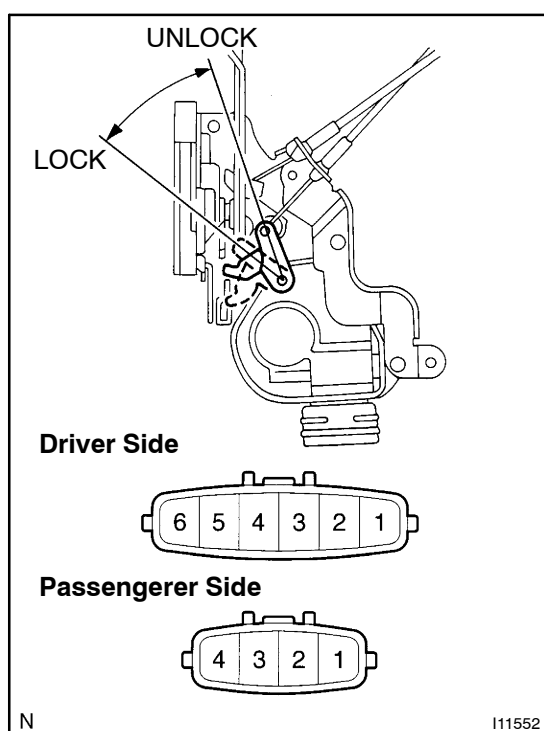


3. INSPECT DOOR KEY LOCK AND UNLOCK SWITCH CONTINUITY

(): LHD models

Switch position	Tester connection	Specified condition
LOCK	3 – 5 (2 – 4)	Continuity
OFF	–	No continuity
UNLOCK	4 – 5 (2 – 3)	Continuity

If continuity is not as specified, replace the door lock assembly.



4. w/o Double locking system:

INSPECT DRIVER SIDE DOOR UNLOCK DETECTION SWITCH CONTINUITY

(): LHD models

Switch position	Tester connection	Specified condition
OFF (Door Lock set to LOCK)	–	No continuity
ON (Door Lock set to UNLOCK)	5 – 6 (3 – 4)	Continuity

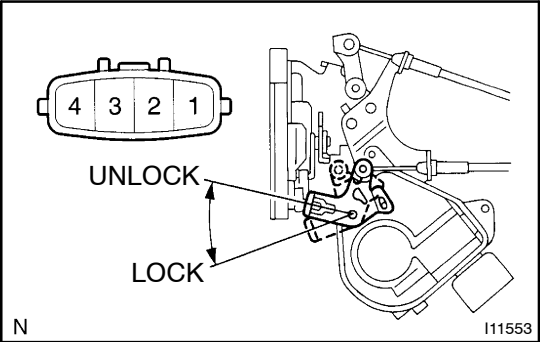
If continuity is not as specified, replace the door lock assembly.

5. w/o Double locking system:

INSPECT PASSENGER DOOR UNLOCK DETECTION SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF (Door Lock set to LOCK)	–	No continuity
ON (Door Lock set to UNLOCK)	1 – 2	Continuity

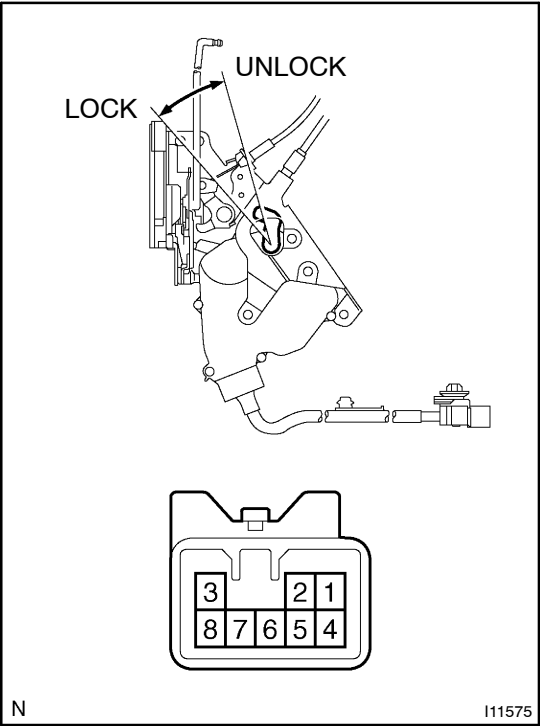
If continuity is not as specified, replace the door lock assembly.



6. w/o Double locking system:
INSPECT REAR DOOR UNLOCK DETECTION
SWITCH CONTINUITY
(): LHD side

Switch position	Tester connection	Specified condition
OFF (Door Lock set to LOCK)	–	No continuity
ON (Door Lock set to UNLOCK)	3 – 4 (1 – 2)	Continuity

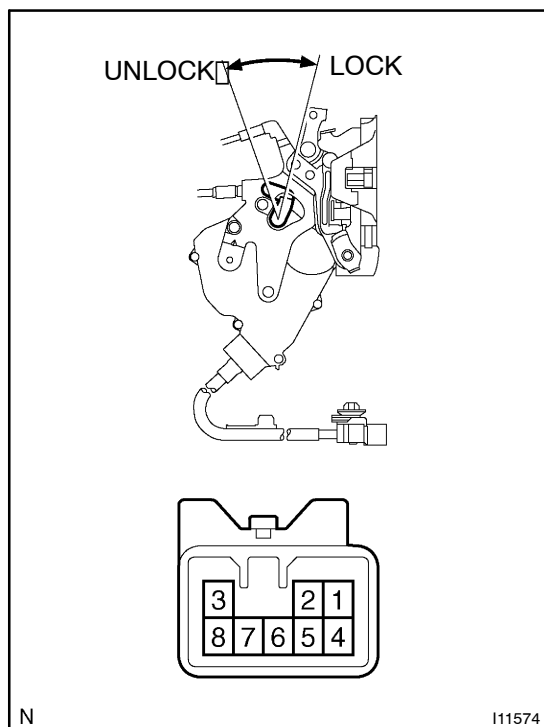
If continuity is not as specified, replace the door lock assembly.



7. w/ Double locking system:
INSPECT FRONT DOOR UNLOCK DETECTION
SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF (Door Lock set to LOCK)	–	No continuity
ON (Door Lock set to UNLOCK)	1 – 5	Continuity

If continuity is not as specified, replace the door lock assembly.

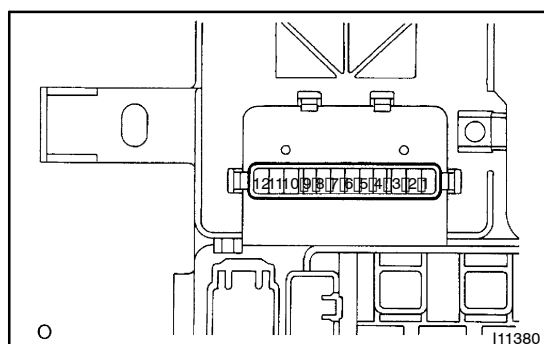


8. w/ Double locking system: INSPECT REAR DOOR UNLOCK DETECTION SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF (Door Lock set to LOCK)	-	No continuity
ON (Door Lock set to UNLOCK)	1 - 5	Continuity

If continuity is not as specified, replace the door lock assembly.

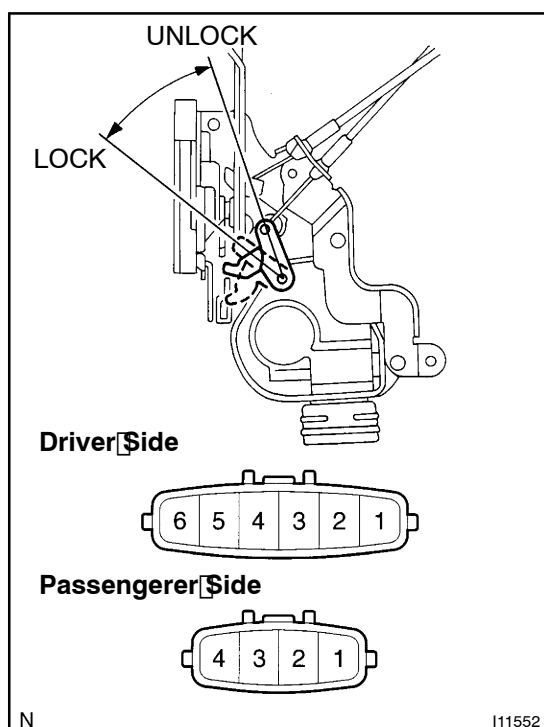
9. INSPECT DOOR UNLOCK DETECTION SWITCH CIRCUIT (See page DI-595)



10. INSPECT DOOR LOCK MOTOR AND J/B CIRCUIT

- Remove the body ECU from the driver's side junction block.
- Connect the positive (+) lead from the battery to J/B terminal 9 and the negative (-) lead to J/B terminal 10, and check that the door lock link moves to LOCK position.
- Reverse the polarity and check that the door link moves to UNLOCK position.

If operation is not as specified, inspect door lock motor.



11. w/o Double locking system: INSPECT FRONT LEFT SIDE DOOR LOCK MOTOR OPERATION

(): LHD models

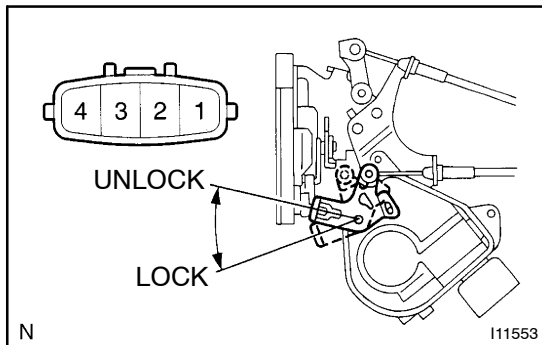
- Connect the positive (+) lead from the battery to terminal 3 (5) and the negative (-) lead to terminal 4 (6), and check that the door lock link moves to LOCK position.
- Reverse the polarity and check that the door lock link moves to UNLOCK position.

If operation is not as specified, replace the door lock assembly.

12. w/o Double locking system: INSPECT FRONT RIGHT SIDE DOOR LOCK MOTOR OPERATION

- Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, and check that the door lock link moves to LOCK position.
- Reverse the polarity and check that the door lock link moves to UNLOCK position.

If operation is not as specified, replace the door lock assembly.

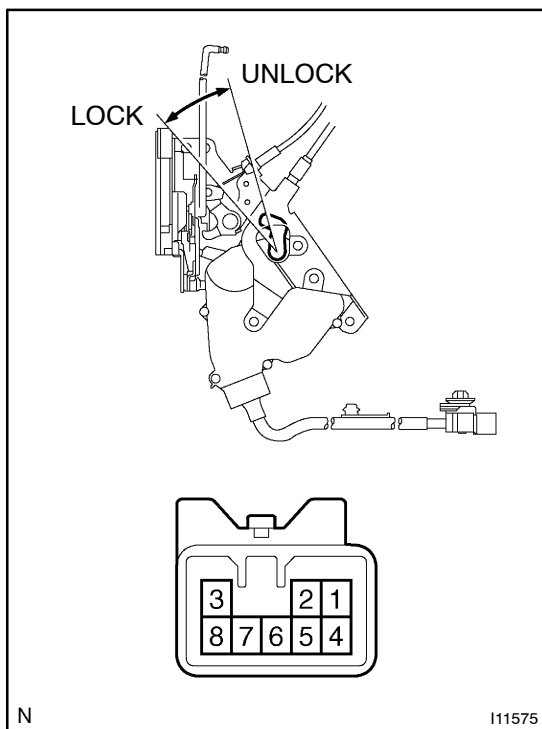


**13. w/o Double locking system:
INSPECT REAR DOOR LOCK MOTOR OPERATION
(): LHD models**

- (a) Connect the positive (+) lead from the battery to terminal 1 (3) and the negative (-) lead to terminal 2 (4), and check that the door lock link moves to LOCK position.
- (b) Reverse the polarity and check that the door lock link moves to UNLOCK position.

If operation is not as specified, replace the door lock assembly.

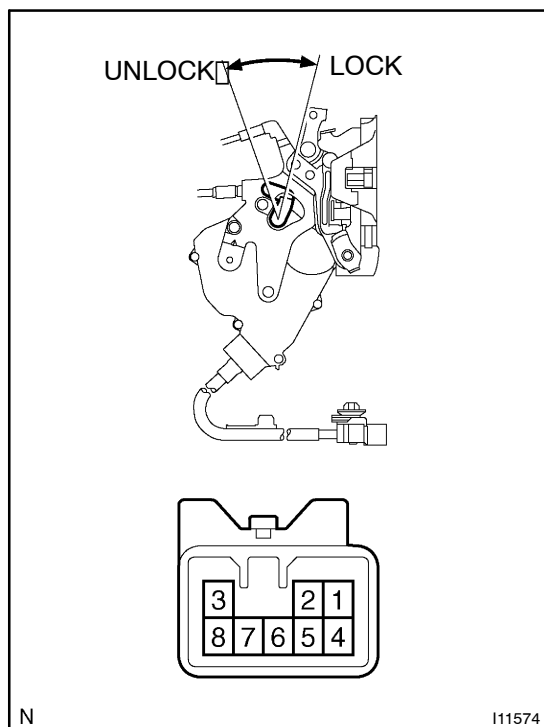
**14. INSPECT DOOR LOCK MOTOR CIRCUIT
(See [page DI-592](#))**



**15. w/ Double locking system:
INSPECT FRONT DOOR LOCK MOTOR OPERATION**

- (a) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 3, and check that the door lock link moves to LOCK position.
- (b) Reverse the polarity and check that the door lock link moves to UNLOCK position.

If operation is not as specified, replace the door lock assembly.

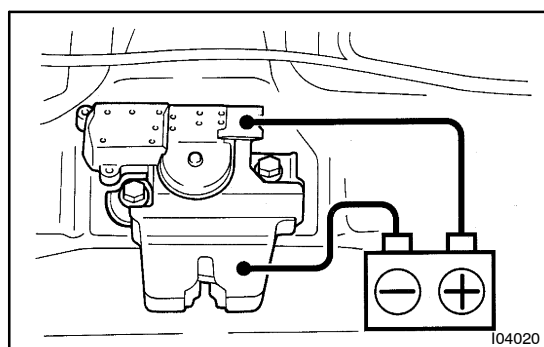
**16. w/ Double locking system:****INSPECT REAR DOOR LOCK MOTOR OPERATION**

- Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 3, and check that the door lock link moves to LOCK position.
- Reverse the polarity and check that the door lock link moves to UNLOCK position.

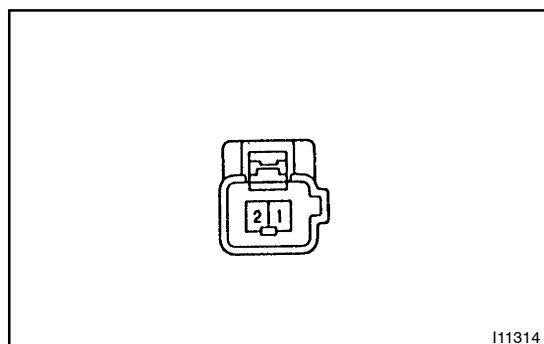
If operation is not as specified, replace the door lock assembly.

17. INSPECT DOOR LOCK MOTOR CIRCUIT

(See page DI-592)

**18. INSPECT LUGGAGE COMPARTMENT DOOR OPENER MOTOR OPERATION**

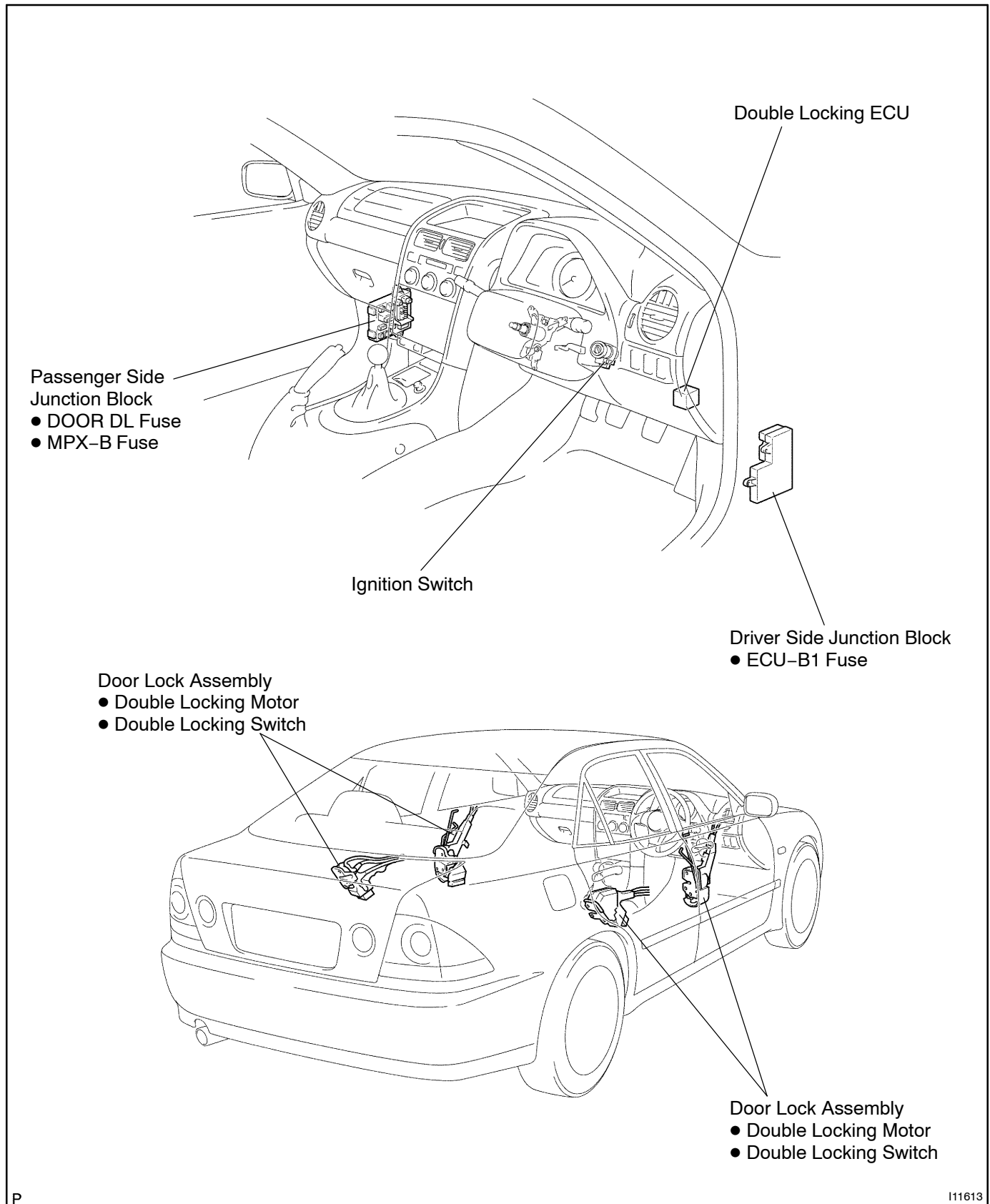
Connect positive (+) lead to the terminal 1 and negative (-) lead to the opener motor body, and check that the motor operates. If operation is not as specified, replace the motor assembly.

**19. INSPECT LUGGAGE COMPARTMENT DOOR OPENER MOTOR CIRCUIT**

(See page DI-589)

DOUBLE LOCKING SYSTEM LOCATION

BE16H-01



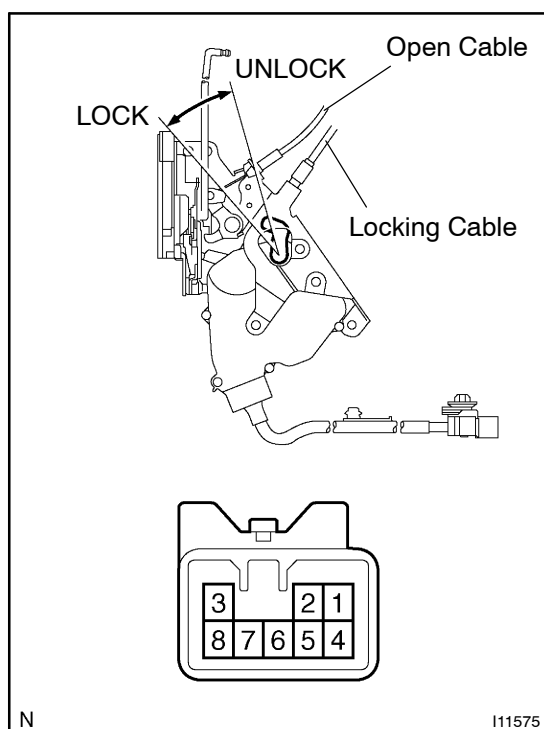
INSPECTION

1. INSPECT DOUBLE LOCKING SYSTEM FUNCTION

HINT:

- In case of doing the following inspection, must open one of the windows of the doors.
 - In order to set the double locking, turn the ignition switch ON to OFF, open the driver's door and close it, then lock the door with the transmitter.
 - In case of doing the following inspection, for preventing the wrong warning, turn OFF the radar sensor. The method to turn off the radar sensor is to press the lock button of the transmitter to lock, then press the lock button again. (When the radar sensor turns OFF, "all turn signal light" flashes 5 times.) In order to turn ON the radar sensor again, press the lock button of the transmitter again. (When the radar sensor turns ON again, "all turn signal light" flashes once.) Switching from ON to OFF can be done only within 30 seconds after setting the Theft Deterrent System (locking with the transmitter).
- (a) Check that the double locking is set.
 - (1) Lock with the wireless transmitter from the inside of the vehicle.
 - (2) Check that the doors won't open from the inside of the vehicle even operating the door lock knob and inside door handle
 - (b) Check that the double locking is released (Case 1).
 - (1) Unlock with the wireless transmitter from the inside of the vehicle.
 - (2) Check that the doors will open from the inside of the vehicle by operating the door knob and inside door handle.
 - (c) Check that the double locking is released (Case 2).
 - (1) Lock with the wireless transmitter from the inside of the vehicle.
 - (2) Under this condition, insert the key into the ignition key cylinder, turn the ignition switch to ON and check that the doors will open.

If you find any abnormal symptom in the check items of (a),(b) and (c), troubleshoot according to the Problem Symptom Table.



2. INSPECT FRONT DOUBLE LOCKING SWITCH CONTINUITY

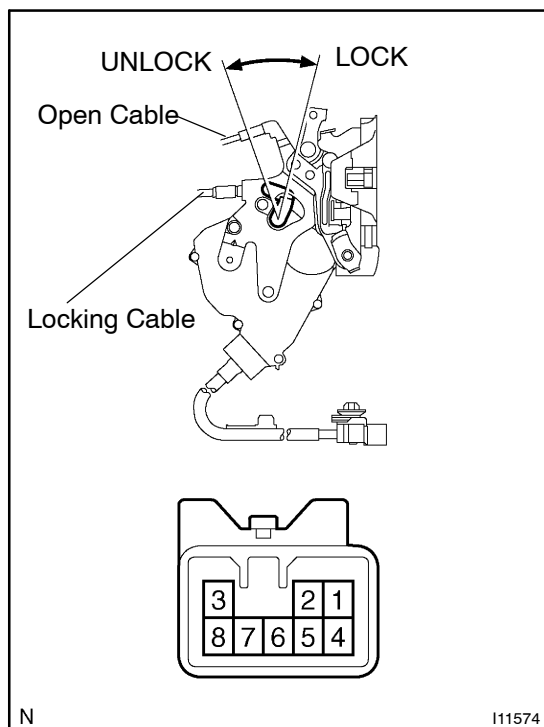
Switch position	Tester connection	Specified condition
OFF (Double Locking is released)	–	No continuity
ON (Double Locking is set)	4 – 6	Continuity

If continuity is not as specified, replace the door lock assembly.

3. INSPECT FRONT DOUBLE LOCKING MOTOR OPERATION

- (a) Set the Door Lock to LOCK position by the locking cable.
- (b) Connect the positive (+) lead from the battery to terminal 8 and negative (–) lead to terminal 7, and check that the Door Lock will not unlock by pulling the locking cable. (Locking cable must return to LOCK position by the force of spring when pulling the locking cable.)
- (c) Reverse the polarity and check that the Door Lock will unlock by pulling the locking cable.

If operation is not as specified, replace the door lock assembly.



4. INSPECT REAR DOUBLE LOCKING SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF (Double Locking is released)	–	No continuity
ON (Double Locking is set)	4 – 6	Continuity

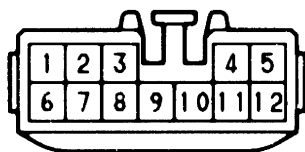
If continuity is not as specified, replace the door lock assembly.

5. INSPECT REAR DEAD LOCK MOTOR OPERATION

- Set the Door Lock to LOCK position by the locking cable.
- Connect the positive (+) lead from the battery to terminal 8 and negative (–) lead to terminal 7, and check that the Door Lock will not unlock by pulling the locking cable. (Locking cable must return to LOCK position by the force of spring when pulling the locking cable.)
- Reverse the polarity and check that the Door Lock will unlock by pulling the locking cable.

If operation is not as specified, replace the door lock assembly.

Wire Harness Side



6. INSPECT DOUBLE LOCKING ECU CIRCUIT

Disconnect connector from the ECU and inspect the connectors on the wire harness side as follows.

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

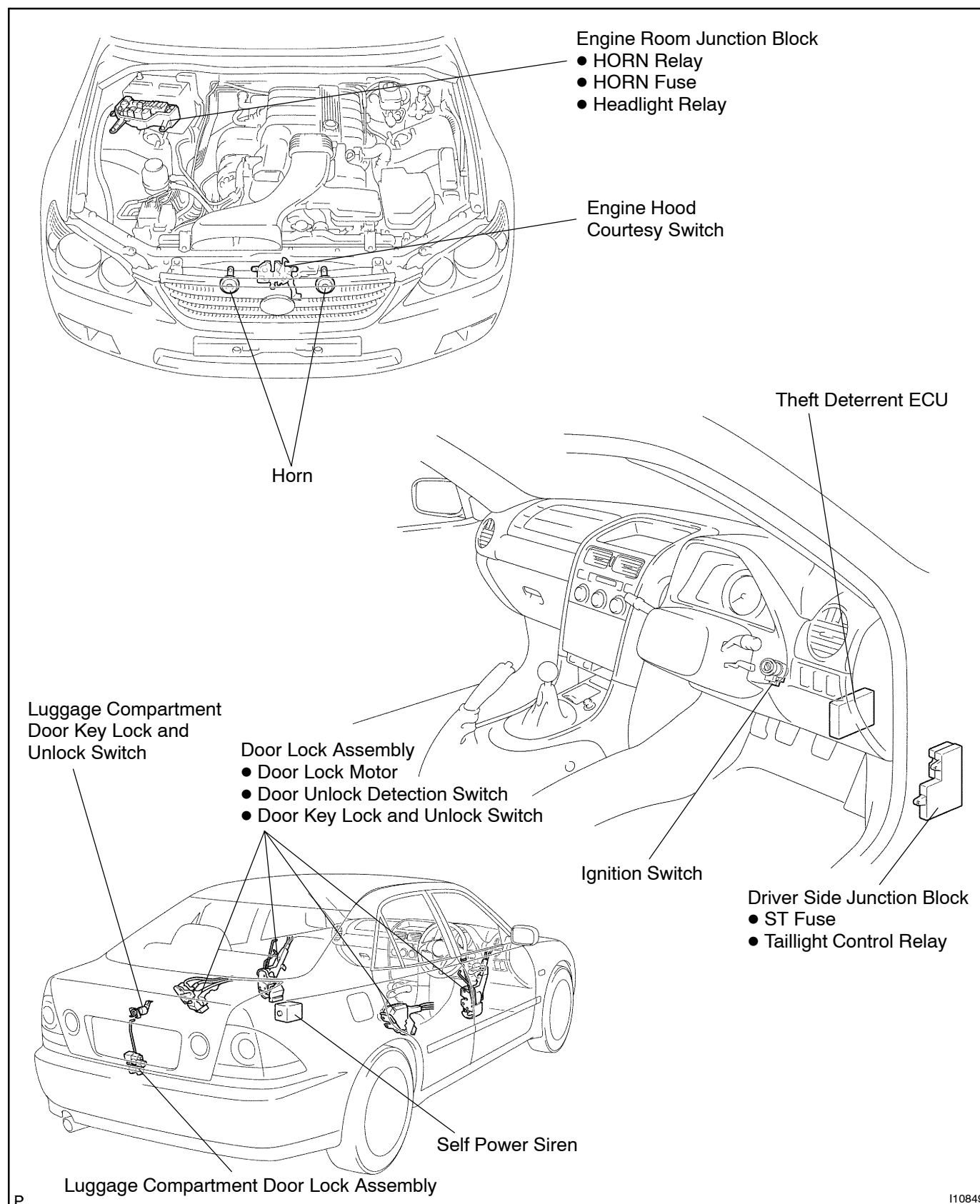
If circuit is as specified, replace the ECU.

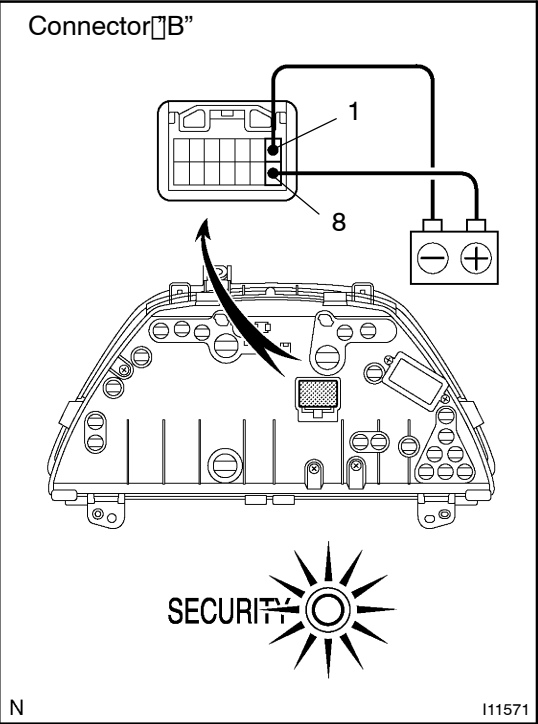
If circuit is not as specified, wiring diagram and inspect the circuits connected to other parts.

THEFT DETERRENT SYSTEM

LOCATION

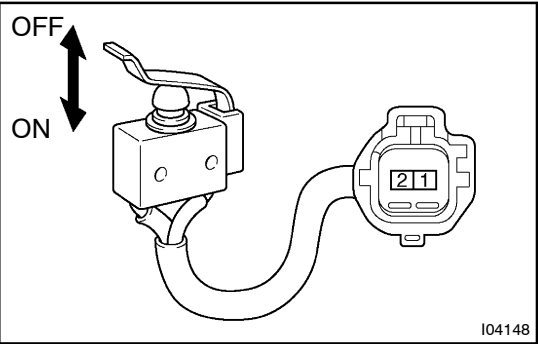
BE16Q-01





INSPECTION

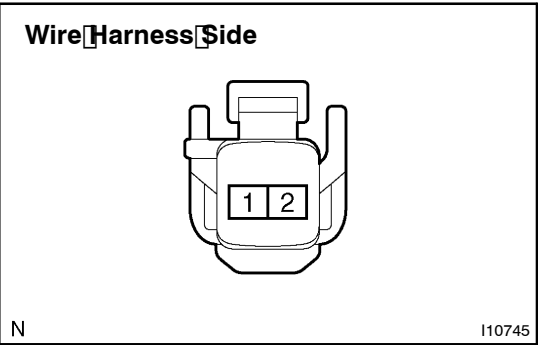
1. INSPECT THEFT DETERRENT INDICATOR LIGHT OPERATION
- (a) Remove the combination meter.
 - (b) Disconnect the combination meter connector.
 - (c) Check indicator light lights up when connect the positive (+) lead from the battery to terminal B8 and the negative (-) lead to terminal B1 of combination meter connector.
- If operation is not as specified, replace the indicator light.
2. INSPECT THEFT DETERRENT INDICATOR LIGHT CIRCUIT
(See page DI-444)



3. INSPECT ENGINE HOOD COURTESY SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF (closed)	-	No continuity
ON (opened)	1 - 2	Continuity

If continuity is not as specified, replace the switch.



4. INSPECT ENGINE HOOD COURTESY SWITCH CIRCUIT
(See page DI-475)

Disconnect the connector from the switch and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
2 - Ground	Constant	Continuity

If circuit is not as specified, inspect power source or wire harness.

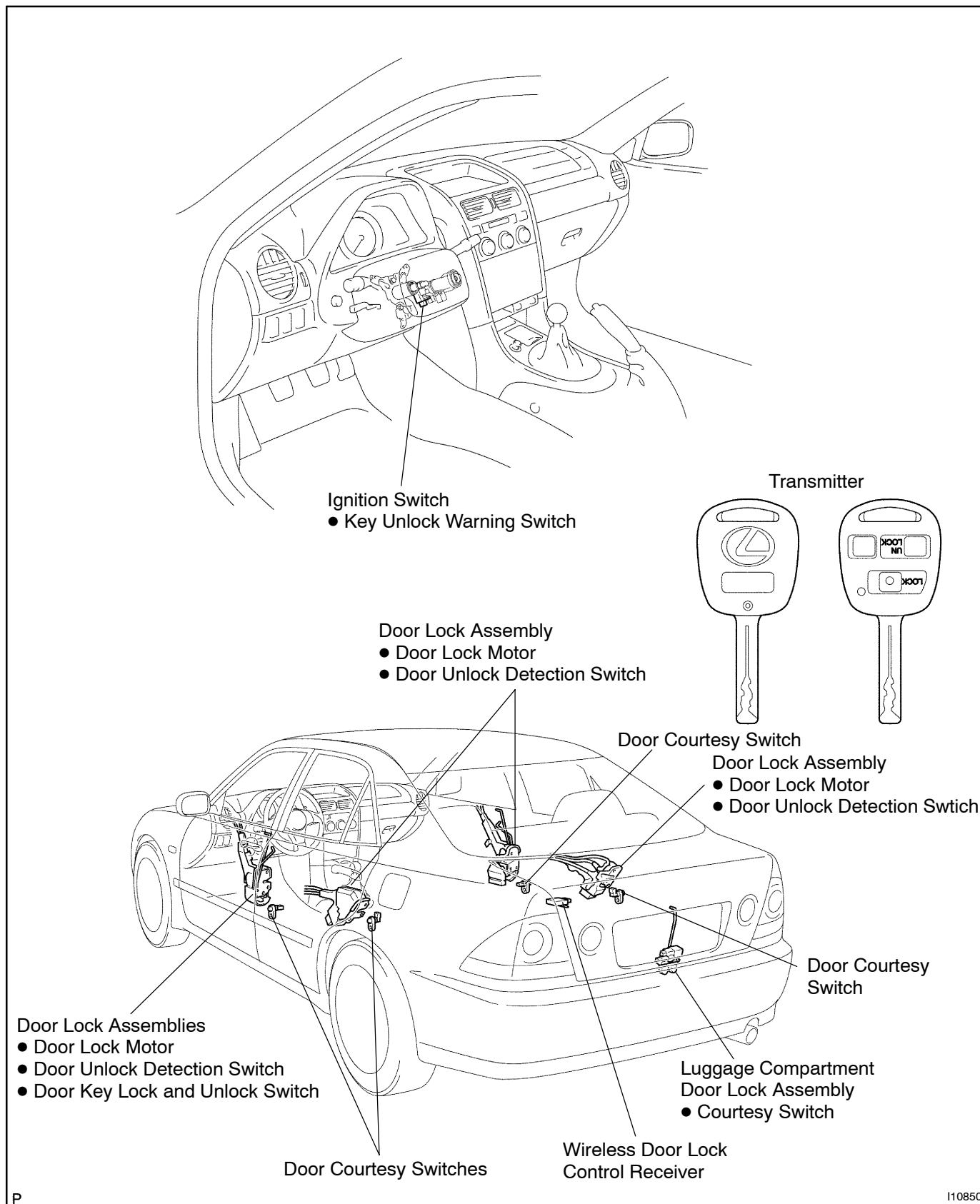
5. INSPECT THEFT DETERRENT SIREN BATTERY

- (a) The internal battery is fully discharged.
- (b) Set the system inside the vehicle.
- (c) Disconnect the connector of theft deterrent ECU in this condition, and sounds the siren for open detection.
- (d) The siren battery is normal when the siren sounds for 30 seconds, stops, then after 5 seconds, seconds again.
- (e) Replace the siren battery when the siren stops sounding before 30 seconds elapse the battery because the battery life has run out

WIRELESS DOOR LOCK CONTROL SYSTEM

LOCATION

BEOGM-06



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.)

Make the vehicle in the initialized condition:

The initialized condition is the condition when the following conditions are satisfied.

- (1) Key plate has not been inserted in the ignition key cylinder.
- (2) All the doors are closed. (Door warning light is OFF.)
- (3) All the doors are locked.

Basic function check:

Under the standard operation, when repeating UNLOCK and LOCK switch 3 times or more alternately, check the UNLOCK-LOCK operation from 3rd time onward.

- Following procedures are standard operation.

- (1) Keep about 1 M away to the right direction from the outside handle of a driver's seat.
- (2) Face the transmitter toward the vehicle and press one of transmitter switches for about 1 sec.

<Reference>

- As of the security function, even the wireless function is normal, there may be the case that only UNLOCK operation will not work.

No

Yes

Transmitter LED inspection:

Check when pressing UNLOCK switch and LOCK switch under standard operation, that the transmitter LED lights up once more.

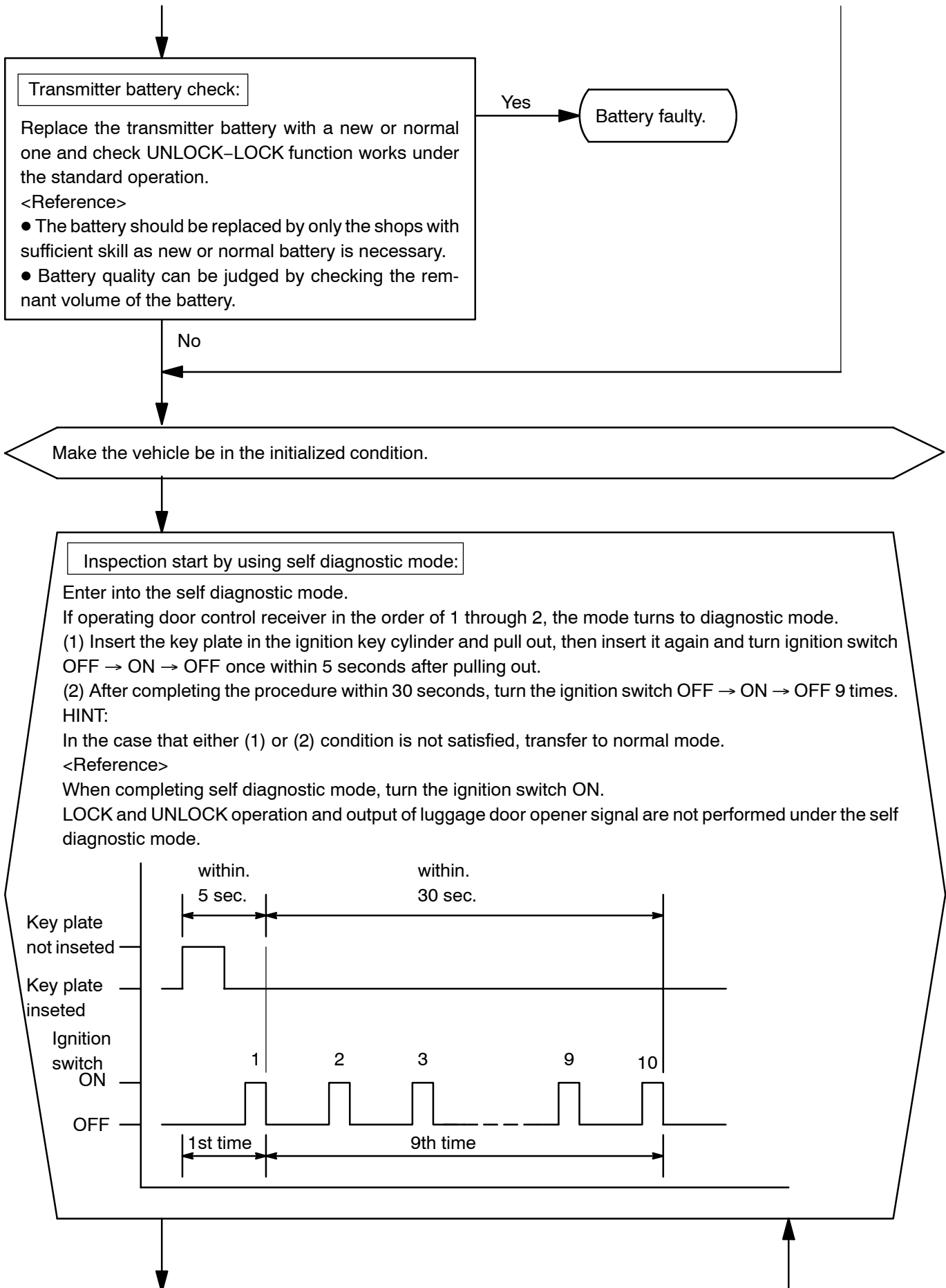
No

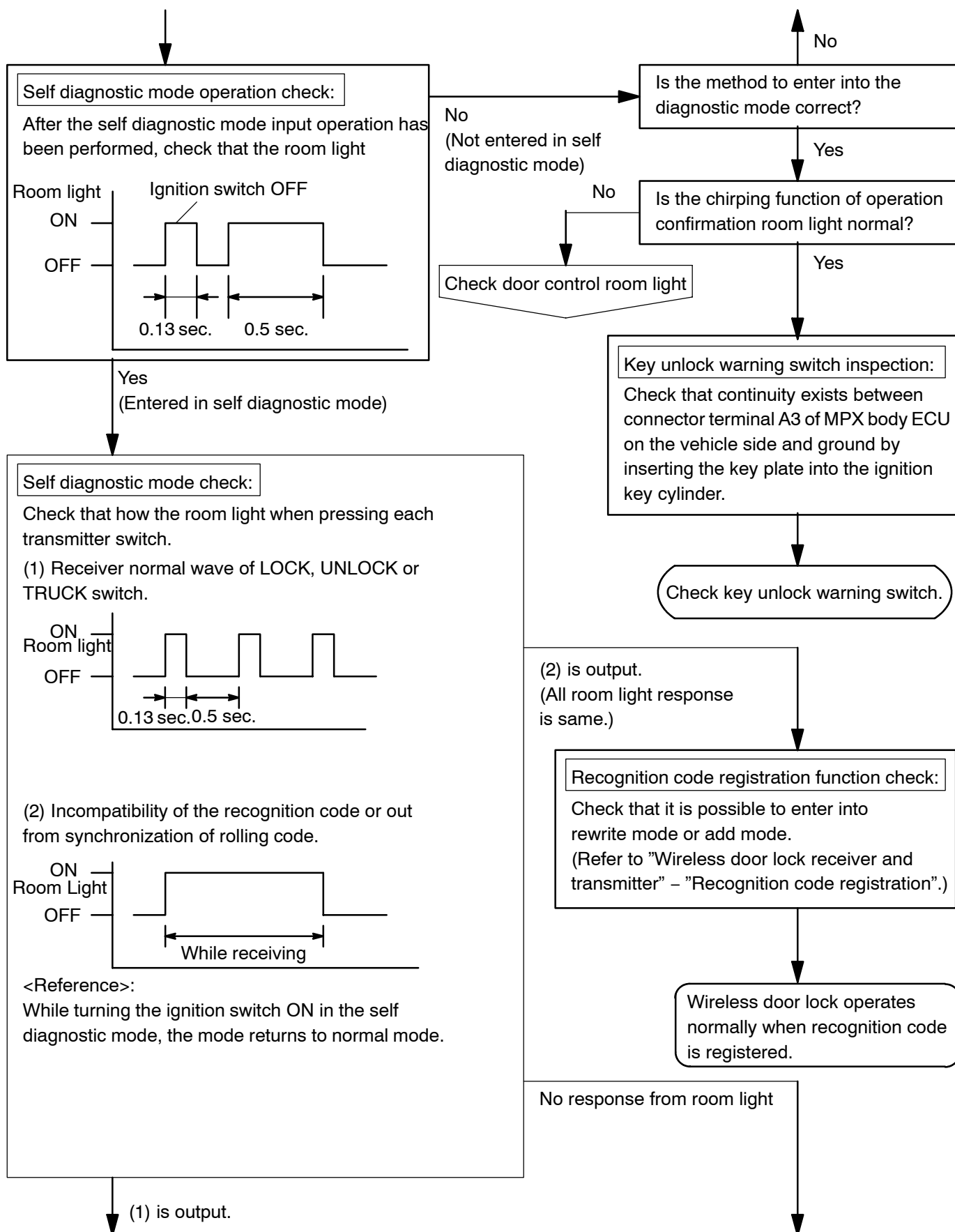
Yes

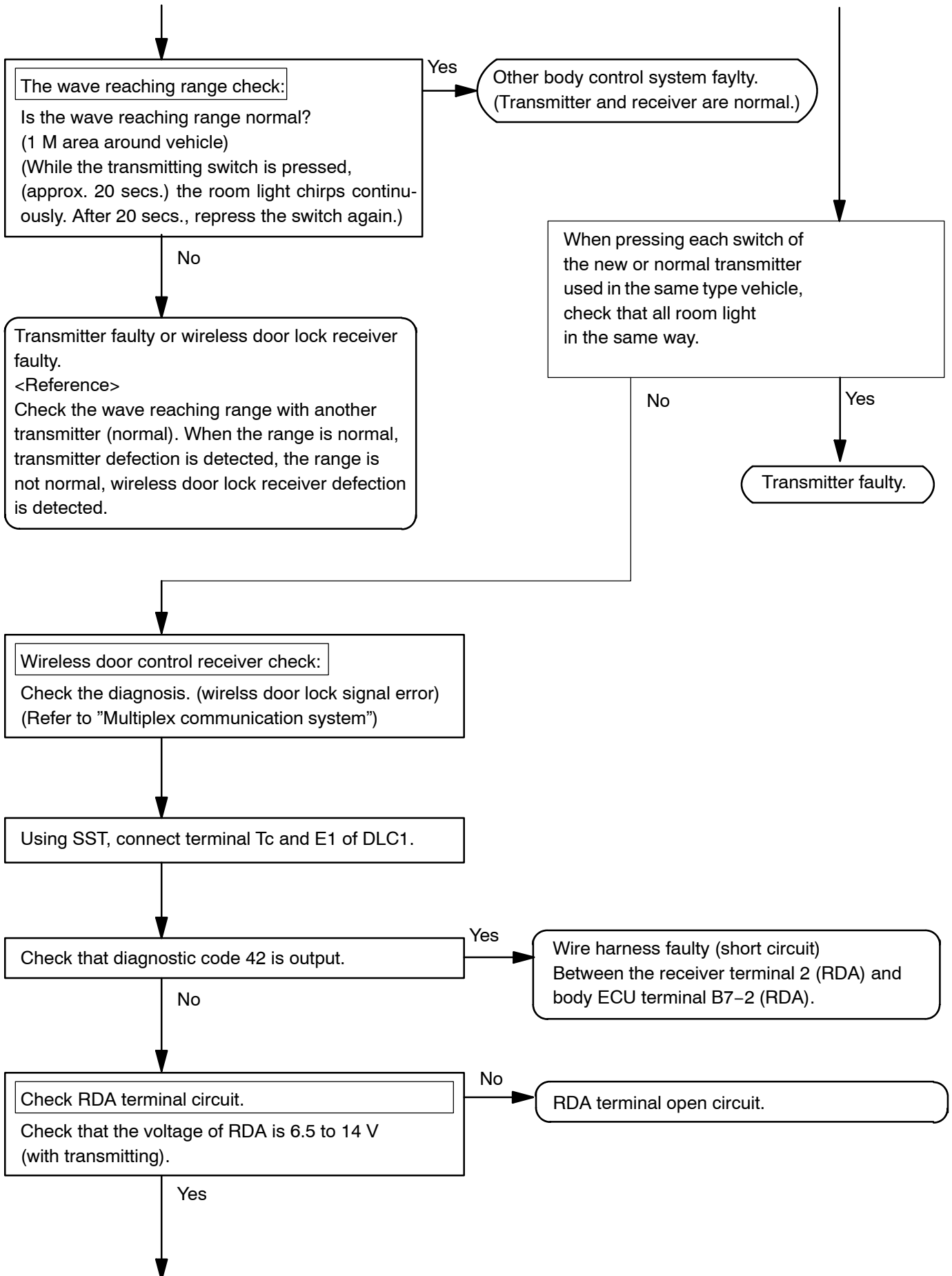
Normal

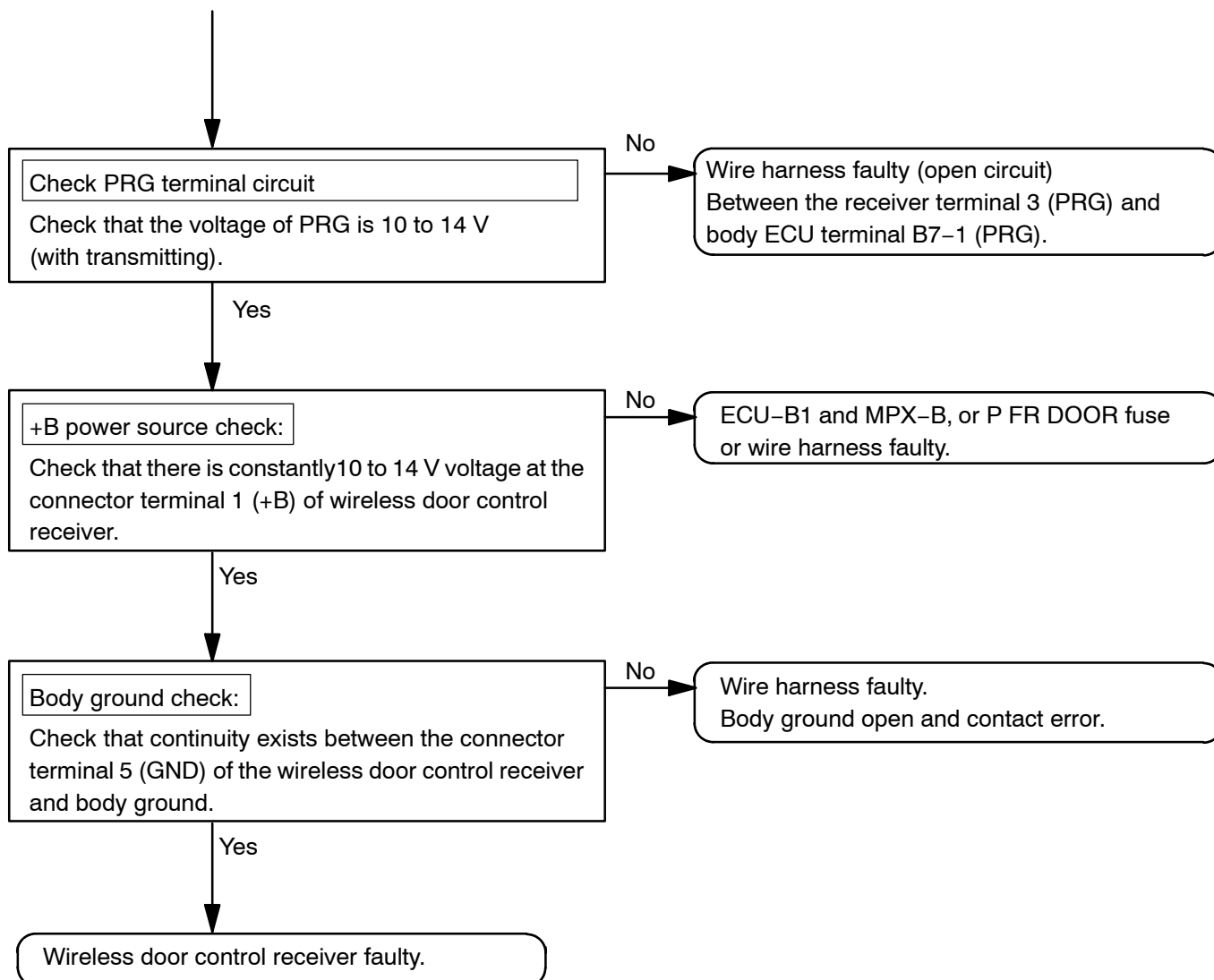
<Reference>

- Operative distance may differ according to an operator, the way of holding the transmitter or position.
- Because weak electric wave is used, when there is strong wave or noise in the used frequency, operation distance might be shortened.









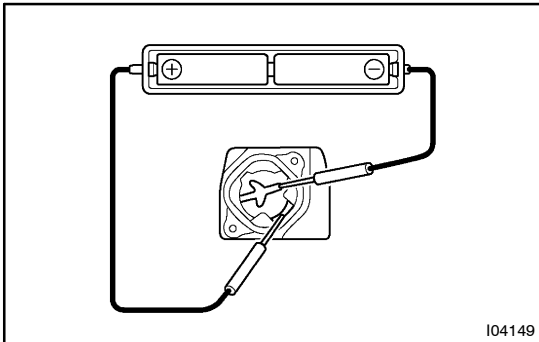
INSPECTION

1. INSPECT WIRELESS DOOR LOCK TRANSMITTER OPERATION

HINT:

Refer to "Wireless door lock control transmitter battery replacement" on [page BE-136](#).

- (a) Using a screwdriver, remove the screw and cover.
- (b) Remove the battery (lithium battery).



- (c) Install a new or normal battery (lithium battery).

HINT:

When a new or normal battery can not be obtained, 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 voltage to the transmitter.

- (d) In the location where is approx. 1 M away from driver's outside handle in the right direction, face the key plate of the transmitter to the vehicle, and check the transmitter operation when pressing transmission switch on the side of the transmitter body.

Standard:

- **Remote control of vehicle door lock can be operated.**
- **LED lights up more than once.**

HINT:

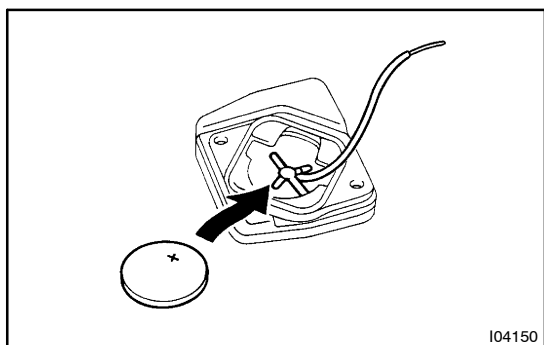
- The minimum operation distance differs according to operator, the way of holding the transmitter, and location.
- As weak wave is used, operation distance might be shortened when noise is detected in strong wave or used frequency.

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

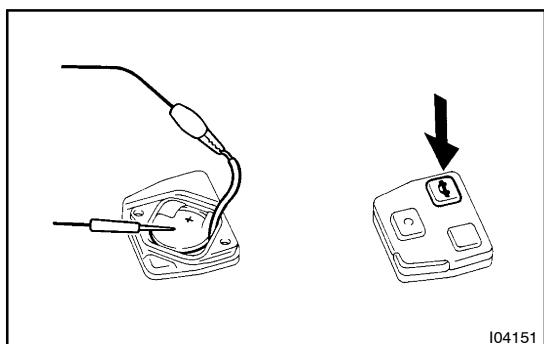
2. CHECK BATTERY CAPACITY

HINT:

- Make sure to use the TOYOTA electrical tester.
- With the battery unloaded, judge can not be made whether the battery is available or not on the test.
- When the transmitter is faulty, the energy amount left in the battery might not be checked correctly.
- On the lithium battery used for the transmitter, the voltage more than 2.5 V with the battery unloaded is shown on the tester until the energy is completely consumed. Accordingly when inspecting the energy amount left in the battery, it is necessary to measure the voltage when the battery is loaded. (1.2 k Ω).



- Remove the screws and cover using a (–) driver.
- Remove the battery (lithium battery) from the transmitter.
- Connect the lead to the (–) terminal of the transmitter and install the battery.

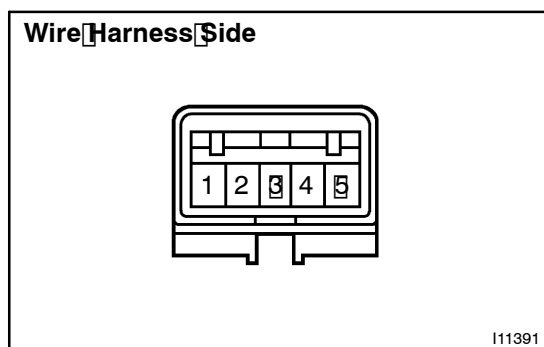


- Connect the (+) tester to the (+) battery (lithium battery), and (–) tester to the lead respectively.
- Press one of the transmitting switches on the transmitter for approx. 1 second.
- Press the transmitting switch on the transmitter again to check the voltage.

Standard: 2.1 V or more

HINT:

- When the temperature of the battery is low, the judge can not be made correctly.
When the outcome of the test is less than 2.1 V, conduct the test again after leaving the battery in the place at 18 °C for more than 30 minutes.
 - By auto power off function, the voltage becomes no load voltage (more than 2.5 V) condition 0.8 seconds after the switch was pressed.
Make sure to read the voltage before of it.
 - High voltage might be shown 1 to 2 times after leaving the battery, judge should be made with the voltage shown at the 3rd time or later.
- (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.
- (j) Using a screwdriver, tighten the screws.



3. INSPECT WIRELESS DOOR LOCK CONTROL RECEIVER CIRCUIT

(See page DI-561)

Connector disconnected:

Disconnect the connector from the receiver and inspect the connector on the wire harness side, as shown.

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

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

4. INSPECT WIRELESS DOOR LOCK CONTROL RECEIVER CIRCUIT

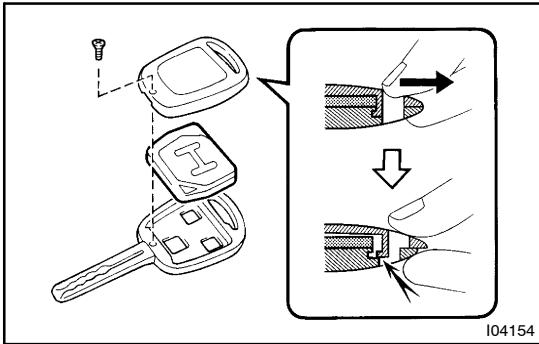
Connector connected:

Connect the wire harness side connector to the receiver and inspect the wire harness side connector from the back side, as shown.

Tester connection	Condition	Specified condition
3 – Ground	Constant	Battery voltage
2 – Ground	All door closed Transmitter OFF → ON	0 V – 6 V → 0 V

If circuit is as specified, replace the receiver.

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



REPLACEMENT

1. REPLACE TRANSMITTER (LITHIUM) BATTERY

NOTICE:

Special caution should be taken for handling each component as they are precision electronic components.

(a) Using a screwdriver, remove the screw and cover.

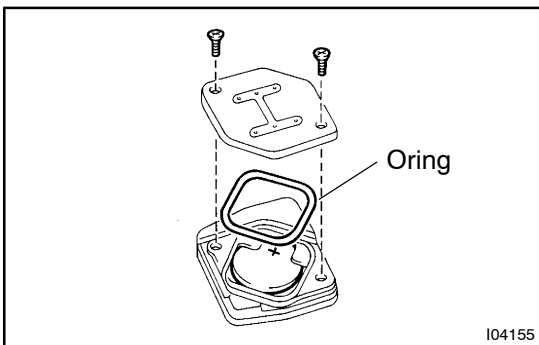
NOTICE:

Do not pry out the cover forcibly.

HINT:

Push the cover with a finger as shown in the illustration, so that there becomes clearance, then pry out the cover from that clearance.

(b) Remove the transmitter.

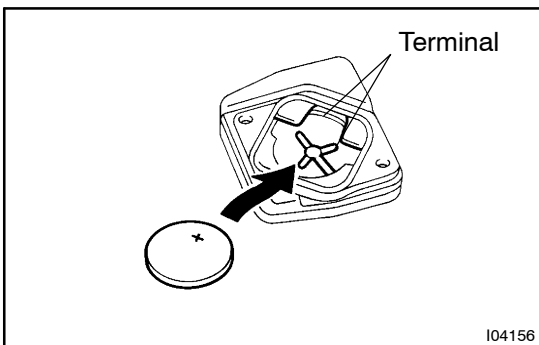


(c) Using a screwdriver, remove the 2 screws and cover.

(d) Remove the battery (lithium battery).

NOTICE:

- **Do not push the terminals with a finger.**
- **If prying up the battery (lithium battery) forcibly to remove, the terminals are deformed.**



(e) Install a battery (lithium battery) as shown in the illustration.

NOTICE:

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

(f) Check that O-ring is not distorted or slipped off, and install the cover.

(g) Using a screwdriver, tighten the 2 screws.

NOTICE:

When the shrews are tightened loosely, it might cause faulty contact of battery (lithium battery) and terminals.

(h) Assemble the transmitter to the key plate and the cover.

(i) Using a screwdriver, tighten the screw.

2. REPLACE DOOR CONTROL RECEIVER AND TRANSMITTER

NOTICE:

When replacing the door control receiver and transmitter, registration of recognition code is necessary because they are provided as single components.

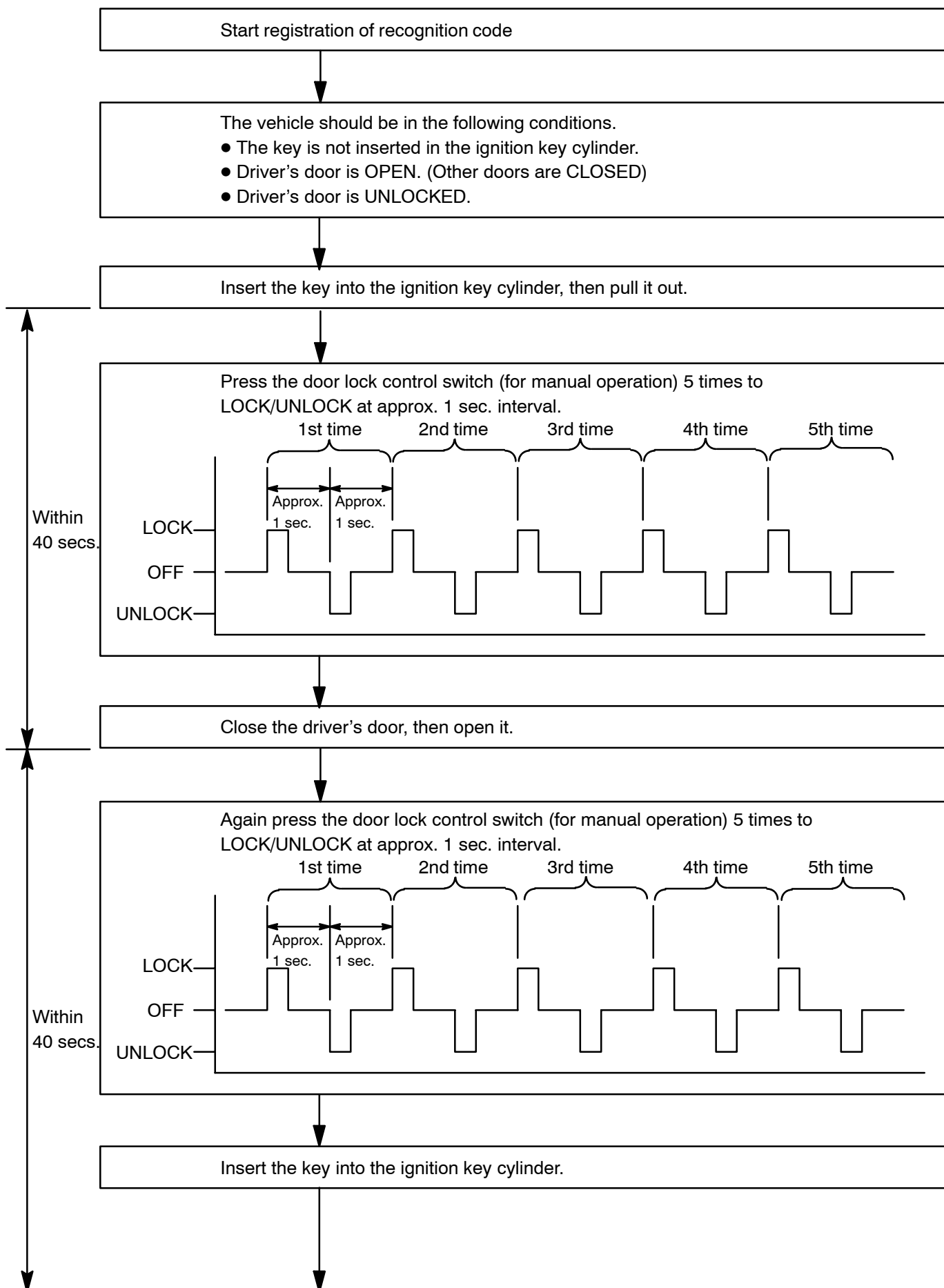
- (a) Select which operation mode should be performed from the following modes.
- Add mode
 - Rewrite mode
 - Prohibition mode
 - Confirmation mode

HINT:

- The add mode is used to retain codes already registered while you register new recognition codes. This mode is used when adding a transmitter. However, if the number of registered codes exceeds 4 codes, previously registered codes are correspondingly erased in order, starting from the first registered code.
 - The rewrite mode is used to erase all previously 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 is for confirming how many recognition codes are already registered before you register additional recognition codes.
- (b) Follow the chart on the following pages to register the transmitter recognition code at the wireless door lock control receiver.

HINT:

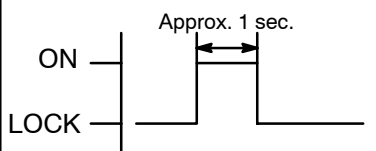
- When procedure is out of the specified, the operation returns to normal operation.
- Maximum 4 recognition codes can be registered.



Turn the ignition switch from ON to LOCK at approx. 1 sec. interval 1 to 5 times to select the mode.

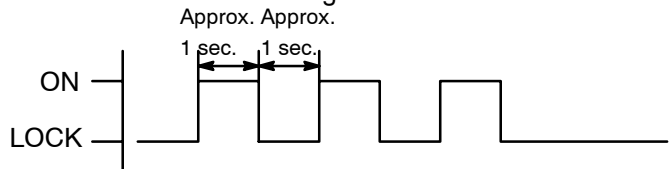
Add mode

ON - LOCK change occurs 1 time



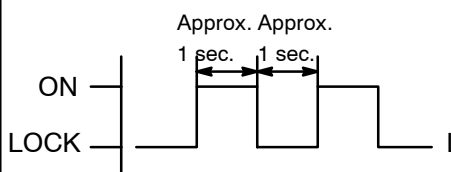
Confirmation mode

ON - LOCK change occurs 3 times



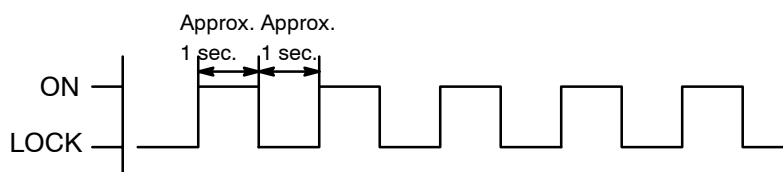
Rewrite mode

ON - LOCK change occurs 2 times



Prohibition mode

ON - LOCK change occurs 5 times



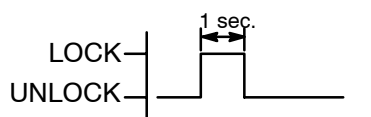
Pull out the key plate from the ignition key cylinder.

When add mode or rewrite mode is selected.

MPX body ECU automatically performs the LOCK-UNLOCK operation once or twice at 1 sec. interval to inform the operator that either the add mode or rewrite mode has been selected.

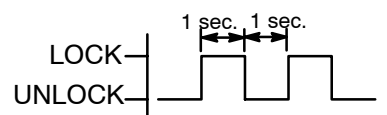
LOCK-UNLOCK occurs once

Indicates that add mode has been selected.



LOCK-UNLOCK occurs twice

Indicates that rewrite mode has been selected.



Within 3 secs.

When prohibition mode is selected.

When confirmation mode is selected.

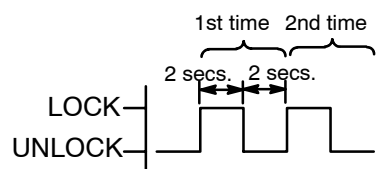
MPX body ECU automatically performs the LOCK-UNLOCK operation 1 to 4 times at 2 sec. interval to inform the operator of the number of the registered codes.

HINT:

When the number of the registered code is 0, the operation is automatically performed 5 times.

Example:

When the operation is performed twice, it directs that 2 types of recognition code have been registered.



Registration of recognition code (Confirmation mode and prohibition mode) is completed.

