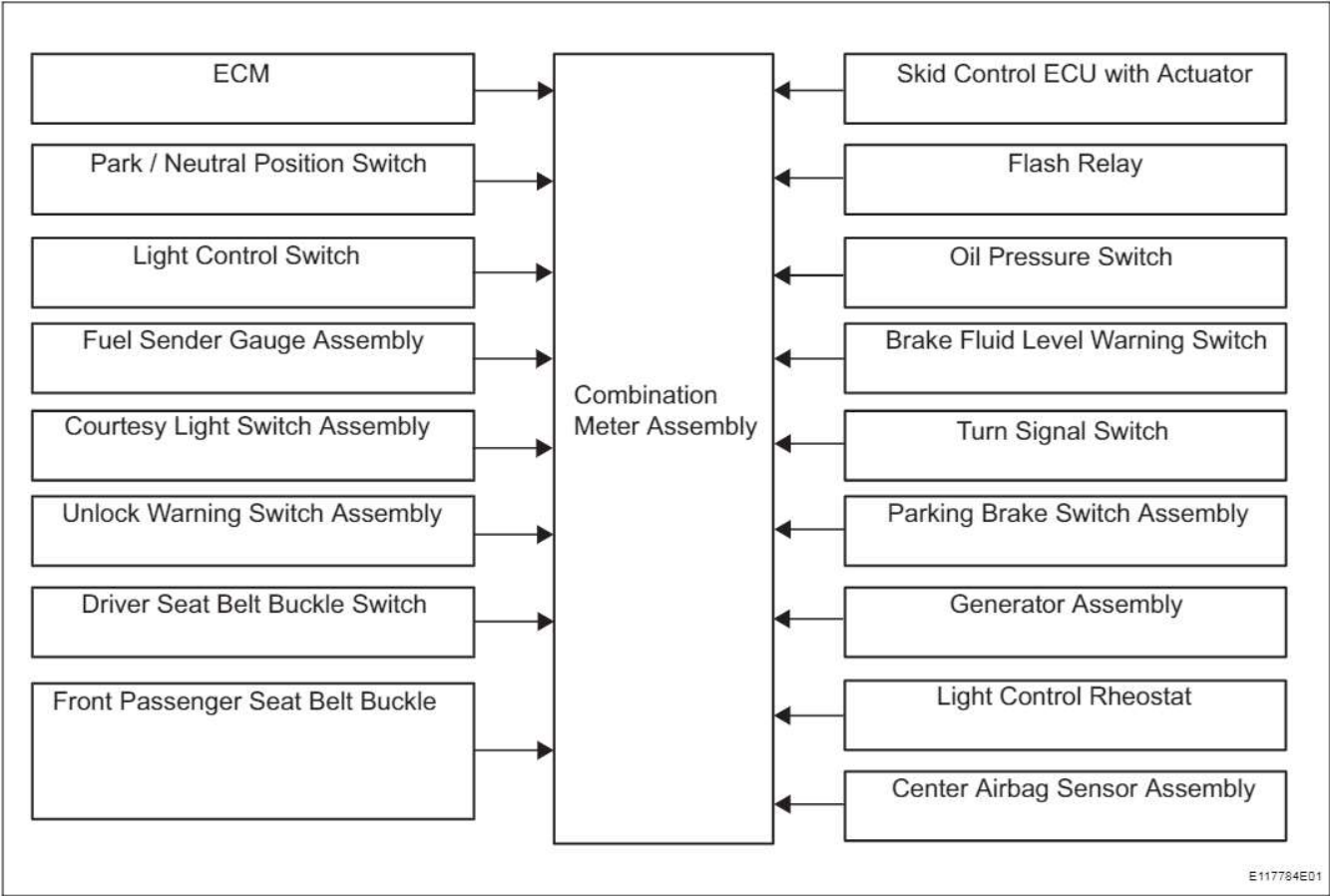


SYSTEM DIAGRAM



ME-6**METER – METER / GAUGE SYSTEM****SYSTEM DESCRIPTION****1. METER GAUGE AND WARNING/INDICATOR LIGHT****Gauge**

Item	Signal Description
Speedometer	Calculates vehicle speed based on signal from vehicle speed sensor
Tachometer	Calculates engine speed based on signal from ECM
ODO/TRIP Meter	Calculates distance vehicle is driven or distance since trip meter knob is pressed
Fuel	Indicates remaining amount of fuel based on signal from fuel sender gauge

Warning/Indicator Lights

Item	Signal Description
TURN	Blinks when receiving signal that turn signal switch or hazard warning signal switch is ON
BEAM	Illuminates when headlight dimmer switch is set to HI BEAM or FLASH position
CHARGE	Illuminates when receiving malfunction signal from generator
OIL PRESSURE	Illuminates when receiving "oil pressure is abnormally low (pressure switch is ON)" signal
MIL	Illuminates when receiving malfunction signal from ECM
DOOR	Illuminates when receiving each door courtesy light switch signal
SEAT BELT	Blinks when driver seat belt buckle switch is ON (unfastened)
BRAKE	Illuminates when receiving signal that parking brake switch is ON, brake fluid warning switch is ON, or vacuum warning switch is ON
SRS	Illuminates when receiving malfunction signal from center airbag sensor assembly
FUEL	Illuminates when receiving fuel empty signal from fuel sender gauge
P	Illuminates when receiving P signal from PNP switch
R	Illuminates when receiving R signal from PNP switch
N	Illuminates when receiving N signal from PNP switch
D	Illuminates when receiving D signal from PNP switch
2	Illuminates when receiving 2 signal from PNP switch
L	Illuminates when receiving L signal from PNP switch
VSC	Illuminates when receiving "traction control system or vehicle stability control system is malfunction" signal from skid control ECU with actuator
SLIP	Blinks when receiving "traction control system or vehicle stability control system is properly operating" signal from skid control ECU with actuator
ABS	Illuminates when receiving malfunction signal from skid control ECU with actuator
TRAC OFF	Illumination when receiving TRAC OFF signal from skid control ECU with actuator

Buzzer

Item	Signal Description
Key Reminder	Buzzer is ON when ignition switch is OFF, key is inserted and driver side door is open
Light Reminder	Buzzer is ON when ignition switch is OFF, light control switch is set to TAIL or HEAD position, and driver side door is open
Seat Belt Reminder	Buzzer is ON when ignition switch is ON and seat belt is unfastened

HOW TO PROCEED WITH TROUBLESHOOTING

- HINT:
- Use these procedures to troubleshoot the meter / gauge system.
 - *: Use the intelligent tester.

1

VEHICLE BROUGHT TO WORKSHOP

NEXT

2

INSPECT BATTERY VOLTAGE

Standard voltage:
11 to 14 V
If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT

3

PROBLEM SYMPTOMS TABLE

Result

Result	Proceed to
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B

Go to step 5

A

4

OVERALL ANALYSIS AND TROUBLESHOOTING*

- (a) Terminals of ECU (see page [ME-9](#))
- (b) DATA LIST / ACTIVE TEST (see page [ME-17](#))
- (c) On-vehicle Inspection (see page [ME-18](#))

NEXT

5

REPAIR OR REPLACE

NEXT

ME-8

METER – METER / GAUGE SYSTEM

6	CONFIRMATION TEST
----------	--------------------------

NEXT

END

ME

METER – METER / GAUGE SYSTEM**ME-9****PROBLEM SYMPTOMS TABLE****HINT:**

- Use the table below to help determine the cause of the problem symptom. The potential causes of the symptoms are listed in order of probability in the "Suspected area" column of the table. Check each symptom by checking the suspected area in the order they are listed. Replace parts as necessary.
- Inspect the related fuses and relays before confirming the suspected area in the table below.

Malfunction system

Symptom	Suspected area	See page
Entire combination meter does not operate	Refer to troubleshooting	ME-22
Operating light control rheostat does not change light brightness	Refer to troubleshooting	ME-41

ME**Meter gauges**

Symptom	Suspected area	See page
Speedometer malfunction	Refer to troubleshooting	ME-24
Tachometer malfunction	Refer to troubleshooting	ME-26
Fuel receiver gauge malfunction	Refer to troubleshooting	ME-29

Warning lights

Symptom	Suspected area	See page
MIL does not turn on	Refer to troubleshooting	ES-322
Discharge warning light does not turn on	1. Generator assembly	CH-7
	2. Wire harness	-
	3. Combination meter assembly	-
Brake warning light does not turn on	1. Brake fluid level warning switch	-
	2. Parking brake switch assembly	-
	3. Wire harness	-
	4. Combination meter assembly	-
ABS warning light does not turn on	Refer to troubleshooting	BC-74
SRS warning light does not turn on	Refer to troubleshooting	RS-284
Open door warning does not turn on	1. Door courtesy light switch assembly	LI-29
	2. Wire harness	-
	3. Combination meter assembly	-
Fuel level warning light does not turn on	1. Fuel sender gauge assembly	-
	2. Wire harness	-
	3. Combination meter assembly	-
Low oil pressure warning light does not turn on	1. Oil pressure switch assembly	-
	2. Wire harness	-
	3. Combination meter assembly	-
Driver side seat belt warning light does not operate	Refer to troubleshooting	ME-36

Indicator lights

Symptom	Suspected area	See page
Turn indicator light does not turn on	1. Headlight dimmer switch assembly (turn signal switch)	LI-9
	2. Turn signal flasher relay	LI-32
	3. Wire harness	-
	4. Combination meter assembly	-

ME-10**METER – METER / GAUGE SYSTEM**

Symptom	Suspected area	See page
HI BEAM indicator light does not turn on	1. Headlight dimmer switch assembly	LI-9
	2. Wire harness	-
	3. Combination meter assembly	-
Taillight indicator light does not turn on	1. Headlight dimmer switch assembly	LI-9
	2. Wire harness	-
	3. Combination meter assembly	-
Front passenger seat belt warning light does not operate	Refer to troubleshooting	ME-38

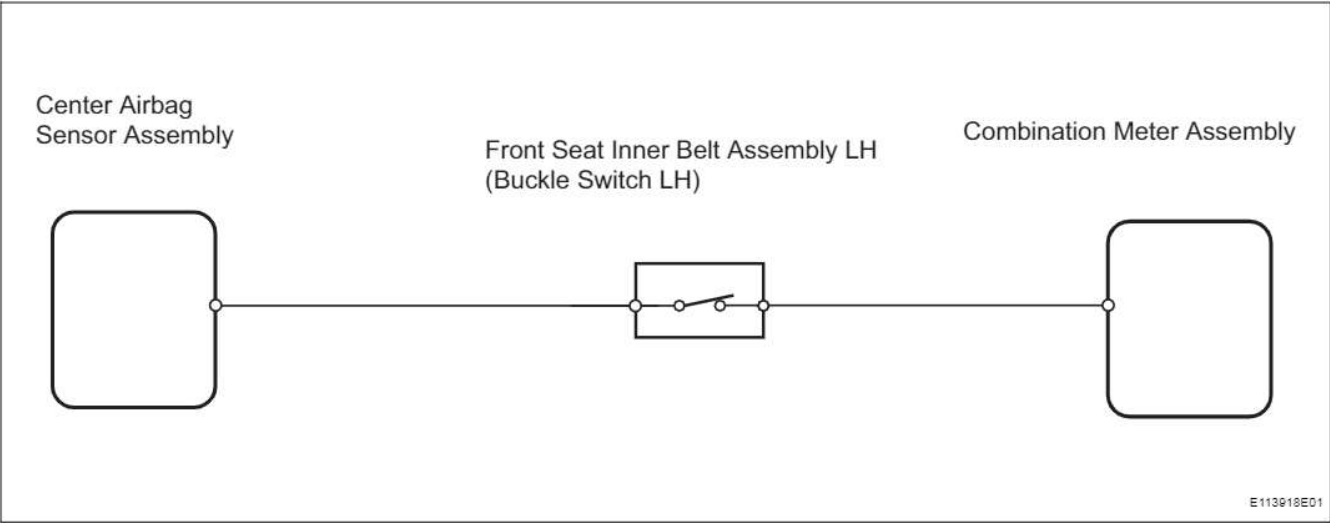
Warning buzzer

Symptom	Suspected area	See page
Key reminder warning buzzer does not sound	Refer to troubleshooting	ME-31
Light reminder warning buzzer does not sound	Refer to troubleshooting	ME-31
Seat belt reminder warning buzzer does not sound	Refer to troubleshooting	ME-36

ME

Driver Side Seat Belt Warning Light does not Operate

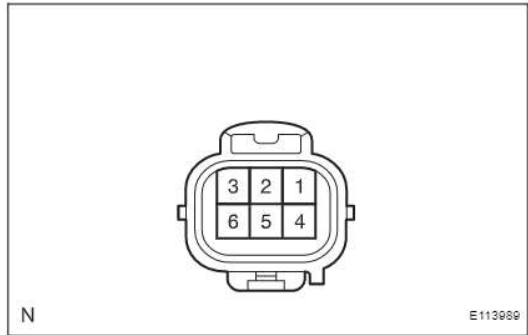
WIRING DIAGRAM



ME

INSPECTION PROCEDURE

1INSPECT FRONT SEAT INNER BELT ASSEMBLY LH (BUCKLE SWITCH LH)



- (a) Disconnect the B7 belt connector.
 - (b) Measure the resistance of the connector.
- Standard resistance**

Tester Connection	Switch Condition	Specified Condition
1 - 3	Driver side seat belt is fastened (buckle switch ON)	1,200 to 1,460 Ω
	Driver side seat belt is unfastened (buckle switch OFF)	300 to 360 Ω

NG

REPLACE FRONT SEAT INNER BELT ASSEMBLY LH

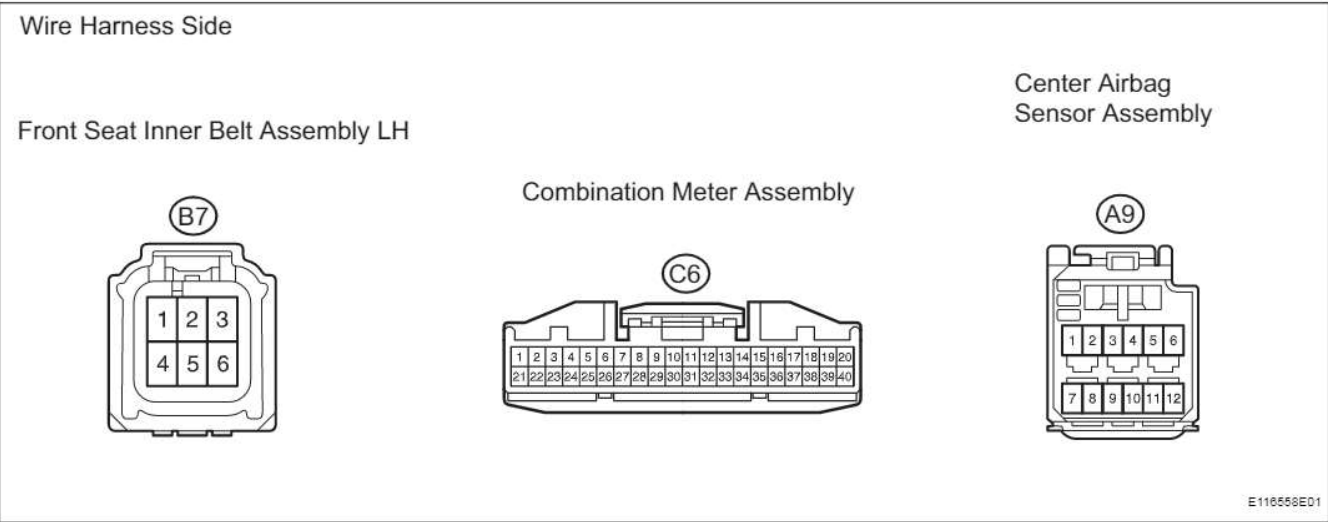
OK

ME-40

METER – METER / GAUGE SYSTEM

2

CHECK WIRE HARNESS (SEAT INNER BELT - COMBINATION METER AND AIRBAG SENSOR)



- (a) Disconnect the B7 belt connector.
- (b) Disconnect the C6 meter connector.
- (c) Disconnect the A9 sensor connector.
- (d) Measure the resistance of the connectors.

Standard resistance

Tester Connection	Specified Condition
B7-3 - C6-32	Below 1 Ω
B7-1 - A9-7	

NG

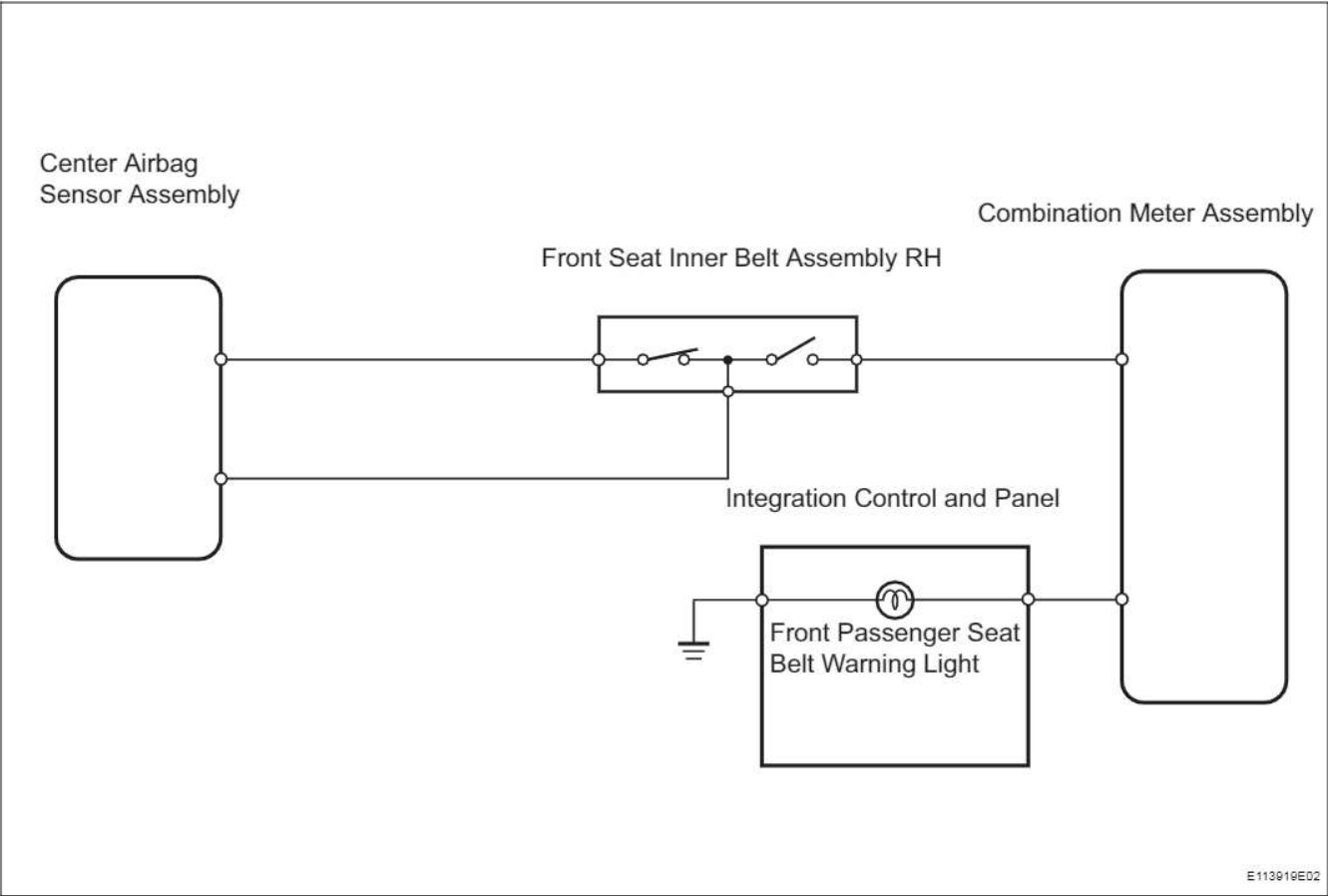
REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE COMBINATION METER ASSEMBLY

Front Passenger Side Seat Belt Warning Light Malfunction

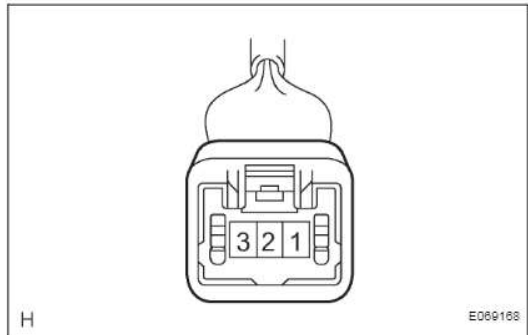
WIRING DIAGRAM



ME

INSPECTION PROCEDURE

1 INSPECT FRONT SEAT INNER BELT ASSEMBLY RH



- (a) Remove the front seat inner belt assembly RH.
(b) Measure the resistance of the belt's connector.

Standard resistance

Tester Connection	Switch Condition	Specified Condition
1 - 3	Front passenger seat is occupied and front passenger side seat belt is unfastened	300 to 360 Ω
	Front passenger seat is occupied and front passenger side seat belt is fastened	1,200 to 1,460 Ω

NG

REPLACE FRONT SEAT INNER BELT ASSEMBLY RH

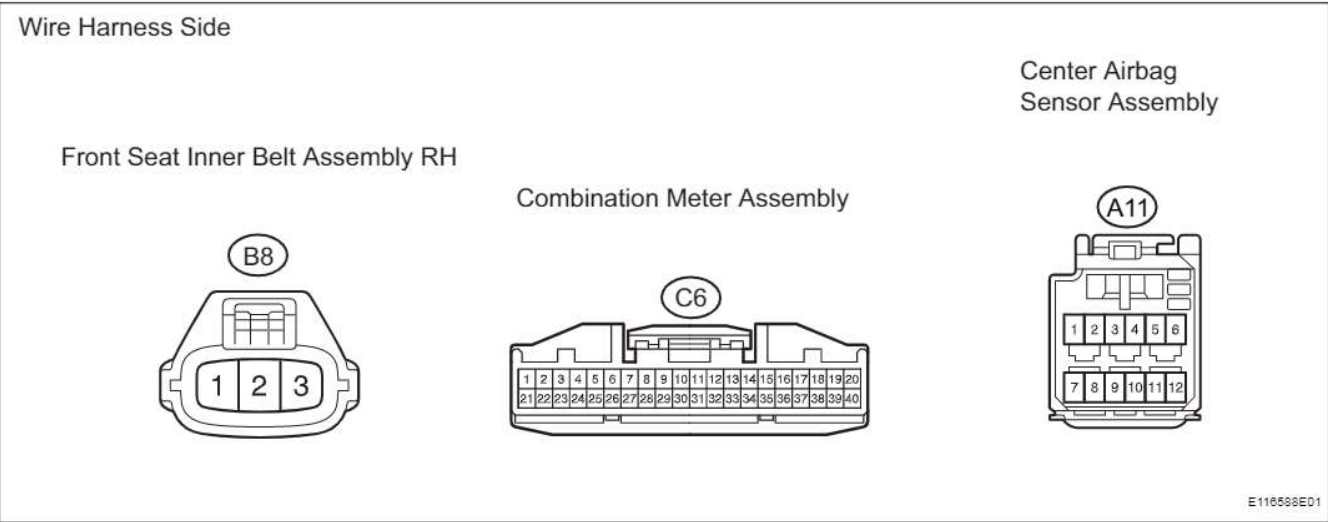
OK

ME-42

METER – METER / GAUGE SYSTEM

2

CHECK WIRE HARNESS (FRONT SEAT INNER BELT - COMBINATION METER AND AIRBAG SENSOR)



- (a) Disconnect the B8 belt connector.
- (b) Disconnect the C6 meter connector.
- (c) Disconnect the A11 sensor connector.
- (d) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
B8-1 - A11-12	Below 1 Ω
B8-2 - A11-8	
B8-3 - C6-33	

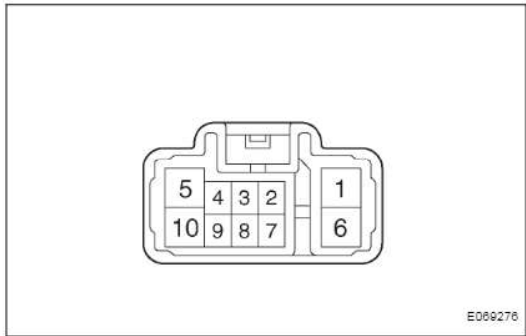
NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

3

INSPECT CENTER CLUSTER MODULE SWITCH



- (a) Disconnect the I13 switch connector.
- (b) Apply battery voltage to the center cluster module switch and check the operation of the switch.

OK

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 9 Battery negative (-) → Terminal 1	Front passenger side seat belt warning light turns on.

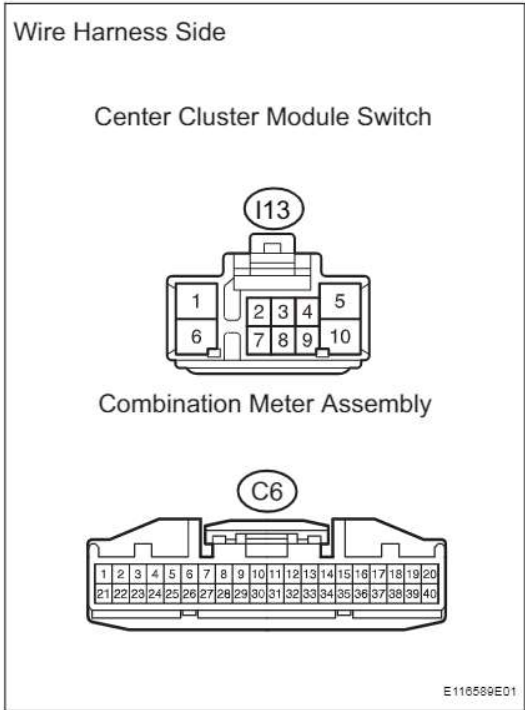
NG

REPLACE CENTER CLUSTER MODULE SWITCH

OK

4

CHECK (CENTER CLUSTER MODULE SWITCH - COMBINATION METER AND BODY GROUND)



- (a) Disconnect the I13 switch connector.
- (b) Disconnect the C6 meter connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
I13-9 - C6-35	Below 1 Ω
I13-1 - Body ground	

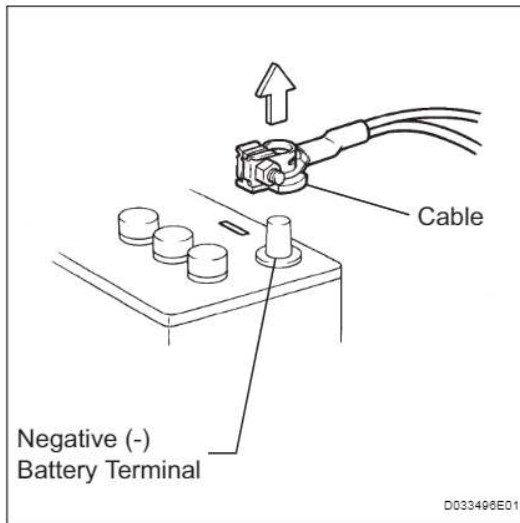
NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

ME

OK

REPLACE COMBINATION METER ASSEMBLY



METER / GAUGE SYSTEM

PRECAUTION

1. DISCONNECT AND RECONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

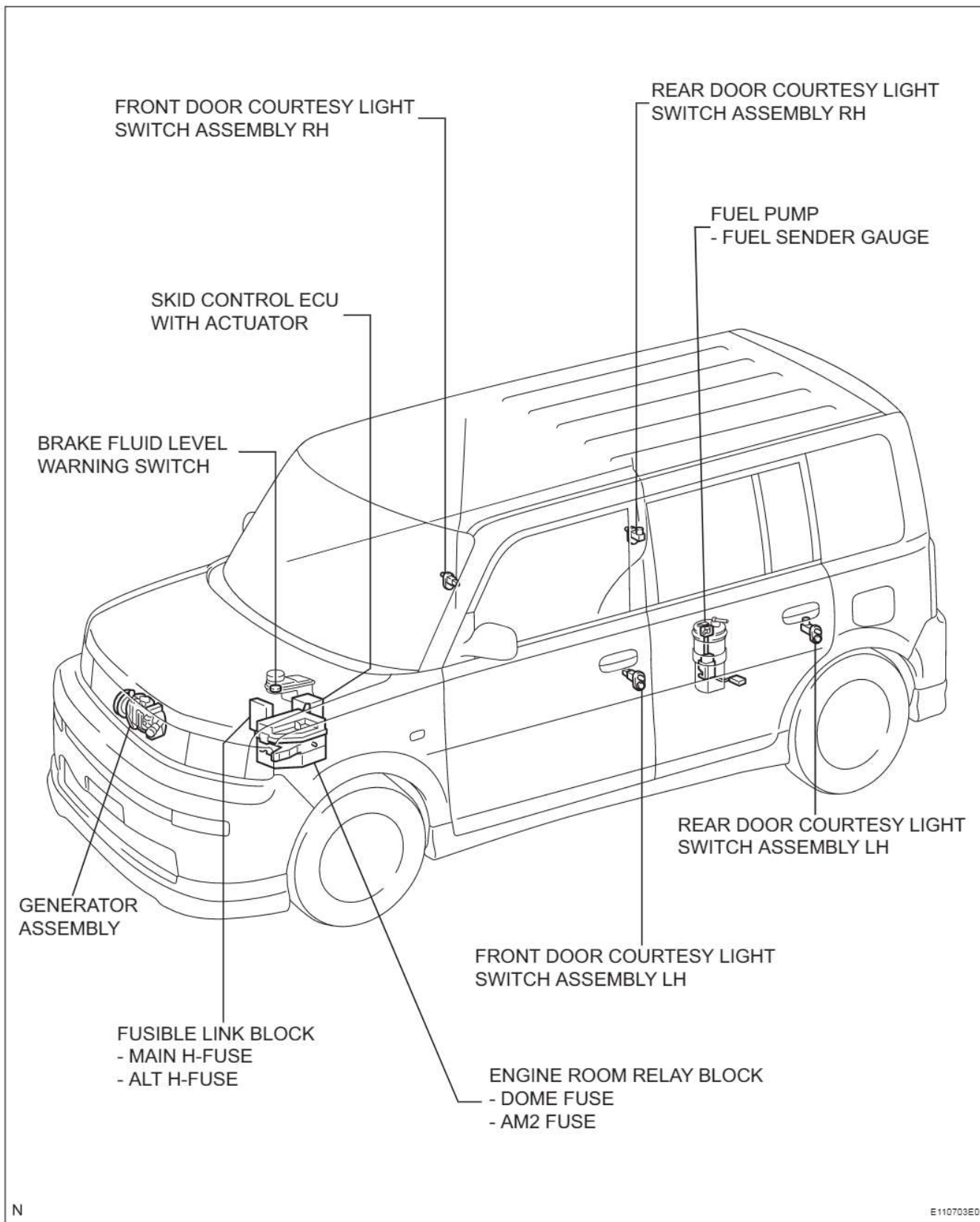
- (a) Before performing electronic work, disconnect the cable from the negative (-) battery terminal in order to prevent it from shorting and burning out.
- (b) When disconnecting and reconnecting the battery cable, turn the ignition switch OFF and headlight dimmer switch OFF. Then loosen the terminal nut completely. Be careful not to damage the cable or terminal.
- (c) When the battery cable is disconnected, the settings of the clock and radio, memory of DTCs, etc. are erased. Before disconnecting the battery cable, take notes of the settings and memory.

ME

ME-2

METER - METER / GAUGE SYSTEM

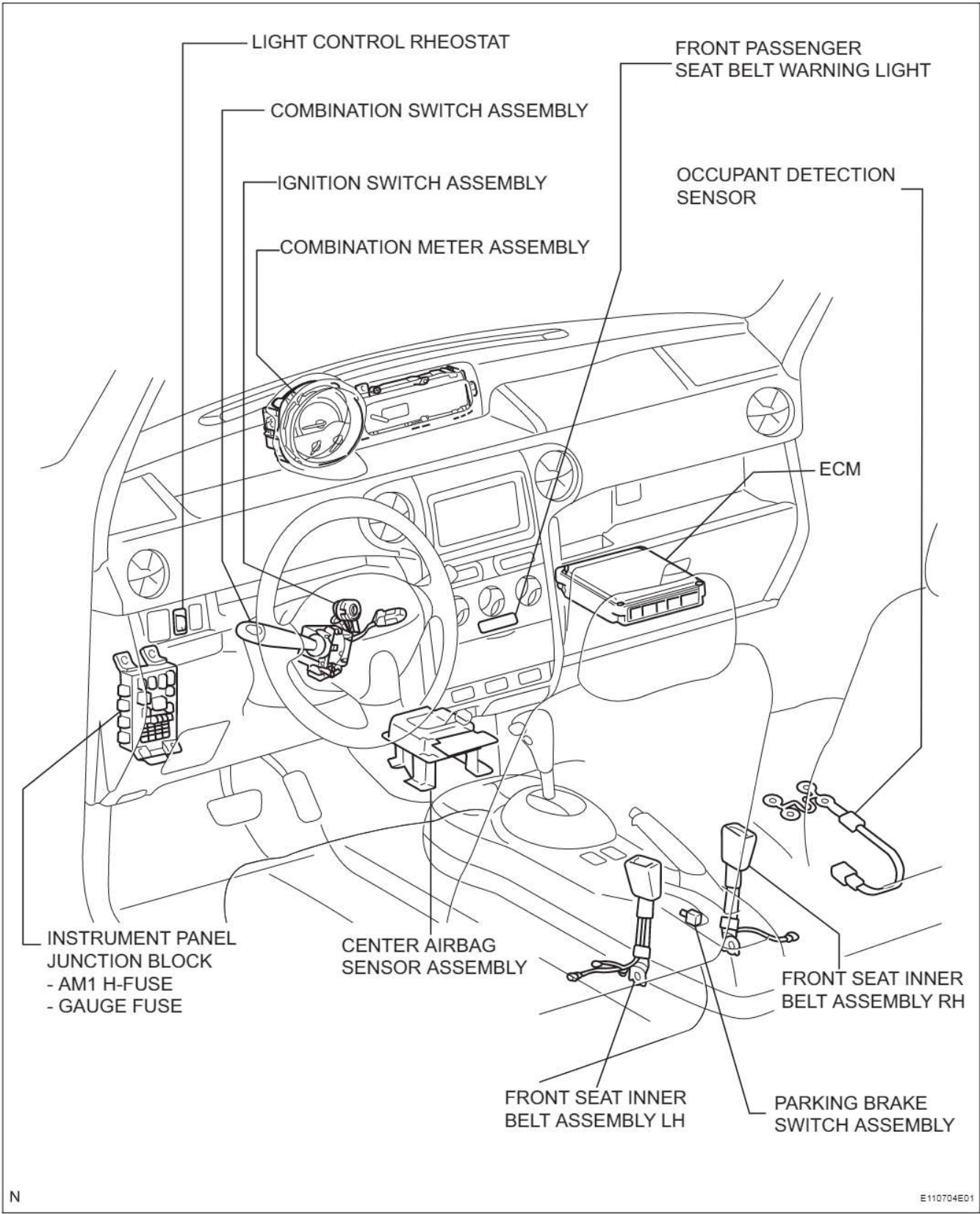
PARTS LOCATION



METER – METER / GAUGE SYSTEM

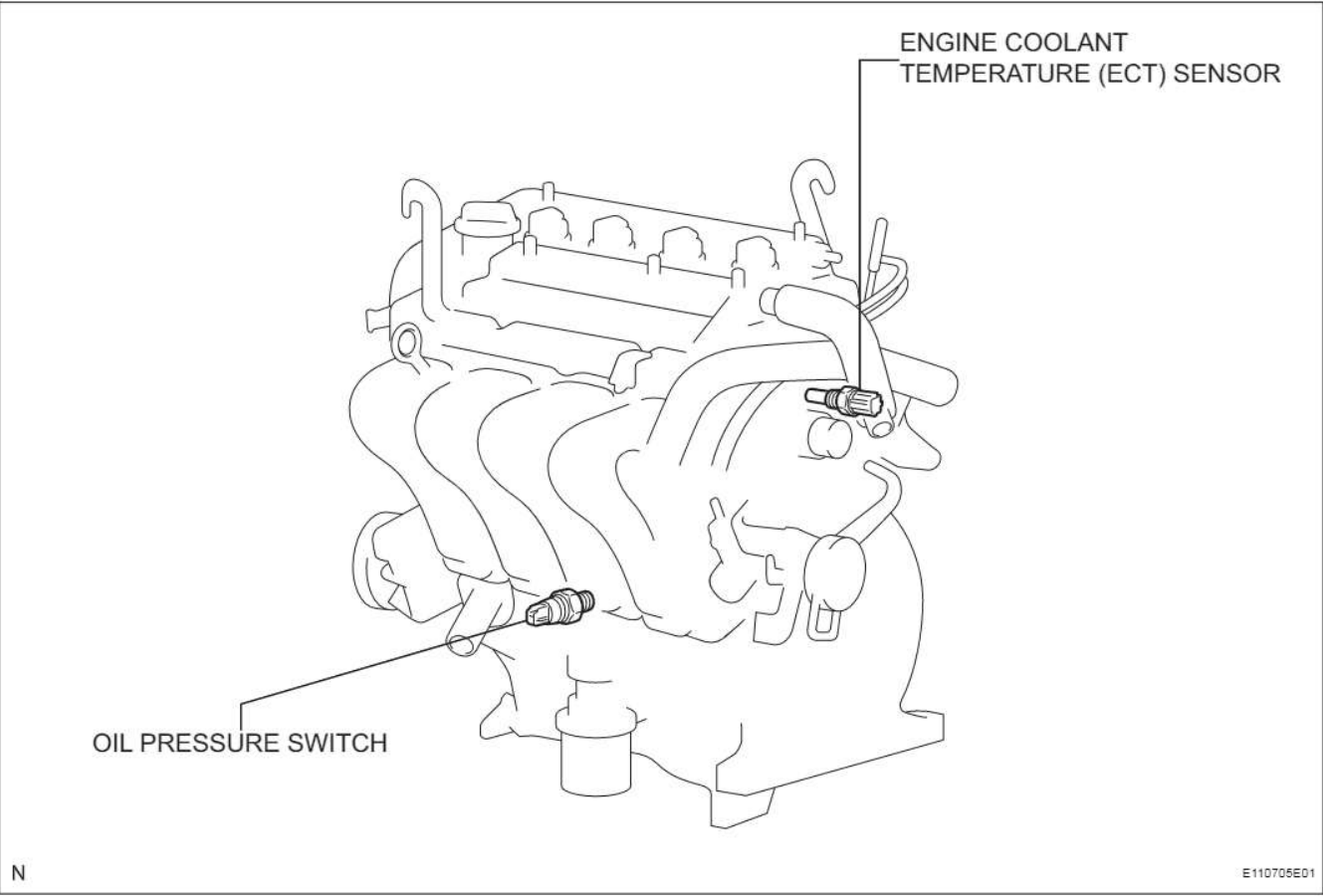
ME-3

ME



ME-4

METER – METER / GAUGE SYSTEM

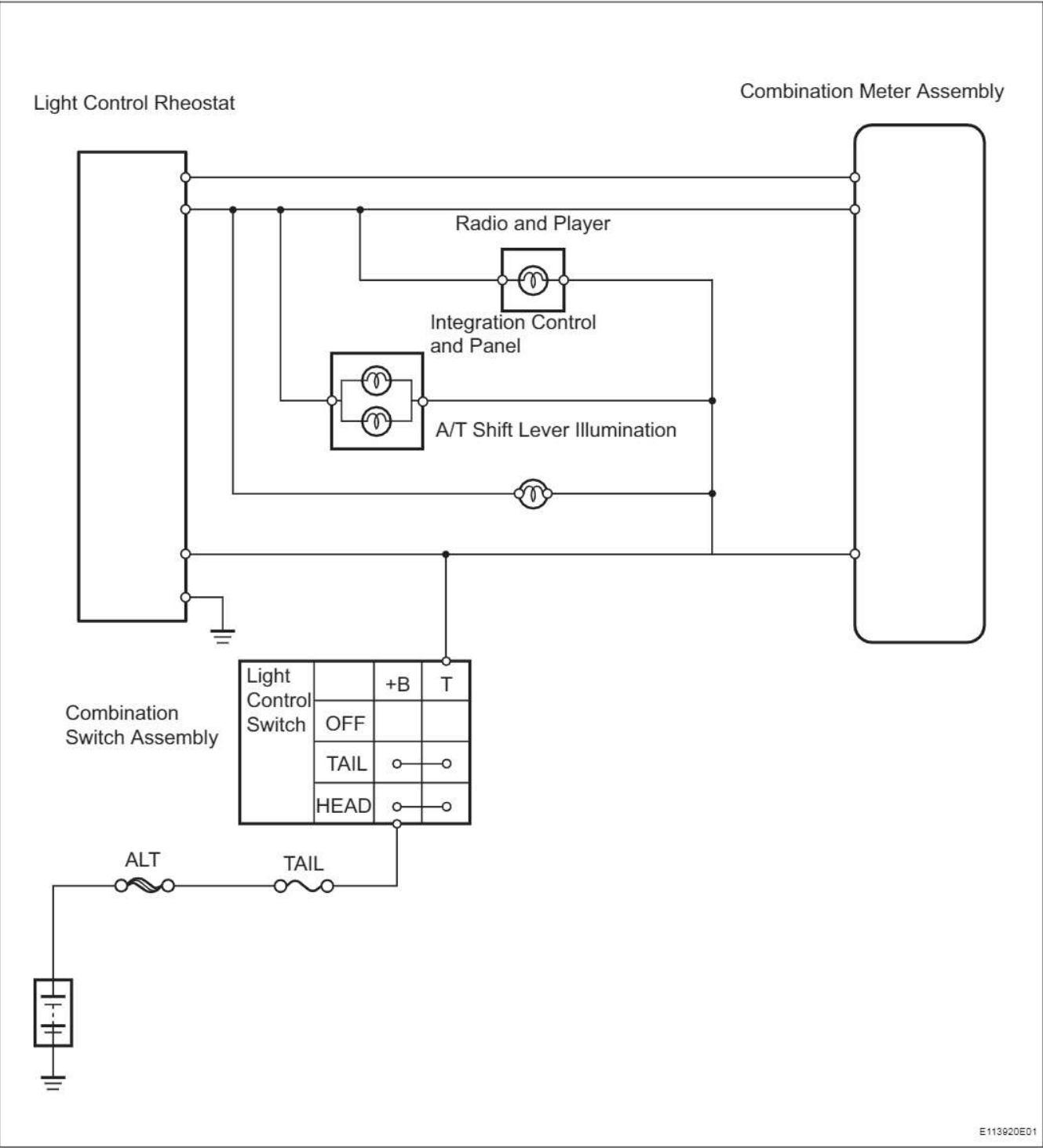


ME-44

METER – METER / GAUGE SYSTEM

Operating Light Control Rheostat does not Change Light Brightness

WIRING DIAGRAM



INSPECTION PROCEDURE

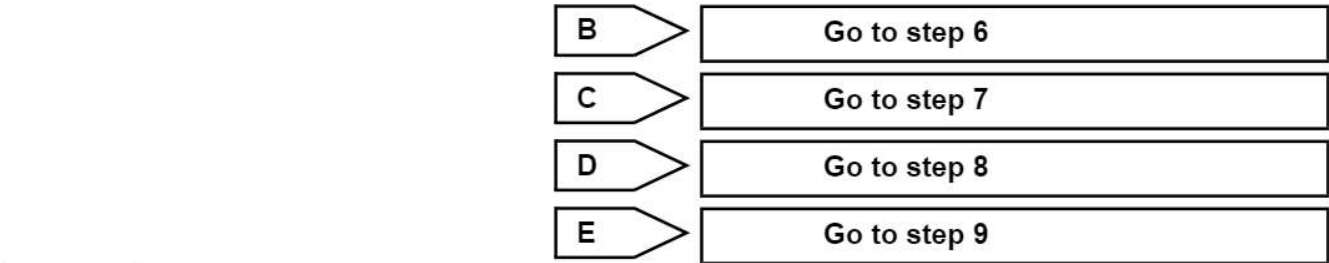
1

CHECK ILLUMINATION OPERATION

- (a) Operate the rheostat and check that the amount of light for the combination meter assembly, the radio and player, the integration control and A/T shift lever.

Result

Result	Proceed to
All illumination does not change	A
Combination meter illumination does not change	B
Radio and player illumination does not change	C
Integration control and panel illumination does not change	D
A/T shift lever illumination does not change	E

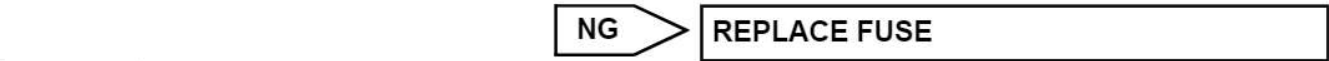


A

2

INSPECT FUSE (TAIL)

- (a) Remove the TAIL fuse from the instrument panel junction block assembly.
- (b) Measure the resistance of the fuse.
- Standard resistance:**
Below 1 Ω



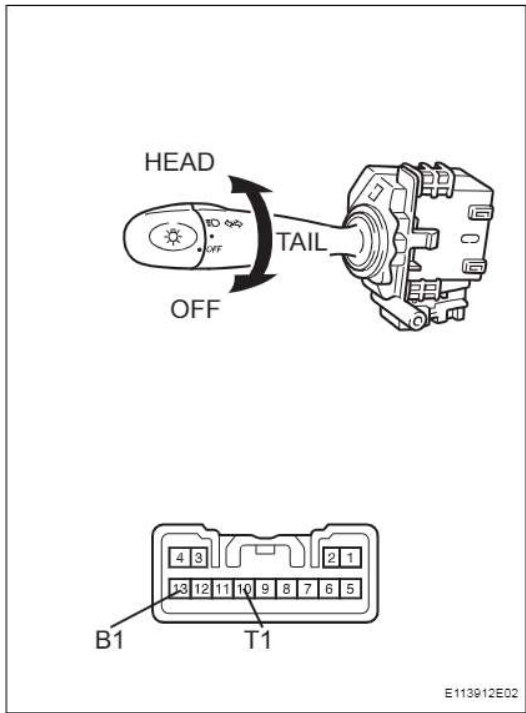
OK

ME-46

METER – METER / GAUGE SYSTEM

3

INSPECT COMBINATION SWITCH ASSEMBLY



- (a) Remove the combination switch.
- (b) Measure the resistance of the switch.

Standard resistance

Tester Connection	Switch Condition	Specified Condition
10 (T1) - 13 (B1)	TAIL	Below 1 Ω
	HEAD	
	OFF	10 kΩ or higher

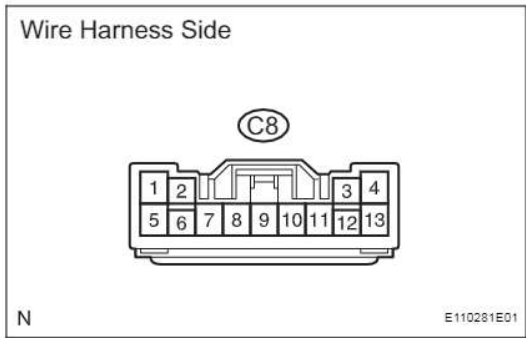
NG

REPLACE COMBINATION SWITCH ASSEMBLY

OK

4

CHECK WIRE HARNESS (COMBINATION SWITCH - BATTERY)



- (a) Disconnect the C8 switch connector.
- (b) Measure the voltage of the wire harness side connector.

Standard voltage

Tester Connection	Specified Condition
C8-13 - Body ground	10 to 14 V

NG

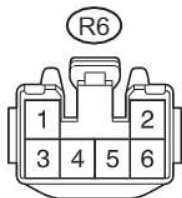
REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

5

CHECK WIRE HARNESS (LIGHT CONTROL RHEOSTAT - BODY GROUND)

Wire Harness Side



E116552E01

- (a) Disconnect the R6 rheostat connector.
- (b) Measure the resistance of the wire harness side connector.

Standard resistance

Tester Connection	Specified Condition
R6-5 - Body ground	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

ME

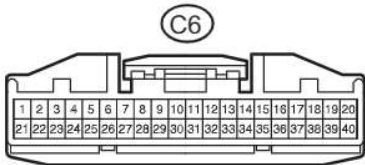
REPLACE LIGHT CONTROL RHEOSTAT

6

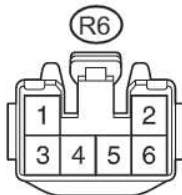
CHECK WIRE HARNESS (COMBINATION METER - RHEOSTAT AND BATTERY)

Wire Harness Side

Combination Meter Assembly



Light Control Rheostat



E117094E01

- (a) Disconnect the C6 meter connector.
- (b) Disconnect the R6 rheostat connector.
- (c) Measure the voltage of the wire harness side connector.

Standard voltage

Tester Connection	Condition	Specified Condition
C6-26 - Body ground	Light control switch is TAIL or HEAD	10 to 14 V

- (d) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
C6-27 - R6-3	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

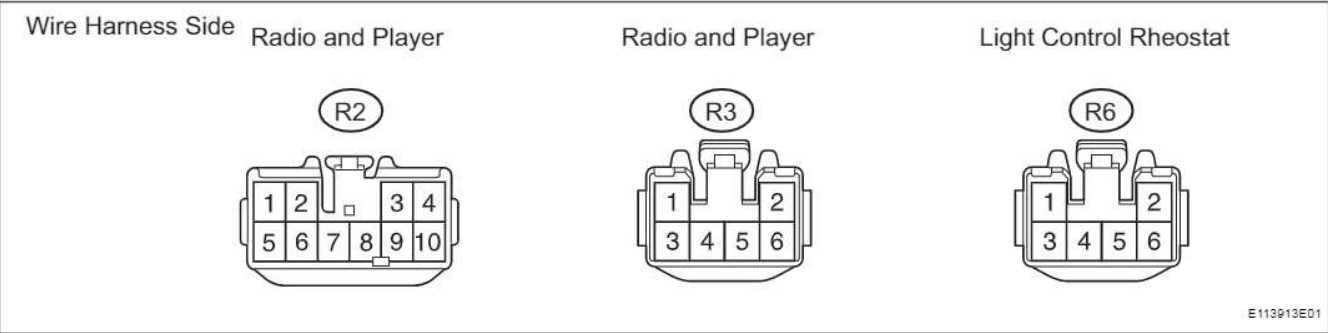
REPLACE COMBINATION SWITCH ASSEMBLY

ME-48

METER – METER / GAUGE SYSTEM

7

CHECK WIRE HARNESS (RADIO AND PLAYER - RHEOSTAT AND BATTERY)



ME

- (a) Disconnect the R2 and R3 radio and player connectors.
- (b) Disconnect the R6 rheostat connector.
- (c) Measure the voltage of the wire harness side connector.
- Standard voltage

Tester Connection	Specified Condition
R2-10 - Body ground	10 to 14 V

- (d) Measure the resistance of the wire harness side connectors.
- Standard resistance

Tester Connection	Specified Condition
R3-5 - R6-6	Below 1 Ω

NG

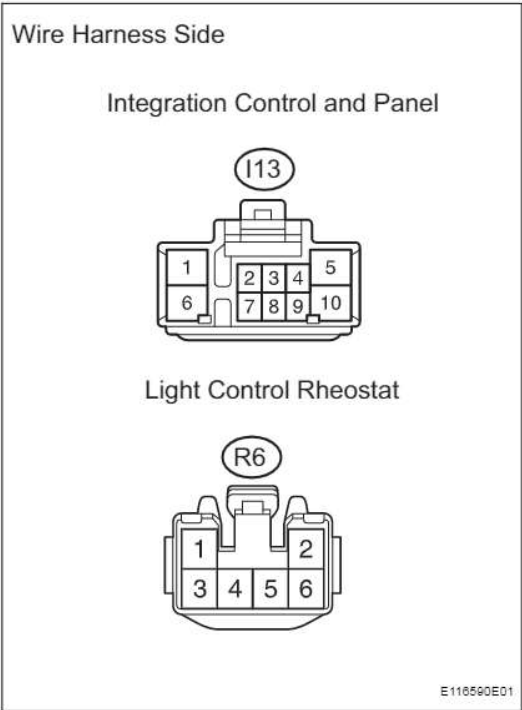
REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE RADIO AND PLAYER

8

CHECK WIRE HARNESS (INTEGRATION CONTROL AND PANEL - RHEOSTAT AND BATTERY)



- (a) Disconnect the I13 panel connector.
- (b) Disconnect the R6 rheostat connector.
- (c) Measure the voltage of the wire harness side connector.
- Standard voltage

Tester Connection	Specified Condition
I13-4 - Body ground	10 to 14 V

- (d) Measure the resistance of the wire harness side connectors.
- Standard resistance

Tester Connection	Specified Condition
I13-5 - R6-6	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

ME

OK

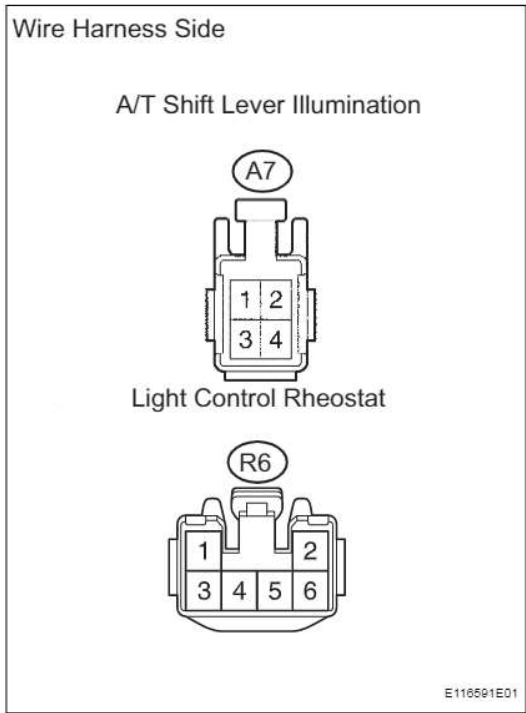
REPLACE INTEGRATION CONTROL AND PANEL

ME-50

METER – METER / GAUGE SYSTEM

9

CHECK WIRE HARNESS (A/T SHIFT LEVER ILLUMINATION - RHEOSTAT AND BATTERY)



- (a) Disconnect the A7 A/T shift lever connector.
 - (b) Disconnect the R6 rheostat connector.
 - (c) Measure the voltage of the wire harness side connector.
- Standard voltage**

Tester Connection	Specified Condition
A7-1 - Body ground	10 to 14 V

- (d) Measure the resistance of the wire harness side connectors.
- Standard resistance**

Tester Connection	Specified Condition
A7-3 - R6-6	Below 1 Ω

NG

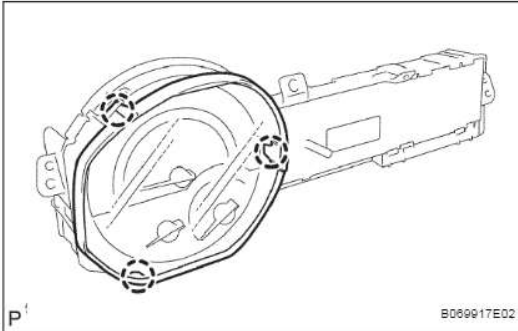
REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

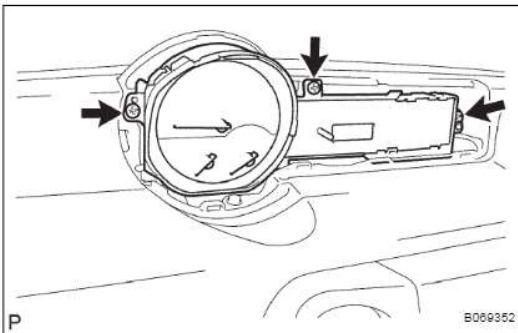
REPLACE A/T SHIFT LEVER ILLUMINATION

ME-50**METER – COMBINATION METER****REASSEMBLY****1. INSTALL NO. 1 COMBINATION METER COVER**

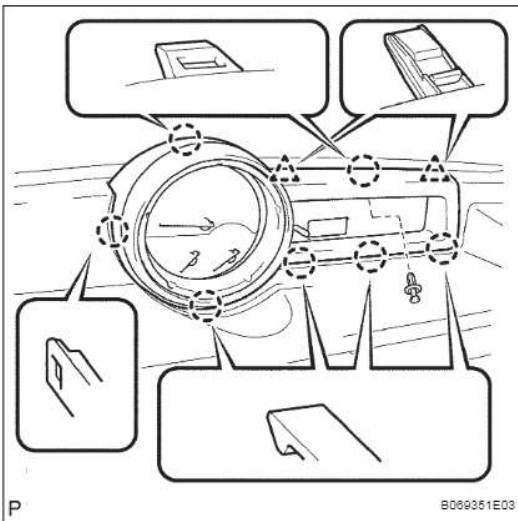
- (a) Attach the 6 claws to install the combination meter cover.

**2. INSTALL COMBINATION METER GLASS**

- (a) Attach the 3 claws to install the combination meter glass.

**INSTALLATION****1. INSTALL COMBINATION METER ASSEMBLY**

- (a) Connect the connector and install the combination meter.
- (b) Install the 3 screws.

**2. INSTALL INSTRUMENT CLUSTER FINISH PANEL**

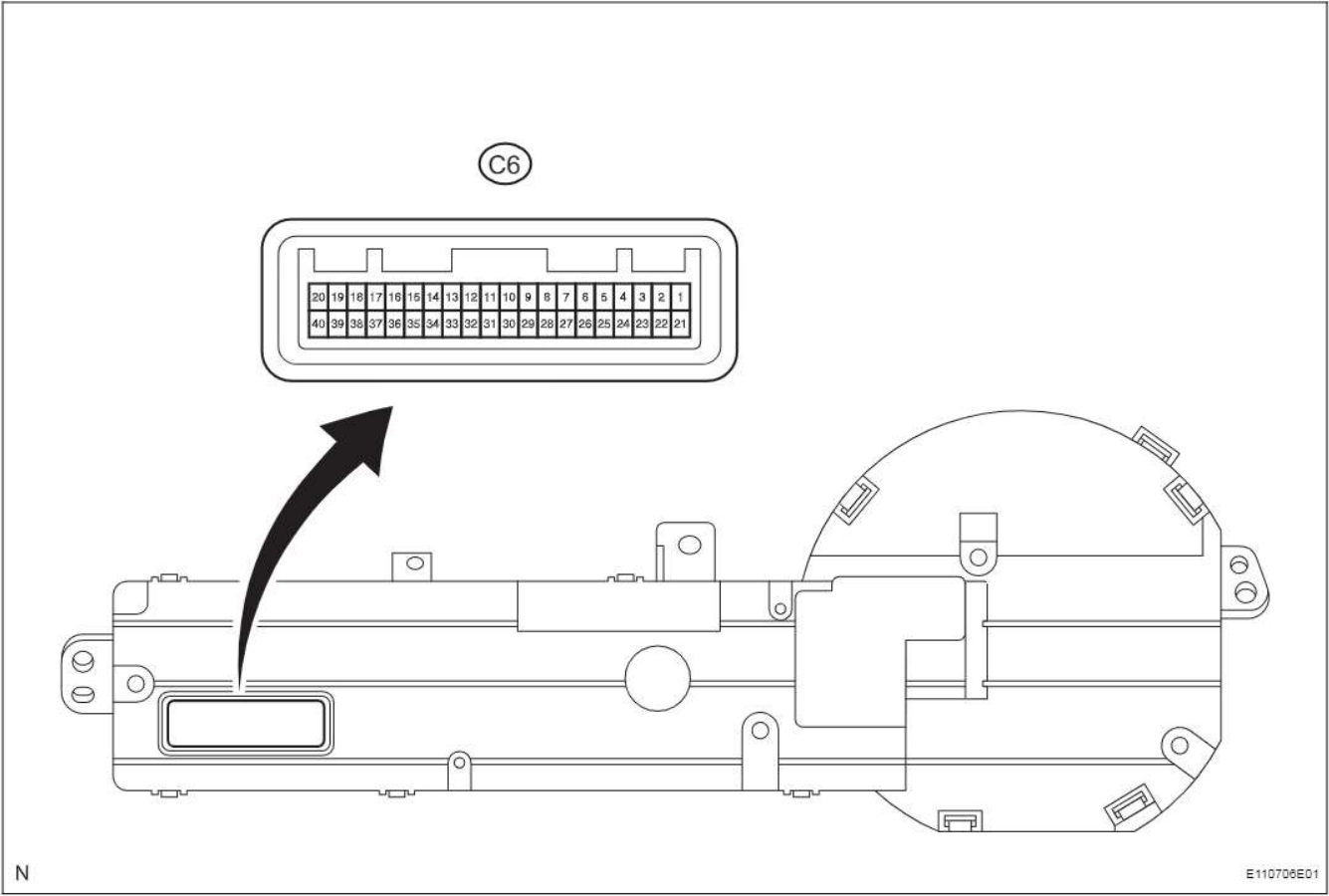
- (a) Attach the 7 claws and 2 clips to install the instrument cluster finish panel.
- (b) Install the clip.

3. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**4. CHECK SRS WARNING LIGHT**

- (a) Check the SRS warning light (see page [RS-37](#)).

TERMINALS OF ECU

1. CHECK COMBINATION METER ASSEMBLY



- (a) Disconnect the C6 meter connector.
- (b) Measure the resistance and voltage of the wire harness side connector.

Terminal No.	Wiring Color	Terminal Description	Condition	Specified Condition
C6-1 - C6-21	L-Y - BR	Battery (+B circuit)	Always	10 to 14 V
C6-21 - Body ground	BR - Body ground	Body ground		Below 1 Ω
C6-23 - C6-21	R-B - BR	IG1 signal	Ignition switch ON	10 to 14 V
			Ignition switch OFF	Below 1 V
C6-40 - C6-21	B-R - BR	IG2 signal	Ignition switch ON	10 to 14 V
			Ignition switch OFF	Below 1 V

If the result is not as specified, there may be a malfunction on the wire harness side.

- (c) Reconnect the C6 meter connector.
- (d) Measure the voltage of the connector.

Terminal No.	Wiring Color	Terminal Description	Condition	Specified Condition
C6-2 - C6-21	Y-B - BR	WATER COOL indicator light signal	COOL indicator light ON	10 to 14 V
			COOL indicator light OFF	Below 1 V
C6-3 - C6-21	Y-R - BR	WATER HOT indicator light signal	HOT indicator light ON	10 to 14 V
			HOT indicator light OFF	Below 1 V
C6-4 - C6-21	BR-W - BR	VSC indicator light signal	VSC indicator light OFF	10 to 14 V
			VSC indicator light ON	Below 1 V

ME-12**METER – METER / GAUGE SYSTEM**

Terminal No.	Wiring Color	Terminal Description	Condition	Specified Condition
C6-5 - C6-21	B-R - BR	Slip indicator light signal	Slip indicator light OFF	10 to 14 V
			Slip indicator light ON	Below 1 V
C6-6 - C6-21	R - BR	A/T P indicator light signal	A/T P indicator light ON	10 to 14 V
			A/T P indicator light OFF	Below 1 V
C6-7 - C6-21	R-W - BR	A/T R indicator light signal	A/T R indicator light ON	10 to 14 V
			A/T R indicator light OFF	Below 1 V
C6-8 - C6-21	GR - BR	A/T N indicator light signal	A/T N indicator light ON	10 to 14 V
			A/T N indicator light OFF	Below 1 V
C6-9 - C6-21	R-Y - BR	A/T D indicator light signal	A/T D indicator light ON	10 to 14 V
			A/T D indicator light OFF	Below 1 V
C6-10 - C6-21	G-R - BR	A/T 2 indicator light signal	A/T 2 indicator light ON	10 to 14 V
			A/T 2 indicator light OFF	Below 1 V
C6-11 - C6-21	G-W - BR	A/T L indicator light signal	A/T L indicator light ON	10 to 14 V
			A/T L indicator light OFF	Below 1 V
C6-12 - C6-21	G-O - BR	O/D OFF indicator light signal	O/D OFF indicator light OFF	10 to 14 V
			O/D OFF indicator light ON	Below 1 V
C6-13 - C6-21	G-B - BR	Left turn indicator light signal	Left turn indicator light ON	10 to 14 V
			Left turn indicator light OFF	Below 1 V
C6-14 - C6-21	B-Y - BR	Hi beam indicator light signal	Hi beam indicator light OFF	10 to 14 V
			Hi beam indicator light ON	Below 1 V
C6-15 - C6-21	R-W - BR	DOOR indicator light signal (Except Front LH Door)	DOOR indicator light ON	10 to 14 V
			DOOR indicator light OFF	Below 1 V
C6-16 - C6-21	Y - BR	CHARGE indicator light signal	CHARGE indicator light OFF	10 to 14 V
			CHARGE indicator light ON	Below 1 V
C6-17 - C6-21	G - BR	Oil pressure indicator light signal	Oil pressure indicator light OFF	10 to 14 V
			Oil pressure indicator light ON	Below 1 V
C6-18 - C6-21	G-Y - BR	Right turn indicator light signal	Right turn indicator light ON	10 to 14 V
			Right turn indicator light OFF	Below 1 V
C6-19 - C6-21	R-Y - BR	TRAC OFF indicator light signal	TRAC OFF indicator light OFF	10 to 14 V
			TRAC OFF indicator light ON	Below 1 V
C6-20 - C6-21	Y-G - BR	MIL signal	MIL OFF	10 to 14 V
			MIL ON	Below 1 V
C6-24 - C6-21	R - BR	DOOR indicator light signal (Front door LH)	DOOR indicator light ON	10 to 14 V
			DOOR indicator light OFF	Below 1 V
C6-25 - C6-21	Y - BR	Ignition key condition	Ignition key is not inserted	10 to 14 V
			Ignition key is inserted	Below 1 V
C6-26 - C6-21	G - BR	Illumination signal	Light control switch TAIL or HEAD	10 to 14 V
			Light control switch OFF	Below 1 V

METER – METER / GAUGE SYSTEM**ME-13**

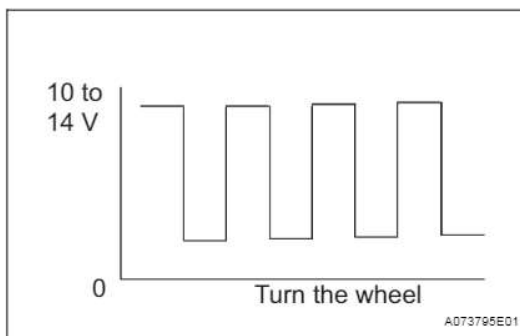
Terminal No.	Wiring Color	Terminal Description	Condition	Specified Condition
C6-27 - C6-21	W-G - BR	Light control rheostat signal	Light control rheostat switch maximum	10 to 14 V
			Light control rheostat switch minimum	1.2 to 2.0 V
C6-28 - C6-21	W-R - BR	Speed signal input	Ignition switch ON and slowly turn drive wheel	Pulse generation (See waveform 1)
			Ignition switch OFF	Below 1 V
C6-29 - C6-21	V-W - BR	Speed signal output	Ignition switch ON and slowly turn drive wheel	Pulse generation (See waveform 1)
			Ignition switch OFF	
C6-30 - C6-21	B - BR	Tachometer signal input	Engine running	Pulse generation (See waveform 2)
			Ignition switch OFF	Below 1 V
C6-31 - C6-21	V - BR	Fuel sender gauge signal	Fuel level empty	4 to 7 V
			Fuel level full	Below 1 V
C6-32 - C6-21	W-R - BR	Driver side seat belt signal	Ignition switch ON and driver side seat belt unfastened	10 to 14 V
			Ignition switch ON and driver side seat belt fastened	Below 1 V
C6-33 - C6-21	O - BR	Front passenger side seat belt signal	Ignition switch ON and front passenger side seat belt unfastened	10 to 14 V
			Ignition switch ON and front passenger side seat belt fastened	Below 1 V
6-34 - C6-21	B-Y - BR	SRS indicator light signal	SRS indicator light ON	10 to 14 V
			SRS indicator light OFF	Below 1 V
C6-35 - C6-21	G-W - BR	Passenger seat belt warning light signal	Passenger seat belt warning light ON	10 to 14 V
			Passenger seat belt warning light OFF	Below 1 V
C6-36 - C6-21	B - BR	Brake fluid level warning switch signal	BRAKE indicator light OFF	10 to 14 V
			BRAKE indicator light ON	Below 1 V
C6-37 - C6-21	P - BR	ABS indicator light signal	ABS warning light ON	10 to 14 V
			ABS warning light OFF	Below 1 V
C6-38 - C6-21	B-W - BR	BRAKE indicator light signal	BRAKE indicator light ON	10 to 14 V
			BRAKE indicator light OFF	Below 1 V

If the result is not as specified, the combination meter may be malfunctioning.

- (e) Using an oscilloscope, check the signal waveform of the meter.

Waveform 1 (Reference)

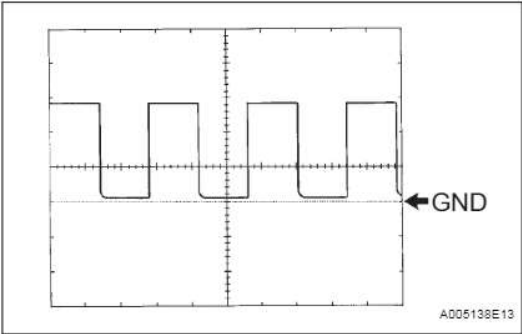
Item	Content
Terminal No.	C6-28 - Body ground C6-29 - Body ground
Tool Setting	5 V/DIV., 10 msec./DIV.
Vehicle Condition	Driving at approx. 20 km/h (12 mph)

**HINT:**

As vehicle speed increases, the wavelength shortens.

ME-14

METER – METER / GAUGE SYSTEM



Waveform 2 (Reference)

Item	Content
Terminal No.	C6-30 - Body ground
Tool Setting	5 V/DIV., 10 msec./DIV.
Vehicle Condition	Engine idling

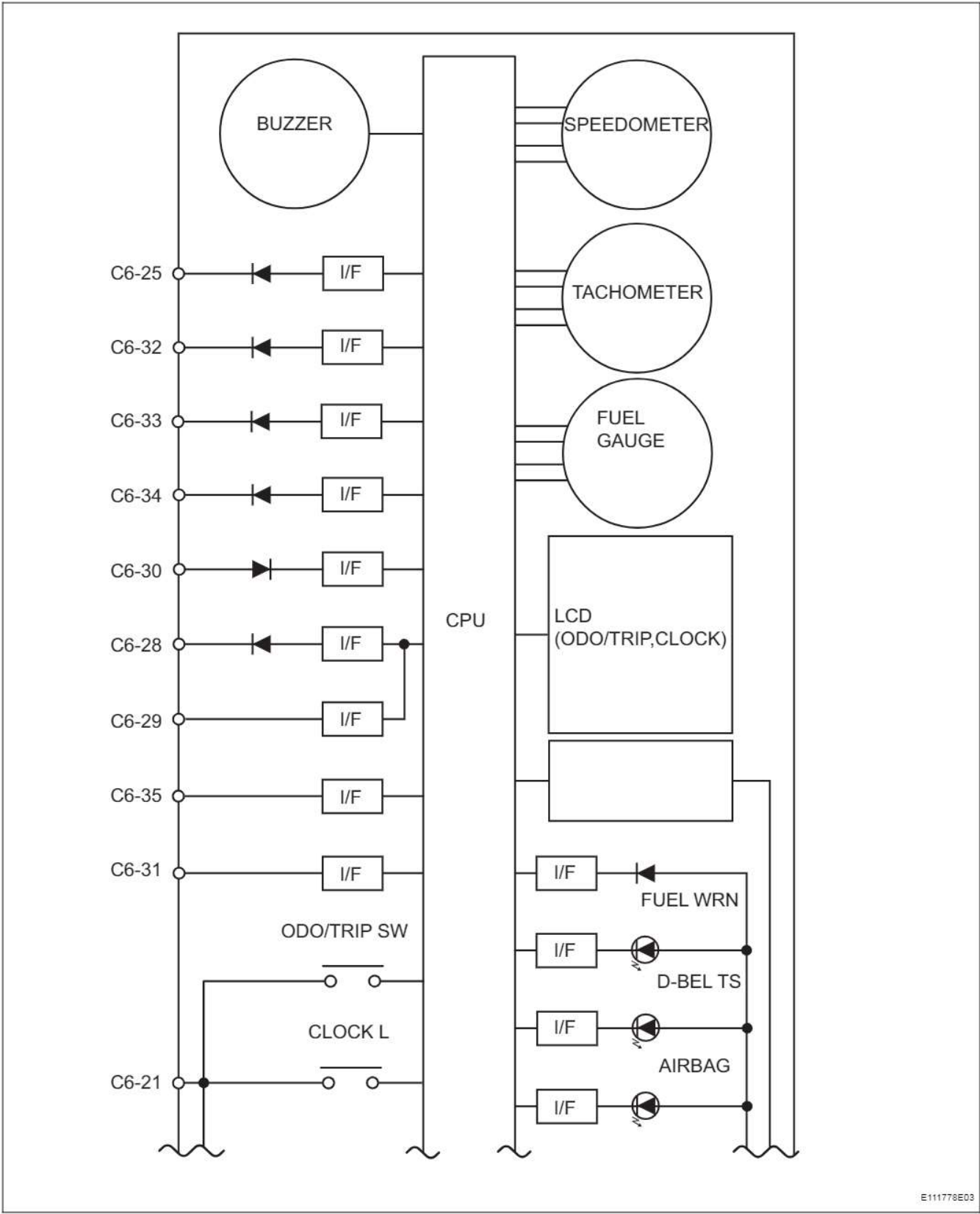
HINT:
As vehicle speed increases, the wavelength shortens.

ME

METER – METER / GAUGE SYSTEM

ME-15

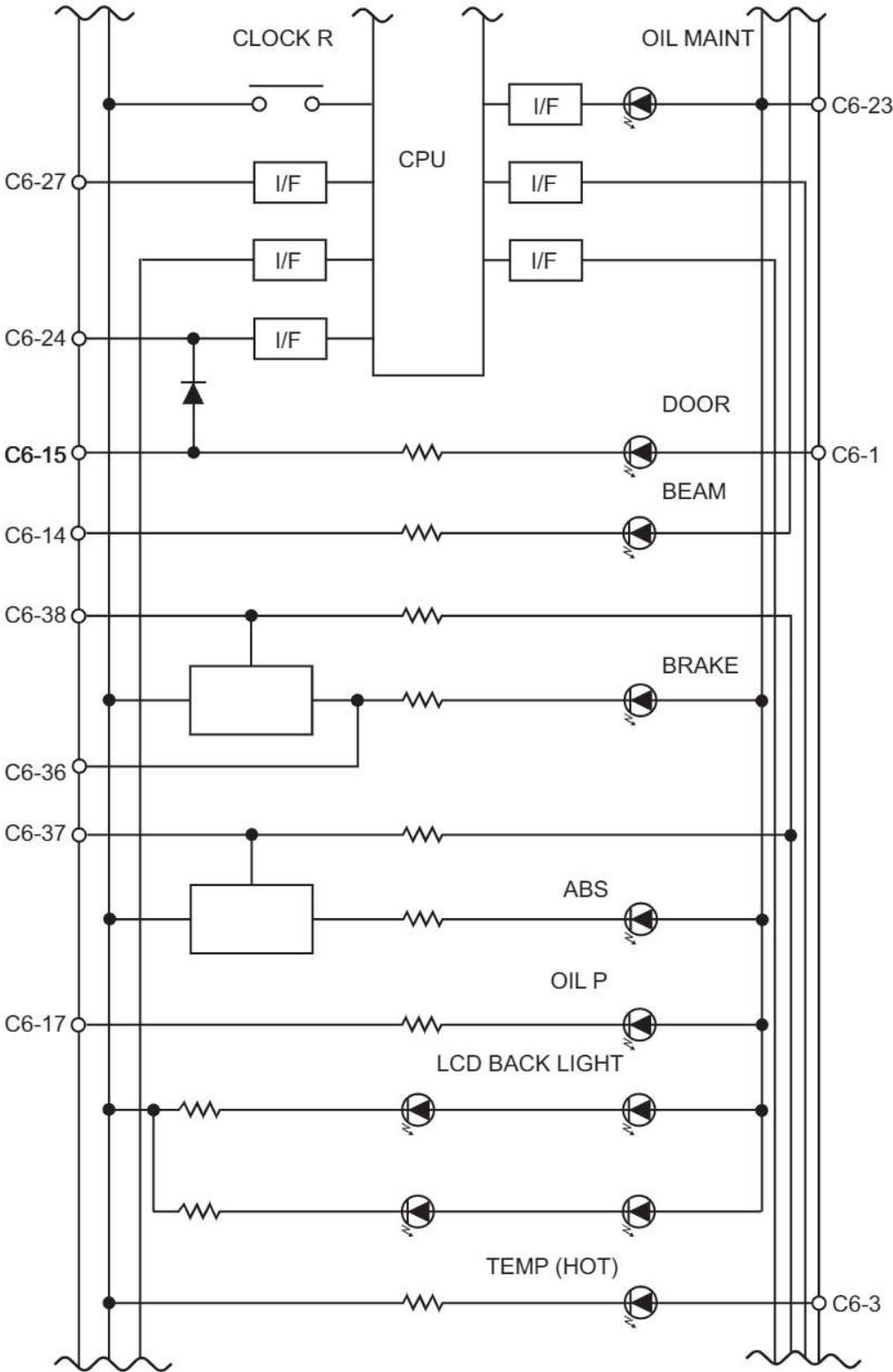
ME



ME-16

METER - METER / GAUGE SYSTEM

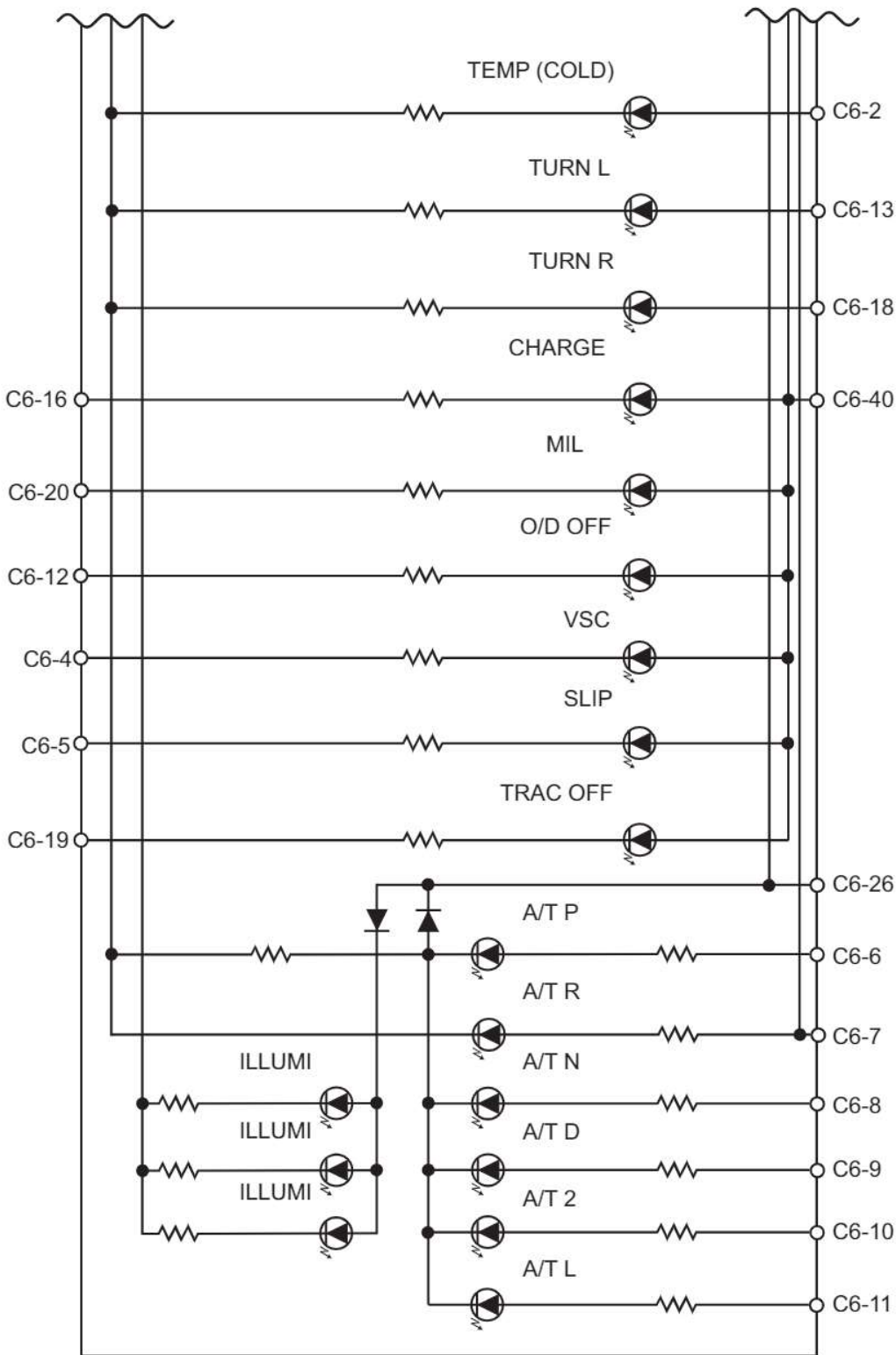
ME



E111778E03

METER – METER / GAUGE SYSTEM

ME-17



E111780E04

ME-18**METER – METER / GAUGE SYSTEM****Table of Terminal Connection**

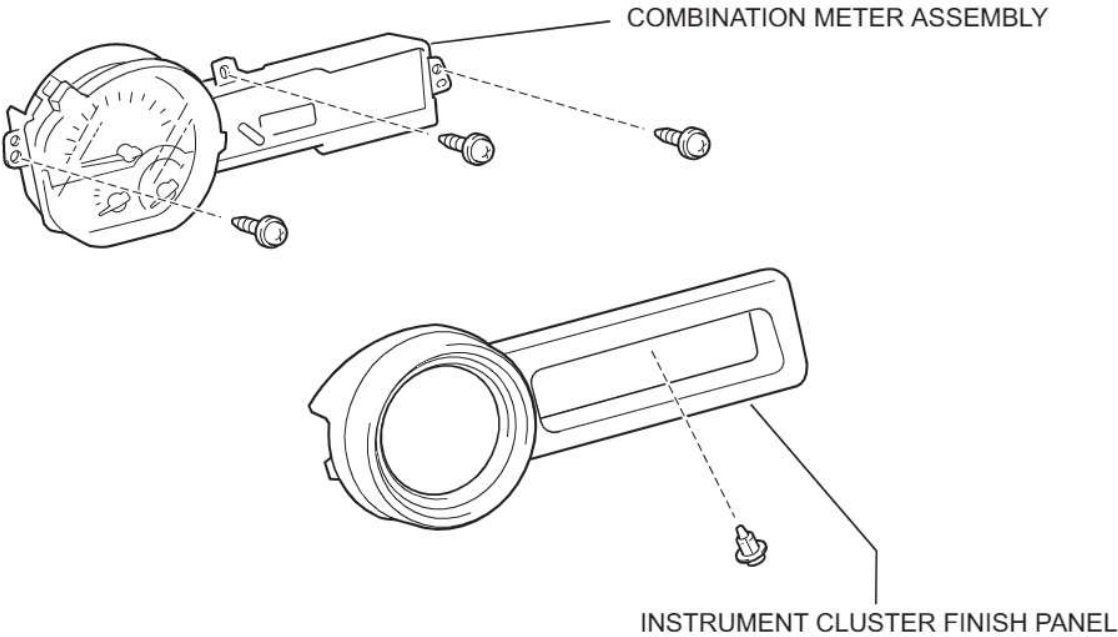
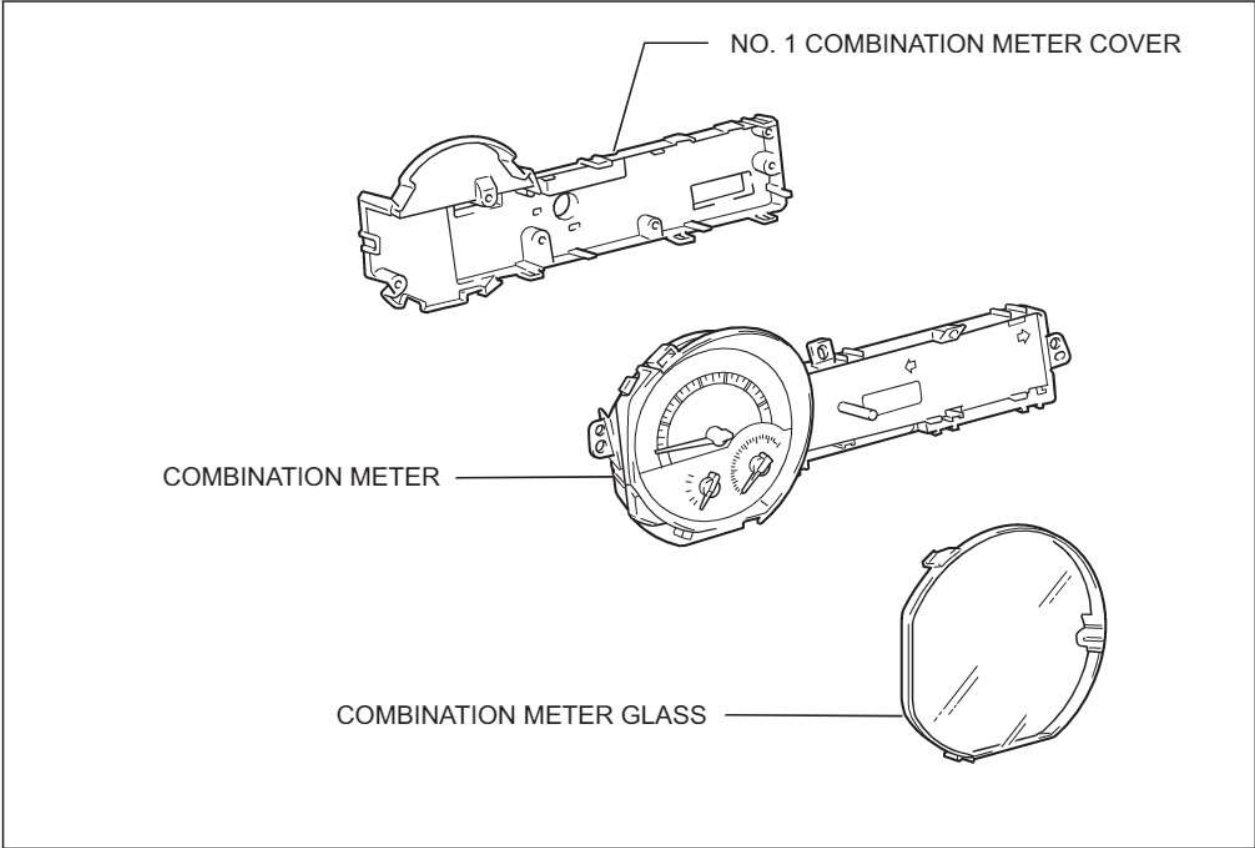
Terminal No.	Wire Harness Side
C6	1 DOME Fuse
	2 ECM
	3
	4 Skid Control ECU with Actuator
	5
	6 Park / Neutral Position Switch Assembly
	7
	8
	9
	10
	11
	12 ECM
	13 Flash Relay
	14 Headlight Dimmer Switch Assembly
	15 Door Courtesy Light Switch Assembly
	16 Generator Assembly
	17 Oil Pressure Switch Assembly
	18 Flash Relay
	19 Skid Control ECU with Actuator
	20 ECM
	21 Body ground
	22 -
	23 GAUGE Fuse
	24 Front Door Courtesy Light Switch Assembly
	25 Unlock Warning Switch Assembly
	26 Light Control Switch Assembly
	27 Light Control Rheostat
	28 Skid Control ECU with Actuator
	29 ECM Door Lock Control Relay Radio and Player
	30 ECM
	31 Fuel Sender Gauge Assembly
	32 Front Buckle Switch Assembly LH
	33 Front Buckle Switch Assembly RH Occupant Detection Sensor
	34 Center Airbag Sensor Assembly
	35 Integration Control and Panel
	36 Brake Fluid Level Warning Switch
	37 Skid Control ECU with Actuator
	38
	39 -
	40 Ignition Switch Assembly

ME-48

METER – COMBINATION METER

COMBINATION METER
COMPONENTS

ME



B119420E01

METER – COMBINATION METER**ME-49****REMOVAL**

1. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**

CAUTION:

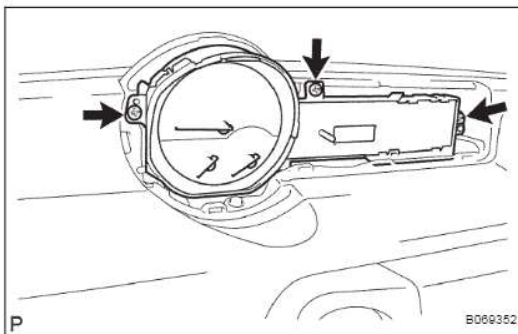
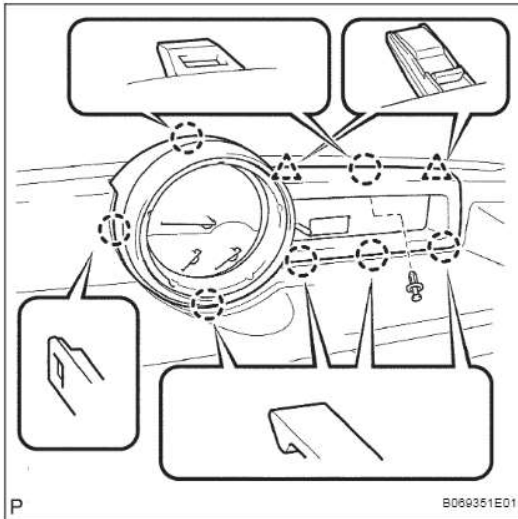
Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.

2. **REMOVE INSTRUMENT CLUSTER FINISH PANEL**

- (a) Remove the clip.
- (b) Using a screwdriver, detach the 7 claws and 2 clips, and remove the instrument cluster finish panel.

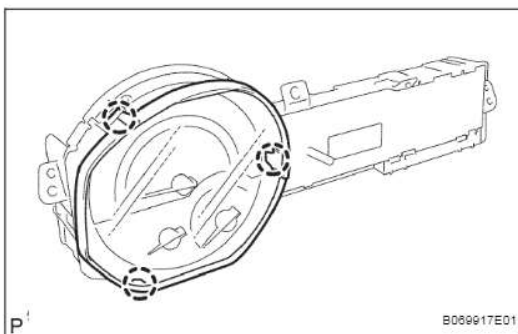
HINT:

Tape the screwdriver tip before use.

ME

3. **REMOVE COMBINATION METER ASSEMBLY**

- (a) Remove the 3 screws.
- (b) Disconnect the connector, and remove the combination meter.

**DISASSEMBLY**

1. **REMOVE COMBINATION METER GLASS**

- (a) Using a screwdriver, detach the 3 claws and remove the combination meter glass.

HINT:

Tape the screwdriver tip before use.

2. **REMOVE NO. 1 COMBINATION METER COVER**

- (a) Using a screwdriver, detach the 6 claws and remove the combination meter cover.

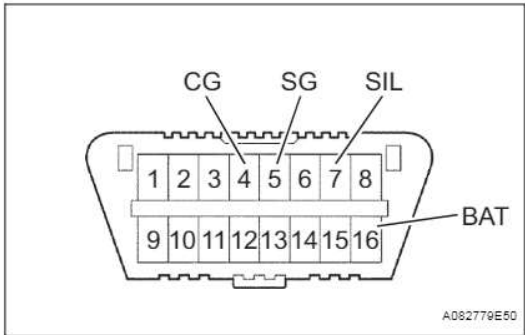
HINT:

Tape the screwdriver tip before use.

DIAGNOSIS SYSTEM

1. DESCRIPTION
- Meter / gauge system data and the Diagnostic Trouble Codes (DTCs) can be read through the Data Link Connector 3 (DLC3) of the vehicle. When the system seems to be malfunctioning, use the intelligent tester to check for malfunctions and perform repairs.

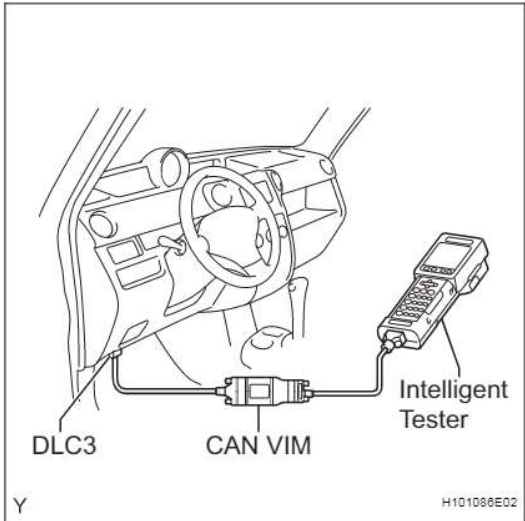
2. CHECK DLC3
- The vehicle's ECM uses the ISO 9141-2 communication protocol. The terminal arrangement of the DLC3 complies with SAE J1962 and matches the ISO 9141-2 format.



Symbols (Terminal No.)	Terminal Description	Condition	Specified Condition
SIL (7) - SG (5)	Bus "+" line	During transmission	Pulse generation
CG (4) - Body ground	Chassis ground	Always	Below 1 Ω
SG (5) - Body ground	Signal ground	Always	Below 1 Ω
BAT (16) - Body ground	Battery	Always	11 to 14 V

If the result is not as specified, the DLC3 may have a malfunction. Repair or replace the harness and connector.

- HINT:
- Connect the cable of the intelligent tester (with CAN VIM) to the DLC3, turn the ignition switch ON and attempt to use the tester. If the display indicates that a communication error has occurred, there is a problem either with the vehicle or with the tester.
- If communication is normal when the tester is connected to another vehicle, inspect the DLC3 on the original vehicle.
 - If communication is still not possible when the tester is connected to another vehicle, the problem may be in the tester itself. Consult the Service Department listed in the tester's instruction manual.



DATA LIST / ACTIVE TEST

1. READ DATA LIST

HINT:

Using the intelligent tester DATA LIST allows switch, actuator and other item values to be read without removing any parts. Reading the DATA LIST early in troubleshooting is one way to save time.

- (a) Connect the intelligent tester (with CAN VIM) to the DLC3.
- (b) Turn the ignition switch ON.
- (c) Read the DATA LIST according to the display on the tester.

Skid control ECU with actuator

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
VEHICLE SPD	Wheel speed sensor (FR) reading / Min.: 0 km/h (0 mph), Max.: 326 km/h (202 mph)	Actual vehicle speed	Speed indicated on speedometer

ECM

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
ENGINE SPD	Engine speed / Min.: 0 rpm, Max.: 16,383 rpm	Idling: 650 to 750 mph	-
COOLANT TEMP	Coolant temperature / Min.: -40°C, Max.: 140°C	After warming up: 80 to 95°C (176 to 203°F)	If the value is "-40 or 140°C", sensor circuit is open or short

ON-VEHICLE INSPECTION

1. CHECK SPEEDOMETER

(a) Check operation.

- (1) Using a speedometer tester, check that the speedometer reading is within the allowable range shown in the table below. Also, check for proper operation of the odometer.

Reference

Standard Indication	Allowable Range
20 mph	19.5 to 22.5 mph
40 mph	39.5 to 44 mph
60 mph	61.5 to 65.5 mph
80 mph	82 to 86.5 mph
100 mph	103 to 108 mph

NOTICE:

Do not use worn, underinflated or overinflated tires, as the speedometer reading will be inaccurate.

- (2) Check the deflection width of the speedometer indicator.

Reference:

Below 0.3 mph

If the result is not as specified, the speedometer may have a malfunction.

2. CHECK TACHOMETER

(a) Check operation.

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

NOTICE:

- **Do not reverse the connections of the tachometer. This will damage its transistors and diodes.**
- **When removing or installing the tachometer, be careful not to drop or strike it.**

- (2) Compare the tester tachometer values and vehicle tachometer values under the following conditions:

- Vehicle battery voltage is 13.5 V
- Ambient temperature is 25°C (77°F)

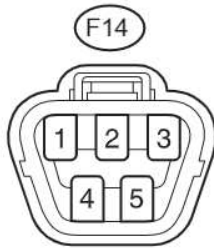
OK

Standard Tachometer Indication (rpm)	Acceptable Range (rpm) Data in () are for reference only
700	630 to 770
1,000	(900 to 1,100)
2,000	(1,850 to 2,150)
3,000	2,800 to 3,200
4,000	(3,800 to 4,200)
5,000	4,800 to 5,200
6,000	(5,750 to 6,250)

ME-22**METER – METER / GAUGE SYSTEM**

If the result is not as specified, the tachometer may have a malfunction.

Wire Harness Side



E114283E01

3. CHECK FUEL RECEIVER GAUGE

- (a) Disconnect the F14 gauge connector.
- (b) Turn the ignition switch ON, and then check the position of the receiver gauge needle.

OK:**Fuel receiver gauge indicates E**

- (c) Connect terminals 2 and 3 of the wire harness side connector.
- (d) Turn the ignition switch ON, and then check the position of the receiver gauge needle.

OK:**Fuel receiver gauge indicates F**

If the result is not as specified, the combination meter may have a malfunction.

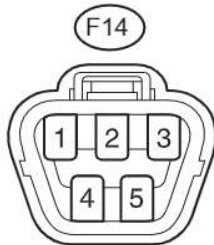
4. CHECK FUEL LEVEL WARNING LIGHT

- (a) Disconnect the F14 gauge connector.
- (b) Turn the ignition switch ON, and then check that the fuel receiver gauge indicates E and that the fuel level warning light turns on.

OK:**Fuel level warning light turns on**

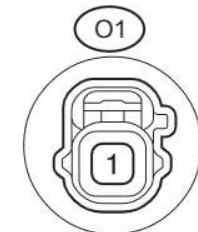
If the result is not as specified, the combination meter may have a malfunction.

Wire Harness Side



E114283E06

Wire Harness Side



N

E113949E02

5. CHECK LOW OIL PRESSURE WARNING LIGHT

- (a) Disconnect the O1 switch connector.
- (b) Connect the terminal 1 of the wire harness side connector to the body ground.
- (c) Turn the ignition switch ON, and then check that the low oil pressure warning light turns on.

OK:**Low oil pressure warning light turns on**

If the result is not as specified, the combination meter may have a malfunction.

Wire Harness Side



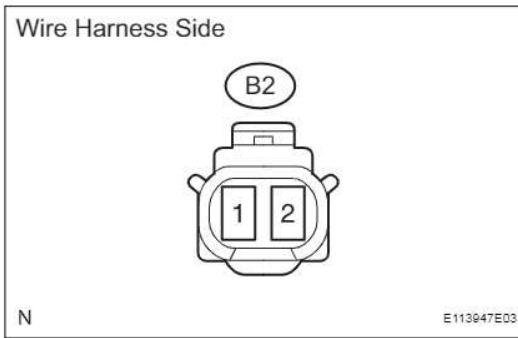
N

E112807E01

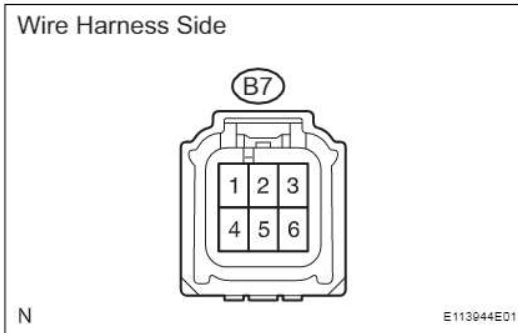
6. CHECK BRAKE WARNING LIGHT

- (a) Check the parking brake warning light.
 - (1) Disconnect the P3 switch connector.
 - (2) Connect the terminal 1 of the wire harness side connector to the body ground.
 - (3) Turn the ignition switch ON, and then check that the warning light turns on.

OK:**Warning light turns on.**

METER – METER / GAUGE SYSTEM**ME-23**

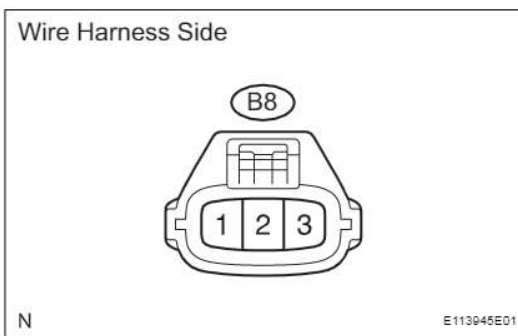
- (b) Check the brake fluid level warning light.
- (1) Disconnect the B2 switch connector.
 - (2) Connect terminals 1 and 2 of the wire harness side connector.
 - (3) Turn the ignition switch ON, and then check that the warning light turns on.

OK:**Warning light turns on.****7. CHECK SEAT BELT WARNING LIGHT FOR DRIVER SIDE**

- (a) Disconnect the B7 switch connector.
- (b) Connect terminals 1 and 3 of the wire harness side connector.
- (c) Turn the ignition switch ON, and then check that the warning light turns on.

OK:**Seat belt warning light for driver side turns on.**

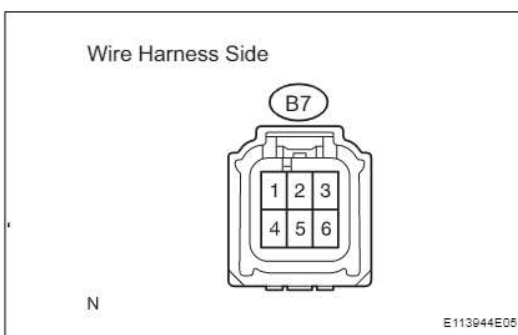
If the result is not as specified, the combination meter may have a malfunction.

**8. CHECK SEAT BELT WARNING LIGHT FOR PASSENGER SIDE**

- (a) Disconnect the B8 switch connector.
- (b) Connect terminals 1 and 3 of the wire harness side connector.
- (c) Turn the ignition switch ON, and then check that the warning light blinks.

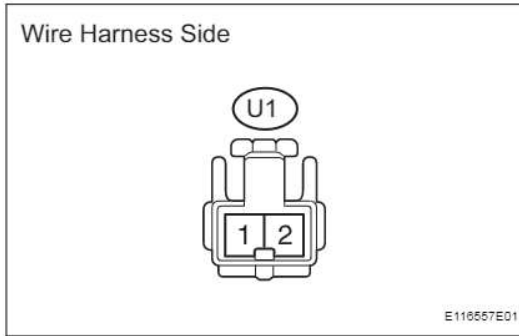
OK:**Seat belt warning light for passenger side blinks.**

If the result is not as specified, the integration control and panel may have a malfunction.

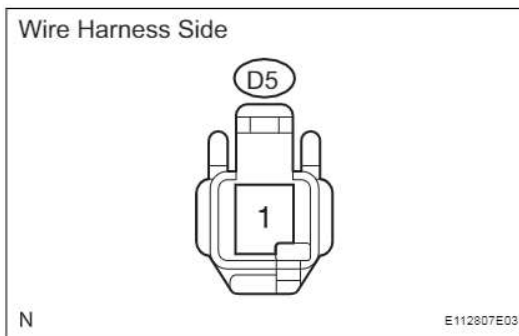
**9. CHECK SEAT BELT WARNING REMINDER BUZZER FOR DRIVER SIDE**

- (a) Disconnect the B7 switch connector.
- (b) Connect terminals 1 and 3 of the wire harness side connector.
- (c) Turn the ignition switch ON, and check that the warning buzzer sounds.

OK:**Warning buzzer sounds.****ME**

ME-24**METER – METER / GAUGE SYSTEM****10. CHECK KEY REMINDER WARNING BUZZER**

- (a) Disconnect the U1 switch connector.
- (b) Connect terminals 1 and 2 of the wire harness side connector.
- (c) Disconnect the D5 switch connector.
- (d) Connect terminal 1 and the body ground of the wire harness side connector.
- (e) Turn the ignition switch ON, and check that the warning buzzer sounds.

OK:**Warning buzzer sounds.****11. CHECK LIGHT REMINDER WARNING BUZZER**

- (a) Disconnect the D5 switch connector.
- (b) Connect terminal 1 and the body ground of the wire harness side connector.
- (c) Turn the light control switch to HEAD or TAIL, and then check that the warning buzzer sounds when the ignition key is not inserted into the key cylinder.

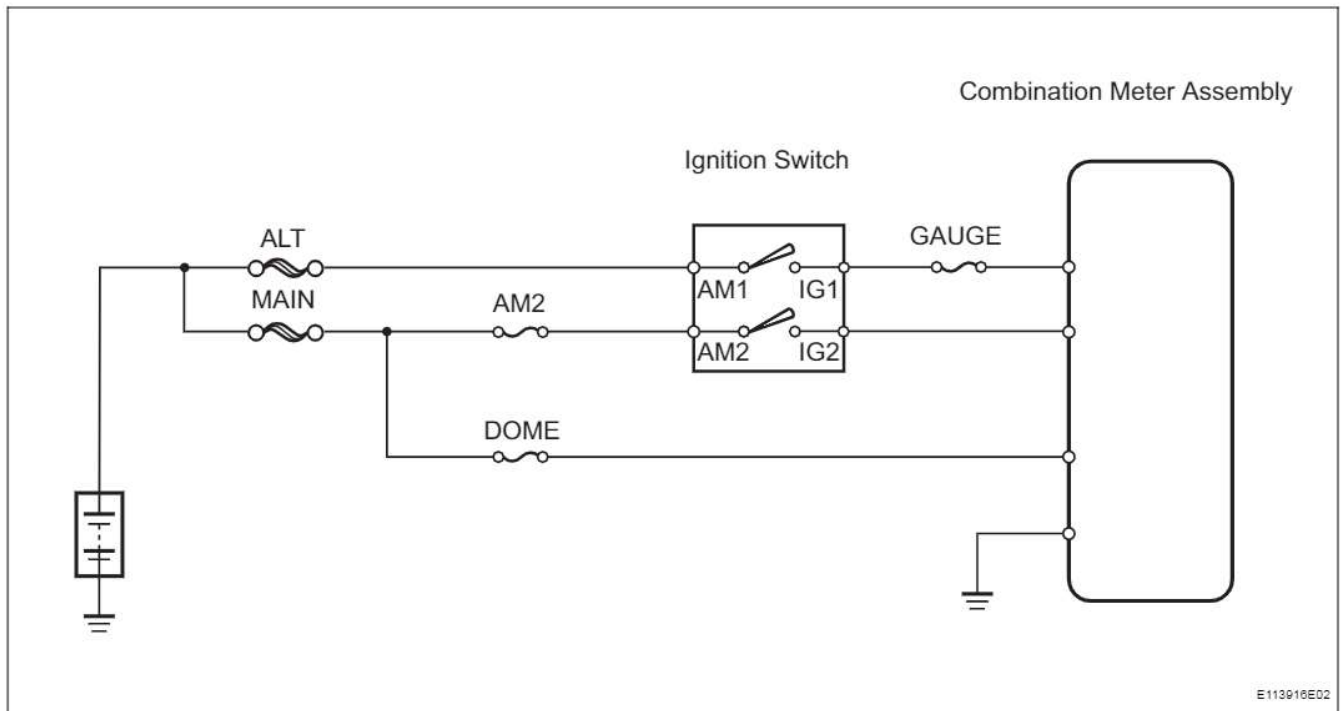
OK:**Warning buzzer sounds.**

METER – METER / GAUGE SYSTEM

ME-25

Entire Combination Meter does not Operate

WIRING DIAGRAM



INSPECTION PROCEDURE

1 INSPECT FUSE (GAUGE, DOME, AM2)

- Remove the GAUGE fuse from the instrument panel junction block.
- Remove the DOME and AM2 fuses from the engine room relay block.
- Measure the resistance of the fuses.

Standard resistance:**Below 1 Ω**

NG

REPLACE FUSE

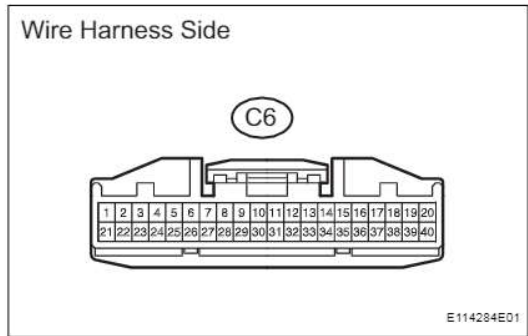
OK

ME-26

METER – METER / GAUGE SYSTEM

2

CHECK WIRE HARNESS (COMBINATION METER - BATTERY AND BODY GROUND)



- (a) Disconnect the C6 meter connector.
- (b) Measure the voltage of the wire harness side connector.
- Standard voltage

Tester Connection	Condition	Specified Condition
C6-1 - Body ground	Always	10 to 14 V
C6-23 - Body ground	Ignition switch ON	
	Ignition switch OFF	Below 1 V
C6-40 - Body ground	Ignition switch ON	10 to 14 V
	Ignition switch OFF	Below 1 V

- (c) Measure the resistance of the wire harness side connector.
- Standard resistance

Tester Connection	Specified Condition
C6-21 - Body ground	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE COMBINATION METER ASSEMBLY

Speedometer Malfunction

WIRING DIAGRAM



ME

INSPECTION PROCEDURE

HINT:
When using the intelligent tester, start from *1. When not using the intelligent tester, start from *2.

1

READ VALUE OF INTELLIGENT TESTER (VEHICLE SPEED SIGNAL)*1

- (a) Check the DATA LIST for proper functioning of the vehicle speed signal.

Skid control ECU with actuator

Item	Measurement Item / Range (Display)	Normal Condition	Diagnostic Note
VEHICLE SPD	Wheel speed sensor (FR) reading / Min.: 0 km/h (0 mph), Max.: 326 km/h (202 mph)	Actual vehicle speed	Speed indicator on speedometer

OK:
Vehicle speed display on the tester is almost the same as the actual vehicle speed.

NG

GO TO VEHICLE STABILITY CONTROL SYSTEM

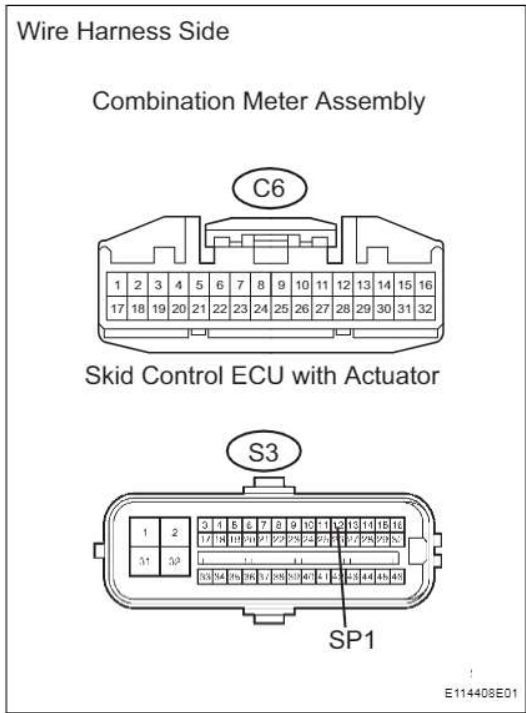
OK

ME-28

METER – METER / GAUGE SYSTEM

2

CHECK (COMBINATION METER - SKID CONTROL ECU WITH ACTUATOR)*2



- (a) Disconnect the C6 meter connector.
- (b) Disconnect the S3 ECU connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
C6-28 - S3-12 (SP1)	Below 1 Ω
C6-28 - Body ground	10 kΩ or higher

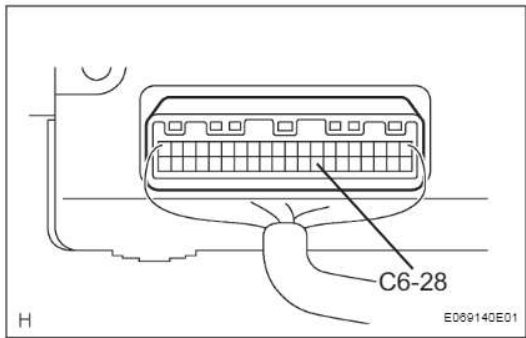
NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

3

CHECK COMBINATION METER ASSEMBLY



- (a) Measure the voltage of the connector.
- Standard voltage

Tester Connection	Condition	Specified Condition
C6-28 - Body ground	Ignition switch ON	10 to 14 V
	Ignition switch OFF	Below 1 V

NG

REPLACE COMBINATION METER ASSEMBLY

OK

REPLACE BRAKE ACTUATOR ASSEMBLY

Tachometer Malfunction

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:
When using the intelligent tester, start from *1. When not using the intelligent tester, start from *2.

1

READ VALUE OF INTELLIGENT TESTER (ENGINE SPEED SIGNAL)*1

(a) Check the DATA LIST for proper functioning of the engine speed signal.

ECM

Item	Measurement Item / Range (Display)	Normal Condition	Diagnostic Note
ENGINE SPD	Engine speed / Min.: 0 rpm, Max.: 16,383 rpm	Idling: 650 to 750 rpm	-

OK:
Engine speed display on the tester is almost the same as the actual engine speed.

NG

GO TO ENGINE CONTROL SYSTEM

OK

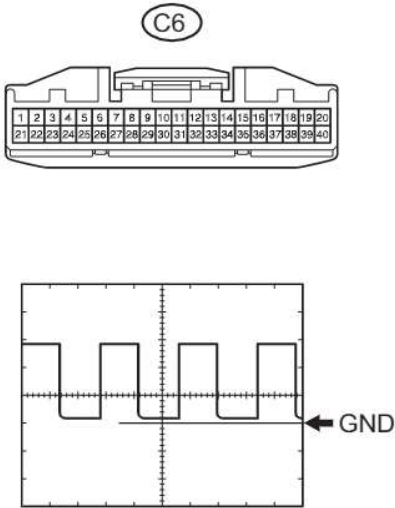
ME-30

METER – METER / GAUGE SYSTEM

2

CHECK COMBINATION METER ASSEMBLY*2

Wire Harness Side



E111772E02

- (a) Disconnect the C6 meter connector.
- (b) Using an oscilloscope, check the signal waveform of the meter.

Tester Connection	Tool Setting	Vehicle Condition
C6-26 - Body ground	5 V/DIV., 10 msec./DIV.	Engine idle speed

OK:
As shown in the illustration.

OK

REPLACE COMBINATION METER ASSEMBLY

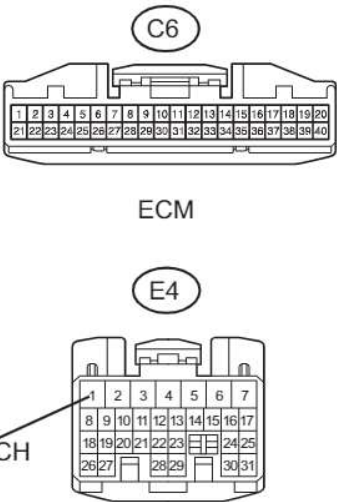
NG

3

CHECK WIRE HARNESS (COMBINATION METER - ECM)

Wire Harness Side

Combination Meter Assembly



ECM

E110888E03

- (a) Disconnect the C6 meter connector.
- (b) Disconnect the E4 ECM connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
C6-30 - E4-1 (TACH)	Below 1 Ω
C6-30 - Body ground	10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

METER – METER / GAUGE SYSTEM

ME-31

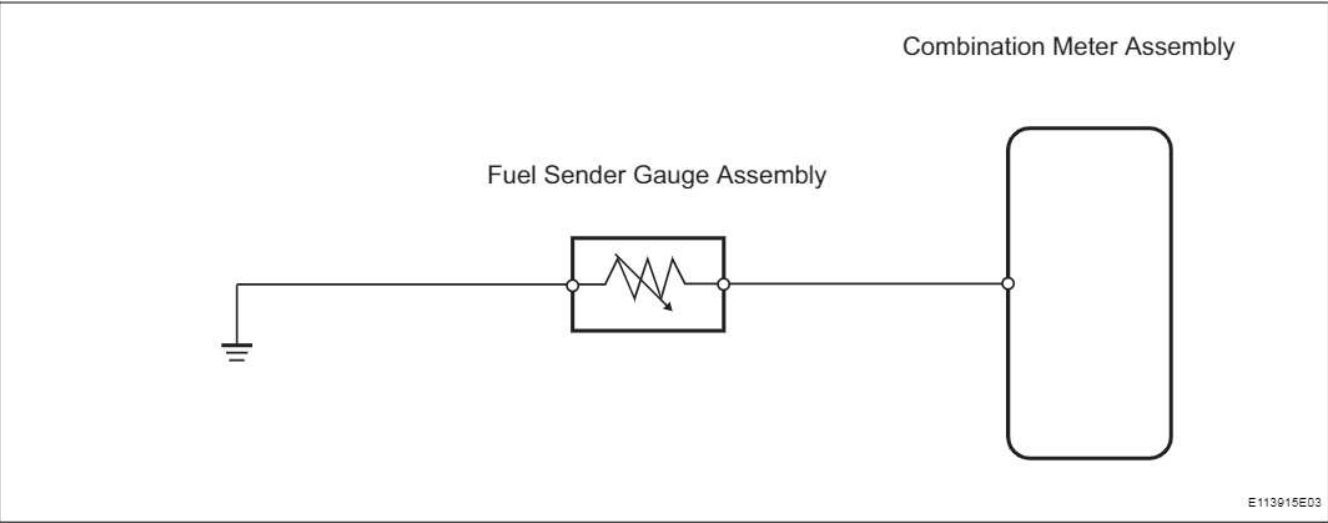
OK

REPLACE ECM

ME

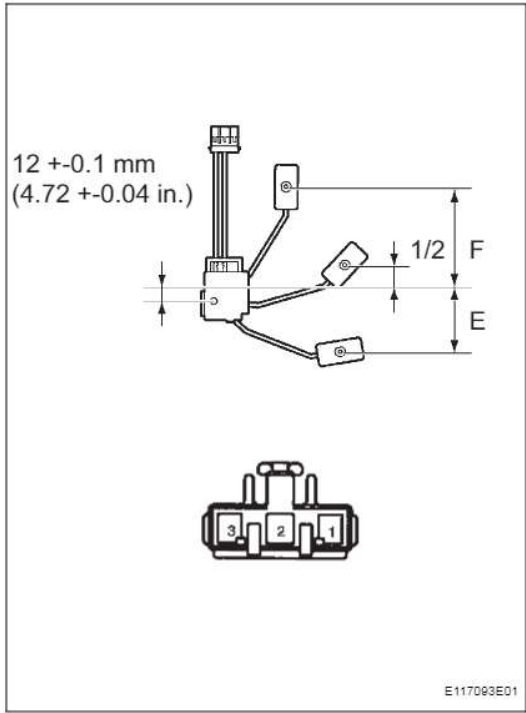
Fuel Gauge Malfunction

WIRING DIAGRAM



INSPECTION PROCEDURE

1INSPECT FUEL SENDER GAUGE ASSEMBLY



- (a) Remove the fuel sender gauge.
- (b) Connect an ohmmeter to terminals 2 and 3.
- (c) Measure the resistance of the sender gauge.

Standard resistance

Float Level	Float Position	Specified Condition
F	80.8 to 86.6 mm (3.181 to 3.417 in.)	3.0 to 5.0 Ω
1/2	15.9 to 21.9 mm (0.626 to 0.862 in.)	52.0 to 58.0 Ω
E	52.2 to 58.2 mm (2.055 to 2.291 in.)	106.0 to 108.0 Ω

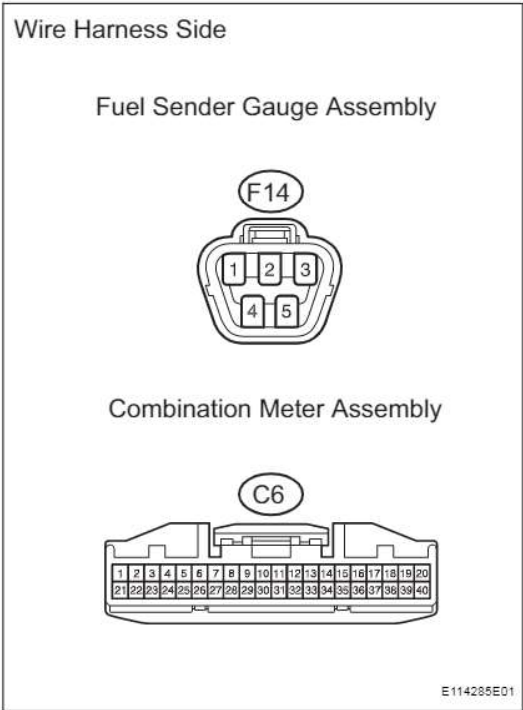
NG

REPLACE FUEL SENDER GAUGE ASSEMBLY

OK

2

CHECK WIRE HARNESS (FUEL SENDER GAUGE - COMBINATION METER AND BODY GROUND)



- (a) Disconnect the F14 gauge connector.
- (b) Disconnect the C6 meter connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
F14-2 - C6-31	Below 1 Ω
F14-3 - Body ground	

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

ME

OK

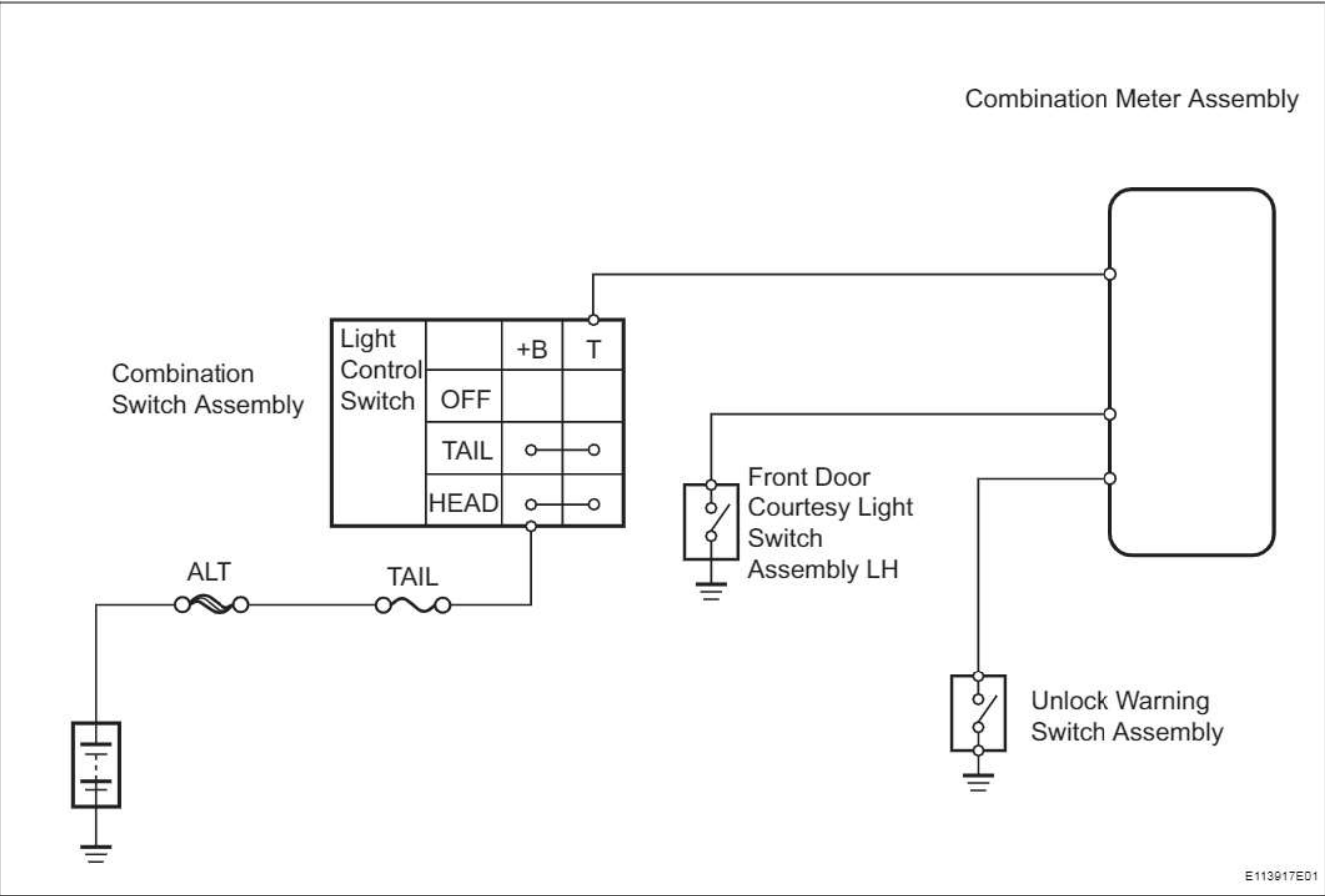
REPLACE COMBINATION METER ASSEMBLY

ME-34

METER – METER / GAUGE SYSTEM

Warning Buzzer does not Sound

WIRING DIAGRAM



INSPECTION PROCEDURE

1 INSPECT FUSE (TAIL)

- (a) Remove the TAIL fuse from the instrument panel junction block.
- (b) Measure the resistance of the fuse.
Standard resistance:
Below 1 Ω

NG → REPLACE FUSE

OK

2 CHECK COMBINATION METER BUZZER (OPERATION)

- (a) Check the key reminder warning buzzer operation.
 - (1) Turn the ignition switch OFF.
 - (2) Open the driver side door with the key inserted into the ignition key cylinder.

OK:

Warning buzzer sounds.

- (b) Check the light reminder warning buzzer operation.
- (1) Turn the ignition switch ON.
 - (2) Set the light control switch to the TAIL or HEAD position.
 - (3) Open the driver side door.

OK:

Warning buzzer sounds.

Result

Result	Proceed to
Key reminder warning buzzer does not sound	A
Light reminder warning buzzer does not sound	B

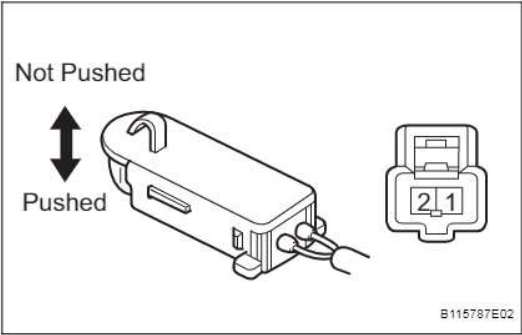
B

Go to step 5

ME

A

3 INSPECT UNLOCK WARNING SWITCH ASSEMBLY



- (a) Remove the unlock warning switch.
(b) Measure the resistance of the switch.
- Standard resistance**

Tester Connection	Condition	Specified Condition
1 - 2	Pushed (ON)	Below 1 Ω
	Not pushed (OFF)	10 k Ω or higher

NG

REPLACE UNLOCK WARNING SWITCH ASSEMBLY

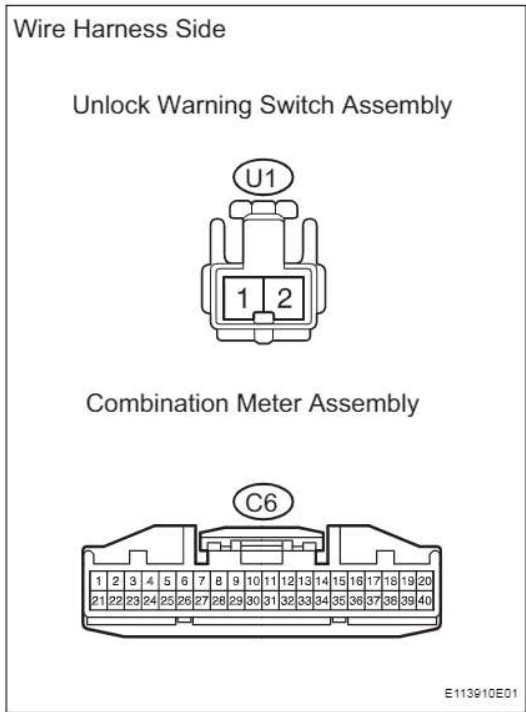
OK

ME-36

METER – METER / GAUGE SYSTEM

4

CHECK WIRE HARNESS (UNLOCK WARNING SWITCH - COMBINATION METER AND BODY GROUND)



- (a) Disconnect the U1 switch connector.
- (b) Disconnect the C6 meter connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance	
Tester Connection	Specified Condition
U1-1 - C6-10	Below 1 Ω
U1-2 - Body ground	

OK

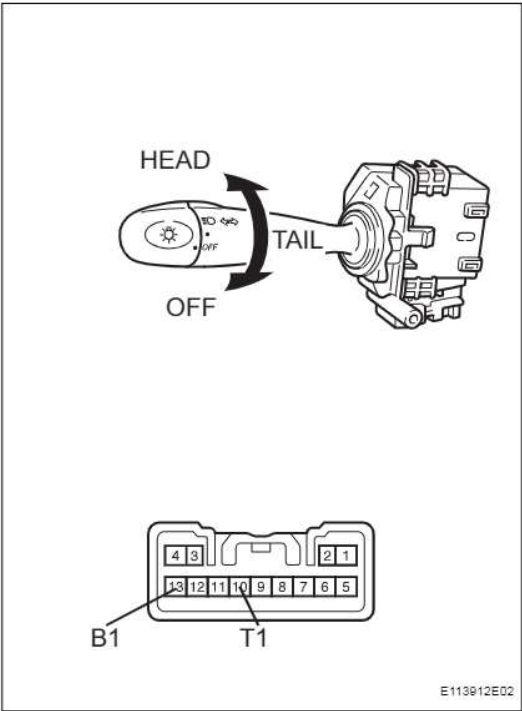
Go to step 7

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

5

INSPECT HEADLIGHT DIMMER SWITCH ASSEMBLY



- (a) Remove the headlight dimmer switch.
(b) Measure the resistance of the switch.

Standard resistance

Tester Connection	Switch Condition	Specified Condition
13 (B1) - 10 (T1)	HEAD	Below 1 Ω
	TAIL	
	OFF	10 k Ω or higher

NG

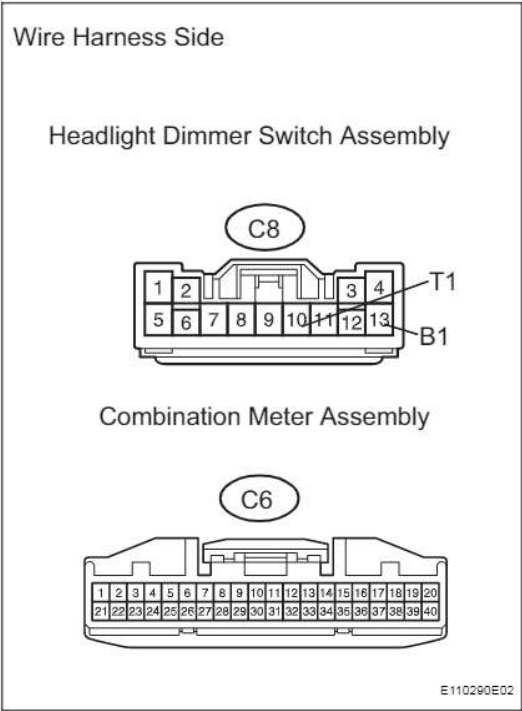
REPLACE HEADLIGHT DIMMER SWITCH ASSEMBLY

ME

OK

6

CHECK WIRE HARNESS (HEADLIGHT DIMMER SWITCH - COMBINATION METER AND BATTERY)



- (a) Disconnect the C8 switch connector.
(b) Disconnect the C6 meter connector.
(c) Measure the voltage of the wire harness side connector.

Standard voltage

Tester Connection	Specified Condition
C8-13 (B1) - Body ground	10 to 14 V

- (d) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
C8-10 (T1) - C6-26	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

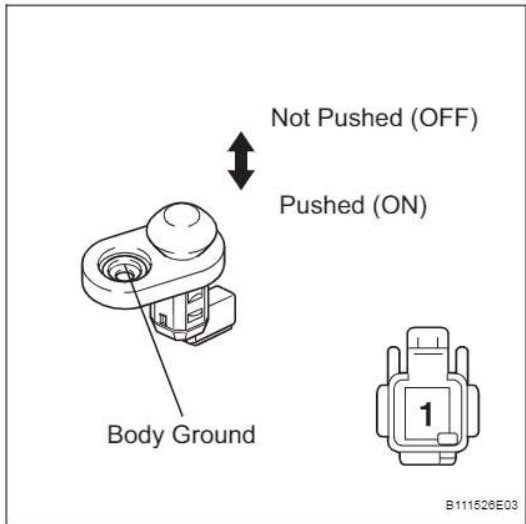
ME-38

METER – METER / GAUGE SYSTEM

OK

7

INSPECT FRONT DOOR COURTESY LIGHT SWITCH ASSEMBLY



- (a) Disconnect the courtesy light switch.
- (b) Measure the resistance of the switch.

Standard resistance

Tester Connection	Condition	Specified Condition
1 - Body ground	Not pushed (OFF)	Below 1 Ω
	Pushed (ON)	10 kΩ or higher

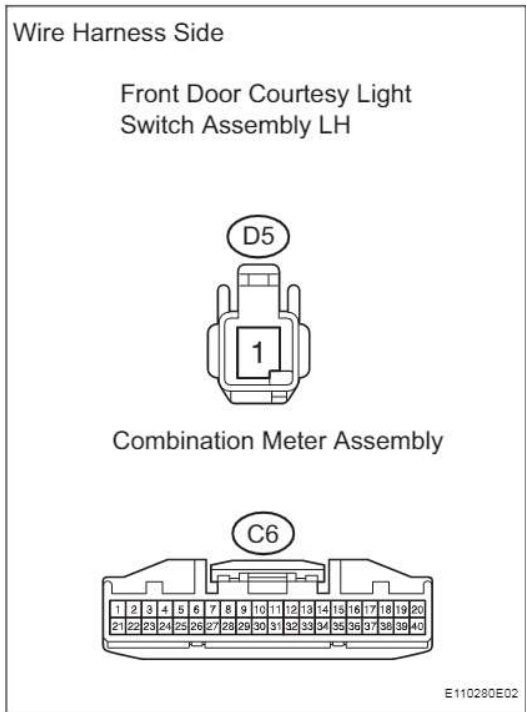
NG

REPLACE FRONT DOOR COURTESY LIGHT SWITCH ASSEMBLY

OK

8

CHECK WIRE HARNESS (FRONT DOOR COURTESY LIGHT SWITCH - COMBINATION METER)



- (a) Disconnect the D5 switch connector.
- (b) Disconnect the C6 meter connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
D5-1 - C6-24	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE COMBINATION METER ASSEMBLY