SECTION DI

DRIVER INFORMATION SYSTEM

CONTENTS

PRECAUTIONS

PFP:00011

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

EKS004MN

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.**

Precaution

EKS004MO

- Do not touch the glass of bulb directly by hand. Keep grease and other oily matters away from it. Do not touch bulb by hand while it is lit or right after being turned off. Burning may result.
- Do not leave bulb out of headlamp reflector for a long time because dust, moisture smoke, etc. may affect the performance of the headlamp. When replacing the bulb, be sure to replace it with a new one.
- Adjust aiming by tightening aiming screw. (To adjust it toward loosening side, first loosen adjusting screw, and then make adjustment by tightening.)
- To remove soil or sealant of bulbs, do not use organic solvent (thinner, gasoline, etc.)
- When replacing bulb, be sure to hold bulb socket and pull it out straight. If wiring harness of the bulb is pulled at an angle, the bulb may be caught in the lamp, making it difficult to take out.

Wiring Diagrams and Trouble Diagnosis

EKS004MP

When you read wiring diagrams, refer to the following:

- Refer to GI-14, "How to Read Wiring Diagrams" in GI section
- Refer to PG-3, "POWER SUPPLY ROUTING" for power distribution circuit in PG section

When you perform trouble diagnosis, refer to the following:

- Refer to GI-10, "How to Follow Trouble Diagnoses" in GI section
- Refer toGI-24, "How to Perform Efficient Diagnosis for an Electrical Incident" in GI section

COMBINATION METERS (LHD MODELS)

PFP:24810

System Description

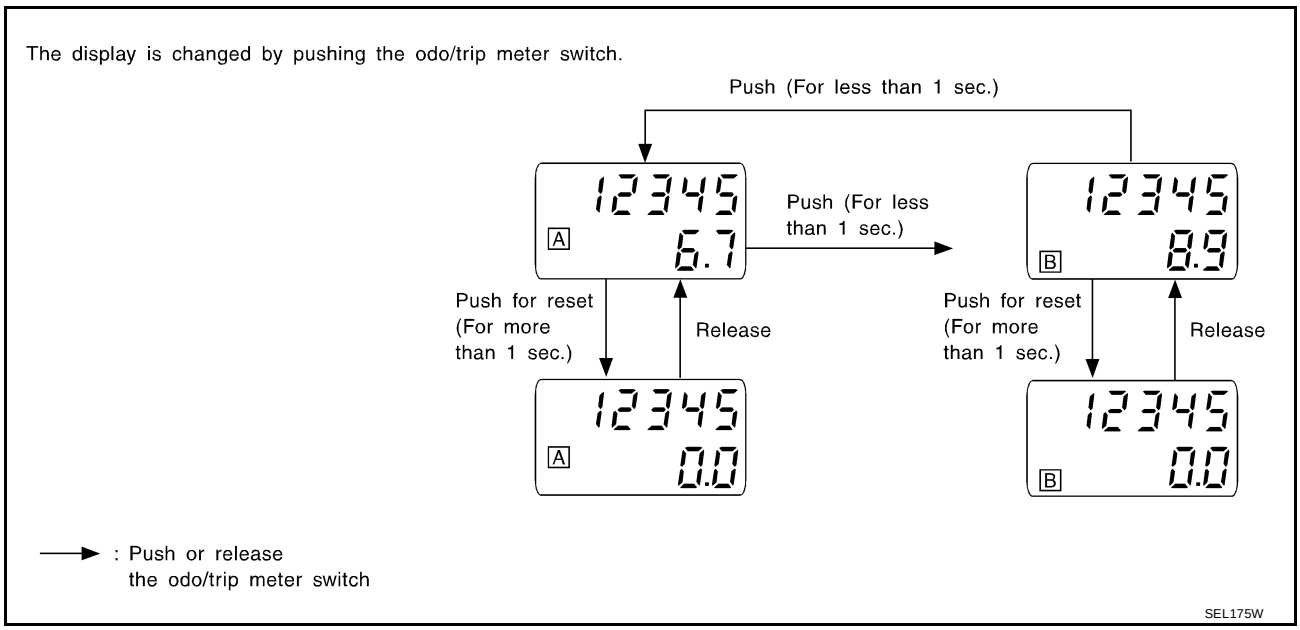
EKS004QF

UNIFIED CONTROL METER

- Speedometer, odo/trip meter, tachometer, fuel gauge and water temperature gauge are controlled totally by control unit built in combination meter.
- Signal of speedometer, odo/trip meter, tachometer and water temperature gauge are sent via CAN communication line.
- Digital meter is adopted for odo/trip meter.*
  *The record of the odometer 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, A/T indicator and ICC system display segments can be checked in self-diagnosis mode.
- Meter/gauge can be checked in self-diagnosis mode.

HOW TO CHANGE THE DISPLAY FOR ODO/TRIP METER

- The CAN communication signals (vehicle speed signal) from ESP/TCS/ABS control unit, and the memory signals from the meter memory circuit are processed by the combination meter, and the mileage is displayed.
- Operating the odometer/trip switch allows switching the mode in the following order.



- The odometer/trip display switching and trip display resetting can be identified by the time from pressing the odometer/trip switch to releasing it.
- When resetting with trip A displayed, only trip A display is reset (same as trip B).

POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- through 10A fuse [NO. 12, located in the fuse block (J/B)]
- to combination meter terminal 52.

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

- through 10A fuse [NO. 30, located in the fuse block (J/B)]
- to combination meter terminal 51.

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

- through 10A fuse [NO. 1, located in the fuse block (J/B)]
- to combination meter terminal 50.

Ground is supplied

- to combination meter terminals 24, 25 and 45
- through body grounds M16, M50 and M70.

WATER TEMPERATURE GAUGE

The water temperature gauge indicates the engine coolant temperature.
ECM provides a water temperature signal to combination meter for water temperature gauge with CAN communication line.

TACHOMETER

The tachometer indicates engine speed in revolution per minutes (rpm). ECM provides an engine speed signal to combination meter for tachometer with CAN communication line.

FUEL GAUGE

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

- to combination meter terminal 47 for the fuel level sensor
- from terminal 4 of the fuel level sensor unit
- through terminal 1 of the fuel level sensor unit and
- through combination meter terminal 46

SPEEDOMETER

ESP/TCS/ABS control unit provides a vehicle speed signal to the combination meter for the speedometer with CAN communication line.

CAN Communication

EKS004QG

SYSTEM DESCRIPTION

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many elec-

tronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

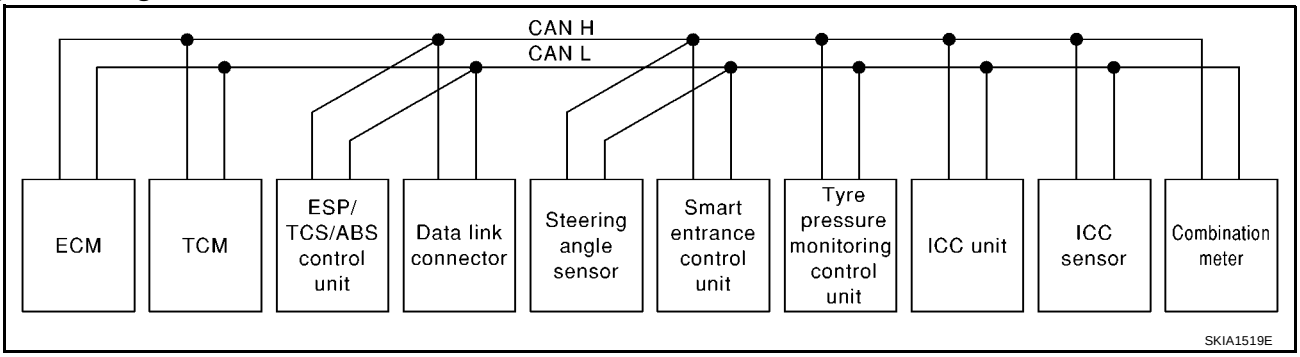
WITH TYRE PRESSURE MONITORING SYSTEM

Go to CAN system, when selecting your car model from the following table.

Body type	Sedan/Wagon								
Axle	2WD								
Engine	QR20DE			QG18DE	QR20DE	QG16DE	QG18DE	QR20DE	YD22DD Ti
Transmission	CVT			A/T	6M/T	5M/T		6M/T	
Brake control	ESP		ABS		ESP	ABS			
ICC system	Applica-ble	Not applicable							
CAN communication unit									
ECM	×	×	×	×	×	×	×	×	×
TCM	×	×	×	×					
ESP/TCS/ABS control unit	×	×			×				
ABS actuator and electric unit (control unit)			×	×		×	×	×	×
Data link connector	×	×	×	×	×	×	×	×	×
Steering angle sensor	×	×			×				
Smart entrance control unit	×	×	×	×	×	×	×	×	×
Tyre pressure monitoring control unit	×	×	×	×	×	×	×	×	×
ICC unit	×								
ICC sensor	×								
Combination meter	×	×	×	×	×	×	×	×	×
CAN communication type	DI-7, "TYPE 1"	DI-9, "TYPE 2"	DI-10, "TYPE 3"	DI-11, "TYPE 4"	DI-12, "TYPE 5"	DI-13, "TYPE 6"			

TYPE 1

System diagram



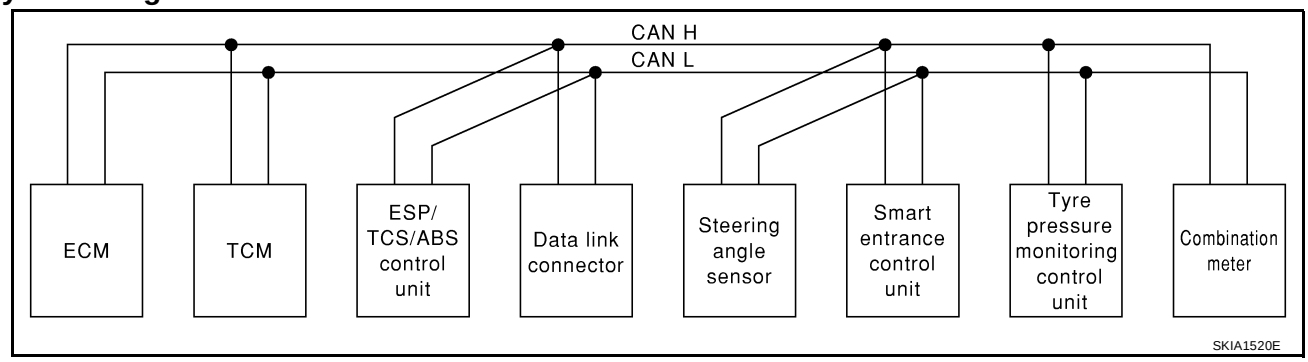
Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Tyre pressure monitoring control unit	ICC unit	ICC sensor	Combination meter
Engine speed signal	T	R	R				R		R
Accelerator pedal position signal	T	R	R				R		
Closed throttle position signal	T						R		
ICC steering switch signal	T						R		
Shift pattern signal		T					R		
Parking brake switch signal			T				R		
ICC system display signal							T		R
ICC sensor signal							R	T	
ESP operation signal	R		T				R		
TCS operation signal	R		T				R		
ABS operation signal	R	R	T				R		
Stop lamp switch signal		R	T						
Steering wheel angle sensor signal			R	T					
Wheel speed sensor signal			T				R		
Rear window defogger signal	R				T				
Heater fan switch signal	R								T
Air conditioner switch signal	R								T
Primary pulley revolution signal	R	T					R		
Secondary pulley revolution signal	R	T					R		
ICC operation signal	R						T		
Brake switch signal	R						T		
MI signal	T								R
Current gear position signal		T							R
Engine coolant temperature signal	T						R		R
Fuel consumption signal	T								R
Vehicle speed signal			T						R
	R								T
Seat belt reminder signal					R				T
Headlamp switch signal					T				R
Flashing indicator signal					T				R
Engine cooling fan speed signal	T				R				
Child lock indicator signal					T				R
Door switches state signal					T				R
Key ID signal	R				T				
	T				R				
A/C compressor signal	T				R				
Tire pressure signal						T			R

TYPE 2

System diagram



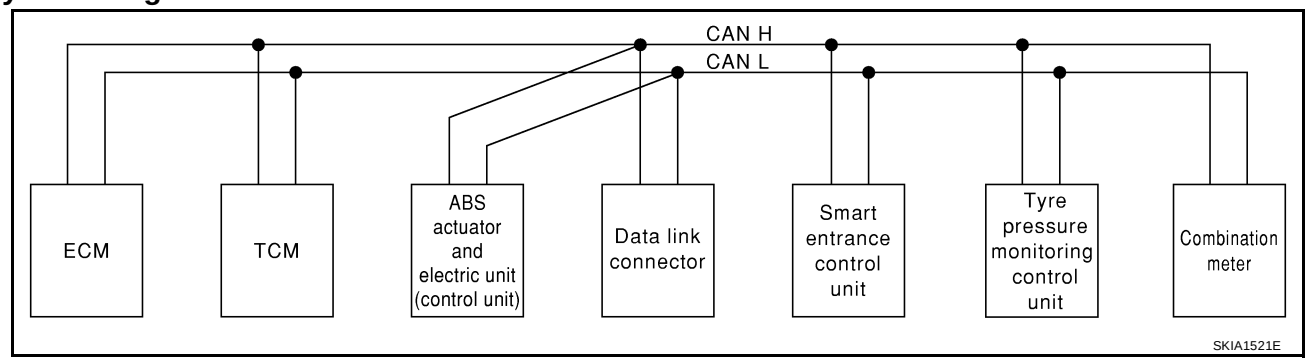
Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Tyre pressure monitoring control unit	Combination meter
Engine speed signal	T	R	R				R
Accelerator pedal position signal	T	R	R				
ESP operation signal	R		T				
TCS operation signal	R		T				
ABS operation signal	R	R	T				
Stop lamp switch signal		R	T				
Steering wheel angle sensor signal			R	T			
Rear window defogger signal	R				T		
Heater fan switch signal	R						T
Air conditioner switch signal	R						T
Primary pulley revolution signal	R	T					
Secondary pulley revolution signal	R	T					
MI signal	T						R
Current gear position signal		T					R
Engine coolant temperature signal	T						R
Fuel consumption signal	T						R
Vehicle speed signal			T				R
	R						T
Seat belt reminder signal					R		T
Headlamp switch signal					T		R
Flashing indicator signal					T		R
Engine cooling fan speed signal	T				R		
Child lock indicator signal					T		R
Door switches state signal					T		R
Key ID signal	R				T		
	T				R		
A/C compressor signal	T				R		
Tire pressure signal						T	R

TYPE 3

System diagram



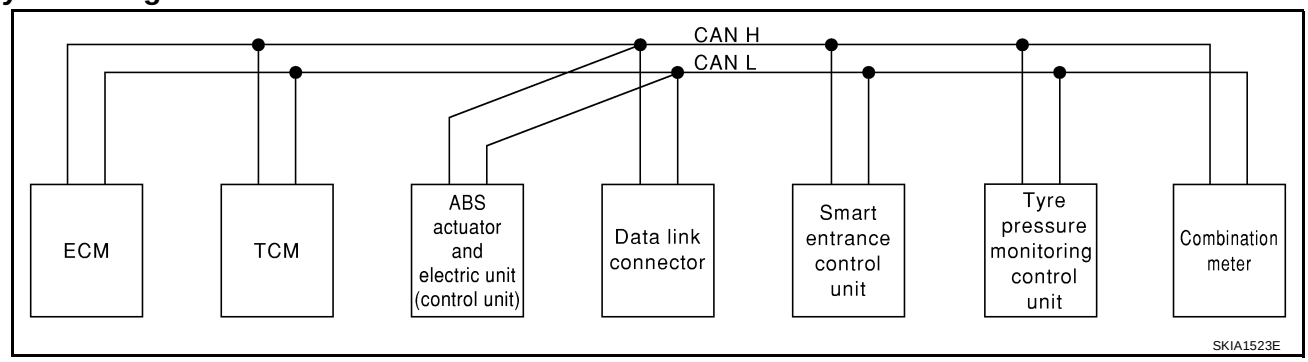
Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Tyre pressure monitoring control unit	Combination meter
Engine speed signal	T	R				R
Stop lamp switch signal		R	T			
Rear window defogger signal	R			T		
Heater fan switch signal	R					T
Air conditioner switch signal	R					T
Primary pulley revolution signal	R	T				
Secondary pulley revolution signal	R	T				
MI signal	T					R
Current gear position signal		T				R
Engine coolant temperature signal	T					R
Fuel consumption signal	T					R
Vehicle speed signal			T			R
	R					T
Seat belt reminder signal				R		T
Headlamp switch signal				T		R
Flashing indicator signal				T		R
Engine cooling fan speed signal	T			R		
Child lock indicator signal				T		R
Door switches state signal				T		R
Key ID signal	R			T		
	T			R		
A/C compressor signal	T			R		
Tire pressure signal					T	R

TYPE 4

System diagram



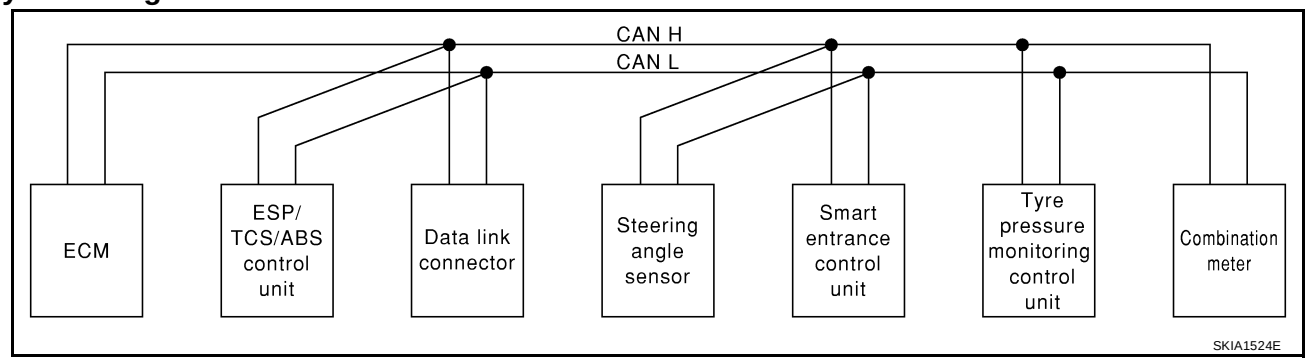
Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Tyre pressure monitoring control unit	Combination meter
Engine speed signal	T	R				R
Stop lamp switch signal		R	T			
Rear window defogger signal	R			T		
Heater fan switch signal	R					T
Air conditioner switch signal	R					T
MI signal	T					R
Current gear position signal		T				R
Engine coolant temperature signal	T					R
Fuel consumption signal	T					R
Vehicle speed signal			T			R
	R					T
Seat belt reminder signal				R		T
Headlamp switch signal				T		R
Flashing indicator signal				T		R
Engine cooling fan speed signal	T			R		
Child lock indicator signal				T		R
Door switches state signal				T		R
Key ID signal	R			T		
	T			R		
A/C compressor signal	T			R		
Tire pressure signal					T	R

TYPE 5

System diagram



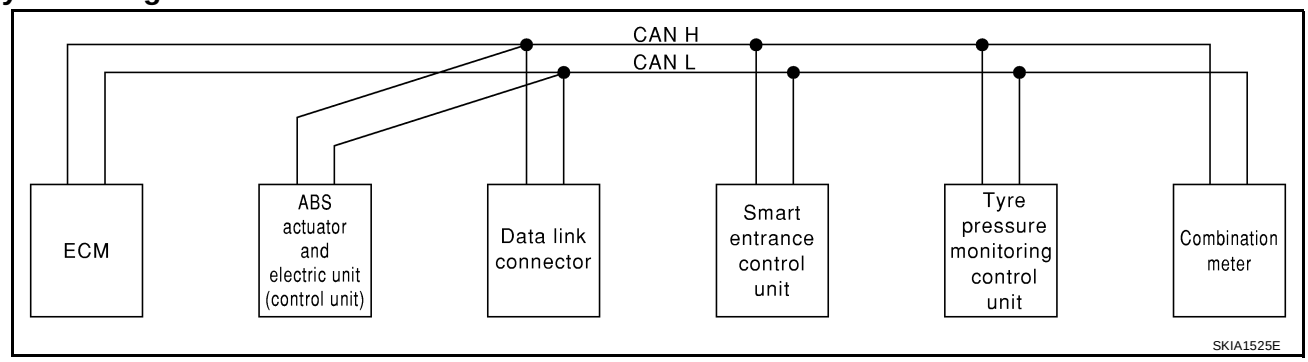
Input/output signal chart

T: Transmit R: Receive

Signals	ECM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Tyre pressure monitoring control unit	Combination meter
Engine speed signal	T	R				R
Accelerator pedal position signal	T	R				
ESP operation signal	R	T				
TCS operation signal	R	T				
ABS operation signal	R	T				
Steering wheel angle sensor signal		R	T			
Rear window defogger signal	R			T		
Heater fan switch signal	R					T
Air conditioner switch signal	R					T
MI signal	T					R
Engine coolant temperature signal	T					R
Fuel consumption signal	T					R
Vehicle speed signal		T				R
	R					T
Seat belt reminder signal				R		T
Headlamp switch signal				T		R
Flashing indicator signal				T		R
Engine cooling fan speed signal	T			R		
Child lock indicator signal				T		R
Door switches state signal				T		R
Key ID signal	R			T		
	T			R		
A/C compressor signal	T			R		
Tire pressure signal					T	R

TYPE 6

System diagram



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Tyre pressure monitoring control unit	Combination meter
Engine speed signal	T				R
Rear window defogger signal	R*1		T		
Heater fan switch signal	R*1				T
Air conditioner switch signal	R				T
MI signal	T				R
Glow lamp signal*2	T				R
Engine coolant temperature signal	T				R
Fuel consumption signal	T				R
Vehicle speed signal		T			R
	R				T
Seat belt reminder signal			R		T
Headlamp switch signal			T		R
Flashing indicator signal			T		R
Engine cooling fan speed signal	T		R		
Child lock indicator signal			T		R
Door switches state signal			T		R
Key ID signal	R		T		
	T		R		
A/C compressor signal	T		R		
Tire pressure signal				T	R

*1: Except YD22DDTi engine model
*2: YD22DDTi engine model only

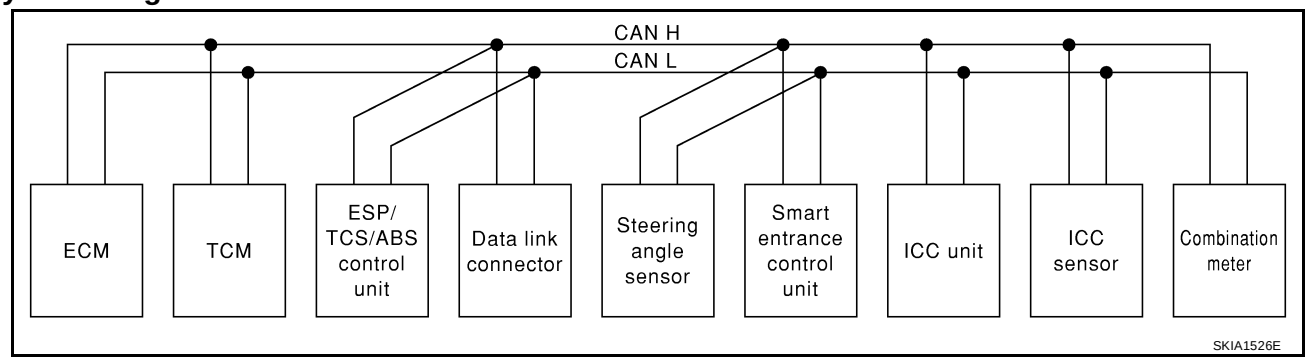
WITHOUT TYRE PRESSURE MONITORING SYSTEM

Go to CAN system, when selecting your car model from the following table.

Body type	Sedan/Wagon								
Axle	2WD								
Engine	QR20DE			QG18DE	QR20DE	QG16DE	QG18DE	QR20DE	YD22DD Ti
Transmission	CVT			A/T	6M/T	5M/T		6M/T	
Brake control	ESP		ABS		ESP	ABS			
ICC system	Applica-ble	Not applicable							
CAN communication unit									
ECM	×	×	×	×	×	×	×	×	×
TCM	×	×	×	×					
ESP/TCS/ABS control unit	×	×			×				
ABS actuator and electric unit (control unit)			×	×		×	×	×	×
Data link connector	×	×	×	×	×	×	×	×	×
Steering angle sensor	×	×			×				
Smart entrance control unit	×	×	×	×	×	×	×	×	×
ICC unit	×								
ICC sensor	×								
Combination meter	×	×	×	×	×	×	×	×	×
Can communication type	DI-14, "TYPE 7"	DI-15, "TYPE 8"	DI-16, "TYPE 9"	DI-17, "TYPE 10"	DI-18, "TYPE 11"	DI-19, "TYPE 12"			

TYPE 7

System diagram



Input/output signal chart

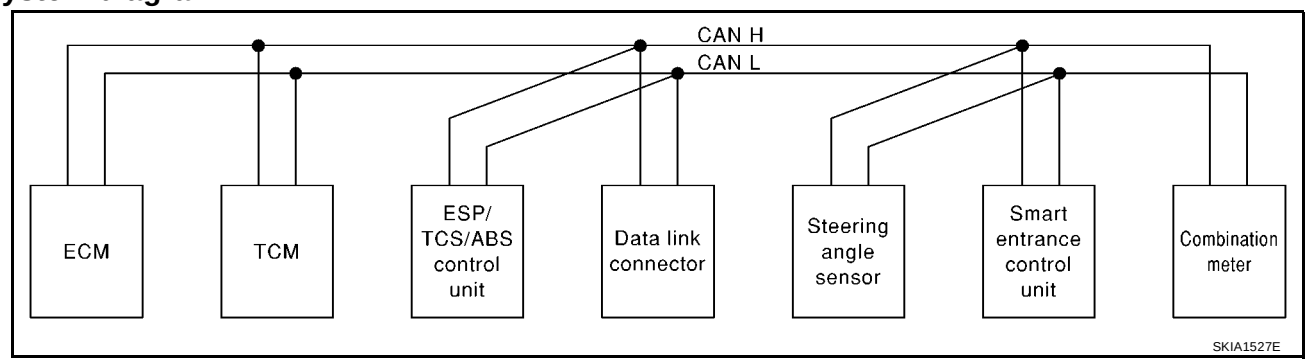
T: Transmit R: Receive

Signals	ECM	TCM	ESP/ TCS / ABS con-trol unit	Steering angle sensor	Smart entrance control unit	ICC unit	ICC sen-sor	Combina-tion meter
Engine speed signal	T	R	R			R		R
Accelerator pedal position signal	T	R	R			R		
Closed throttle position signal	T					R		
ICC steering switch signal	T					R		
Shift pattern signal		T				R		
Parking brake switch signal			T			R		
ICC system display signal						T		R

Signals	ECM	TCM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	ICC unit	ICC sensor	Combination meter
ICC sensor signal						R	T	
ESP operation signal	R		T			R		
TCS operation signal	R		T			R		
ABS operation signal	R	R	T			R		
Stop lamp switch signal		R	T					
Steering wheel angle sensor signal			R	T				
Wheel speed sensor signal			T			R		
Rear window defogger signal	R				T			
Heater fan switch signal	R							T
Air conditioner switch signal	R							T
Primary pulley revolution signal	R	T				R		
Secondary pulley revolution signal	R	T				R		
ICC operation signal	R					T		
Brake switch signal	R					T		
MI signal	T							R
Current gear position signal		T						R
Engine coolant temperature signal	T					R		R
Fuel consumption signal	T							R
Vehicle speed signal			T					R
	R							T
Seat belt reminder signal					R			T
Headlamp switch signal					T			R
Flashing indicator signal					T			R
Engine cooling fan speed signal	T				R			
Child lock indicator signal					T			R
Door switches state signal					T			R
Key ID signal	R				T			
	T				R			
A/C compressor signal	T				R			

TYPE 8

System diagram



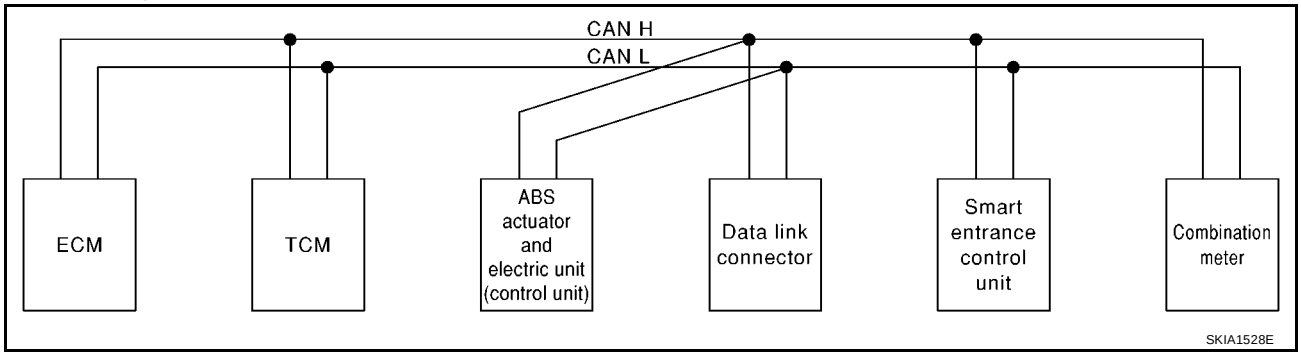
Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Combination meter
Engine speed signal	T	R	R			R
Accelerator pedal position signal	T	R	R			
ESP operation signal	R		T			
TCS operation signal	R		T			
ABS operation signal	R	R	T			
Stop lamp switch signal		R	T			
Steering wheel angle sensor signal			R	T		
Rear window defogger signal	R				T	
Heater fan switch signal	R					T
Air conditioner switch signal	R					T
Primary pulley revolution signal	R	T				
Secondary pulley revolution signal	R	T				
MI signal	T					R
Current gear position signal		T				R
Engine coolant temperature signal	T					R
Fuel consumption signal	T					R
Vehicle speed signal			T			R
	R					T
Seat belt reminder signal					R	T
Headlamp switch signal					T	R
Flashing indicator signal					T	R
Engine cooling fan speed signal	T				R	
Child lock indicator signal					T	R
Door switches state signal					T	R
Key ID signal	R				T	
	T				R	
A/C compressor signal	T				R	

TYPE 9

System diagram



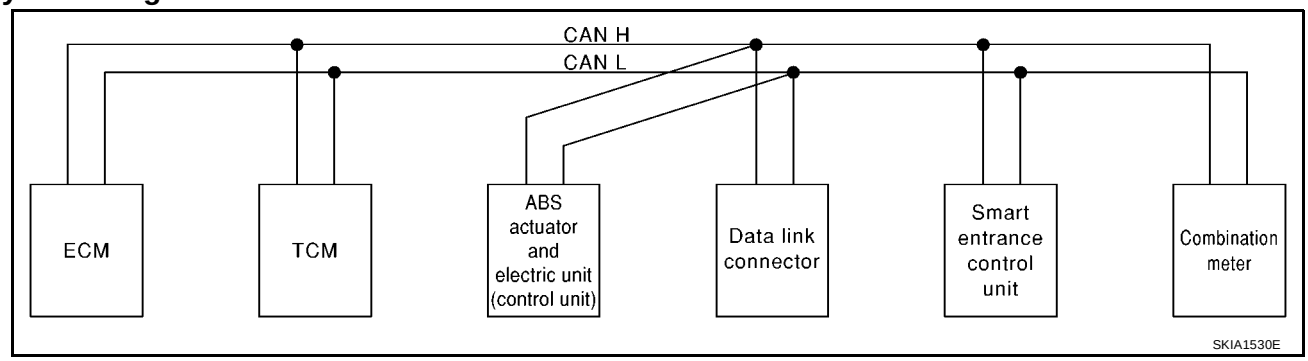
Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Engine speed signal	T	R			R
Stop lamp switch signal		R	T		
Rear window defogger signal	R			T	
Heater fan switch signal	R				T
Air conditioner switch signal	R				T
Primary pulley revolution signal	R	T			
Secondary pulley revolution signal	R	T			
MI signal	T				R
Current gear position signal		T			R
Engine coolant temperature signal	T				R
Fuel consumption signal	T				R
Vehicle speed signal			T		R
	R				T
Seat belt reminder signal				R	T
Headlamp switch signal				T	R
Flashing indicator signal				T	R
Engine cooling fan speed signal	T			R	
Child lock indicator signal				T	R
Door switches state signal				T	R
Key ID signal	R			T	
	T			R	
A/C compressor signal	T			R	

TYPE 10

System diagram



Input/output signal chart

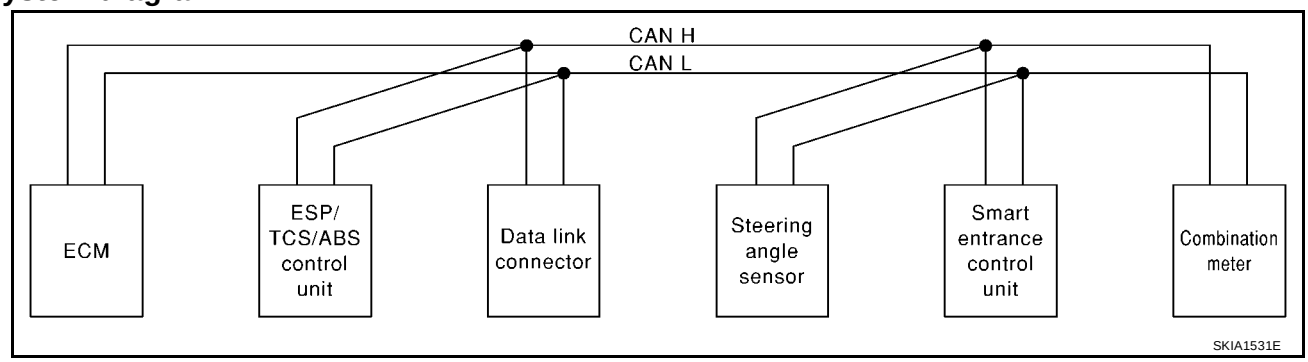
T: Transmit R: Receive

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Engine speed signal	T	R			R
Stop lamp switch signal		R	T		
Rear window defogger signal	R			T	
Heater fan switch signal	R				T

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Air conditioner switch signal	R				T
MI signal	T				R
Current gear position signal		T			R
Engine coolant temperature signal	T				R
Fuel consumption signal	T				R
Vehicle speed signal			T		R
	R				T
Seat belt reminder signal				R	T
Headlamp switch signal				T	R
Flashing indicator signal				T	R
Engine cooling fan speed signal	T			R	
Child lock indicator signal				T	R
Door switches state signal				T	R
Key ID signal	R			T	
	T			R	
A/C compressor signal	T			R	

TYPE 11

System diagram



Input/output signal chart

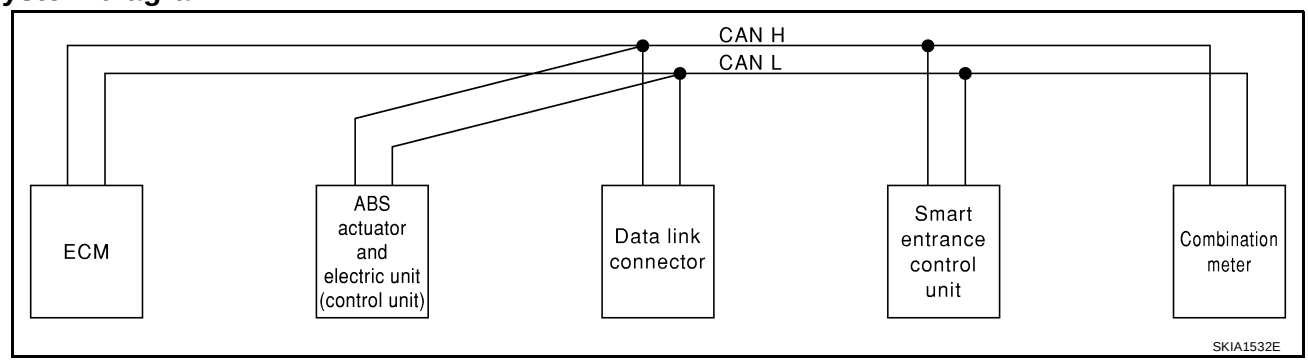
T: Transmit R: Receive

Signals	ECM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Combination meter
Engine speed signal	T	R			R
Accelerator pedal position signal	T	R			
ESP operation signal	R	T			
TCS operation signal	R	T			
ABS operation signal	R	T			
Steering wheel angle sensor signal		R	T		
Rear window defogger signal	R			T	
Heater fan switch signal	R				T
Air conditioner switch signal	R				T
MI signal	T				R
Engine coolant temperature signal	T				R

Signals	ECM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Combination meter
Fuel consumption signal	T				R
Vehicle speed signal		T			R
	R				T
Seat belt reminder signal				R	T
Headlamp switch signal				T	R
Flashing indicator signal				T	R
Engine cooling fan speed signal	T			R	
Child lock indicator signal				T	R
Door switches state signal				T	R
Key ID signal	R			T	
	T			R	
A/C compressor signal	T			R	

TYPE 12

System diagram



Input/output signal chart

T: Transmit R: Receive

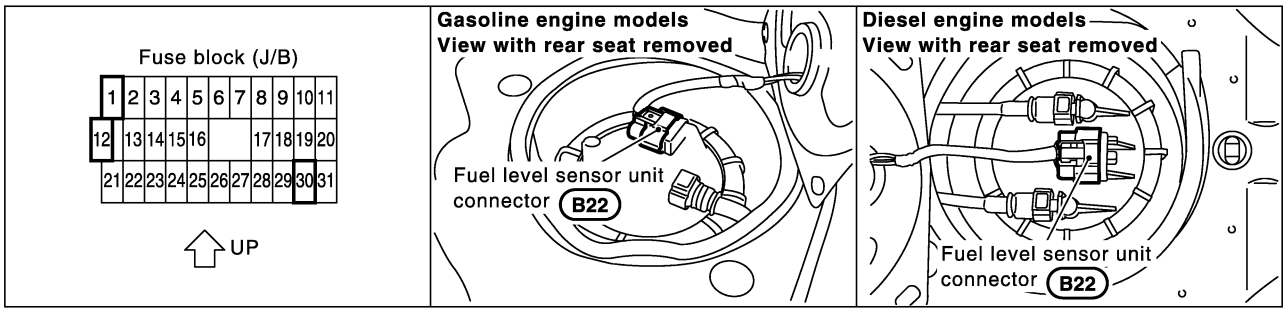
Signals	ECM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Engine speed signal	T			R
Rear window defogger signal	R*1		T	
Heater fan switch signal	R*1			T
Air conditioner switch signal	R			T
MI signal	T			R
Glow lamp signal*2	T			R
Engine coolant temperature signal	T			R
Fuel consumption signal	T			R
Vehicle speed signal		T		R
	R			T
Seat belt reminder signal			R	T
Headlamp switch signal			T	R
Flashing indicator signal			T	R
Engine cooling fan speed signal	T		R	
Child lock indicator signal			T	R
Door switches state signal			T	R

Signals	ECM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Key ID signal	R		T	
	T		R	
A/C compressor signal	T		R	

*1: Except YD22DDTi engine model
*2:YD22DDTi engine model only

Component Parts and Harness Connector Location

EKS003VC

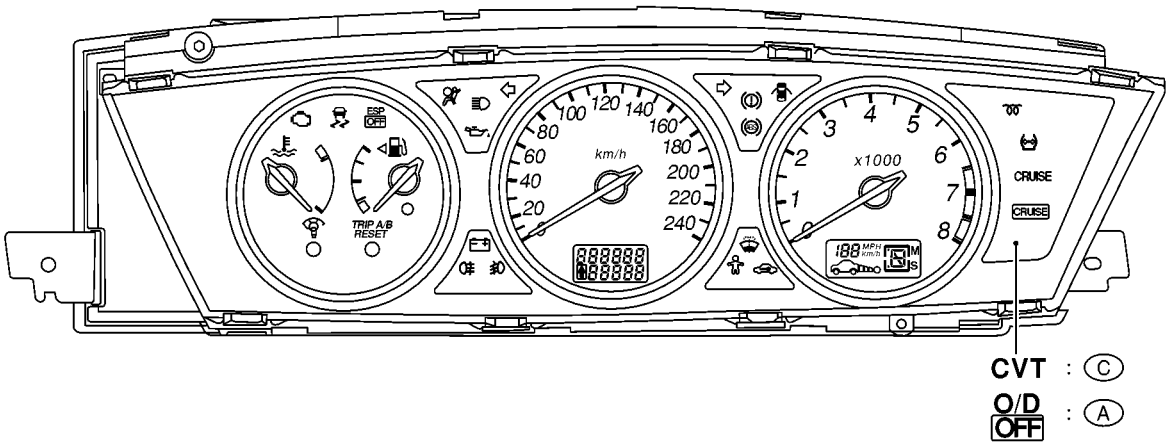


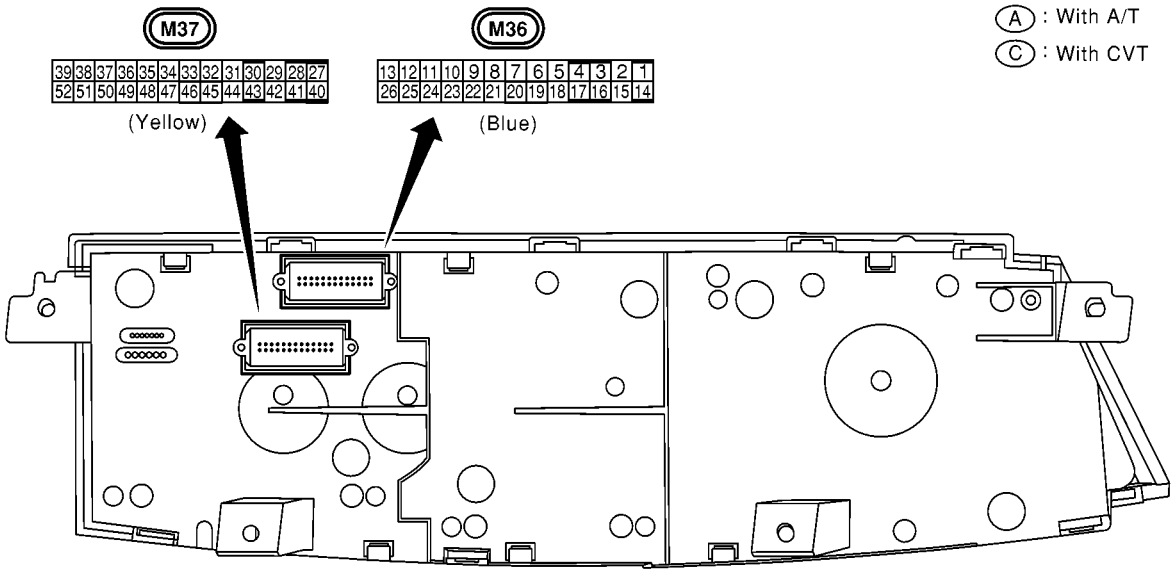
MKIB0048E

Combination Meter

EKS004QH

CHECK

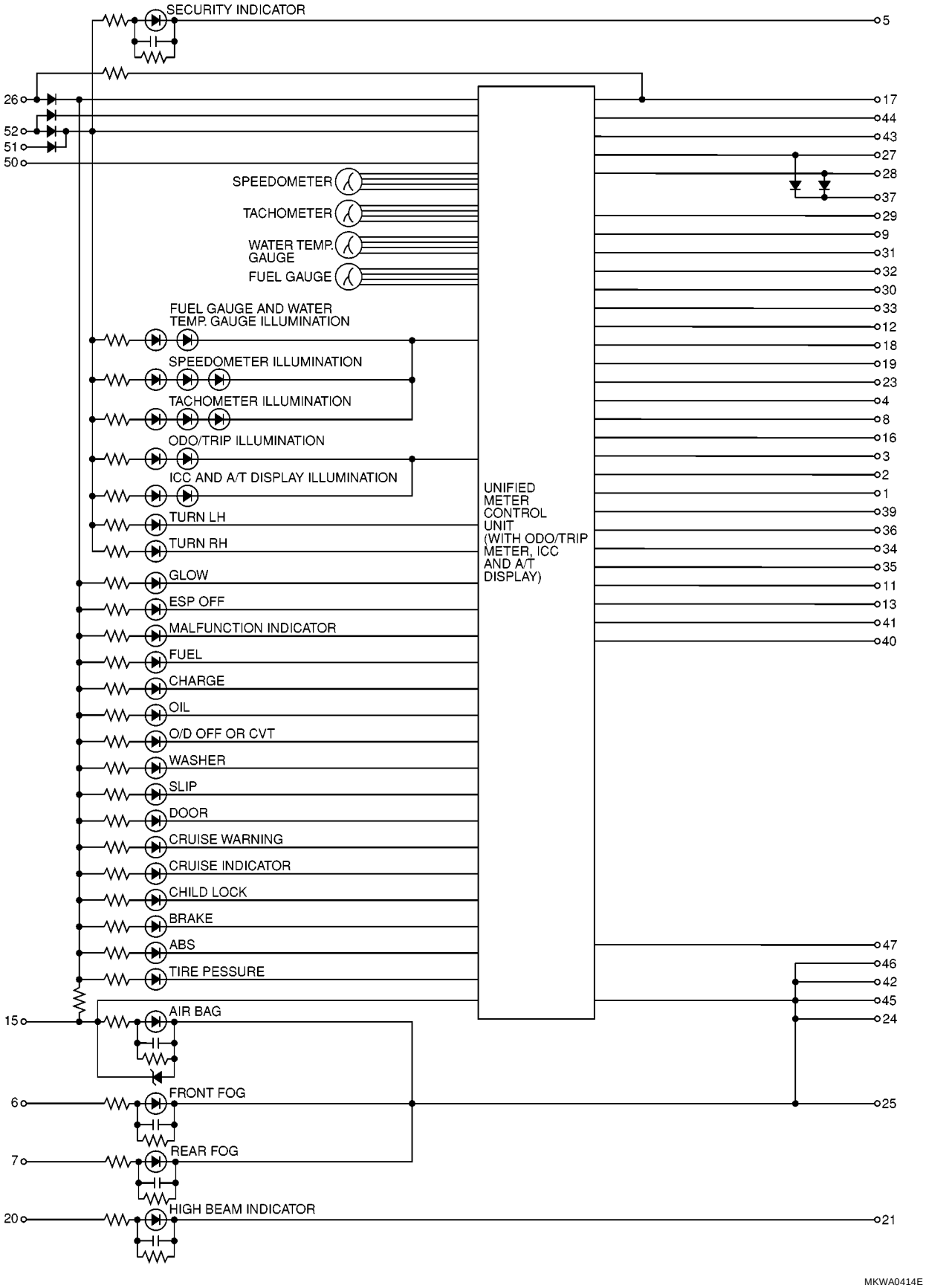




MKWA0172E

Schematic

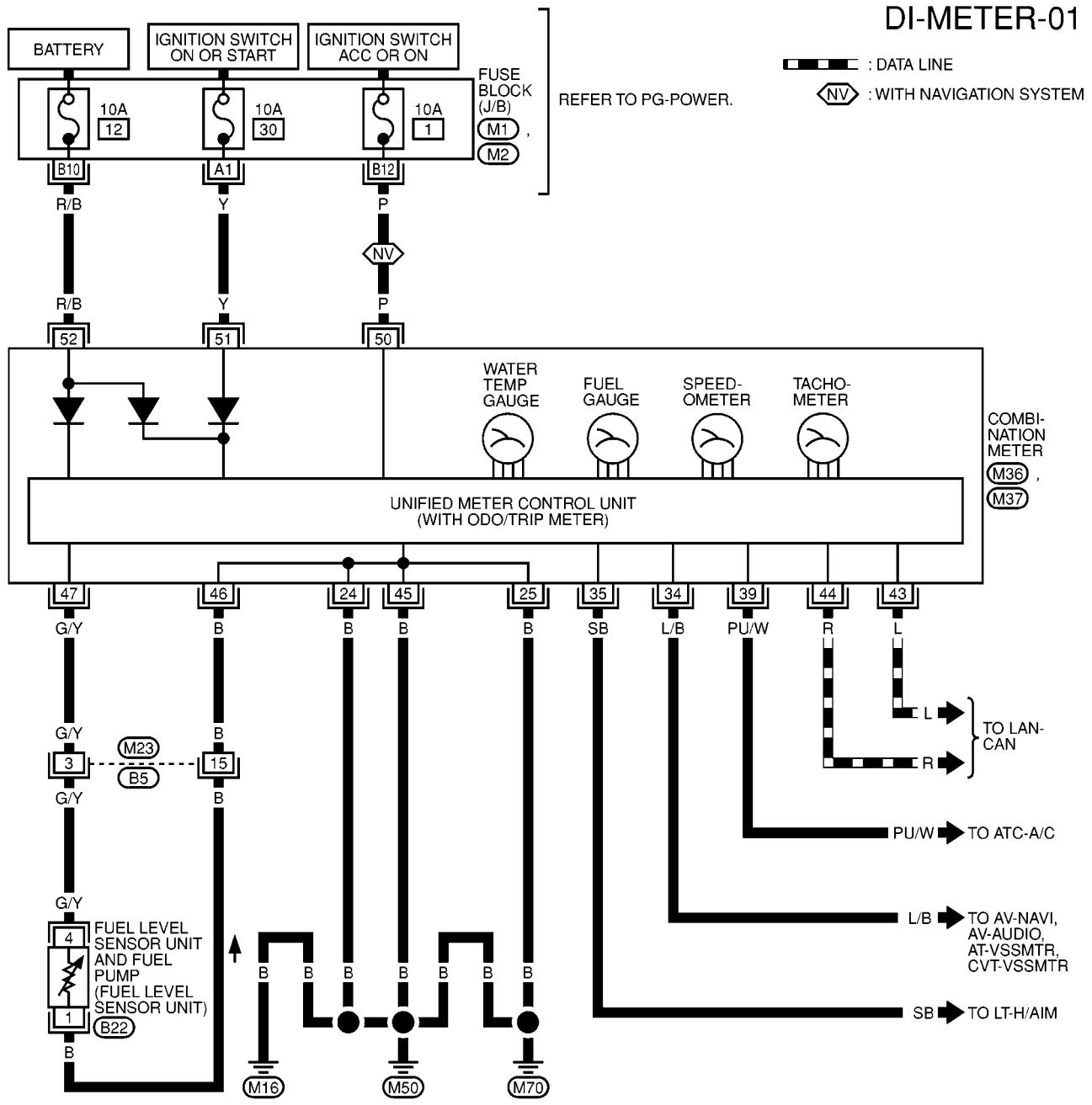
EKS003VE



MKWA0414E

Wiring Diagram — METER —

EKS004QI



MKWA0175E

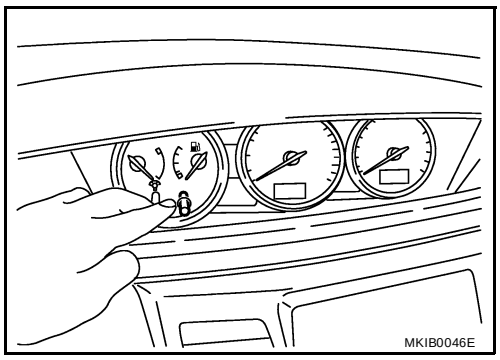
Combination Meter Self-Diagnosis

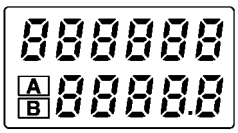
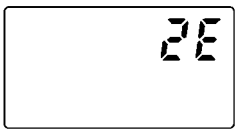
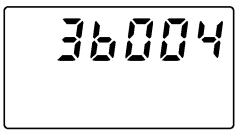
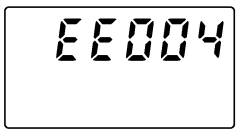
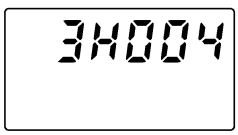
EKS004QJ

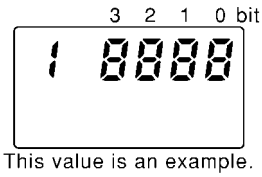
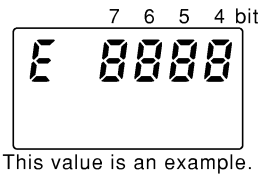
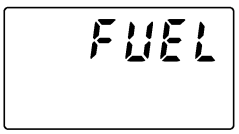
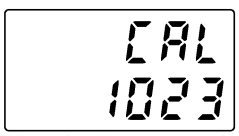
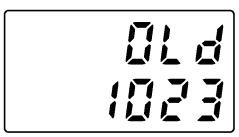
PERFORMING SELF-DIAGNOSIS MODE

1. Turn the ignition switch to the “LOCK” position.
2. Press both reset buttons on the combination meter and keep them depressed.
3. Turn the ignition switch to the “ON” position, while keeping the reset buttons pressed.
4. Release both reset buttons then self-diagnosis will start. The sequence (A to L) is activated by press the either reset buttons.

   NOTE:
   If either reset button is not pressed for 20 seconds at each step or if the ignition switch is turned OFF, the self-diagnosis mode is exited.



	Check items	Display	Remarks
A)	Odometer segment test	 MKIB0001E	All odo/trip meter, A/T indicator and ICC system display segments are ON.
B)	Work instruction code	 This code is an example. MKIB0002E	This information is not used for service. Skip this step.
C)	Software code	 This code is an example. MKIB0003E	This information is not used for service. Skip this step.
D)	EEPROM code	 This code is an example. MKIB0004E	This information is not used for service. Skip this step.
E)	Hardware code	 This code is an example. MKIB0005E	This information is not used for service. Skip this step.

	Check items	Display	Remarks
F)	PCB code	 This code is an example. MKIB0006E	This information is not used for service. Skip this step.
G)	Meter/gauge test (Sweeping movement)	 Flashing MKIB0007E	Tachometer, speedometer, fuel level gauge and water temperature gauge have sweeping movement test. (The meter/gauges operate MIN. → MAX., MAX. → MIN. for 2 times) The odo/trip meter segment flashes during the sweep movement.
H)	Error 1 (Bit 0 - Bit 3)	 3 2 1 0 bit This value is an example. MKIB0008E	The segment of each bit displays “0”, meaning no malfunction. If the bit(s) displays figures other than “0”, the item of the bit has malfunctioned. For details, refer to “Malfunction chart for Error 1 and Error E” below.
I)	Error E (Bit 4 - Bit 7)	 7 6 5 4 bit This value is an example. MKIB0009E	
J)	Fuel warning lamp test	 Flashing MKIB0010E	Fuel warning lamp is on and odo/trip meter segment “FUEL” flashes.
K)	Fuel gauge calibration (CAL)	 This value is an example. MKIB0011E	This information is not used for service. Skip this step.
L)	Fuel gauge calibration (OLD)	 This value is an example. MKIB0012E	This information is not used for service. Skip this step.

Malfunction Chart for “Error 1” and “Error E”

Bit	Detectable items	Description of the malfunction		Displayed figure on the bit	
				Malfunction	No malfunction
0	Speedometer input signal	No input signal When no signal is detected for 5 minutes continuously with the ignition ON, it should be judged as signal malfunction. (If input signal is detected later, then the judgement will be canceled immediately.)		1	0
		Unusual input signal When any signal of frequency which would not exist in normal conditions is detected, it should be judged as signal malfunction.		2	
1	Tachometer input signal	No input signal When no signal is detected for 5 minutes continuously with the ignition ON, it should be judged as signal malfunction. (If input signal is detected later, then the judgement will be canceled immediately.)		1	0
		Unusual input signal When any signal of frequency which would not exist in normal conditions is detected, it should be judged as signal malfunction.		2	
2	Fuel level input signal	Short circuit When short circuit of the signal line is detected for 5 seconds or more, it should be judged as short-circuit malfunction.		1	0
		Open circuit When open circuit of the signal line is detected for 5 seconds or more, it should be judged as open-circuit malfunction.		2	
3	Water temperature input signal	Short circuit When short circuit of the signal line is detected for 5 seconds or more, it should be judged as short-circuit malfunction.		1	0
		Open circuit When open circuit of the signal line is detected for 5 seconds or more, it should be judged as open-circuit malfunction.		2	
4	Reset buttons	Short circuit for reset buttons When the short circuit is continuously detected for 5 minutes or more, it should be judged as short-circuit malfunction.	Right side reset button has malfunctioned.	1	0
			Left side reset button has malfunctioned.	2	
			Both reset buttons have malfunctioned.	3	
5	CPU	CPU RAM malfunction		1	0
6	—	—		0	0

Combination Meter Calibration

After replacing a combination meter, it might be necessary to calibrate the fuel gauge/low fuel warning lamp. In case the fuel warning lamp is flashing after replacing the combination meter perform the following:

1. Press both reset buttons.
2. Turn the ignition ON **and keep the reset buttons depressed for at least 5 seconds.**
3. Release both reset buttons.
   The low fuel warning lamp will stop flashing and the combination meter will shown CALL and possibly CALL FAIL. Showing CALL FAIL does not indicate a concern as this might be related to the current (unexpected) amount of fuel in the tank.

Trouble Diagnoses

EKS004QK

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 check. Refer to DI-29, "Power Supply and Ground Circuit Check" .

2. CHECK SELF-DIAGNOSIS MODE OPERATION

Perform self-diagnosis mode. Refer to DI-24, "Performing Self-Diagnosis Mode" .

Can self-diagnosis mode be activated?

YES >> GO TO 3.
NO >> Replace unified meter control unit. Refer to DI-33, "Removal and Installation for Combination Meter" .

3. CHECK METER/GAUGE OPERATION

Check meter/gauge operation in self-diagnosis mode (Meter/gauge test). Refer to DI-24, "Performing Self-Diagnosis Mode" .

Is any malfunction indicated in self-diagnosis mode?

YES >> GO TO “Symptom Chart 1”. Refer to DI-28, "SYMPTOM CHART" .
NO >> GO TO 4.

4. CHECK SEGMENTS

Check all odo/trip meter segments in self-diagnosis mode (Odo/trip meter segment test). Refer to DI-24, "Performing Self-Diagnosis Mode" .

Is any malfunction indicated in self-diagnosis mode?

YES >> GO TO “Symptom Chart 1”. Refer to DI-28, "SYMPTOM CHART" .
NO >> GO TO 5.

5. CHECK FUEL WARNING LAMP

Check fuel warning lamp in self-diagnosis mode (Fuel warning lamp test). Refer to DI-24, "Performing Self-Diagnosis Mode" .

Do fuel warning lamp illuminate?

YES >> GO TO “Symptom Chart 1”. Refer to DI-28, "SYMPTOM CHART" .
NO >> GO TO 6.

6. CHECK INPUT SIGNALS

Check input signals from each sensors in self-diagnosis mode (Error 1 and Error E). Refer to DI-24, "Performing Self-Diagnosis Mode" .

OK or NG?

OK >> GO TO 7.
NG >> GO TO “Symptom Chart 2”. Refer to DI-28, "SYMPTOM CHART" .

7. CHECK OTHER MALFUNCTION

Check each malfunction according to the instruction of the “SYMPTOM CHART 3”. Refer to DI-28, "SYMPTOM CHART" .

OK >> Combination meter is OK.
NG >> Check the case of malfunction.

SYMPTOM CHART

Symptom Chart 1

Symptom	Possible causes	Repair order
Odo/trip meter indicates malfunction in Diagnosis mode.	Unified meter control unit	Replace unified meter control unit. Refer to DI-33, "Removal and Installation for Combination Meter" .
Multiple meter/gauge indicate malfunction in Diagnosis mode.		
One of speedometer/tachometer/fuel gauge/water temp. gauge indicates malfunction in Diagnosis mode.		

Symptom Chart 2

Symptom	Possible causes	Repair order
Speedometer input signal indicates malfunction in Diagnosis mode.	Speedometer input signal	Check signal for speedometer. Refer to DI-29, "Inspection/Vehicle Speed Signal" .
Tachometer input signal indicates malfunction in Diagnosis mode.	Tachometer input signal	Check signal for tachometer. Refer to DI-29, "Inspection/Engine Speed Signal" .
Fuel level input signal indicates malfunction in Diagnosis mode.	Fuel level input signal	Check signal for tachometer. Refer to DI-30, "Inspection/Fuel Level Sensor Unit" .
Water temperature input signal Indicates malfunction in Diagnosis mode.	Water temp. gauge input signal	Check signal for water temp. gauge. Refer to DI-31, "Inspection/Water Temperature Gauge" .
Reset buttons indicates malfunction in Diagnosis mode.	Unified meter control unit	Replace unified meter control unit assembly. Refer to DI-33, "Removal and Installation for Combination Meter" .
CPU indicates malfunction in Diagnosis mode.	Unified meter control unit	Replace unified meter control unit assembly. Refer to DI-33, "Removal and Installation for Combination Meter" .

Symptom Chart 3

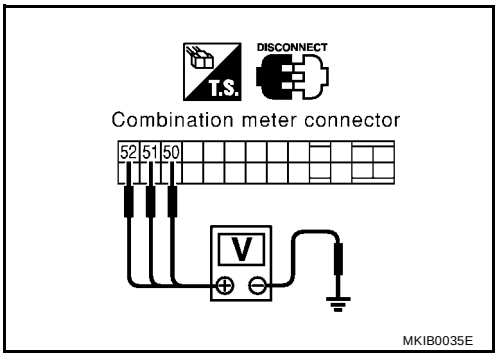
Symptom	Possible causes	Repair order
Fuel gauge pointer fluctuates, Indicator wrong value or varies.	-	Check the case of malfunction. Refer to DI-31, "The Fuel Gauge Pointer Fluctuates Indicator Wrong Value or Varies." .
Fuel gauge does not move to “F” position.	-	Check the case of malfunction. Refer to DI-31, "The Fuel Gauge Does Not Move to F-position." .
Fuel gauge does not work.	-	Check the case of malfunction. Refer to DI-32, "The Fuel Gauge Does Not Work." .

Power Supply and Ground Circuit Check

EKS004QL

1. POWER SUPPLY CIRCUIT CHECK

1. Disconnect combination meter connector.
2. Check voltage between combination meter harness connector and ground in the following conditions.



Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (wire color)				
M37	50 (P)*	Ground	0V	Battery voltage	Battery voltage
M37	51 (Y)	Ground	0V	0V	Battery voltage
M37	52 (R/B)	Ground	Battery voltage	Battery voltage	Battery voltage

*: With Navigation system

OK or NG?

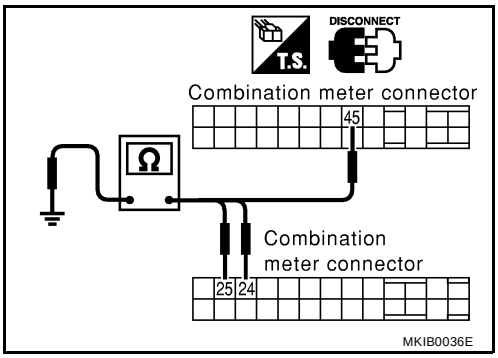
OK >> GO TO 2.

NG >>
- 10A fuse [No. 1, located in fuse block (J/B)].
- 10A fuse [No. 30, located in fuse block (J/B)].
- 10A fuse [No. 12, located in fuse block (J/B)].
- Harness for open or short between fuse and combination meter.

2. GROUND CIRCUIT CHECK

Check continuity between combination meter and ground in the following conditions.

Terminals			Continuity
(+)		(–)	
Connector	Terminal		
M36	25	Ground	Yes
M37	45	Ground	Yes
M36	24	Ground	Yes



OK or NG?

OK >> INSPECTION END.

NG >> Harness for open ground circuit.

Inspection/Vehicle Speed Signal

EKS004QM

1. ESP/TCS/ABS CONTROL UNIT SYSTEM INSPECTION

- Perform ESP/TCS/ABS control unit self-diagnosis. Refer to BRC-76, "Functions of CONSULT-II" .

OK or NG?

OK >> Recheck “PRELIMINALY CHECK”.

NG >> Check ESP/TCS/ABS control system.

Inspection/Engine Speed Signal

EKS004QN

1. ECM SYSTEM INSPECTION

Perform ECM self-diagnosis. Refer to EC-121, "CONSULT-II Function" (QG engine with EURO-OBD), EC-633, "CONSULT-II Function" (QG engine without EURO-OBD), EC-1050, "CONSULT-II Function" (QR

engine with EURO-OBD), EC-1467, "CONSULT-II Function" (QR engine without EURO-OBD) or EC-1760, "CONSULT-II Function" (YD engine)

OK or NG?

OK >> Recheck “PRELIMINALY CHECK”.
NG >> Check engine control system.

Inspection/Fuel Level Sensor Unit

EKS004QO

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. 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.

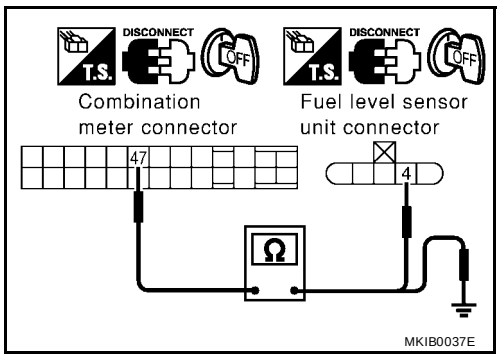
OK or NG?

OK >> GO TO 2.
NG >> Repair or replace terminals or connectors.

2. CHECK FUEL LEVEL SENSOR INPUT SIGNAL CIRCUIT

1. Turn ignition switch “OFF”.
2. Disconnect fuel level sensor unit harness connector and combination meter harness connector.
3. Check the following.

– Harness continuity between fuel level sensor unit pump harness connector B22 terminal 4 (G/Y) and combination meter harness connector M37 terminal 47 (G/Y).
– Harness continuity between combination meter harness connector M37 terminal 47 (G/Y) and ground.



Terminals				Continuity
(+)		(–)		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M37	47 (G/Y)	B22	4 (G/Y)	Yes
M37	47 (G/Y)	Ground		No

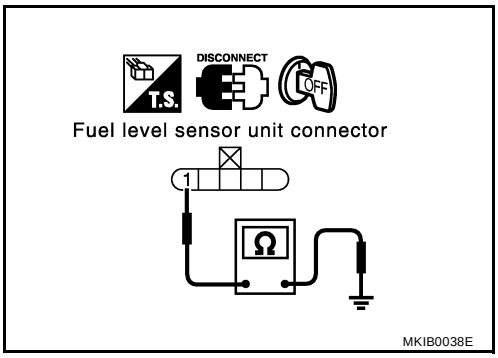
OK or NG?

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

3. CHECK FUEL LEVEL SENSOR GROUND CIRCUIT

Check harness continuity between fuel level sensor unit connector B22 terminal 1 and ground.

Continuity should exist.



OK or NG?

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

4. FUEL LEVEL SENSOR UNIT INSPECTION

Refer to DI-33, "FUEL LEVEL SENSOR UNIT CHECK" .

OK or NG?

OK >> GO TO 5.
NG >> Replace fuel level sensor unit.

5. 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 properly.

Inspection/Water Temperature Gauge

EKS004QP

1. ECM SYSTEM INSPECTION

Perform ECM self-diagnosis. Refer to EC-121, "CONSULT-II Function" (QG engine with EURO-OBD), EC-633, "CONSULT-II Function" (QG engine without EURO-OBD), EC-1050, "CONSULT-II Function" (QR engine with EURO-OBD), EC-1467, "CONSULT-II Function" (QR engine without EURO-OBD) or EC-1760, "CONSULT-II Function" (YD engine)

OK or NG?

OK >> Recheck “PRELIMINALY CHECK”.
NG >> Check engine control system.

The Fuel Gauge Pointer Fluctuates Indicator Wrong Value or Varies.

EKS004QQ

1. CHECK THE FUEL GAUGE POINTER FOR FLUCTUATION

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

OK or NG?

OK >> The pointer fluctuation may be caused by fuel level change in the fuel tank.
NG >> Ask the customer about the situation when the symptom occurs in detail, and Preform the trouble diagnosis.

The Fuel Gauge Does Not Move to F-position.

EKS004QR

1. QUESTIONNAIRE 1

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

YES or NO?

YES >> GO TO 2.
NO >> GO TO 3.

2. QUESTIONNAIRE 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 F-position because of the characteristic of the fuel gauge.
NO >> GO TO 3.

3. QUESTIONNAIRE 3

Is the floor or the vehicle inclined?

YES or NO?

YES >> It may not be filled fully.
NO >> GO TO 4.

4. QUESTIONNAIRE 4

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

YES or NO?

YES >> Check the components. Refer to DI-33, "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.

EKS004QS

1. 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 2.
NG >> Repair connector.

2. CHECK INSTALLATION CONDITION

Check fuel level sensor unit installation (refer toFL-6, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY (EXCEPT YD22DDTi)" or FL-9, "FUEL LEVEL SENSOR UNIT (YD22DDTi)"), and check whether the float arm interferes or binds with any components inside the arm.

OK or NG?

OK >> Recheck “PRELIMINALY CHECK”.
NG >> Check fuel level sensor unit. Refer to DI-33, "Electrical Components Inspection" .

Electrical Components Inspection

EKS004QT

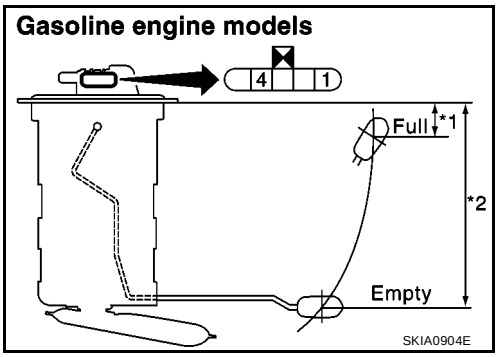
FUEL LEVEL SENSOR UNIT CHECK

For removal, refer toFL-6, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY (EXCEPT YD22DDTi)" or FL-9, "FUEL LEVEL SENSOR UNIT (YD22DDTi)" for Gasoline engine models.

Check the resistance between terminals 1 and 4.

Ohmmeter		Float position mm (in)			Resistance value Ω
(+)	(–)				
4	1	*1	Full	35 (1.38)	Approx. 4.5 - 5.5
		*2	Empty	179 (7.05)	Approx. 80 - 83

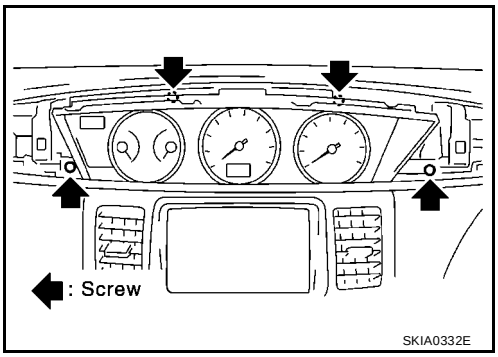
*1 and *2: When float rod is in contact with stopper.



Removal and Installation for Combination Meter

EKS003VT

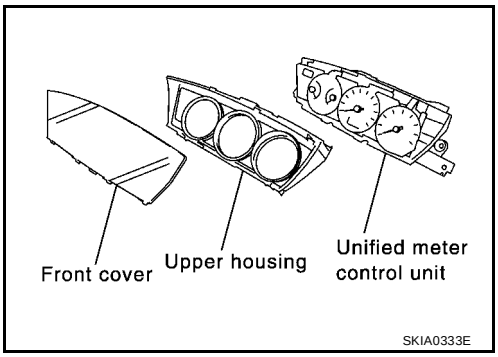
1. Remove the cluster lid A. Refer toIP-3, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove the screws (4), and pull out combination meter.
3. Disconnect connectors and remove combination meter.



Disassembly and Assembly for Combination Meter

EKS004QU

1. Disengage the tabs (8) to separate front cover.
2. Remove upper housing.



COMBINATION METERS (RHD MODELS)

PFP:24810

System Description

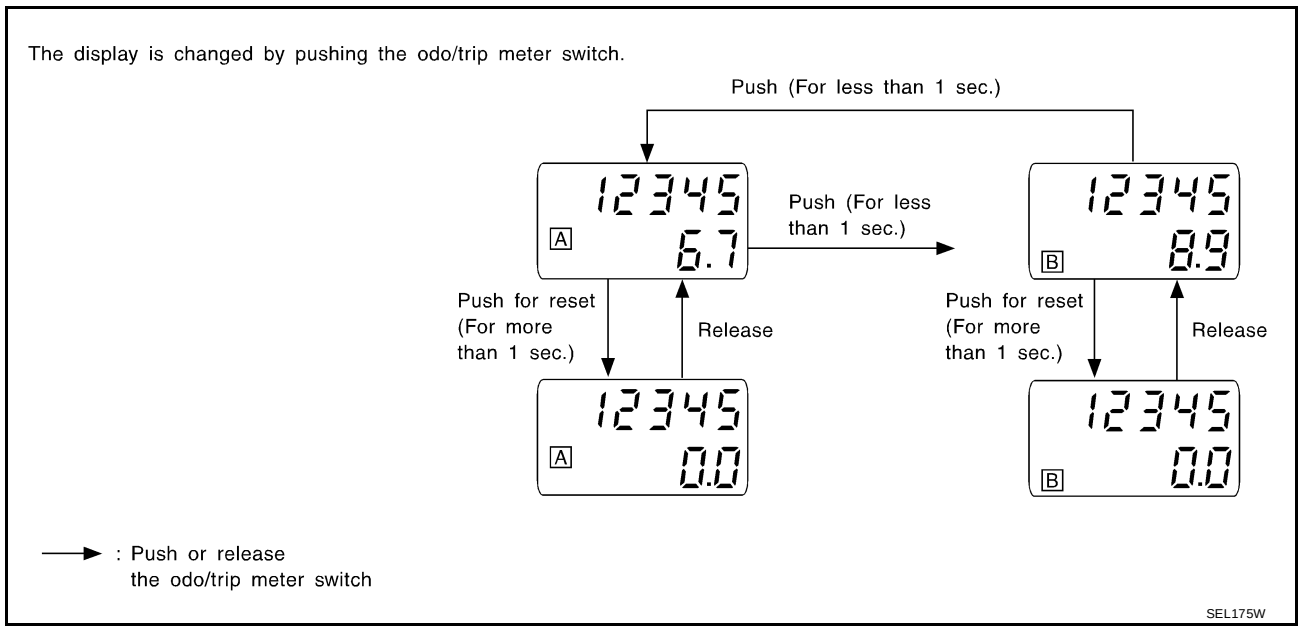
EKS004QV

UNIFIED CONTROL METER

- Speedometer, odo/trip meter, tachometer, fuel gauge and water temperature gauge are controlled totally by control unit built in combination meter.
- Signal of speedometer, odo/trip meter, tachometer and water temperature gauge are sent via CAN communication line.
- Digital meter is adopted for odo/trip meter.*
  *The record of the odometer 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, A/T indicator and ICC system display segments can be checked in self-diagnosis mode.
- Meter/gauge can be checked in self-diagnosis mode.

HOW TO CHANGE THE DISPLAY FOR ODO/TRIP METER

- The CAN communication signals (vehicle speed signal) from ESP/TCS/ABS control unit, and the memory signals from the meter memory circuit are processed by the combination meter, and the mileage is displayed.
- Operating the odometer/trip switch allows switching the mode in the following order.



- The odometer/trip display switching and trip display resetting can be identified by the time from pressing the odometer/trip switch to releasing it.
- When resetting with trip A displayed, only trip A display is reset (same as trip B).

POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- through 10A fuse [NO. 12, located in the fuse block (J/B)]
- to combination meter terminal 39.

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

- through 10A fuse [NO. 30, located in the fuse block (J/B)]
- to combination meter terminal 38.

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

- through 10A fuse [NO. 1, located in the fuse block (J/B)]
- to combination meter terminal 37.

Ground is supplied

- to combination meter terminals 11, 12 and 32
- through body grounds M16, M50 and M70.

WATER TEMPERATURE GAUGE

The water temperature gauge indicates the engine coolant temperature.
ECM provides a water temperature signal to combination meter for water temperature gauge with CAN communication line.

TACHOMETER

The tachometer indicates engine speed in revolution per minutes (rpm). ECM provides an engine speed signal to combination meter for tachometer with CAN communication line.

FUEL GAUGE

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

- to combination meter terminal 34 for the fuel level sensor
- from terminal 4 of the fuel level sensor unit
- through terminal 1 of the fuel level sensor unit and
- through combination meter terminal 33

SPEEDOMETER

ESP/TCS/ABS control unit provides a vehicle speed signal to the combination meter for the speedometer with CAN communication line.

CAN Communication

EKS004U6

SYSTEM DESCRIPTION

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

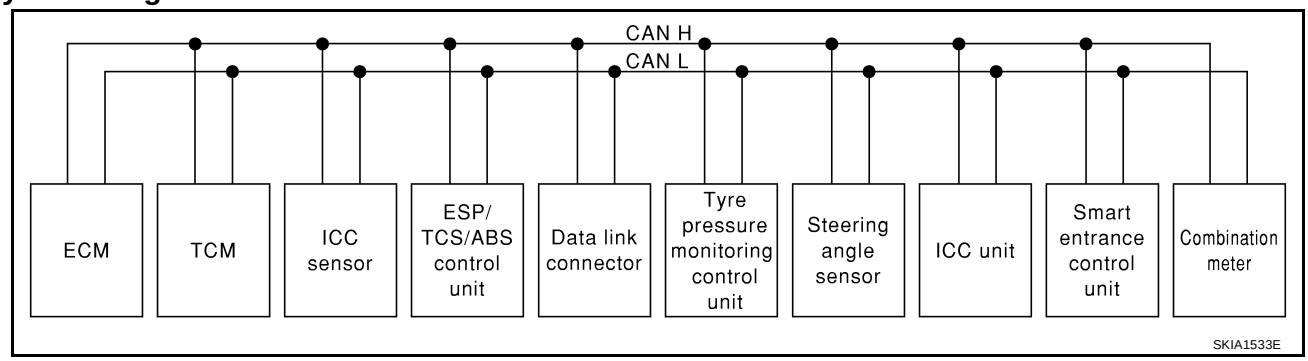
WITH TYRE PRESSURE MONITORING SYSTEM

Body type	Sedan/Wagon								
Axle	2WD								
Engine	QR20DE			QG18DE	QR20DE	QG16DE	QG18DE	QR20DE	YD22DD Ti
Transmission	CVT			A/T	6M/T	5M/T		6M/T	
Brake control	ESP		ABS		ESP	ABS			
ICC system	Applicable	Not applicable							
CAN communication unit									
ECM	×	×	×	×	×	×	×	×	×
TCM	×	×	×	×					
ICC sensor	×								
ESP/TCS/ABS control unit	×	×			×				
ABS actuator and electric unit (control unit)			×	×		×	×	×	×
Data link connector	×	×	×	×	×	×	×	×	×
Tyre pressure monitoring control unit	×	×	×	×	×	×	×	×	×
Steering angle sensor	×	×			×				
ICC unit	×								
Smart entrance control unit	×	×	×	×	×	×	×	×	×

Body type	Sedan/Wagon								
Axle	2WD								
Engine	QR20DE			QG18DE	QR20DE	QG16DE		QG18DE	QR20DE	YD22DD Ti
Transmission	CVT			A/T	6M/T	5M/T			6M/T	
Brake control	ESP		ABS		ESP	ABS				
ICC system	Applica-ble	Not applicable								
CAN communication unit										
Combination meter	×	×	×	×	×	×		×	×	×
CAN communication type	DI-36, "TYPE 13"	DI-37, "TYPE 14"	DI-38, "TYPE 15"	DI-39, "TYPE 16"	DI-40, "TYPE 17"	DI-41, "TYPE 18"				

TYPE 13

System diagram



Input/output signal chart

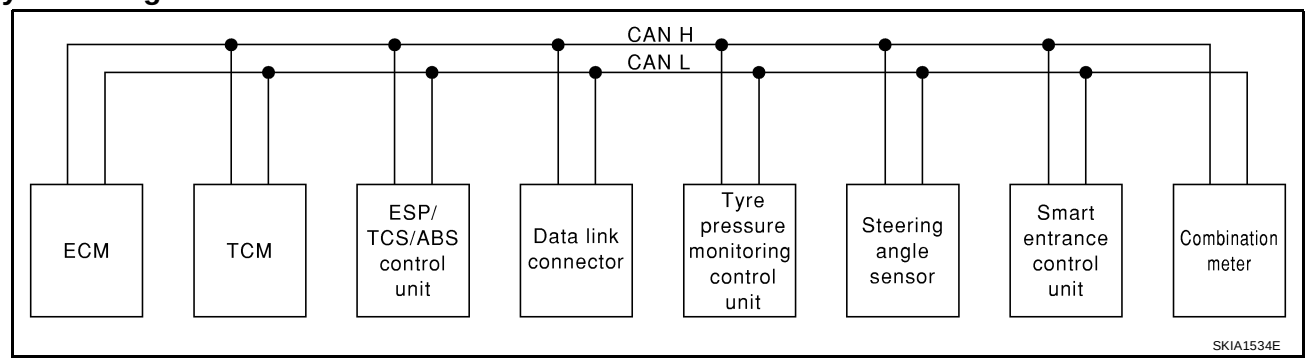
T: Transmit R: Receive

Signals	ECM	TCM	ICC sensor	ESP/ TCS / ABS control unit	Tyre pres-sure monitor-ing con-trol unit	Steer-ing angle sensor	ICC unit	Smart entranc e con-trol unit	Combi-nation meter
Engine speed signal	T	R		R			R		R
Accelerator pedal position signal	T	R		R			R		
Closed throttle position signal	T						R		
ICC steering switch signal	T						R		
Shift pattern signal		T					R		
Parking brake switch signal				T			R		
ICC system display signal							T		
ICC sensor signal			T				R		
ESP operation signal	R			T			R		
TCS operation signal	R			T			R		
ABS operation signal	R	R		T			R		
Stop lamp switch signal		R		T					
Steering wheel angle sensor signal				R		T			
Wheel speed sensor signal				T			R		
Rear window defogger signal	R							T	
Heater fan switch signal	R								T
Air conditioner switch signal	R								T

Signals	ECM	TCM	ICC sensor	ESP/ TCS / ABS control unit	Tyre pressure monitoring control unit	Steering angle sensor	ICC unit	Smart entrance control unit	Combination meter
Primary pulley revolution signal	R	T					R		
Secondary pulley revolution signal	R	T					R		
ICC operation signal	R						T		
Brake switch signal	R						T		
MI signal	T								R
Current gear position signal		T							R
Engine coolant temperature signal	T						R		R
Fuel consumption signal	T								R
Vehicle speed signal				T					R
	R								T
Seat belt reminder signal								R	T
Headlamp switch signal								T	R
Flashing indicator signal								T	R
Engine cooling fan speed signal	T							R	
Child lock indicator signal								T	R
Door switches state signal								T	R
Key ID signal	R							T	
	T							R	
A/C compressor signal	T							R	
Tire pressure signal					T				R

TYPE 14

System diagram



Input/output signal chart

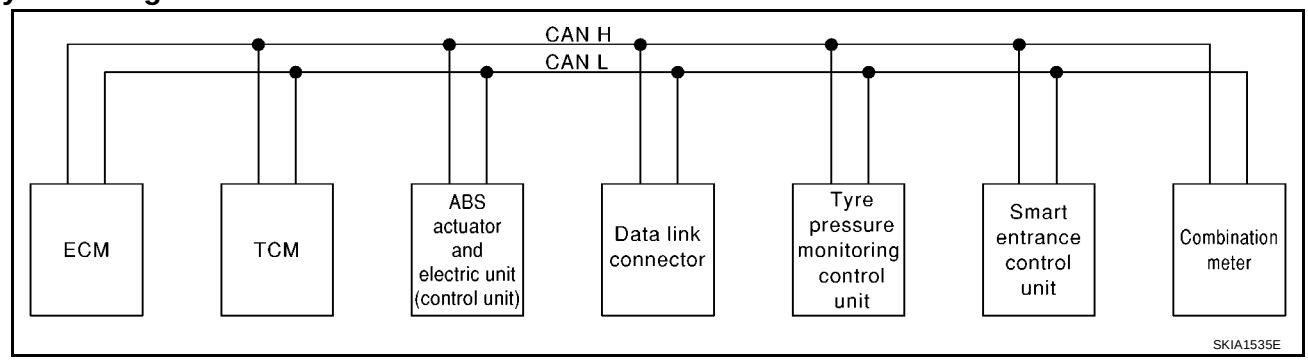
T: Transmit R: Receive

Signals	ECM	TCM	ESP/ TCS / ABS control unit	Tyre pressure monitoring control unit	Steering angle sensor	Smart entrance control unit	Combination meter
Engine speed signal	T	R	R				R
Accelerator pedal position signal	T	R	R				
ESP operation signal	R		T				
TCS operation signal	R		T				
ABS operation signal	R	R	T				

Signals	ECM	TCM	ESP/ TCS / ABS control unit	Tyre pressure monitoring control unit	Steering angle sensor	Smart entrance control unit	Combination meter
Stop lamp switch signal		R	T				
Steering wheel angle sensor signal			R		T		
Rear window defogger signal	R					T	
Heater fan switch signal	R						T
Air conditioner switch signal	R						T
Primary pulley revolution signal	R	T					
Secondary pulley revolution signal	R	T					
MI signal	T						R
Current gear position signal		T					R
Engine coolant temperature	T						R
Fuel consumption signal	T						R
Vehicle speed signal			T				R
	R						T
Seat belt reminder signal						R	T
Headlamp switch signal						T	R
Flashing indicator signal						T	R
Engine cooling fan speed signal	T					R	
Child lock indicator signal						T	R
Door switches state signal						T	R
Key ID signal	R					T	
	T					R	
A/C compressor signal	T					R	
Tire pressure signal				T			R

TYPE 15

System diagram



Input/output signal chart

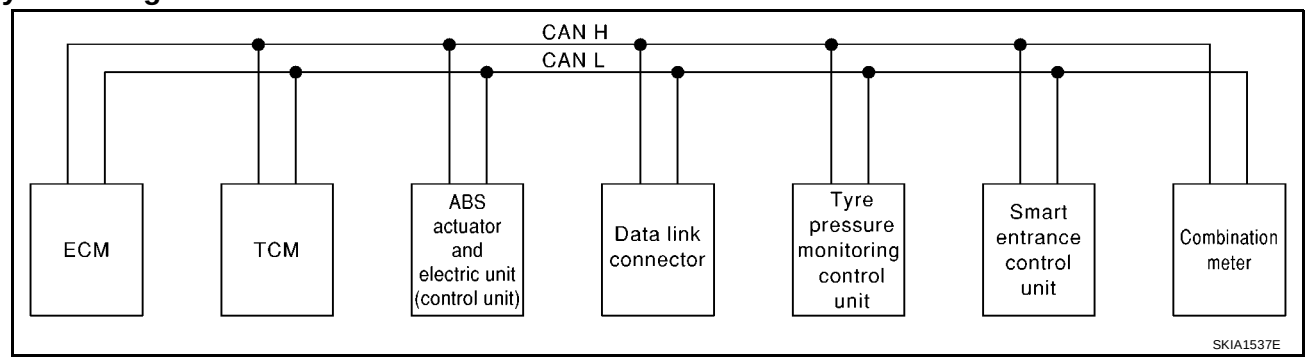
T: Transmit R: Receive

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Tyre pressure monitoring control unit	Smart entrance control unit	Combination meter
Engine speed signal	T	R				R
Stop lamp switch signal		R	T			
Rear window defogger signal	R				T	

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Tyre pressure monitoring control unit	Smart entrance control unit	Combination meter
Heater fan switch signal	R					T
Air conditioner switch signal	R					T
Primary pulley revolution signal	R	T				
Secondary pulley revolution signal	R	T				
MI signal	T					R
Current gear position signal		T				R
Engine coolant temperature signal	T					R
Fuel consumption signal	T					R
Vehicle speed signal			T			R
	R					T
Seat belt reminder signal					R	T
Headlamp switch signal					T	R
Flashing indicator signal					T	R
Engine cooling fan speed signal	T				R	
Child lock indicator signal					T	R
Door switches state signal					T	R
Key ID signal	R				T	
	T				R	
A/C compressor signal	T				R	
Tire pressure signal				T		R

TYPE 16

System diagram



Input/output signal chart

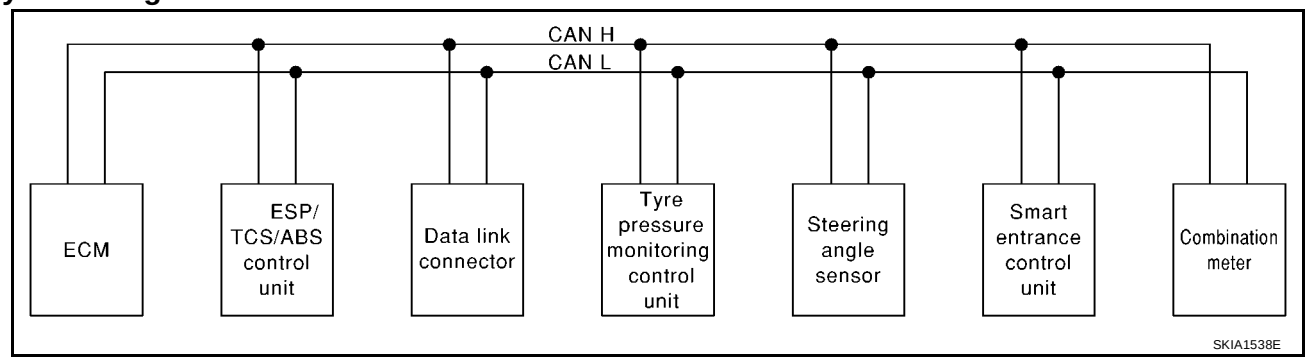
T: Transmit R: Receive

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Tyre pressure monitoring control unit	Smart entrance control unit	Combination meter
Engine speed signal	T	R				R
Stop lamp switch signal		R	T			
Rear window defogger signal	R				T	
Heater fan switch signal	R					T
Air conditioner switch signal	R					T

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Tyre pressure monitoring control unit	Smart entrance control unit	Combination meter
MI signal	T					R
Current gear position signal		T				R
Engine coolant temperature signal	T					R
Fuel consumption signal	T					R
Vehicle speed signal			T			R
	R					T
Seat belt reminder signal					R	T
Headlamp switch signal					T	R
Flashing indicator signal					T	R
Engine cooling fan speed signal	T				R	
Child lock indicator signal					T	R
Door switches state signal					T	R
Key ID signal	R				T	
	T				R	
A/C compressor signal	T				R	
Tire pressure signal				T		R

TYPE 17

System diagram



Input/output signal chart

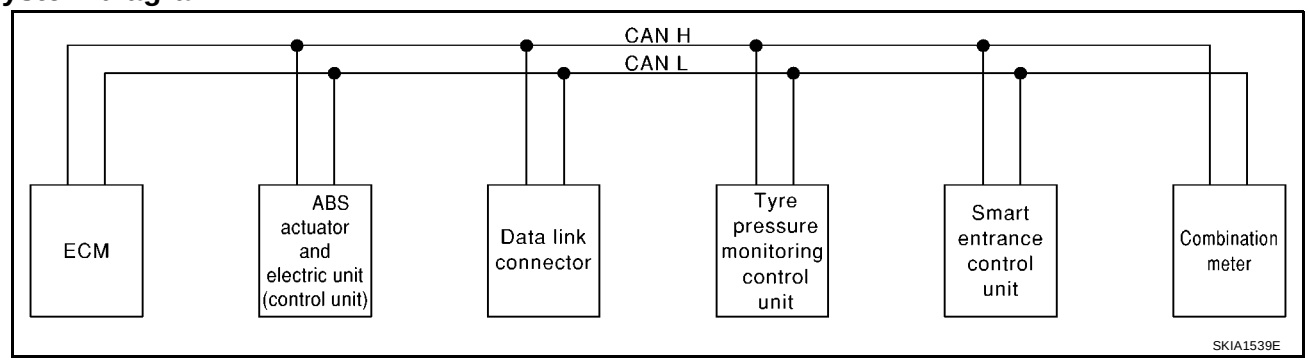
T: Transmit R: Receive

Signals	ECM	ESP/ TCS / ABS control unit	Tyre pressure monitoring control unit	Steering angle sensor	Smart entrance control unit	Combination meter
Engine speed signal	T	R				R
Accelerator pedal position signal	T	R				
ESP operation signal	R	T				
TCS operation signal	R	T				
ABS operation signal	R	T				
Steering wheel angle sensor signal		R		T		
Rear window defogger signal	R				T	
Heater fan switch signal	R					T
Air conditioner switch signal	R					T
MI signal	T					R

Signals	ECM	ESP/ TCS / ABS control unit	Tyre pressure monitoring control unit	Steering angle sensor	Smart entrance control unit	Combination meter
Engine coolant temperature signal	T					R
Fuel consumption signal	T					R
Vehicle speed signal		T				R
	R					T
Seat belt reminder signal					R	T
Headlamp switch signal					T	R
Flashing indicator signal					T	R
Engine cooling fan speed signal	T				R	
Child lock indicator signal					T	R
Door switches state signal					T	R
Key ID signal	R				T	
	T				R	
A/C compressor signal	T				R	
Tire pressure signal			T			R

TYPE 18

System diagram



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	ABS actuator and electric unit (control unit)	Tyre pressure monitoring control unit	Smart entrance control unit	Combination meter
Engine speed signal	T				R
Rear window defogger signal	R*1			T	
Heater fan switch signal	R*1				T
Air conditioner switch signal	R				T
MI signal	T				R
Glow lamp signal*2	T				R
Engine coolant temperature signal	T				R
Fuel consumption signal	T				R
Vehicle speed signal		T			R
	R				T
Seat belt reminder signal				R	T
Headlamp switch signal				T	R

Signals	ECM	ABS actuator and electric unit (control unit)	Tyre pressure monitoring control unit	Smart entrance control unit	Combination meter
Flashing indicator signal				T	R
Engine cooling fan speed signal	T			R	
Child lock indicator signal				T	R
Door switches state signal				T	R
Key ID signal	R			T	
	T			R	
A/C compressor signal	T			R	
Tire pressure signal			T		R

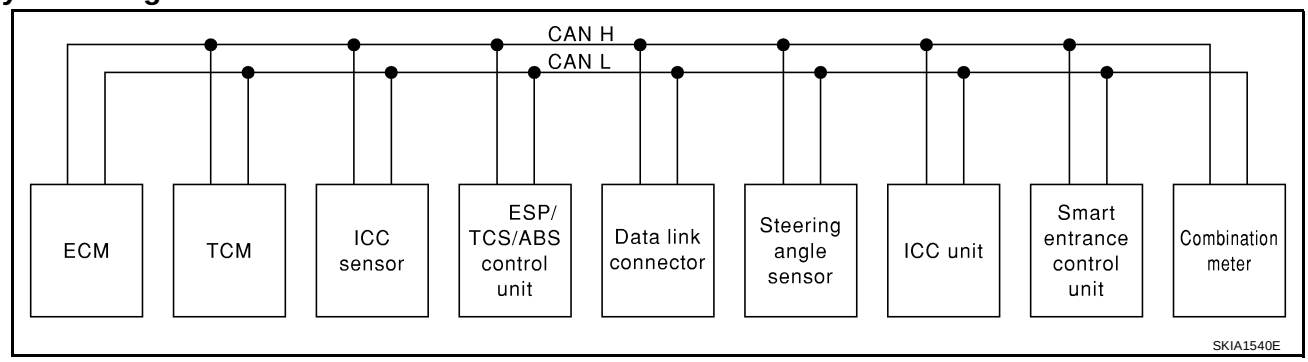
*1: Except YD22DDTi engine model
*2: YD22DDTi engine model only

WITHOUT TYRE PRESSURE MONITORING SYSTEM

Body type	Sedan/Wagon								
Axle	2WD								
Engine	QR20DE			QG18DE	QR20DE	QG16DE	QG18DE	QR20DE	YD22DDTi
Transmission	CVT			A/T	6M/T	5M/T		6M/T	
Brake control	ESP		ABS		ESP	ABS			
ICC system	Applicable	Not applicable							
CAN communication unit									
ECM	×	×	×	×	×	×	×	×	×
TCM	×	×	×	×					
ICC sensor	×								
ESP/TCS/ABS control unit	×	×			×				
ABS actuator and electric unit (control unit)			×	×		×	×	×	×
Data link connector	×	×	×	×	×	×	×	×	×
Steering angle sensor	×	×			×				
ICC unit	×								
Smart entrance control unit	×	×	×	×	×	×	×	×	×
Combination meter	×	×	×	×	×	×	×	×	×
Can communication type	DI-43, "TYPE 19"	DI-44, "TYPE 20"	DI-45, "TYPE 21"	DI-46, "TYPE 22"	DI-47, "TYPE 23"	DI-48, "TYPE 24"			
Can system Trouble Diagnosis	LAN-380, "CAN SYSTEM (TYPE 19)"	LAN-405, "CAN SYSTEM (TYPE 20)"	LAN-423, "CAN SYSTEM (TYPE 21)"	LAN-439, "CAN SYSTEM (TYPE 22)"	LAN-455, "CAN SYSTEM (TYPE 23)"	LAN-470, "CAN SYSTEM (TYPE 24)"			

TYPE 19

System diagram



Input/output signal chart

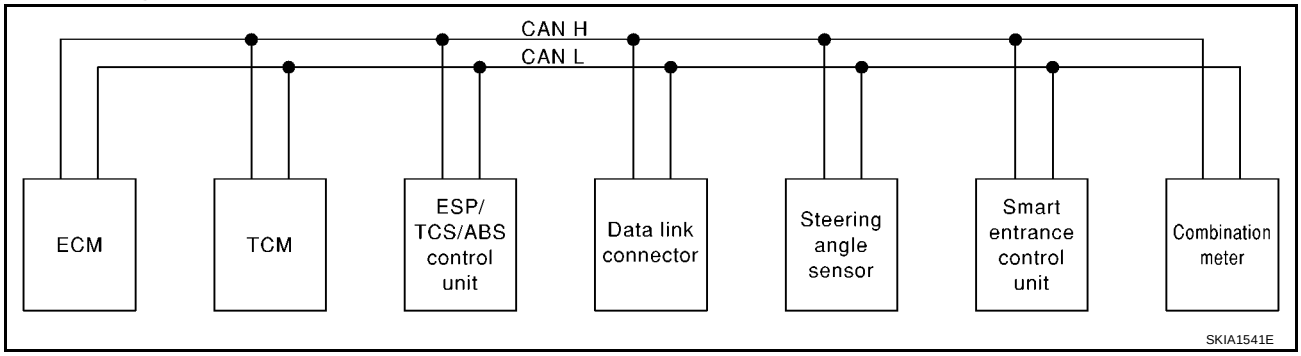
T: Transmit R: Receive

Signals	ECM	TCM	ICC sensor	ESP/ TCS / ABS control unit	Steering angle sensor	ICC unit	Smart entrance control unit	Combination meter
Engine speed signal	T	R		R		R		R
Accelerator pedal position signal	T	R		R		R		
Closed throttle position signal	T					R		
ICC steering switch signal	T					R		
Shift pattern signal		T				R		
Parking brake switch signal				T		R		
ICC system display signal						T		R
ICC sensor signal			T			R		
ESP operation signal	R			T		R		
TCS operation signal	R			T		R		
ABS operation signal	R	R		T		R		
Stop lamp switch signal		R		T				
Steering wheel angle sensor signal				R	T			
Wheel speed sensor signal				T		R		
Rear window defogger signal	R						T	
Heater fan switch signal	R							T
Air conditioner switch signal	R							T
Primary pulley revolution signal	R	T				R		
Secondary pulley revolution signal	R	T				R		
ICC operation signal	R					T		
Brake switch signal	R					T		
MI signal	T							R
Current gear position signal		T						R
Engine coolant temperature signal	T					R		R
Fuel consumption signal	T							R
Vehicle speed signal				T				R
	R							T
Seat belt reminder signal							R	T
Headlamp switch signal							T	R
Flashing indicator signal							T	R

Signals	ECM	TCM	ICC sensor	ESP/ TCS / ABS control unit	Steering angle sensor	ICC unit	Smart entrance control unit	Combination meter
Engine cooling fan speed signal	T						R	
Child lock indicator signal							T	R
Door switches state signal							T	R
Key ID signal	R						T	
	T						R	
A/C compressor signal	T						R	

TYPE 20

System diagram



Input/output signal chart

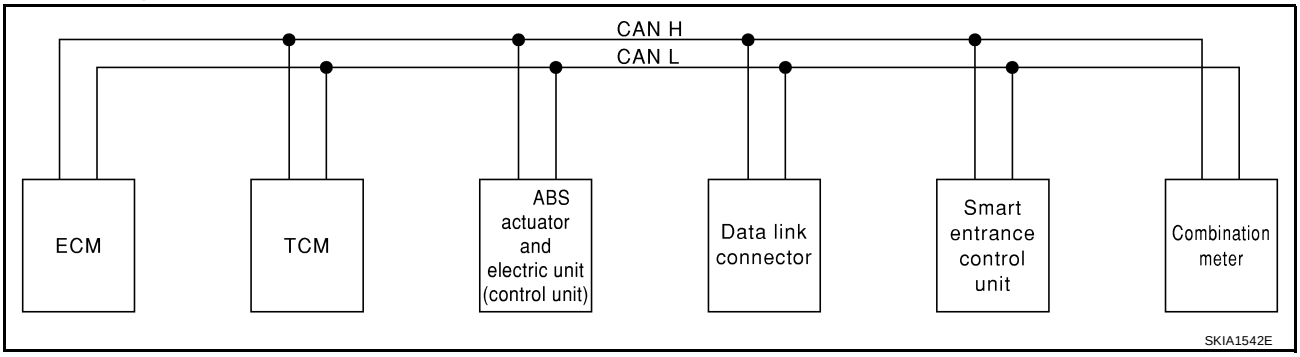
T: Transmit R: Receive

Signals	ECM	TCM	ESP/TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Combination meter
Engine speed signal	T	R	R			R
Accelerator pedal position signal	T	R	R			
ESP operation signal	R		T			
TCS operation signal	R		T			
ABS operation signal	R	R	T			
Stop lamp switch signal		R	T			
Steering wheel angle sensor signal			R	T		
Rear window defogger signal	R				T	
Heater fan switch signal	R					T
Air conditioner switch signal	R					T
Primary pulley revolution signal	R	T				
Secondary pulley revolution signal	R	T				
MI signal	T					R
Current gear position signal		T				R
Engine coolant temperature signal	T					R
Fuel consumption signal	T					R
Vehicle speed signal			T			R
	R					T
Seat belt reminder signal					R	T
Headlamp switch signal					T	R

Signals	ECM	TCM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Combination meter
Flashing indicator signal					T	R
Engine cooling fan speed signal	T				R	
Child lock indicator signal					T	R
Door switches state signal					T	R
Key ID signal	R				T	
	T				R	
A/C compressor signal	T				R	

TYPE 21

System diagram



Input/output signal chart

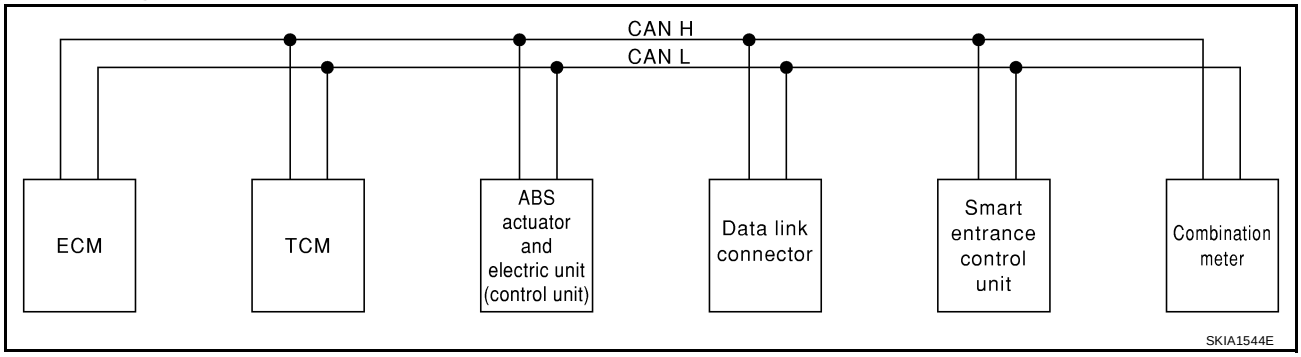
T: Transmit R: Receive

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Engine speed signal	T	R			R
Stop lamp switch signal		R	T		
Rear window defogger signal	R			T	
Heater fan switch signal	R				T
Air conditioner switch signal	R				T
Primary pulley revolution signal	R	T			
Secondary pulley revolution signal	R	T			
MI signal	T				R
Current gear position signal		T			R
Engine coolant temperature signal	T				R
Fuel consumption signal	T				R
Vehicle speed signal			T		R
	R				T
Seat belt reminder signal				R	T
Headlamp switch signal				T	R
Flashing indicator signal				T	R
Engine cooling fan speed signal	T			R	
Child lock indicator signal				T	R
Door switches state signal				T	R

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Key ID signal	R			T	
	T			R	
A/C compressor signal	T			R	

TYPE 22

System diagram



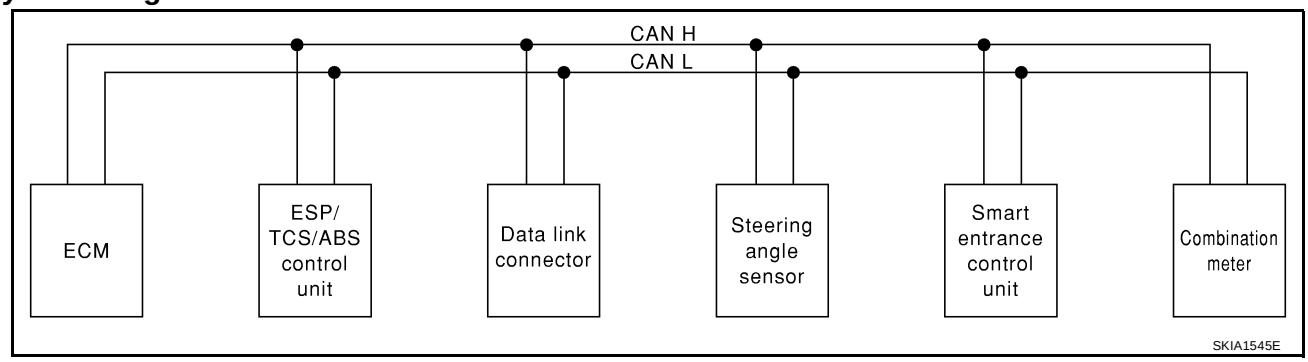
Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Engine speed signal	T	R			R
Stop lamp switch signal		R	T		
Rear window defogger signal	R			T	
Heater fan switch signal	R				T
Air conditioner switch signal	R				T
MI signal	T				R
Current gear position signal		T			R
Engine coolant temperature signal	T				R
Fuel consumption signal	T				R
Vehicle speed signal			T		R
	R				T
Seat belt reminder signal				R	T
Headlamp switch signal				T	R
Flashing indicator signal				T	R
Engine cooling fan speed signal	T			R	
Child lock indicator signal				T	R
Door switches state signal				T	R
Key ID signal	R			T	
	T			R	
A/C compressor signal	T			R	

TYPE 23

System diagram



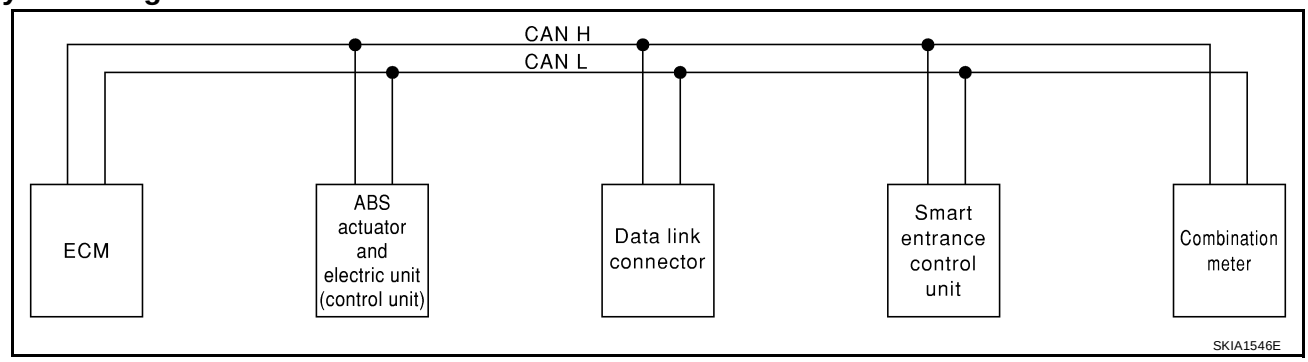
Input/output signal chart

T: Transmit R: Receive

Signals	ECM	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Combina-tion meter
Engine speed signal	T	R			R
Accelerator pedal position signal	T	R			
ESP operation signal	R	T			
TCS operation signal	R	T			
ABS operation signal	R	T			
Steering wheel angle sensor signal		R	T		
Rear window defogger signal	R			T	
Heater fan switch signal	R				T
Air conditioner switch signal	R				T
MI signal	T				R
Engine coolant temperature signal	T				R
Fuel consumption signal	T				R
Vehicle speed signal		T			R
	R				T
Seat belt reminder signal				R	T
Headlamp switch signal				T	R
Flashing indicator signal				T	R
Engine cooling fan speed signal	T			R	
Child lock indicator signal				T	R
Door switches state signal				T	R
Key ID signal	R			T	
	T			R	
A/C compressor signal	T			R	

TYPE 24

System diagram



Input/output signal chart

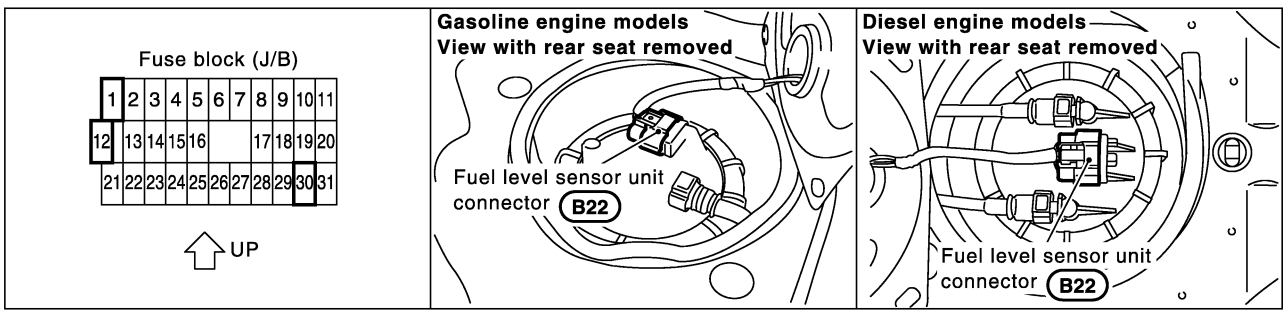
T: Transmit R: Receive

Signals	ECM	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter
Engine speed signal	T			R
Rear window defogger signal	R*1		T	
Heater fan switch signal	R*1			T
Air conditioner switch signal	R			T
MI signal	T			R
Glow lamp signal*2	T			R
Engine coolant temperature signal	T			R
Fuel consumption signal	T			R
Vehicle speed signal		T		R
	R			T
Seat belt reminder signal			R	T
Headlamp switch signal			T	R
Flashing indicator signal			T	R
Engine cooling fan speed signal	T		R	
Child lock indicator signal			T	R
Door switches state signal			T	R
Key ID signal	R		T	
	T		R	
A/C compressor signal	T		R	

*1: Except YD22DDTi engine model
*2: YD22DDTi engine model only

Component Parts and Harness Connector Location

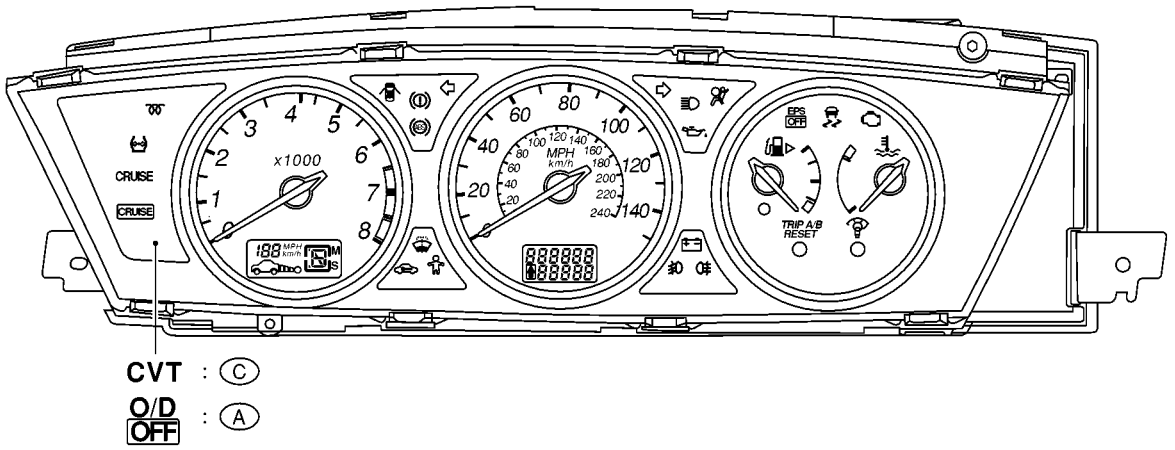
EKS003VW



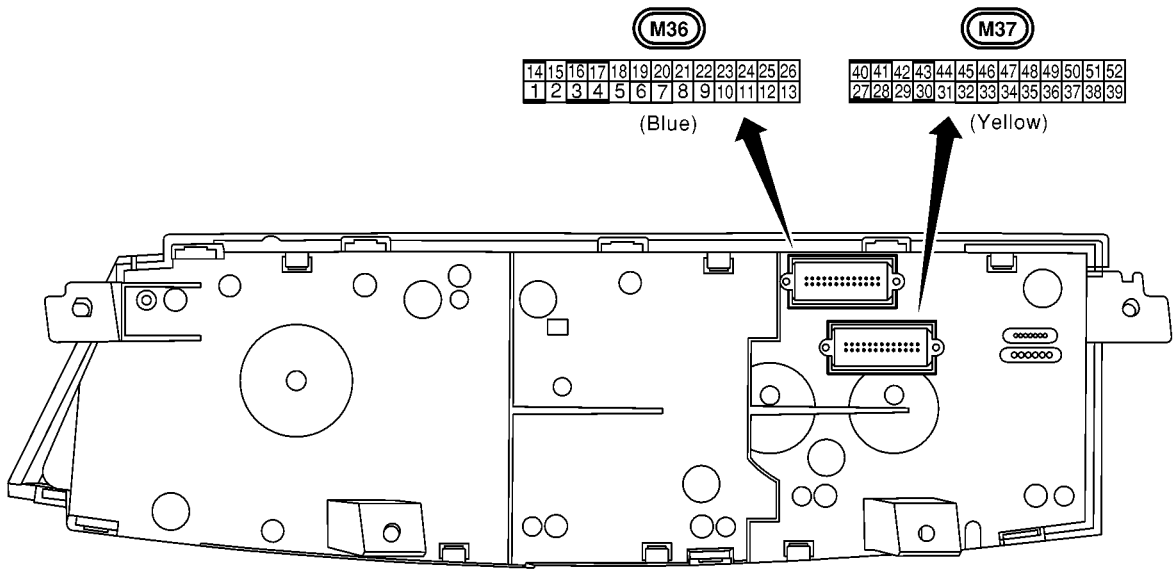
Combination Meter

EKS004QW

CHECK



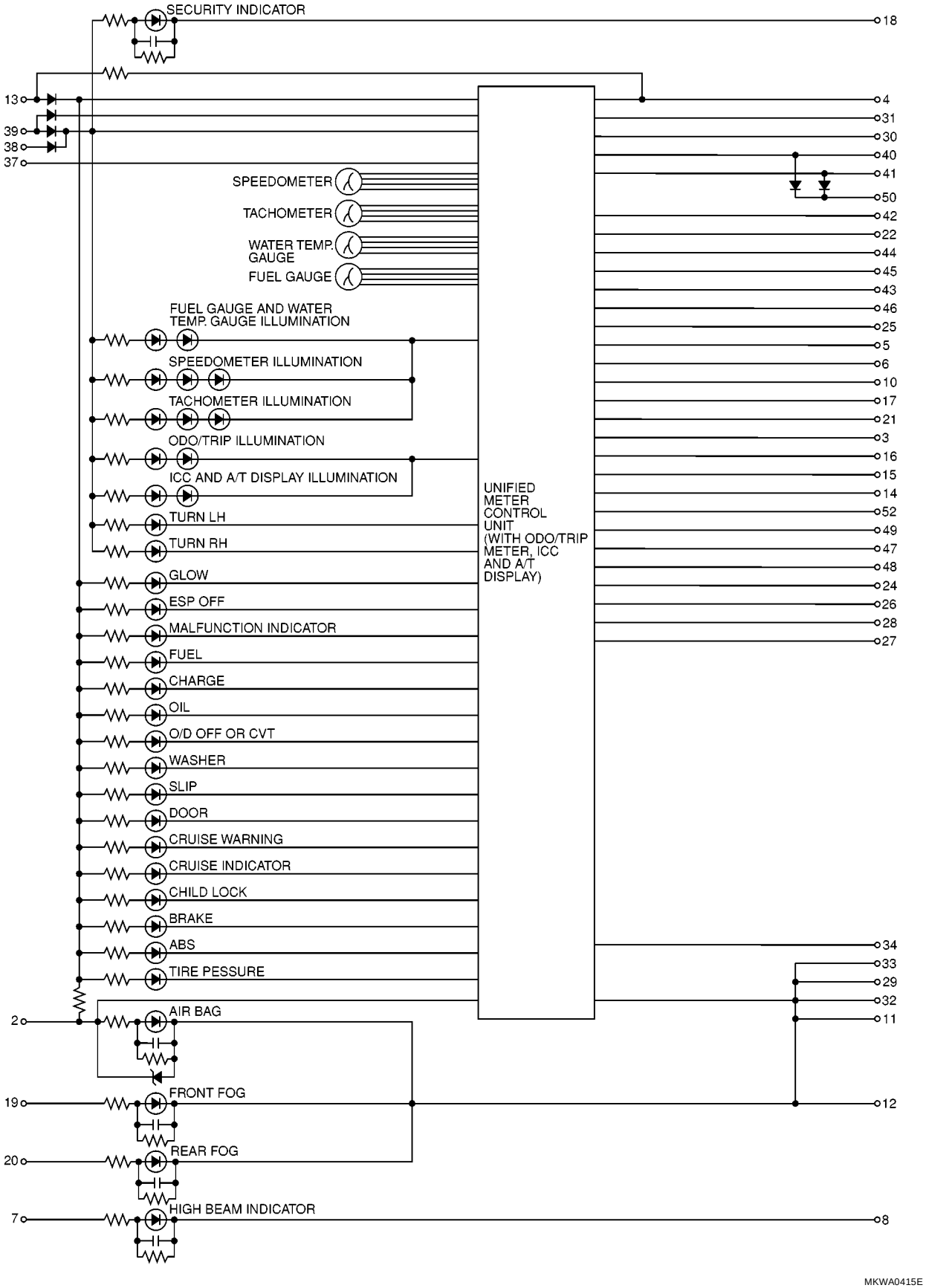
A : With A/T
C : With CVT



MKWA0173E

Schematic

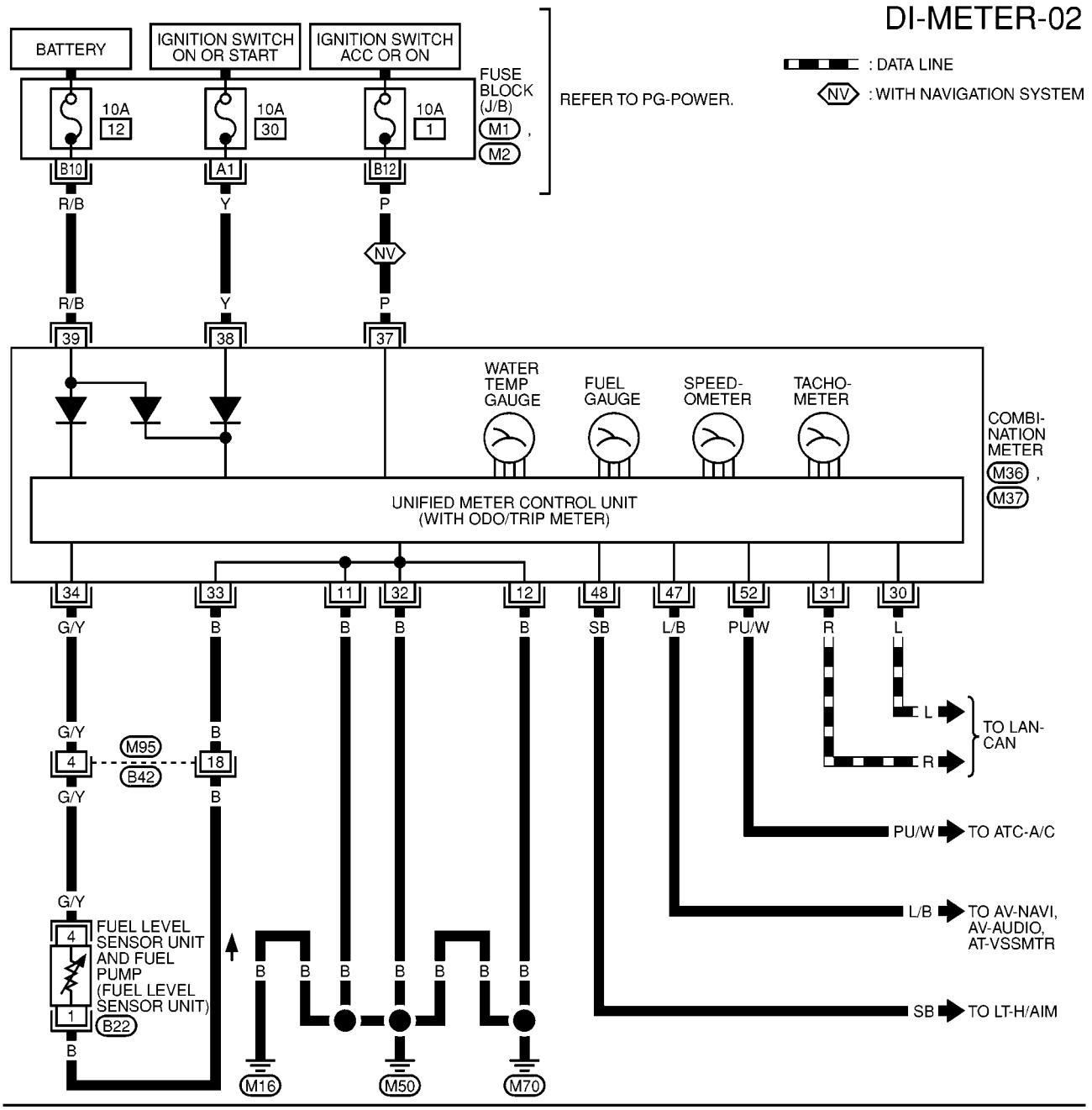
EKS003VY



MKWA0415E

Wiring Diagram — METER —

EKS004QX



MKWA0176E

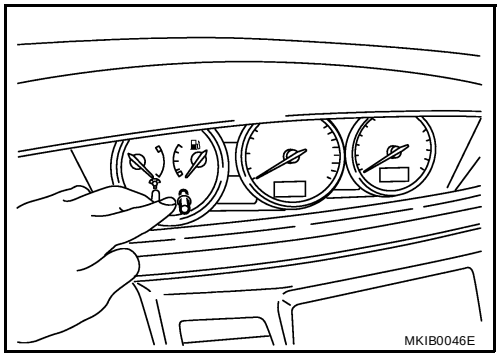
Combination Meter Self-Diagnosis

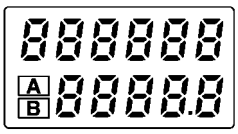
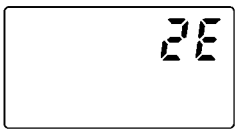
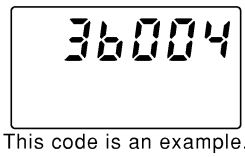
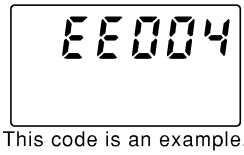
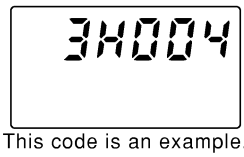
EKS004QY

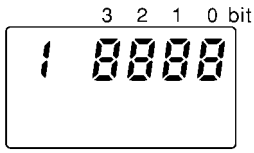
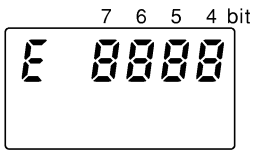
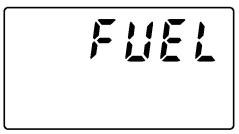
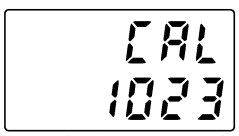
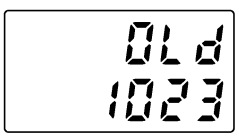
PERFORMING SELF-DIAGNOSIS MODE

1. Turn the ignition switch to the “LOCK” position.
2. Press both reset buttons on the combination meter and keep them depressed.
3. Turn the ignition switch to the “ON” position, while keeping the reset buttons pressed.
4. Release both reset buttons then self-diagnosis will start. The sequence (A to L) is activated by press the either reset buttons.

   NOTE:
   If either reset button is not pressed for 20 seconds at each step or if the ignition switch is turned OFF, the self-diagnosis mode is exited.



	Check items	Display	Remarks
A)	Odometer segment test	 MKIB0001E	All odo/trip meter, A/T indicator and ICC system display segments are ON.
B)	Work instruction code	 This code is an example. MKIB0002E	This information is not used for service. Skip this step.
C)	Software code	 This code is an example. MKIB0003E	This information is not used for service. Skip this step.
D)	EEPROM code	 This code is an example. MKIB0004E	This information is not used for service. Skip this step.
E)	Hardware code	 This code is an example. MKIB0005E	This information is not used for service. Skip this step.

	Check items	Display	Remarks
F)	PCB code	 This code is an example. MKIB0006E	This information is not used for service. Skip this step.
G)	Meter/gauge test (Sweeping movement)	 Flashing MKIB0007E	Tachometer, speedometer, fuel level gauge and water temperature gauge have sweeping movement test. (The meter/gauges operate MIN. → MAX., MAX. → MIN. for 2 times) The odo/trip meter segment flashes during the sweep movement.
H)	Error 1 (Bit 0 - Bit 3)	 This value is an example. MKIB0008E	The segment of each bit displays “0”, meaning no malfunction. If the bit(s) displays figures other than “0”, the item of the bit has malfunctioned. For details, refer to “Malfunction chart for Error 1 and Error E” below.
I)	Error E (Bit 4 - Bit 7)	 This value is an example. MKIB0009E	
J)	Fuel warning lamp test	 Flashing MKIB0010E	Fuel warning lamp is on and odo/trip meter segment “FUEL” flashes.
K)	Fuel gauge calibration (CAL)	 This value is an example. MKIB0011E	This information is not used for service. Skip this step.
L)	Fuel gauge calibration (OLD)	 This value is an example. MKIB0012E	This information is not used for service. Skip this step.

Malfunction Chart for “Error 1” and “Error E”

Bit	Detectable items	Description of the malfunction		Displayed figure on the bit	
				malfunction	No malfunction
0	Speedometer input signal	No input signal When no signal is detected for 5 minutes continuously with the ignition ON, it should be judged as signal malfunction. (If input signal is detected later, then the judgement will be canceled immediately.)		1	0
		Unusual input signal When any signal of frequency which would not exist in normal conditions is detected, it should be judged as signal malfunction.		2	
1	Tachometer input signal	No input signal When no signal is detected for 5 minutes continuously with the ignition ON, it should be judged as signal malfunction. (If input signal is detected later, then the judgement will be canceled immediately.)		1	0
		Unusual input signal When any signal of frequency which would not exist in normal conditions is detected, it should be judged as signal malfunction.		2	
2	Fuel level input signal	Short circuit When short circuit of the signal line is detected for 5 seconds or more, it should be judged as short-circuit malfunction.		1	0
		Open circuit When open circuit of the signal line is detected for 5 seconds or more, it should be judged as open-circuit malfunction.		2	
3	Water temperature input signal	Short circuit When short circuit of the signal line is detected for 5 seconds or more, it should be judged as short-circuit malfunction.		1	0
		Open circuit When open circuit of the signal line is detected for 5 seconds or more, it should be judged as open-circuit malfunction.		2	
4	Reset buttons	Short circuit for reset buttons When the short circuit is continuously detected for 5 minutes or more, it should be judged as short-circuit malfunction.	Right side reset button has malfunctioned.	1	0
			Left side reset button has malfunctioned.	2	
			Both reset buttons have malfunctioned.	3	
5	CPU	CPU RAM malfunction		1	0
6	—	—		0	0

Combination Meter Calibration

After replacing a combination meter, it might be necessary to calibrate the fuel gauge/low fuel warning lamp. In case the fuel warning lamp is flashing after replacing the combination meter perform the following:

1. Press both reset buttons.
2. Turn the ignition ON **and keep the reset buttons depressed for at least 5 seconds.**
3. Release both reset buttons.
   The low fuel warning lamp will stop flashing and the combination meter will shown CALL and possibly CALL FAIL. Showing CALL FAIL does not indicate a concern as this might be related to the current (unexpected) amount of fuel in the tank.

Trouble Diagnoses

EKS004QZ

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 check. Refer to DI-57, "Power Supply and Ground Circuit Check" .

2. CHECK SELF-DIAGNOSIS MODE OPERATION

Perform self-diagnosis mode. Refer to DI-52, "Combination Meter Self-Diagnosis" .

Can self-diagnosis mode be activated?

YES >> GO TO 3.
NO >> Replace unified meter control unit. Refer to DI-61, "Removal and Installation for Combination Meter" .

3. CHECK METER/GAUGE OPERATION

Check meter/gauge operation in self-diagnosis mode (Meter/gauge test). Refer to DI-52, "Combination Meter Self-Diagnosis" .

Is any malfunction indicated in self-diagnosis mode?

YES >> GO TO “Symptom Chart 1”. Refer to DI-52, "Combination Meter Self-Diagnosis" .
NO >> GO TO 4.

4. CHECK SEGMENTS

Check all odo/trip meter segments in self-diagnosis mode (Odo/trip meter segment test). Refer to DI-52, "Combination Meter Self-Diagnosis" .

Is any malfunction indicated in self-diagnosis mode?

YES >> GO TO “Symptom Chart 1” DI-56, "Symptom Chart 1" .
NO >> GO TO 5.

5. CHECK FUEL WARNING LAMP

Check fuel warning lamp in self-diagnosis mode (Fuel warning lamp test). Refer to DI-52, "Combination Meter Self-Diagnosis" .

Do fuel warning lamp illuminate?

YES >> GO TO “Symptom Chart 1” DI-56, "Symptom Chart 1" .
NO >> GO TO 6.

6. CHECK INPUT SIGNALS

Check input signals from each sensors in self-diagnosis mode (Error 1 and Error E). Refer to DI-52, "Combination Meter Self-Diagnosis" .

OK or NG?

OK >> GO TO 7.
NG >> GO TO “Symptom Chart 2” DI-56, "Symptom Chart 2" .

7. CHECK OTHER MALFUNCTION

Check each malfunction according to the instruction of the “SYMPTOM CHART 3” DI-56, "Symptom Chart 3" .

OK >> Combination meter is OK.
NG >> Check the case of malfunction.

SYMPTOM CHART

Symptom Chart 1

Symptom	Possible causes	Repair order
Odo/trip meter indicates malfunction in Diagnosis mode.	Unified meter control unit	Replace unified meter control unit. Refer to DI-61, "Removal and Installation for Combination Meter" .
Multiple meter/gauge indicate malfunction in Diagnosis mode.		
One of speedometer/tachometer/fuel gauge/water temp. gauge indicates malfunction in Diagnosis mode.		

Symptom Chart 2

Symptom	Possible causes	Repair order
Speedometer input signal indicates malfunction in Diagnosis mode.	Speedometer input signal	Check signal for speedometer. Refer to DI-57, "Inspection/Vehicle Speed Signal" .
Tachometer input signal indicates malfunction in Diagnosis mode.	Tachometer input signal	Check signal for tachometer. Refer to DI-58, "Inspection/Engine Speed Signal" .
Fuel level input signal indicates malfunction in Diagnosis mode.	Fuel level input signal	Check signal for tachometer. Refer to DI-58, "Inspection/Fuel Level Sensor Unit" .
Water temperature input signal Indicates malfunction in Diagnosis mode.	Water temp. gauge input signal	Check signal for water temp. gauge. Refer to DI-59, "Inspection/Water Temperature Gauge" .
Reset buttons indicate malfunction in Diagnosis mode.	Unified meter control unit	Replace unified meter control unit assembly. Refer to DI-61, "Removal and Installation for Combination Meter" .
CPU indicates malfunction in Diagnosis mode.	Unified meter control unit	Replace unified meter control unit assembly. Refer to DI-61, "Removal and Installation for Combination Meter" .

Symptom Chart 3

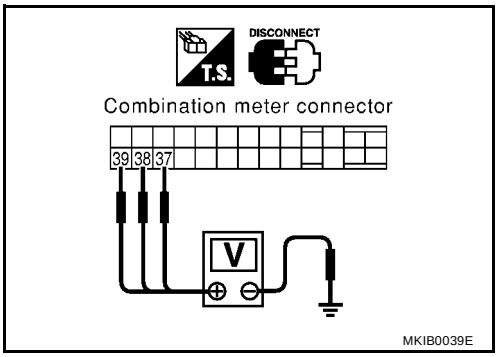
Symptom	Possible causes	Repair order
Fuel gauge pointer fluctuates, Indicator wrong value or varies.	-	Check the case of malfunction. Refer to DI-59, "The Fuel Gauge Pointer Fluctuates Indicator Wrong Value or Varies." .
Fuel gauge does not move to “F” position.	-	Check the case of malfunction. Refer to DI-59, "The Fuel Gauge Does Not Move to F-position." .
Fuel gauge does not work.	-	Check the case of malfunction. Refer to DI-60, "The Fuel Gauge Does Not Work." .

Power Supply and Ground Circuit Check

EKS004R0

1. POWER SUPPLY CIRCUIT CHECK

1. Disconnect combination meter connector.
2. Check voltage between combination meter harness connector and ground in the following conditions.



Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (wire color)				
M37	37 (P)*	Ground	0V	Battery voltage	Battery voltage
M37	38 (Y)	Ground	0V	0V	Battery voltage
M46	39 (R/B)	Ground	Battery voltage	Battery voltage	Battery voltage

*: With Navigation system

OK or NG?

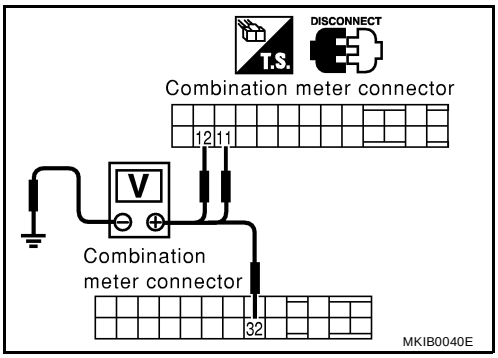
OK >> GO TO 2.

NG >>
- 10A fuse [No. 1, located in fuse block (J/B)].
- 10A fuse [No. 30, located in fuse block (J/B)].
- 10A fuse [No. 12, located in fuse block (J/B)].
- Harness for open or short between fuse and combination meter.

2. GROUND CIRCUIT CHECK

Check continuity between combination meter and ground in the following conditions.

Terminals			Continuity
(+)		(–)	
Connector	Terminal		
M36	12	Ground	Yes
M37	32	Ground	Yes
M36	11	Ground	Yes



OK or NG?

OK >> INSPECTION END.

NG >> Harness for open ground circuit.

Inspection/Vehicle Speed Signal

EKS004T4

1. ESP/TCS/ABS CONTROL UNIT SYSTEM INSPECTION

Perform ESP/TCS/ABS control unit self-diagnosis. Refer to BRC-76, "Functions of CONSULT-II" .

OK or NG?

OK >> Recheck “PRELIMINALY CHECK”.

NG >> Check ESP/TCS/ABS control system.

Inspection/Engine Speed Signal

EKS004R1

1. ECM SYSTEM INSPECTION

Perform ECM self-diagnosis. Refer to EC-121, "CONSULT-II Function" .

OK or NG?

OK >> Recheck “PRELIMINALY CHECK”.
NG >> Check engine control system.

Inspection/Fuel Level Sensor Unit

EKS004R2

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. 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.

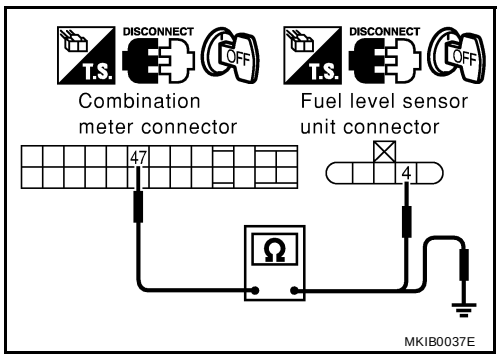
OK or NG?

OK >> GO TO 2.
NG >> Repair or replace terminals or connectors.

2. CHECK FUEL LEVEL SENSOR INPUT SIGNAL CIRCUIT

1. Turn ignition switch “OFF”.
2. Disconnect fuel level sensor unit harness connector and combination meter harness connector.
3. Check the following.

– Harness continuity between fuel level sensor unit harness connector B22 terminal 4 (G/Y) and combination meter harness connector M37 terminal 34 (G/Y).
– Harness continuity between combination meter harness connector M37 terminal 34 (G/Y) and ground.



Terminals				Continuity
(+)		(–)		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M37	34 (G/Y)	B22	4 (G/Y)	Yes
M37	34 (G/Y)	Ground		No

OK or NG?

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

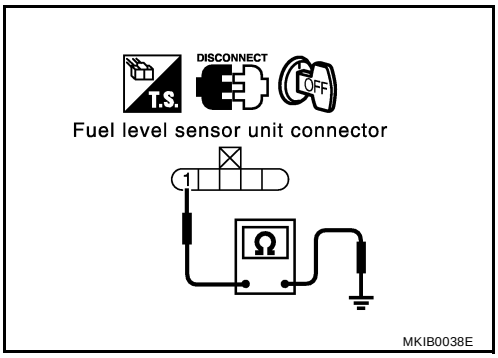
3. CHECK FUEL LEVEL SENSOR GROUND CIRCUIT

Check harness continuity between fuel level sensor unit connector B22 terminal 1 (B) and ground.

Continuity should exist.

OK or NG?

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



4. FUEL LEVEL SENSOR UNIT INSPECTION

Refer to DI-58, "Inspection/Fuel Level Sensor Unit" .

OK or NG?

OK >> GO TO 5.
NG >> Replace fuel level sensor unit.

5. 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 properly.

Inspection/Water Temperature Gauge

EKS004R3

1. ECM SYSTEM INSPECTION

Perform ECM self-diagnosis. Refer to EC-121, "CONSULT-II Function" (QG engine with EURO-OBD), EC-633, "CONSULT-II Function" (QG engine without EURO-OBD), EC-1050, "CONSULT-II Function" (QR engine with EURO-OBD), EC-1467, "CONSULT-II Function" (QR engine without EURO-OBD) or EC-1760, "CONSULT-II Function" (YD engine).

OK or NG?

OK >> Recheck “PRELIMINALY CHECK”.
NG >> Check engine control system.

The Fuel Gauge Pointer Fluctuates Indicator Wrong Value or Varies.

EKS003W8

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 F-position.

EKS004R4

1. QUESTIONNAIRE 1

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

YES or NO?

YES >> GO TO 2.
NO >> GO TO 3.

2. QUESTIONNAIRE 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 F-position because of the characteristic of the fuel gauge.
NO >> GO TO 3.

3. QUESTIONNAIRE 3

Is the floor or the vehicle inclined?

YES or NO?

YES >> It may not be filled fully.
NO >> GO TO 4.

4. QUESTIONNAIRE 4

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

YES or NO?

YES >> Check the components. Refer to DI-61, "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.

EKS004R5

1. 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 2.
NG >> Repair connector.

2. CHECK INSTALLATION CONDITION

Check fuel level sensor unit installation (Refer to FL-6, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY (EXCEPT YD22DDTi)" or FL-9, "FUEL LEVEL SENSOR UNIT (YD22DDTi)" , 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. Refer to DI-61, "Electrical Components Inspection" .

Low Fuel Warning Lamp Illuminate or Not Illuminate

EKS003WB

1. DIAGNOSIS MODE INSPECTION

Perform combination meter diagnosis mode. Refer to DI-52, "Combination Meter Self-Diagnosis" .

OK or NG?

OK >> Check fuel level sensor unit. Refer to DI-61, "Electrical Components Inspection" .
NG >> Replace combination meter.

Electrical Components Inspection

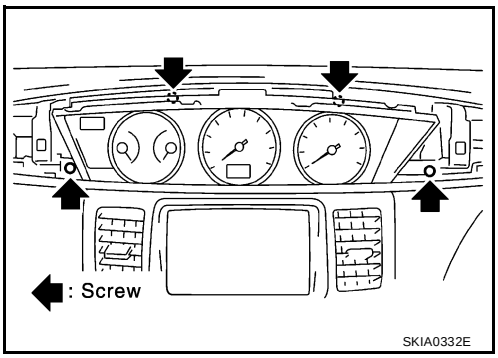
EKS004R6

For electrical components Inspection, refer to DI-61, "Electrical Components Inspection" .

Removal and Installation for Combination Meter

EKS003WD

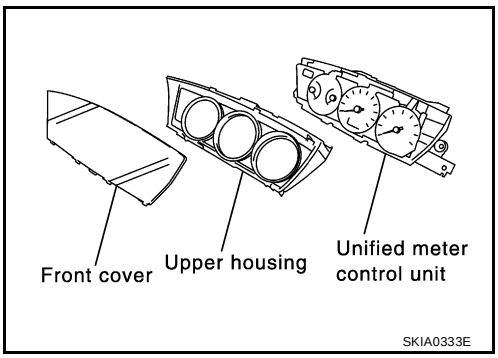
1. Remove the cluster lid A. Refer to IP-3, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove the screws (4), and pull out combination meter.
3. Disconnect connectors and remove combination meter.



Disassembly and Assembly for Combination Meter

EKS003WE

1. Disengage the tabs (8) to separate front cover.
2. Remove upper housing.

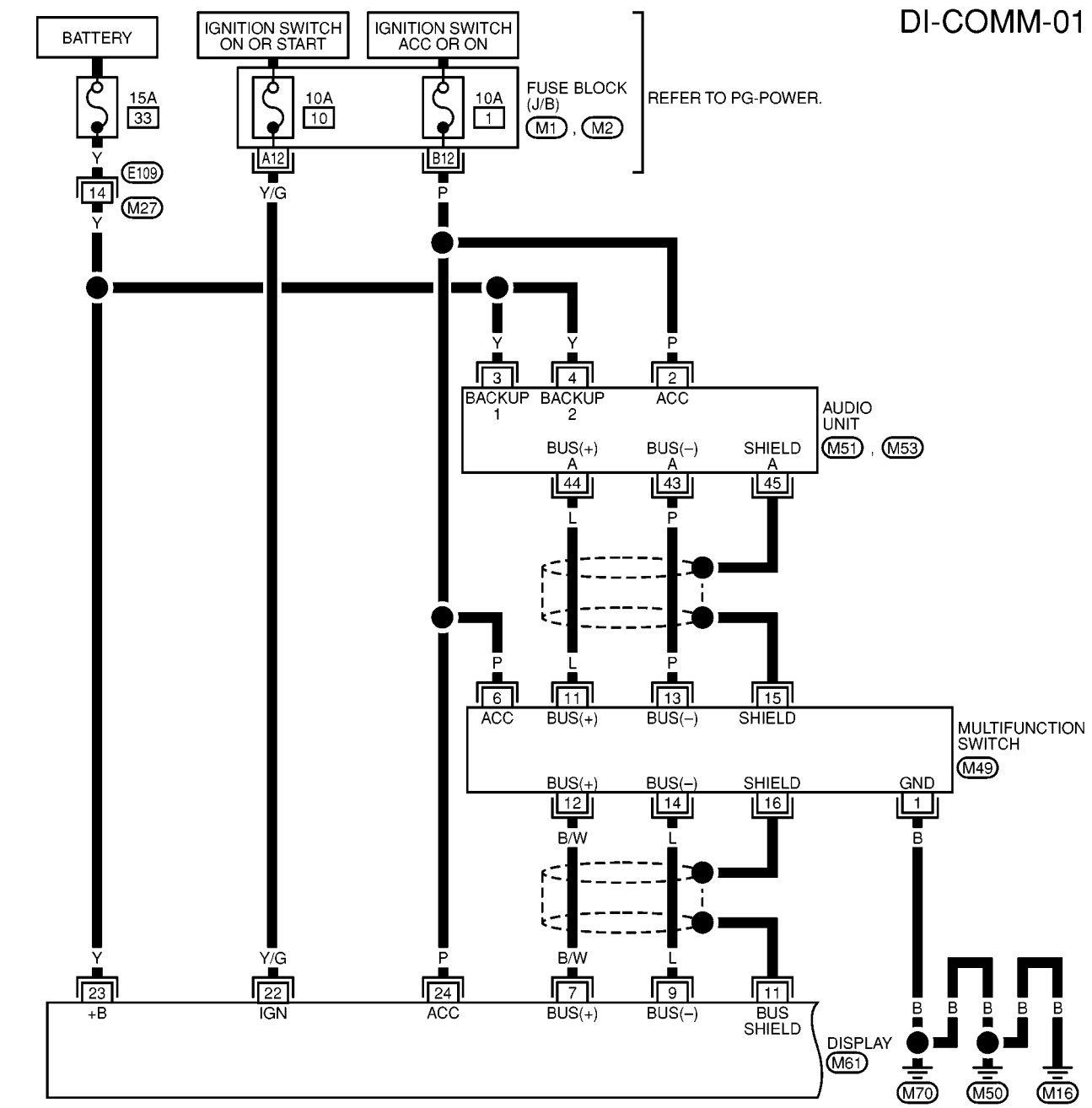


VFD DISPLAY

PFP:28090

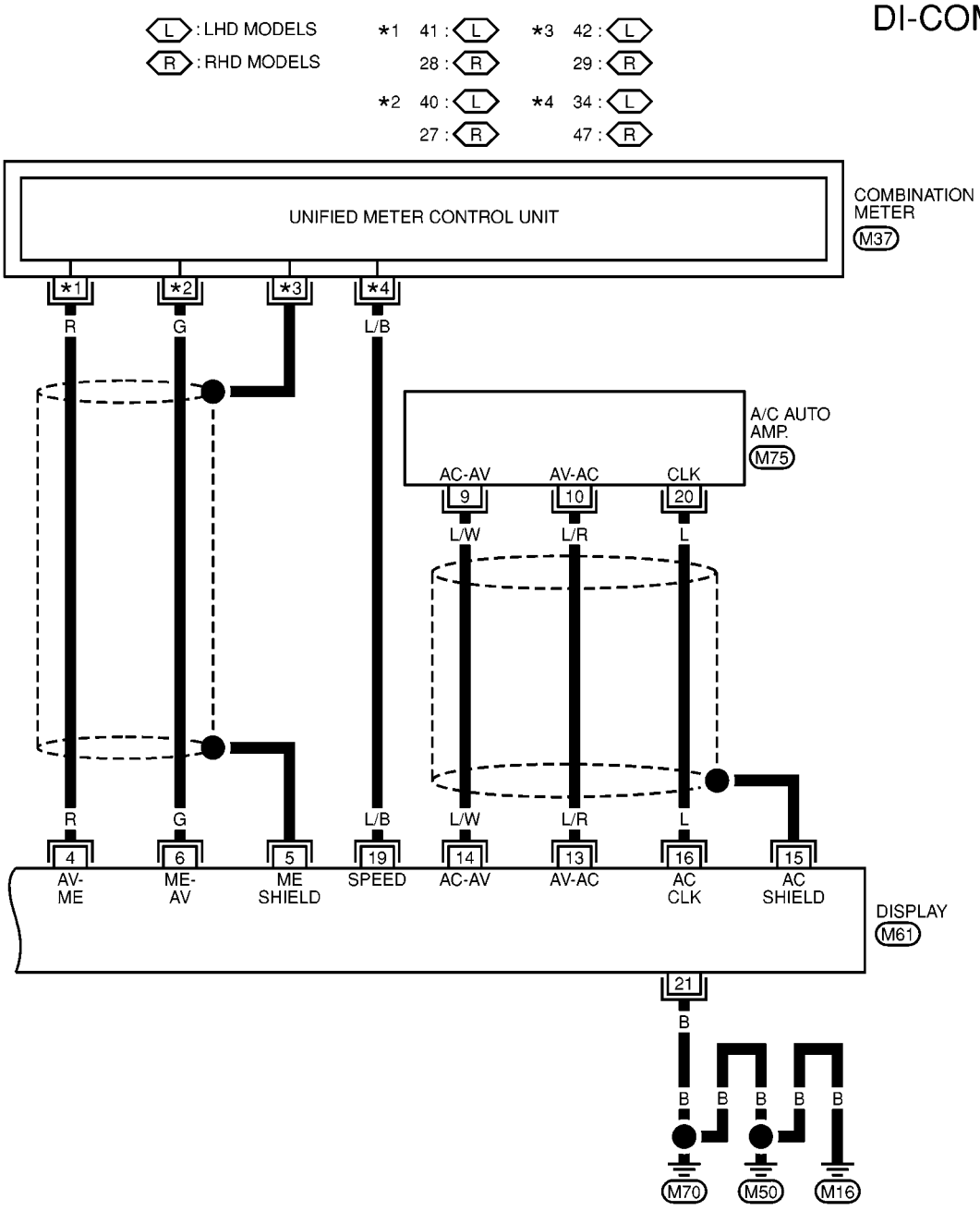
Wiring Diagram — COMM —

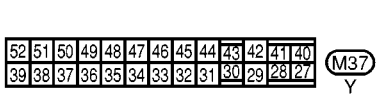
EKS0055C

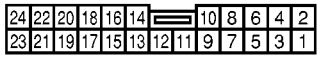


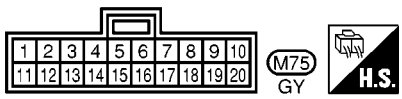
MKWA0349E

DI-COMM-02









MKWA0350E

LCD DISPLAY

PFP:28395

System Description

EKS004O6

MULTIFUNCTION SWITCH SYSTEM

Refer to Owner's Manual for multifunction switch operating instructions.
Using the multifunction switch at the center of the instrument panel, the controls of the following systems are centralized:

- Auto A/C system
- Vehicle information system
- Audio system

PRECAUTION OF LCD MONITOR

- When passenger compartment temperature is low, the LCD monitor sometimes dims because of the brightness of the back light (small fluorescent light) integrated into the LCD monitor decrease. In this case, the refreshing rate of the picture also becomes low because of the low response of the LCD monitor. When passenger compartment becomes warm, however, the LCD recovers the normal display.
- Sometimes, black or bright dots peculiar to LCD monitor can be seen on the display.
- Back light sometimes flickers or darkens according to the total consumption hours and the number of ON and OFF switching. In this case, the back light should be replaced. (display unit assembly)

POWER SUPPLY AND GROUND

Power is supplied at all times

- through 15A fuse (No. 33, located in fuse and fusible link box)
- to display unit terminals 2 and 4
- to audio unit terminals 3 and 4.

When ignition switch is in ACC or ON position, power is supplied

- through 10A fuse [No. 1, located in fuse block (J/B)]
- to display unit terminal 6,
- to multifunction switch terminal 6 and
- to audio unit terminal 2.

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

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

Ground is supplied

- to multifunction switch terminal 1 and
- to display unit terminals 1 and 3
- through body grounds M16, M50 and M70.

AV COMMUNICATION LINE

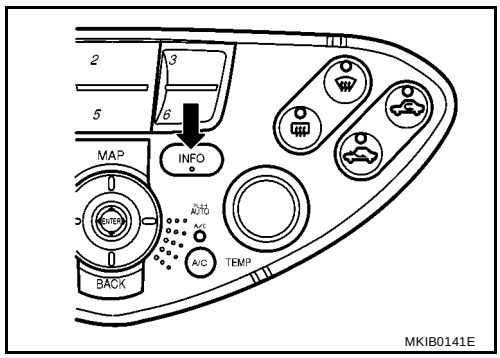
Display unit is controlled by the following unit with AV communication line.

- Multifunction switch
- Audio unit

VEHICLE INFORMATION SYSTEM

Refer to Owner's Manual for vehicle information system operating instructions.
Vehicle information system is monitoring to drive information, fuel economy information, maintenance information and Tyre pressure monitoring.

1. Press “INFO” switch to display vehicle information display.
2. Select “Drive”, “Fuel Economy”, “Maintenance” or “Tyre pressure”.

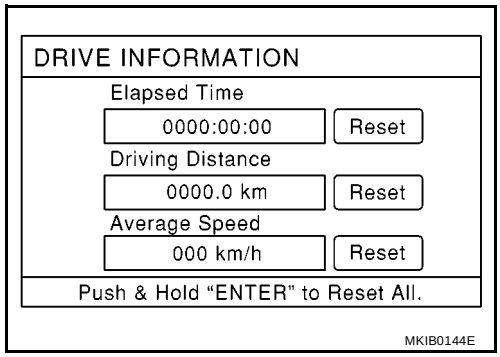


Display items	Display/Setting contents	
Drive	Elapsed Time	Displays driving time with a range of 0000:00:00 to 9999:59:59.
	Driving Distance (km)	Displays driving distance with a range of 00000.0 to 99999.9.
	Average speed (km/h)	Displays average speed with a range of 000.0 to 999.9.
Fuel Economy	Average Fuel Economy (l/100km)	Displays fuel economy with ignition switch ON, average fuel economy each 30 minutes.
	Distance to Empty (km)	Displays possible driving distance with remaining fuel.
	Fuel Economy (l/100km)	Displays fuel economy each approx. 100 ms.
	Fuel Economy Record (l/100 km)	Displays Average Fuel Consumption History.
Maintenance (with Maintenance information*)	Engine oil	Maintenance intervals of engine oil and setting of oil change cycle
	Oil Filter	Maintenance intervals of oil filter and setting of filter replacement cycle
	Custom 1	Determines when maintenance intervals are needed.
	Custom 2	Determines when maintenance intervals are needed.
Tyre Pressure monitoring	Tyre pressure monitoring information.	

*: Maintenance information displays the change cycle of engine oil, oil filter, custom1 and custom2 on LCD monitor depending on the driving distance specified by a driver or a technician.

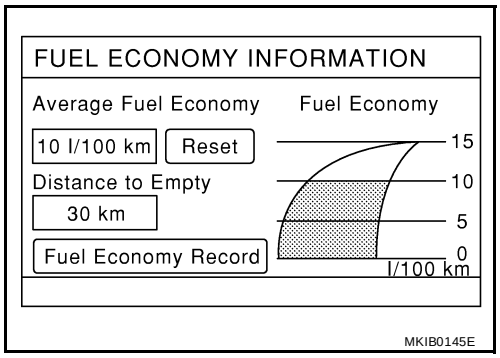
Drive Information

1. Select “Drive”.
2. Elapsed time, Driving distance and Average speed are displayed as Drive information. When pushing “ENTER”, Elapsed time, Driving distance and Average speed are all reset.

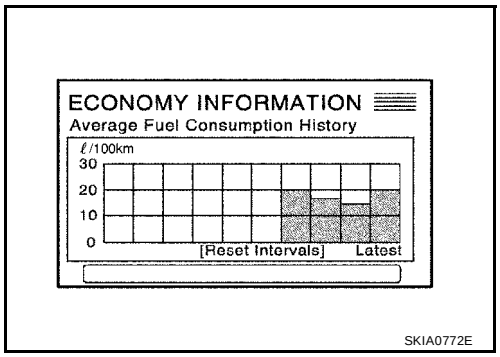


Fuel Economy Information

1. Select “Fuel Economy”.
2. Average Fuel Economy, Distance to Empty, Fuel Economy are displayed as Fuel Economy information.

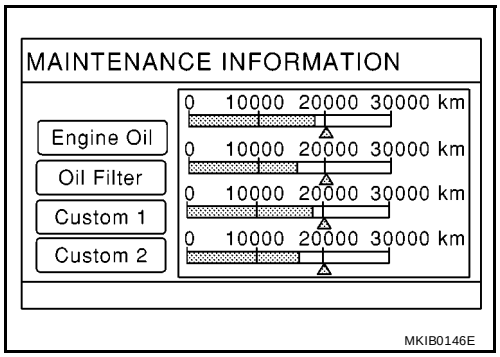


3. Select “Fuel Economy Record”. The average fuel consumption history will be displayed in graph along with the average for the previous Reset – to – Reset period.



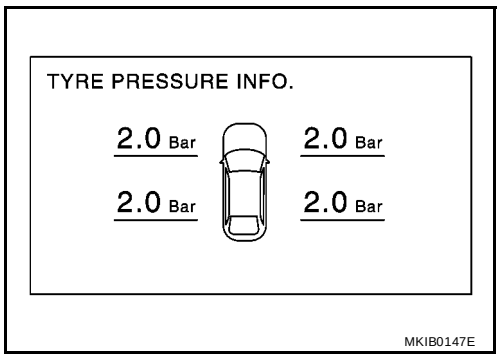
Maintenance Information

1. Select “Maintenance”.
2. Engine Oil, Oil Filter, Custom1 and Custom2 are displayed as Maintenance information.



Tyre Pressure

1. Select “Tyre Pressure”.
2. Tyre pressure is displayed as Tyre pressure information.



WARNING INDICATIONS

When combination meter receives warning signal from some control units or sensors, then combination meter warning lamp is illuminated.
Then combination meter sends warning signal to display unit warning indications on the screen.

Warning indicators	Warning lamps in instrument panel	Warning detection and cancel conditions		Cases of malfunction
ENGINE	ENGINE	Detection condition	Warning lamp ON signal is detected while engine is running.	ECM malfunction
		Cancel condition	Warning lamp OFF signal is detected.	
ENGINE OIL PRESSURE	Engine oil pressure	Detection condition	Warning lamp ON signal is detected for at least approx. 5 seconds while engine is running.	Engine oil pressure decreases.
		Cancel condition	Warning lamp OFF signal is detected.	
AIR BAG	Air bag	Detection condition	Warning lamp ON signal is detected for at least approx. 10 seconds after ignition switch is turned ON.	SRS air bag system malfunction
		Cancel condition	Warning lamp OFF signal is detected.	
LOW BRAKE FLUID	Brake	Detection condition	Warning lamp ON signal (fluid level) is detected.	Low brake fluid level
		Cancel condition	Warning lamp OFF signal is detected.	
OVERHEATING	–	Detection condition	Engine coolant temperature as being approx. 119°C (246°F) min.	Engine cooling system malfunction
		Cancel condition	Engine coolant temperature as being approx. 105°C (221°F) max.	
CHARGE	Charge	Detection condition	Warning lamp ON signal is detected while engine is running. Charging system malfunction	Charging system malfunction
		Cancel condition	Warning lamp OFF signal is detected.	
LOW WASHER FLUID	–	Detection condition	Washer liquid level falls below approx. 0.8 ℓ (1-3/8 Imp pt)	Low washer liquid level
		Cancel condition	Except above condition.	
LOW FUEL	Fuel level	Detection condition	After warning lamp ON signal is detected, vehicle is driven for over specified distance. [Fuel level: Approx. 9.6 ℓ (8–1/2 Imp pt)]	Low fuel level
		Cancel condition	Warning lamp OFF signal is detected.	
PARKING BRAKE	Brake	Detection condition	Parking brake ON signal is detected while vehicle is running [approx. 5 km/h (3 MPH) or faster].	Parking brake remains engaged.
		Cancel condition	Vehicle is stopped, or parking brake OFF signal is detected.	
DOOR OPEN	Door	Detection condition	Vehicle is running [approx. 5 km/h (3 MPH) or faster] and door ajar of any of the doors is detected.	Door is open
		Cancel condition	Vehicle is stopped and all the doors lock.	
ABS	ABS	Detection condition	Warning lamp ON signal is detected when engine is running.	ABS control system malfunction
		Cancel condition	Warning lamp OFF signal is detected.	

Warning indicators	Warning lamps in instrument panel	Warning detection and cancel conditions		Cases of malfunction
ESP ELECTRONIC CONTROL SYSTEM	ESP	Detection condition	Warning lamp ON signal is detected when engine is running.	ESP system malfunction
		Cancel condition	Warning lamp OFF signal is detected.	
CVT ELECTRONIC CONTROL SYSTEM	CVT	Detection condition	Warning lamp ON signal is detected after ignition switch is turned ON.	TCM system malfunction
		Cancel condition	Warning lamp OFF signal is detected.	
TYRE PRESSURE	Tyre Pressure	Detection condition	Warning lamp ON signal is detected after ignition switch is turned ON.	Tyre pressure monitoring control system malfunction
		Cancel condition	Warning lamp OFF signal is detected.	
CRUISE CONTROL SYSTEM	CRUISE	Detection condition	Warning lamp ON signal is detected after ignition switch is turned ON.	ICC system malfunction
		Cancel condition	Warning lamp OFF signal is detected.	

Precautions for Display Unit Replacement

EKS004O7

- Record the following memorized contents before replacing the control unit.

<FM·AM>
- **Preset frequency**
- **Area for indicating station, selection of overlapped stations**

<CD>
- **Program status**

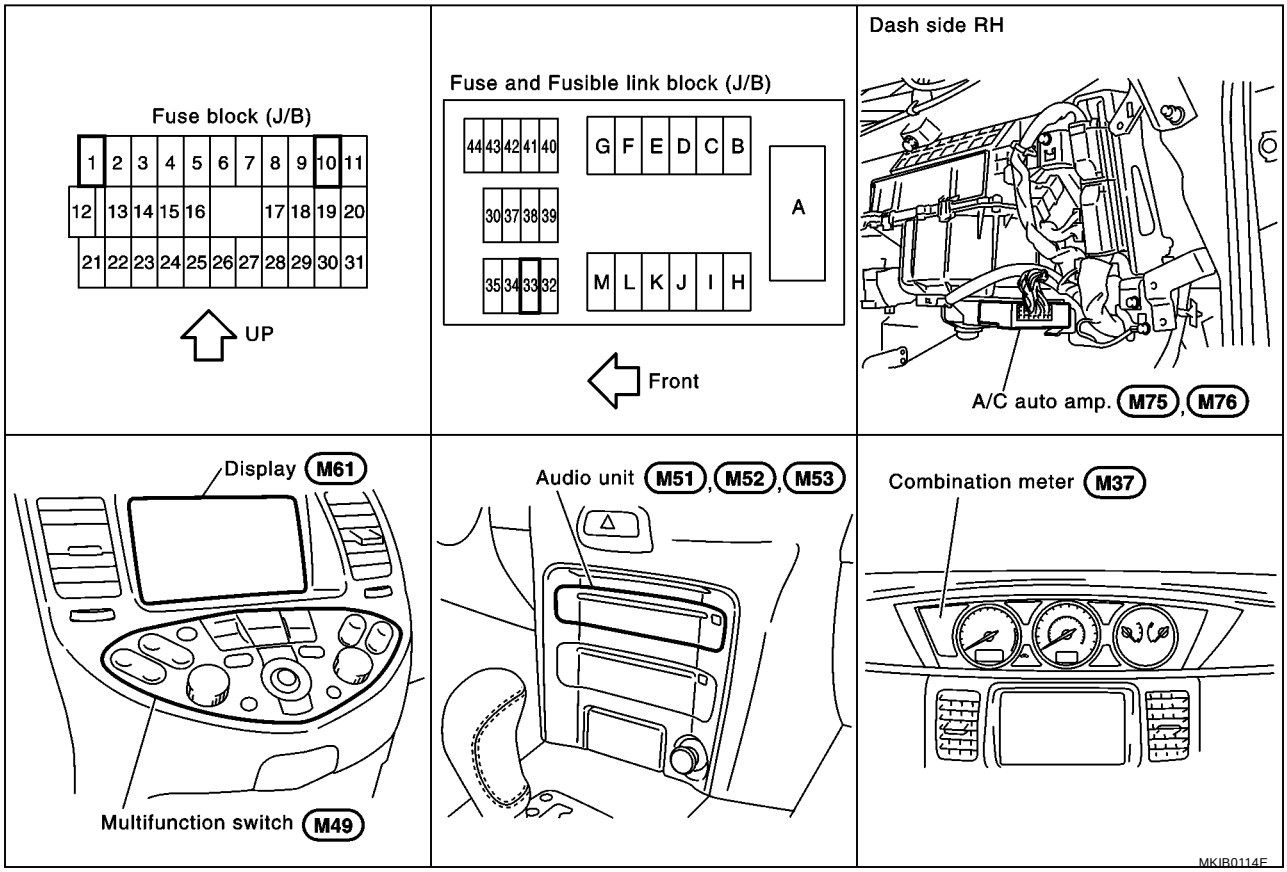
<Sound quality>
- **Volume balance memory set values**
- **Equalizer memory set values**

<Image quality>
- **Brightness of light when ON/OFF**
- **Dimming switching**
- **Display color switching**

- Replace the Display unit after disconnecting both battery cables.

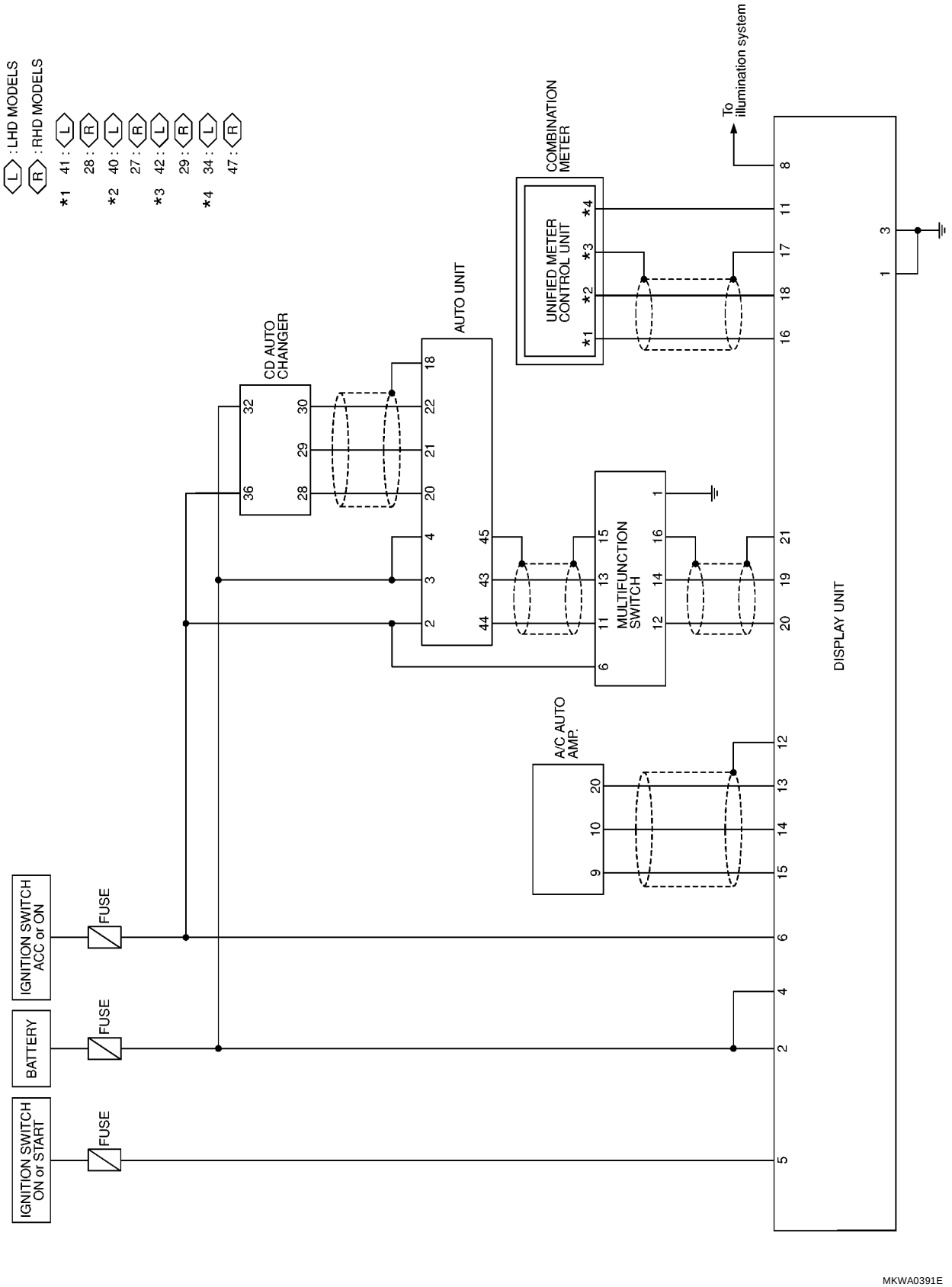
Component Parts and Harness Connector and Harness Connector Location

EKS004O8



Schematic

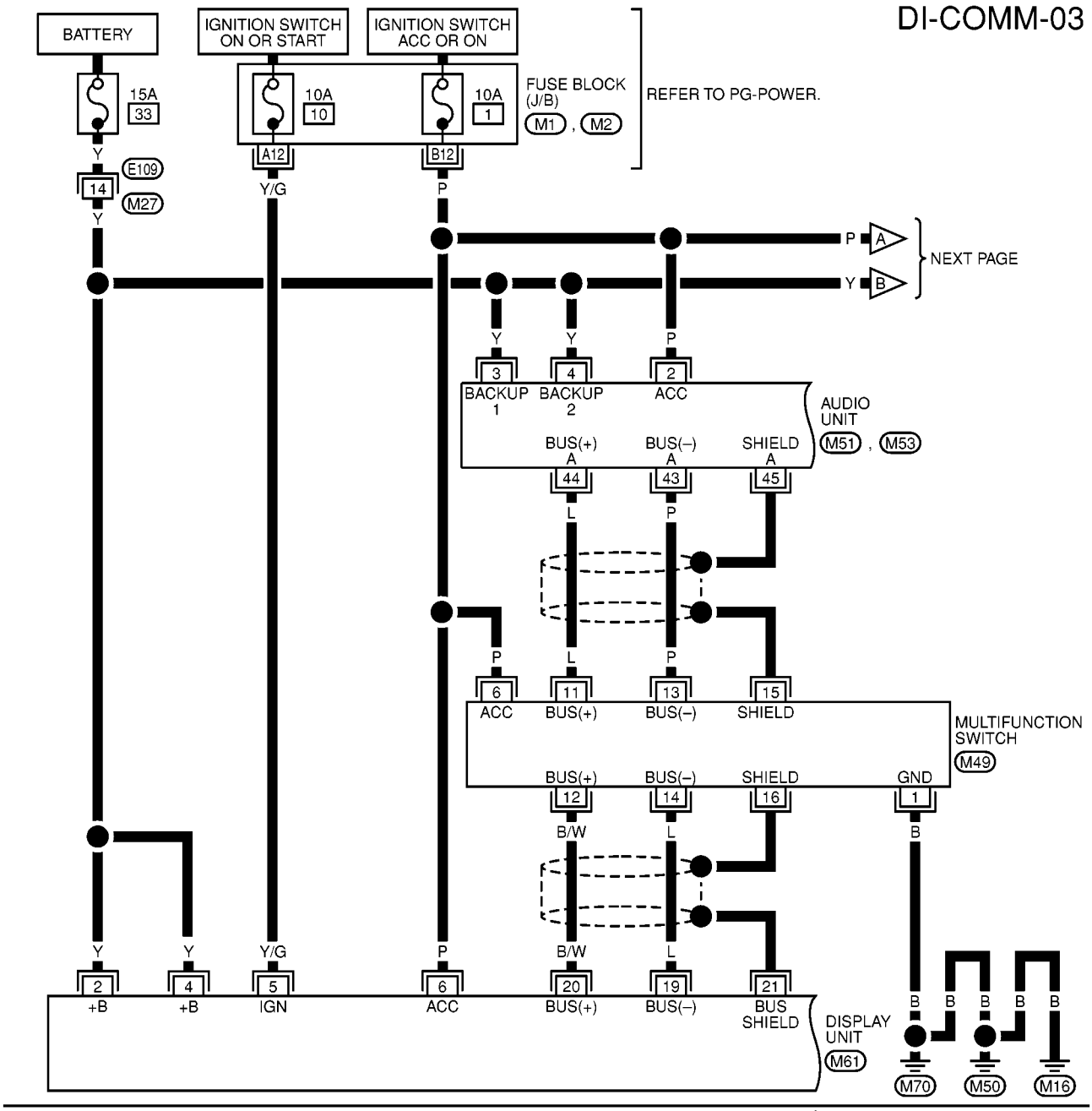
EKS004SQ

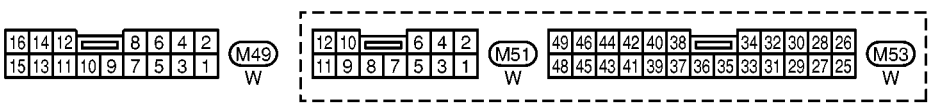


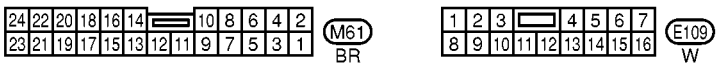
MKWA0391E

Wiring Diagram — COMM —

EKS004OA



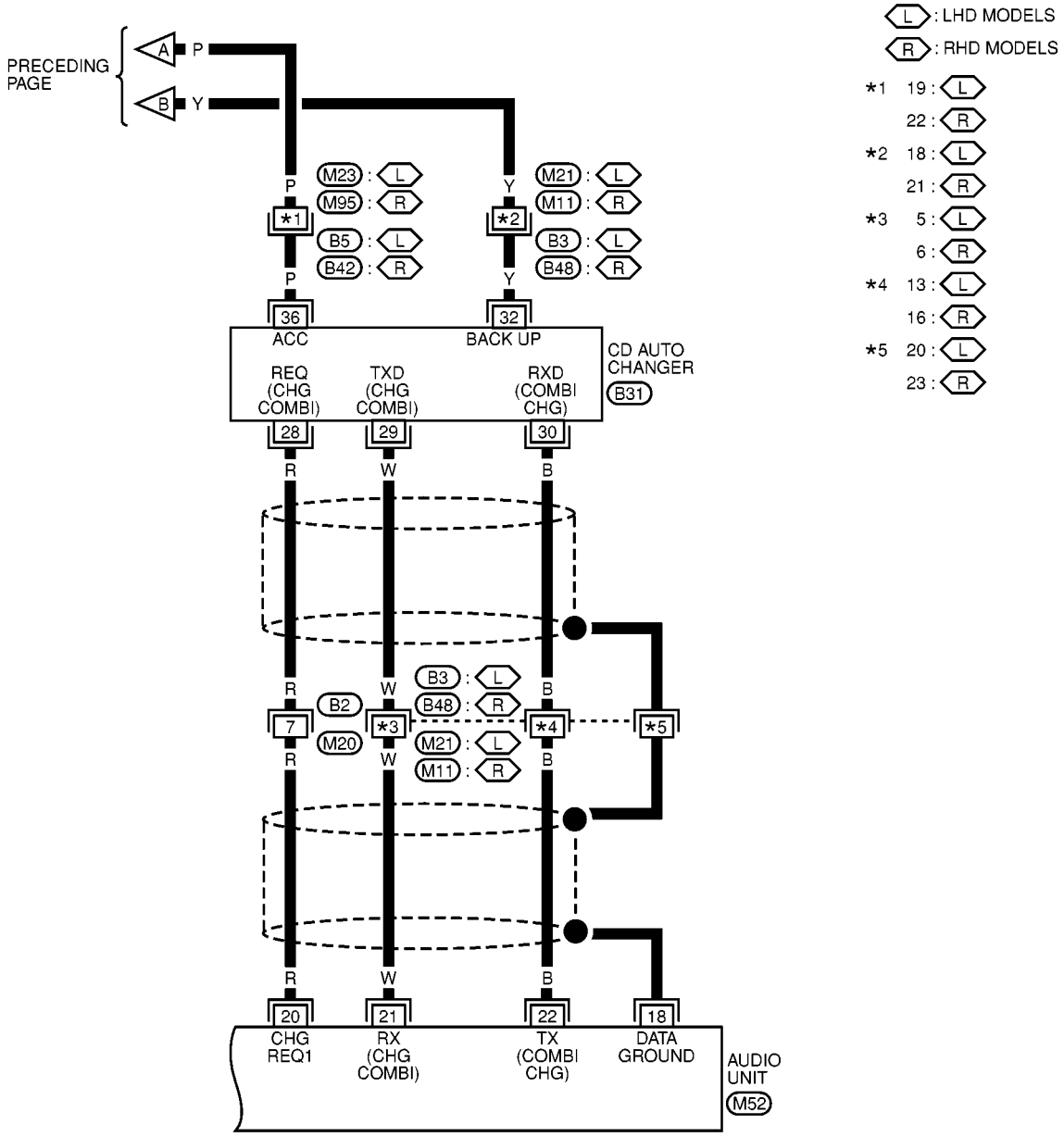


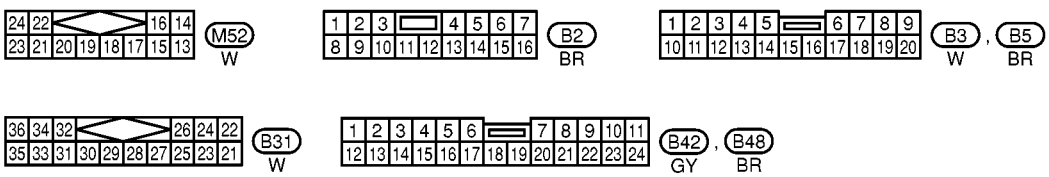


REFER TO THE FOLLOWING.
M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)

MKWA0351E

DI-COMM-04





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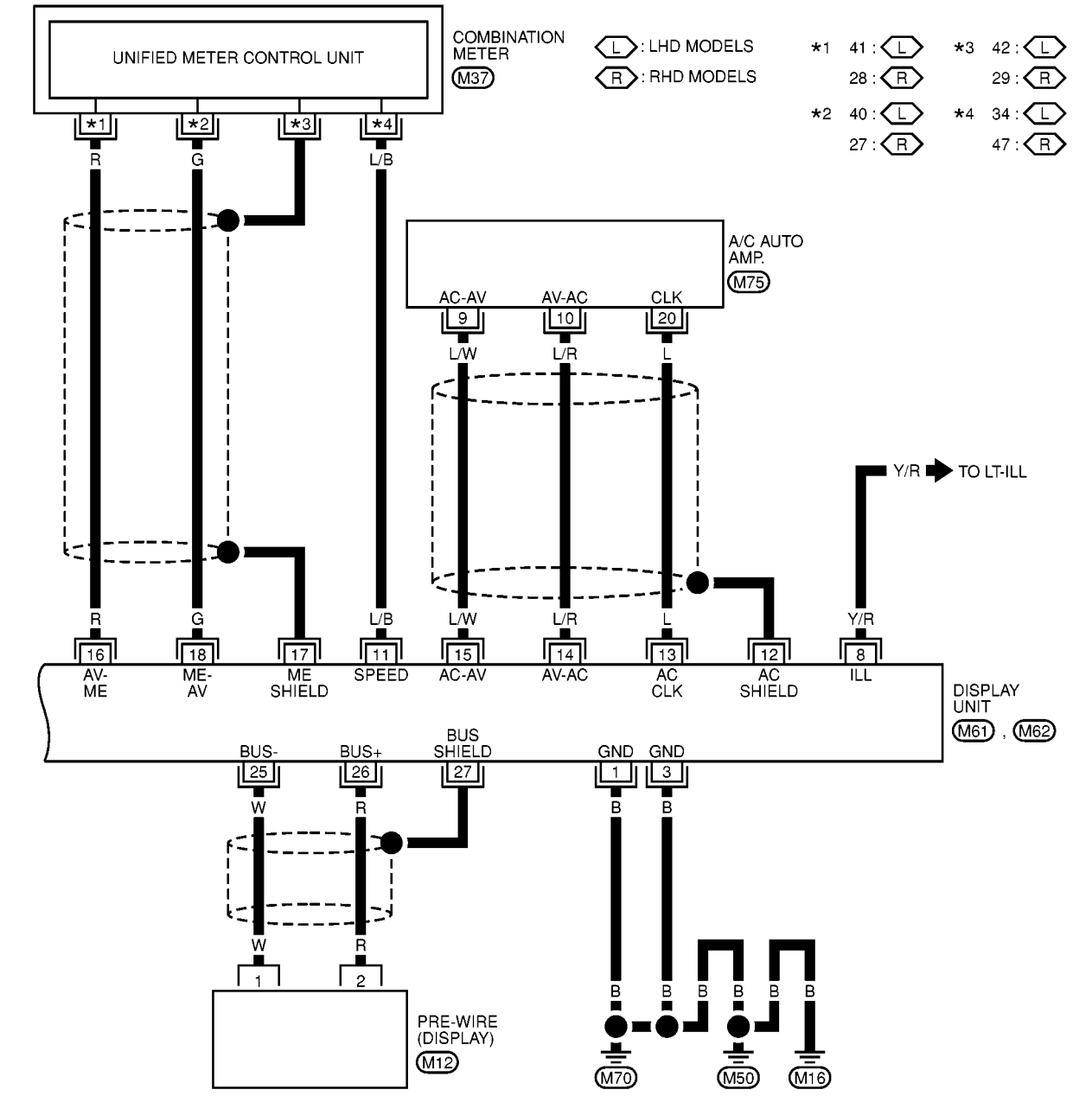
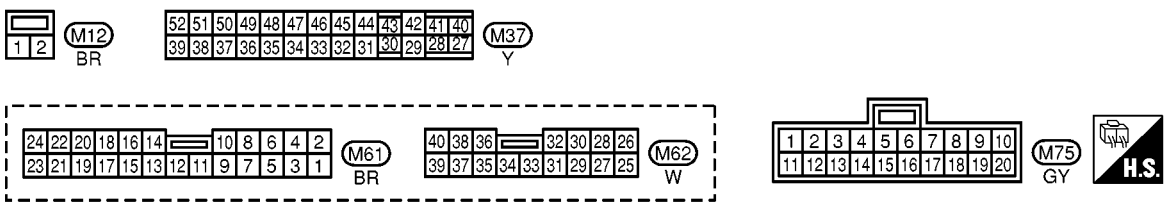
DI-COMM-05

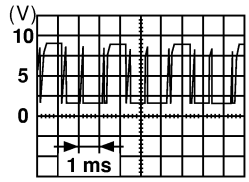
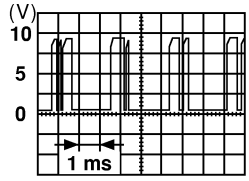
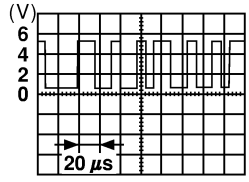
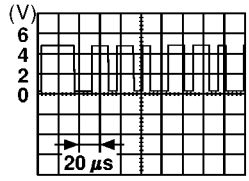




MKWA0417E

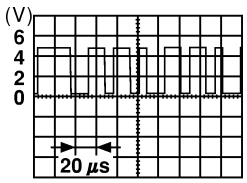
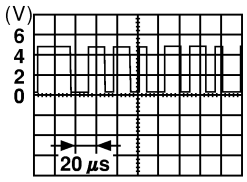
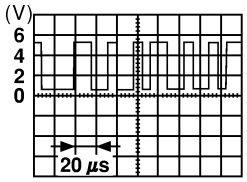
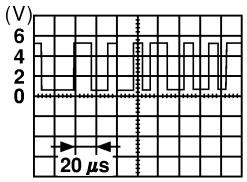
Terminals and Reference Value for Display Unit

EKS004OD

TERMINALS (+) TER-MINAL	TERMINALS (+) WIRE COLOR	TERMINALS (–)	SIGNAL	CONDITION IGNI-TION SWITCH	CONDITION OPERATION		VOLTAGE
1	B	Ground	—	—	—		—
2	Y	Ground	Battery power	OFF	—		Battery voltage
3	B	Ground	—	—	—		—
4	Y	Ground	Battery power	OFF	—		Battery voltage
5	Y/G	Ground	Ignition signal	ON	—		—
6	P	Ground	ACC signal	ACC	—		—
8	LG	Ground	Illumination control signal	ON	Lighting switch position	1st or 2nd	Battery voltage
						OFF	0V
16	R	Ground	Communication signal (AV-ME)	ON	—		 SKIA0169E
17	—	—	Shield ground	—	—		—
18	G	Ground	Communication signal (ME-AV)	ON	—		 SKIA0170E
19	L	Ground	Communication signal (-)	ON	—		 SKIA0176E
20	B/W	Ground	Communication signal (+)	ON	—		 SKIA0175E
21	–	Ground	Shield ground	—	—		—

Terminals and Reference Value for Multifunction Switch

EKS004OE

TERMINALS (+) TERMINAL	TERMINALS (+) WIRE COLOR	TERMINALS (–)	SIGNAL	CONDITION IGNITION SWITCH	CONDITION OPERATION	DATA
6	L/OR	Ground	ACC	ACC	—	Battery voltage
1	B	Ground	Ground	ON	—	Apporox. 0V
11	R	Ground	Communication signal (+)	ON	—	 SKIA0175E
12	R	Ground	Communication signal (+)	ON	—	 SKIA0175E
13	L	Ground	Communication signal (-)	ON	—	 SKIA0176E
14	L	Ground	Communication signal (-)	ON	—	 SKIA0176E
15	—	Ground	Shield ground	ON	—	—
16	—	Ground	Shield ground	ON	—	—

On Board Self-Diagnosis Function

EKS004OF

DESCRIPTION

- Diagnosis function consists of the self-diagnosis mode performed automatically and the CONFIRMATION/ ADJUSTMENT mode operated manually.
- Self-diagnosis mode checks for connections between the units constituting this system, analyzes each individual unit at the same time, and displays the results on the LCD screen.
- CONFIRMATION/ADJUSTMENT mode is used to perform trouble diagnosis that require operation and judgment by an operator (trouble that cannot be automatically judged by the system), to check/change the set value.

DIAGNOSIS ITEM

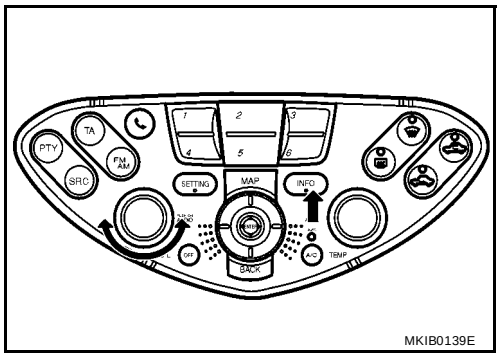
Mode			Description	Reference page
Self-diagnosis			● Center control unit (display unit) diagnosis. ● Analyzes connection between the display unit and each unit, and operation of each unit.	DI-76, "Self-Diagnosis Mode"
CONFIRMATION/ADJUSTMENT	Display Diagnosis	Display Color Spectrum Bar	Color of display can be checked in this mode.	DI-79, "DISPLAY DIAGNOSIS"
		Display Gradation Bar	Gray gradation of display can be checked in this mode.	
	Vehicle Signals	Vehicle Speed	Vehicle speed input signal to center control unit (display unit), can be monitored in this mode.	DI-80, "VEHICLE SIGNALS"
		Light	Light input signal to center control unit (display unit), can be monitored in this mode.	
		IGN	Ignition input signal to center control unit (display unit), can be monitored in this mode.	
	Auto Climate Control		Trouble diagnosis for auto climate control unit (A/C auto amp), can be checked in this mode.	ATC-42, "FUNCTION CONFIRMATION PROCEDURE"
	Service		Service schedule can be changed in this mode	DI-80, "SERVICE"

Self-Diagnosis Mode

EKS004OG

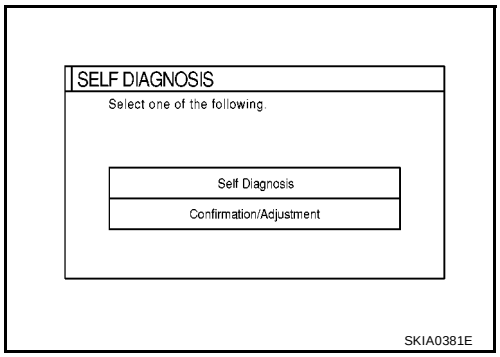
OPERATION PROCEDURES

1. Start the engine.
2. Turn the audio system off.
3. While pressing the “INFO” switch, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
   - Shifting from current screen to previous screen is performed by pressing “PREV” switch.



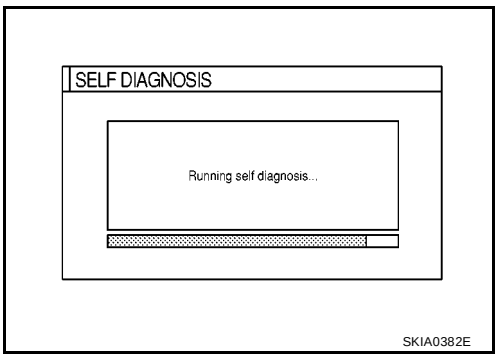
MKIB0139E

4. The initial trouble diagnosis screen will be shown, and items “SELF-DIAGNOSIS” and “CONFIRMATION/ADJUSTMENT” will become selective.

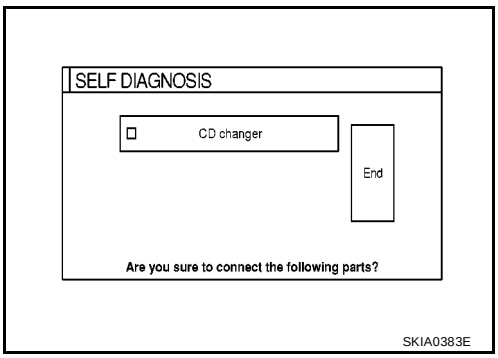


SKIA0381E

5. Perform self-diagnosis by selecting the “SELF-DIAGNOSIS”.
   - Self-diagnosis subdivision screen will be shown and the operation enters the self-diagnosis mode.
   - A bar graph shown below the self-diagnosis subdivision screen indicates progress of the diagnosis.



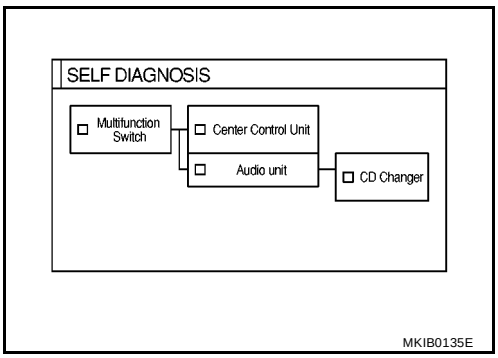
6. When the self-diagnosis completes, optional part confirmation screen will be shown.
   - When connection of an optional part is judged malfunction, a screen to check if the optional part is fitted on the vehicle or not will be shown. When fitted, select the switch of the part on the screen and press “END”. Then the “Self-diagnosis” screen will be shown.
   - When the optional part is connected normally, the switch for the part will not appear on the screen.



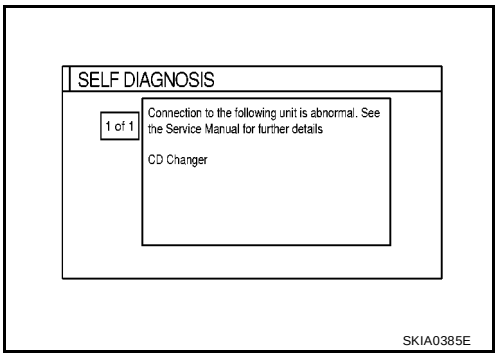
7. On the “Self-diagnosis” screen, each unit name will be colored according to the diagnosis result, as follows.

   Green : No malfunctioning.
   Yellow : Cannot be judged by self-diagnosis results.
   Red : Unit is malfunctioning.

   - If several malfunctions are present in a unit, color of its switch on the screen will be either red, yellow, or gray, determined by the malfunction of the highest priority.



8. Select a switch on the “Self-diagnosis” screen and comments for the diagnosis results will be shown.
   - When the switch is green, the following comment will be shown. “Self-diagnosis was successful. Further diagnosis and adjustments are recommended. Follow the “confirmation and adjustments” menu or refer to the service manual.”
   - When the switch is yellow, the following comment will be shown. “Connection to the following unit is abnormal. See the service manual for further details.”
   - When the switch is red, the following comment will be shown. “Center Control Unit is abnormal.”



CAUTION:
If self-diagnosis cannot activated, refer to DI-87, "Self-Diagnosis Does Not Perform" .

SELF-DIAGNOSIS RESULT

Quick reference table

1. Select an applicable diagnosis No. in the diagnosis result quick reference table.
2. Find estimated malfunctioning system in the diagnosis No. table and perform check by referring to the AV communication line circuit diagram.
3. Turn the ignition switch to OFF and perform self-diagnosis again.

Screen switch					Diagnosis No.
Switch color	Center control unit *	Multifunction switch	Audio unit	CD auto changer	
Red	×				1
Yellow	×	×			2
	×		×	×	3
	×			×	4
	×	×	×	×	5

*: Center control unit = Display unit

CAUTION:

When an error is in the AV communication line, it cannot be detected on the screen because self-diagnosis is inoperative. However, the error can be detected with CONSULT-II.

SELF–DIAGNOSIS CODES

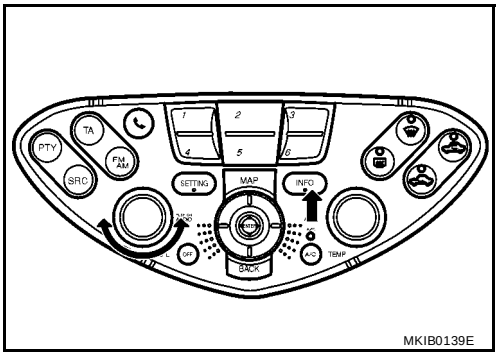
Diagnosis No.	Possible cause	Reference page
1	Display unit malfunction.	–
2	Multifunction switch power supply and ground circuit.	DI-81, "Power Supply and Ground Circuit Check for Multifunction Switch"
3	Audio unit power supply and ground circuit. AV communication line between multifunction switch and the display unit. Audio unit internal communication circuit.	●AV-41, "Power Supply Circuit Inspection" ●DI-85, "Audio Circuit Check"
4	CD auto changer power supply and ground circuit. AV communication line between CD auto changer and audio unit.	●AV-41, "Power Supply Circuit Inspection" ●DI-85, "CD Changer Circuit Check"
5	AV communication line circuit malfunction.	DI-86, "AV Communication Line Check"

CONFIRMATION/ADJUSTMENT Mode

EKS004OH

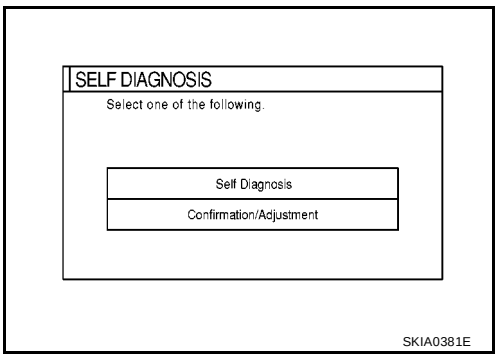
OPERATION PROCEDURE

1. Start the engine.
2. Turn the audio system off.
3. While pressing the “INFO” switch, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
   - Shifting from current screen to previous screen is performed by pressing “PREV” switch.

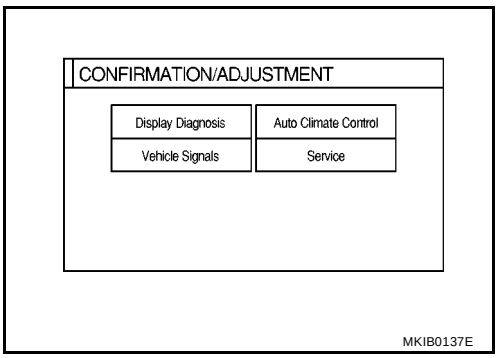


MKIB0139E

4. The initial trouble diagnosis screen will be shown, and items “SELF-DIAGNOSIS” and “CONFIRMATION/ADJUSTMENT” will become selective.

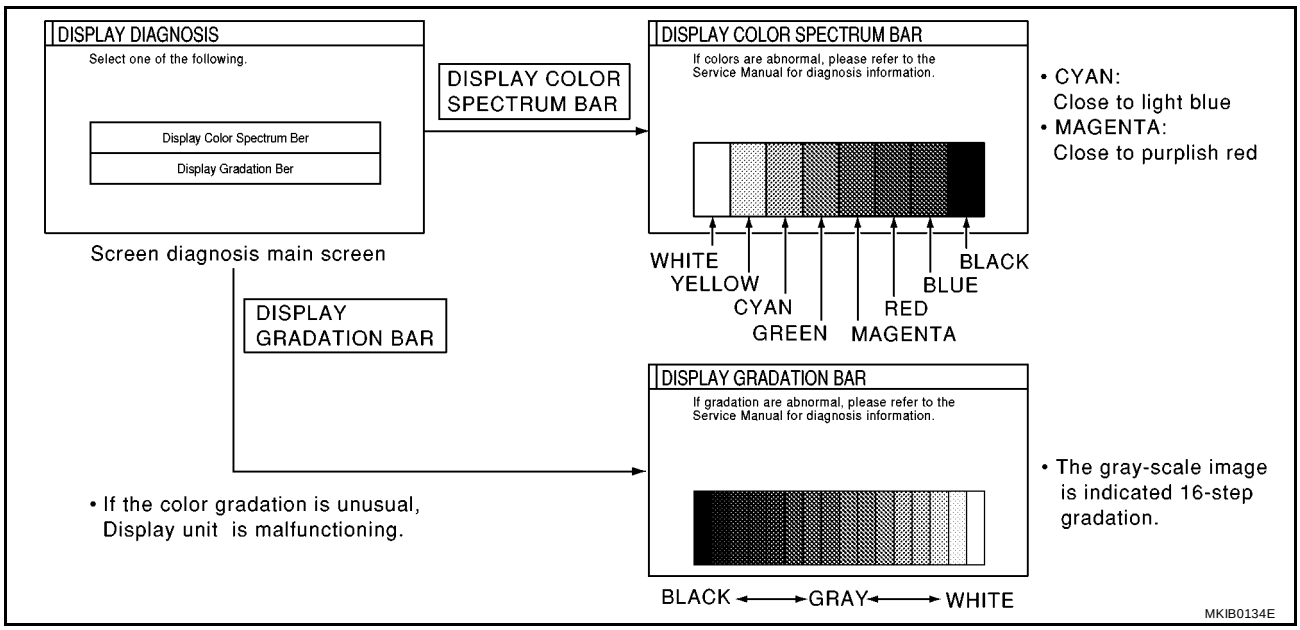


5. When “CONFIRMATION/ADJUSTMENT” is selected on the initial trouble diagnosis screen, the operation will enter the CONFIRMATION/ADJUSTMENT mode. In this mode, check and adjustment of each item will become possible.
6. Select each switch on “CONFIRMATION/ADJUSTMENT” screen to display the relevant diagnosis screen.



DISPLAY DIAGNOSIS

Use this mode to check the display color brightness and setting. The display unit must be replaced if the color brightness and shading are unusual.

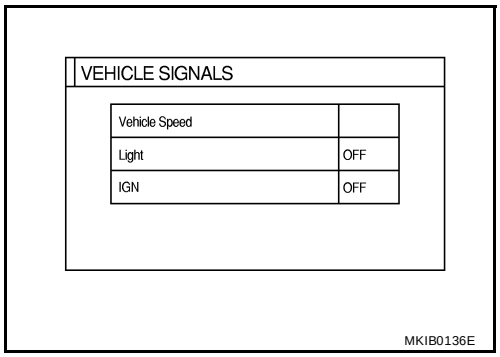


CAUTION:

When Display Color Spectrum Bar screen is completed after “BACK” switch is pressed, the screen color changes once. This is normal.

VEHICLE SIGNALS

- In this mode, following input signals to the display unit can be checked on the display.



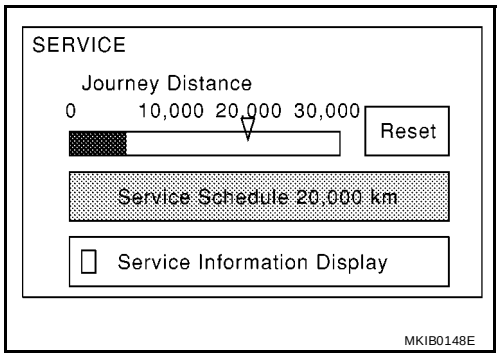
Diagnosis item	Display	Condition	Remarks
Vehicle speed	ON	Vehicle speed is greater than 0 km/h (0 MPH)	Changes in indication may be delayed by approx. 1.5 seconds. This is normal.
	OFF	Vehicle speed is 0 km /(0 MPH)	
	–	Ignition switch is in ″ACC″ position.	
Light	ON	Lighting switch is 1st or 2nd position.	-
	OFF	Lighting switch is ″OFF″ position.	
IGN	ON	Ignition switch is in ″ON″ position.	-
	OFF	Ignition switch is in ″ACC″ or ″OFF″ position	

- If vehicle speed is NG, refer to DI-82, "Vehicle Speed Signal Check/LHD Models" or DI-83, "Vehicle Speed Signal Check/RHD Models" .
- If light is NG, refer to DI-84, "Illumination Control Signal Check" .
- If IGN is NG, refer toDI-84, "Ignition Signal Check" .

SERVICE

- In this mode, Service schedule can be set on this display.

  NOTE:
  - To set Service schedule, change journey distance.
  - When the indicator of ″Service Information Display″ is set green, the color of the journey distance marker will be red. And automatically Service information screen will be displayed when journey distance is reached on service schedule.



Power Supply and Ground Circuit Check for Display Unit

EKS004OP

1. CHECK FUSE

- Check that the following fuses in display are blown.

Unit	Power souse	Fuse No.
Display	Battery power	33
	Ignition switch ACC or ON	1

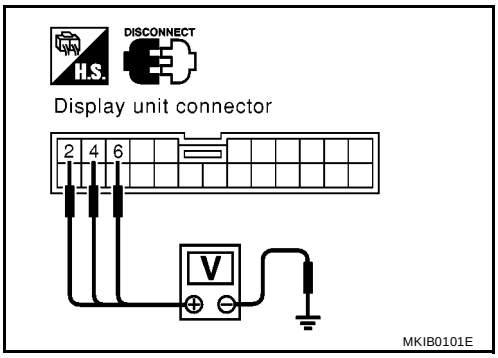
OK or NG

OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING" .

2. POWER SUPPLY CIRCUIT CHECK

1. Disconnect display connector.
2. Check voltage between display unit connector and ground.



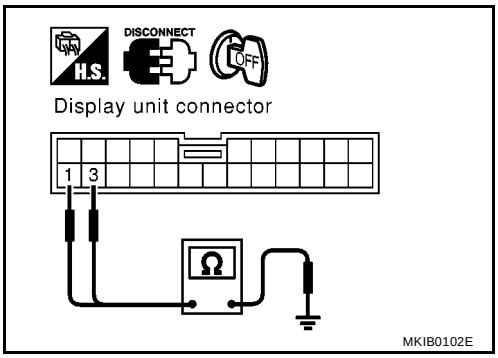
Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M61	2 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage
	4 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage
	6 (P)	Ground	0V	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between display and fuse.

3. GROUND CIRCUIT CHECK

Check continuity between display unit and ground.



Terminals			Continuity
(+)		(–)	
Connector	Terminal (wire color)		
M61	1 (B)	Ground	Yes
	3 (B)	Ground	Yes

OK or NG

OK >> Inspection end.
NG >> Check ground harness.

Power Supply and Ground Circuit Check for Multifunction Switch

EKS004OQ

1. CHECK FUSES.

- Check the fuse below.

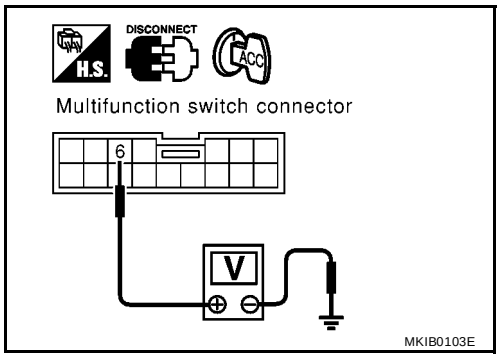
Unit	Power source	Fuse No.
Multifunction switch	Ignition switch ACC or ON	1

OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING" .

2. POWER SUPPLY CIRCUIT CHECK

1. Disconnect multifunction switch connector.
2. Check voltage between multifunction switch and ground.



Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M49	6 (P)	Ground	0V	Battery voltage	Battery voltage

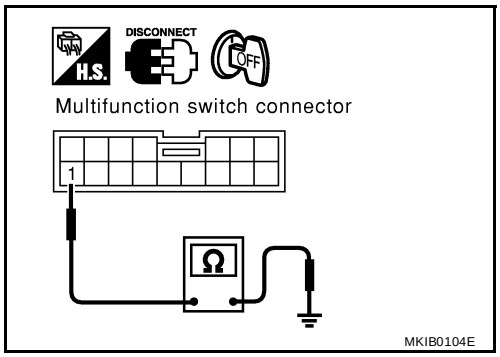
OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between multifunction switch and fuse.

3. GROUND CIRCUIT CHECK

1. Check continuity between multifunction switch harness connector M49 terminal 1 (B) and ground.

Continuity should exist.



OK or NG

OK >> Inspection end.
NG >> Check ground harness.

Vehicle Speed Signal Check/LHD Models

EKS004TV

1. HARNESS CHECK

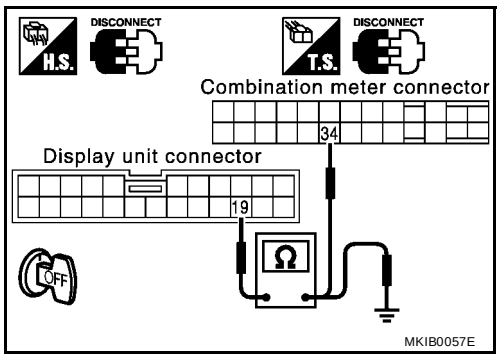
1. Disconnect display unit connector and combination meter.
2. Check the following.

– Continuity between display unit connector M61 terminal 19 (L/B) and combination meter connector M37 terminal 34 (L/B).

Continuity should exist.

– Continuity between display unit connector M61 terminal 19 (L/B) and ground.

Continuity should not exist.



OK or NG

OK >> GO TO 2.
NG >> Replace harness or connector.

2. VEHICLE SPEED SIGNAL CHECK

Connect combination meter connector and display unit connector.

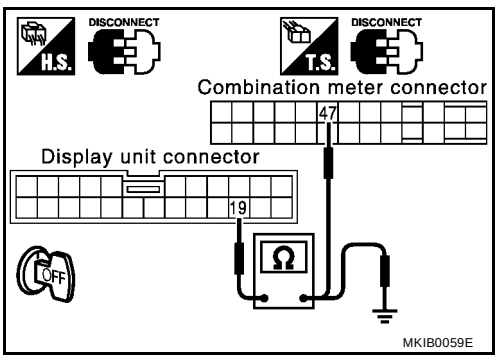
With CONSULT-II

1. Lift up drive wheels.
2. Start engine and drive vehicle at more than 20 km/h (12MPH).
3. Check signal between display unit connector M61 terminal 19(L/B) and ground when rotating wheels with engine at idle. (Use "SIMPLE OSCILLOSCOPE" in "SUB MODE" with CONSULT-II.)

Without CONSULT -II

1. Lift up drive wheels.
2. Start engine and drive vehicle at more than 20 km/h (12MPH).
3. Check voltage between display unit connector M61 terminal 19(L/B) and ground when rotating wheels with engine at idle.

Voltage: Approximately 0 – 5V



OK or NG

OK >> Replace display unit.
NG >> Check combination meter system. Refer toDI-24, "Combination Meter Self-Diagnosis" .

EKS004TW

Vehicle Speed Signal Check/RHD Models

1. HARNESS CHECK

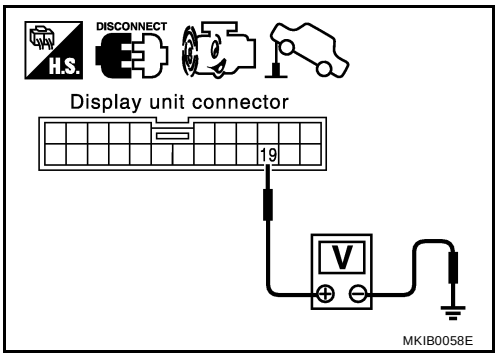
1. Disconnect display unit connector and combination meter.
2. Check the following.

– Continuity between display unit connector M61 terminal 19 (L/B) and combination meter connector M37 terminal 47 (L/B)

Continuity should exist.

– Continuity between display unit connector M61 terminal 19 (L/B) and ground.

Continuity should not exist.



OK or NG

OK >> GO TO 2.
NG >> Replace harness or connector.

2. VEHICLE SPEED SIGNAL CHECK

Connect combination meter connector and display unit connector.

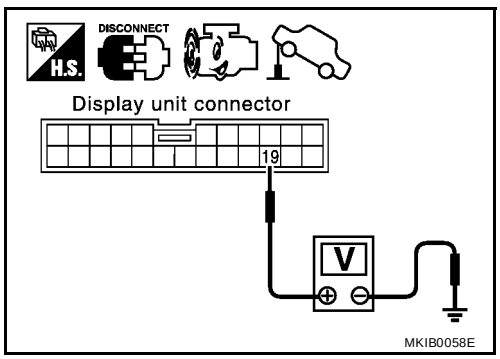
With CONSULT-II

1. Lift up drive wheels.
2. Start engine and drive vehicle at more than 20 km/h (12MPH).
3. Check signal between display unit connector M61 terminal 19(L/B) and ground when rotating wheels with engine at idle. (Use "SIMPLE OSCILLOSCOPE" in "SUB MODE" with CONSULT-II.)

Without CONSULT -II

1. Lift up drive wheels.
2. Start engine and drive vehicle at more than 20 km/h (12MPH).
3. Check voltage between display unit connector M61 terminal 19(L/B) and ground when rotating wheels with engine at idle.

Voltage: Approximately 0 – 5V



OK or NG

OK >> Replace display unit.
NG >> Check combination meter system. Refer to DI-52, "Combination Meter Self-Diagnosis" .

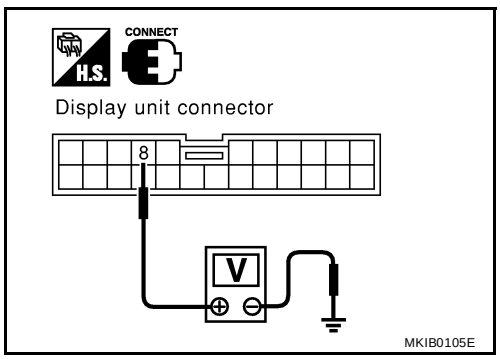
Illumination Control Signal Check

EKS004OT

1. ILLUMINATION CONTROL SIGNAL CHECK

1. Turn ignition switch ON.
2. Check voltage between display unit and ground.

Terminals			Condition	Voltage (V)
(+)		(-)		
Connector	Terminal (wire color)			
M61	8 (R/L)	Ground	Lighting switch 1st or 2nd position	Battery voltage
			OFF	Approx.0



OK or NG

OK >> Replace display unit.
NG >> Check harness for open or short between display unit and lighting switch.

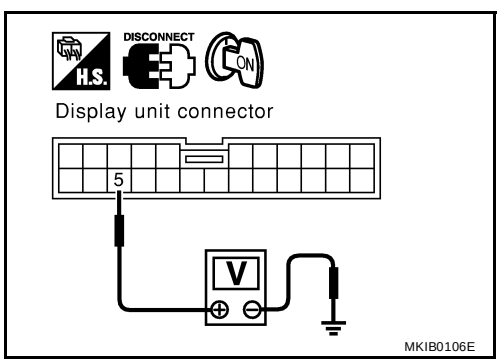
Ignition Signal Check

EKS004OU

1. IGNITION SIGNAL CHECK

1. Disconnect the display unit connector.
2. Check voltage between display unit harness connector M61 terminal 5 (Y/G) and ground.

Battery voltage should exist.



OK or NG

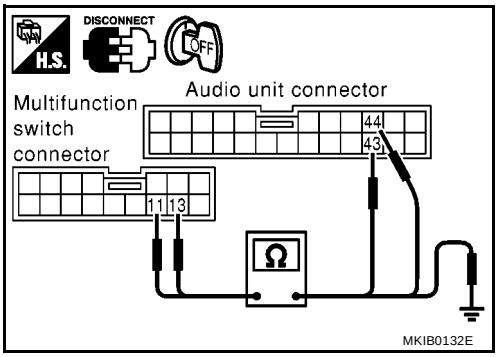
OK >> Replace display unit.
NG >> Check harness for open or short between display unit and fuse.

Audio Circuit Check

EKS004TX

1. AUDIO UNIT CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect audio unit connector.
3. Check continuity between multifunction switch and audio unit.



Terminals				Continuity
Multifunction switch		Audio unit		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M49	11 (L)	M53	44 (L)	Yes
	13 (P)		43 (P)	

4. Check continuity between multifunction switch and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M49	11 (L)	Ground	No
	13 (P)		

Question

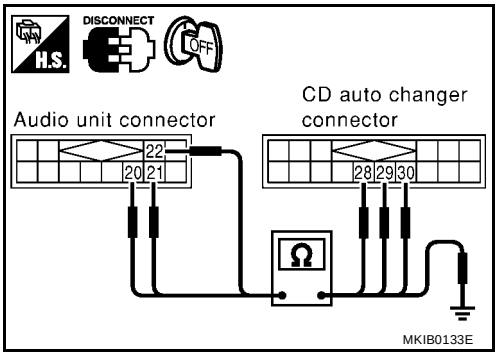
OK >> Replace audio unit.
NG >> Replace harness or connector.

CD Changer Circuit Check

EKS004TY

1. CD CHANGER CIRCUIT CHECK

1. Disconnect CD auto changer connector.
2. Check continuity between audio unit and CD auto changer.



Terminals				Continuity
Multifunction switch		CD auto changer		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M52	20 (R)	B31	28 (R)	Yes
	21 (W)		29 (W)	
	22 (B)		30 (B)	

3. Check continuity between multifunction switch and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M49	20 (R)	Ground	No
	21 (W)		
	22 (B)		

Question

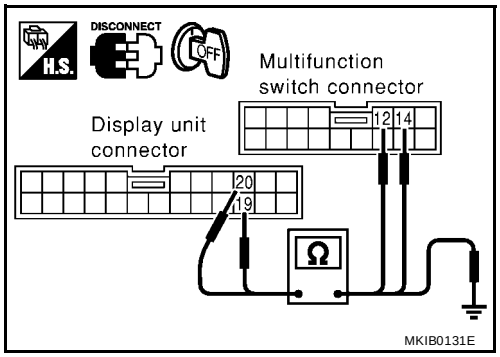
OK >> Replace CD auto changer.
NG >> Replace harness or connector.

AV Communication Line Check

EKS004SM

1. MULTIFUNCTION SWITCH CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect display unit connector and multifunction switch connector.
3. Check continuity between display unit and multifunction switch.



Terminals				Continuity
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M61	19 (L)	M49	14 (L)	Yes
	20 (B/W)		12 (B/W)	

4. Check continuity between display unit and ground.

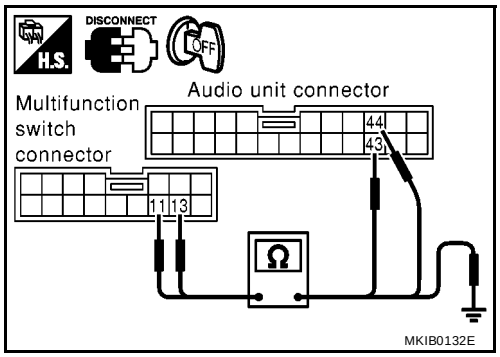
Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M61	19 (L)	Ground	No
	20 (B/W)		

OK or NG

OK >> GO TO 2.
NG >> Replace harness or connector

2. AUDIO UNIT CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect audio unit connector.
3. Check continuity between multifunction switch and audio unit.



Terminals				Continuity
Multifunction switch		Audio unit		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M49	11 (L)	M53	44 (L)	Yes
	13 (P)		43 (P)	

4. Check continuity between multifunction switch and ground.

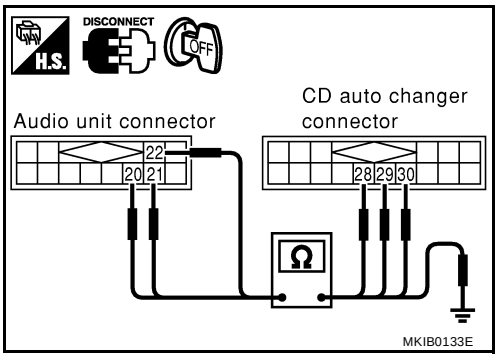
Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M49	11 (L)	Ground	No
	13 (P)		

Question

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

3. CD CHANGER CIRCUIT CHECK

1. Disconnect CD auto changer connector.
2. Check continuity between audio unit and CD auto changer.



Terminals				Continuity
Multifunction switch		CD auto changer		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M52	20 (R)	B31	28 (R)	Yes
	21 (W)		29 (W)	
	22 (B)		30 (B)	

3. Check continuity between multifunction switch and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M49	20 (R)	Ground	No
	21 (W)		
	22 (B)		

Question

OK >> Replace display unit.
NG >> Replace harness or connector.

Self-Diagnosis Does Not Perform

EKS004SO

1. MULTIFUNCTION SWITCH CHECK

Check multifunction switch power and ground circuit.Refer to DI-81, "Power Supply and Ground Circuit Check for Multifunction Switch" .

>> GO TO 2.

2. DISPLAY UNIT CHECK

Check display unit power and ground circuit. Refer to DI-80, "Power Supply and Ground Circuit Check for Display Unit" .

>> GO TO 3.

3. SELF-DIAGNOSIS CHECK

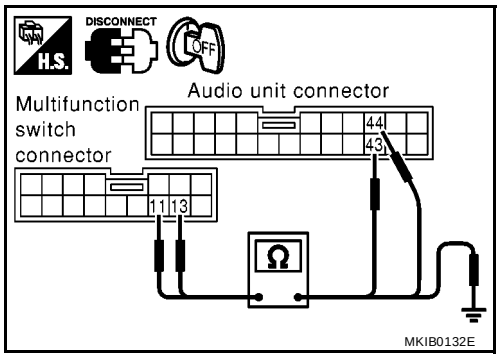
1. Disconnect audio unit connector M53.
2. Perform self-diagnosis mode.

Self-diagnosis activated

OK >> GO TO 4.
NG >> AV communication line check. Refer to DI-86, "AV Communication Line Check" .

4. MULTIFUNCTION SWITCH CIRCUIT CHECK

1. Disconnect multifunction switch connector.
2. Check continuity between multifunction switch and audio unit.



Terminals				Continuity
Multifunction switch		Audio unit		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M49	11 (L)	M53	44 (L)	Yes
	13 (P)		43 (P)	

3. Check continuity between multifunction switch and ground.

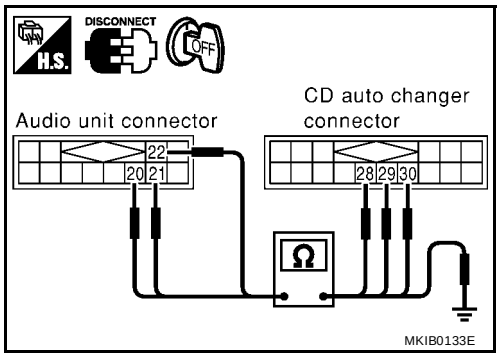
Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M49	11 (L)	Ground	No
	13 (P)		

OK or NG

OK >> GO TO 5.
NG >> Replace harness or connector.

5. AUDIO UNIT CIRCUIT CHECK

1. Disconnect CD auto changer connector.
2. Check continuity between audio unit and CD auto changer.



Terminals				Continuity
Multifunction switch		CD auto changer		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M52	20 (R)	B31	28 (R)	Yes
	21 (W)		29 (W)	
	22 (B)		30 (B)	

3. Check continuity between audio unit and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M52	20 (R)	Ground	No
	21 (W)		
	22 (B)		

OK or NG

OK >> Inspection end.
NG >> Replace harness or connector.

RGB Screen Is Not Shown

EKS004OV

Replace display unit.

Color of RGB Image Is Not Proper

EKS004OW

Replace display unit.

RGB Screen Is Rolling

EKS004OX

Replace display unit.

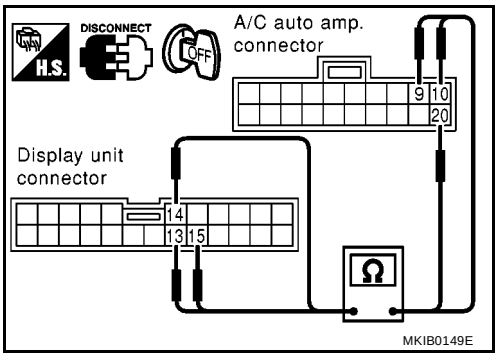
Air Conditioning Controls (Only) Are Ineffective (Rear Defogger Control Excluded).

EKS004TF

1. A/C AUTO AMP.AND DISPLAY UNIT CIRCUIT CHECK

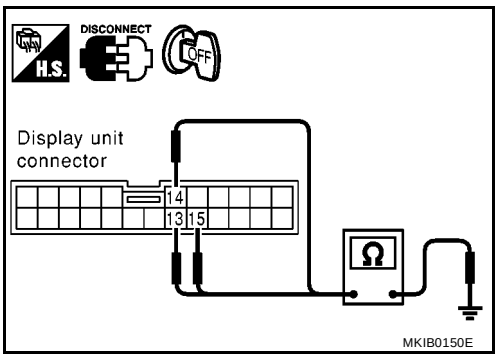
1. Turn the ignition switch OFF.
2. Disconnect A/C auto amp. connector and display unit connector.
3. Check continuity between display unit and A/C auto amp.

Terminals				Continuity
Display unit (+)		A/C auto amp. (-)		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
M61	13 (L)	M75	20 (L)	YES
	14 (L/R)		10 (L/R)	
	15 (L/W)		9 (L/W)	



4. Check continuity between display unit and ground.

Terminals			Continuity
Connector	Terminal (wire color)	(-)	
M61	13 (L)	Ground	NO
	14 (L/R)		
	15 (L/W)		



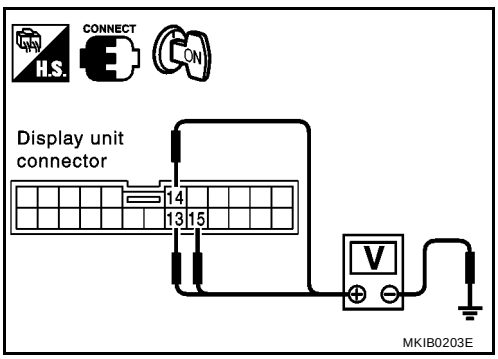
Ok or NG

OK >> GO TO 2.
NG >> Replace harness or connector.

2. A/C–AV, AV–AC, AC–CLK COMMUNICATION SIGNAL CHECK

1. Connect A/C auto amp. connector.
2. Turn the ignition switch ON.
3. Check voltage between display unit and ground.

Terminals			Voltage (V)
(+)		(-)	
Connector	Terminal (wire color)		
M61	13 (L)	Ground	Approx. 3.5 or more
	14 (L/R)		
	15 (L/W)		



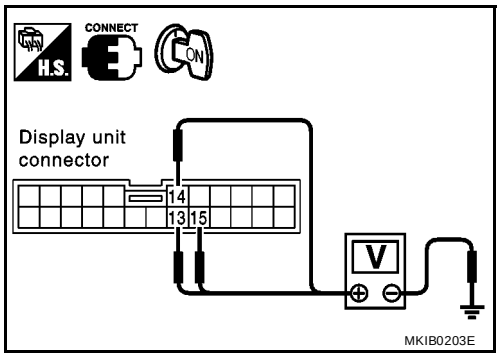
OK or NG

OK >> GO TO 3.
NG >> Replace A/C auto amp.

3. A/C– AV, AV– AC, AC– CLK COMMUNICATION SIGNAL CHECK

1. Connect display unit connector.
2. Turn the ignition switch ON.
3. Check voltage between display unit and ground.

Terminals			Reference signal
(+)		(-)	
Connector	Terminal (wire color)		
M61	13 (L)	Ground	DI-74, "Terminals and Reference Value for Display Unit"
	14 (L/R)		
	15 (L/W)		



OK or NG

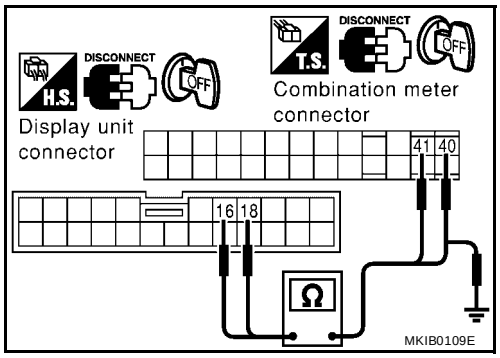
OK >> Replace A/C auto amp.
NG >> Replace display unit.

No Fuel Information Is Displayed/No Warning Message Is Displayed/LHD Models

EKS004OY

1. COMMUNICATION LINE (MA-AV, AV-ME) CIRCUIT CHECK

1. Disconnect the Display unit connector and combination meter connector.
2. Check continuity between display unit and ground.



Terminals			Continuity
Connector	Terminal (wire color)	Terminal	
M61	16 (R)	Ground	No
	18 (G)		

3. Check continuity between display unit and combination meter.

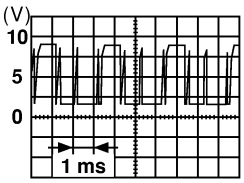
Terminals				Continuity
Display unit		Combination meter		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
M61	16 (R)	M37	41 (R)	Yes
	18 (G)		40 (G)	

OK or NG

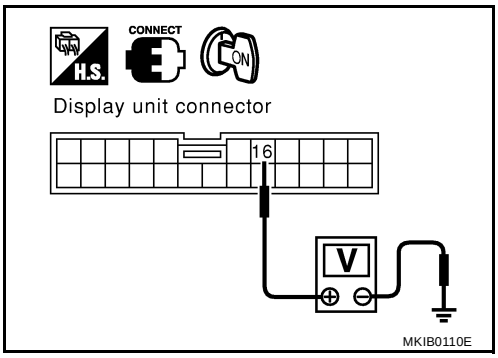
OK >> GO TO 2.
NG >> Replace harness or connector.

2. COMMUNICATION SIGNAL (AV–ME) CHECK

1. Connect display unit connector and combination meter connector.
2. Turn ignition switch ON.
3. Check voltage signal between display unit terminal 16 (R) and ground.



SKIA0169E



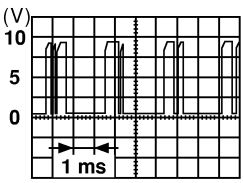
MKIB0110E

OK or NG

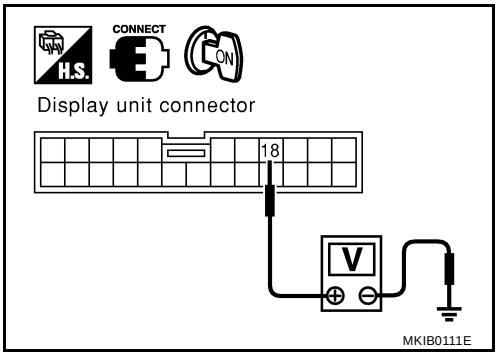
OK >> GO TO 3.
NG >> Replace display unit.

3. COMMUNICATION SIGNAL (ME–AV) CHECK

1. Turn ignition switch to ON and display.
2. Check voltage signal between display unit connector terminal 18 (L) and ground.



SKIA0170E



MKIB0111E

OK or NG

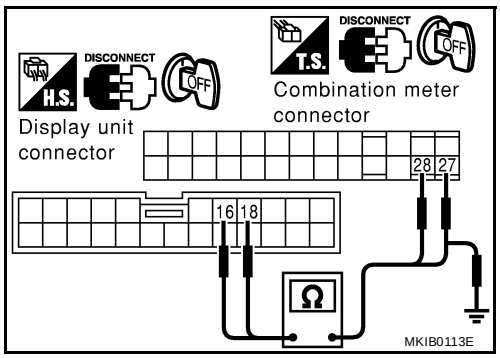
OK >> Replace display unit.
NG >> Replace combination meter.

No Fuel Information Is Displayed/No Warning Message Is Displayed/RHD Models

EKS004SP

1. COMMUNICATION LINE (MA-AV, AV-ME) CIRCUIT CHECK

1. Disconnect the Display unit connector and combination meter connector.
2. Check continuity between display unit and ground.



Terminals			Continuity
Connector	Terminal (wire color)	Terminal	
M61	16 (R)	Ground	No
	18 (G)		

3. Check continuity between display unit and combination meter.

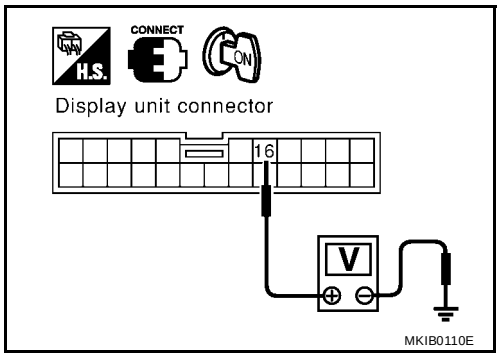
Terminals				Continuity
Display unit		Combination meter		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
M61	16 (R)	M37	28 (R)	Yes
	18 (G)		27 (G)	

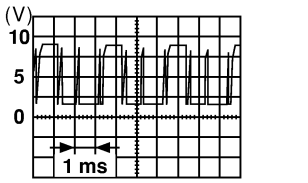
OK or NG

OK >> GO TO 2.
NG >> Replace harness or connector.

2. COMMUNICATION SIGNAL (AV–ME) CHECK

1. Connect display unit connector and combination meter connector.
2. Turn ignition switch ON.
3. Check voltage signal between display unit terminal 16 (R) and ground.





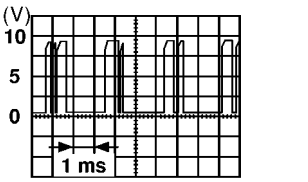
SKIA0169E

OK or NG

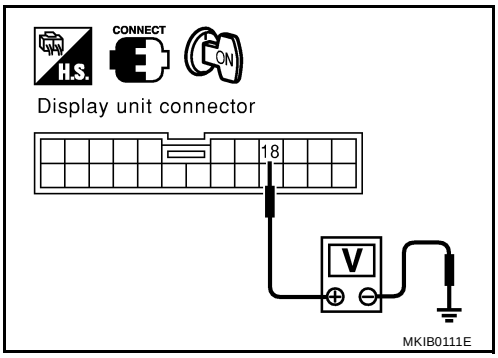
OK >> GO TO 3.
NG >> Replace display unit.

3. COMMUNICATION SIGNAL (ME–AV) CHECK

1. Turn ignition switch to ON and display.
2. Check voltage signal between display unit connector terminal 18 (L) and ground.



SKIA0170E



MKIB0111E

OK or NG

OK >> Replace display unit.
NG >> Replace combination meter.

Multifunction Switch Does Not Operate.

EKS004P0

1. POWER AND GROUND CIRCUIT CHECK

- Check power and ground circuit. Refer to DI-75, "Terminals and Reference Value for Multifunction Switch" .

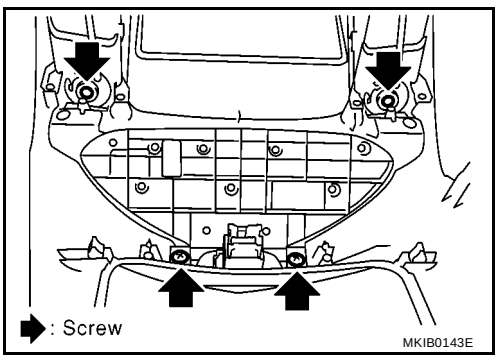
OK or NG

OK >> Replace multifunction switch.
NG >> Repair or replace harness.

Removal and Installation of Multifunction switch

EKS004T3

1. Remove the cluster lid C. Refer to IP-6, "CLUSTER LID C" .
2. Remove the screw (4), and remove the multifunction switch.

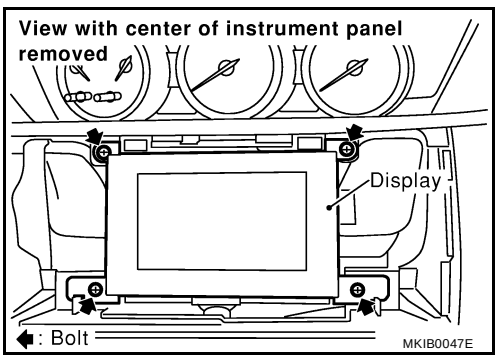


MKIB0143E

Removal and Installation of Display

EKS004P2

1. Remove the cluster lid C. Refer to IP-6, "CLUSTER LID C" .
2. Remove the screws (2), and remove the display.



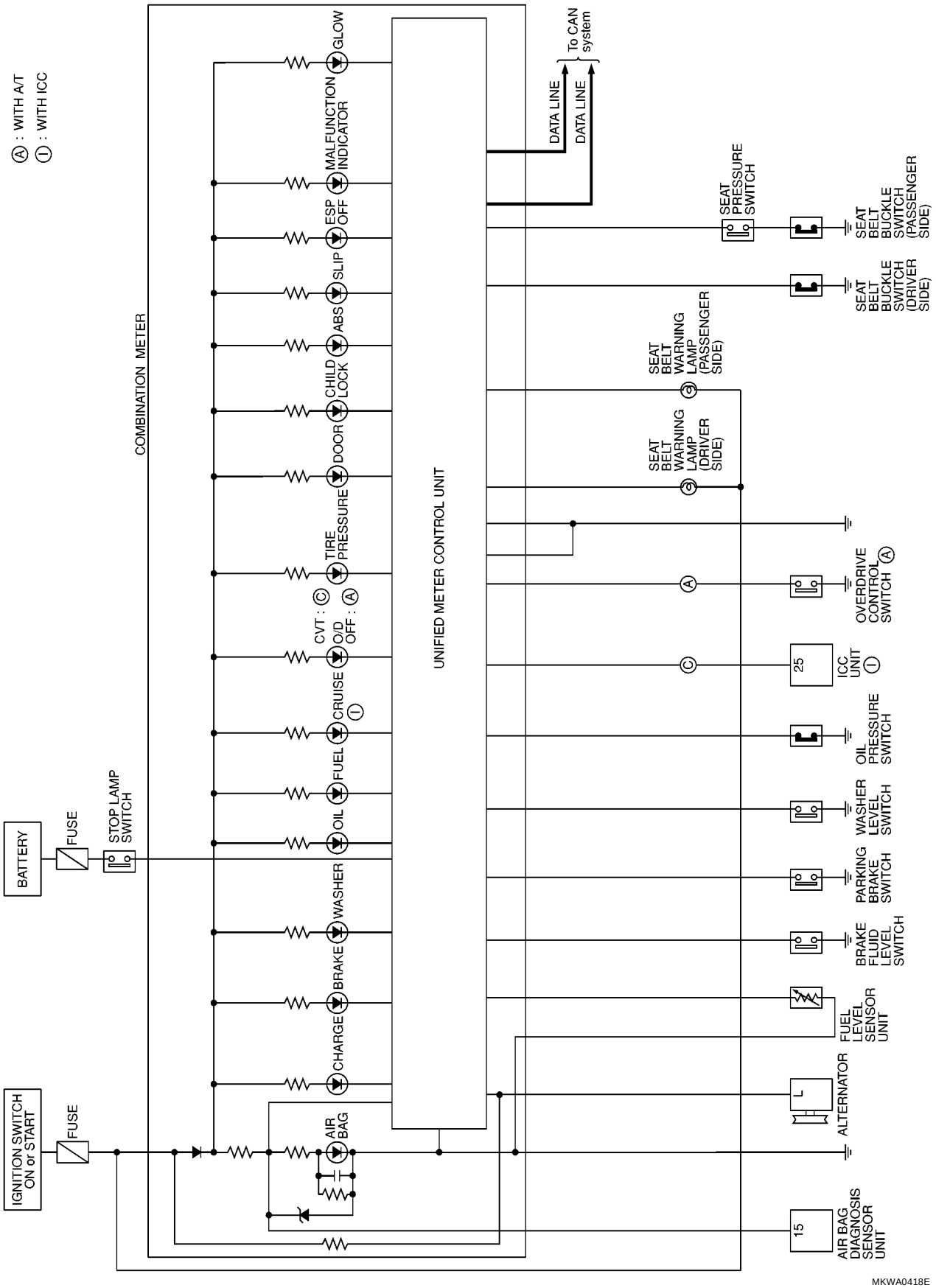
MKIB0047E

WARNING LAMPS

PFP:24814

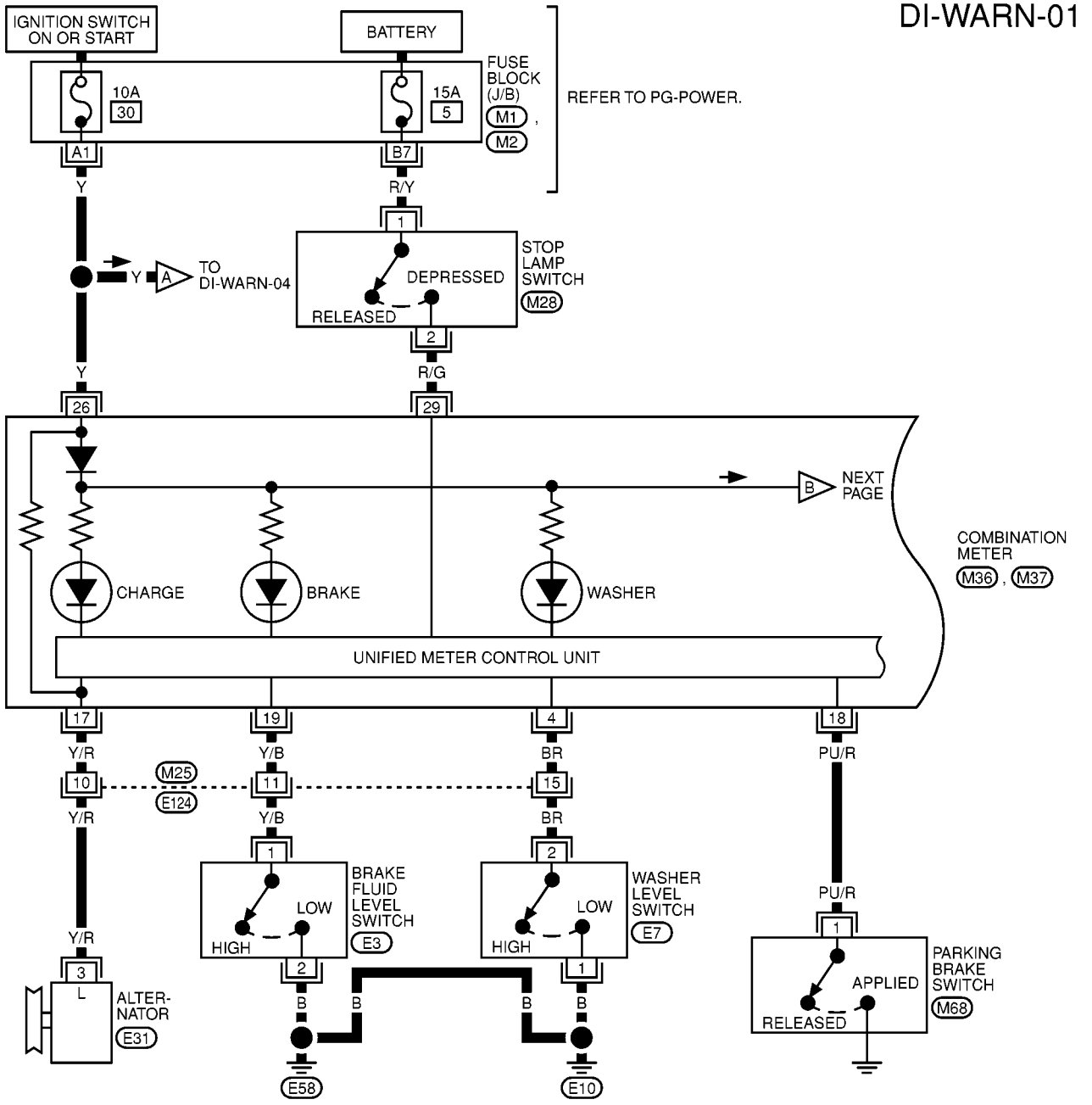
Schematic

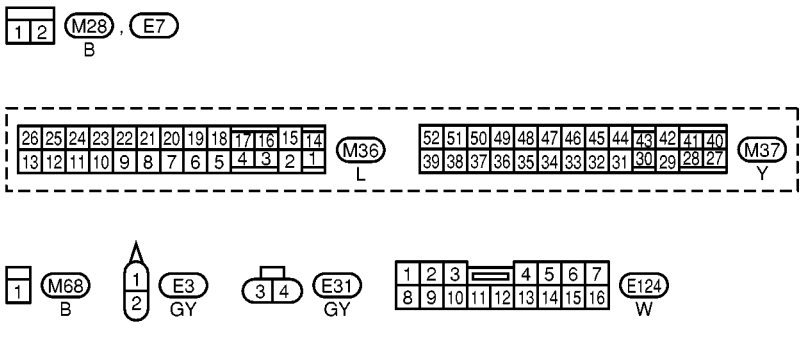
EKS003XH



Wiring Diagram — WARN —/LHD Models

EKS003XI

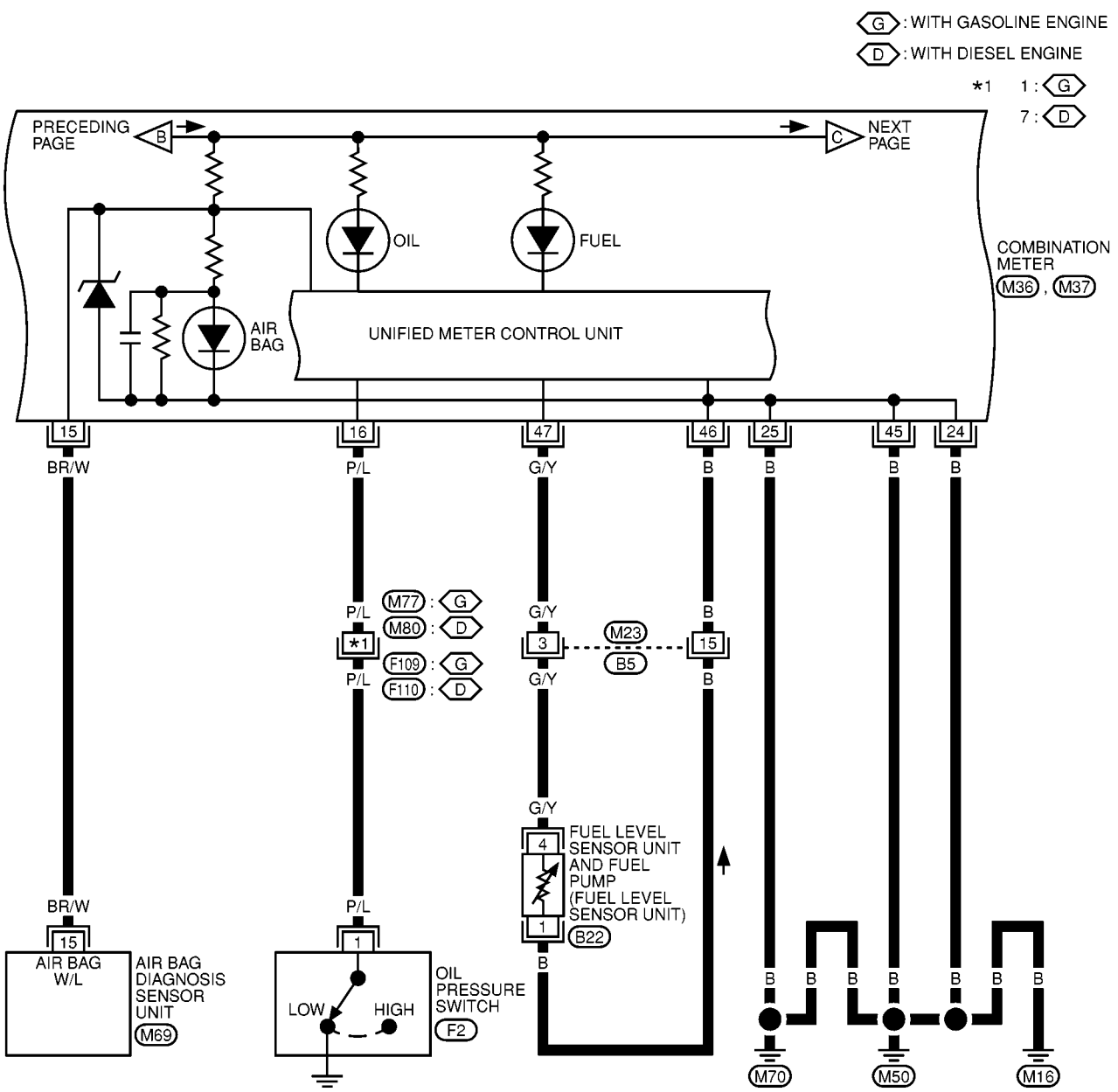


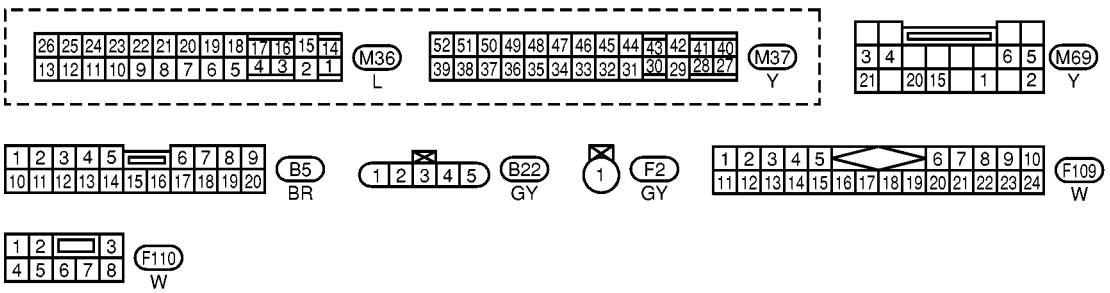


REFER TO THE FOLLOWING.
M1 , M2 -FUSE BLOCK-JUNCTION BOX (J/B)

MKWA0419E

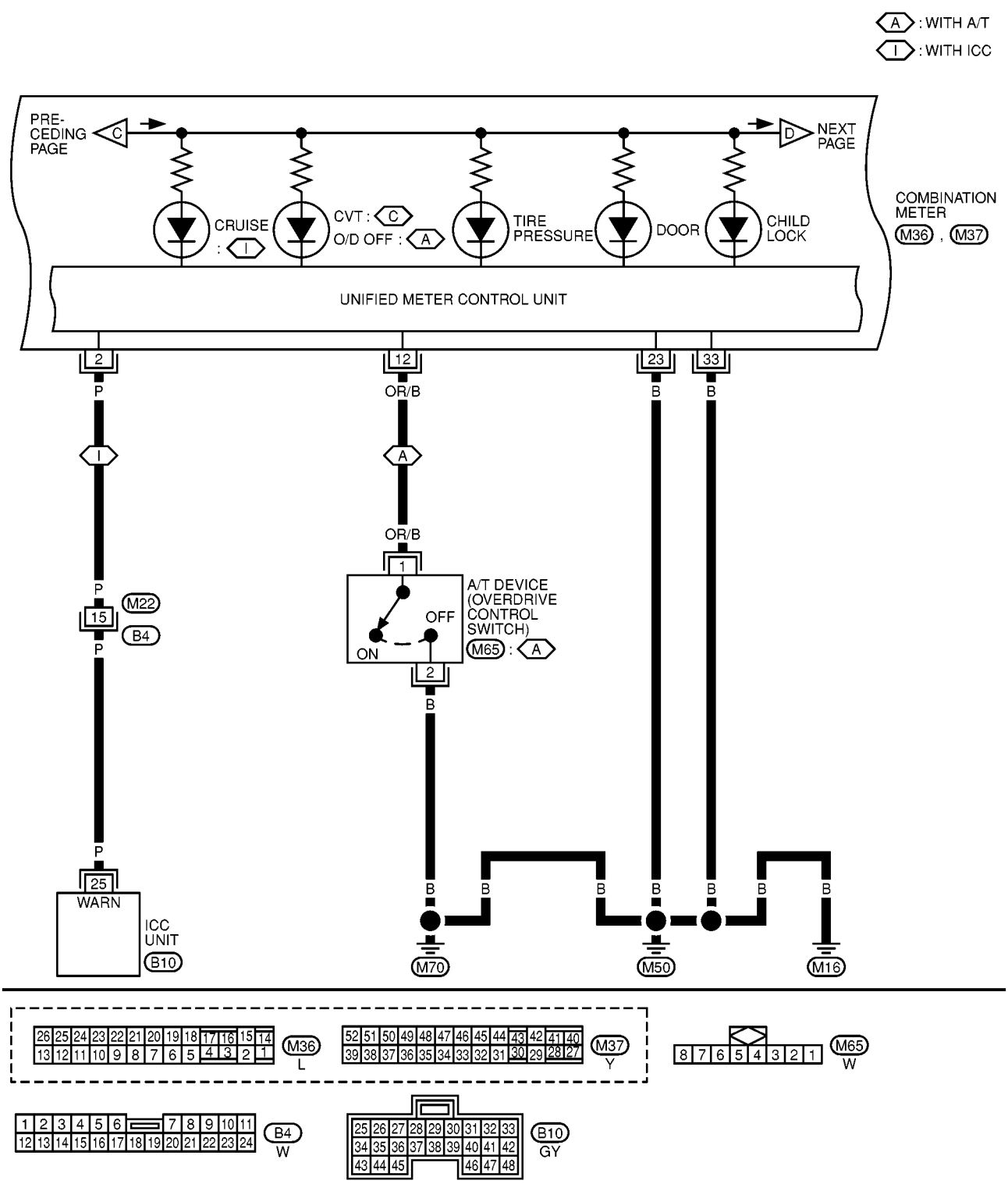
DI-WARN-02





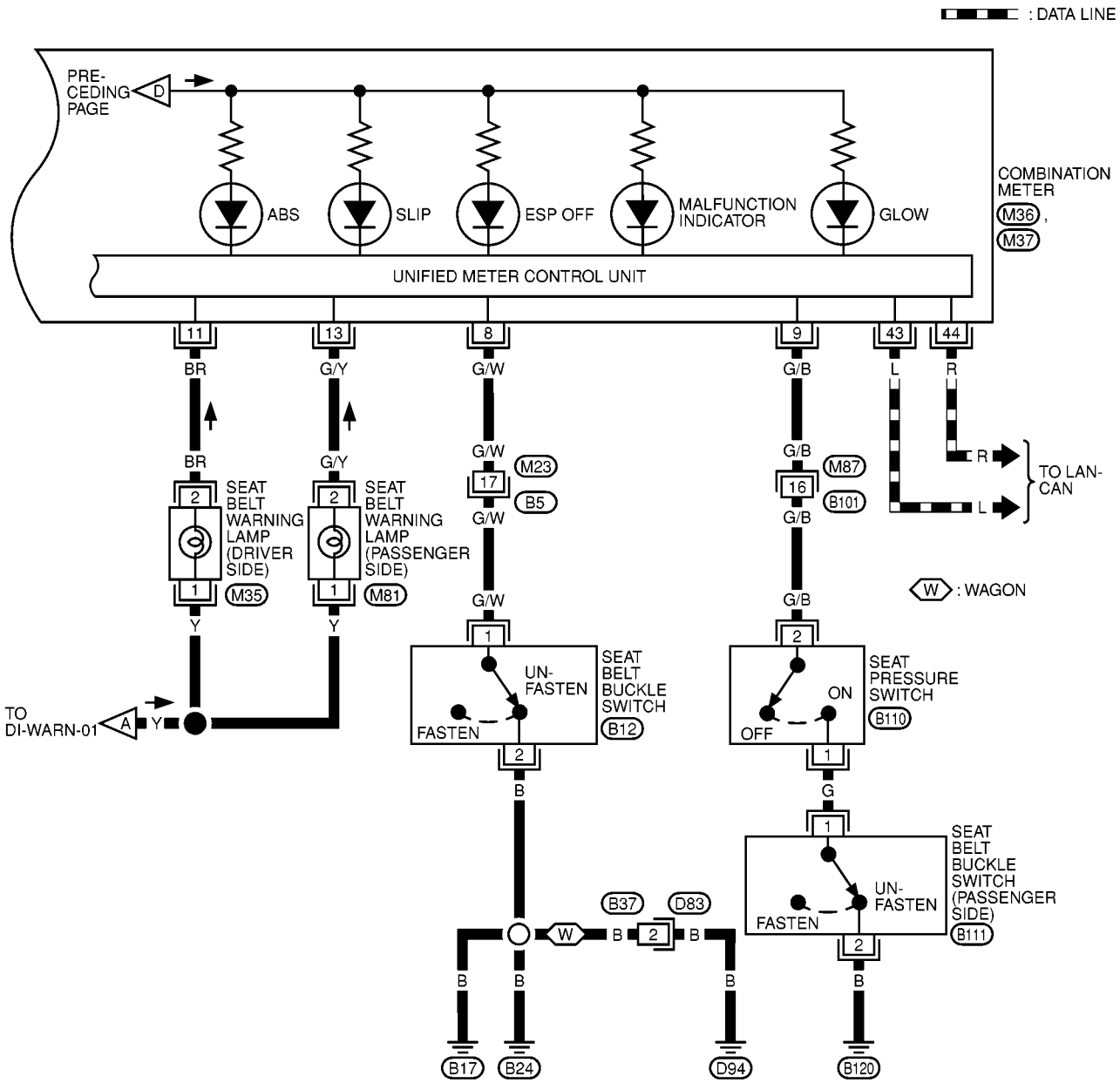
MKWA0420E

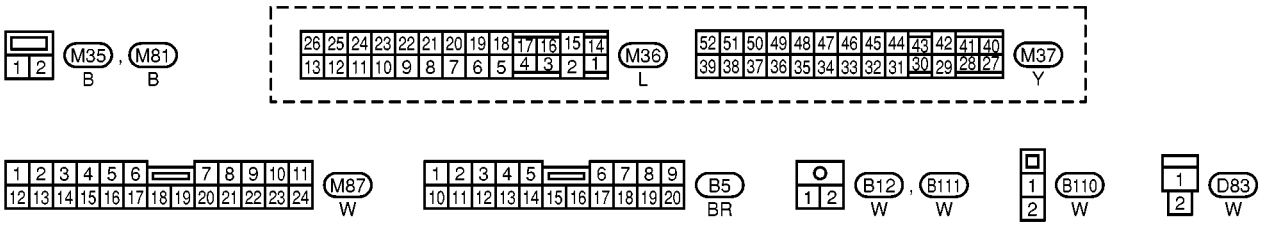
DI-WARN-03



MKWA0421E

DI-WARN-04



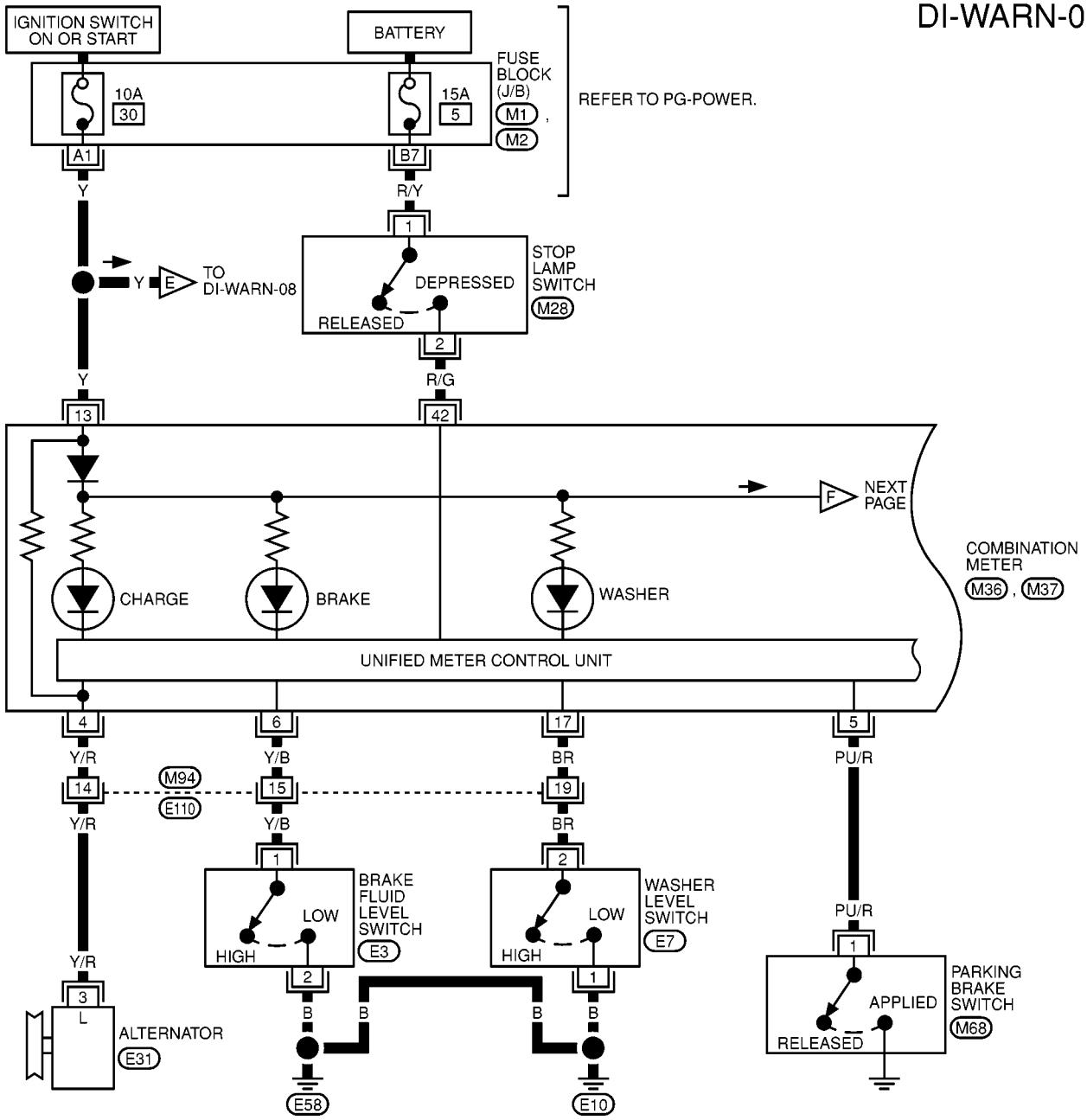


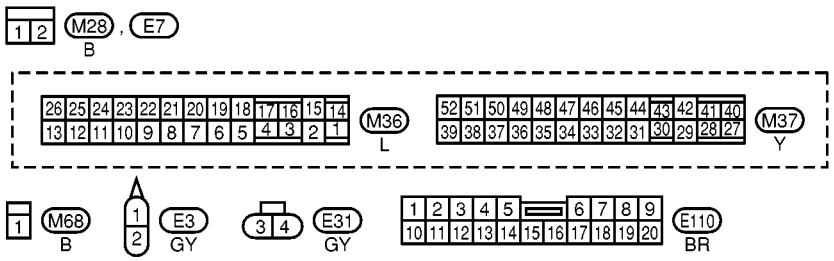
MKWA0422E

Wiring Diagram — WARN — /RHD Models

EKS003XJ

DI-WARN-05

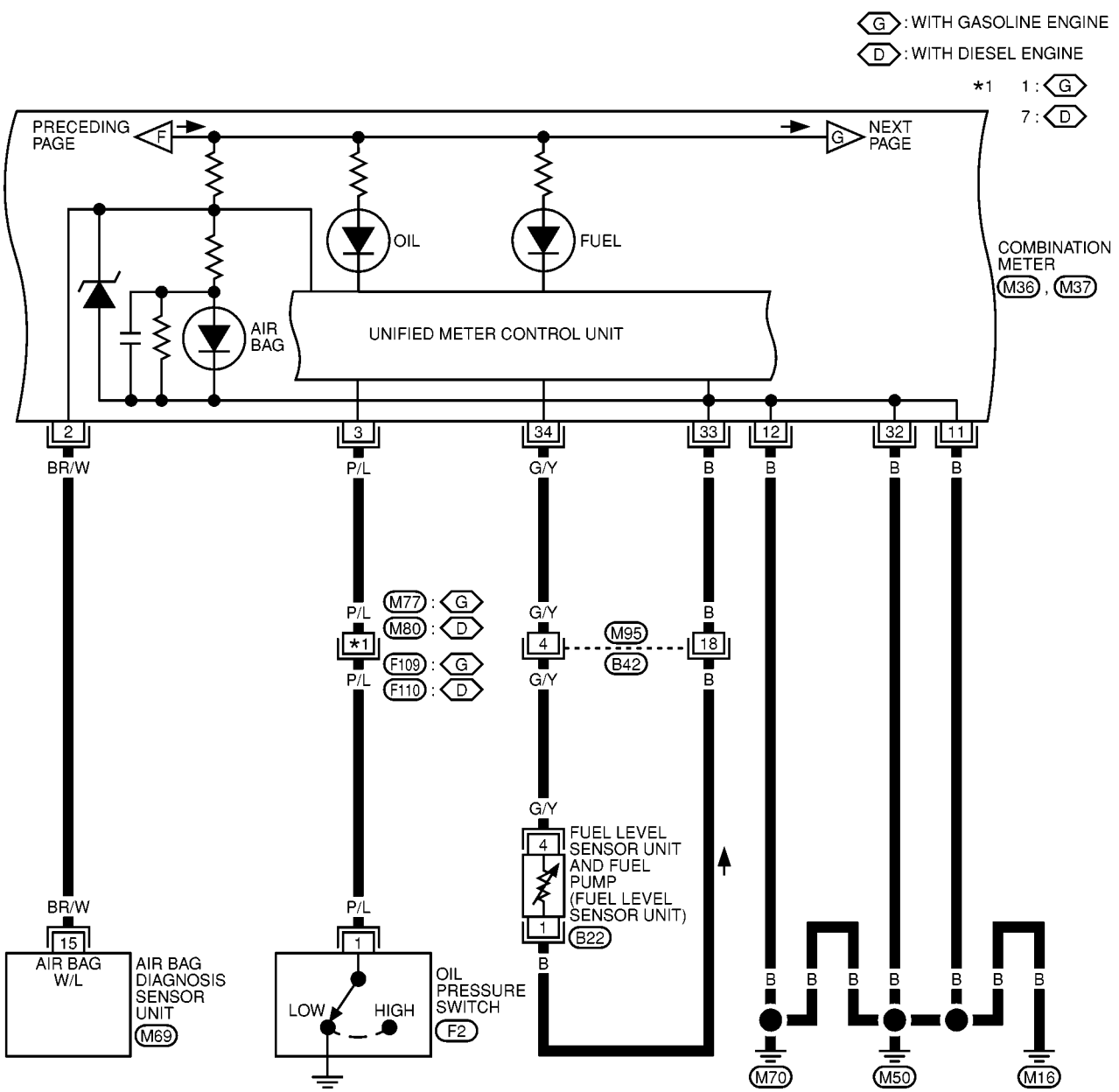




REFER TO THE FOLLOWING.
M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)

MKWA0423E

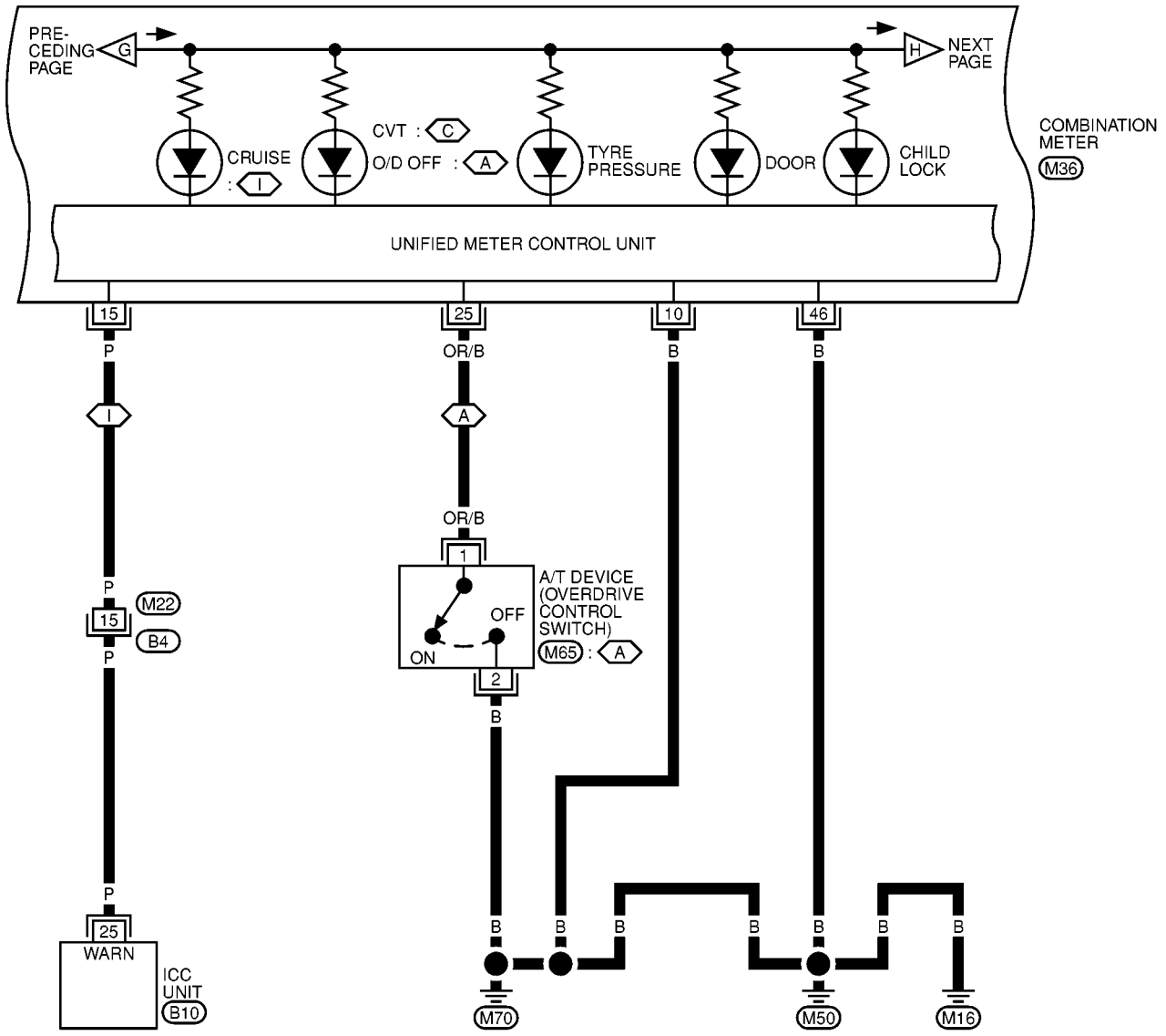
DI-WARN-06

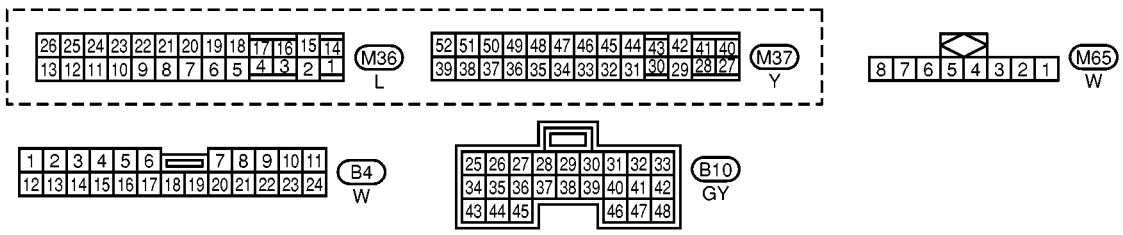


MKWA0424E

DI-WARN-07

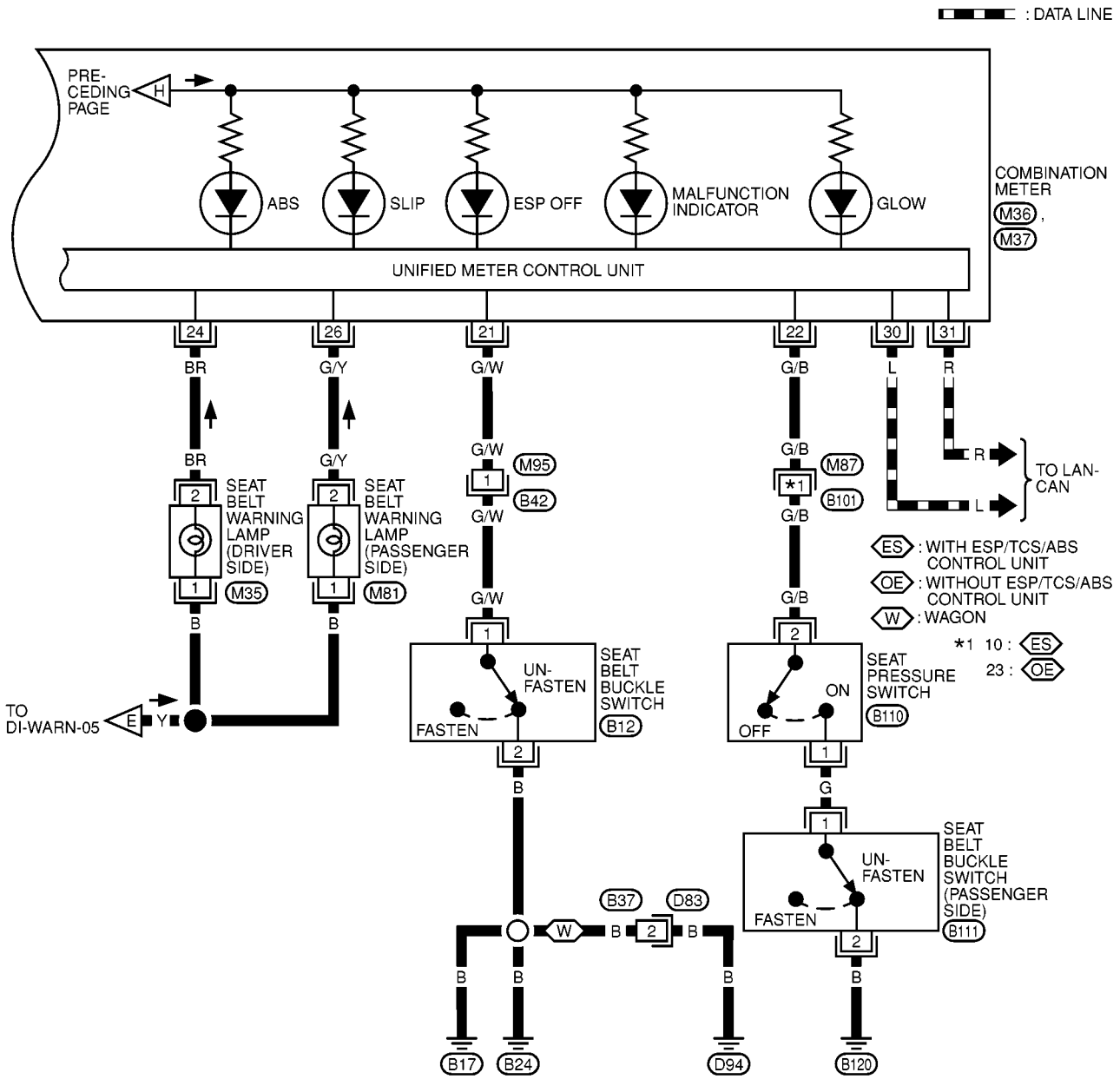
A : WITH A/T
I : WITH ICC

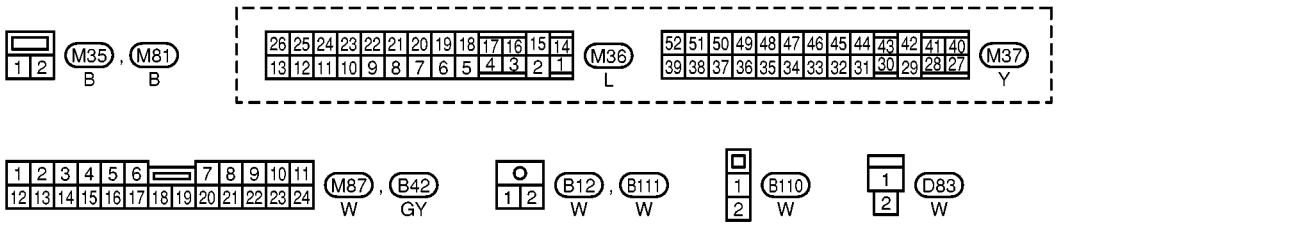




MKWA0425E

DI-WARN-08





MKWA0426E

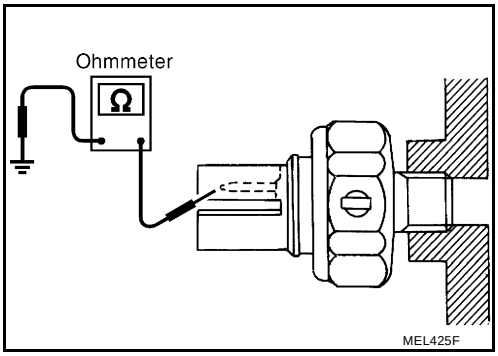
Electrical Components Inspection

EKS003XK

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.

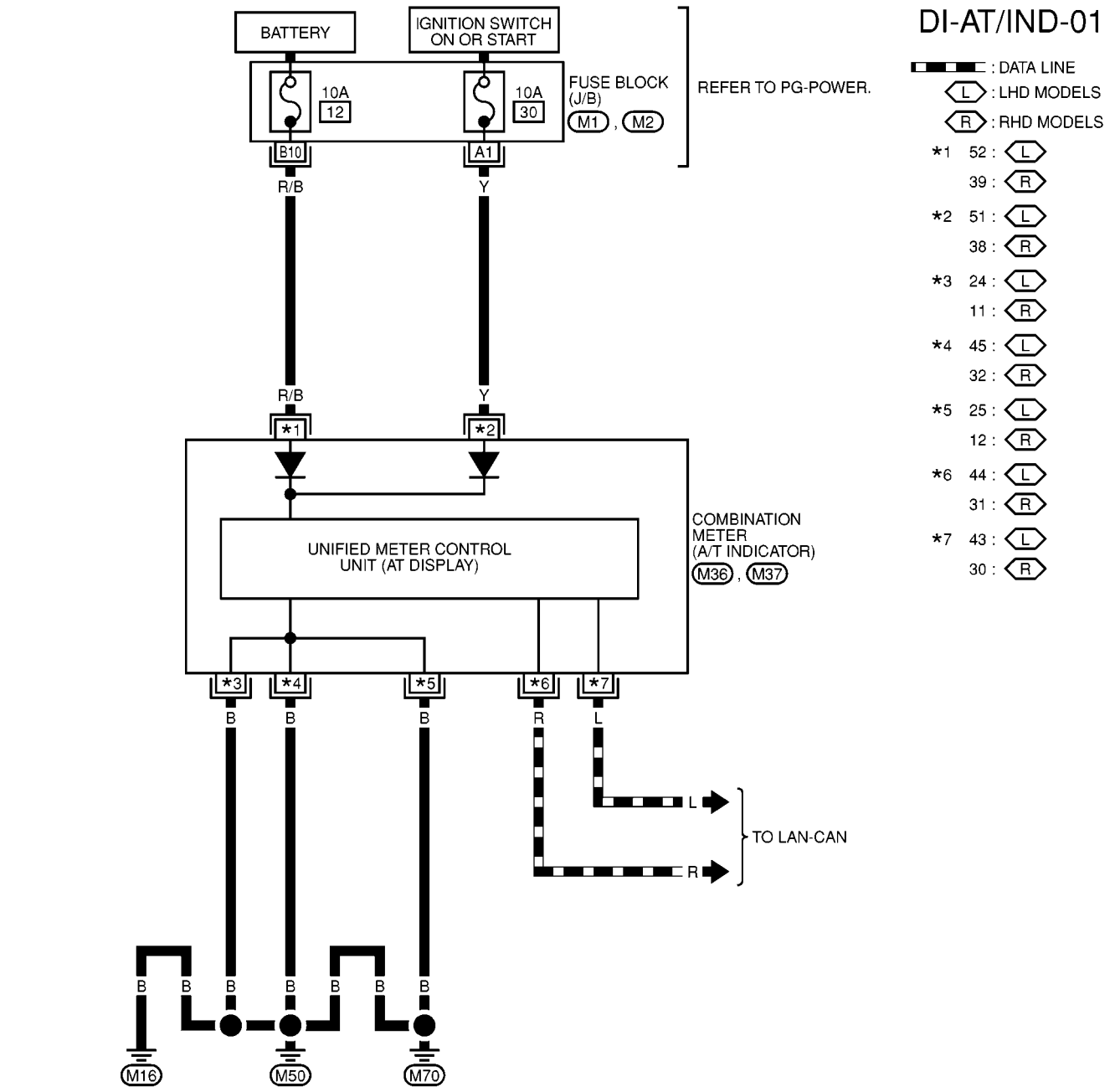


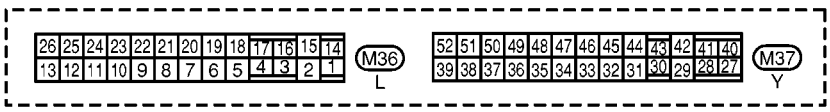
A/T INDICATOR

PFP:24814

Wiring Diagram — AT/IND —

EKS003XL





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

MKWA0186E

SYMPTOM CHART

Symptom		Possible cause
A/T indicator lamp is malfunctioning.	All the lamps inactive Partially inactive	A/T indicator does not illuminate. Shown the below.
	Segment is missing	● Combination meter self-diagnosis mode. Refer to DI-24, "Combination Meter Self-Diagnosis" (LHD models) or DI-52, "Combination Meter Self-Diagnosis" (RHD models). ● Check the connector conditions in combination meter. If the above system is OK, replace unified meter control unit.

1. TCM CONTROL UNIT SYSTEM INSPECTION

Perform TCM self-diagnosis. Refer to in AT section.

OK or NG?

OK >> GO TO 2.
NG >> GO to TCM trouble diagnosis.

2. SELF-DIAGNOSIS INSPECTION

Perform combination meter self-diagnosis mode. Refer to DI-24, "Combination Meter Self-Diagnosis" (LHD models) or DI-52, "Combination Meter Self-Diagnosis" (RHD models).

OK or NG?

OK >> A/T indicator is OK.
NG >> Replace combination meter control unit assembly.

WARNING CHIME

PFP:24814

System Description

EKS004MQ

POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- through 10A fuse (No. 32, located in fuse and fusible link box)
- to combination switch terminal 11, and
- to daytime light control unit terminal 1 (with daytime light control unit).
- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to key switch terminal 1 and
- to smart entrance control unit terminal 5.

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

- through 10A fuse [No. 10, located in the fuse block (J/B)]
- to smart entrance control unit terminal 29.

Ground is supplied

- to smart entrance control unit terminal 53
- through body grounds M16, M50 and M70.

When a signal, or combination of signals, is received by the smart entrance control unit, the warning chime will sound.

IGNITION KEY WARNING CHIME

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

- through key switch terminal 2
- to smart entrance control unit terminal 5.

Ground is supplied

- from front door switch (driver side) terminal 1
- to smart entrance control unit terminal 43.

Ground is supplied through the case of the front door switch (driver side).

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 10 (with daytime light system)
- to smart entrance control unit terminal 17.

Ground is supplied

- from front door switch (driver side) terminal 1
- to smart entrance control unit terminal 43.

Ground is supplied through the case of the front door switch (driver side).

SEAT BELT WARNING CHIME

Driver side

When the vehicle speed exceeds 25 km/h (16 MPH) with front driver side seat belt unfastened (seat belt switch ON), warning chime will sound for approximately 90 seconds.
If the seat belt are fastened, then unfastened again, warning chime will sound.
Ground is supplied:

- from seat belt buckle switch (driver side) terminal 1
- to combination meter terminal 8 (LHD models) or 21 (RHD models).

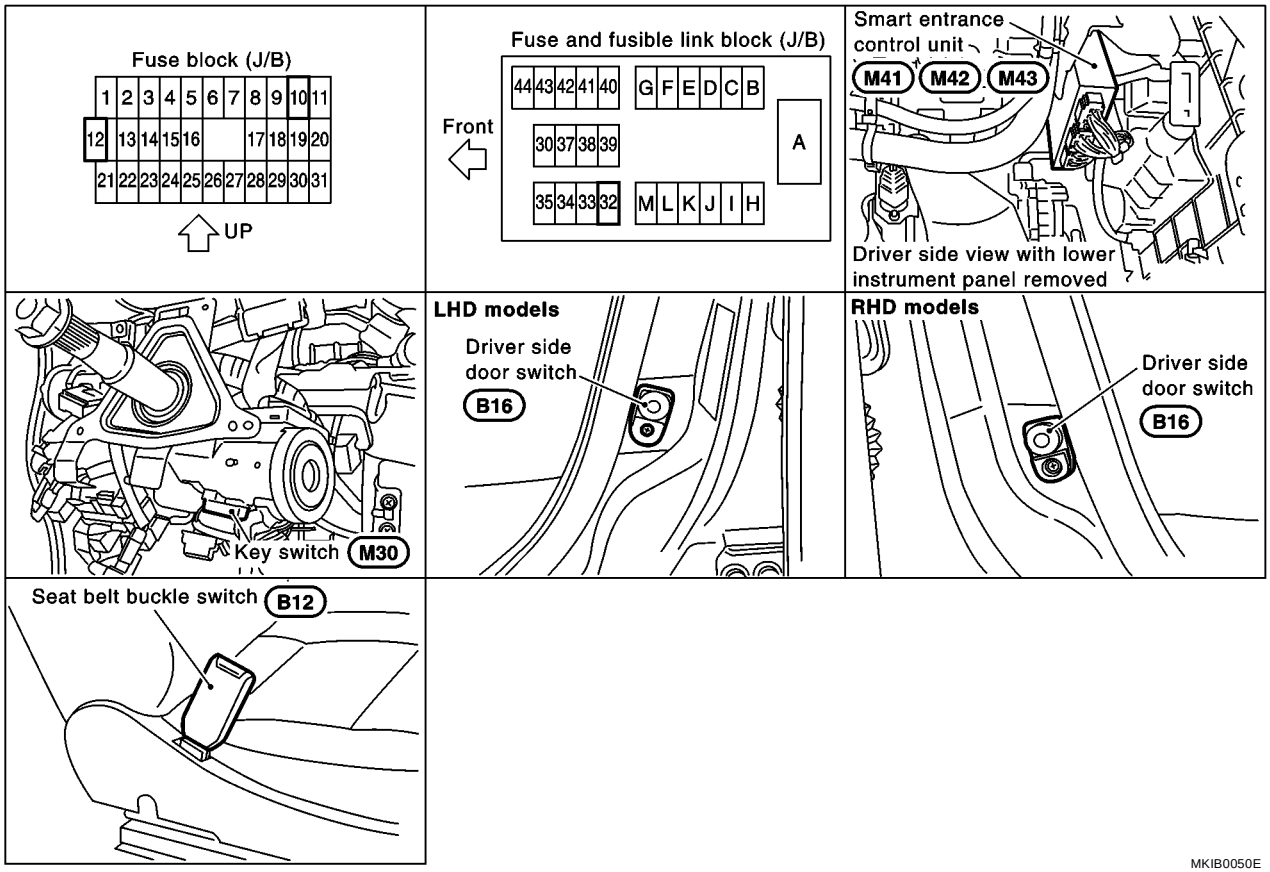
Seat belt buckle switch (driver side) terminal 2 is grounded through body grounds B17, B24 and D94.

Passenger side

When the person is sitting on the passenger side seat, warning chime will sound in case of the same condition as the driver side.

Component Parts and Harness Connector Location

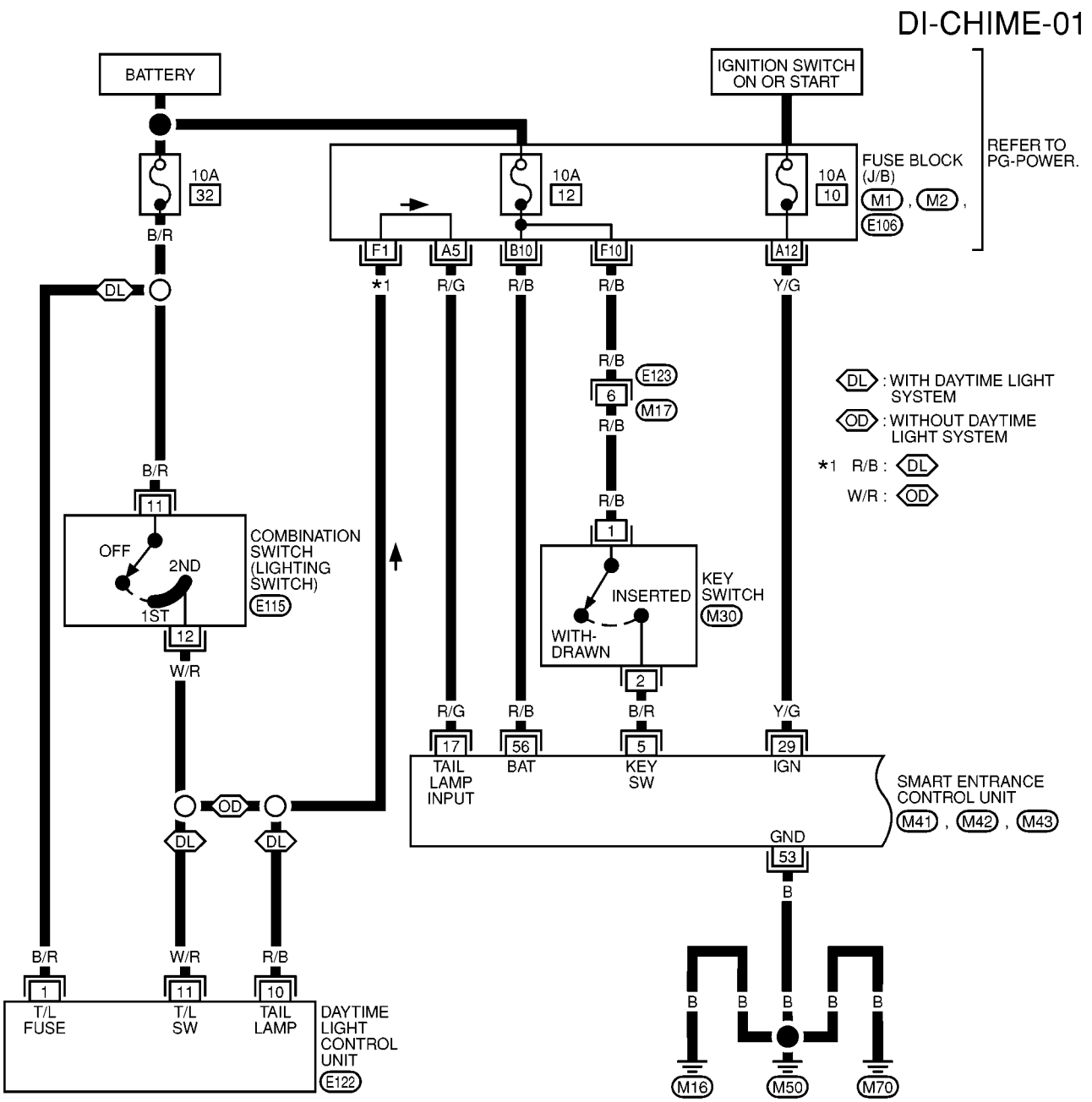
EKS003XN

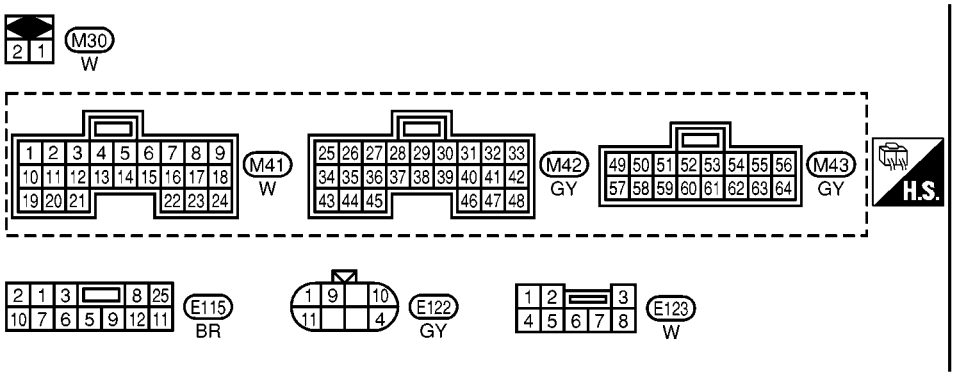


Wiring Diagram — CHIME —

EKS004R8

LHD MODELS

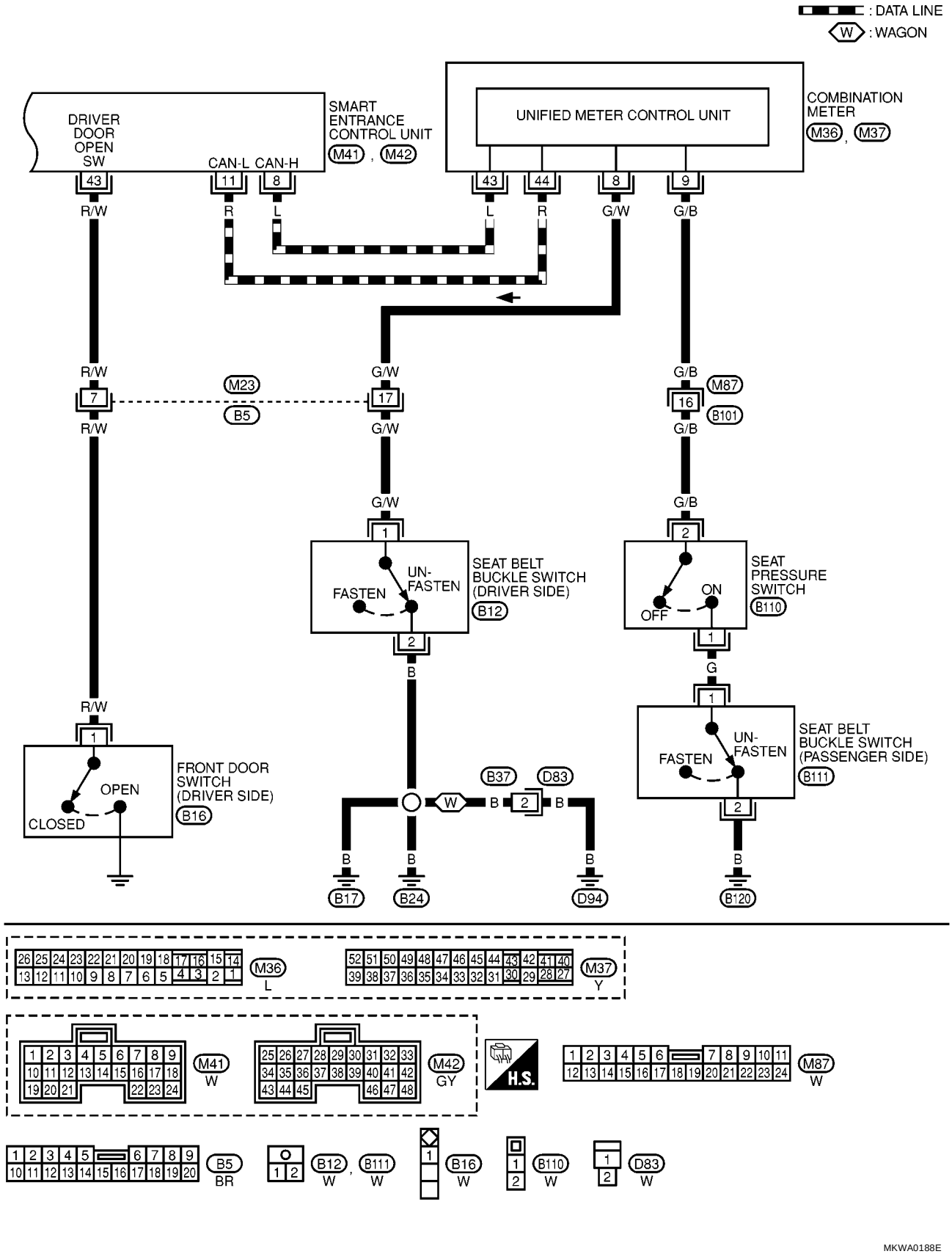




REFER TO THE FOLLOWING.
M1, M2, E106 -FUSE BLOCK-JUNCTION BOX (J/B)

MKWA0187E

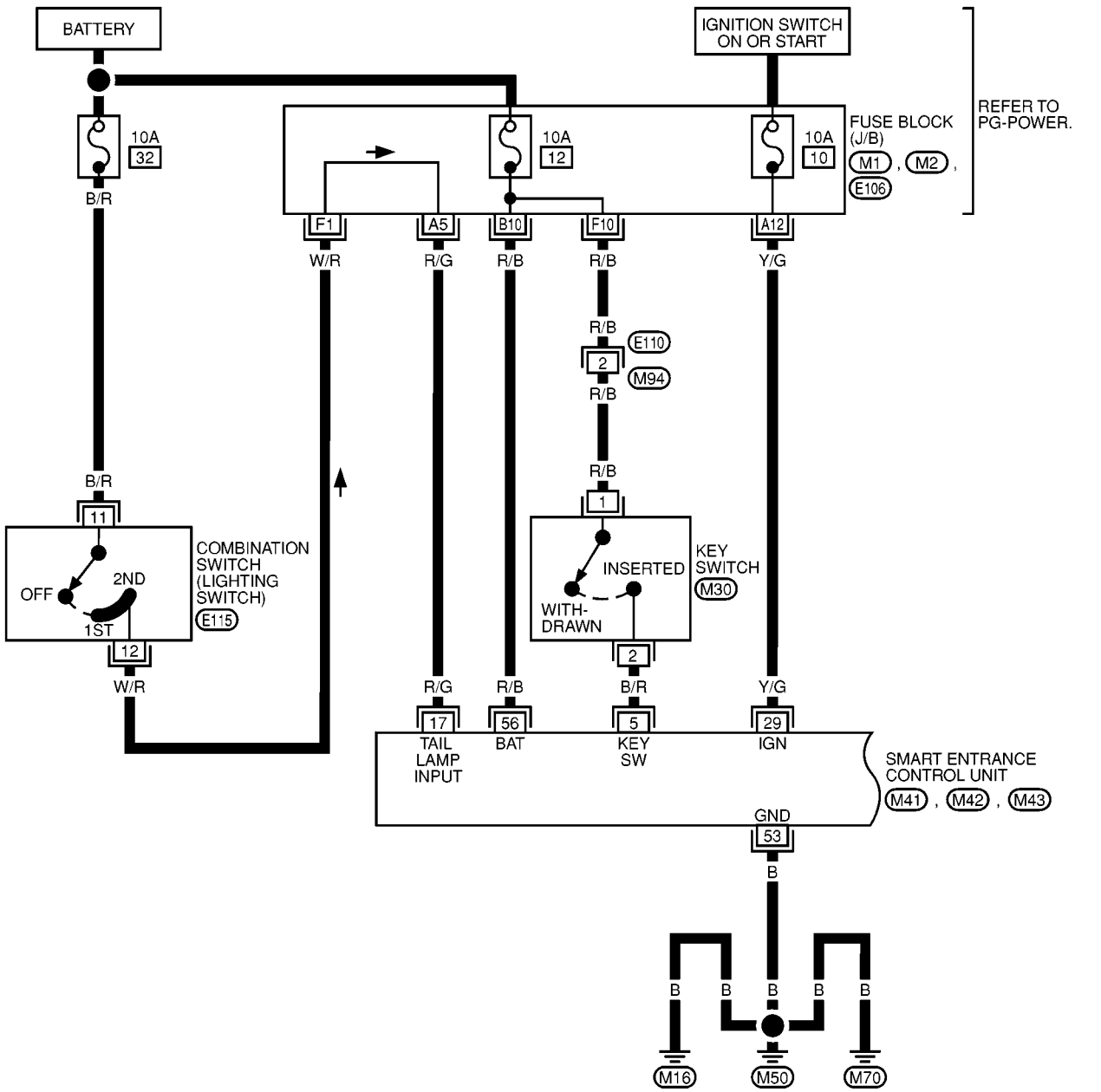
DI-CHIME-02

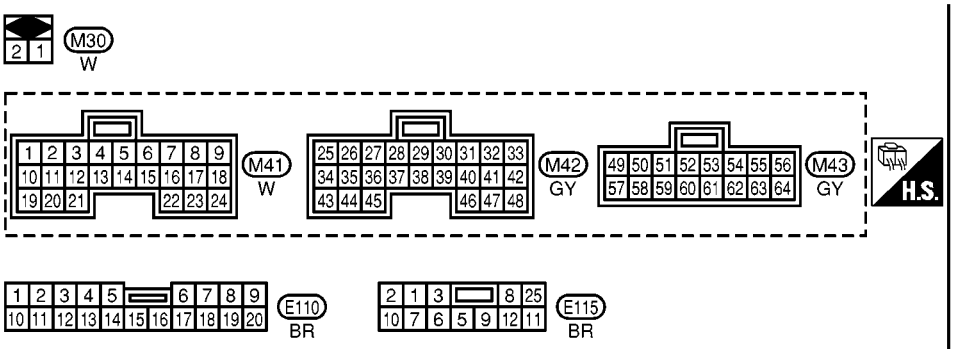


MKWA0188E

RHD MODELS

DI-CHIME-03

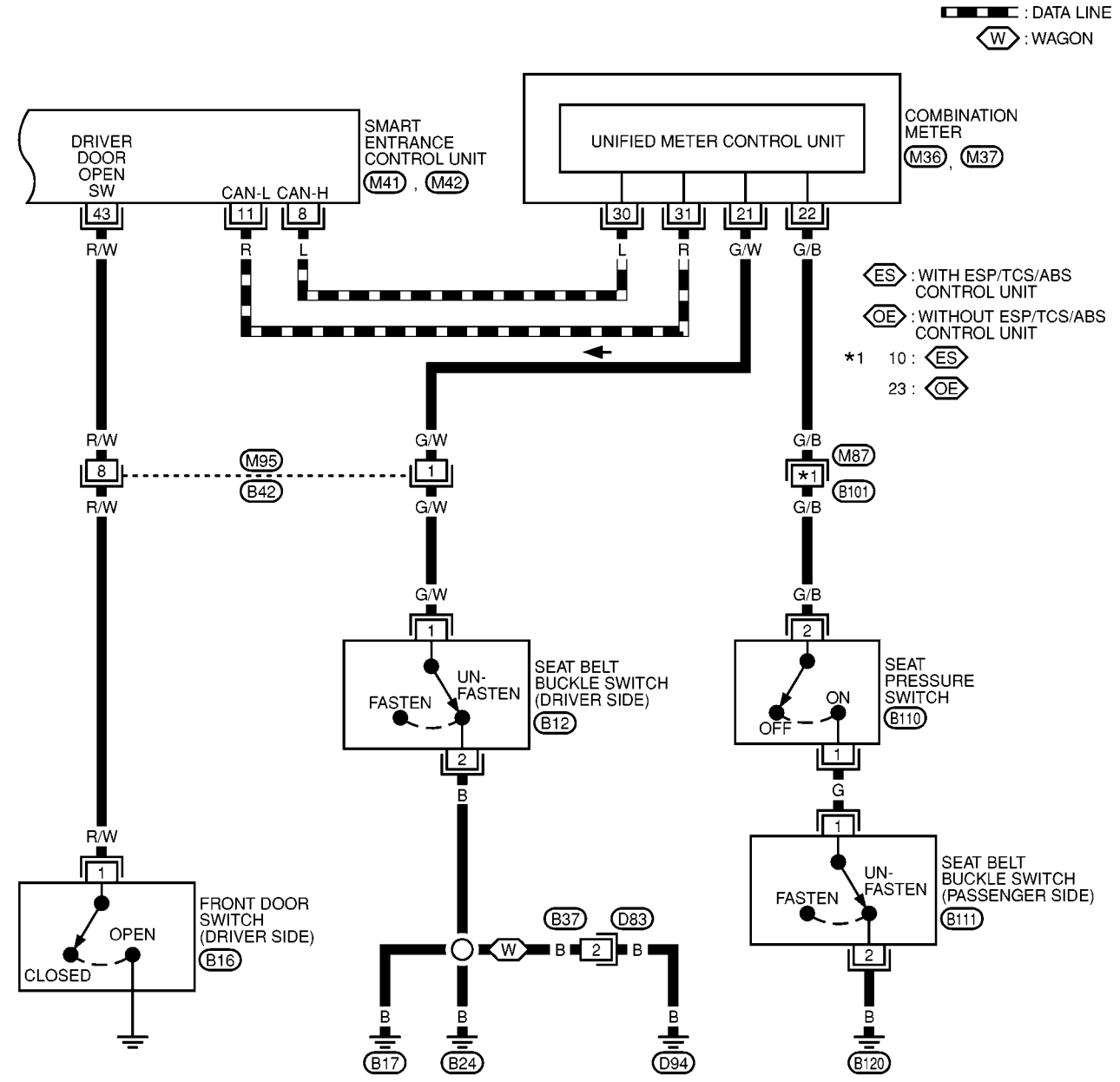




REFER TO THE FOLLOWING.
M1, M2, E106 -FUSE BLOCK-JUNCTION BOX (J/B)

MKWA0189E

DI-CHIME-04



MKWA0190E

CONSULT-II Inspection Procedure

EKS004R9

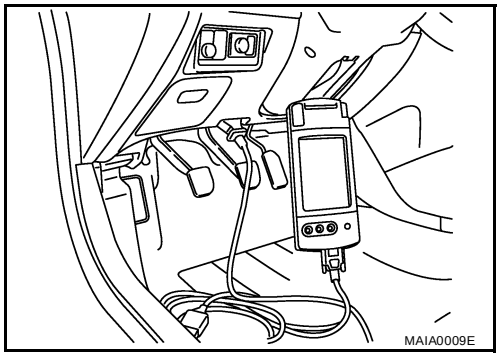
CONSULT-II executes the following functions by combining data reception and command transmission via the communication line from smart entrance control unit. CAN communication inspection and data monitor display.

DIAGNOSTIC ITEMS DESCRIPTION

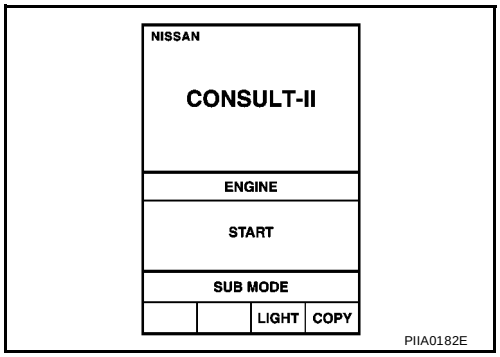
SMART ENTRANCE diagnosis position	Diagnosis mode	Description
KEY REMINDER	Data monitor	The input data to the SMART ENTRANCE control units is displayed in real time.
LIGHT ON REMINDER	Data monitor	The input data to the SMART ENTRANCE control units is displayed in real time.
SMART ENTRANCE PART NUMBER		Displays SMART ENTRANCE part No.

CONSULT-II BASIC OPERATION PROCEDURE

1. With the ignition switch OFF, connect CONSULT-II to the data link connector, and turn the ignition switch ON.

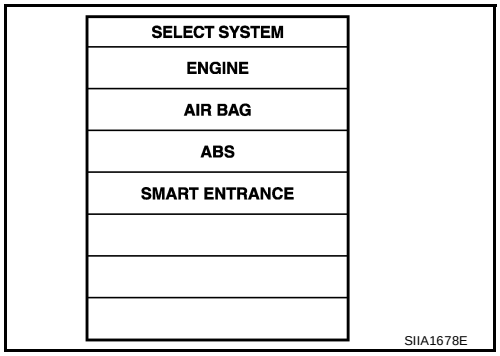

MAIA0009E

2. Touch “START”.



PIIA0182E

3. Touch “SMART ENTRANCE”.



SIIA1678E

4. Select the desired part to be diagnosed on the “SELECT TEST ITEM” screen.

Data monitor item (KEY REMINDER)

Monitored item	Description
IGNITION SW	Indicates [ON/OFF] condition of ignition switch.
KEY IN DETECT	Indicates [ON/OFF] condition of electronic key switch.
DR DOOR SW	Indicates [ON/OFF] condition of front door switch (driver side).
CDL LOCK SW	Indicates [ON/OFF] condition of door lock/unlock switch.
RKE LOCK	Indicates [ON/OFF] condition of lock signal from remote controller.

Data monitor item (Light warning chime)

Monitored item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
DR DOOR SW	Indicates [ON/OFF] condition of front door switch (driver side).
TAIL LAMP ON	Indicates [ON/OFF] condition of lighting switch.

Symptom Chart

EKS004MS

First perform the “SELF-DIAG RESULTS” in “SMART ENTRANCE” with CONSULT-II, when perform the each trouble diagnosis.

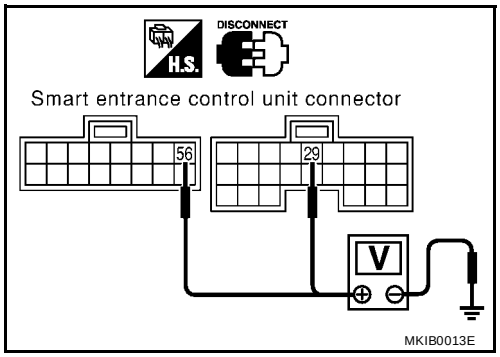
Symptom	Diagnoses/Service procedure	Reference page
Light warning chime does not activate.	● Power supply and ground circuit check	DI-114, "Power Supply and Ground Circuit Check"
	● Lighting switch check	DI-115, "Lighting Switch Input Signal Check"
	● Front door switch (driver side) check	DI-118, "Front Door Switch (Driver side) Check"
Key warning chime does not activate.	● Power supply and ground circuit check	DI-114, "Power Supply and Ground Circuit Check"
	● Key switch insert signal check	DI-116, "Key Switch Insert Signal Check"
	● Front door switch (driver side) check	DI-118, "Front Door Switch (Driver side) Check"
Seat belt chime does not activate.	● Power supply and ground circuit check	DI-114, "Power Supply and Ground Circuit Check"
	● Seat belt buckle switch (driver side) check	DI-119, "Seat Belt Buckle Switch Check (Driver side)"
	● Seat belt buckle switch (passenger side) check	DI-121, "Seat Belt Buckle Switch Check (Passenger Side)"
All warning chimes do not activate.	● Power supply and ground circuit check	DI-114, "Power Supply and Ground Circuit Check"
With the ignition switch turned OFF and the door closed (driver side) turning the lighting switch ON (1st) activates the chime.	● Front door switch (driver side) check	DI-118, "Front Door Switch (Driver side) Check"

Power Supply and Ground Circuit Check

EKS004MT

1. POWER SUPPLY CIRCUIT CHECK

1. Disconnect smart entrance control unit connector.
2. Check the following.



Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M42	29 (Y/G)	Ground	0V	0V	Battery voltage
M43	56 (R/B)	Ground	Battery voltage	Battery voltage	Battery voltage

OK or NG?

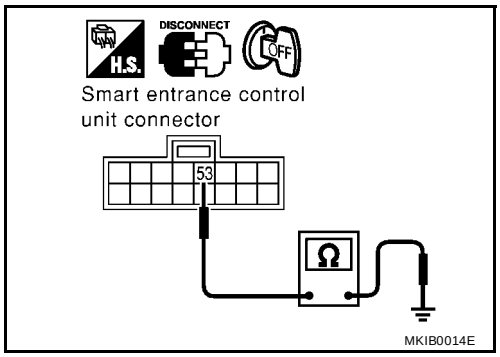
OK >> GO TO 2.

NG >>
- 10A fuse [NO. 10, located in fuse block (J/B)].
- 10A fuse [NO. 12, located in fuse block (J/B)].
- Check harness for open or short between smart entrance control unit and fuse.

2. GROUND CIRCUIT CHECK

Check continuity between smart entrance control unit harness connector M43 terminal 53 (B) and ground.

Continuity should exist.



OK or NG?

OK >> INSPECTION END.

NG >> Check ground harness.

Lighting Switch Input Signal Check

EKS004MU

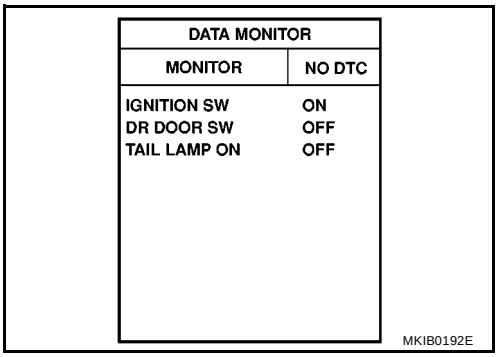
1. CHECK LIGHTING SWITCH INPUT SIGNAL

With CONSULT-II

Check lighting switch (“TAIL LAMP ON”) in “DATA MONITOR” mode with CONSULT-II.

When lighting switch is in 1st or 2nd position : TAIL LAMP ON ON

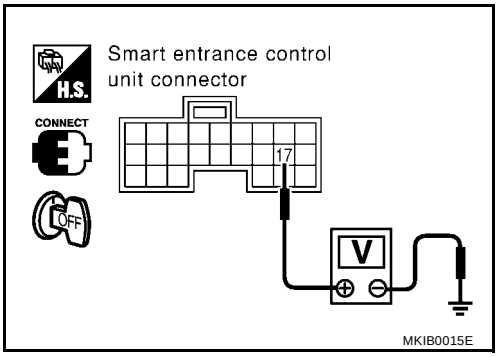
When lighting switch is in OFF position : TAIL LAMP ON OFF



Without CONSULT-II

Check voltage between smart entrance control unit harness connector M41 terminal 17 (R/G) and ground.

Condition of switch		Voltage [V]:
Lighting switch:	1st or 2nd	Approx. 12
Lighting switch:	OFF	0



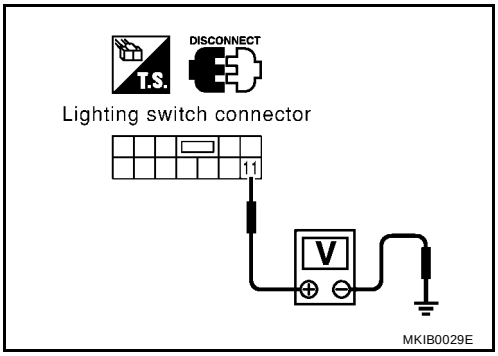
OK or NG?

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

2. CHECK LIGHTING SWITCH POWER SUPPLY CIRCUIT FOR OPEN OR SHORT

1. Disconnect lighting switch harness connector.
2. Check voltage between lighting switch harness connector E115 terminal 11 (B/R) and ground.

Battery voltage should exist.



OK or NG?

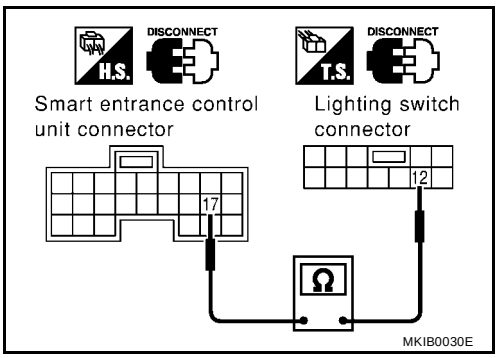
OK >> GO TO 3.
NG >> Check the following.

- 10A fuse (No. 32 located in the fuse and fusible link box)
- Harness for open or short between lighting switch and fuse

3. CHECK LIGHTING SWITCH INPUT SIGNAL CIRCUIT FOR OPEN OR SHORT

Check harness continuity between lighting switch harness connector E115 terminal 12 (W/R) and smart entrance control unit harness connector M41 terminal 17 (R/G).

Continuity should exist.



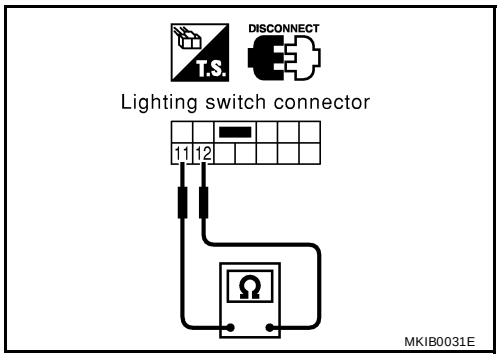
OK or NG?

OK >> GO TO 4.
NG >> Check the following.

- Harness for open or short between smart entrance control unit and lighting switch.
- Harness for open or short between smart entrance control unit and lighting switch/daytime light control unit (with daytime light control unit).

4. CHECK LIGHTING SWITCH (DRIVER SIDE)

Check continuity between lighting switch harness connector E115 terminals 11 and 12.



Terminals			Condition	Continuity
(+)		(–)		
Connector	Terminal	Terminal		
E115	11	12	OFF position	No
			1st or 2nd position	Yes

OK or NG?

OK >> Lighting switch is OK.
NG >> Replace lighting switch.

Key Switch Insert Signal Check

EKS004MV

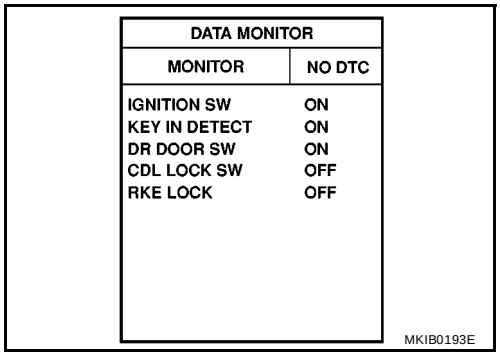
1. CHECK KEY SWITCH INPUT SIGNAL

With CONSULT-II

Check key switch (“KEY IN DETECT”) in “DATA MONITOR” mode with CONSULT-II.

When key is inserted to ignition key cylinder : KEY IN DETECT ON

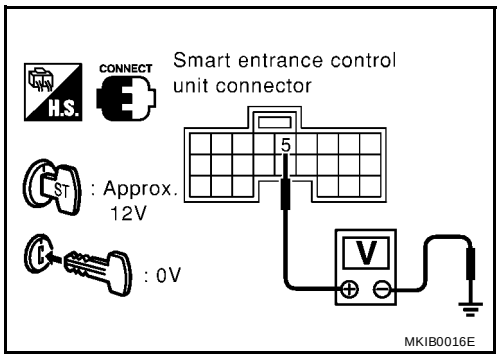
When key is removed from ignition key cylinder : KEY IN DETECT OFF



Without CONSULT-II

Check voltage between smart entrance control unit harness connector M41 terminal 5 (B/L) and ground.

Condition of key switch	Voltage [V]
When key is inserted to ignition key cylinder:	Approx. 12
When key is removed from ignition key cylinder:	0



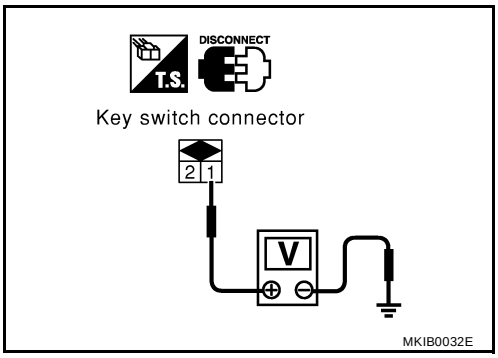
OK or NG?

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

2. CHECK KEY SWITCH POWER SUPPLY CIRCUIT FOR OPEN OR SHORT

1. Disconnect key switch harness connector.
2. Check voltage between key switch harness connector M30 terminal 1 (R/B) and ground.

Battery voltage should exist.



OK or NG?

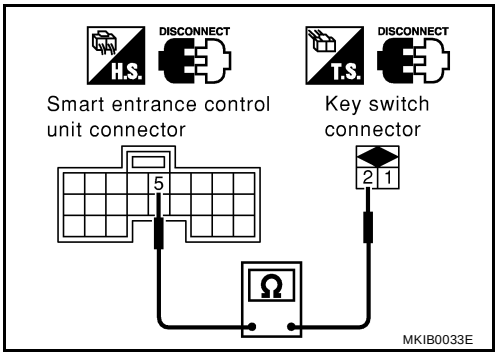
OK >> GO TO 3.
NG >> Check the following.

- 10A fuse [No. 32 located in fuse block (J/B)]
- Harness for open or short between key switch and fuse

3. CHECK KEY SWITCH INPUT SIGNAL CIRCUIT FOR OPEN OR SHORT

Check harness continuity between key switch harness connector M30 terminal 2 (B/R) and smart entrance control unit harness connector M41 terminal 5 (B/R).

Continuity should exist.



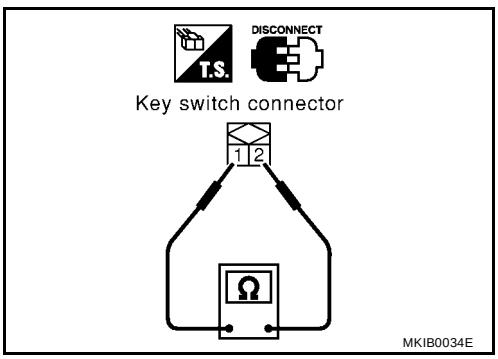
OK or NG?

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

4. CHECK KEY SWITCH

Check continuity between key switch harness connector M30 terminals 1 and 2.

Terminals			Condition	Continuity
(+)		(–)		
Connector	Terminal	Terminal		
M30	1	2	Inserted	Yes
			Removed	No



OK or NG?

OK >> Key switch is OK.
NG >> Replace key switch.

Front Door Switch (Driver side) Check

EKS004MW

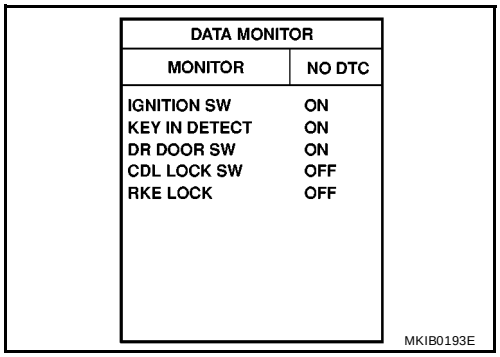
1. CHECK FRONT DOOR SWITCH (DRIVER SIDE) INPUT SIGNAL

With CONSULT-II

- Check front door switch (“DR DOOR SW”) in “DATA MONITOR” mode with CONSULT-II.

When driver's door is open : **DR DOOR SW ON**

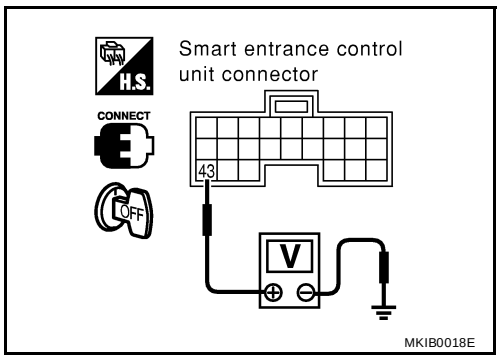
When driver's door is closed : **DR DOOR SW OFF**



Without CONSULT-II

- Check voltage between smart entrance control unit harness connector M42 terminal 43 (R/W) and ground.

Terminal		Condition (Driver's door)	Voltage [V]
(+)	(–)		
43 (R/W)	Ground	Open	Approx. 5
		Closed	0



OK or NG?

OK >> INSPECTION END
NG >> GO TO 2.

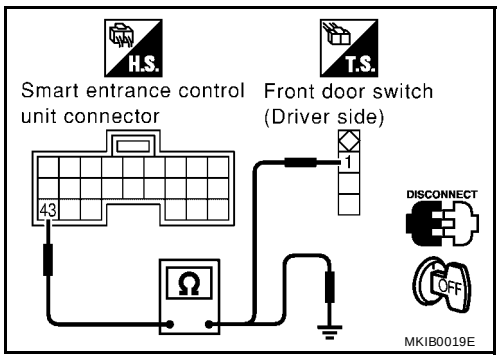
2. CHECK DOOR SWITCH OPEN OR SHORT CIRCUIT

1. Disconnect smart entrance control unit harness connector and front door switch (driver side) connector.
2. Check the following.

– Harness continuity between smart entrance control unit harness connector M42 terminal 43 (R/W) and door switch (driver side) connector B16 terminal 1 (R/W).

– Harness continuity between smart entrance control unit harness connector M42 terminal 43 (R/W) and body ground.

Terminals				Continuity
(+)		(–)		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M42	43 (R/W)	B16 (R/W)	1 (W/R)	Yes
M42	43 (R/W)	Ground		No

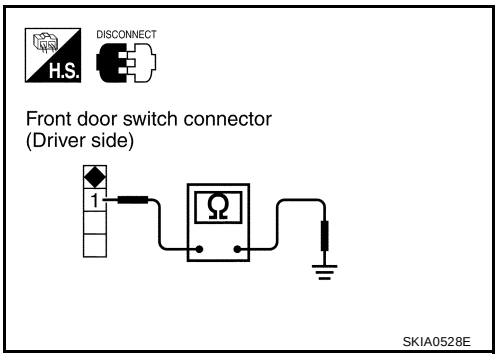


OK or NG?

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

3. CHECK DOOR SWITCH (DRIVER SIDE)

Check continuity between front door switch (driver side) harness connector B16 terminal 1 (R/W) and body ground.



Terminals			Condition	Continuity
(+)		(–)		
Connector	Terminal (Wire color)			
B16	1 (R/W)	Ground	Door is open	Yes
			Door is closed	No

OK or NG?

OK >> Front door switch (driver side) is OK.
NG >> Replace front door switch (driver side)

Seat Belt Buckle Switch Check (Driver side)

EKS004MX

1. SMART ENTRANCE CONTROL UNIT SYSTEM INSPECTION

Perform the smart entrance control unit self-diagnosis. Refer to BCS-32, "SELF-DIAG RESULTS MODE" in “Body control system (BCS)” section.

OK or NG?

OK >> GO TO 2.
NG >> Check Smart entrance control system.

2. COMBINATION METER SELF-DIAGNOSIS INSPECTION

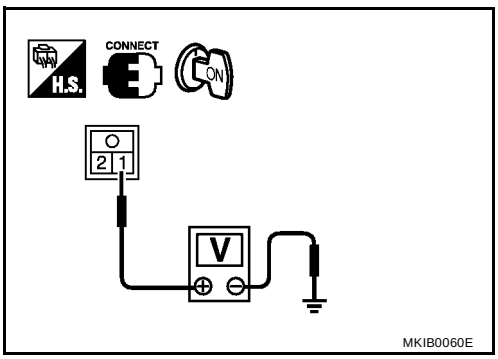
Perform combination meter self-diagnosis mode. Refer to DI-24, "Combination Meter Self-Diagnosis" (LHD models) or DI-52, "Combination Meter Self-Diagnosis" (RHD models).

OK or NG?

OK >> GO TO 3.
NG >> Check Combination meter system.

3. CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL

1. Turn ignition switch “ON”.
2. Check voltage between seat belt buckle switch (driver side) harness connector B12 terminal 1 (G/W) and ground.



Terminal		Condition (Driver side seat belt buckle switch)	Voltage [V]
(+)	(–)		
1 (G/W)	Ground	Fasten	Approx. 5
		Unfasten	0

OK or NG?

OK >> Seat belt buckle switch is OK.
NG >> GO TO 4. (LHD models)
NG >> GO TO 5. (RHD models)

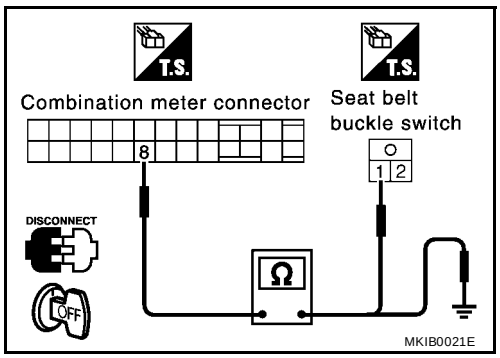
4. CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL CIRCUIT (LHD MODELS)

1. Turn ignition switch “OFF”.
2. Disconnect combination meter harness connector and seat belt buckle switch (driver side) harness connector.
3. Check the following.

– Harness continuity between combination meter harness connector M36 terminal 8 (G/W) and seat belt buckle switch (driver side) harness connector B12 terminal 1 (G/W).

– Harness continuity between combination meter harness connector M36 terminal 8 (G/W) and body ground.

Terminal				Continuity
(+)		(–)		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M36	8 (G/W)	B12	1 (G/W)	Yes
M36	8 (G/W)	Ground		No



OK or NG?

OK >> GO TO 6.
NG >> Repair or replace harness.

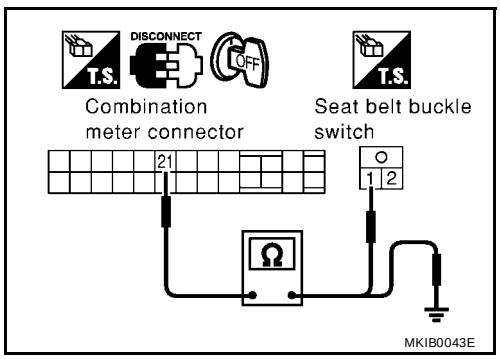
5. CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL CIRCUIT (RHD MODELS)

1. Turn ignition switch “OFF”.
2. Disconnect combination meter harness connector and seat belt buckle switch (driver side) harness connector.
3. Check the following.

– Harness continuity between combination meter harness connector M36 terminal 21 (G/W) and seat belt buckle switch (driver side) harness connector B12 terminal 1 (G/W).

– Harness continuity between combination meter harness connector M36 terminal 21 (G/W) and body ground.

Terminal				Continuity
(+)		(–)		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M36	21 (G/W)	B12	1 (G/W)	Yes
M36	21 (G/W)	Ground		No



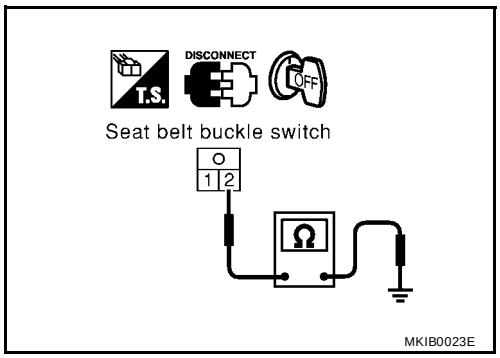
OK or NG?

OK >> GO TO 6.
NG >> Repair or replace harness.

6. CHECK SEAT BELT BUCKLE SWITCH GROUND CIRCUIT

Check harness continuity between seat belt buckle switch (driver side) harness connector B12 terminal 2 (B) and body ground.

Continuity should exist.



OK or NG?

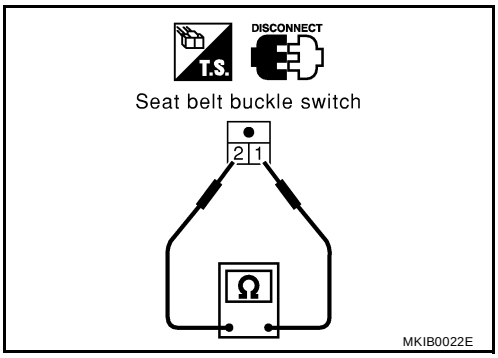
OK >> GO TO 7.
NG >> Repair or replace harness.

7. CHECK SEAT BELT BUCKLE SWITCH

Check continuity between seat belt buckle switch (driver side) harness connector B12 terminal 1 and 2.

When seat belt fastened : Continuity should not exist.

When seat belt unfastened : Continuity should exist.



OK or NG?

OK >> INSPECTION END.
NG >> Replace seat belt buckle switch (driver side).

Seat Belt Buckle Switch Check (Passenger Side)

EKS004T5

1. SMART ENTRANCE CONTROL UNIT SYSTEM INSPECTION

Perform the smart entrance control unit self-diagnosis. Refer to BCS-32, "SELF-DIAG RESULTS MODE" in "Body control system (BCS)" section.

OK or NG?

OK >> GO TO 2.
NG >> Check Smart entrance control system.

2. COMBINATION METER SELF-DIAGNOSIS INSPECTION

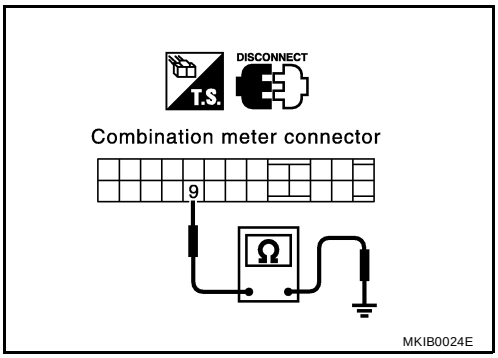
Perform combination meter self-diagnosis mode. Refer to DI-24, "Combination Meter Self-Diagnosis" (LHD models) or DI-52, "Combination Meter Self-Diagnosis" (RHD models).

OK or NG?

OK >> GO TO 3. (LHD models)
OK >> GO TO 4. (RHD models)
NG >> Check Combination meter system.

3. CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL (LHD MODELS)

1. Turn ignition switch "OFF".
2. Disconnect combination meter harness connector.
3. Check continuity between combination meter harness connector M36 terminal 9 (G/B) and ground.



NOTE:
When performing the following procedure, a person is sitting on the passenger side seat. (As a result, the seat pressure sensor is turned ON.)

Terminal		Condition (Passenger side seat belt buckle switch)	Continuity
9 (G/B)	Ground	Fasten	Yes
		Unfasten	No

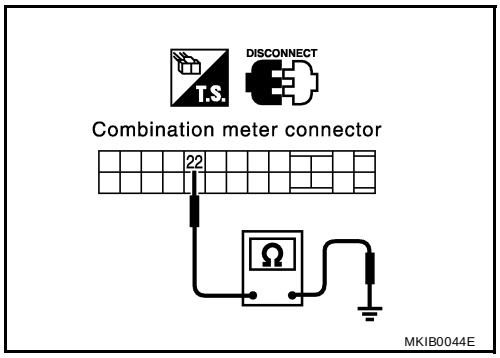
OK or NG?

OK >> Seat belt buckle switch is OK.
NG >> GO TO 5.

4. CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL (RHD MODELS)

1. Turn ignition switch “OFF”.
2. Disconnect combination meter harness connector.
3. Check continuity between combination meter harness connector M36 terminal 22 (G/B) and ground.

NOTE:
When performing the following procedure, a person is sitting on the passenger side seat. (As a result, the seat pressure sensor is turned ON.)



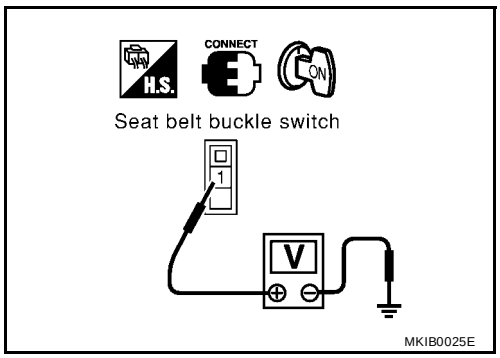
Terminal		Condition (Passenger side seat belt buckle switch)	Continuity
22 (G/B)	Ground	Fasten	Yes
		Unfasten	No

OK or NG?

OK >> Seat belt buckle switch is OK.
NG >> GO TO 5.

5. CHECK SEAT PRESSURE SWITCH INPUT SIGNAL

1. Reconnect combination meter harness connector.
2. Disconnect seat belt buckle switch (passenger side) harness connector.
3. Turn ignition switch “ON”.
4. Check voltage between seat belt buckle switch (passenger side) harness connector B111 terminal 1 (G) and ground.



Terminal		Condition (Seat pressure switch)	Voltage [V]
(+)	(–)		
1 (G)	Ground	Person is not sitting in passenger side seat. (Seat pressure switch “OFF”)	0
		Person is sitting in passenger side seat. (Seat pressure switch “ON”)	Approx. 5

OK or NG?

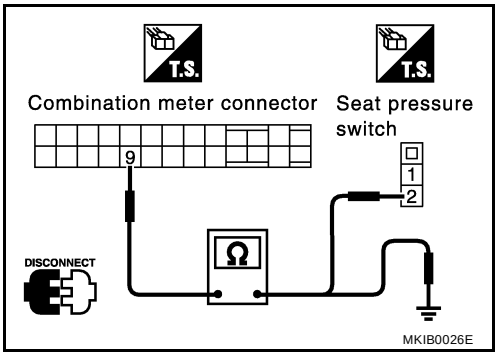
OK >> GO TO 10.
NG >> GO TO 6. (LHD models)
NG >> GO TO 7. (RHD models)

6. CHECK SEAT PRESSURE SWITCH INPUT SIGNAL CIRCUIT (LHD MODELS)

1. Turn ignition switch “OFF”.
2. Disconnect combination meter harness connector and seat pressure switch harness connector.
3. Check the following.

- Harness continuity between combination meter harness connector M36 terminal 9 (G/B) and seat pressure switch harness connector B110 terminal 2 (G/B).
- Harness continuity between combination meter harness connector M36 terminal 9 (G/B) and body ground.

Terminal				Continuity
(+)		(–)		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M36	9 (G/B)	B110	2 (G/B)	Yes
M36	9 (G/B)	Ground		No



OK or NG?

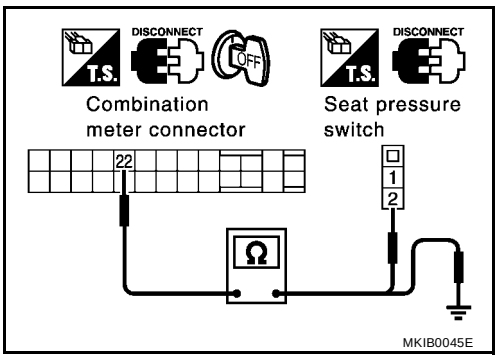
OK >> GO TO 8.
NG >> Repair or replace harness.

7. CHECK SEAT PRESSURE SWITCH INPUT SIGNAL CIRCUIT (RHD MODELS)

1. Turn ignition switch “OFF”.
2. Disconnect combination meter harness connector and seat pressure switch harness connector.
3. Check the following.

- Harness continuity between combination meter harness connector M36 terminal 22 (G/B) and seat pressure switch harness connector B110 terminal 2 (G/B).
- Harness continuity between combination meter harness connector M36 terminal 22 (G/B) and body ground.

Terminal				Continuity
(+)		(–)		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M36	22 (G/B)	B110	2 (G/B)	Yes
M36	22 (G/B)	Ground		No



OK or NG?

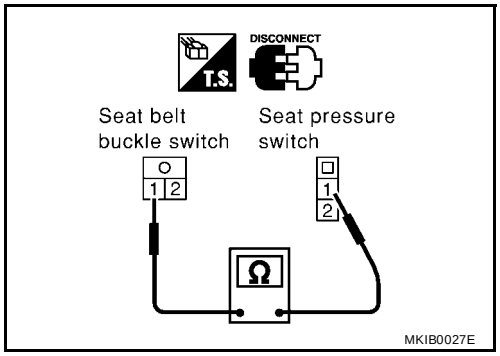
OK >> GO TO 8.
NG >> Repair or replace harness.

8. CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL CIRCUIT

1. Disconnect seat belt buckle switch (passenger side) and seat pressure switch harness connector.
2. Check the following.

- Harness continuity between seat belt buckle switch (passenger side) harness connector B111 terminal 1 (G) and seat pressure switch harness connector B110 terminal 1 (G).
- Harness continuity between seat pressure switch harness connector B110 terminal 1 (G) and body ground.

Terminal				Continuity
(+)		(–)		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M110	1 (G)	B111	1 (G)	Yes
M110	1 (G)	Ground		No



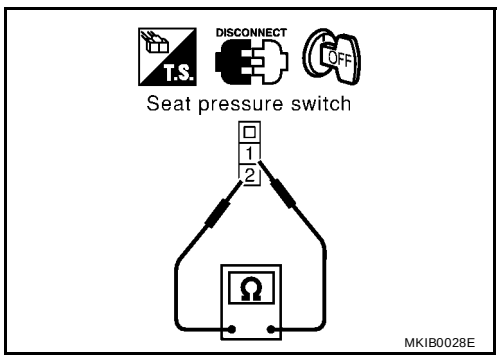
OK or NG?

OK >> GO TO 9.
NG >> Repair or replace harness.

9. CHECK SEAT PRESSURE SWITCH

Check continuity between seat pressure switch harness connector B110 terminal 1 and 2.

Terminal		Condition (Seat pressure switch)	Continuity
(+)	(–)		
1	2	Person is not sitting in passenger side seat. (Seat pressure switch “OFF”)	No
		Person is sitting in passenger side seat. (Seat pressure switch “ON”)	Yes



OK or NG?

OK >> GO TO 10.
NG >> Replace seat pressure switch.

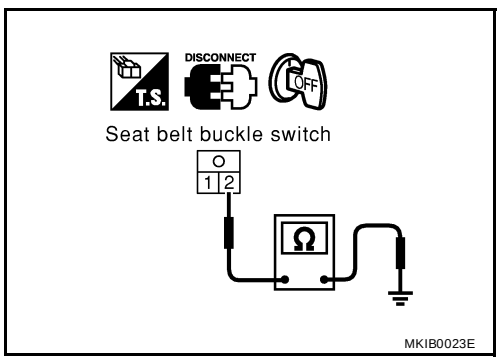
10. CHECK SEAT BELT BUCKLE SWITCH GROUND CIRCUIT

Check harness continuity between seat belt buckle switch (passenger side) harness connector B111 terminal 2 (B) and body ground.

Continuity should exist.

OK or NG?

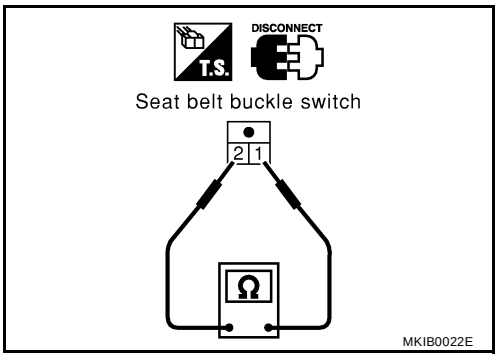
OK >> GO TO 11.
NG >> Repair or replace harness.



11. CHECK SEAT BELT BUCKLE SWITCH

Check continuity between seat belt buckle switch (passenger side) harness connector B111 terminals 1 and 2.

When seat belt fastened:	**Continuity should not exist.**
When seat belt unfastened:	**Continuity should exist.**



OK or NG?

OK >> INSPECTION END.
NG >> Replace seat belt buckle switch (passenger side)

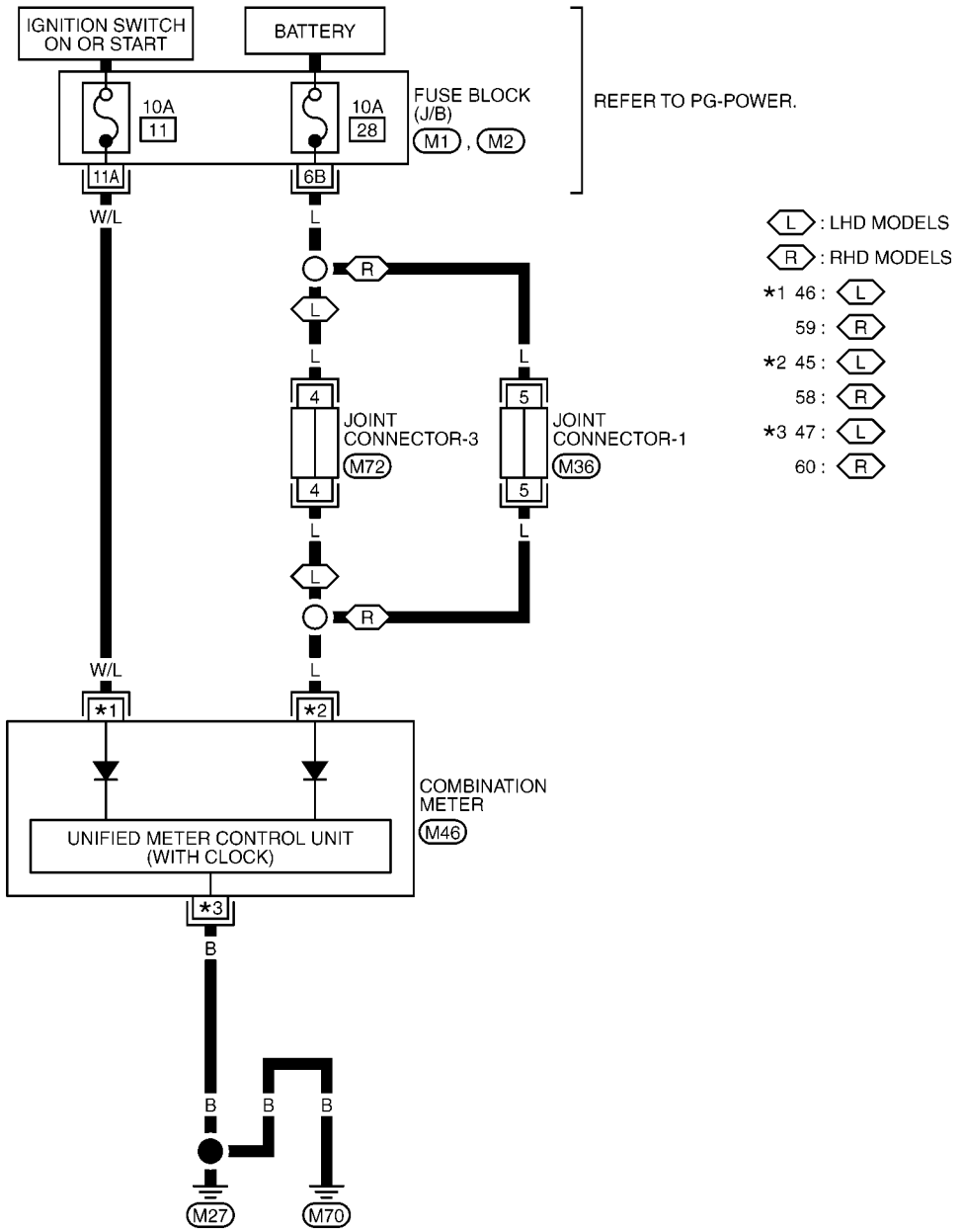
CLOCK

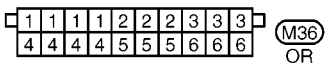
PFP:25820

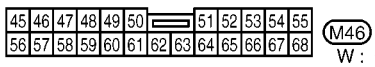
Wiring Diagram — CLOCK —

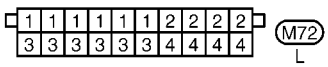
EKS003XV

DI-CLOCK-01









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

TKWA0129E

REAR VIEW MONITOR

PFP:28260

System Description

EKS004TG

- The rear view monitor is equipped to check the rearward of the vehicle with display when the selector lever is in R position.
- The lines of vehicle sides and the distance from the rear end of the vehicle are provided on display as a guide. It allows the driver to know the distance between the vehicle and a rearward object, and the width of the vehicle much easier.

POWER SUPPLY AND GROUND

Power is supplied at all time

- through 15 A fuse (No.33, located in fuse and fusible link box)
- to rear view camera control unit terminal 7.

When ignition switch is ACC or ON position, power is supplied

- through 10 A fuse [No.1, located in fuse block (J/B)]
- to rear view camera control unit terminal 6.

When ignition switch is ON or START position, power is supplied

- through 10 A fuse [NO.30, located in fuse block (J/B)]
- to back–up lamp switch terminal 1 (M/T models)
- to park/neutral position switch terminal 3 (CVT or A/T models).

Ground is supplied
LHD models

- to rear view camera control unit terminal 16
- through body ground B120, and
- to rear view camera terminal 3
- through body ground B120 (sedan models) or B17, B24 and D94 (wagon models).

RHD models

- to rear view camera control unit terminal 16
- through body ground B24, D94 and B117, and
- to rear view camera terminal 3
- through body ground B17 and B24 (sedan models) or B17, B24 and D94 (wagon models).

REAR VIEW CAMERA OPERATION

When A/T selector lever is reverse position

- through back–up lamp switch terminal 2 (M/T models)
- through park/neutral position switch terminal 8 (CVT or A/T models)
- to rear view camera control unit terminal 14, and
- to AV and NAVI control unit terminal 32 (with navigation system)
- to display unit terminal 7 (without navigation system).

Then, camera ON signal is sent

- through rear view camera control unit terminal 5
- to rear view camera terminal 4.

An image taken by rear view camera is sent

- through rear view camera terminal 2
- to rear view camera control unit terminal 3.

Then an image is sent

- through rear view camera control unit terminal 2 and 13
- to display terminal 9 and 10 (with navigation system)
- to display unit terminal 23 and 24 (without navigation system).

An image of rear view will be projected on the display.

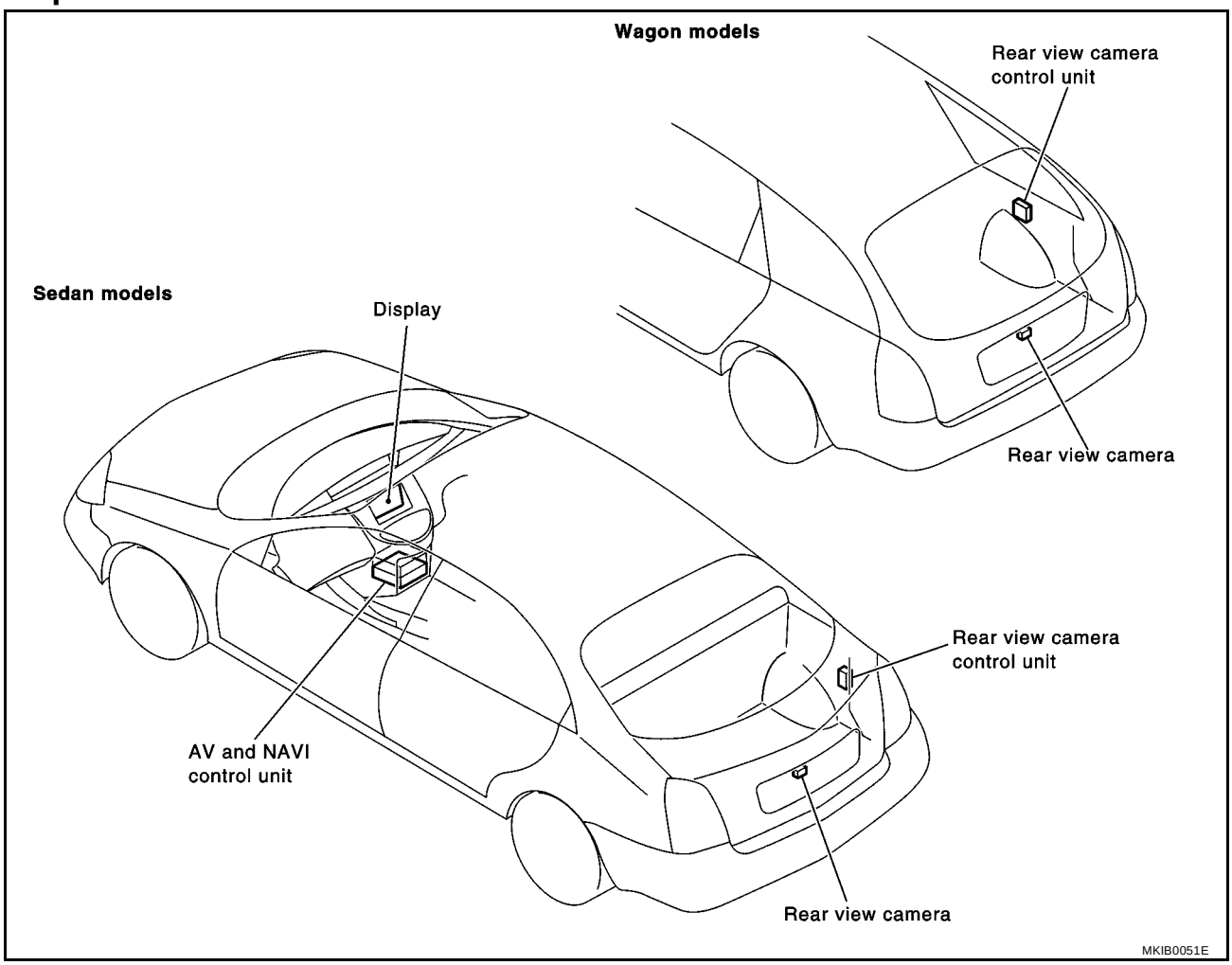
Rear View Camera Guide Line (With Navigation System)

- from AV and NAVI control unit terminal 37
- to display terminal 10.

Rear view guideline will be projected on the display.

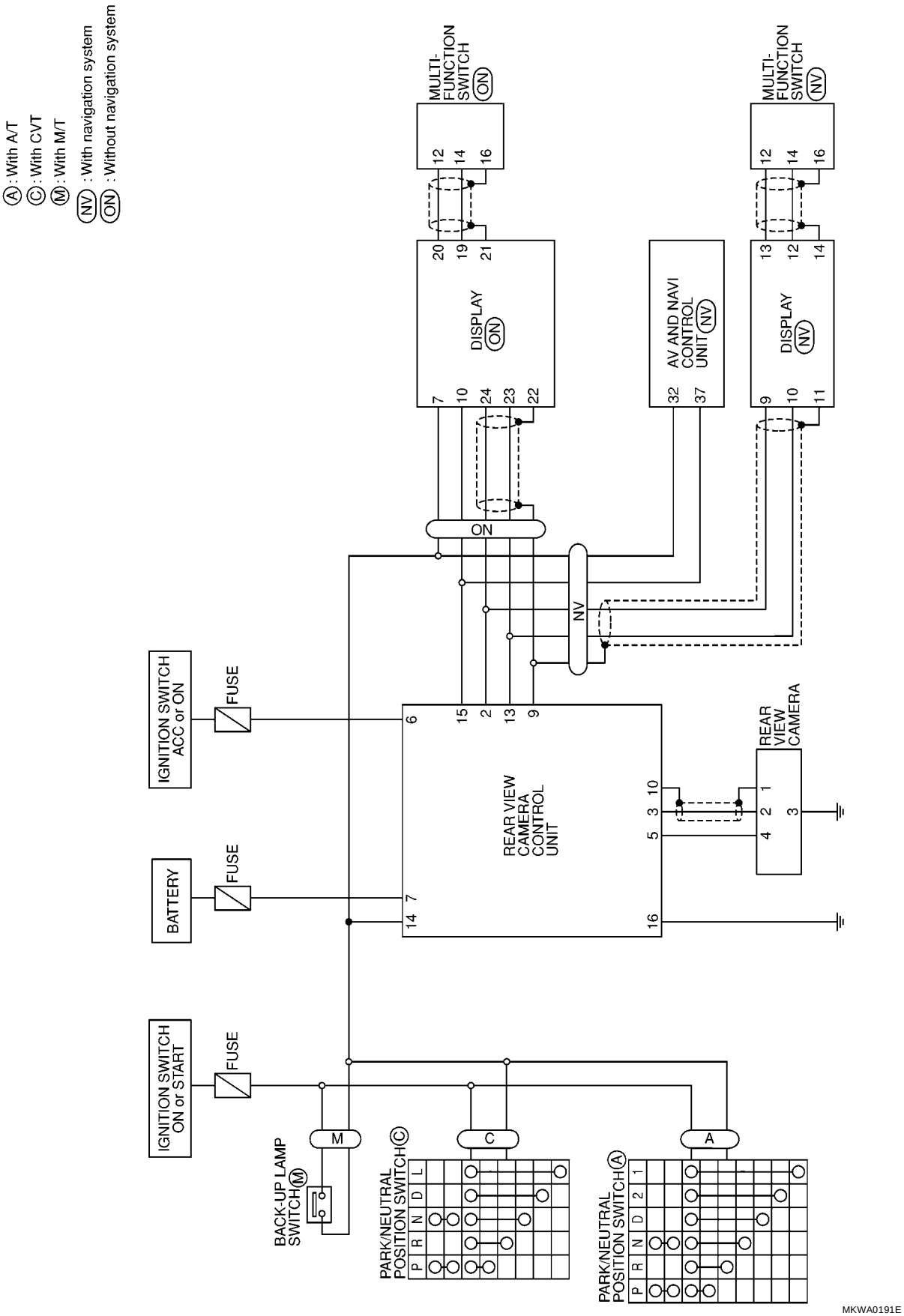
Component Location

EKS004TH



Schematic

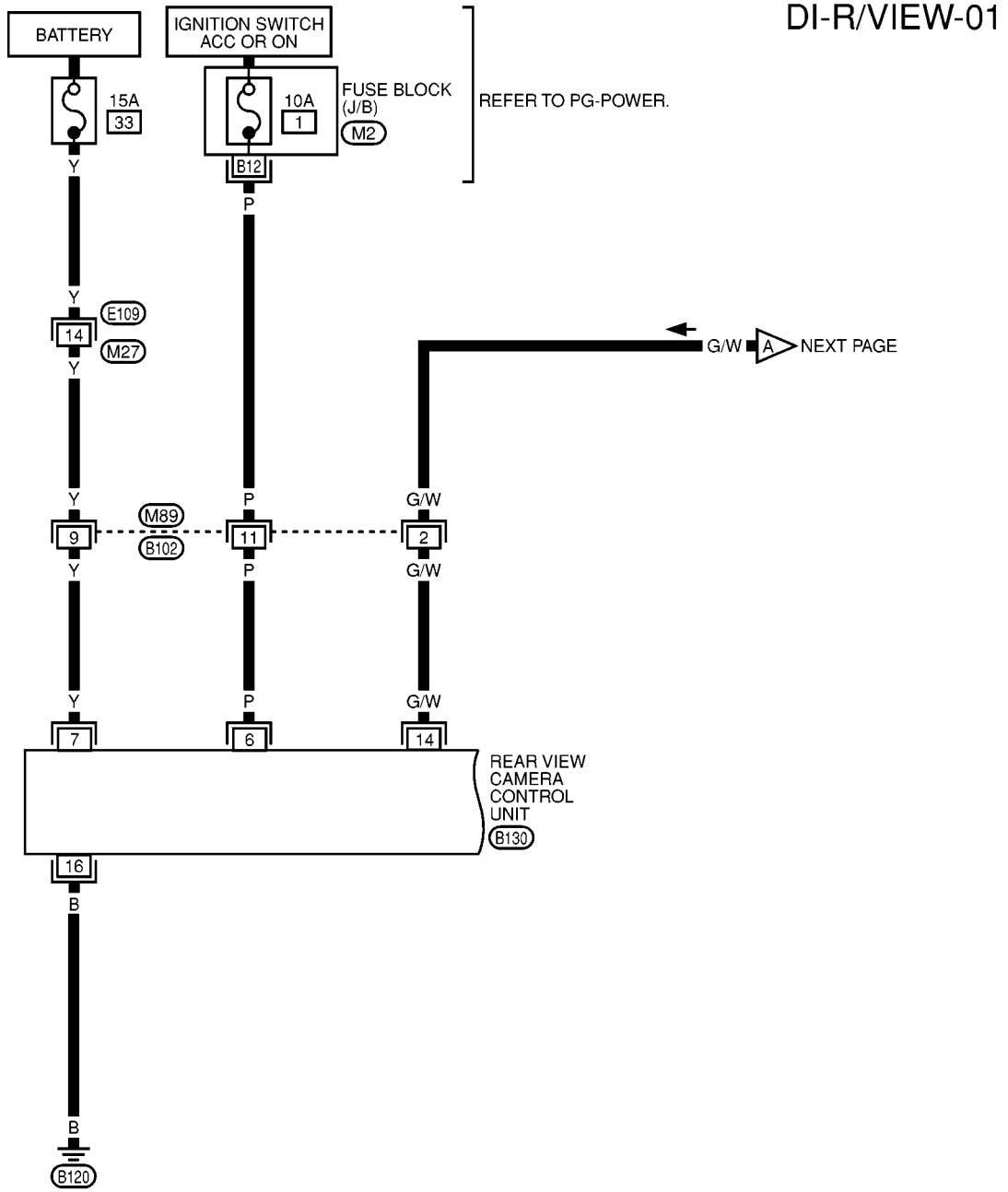
EKS004TI

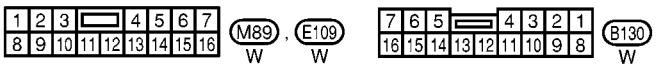


Wiring Diagram — R/VIEW —

EKS004TJ

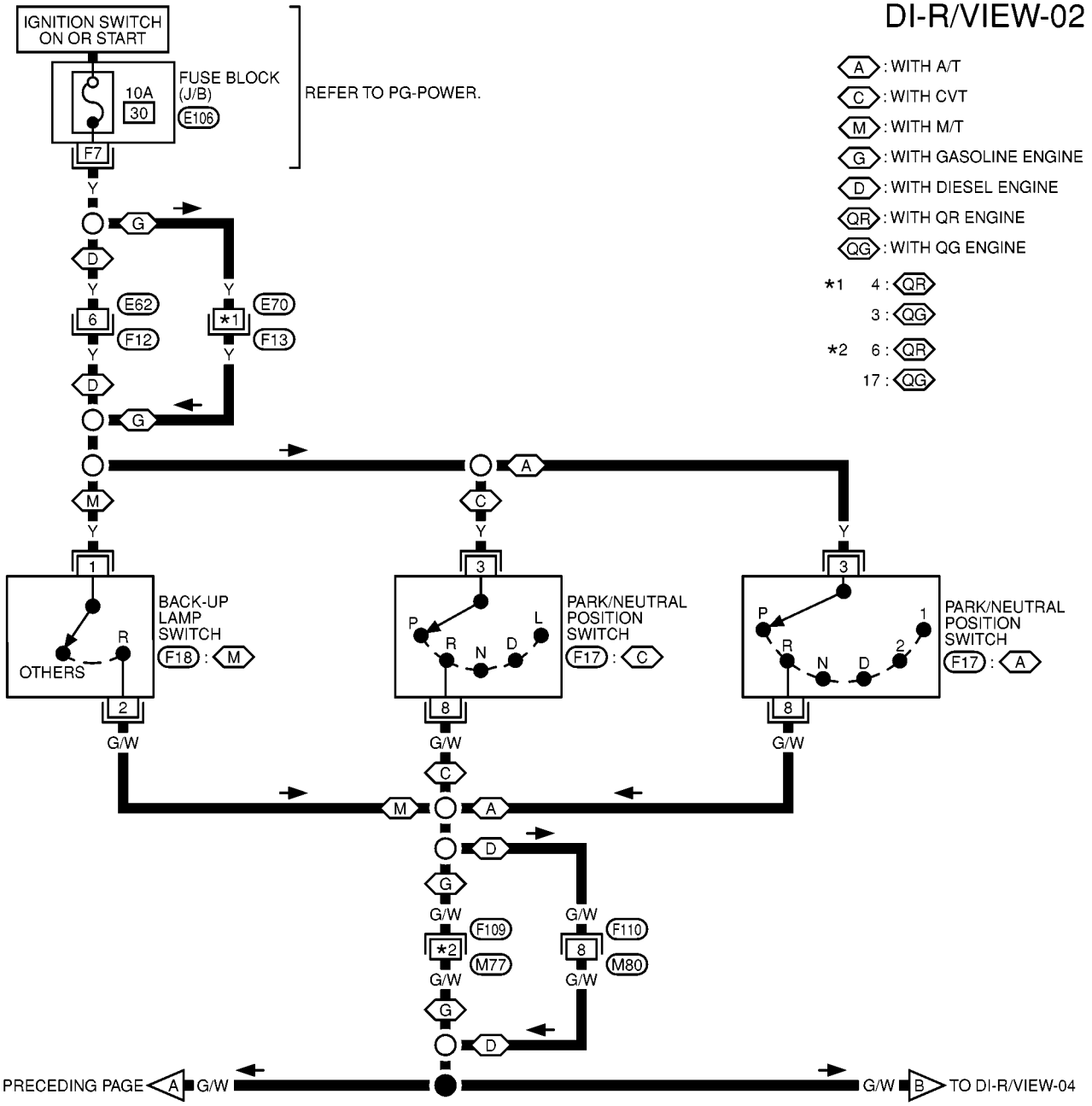
LHD MODELS

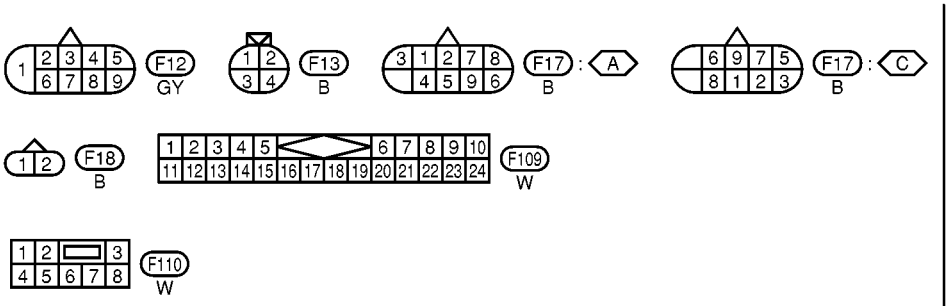




REFER TO THE FOLLOWING.
M2 -FUSE BLOCK-JUNCTION BOX (J/B)

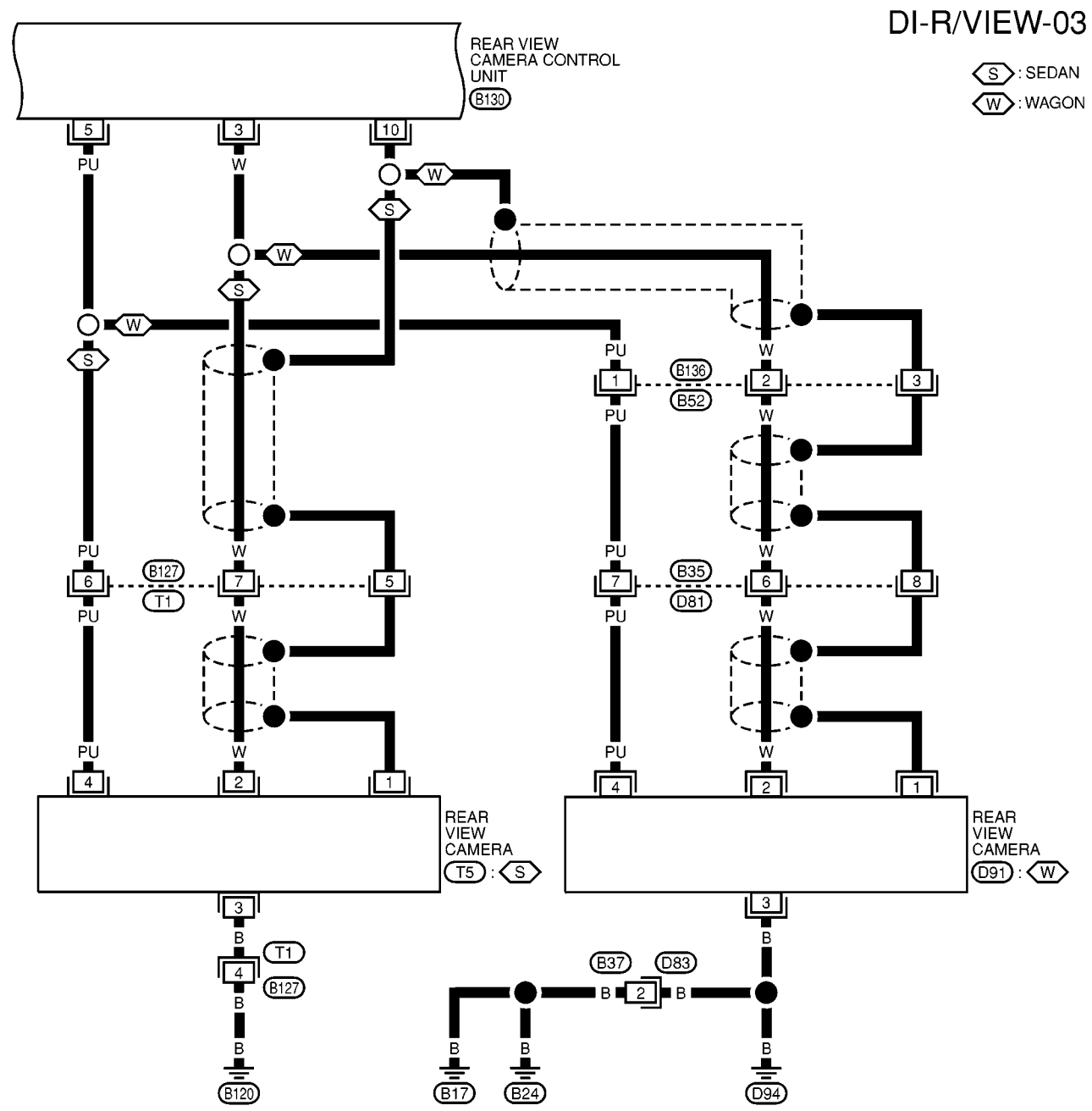
MKWA0192E

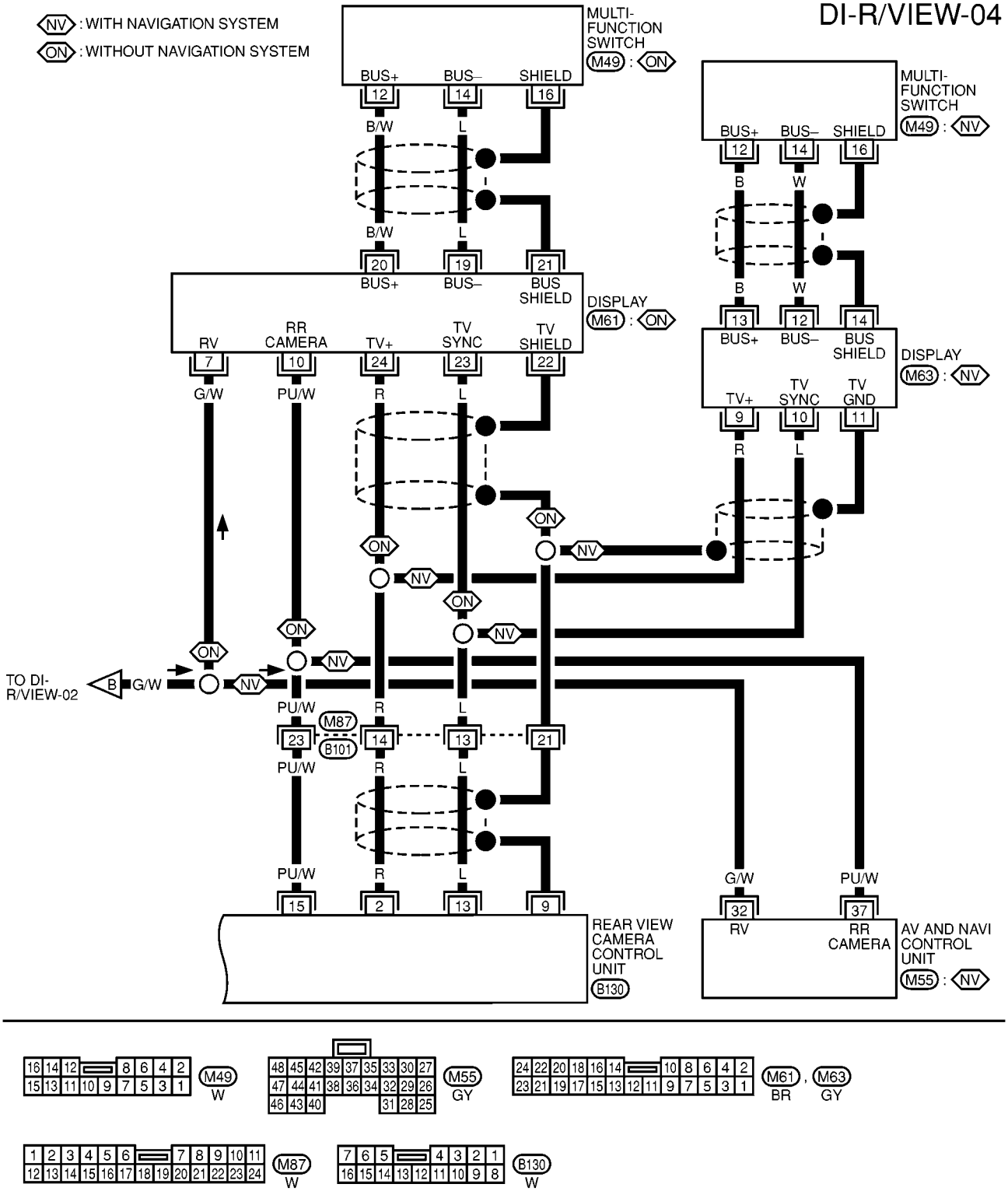




REFER TO THE FOLLOWING.
E106 -FUSE BLOCK-JUNCTION BOX (J/B)

MKWA0427E

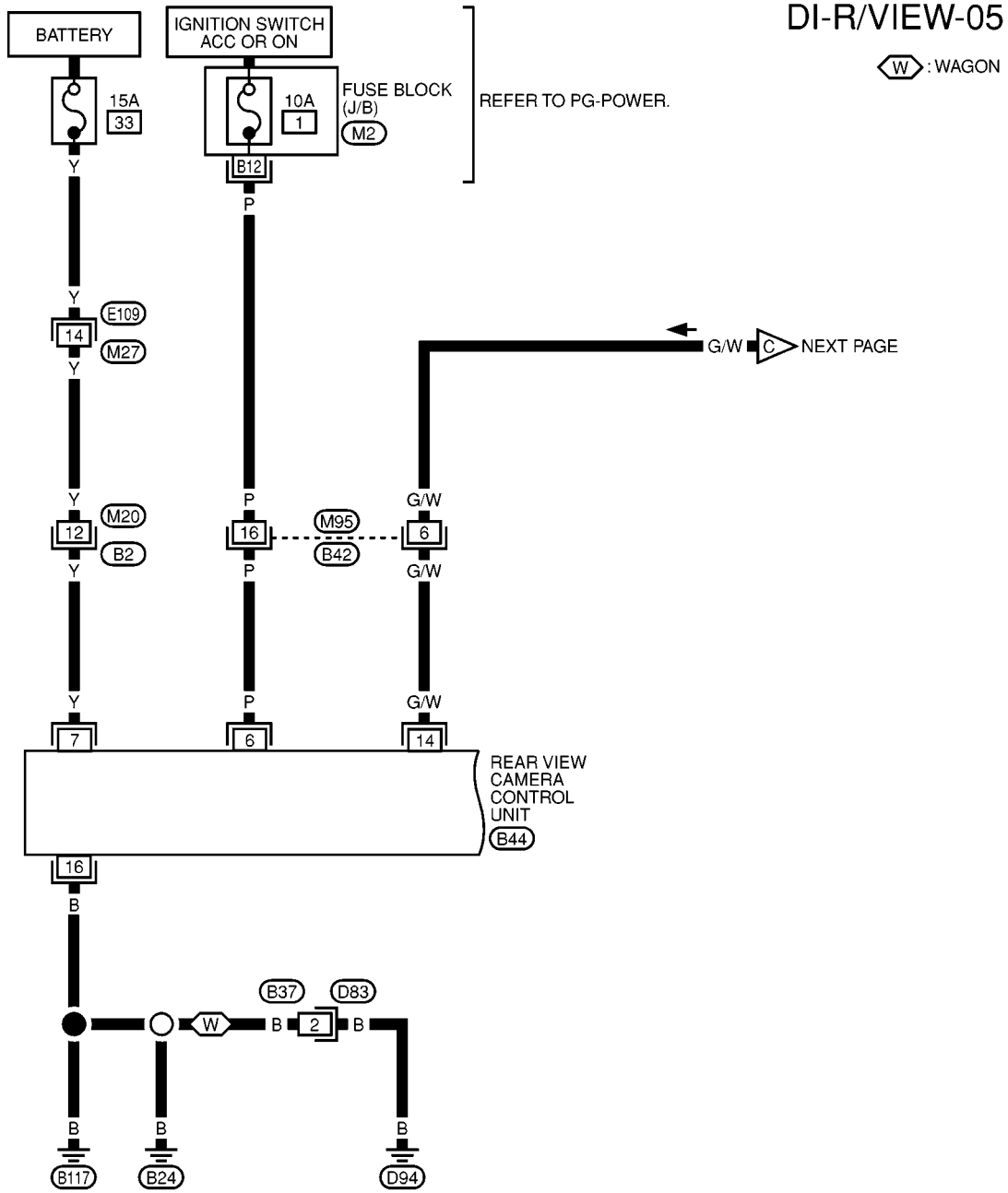

DI-R/VIEW-03
S : SEDAN
W : WAGON
REAR VIEW CAMERA CONTROL UNIT
B130
REAR VIEW CAMERA
T5 : S
REAR VIEW CAMERA
D91 : W
B52
B136
B127
T1
B35
D81
B37
D83
B17
B24
B120
D94
MKWA0194E

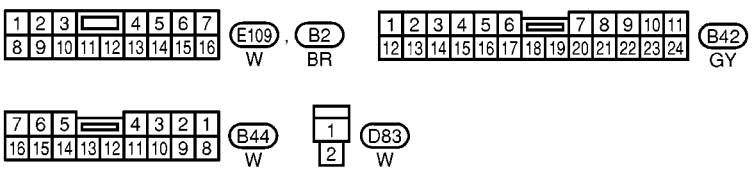

NV : WITH NAVIGATION SYSTEM
ON : WITHOUT NAVIGATION SYSTEM
DI-R/VIEW-04
MULTI-FUNCTION SWITCH M49 : ON
BUS+ 12
BUS– 14
SHIELD 16
B/W
L
B/W
L
20 BUS+
19 BUS–
21 BUS SHIELD
DISPLAY M61 : ON
RV 7
RR CAMERA 10
TV+ 24
TV SYNC 23
TV SHIELD 22
G/W
PU/W
R
L
MULTI-FUNCTION SWITCH M49 : NV
BUS+ 12
BUS– 14
SHIELD 16
B
W
B
W
13 BUS+
12 BUS–
14 BUS SHIELD
DISPLAY M63 : NV
TV+ 9
TV SYNC 10
TV GND 11
R
L
ON
NV
TO DI-R/VIEW-02
B
G/W
PU/W
M87
B101
23
14
13
21
15
2
13
9
REAR VIEW CAMERA CONTROL UNIT B130
G/W
PU/W
32 RV
37 RR CAMERA
AV AND NAVI CONTROL UNIT M55 : NV

M49 W
M55 GY
M61, M63 BR GY
M87 W
B130 W

MKWA0195E

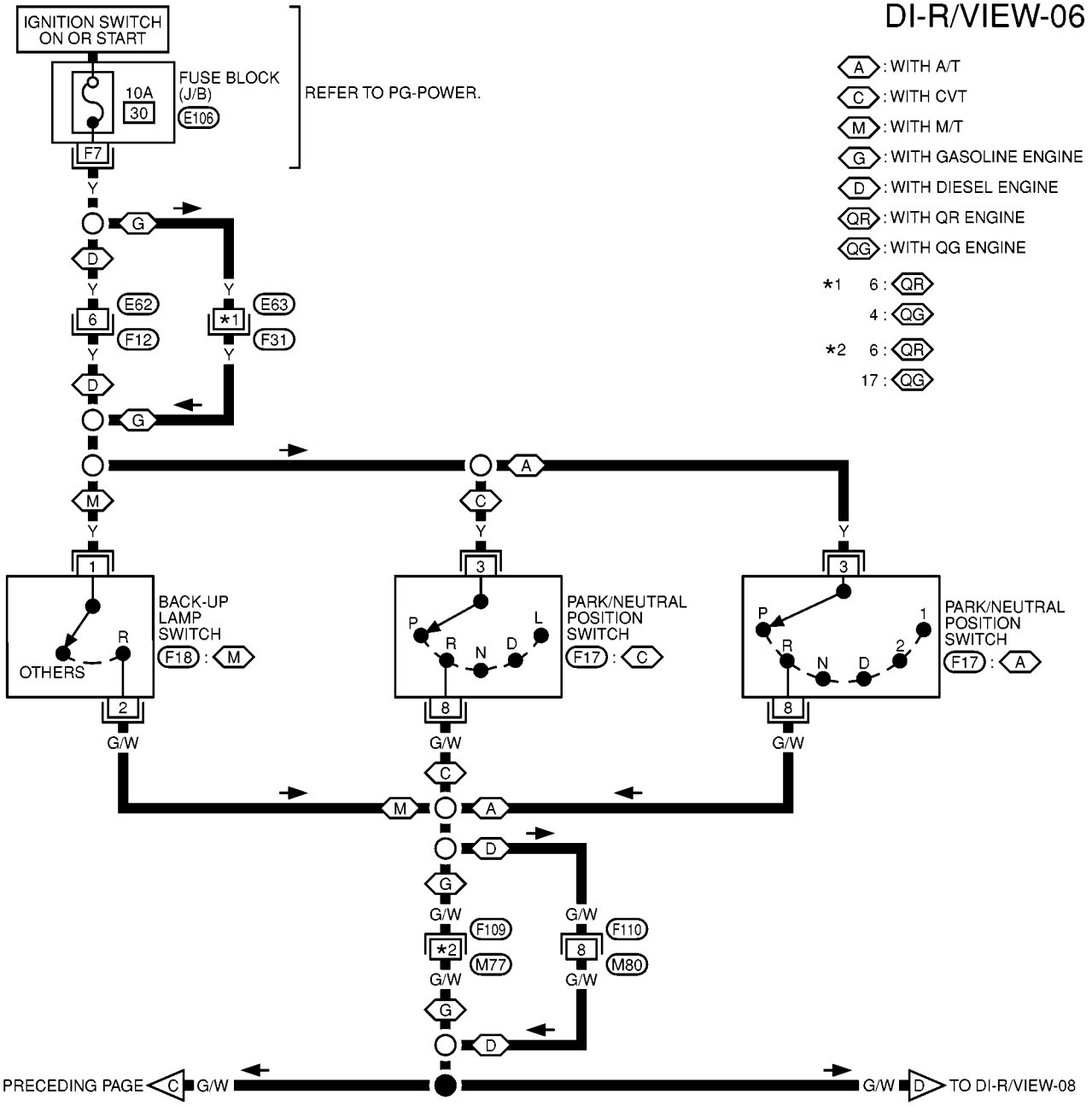
RHD MODELS

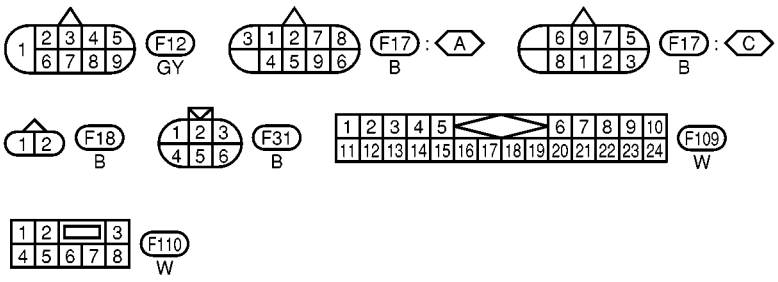




REFER TO THE FOLLOWING.
M2 -FUSE BLOCK-JUNCTION BOX (J/B)

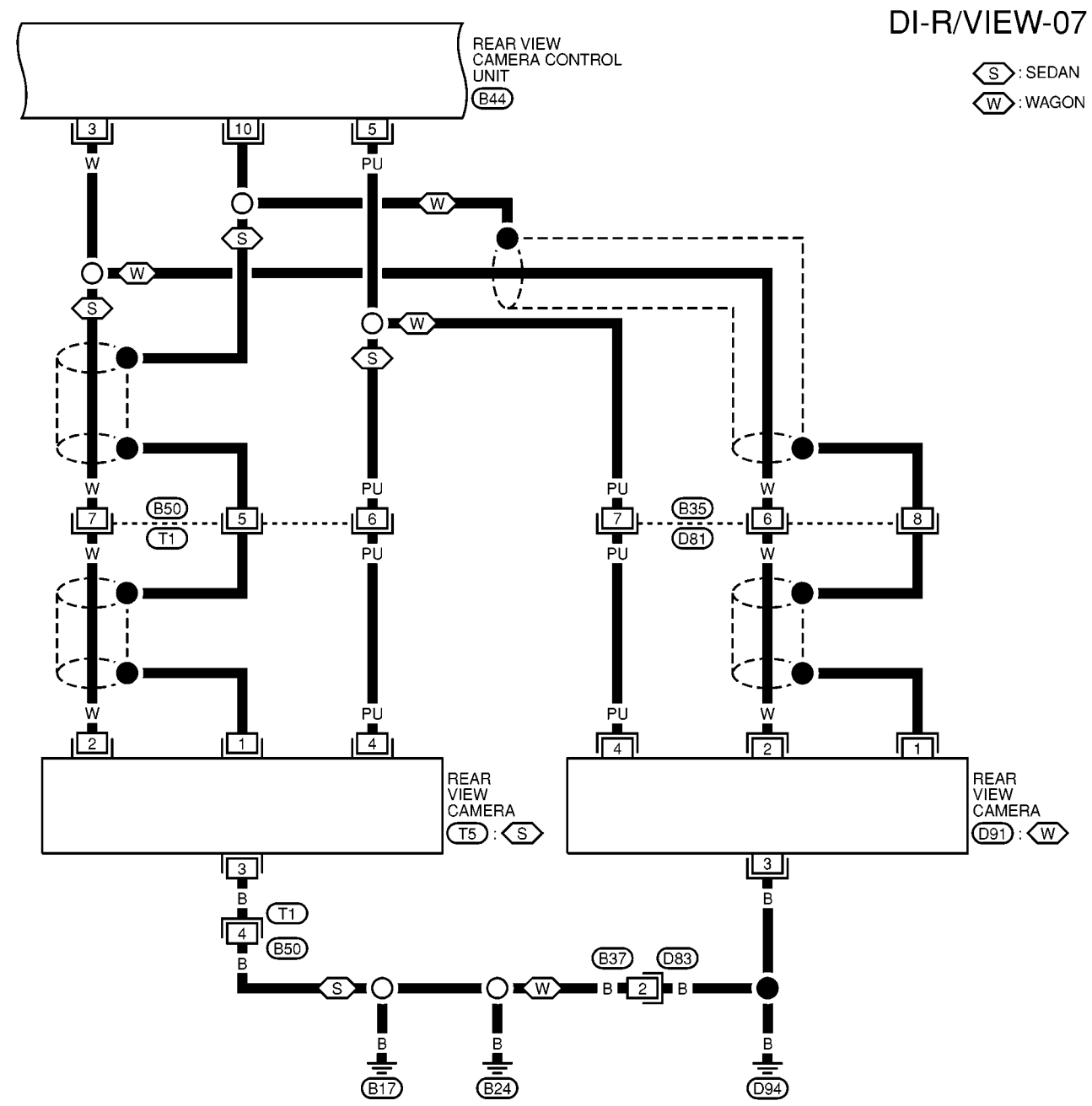
MKWA0196E

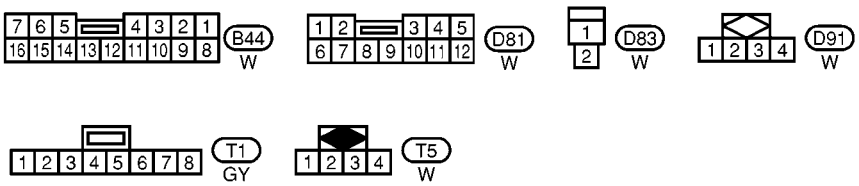




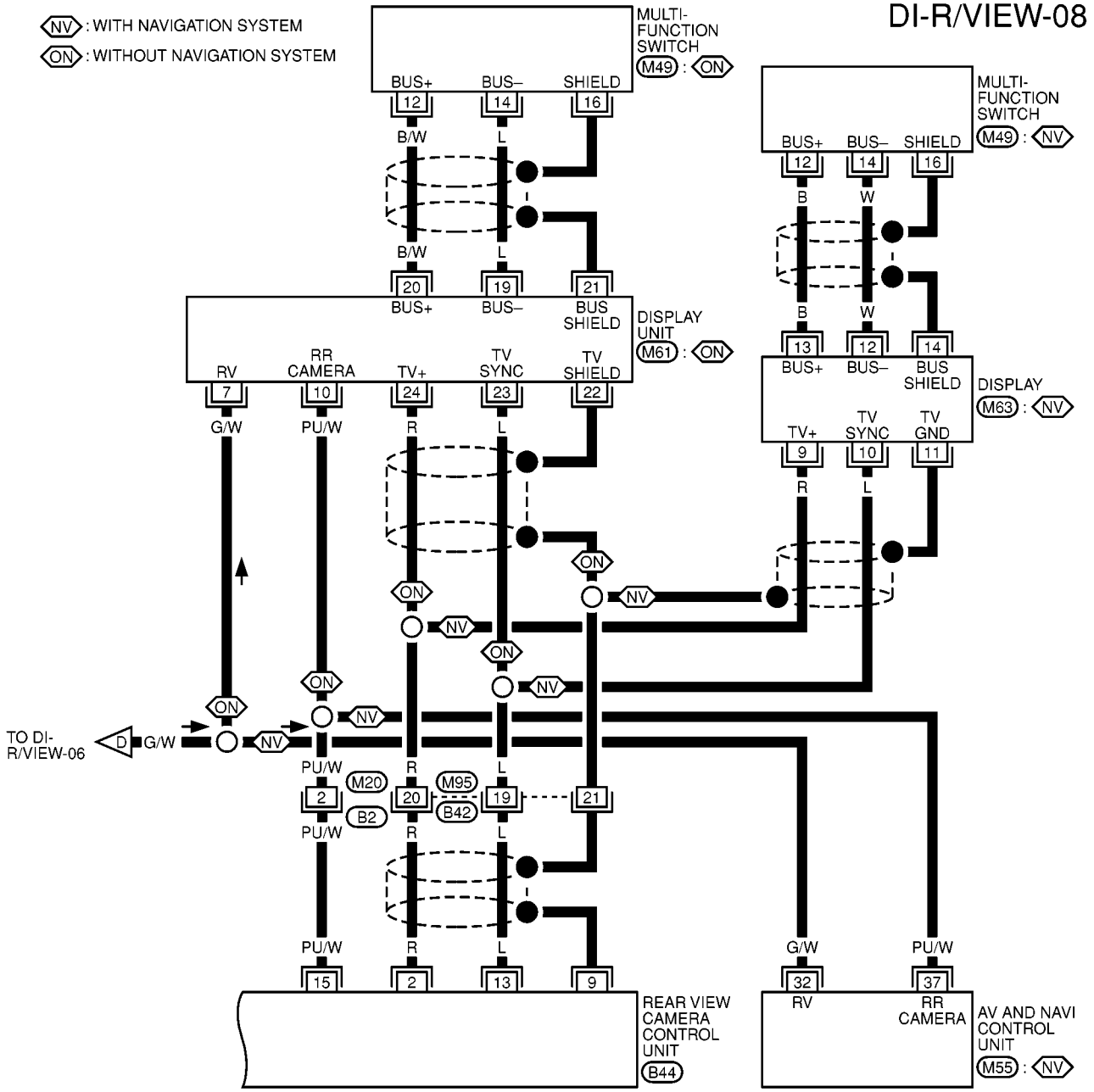
REFER TO THE FOLLOWING.
E106 -FUSE BLOCK-JUNCTION BOX (J/B)

MKWA0428E


DI-R/VIEW-07
S : SEDAN
W : WAGON
REAR VIEW CAMERA CONTROL UNIT
B44
REAR VIEW CAMERA
T5 : S
REAR VIEW CAMERA
D91 : W
B50
T1
B35
D81
B37
D83
B17
B24
D94


B44 W
D81 W
D83 W
D91 W
T1 GY
T5 W

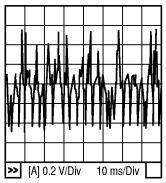
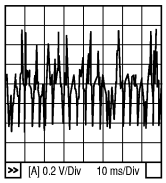
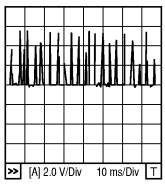
MKWA0198E


DI-R/VIEW-08
NV : WITH NAVIGATION SYSTEM
ON : WITHOUT NAVIGATION SYSTEM
MULTI-FUNCTION SWITCH M49 : ON
BUS+ BUS– SHIELD
12 14 16
B/W L
20 19 21
BUS+ BUS– BUS SHIELD
DISPLAY UNIT M61 : ON
RV RR CAMERA TV+ TV SYNC TV SHIELD
7 10 24 23 22
G/W PU/W R L
MULTI-FUNCTION SWITCH M49 : NV
B W
13 12 14
BUS+ BUS– BUS SHIELD
DISPLAY M63 : NV
TV+ TV SYNC TV GND
9 10 11
ON NV
TO DI-R/VIEW-06
D G/W
M20 M95
2 20 19 21
B2 B42
15 2 13 9
REAR VIEW CAMERA CONTROL UNIT B44
32 37
RV RR CAMERA
AV AND NAVI CONTROL UNIT M55 : NV
M49 W
M55 GY
M61 , M63 BR GY
B2 BR
B42 GY
B44 W

MKWA0474E

Terminals and Reference Value for Rear View Camera Control Unit

EKS004TK

TERMINALS (+) TER-MINAL	TERMINALS (+) WIRE COLOR	TERMINALS (–)	ITEM	CONDITION Igni-tion switch	CONDITION Operation	Voltage (V)
2	R	Ground	Image signal (out-put	ON	Gear position: “R” position	Approximately 0V  MKIB0189E
3	W	Ground	Camera image signal (input)	ON	Gear position “R” position	Approximately 0V  MKIB0189E
5	PU	Ground	Camera power output	ON	Gear position: R-position	Approximately 6.5V
6	P	Ground	ACC power	ACC	—	Battery voltage
7	Y	Ground	Battery power	OFF	—	Battery voltage
9	—	Ground	Shield ground	ON	—	Battery voltage
10	—	Ground	Shield ground	ON	—	Battery voltage
13	L	Ground	Image synchro-nous signal (out-put)	ON	Gear position: R-position	Approximately 5V  MKIB0190E
14	G/W	Ground	Reverse signal input	ON	Gear position: “R” position	Battery voltage
					Gear position: Other position	Approximately 0V
15	PU/W	Ground	Connected recog-nition signal	ON	—	Approximately 0V
16	B	Ground	Ground	ON	—	—

Power Supply and Ground Circuit Check

EKS004TP

1. CHECK THE FUSES

- Check that the fuses for rear view camera control unit is blown.

Unit	Power source	Fuse No.
Rear view camera control unit	Battery Power	33
	Ignition switch ACC or ON	1

OK or NG

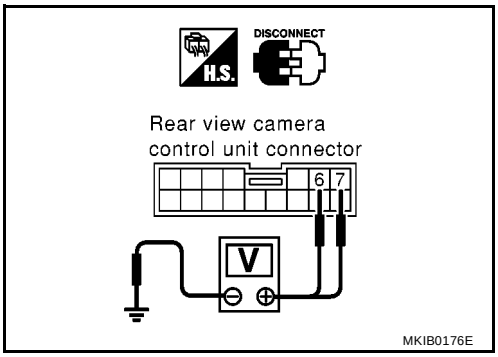
OK >> GO TO 2.

NO >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer toPG-3, "POWER SUPPLY ROUTING" .

2. POWER SUPPLY CIRCUIT CHECK

1. Disconnect camera controller connector.
2. Check voltage rear view camera control unit B130(LHD models) or B44(RHD models) terminal 6(P) and 7(Y), and ground.

Terminals			OFF	ACC	ON
(+)		(–)			
Connector	Terminal (Wire color)				
B130 or B44	6 (P)	Ground	0V	Battery voltage	Battery voltage
B130 or B44	7 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage



OK or NG

OK >> GO TO 3.
NO >> Check harness for open or short between rear view camera control unit and fuse.

3. GROUND CIRCUIT CHECK

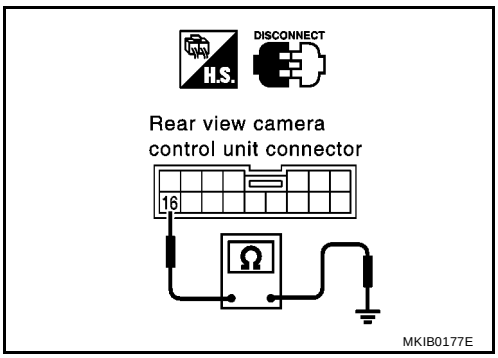
Check the following.

- Continuity between rear view camera control unit harness connector B130(LHD models) or B44(RHD models) terminal 16(B) and ground.

Continuity should exist.

OK or NG

OK >> Inspection end.
NG >> Check ground harness.



Rear View Is Not Displayed With The Selector Lever In R-position.

EKS004TQ

1. BACKUP LAMP INSPECTION

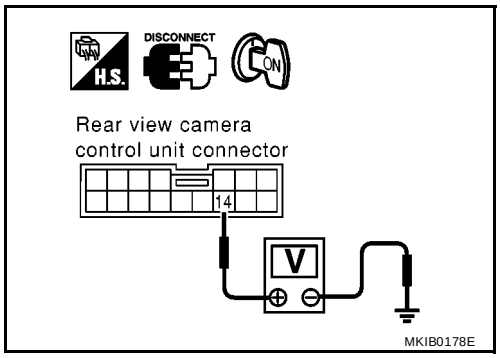
1. Turn ignition switch ON position.
2. Shift the selector lever to R-position.

Dose backup lamp illuminate?

YES >> GO TO 2.
NO >> Check backup lamp system.

2. CHECK REVERSE POSITION INPUT SIGNAL -I

1. Turn ignition switch OFF.
2. Disconnect rear view camera control unit connector.
3. Turn ignition switch ON.
4. Shift the selector lever to R-position.
5. Check voltage between rear view camera control unit harness connector B130(LHD models) or B44(RHD models) terminal 14(G/W) and ground.



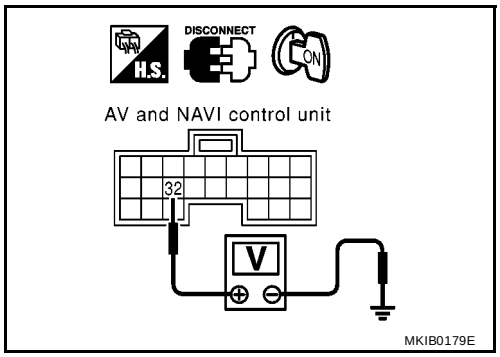
Battery voltage should exist.

OK or NG

OK >> GO TO 3 (with navigation system).
OK >> GO TO 4 (without navigation system).
NG >> Check harness for open or short between rear view camera control unit and backup lamp switch (M/T models) or park/neutral position switch (CVT or A/T models).

3. CHECK REVERSE POSITION INPUT SIGNAL -II

1. Turn ignition switch OFF.
2. Disconnect rear AV and NAVI control unit connector.
3. Turn ignition switch ON.
4. Shift the selector lever to R-position.
5. Check voltage between AV and NAVI control unit harness connector M55 terminal 32(G/W) and ground.



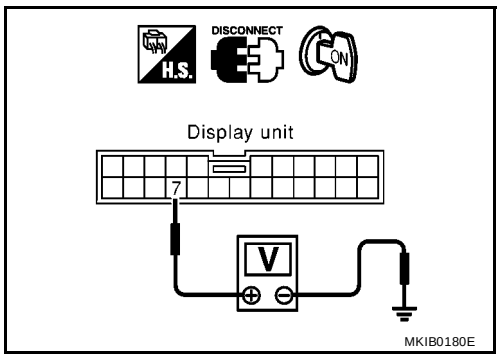
Battery voltage should exist.

OK or NG

OK >> GO TO 5.
NG >> Check harness for open or short between AV and NAVI control unit and backup lamp switch (M/T models) or park/neutral position switch (CVT or A/T models).

4. CHECK REVERSE POSITION INPUT SIGNAL -III

1. Turn ignition switch OFF.
2. Disconnect display unit connector.
3. Turn ignition switch ON.
4. Shift the selector lever to R-position.
5. Check voltage between display unit harness connector M61 terminal 7(G/W) and ground.



Battery voltage should exist.

OK or NG

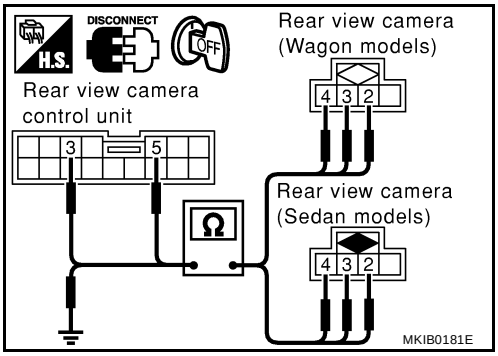
OK >> GO TO 5.
NG >> Check harness for open or short between display unit and back up lamp switch (M/T models) or park/neutral position switch (CVT or A/T models).

5. CHECK REAR VIEW CAMERA CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear view camera control unit connector and rear view camera connector.
3. Check the following.

- Continuity between rear view camera control unit harness connector B130(LHD models) or B44(RHD models) terminal 3(W) and rear view camera harness connector T5(sedan models) or D91(wagon models) each terminal 2(W).
- Continuity between rear view camera control unit harness connector B130(LHD models) or B44 (RHD models) terminal 5(PU) and rear view camera harness connector T5(sedan models) or D91(wagon models) each terminal 4(PU).
- Continuity between rear view camera harness connector T5(sedan models) or D91(wagon models) each terminal 3(B) and ground.

Terminals				Continuity
(+)		(–)		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
B130 or B44	3 (W)	T5 or D91	2 (W)	Yes
B130 or B44	5 (PU)	T5 or D91	4 (PU)	Yes
T5 or D91	3 (B)	Ground		Yes



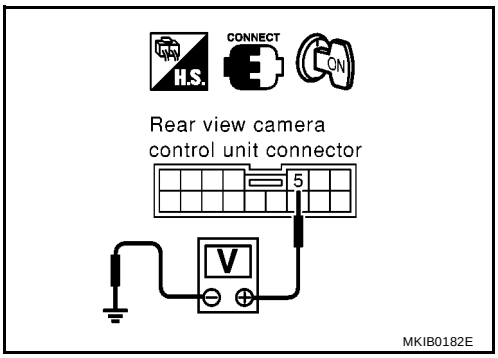
OK or NG

OK >> GO TO 6.
NG >> Repair or replace harness.

6. CHECK REAR VIEW CAMERA CONTROL UNIT OUTPUT SIGNAL

1. Connect rear view camera control unit connector.
2. Turn ignition switch ON.
3. Shift the selector lever to R-position.
4. Check voltage between rear view camera control unit harness connector B130(LHD models) or B44(RHD models) terminal 5(PU) and ground.

Approx. 6.5V



OK or NG

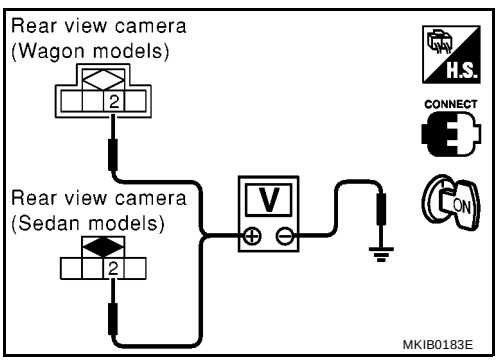
OK >> GO TO 7.
NG >> Replace rear view camera control unit.

7. CHECK REAR VIEW CAMERA SIGNAL

1. Connect the rear view camera connector.
2. Check voltage between rear view camera harness connector T5(sedan models) or D91(wagon models) each terminal 2(W) and ground.

2 - Ground

:Refer to DI-138, "Terminals and Reference Value for Rear View Camera Control Unit" .



OK or NG

OK >> Replace rear view camera control unit.
NG >> Replace rear view camera.

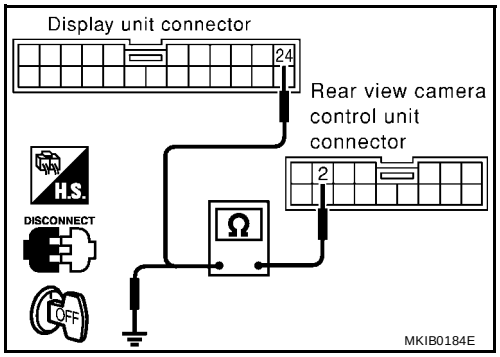
The Rear View Image Is Distorted.

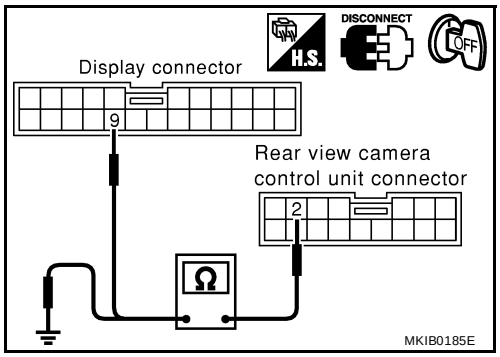
EKS004TS

1. CHECK SYNCHRO SIGNAL OPEN OR SHORT CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear view camera control unit connector and display unit.
3. Check the following

- Continuity between rear view camera control unit harness connector B130(LHD models) or B44(RHD models) terminal 2 (R) and display unit harness connector M61 terminal 24 (R) (without navigation system).
- Continuity between rear view camera control unit harness connector B130(LHD models) or B44(RHD models) terminal 2 (R) and display harness connector M63 terminal 9 (R) (with navigation system).
- Continuity between rear view camera control unit harness connector B130(LHD models) or B44(RHD models) terminal 2 (R) and ground.





Terminals				Continuity
(+)		(–)		
Connector	Terminal (Wire color)	Connector	Terminal	
B130 or B44	2 (R)	M61	24 (R)	Yes
B130 or B44	2 (R)	M63	9 (R)	Yes
B130 or B44	2 (R)	Ground		No

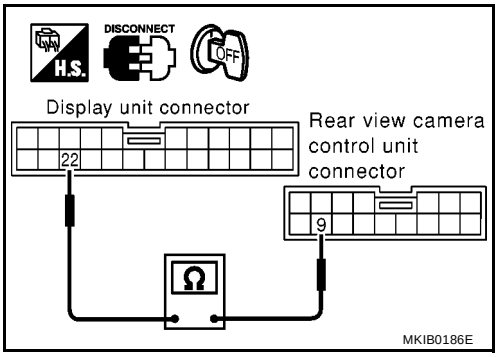
OK or NG

OK >> GO TO 2.
NG >> Repair or replace harness.

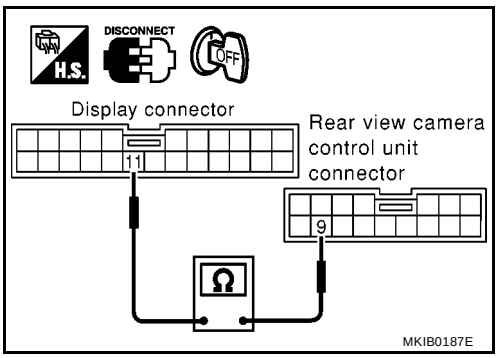
2. CHECK SYNCHRO SIGNAL OPEN OR SHORT CIRCUIT

1. Check the following.

– Continuity between rear view camera control unit harness connector B130(LHD models) or B44(RHD models) terminal 9 and display unit harness connector M61 terminal 22 (without navigation system).



– Continuity between rear view camera control unit harness connector B130(LHD models) or B44(RHD models) terminal 9 and display harness connector M63 terminal 11 (with navigation system).



Continuity should exist.

OK or NG

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

3. CHECK REAR VIEW CONTROL UNIT SYNCHRO SIGNAL

1. Connect rear view camera control unit connector.
2. Turn ignition switch ON.
3. Shift the selector lever to R-position.
4. Check signal between rear view camera control unit harness connector B130(LHD models) or B44 (RHD models) terminal 13 (L) and ground.

13 - Ground:

Refer to DI-138, "Terminals and Reference Value for Rear View Camera Control Unit" .

OK or NG

OK >> Replace display unit or display.
NG >> Replace rear view camera control unit.

Removal and Installation of Rear View Camera

EKS004TU

1. Remove the trunk trim. Refer to.
2. Remove the license plate finisher. Refer to EI-21, "LICENSE PLATE FINISHER" .
3. Remove the nuts (2), and remove the rear view monitor camera.