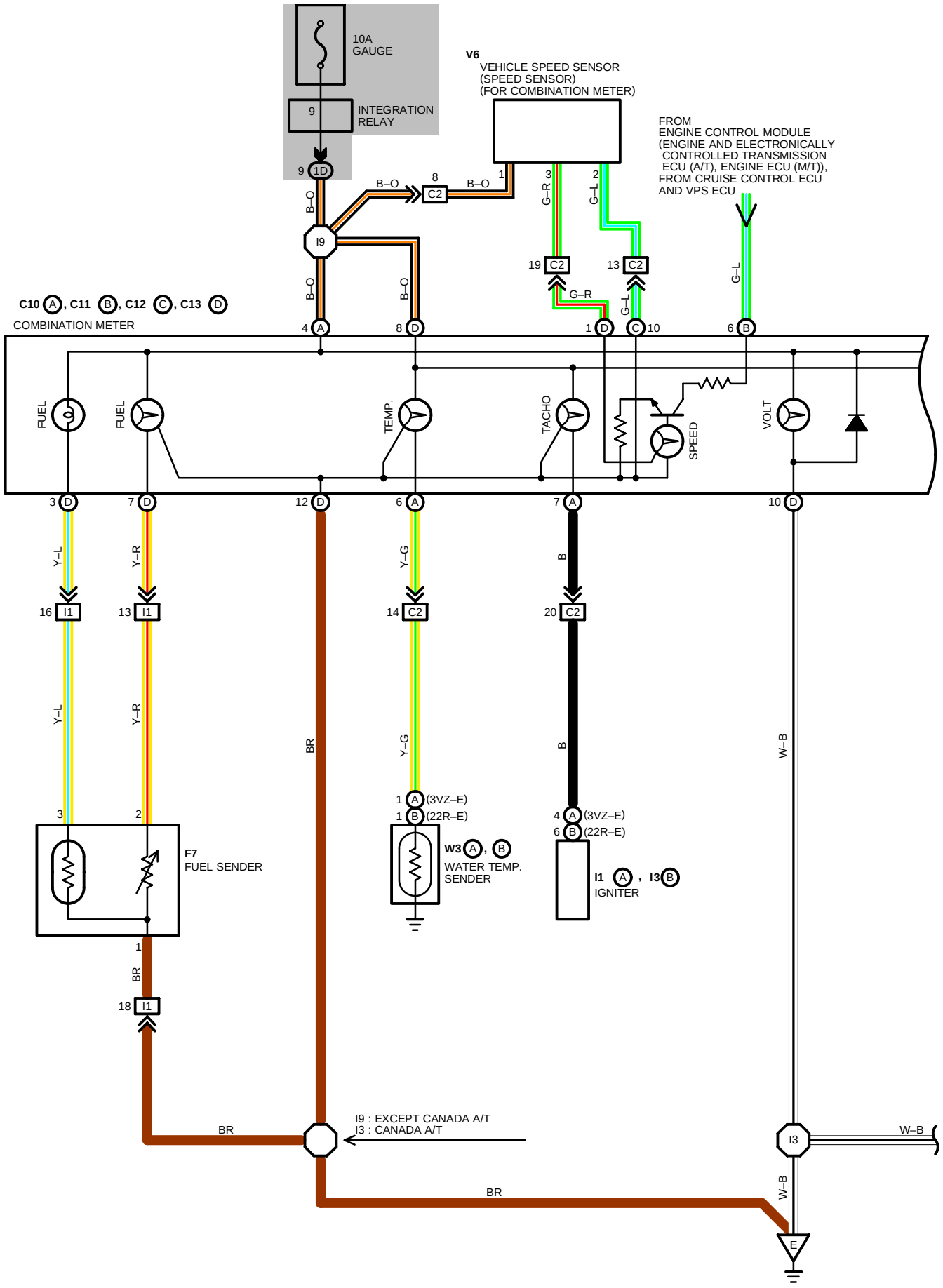
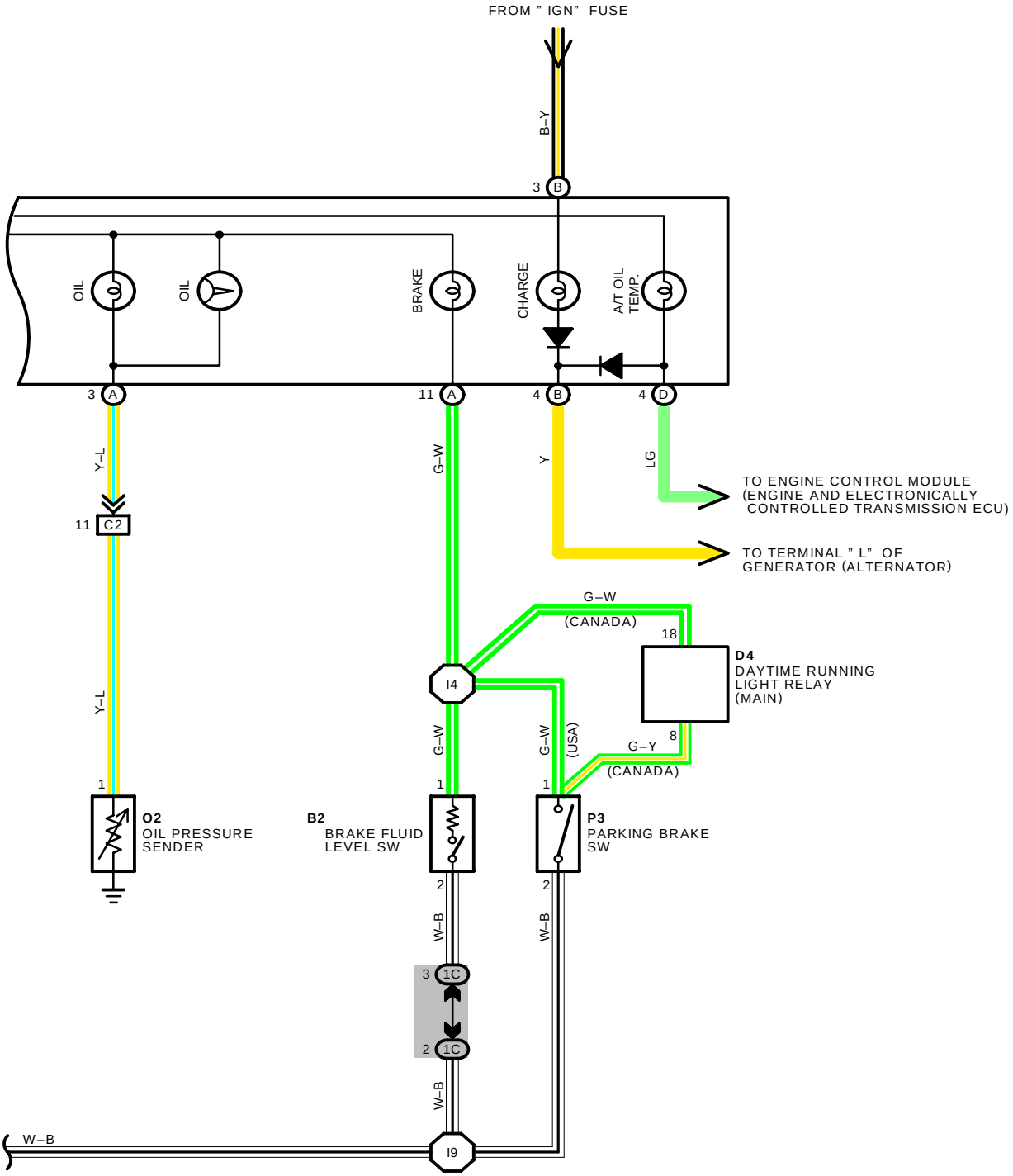
85-94 Toyota Pickup Truck Instrument Cluster Wiring Diagram

RodsShop

COMBINATION METER





COMBINATION METER

SERVICE HINTS

B 2 BRAKE FLUID LEVEL SW
1–2 : CLOSED WITH FLOAT DOWN

C10(A), C11(B), C12(C), C13(D) COMBINATION METER
(A)4, **(D)** 8–GROUND: APPROX. **12** VOLTS WITH IGNITION SW ON
(D)10, **(D)** 12–GROUND: ALWAYS CONTINUOUS

P 3 PARKING BRAKE SW
1–2 : CLOSED WITH PARKING BRAKE LEVER PULLED UP

○ : PARTS LOCATION

CODE		SEE PAGE	CODE		SEE PAGE	CODE		SEE PAGE
B 2		24 (3VZ–E), 25 (22R–E)	**D 4**		26	**P 3**		26
C10	A	26	**F 7**		27	**V 6**		24 (3VZ–E), 25 (22R–E)
C11	B	26	**I 1**	A	24 (3VZ–E)	**W 3**	A	24 (3VZ–E)
C12	C	26	**I 3**	B	25 (22R–E)		B	25 (22R–E)
C13	D	26	**O 2**		24 (3VZ–E), 25 (22R–E)			

⬭ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1 C	20	COWL WIRE AND J/B NO.1 (LEFT KICK PANEL)
1 D		

▭ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
C 2	32	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)
I 1	34	FRAME WIRE AND COWL WIRE (UNDER PASSENGER'S SEAT)

▽ : GROUND POINTS

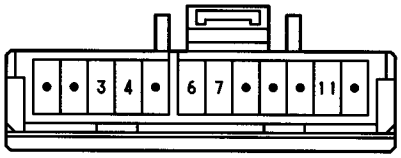
CODE	SEE PAGE	GROUND POINTS LOCATION
E	32	LEFT KICK PANEL

⯃ : SPLICE POINTS

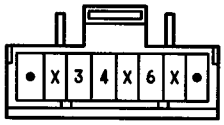
CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 3	32	COWL WIRE	**I 9**	32	COWL WIRE
I 4					

B2 GRAY

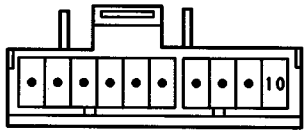
C10 (A) BLUE



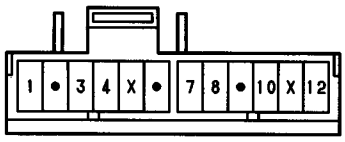
C11 (B)



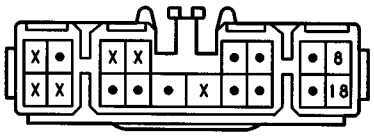
C12 (C) GRAY



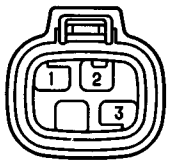
C13 (D)



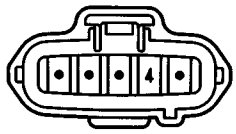
D4 GRAY



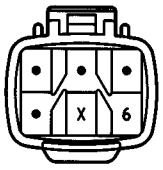
F7 DARK GRAY



I1 (A) BLACK



I3 (B) DARK GRAY



O2 GRAY

P3

V6 BLACK

(3VZ-E) W3 (A) DARK GRAY

(22R-E) W3 (B) GRAY

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Select year

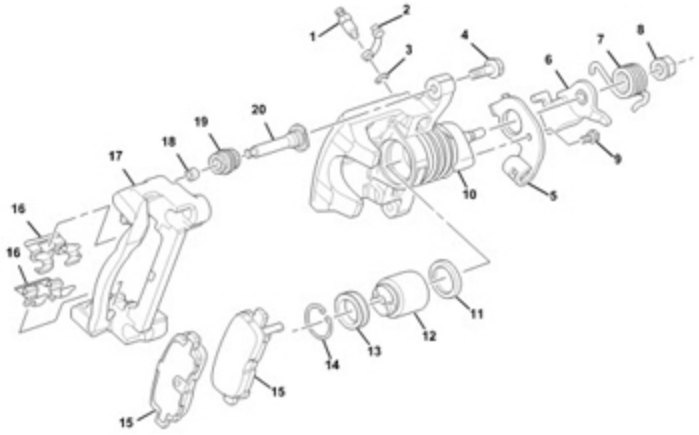
Select manufacturer

Select model

The Fix is in

Everything you need to get the job done.

- Repair Procedures
- Diagrams
- Parts Information



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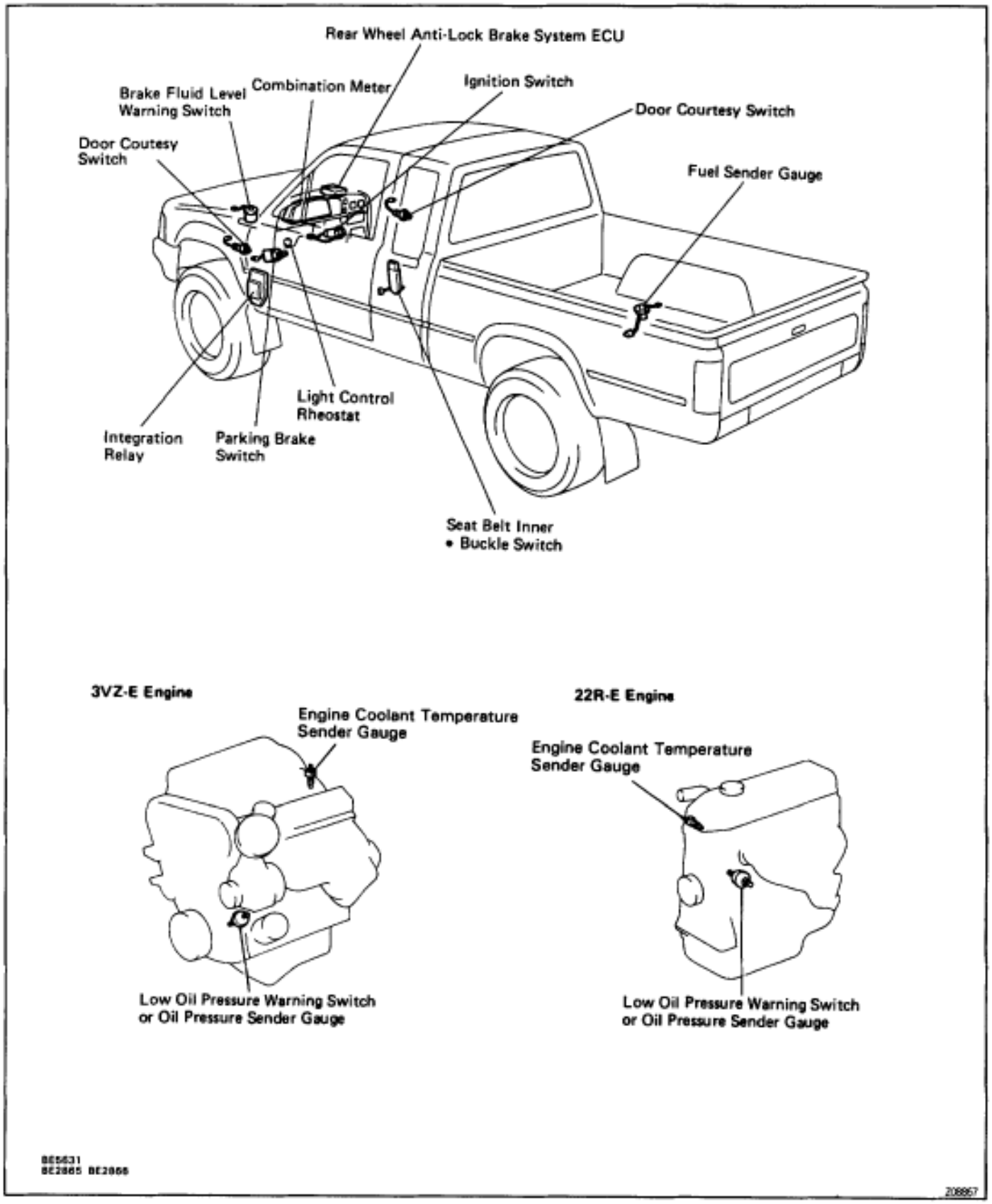
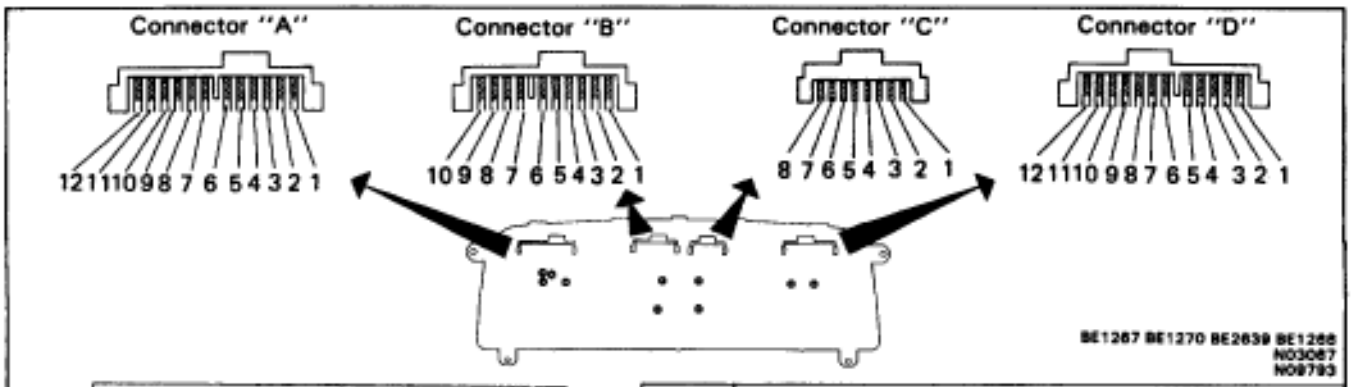
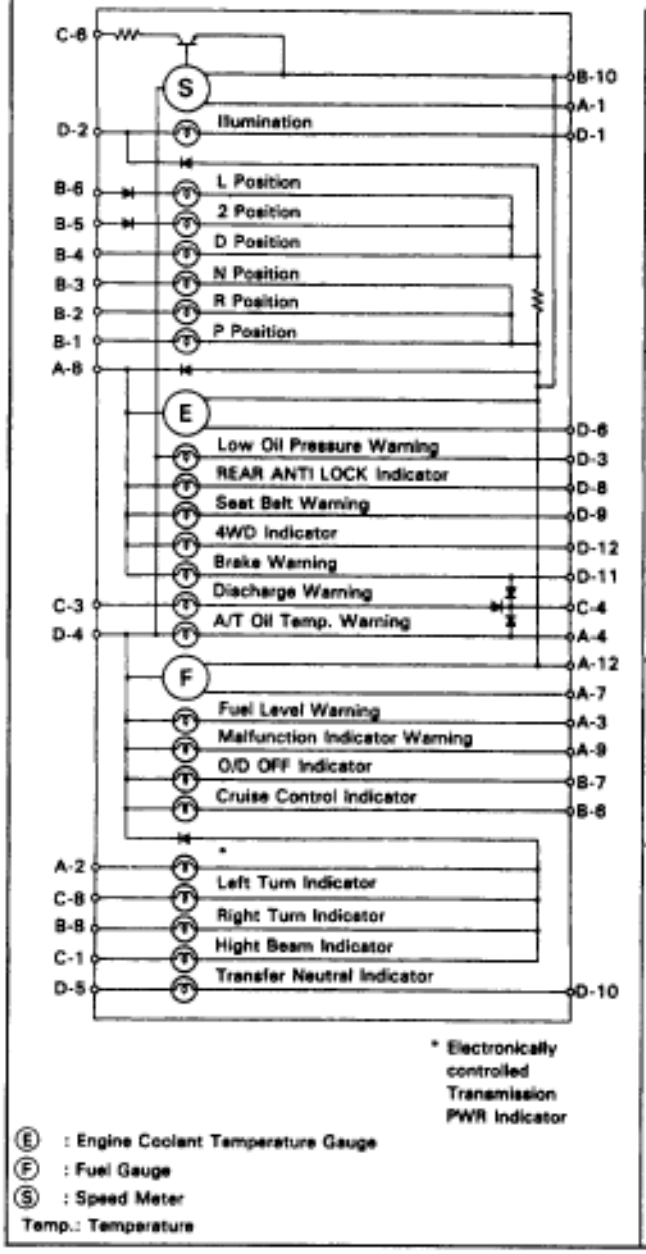
COMBINATION METER
PARTS LOCATION



METER CIRCUIT

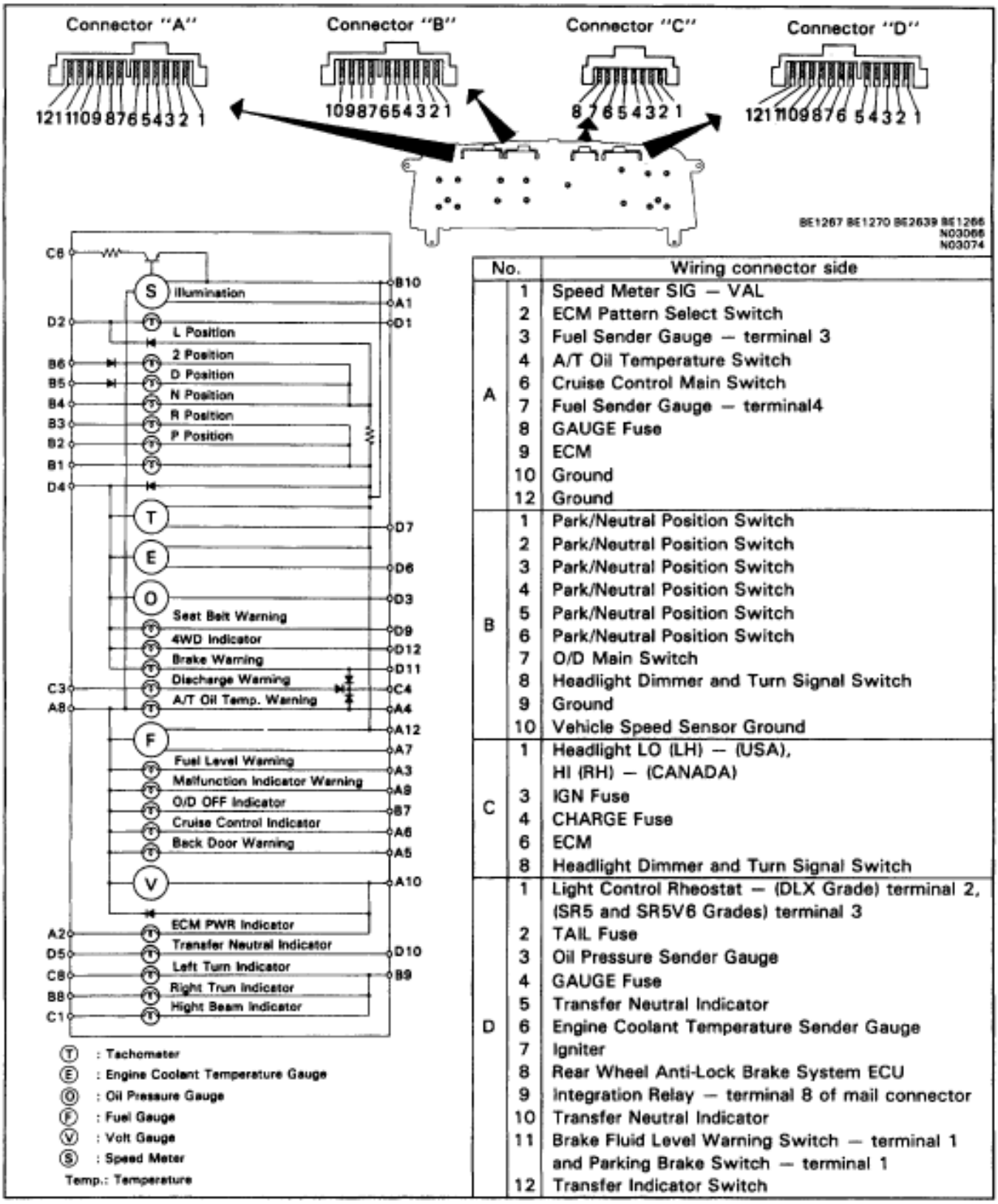
w/o Tachometer





No.		Wiring connector side
A	A	Vehicle Speed Sensor SIG – VAL
	1	Speed Sensor SIG – VAL
	2	Electronically controlled transmission
	4	A/T Oil Temperature Switch
	6	Cruise Control Main Switch
	7	Fuel Sender Gauge – terminal 2
	8	GAUGE Fuse
	9	ECM
	12	Ground
B	1	Park/Neutral Position Switch
	2	Park/Neutral Position Switch
	3	Park/Neutral Position Switch
	4	Park/Neutral Position Switch
	5	Park/Neutral Position Switch
	6	Park/Neutral Position Switch
	7	O/D Main Switch
	8	Headlight Dimmer and Turn Signal Switch
	9	Ground
	10	Vehicle Speed Sensor Ground
C	1	Headlight LO (LH) – (USA), HI (RH) – (CANADA)
	3	IGN Fuse
	4	CHARGE Fuse
	6	ECM
	8	Headlight Dimmer and Turn Signal Switch
D	1	(A/T) Light Control Rheostat – terminal 3 (M/T) Light Control Rheostat – terminal 2
	2	TAIL Fuse
	3	Low Oil Pressure Warning Switch
	4	GAUGE Fuse
	5	Transfer Neutral Indicator
	6	Engine Coolant Temperature Sender Gauge
	8	Rear Wheel Anti-Lock Brake System ECU
	9	Integration Relay – terminal 8 of mail connector
	10	Transfer Neutral Indicator
	11	Brake Fluid Level Warning Switch – terminal 1 and Parking Brake Switch – terminal 1
	12	Transfer Indicator Switch

w/ Tachometer



No.		Wiring connector side
A	1	Speed Meter SIG – VAL
	2	ECM Pattern Select Switch
	3	Fuel Sender Gauge – terminal 3
	4	A/T Oil Temperature Switch
	6	Cruise Control Main Switch
	7	Fuel Sender Gauge – terminal4
	8	GAUGE Fuse
	9	ECM
	10	Ground
	12	Ground
B	1	Park/Neutral Position Switch
	2	Park/Neutral Position Switch
	3	Park/Neutral Position Switch
	4	Park/Neutral Position Switch
	5	Park/Neutral Position Switch
	6	Park/Neutral Position Switch
	7	O/D Main Switch
	8	Headlight Dimmer and Turn Signal Switch
	9	Ground
	10	Vehicle Speed Sensor Ground
C	1	Headlight LO (LH) – (USA), HI (RH) – (CANADA)
	3	IGN Fuse
	4	CHARGE Fuse
	6	ECM
	8	Headlight Dimmer and Turn Signal Switch
D	1	Light Control Rheostat – (DLX Grade) terminal 2, (SR5 and SR5V6 Grades) terminal 3
	2	TAIL Fuse
	3	Oil Pressure Sender Gauge
	4	GAUGE Fuse
	5	Transfer Neutral Indicator
	6	Engine Coolant Temperature Sender Gauge
	7	Igniter
	8	Rear Wheel Anti-Lock Brake System ECU
	9	Integration Relay – terminal 8 of mail connector
	10	Transfer Neutral Indicator
	11	Brake Fluid Level Warning Switch – terminal 1 and Parking Brake Switch – terminal 1
	12	Transfer Indicator 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	Parts name	(See page)
Gauges and Indicator Lights do not operate	1. GAUGE Fuse 2. Wire Harness	(BE–11)
Voltmeter does not work	1. Volt Gauge 2. Wire Harness	(BE–52)
Tachometer does not operate	1. Tachometer 2. Wire Harness	(BE–51)
Fuel Gauge does not operate	1. Receiver Gauge 2. Sender Gauge 3. Wire Harness	(BE–52) (BE–53)
Engine Coolant Temperature Gauge does not operate	1. Receiver Gauge 2. Wire Harness	(BE–55)
Oil Pressure Gauge does not operate	1. Receiver Gauge 2. Sender Gauge 3. Wire Harness	(BE–57) (BE–58)
Brake Warning Light does not Light up	1. Bulb Burned Out 2. Brake Fluid Level Warning Switch 3. Parking Brake Switch 4. Wire Harness	 (BE–58) (BE–58)
Seat Belt Warning Light does not Light up	1. Bulb Burned Out 2. Integration Relay 3. Wire Harness	 (BE–60)
Discharge Warning Light does not Light Up	1. IGN Fuse 2. CHARGE Fuse 3. Bulb Burned out 4. Wire Harness	(BE–11) (BE–11)

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.

If error is excessive, replace the speedometer.

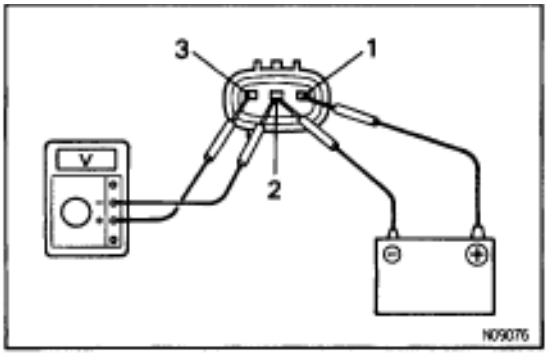
(b) Check the speedometer for pointer vibration and abnormal noise.

km / h

Standard indication	Allowable range
20	(17–24)
40	38–46
60	57.5–67
80	77–88
100	96–109
120	115–130
140	134–151.5
160	153–173

mph

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



VEHICLE SPEED SENSOR INSPECTION

INSPECT VEHICLE SPEED SENSOR

(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 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 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.

DC 13.5V 20˚C at (68˚F)

Standard indication (RPM)	Allowable range (RPM)
700	610–750
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.

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Select model

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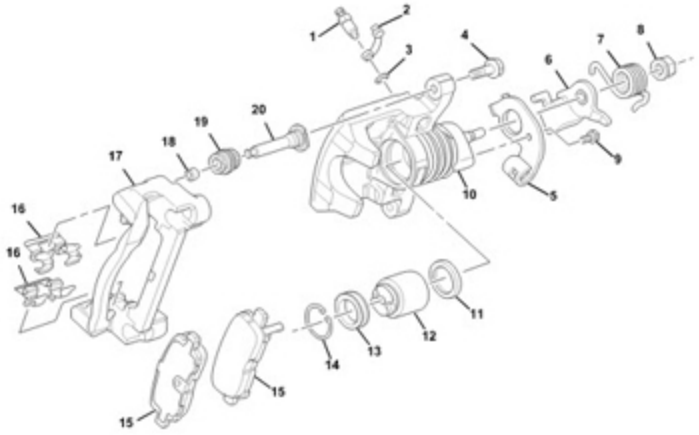

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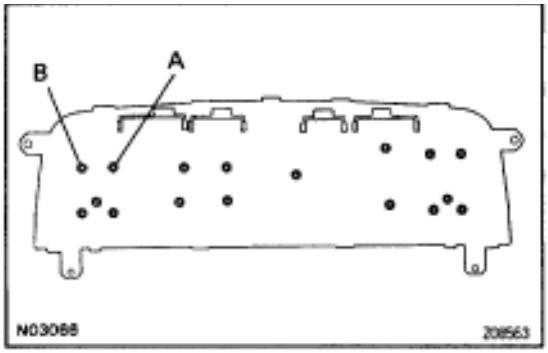


VOLT GAUGE INSPECTION

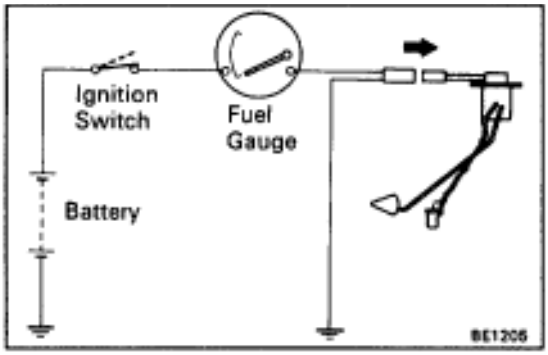
INSPECT VOLT GAUGE

Measure the resistance between terminals A and B.

Resistance:

Approx. 347Ω

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



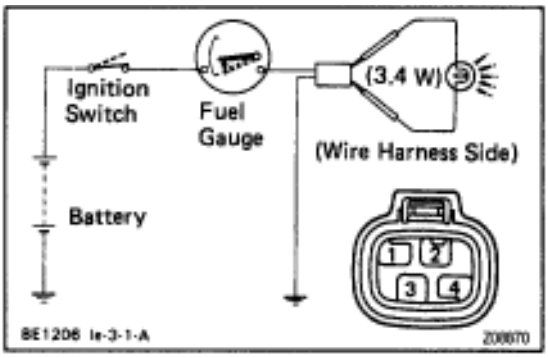
FUEL RECEIVER GAUGE INSPECTION

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.



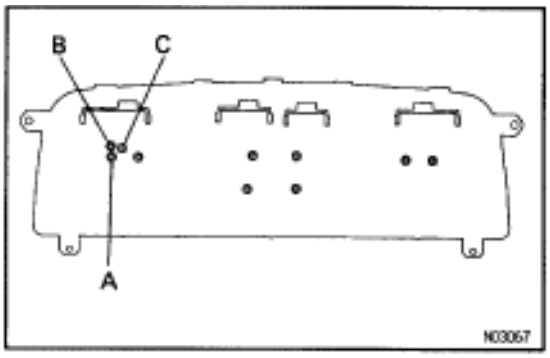
(c) Connect terminals 1 and 2 on the wire harness side connector through a 3.4 W test bulb.

(d) Turn the ignition switch ON, check that the bulb lights up and the receiver gauge needle moves towards the full side.

HINT: w/ Tachometer

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

If operation is not as specified, inspect the receiver gauge resistance, and the voltage regulator (w/o Tachometer).



Voltage Regulator: w/o Tachometer

(a) Connect the positive (+) lead from the battery to terminal A and negative (–) lead to terminal B.

(b) Connect the positive (+) lead from the voltmeter to terminal C and the negative (–) lead to terminal B and check that the voltmeter needle vibrates near the 7 V position.

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

Resistance

Measure the resistance between terminals.

w/o Tachometer

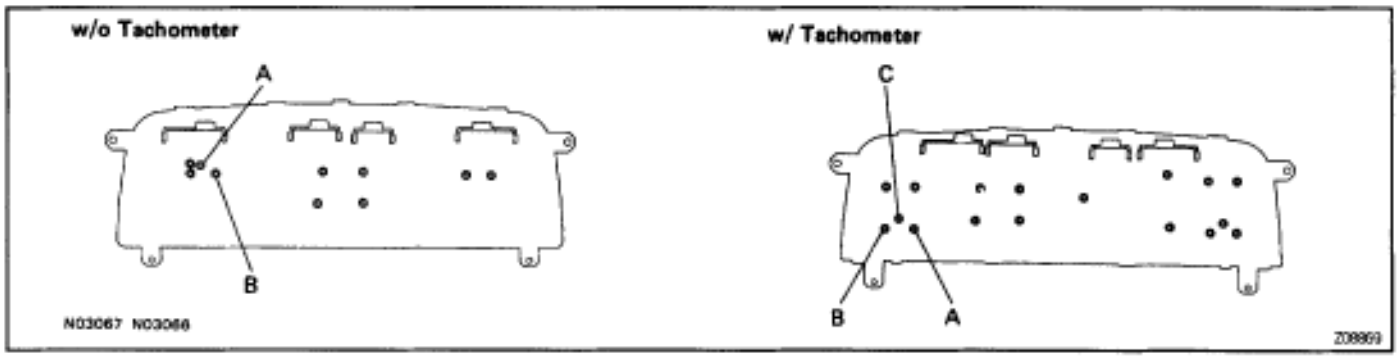
Between terminals	Resistance (Ω)
A–B	Approx. 55
A–C	–
B–C	–

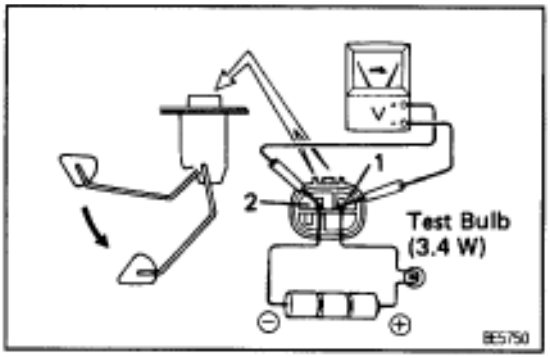
If resistance value is not as specified, replace the receiver gauge.

w/ Tachometer

Between terminals	Resistance (Ω)
A–B	Approx. 123
A–C	Approx. 260
B–C	Approx. 137

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





FUEL SENDER GAUGE INSPECTION

INSPECT FUEL SENDER GAUGE

Operation

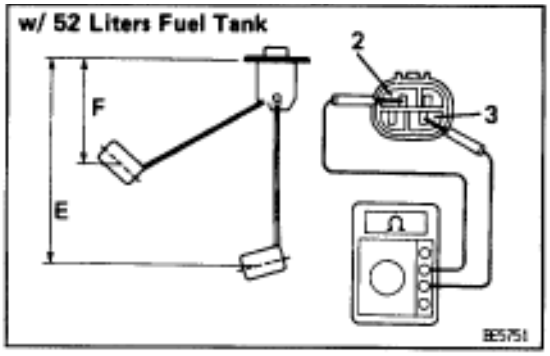
(a) Connect a series of three 1.5 V dry cell batteries.

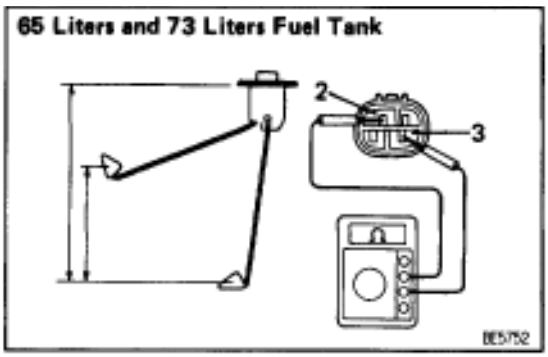
(b) Connect the positive (+) lead from the dry cell batteries to terminal 2 through a 3.4 W test bulb and the negative (–) lead to terminal 1.

(c) Connect the positive (+) lead from the voltmeter to terminal 2 and the negative (–) lead to terminal 1.

(d) Check that the voltage rises as the float is moved from the full to empty position.

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





Resistance

Measure the resistance between terminals 1 and 3.

w/ 52 Liters Fuel Tank

Float position mm (in.)	Resistance (Ω)
F: Approx. 121 (4.78)	F: Approx. 3
E: Approx. 263 (10.35)	E: Approx. 110

w/ 65 Liters Fuel Tank

2WD

Float position mm (in.)	Resistance (Ω)
F: Approx. 96 (3.78)	F: Approx. 3
E: Approx. 281 (11.06)	E: Approx. 110

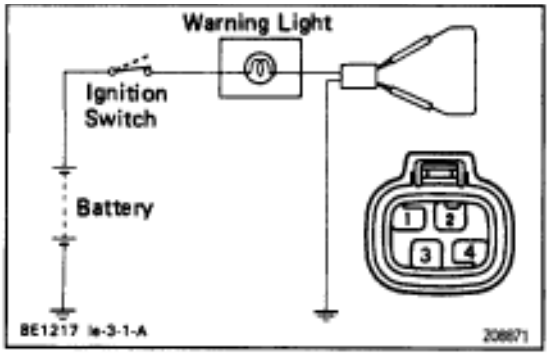
4WD

Float position mm (in.)	Resistance (Ω)
F: Approx. 108 (4.25)	F: Approx. 3
E: Approx. 300 (11.81)	E: Approx. 110

w/ 73 Liters Fuel Tank

Float position mm (in.)	Resistance (Ω)
F: Approx. 116 (4.57)	F: Approx. 3
E: Approx. 319 (12.56)	E: Approx. 110

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



FUEL LEVEL WARNING LIGHT INSPECTION

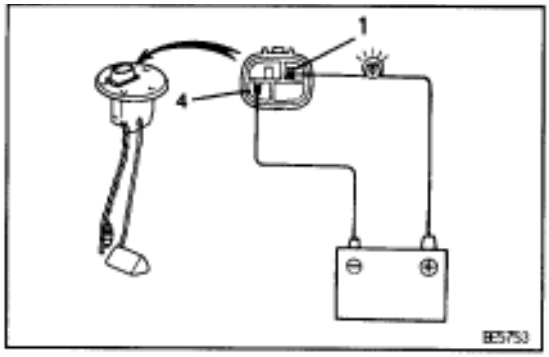
INSPECT FUEL LEVEL WARNING LIGHT

(a) Disconnect the connector from the sender gauge.

(b) Connect terminals 1 and 3 on the wire harness side connector.

(c) Turn the ignition switch ON, check that the warning light lights up.

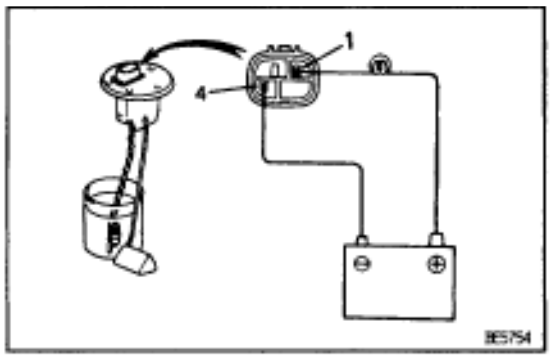
If the warning light does not light up, test the bulb.



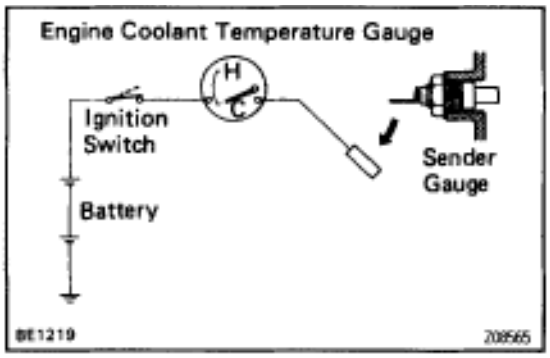
FUEL LEVEL WARNING SWITCH INSPECTION

INSPECT FUEL LEVEL WARNING SWITCH

(a) Apply battery positive voltage between terminals 1 and 4 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 and replace the sender gauge.

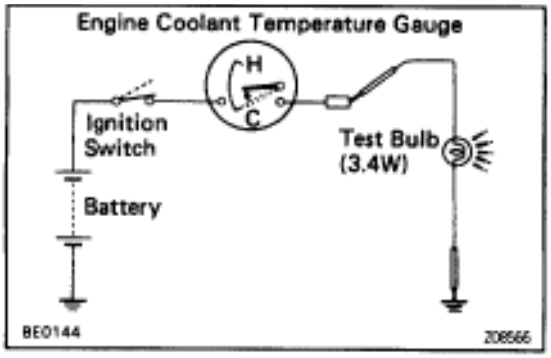


ENGINE COOLANT TEMPERATURE RECEIVER GAUGE INSPECTION

INSPECT ENGINE COOLANT TEMPERATURE RECEIVER GAUGE

Operation

(a) Disconnect the connector from the sender gauge.
(b) 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 towards 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.

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

w/o Tachometer

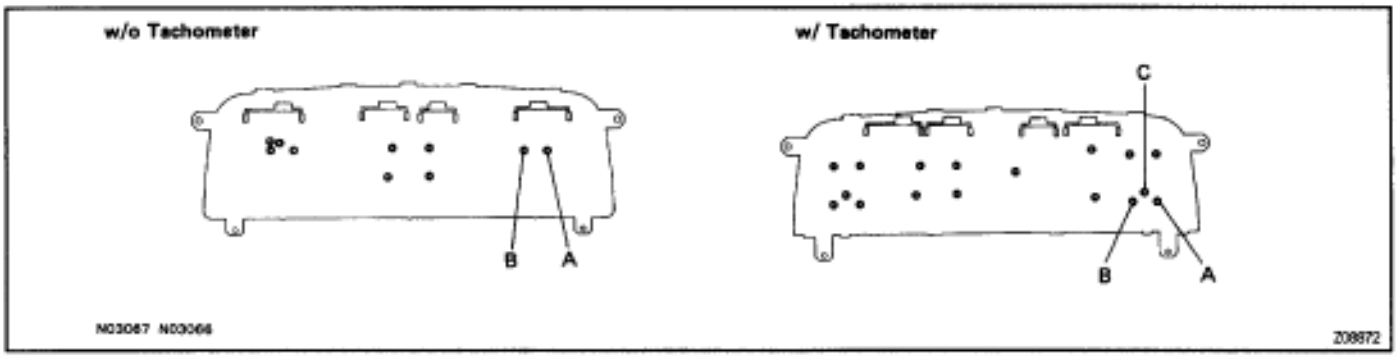
Between terminals	Resistance (Ω)
A–B	Approx. 25
A–C	–
B–C	–

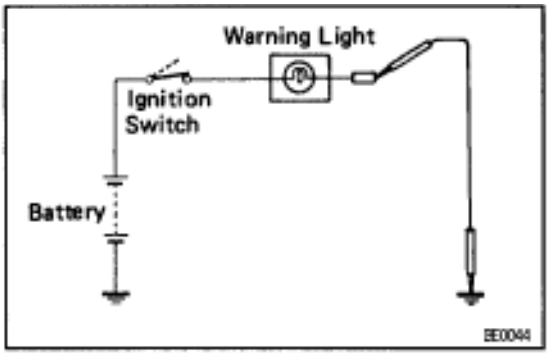
If resistance value is not as specified, replace the receiver gauge.

w/ Tachometer

Between terminals	Resistance (Ω)
A–B	Approx. 57
A–C	Approx. 135
B–C	Approx. 217

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





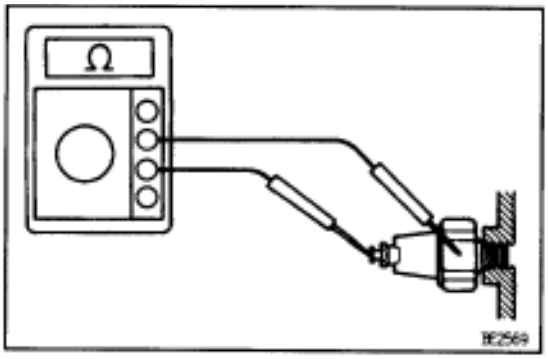
LOW OIL PRESSURE WARNING LIGHT INSPECTION

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, check that the warning light will come on.

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



LOW OIL PRESSURE WARNING SWITCH INSPECTION

INSPECT LOW OIL PRESSURE WARNING SWITCH

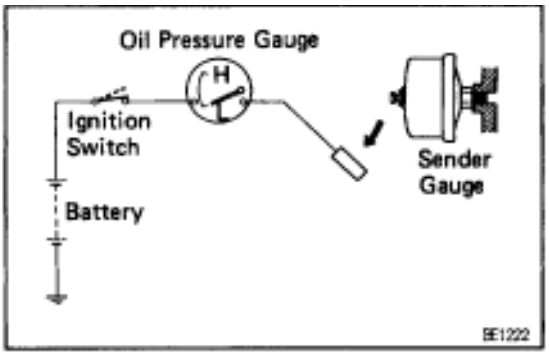
(a) Disconnect the connector from the switch.

(b) Check that there is continuity between terminal and ground with the engine stopped.

(c) Check that there is no continuity between terminal and ground with the engine running.

HINT: Oil pressure should be over 29 kPa (0.3 kgf/cm^2, 4.3 psi).

If operation is not as specified, replace the switch.



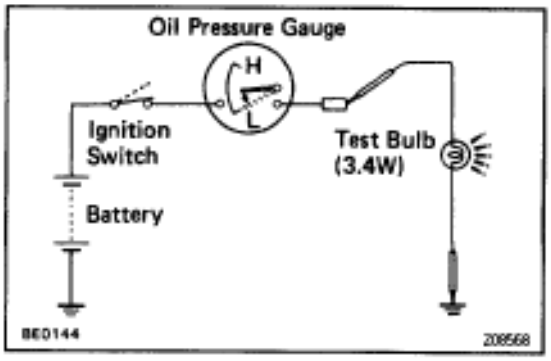
OIL PRESSURE RECEIVER GAUGE INSPECTION

INSPECT OIL PRESSURE RECEIVER GAUGE

Operation

(a) Disconnect the connector from the sender gauge.

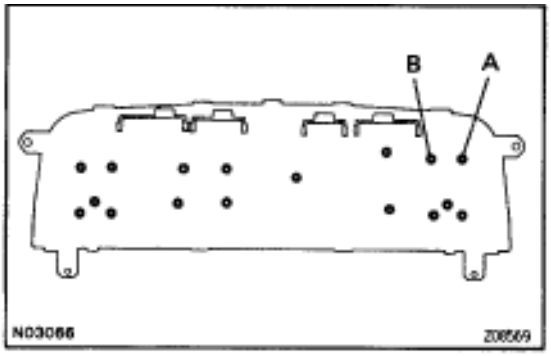
(b) Turn the ignition switch ON, check that the receiver gauge needle indicates LOW.



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



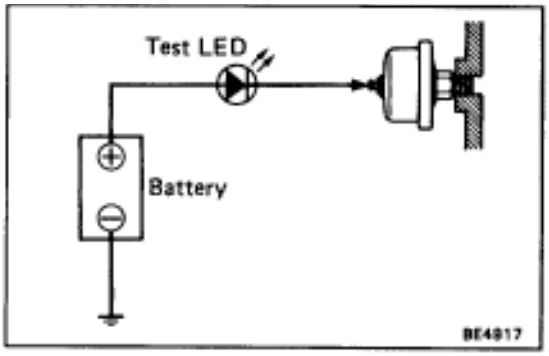
Resistance

Measure the resistance between terminals A and B.

Resistance:

Approx. 25 Ω

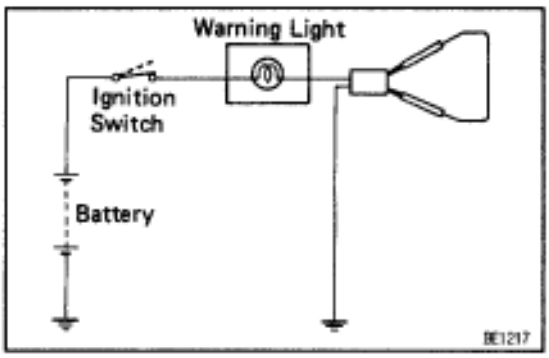
If resistance value is not as specified, replace the receiver gauge.



OIL PRESSURE SENDER GAUGE INSPECTION

INSPECT OIL PRESSURE SENDER GAUGE

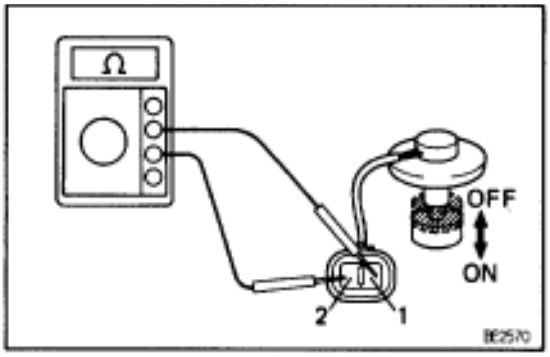
(a) Disconnect the connector from the sender gauge.
(b) Apply battery positive voltage to the sender gauge terminal through a test LED.
(c) Check that the bulb does not light when the engine is stopped.
(d) Check that the LED flashes when the engine is running. The number of flashed should vary with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



BRAKE WARNING LIGHT INSPECTION

INSPECT BRAKE WARNING LIGHT

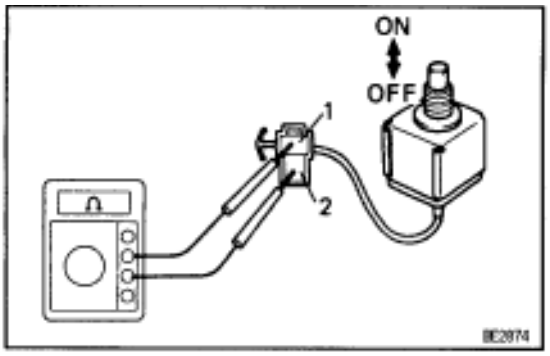
(a) Disconnect the connectors from the level warning switch and parking brake switch.
(b) Connect terminals on the wire harness side connector of the level warning switch connector.
(c) Remove the CHARGE fuse and turn the ignition switch ON, check that the warning light come on.
If the warning light does not light up, test the bulb.



BRAKE FLUID LEVEL WARNING SWITCH INSPECTION

INSPECT BRAKE FLUID LEVEL WARNING SWITCH

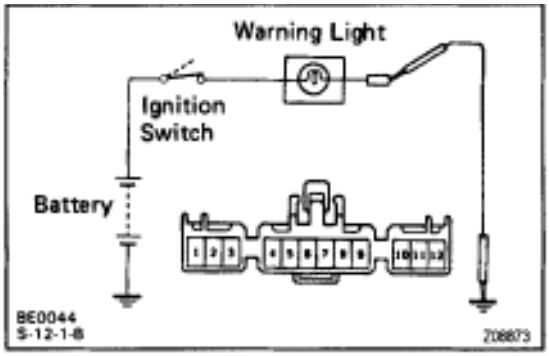
(a) Check that there is no continuity between terminals with the switch OFF (float up).
(b) Check that there is continuity between terminals with the switch ON (float down).
If operation is not as specified, replace the switch.



PARKING BRAKE SWITCH INSPECTION

INSPECT PARKING BRAKE SWITCH

(a) Check that there is continuity between terminals with the switch ON (switch pin released).
(b) Check that there is no continuity between terminals with the switch OFF (switch pin pushed in).
If operation is not as specified, replace the switch.



SEAT BELT WARNING LIGHT INSPECTION

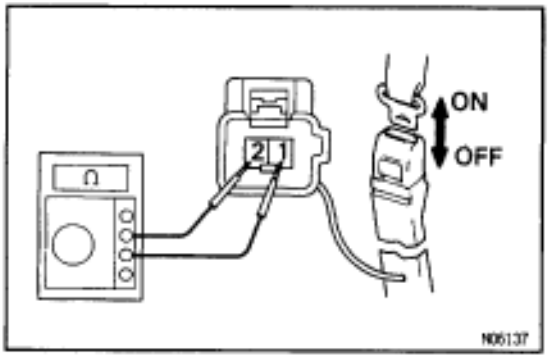
INSPECT SEAT BELT WARNING LIGHT

(a) Disconnect the wire harness side connector from the integration relay.

(b) Ground terminal 8 on the wire harness side connector.

(c) Turn the ignition switch ON, check that the warning light lights up.

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



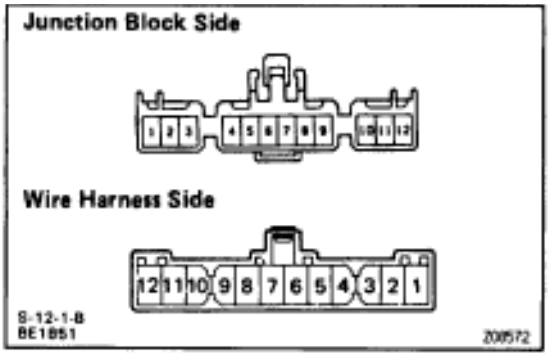
BUCKLE SWITCH INSPECTION

INSPECT BUCKLE SWITCH

(a) Check that there is continuity between terminals with the switch ON (belt unfastened).

(b) 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 assembly.



INTEGRATION RELAY INSPECTION

INSPECT INTEGRATION RELAY

Relay Circuit

Remove the integration relay and inspect the connectors on the wire harness side and the junction block side, as shown in the chart.

Wire Harness Side

Tester connection to terminal number	Condition	Specified value (Continuity)
2–3	Key unlock warning switch position OFF (Ignition key removed)	No continuity
2–3	Key unlock warning switch position ON (Ignition key set)	Continuity
6–Ground	Buckle switch position OFF (Belt fastened)	No continuity
6–Ground	Buckle switch position ON (Belt unfastened)	Continuity
8–9	Constant	*Continuity
10–Ground	Driver’s door courtesy switch position OFF (Door closed)	No continuity
10–Ground	Driver’s door courtesy switch position ON (Door opened)	Continuity
12–Ground	Passenger’s door courtesy switch position OFF (Door closed)	No continuity
12–Ground	Passenger’s door courtesy switch position ON (Door opened)	Continuity

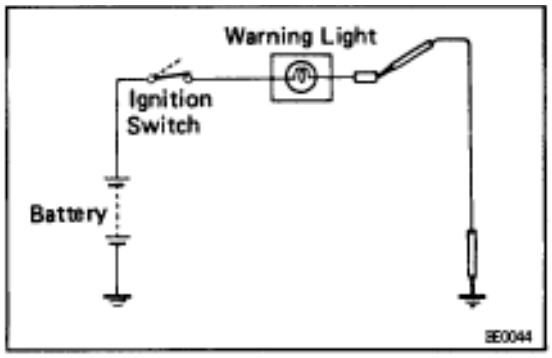
* There is resistance because this circuit is included the bulb.

Junction Block Side

Tester connection to terminal number	Condition	Specified value (Voltage)
7–Ground	Constant	Continuity

Tester connection to terminal number	Condition	Specified value (Voltage)
3–Ground	Constant	Battery positive voltage
9–Ground	Ignition switch position LOCK or ACC	No voltage
9–Ground	Ignition switch position ON	Battery positive voltage

If circuit is as specified, replace the relay.



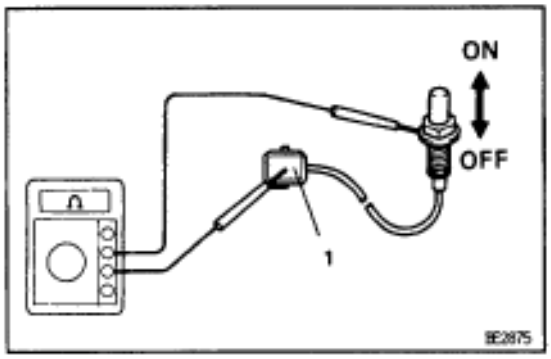
OPEN DOOR WARNING LIGHT INSPECTION

INSPECT OPEN DOOR WARNING LIGHT

(a) Disconnect the connector from the door courtesy switch and ground terminal on the wire harness side connector.

(b) Turn the ignition switch ON, check that the warning light lights up.

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



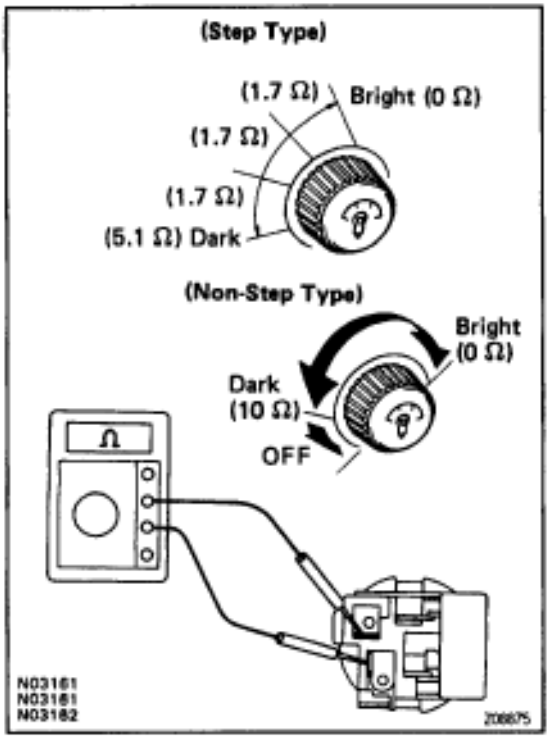
DOOR COURTESY SWITCH INSPECTION

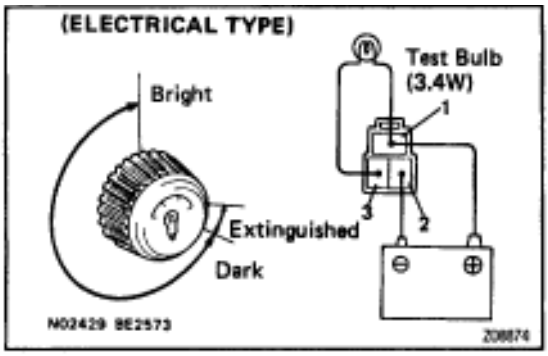
INSPECT DOOR COURTESY SWITCH

(a) Check that there is continuity between terminal and the switch body with the switch ON (switch pin released).

(b) Check that there is no continuity between terminal and the switch body with the switch OFF (switch pin pushed in).

If operation is not as specified, replace the switch.





LIGHT CONTROL RHEOSTAT INSPECTION

INSPECT LIGHT CONTROL RHEOSTAT

STEP TYPE

w/o Tachometer

Gradually turn the rheostat knob from the bright side to dark side, check that the resistance between terminals increases from approximately 0 to 5.1 Ω.

If operation is not as specified, replace the rheostat.

NON–STEP TYPE

w/ Tachometer

(a) Turn the rheostat knob OFF and check that there is no continuity 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.

ELECTRICAL TYPE

w/ All A/T Vehicle

(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.

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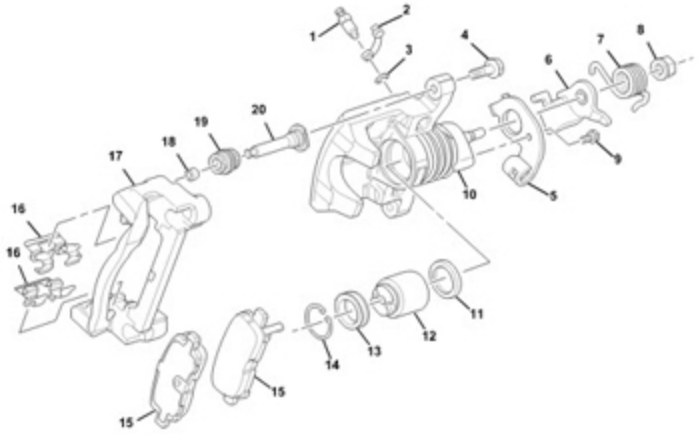

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