

## INSPECTION

### 1. 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.

If error is excessive, replace the speedometer.

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

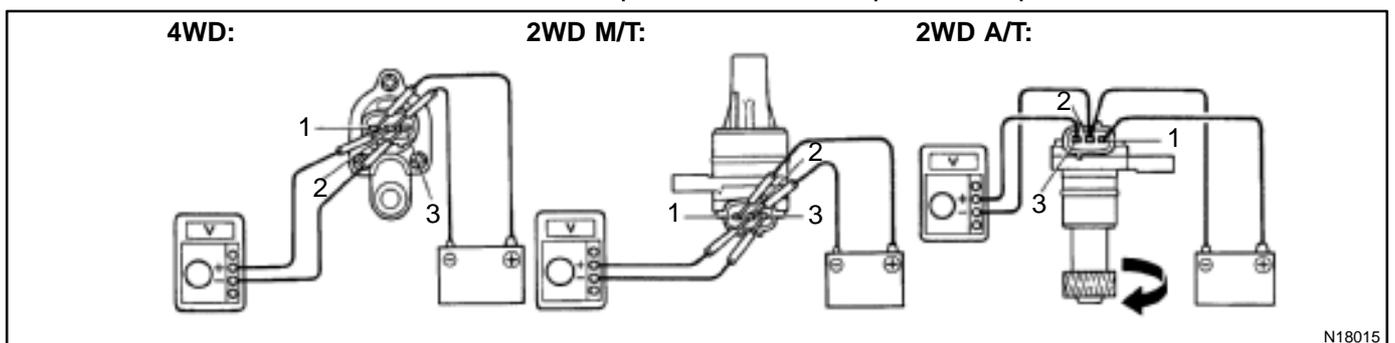
### 2. INSPECT VEHICLE SPEED SENSOR OPERATION

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

HINT:

The voltage change should be performed 4 times for every revolution of the speed sensor shaft.

If operation is not as specified, replace the sensor.



N18015

**3. INSPECT TACHOMETER (ON-VEHICLE)**

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

**NOTICE:**

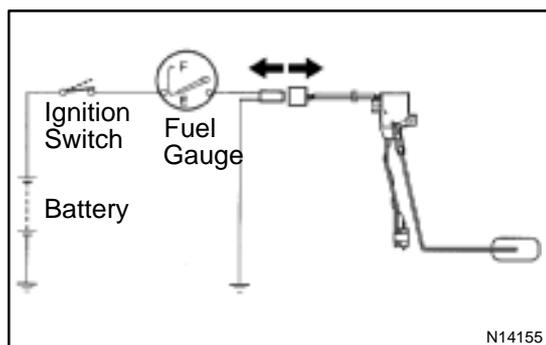
- Reversing the connection of the tachometer will damage the transistors and diodes inside.
- When removing or installing the tachometer, be careful not to drop or subject it to heavy shocks.

- (b) Compare the tester and tachometer indications.

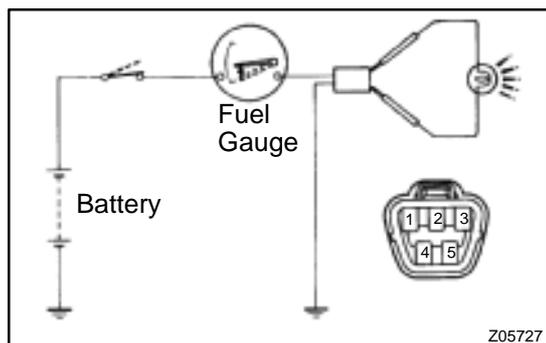
**DC 13.5 V 20°C at (68°F)**

Standard indication (rpm)	Allowable range (rpm)
700	630 - 770
3,000	2,850 - 3,150
5,000	4,850 - 5,150
7,000	6,790 - 7,210

If error is excessive, replace the tachometer.

**4. INSPECT FUEL RECEIVER GAUGE OPERATION**

- (a) Disconnect the connector from the sender gauge.  
 (b) Turn the ignition switch ON, check that the receiver gauge needle indicates EMPTY.

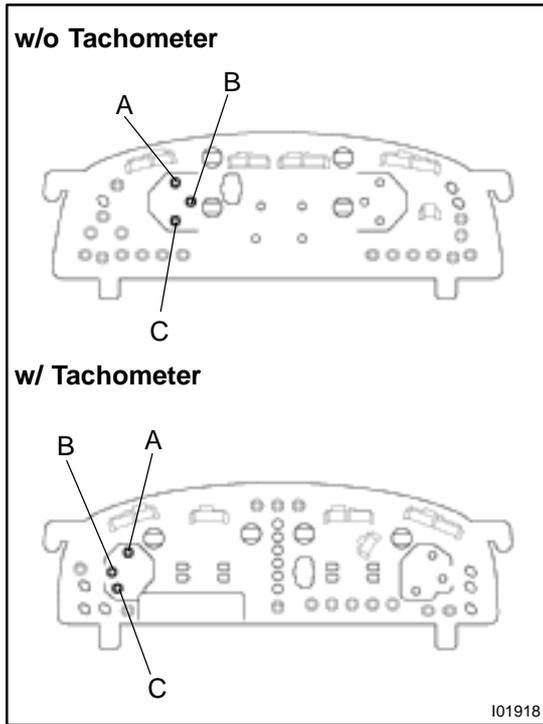


- (c) Connect terminals 2 and 3 on the wire harness side connector through a 3.4 W test bulb.  
 (d) Turn the ignition switch ON, check that the bulb lights up and the receiver gauge needle moves toward FULL side.

**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.



**5. INSPECT FUEL RECEIVER GAUGE RESISTANCE**

Measure the resistance between terminals.

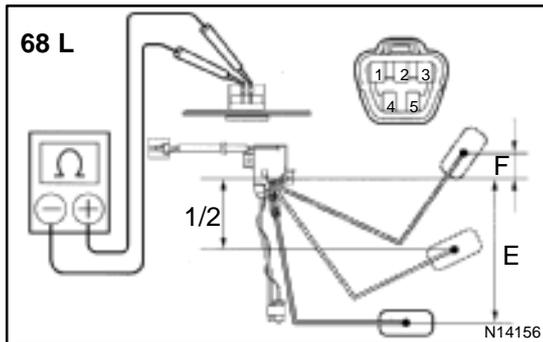
**w/ Tachometer**

Between terminals	Resistance ( $\Omega$ )
A - B	Approx. 137
A - C	Approx. 260.3
B - C	Approx. 123.3

**w/o Tachometer**

Between terminals	Resistance ( $\Omega$ )
A - B	Approx. 160
A - C	Approx. 84
B - C	Approx. 244

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

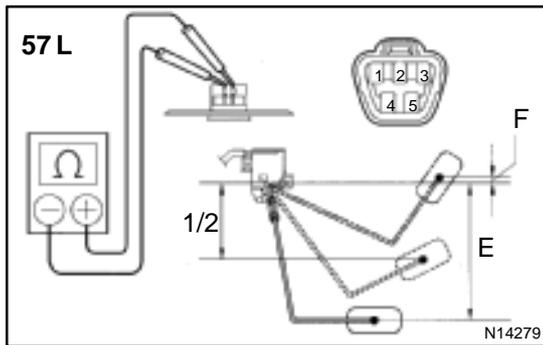


**6. INSPECT FUEL SENDER GAUGE RESISTANCE**

Measure the resistance between terminals 2 and 3.

**68 L:**

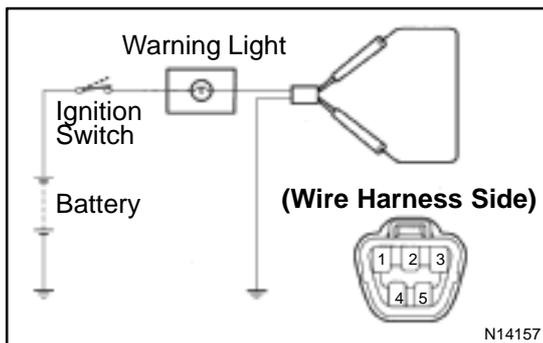
Float position mm (in.)	Resistance ( $\Omega$ )
F: Approx. 28.0 (1.102)	F: Approx. 3.0
1/2: 81.3 (3.201)	1/2: Approx. 32.5
E: Approx. 163.9 (6.453)	E: Approx. 110.0



**57 L:**

Float position mm (in.)	Resistance ( $\Omega$ )
F: Approx. 12.1 (0.476)	F: Approx. 3.0
1/2: 79.0 (3.110)	1/2: Approx. 32.5
E: Approx. 153.3 (6.035)	E: Approx. 110.0

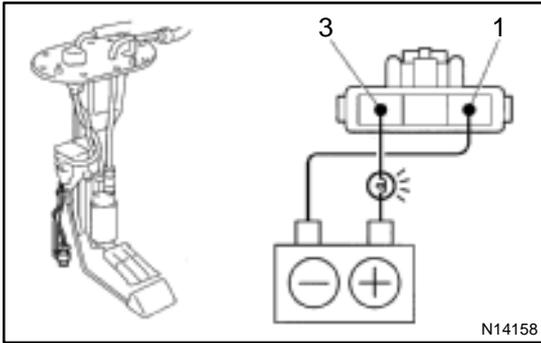
If resistance value is not as specified, replace the sender gauge.



**7. INSPECT FUEL LEVEL WARNING LIGHT**

- Disconnect the connector from the sender gauge.
- Connect terminals 1 and 3 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.

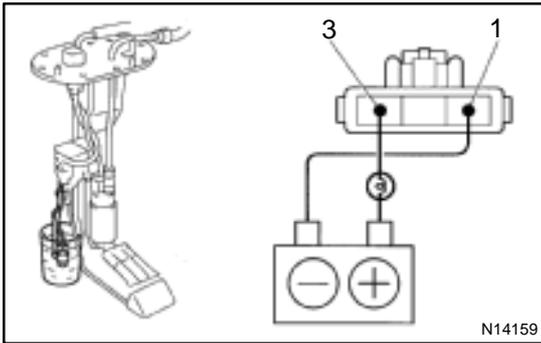


**8. INSPECT FUEL LEVEL WARNING SWITCH**

- (a) Apply battery positive voltage between terminals 1 and 3, and through a 3.4 W test bulb, and check that the bulb lights up.

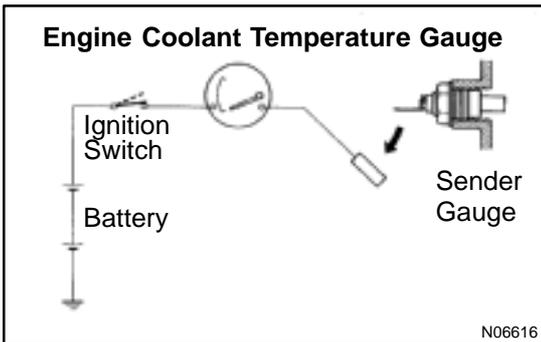
HINT:

It will take a short time for bulb to light up.



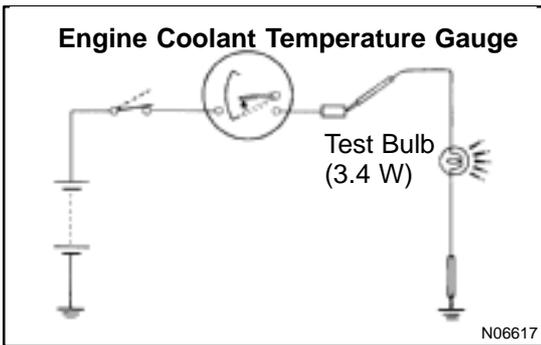
- (b) Submerge the switch in fuel and check that the bulb goes out.

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



**9. INSPECT ENGINE COOLANT TEMPERATURE RECEIVER GAUGE OPERATION**

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

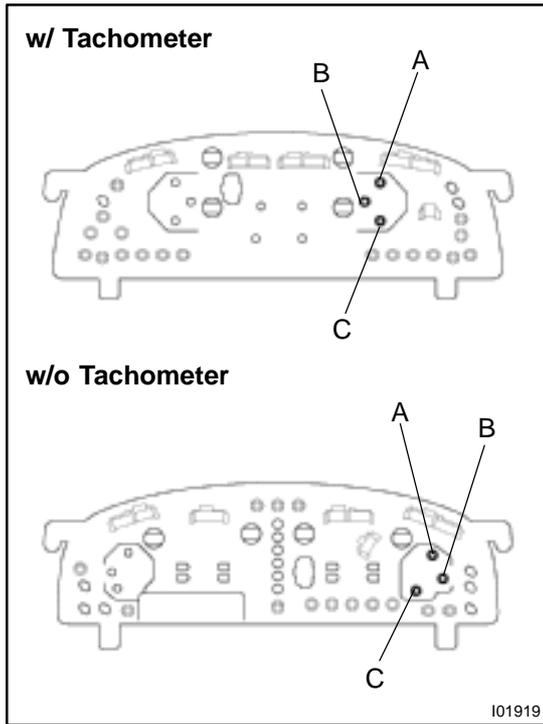


- (c) Ground terminal on the wire harness side connector through a 3.4 W test bulb.

- (d) 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, re-check 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.

**w/ Tachometer**

Between terminals	Resistance ( $\Omega$ )
A - B	Approx. 256.5
A - C	Approx. 181.5
B - C	Approx. 75

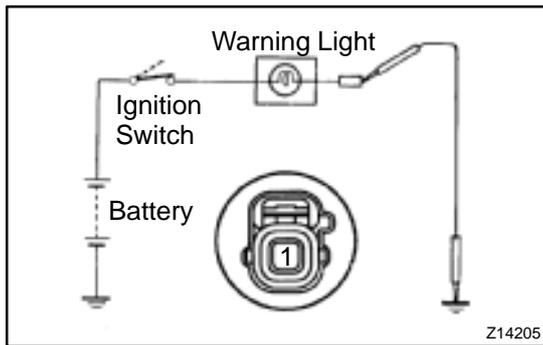
**w/o Tachometer**

Between terminals	Resistance ( $\Omega$ )
A - B	Approx. 139
A - C	Approx. 75
B - C	Approx. 214

**HINT:**

Connect the test leads so that the current from the ohmmeter can flow according to the above order. This circuit includes the diode.

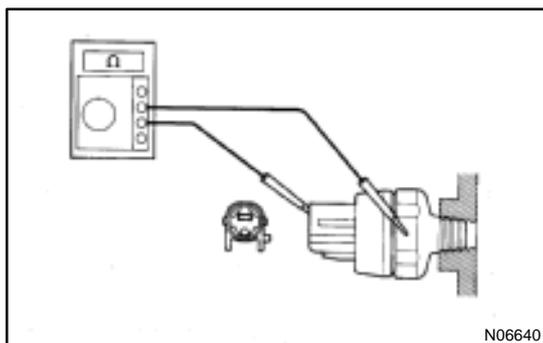
If resistance value is not as specified, replace the receiver gauge.



**11. INSPECT LOW OIL PRESSURE WARNING LIGHT**

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

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

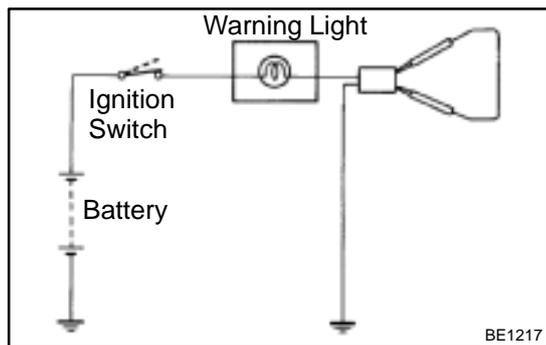


**12. INSPECT LOW OIL PRESSURE SWITCH**

- (a) Disconnect the connector from the switch.
- (b) Check that continuity exists between terminal and ground with the engine stopped.
- (c) Check that no continuity exists between terminal and ground with the engine running.

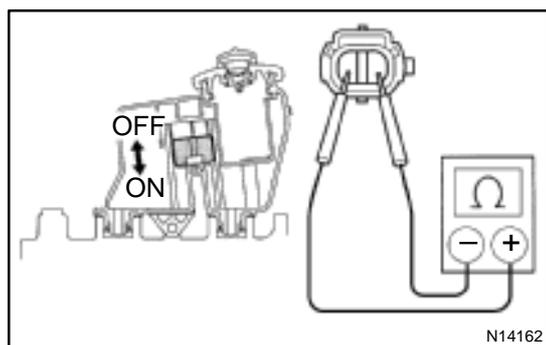
**HINT:**

Oil pressure should be over 49 kPa (0.5 kg/cm<sup>2</sup>, 7.1 psi). If operation is not as specified, replace the switch.

**13. INSPECT BRAKE WARNING LIGHT**

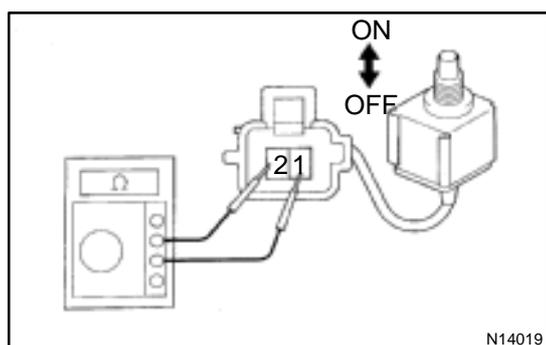
- Disconnect the connectors from the level warning switch and parking brake switch.
- Connect terminals on the wire harness side connector of the level warning switch connector.
- Turn the ignition switch ON and check that the warning light lights up.

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

**14. INSPECT BRAKE FLUID LEVEL WARNING SWITCH CONTINUITY**

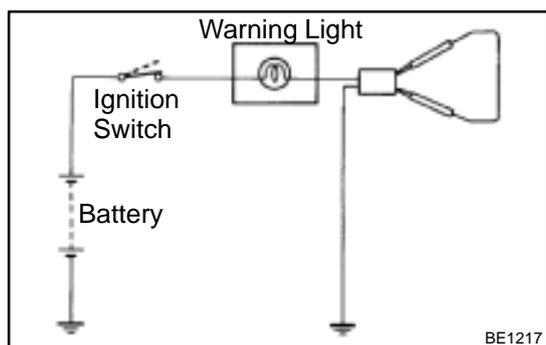
- Check that no continuity exists between terminals with the switch OFF (float up).
- Check that continuity exists between terminals with the switch ON (float down).

If operation is not as specified, replace the switch.

**15. INSPECT PARKING BRAKE SWITCH CONTINUITY**

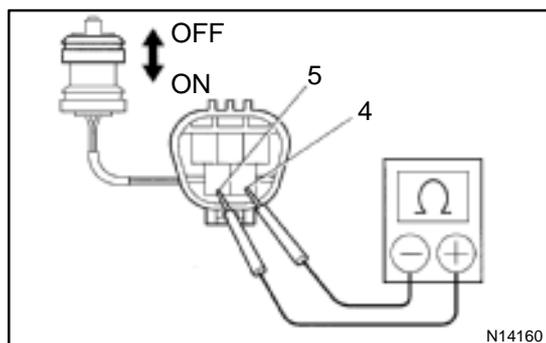
- Check that continuity exists between terminals with the switch ON (switch pin released).
- Check that no continuity exists between terminals with the switch OFF (switch pin pushed in).

If operation is not as specified, replace the switch.

**16. INSPECT WASHER LEVEL WARNING LIGHT**

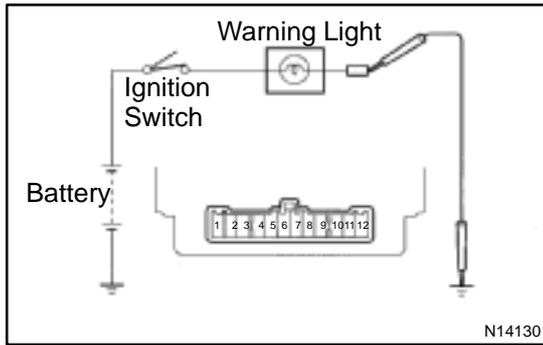
- Disconnect the connectors from the level warning switch and parking brake switch.
- Connect terminals on the wire harness side connector of the level warning switch connector.
- Remove the CHARGE fuse and turn the ignition switch ON, and check that the warning light comes on.

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

**17. INSPECT WASHER LEVEL SWITCH**

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

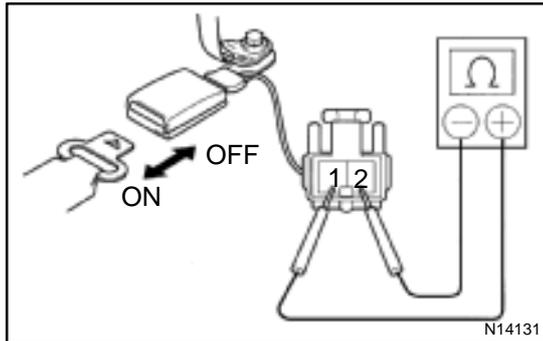
If operation is not as specified, replace the switch.



**18. INSPECT SEAT BELT WARNING LIGHT**

- (a) Remove the integration relay from the No.1 J/B.
- (b) Ground terminal 9 on the junction block side connector.
- (c) Turn the ignition switch ON and check that the warning light lights up.

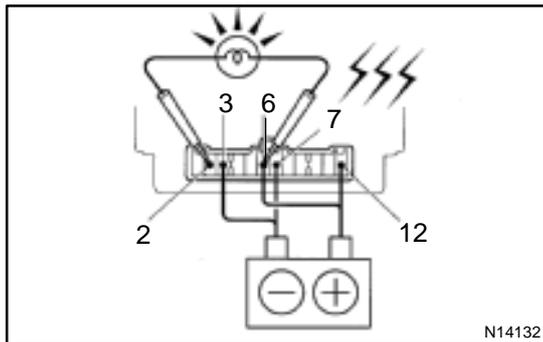
If the warning light does not light up, inspect the bulb or wire harness.



**19. INSPECT BUCKLE SWITCH CONTINUITY**

- (a) Check that continuity exists between terminals on the switch side connector with the switch ON (belt unfastened).
- (b) Check that no continuity exists between terminals on the switch side connector with the switch OFF (belt fastened).

If operation is not as specified, replace the seat belt inner.



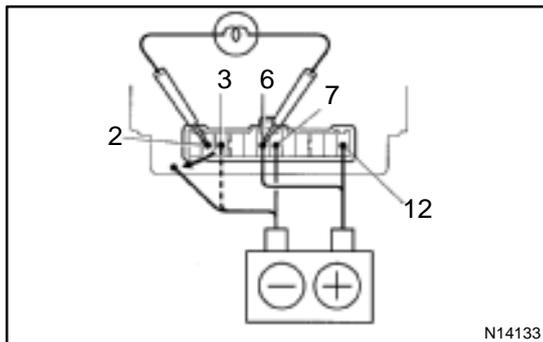
**20. INSPECT INTEGRATION RELAY SEAT BELT WARNING SYSTEM OPERATION**

- (a) Connect the positive (+) lead from the battery to terminal 12 and negative (-) lead from the battery to terminal 7.
- (b) Connect the terminal 2 to terminal 5 through the 3.4 W test bulb.
- (c) Connect the negative (-) lead from the battery to terminal 3.
- (d) Check that the bulb lights and the chime sounds for 4 – 8 seconds.
- (e) Return to step (a) and operate the chime again.
- (f) Check that the buzzer does not sound when disconnecting terminal 3 from the negative (-) lead.
- (g) Check that the chime stops sounding.

HINT:

Check the chime within a period of 4 to 8 seconds.

If operation is not as specified, replace the relay.



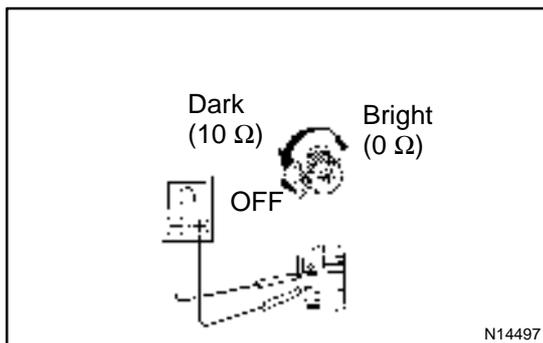
**21. INSPECT INTEGRATION RELAY CIRCUIT (See page BE-12)**

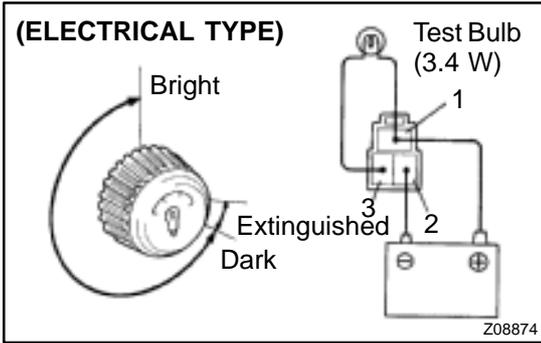
If operation is not as specified, replace the rheostat.

**22. w/ Tachometer (DLX Grade M/T Vehicle) INSPECT LIGHT CONTROL RHEOSTAT**

- (a) Turn the rheostat knob OFF and check that no continuity exists between terminals (Rheostat knob turned to fully counterclockwise).
- (b) Gradually, turn the rheostat knob from the dark side to bright side and check that the resistance decreases from 10 to 0 Ω.(Rheostat knob turned to clockwise)

If operation is not as specified, replace the rheostat.



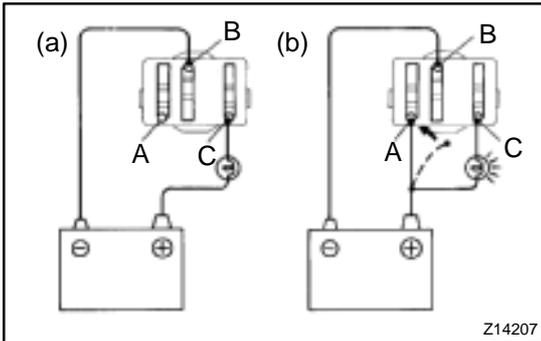


**23. ELECTRICAL TYPE (w/ All A/T Vehicle and SR5 Grade M/T Vehicle):**

**INSPECT LIGHT CONTROL RHEOSTAT**

- (a) Connect terminals 1 and 3 through a 3.4 W test bulb.
- (b) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2.
- (c) Turn the rheostat knob to fully counterclockwise and check that the test bulb goes out.
- (d) Gradually turn the rheostat knob to clockwise and check that the test bulb brightness changes from dark to bright.

If operation is not as specified, replace the rheostat.



**24. INSPECT BULB CHECK RELAY OPERATION**

- (a) Connect the positive (+) lead from the battery to terminal C through a 1.4 W test bulb and the negative (-) lead to terminal B, check that the test bulb does not light up.
- (b) Connect the positive (+) lead from the battery to terminal A and check that the test bulb lights up.

If operation is not as specified, replace the relay.