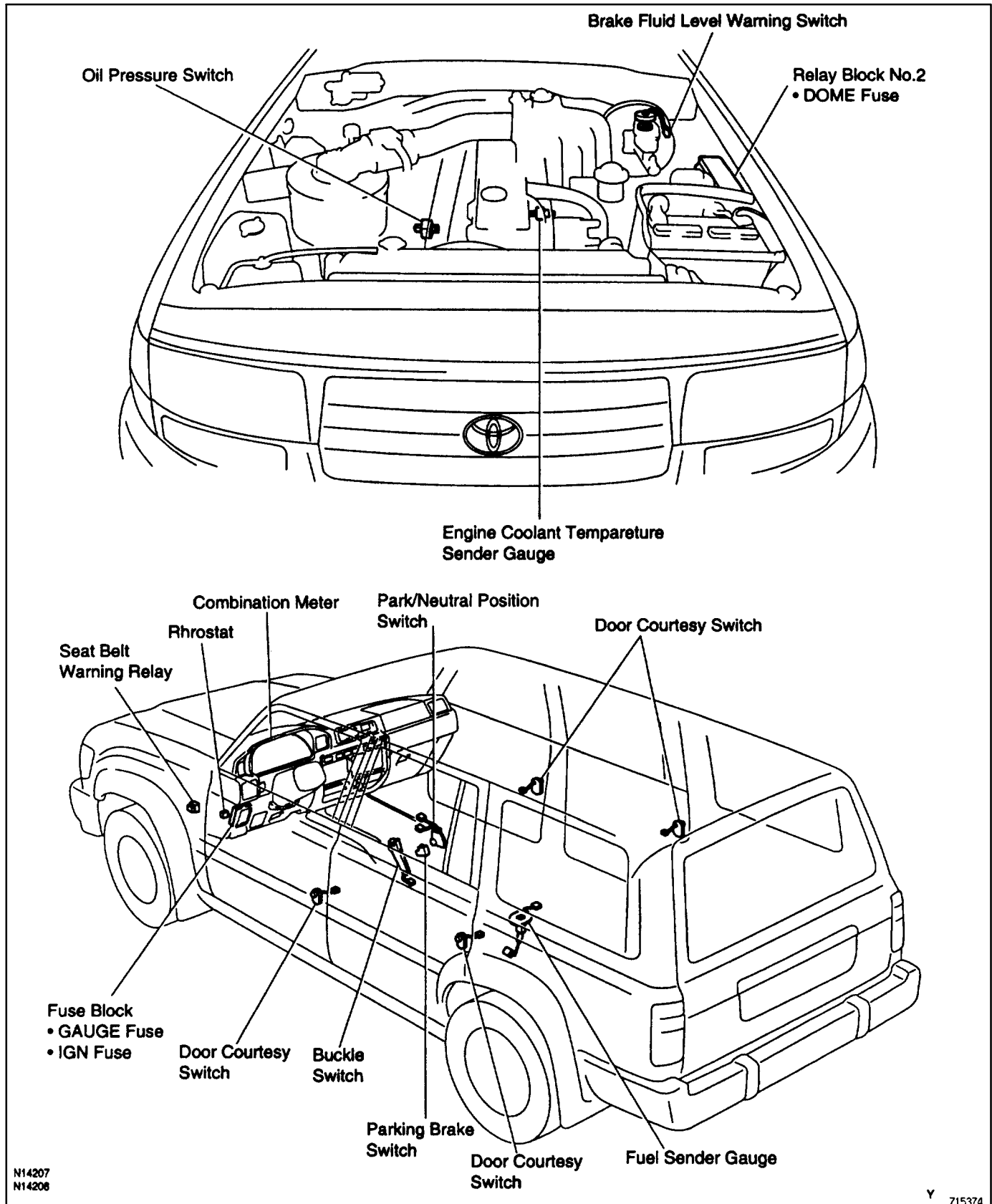
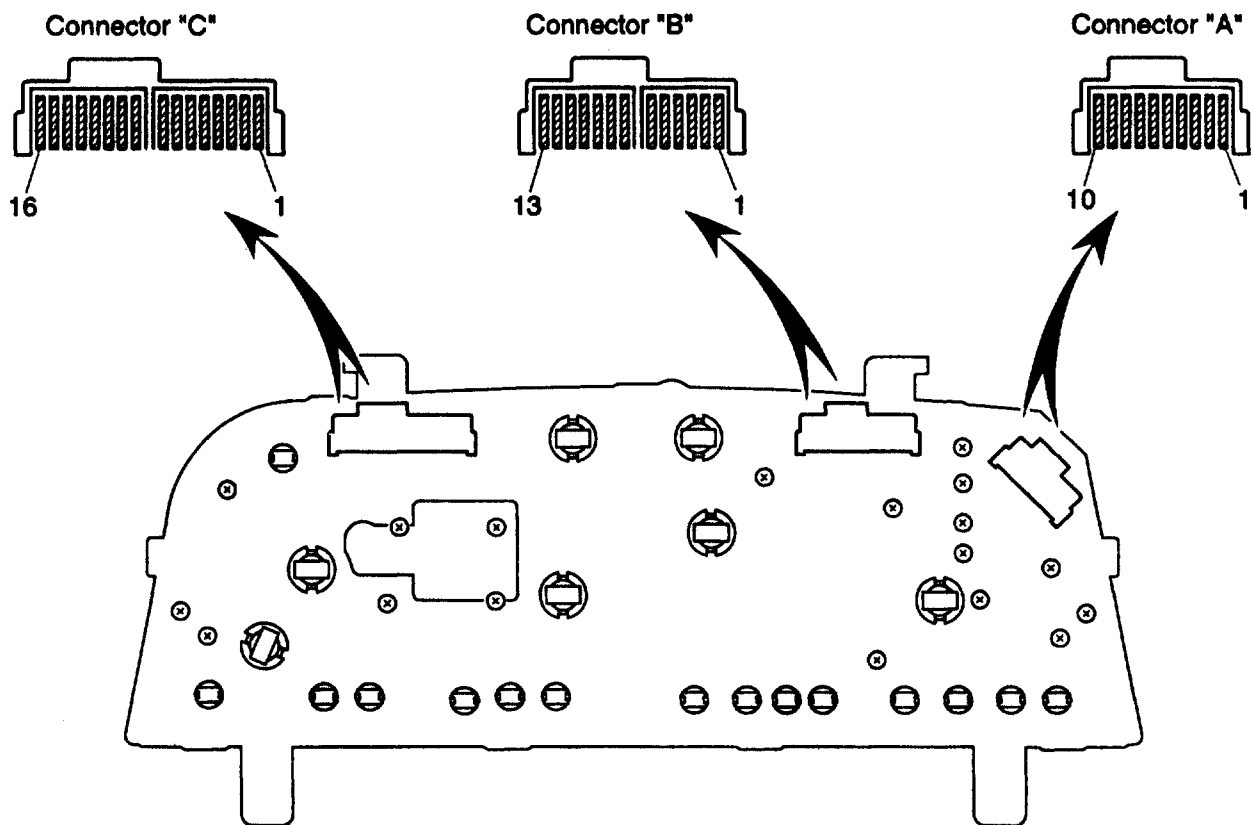
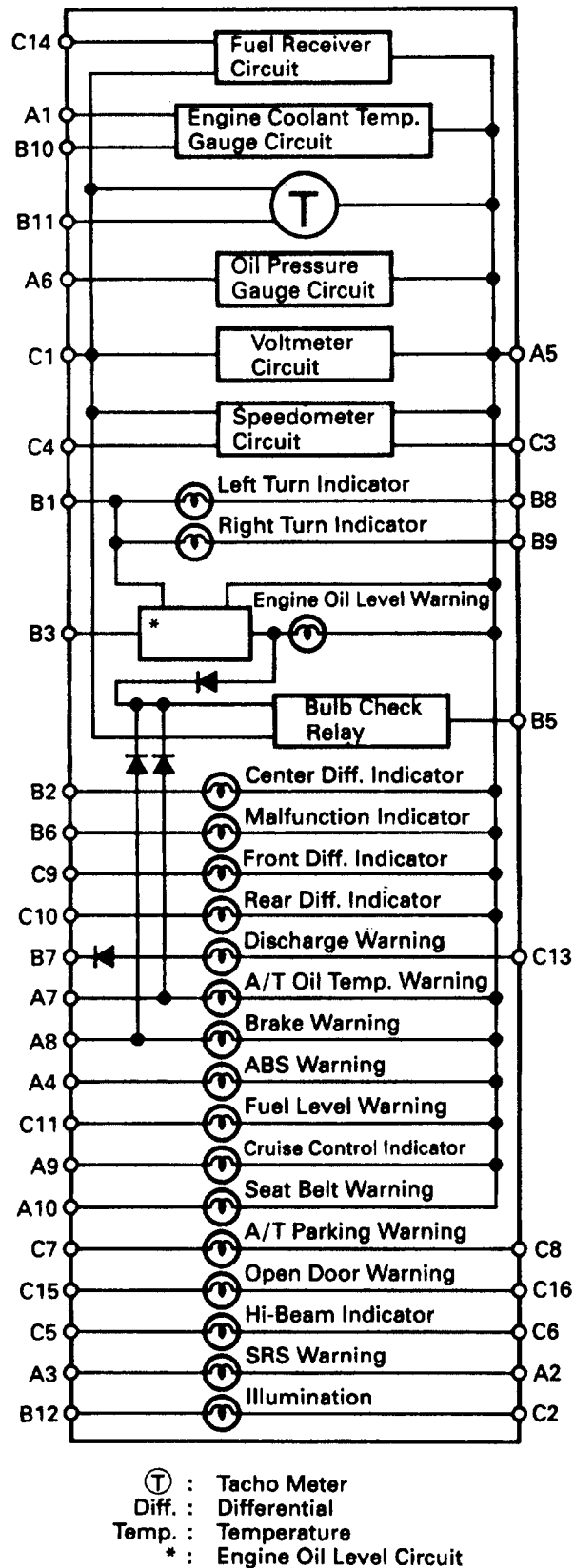


COMBINATION METER PARTS LOCATION



METER CIRCUIT





N14140

No.	Wiring connector side
A	1 Ground
	2 DOME Fuse
	3 Airbag ECU
	4 ABS ECU
	5 GAUGE Fuse
	6 Oil Pressure Sender Gauge
	7 A/T Fluid Temperature Sensor
	8 Brake Warning Switch
	9 Cruise Control ECU
	10 Seat Belt Warning Relay
B	1 Ground
	2 Center Diff. Lock Indicator Switch
	3 Engine Oil Level Sensor
	5 STARTER Relay
	6 ECM
	7 Charge Light Relay
	8 Light Control Switch (Left)
	9 Light Control Switch (Right)
	10 Engine Coolant Temperature Gauge
	11 Igniter
	12 Light Control Rheostat
C	1 Ground
	2 TAIL Fuse
	3 Speed Control Unit
	4 No.1 Vehicle Speed Sensor
	5 Headlight
	6 Headlight Dimmer Switch
	7 L4 Position Switch
	8 PNP 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

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	O/D OFF Switch
9	GAUGE Fuse
10	Park/Neutral Position Switch-terminal 3
11	Park/Neutral Position Switch-terminal 8
12	ECM
13	Pattern Select Switch

V06501

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.

METER, GAUGES AND ILLUMINATION

Trouble	Parts name	(See page)
Tachometer, voltmeter, fuel gauge and engine coolant temperature gauge do not operate.	1. GAUGE Fuse 2. Combination Meter Wiring Circuit 3. Wire Harness 4. Meter Circuit Plate	(BE-5) (BE-35) (BE-34)
Speedometer does not operate.	1. No. 1 Vehicle Speed Sensor 2. Speedometer Driven Gear and Drive Gear	(BE-40)
Tachometer does not operate.	1. Combination Meter Wiring Circuit 2. Wire Harness 3. Igniter 4. Meter Circuit Plate	(BE-35) (IG-8) (BE-34)
Voltmeter does not operate.	1. Voltmeter Receiver Gauge 2. Wire Harness	(BE-41)
Fuel gauge does not operate or abnormal operation.	1. Fuel Receiver Gauge 2. Fuel Sender Gauge 3. Combination Meter Wiring Circuit 4. Wire Harness	(BE-41) (BE-42) (BE-35)
Engine coolant temperature gauge does not operate or abnormal operation.	1. Engine Coolant Temperature Receiver Gauge 2. Engine Coolant Temperature Sender Gauge 3. Combination Meter Wiring Circuit 4. Wire Harness	(BE-43) (BE-43) (BE-35)
Oil pressure gauge does not operate or abnormal operation.	1. Oil Pressure Receiver Gauge 2. Oil Pressure Sender Gauge 3. Combination Meter Wiring Circuit 4. Wire Harness	(BE-44) (BE-44) (BE-35)
All illumination lights do not light up.	1. TAIL Fuse 2. Light Control Rheostat 3. Wire Harness	(BE-5) (BE-48)
Brightness does not change even when rheostat turned.	1. Bulb 2. Wire Harness	
Only one illumination light does not light up.	1. Bulb 2. Wire Harness	

WARNING LIGHTS

Trouble	Parts name	(See page)
Warning light do not light up. (Except Discharge)	1. GAUGE Fuse 2. Combination Meter Wiring Circuit 3. Wire Harness	(BE-5) (BE-35)
Fuel level warning light does not light up.	1. Bulb 2. Combination Meter Wiring Circuit 3. Fuel Level Warning Switch	(BE-35) (BE-42)
Malfunction warning light does not light up.	1. Bulb 2. ECM 3. Fuel Level Warning Switch	(EG Section) (BE-42)
Seat belt warning light does not light up.	1. Bulb 2. Seat Belt Warning Relay 3. Seat Belt Buckle Switch 4. Wire Harness	(BE-46) (BE-46)
Discharge warning light does not light up.	1. IGN Fuse 2. Bulb 3. Wire Harness 4. Generator	(BE-5) (CH-10)
Brake warning light does not light up.	1. Bulb 2. Combination Meter Wiring Circuit 3. Parking Brake Switch 4. Brake Fluid Level Warning Switch	(BE-35) (BE-45) (BE-45)
Open door warning light does not light up.	1. Bulb 2. Combination Meter Wiring Circuit 3. Door Courtesy Switch	(BE-35) (BE-20)
Engine oil level warning light does not light up.	1. Bulb 2. Combination Meter Wiring Circuit 3. Engine Oil Level Sensor	(BE-35) (BE-47)

INDICATOR LIGHTS

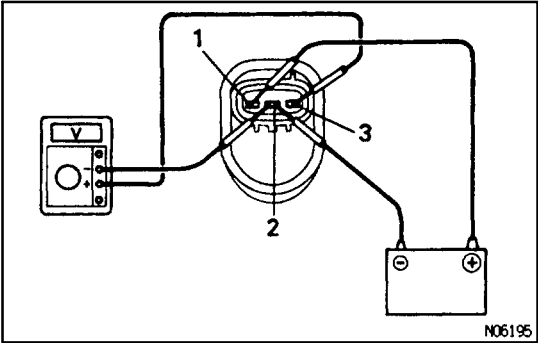
Trouble	Parts name	(See page)
O/D OFF indicator light does not light up.	1. Bulb 2. Shift Position Indicator Wiring Circuit 3. O/D OFF Switch 4. Wire Harness	(BE-36) (AT-87)
High beam indicator light does not light up.	1. Bulb 2. Combination Meter Wiring Circuit 3. Wire Harness 4. Headlight System	(BE-35) (BE-9)
Turn indicator light does not light up.	1. Bulb 2. Combination Meter Wiring Circuit 3. Wire Harness 4. Turn Signal and Hazard Warning System	(BE-35) (BE-16)
Shift indicator lights do not light up. (All)	1. Bulb 2. Shift Position Indicator Wiring Circuit 3. Park / Neutral Position Switch 4. Wire Harness	(BE-36) (AT-82)
Shift indicator lights do not light up. (L, 2, D)	1. Bulb 2. Shift Position Indicator Wiring Circuit 3. Park / Neutral Position Switch 4. Light Control Rheostat 5. Wire Harness	(BE-36) (AT-82) (BE-48)
Shift indicator lights do not light up. (PWR)	1. Bulb 2. Shift Position Indicator Wiring Circuit 3. Pattern Select Switch 4. Wire Harness	(BE-36) (AT-90)
Shift indicator lights do not light up. (2nd START)	1. Bulb 2. Shift Position Indicator Wiring Circuit 3. ECM 4. Wire Harness	(BE-36) (EG Section)
Only one shift indicator does not light up.	1. Bulb 2. Shift Position Indicator Wiring Circuit	(BE-36)
Indicator lights do not light up. (Except Turn, Hi-beam)	1. GAUGE Fuse 2. Wire Harness	(BE-5)

SPEEDOMETER INSPECTION

INSPECT SPEEDOMETER ON-VEHICLE

- (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.

Standard indication	Allowable range
20	18 – 24
40	38 – 44
60	58 – 66
80	78 – 88
100	98 – 110
120	118 – 132



VEHICLE SPEED SENSOR INSPECTION

INSPECT SENSOR OPERATION

- (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) Revolve shaft.
- (d) Check that there is voltage changer from approx. 0 V to 11 V or more between terminals 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 INSPECTION

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.
If error is excessive, replace the tachometer.

RPM (DC 13.5 V, 25 °C (77°F))

Standard indication	Allowable range
700	630 – 770
1000	900 – 1,100
2000	1,875 – 2,125
3000	2,850 – 3,150
4000	3,850 – 4,150
5000	4,850 – 5,150

VOLTMETER INSPECTION

INSPECT VOLTMETER (ON-VEHICLE)

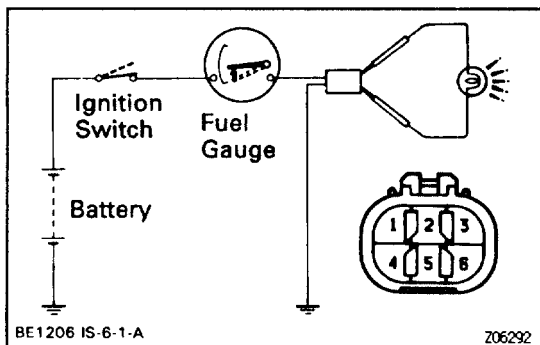
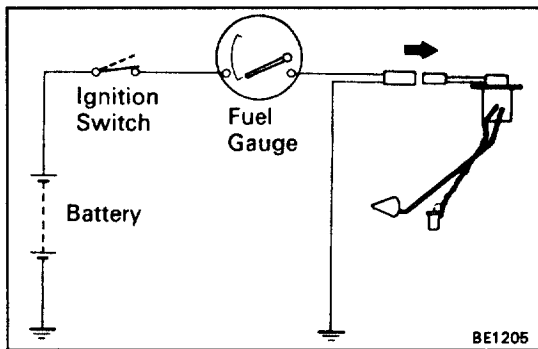
Compare the tester and voltmeter indications.

If error is excessive, replace the voltmeter.

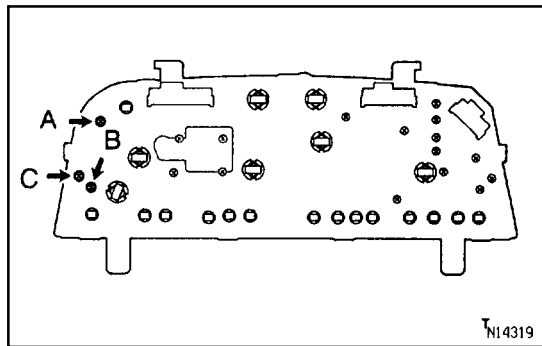
FUEL GAUGE INSPECTION

1. INSPECT FUEL 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 EMPTY.



- (c) Connect terminals 4 and 5 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 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.

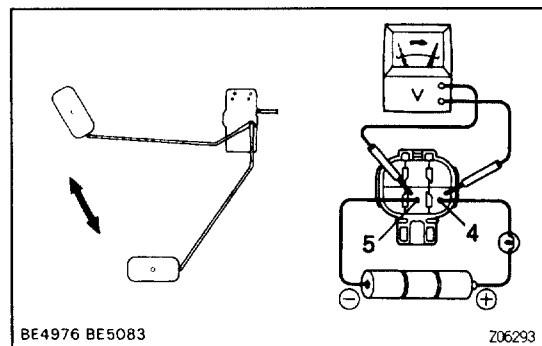


2. INSPECT FUEL RECEIVER GAUGE RESISTANCE

Between terminals	Resistance (Ω)
A - B	85.5 - 105.5
A - C	126 - 150
B - C	90 - 110

*: Include voltmeter resistance

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



3. INSPECT FUEL SENDER GAUGE OPERATION

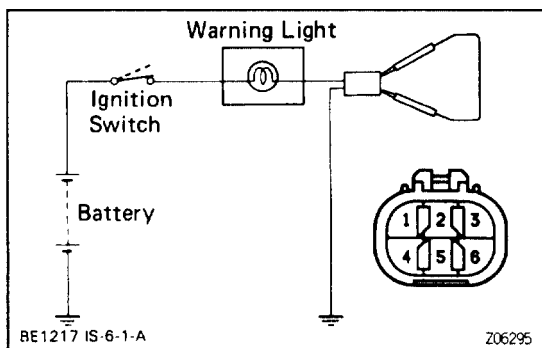
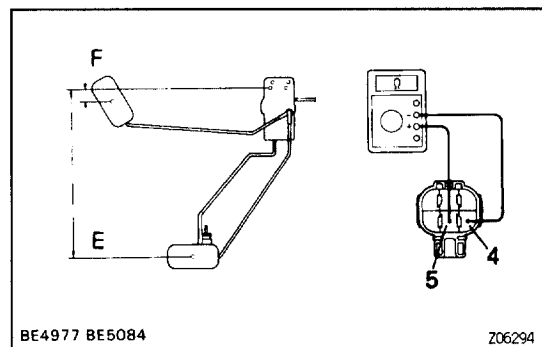
- Connect a series of three 1.5 V dry cell batteries.
- Connect the positive (+) lead from the dry cell batteries to terminal 4 through a 3.4 W test bulb and the negative (-) lead to terminal 5.
- Connect the positive (+) lead from the voltmeter to terminal 4 and the negative (-) lead to terminal 5.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

4. INSPECT FUEL SENDER GAUGE 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 INSPECTION

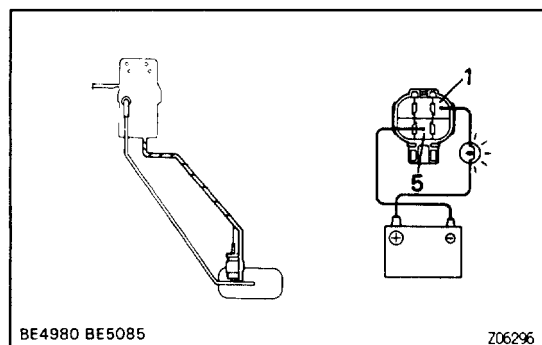
1. INSPECT WARNING LIGHT

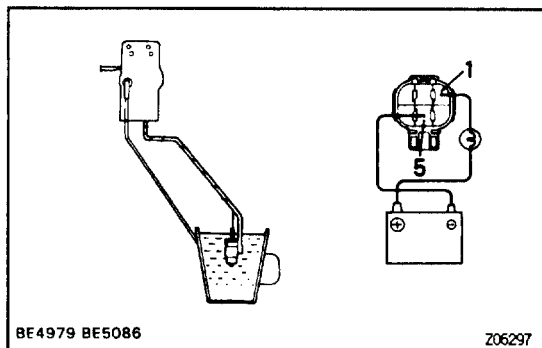
- Disconnect the connector from the sender gauge.
- Connect terminals 1 and 5 on the wire harness side connector.
- Turn the ignition switch ON, and check that the warning light lights up.

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

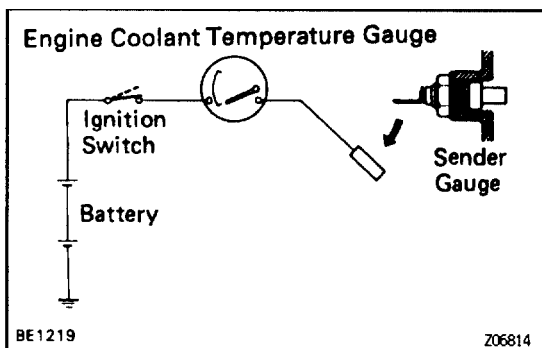
2. INSPECT SWITCH

- Apply battery positive voltage between terminals 1 and 5 through a 3.4 W test bulb, and check that the bulb lights up.
HINT: It will take a short time for the bulb to light up.





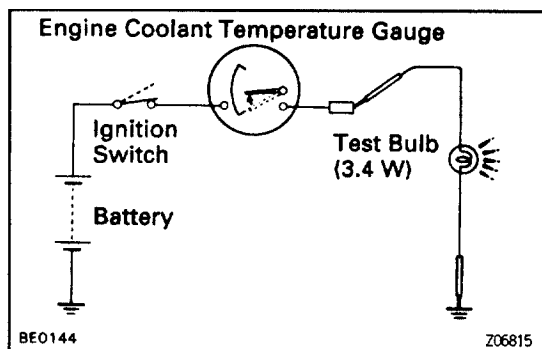
- (b) Submerge the switch in fuel, and check that the bulb goes out.
If operation is not as specified, replace the sender gauge.



ENGINE COOLANT TEMPERATURE GAUGE INSPECTION

1. INSPECT 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 recheck the system.
If operation is not as specified, measure the receiver gauge resistance.

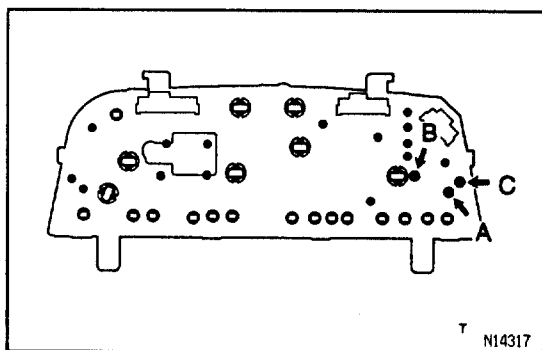
2. INSPECT RECEIVER GAUGE RESISTANCE

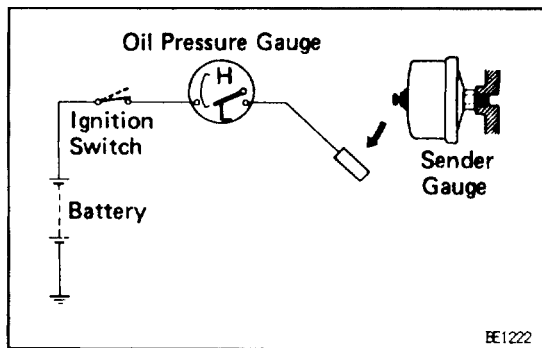
Measure the resistance between terminals.

Between terminals	Resistance (Ω)
A - B	71 - 79
A - C	117 - 141
B - C	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.

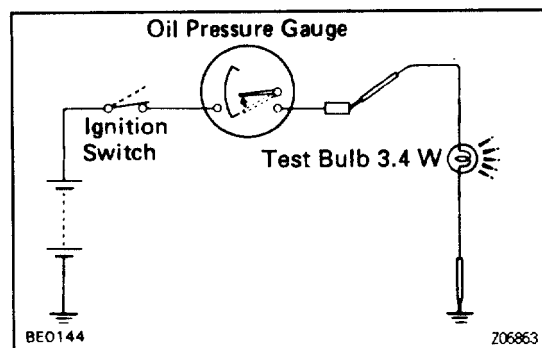




OIL PRESSURE RECEIVER GAUGE INSPECTION

1. INSPECT 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.



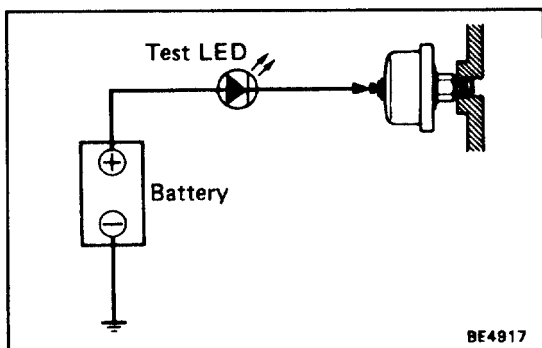
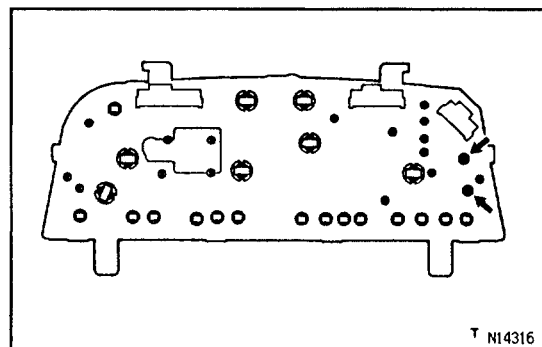
2. INSPECT RECEIVER GAUGE RESISTANCE

Measure the receiver gauge resistance between terminals.

Resistance:

40 – 48 Ω

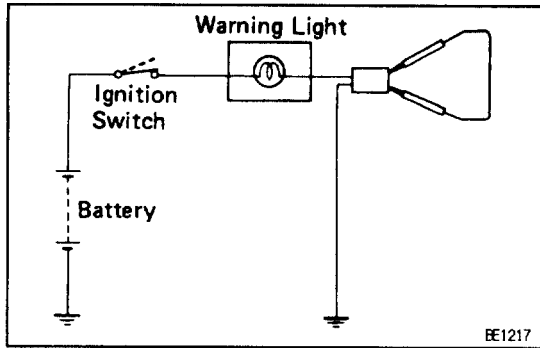
If resistance value is not as specified, replace the receiver gauge.



OIL PRESSURE SENDER GAUGE INSPECTION

INSPECT SENDER GAUGE OPERATION

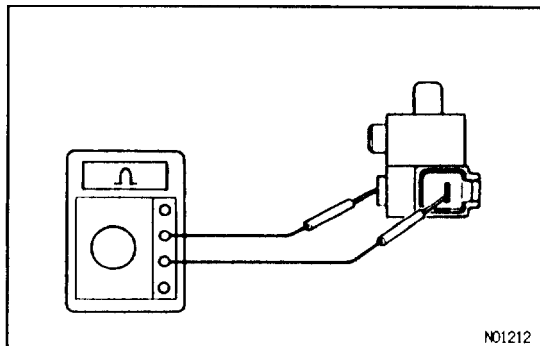
- Disconnect the connector from the sender gauge.
- Apply battery positive voltage to the sender gauge terminal through a test LED.
- Check that the bulb does not light when the engine is stopped.
- Check that the LED flashes when the engine is running. The number of flashed should vary with engine speed.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



BRAKE WARNING INSPECTION

1. INSPECT BRAKE WARNING LIGHT

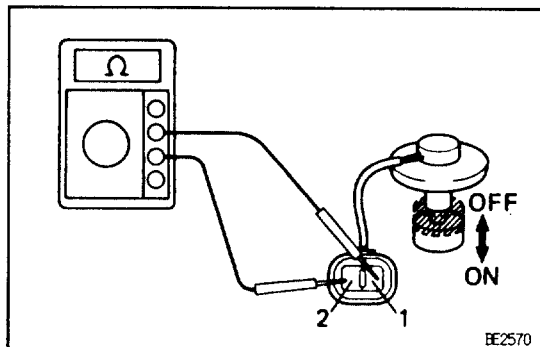
- Disconnect the connectors from the level warning switch and parking brake switch.
- Connect terminals on the wire harness side connector of the level warning switch connector.
- Turn the ignition switch ON, and check that the warning light lights up.



2. INSPECT PARKING BRAKE SWITCH

- 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)

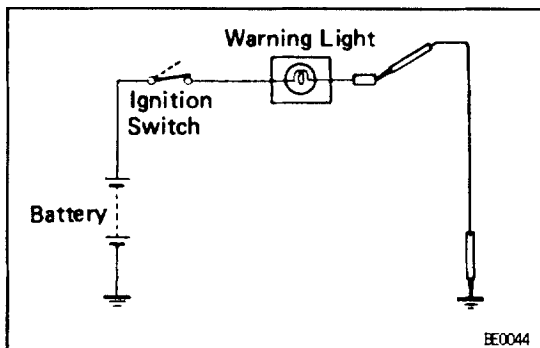
If operation is not as specified, replace the switch.



3. INSPECT BRAKE FLUID LEVEL WARNING SWITCH

- 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.

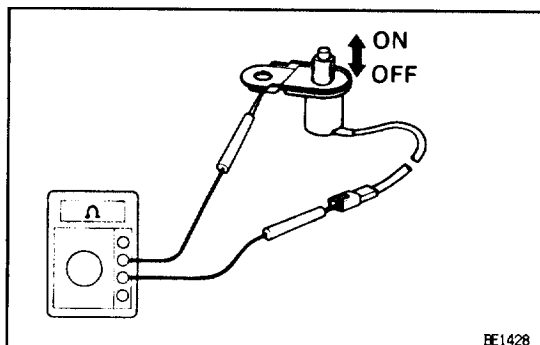


OPEN DOOR WARNING INSPECTION

1. INSPECT WARNING LIGHT

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

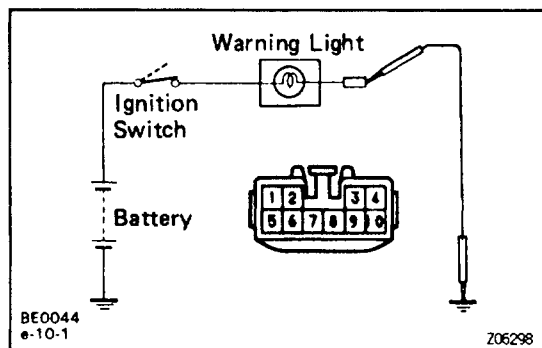
If the warning light does not light up, test the bulb.



2. INSPECT DOOR COURTESY SWITCH

- Check that there is continuity between terminal and the switch body with the switch ON (switch pin released: opened door).
- Check that there is no continuity between terminal and the switch body with the switch OFF (switch pin pushed in: closed door).

If operation is not as specified, replace the switch.

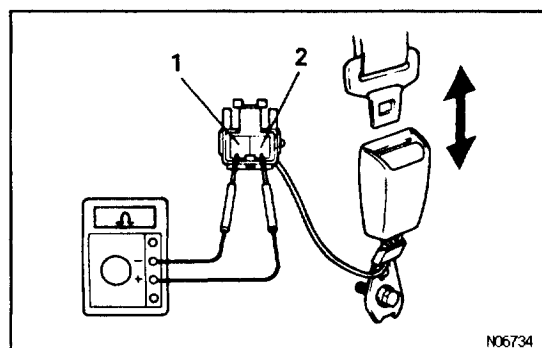


SEAT BELT WARNING INSPECTION

1. INSPECT WARNING LIGHT

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

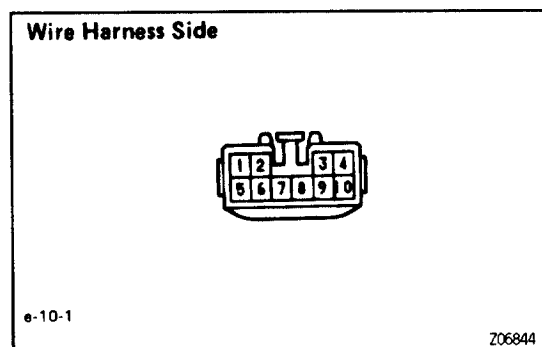
If the warning light does not light up, test the bulb.



2. INSPECT BUCKLE SWITCH

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

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



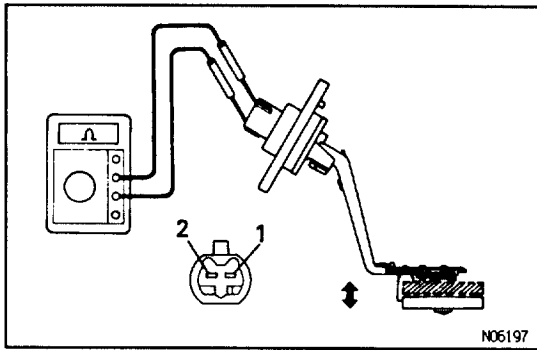
3. INSPECT SEAT BELT WARNING RELAY CIRCUIT

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

Tester connection to terminal number	Condition	Specified condition
1 - Ground	Constant	Continuity
4 - Ground	Driver's seat belt position UNFASTEN	Continuity
4 - Ground	Driver's seat belt position FASTEN	No continuity
7 - Ground	Ignition key SET	Continuity
7 - Ground	Ignition key Remove	No continuity
8 - Ground	Driver's door position OPEN	Continuity
8 - Ground	Driver's door position CLOSE	No continuity
5 - Ground	Ignition switch position ON	Battery positive voltage
5 - Ground	Ignition switch position LOCK or ACC	No voltage
9 - Ground	Constant	Battery positive voltage

If circuit is as specified, try another relay.

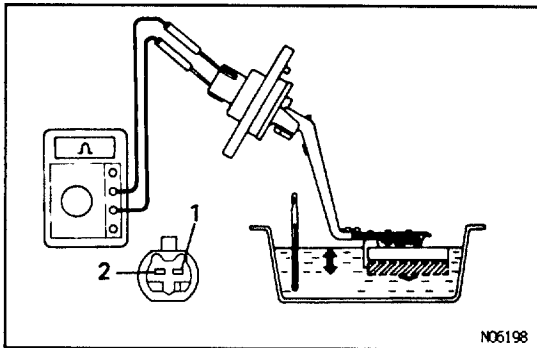
If the circuit is not as specified, refer to [BE-35](#) wiring diagram and inspect the circuits connected to other parts.



ENGINE OIL LEVEL WARNING INSPECTION

1. INSPECT WARNING SWITCH

- 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



le-2-1-h

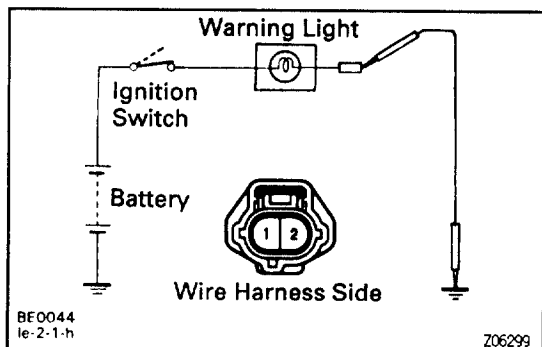
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2. INSPECT WARNING CIRCUIT

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

Tester connection to terminal number	Condition	Specified condition
2 - Ground	Constant	Continuity

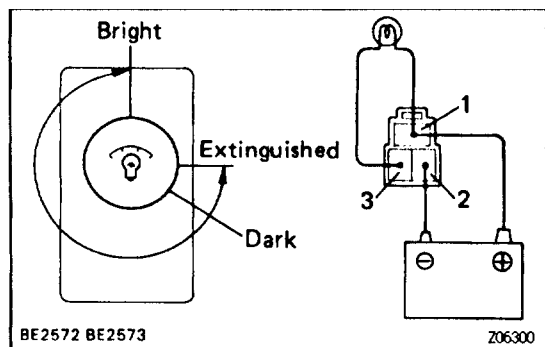
If continuity is not as specified, inspect the wire harness or ground point.

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le-2-1-h

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3. INSPECT WARNING LIGHT

- Disconnect the connector from the switch.
 - Ground terminal 1 on the wire harness connector.
 - Turn the ignition switch ON, and check that the warning light lights up approximately 40 seconds later.
- If the warning light does not light up, inspect bulb or wire harness.



LIGHT CONTROL RHEOSTAT INSPECTION

INSPECT RHEOSTAT

- 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, and check that the test bulb goes out.
- 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.

HINT: Adjust the brightness of illumination lights by rheostat.

- 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