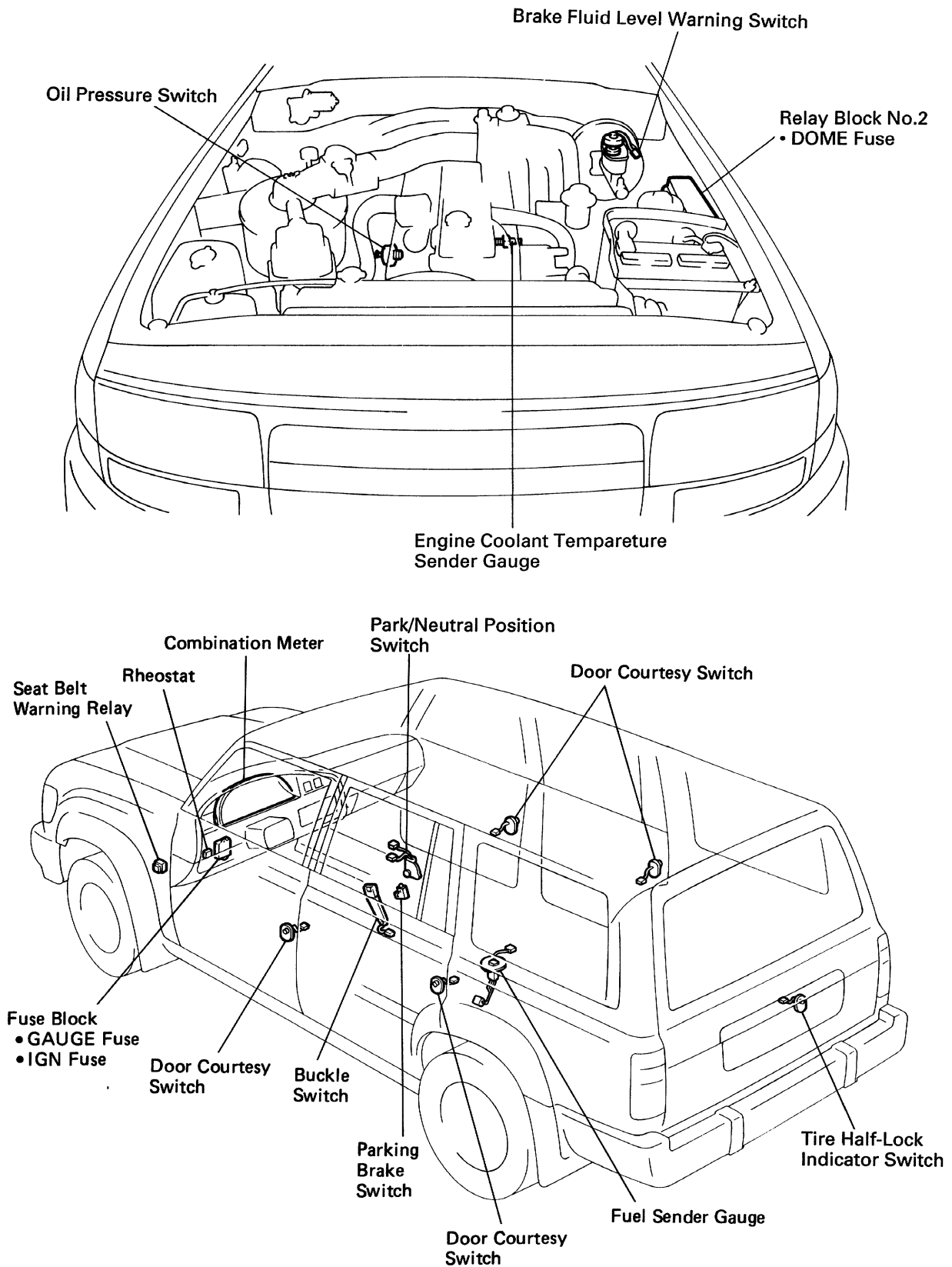
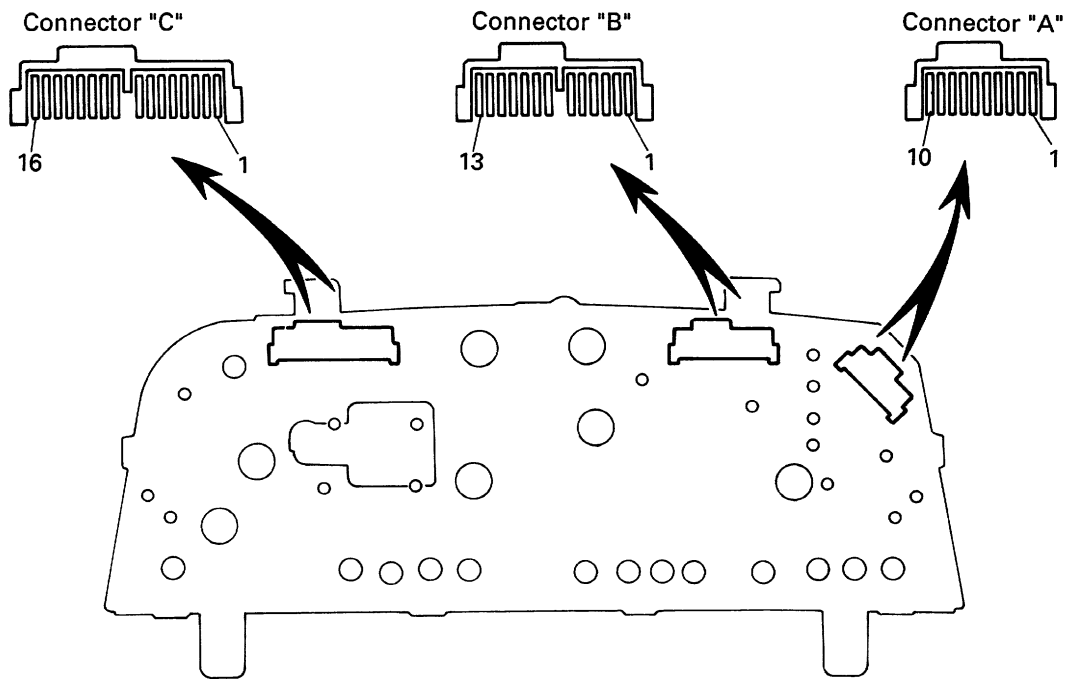
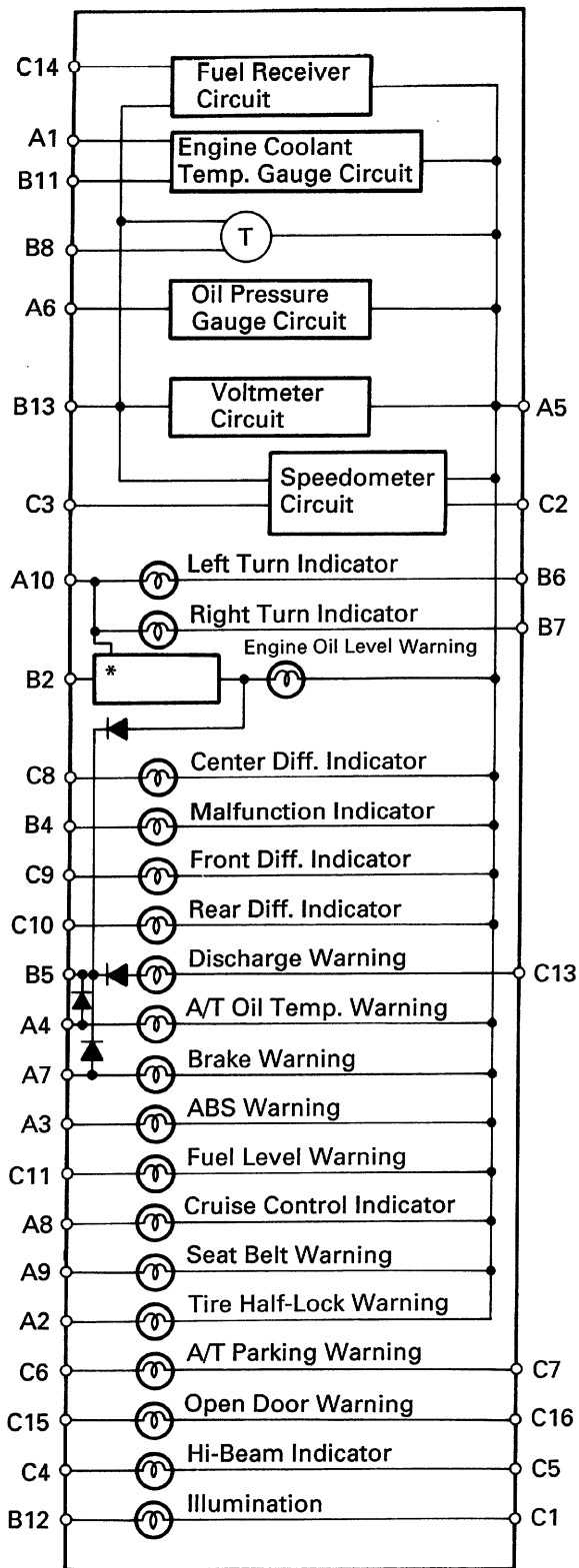


COMBINATION METER PARTS LOCATION



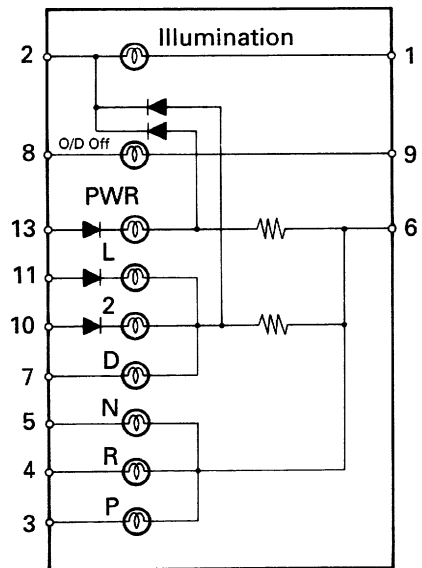
METER CIRCUIT





No.	Wiring connector side
A	1 Ground
	2 Tire Half-Lock Indicator Switch
	3 ABS ECU
	4 A/T Fluid Temperature Sensor
	5 GAUGE Fuse
	6 Oil Pressure Sender Gauge
	7 Brake Warning Switch
	8 Cruise Control ECU
	9 Seat Belt Warning Relay
	10 Ground
B	2 Engine Oil Level Sensor
	4 ECM
	5 Charge Light Relay
	6 Light Control Switch (Left)
	7 Light Control Switch (Right)
	8 Igniter
	11 Engine Coolant Temperature Gauge
C	12 Light Control Rheostat
	13 Ground
	1 TAIL Fuse
	2 Speed Control Unit
	3 No.1 Vehicle Speed Sensor
	4 Headlight
	5 Headlight LO-Beam
	6 Park/Neutral Position Switch
	7 Park/Neutral Position Switch
	8 Center Diff. Lock Indicator Switch
	9 Front Diff. Lock Indicator Switch
	10 Rear Diff. Lock Indicator Switch
	11 Fuel Level Warning Switch
	13 IGN Fuse
	14 Fuel Sender Gauge
	15 Door Courtesy Switch
	16 DOME Fuse

• SHIFT POSITION INDICATOR



Terminal	Wiring connector side
1	Light Control Rheostat-terminal A
2	TAIL Fuse
3	Park/Neutral Position Switch-terminal 6
4	Park/Neutral Position Switch-terminal 1
5	Park/Neutral Position Switch-terminal 5
6	Ground
7	Park/Neutral Position Switch-terminal 7
8	IGN Fuse
9	O/D OFF Switch
10	Park/Neutral Position Switch-terminal 3
11	Park/Neutral Position Switch-terminal 8
13	Pattern Select Switch

TROUBLESHOOTING

The table below will be useful for you in troubleshooting these electrical problems. The most likely causes of the malfunction are shown in the order of their probability. Inspect each part in the order shown, and replace the part when it is found to be faulty.

Trouble	Part name	See page
Combination meter do not operate.	1. GAUGE Fuse 2. Wire Harness	BE-6, BE-10 –
Speedometer does not operate.	1. Speedometer 2. No. 1 Vehicle Speed Sensor 3. Wire Harness	BE-51
Tachometer does not operate.	1. Tachometer 2. Ignite 3. Wire Harness	BE-51 IG-7 –
Fuel gauge does not operate.	1. Receiver Gauge 2. Sender Gauge 3. Wire Harness	BE-52 BE-52 –
Fuel level warning light does not light up.	1. Bulb 2. Fuel Level Warning Switch 3. Wire Harness	– BE-53 –
Engine coolant temperature gauge does not operate.	1. Receiver Gauge 2. Sender Gauge 3. Wire Harness	BE-53 BE-54 –
Oil pressure gauge does not operate.	1. Receiver Gauge 2. Sender Gauge 3. Wire Harness	BE-54 BE-55 –
Voltmeter does not operate.	1. Receiver Gauge 2. Wire Harness	BE-55 –
Brake warning light does not light up.	1. Bulb 2. Brake Fluid Level Warning Switch 3. Parking Brake Switch 4. Wire Harness	– BE-56 BE-56 –
Seat belt warning light does not light up.	1. Bulb 2. Buckle Switch 3. Seat Belt Warning Relay 4. Wire Harness	BE-57 BE-57 – –
Open door warning light does not light up.	1. Bulb 2. Door Courtesy Switch 3. Wire Harness	– BE-56 –
Tire half-lock warning light does not light up.	1. Bulb 2. Tire Half-Lock Indicator Switch 3. Wire Harness	– BE-58 –
Engine oil level warning light does not light up.	1. Bulb 2. Engine Oil Level Sensor 3. Wire Harness	– BE-59 –

Trouble	Part name	See page
ABS warning light does not light up.	1. Bulb 2. ABS ECU 3. Wire Harness	- BR-60 -
Meter illumination control system does not operate.	1. Bulb 2. Light Control Rheostat 3. Wire Harness	- BE-59 -
Shift position indicator light does not light up.	1. Bulb 2. Park/Neutral Position Switch 3. Wire Harness	- AT-40 -

SPEEDOMETER SYSTEM

INSPECT SPEEDOMETER (ON-VEHICLE)

(mph)

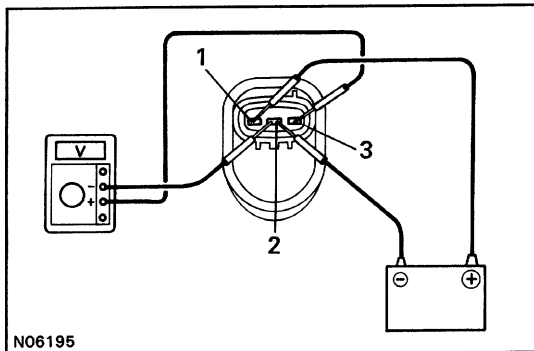
Standard indication	Allowable range
20	18.5 — 21.5
40	38 — 41.5
60	58 — 62
80	78 — 82.5
100	98 — 103

- (a) 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.

- (b) Check the speedometer for pointer vibration and abnormal noise.

HINT: Pointer vibration can be caused by a loose speedometer cable.



NO.1 VEHICLE SPEED SENSOR INSPECTION

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

HINT: The voltage change should be 4 times per each revolution of the No. 1 vehicle speed sensor shaft. If operation is not as specified, replace the sensor.

TACHOMETER SYSTEM

TACHOMETER INSPECTION (ON-VEHICLE)

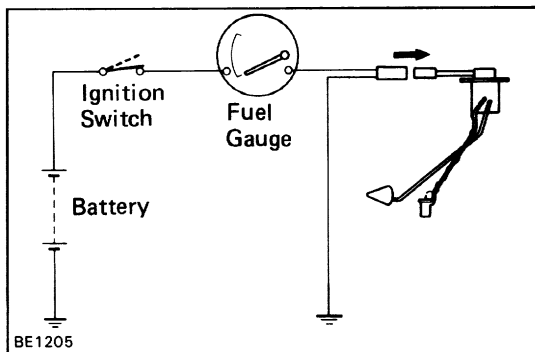
- (a) Connect a tune-up test tachometer, and start the engine.

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. If error is excessive, replace the tachometer.

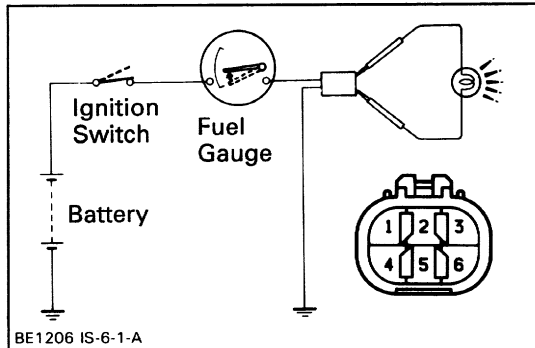
DC 13.5 V 20°C (68°F)		rpm
Standard indication	Allowable range	
700	630 — 770	
1,000	900 — 1,100	
2,000	1,875 — 2,125	
3,000	2,850 — 3,150	
4,000	3,850 — 4,150	
5,000	4,850 — 5,150	



FUEL GAUGE SYSTEM

FUEL RECEIVER GAUGE INSPECTION OPERATION

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



- Connect terminals 4 and 5 on the wire harness side connector through a 3.4 W test bulb.
- Turn the ignition switch ON, check that the bulb lights up and the receiver gauge needle moves towards the full side.

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

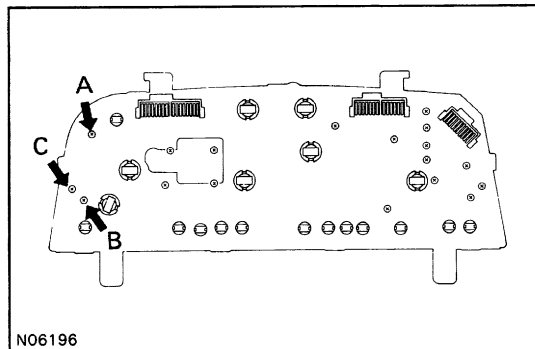
If operation is not as specified, inspect the receiver gauge resistance.

RESISTANCE

Measure the resistance between terminals.

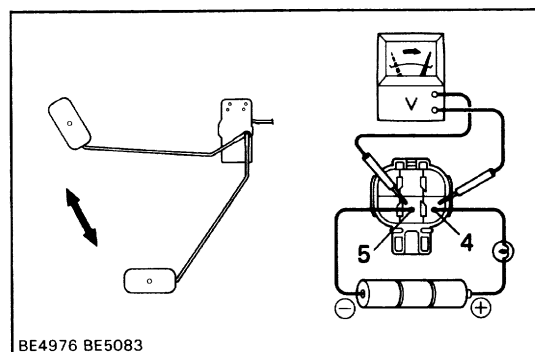
Between terminals	Resistance (Ω)
A - B	85.5 - 105.5
A - C	126 - 150
C - B	*90 - 110
*: Include voltmeter resistance.	

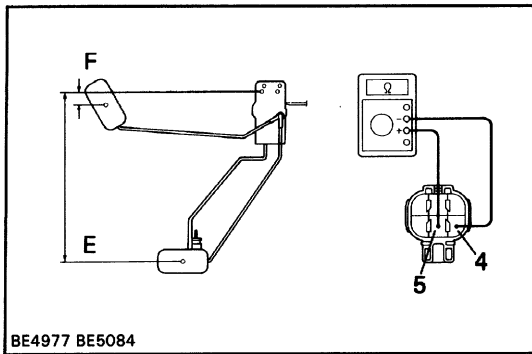
If resistance value is not as specified, replace the receiver gauge.



FUEL SENDER GAUGE INSPECTION OPERATION

- Connect a series of three 1.5 volts dry cell batteries.
- Connect the positive (+) lead from the dry cell batteries to terminal 4 through a 3.4 W test bulb and the negative (-) lead to terminal 5.
- Connect the positive (+) lead from the voltmeter to terminal 4 and the negative (-) lead to terminal 5.
- Check that the voltage rises as the float is moved from the full to empty position.



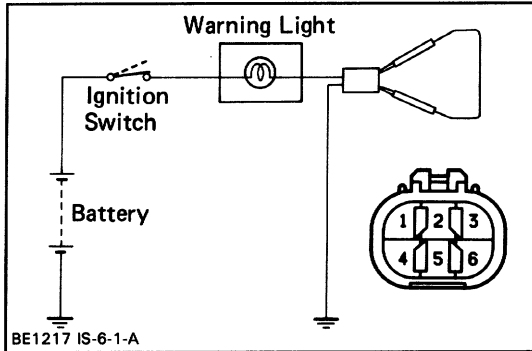


RESISTANCE

Measure the resistance between terminals 4 and 5.

Float position mm (in.)	Resistance (Ω)
F approx. 15 (0.59)	approx. 3
E approx. 200 (7.87)	approx. 110

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

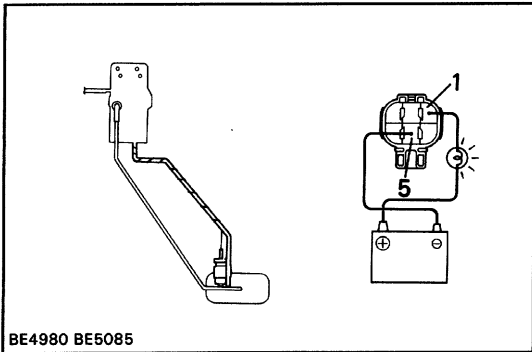


FUEL LEVEL WARNING SYSTEM

FUEL LEVEL WARNING INSPECTION

- Disconnect the connector from the sender gauge.
- Connect terminals 1 and 5 on the wire harness side connector.
- Turn the ignition switch ON, check that the warning light lights up.

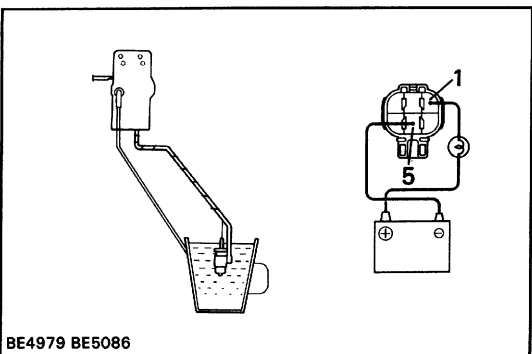
If the warning light does not light up, test the bulb.



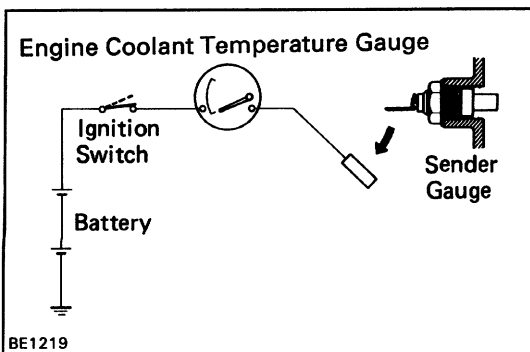
FUEL LEVEL WARNING SWITCH INSPECTION

- Apply battery positive voltage between terminals 1 and 5 through a 3.4 W test bulb, check that the bulb lights up.

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



- Submerge the switch in fuel, check that the bulb goes out. If operation is not as specified, replace the sender gauge.

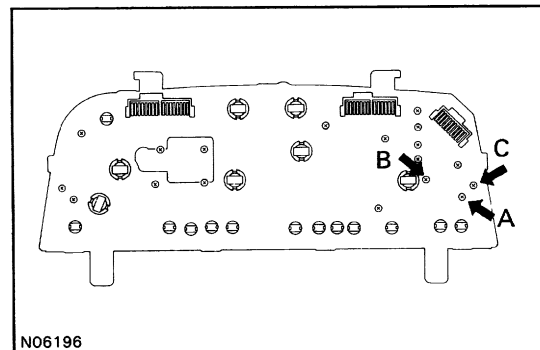
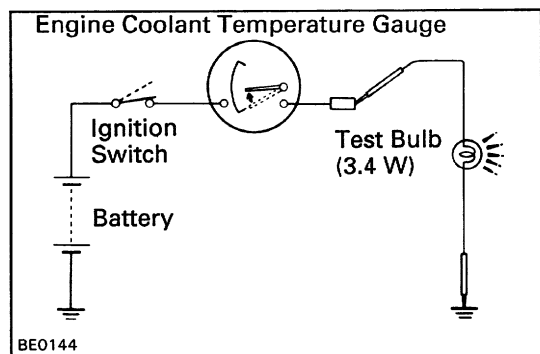


ENGINE COOLANT TEMPERATURE GAUGE SYSTEM

ENGINE COOLANT TEMPERATURE RECEIVER GAUGE INSPECTION

OPERATION

- Disconnect the connector from the sender gauge.
- Turn the ignition switch ON, 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, 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.

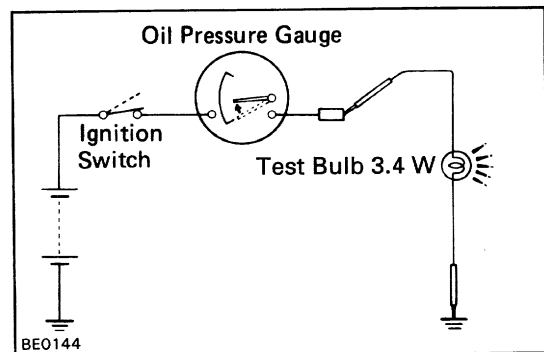
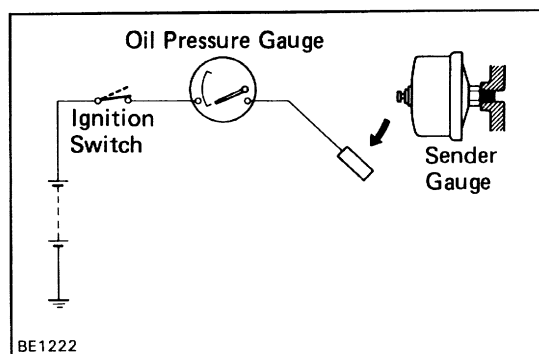
RESISTANCE

Measure the resistance between terminals.

Between terminals	Resistance (Ω)
A - 6	71 - 79
A - C	117 - 141
C - A	185 - 215

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

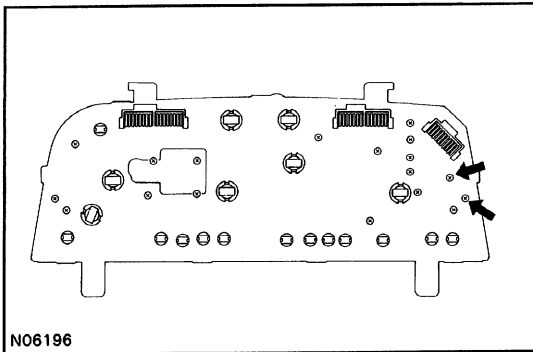
If resistance value is not as specified, replace the receiver gauge.



OIL PRESSURE GAUGE SYSTEM

OIL PRESSURE RECEIVER GAUGE INSPECTION OPERATION

- (a) Disconnect the connector from the sender gauge.
- (b) Turn the ignition switch ON, check that the receiver gauge needle indicates LOW.
- (c) Ground terminal on the wire harness side 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 to the high side. If operation is not as specified, measure the receiver gauge resistance.

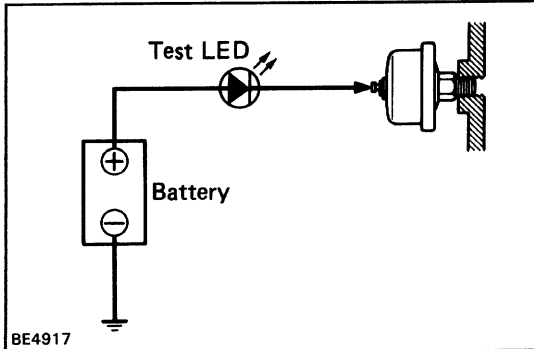


RESISTANCE

Measure the receiver gauge resistance between terminals.

Resistance: 22 – 28 Ω

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



OIL PRESSURE SENDER GAUGE INSPECTION

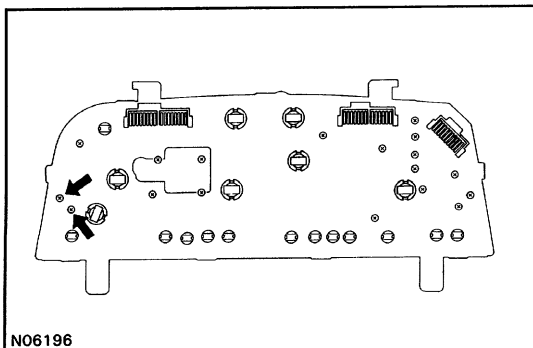
- Disconnect the connector from the sender gauge.
- Apply battery positive voltage to the sender gauge terminal through a test LED.
- Check that the bulb does not light when the engine is stopped.
- Check that the LED flashes when the engine is running. The number of flashed should vary with engine speed.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

VOLTMETER SYSTEM

VOLTMETER INSPECTION (ON-VEHICLE)

Compare the tester and voltmeter indications.

If error is excessive, replace the voltmeter.



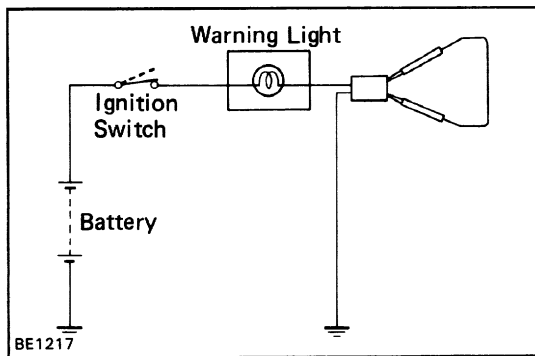
RESISTANCE

Measure the receiver gauge resistance between terminals.

Resistance: 90 – 110 Ω

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

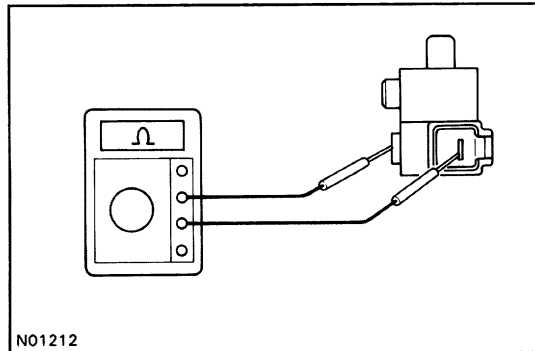
HINT: This resistance include fuel receiver gauge resistance.



BRAKE WARNING SYSTEM

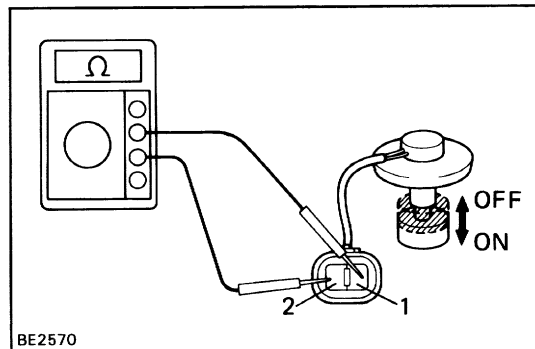
BRAKE WARNING LIGHT INSPECTION

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



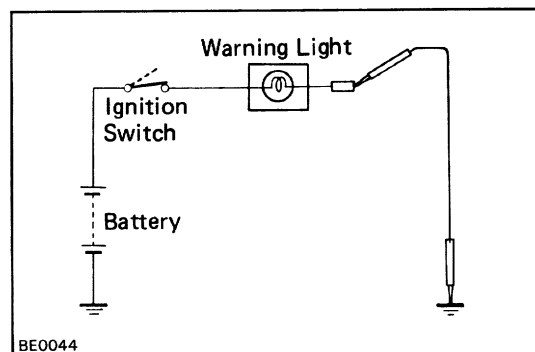
PARKING BRAKE SWITCH INSPECTION

- Check that there is continuity between terminal and the switch set nut with switch pin released. (parking brake lever pulled up)
 - Check that there is no continuity between terminal and the switch set nut with switch pin pushed in. (parking brake lever released)
- If operation is not as specified, replace the switch.



BRAKE FLUID LEVEL WARNING SWITCH INSPECTION

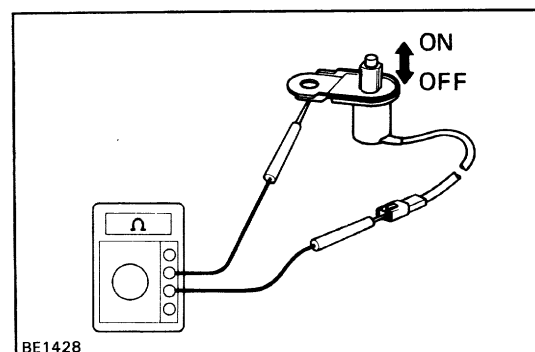
- Check that there is no continuity between terminals with the switch OFF (float up).
 - Check that there is continuity between terminals with the switch ON (float down).
- If operation is not as specified, replace the switch.



OPEN DOOR WARNING SYSTEM

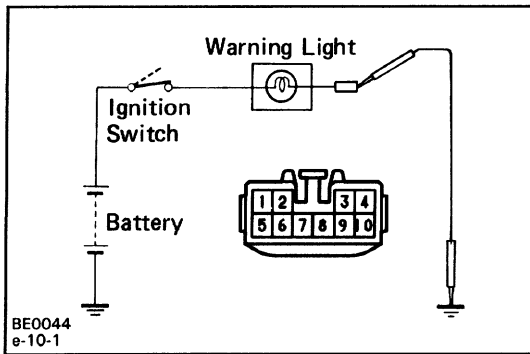
OPEN DOOR WARNING INSPECTION

- Disconnect the connector from the door courtesy switch and ground terminal on the wire harness side connector.
 - Turn the ignition switch ON, check that the warning light lights up.
- If the warning light does not light up, test the bulb.



DOOR COURTESY SWITCH INSPECTION

- Check that there is continuity between terminal and the switch body with the ON (switch pin released: opened door).
 - Check that there is no continuity between terminal and the switch body with the OFF (switch pin pushed in: closed door).
- If operation is not as specified, replace the switch.

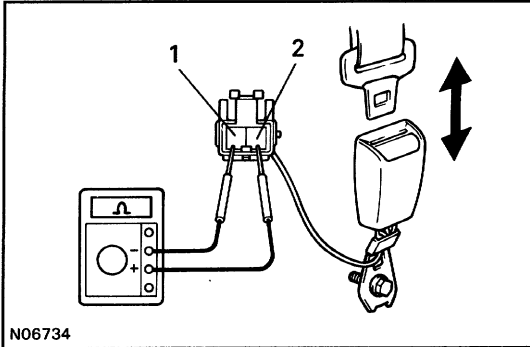


SEAT BELT WARNING SYSTEM

SEAT BELT WARNING INSPECTION

- Disconnect the connector from the seat belt warning relay.
- Ground terminal 9 on the wire harness side connector.
- Turn the ignition switch ON, check that the warning light lights up.

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



SEAT BELT BUCKLE SWITCH INSPECTION

- Check that there is no continuity between terminals with the switch ON (belt unfastened).
- Check that there is continuity between terminals with the switch OFF (belt fastened).

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

DOOR COURTESY SWITCH INSPECTION

See page [BE-56](#).

KEY UNLOCK WARNING SWITCH INSPECTION

See page [BE-13](#).

Wire Harness Side



SEAT BELT WARNING RELAY INSPECTION RELAY CIRCUIT

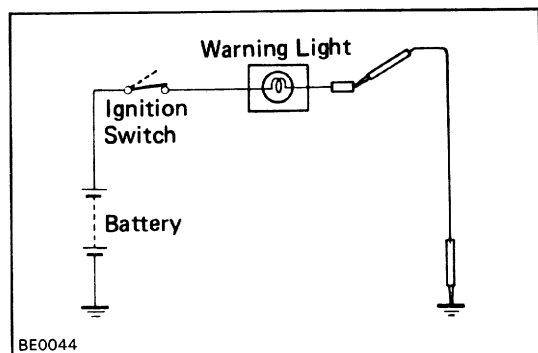
Disconnect the connector from the relay and inspect the connector on the wire harness side as shown in the chart.

Check for	Tester connection	Condition		Specified value
Voltage	5 — Ground	Ignition switch position	ON	Battery positive voltage
			LOCK or ACC	No voltage
	9 — Ground	Constant		Battery positive voltage

Continuity	8 — Ground	Driver's door	Open	Continuity
			Close	No continuity
	4 — Ground	Driver's seat belt	Fasten	No continuity
			Unfasten	Continuity
	7 — Ground	Ignition key	Set	Continuity
			Remove	No continuity
	1 — Ground	Constant		Continuity

If circuit is as specified, try another relay.

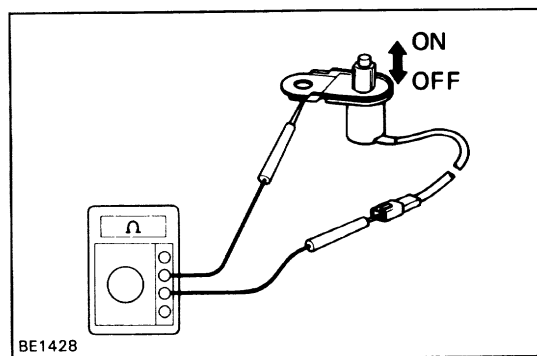
If the circuit is not as specified, refer to [BE-44](#) wiring diagram and inspect the circuits connected to other parts.



TIRE HALF-LOCK WARNING SYSTEM

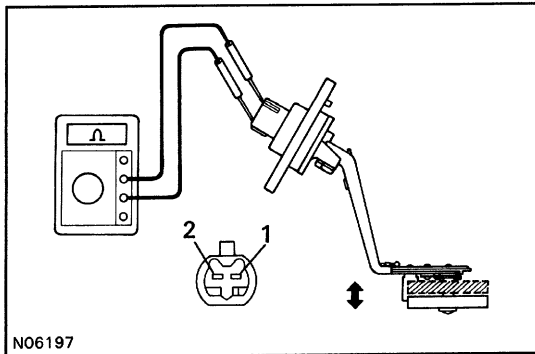
TIRE HALF-LOCK WARNING INSPECTION

- Disconnect the connector from the door courtesy switch and ground terminal on the wire harness side connector.
 - Turn the ignition switch ON, check that the warning light lights up.
- If the warning light does not light up, test the bulb.



TIRE HALF-LOCK INDICATOR SWITCH INSPECTION

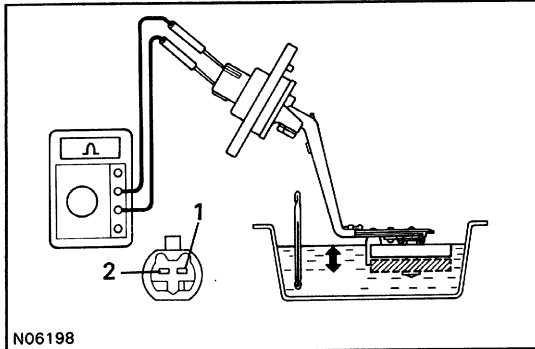
- Check that there is continuity between terminal and the switch body with the ON (switch pin released: opened door).
 - Check that there is no continuity between terminal and the switch body with the OFF (switch pin pushed in: closed door).
- If operation is not as specified, replace the switch.



ENGINE OIL LEVEL WARNING SYSTEM

ENGINE OIL LEVEL WARNING SENSOR INSPECTION

- Check that there is continuity between terminal with the switch each position.
- Heat the switch to above 60°C (140°F) in an oil bath.



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

Wire Harness Side



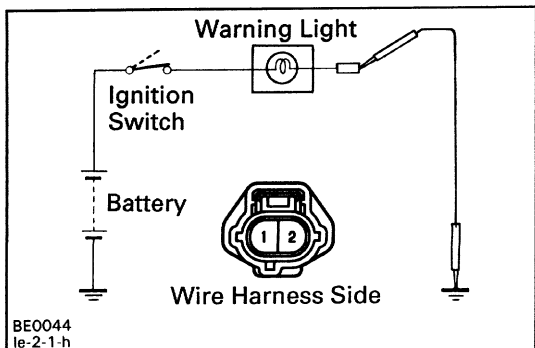
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CIRCUIT

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

Check for	Tester connection	Condition	Specified value
Continuity	2 — Ground	Constant	Continuity

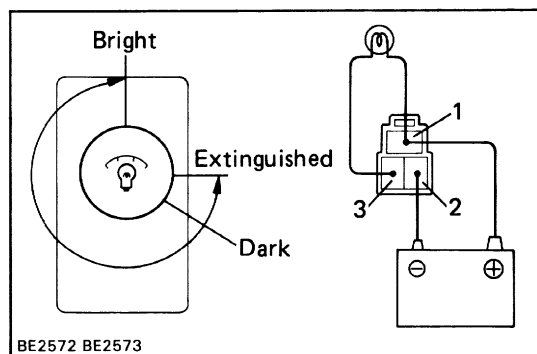
If continuity is not as specified, inspect the wire harness or ground point.



ENGINE OIL LEVEL WARNING INSPECTION

- Disconnect the connector from the switch.
- Ground terminal 1 on the wire harness connector.
- 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.



METER ILLUMINATION CONTROL SYSTEM

LIGHT CONTROL RHEOSTAT INSPECTION

- Connect terminals 1 and 3 through a 3.4 W test bulb.
 - Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2.
 - Turn the rheostat knob to fully counterclockwise, check that the test bulb goes out.
 - Gradually turn the rheostat knob to clockwise, check that the test bulb brightness changes from dark to bright.
- If operation is not as specified, replace the rheostat.

HINT: Illumination lights with adjustable brightness.

- Cigarette Lighter
- Ash Receptacle
- Antenna Switch
- Defogger Switch
- Headlight Cleaner Switch
- Audio
- A/C Control Assembly
- Center Diff. Lock Switch
- Hazard Warning Light Switch
- Shift Lever