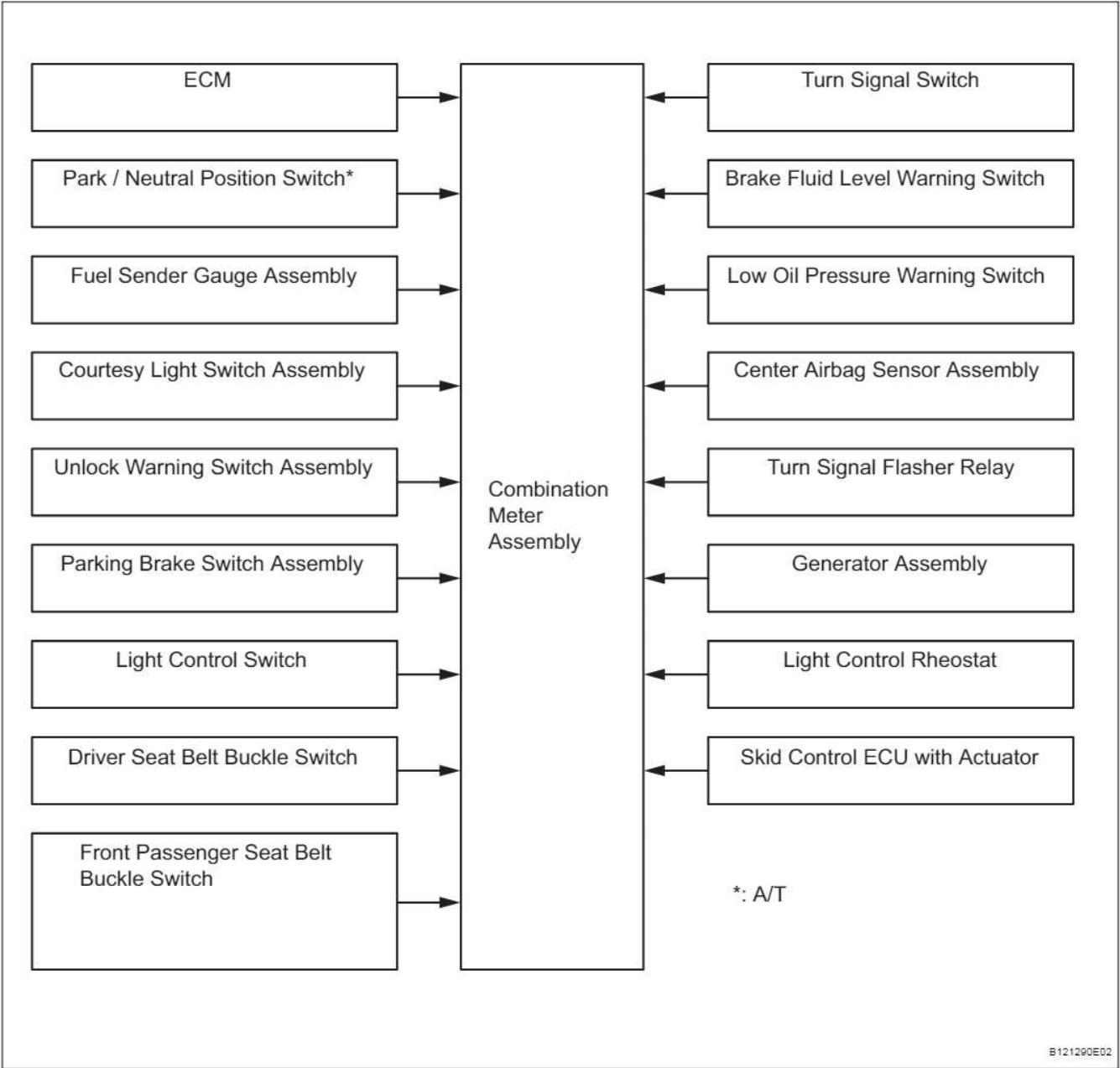


METER – METER / GAUGE SYSTEM

SYSTEM DIAGRAM

ME



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 (Driver)	Blinks when driver's seat belt buckle switch is ON (unfastened)
SEAT BELT (Front passenger)	- Located on center cluster module switch - Blinks when front passenger's 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
MAINT REQD	- Illuminates when oil is changed and vehicle is driven about 8,000 km (5,000 miles) - Blinks when oil is changed and vehicle is driven about 12,000 km (7,500 miles)
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 is malfunctioning" or "vehicle stability control system is malfunctioning" signal from skid control ECU with actuator
SLIP	Blinks when receiving "traction control system is properly operating" or "vehicle stability control system is properly operating" signal from skid control ECU with actuator
Engine Coolant Temperature	- Illuminates red when signal from ECM indicates that engine coolant temperature is high - Illuminates blue when signal from ECM indicates that engine coolant temperature is low
TRAC OFF	Illuminates when receiving TRAC OFF signal from skid control ECU with actuator
ABS	Illuminates when receiving malfunction signal from skid control ECU with actuator
O/D OFF*	Illuminates when O/D off

METER – METER / GAUGE SYSTEM

ME-7

HINT:
*: A/T

Buzzer

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

ME

HOW TO PROCEED WITH TROUBLESHOOTING

- HINT:
- Use these procedures to troubleshoot the combination meter.
 - *: Use the intelligent tester.

1

VEHICLE BROUGHT TO WORKSHOP

NEXT

ME

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) Terminal of ECU (see page [ME-10](#))
- (b) DATA LIST/ACTIVE TEST (see page [ME-18](#))
- (c) On-vehicle inspection (see page [ME-19](#))

NEXT

5

ADJUST, REPAIR OR REPLACE

NEXT

END

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	1. Refer to troubleshooting	ME-24
Operating light control rheostat does not change light brightness	1. Light control rheostat	ME-55
	2. Wire harness	ME-55
	3. Combination meter assembly	ME-61

Meter gauges

Symptom	Suspected area	See page
Malfunction in speedometer	1. Refer to troubleshooting	ME-26
Malfunction in tachometer	1. Refer to troubleshooting	ME-30
Malfunction in fuel receiver gauge	1. Refer to troubleshooting	ME-33
Malfunction in water temperature receiver gauge	1. Refer to troubleshooting	ME-36

Warning light

Symptom	Suspected area	See page
MIL does not come on	1. ECM	ES-9
	2. Wire harness or connector	-
	3. Combination meter assembly	ME-61
Discharge warning light does not come on	1. ECM	ES-9
	2. Wire harness or connector	-
	3. Combination meter assembly	ME-61
Brake warning light does not come on	1. Brake actuator assembly	BC-4
	2. Wire harness or connector	-
	3. Combination meter assembly	ME-61
Malfunction in engine coolant temperature warning light	1. Combination meter assembly	ME-61
	2. Engine coolant temperature sensor	ES-341
	3. SFI system	ES-9
	4. Wire harness	ME-36
ABS warning light does not come on	1. Brake actuator assembly	BC-162
	2. Wire harness or connector	-
	3. Combination meter assembly	ME-61
SRS warning light does not come on	1. Center airbag sensor assembly	RS-23
	2. Wire harness or connector	-
	3. Combination meter assembly	ME-61
Open door warning light does not come on	1. Refer to troubleshooting	LI-7
	2. Wire harness or connector	-
	3. Combination meter assembly	ME-61
Fuel level warning light does not come on	1. Refer to troubleshooting	ME-33
	2. Wire harness or connector	ME-33
	3. Combination meter assembly	ME-61

ME-10**METER – METER / GAUGE SYSTEM****Indicator light**

Symptom	Suspected area	See page
Turn indicator light does not come on	1. Turn signal and hazard warning system	LI-31
	2. Wire harness or connector	-
	3. Combination meter assembly	ME-61
High beam indicator light does not come on	1. Headlight dimmer switch	LI-31
	2. Wire harness or connector	-
	3. Combination meter assembly	ME-61
Washer level indicator light does not come on	1. Washer level warning switch	ME-19
	2. Wire harness or connector	-
	3. Combination meter assembly	ME-61
MAINT REQD indicator light is blinking or continuously illuminated	1. Resetting procedure	ME-19
	2. Combination meter assembly	ME-61
O/D OFF indicator light does not come on	1. Refer to troubleshooting	AX-80
	2. Wire harness or connector	-
	3. Combination meter assembly	ME-61
Water temperature indicator light does not come on	1. Refer to troubleshooting	ME-19
	2. Wire harness or connector	-
	3. Combination meter assembly	ME-61

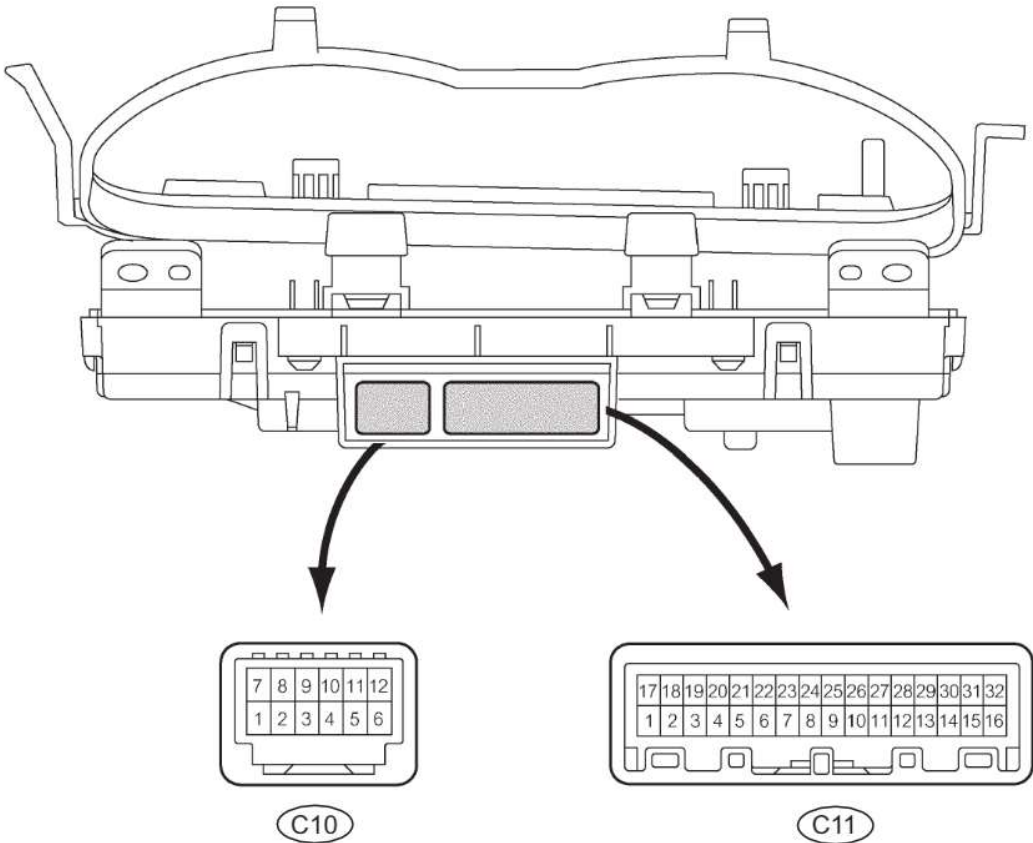
Buzzer

Symptom	Suspected area	See page
All buzzers (key reminder, seat belt, taillight) do not operate	1. Refer to troubleshooting	ME-39
	2. Combination meter assembly	ME-61
Key reminder warning buzzer does not sound	1. Refer to troubleshooting	ME-39
	2. Un-lock warning switch assembly	ME-39
	3. Wire harness or connector	-
	4. Combination meter assembly	ME-61
Taillight reminder warning buzzer does not sound	1. Refer to troubleshooting	ME-39
	2. Wire harness or connector	-
	3. Combination meter assembly	ME-61
Seat belt warning buzzer does not sound	1. Refer to troubleshooting	ME-39
	2. Wire harness or connector	-
	3. Combination meter assembly	ME-61

TERMINALS OF ECU

1. CHECK COMBINATION METER ASSEMBLY

ME



H

E078374E01

- (a) Disconnect the C10 and C11 meter connectors.
- (b) Measure the voltage and resistance of the wire harness side connectors.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
IGN1 (C10-1) - Body ground	R-B - Body ground	Ignition switch signal	Ignition switch OFF → ON	Below 1 V → 10 to 14 V
S GND (C10-3) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
+B (C10-7) - Body ground	L-B - Body ground	Battery	Always	10 to 14 V
IGN2 (C11-13) - Body ground	B-R - Body ground	Ignition switch signal	Ignition switch OFF → ON	Below 1 V → 10 to 14 V

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

- (c) Reconnect the C10 and C11 meter connectors.
- (d) Measure the resistance of the connectors.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
BEAM- (C10-2) - Body ground	R-Y - Body ground	Hi-beam indicator signal	Headlight dimmer switch (Hi-beam) Lo → Hi	Below 1 V → 10 to 14 V

ME-12

METER – METER / GAUGE SYSTEM

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
TURN R (C10-4) - Body ground	G-Y - Body ground	Turn signal RH indicator signal	Ignition switch ON, turn signal RH indicator OFF → ON	Below 1 V → 10 to 14 V
TURN L (C10-5) - Body ground	P-B - Body ground	Turn signal LH indicator signal	Ignition switch ON, turn signal LH indicator OFF → ON	Below 1 V → 10 to 14 V
P-BELT OUT (C10-6) - Body ground	G-W - Body ground	Seat belt warning light signal (Passenger's seat)	Seat belt warning light for passenger's seat OFF → Blinks	Below 1 V → 10 to 14 V
BEAM+ (C10-8) - Body ground	R-L - Body ground	Hi-beam indicator signal	Headlight dimmer switch (Hi-beam) Lo → Hi	Below 1 V → 10 to 14 V
KEY ILL OUT (C10-9) - Body ground	BR-Y - Body ground	Key illumination signal	Key illumination ON → OFF	Below 1 V → 10 to 14 V
SP (C10-10) - Body ground	W-R - Body ground	Vehicle speed signal (Input)	Ignition switch ON, slowly turn wheel	Pulse generation (See waveform 1)
TM (C10-11) - Body ground	B - Body ground	Tachometer signal (Input)	Engine idling	Pulse generation (See waveform 2)
ILL+ (C10-12) - Body ground	G - Body ground	Illumination signal	Taillight OFF → ON	Below 1 V → 10 to 14 V
2 (C11-1) - Body ground*1	G - Body ground	A/T shift indicator signal (2)	A/T 2 indicator OFF → ON	Below 1 V → 10 to 14 V
D (C11-2) - Body ground*1	LG-B - Body ground	A/T shift indicator signal (D)	A/T D indicator OFF → ON	Below 1 V → 10 to 14 V
N (C11-3) - Body ground*1	GR - Body ground	A/T shift indicator signal (N)	A/T N indicator OFF → ON	Below 1 V → 10 to 14 V
R (C11-4) - Body ground*1	R-W - Body ground	A/T shift indicator signal (R)	A/T R indicator OFF → ON	Below 1 V → 10 to 14 V
P (C11-5) - Body ground*1	R - Body ground	A/T shift indicator signal (P)	A/T P indicator OFF → ON	Below 1 V → 10 to 14 V
D-BELT (C11-6) - Body ground	W-R - Body ground	Seat belt warning light for driver's seat signal	Ignition switch ON, seat belt unfastened → fastened	Below 1 V → 10 to 14 V
ILL- (C11-7) - Body ground	W-R - Body ground	Illumination signal	Light control switch TAIL, light control rheostat position MIN → MAX	Below 1 V → 10 to 14 V
P-BELT (C11-8) - Body ground	O - Body ground	Seat belt warning light for passenger's seat signal	Ignition switch ON, sit on passenger seat, seat belt unfastened → fastened	Below 1 V → 10 to 14 V
VSC (C11-10)*2 - Body ground	BR-W - Body ground	VSC warning light signal	Ignition switch ON, VSC warning light ON → OFF	Below 1 V → 10 to 14 V
ABS (C11-11) - Body ground	P - Body ground	ABS signal	Ignition switch ON, ABS warning light ON → OFF	6.7 to 12 V → Below 1 V
O/D OFF (C11-12) - Body ground	G-O - Body ground	O/D OFF signal	O/D OFF indicator light ON → OFF	Below 1 V → 10 to 14 V
BRAKE (C11-14) - Body ground	B-Y - Body ground	Brake signal	Ignition switch ON, BRAKE warning light ON → OFF	6.7 to 12 V → Below 1 V
BRAKE LEVEL (C11-15) - Body ground	Y-R - Body ground	Brake fluid level warning light signal	Ignition switch ON, brake fluid level warning light ON → OFF	Below 1 V → 10 to 14 V
OIL-P (C11-16) - Body ground	G-Y - Body ground	Oil pressure signal	Oil pressure warning light ON → OFF	Below 1 V → 10 to 14 V
L (C11-17) - Body ground*1	G-R - Body ground	A/T shift indicator signal (L)	A/T L indicator OFF → ON	Below 1 V → 10 to 14 V
KEY SW (C11-18) - Body ground	Y - Body ground	Unlock warning switch signal	Key is inserted → removed	Below 1 V → 10 to 14 V
FUEL (C11-19) - Body ground	V - Body ground	Fuel level signal	Ignition switch ON, fuel level is FULL → EMPTY	Below 1 V → 10 to 14 V

METER – METER / GAUGE SYSTEM**ME-13**

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
AIRBAG (C11-20) - Body ground	B-Y - Body ground	SRS warning light signal	Ignition switch ON, SRS warning light ON → OFF	8 to 14 V → Below 1 V
4P-OUT (C11-21) - Body ground	V-W - Body ground	Speed signal (Output)	Ignition switch ON and turn wheel slowly	Pulse generation (see waveform 1)
HOT (C11-23) - Body ground	Y-R - Body ground	Coolant temperature signal	Ignition switch ON, HOT indicator OFF → ON	Below 1 V → 2 to 5 V
COLD (C11-24) - Body ground	Y - Body ground	Coolant	Ignition switch ON, COLD indicator OFF → ON	Below 1 V → 2 to 5 V
D-DOOR (C11-25) - Body ground	R-Y - Body ground	Driver door condition signal	Driver door OPEN → CLOSE	Below 1 V → 10 to 14 V
DOOR (C11-26) - Body ground	L - Body ground	Except driver door condition signal	Except driver door OPEN → CLOSE	Below 1 V → 10 to 14 V
SLIP (C11-27)*2 - Body ground	B-R - Body ground	SLIP indicator signal	Ignition switch ON, SLIP indicator ON → OFF	Below 1 V → 10 to 14 V
TRAC OFF (C11-30)*2 - Body ground	R-L - Body ground	TRAC OFF indicator signal	Ignition switch ON, TRAC OFF indicator ON → OFF	Below 1 V → 10 to 14 V
CHECKENGINE (C11-31) - Body ground	Y-R - Body ground	MIL signal	Ignition switch ON, MIL ON → OFF	Below 1 V → 10 to 14 V
CHG- (C11-32) - Body ground	B-W - Body ground	Charge warning light signal	Ignition switch ON, charge warning light OFF → ON	10 to 14 V → Below 1 V

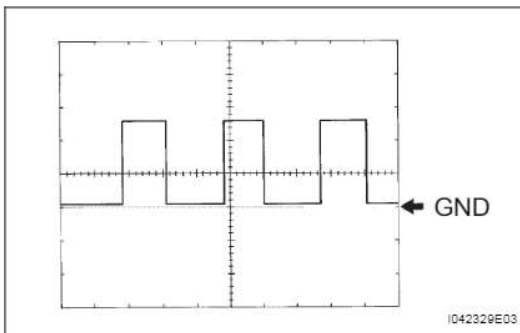
HINT:

*1: A/T

*2: w/ VSC

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

Waveform 1 (Reference):

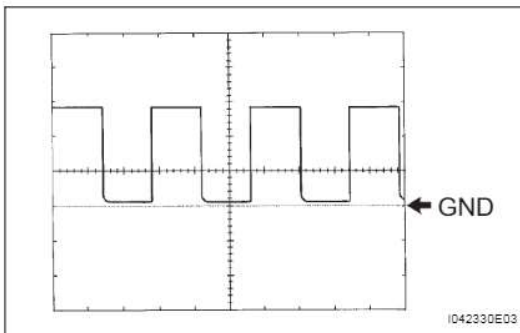


Item	Condition
Tool setting	5 V/DIV., 20 msec./DIV.
Vehicle condition	Driving at approx. 20 km/h (12.4 mph)

HINT:

As the vehicle speed increases, the wavelength shortens.

Waveform 2 (Reference):



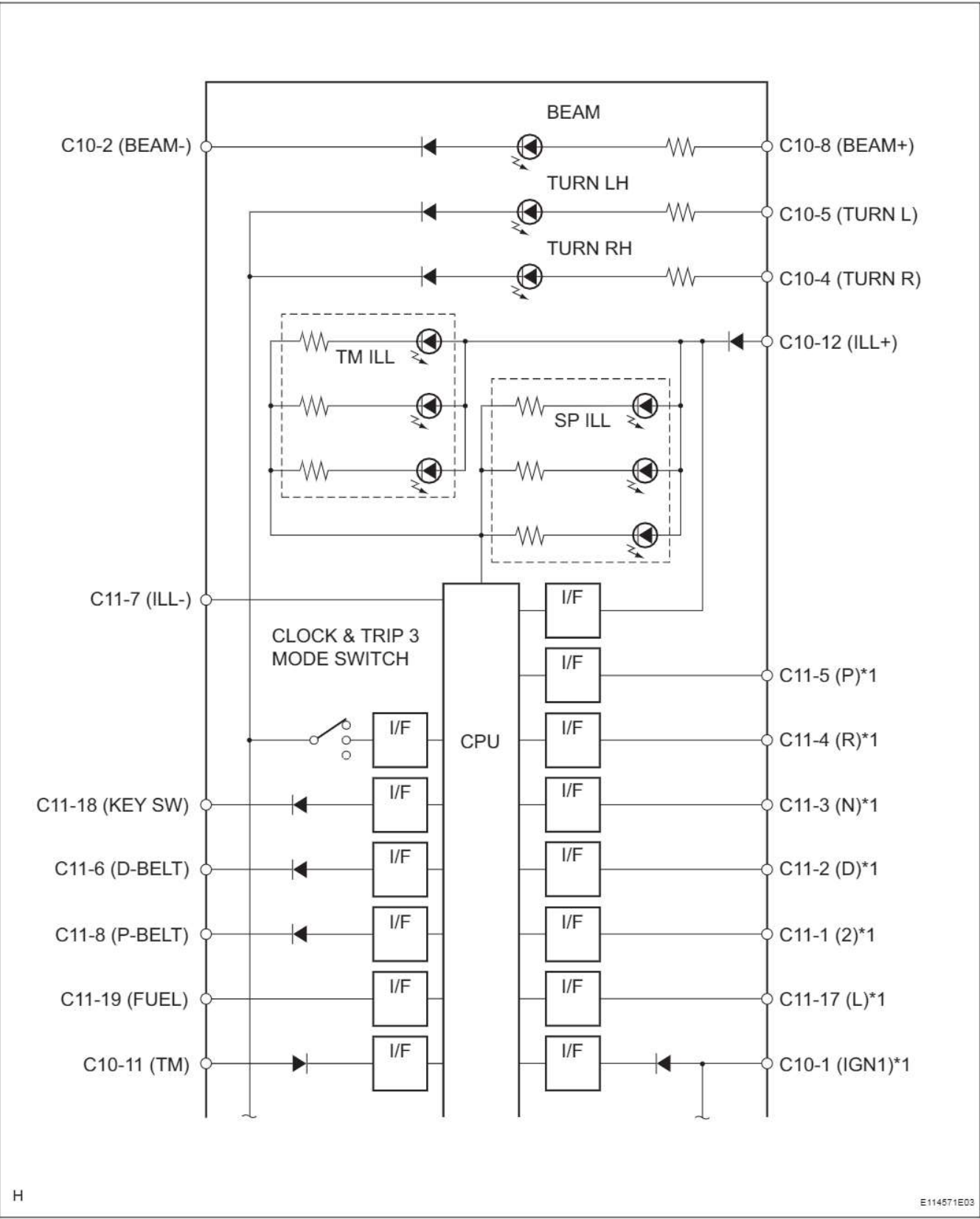
Item	Condition
Tool setting	5 V/DIV., 10 msec./DIV.
Vehicle condition	Engine idling

HINT:

As the vehicle speed increases, the wavelength shortens.

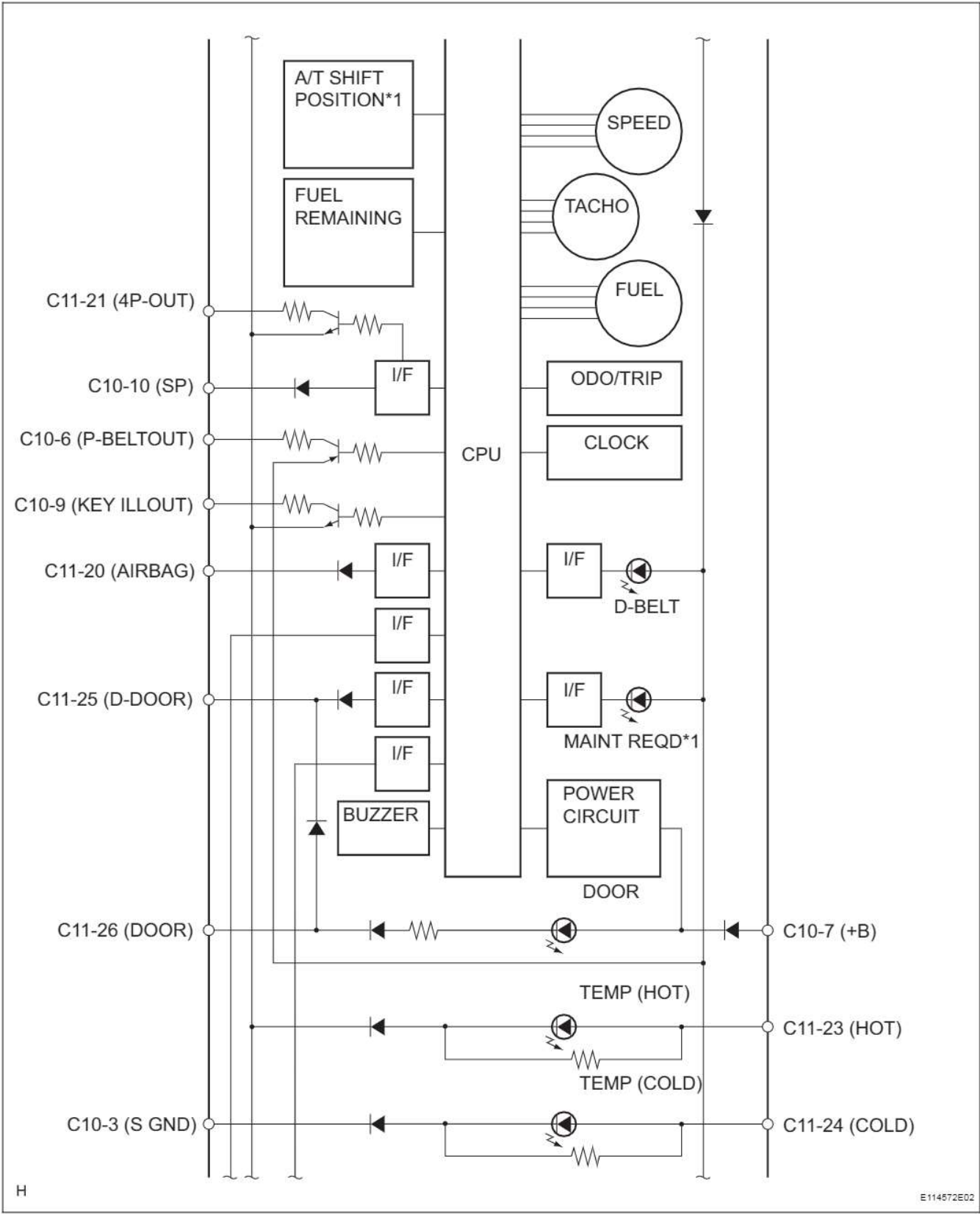
ME-14

METER – METER / GAUGE SYSTEM



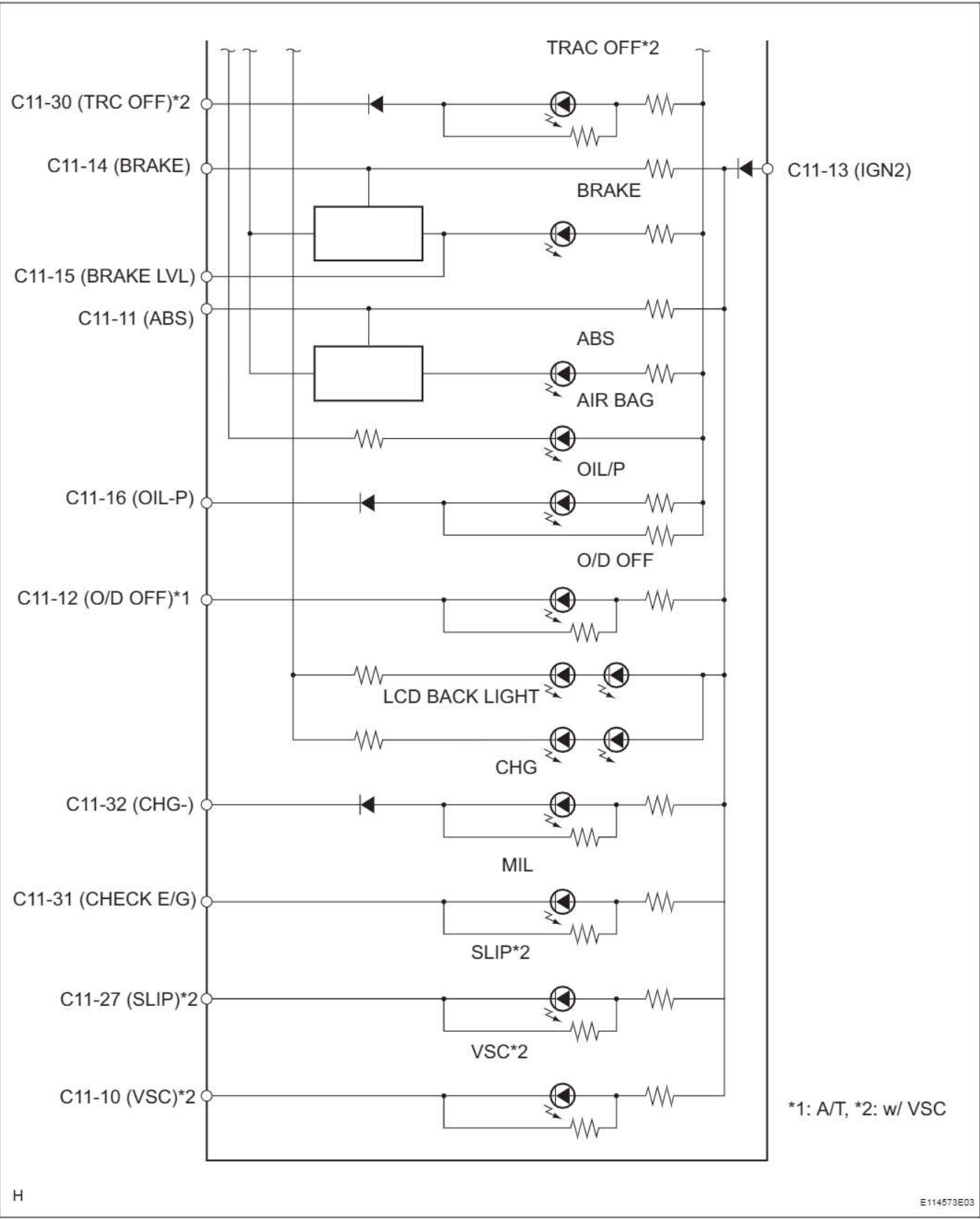
METER – METER / GAUGE SYSTEM

ME



ME-16

METER – METER / GAUGE SYSTEM



METER – METER / GAUGE SYSTEM**ME-17****Table of terminal connection**

Terminal No.		Wire Harness Side
C11	1	Park / Neutral Position Switch (2)*1
	2	Park / Neutral Position Switch (D)*1
	3	Park / Neutral Position Switch (N)*1
	4	Park / Neutral Position Switch (R)*1
	5	Park / Neutral Position Switch (P)*1
	6	Front Seat Inner Belt Assembly (Driver Side)
	7	Light Control Rheostat
	8	Front Seat Inner Belt Assembly (Passenger Side)
	9	-
	10	Skid Control ECU with Actuator*2
	11	Skid Control ECU with Actuator*2
	12	ECM
	13	Ignition Switch
	14	Skid Control ECU with Actuator*2
	15	Brake Fluid Level Warning Switch
	16	Low Oil Pressure Warning Switch
	17	Park / Neutral Position switch (L)*1
	18	Unlock Warning Switch Assembly
	19	Fuel Sender Gauge Assembly
	20	Center Airbag Sensor Assembly
	21	ECM
	22	-
	23	ECM
	24	ECM
	25	Door Courtesy Light Switch Assembly (Driver Side)
	26	Door Courtesy Light Switch Assembly (Except Driver Side)
	27	Skid Control ECU with Actuator*2
	28	-
	29	-
	30	Skid Control ECU with Actuator*2
	31	ECM
	32	Generator Assembly

HINT:

*1: A/T

*2: w/ VSC

ME

ME-18

METER – METER / GAUGE SYSTEM

Table of terminal connection

Terminal No.		Wire Harness Side
C10	1	GAUGE Fuse
	2	Headlight Dimmer Switch (GND)
	3	GND
	4	Turn Signal Flasher
	5	Turn Signal Flasher
	6	Seat Belt Warning Light for Passenger's Seat
	7	DOVE Fuse
	8	Headlight
	9	Illumination Relay
	10	Skid Control ECU with Actuator*
	11	ECM
	12	Headlight Dimmer Switch (Light Control Switch)

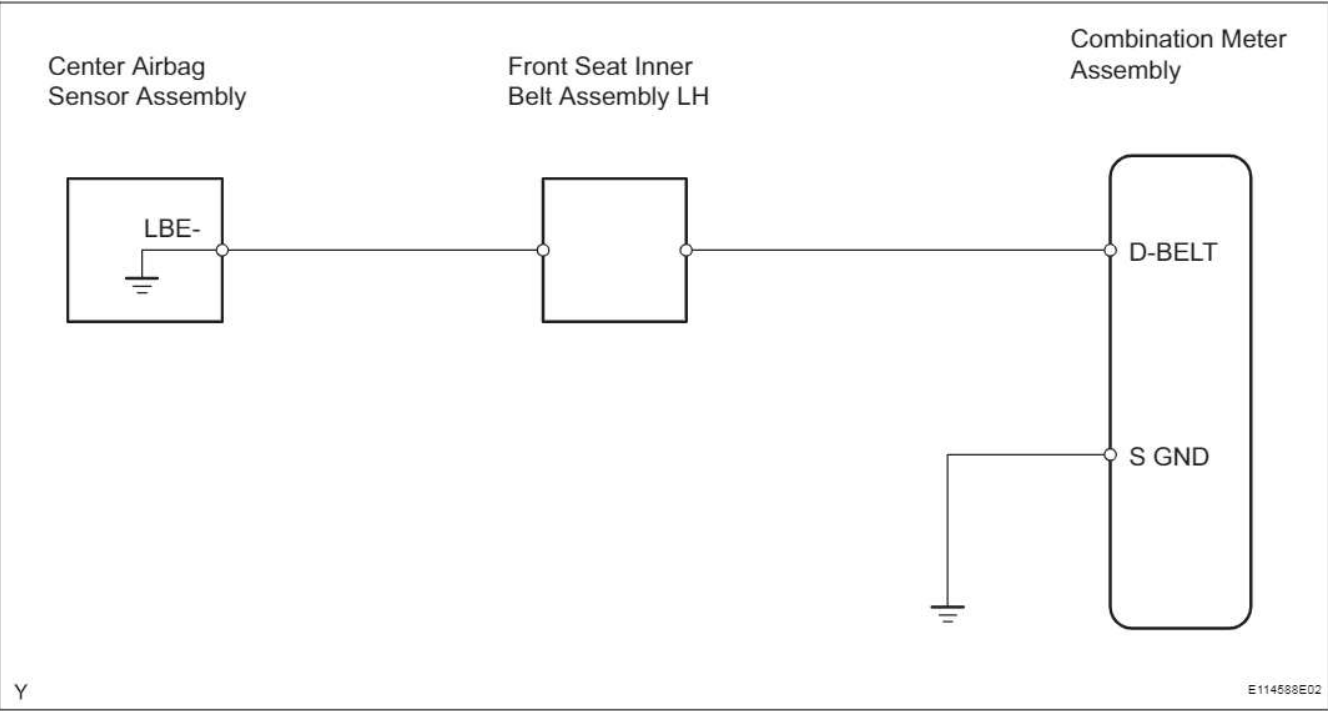
HINT:
*: w/ VSC

ME-48

METER – METER / GAUGE SYSTEM

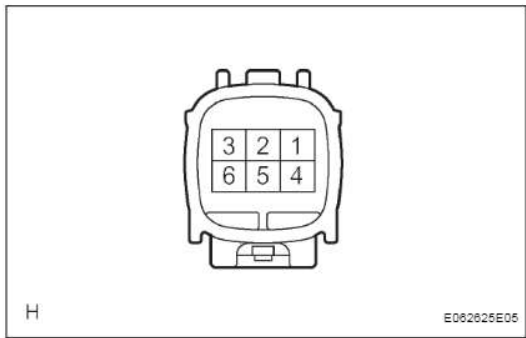
Driver Side Seat Belt Warning Light does not Operate

WIRING DIAGRAM



INSPECTION PROCEDURE

1INSPECT FRONT SEAT INNER BELT ASSEMBLY LH



- (a) Remove the inner belt LH.
- (b) Measure the resistance of the belt.
- Standard resistance

Tester Connection	Condition	Specified Condition
B6-1 - B6-3	Seat belt is fastened	10 kΩ or higher
B6-1 - B6-3	Seat belt is unfastened	Below 1 Ω

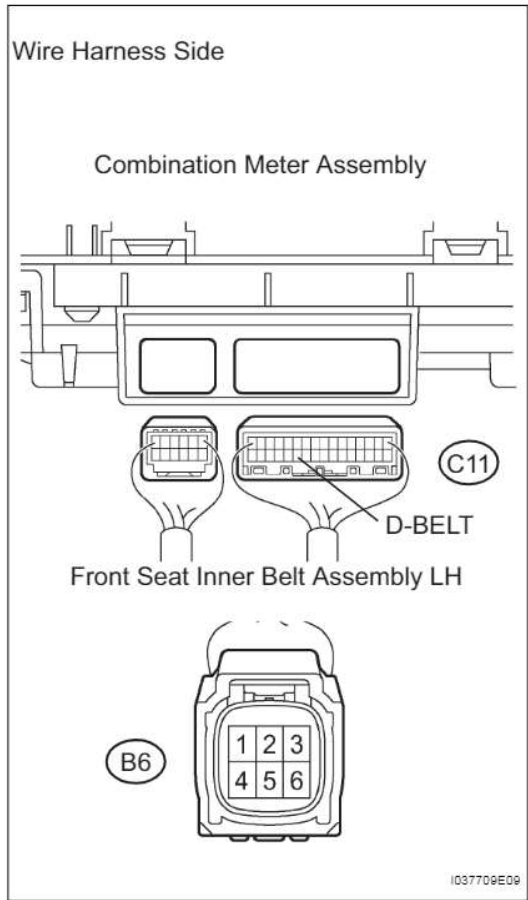
NG

REPLACE FRONT SEAT INNER BELT ASSEMBLY LH

OK

2

CHECK WIRE HARNESS (COMBINATION METER - FRONT SEAT INNER BELT LH)



- (a) Disconnect the C11 meter connector.
- (b) Disconnect the B6 belt connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
C11-6 (D-BELT) - B6-3	Below 1 Ω
C11-6 (D-BELT) - Body ground	10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

ME

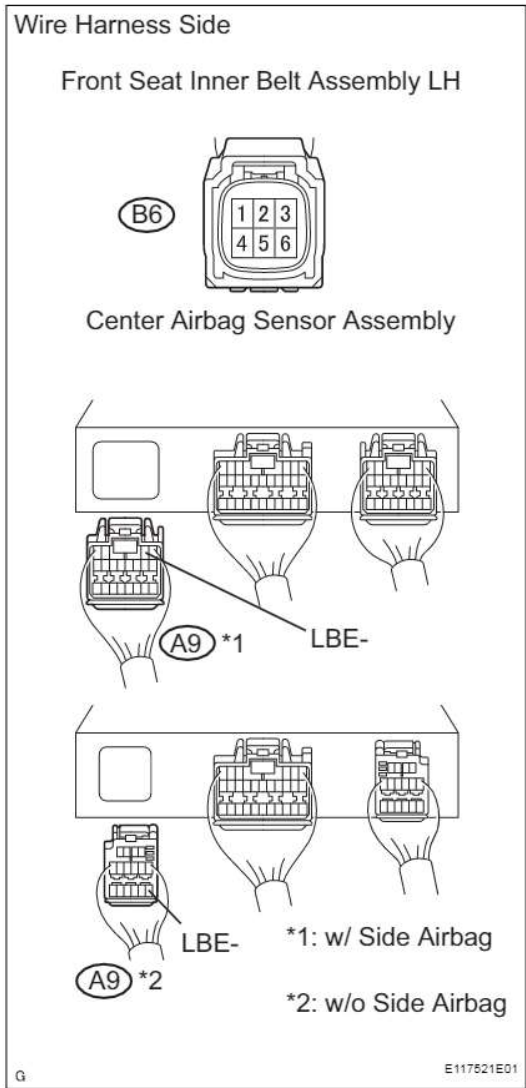
OK

ME-50

METER – METER / GAUGE SYSTEM

3

CHECK WIRE HARNESS (FRONT SEAT INNER BELT LH - CENTER AIRBAG SENSOR)



- (a) Disconnect the B6 belt connector.
- (b) Disconnect the A9 sensor connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
B6-1 - A9-2*1 (LBE-)	Below 1 Ω
B6-1 - A9-7*2 (LBE-)	Below 1 Ω
B6-1 - Body ground	10 k Ω or higher

HINT:

- *1: w/ Side airbag
- *2: w/o Side airbag

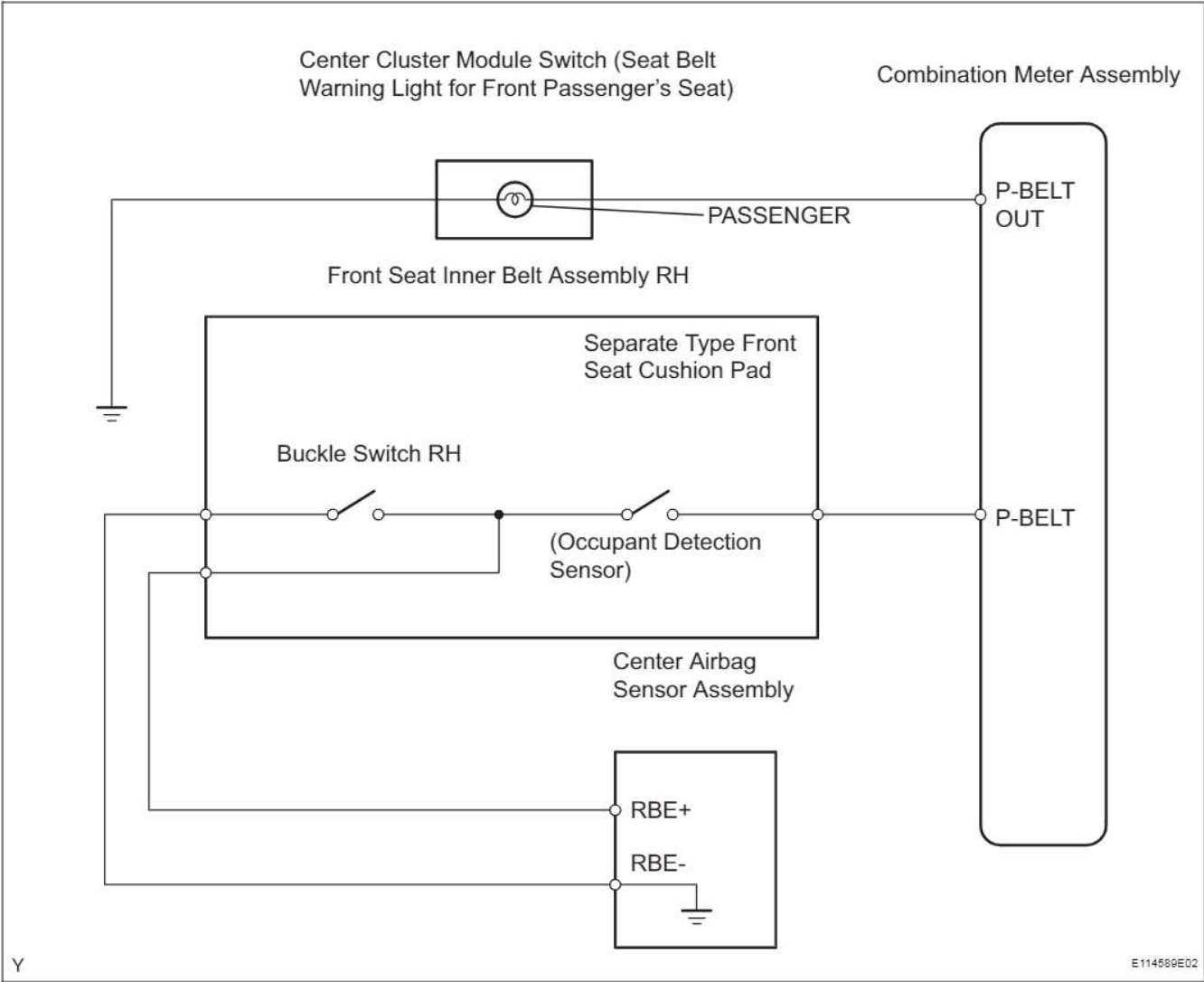
NG REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE COMBINATION METER ASSEMBLY

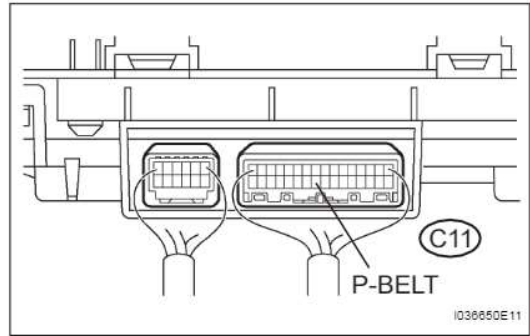
Front Passenger Side Seat Belt Warning Light Malfunction

WIRING DIAGRAM



DESCRIPTION

1 CHECK COMBINATION METER ASSEMBLY



(a) Measure the resistance of the connector.
Standard resistance

Tester Connection	Condition	Specified Condition
C11-8 (P-BELT) - Body ground	Ignition switch is OFF, sit on passenger seat, passenger seat belt is unfastened	Below 1 Ω

OK Go to step 6

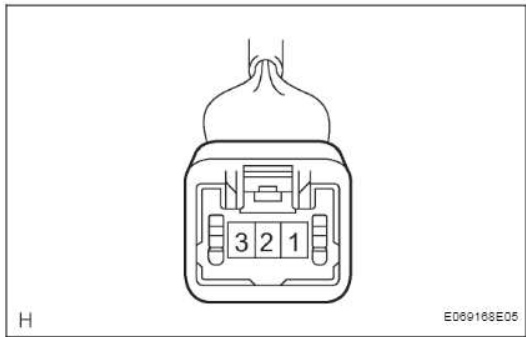
ME-52

METER – METER / GAUGE SYSTEM

NG

2

INSPECT FRONT SEAT INNER BELT ASSEMBLY RH



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

Tester Connection	Condition	Specified Condition
1 - 3	Seat belt is unfastened (occupant detection sensor ON)	Below 1 Ω

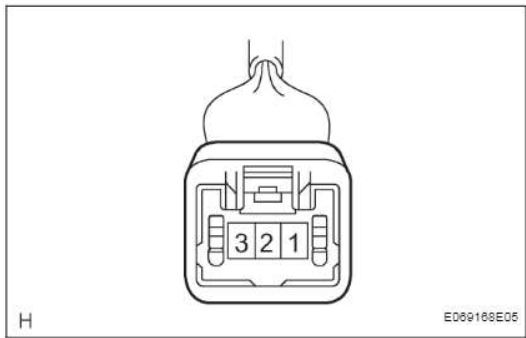
NG

REPLACE FRONT SEAT INNER BELT ASSEMBLY RH

OK

3

INSPECT SEPARATE TYPE FRONT SEAT CUSHION PAD



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

Tester Connection	Condition	Specified Condition
1 - 2	Seat belt is fastened	Below 1,330 Ω
1 - 2	Seat belt is unfastened	Below 330 Ω

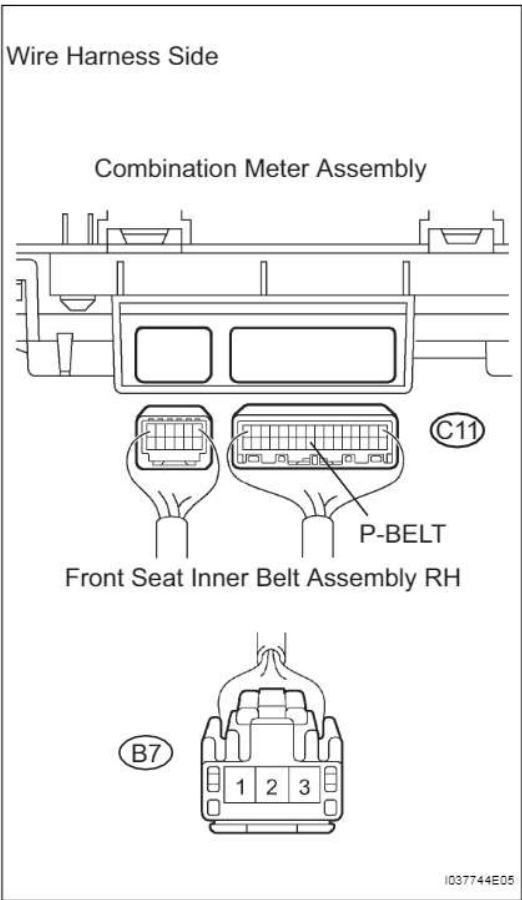
NG

REPLACE SEPARATE TYPE FRONT SEAT CUSHION PAD

OK

4

CHECK WIRE HARNESS (COMBINATION METER - FRONT SEAT INNER BELT RH)



- (a) Disconnect the C11 meter connector.
- (b) Disconnect the B7 belt connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
C11-8 (P-BELT) - B7-3	Below 1 Ω
C11-8 (P-BELT) - Body ground	10 kΩ or higher
B7-1 - Body ground	10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

ME

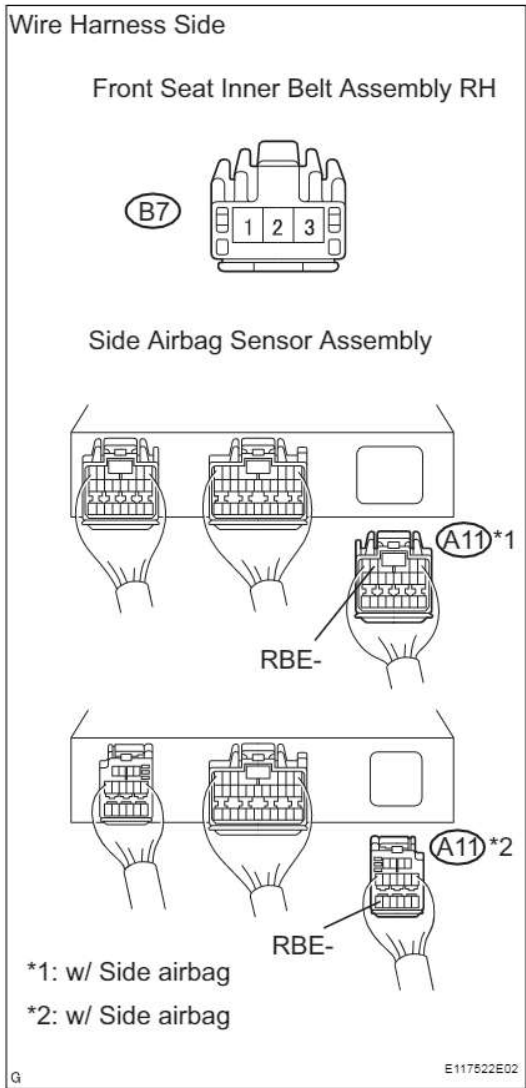
OK

ME-54

METER – METER / GAUGE SYSTEM

5

CHECK WIRE HARNESS (FRONT SEAT INNER BELT RH - CENTER AIRBAG SENSOR)



- (a) Disconnect the B7 belt connector.
- (b) Disconnect the A11 sensor connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
B7-1 - A11-3 (RBE-)*1	Below 1 Ω
B7-1 - A11-2 (RBE-)*2	Below 1 Ω
B7-1 - Body ground	10 kΩ or higher

HINT:

- *1: w/ Side airbag
- *2: w/o Side airbag

NG

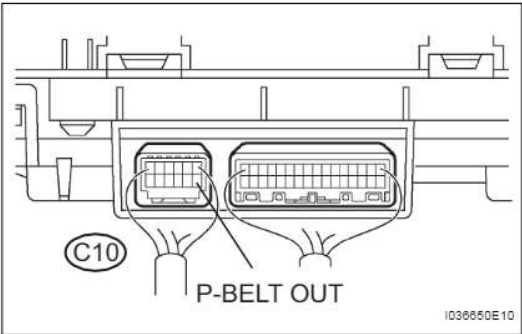
REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE COMBINATION METER ASSEMBLY

METER – METER / GAUGE SYSTEM

6 CHECK COMBINATION METER ASSEMBLY (P-BELT OUT VOLTAGE)



- (a) Remove the combination meter but do not disconnect the connector.
 - (b) Measure the voltage of the connector.
- Standard voltage**

Tester Connection	Condition	Specified Condition
C10-6 (P-BELT OUT) - Body ground	Ignition switch ON	10 to 14 V

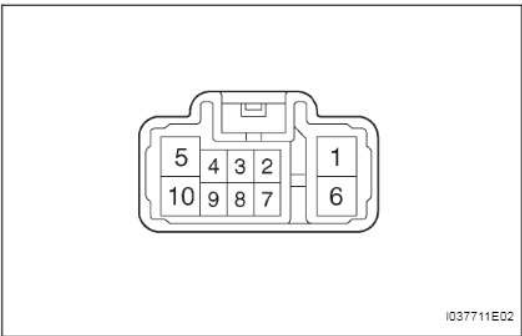
NG

REPLACE COMBINATION METER ASSEMBLY

OK

ME

7 INSPECT CENTER CLUSTER MODULE SWITCH (SEAT BELT WARNING LIGHT FOR PASSENGER'S SEAT)



- (a) Remove the center cluster module switch.
 - (b) Apply battery voltage to the terminals of the module switch and check that the passenger seat belt warning light.
- OK**

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 9 Battery negative (-) → Terminal 1	Seat belt warning light turns on

NG

REPLACE CENTER CLUSTER MODULE SWITCH

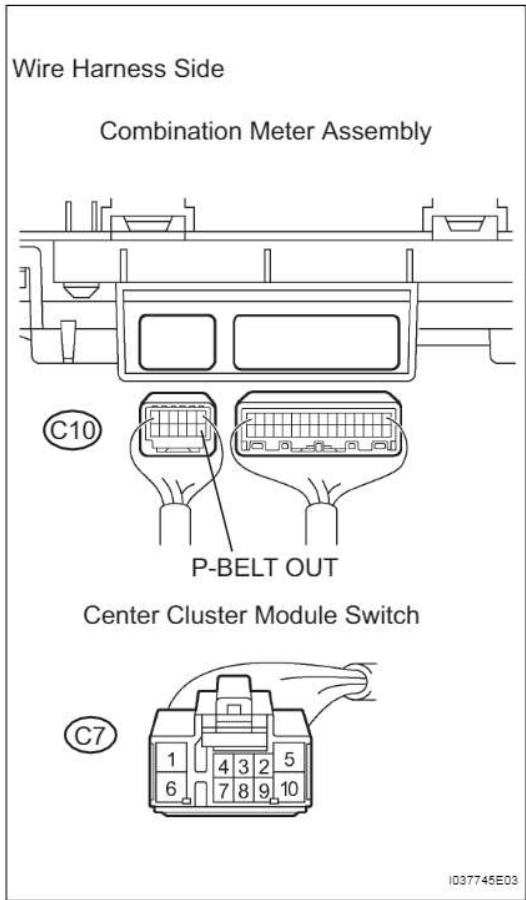
OK

ME-56

METER – METER / GAUGE SYSTEM

8

CHECK WIRE HARNESS (COMBINATION METER - CENTER CLUSTER MODULE SWITCH)



- (a) Disconnect the C10 meter connector.
- (b) Disconnect the C7 switch connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
C10-6 (P-BELT OUT) - C7-9	Below 1 Ω
C10-6 (P-BELT OUT) - Body ground	10 kΩ or higher

NG REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

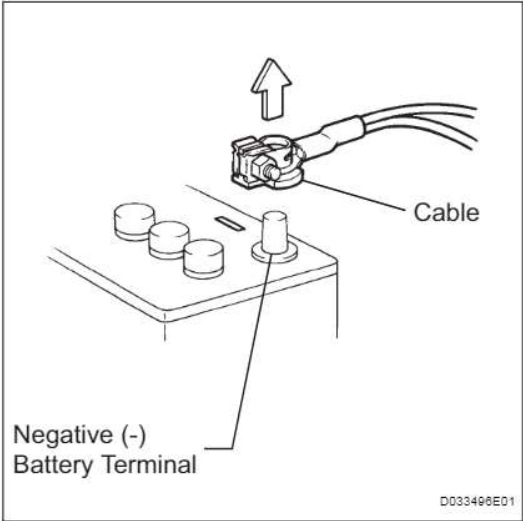
REPAIR OR REPLACE WIRE HARNESS (CENTER CLUSTER MODULE SWITCH - BODY GROUND)

METER / GAUGE SYSTEM

PRECAUTION

CAUTION:
When disconnecting the cable from the negative (-) battery terminal, initialize the following system(s) after the cable is reconnected.

System Name	See procedure
Sliding Roof System	IN-23



1. DISCONNECT AND RECONNECT CABLE OF NEGATIVE BATTERY TERMINAL
- (a)

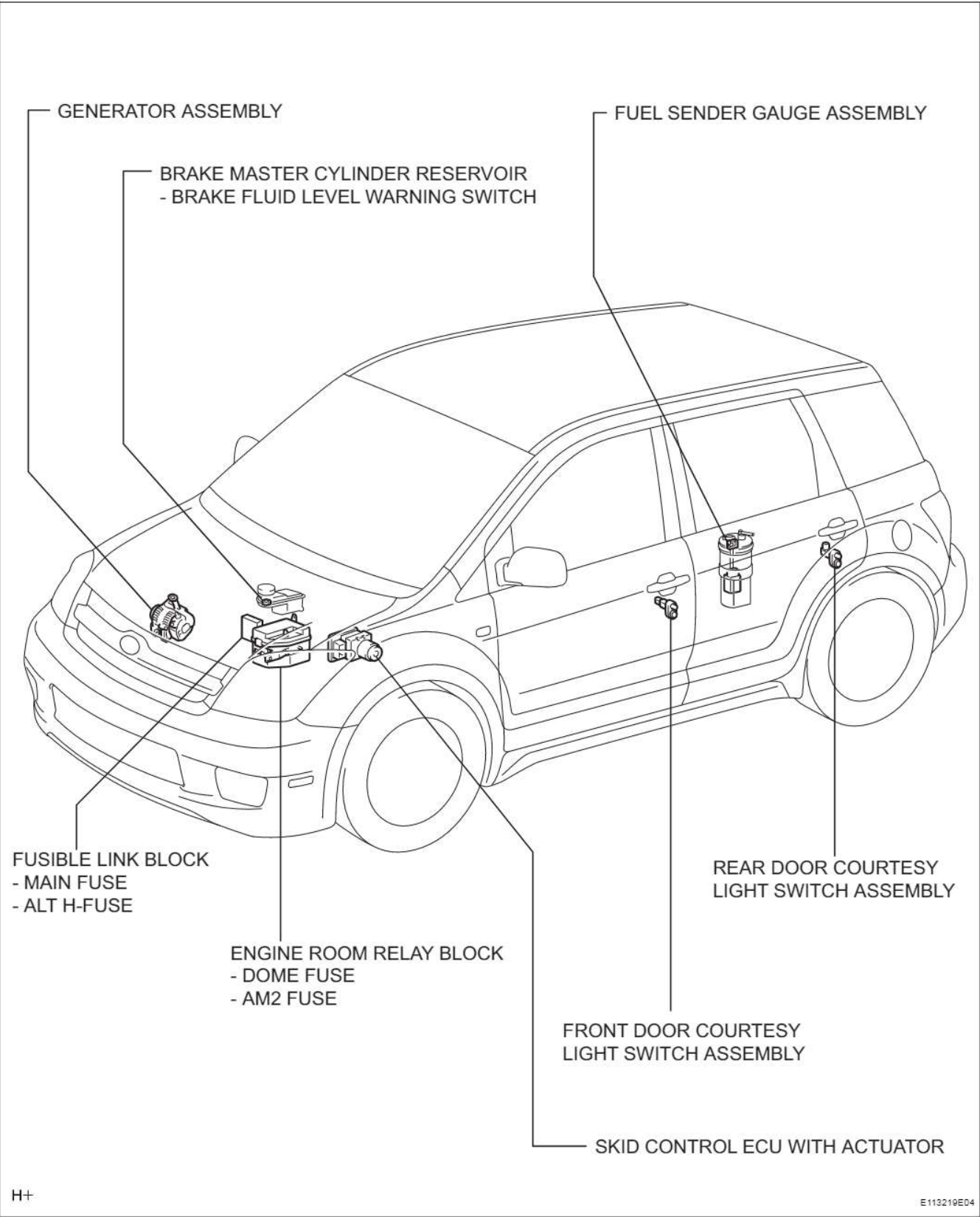
Before performing electronic work, disconnect the cable from the negative (-) battery terminal in order to prevent it from shorting and burning out.
- (b)

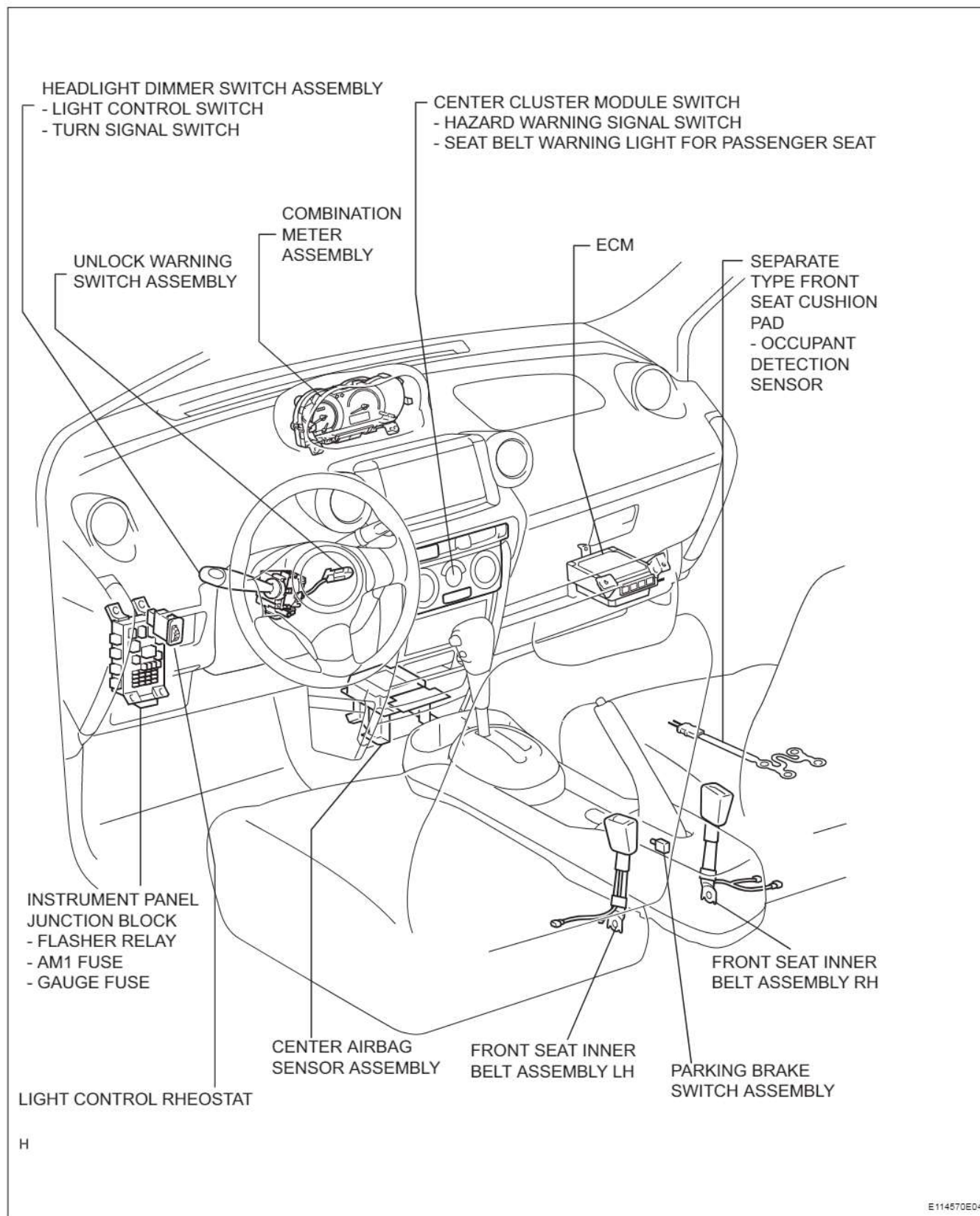
When disconnecting and reconnecting the battery cable, turn the ignition switch OFF and headlight dimmer switch OFF. Then loosen the terminal nut completely. Be careful not to damage the cable or terminal.
- (c)

When the battery cable is disconnected, the settings of the clock and radio, and memory of DTCs, etc. are erased. Before disconnecting the battery cable, take notes of the settings and memory.

ME

PARTS LOCATION

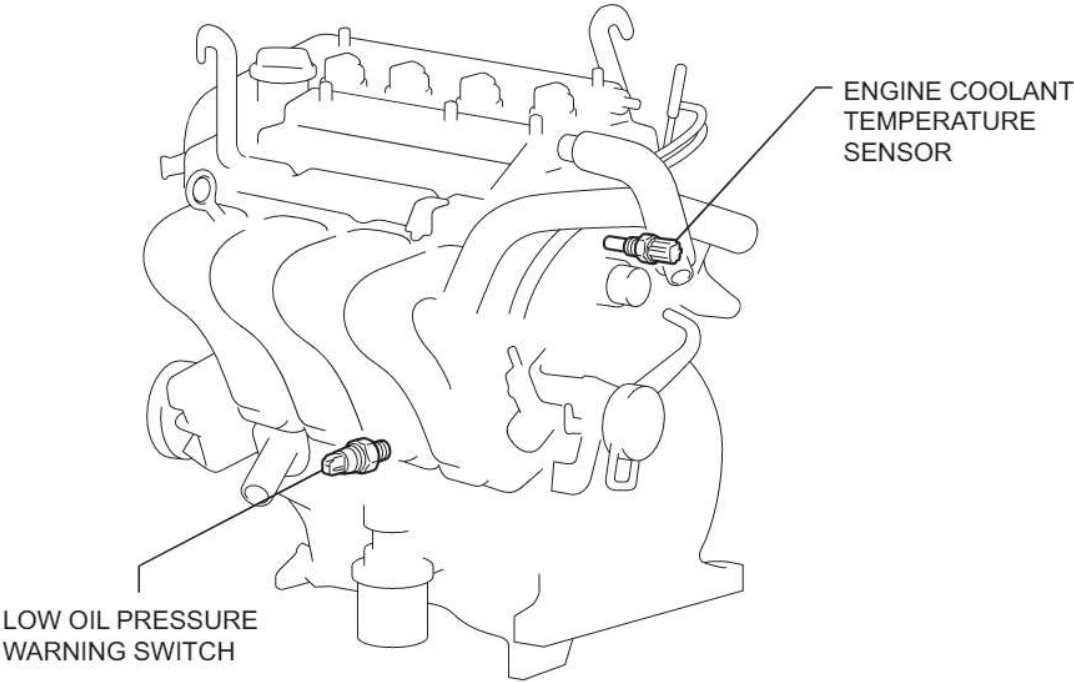


METER – METER / GAUGE SYSTEM**ME-3****ME**

ME-4

METER – METER / GAUGE SYSTEM

ME

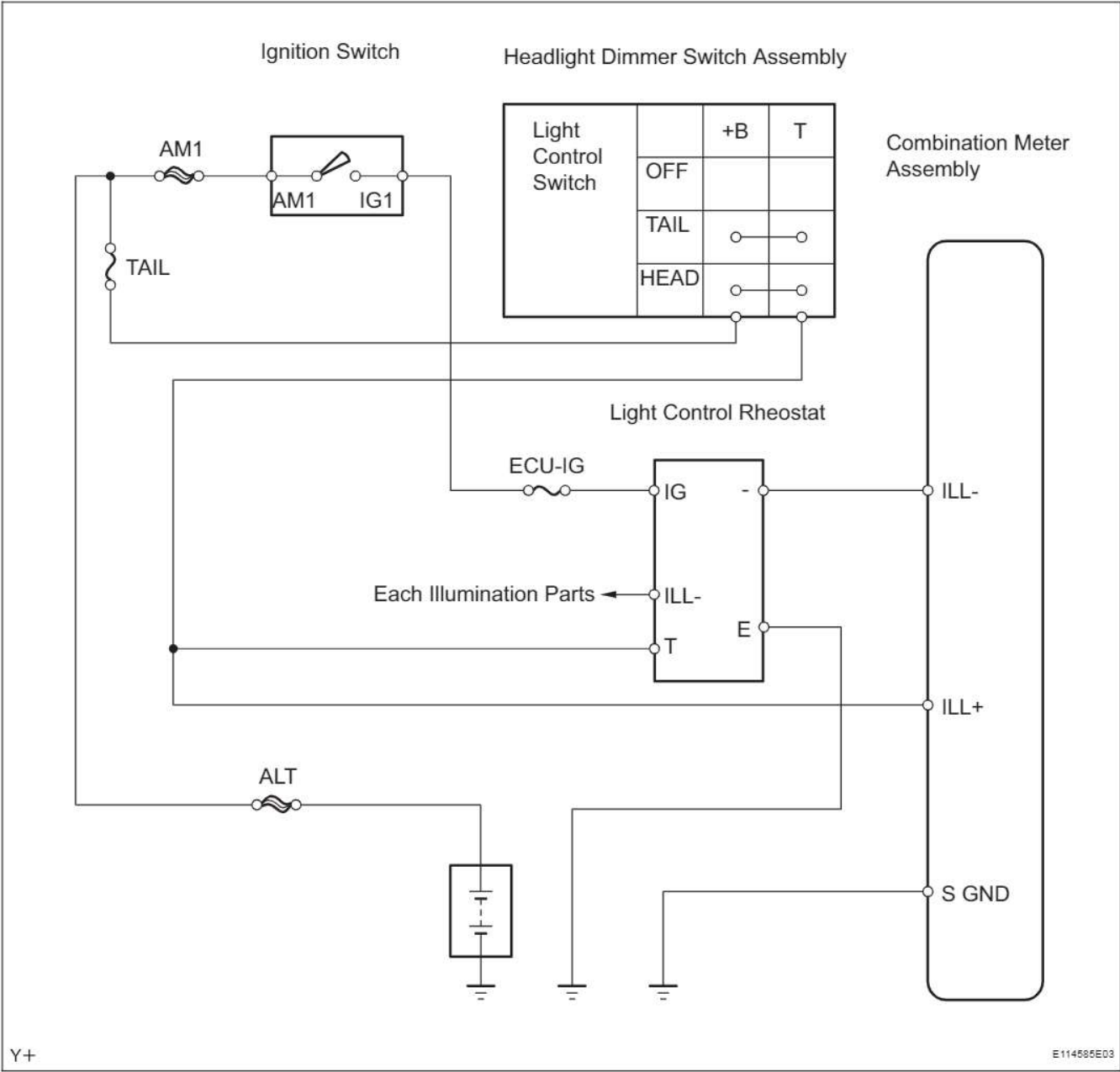


N

E110705E03

Operating Light Control Rheostat does not Change Light Brightness

WIRING DIAGRAM



INSPECTION PROCEDURE

1

CHECK LIGHT CONTROL RHEOSTAT

- (a) Operate the light control rheostat and check that the illumination of the radio and player, center cluster module switch, etc. change accordingly.

OK:
The illumination can be adjusted.

ME-58

METER – METER / GAUGE SYSTEM

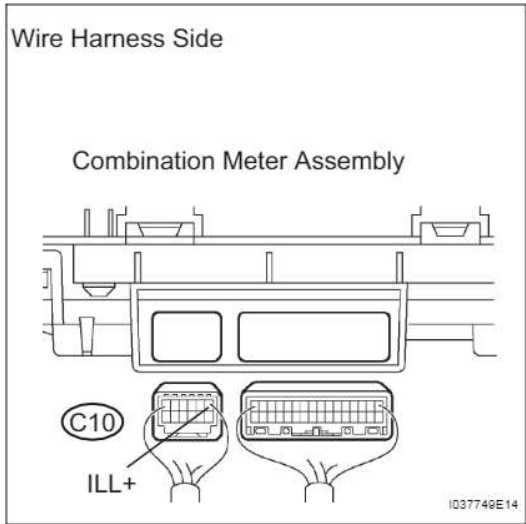
OK

NG

Go to step 6

2

CHECK WIRE HARNESS (COMBINATION METER - BATTERY)



- (a) Disconnect the C10 meter connector.
(b) Measure the voltage of the wire harness side connector.
Standard voltage

Tester Connection	Condition	Specified Condition
C1-12 (ILL+) - Body ground	Ignition switch is ON and light control switch is at TAIL or HEAD	10 to 14 V

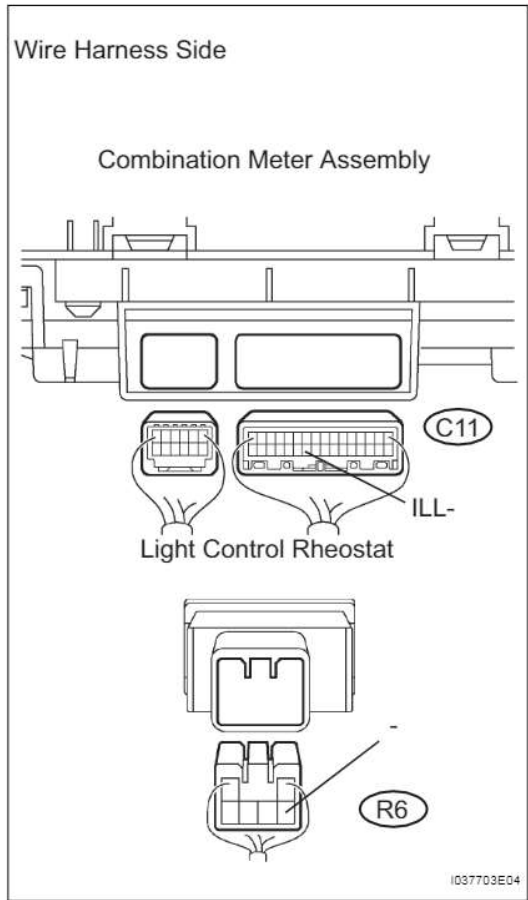
ME

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

3 CHECK WIRE HARNESS (COMBINATION METER - LIGHT CONTROL RHEOSTAT)



- (a) Disconnect the C11 meter connector.
- (b) Disconnect the R6 rheostat connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
C11-7 (ILL-) - R6-3 (-)	Below 1 Ω

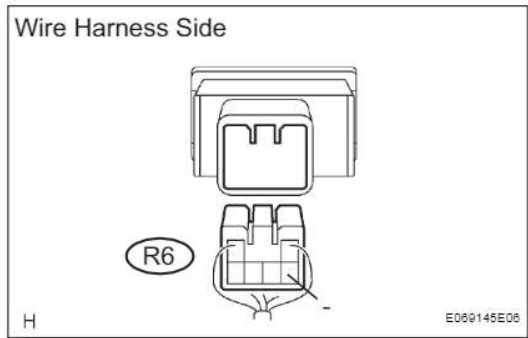
NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

ME

OK

4 CHECK LIGHT CONTROL RHEOSTAT



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

Tester Connection	Condition	Specified Condition
R6-3 (-) - Body ground	Ignition switch is ON and light control switch is at TAIL or HEAD	10 to 14 V

NG

REPLACE COMBINATION METER ASSEMBLY

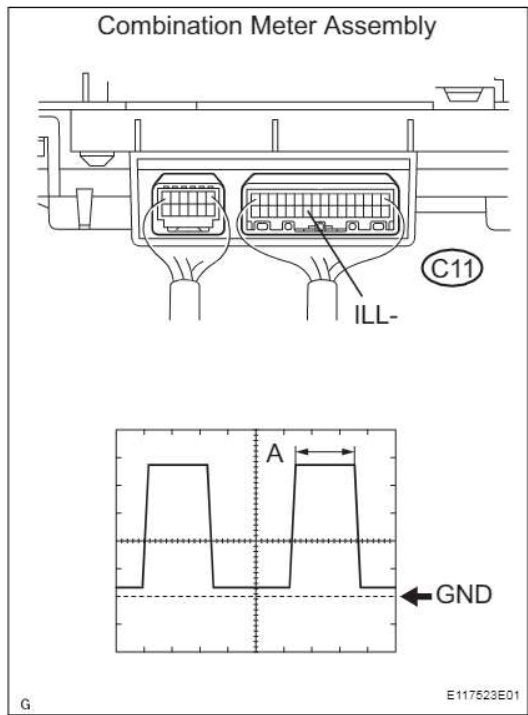
OK

ME-60

METER – METER / GAUGE SYSTEM

5

CHECK COMBINATION METER ASSEMBLY (ILL- VOLTAGE)



- (a) Remove the combination meter but do not disconnect the connectors.
- (b) Turn the ignition switch ON.
- (c) Using an oscilloscope, check the signal waveform of the meter.

Item	Contents
Terminal No.	C11-7 (ILL-) - Body ground
Tool setting	2 V/DIV., 1 msec./DIV.
Vehicle condition	Ignition switch ON

OK:
As shown in the illustration.

HINT:
Waveform changes as illumination dims ("A" becomes longer).

NG

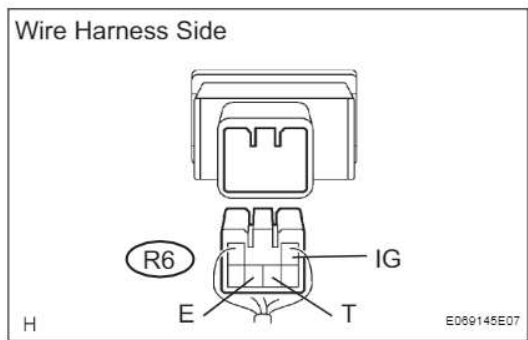
REPLACE LIGHT CONTROL RHEOSTAT

OK

REPLACE COMBINATION METER ASSEMBLY

6

CHECK WIRE HARNESS (LIGHT CONTROL RHEOSTAT - BATTERY AND BODY GROUND)



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

Tester Connection	Condition	Specified Condition
R6-1 (IG) - Body ground	Ignition switch is ON	10 to 14 V
R6-4 (T) - Body ground	Ignition switch ON, combination switch position TAIL or HEAD	10 to 14 V

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

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

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

METER – METER / GAUGE SYSTEM

ME-61

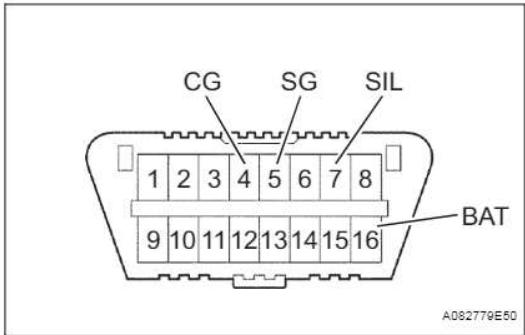


REPLACE LIGHT CONTROL RHEOSTAT

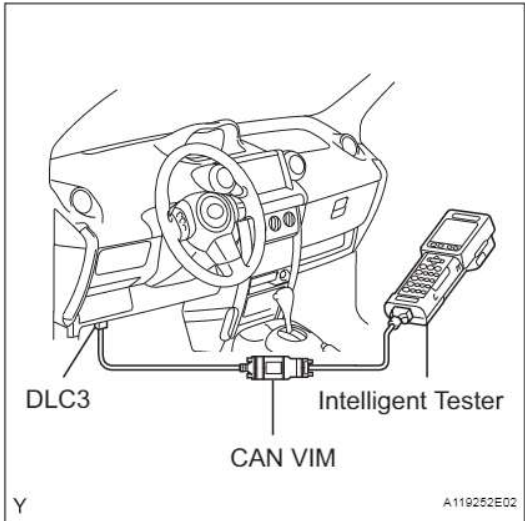
ME

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 positive	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.

ME-20**METER – METER / GAUGE SYSTEM****DATA LIST / ACTIVE TEST****1. READ DATA LIST****HINT:**

Using the intelligent tester's 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

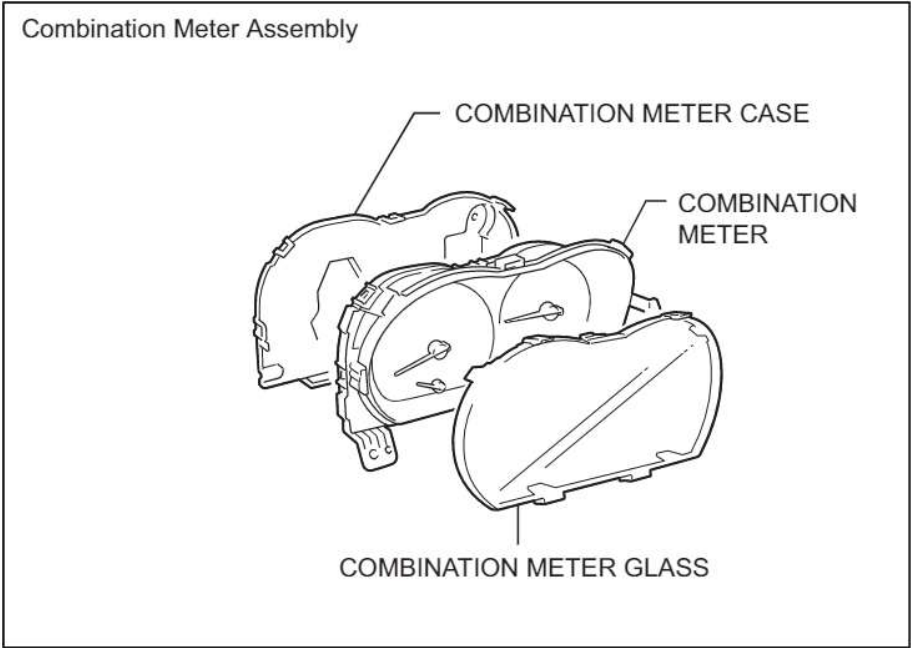
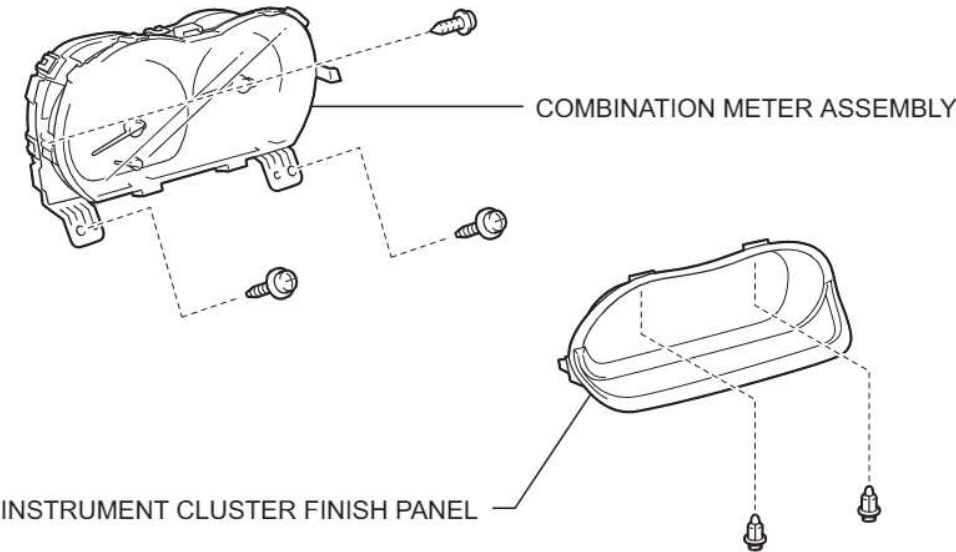
Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
WHEEL SPD FR	Vehicle speed / Min.: 0 km/h (0 mph), Max.: 326 km/h (202 mph)	Almost equal to speedometer value (when driving)	-
WHEEL SPD FL	Vehicle speed / Min.: 0 km/h (0 mph), Max.: 326 km/h (202 mph)	Almost equal to speedometer value (when driving)	-
WHEEL SPD RR	Vehicle speed / Min.: 0 km/h (0 mph), Max.: 326 km/h (202 mph)	Almost equal to speedometer value (when driving)	-
WHEEL SPD RL	Vehicle speed / Min.: 0 km/h (0 mph), Max.: 326km/h (202 mph)	Almost equal to speedometer value (when driving)	-

ECM

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
ENGINE SPD	Engine speed: Min.: 0, Max.: 16,383 rpm	600 to 700 rpm: Idling (M/T) 650 to 750 rpm: Idling (A/T)	-
COOLANT TEMP	Engine coolant temperature (ECT): Min.: -40°C (-40°F), Max.: 140°C (284°F)	75 to 100°C (167 to 203°F): After warming up engine	- If value -40°C (-40°F): ECT sensor open - If value 140°C (284°F) or higher: ECT sensor shorted

COMBINATION METER

COMPONENTS



METER – COMBINATION METER**ME-61****REMOVAL**

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

CAUTION:

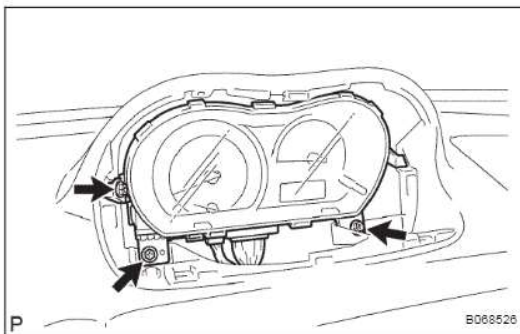
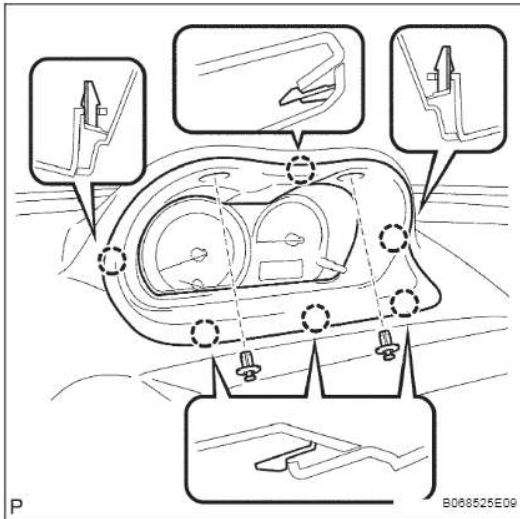
Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.

2. **REMOVE INSTRUMENT CLUSTER FINISH PANEL**

- (a) Remove the 2 clips.
- (b) Using a screwdriver, detach the 6 claws and remove the cluster finish panel.

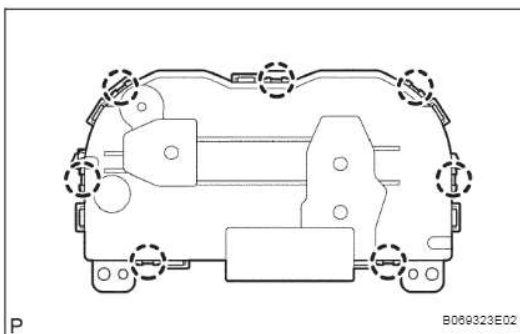
HINT:

Tape the screwdriver tip before use.

ME

3. **REMOVE COMBINATION METER ASSEMBLY**

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

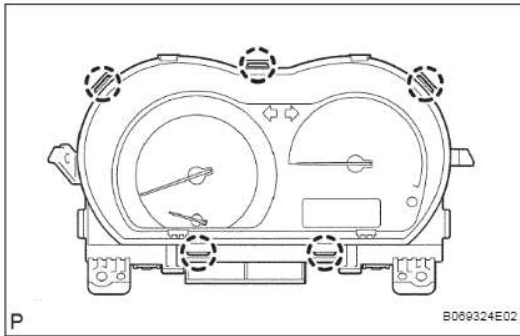
**DISASSEMBLY**

1. **REMOVE COMBINATION METER CASE**

- (a) Using a screwdriver, detach the 7 claws and remove the meter case.

HINT:

Tape the screwdriver tip before use.

ME-62**METER – COMBINATION METER****2. REMOVE COMBINATION METER GLASS**

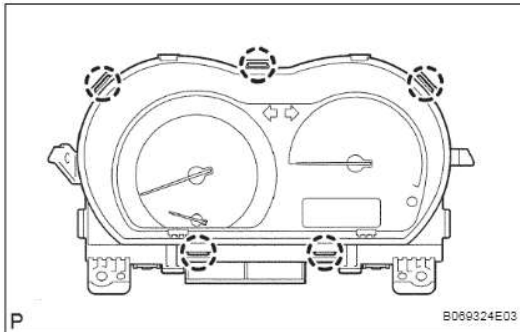
- (a) Using a screwdriver, detach the 5 claws and remove the meter glass.

HINT:

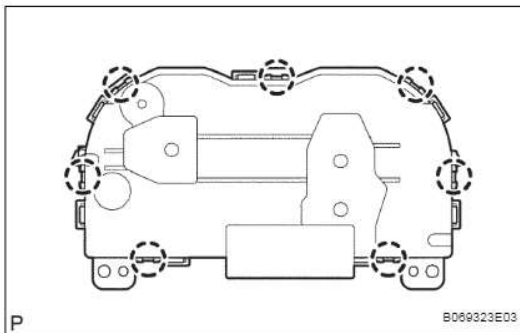
Tape the screwdriver tip before use.

REASSEMBLY**1. INSTALL COMBINATION METER GLASS**

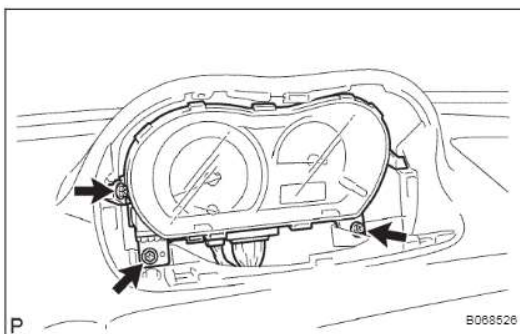
- (a) Attach the 5 claws to install the meter glass.

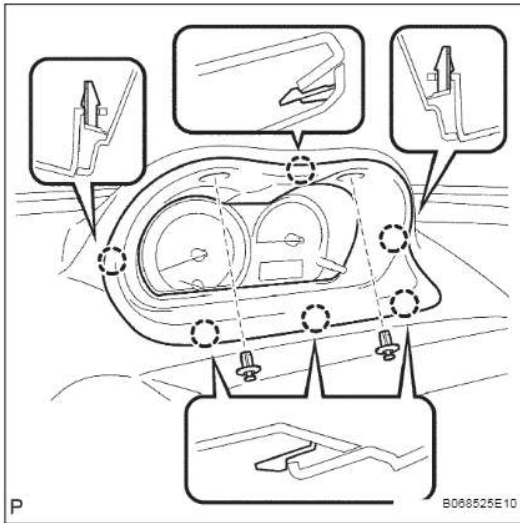
**2. INSTALL COMBINATION METER CASE**

- (a) Attach the 7 claws to install the meter case.

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

- (a) Connect the connectors and install the combination meter with the 3 screws.



METER – COMBINATION METER**ME-63**

- 2. INSTALL INSTRUMENT CLUSTER FINISH PANEL**
 - (a) Attach the 6 claws to install the cluster finish panel.
 - (b) Install the 2 clips.
- 3. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**
- 4. PERFORM INITIALIZATION**
 - (a) Perform initialization (see page [IN-23](#)).

NOTICE:
Certain systems need to be initialized after disconnecting and reconnecting the cable from the negative (-) battery terminal.
- 5. CHECK SRS WARNING LIGHT**
 - (a) Check the SRS warning light (see page [RS-28](#)).

ME

METER – METER / GAUGE SYSTEM**ME-21****ON-VEHICLE INSPECTION****1. INSPECT SPEEDOMETER**

(a) Check the operation.

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

Reference: km/h (Canada)

Standard Indication	Acceptable Range
20 km/h	18.9 to 22.0 km/h
40 km/h	37.9 to 41.8 km/h
60 km/h	57.2 to 62.0 km/h
80 km/h	76.6 to 82.5 km/h
100 km/h	96.8 to 102.7 km/h
120 km/h	117.2 to 123.2 km/h
140 km/h	137.3 to 144.5km/h
160 km/h	157.7 to 165.9 km/h
180 km/h	178.3 to 187.5 km/h

Reference: mph (U.S.A.)

Standard Indication	Acceptable Range
20 mph	19.7 to 22.6 mph
40 mph	39.8 to 43.2 mph
60 mph	59.9 to 64.0 mph
80 mph	79.2 to 85.4 mph
100 mph	101.8 to 107.0 mph

NOTICE:

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

- (2) Check the deflection width of the speed meter indicator.

Reference:

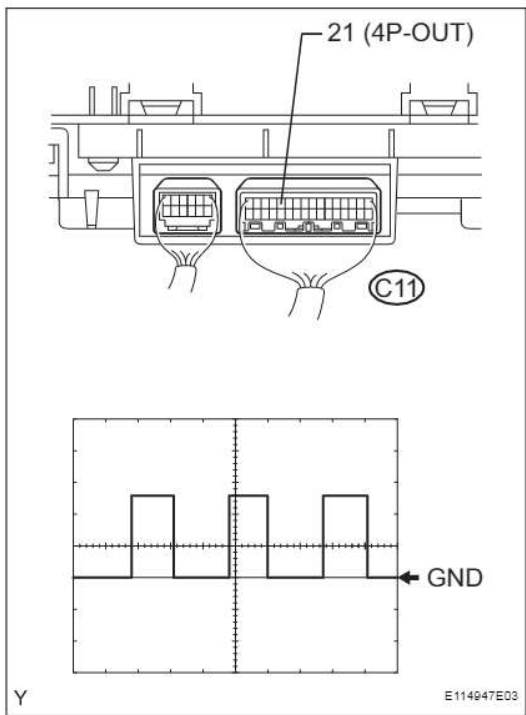
Below 0.5 km/h (0.3 mph)

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

ME

ME-22

METER – METER / GAUGE SYSTEM



2. INSPECT OUTPUT SIGNAL OF VEHICLE SPEED SENSOR

- (a) Check the output signal waveform.
- (1) Remove the combination meter, but do not disconnect the connector.
 - (2) Connect an oscilloscope to terminal C11-21 and body ground.
 - (3) Start the engine.
 - (4) Check the signal waveform according to the condition(s) in the table below.

Item	Condition
Tool setting	5 V/DIV, 20 ms/DIV
Vehicle condition	Driving at approx. 20 km/h (12.4 mph)

OK:
As shown in the illustration.

HINT:
As the vehicle speed increases, the cycle of the signal waveform narrows.

3. INSPECT TACHOMETER

- (a) Check operation.
- (1) Connect the tune-up test tachometer, and start the engine.
- NOTICE:**
- Reversing the connection of the tachometer will damage the transistors and the insides of the diodes.
 - When removing or installing the tachometer, be careful not to drop or subject it to heavy shocks.
- (2) Compare the result of the test with the standard indication.

DC 13.5 V, 25°C (77°F)

Standard Indication (r/min)	Acceptable Range (r/min) Data in () are for reference
700	630 to 770
1,000	(900 to 1,100)
2,000	(1,850 to 2,150)
3,000	2,850 to 3,150
4,000	(3,800 to 4,200)
5,000	4,800 to 5,200
6,000	(5,750 to 6,250)
7,000	6,700 to 7,300

METER – METER / GAUGE SYSTEM**ME-23**

Wire Harness Side



1030899E14

4. INSPECT FUEL RECEIVER GAUGE

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

OK:**Needle position is on EMPTY.**

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

OK:**Needle position is on FULL.****5. INSPECT FUEL LEVEL WARNING**

- (a) Disconnect the connector from the sender gauge.
- (b) Turn the ignition switch ON, check that the fuel level needle indicates EMPTY and fuel level warning light comes on.

OK:**Fuel level warning light comes on.****6. INSPECT WATER TEMPERATURE RECEIVER GAUGE**

- (a) Disconnect the connector from the water temperature receiver gauge.
- (b) Turn the ignition switch ON, and then check the water temperature receiver gauge warning light.

OK:**COLD indicator light comes on.**

- (c) Ground terminal 2 on the wire harness side, then check the water temperature receiver gauge warning light.

OK:**HOT indicator light comes on / blinks.****7. INSPECT LOW OIL PRESSURE WARNING LIGHT**

- (a) Disconnect the connector from the low oil pressure switch.
- (b) Turn the ignition switch ON.
- (c) Ground the terminal of the wire harness side connector, then check the low oil pressure warning light.

OK:**Low oil pressure warning light comes on.****8. INSPECT PARKING BRAKE WARNING LIGHT**

- (a) Inspect the parking brake warning light.
 - (1) Disconnect the connector from the parking brake warning switch.
 - (2) Turn the ignition switch ON.
 - (3) Ground the terminal of the wire harness side connector, and then check that the parking brake warning light illuminates.

OK:**Parking brake warning light illuminates.****ME**

ME-24**METER – METER / GAUGE SYSTEM**

- (b) Inspect the parking brake warning light.
 - (1) Disconnect the connector from the brake fluid level warning switch.
 - (2) Turn the ignition switch ON.
 - (3) Connect terminal 1 and 2 of the wire harness side connector, and then check that the parking brake warning light illuminates.

OK:**Parking brake warning light illuminates.****9. INSPECT BRAKE FLUID LEVEL WARNING SWITCH**

- (a) Remove the reservoir cap and strainer.
- (b) Disconnect the connector.
- (c) Measure the resistance between the terminals.

Standard resistance:**Float up (switch off):****10 kΩ or higher**

- (d) Use a siphon, etc., to take fluid out of the reservoir.
- (e) Measure the resistance between the terminals.

Standard resistance:**Float down (switch on):****Below 1 Ω**

- (f) Pour the fluid back in the reservoir.
- (g) Reconnect the connector.

10. INSPECT WASHER LEVEL WARNING SWITCH

- (a) Disconnect the connector from the washer level warning switch.
- (b) Turn the ignition switch ON.
- (c) Ground the terminal of the wire harness side connector, then check the washer level warning light.

OK:**Washer level warning light comes on.****11. RESET OIL REPLACEMENT REMINDER LIGHT (INDICATOR)****Indicator condition:**

State	Condition	Specified State
Blinking	Vehicle is driven about 8,000 km (5,000 miles) since oil is changed	Indicator blinks for 15 seconds after ignition switch is turned ON (including 3 seconds for a valve check)
Continuously Illuminated	Vehicle is driven about 12,000 km (7,500 miles) since oil is changed	Indicator is continuously illuminated after ignition switch is turned ON.

- (a) Set the liquid crystal display (LCD) to ODO.
- (b) Turn the ignition switch OFF.
- (c) Press and hold the reset switch, and turn the ignition switch ON.
- (d) After turning the ignition switch ON, keep holding the reset switch for at least 5 seconds. The reset procedure is completed.

HINT:

- If the ignition switch is turned OFF during the reset procedure:
LCD: off
IND: off

ME

METER – METER / GAUGE SYSTEM**ME-25**

- If the reset switch is released too quickly during the reset procedure:
LCD: returns to ODO display
IND: is not reset

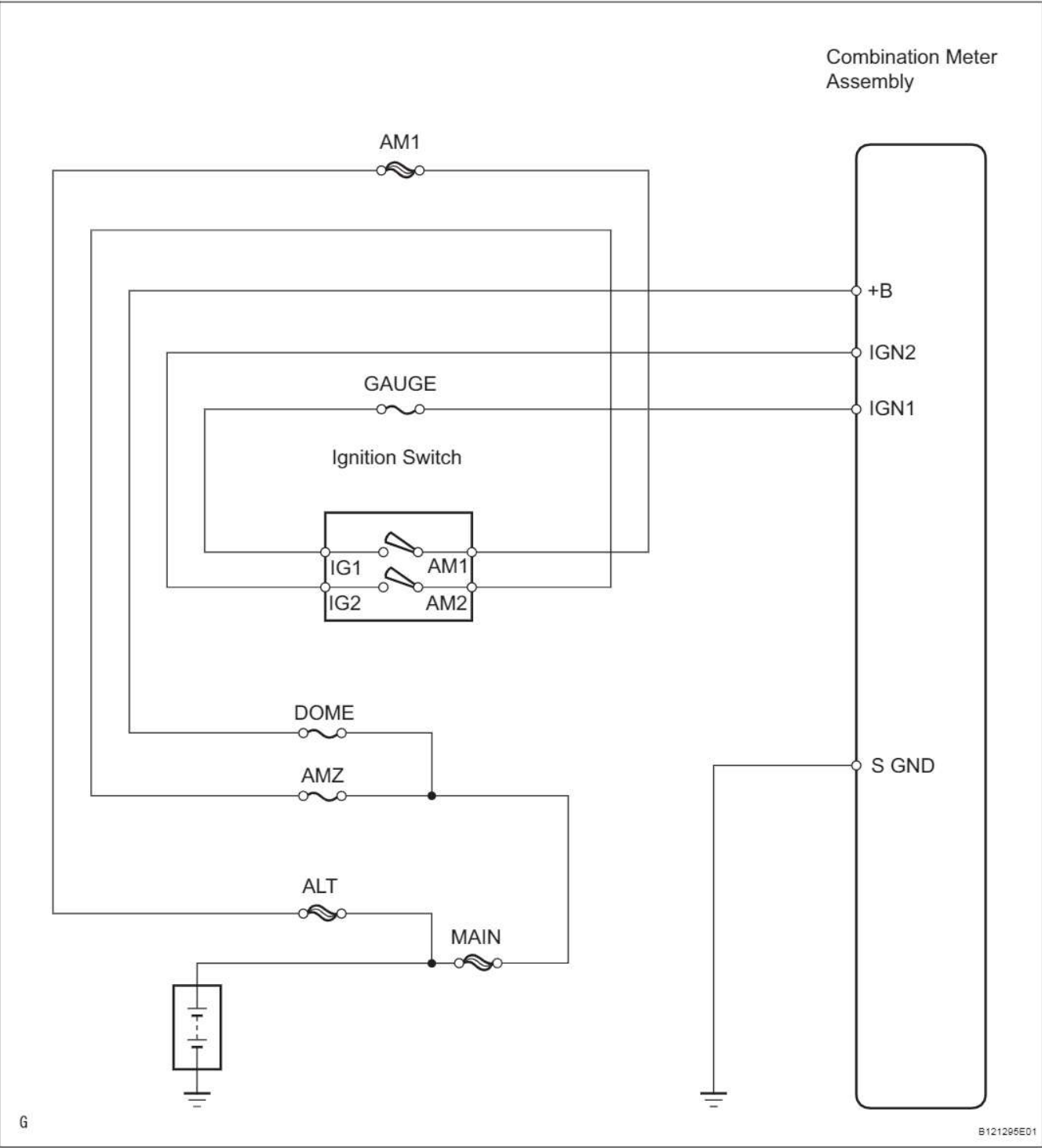
ME

ME-26

METER – METER / GAUGE SYSTEM

Entire Combination Meter does not Operate

WIRING DIAGRAM



1 INSPECT FUSE (MAIN, DOME, AM2, GAUGE, AM1)

(a) Measure the resistance of the ALT H-fuse and MAIN H-fuse in the fusible link block.

Standard resistance:
Below 1 Ω

- (b) Measure the resistance of the DOME fuse and AM2 fuse in the engine room relay block.

Standard resistance:
Below 1 Ω

- (c) Measure the resistance of the GAUGE fuse and AM1 in the instrument panel junction block.

Standard resistance:
Below 1 Ω

NG

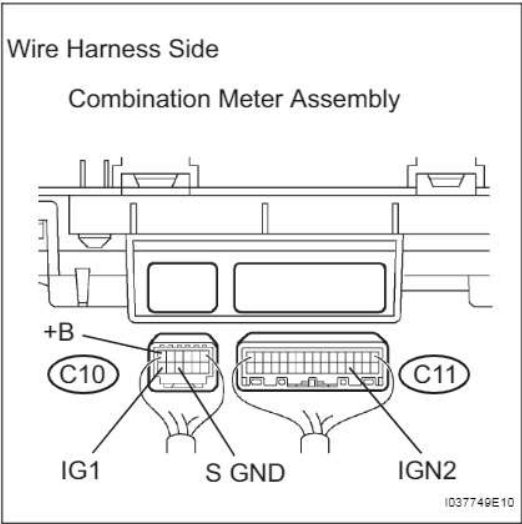
REPLACE FUSE

OK

2

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

ME



- (a) Disconnect the C10 and C11 meter connectors.
(b) Measure the voltage of the wire harness side connectors.

Standard voltage

Tester Connection	Condition	Specified Condition
C10-7 (+B) - Body ground	Always	10 to 14 V
C10-1 (IGN1) - Body ground	Ignition switch ON	10 to 14 V
C11-3 (IGN2) - Body ground	Ignition switch ON	10 to 14 V

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

Standard resistance

Tester Connection	Specified Condition
C10-3 (S GND) - Body ground	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

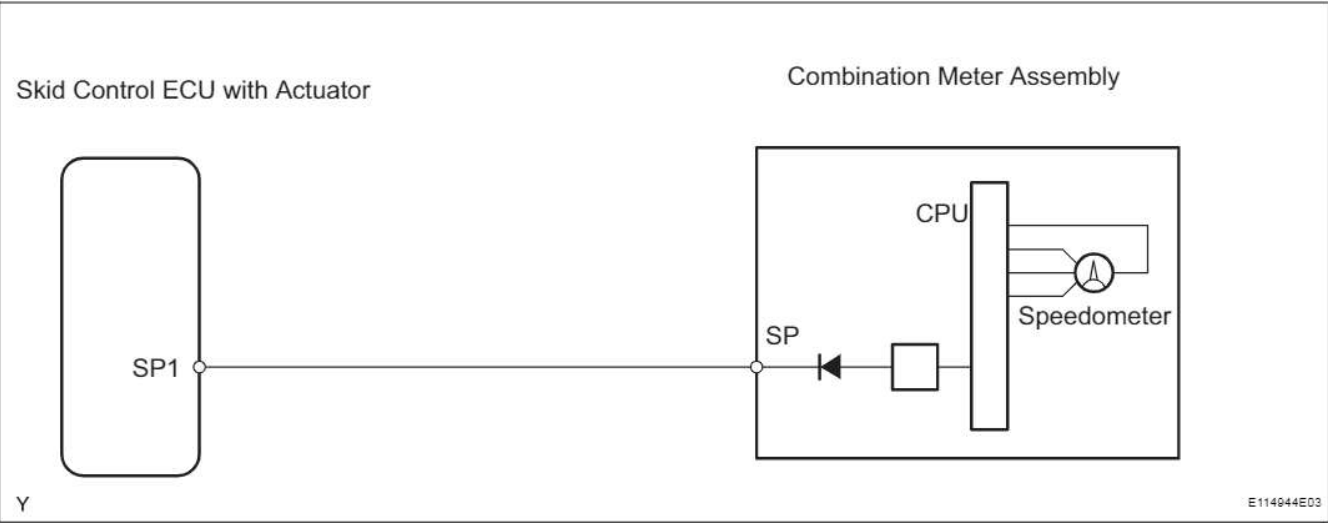
REPLACE COMBINATION METER ASSEMBLY

ME-28

METER – METER / GAUGE SYSTEM

Speedometer 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 (VEHICLE SPEED)*1

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

Skid control ECU with actuator:

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
WHEEL SPD FR	Vehicle speed / Min.: 0 km/h (0 mph) Max.: 326 km/h (202 mph)	Almost equal to actual speed (When driving)	-
WHEEL SPD FL	Vehicle speed / Min.: 0 km/h (0 mph) Max.: 326 km/h (202 mph)	Almost equal to actual speed (When driving)	-
WHEEL SPD RR	Vehicle speed / Min.: 0 km/h (0 mph) Max.: 326 km/h (202 mph)	Almost equal to actual speed (When driving)	-
WHEEL SPD RL	Vehicle speed / Min.: 0 km/h (0 mph) Max.: 326 km/h (202 mph)	Almost equal to actual speed (When driving)	-

OK:
Vehicle speed displayed on tester is almost equal to actual vehicle speed.

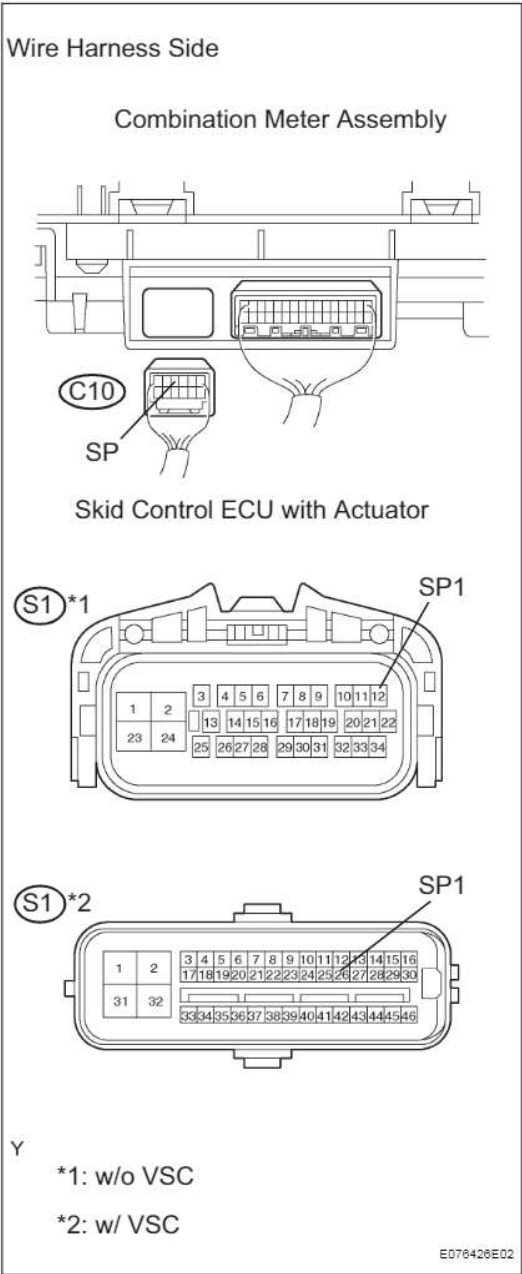
OK

NG

GO TO BRAKE SYSTEM

2

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



- (a) Disconnect the C10 meter connector.
- (b) Disconnect the S1 ECU connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
C10-10 (SP) - S1-12 (SP1)*1	Below 1 Ω
C10-10 (SP) - S1-26 (SP1)*2	Below 1 Ω
C10-10 (SP) - Body ground	10 kΩ or higher

HINT:

*1: w/o VSC

*2: w/ VSC

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

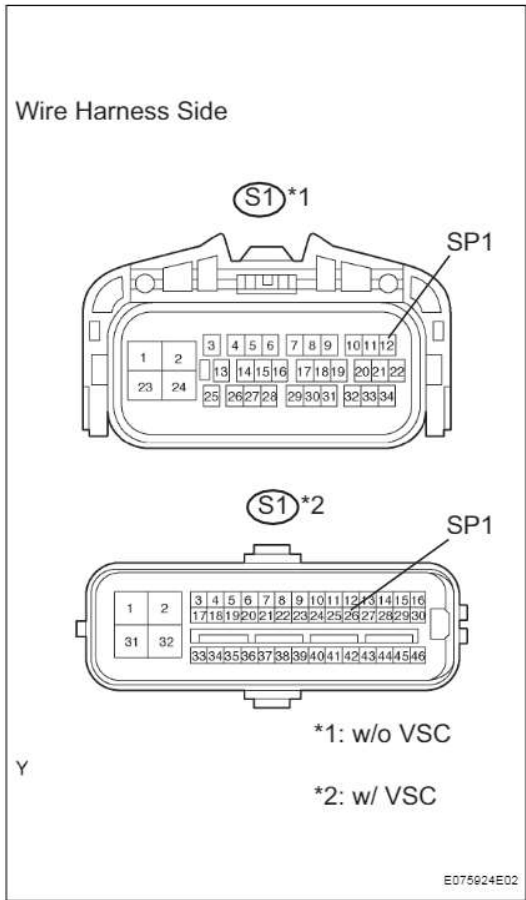
ME

ME-30

METER – METER / GAUGE SYSTEM

3

CHECK SKID CONTROL ECU WITH ACTUATOR (SP1 VOLTAGE)



- (a) Disconnect the S1 ECU connector.
(b) Measure the voltage of the wire harness side connector.

Standard voltage

Tester Connection	Condition	Specified Condition
S1-12 (SP1)*1 - Body ground	Ignition switch ON	10 to 14 V
S1-26 (SP1)*2 - Body ground	Ignition switch ON	10 to 14 V

HINT:

*1: w/o VSC

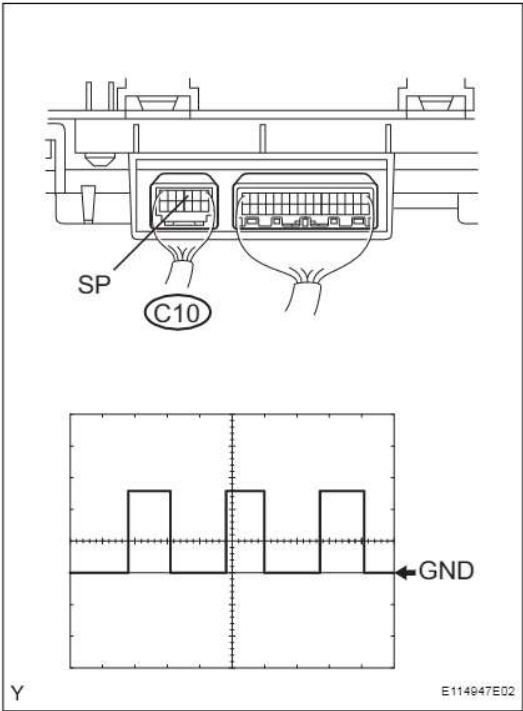
*2: w/ VSC

NG

REPLACE COMBINATION METER ASSEMBLY

OK

4 CHECK COMBINATION METER ASSEMBLY



- (a) Remove the combination meter but do not disconnect the connectors.
- (b) Start the engine.
- (c) Using an oscilloscope, check the signal waveform of the meter.

Item	Content
Terminal No.	C10-10 (SP) - Body ground
Tool setting	5 V/DIV., 20 msec./DIV.
Vehicle condition	Driving at approx. 20 km/h (12.4 mph)

OK:
As shown in the illustration.

HINT:
As the vehicle speed increases, the wavelength shortens.

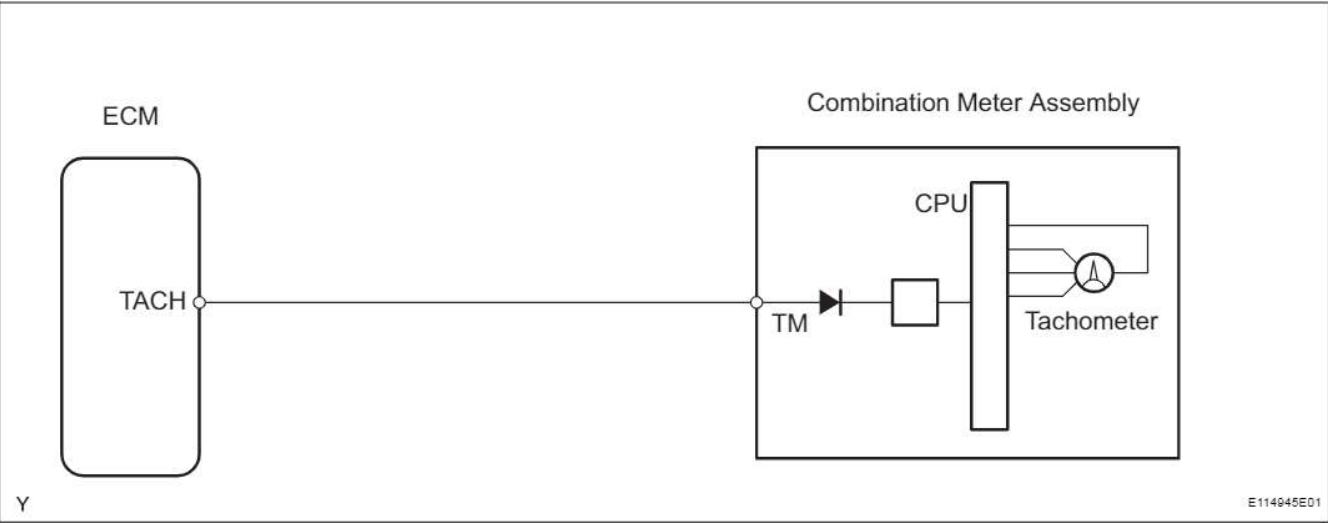
NG GO TO BRAKE SYSTEM

OK

REPLACE COMBINATION METER 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)*1

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

ECM:

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
ENGINE SPD	Engine speed / Min.: 0 rpm, Max.: 16,383 rpm	Almost equal to actual engine speed (When engine is running)	-

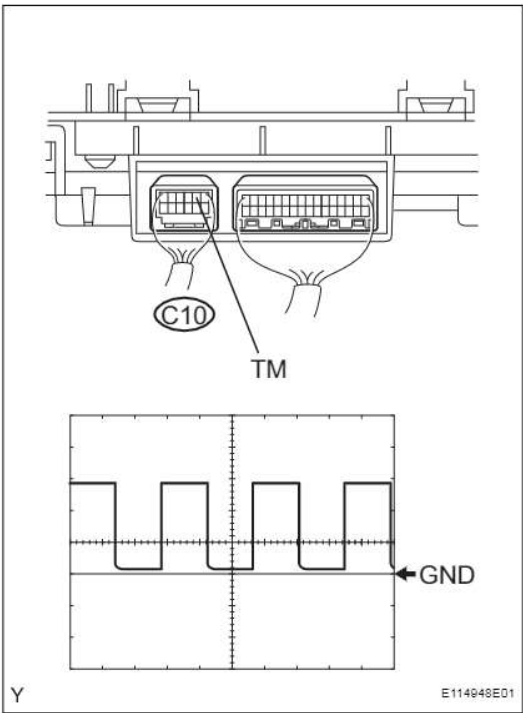
OK:
Engine speed on tester is almost equal to actual engine speed.

OK

NG GO TO SFI SYSTEM

METER – METER / GAUGE SYSTEM

2 CHECK COMBINATION METER ASSEMBLY*2



- (a) Remove the combination meter but do not disconnect the connector.
- (b) Start the engine.
- (c) Using an oscilloscope, check the signal waveform of the meter.

Item	Content
Terminal No.	C10-11 (TM) - Body ground
Tool Setting	5 V/DIV., 10 msec/DIV.
Vehicle Condition	Engine idling

OK:
As shown in the illustration.

NG **REPLACE COMBINATION METER ASSEMBLY**

ME

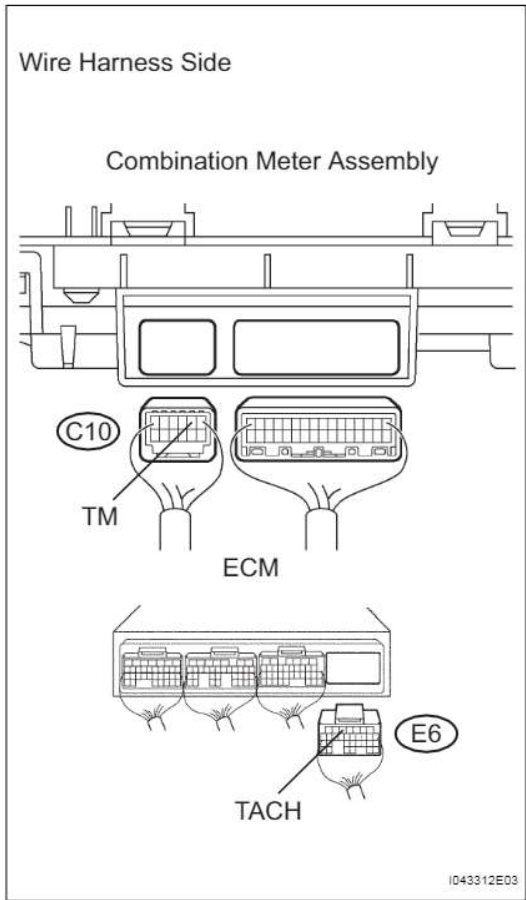
OK

ME-34

METER – METER / GAUGE SYSTEM

3

CHECK WIRE HARNESS (COMBINATION METER - ECM)



- (a) Disconnect the C10 meter connector.
- (b) Disconnect the E6 ECM connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
C10-11 (TM) - E6-5 (TACH)	Below 1 Ω
C10-11 (TM) - Body ground	10 k Ω or higher

NG REPAIR OR REPLACE HARNESS AND CONNECTOR

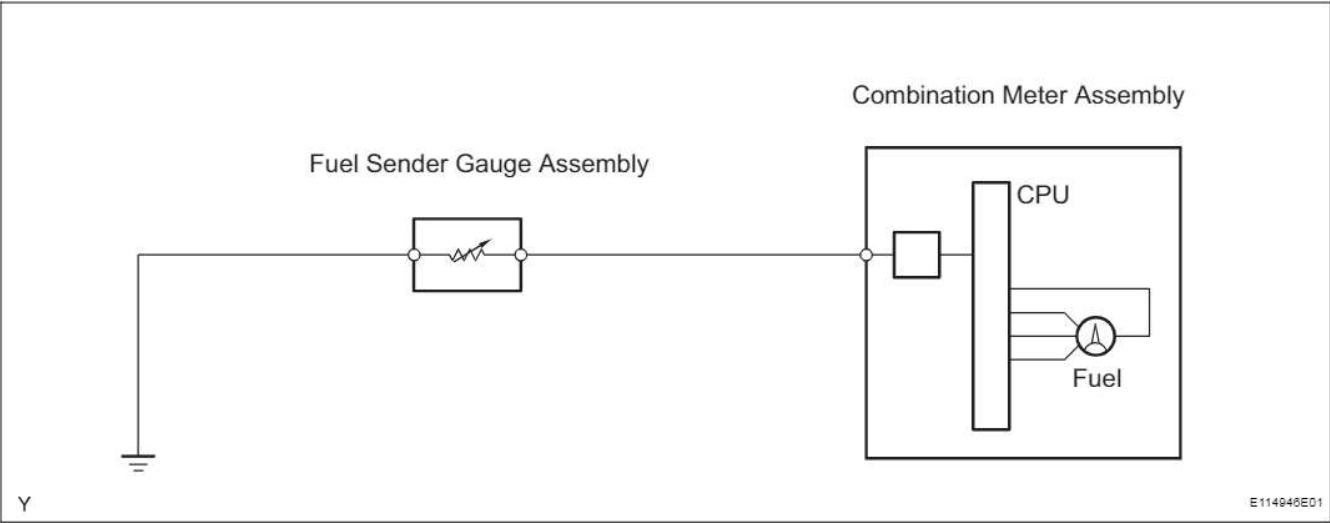
OK

REPLACE ECM

METER – METER / GAUGE SYSTEM

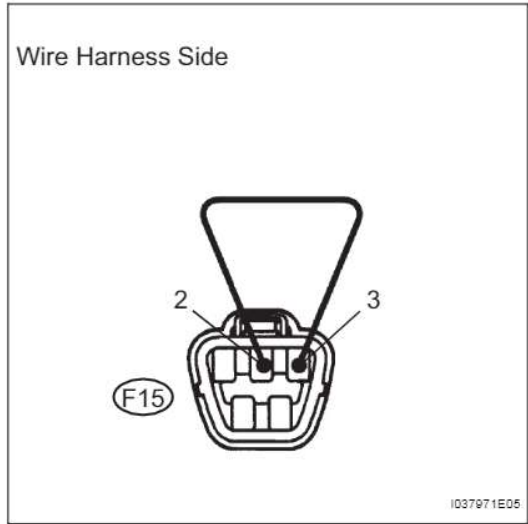
Fuel Gauge Malfunction

WIRING DIAGRAM



INSPECTION PROCEDURE

1 CHECK METER INDICATOR OPERATION (FUEL GAUGE)



- (a) Disconnect the F15 gauge connector.
- (b) Check the meter indicator conditions.
OK

Wire Connection	Condition	Specified Condition
2 - 3	Short circuit (ignition switch ON)	Fuel gauge on combination meter indicates "F" or more

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

Wire Connection	Condition	Specified Condition
2 - Body ground	Ignition switch ON	10 to 14 V

NG

Go to step 3

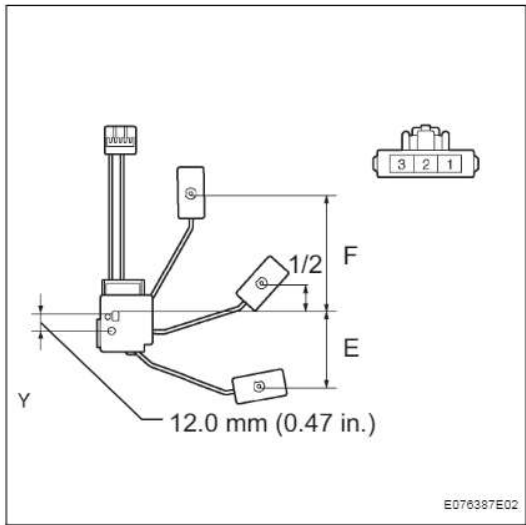
OK

ME-36

METER – METER / GAUGE SYSTEM

2

INSPECT 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 gauge.

Standard resistance

Float Level	Float Position	Specified Condition
F	80.8 to 86.8 mm (3.18 to 3.42 in.)	4.0 +-1 Ω
1/2	15.9 to 21.9 mm (0.62 to 0.86 in.)	55.0 +-3 Ω
E	52.2 to 58.2 mm (2.05 to 2.29 in.)	107.0 +-1 Ω

NG

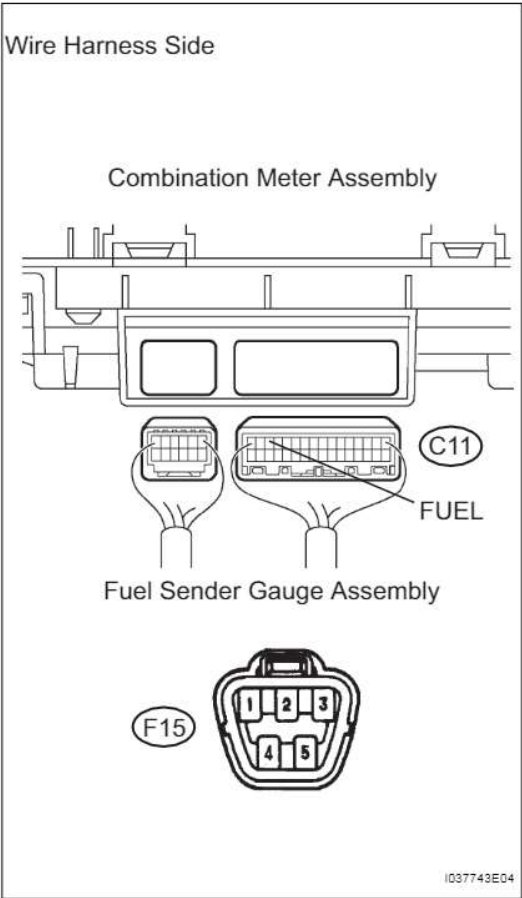
REPLACE FUEL SENDER GAUGE ASSEMBLY

OK

REPLACE COMBINATION METER ASSEMBLY

METER – METER / GAUGE SYSTEM

3 CHECK WIRE HARNESS (COMBINATION METER - FUEL SENDER GAUGE)



- (a) Disconnect the C11 connector.
- (b) Disconnect the F15 gauge connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
C11-19 (FUEL) - F15-2	Below 1 Ω
F15-3 - Body ground	Below 1 Ω
C11-19 (FUEL) - Body ground	10 kΩ or higher

NG REPAIR OR REPLACE HARNESS AND CONNECTOR

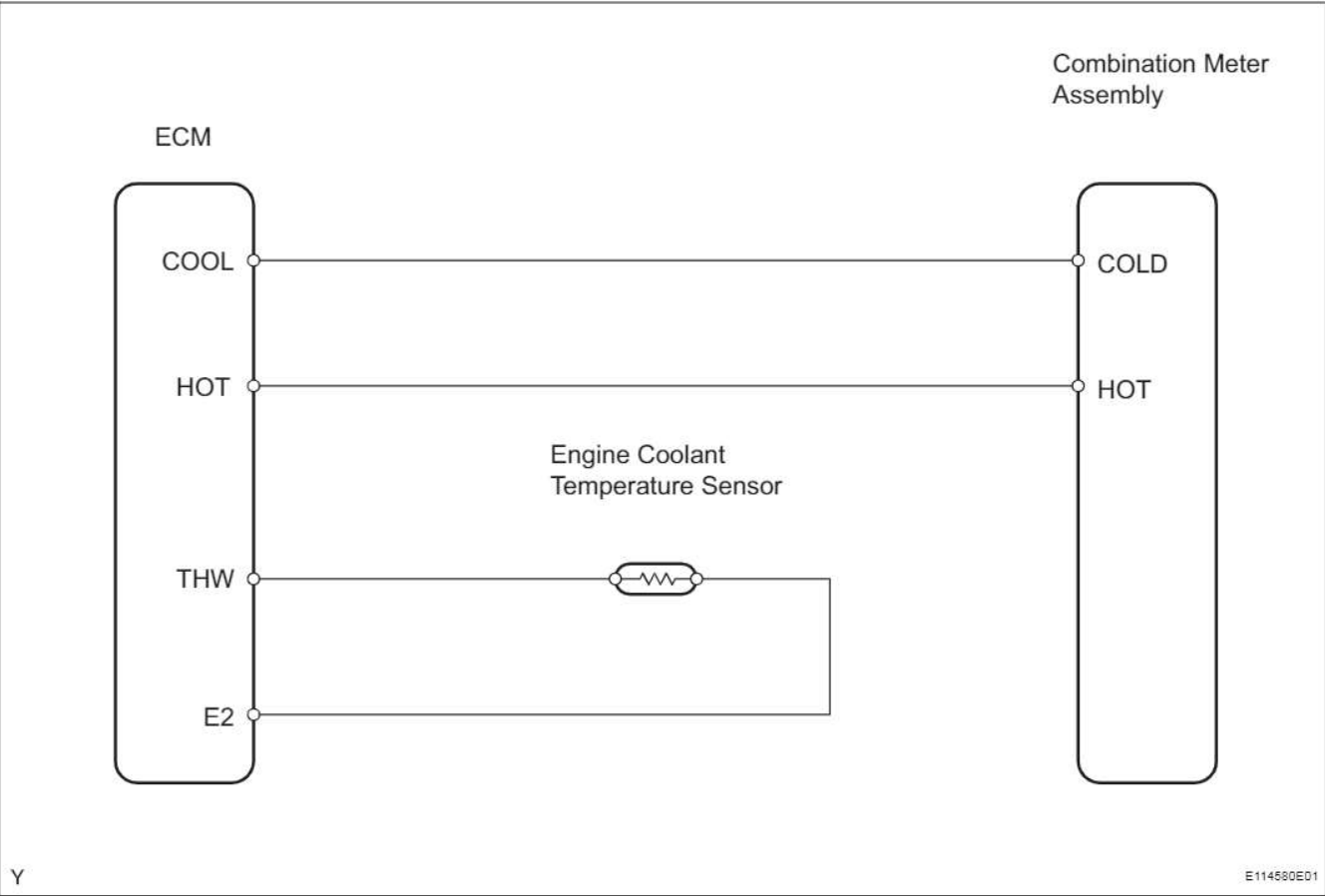
ME

OK

REPLACE COMBINATION METER ASSEMBLY

Engine Coolant Temperature Gauge 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 (COOLANT TEMPERATURE)*1

- (a) Check the DATA LIST for proper functioning of the engine coolant temperature sensor.

ECM:

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
COOLANT TEMP	Engine coolant Temperature (ECT): Min.: -40°C (-40°F), Max.: -140°C (-284°F)	75 to 100°C (167 to 203°F): After warming up engine	- If value -40°C (-40°F): ECT sensor open - If value 140°C (284°F) or higher: ECT sensor shorted

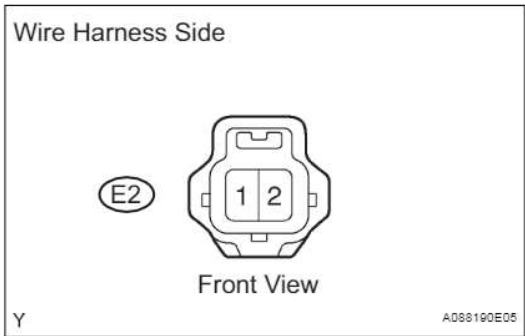
OK

NG

GO TO SFI SYSTEM

2

CHECK COMBINATION METER ASSEMBLY (INDICATOR CHECK)*2



- (a) Disconnect the E2 connector from the engine coolant temperature sensor.
- (b) Check the meter indicator conditions according to the table below.

OK

Wire Connection	Condition	Specified Condition
1 - 2	Short circuit (Ignition switch ON)	Warning light blinks (red)
All wires are disconnected	Open circuit (Ignition switch ON)	Warning light turns on (blue)

OK

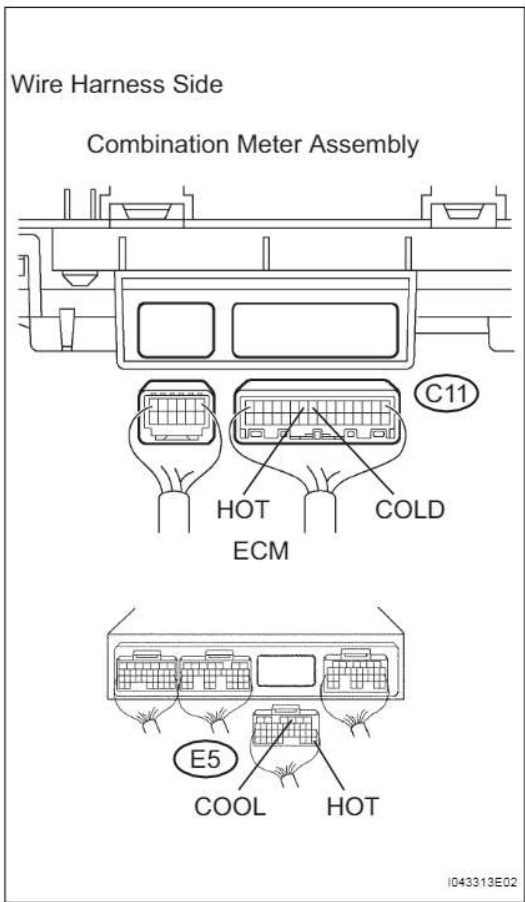
REPLACE ENGINE COOLANT TEMPERATURE SENSOR

ME

NG

3

CHECK WIRE HARNESS (COMBINATION METER - ECM)



- (a) Disconnect the C11 meter connector.
- (b) Disconnect the E5 ECM connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Specified Condition
E5-3 (COOL) - C11-24 (COLD)	Below 1 Ω
E5-28 (HOT) - C11-23 (HOT)	Below 1 Ω
C11-24 (COLD) - Body ground	10 k Ω or higher
C11-23 (HOT) - Body ground	10 k Ω or higher

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

ME-40

METER – METER / GAUGE SYSTEM

4	CHECK OPERATION OF COMBINATION METER SYSTEM WITH A NEW OR NORMALLY FUNCTIONING COMBINATION METER
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- (a) Temporarily replace the combination meter with a new or normally functioning combination meter.
- (b) Check that the malfunction disappears.

OK:

Malfunction disappears.

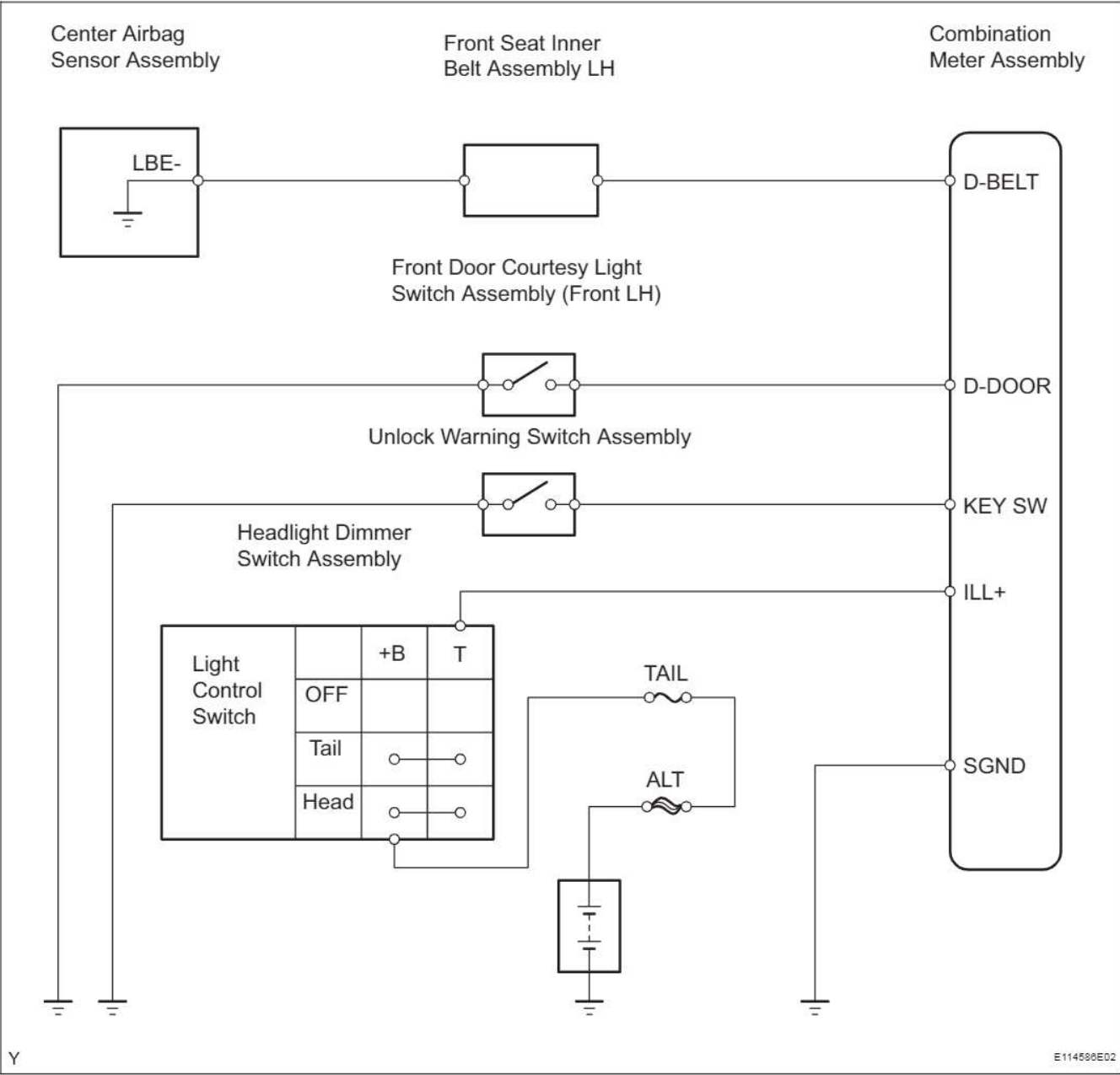
OK

NG	GO TO SFI SYSTEM
----	------------------

ME	REPLACE COMBINATION METER ASSEMBLY
----	------------------------------------

Warning Buzzer does not Sound

WIRING DIAGRAM



INSPECTION PROCEDURE

1 CHECK BUZZER (SEAT BELT, KEY REMINDER, TAILLIGHT REMINDER)

- (a) Check that the seat belt, key reminder and taillight reminder warning buzzers sound.

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

ME-42

METER – METER / GAUGE SYSTEM

Result	Proceed to
Taillight reminder warning buzzer does not sound (Meter illumination is normal)	C
All warning buzzers do not sound	D

B

Go to step 5

C

Go to step 9

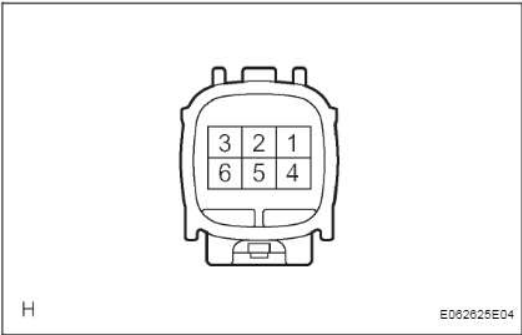
D

REPLACE COMBINATION METER ASSEMBLY

A

ME

2INSPECT FRONT SEAT INNER BELT ASSEMBLY LH



- (a) Remove the inner belt LH.
- (b) Measure the resistance of the belt.
- Standard resistance

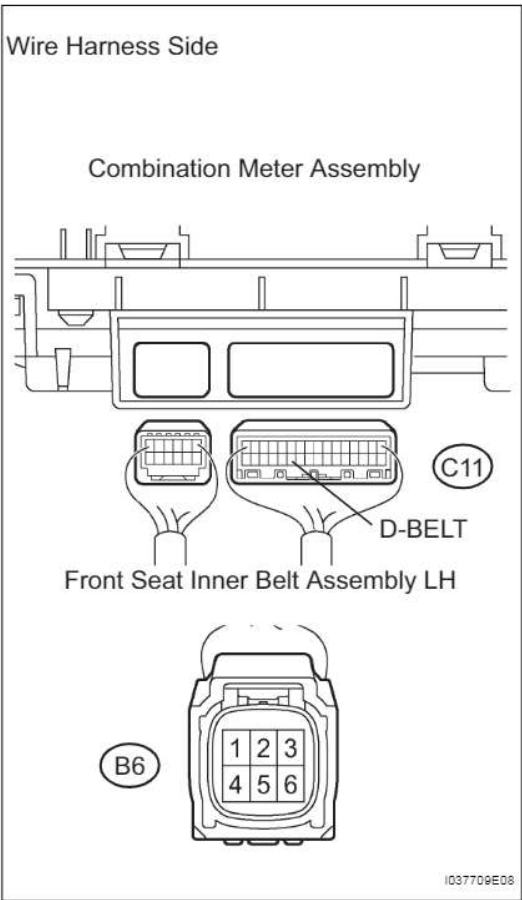
Tester Connection	Condition	Specified Condition
B6-1 - B6-3	Seat belt is fastened	10 kΩ or higher
B6-1 - B6-3	Seat belt is unfastened	Below 1 Ω

NG

REPLACE FRONT SEAT INNER BELT ASSEMBLY LH

OK

3 CHECK WIRE HARNESS (COMBINATION METER - FRONT SEAT INNER BELT LH)



- (a) Disconnect the C11 meter connector.
- (b) Disconnect the B6 belt connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
C11-6 (D-BELT) - B6-3	Below 1 Ω
C11-6 (D-BELT) - Body ground	10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

ME

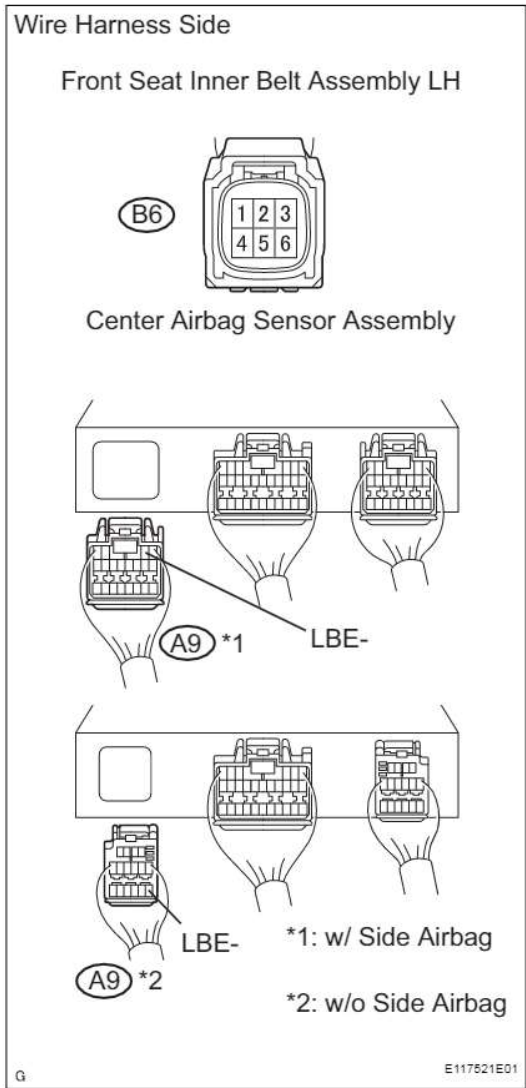
OK

ME-44

METER – METER / GAUGE SYSTEM

4

CHECK WIRE HARNESS (FRONT SEAT INNER BELT LH - CENTER AIRBAG SENSOR)



- (a) Disconnect the B6 belt connector.
- (b) Disconnect the A9 sensor connector.
- (c) measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
B6-1 - A9-2 (LBE-)*1	Below 1 Ω
B6-1 - A9-7 (LBE-)*2	Below 1 Ω
B6-1 - Body ground	10 kΩ or higher

HINT:

*1: w/ Side airbag

*2: w/o Side airbag

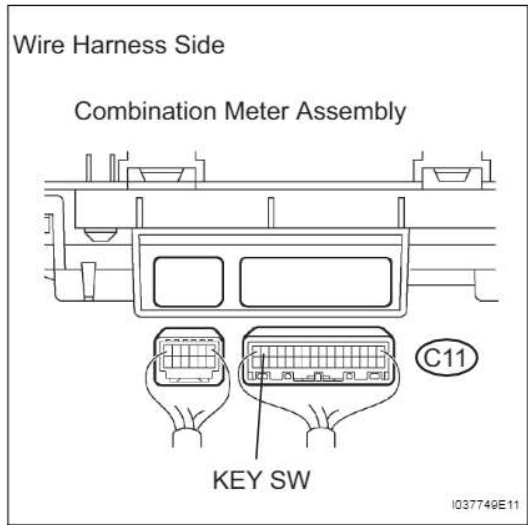
NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE COMBINATION METER ASSEMBLY

5 CHECK WIRE HARNESS (COMBINATION METER - BODY GROUND)



- (a) Disconnect the C11 meter connector.
(b) Measure the resistance of the wire harness side connector.

Standard resistance

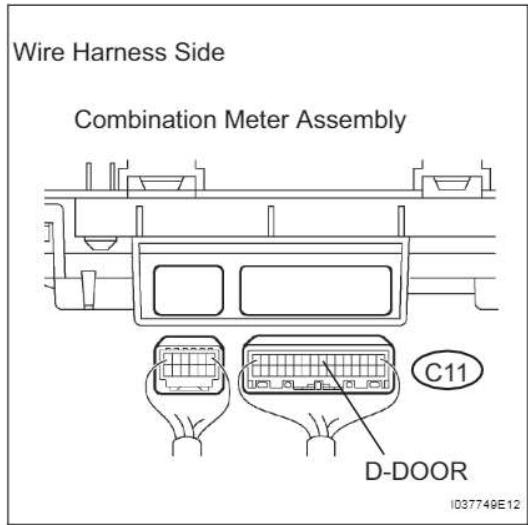
Tester Connection	Condition	Specified Condition
C11-18 (KEY SW) - Body ground	No key in ignition key cylinder	10 kΩ or higher
C11-18 (KEY SW) - Body ground	key in ignition key cylinder	Below 1 Ω

NG

Go to step 7

OK

6 CHECK WIRE HARNESS (COMBINATION METER - BODY GROUND)



- (a) Disconnect the C11 meter connection.
(b) Measure the resistance of the wire harness side connector.

Standard resistance

Tester Connection	Condition	Specified Condition
C11-25 (D-DOOR) - Body ground	Driver side door is closed	10 kΩ or higher
C11-25 (D-DOOR) - Body ground	Driver side door is open	Below 1 Ω

NG

Go to step 8

OK

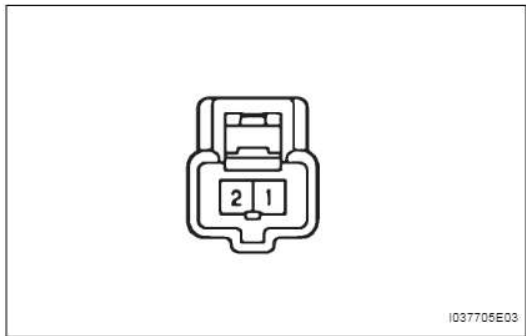
REPLACE COMBINATION METER ASSEMBLY

ME-46

METER – METER / GAUGE SYSTEM

7

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	No key in ignition key cylinder	10 kΩ or higher
1 - 2	Key in ignition key cylinder	Below 1 Ω

NG

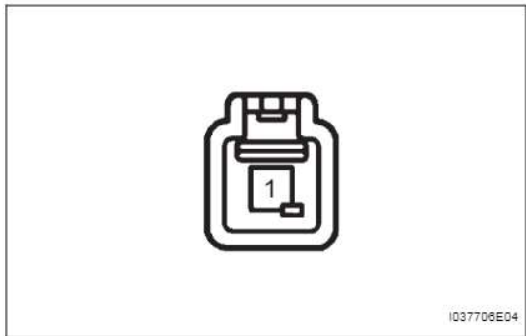
REPLACE UNLOCK WARNING SWITCH ASSEMBLY

OK

REPAIR OR REPLACE HARNESS AND CONNECTOR (UNLOCK WARNING SWITCH - METER AND BODY GROUND)

8

INSPECT FRONT DOOR COURTESY LIGHT SWITCH ASSEMBLY



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

Standard resistance

Tester Connection	Condition	Specified Condition
1 - Body ground	Driver side courtesy switch is pushed	10 kΩ or higher
1 - Body ground	Driver side courtesy switch is not pushed	Below 1 Ω

NG

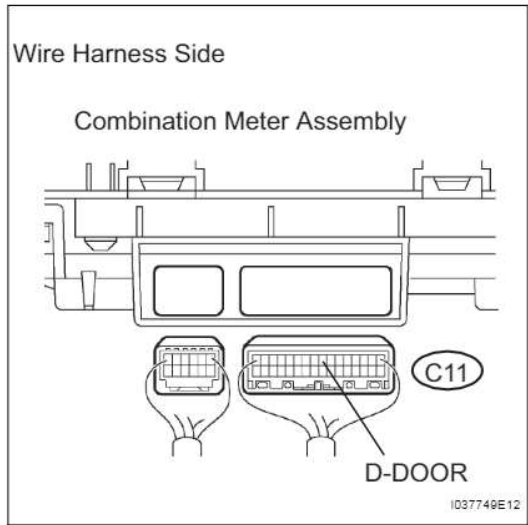
REPLACE FRONT DOOR COURTESY LIGHT SWITCH ASSEMBLY

OK

REPAIR OR REPLACE HARNESS AND CONNECTOR (FRONT DOOR COURTESY LIGHT SWITCH - METER AND BODY GROUND)

METER – METER / GAUGE SYSTEM

9 INSPECT COMBINATION METER ASSEMBLY



- (a) Disconnect the C11 meter connection.
(b) Measure the resistance of the wire harness side connector.

Standard resistance

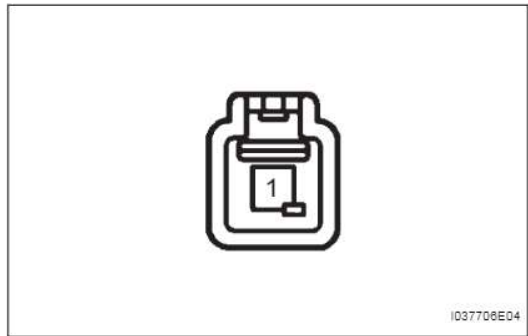
Tester Connection	Condition	Specified Condition
C11-25 (D-DOOR) - Body ground	Driver side door is closed	10 kΩ or higher
C11-25 (D-DOOR) - Body ground	Driver side door is open	Below 1 Ω

OK → REPLACE COMBINATION METER ASSEMBLY

ME

NG

10 INSPECT FRONT DOOR COURTESY LIGHT SWITCH ASSEMBLY



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

Standard resistance

Tester Connection	Condition	Specified Condition
1 - Body ground	Driver side courtesy switch shaft is pushed	10 kΩ or higher
1 - Body ground	Driver side courtesy switch shaft is not pushed	Below 1 Ω

NG → REPLACE FRONT DOOR COURTESY LIGHT SWITCH ASSEMBLY

OK

REPAIR OR REPLACE HARNESS AND CONNECTOR (FRONT DOOR COURTESY LIGHT SWITCH - METER AND BODY GROUND)