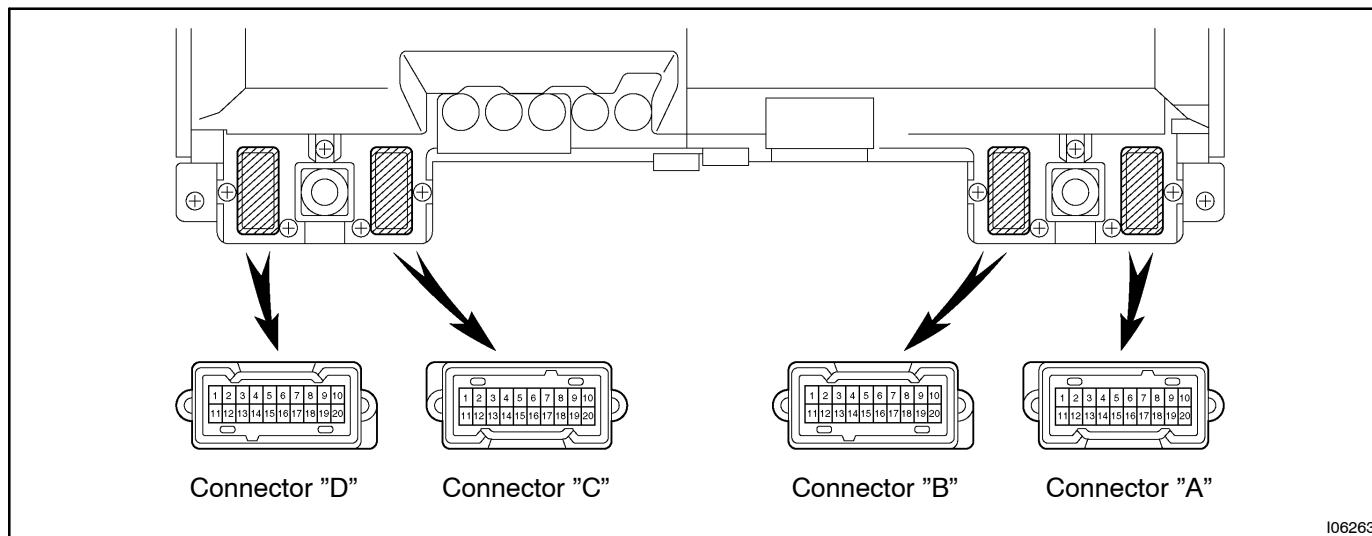


INSPECTION

1. INSPECT COMBINATION METER CIRCUIT

Connect the connector "A", "B", "C" and "D" to the combination meter and inspect the wire harness side connectors from the back side as shown in the table.



106263

Tester connection	Condition	Specified condition
A1 – Ground	Key unlock warning switch ON (Key is inserted)	No voltage
A1 – Ground	Key unlock warning switch OFF (Key is removed)	Battery positive voltage
A2 – Ground	Ignition switch ON	4.5 – 5.5 V
A3 – Ground	Ignition switch ON and fuel sender gauge float UP	Approx. 0.5 V
A3 – Ground	Ignition switch ON and fuel sender gauge float DOWN	Approx. 5.5 V
A4 – Ground	Constant	Continuity
A9 – Ground	Ignition switch ON and ABS warning light light up	No voltage
A9 – Ground	Ignition switch ON and ABS warning light does not light up	Battery positive voltage
A10 – Ground	Ignition switch ON and light control rheostat volume minimum	No voltage
A10 – Ground	Ignition switch ON and light control rheostat volume maximum	4.5 – 5.5 V
A11 – Ground	Light control switch OFF	No voltage
A11 – Ground	Light control switch TAIL or HEAD	Battery positive voltage
A12 – Ground	Ignition switch ON and driver door is opened	No voltage
A12 – Ground	Ignition switch ON and driver door is closed	Battery positive voltage
A15 – Ground	Ignition switch ON and seat belt is unfasted	No voltage
A15 – Ground	Ignition switch ON and seat belt is fasted	Battery positive voltage
A16 – Ground	Ignition switch OFF	No voltage
A16 – Ground	Ignition switch ON	Battery positive voltage
A17 – Ground	Constant	Battery positive voltage
A18 – Ground	Ignition switch ON and ABS is error	No voltage

A18 – Ground	Ignition switch ON and ABS is normal	Battery positive voltage
B2 – Ground	Ignition switch ON and engine is stopped	No voltage
B2 – Ground	Ignition switch ON and engine is running	Battery positive voltage
B4 – Ground	Ignition switch OFF	No voltage
B4 – Ground	Ignition switch ACC or ON	Battery positive voltage
B5 – Ground	Ignition switch ON and A/T shift P indicator light up	No voltage
B5 – Ground	Ignition switch ON and A/T shift P indicator does not light up	Battery positive voltage
B6 – Ground	Ignition switch ON and except A/T shift P position	No voltage
B6 – Ground	Ignition switch ON and A/T shift P position	Battery positive voltage
B7 – Ground	Ignition switch ON and except A/T shift R position	No voltage
B7 – Ground	Ignition switch ON and A/T shift R position	Battery positive voltage
B8 – Ground	Ignition switch ON and A/T oil temperature indicator light up	No voltage
B8 – Ground	Ignition switch ON and A/T oil temperature indicator does not light up	Battery positive voltage
B9 – Ground	Ignition switch ON and slowly move the wheel	Pulse signal is output below 1.5 V ↔ approx. 5 V or below 1.5 V ↔ battery positive voltage
B10 – Ground	Ignition switch ON and slowly move the wheel	Pulse signal is output below 1.5 V ↔ battery positive voltage
B11 – Ground	Constant	Continuity
B12 – Ground	Ignition switch ON and rheostat light control volume CANCEL position	No voltage
B12 – Ground	Ignition switch ON and rheostat light control volume maximum	Battery positive voltage
B13 – Ground	Ignition switch ON and engine is stopping	No voltage
B13 – Ground	Ignition switch ON and engine is running	Battery positive voltage
B14 – Ground	Ignition switch OFF	No voltage
B14 – Ground	Ignition switch ON	Battery positive voltage
B15 – Ground	Ignition switch ON and engine coolant temperature 90 °C	Battery positive voltage
B16 – Ground	Constant	Continuity
C3 – Ground	Constant	Battery positive voltage
C4 – Ground	Ignition switch ON and ABS indicator light light up	No voltage
C4 – Ground	Ignition switch ON and ABS indicator does not light up	Battery positive voltage
C5 – Ground	Ignition switch ON and except A/T shift N position	No voltage
C5 – Ground	Ignition switch ON and A/T shift N position	Battery positive voltage
C6 – Ground	Ignition switch ON and except A/T shift D position	No voltage
C6 – Ground	Ignition switch ON and A/T shift D position	Battery positive voltage
C7 – Ground	Ignition switch ON and except A/T shift 2nd position	No voltage
C7 – Ground	Ignition switch ON and A/T shift 2nd position	Battery positive voltage

BODY ELECTRICAL – COMBINATION METER

C8 – Ground	Ignition switch ON and except A/T shift L position	No voltage
C8 – Ground	Ignition switch ON and A/T shift L position	Battery positive voltage
C10 – Ground	Ignition switch ON and O/D off switch ON	No voltage
C10 – Ground	Ignition switch ON and O/D off switch OFF	Battery positive voltage
C12 – Ground	Ignition switch ON and engine oil level warning light up	No voltage
C12 – Ground	Ignition switch ON and engine oil level warning does not light up	Battery positive voltage
C14 – Ground	Ignition switch ON and cruise control switch OFF	No voltage
C14 – Ground	Ignition switch ON and cruise control switch ON	Battery positive voltage
C15 – Ground	Ignition switch ON and center diff. lock switch OFF	No voltage
C15 – Ground	Ignition switch ON and center diff. lock switch ON	Battery positive voltage
C17 – Ground	IG switch ON, off road TRC indicator light ON	Below 1.5V
	IG switch ON, off road TRC indicator light OFF	10 – 14 V
C18 – Ground	IG switch ON, VSC warning light ON	Below 2.0 V
	IG switch ON, VSC warning light OFF	10 – 14 V
C19 – Ground	IG switch ON, VSC warning light ON	Below 2.0 V
	IG switch ON, VSC warning light OFF	10 – 14 V
C20 – Ground	IG switch ON, VSC OFF indicator light ON	Below 2.0 V
	IG switch ON, VSC OFF indicator light OFF	10 – 14 V
D1 – Ground	Ignition switch ON and engine is stopped	No voltage
D1 – Ground	Ignition switch ON and engine is running	Battery positive voltage
D3 – Ground	Ignition switch ON and HPS indicator light up	No voltage
D3 – Ground	Ignition switch ON and HPS indicator light does not light up	Battery positive voltage
D4 – Ground	Ignition switch ON and HPS switch N	No voltage
D4 – Ground	Ignition switch ON and HPS switch HI or LO	Battery positive voltage
D5 – Ground	Ignition switch ON and HPS switch LO	No voltage
D5 – Ground	Ignition switch ON and HPS switch N	Battery positive voltage
D6 – Ground	Ignition switch ON and HPS system is operating	No voltage
D6 – Ground	Ignition switch ON and HPS system is OFF	Battery positive voltage
D7 – Ground	Ignition switch ON and brake fluid level warning switch float DOWN	No voltage
D7 – Ground	Ignition switch ON and brake fluid level warning switch float UP	Battery positive voltage
D8 – Ground	Ignition switch ON and parking brake lever is pulled	No voltage
D8 – Ground	Ignition switch ON and parking brake lever is released	Battery positive voltage
D9 – Ground	Ignition switch ON, parking brake lever is released and brake fluid level warning switch float DOWN	No voltage
D9 – Ground	Ignition switch ON, parking brake lever is released and brake fluid level warning switch float UP	Battery positive voltage

D10 – Ground	Ignition switch ON and pattern select switch NORM	No voltage
D10 – Ground	Ignition switch ON and pattern select switch PWR	Battery positive voltage
D11 – Ground	Either door is opened	No voltage
D11 – Ground	Either door is closed	Battery positive voltage
D12 – Ground	Constant	Continuity
D13 – Ground	Ignition switch ON and turn signal switch OFF or RIGHT	No voltage
D13 – Ground	Ignition switch ON and turn signal switch LEFT	Battery positive voltage
D14 – Ground	Light control switch OFF	No voltage
D14 – Ground	Light control switch HI	Battery positive voltage
D15 – Ground	Ignition switch ON and turn signal switch OFF or LEFT	No voltage
D15 – Ground	Ignition switch ON and turn signal switch RIGHT	Battery positive voltage
D16 – Ground	Headlight switch ON	Battery positive voltage
D17 – Ground	Ignition switch ON and Window washer level warning switch float UP	No voltage
D18 – Ground	IG switch ON, BRAKE warning light ON	Below 2.0V
	IG switch ON, BRAKE warning light OFF	10 – 14 V

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

2. INSPECT SPEEDOMETER/ ON-VEHICLE

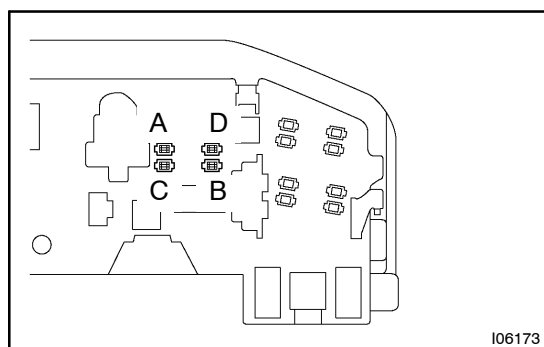
Using a speedometer tester, inspect the speedometer for allowable indication error and check the operation of the odometer.

HINT:

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

USA (mph)		CANADA (km/h)	
Standard indication	Allowable range	Standard indication	Allowable range
20	18 – 24	20	17 – 24
40	38 – 44	40	38 – 46
60	56 – 66	60	57.5 – 67
80	78 – 88	80	77 – 88
100	98 – 110	100	96 – 109
120	118 – 132	120	115 – 130
		140	134 – 151.5
		160	153 – 173

If error is excessive, replace the speedometer.



3. INSPECT SPEEDOMETER 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 the specified, replace the meter.

4. INSPECT TACHOMETER/ON-VEHICLE

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

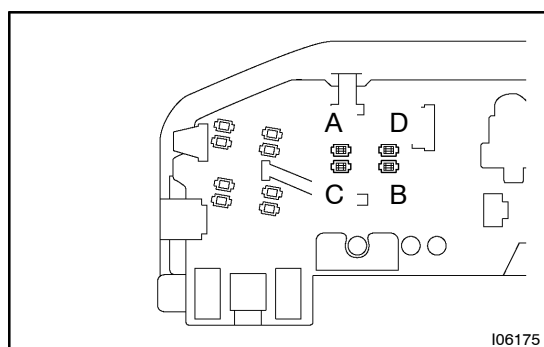
NOTICE:

- 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	617 - 757
1,000	(881 - 1081)
2,000	(1837 - 2087)
3,000	2793 - 3093
4,000	(3775 - 4075)
5,000	4756 - 5056
6,000	(5707 - 6067)

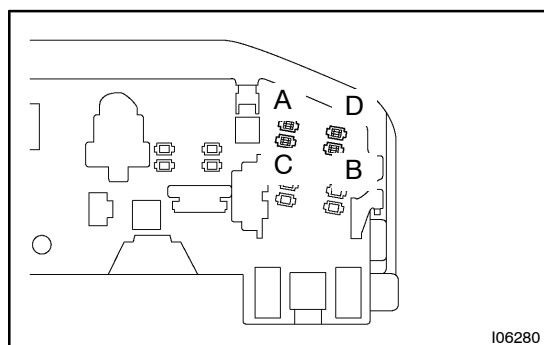


5. INSPECT TACHOMETER RESISTANCE

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 meter.

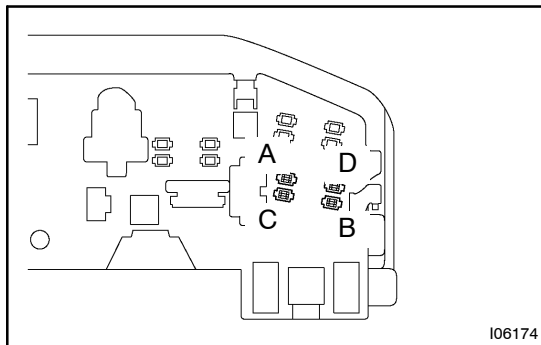


6. INSPECT VOLTMETER RESISTANCE

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 meter.

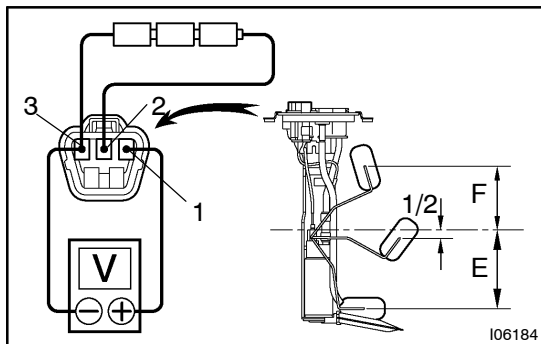


7. INSPECT FUEL RECEIVER GAUGE RESISTANCE

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.

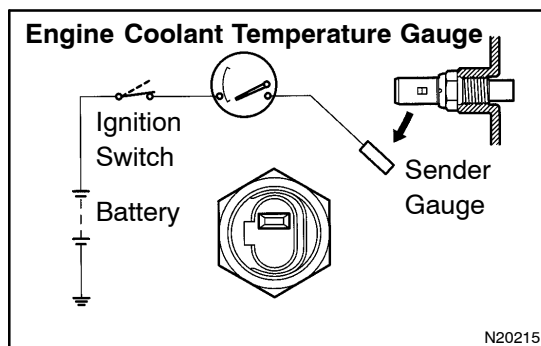


8. INSPECT FUEL SENDER GAUGE RESISTANCE

- Apply voltage between terminals 2 and 3.
- Measure voltage between terminals 1 and 2 for each float position.

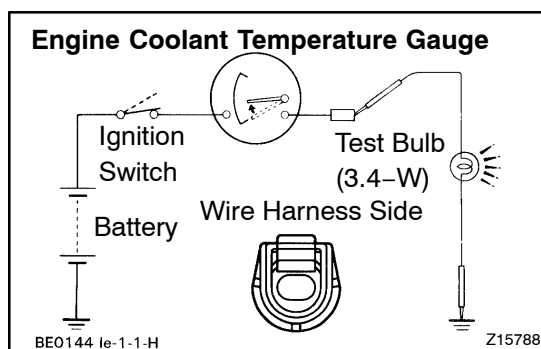
Float position mm (in.)	Resistance (Ω)
F: Approx. 85.3 (3.36)	Approx. 0.30 ± 0.1
1/2: Approx. 1.7 (0.67)	Approx. 2.45 ± 0.1
E: Approx. 91.9 (3.62)	Approx. 4.60 ± 0.1

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



9. INSPECT ENGINE COOLANT TEMPERATURE RECEIVER GAUGE OPERATION

- Disconnect the connector from the sender gauge.
- Turn the ignition switch ON and check that the receiver gauge needle indicates COOL.

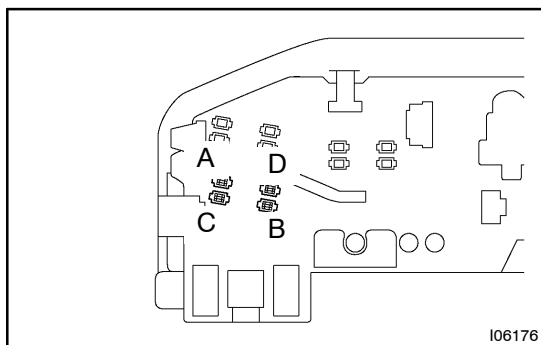


- Ground terminal on the wire harness side connector through a 3.4-W test bulb.
- Turn the ignition switch ON, and check that the bulb lights up and the receiver gauge needle moves to the hot side.

If operation is as specified, replace the sender gauge.

Then recheck the system.

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



10. INSPECT ENGINE COOLANT TEMPERATURE RECEIVER GAUGE RESISTANCE

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

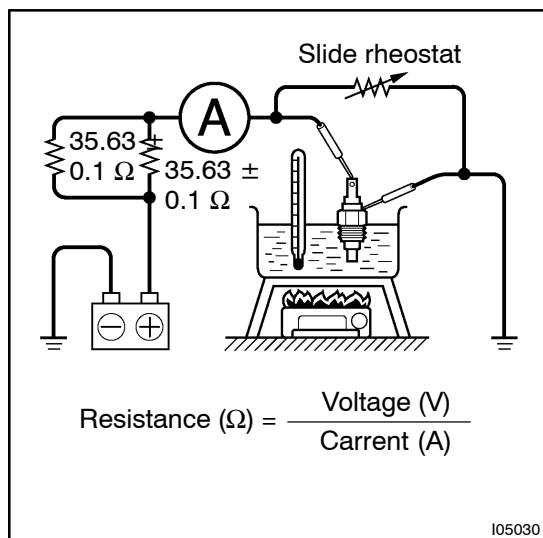
Tester connection	Resistance (Ω)
A - B	160
C - D	160

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.

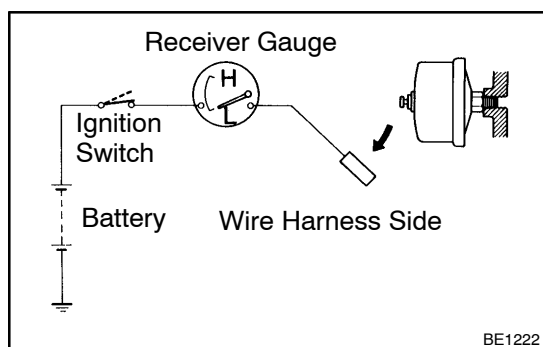


11. INSPECT ENGINE COOLANT TEMPERATURE SENDER GAUGE RESISTANCE

Connect the wire harness as shown in the illustration, and enter the value in the left formula. Check the resistance conforms to the values in the table below.

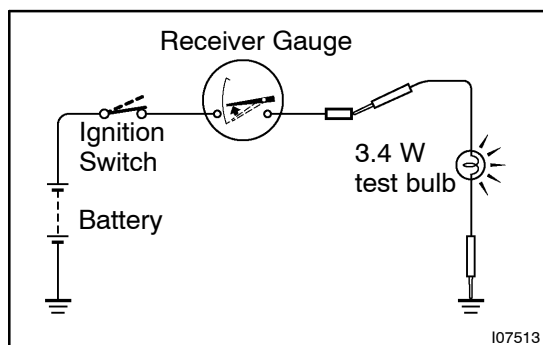
Temperature °C (°F)	Resistance (Ω)
50 (122.0)	160 - 240
120 (248.0)	17.1 - 21.2

If resistance value is not as specified, replace the engine coolant temperature sender gauge.



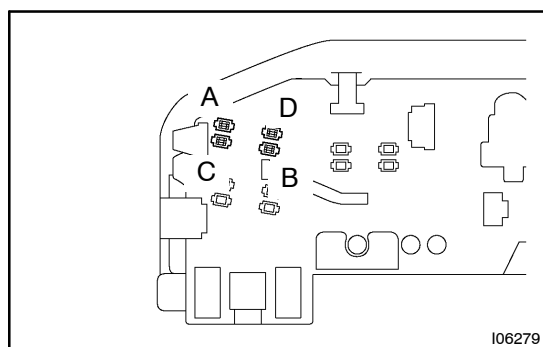
12. INSPECT OIL PRESSURE RECEIVER GAUGE OPERATION

- Disconnect the connector from the sender gauge.
- Turn the ignition switch ON and check that the receiver gauge needle indicates LOW.



- Ground terminal on the wire harness side through a 3.4 W test bulb.
- Turn the ignition switch ON and check that the bulb lights up and that the receiver gauge needle moves to the high side.

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

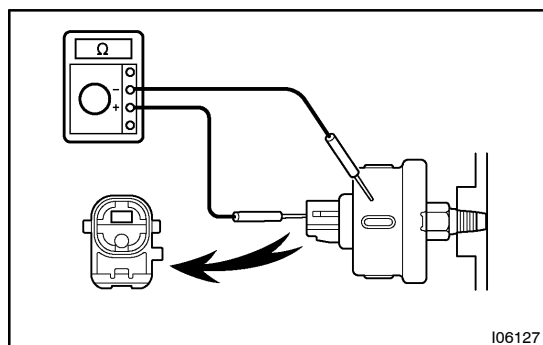


13. INSPECT OIL PRESSURE GAUGE RESISTANCE

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

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

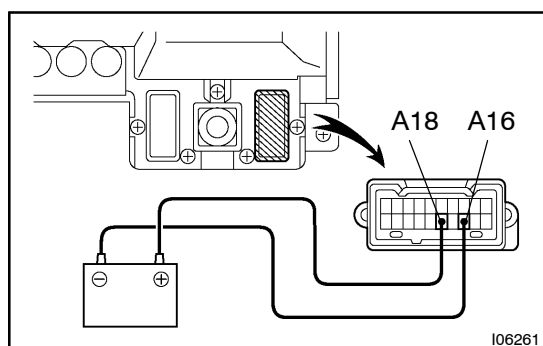
If resistance value is not as the specified, replace the meter.



14. INSPECT OIL PRESSURE SENDER GAUGE OPERATION

- Disconnect the connector from the sender gauge.
- Apply battery positive voltage to the sender gauge terminal through a test LED.
- Check that the bulb does not light when the engine is stopped.
- Check that the LED flashes when the engine is running. The number of flashed should vary with engine speed.

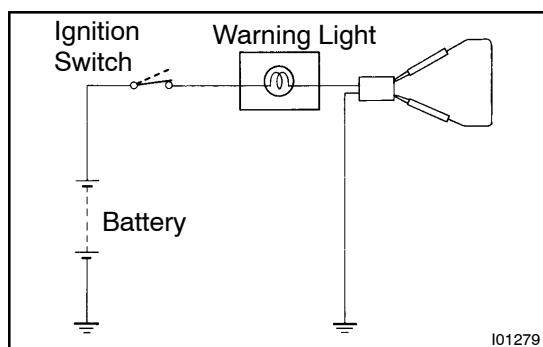
If operation is not as specified, replace the sender gauge.



15. INSPECT ABS WARNING BUZZER OPERATION

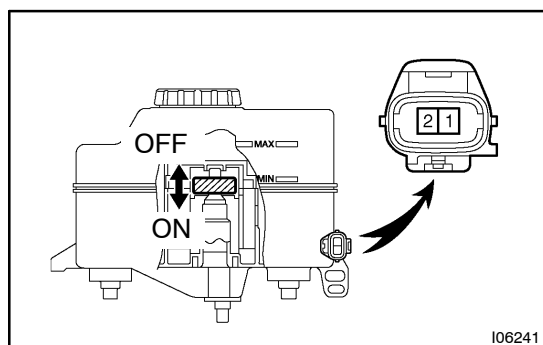
- Disconnect the connector from the meter connectors.
- Apply battery positive voltage to the terminal A16 and A18.

If operation is not as specified, replace the meter.



16. INSPECT BRAKE WARNING LIGHT

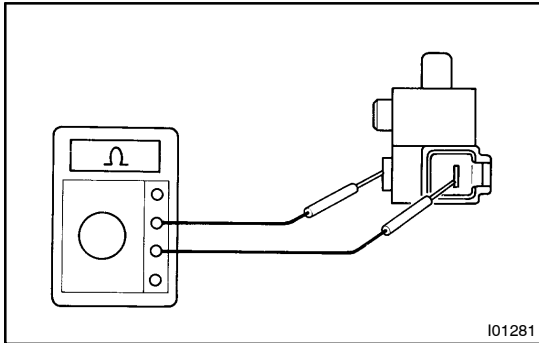
- Disconnect the connector from the brake fluid warning switch.
 - Release the parking brake pedal.
 - Connect the terminals on the wire harness side of the level warning switch connector.
 - Start the engine, check that the warning light lights up.
- If the warning light does not light up, test the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



17. INSPECT BRAKE FLUID LEVEL WARNING SWITCH CONTINUITY

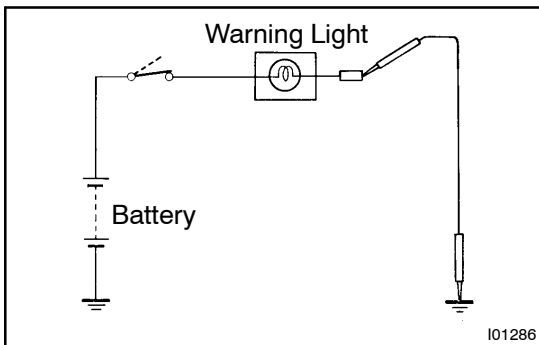
- Remove the reservoir tank cap and strainer.
- Disconnect the connector.
- Check that no continuity exists between the terminals with the switch OFF (float up).
- Use siphon, etc. to take fluid out of the reservoir tank.
- Check that continuity exists between the terminals with the switch ON (float down)
- Pour the fluid back in the reservoir tank.

If operation is not as specified, replace the switch.



18. 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.

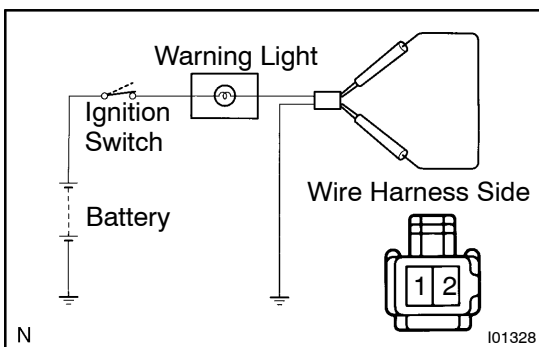


19. INSPECT OPEN DOOR WARNING LIGHT

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.

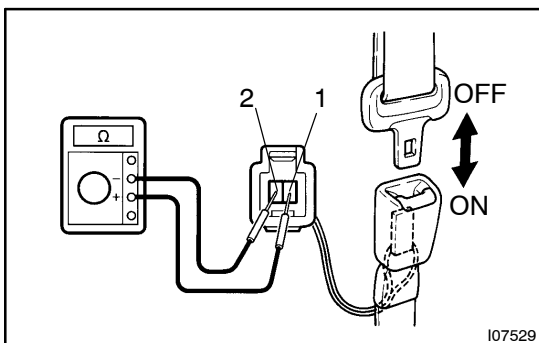
20. INSPECT DOOR COURTESY SWITCH CONTINUITY AND CIRCUIT (See page [DI-773](#))



21. INSPECT SEAT BELT WARNING LIGHT

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

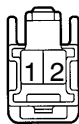
If the warning light does not light up, inspect the bulb or wire harness.



22. INSPECT SEAT BELT BUCKLE SWITCH CONTINUITY

- Check that continuity exists between the terminals 1 and 2 on the switch side connector with the switch ON (belt fastened).
- Check that continuity exists between the terminals 2 and 4 on the switch side connector with the switch OFF (belt unfastened).

If operation is not as specified, replace the switch.

Wire Harness Side

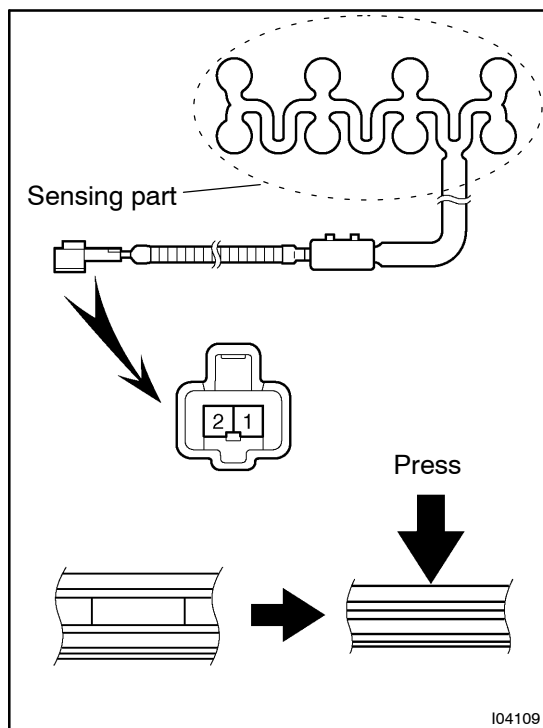
N21309

23. INSPECT SEAT BELT BUCKLE SWITCH CIRCUIT

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

Tester connection	Condition	Specified condition
2 – Ground	Constant	Continuity
–	Turn the ignition switch ON	Chime sounds for 4 – 8 secs.
–	Ground terminal 1 and turn the ignition switch ON	No chime sound

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

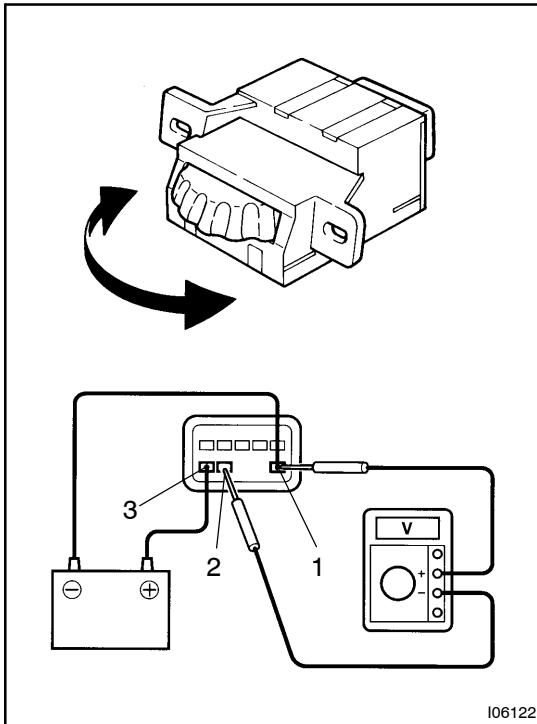


I04109

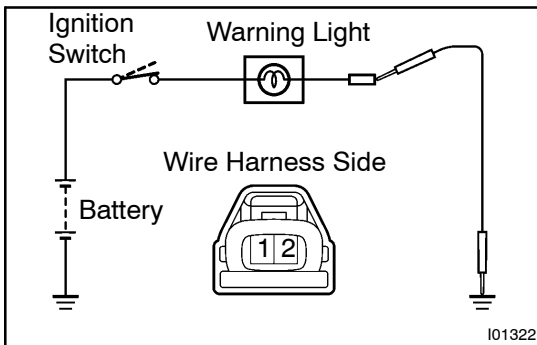
24. Passenger seat only:**INSPECT SEAT BELT WARNING OCCUPANT DETECTION SENSOR CONTINUITY**

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

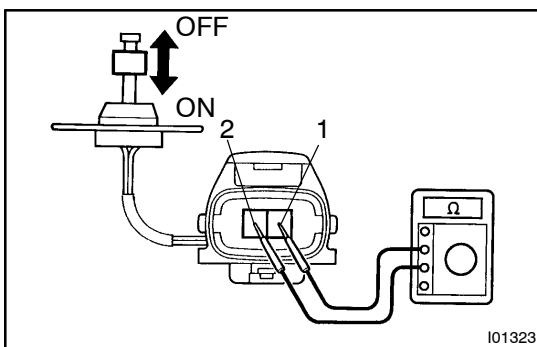
If operation is not as specified, replace the sensor.

**25. INSPECT LIGHT CONTROL RHEOSTAT**

- (a) Connect the positive (+) lead from the battery to terminal 1 and negative lead (-) to terminal 3.
- (b) Connect the positive (+) lead from the voltmeter to terminal 2 and negative lead to terminal 3.
- (c) Turn the rheostat knob and check that the voltage changes.

**26. INSPECT WINDOW WASHER LEVEL WARNING LIGHT**

- (a) Disconnect the connector from the warning switch and ground terminal on the wire harness side connector.
- (b) Engine running and check that the warning light lights up. If the warning light does not light up, inspect the bulb or wire harness.

**27. INSPECT WINDOW WASHER LEVEL WARNING SWITCH CONTINUITY**

- (a) Check that no continuity exists between the terminals with the switch OFF (float up).
- (b) Check that continuity exists between the terminals with the switch ON (float down).

If operation is not as specified, replace the switch or inspect ground point.

28. INSPECT INCLINATION SENSOR

- (a) With the combination meter in which the inclination sensor installed, connect the battery plus to the A16 terminal (IGN+) of the meter connector, and battery minus to the B16 terminal (E/G EARTH).
- (b) Check whether or not the voltage is 5V between the Vcc and the GND terminals of the inclination sensor connector.
- (c) Check the voltage between the OUT and the GND terminals when the inclination sensor is in level position and when it is inclined backward and forward.

Standard Value:**Sensor in level position about 4.5V****Sensor inclined about 0.5V**