SECTION DI
DRIVER INFORMATION SYSTEM

CONTENTS

PRECAUTIONS

PFP:00011

Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

EKS00367

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SRS section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harness connectors.**

Wiring Diagrams and Trouble Diagnosis

EKS00368

When you read wiring diagrams, refer to the followings:

- Refer to GI-13, "How to Read Wiring Diagrams" in GI section
- Refer to PG-2, "POWER SUPPLY ROUTING" for power distribution circuit in PG section

When you perform trouble diagnosis, refer to the followings:

- Refer to GI-10, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES" in GI section
- Refer to GI-23, "How to Perform Efficient Diagnosis for an Electrical Incident" in GI section

COMBINATION METERS (LHD MODELS)

PFP:24810

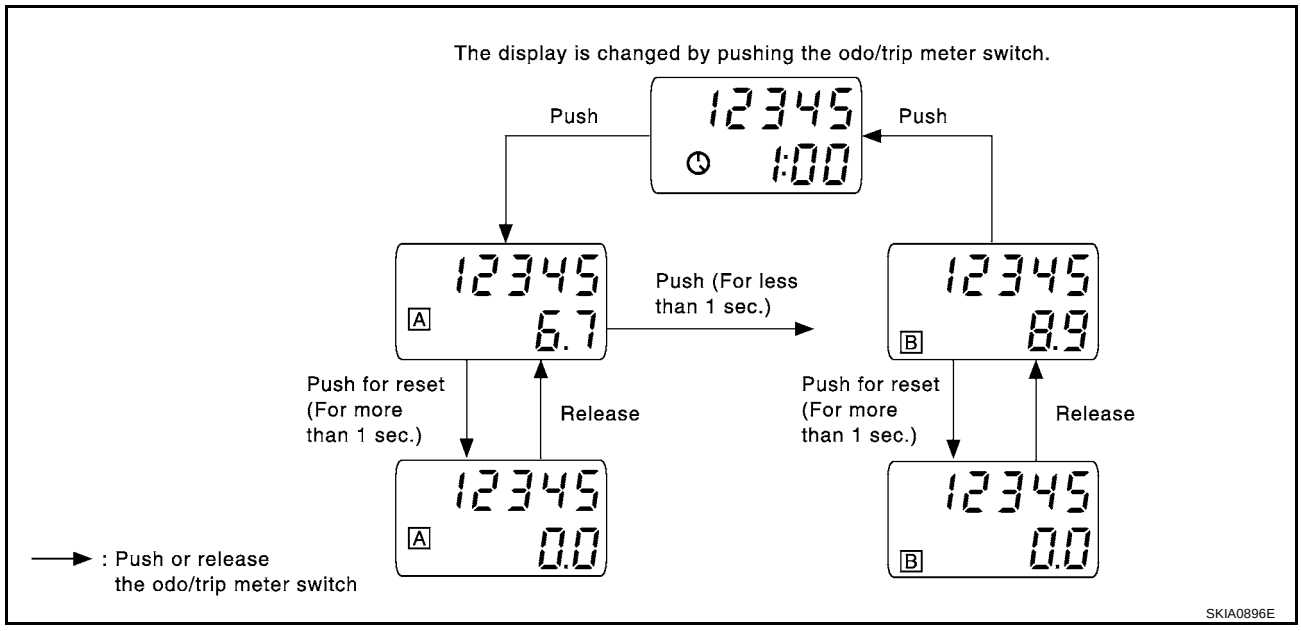
System Description

EKS002Z7

UNIFIED CONTROL METER

- Speedometer, odo/trip meter, tachometer, fuel gauge and water temperature gauge are controlled totally by control unit built-in combination meter.
- Digital meter is adopted for odo/trip meter.*
  *The record of the odo meter is kept even if the battery cable is disconnected. The record of the trip meter is erased when the battery cable is disconnected.
- Odo/trip meter segment can be checked in diagnosis mode.
- Meter/gauge can be checked in diagnosis mode.

HOW TO CHANGE THE DISPLAY FOR ODO/TRIP METER



NOTE:
Turn ignition switch to the “ON” position to operate odo/trip meter.

POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- through 10A fuse [No. 28, located in the fuse block (J/B)]
- to combination meter terminal 45.

With the ignition switch in the ON or START position, power is supplied

- through 10A fuse [No. 11, located in the fuse block (J/B)]
- to combination meter terminal 46.

Ground is supplied

- through body grounds M27 and M70
- to combination meter terminal 47.

WATER TEMPERATURE GAUGE

Gasoline engine models

The water temperature gauge indicates the engine coolant temperature. The reading on the gauge is received engine coolant temperature signal from ECM. ECM is detected by water temperature sensor.
The water temperature gauge is received by a signal

- from ECM terminal 32
- to combination meter terminal 55.

The needle on the gauge moves from “C” to “H”

Diesel engine models

The water temperature gauge indicates the engine coolant temperature. The reading on the gauge is based on the resistance of the thermal transmitter.
As the temperature of the coolant increases, the resistance of the thermal transmitter decreases. A variable ground is supplied to terminal 55 of the combination meter for the water temperature gauge. The needle on the gauge moves from “C” to “H”.

TACHOMETER

The tachometer indicates engine speed in revolutions per minute (rpm).
The tachometer is regulated by a signal

- from terminal 36 (Gasoline engine models) or D1 (Diesel engine models) of the ECM
- to combination meter terminal 54 for the tachometer.

FUEL GAUGE

The fuel gauge indicates the approximate fuel level in the fuel tank.
The fuel gauge is regulated by a variable ground signal supplied

- from body grounds, B8 and B18
- through terminals 4 and 1 of the fuel level sensor unit and
- through terminals 1 and 3 of the Sub fuel level sensor unit
- to combination meter terminal 51 for the fuel gauge.

SPEEDOMETER

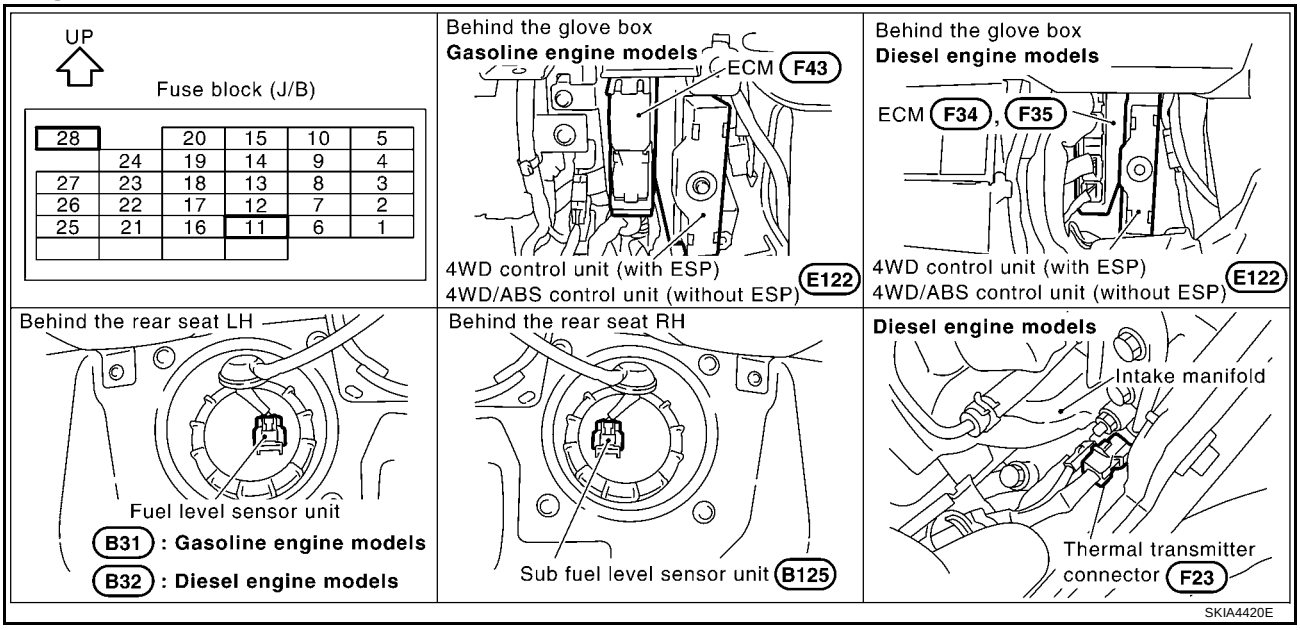
The combination meter provides a voltage signal to the vehicle speed signal from 4WD/ABS control unit (without ESP) or 4WD control unit (with ESP).
The voltage is supplied

- from combination meter terminal 52 for the speedometer
- to terminal 20 of 4WD control unit (with ESP) or 4WD/ABS control unit (without ESP).

The speedometer converts the voltage into the vehicle speed displayed.

Component Parts and Harness Connector Location

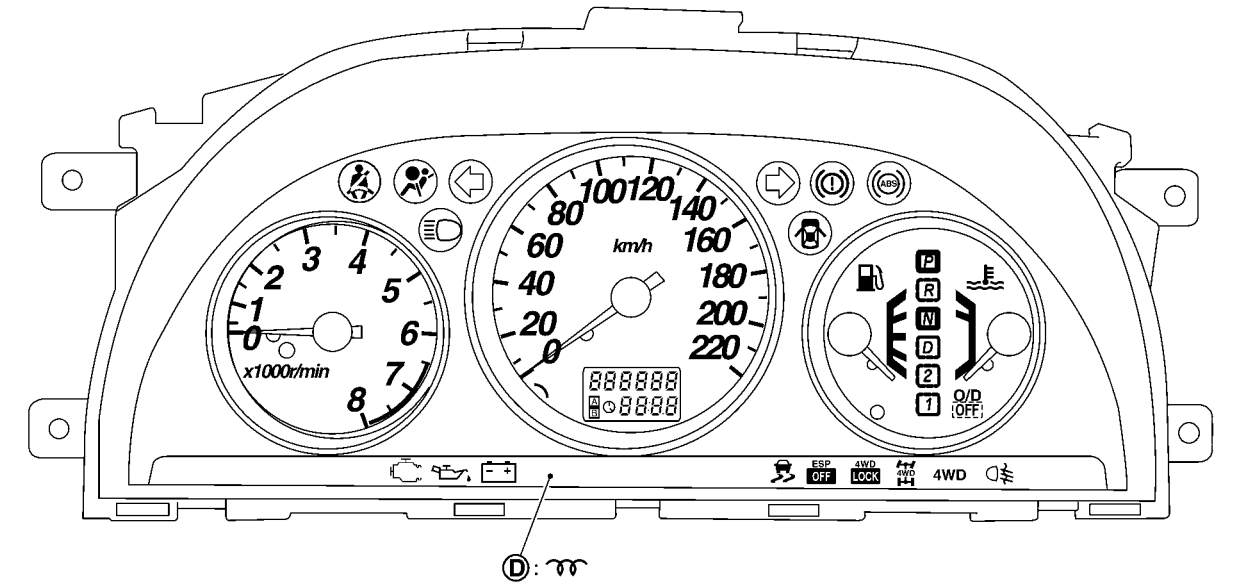
EKS002Z8

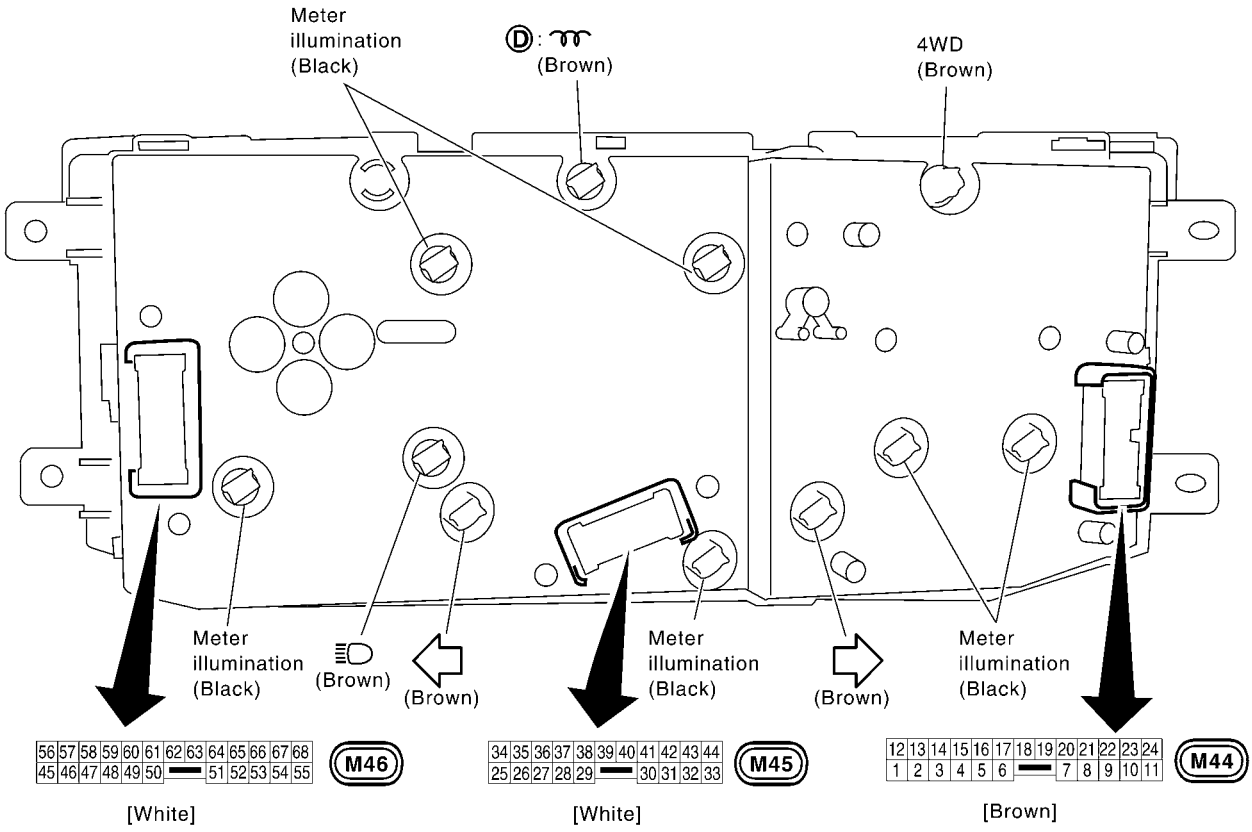


Combination Meter

EKS002Z9

CHECK





Buld socket color	Buld wattage
Brown	1.4W
Black	3.0W

( ): Warning bulb socket color

Ⓓ: Diesel engine models

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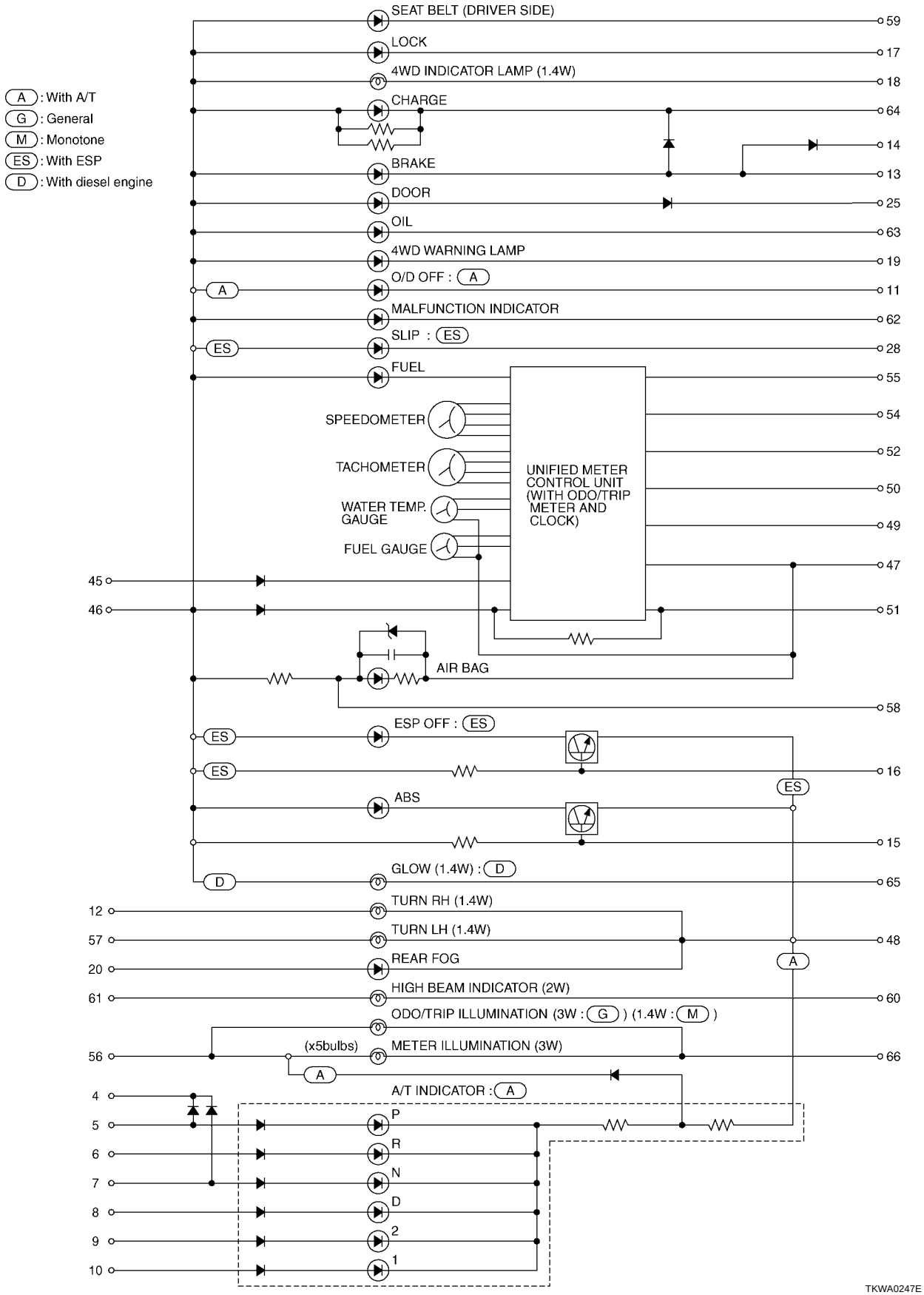
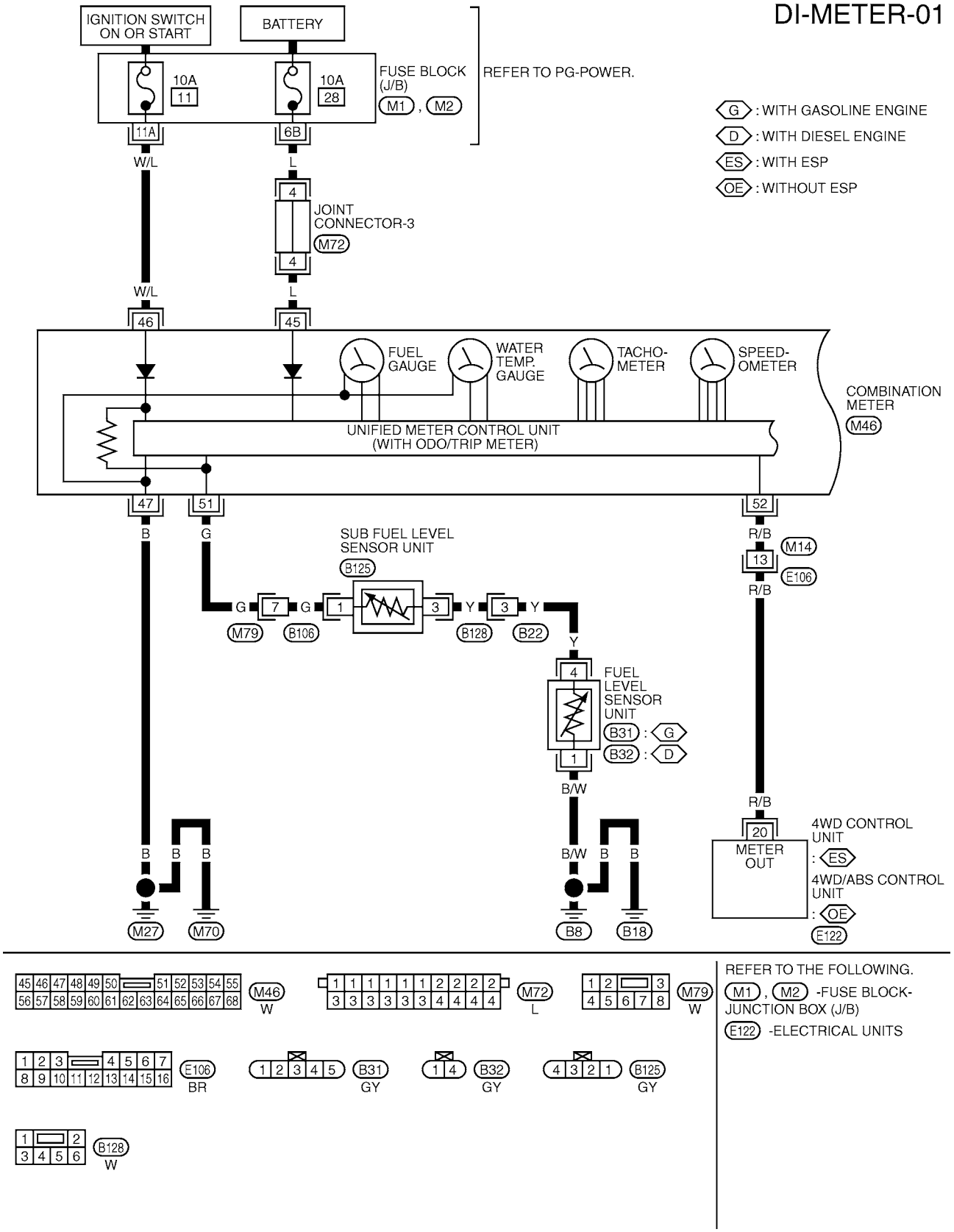
Schematic

EKS002ZA



Wiring Diagram — METER —

EKS002ZB



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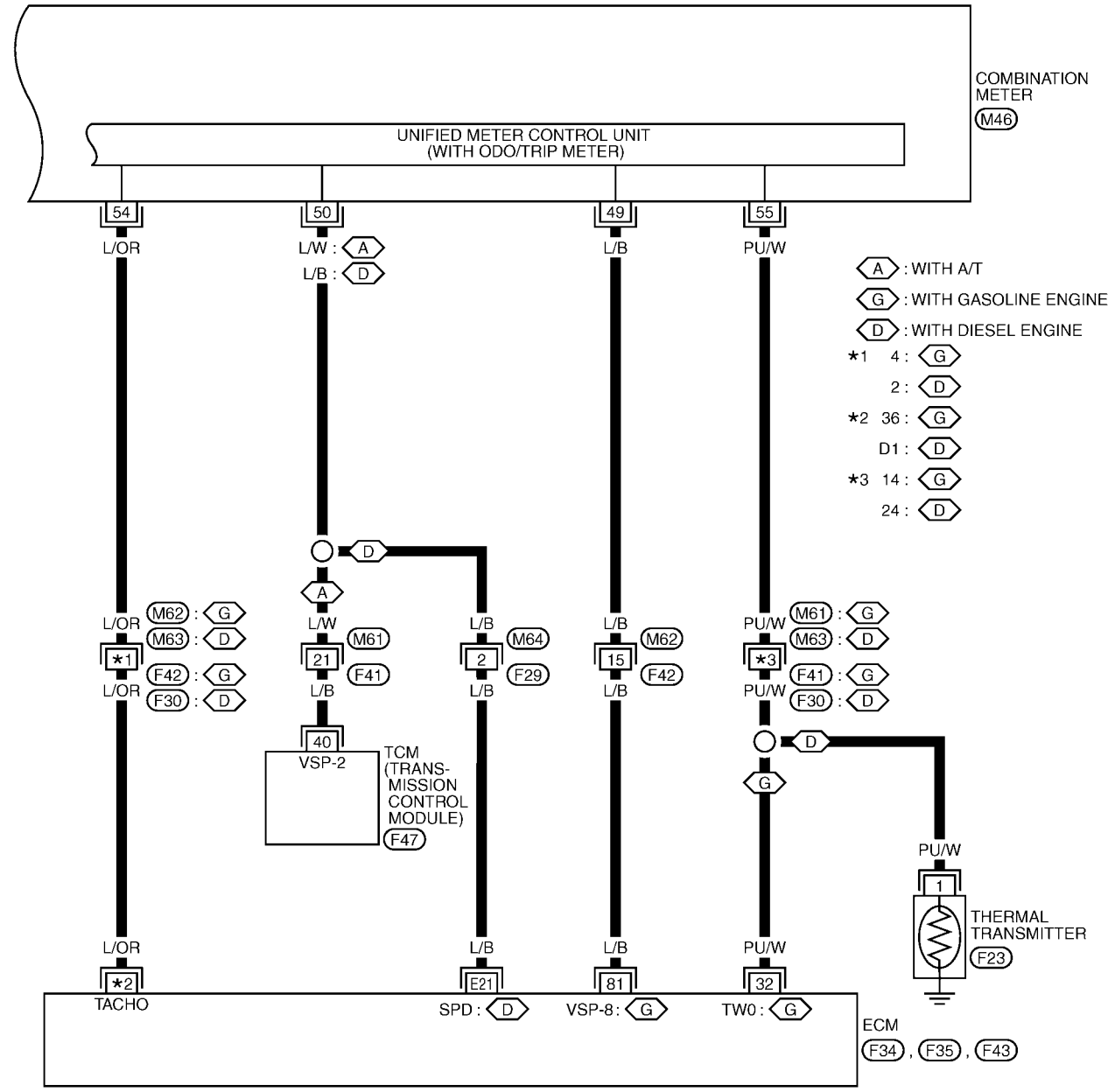
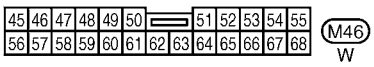
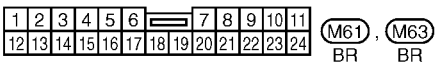
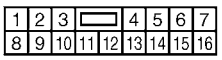
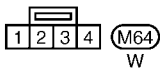
DI-METER-02

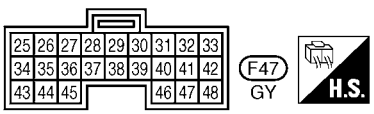












REFER TO THE FOLLOWING.
F34 , F35 , F43
-ELECTRICAL UNITS

TKWA0087E

Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode

EKS002ZC

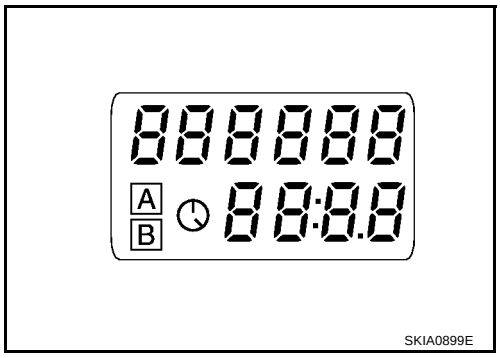
DIAGNOSIS FUNCTION

- Odo/trip meter segment can be checked in diagnosis mode.
- Meters/gauges can be checked in diagnosis mode.

HOW TO ALTERNATE DIAGNOSIS MODE

1. Turn ignition switch to ON and change odo/trip meter to “TRIP A” or “TRIP B”.
2. Turn ignition switch to OFF.
3. Turn ignition switch to ON when pushing odo/trip meter switch.
4. Confirm that trip meter indicates “000.0”.
5. Push odo/trip meter switch more than three times within 5 seconds.
6. All odo/trip meter segments should be turned on.

   NOTE:
   If some segments are not turned on, unified meter control unit with odo/trip meter should be replaced.
   At this point, the unified control meter is turned to diagnosis mode.



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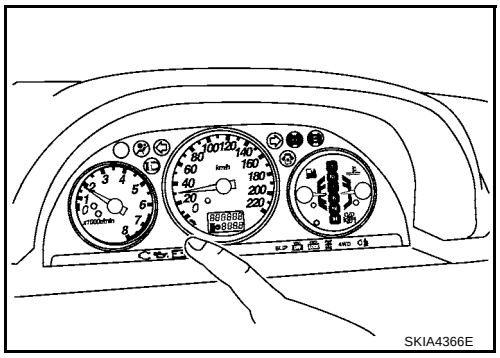
7. Push odo/trip meter switch. Indication of each meter/gauge should be as shown left during pushing odo/trip meter switch if it is no malfunctioning.

   NOTE:
   It takes about a few seconds for indication of fuel gauge and water temperature gauge to become stable.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Trouble Diagnoses

EKS002ZD

PRELIMINARY CHECK

1. CHECK WARNING LAMPS

1. Turn ignition switch ON.
2. Warning lamps should illuminate (seat belt warning or door warning etc.).

Do warning lamps illuminate?

Yes >> GO TO 2.
No >> Power supply and ground circuit check. Refer to DI-13, "Power Supply and Ground Circuit Check" .

2. CHECK DIAGNOSIS MODE OPERATION

Preform diagnosis mode. Refer to DI-10, "Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode" .

Can diagnosis mode be activated?

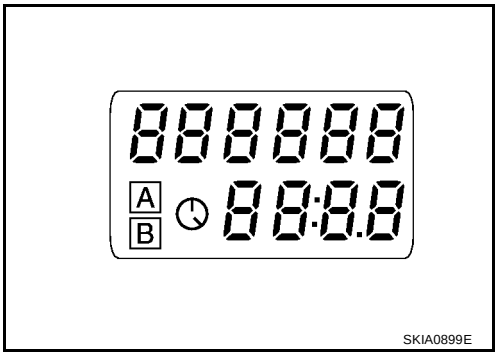
Yes >> GO TO 3.
No >> Power supply and ground circuit check. Refer to DI-13, "Power Supply and Ground Circuit Check"

3. SEGMENTS CHECK

Check odo / trip meter segment.

Do all segments illuminate?

Yes >> GO TO 4.
No >> Replace combination meter.



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4. FUEL WARNING LAMP ILLUMINATION CONFIRMATION

During fuel warning lamp check, confirm illumination of fuel warning lamp.

Condition of odo/trip meter switch	Fuel warning lamp
Pushed	Does not illuminate.
Released	Illuminates.

OK or NG

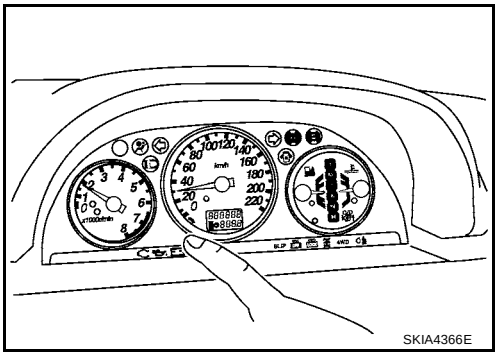
OK >> GO TO 5.
NG >> Replace the combination meter.

5. CHECK METER CIRCUIT

Check indication of each meter/gauge in self-diagnosis mode.

OK or NG

OK >> Go to symptom chart.
NG >> Replace combination meter.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SYMPTOM CHART

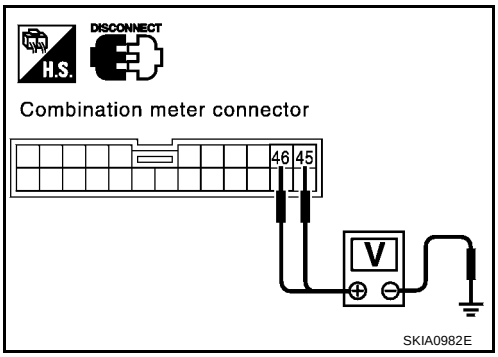
Symptom	Possible cause	Repair procedure
Fuel warning lamp is malfunctioning.	1. Sensor Signal – Engine revolution signal – Fuel gauge – Water temp gauge 2. Unified meter control unit	1. Check the sensor for malfunctioning meter/gauge. – INSPECTION/ENGINE SPEED SIGNAL (Refer to DI-13, "Inspection/Engine Speed Signal" .) – INSPECTION/FUEL LEVEL SENSOR UNIT (Refer to DI-17, "Inspection/Fuel Level Sensor Unit" .) – INSPECTION/THERMAL TRANSMITTER (Refer to DI-14, "Inspection/Water Temperature Gauge /Gasoline Engine Models" or DI-15, "Inspection/Water Temperature Gauge (Diesel Engine Models)" .) 2. Replace combination meter
One of tachometer/fuel gauge/water temp. gauge is malfunctioning.		
Speedometer and odo/trip meter is malfunctioning.	1. Sensor Signal – Vehicle speed signal 2. Unified meter control unit	1. Check the sensor for malfunctioning meter/gauge. – INSPECTION/VEHICLE SPEED SIGNAL (Refer to DI-13, "Inspection/Engine Speed Signal" .) 2. Replace combination meter
Multiple meter/gauge are malfunctioning.	● Unified meter control unit	● Replace combination meter.

Power Supply and Ground Circuit Check

EKS002ZE

1. POWER SUPPLY CIRCUIT CHECK

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (wire color)				
M46	45 (L)	Ground	Battery voltage	Battery voltage	Battery voltage
M46	46 (W/L)	Ground	0V	0V	Battery voltage



OK or NG

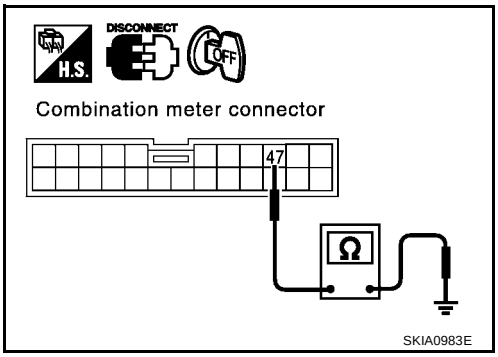
OK >> GO TO 2.

NG >> Check the following:

- 10A fuse [No. 11, located in fuse block (J/B)]
- 10A fuse [No. 28, located in fuse block (J/B)]
- Harness for open or short between fuse and combination meter

2. GROUND CIRCUIT CHECK

Terminals			Continuity
(+)		(-)	
Connector	Terminal (wire color)		
M46	47 (B)	Ground	Yes



OK or NG

OK >> Inspection end.

NG >> Check harness for open ground circuit.

Inspection/Engine Speed Signal

EKS002ZF

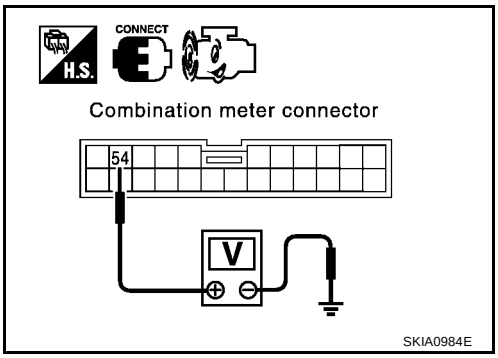
1. CHECK ECM OUTPUT

1. Start engine.
2. Check voltage between combination meter harness connector M46 terminals 54 (L/OR) and ground at idle and 2,000 rpm.

Higher rpm = Higher voltage

Lower rpm = Lower voltage

Voltage should change with rpm.



OK or NG

OK >> Engine speed signal is OK.

NG >> Check harness for open or short between ECM and combination meter.

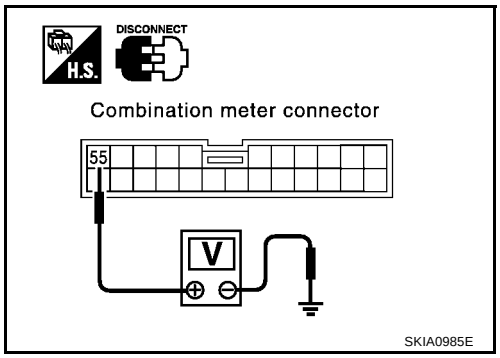
Inspection/Water Temperature Gauge /Gasoline Engine Models

EKS002ZT

1. CHECK ECM OUTPUT

1. Disconnect combination meter.
2. Check voltage between combination meter harness connector M46 terminal 55 (PU/W) and ground.

Battery voltage should exist.



OK or NG

OK >> GO TO 3.
NG >> GO TO 2.

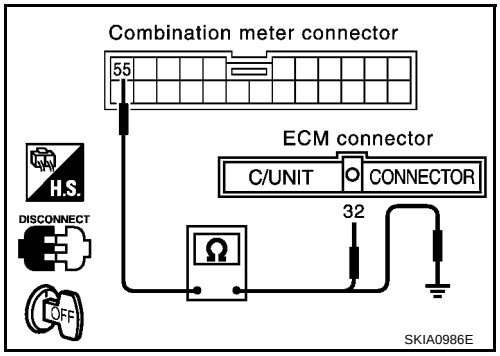
2. CHECK HARNESS FOR OPEN OR SHORT

1. Disconnect ECM connector.
2. Check continuity between combination meter harness connector M46 terminal 55 (PU/W) and ECM harness connector F43 terminal 32 (PU/W).

Continuity should exist.

3. Check continuity between combination meter harness connector M46 terminal 55 (PU/W) and ground.

Continuity should not exist.



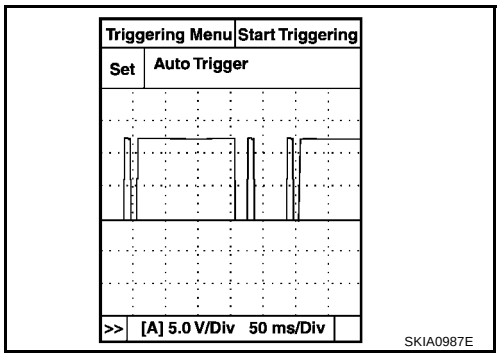
OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3. CHECK WATER TEMPERATURE OUTPUT SIGNAL

1. Connect combination meter connector and ECM connector.
2. Start engine.
3. Check output signal between combination meter harness connector M46 terminal 55 (PU/W) and ground. (Use “SIMPLE OSCILLOSCOPE” in “SUB MODE” with CONSULT-II.)

55 (PU/W) – ground



OK or NG

OK >> Replace combination meter.
NG >> Check ECM.

Inspection/Water Temperature Gauge (Diesel Engine Models)

EKS002ZG

1. CHECK THERMAL TRANSMITTER

Refer to DI-22, "THERMAL TRANSMITTER CHECK" .

OK or NG

OK >> GO TO 2.
NG >> Replace thermal transmitter.

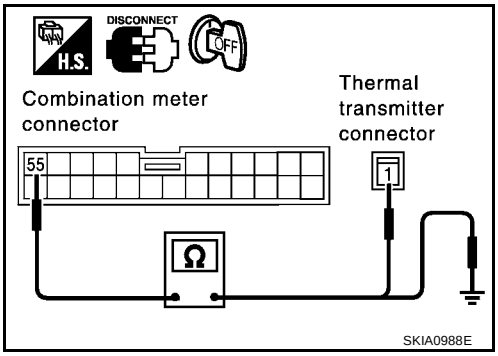
2. CHECK HARNESS FOR OPEN OR SHORT

1. Disconnect combination meter connector and thermal transmitter connector.
2. Check continuity between combination meter harness connector M46 terminal 55 (PU/W) and thermal transmitter harness connector F23 terminal 1 (PU/W).

Continuity should exist.

3. Check continuity between combination meter harness connector M46 terminal 55 (PU/W) and ground.

Continuity should not exist.



OK or NG

OK >> Thermal transmitter is OK.
NG >> Replace harness or connector.

Inspection/Vehicle speed signal

EKS002ZH

1. CHECK ABS WARNING LAMP

- Turn the ignition switch ON, then ABS warning lamp turn ON.

ABS warning lamp should illuminate.

OK or NG

OK >> Check 4WD control unit (with ESP) or 4WD/ABS control unit (without ESP).
NG >> GO TO 2.

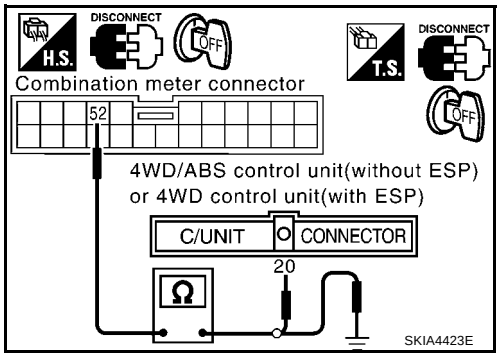
2. CHECK HARNESS FOR OPEN OR SHORT

1. Disconnect combination meter connector and 4WD control unit (with ESP) or 4WD/ABS control unit (without ESP) connector.
2. Check continuity between combination meter harness connector M46 terminal 52 (R/B) and 4WD control unit (with ESP) or 4WD/ABS control unit (without ESP) harness connector E122 terminal 20 (R/B).

Continuity should exist.

3. Check continuity between combination meter harness connector M46 terminal 52 (R/B) and ground.

Continuity should not exist.



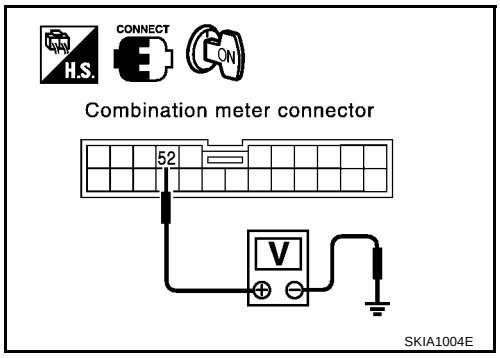
OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3. CHECK 4WD/ABS CONTROL UNIT (WITHOUT ESP) OR 4WD CONTROL UNIT (WITH ESP) OUTPUT

1. Connect combination meter connector.
2. Check voltage between combination meter harness connector M46 terminal 52 (R/B) and ground.

Approx. 9V



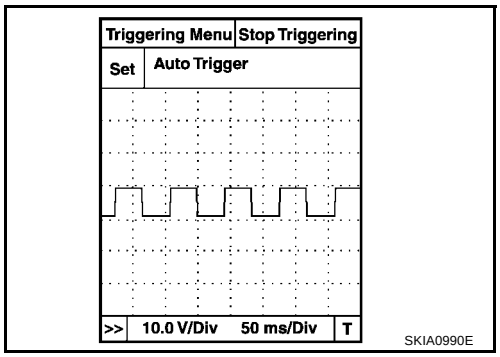
OK or NG

OK >> GO TO 4.
NG >> Replace combination meter.

4. CHECK VEHICLE SPEED INPUT SIGNAL

1. Connect 4WD control unit (with ESP) or 4WD/ABS control unit (without ESP) connector.
2. Lift up drive wheels.
3. Start engine.
4. Check voltage signal between combination meter harness connector M46 terminal 52 (R/B) and ground. (Use “SIMPLE OSCILLOSCOPE” in “SUB MODE” with CONSULT-II.)

52 (R/B) – ground



OK or NG

OK >> Replace combination meter.
NG >> Check 4WD control unit (with ESP) or 4WD/ABS control unit (without ESP).

Inspection/Fuel Level Sensor Unit

EKS002ZI

FUEL LEVEL SENSOR UNIT

The following symptoms do not indicate a malfunction.

- Depending on vehicle posture or driving circumstance, the fuel level in the tank varies, and the pointer may fluctuate.
- If the vehicle is fueled with the ignition switch ON, the pointer will move slowly.

LOW-FUEL WARNING LAMP

Depending on vehicle posture or driving circumstance, the fuel level in the tank varies, and the warning lamp ON timing may be changed.

1. DIAGNOSIS MODE INSPECTION

Preform the combination meter diagnosis mode. Refer to DI-10, "Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode" .

OK or NG

OK >> GO TO 2.
NG >> Replace combination meter.

2. HARNESS CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Check combination meter, fuel level sensor unit and terminals (meter-side, module-side, and harness-side) for poor connection and bend.

OK or NG

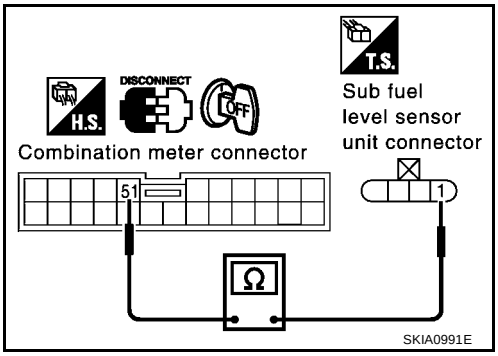
OK >> GO TO 3.
NG >> Repair or replace terminals or connectors.

3. CHECK FUEL LEVEL SENSOR FOR OPEN CIRCUIT

1. Disconnect combination meter connector, fuel level sensor unit connector and sub fuel level sensor unit connector.
2. Check the following.

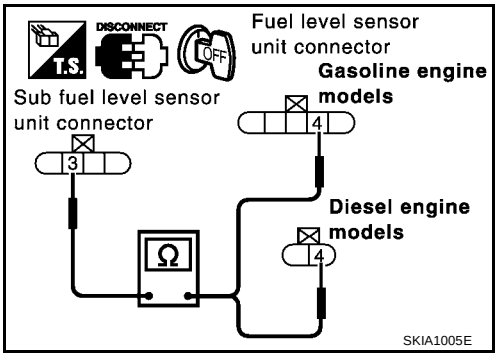
– Continuity between combination meter harness connector M46 terminal 51 (G) and sub fuel level sensor unit harness connector B125 terminal 1 (G).

Continuity should exist.



– Continuity between sub fuel level sensor unit harness connector B125 terminal 3 (Y) and fuel level sensor unit harness connector B31(Gasoline engine models) or B32 (Diesel engine models) terminal 4 (Y).

Continuity should exist.



OK or NG

OK >> GO TO 4.
NG >> Repair or replace harnesses or connectors.

4. CHECK FUEL LEVEL SENSOR SHORT CIRCUIT

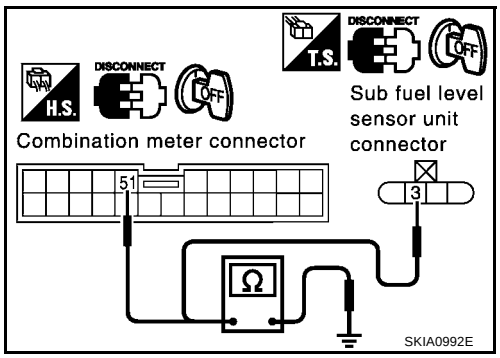
1. Checking the following.

– Continuity between combination meter harness connector M46 terminal 51 (G) and ground.

Continuity should not exist.

– Continuity between sub fuel level sensor harness connector B125 terminal 3 (Y) and ground.

Continuity should not exist.



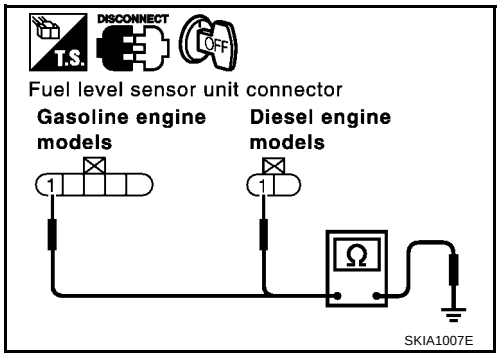
OK or NG

OK >> GO TO 5.
NG >> Repair or replace harnesses or connectors.

5. CHECK FUEL LEVEL SENSOR GROUND CIRCUIT

Check continuity between fuel level sensor unit harness connector B31(Gasoline engine models) or B32 (Diesel engine models) terminal 1 (B/W) and ground.

Continuity should exist.



OK or NG

OK >> GO TO 6.
NG >> Repair or replace harnesses or connectors.

6. FUEL LEVEL SENSOR UNIT INSPECTION

Check the components. Refer to DI-21, "Electrical Components Inspection" .

OK or NG

OK >> GO TO 7.
NG >> Replace fuel level sensor unit or sub fuel level sensor unit.

7. CHECK INSTALLATION CONDITION

Check fuel level sensor unit installation, and check whether the float arm interferes or binds with any components inside the arm.

OK or NG

OK >> Replace combination meter.
NG >> Install fuel level sensor unit or sub fuel sensor unit properly.

The Fuel Gauge Pointer Fluctuates·Indicator Wrong Value·or Varies.

EKS002ZJ

1. CHECK THE FUEL GAUGE POINTER FOR FLUCTUATION

Does the indication value fluctuate during driving or before/after stop?

Does the indication value vary?

Yes >> The pointer fluctuation may be caused by fuel level change in the fuel tank.
No >> Ask the customer about the situation when the symptom occurs in detail, and Preform the trouble diagnosis.

The Fuel Gauge Does Not Move to Full-position.

EKS002ZK

1. QUESTION 1

Does it take a long time for the pointer to move to Full-position?

Yes or No

Yes >> GO TO 2.
No >> GO TO 3.

2. QUESTION 2

Was the vehicle fueled with the ignition switch ON?

Yes or No

Yes >> Be sure to fuel the vehicle with the ignition switch OFF. Otherwise it will take a long time to move to Full-position because of the characteristic of the fuel gauge.
No >> GO TO 3.

3. QUESTION 3

Is the floor or the vehicle inclined?

Yes or No

Yes >> It may not be filled fully.
No >> GO TO 4.

4. QUESTION 4

During driving, does the fuel gauge pointer move gradually toward E-position?

Yes or No

Yes >> Check the components. Refer to DI-21, "Electrical Components Inspection" .
No >> The float arm may interfere or bind with any of the components in the fuel tank.

The Fuel Gauge Does Not Work.

EKS002ZL

1. HARNESS CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Check combination meter, fuel level sensor unit, sub fuel level sensor unit and terminals (meter-side, module-side, and harness-side) for poor connection and bend.

OK or NG

OK >> GO TO 2.
NG >> Repair connector.

2. CHECK INSTALLATION CONDITION

Check fuel level sensor unit or sub fuel level sensor unit installation (refer toFL-4, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY" for QR engine models or FL-17, "FUEL LEVEL SENSOR UNIT" for YD engine models), and check whether the float arm interferes or binds with any components inside the arm.

OK or NG

OK >> Fuel level sensor unit is OK.
NG >> Check fuel level sensor unit or sub fuel level sensor unit. Refer to DI-21, "Electrical Components Inspection" .

Low Fuel Warning Lamp Illuminate or Not Illuminate

EKS002ZM

1. DIAGNOSIS MODE INSPECTION

Preform combination meter diagnosis mode. Refer to DI-10, "Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode" .

OK or NG

OK >> Check fuel level sensor unit or sub fuel level sensor unit. Refer to DI-21, "Electrical Components Inspection" .

NG >> Replace combination meter.

Electrical Components Inspection

EKS002ZN

FUEL LEVEL SENSOR UNIT CHECK / GASOLINE ENGINE MODELS

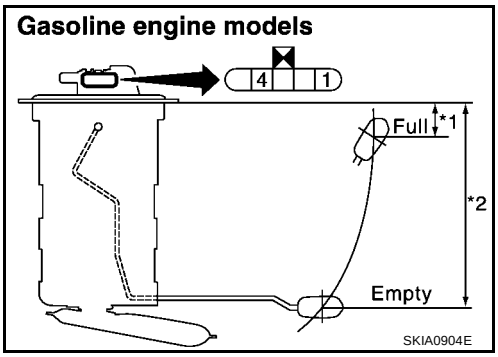
For removal, refer toFL-4, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY" for Gasoline engine models.

Fuel level sensor unit

Check the resistance between terminals 1 and 4.

Ohmmeter		Float position mm (in)			Resistance value Ω
(+)	(–)				
4	1	*1	Full	24 (2.36)	Approx. 4 - 6
		*2	Empty	167 (6.57)	Approx. 79 - 84

*1 and *2: When float rod is in contact with stopper.

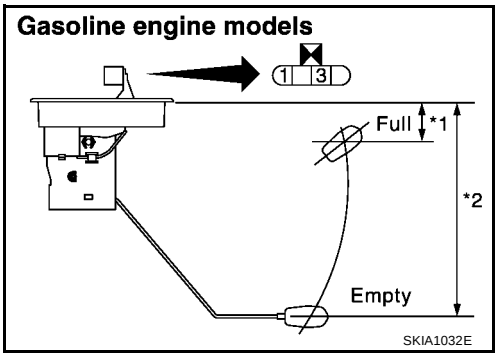


Sub fuel level sensor unit

Check the resistance between terminals 1 and 3.

Ohmmeter		Float position mm (in)			Resistance value Ω
(+)	(–)				
1	3	*1	Full	35 (1.50)	Approx. 0.8 -1
		*2	Empty	186 (6.38)	Approx.79 - 84

*1 and *2: When float rod is in contact with stopper.



FUEL LEVEL SENSOR UNIT CHECK / DIESEL ENGINE MODELS EXCEPT FOR NORTHERN EUROPE

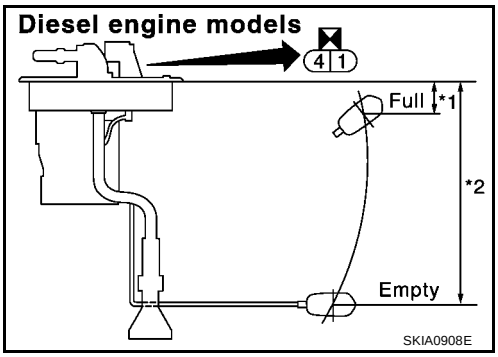
For removal, refer toFL-17, "FUEL LEVEL SENSOR UNIT" for Diesel engine models.

Fuel level sensor unit

Check the resistance between terminals 1 and 4.

Ohmmeter		Float position mm (in)			Resistance value Ω
(+)	(–)				
4	1	*1	Full	24 (2.38)	Approx. 4 - 6
		*2	Empty	170 (6.46)	Approx. 79 - 84

*1 and *2: When float rod is in contact with stopper.

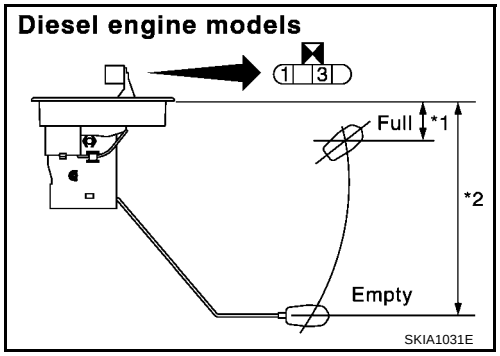


Sub fuel level sensor unit

Check the resistance between terminals 1 and 3.

Ohmmeter		Float position mm (in)			Resistance value Ω
(+)	(–)				
1	3	*1	Full	35 (1.50)	Approx. 0.8 - 1.0
		*2	Empty	186 (6.38)	Approx. 38 - 42

*1 and *2: When float rod is in contact with stopper.



FUEL LEVEL SENSOR UNIT CHECK / DIESEL ENGINE MODELS FOR NORTHERN EUROPE

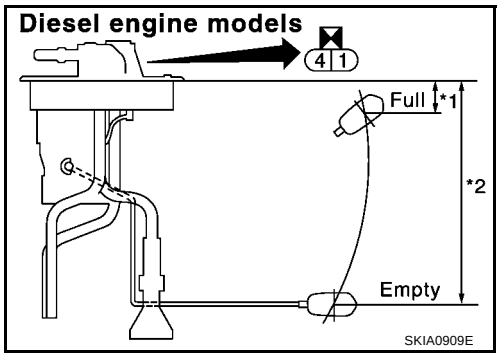
For removal, refer toFL-17, "FUEL LEVEL SENSOR UNIT" for Diesel engine models.

Fuel level sensor unit

Check the resistance between terminals 1 and 4.

Ohmmeter		Float position mm (in)			Resistance value Ω
(+)	(–)				
1	4	*1	Full	40 (1.57)	Approx. 4 - 6
		*2	Empty	171 (6.73)	Approx. 80 - 83

*1 and *2: When float rod is in contact with stopper.

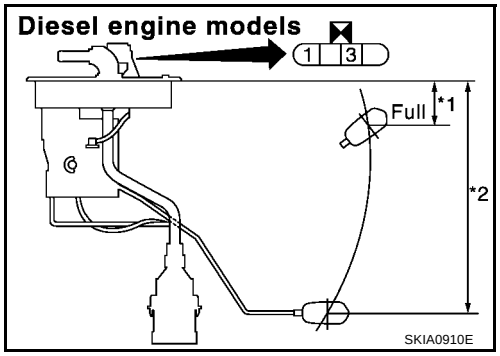


Sub fuel level sensor unit

Check the resistance between terminals 1 and 3.

Ohmmeter		Float position mm (in)			Resistance value Ω
(+)	(–)				
1	3	*1	Full	51 (2.01)	Approx. 0.8 - 1.0
		*2	Empty	162 (6.38)	Approx. 38 - 42

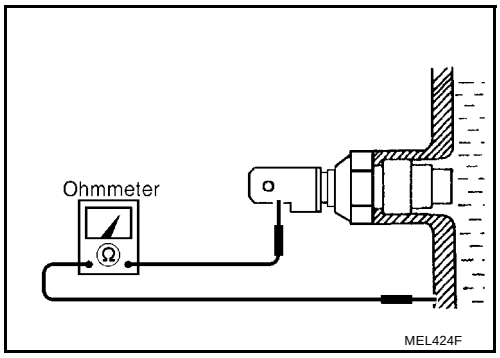
*1 and *2: When float rod is in contact with stopper.



THERMAL TRANSMITTER CHECK

Check the resistance between the terminals of thermal transmitter and body ground.

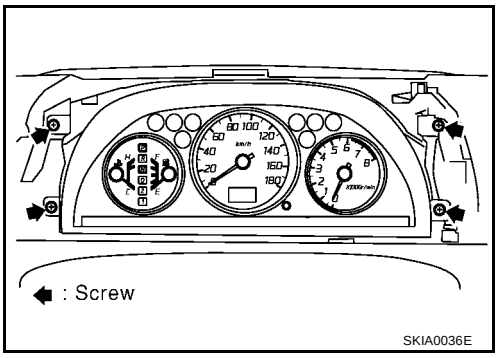
Water temperature	Resistance
60°C (140°F)	Approx. 170 - 210Ω
100°C (212°F)	Approx. 47 - 53Ω



Removal and Installation for Combination Meter

EKS002ZO

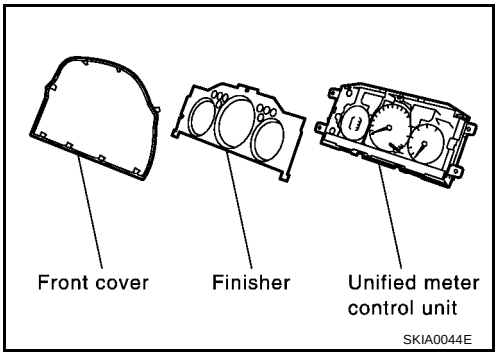
1. Remove the cluster lid A. Refer toIP-3, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove the screws (4), and pull out combination meter.
3. Disconnect connectors and remove combination meter.



Disassembly and Assembly for Combination Meter

EKS002ZP

1. Disengaged the tabs(8) to separate front cover.
2. Remove finisher.
3. Remove bulbs.



COMBINATION METERS (RHD MODELS)

PFP:24810

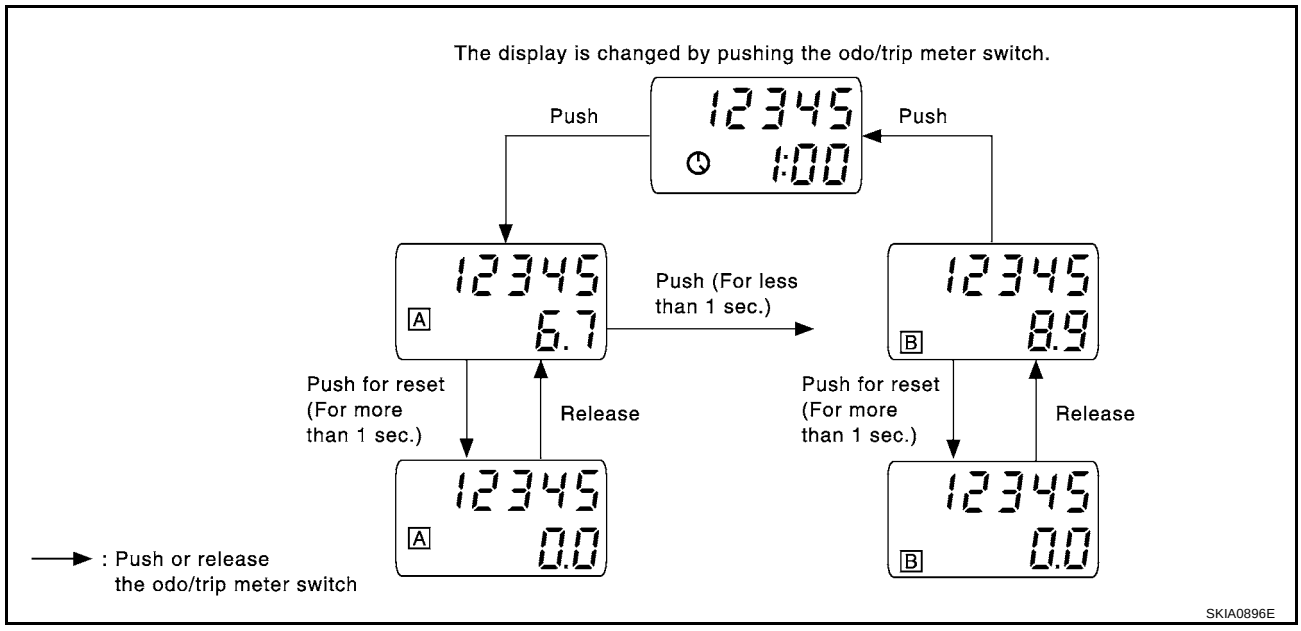
System Description

EKS0030H

UNIFIED CONTROL METER

- Speedometer, odo/trip meter, tachometer, fuel gauge and water temperature gauge are controlled totally by control unit built-in combination meter.
- Digital meter is adopted for odo/trip meter.*
  *The record of the odo meter is kept even if the battery cable is disconnected. The record of the trip meter is erased when the battery cable is disconnected.
- Odo/trip meter segment can be checked in diagnosis mode.
- Meter/gauge can be checked in diagnosis mode.

HOW TO CHANGE THE DISPLAY FOR ODO/TRIP METER



NOTE:
Turn ignition switch to the “ON” position to operate odo/trip meter.

POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- through 10A fuse [No. 28, located in the fuse block (J/B)]
- to combination meter terminal 58.

With the ignition switch in the ON or START position, power is supplied

- through 10A fuse [No. 11, located in the fuse block (J/B)]
- to combination meter terminal 59.

Ground is supplied

- through body grounds M27 and M70
- to combination meter terminal 60.

WATER TEMPERATURE GAUGE

Gasoline engine models

The water temperature gauge indicates the engine coolant temperature. The reading on the gauge is received engine coolant temperature signal from ECM. ECM is detected by water temperature sensor.
The water temperature gauge is received by a signal

- from ECM terminal 32
- to combination meter terminal 66.

The needle on the gauge moves from “C” to “H”

Diesel engine models

The water temperature gauge indicates the engine coolant temperature. The reading on the gauge is based on the resistance of the thermal transmitter.
As the temperature of the coolant increases, the resistance of the thermal transmitter decreases. A variable ground is supplied to terminal 66 of the combination meter for the water temperature gauge. The needle on the gauge moves from “C” to “H”.

TACHOMETER

The tachometer indicates engine speed in revolutions per minute (rpm).
The tachometer is regulated by a signal

- from terminal 36 (Gasoline engine models) or D1 (Diesel engine models) of the ECM
- to combination meter terminal 41 for the tachometer.

FUEL GAUGE

The fuel gauge indicates the approximate fuel level in the fuel tank.
The fuel gauge is regulated by a variable ground signal supplied

- from body grounds, B107 and B119
- through terminals 4 and 1 of the fuel level sensor unit and
- through terminals 1 and 3 of the sub fuel level sensor unit
- to combination meter terminal 40 for the fuel gauge.

SPEEDOMETER

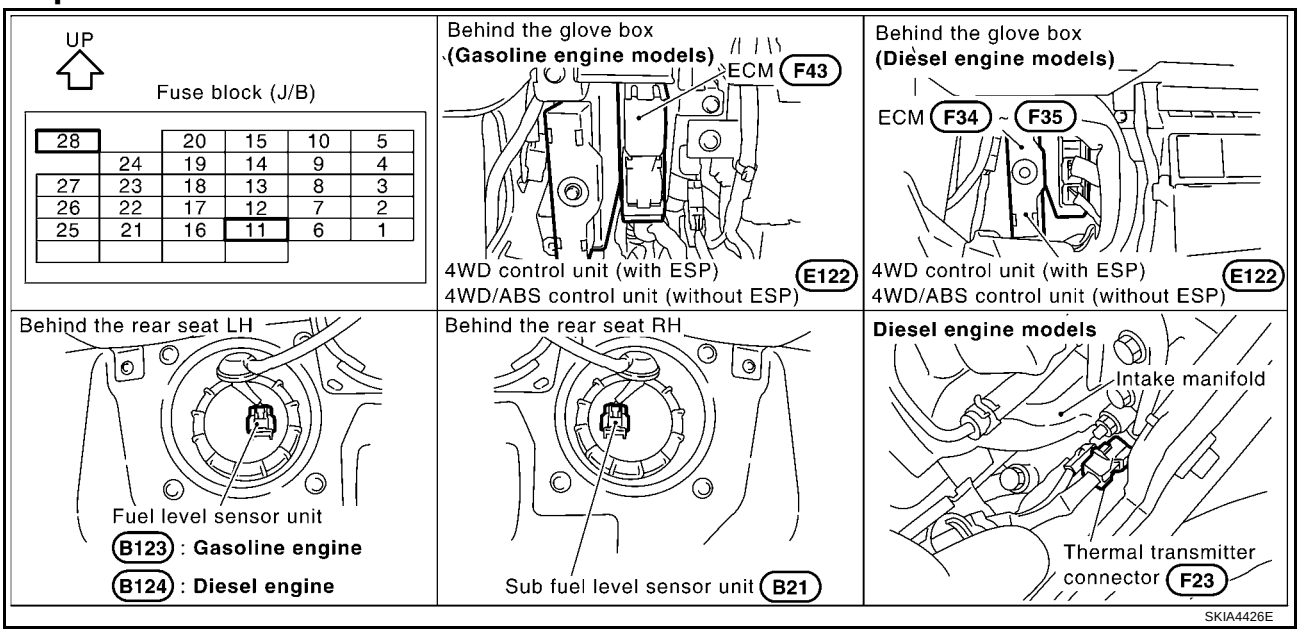
The combination meter provides a voltage signal to the vehicle speed signal from 4WD/ABS control unit (without ESP) or 4WD control unit (with ESP).
The voltage is supplied

- from combination meter terminal 42 for the speedometer
- to terminal 20 of 4WD control unit (with ESP) or 4WD/ABS control unit (without ESP).

The speedometer converts the voltage into the vehicle speed displayed.

Component Parts and Harness Connector Location

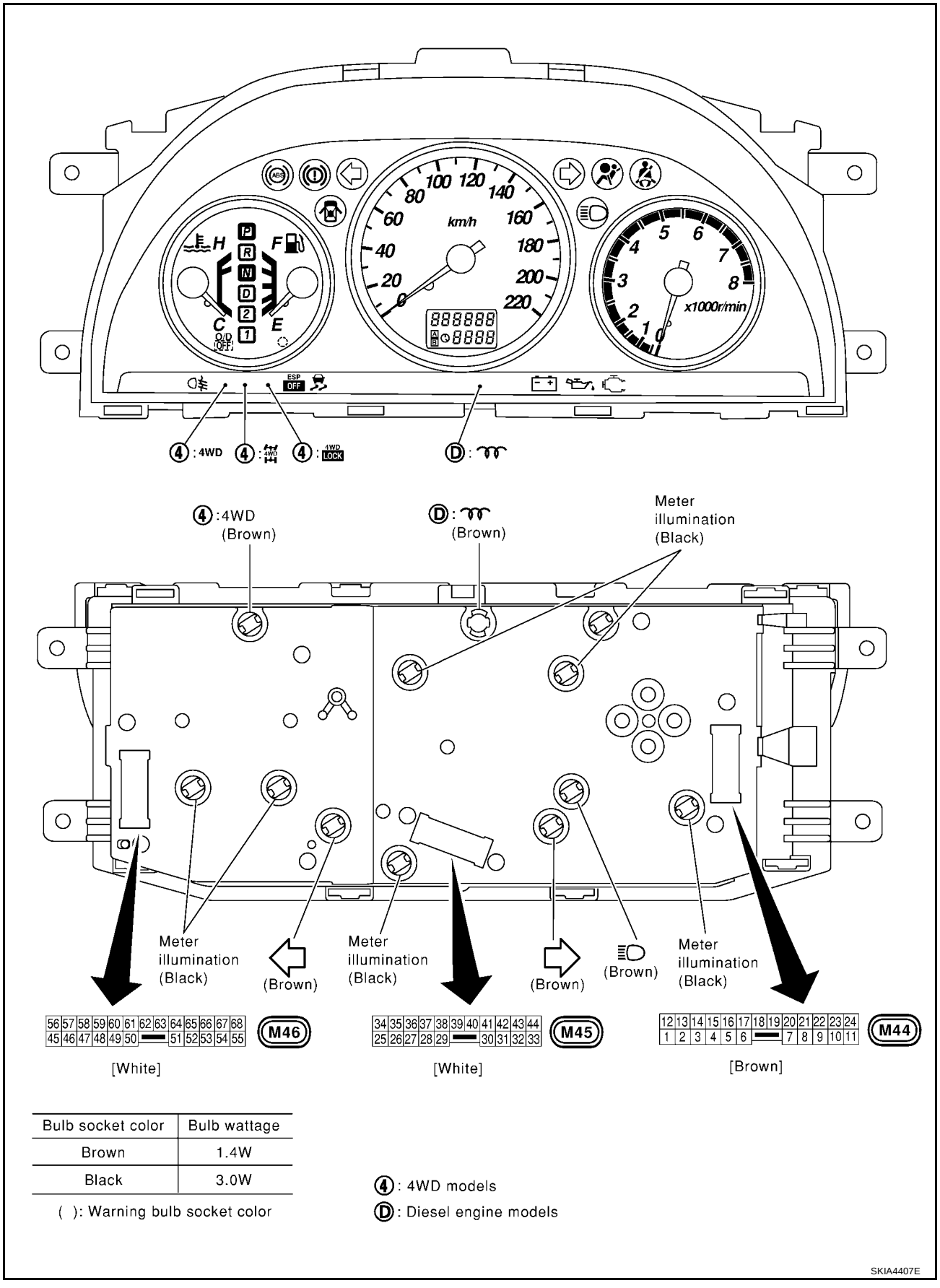
EKS0030I



Combination Meter

EKS0030J

CHECK



Bulb socket color	Bulb wattage
Brown	1.4W
Black	3.0W

( ): Warning bulb socket color

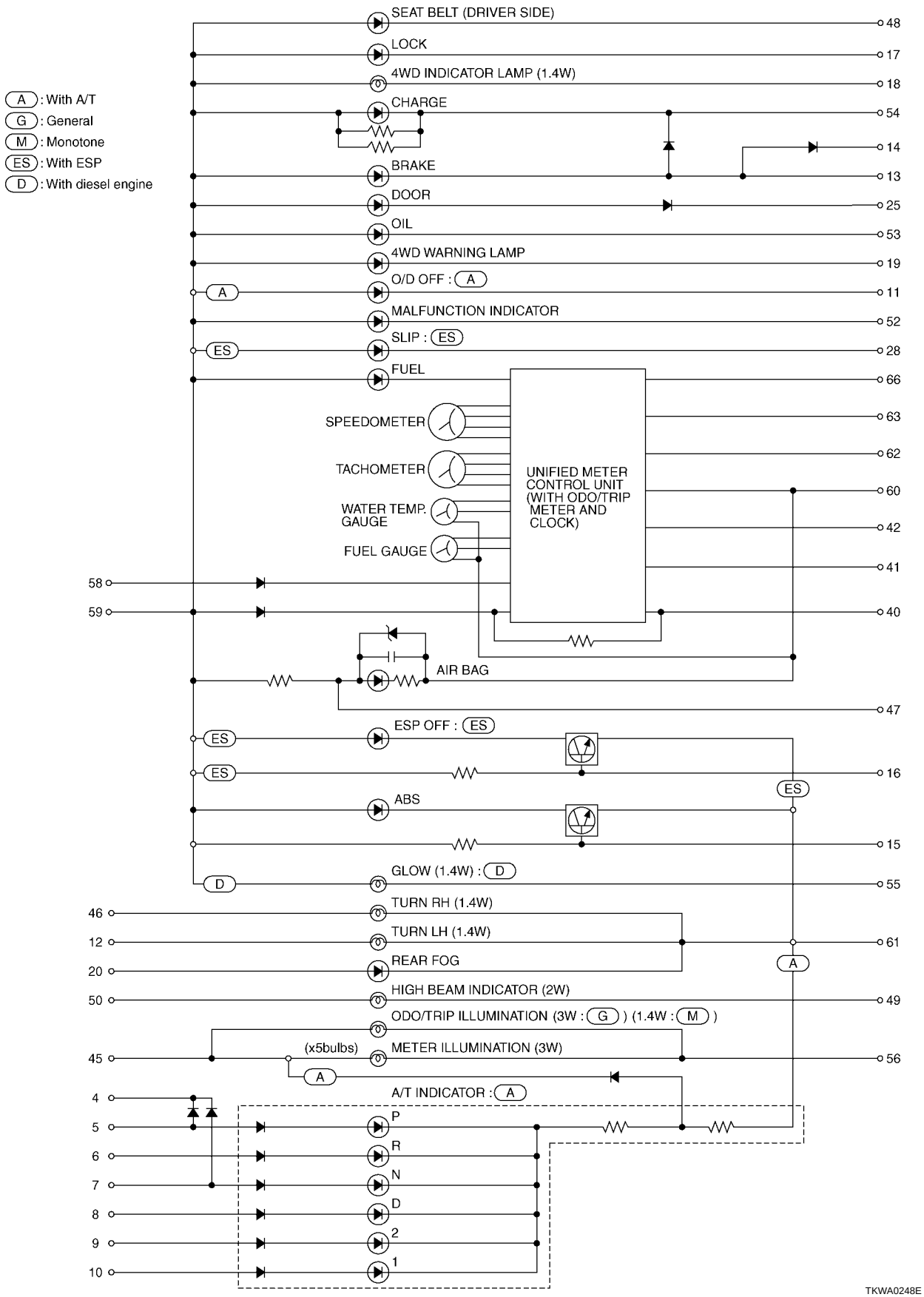
④ : 4WD models

Ⓓ : Diesel engine models

SKIA4407E

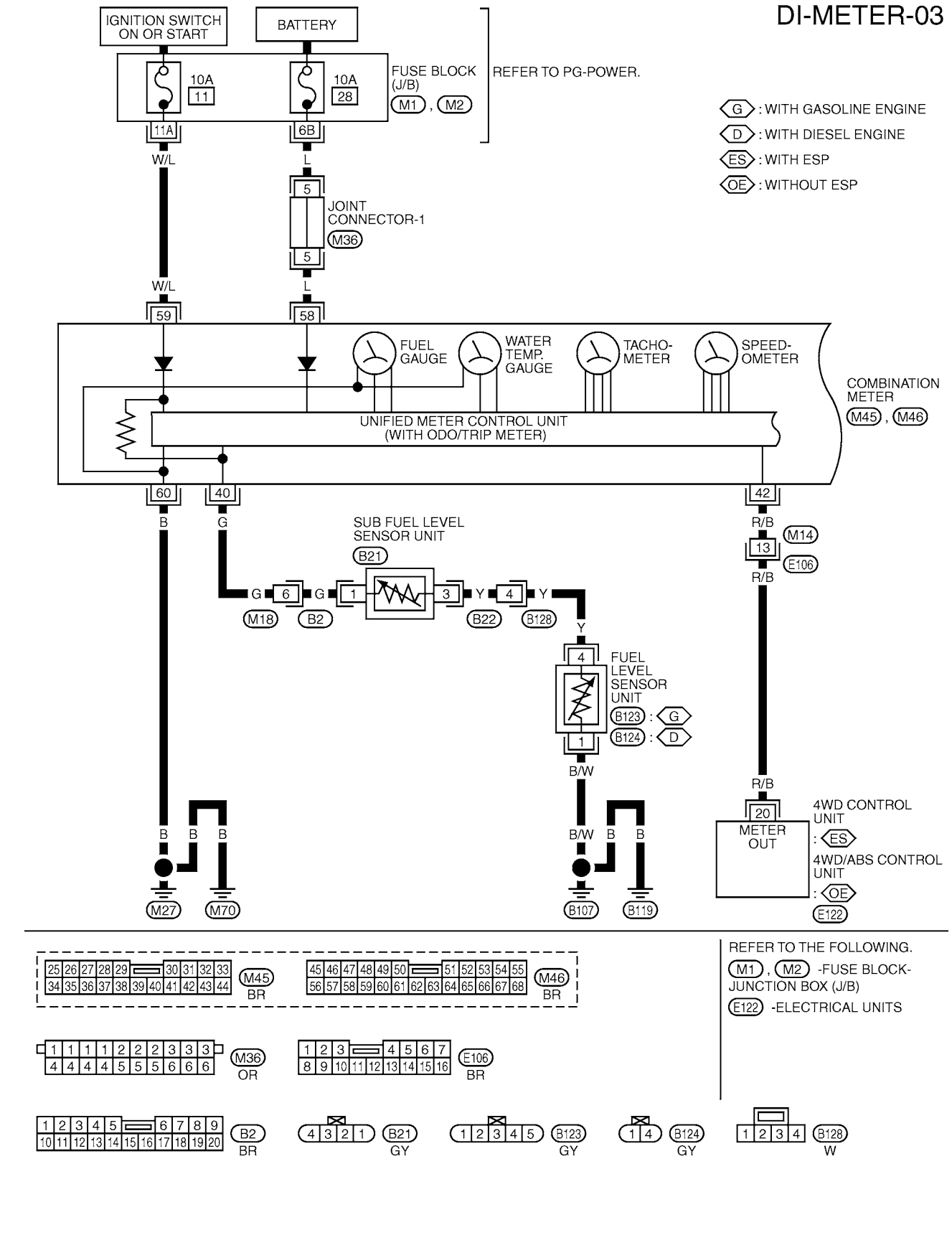
Schematic

EKS0030K



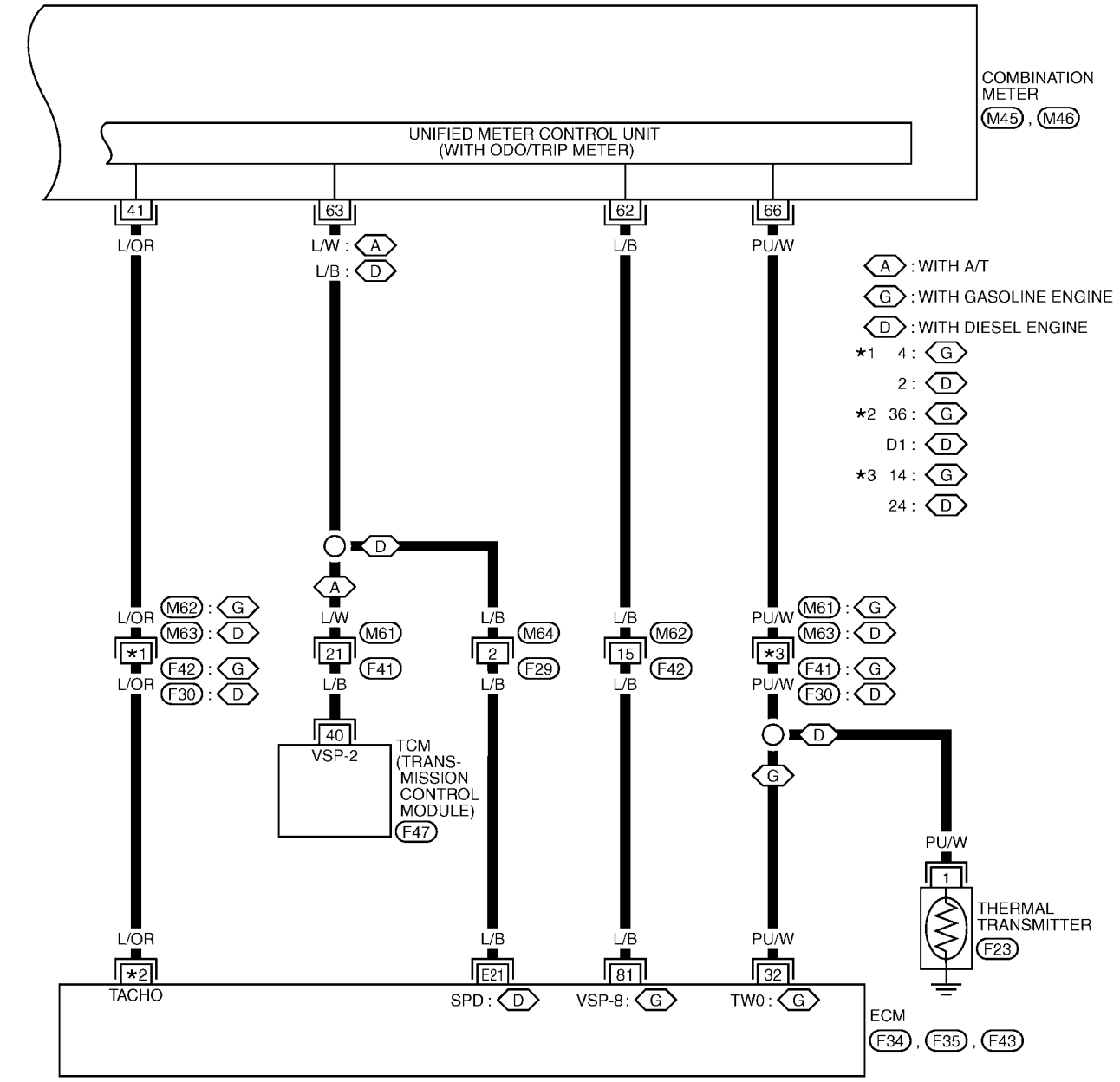
Wiring Diagram — METER —

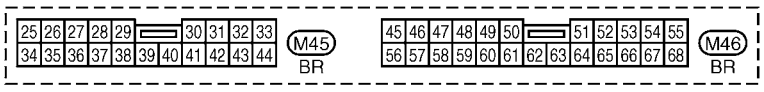
EKS0030L

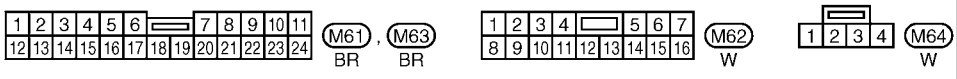


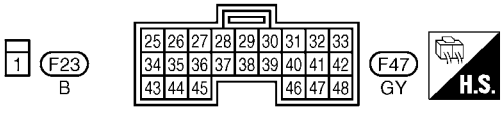
TKWA0088E

DI-METER-04









REFER TO THE FOLLOWING.
F34 , F35 , F43
-ELECTRICAL UNITS

TKWA0089E

Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode

EKS0030M

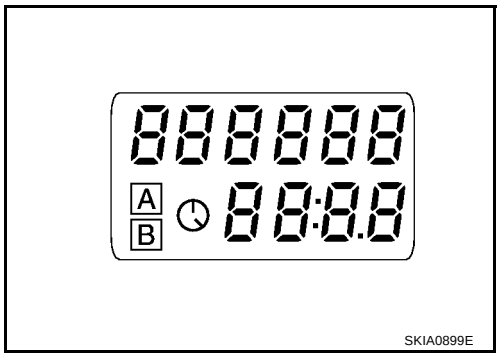
DIAGNOSIS FUNCTION

- Odo/trip meter segment can be checked in diagnosis mode.
- Meters/gauges can be checked in diagnosis mode.

HOW TO ALTERNATE DIAGNOSIS MODE

1. Turn ignition switch to ON and change odo/trip meter to “TRIP A” or “TRIP B”.
2. Turn ignition switch to OFF.
3. Turn ignition switch to ON when pushing odo/trip meter switch.
4. Confirm that trip meter indicates “000.0”.
5. Push odo/trip meter switch more than three times within 5 seconds.
6. All odo/trip meter segments should be turned on.

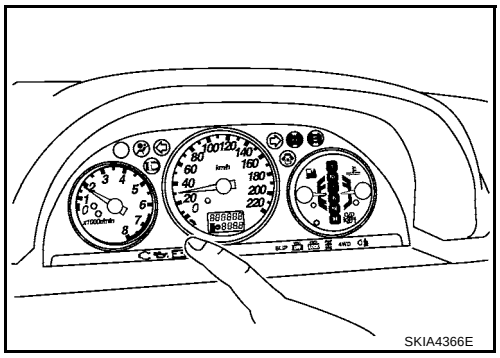
   NOTE:
   If some segments are not turned on, unified meter control unit with odo/trip meter should be replaced.
   At this point, the unified control meter is turned to diagnosis mode.



SKIA0899E

7. Push odo/trip meter switch. Indication of each meter/gauge should be as shown left during pushing odo/trip meter switch if it is no malfunctioning.

   NOTE:
   It takes about a few seconds for indication of fuel gauge and water temperature gauge to become stable.


SKIA4366E

Trouble Diagnoses

EKS0030N

PRELIMINARY CHECK

1. CHECK WARNING LAMPS

1. Turn ignition switch ON.
2. Warning lamps should illuminate (seat belt warning or door warning etc.).

Do warning lamps illuminate?

Yes >> GO TO 2.
No >> Power supply and ground circuit check. Refer to DI-32, "Power Supply and Ground Circuit Check" .

2. CHECK DIAGNOSIS MODE OPERATION

Preform diagnosis mode. Refer to DI-30, "Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode" .

Can diagnosis mode be activated?

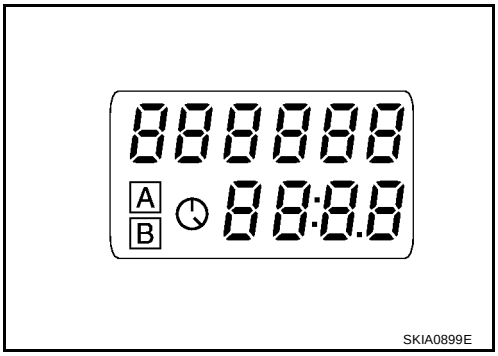
Yes >> GO TO 3.
No >> Power supply and ground circuit check. Refer to DI-32, "Power Supply and Ground Circuit Check" .

3. SEGMENTS CHECK

Check odo/trip meter segment.

Do all segments illuminate?

Yes >> GO TO 4.
No >> Replace combination meter.



4. FUEL WARNING LAMP ILLUMINATION CONFIRMATION

During fuel warning lamp check, confirm illumination of fuel warning lamp.

Condition of odo/trip meter switch	Fuel warning lamp
Pushed	Does not illuminate.
Released	Illuminates.

OK or NG

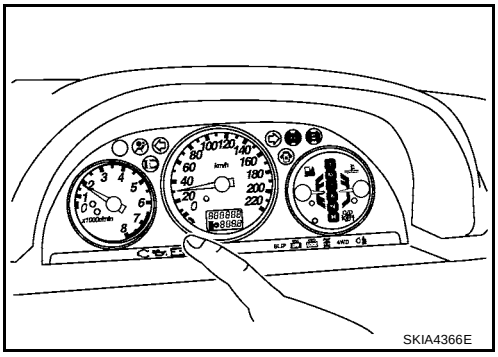
OK >> GO TO 5.
NG >> Replace the combination meter.

5. CHECK METER CIRCUIT

Check indication of each meter/gauge in diagnosis mode.

OK or NG

OK >> GO TO symptom chart.
NG >> Replace combination meter.



SYMPTOM CHART

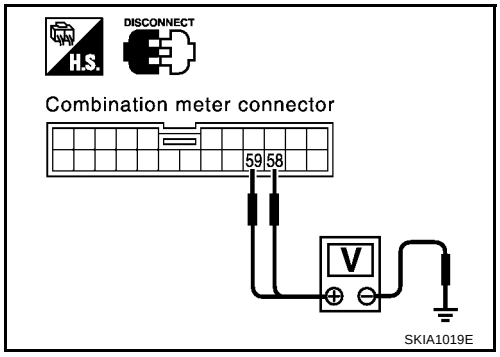
Symptom	Possible cause	Repair procedure
Fuel warning lamp is malfunctioning.	1. Sensor Signal – Engine revolution signal – Fuel gauge – Water temp gauge 2. Unified meter control unit	1. Check the sensor for malfunctioning meter/gauge. – Inspection/Engine Speed Signal (Refer to DI-33, "Inspection/ Engine Speed Signal") – Inspection/Fuel Level Sensor Unit (Refer to DI-37, "Inspection/ Fuel Level Sensor Unit") – Inspection/Water Temperature Gauge (Refer to DI-33, "Inspection/Water Temperature Gauge/Gasoline Engine Models" or DI-35, "Inspection/Water Temperature Gauge/Diesel Engine Models") 2. Replace combination meter
One of tachometer/fuel gauge/water temp. gauge is malfunctioning.		
Speedometer and odo/trip meter is malfunctioning.	1. Sensor Signal – Vehicle speed signal 2. Unified meter control unit	1. Check the sensor for malfunctioning meter/gauge. – Inspection/Vehicle Speed Signal (Refer toDI-35, "Inspection/ Vehicle speed signal") 2. Replace combination meter
Multiple meter/gauge are malfunctioning.	● Unified meter control unit	● Replace combination meter.

Power Supply and Ground Circuit Check

EKS0030O

1. POWER SUPPLY CIRCUIT CHECK

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (wire color)				
M46	58 (L)	Ground	Battery voltage	Battery voltage	Battery voltage
M46	59 (W/L)	Ground	0V	0V	Battery voltage



OK or NG

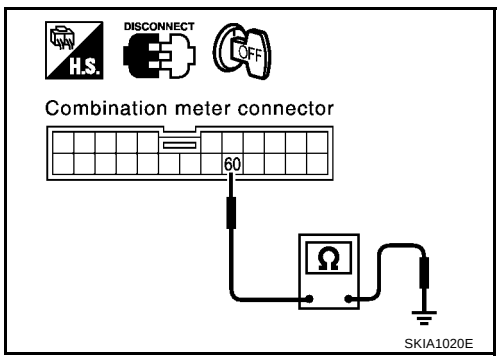
OK >> GO TO 2.

NG >> Check the following:

- 10A fuse [No. 11, located in fuse block (J/B)]
- 10A fuse [No. 28, located in fuse block (J/B)]
- Harness for open or short between fuse and combination meter

2. GROUND CIRCUIT CHECK

Terminals			Continuity
(+)		(-)	
Connector	Terminal (wire color)		
M46	60 (B)	Ground	Yes



OK or NG

OK >> Inspection end.

NG >> Repair harness or connector.

Inspection/Engine Speed Signal

EKS0030P

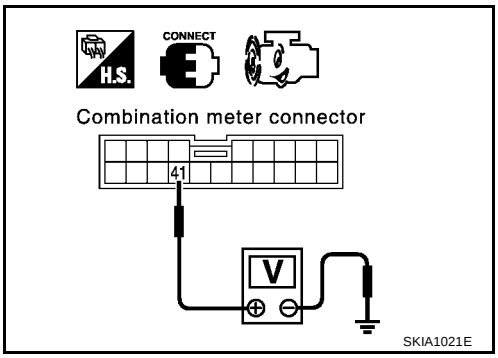
1. CHECK ECM OUTPUT

1. Start engine.
2. Check voltage between combination meter harness connector M45 terminals 41 (L/OR) and ground at idle and 2,000 rpm.

Higher rpm = Higher voltage

Lower rpm = Lower voltage

Voltage should change with rpm.



OK or NG

OK >> Engine speed signal is OK.
NG >> Check harness for open or short between ECM and combination meter.

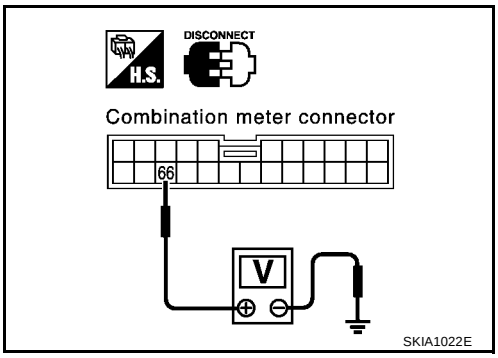
Inspection/Water Temperature Gauge/Gasoline Engine Models

EKS0030Q

1. CHECK ECM OUT PUT

1. Disconnect combination meter
2. Check Voltage between combination meter harness connector M46 terminal 66 (PU/W) and ground.

Battery voltage should exist



OK or NG

OK >> GO TO 3.
NG >> GO TO 2.

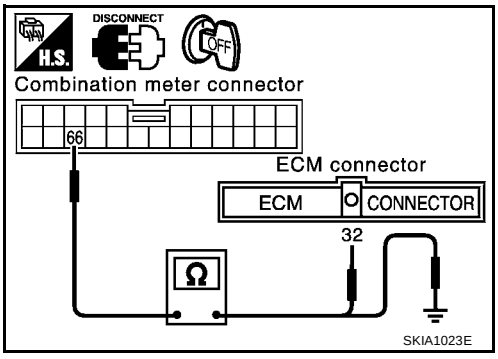
2. CHECK HARNESS FOR OPEN OR SHORT

1. Disconnect ECM connector.
2. Check continuity between combination meter harness connector M46 terminal 66 (PU/W) and ECM harness connector F43 terminal 32 (PU/W).

Continuity should exist

3. Check continuity between combination meter harness connector M46 terminal 66 (PU/W) and ground.

Continuity should not exist



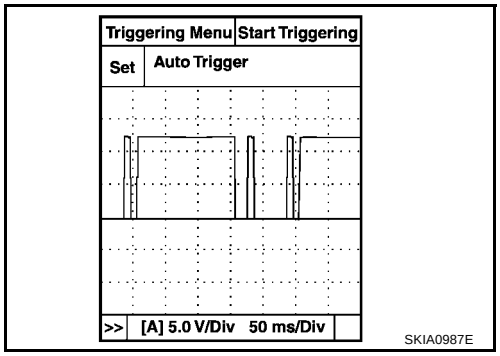
OK or NG

OK >> GO TO 3.
NG >> Repair harness or connector.

3. CHECK WATER TEMPERATURE OUTPUT SIGNAL

1. Connect combination meter connector and ECM connector.
2. Start engine.
3. Check output signal between combination meter harness connector M46 terminal 66(PU/W) and ground. (Use “SIMPLE OSCILLOSCOPE” in “SUB MODE” with CONSULT-II.)

66 (PU/W) – ground



OK or NG

OK >> Replace combination meter.
NG >> Check ECM.

Inspection/Water Temperature Gauge/Diesel Engine Models

EKS0030R

1. CHECK THERMAL TRANSMITTER

Refer to DI-42, "THERMAL TRANSMITTER CHECK" .

OK or NG

OK >> GO TO 2.
NG >> Replace thermal transmitter.

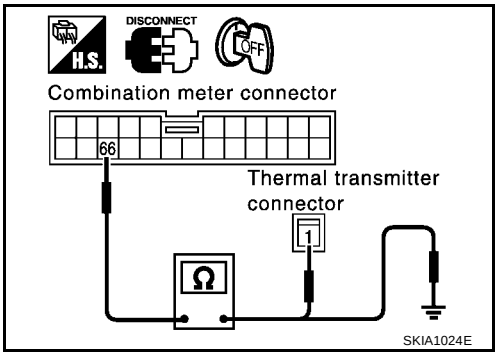
2. CHECK HARNESS FOR OPEN OR SHORT

1. Disconnect combination meter connector and thermal transmitter connector.
2. Check continuity between combination meter harness connector M46 terminal 66 (PU/W) and thermal transmitter harness connector F23 terminal 1 (PU/W).

Continuity should exist.

3. Check continuity between combination meter harness connector M46 terminal 66 (PU/W) and ground.

Continuity should not exist.



OK or NG

OK >> Thermal transmitter is OK.
NG >> Replace harness or connector.

Inspection/Vehicle speed signal

EKS0030S

1. CHECK ABS WARNING LAMP

- Turn the ignition switch ON, then ABS warning lamp turn ON.

ABS warning lamp should illuminate.

OK or NG

OK >> Check 4WD control unit (with ESP) or 4WD/ABS control unit (without ESP).
NG >> GO TO 2.

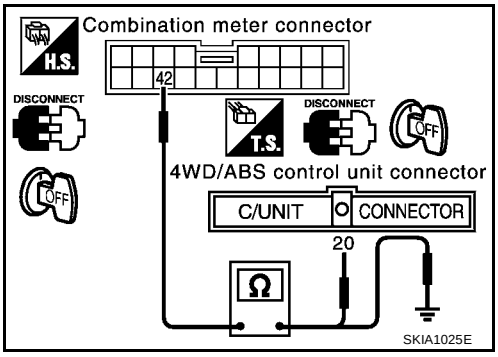
2. CHECK HARNESS FOR OPEN OR SHORT

1. Disconnect combination meter connector and 4WD/ABS control unit (without ESP) or 4WD control unit (with ESP) connector.
2. Check continuity between combination meter harness connector M45 terminal 42 (R/B) and 4WD/ABS control unit (without ESP) or 4WD control unit (with ESP) harness connector E122 terminal 20 (R/B).

Continuity should exist.

3. Check continuity between combination meter harness connector M45 terminal 42 (R/B) and ground.

Continuity should not exist.



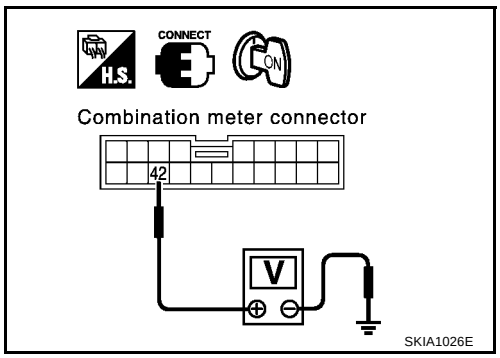
OK or NG

OK >> GO TO 3.
NG >> Replace combination meter.

3. CHECK 4WD/ABS CONTROL UNIT OUTPUT

1. Connect combination meter connector.
2. Check voltage between combination meter harness connector M45 terminal 42 (R/B) and ground.

Approx. 9V



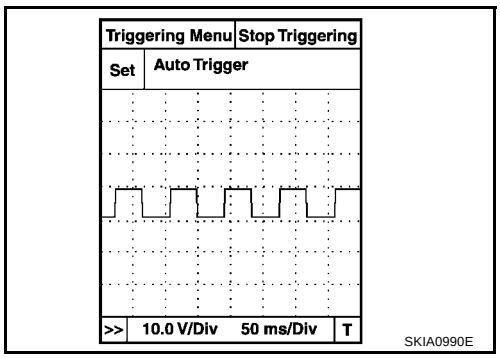
OK or NG

OK >> GO TO 4.
NG >> Replace combination meter.

4. CHECK VEHICLE SPEED INPUT SIGNAL

1. Connect 4WD/ABS control unit connector (without ESP) or 4WD control unit (with ESP).
2. Lift up drive wheels.
3. Start engine.
4. Check voltage signal between combination meter harness connector M45 terminal 42 (R/B) and ground (Use “SIMPLE OSCILLOSCOPE” in “SUB MODE” with CONSULT-II.).

42 (R/B) – ground



OK or NG

OK >> Replace combination meter.
NG >> Check 4WD control unit (with ESP) or 4WD/ABS control unit (without ESP).

Inspection/Fuel Level Sensor Unit

EKS0030T

FUEL LEVEL SENSOR UNIT

The following symptoms do not indicate a malfunction.

- Depending on vehicle posture or driving circumstance, the fuel level in the tank varies, and the pointer may fluctuate.
- If the vehicle is fueled with the ignition switch ON, the pointer will move slowly.

LOW-FUEL WARNING LAMP

Depending on vehicle posture or driving circumstance, the fuel level in the tank varies, and the warning lamp ON timing may be changed.

1. DIAGNOSIS MODE INSPECTION

Preform the combination meter diagnosis mode. Refer to DI-30, "Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode" .

OK or NG

OK >> GO TO 2.
NG >> Replace combination meter.

2. HARNESS CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Check combination meter, fuel level sensor unit and terminals (meter-side, module-side, and harness-side) for poor connection and bend.

OK or NG

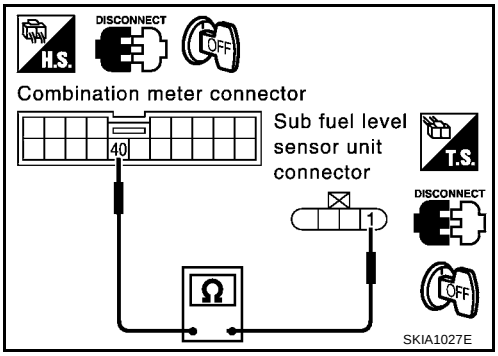
OK >> GO TO 3.
NG >> Repair terminals or connectors.

3. CHECK FUEL LEVEL SENSOR FOR OPEN CIRCUIT

1. Disconnect combination meter connector, fuel level sensor unit connector and sub fuel level sensor unit connector.
2. Check the following.

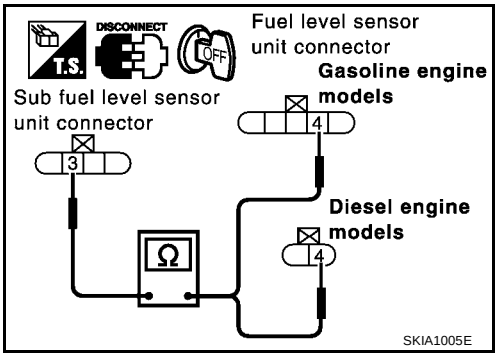
– Continuity between combination meter harness connector M45 terminal 40 (G) and sub fuel level sensor unit harness connector B21 terminal 1 (G).

Continuity should exist.



– Continuity between sub fuel level sensor unit harness connector B21 terminal 3 (Y) and fuel level sensor unit harness connector B123 (Gasoline engine models) or B124 (Diesel engine models) terminal 4 (Y).

Continuity should exist.



OK or NG

OK >> GO TO 4.
NG >> Repair harnesses or connectors.

4. CHECK FUEL LEVEL SENSOR SHORT CIRCUIT

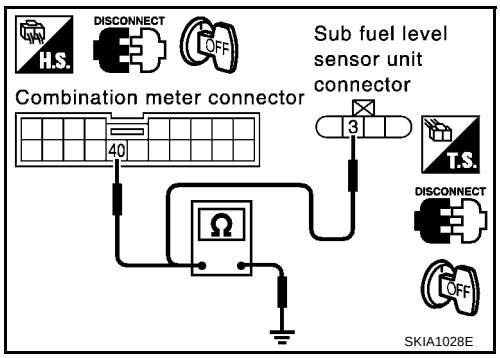
1. Checking the following.

– Continuity between combination meter harness connector M45 terminal 40 (G) and ground.

Continuity should not exist.

– Continuity between sub fuel level sensor harness connector B21 terminal 3 (Y) and ground.

Continuity should not exist.



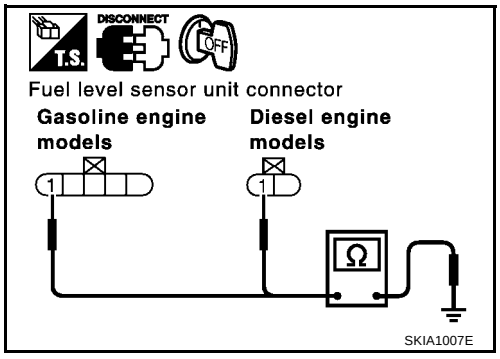
OK or NG

OK >> GO TO 5.
NG >> Repair harnesses or connectors.

5. CHECK FUEL LEVEL SENSOR GROUND CIRCUIT

Check continuity between fuel level sensor unit harness connector B123 (Gasoline engine models) or B124 (Diesel engine models) terminal 1 (B/W) and ground.

Continuity should exist.



OK or NG

OK >> GO TO 6.
NG >> Repair harnesses or connectors.

6. FUEL LEVEL SENSOR UNIT INSPECTION

Check the components. Refer to DI-41, "Electrical Components Inspection" .

OK or NG

OK >> GO TO 7.
NG >> Replace fuel level sensor unit or sub fuel sensor unit.

7. CHECK INSTALLATION CONDITION

Check fuel level sensor unit installation, and check whether the float arm interferes or binds with any components inside the arm.

OK or NG

OK >> Replace combination meter.
NG >> Install fuel level sensor unit or sub fuel sensor unit properly.

The Fuel Gauge Pointer Fluctuates·Indicator Wrong Value·or Varies.

EKS0030U

1. CHECK THE FUEL GAUGE POINTER FOR FLUCTUATION

Does the indication value fluctuate during driving or before/after stop?

Does the indication value vary?

Yes >> The pointer fluctuation may be caused by fuel level change in the fuel tank.
No >> Ask the customer about the situation when the symptom occurs in detail, and Preform the trouble diagnosis.

The Fuel Gauge Does Not Move to Full-position.

EKS0030V

1. QUESTION 1

Does it take a long time for the pointer to move to Full-position?

Yes or No

Yes >> GO TO 2.
No >> GO TO 3.

2. QUESTION 2

Was the vehicle fueled with the ignition switch ON?

Yes or No

Yes >> Be sure to fuel the vehicle with the ignition switch OFF. Otherwise it will take a long time to move to Full-position because of the characteristic of the fuel gauge.
No >> GO TO 3.

3. QUESTION 3

Is the floor or the vehicle inclined?

Yes or No

Yes >> It may not be filled fully.
No >> GO TO 4.

4. QUESTION 4

During driving, does the fuel gauge pointer move gradually toward E-position?

Yes or No

Yes >> Check the components. Refer to DI-41, "Electrical Components Inspection" .
No >> The float arm may interfere or bind with any of the components in the fuel tank.

The Fuel Gauge Does Not Work.

EKS0030W

1. HARNESS CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Check combination meter, fuel level sensor unit, sub fuel level sensor unit and terminals (meter-side, module-side, and harness-side) for poor connection and bend.

OK or NG

OK >> GO TO 2.
NG >> Repair connector.

2. CHECK INSTALLATION CONDITION

Check fuel level sensor unit or sub fuel level sensor unit installation (refer toFL-4, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY" for QR engine models or FL-17, "FUEL LEVEL SENSOR UNIT" for YD engine models, and check whether the float arm interferes or binds with any components inside the arm.

OK or NG

OK >> Fuel level sensor unit is OK.
NG >> Check fuel level sensor unit or sub fuel level sensor unit. Refer to DI-41, "Electrical Components Inspection" .

Low Fuel Warning Lamp Illuminate or Not Illuminate

EKS0030X

1. DIAGNOSIS MODE INSPECTION

Preform combination meter diagnosis mode. Refer to DI-30, "Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode" .

OK or NG

OK >> Check fuel level sensor unit or sub fuel level sensor unit. Refer to DI-41, "Electrical Components Inspection" .

NG >> Replace combination meter.

Electrical Components Inspection

EKS0031V

FUEL LEVEL SENSOR UNIT CHECK / GASOLINE ENGINE MODELS

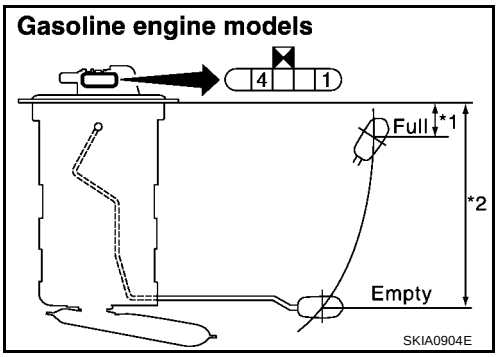
For removal, refer to FL-4, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY" for Gasoline engine models.

Fuel level sensor unit

Check the resistance between terminals 1 and 4.

Ohmmeter		Float position mm (in)			Resistance value Ω
(+)	(–)				
4	1	*1	Full	24 (2.36)	Approx. 4 - 6
		*2	Empty	167 (6.57)	Approx. 79 - 84

*1 and *2: When float rod is in contact with stopper.

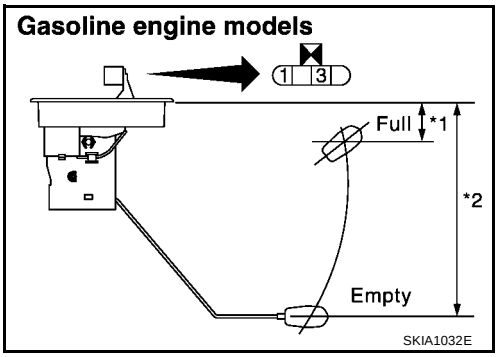


Sub fuel level sensor unit

Check the resistance between terminals 1 and 3.

Ohmmeter		Float position mm (in)			Resistance value Ω
(+)	(–)				
1	3	*1	Full	35 (1.50)	Approx. 0.8 -1
		*2	Empty	186 (6.38)	Approx.79 - 84

*1 and *2: When float rod is in contact with stopper.



FUEL LEVEL SENSOR UNIT CHECK / DIESEL ENGINE MODELS

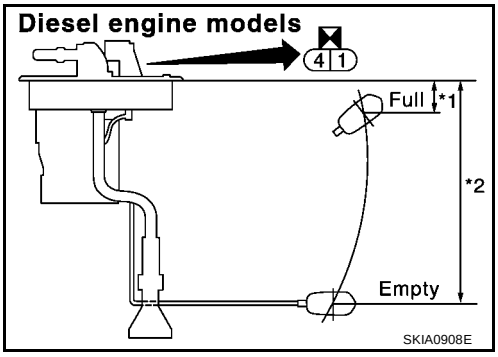
For removal, refer to FL-17, "FUEL LEVEL SENSOR UNIT" for Diesel engine models.

Fuel level sensor unit

Check the resistance between terminals 1 and 4.

Ohmmeter		Float position mm (in)			Resistance value Ω
(+)	(–)				
4	1	*1	Full	24 (2.38)	Approx. 4 - 6
		*2	Empty	170 (6.46)	Approx. 79 - 84

*1 and *2: When float rod is in contact with stopper.

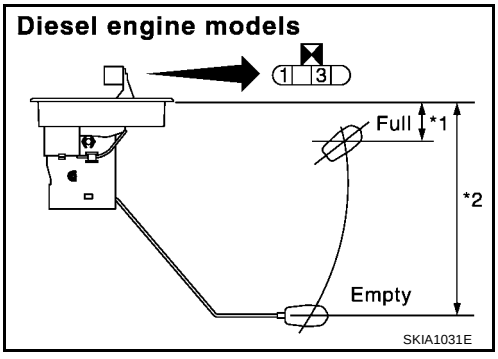


Sub fuel level sensor unit

Check the resistance between terminals 1 and 3.

Ohmmeter		Float position mm (in)			Resistance value Ω
(+)	(–)				
1	3	*1	Full	35 (1.50)	Approx. 0.8 - 1.0
		*2	Empty	186(6.38)	Approx. 38 - 42

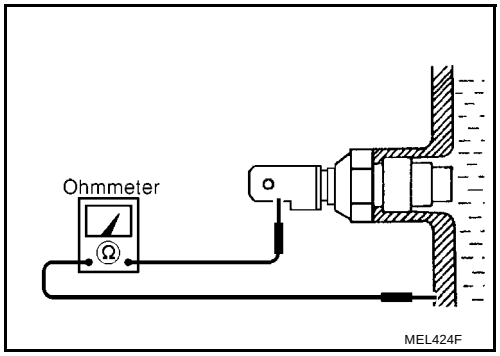
*1 and *2: When float rod is in contact with stopper.



THERMAL TRANSMITTER CHECK

Check the resistance between the terminals of thermal transmitter and body ground.

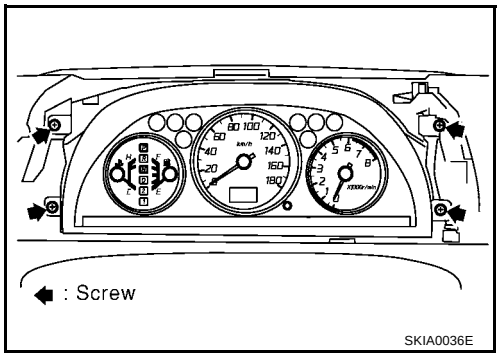
Water temperature	Resistance
60°C (140°F)	Approx. 170 - 210Ω
100°C (212°F)	Approx. 47 - 53Ω



Removal and Installation for Combination Meter

EKS0030Z

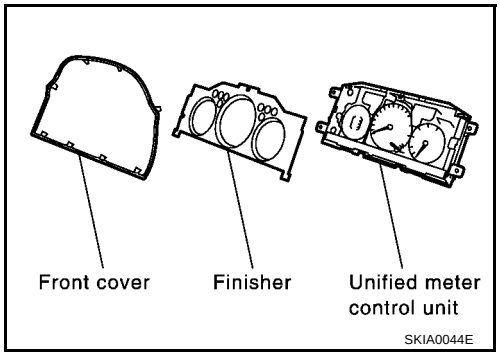
1. Remove the cluster lid A. Refer to IP-3, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove the screws (4), and pull out combination meter.
3. Disconnect connectors and remove combination meter.



Disassembly and Assembly for Combination Meter

EKS00310

1. Disengaged the tabs(8) to separate front cover.
2. Remove finisher.
3. Remove bulbs.

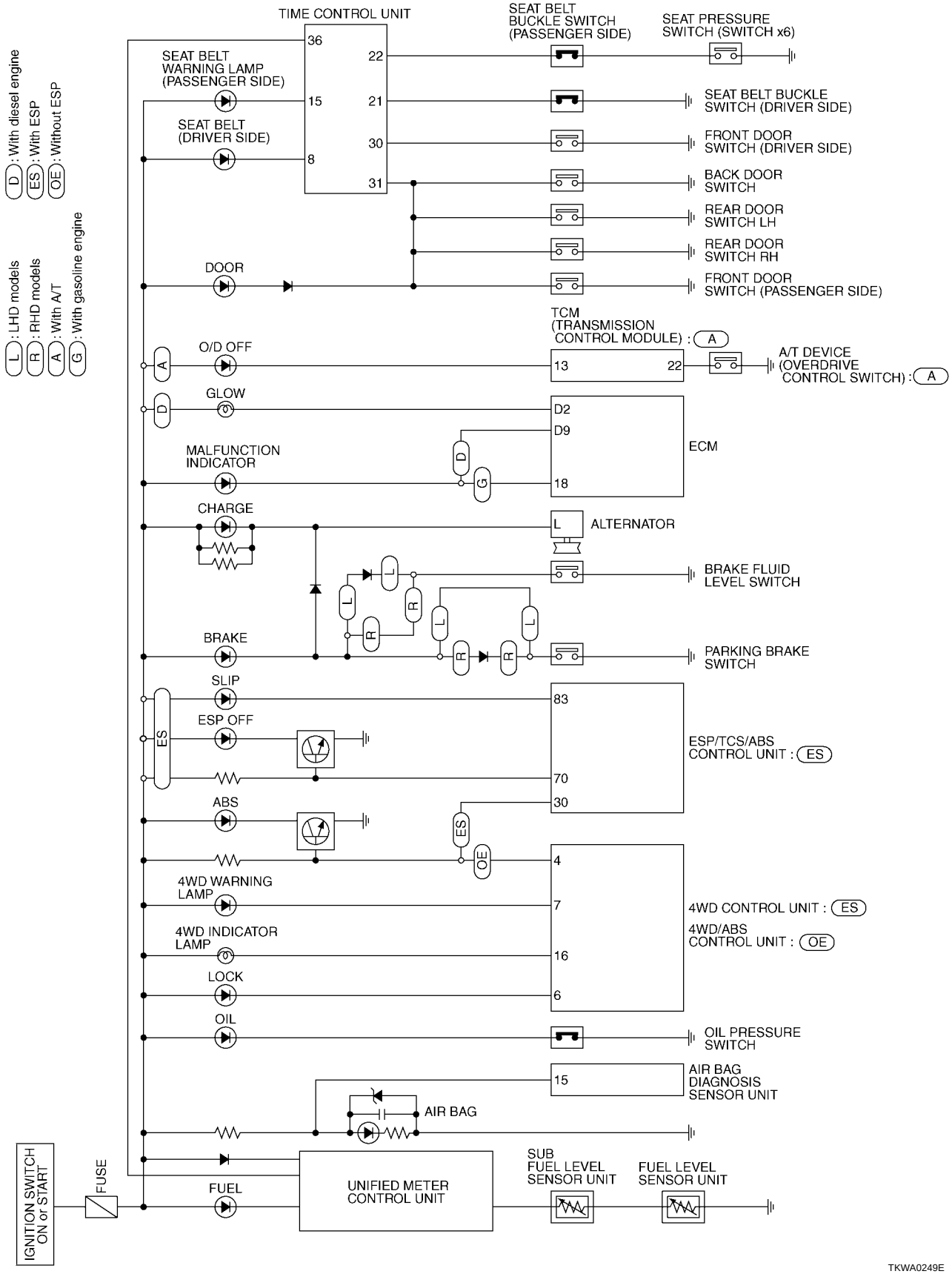


WARNING LAMPS

PFP:24814

Schematic

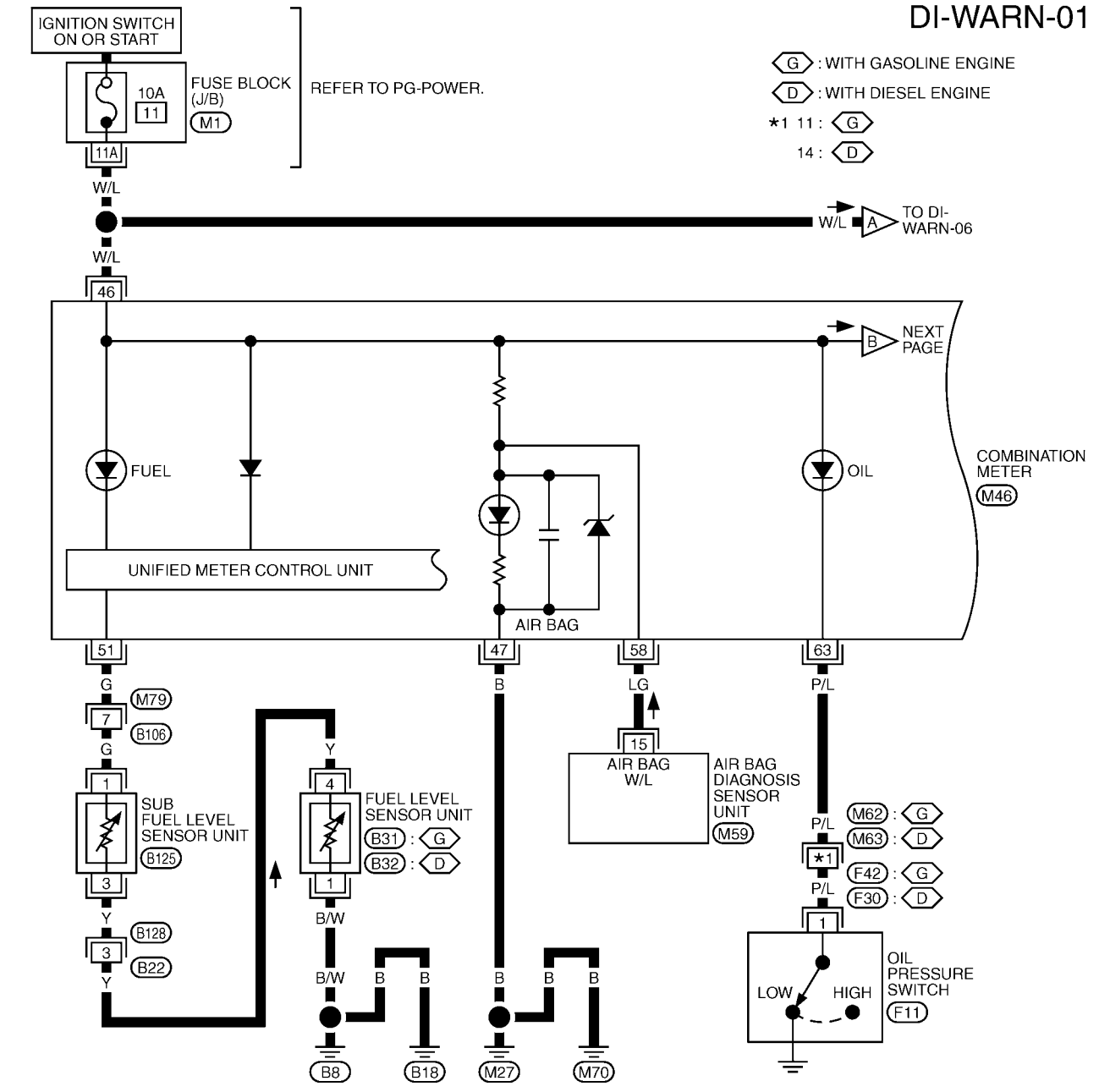
EKS002HE

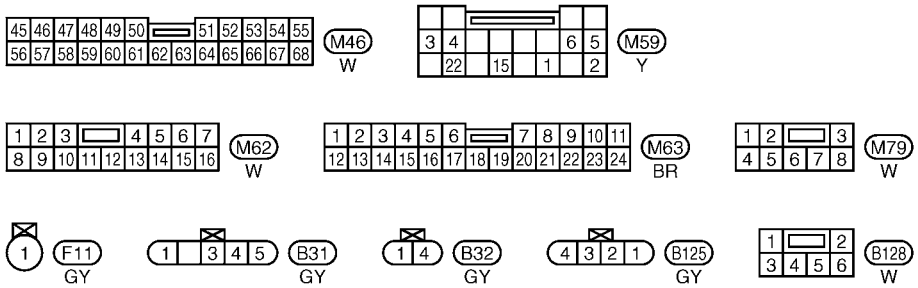


TKWA0249E

Wiring Diagram — WARN —/ LHD Models

EKS002HH



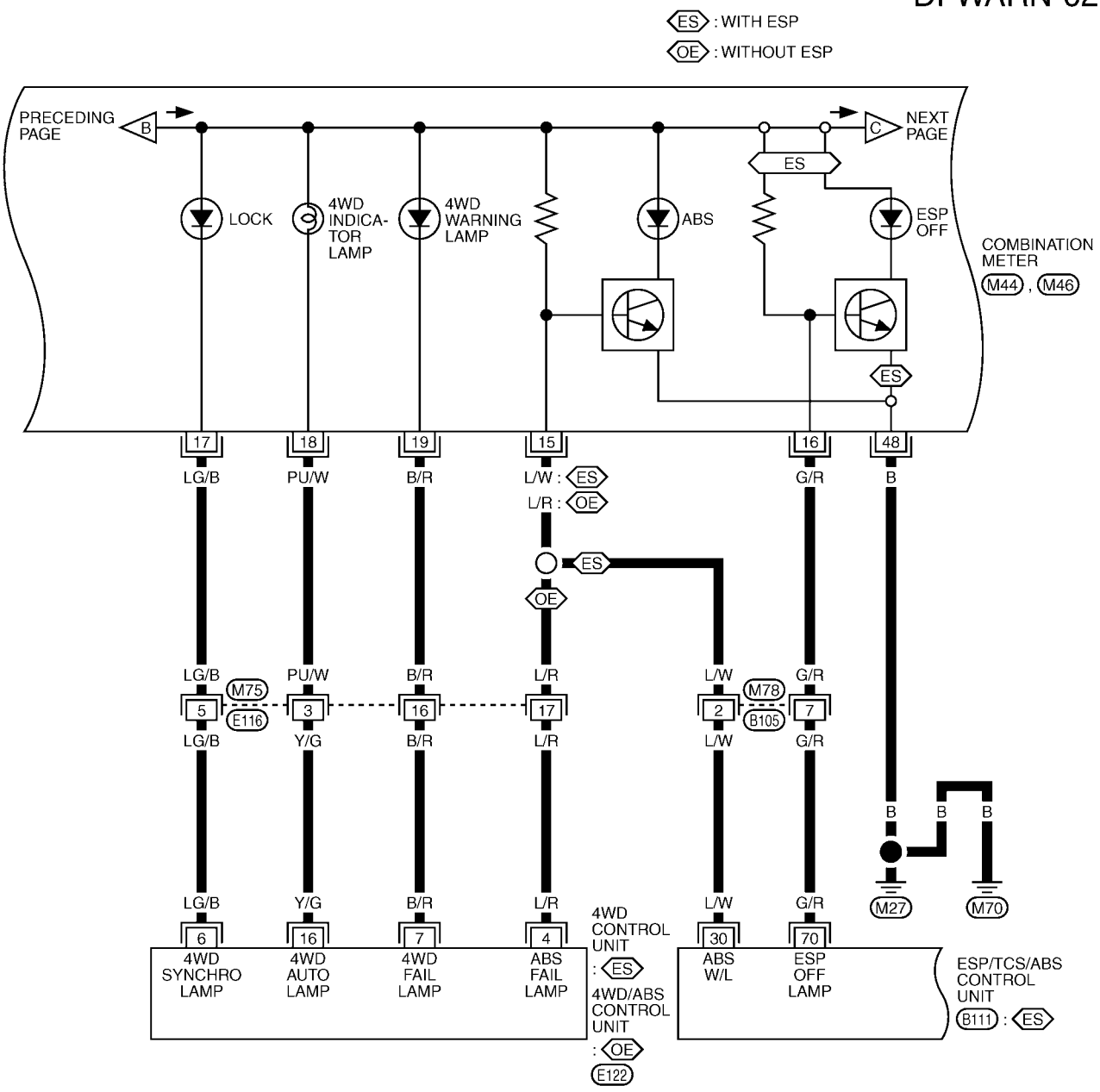


REFER TO THE FOLLOWING.

M1 -FUSE BLOCK-JUNCTION BOX (J/B)

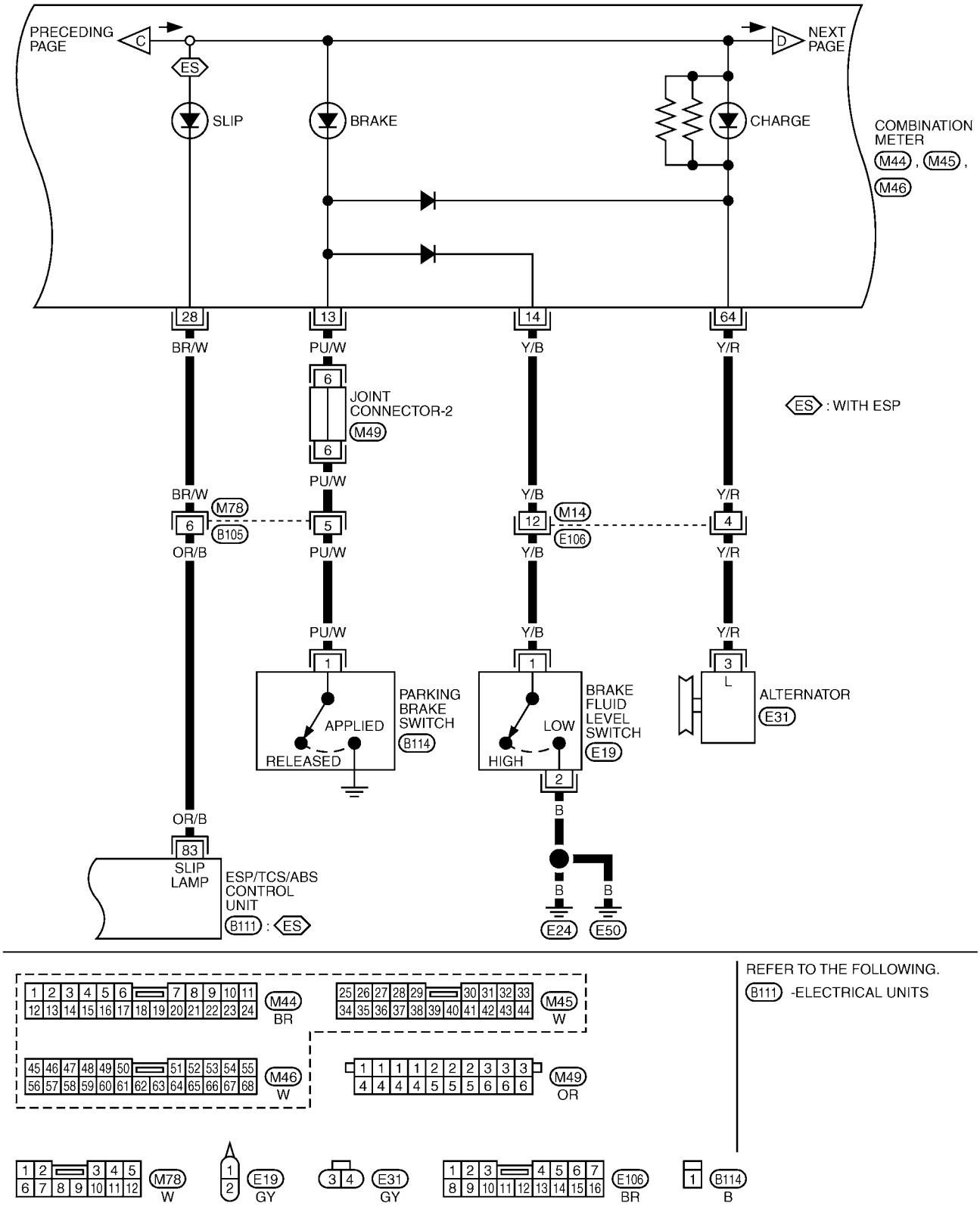
TKWA0726E

DI-WARN-02



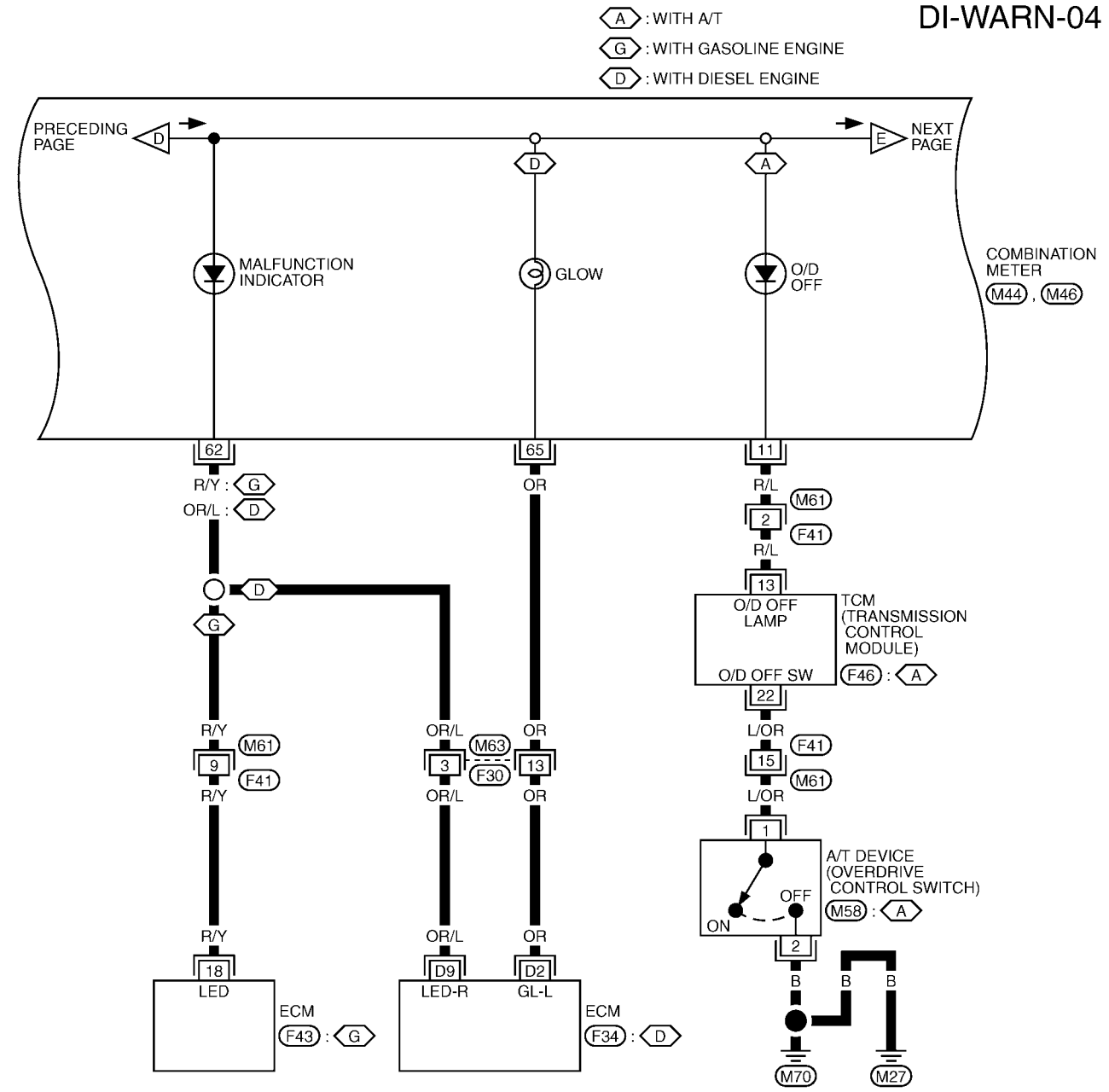
TKWA0251E

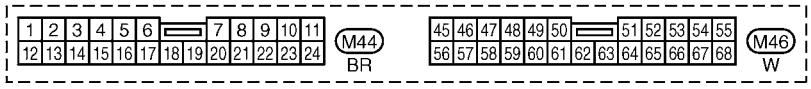
DI-WARN-03

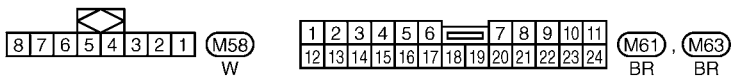


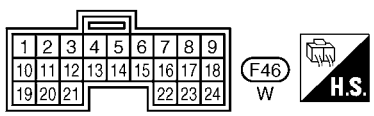
TKWA0252E

DI-WARN-04



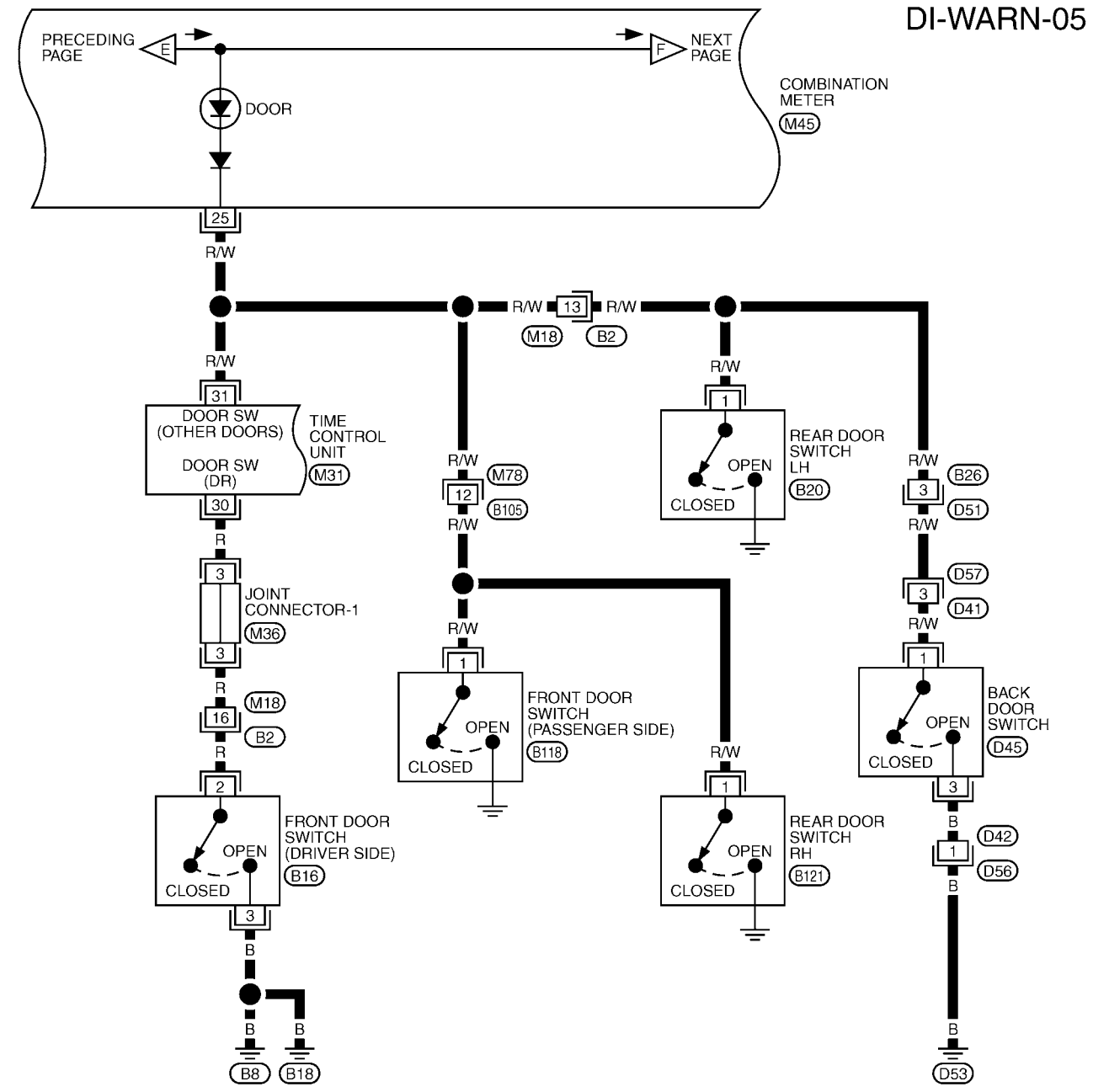


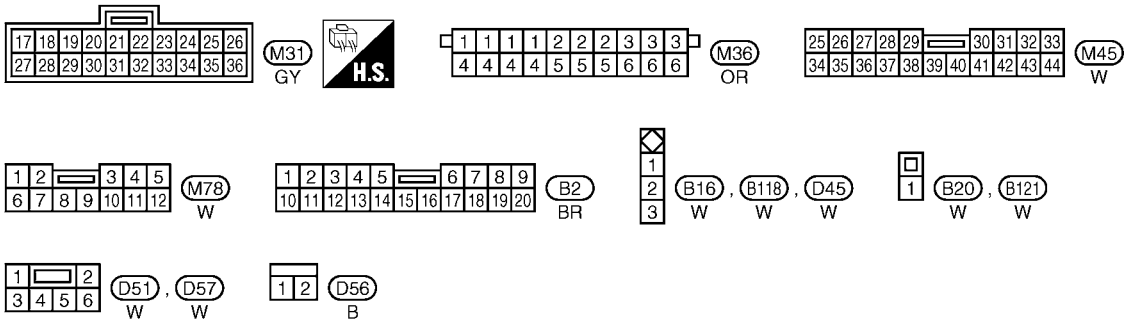




REFER TO THE FOLLOWING.
F34 , F43 -ELECTRICAL UNITS

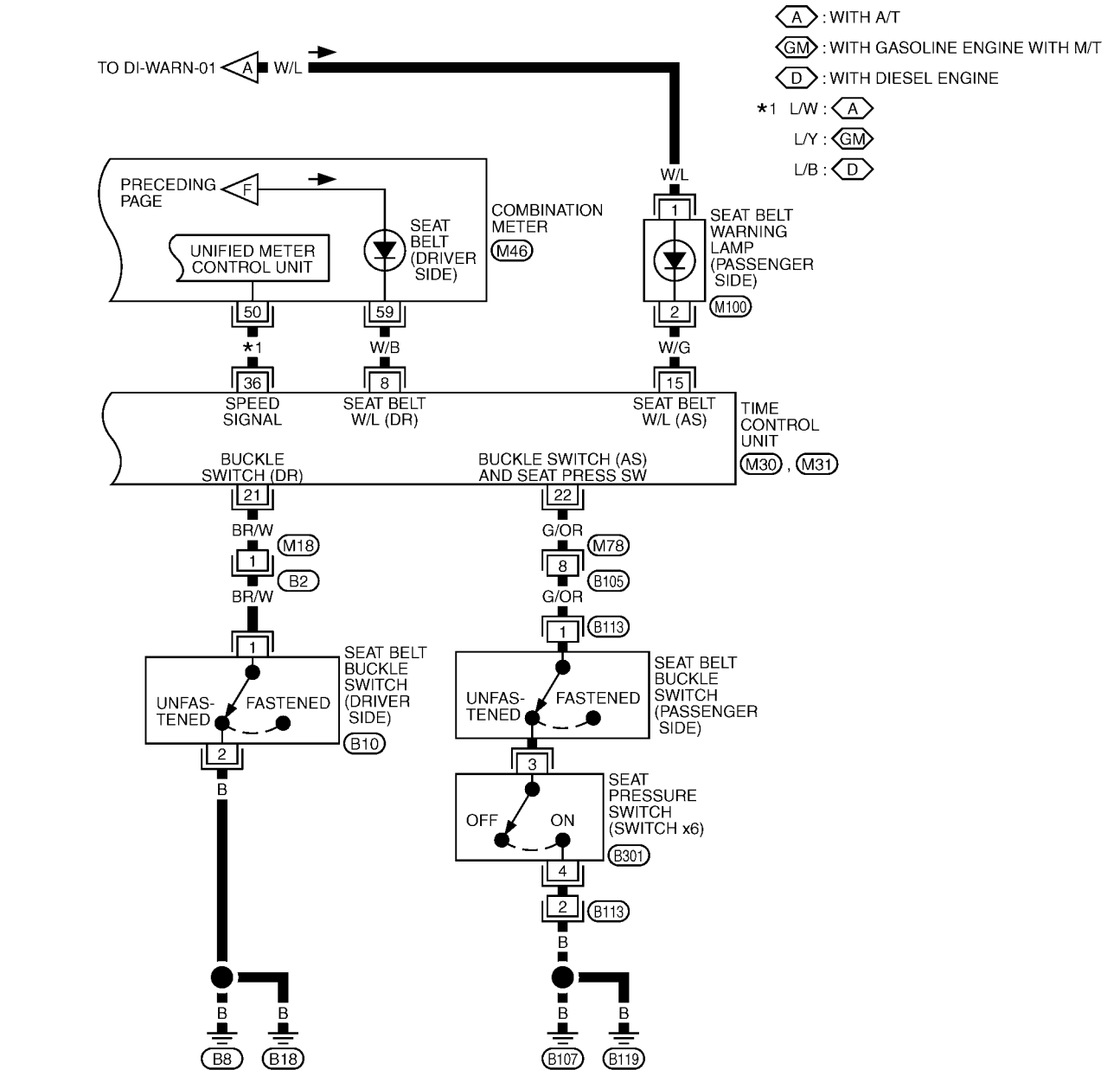
TKWA0253E

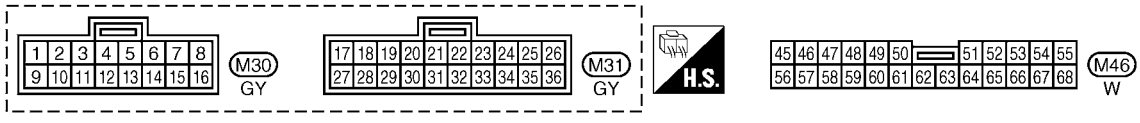

DI-WARN-05
PRECEDING PAGE
E
F
NEXT PAGE
DOOR
COMBINATION METER
M45
25
R/W
R/W
13
M18
B2
R/W
31
DOOR SW (OTHER DOORS)
DOOR SW (DR)
TIME CONTROL UNIT
M31
30
R
3
JOINT CONNECTOR-1
M36
3
R
16
M18
B2
R
2
FRONT DOOR SWITCH (DRIVER SIDE)
OPEN
CLOSED
B16
3
B
B
B
B8
B18
R/W
M78
12
B105
R/W
1
FRONT DOOR SWITCH (PASSENGER SIDE)
OPEN
CLOSED
B118
R/W
1
REAR DOOR SWITCH RH
OPEN
CLOSED
B121
R/W
1
REAR DOOR SWITCH LH
OPEN
CLOSED
B20
R/W
3
B26
D51
R/W
D57
3
D41
R/W
1
BACK DOOR SWITCH
OPEN
CLOSED
D45
3
B
D42
1
D56
B
B
D53

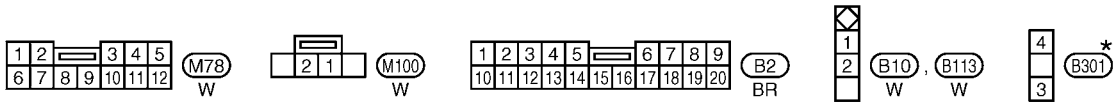

M31
GY
H.S.
M36
OR
M45
W
M78
W
B2
BR
B16
W
B118
W
D45
W
B20
W
B121
W
D51
W
D57
W
D56
B

TKWA0254E

DI-WARN-06





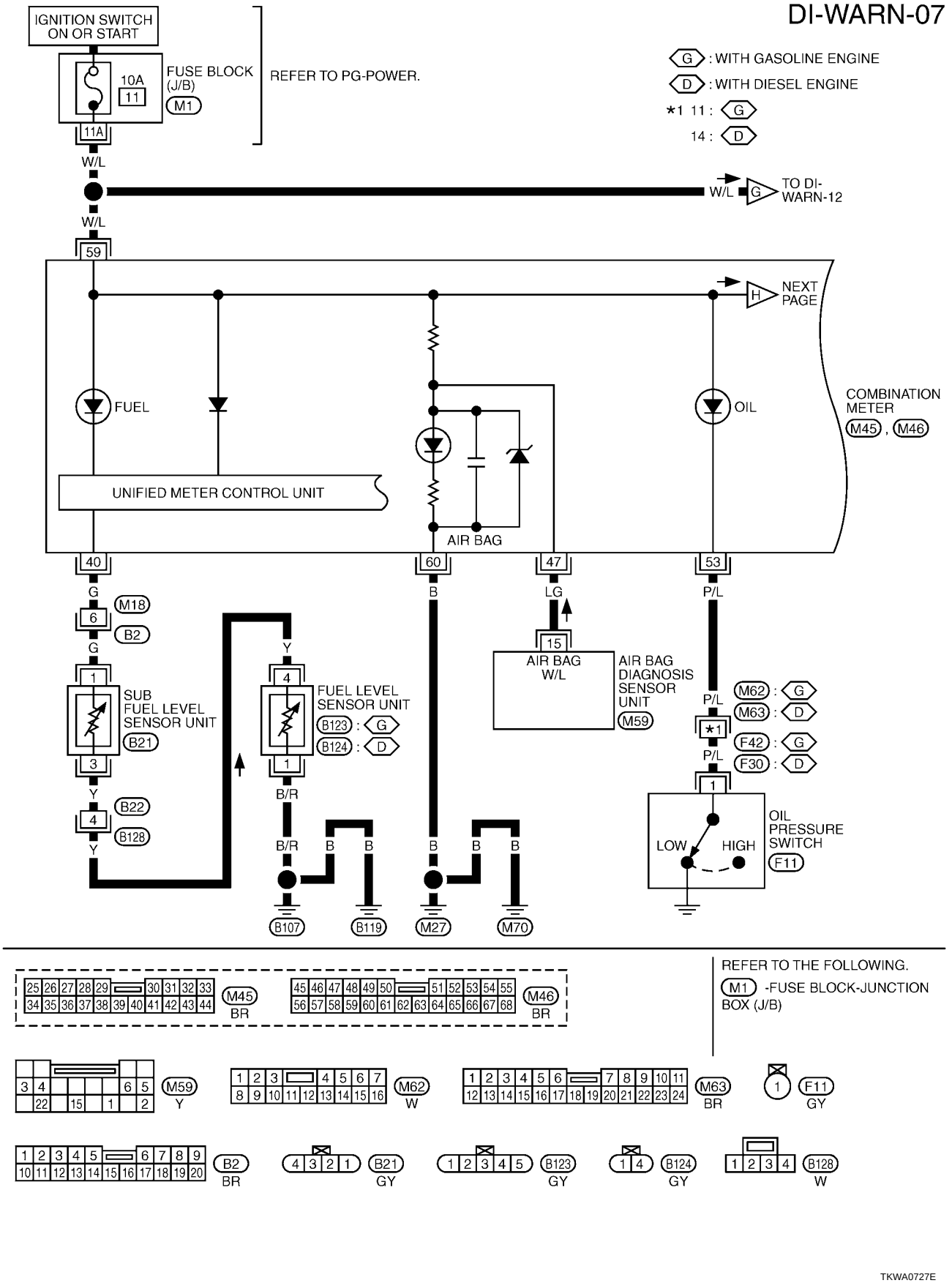


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWA0255E

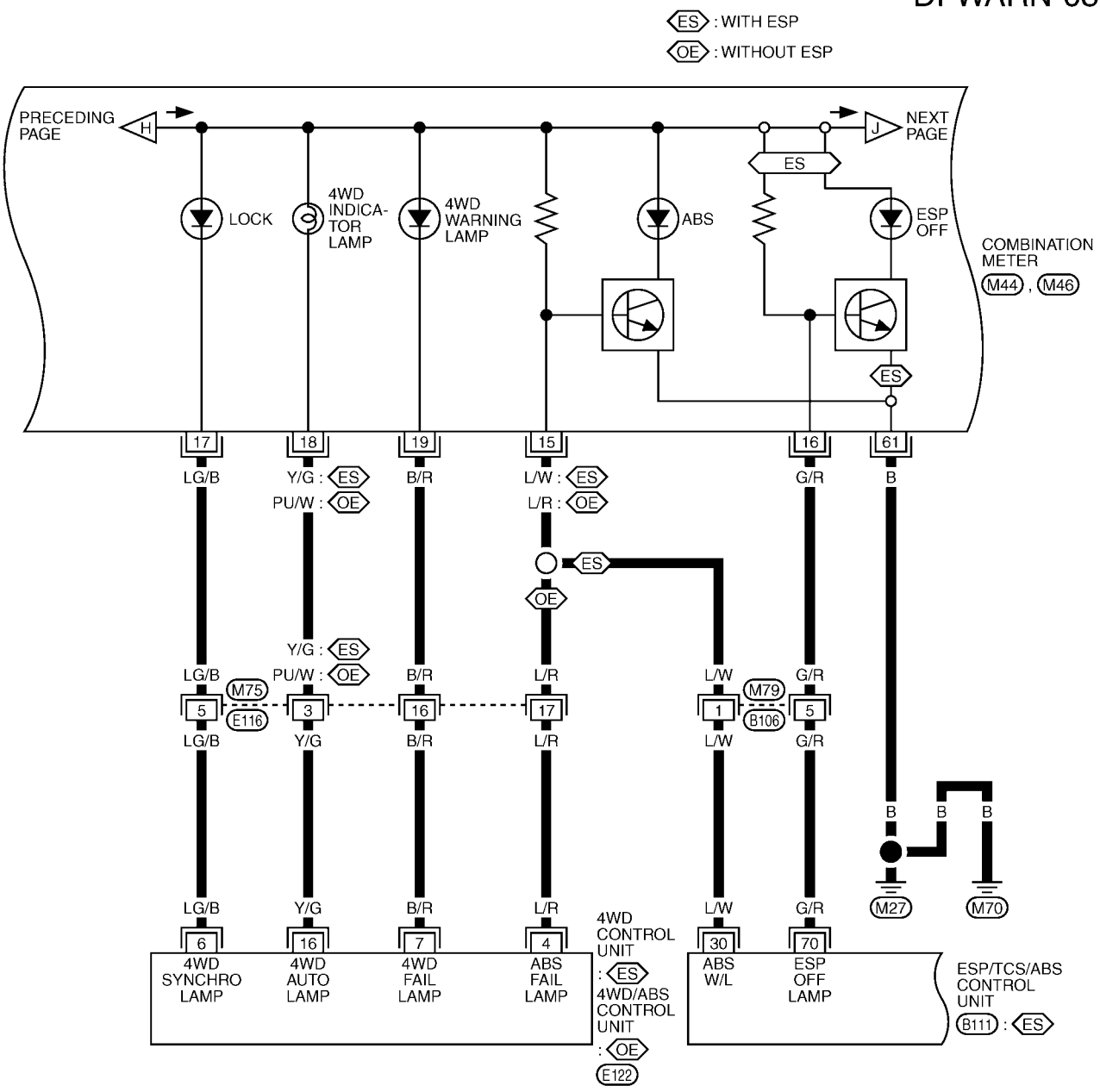
Wiring Diagram — WARN — / RHD Models

EKS0031U



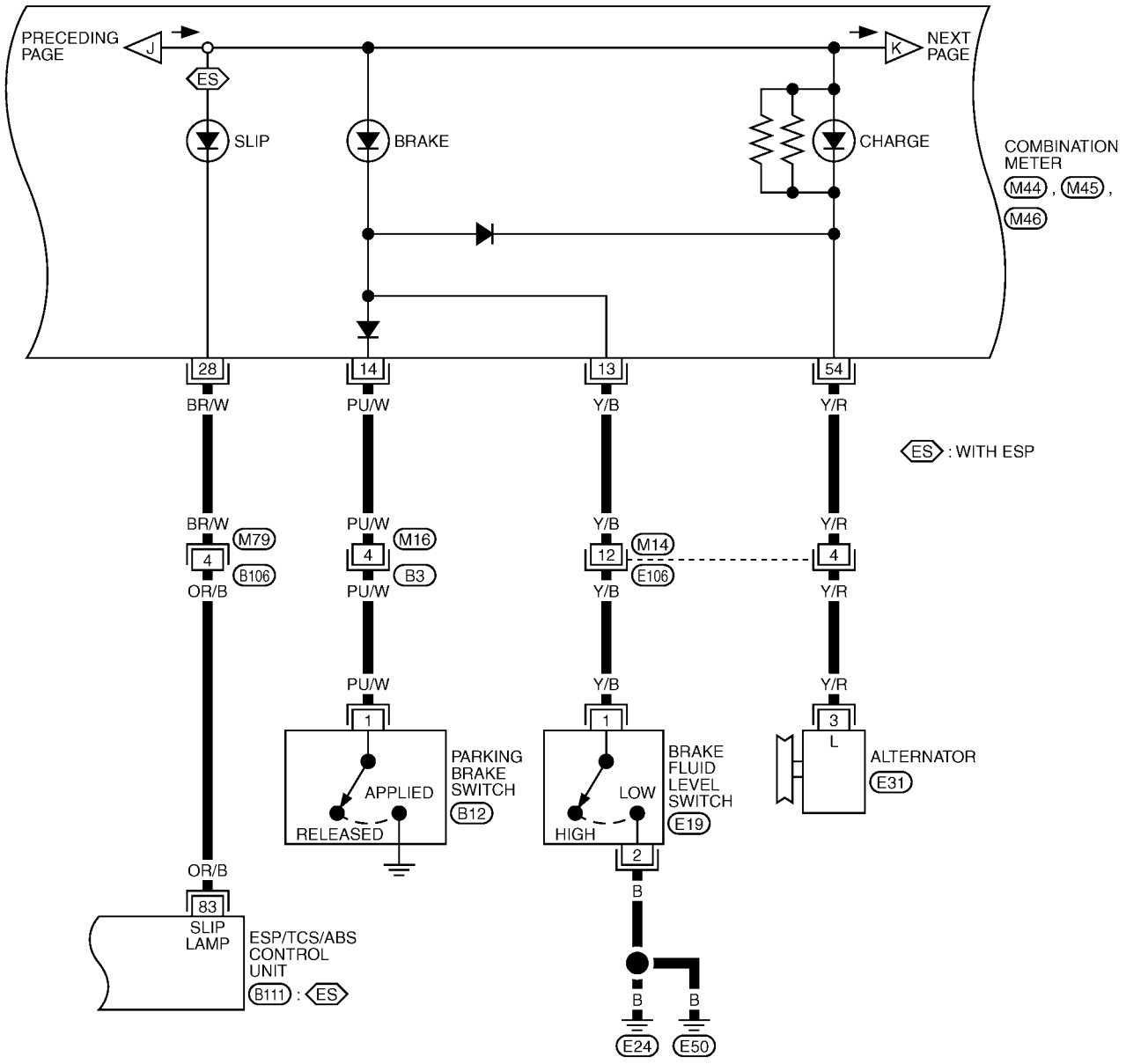
TKWA0727E

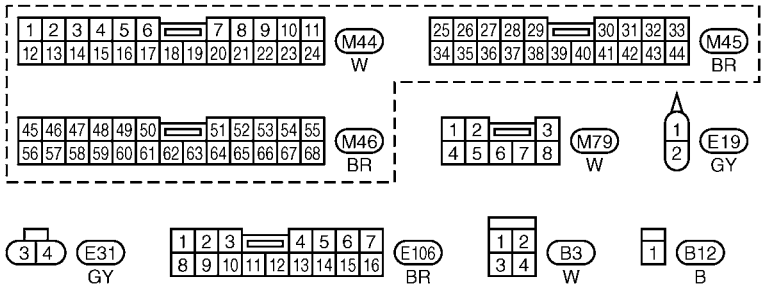
DI-WARN-08



TKWA0257E

DI-WARN-09

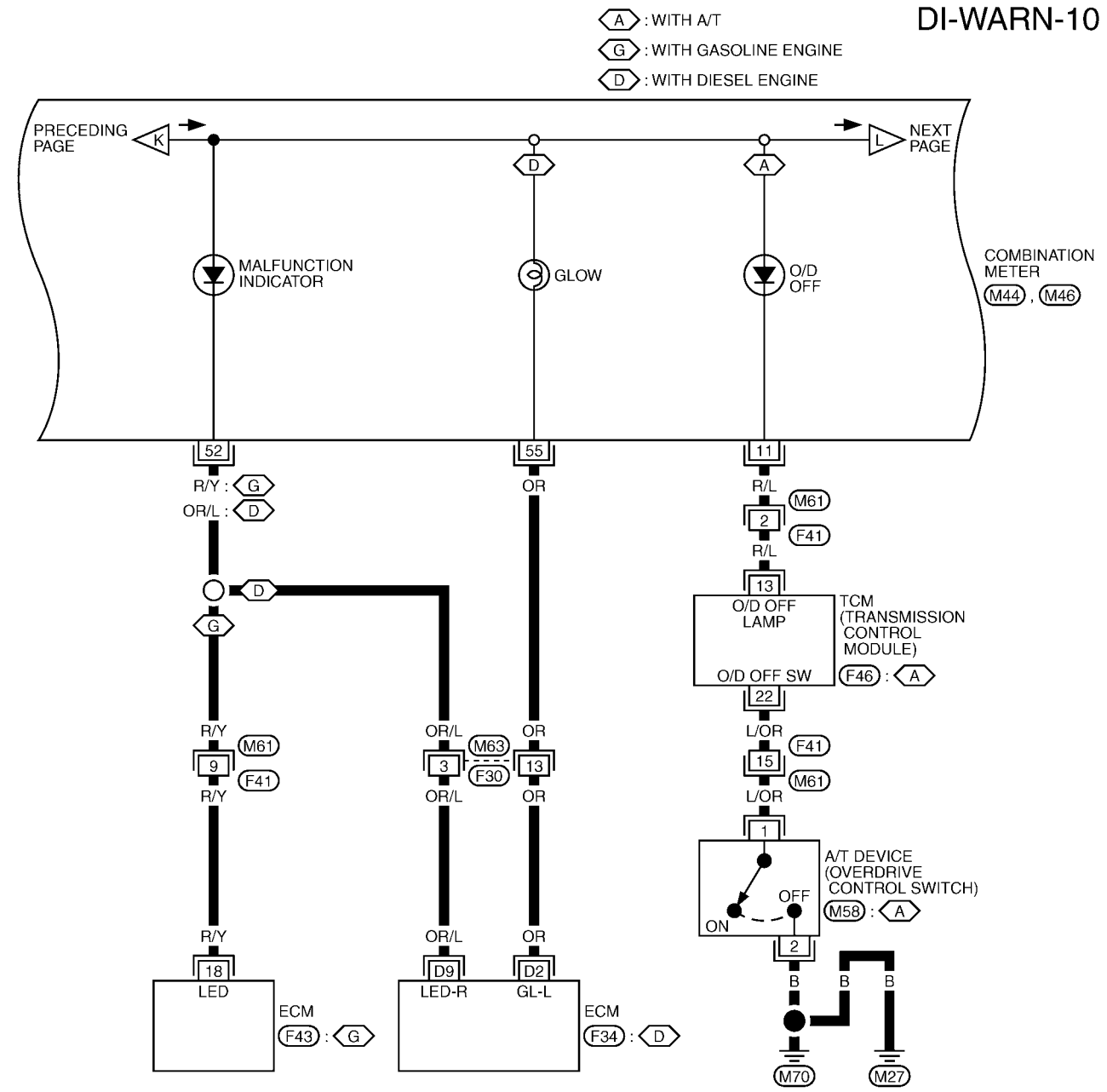


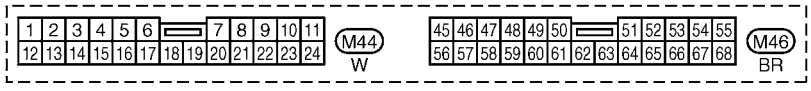


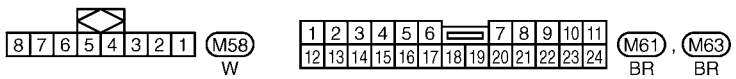
REFER TO THE FOLLOWING.
B111 -ELECTRICAL UNITS

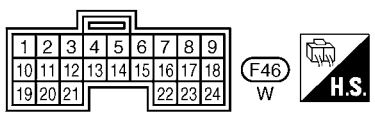
TKWA0258E

DI-WARN-10



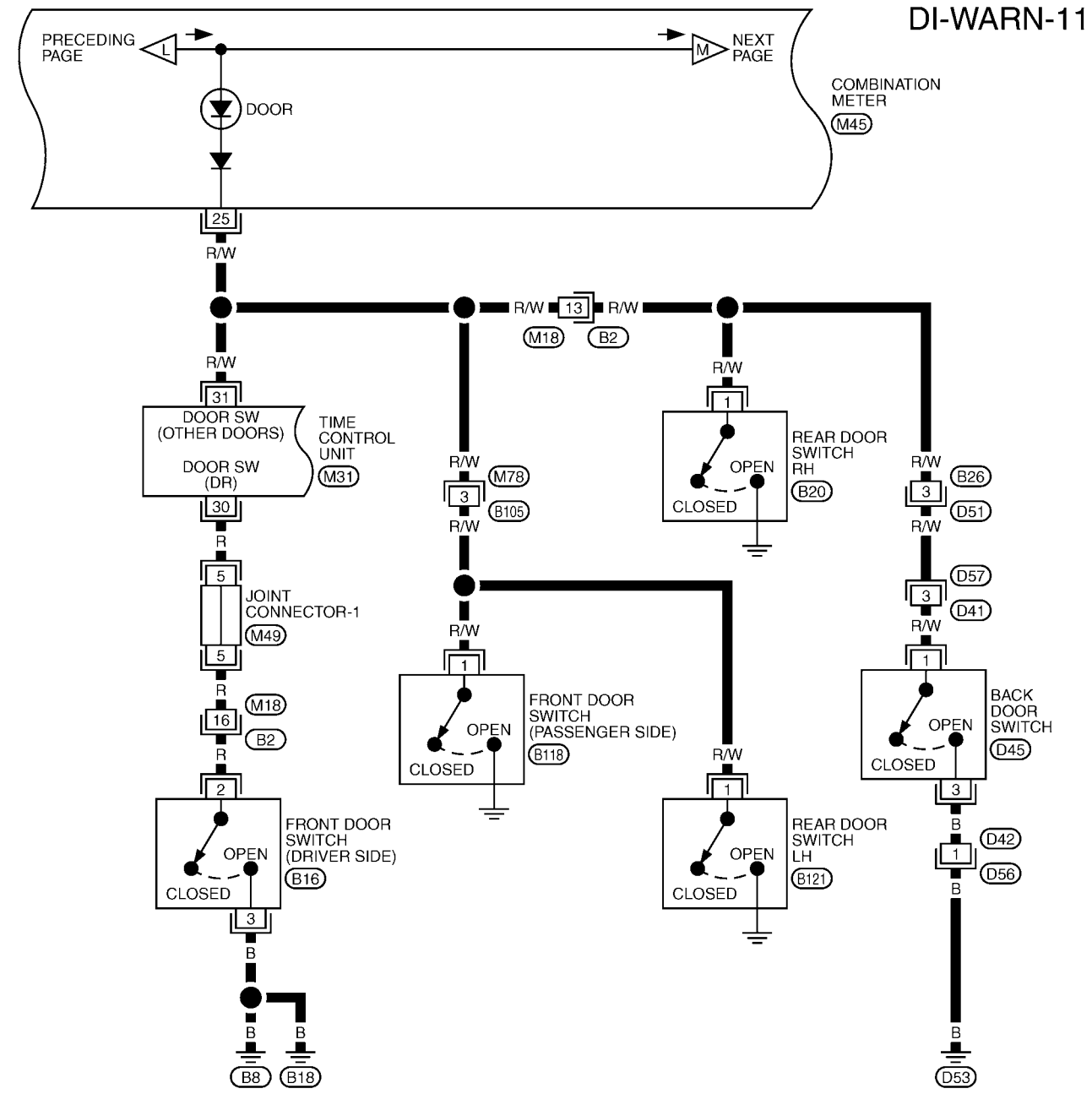


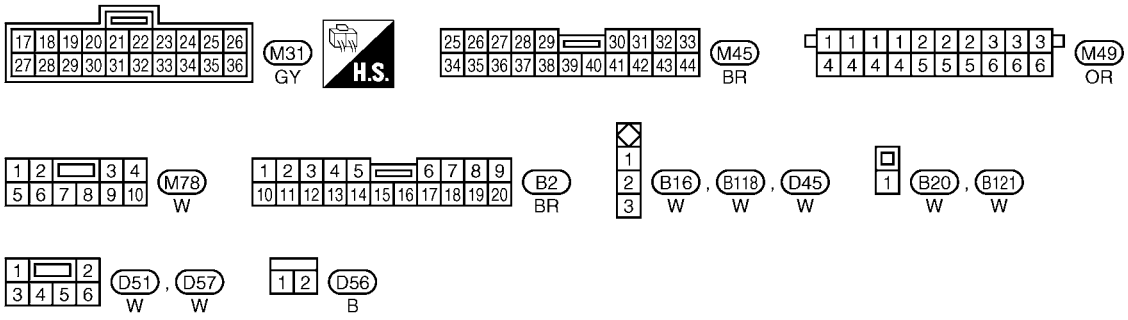




REFER TO THE FOLLOWING.
F34 , F43 -ELECTRICAL UNITS

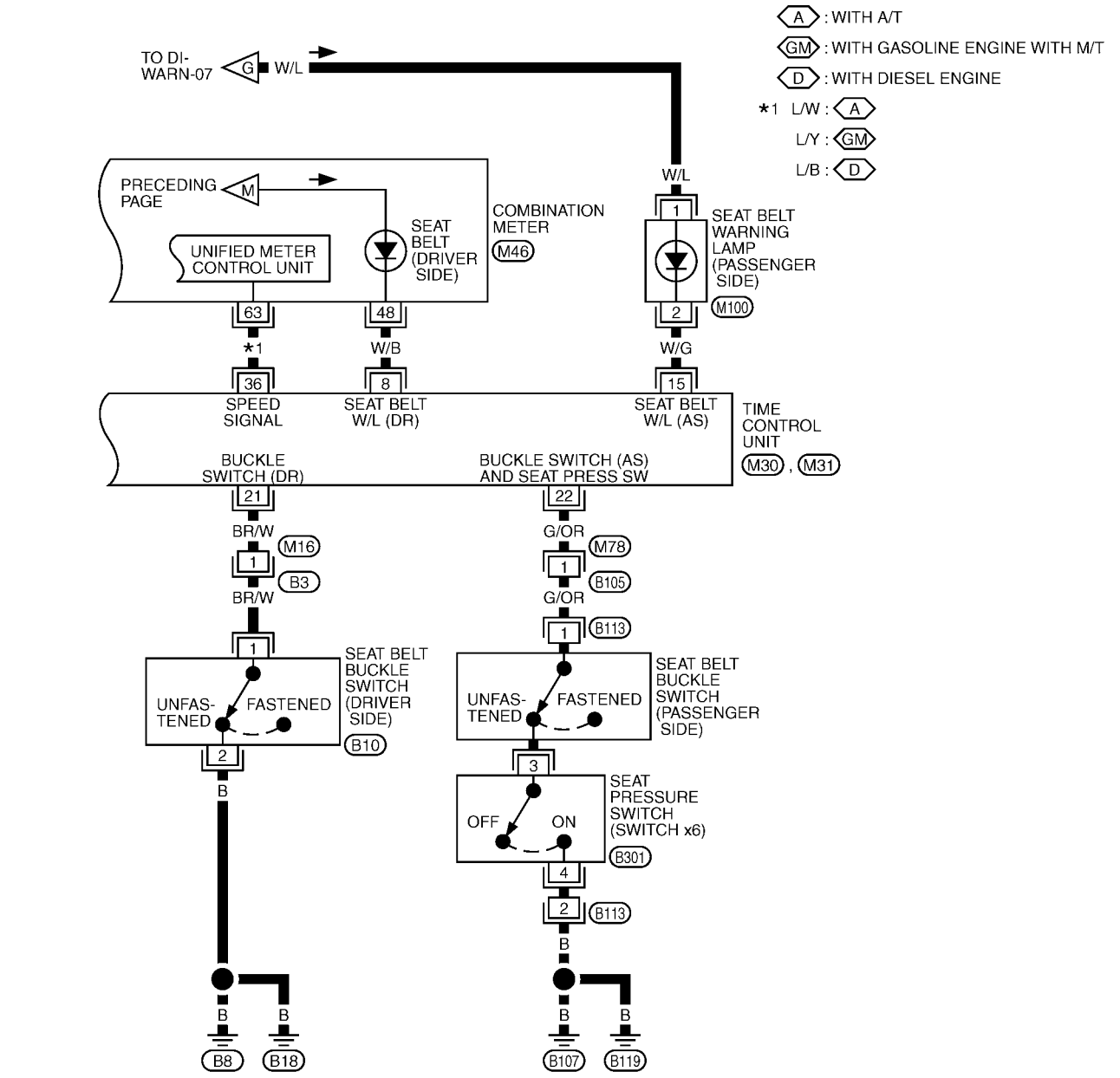
TKWA0259E

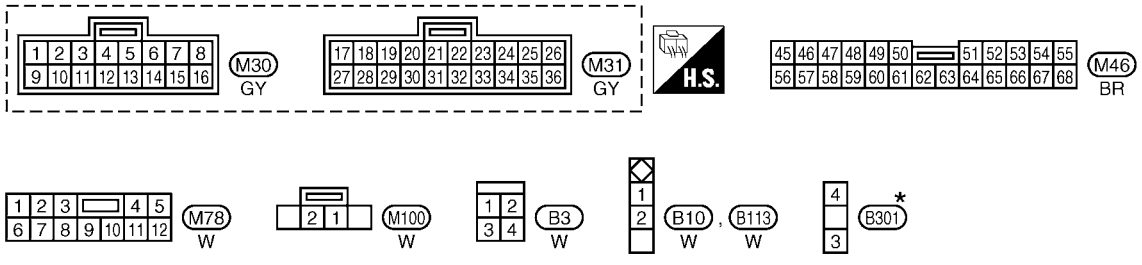

DI-WARN-11
PRECEDING PAGE
L
M
NEXT PAGE
DOOR
COMBINATION METER
M45
25
R/W
R/W
13
M18
B2
R/W
31
DOOR SW (OTHER DOORS)
DOOR SW (DR)
TIME CONTROL UNIT
M31
30
R
5
JOINT CONNECTOR-1
M49
16
M18
B2
2
OPEN
CLOSED
FRONT DOOR SWITCH (DRIVER SIDE)
B16
3
B
B8
B18
M78
3
B105
1
FRONT DOOR SWITCH (PASSENGER SIDE)
B118
1
REAR DOOR SWITCH RH
B20
1
REAR DOOR SWITCH LH
B121
B26
3
D51
D57
3
D41
1
BACK DOOR SWITCH
D45
3
D42
1
D56
B
B53


M31
GY
H.S.
M45
BR
M49
OR
M78
W
B2
BR
B16
B118
D45
W
B20
B121
W
D51
D57
W
D56
B

TKWA0260E

DI-WARN-12





*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWA0261E

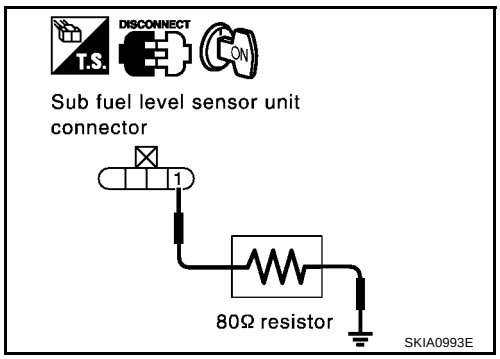
Electrical Components Inspection

EKS002HK

FUEL WARNING LAMP OPERATION CHECK

1. Turn ignition switch “OFF”.
2. Disconnect sub fuel level sensor unit harness connector B125 (LHD models) or B21 (RHD models).
3. Connect a resistor (80Ω) between sub fuel level sensor unit harness connector terminal 1(G) and ground.
4. Turn ignition switch “ON”.

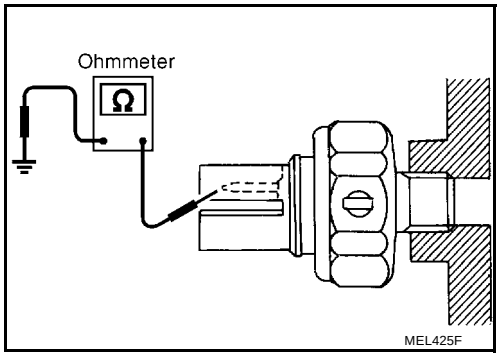
The fuel warning lamp should come on.



OIL PRESSURE SWITCH CHECK

	Oil pressure kPa (bar, kg/cm^2 , psi)	Continuity
Engine running	More than 10 - 20 (0.10 - 0.20, 0.1 - 0.2, 1 - 3)	No
Engine not running	Less than 10 - 20 (0.10 - 0.20, 0.1 - 0.2, 1 - 3)	Yes

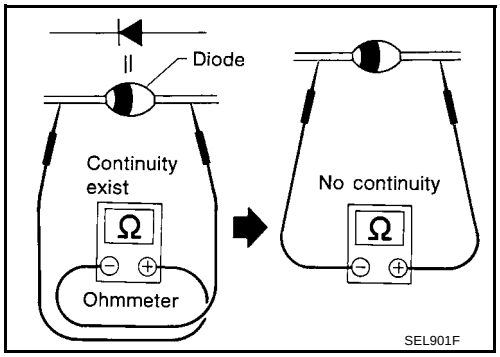
Check the continuity between the terminals of oil pressure switch and body ground.



DIODE CHECK

- Check continuity using an ohmmeter.
- Diode is functioning properly if test results are as shown in the figure at left.
- Check diodes at the combination meter harness connector instead of on the combination meter assembly. Refer toDI-44, "Wiring Diagram — WARN —/ LHD Models" orDI-50, "Wiring Diagram — WARN — / RHD Models" .

  NOTE:
  Specification may vary depending on the type of tester. Before performing this inspection, be sure to refer to the instruction manual for the tester to be used.



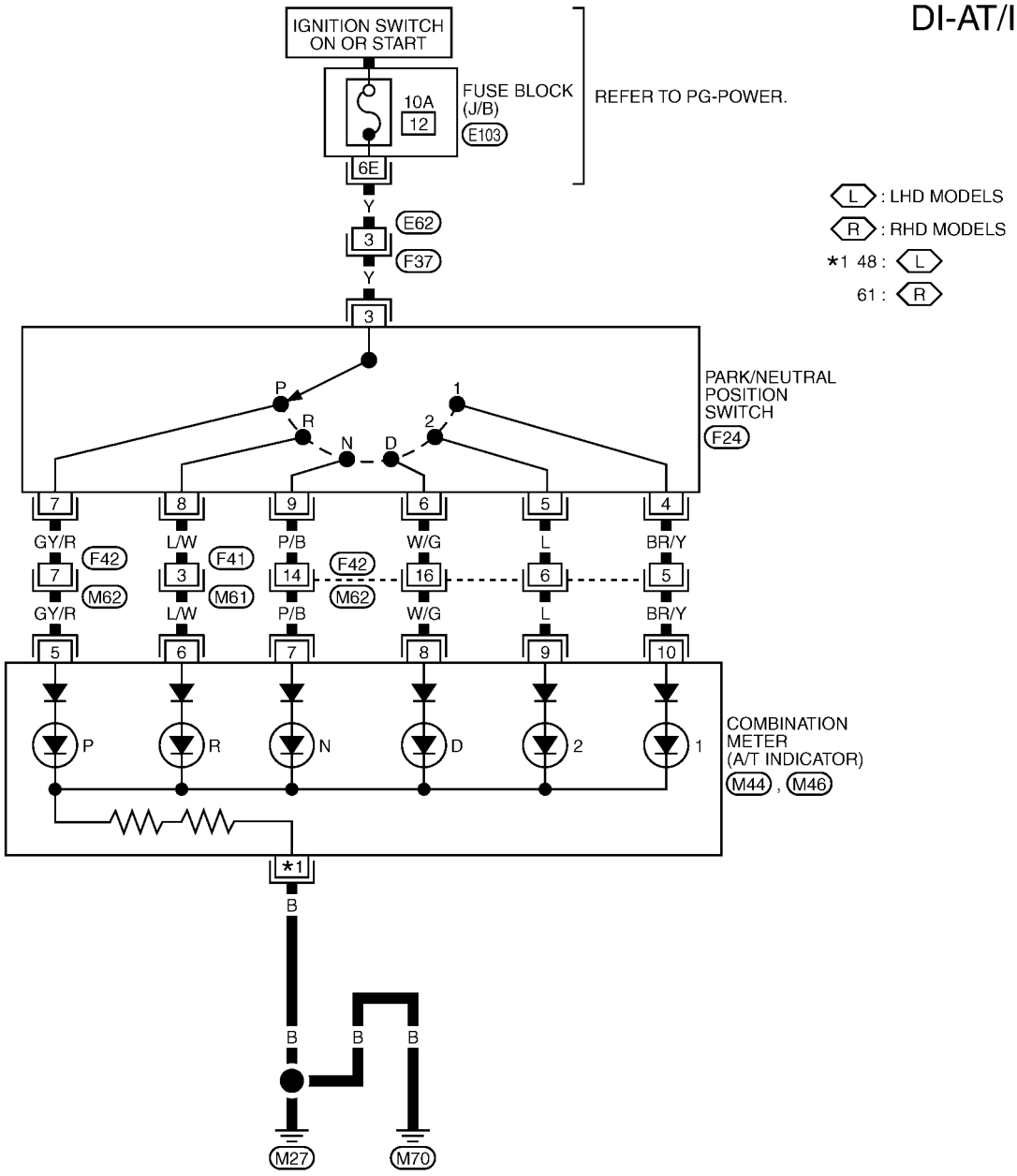
A/T INDICATOR

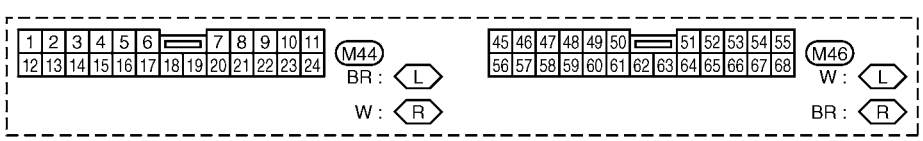
PFP:24814

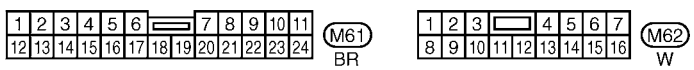
Wiring Diagram — AT/IND —

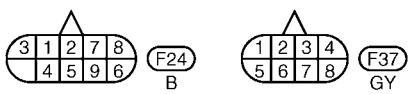
EKS002HL

DI-AT/IND-01









REFER TO THE FOLLOWING.

E103 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWA0103E

WARNING CHIME

PFP:24814

System Description

EKS002XF

POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- to combination switch terminal 11 and
- to daytime light control unit terminal 1 (with daytime light system)
- through 10A fuse (No.31, located in fuse and fusible link box), and
- to key switch terminal 1 and
- to time control unit terminal 1
- through 10A fuse [No.28, located in the fuse block (J/B)].

With ignition switch in ON or START position, power is supplied

- to time control unit terminal 17
- through 10A fuse [No.5, located in the fuse block (J/B)].

Ground is supplied

- to time control unit terminal 16
- through body grounds M27 and M70.

IGNITION KEY WARNING CHIME

With ignition switch in OFF or ACC position, and the driver's door open and driver’s door locked, the warning chime will sound. Power is supplied

- to time control unit terminal 18
- through key switch terminal 2 and

Ground is supplied

- to time control unit terminal 28
- through front door lock actuator (driver side) terminal 5

Front door lock actuator (driver side) terminal 2 is grounded through body grounds M27 and M70, and Ground is supplied

- to time control unit terminal 30
- through front door switch (driver side) terminal 2.

Front door switch (driver side) terminal 3 is grounded through body grounds B8 and B18.

LIGHT WARNING CHIME

With ignition switch OFF position, driver's door open, and lighting switch in 1ST or 2ND position, warning chime will sound. Power is supplied

- from the lighting switch terminal 12 or daytime light control unit terminal 11 (with daytime light system)
- to time control unit terminal 19.

Ground is supplied

- to time control unit terminal 30
- through front door switch (driver side) terminal 2.

Front door switch (driver side) terminal 3 is grounded through body grounds B8 and B18.

SEAT BELT WARNING CHIME

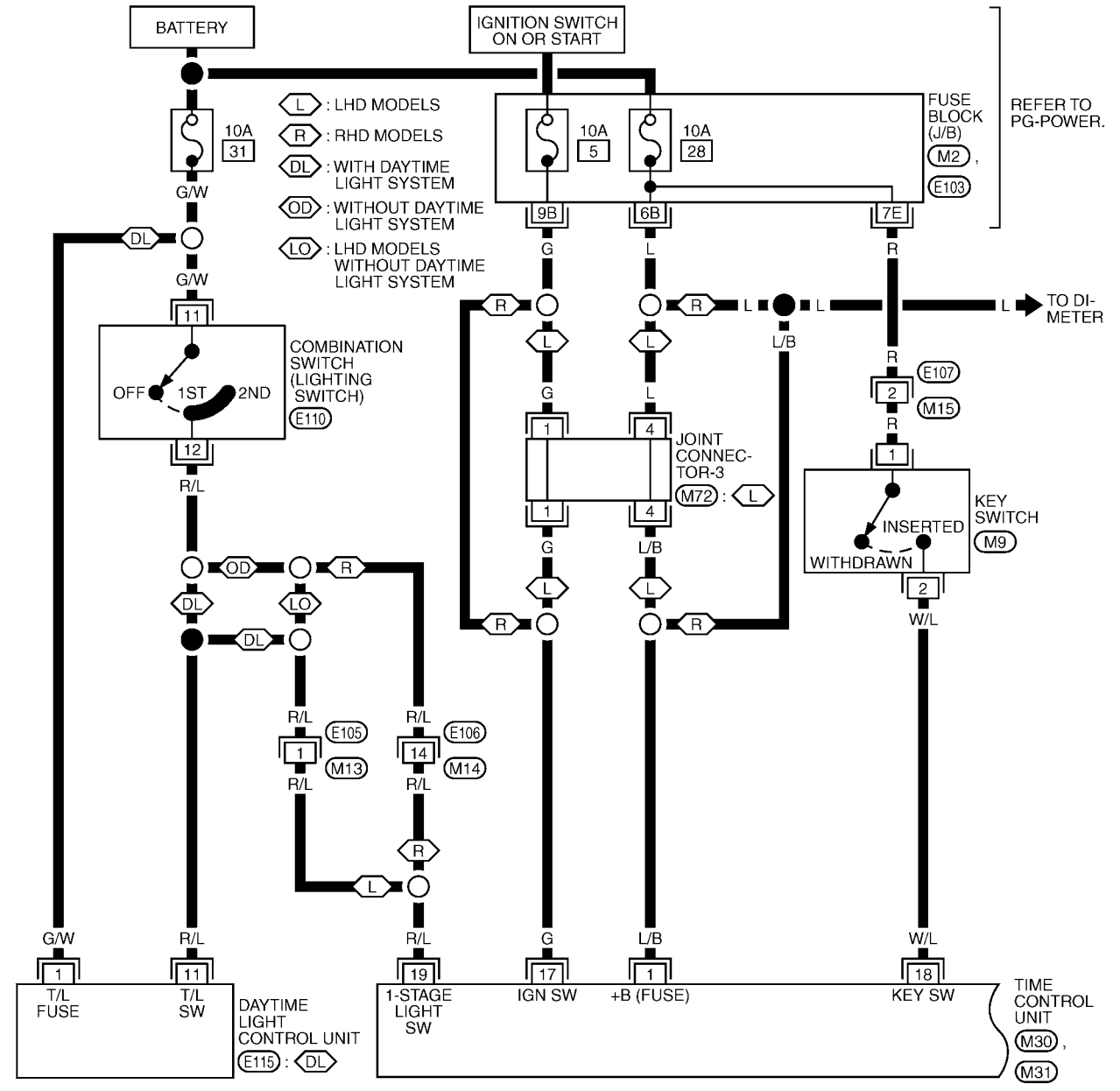
When the vehicle speed exceeds 25 km/h (16MPH) with driver side or passenger side seat belt unfastened (seat belt switch ON), warning chime will sound. Refer to SB-6, "SEAT BELT WARNING SYSTEM" .

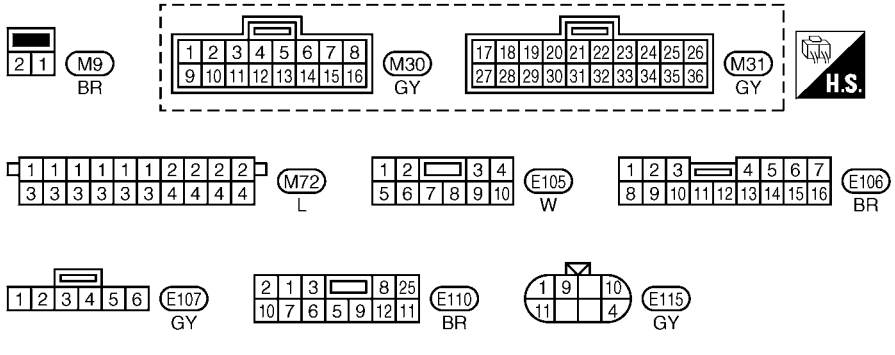
Wiring Diagram — CHIME —

SMA for models with roof mounted driving lamp

EKS002XJ

DI-CHIME-01

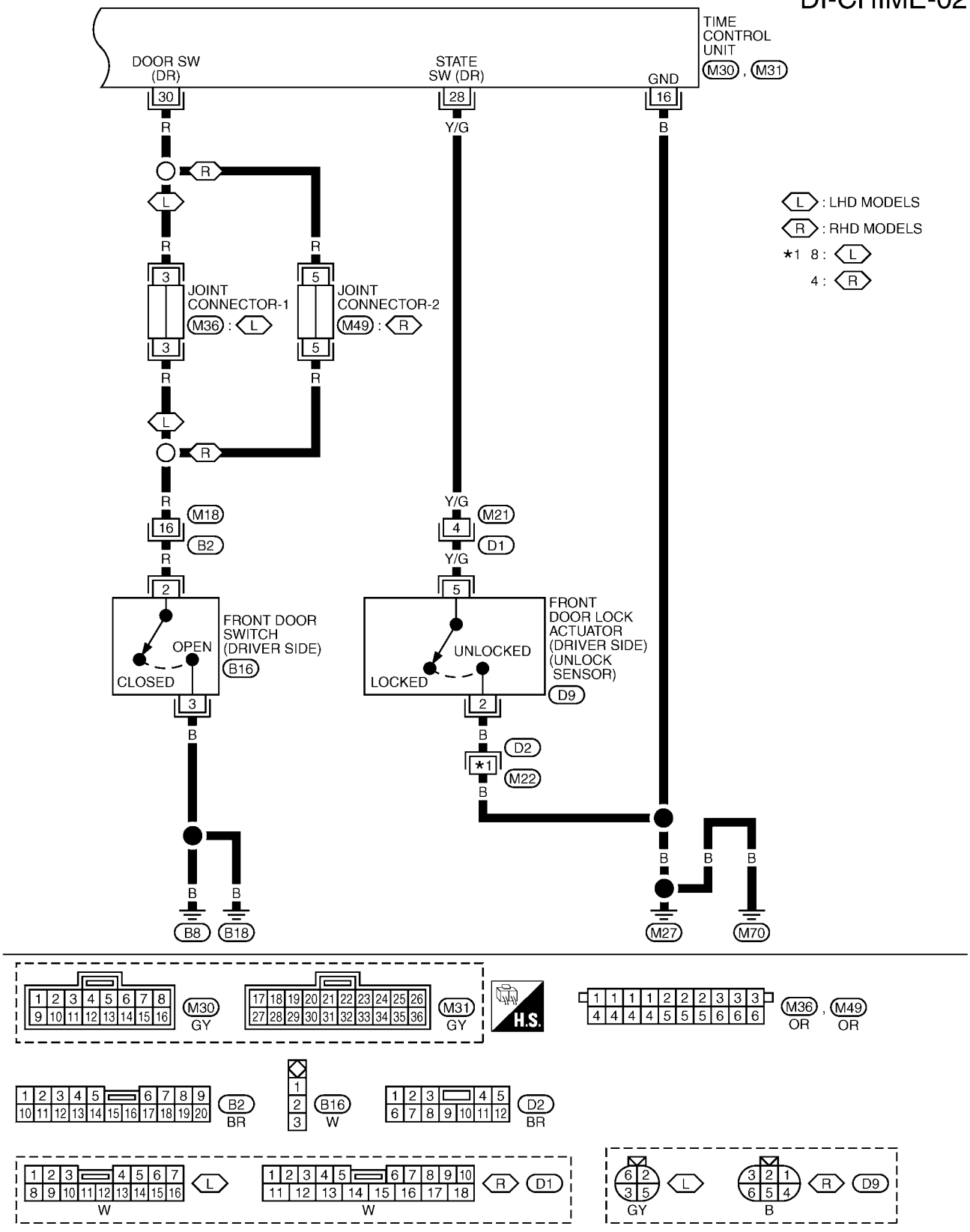




REFER TO THE FOLLOWING.
M2, E103 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWA0101E

DI-CHIME-02



TKWA0102E

Symptom Chart

EKS002XQ

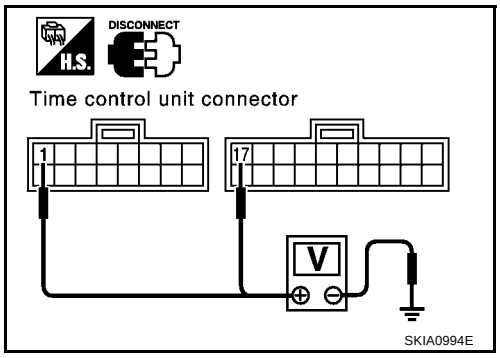
Symptom	Diagnoses/ Service procedure	Reference page
Light warning chime does not activate.	● Power supply and ground circuit check	DI-62, "Power Supply and Ground Circuit Check"
	● Lighting switch check	DI-63, "Lighting Switch Input Signal Check"
	● Front door switch (driver side) check	DI-68, "Front Door Switch (driver side) Check"
Key warning chime does not activate.	● Power supply and ground circuit check	DI-62, "Power Supply and Ground Circuit Check"
	● Key switch insert signal check	DI-65, "Key Switch Insert Signal Check"
	● Door unlock sensor check	DI-66, "Door Unlock Sensor Check"
	● Front door switch (driver side) check	DI-68, "Front Door Switch (driver side) Check"
Seat belt warning chime does not activate.	● Seat belt warning system check	SB-6, "SEAT BELT WARNING SYSTEM"
All warning chimes do not activate.	● Power supply and ground circuit check	DI-62, "Power Supply and Ground Circuit Check"
	● Front door switch (driver side) check	DI-68, "Front Door Switch (driver side) Check"

Power Supply and Ground Circuit Check

EKS002YF

1. POWER SUPPLY CIRCUIT CHECK

1. Disconnect time control unit connector.
2. Check the following.



Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M30	1 (L/B)	Ground	Battery voltage	Battery voltage	Battery voltage
M31	17 (G)	Ground	0V	0V	Battery voltage

OK or NG

OK >> GO TO 2

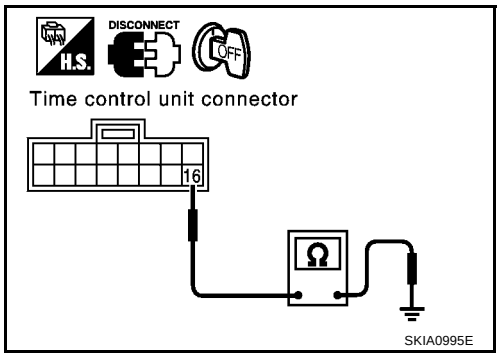
NG >> Check the following:

- 10A fuse [No.28, located in fuse block (J/B)]
- 10A fuse [No.5, located in fuse block (J/B)]
- Harness for open or short between time control unit and fuse

2. GROUND CIRCUIT CHECK

Check continuity between time control unit harness connector M30 terminal 16 (B) and ground.

Continuity should exist.



OK or NG

OK >> Inspection end.

NG >> Repair harness or connector.

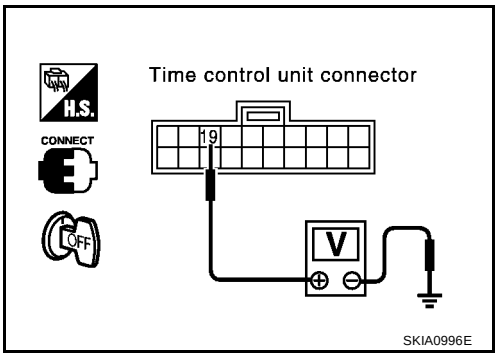
Lighting Switch Input Signal Check

EKS002XU

1. CHECK LIGHTING SWITCH INPUT SIGNAL

Check voltage between time control unit and ground.

Terminals			Condition of lighting switch	Voltage [V]
(+)		(–)		
Connector	Terminal (Wire color)			
M31	19 (R/L)	Ground	1st or 2nd position	Approx.12
			OFF	0



OK or NG

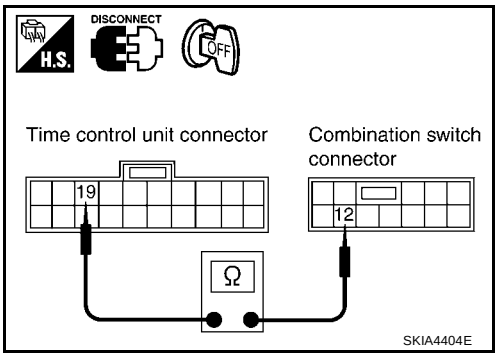
OK >> Lighting switch is OK.

NG >>
- GO TO 2 (without daytime light control unit)
- GO TO 3 (with daytime light control unit)

2. CHECK LIGHTING SWITCH CIRCUIT (WITHOUT DAYTIME LIGHT SYSTEM)

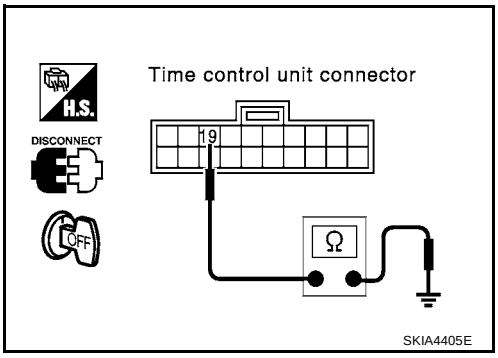
1. Disconnect time control unit connector and combination switch connector.
2. Check continuity between time control unit harness connector M31 terminal 19 (R/L) and combination switch harness connector E110 terminal 12 (R/L).

Continuity should exist.



3. Check continuity between time control unit harness connector M31 terminal 19 (R/L) and ground.

Continuity should not exist.



OK or NG

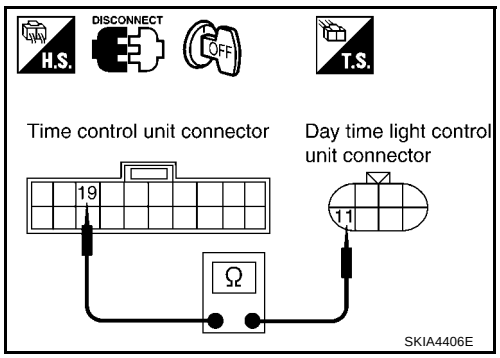
OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK LIGHTING SWITCH CIRCUIT (WITH DAYTIME LIGHT SYSTEM)

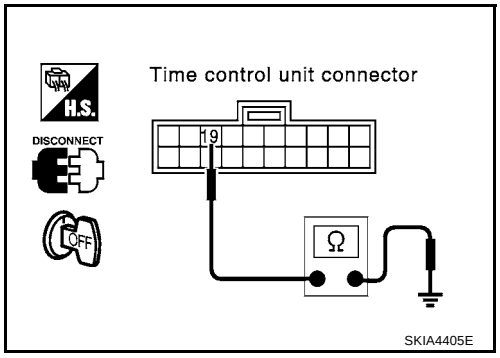
1. Disconnect time control unit connector and daytime light control unit connector.
2. Check continuity between time control unit harness connector M31 terminal 19 (R/L) and daytime light control unit harness connector E115 terminal 11 (R/L).

Continuity should exist.



3. Check continuity between time control unit harness connector M31 terminal 19 (R/L) and ground.

Continuity should not exist.



OK or NG

OK >> Check the following:

- 10A fuse (No.31, located in fuse and fusible link box)
- Harness for open or short between combination switch and fuse

NG >> Repair harness or connector.

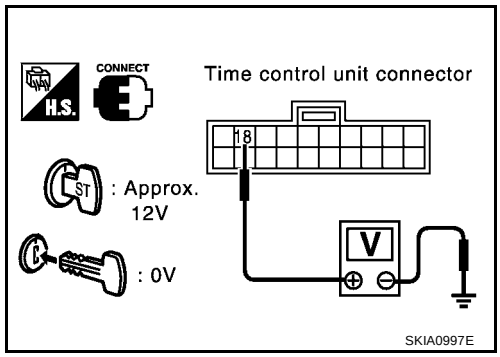
Key Switch Insert Signal Check

EKS002XT

1. CHECK KEY SWITCH INPUT SIGNAL

Check voltage between time control unit and ground.

Terminals			Condition of key switch	Voltage [V]
(+)		(–)		
Connector	Terminal (Wire color)			
M31	18 (W/L)	Ground	Inserted	Approx.12
			Removed	0



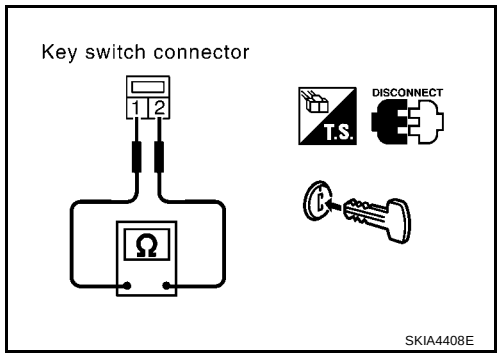
OK or NG

OK >> Key switch is OK.
NG >> GO TO 2.

2. CHECK KEY SWITCH (INSERT)

1. Disconnect key switch connector.
2. Check continuity between key switch terminals 1 and 2.

Connector	Terminals		Condition of key switch	Continuity
M9	1	2	Inserted	Yes
			Removed	No



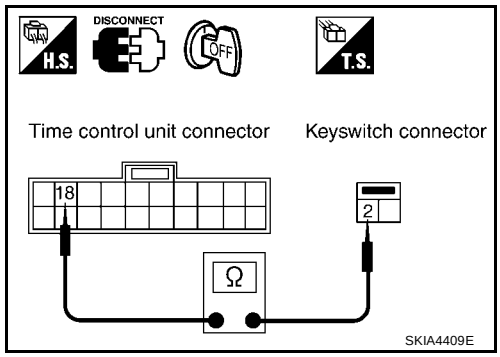
OK or NG

OK >> GO TO 3.
NG >> Replace key switch.

3. CHECK KEY SWITCH CIRCUIT

1. Disconnect time control unit connector.
2. Check continuity between time control unit harness connector M31 terminal 18 (W/L) and key switch harness connector M9 terminal 2 (W/L).

Continuity should exist.



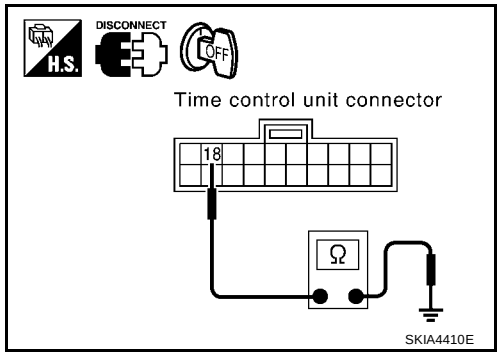
3. Check continuity between time control unit harness connector M31 terminal 18 (W/L) and ground.

Continuity should not exist.

OK or NG

OK >> Check the following.
- 10A fuse [No.28, located in fuse block (J/B)]
- Harness for open or short between key switch and fuse

NG >> Repair harness or connector.

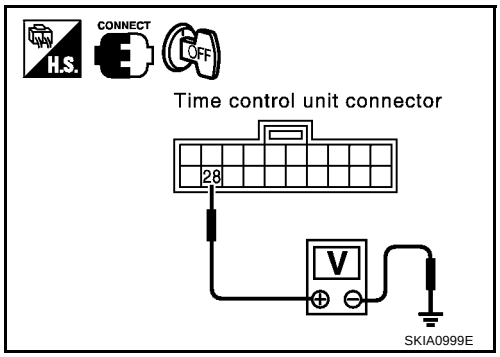


Door Unlock Sensor Check

EKS002YG

1. CHECK DOOR UNLOCK SENSOR INPUT SIGNAL

Check voltage between time control unit harness connector M31 terminal 28 (Y/G) and ground.



Terminals		Condition (Driver's door)	Voltage [V]
(+)	(–)		
28	Ground	Locked	Approx. 5
		Unlocked	0

OK or NG

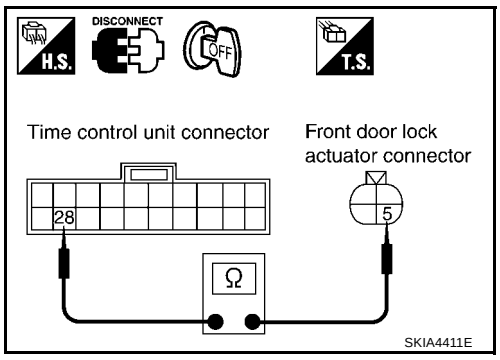
OK >> Door unlock sensor is OK.

NG >>
- GO TO 2 (LHD models).
- GO TO 3 (RHD models)

2. CHECK DOOR UNLOCK SENSOR CIRCUIT (LHD MODELS)

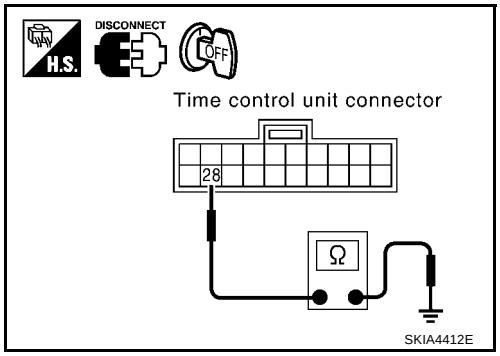
1. Disconnect door unlock sensor connector.
2. Check continuity between time control unit harness connector M31 terminal 28 (Y/G) and front door lock actuator (driver side) harness connector D9 terminal 5 (Y/G).

Continuity should exist.



3. Check continuity between time control unit harness connector M31 terminal 28 (Y/G) and ground.

Continuity should not exist.



OK or NG

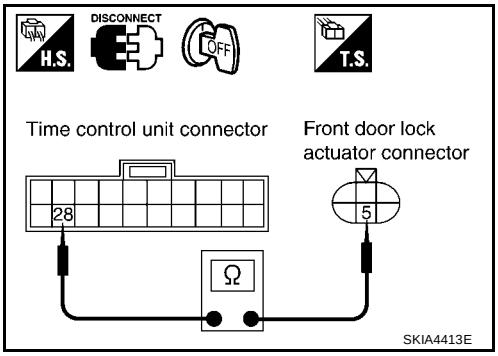
OK >> GO TO 4.

NG >> Repair harness or connector.

3. CHECK DOOR UNLOCK SENSOR CIRCUIT (RHD MODELS)

1. Disconnect door unlock sensor connector.
2. Check continuity between time control unit harness connector M31 terminal 28 (Y/G) and front door lock actuator (driver side) harness connector D9 terminal 5 (Y/G).

Continuity should exist.

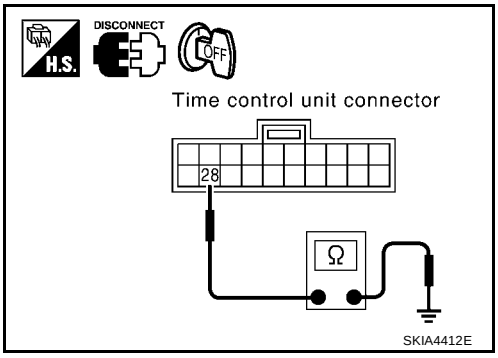


3. Check continuity between time control unit harness connector M31 terminal 28 (Y/G) and ground.

Continuity should not exist.

OK or NG

OK >> GO TO 4.
NG >> Repair harness or connector.



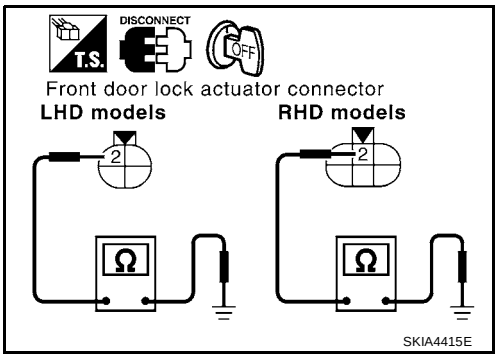
4. CHECK DOOR UNLOCK SENSOR GROUND CIRCUIT

Check continuity between front door lock actuator (driver side) harness connector D9 terminal 2 (B) and ground.

Continuity should exist.

OK or NG

OK >> Replace front door lock actuator (driver side).
NG >> Repair harness or connector.

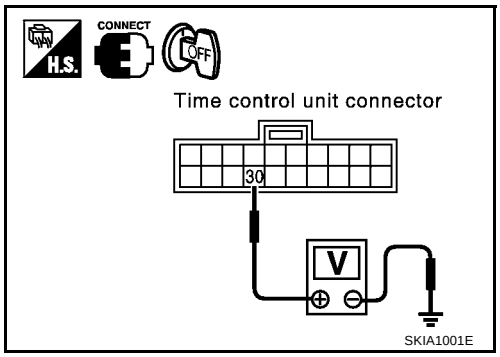


Front Door Switch (driver side) Check

EKS002YH

1. CHECK DOOR SWITCH INPUT SIGNAL

Check voltage between time control unit harness connector M31 terminal 30 (R) and ground.



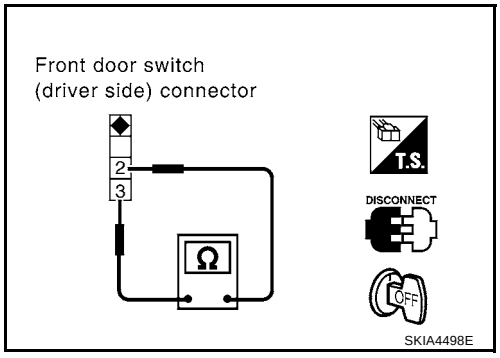
Terminals		Condition (Driver's door)	Voltage [V]
(+)	(–)		
30	Ground	Closed	Approx. 5
		Open	0

OK or NG?

OK >> Front door switch (driver side) is OK.
NG >> GO TO 2.

2. CHECK FRONT DOOR SWITCH (DRIVER SIDE)

1. Disconnect front door switch (driver side) connector.
2. Check continuity between front door switch (driver side) B16 terminal 2 and 3.



Connector	Terminals		Condition of key switch	Continuity
B16	2	3	Pressed	No
			Released	Yes

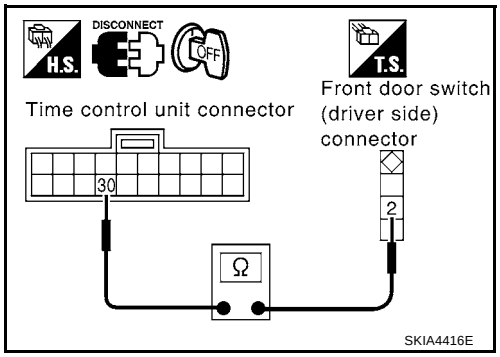
OK or NG?

OK >> GO TO 3.
NG >> Replace front door switch (driver side).

3. CHECK FRONT DOOR SWITCH CIRCUIT

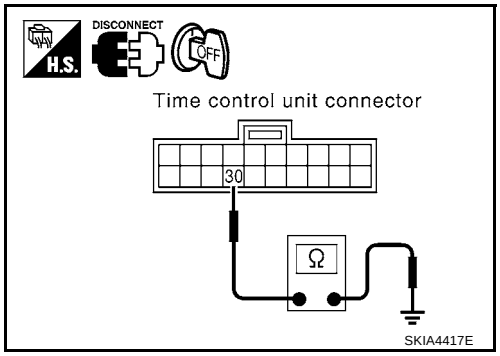
1. Disconnect time control unit connector.
2. Check continuity between time control unit harness connector M31 terminal 30 (R) and front door switch (driver side) harness connector B16 terminal 2 (R).

Continuity should exist.



3. Check continuity between time control unit harness connector M31 terminal 30 (R) and ground.

Continuity should not exist.



OK or NG

OK >> GO TO 4.
NG >> Repair harness or connector.

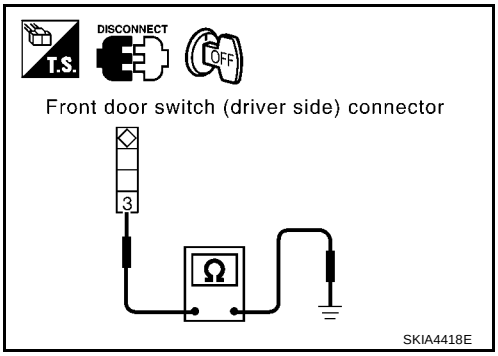
4. CHECK FRONT DOOR SWITCH GROUND CIRCUIT

Check continuity between front door switch (driver side) harness connector B16 terminal 3 (B) and ground.

Continuity should exist.

OK or NG

OK >> Replace front door switch (driver side).
NG >> Repair harness or connector.



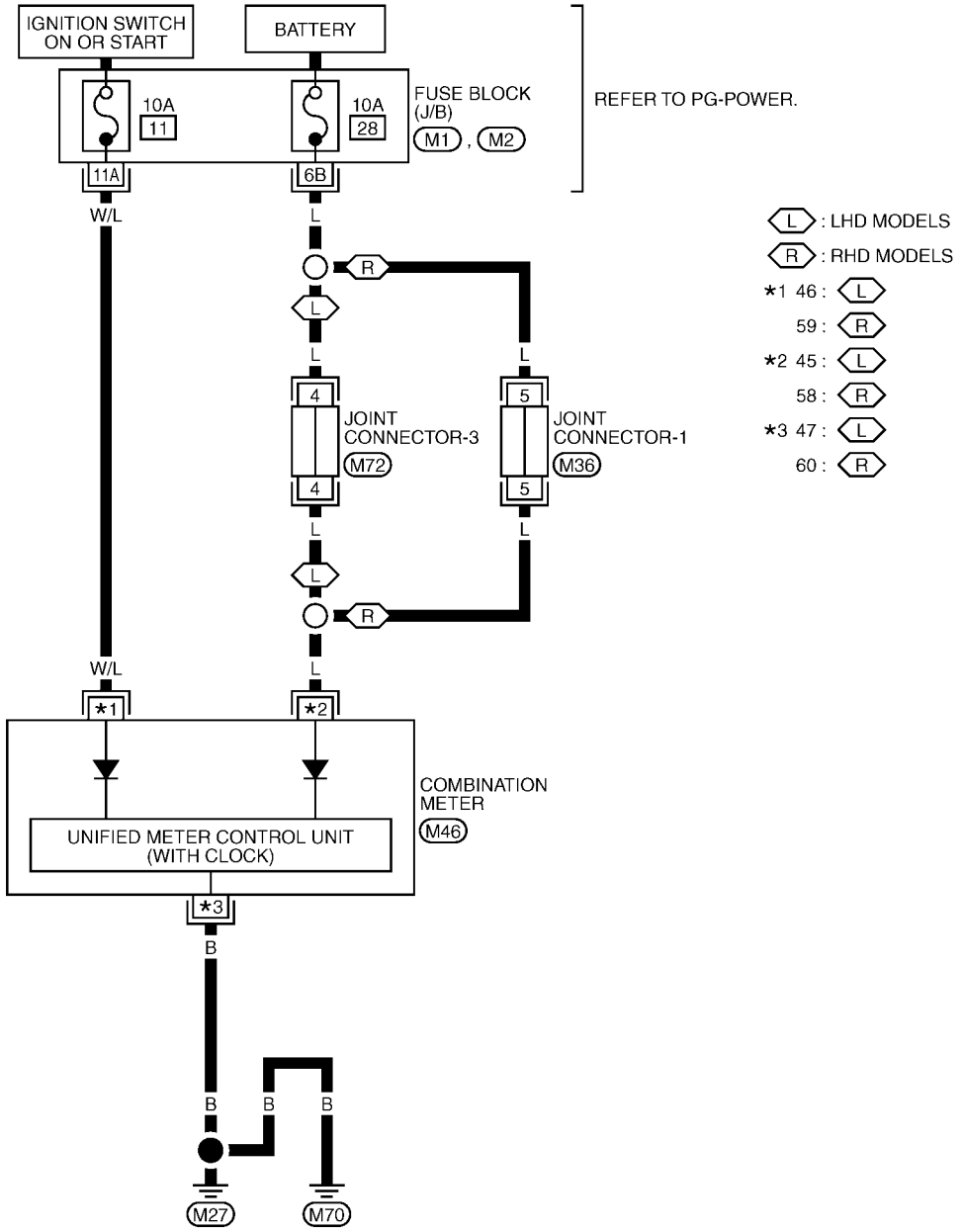
CLOCK

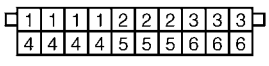
PFP:25820

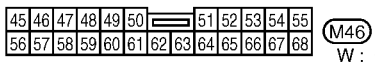
Wiring Diagram — CLOCK —

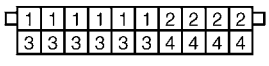
EKS002I5

DI-CLOCK-01









REFER TO THE FOLLOWING.
M1 , M2 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWA0129E