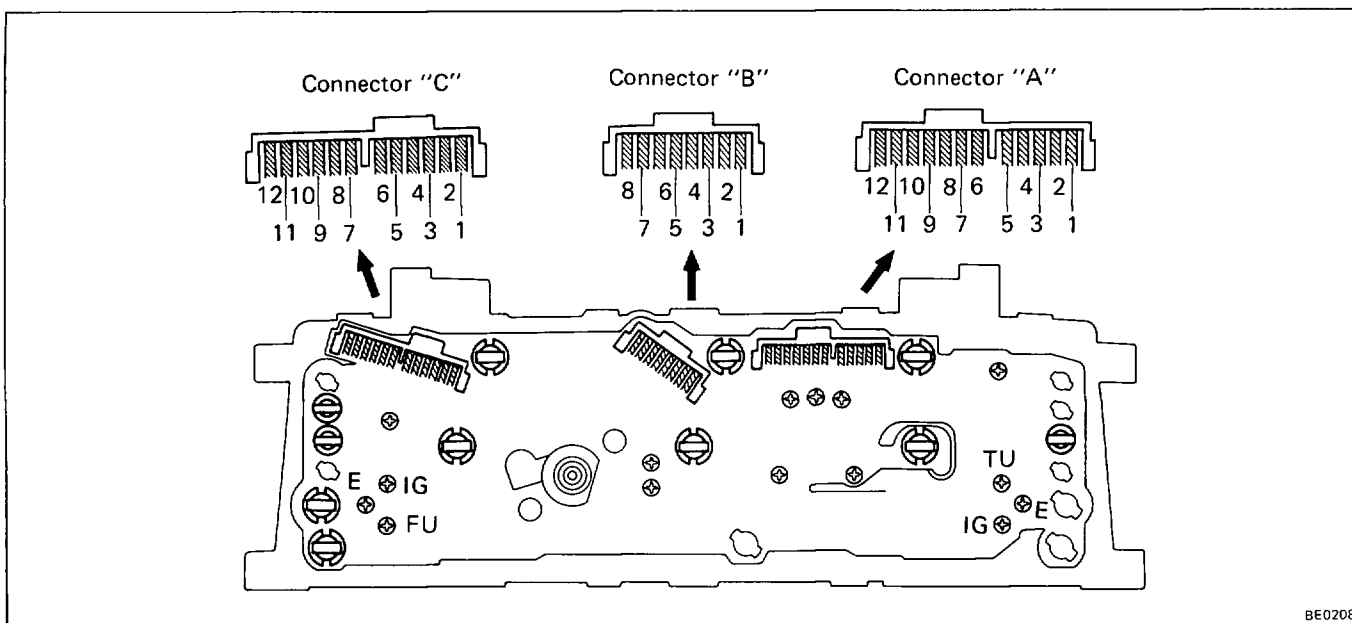


INSTRUMENTS, GAUGES AND WARNING LIGHTS

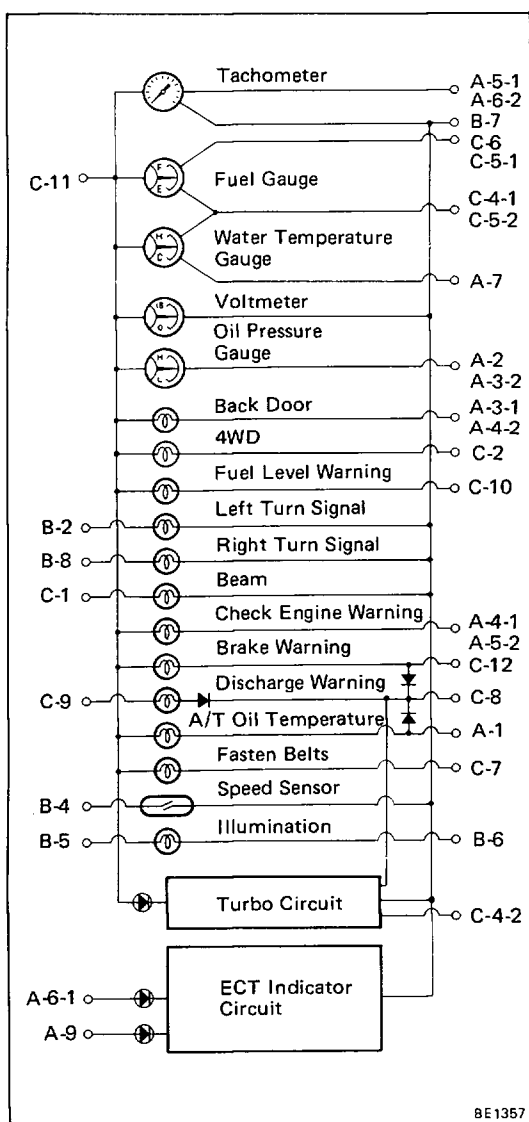
Troubleshooting

Problem	Possible cause	Remedy	Page
Voltmeter does not work	Fuses blown	Replace in-line fuse and check for short	BE-26
	Voltmeter faulty	Check voltmeter	
	Wiring or ground faulty	Repair as necessary	
Tachometer does not work	ENGINE fuse blown	Replace fuse and check for short	BE-4
	Tachometer faulty	Check tachometer	BE-26
	Wiring or ground faulty	Repair as necessary	
Fuel gauge does not work	ENGINE fuse blown	Replace fuse and check for short	BE-4
	Fuel receiver gauge faulty	Check gauge	BE-27
	Sender gauge faulty	Check sender gauge	BE-28
	Wiring or ground faulty	Repair as necessary	
Water temperature gauge does not work	ENGINE fuse blown	Replace fuse and check for short	BE-4
	Water temperature gauge faulty	Check gauge	BE-29
	Water temperature sender gauge faulty	Check sender gauge	BE-30
	Wiring or ground faulty	Repair as necessary	
Brake warning light does not light	ENGINE fuse blown	Replace fuse and check for short	BE-4
	Bulb burned out	Replace bulb	
	Brake fluid level warning switch faulty	Check switch	BE-31
	Parking brake switch faulty	Check switch	BE-31
	Wiring or ground faulty	Repair as necessary	
Low oil pressure warning light does not light	ENGINE fuse blown	Replace fuse and check for short	BE-4
	Bulb burned out	Replace bulb	
	Oil pressure switch faulty	Check switch	BE-30
	Wiring or ground faulty	Repair as necessary	
Discharge warning light does not light	IGN fuse blown	Replace fuse and check for short	BE-4
	Bulb burned out	Replace bulb	
	Wiring or ground faulty	Repair as necessary	

Combination Meter and Gauge (w/ Tachometer)



BE0208

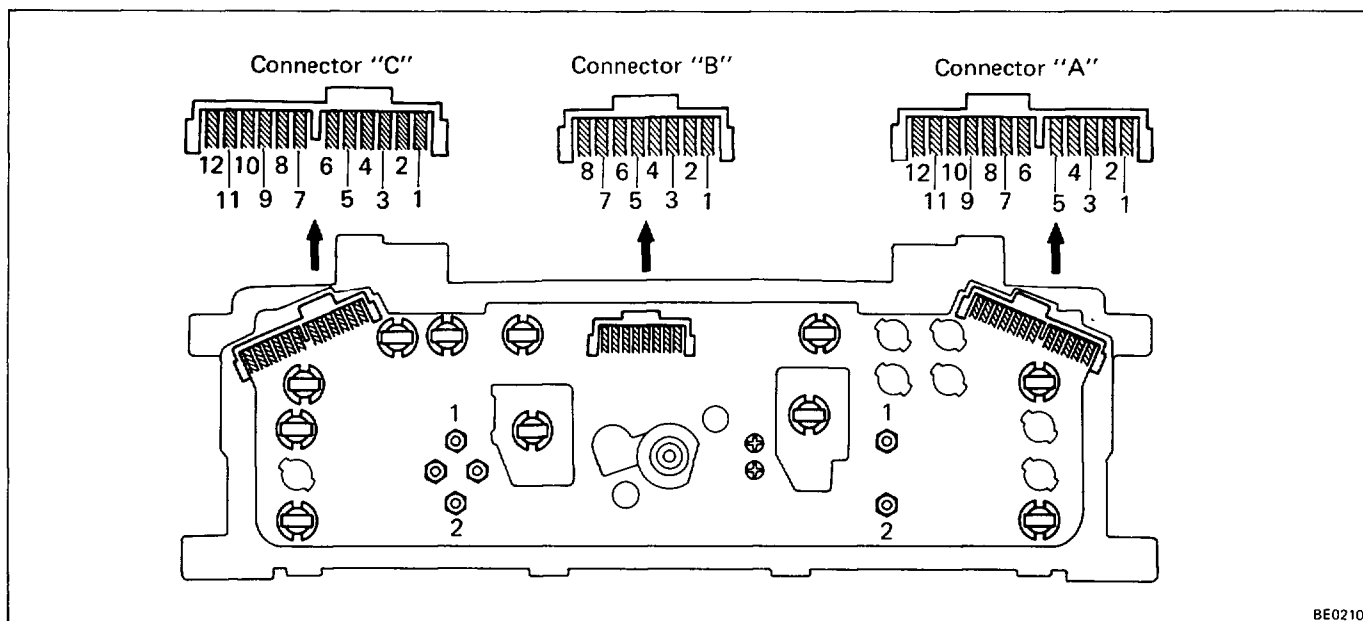


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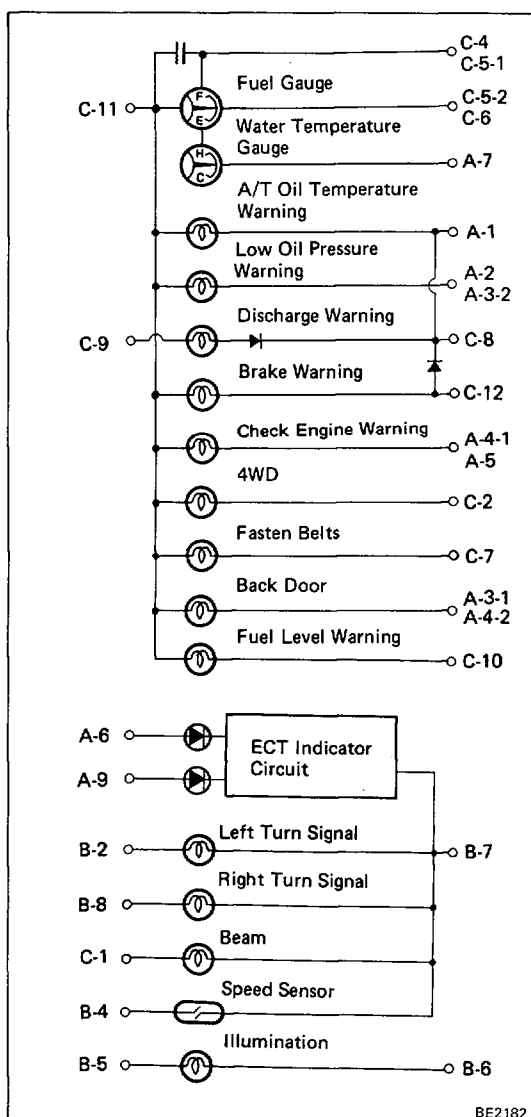
COMBINATION METER CIRCUIT

No.	Wiring connector side
A	1 (w/ ECT) A/T Oil Temperature Gauge
	2 (22R-TE or w/ ECT) Oil Pressure Sender Gauge
	3-1 (22R-TE or w/ ECT) Back Door Unlock Warning Switch and Door Lock Detection Switch
	3-2 (22R-E and w/o ECT) Oil Pressure Sender Gauge
	4-1 (22R-TE or w/ ECT) TCCS ECU
	4-2 (22R-E and w/o ECT) Back Door Unlock Warning Switch and Door Lock Detection Switch
	5-1 (22R-TE or w/ ECT) Ignition Coil
	5-2 (22R-E and w/o ECT) TCCS ECU
	6-1 (w/ ECT) ECT Select Switch NORMAL
B	6-2 (22R-E and w/o ECT) Ignition Coil
	7 Water Temperature Sender Gauge
	9 (w/ ECT) ECT Select Switch POWER
B	2 Turn Signal Switch Terminal 9
	4 TCCS ECU and Cruise Control Computer Terminal 7
	5 TAIL Fuse
	6 Light Control Rheostat Terminal 1
	7 Ground
	8 Turn Signal Switch Terminal 8
C	1 Turn Signal Switch Terminal 6
	2 4WD Indicator Switch
	4-1 (22R-E and w/o ECT) Ground
	4-2 (22R-TE) TCCS ECU
	5-1 (22R-E and w/o ECT) Fuel Sender Gauge Terminal 1
	5-2 (22R-TE or w/ ECT) Ground
	6 (22R-TE or w/ ECT) Fuel Sender Gauge Terminal 1
	7 Seat Belt Warning Relay
	8 CHARGE Fuse
	9 IGN Fuse
	10 Fuel Level Warning Switch Terminal 2
	11 ENGINE Fuse
	12 Parking Brake Switch and Brake Fluid Level Warning Switch

Combination Meter and Gauge (w/o Tachometer)



BE0210



BE2182

COMBINATION METER CIRCUIT

No.	Wiring connector side
A	1 (w/ ECT) A/T Oil Temperature Gauge
	2 (w/ ECT) Oil Pressure Switch
	3-1 (w/ ECT) Back Door Unlock Warning Switch and Door Lock Detection Switch
	3-2 (w/o ECT) Oil Pressure Switch
	4-1 (w/ ECT) TCCS ECU
	4-2 (w/o ECT) Back Door Unlock Warning Switch and Door Lock Detection Switch
	5 (w/o ECT) TCCS ECU
	6 (w/ ECT) ECT Select Switch NORMAL
	7 Water Temperature Sender Gauge
	9 (w/ ECT) ECT Select Switch POWER
B	2 Turn Signal Switch Terminal 9
	4 TCCS ECU and Cruise Control Computer Terminal 7
	5 TAIL Fuse
	6 Light Control Rheostat Terminal 1
	7 Ground
	8 Turn Signal Switch Terminal 8
C	1 Turn Signal Switch Terminal 6
	2 4WD Indicator Switch
	4 (w/o ECT) Ground
	5-1 (w/ ECT) Ground
	5-2 (w/o ECT) Fuel Sender Gauge Terminal 1
	6 (w/ ECT) Fuel Sender Gauge Terminal 1
	7 Seat Belt Warning Relay
	8 CHARGE Fuse
	9 IGN Fuse
	10 Fuel Level Warning Switch Terminal 2
	11 ENGINE Fuse
	12 Parking Brake Switch and Brake Fluid Level Warning Switch

Speedometer

ON-VEHICLE INSPECTION OF SPEEDOMETER

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

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

Standard indication (km/h)	Allowable range (km/h)
20	18 – 23
40	40 – 44
60	60 – 64.5
80	80 – 85
100	100 – 105
120	120 – 125.5
140	140 – 146
160	160 – 167

Standard indication (mph)	Allowable range (mph)
20	20 – 23
40	40 – 43.5
60	60 – 64
80	80 – 84.5
100	100 – 105

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

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

Tachometer

ON-VEHICLE INSPECTION OF TACHOMETER

- (a) Connect a tune-up test tachometer and start the engine.
- (b) Compare the tester and tachometer indications.
- If error is excessive, replace the tachometer.

CAUTION:

- 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 severe impact.

Standard indication (rpm)	700	3,000	5,000	7,000
Allowable range (rpm) 25°C DC 13 V	+50 –90	± 150	± 150	± 210

Voltmeter

INSPECTION OF VOLTMETER

Compare the tester and voltmeter indications.

If error is excessive, replace the voltmeter.

Fuel Gauge

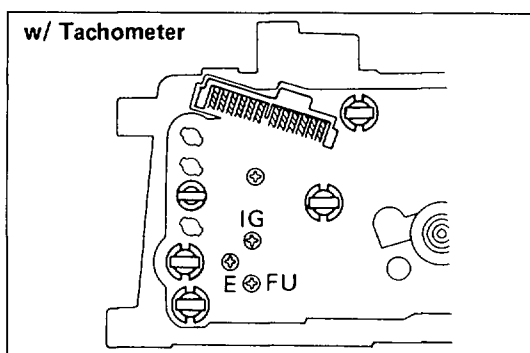
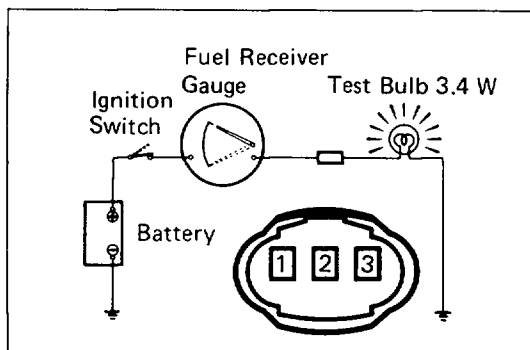
INSPECTION OF FUEL GAUGE

1. INSPECT RECEIVER GAUGE OPERATION (w/ Tachometer)

- Disconnect the connector from the fuel sender gauge. Turn the ignition switch on. Check that the receiver gauge needle moves to the empty position.
- Connect a 3.4 W bulb between terminal 1 and body ground. Check that the bulb lights and that the receiver gauge needle operates.

NOTE: Because of the silicon oil in the gauge, it will take about 90 seconds for the needle to stabilize.

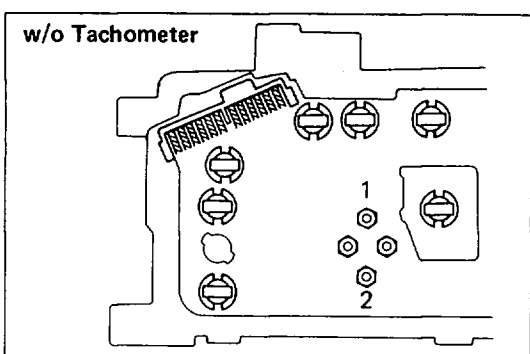
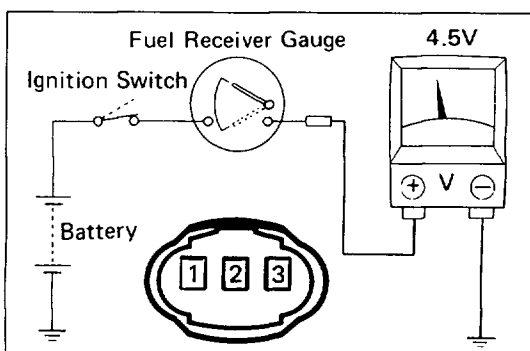
If indication is not correct, remove and test the receiver gauge.



2. MEASURE RECEIVER GAUGE RESISTANCE BETWEEN TERMINALS (w/ Tachometer)

Between terminals	Resistance (Ω)
IG – FU	Approx. 83
FU – E	Approx. 156
IG – E	Approx. 239

If each resistance value is not as shown in the table above, replace the receiver gauge.



3. INSPECT RECEIVER GAUGE OPERATION (w/o Tachometer)

- Disconnect the connector from the fuel sender gauge. Connect the positive (+) lead from the voltmeter to terminal 1 and connect the negative (–) lead from the voltmeter to body ground.
- Turn the ignition switch on. Check that the meter needle vibrates near the 4.5V position.

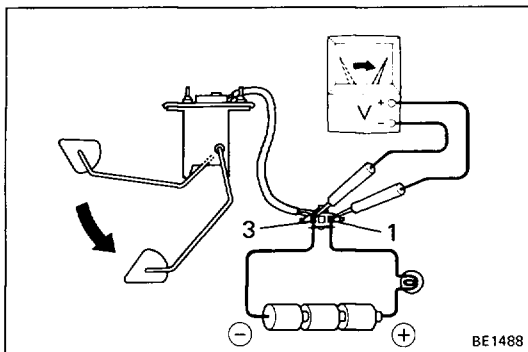
If voltage is not correct, remove and test the receiver gauge.

4. MEASURE RECEIVER GAUGE RESISTANCE (w/o Tachometer)

Using an ohmmeter, measure the resistance between terminals 1 and 2.

Resistance: Approx. 55 Ω

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



5. INSPECT 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 1 through a 3.4 W test bulb and the negative (–) lead to terminal 3.
- Check that the voltage rises between terminals 1 and 3 as the float is moved from the top to bottom position.
- Measure the resistance between terminals 1 and 3 for each float position.

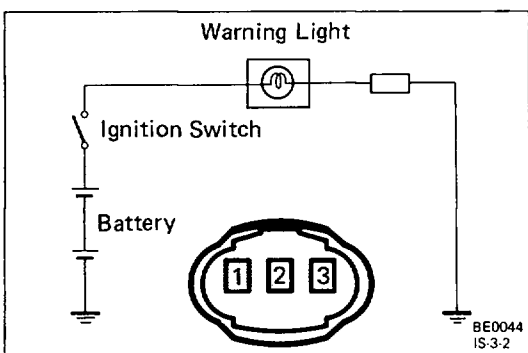
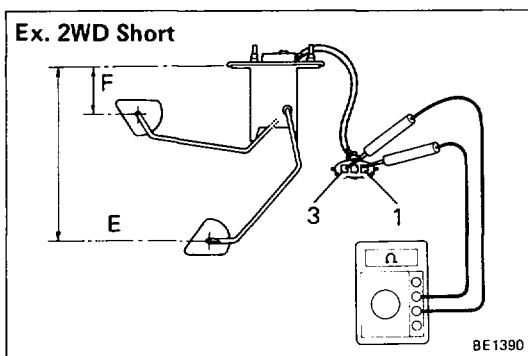
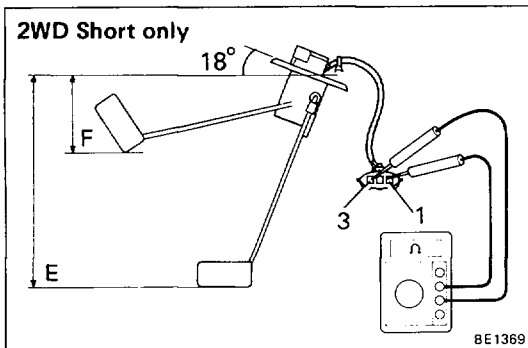
2WD

	Float position mm (in.)		Resistance (Ω)
	Short deck	Long deck	
F	78.6 (3.094)	93.6 (3.685)	$3 \begin{smallmatrix} + \\ - \end{smallmatrix} 2$
E	257.1 (10.122)	278.6 (10.968)	110 ± 7.7

4WD

	Float position mm (in.)		Resistance (Ω)
	65 liters	73 liters	
F	105.7 (4.161)	114.3 (4.500)	$3 \begin{smallmatrix} + \\ - \end{smallmatrix} 2$
E	288.2 (11.346)	317.1 (12.484)	110 ± 7.7

If each resistance value is not as shown in the table above, replace the sender gauge.



Fuel Level Warning

INSPECTION OF FUEL LEVEL WARNING

1. INSPECT WARNING LIGHT OPERATION

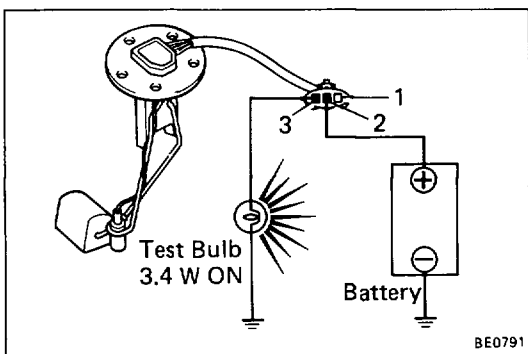
- Disconnect the connector from the fuel level warning switch. Ground the terminal 2.
- Turn the ignition switch on. Check that the bulb lights.

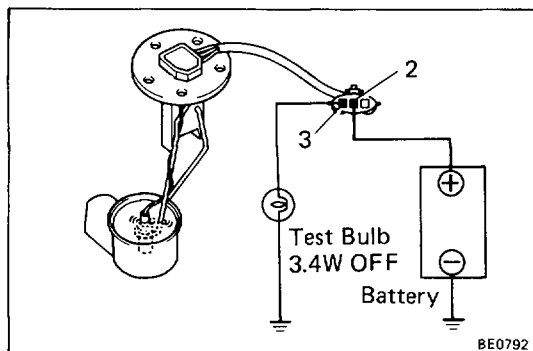
If operation is not correct, remove and test the bulb.

2. INSPECT LEVEL WARNING SWITCH OPERATION

- Apply battery voltage between terminals 2 and 3 through a 3.4W bulb. Check that the bulb lights.

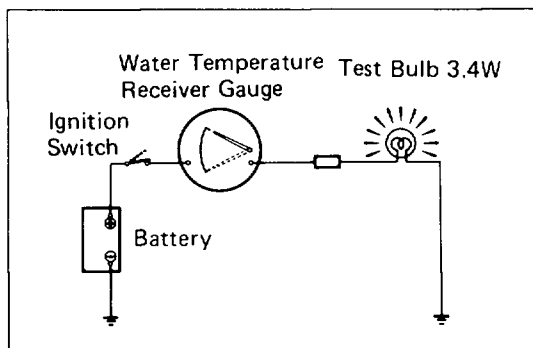
NOTE: It will take a short time for the bulb light.





- (b) Submerge the switch in gasoline. Check that the bulb goes out.

If operation is not correct, replace the sender gauge.



Water Temperature Gauge

INSPECTION OF WATER TEMPERATURE GAUGE

1. INSPECT RECEIVER GAUGE OPERATION (w/ Tachometer)

- Disconnect the connector from the sender gauge. Ground the terminal through a 3.4 W bulb as shown.
- Turn the ignition switch on. Check that the bulb lights and that the receiver gauge needle operates.

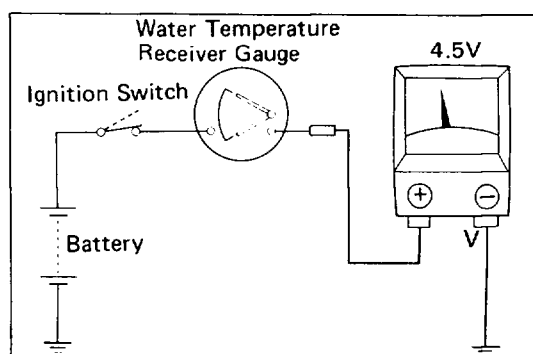
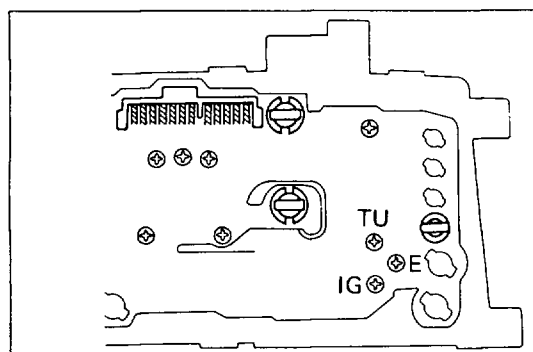
If indications are not correct, remove and test the receiver gauge.

2. MEASURE RECEIVER GAUGE RESISTANCE (w/ Tachometer)

Measure the resistance between terminals.

If each resistance value is not as shown in the table below, replace the receiver gauge.

Between terminals	Resistance (Ω)
IG — TU	Approx. 135
TU — E	Approx. 138
IG — E	Approx. 273



3. INSPECT RECEIVER GAUGE OPERATION (w/o Tachometer)

- Disconnect the connector from the sender gauge. Connect the positive (+) lead from the voltmeter to terminal and connect the negative (—) lead from the voltmeter to body ground.
- Turn the ignition switch on. Check that the meter needle vibrates near the 4.5 V position.

If voltage value is not correct, remove and test the receiver gauge.

4. MEASURE RECEIVER GAUGE RESISTANCE (w/o Tachometer)

Measure the resistance between terminals 1 and 2.

Resistance: Approx. 25 Ω

If resistance value is not correct, replace the receiver gauge.

