SECTION PG

POWER SUPPLY, GROUND & CIRCUIT ELEMENTS

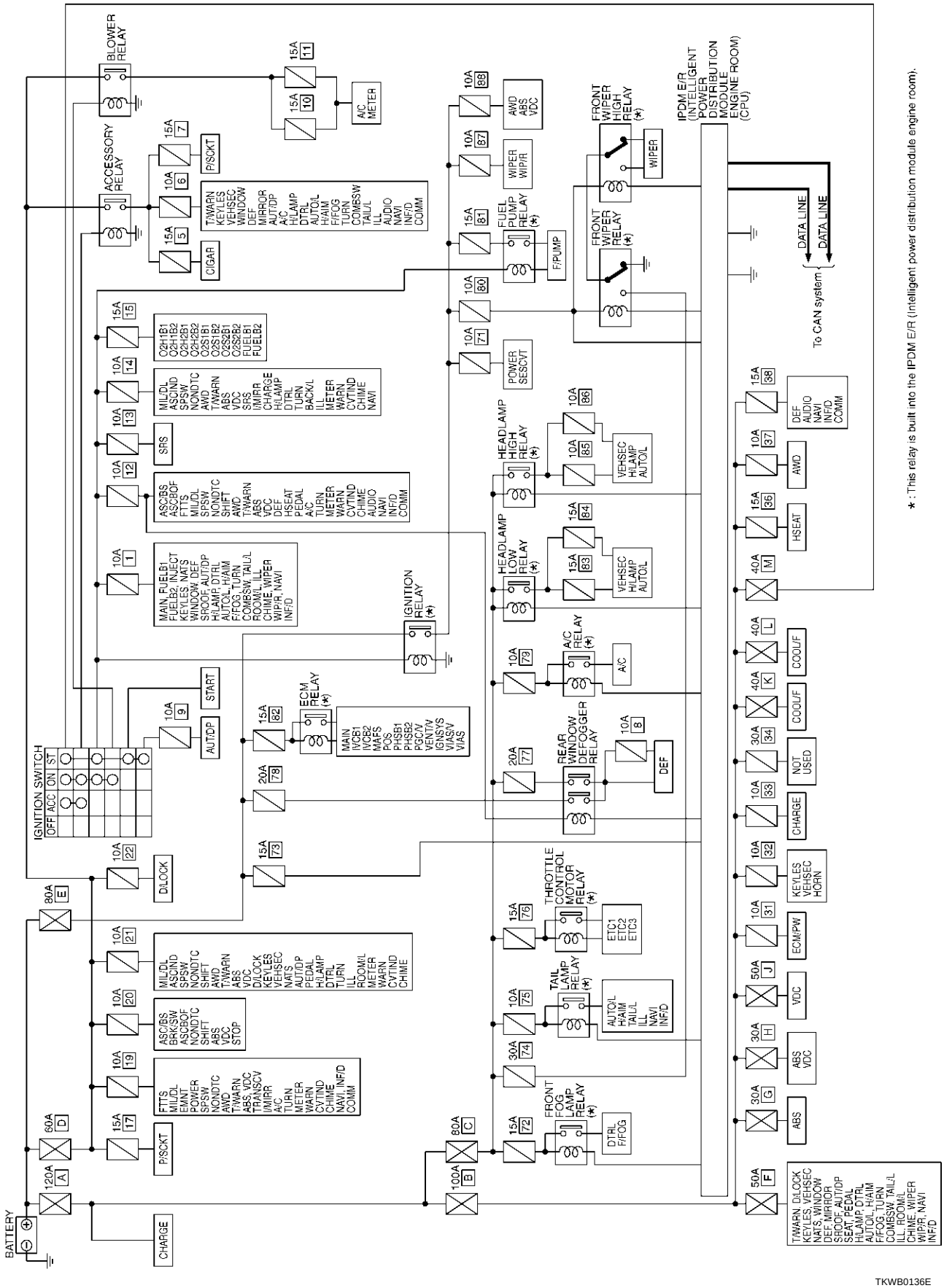
CONTENTS

POWER SUPPLY ROUTING CIRCUIT

PFP:24110

Schematic

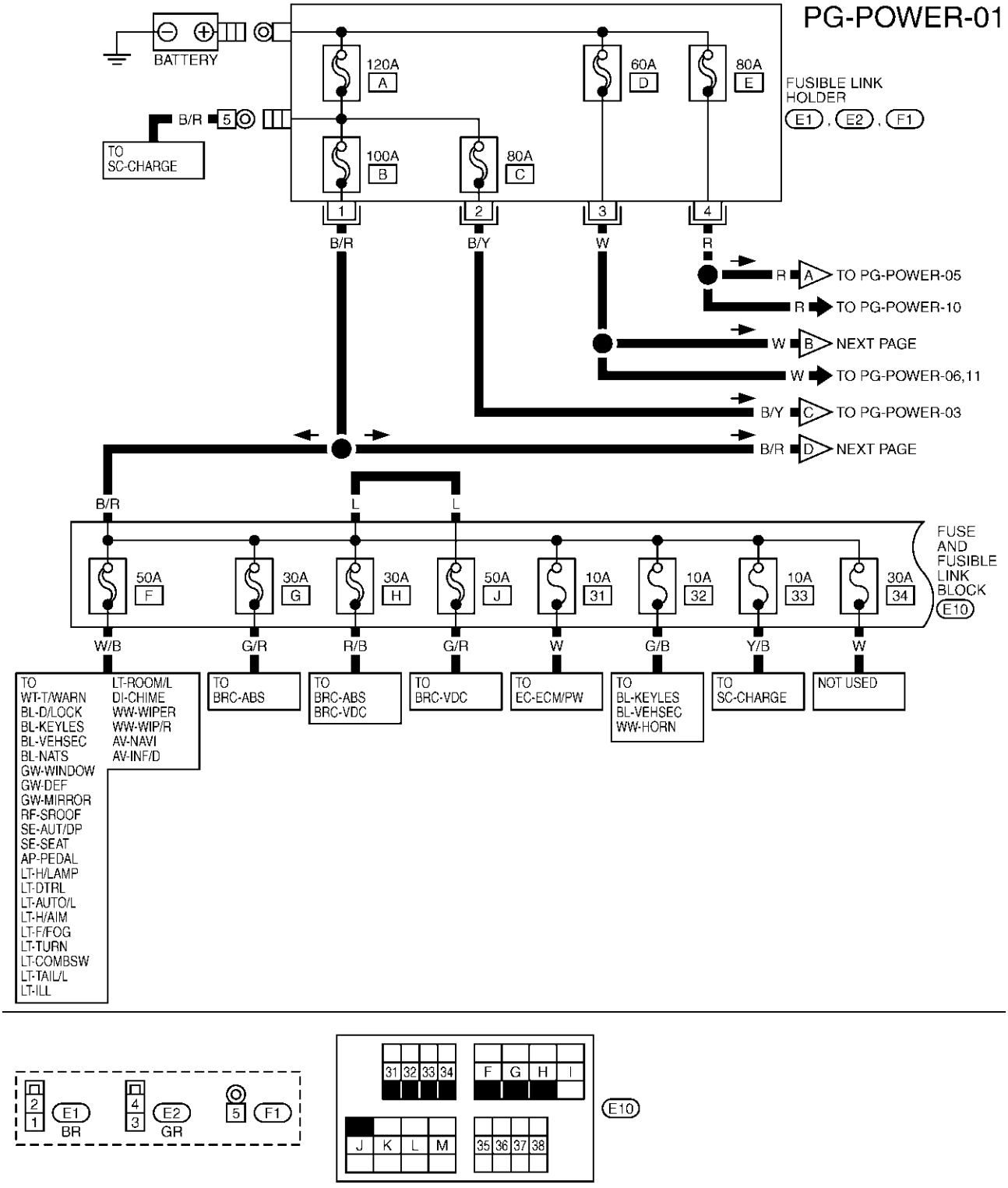
AKS007HE



Wiring Diagram - POWER -

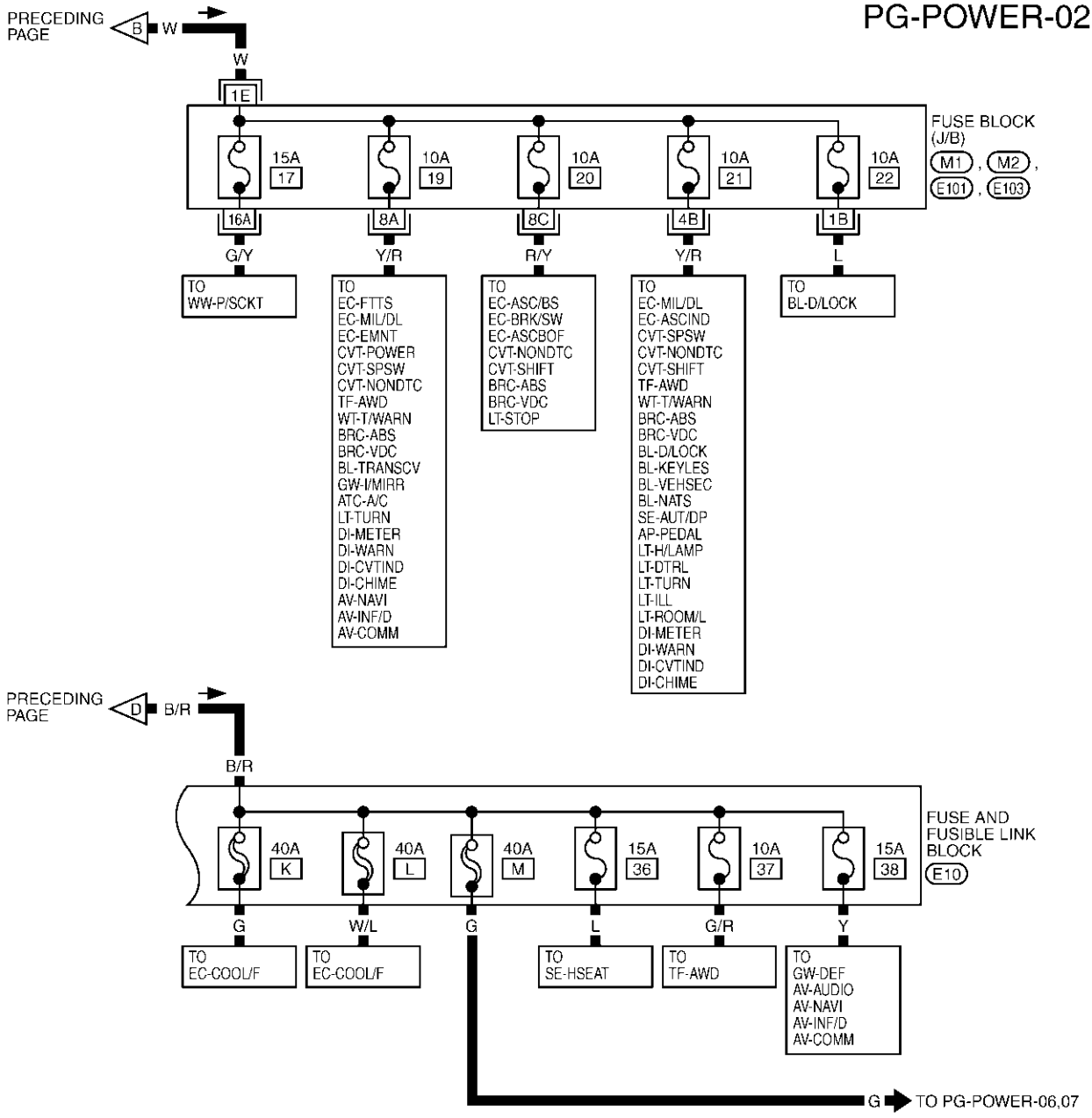
AKS007HF

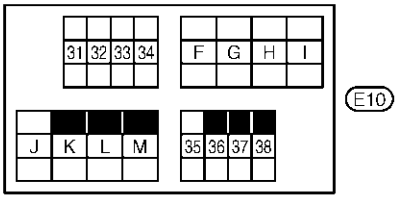
BATTERY POWER SUPPLY - IGNITION SW. IN ANY POSITION



TKWA0794E

PG-POWER-02





REFER TO THE FOLLOWING.

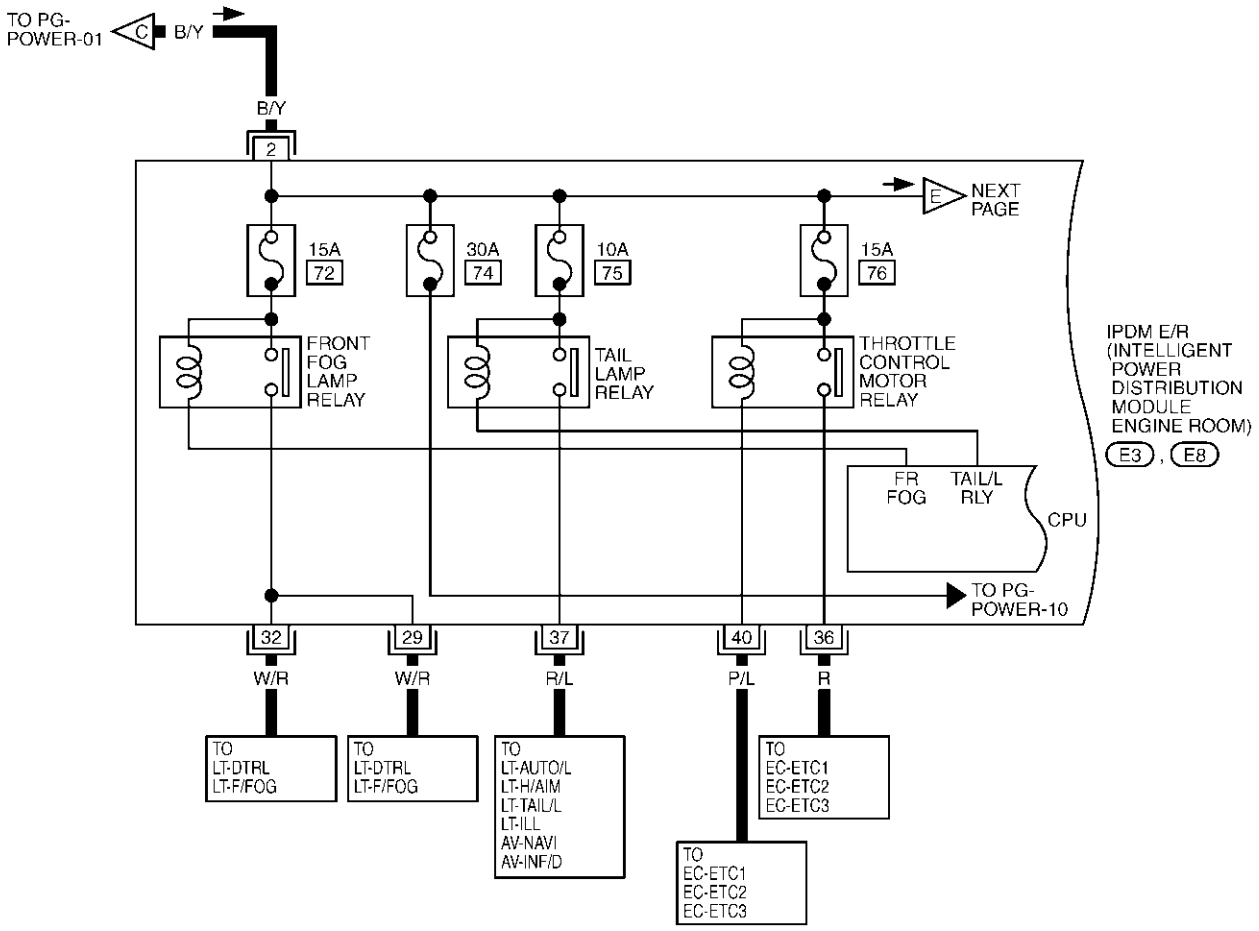
M1, M2, E101, E103

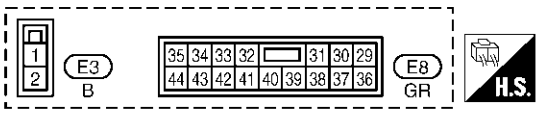
-FUSE BLOCK-JUNCTION BOX (J/B)

1	2	3	4	5	6	7		8	9	10	11
12	13	14	15	16	17	18	19	20	21	22	

TKWB0137E

PG-POWER-03





TKWA0796E

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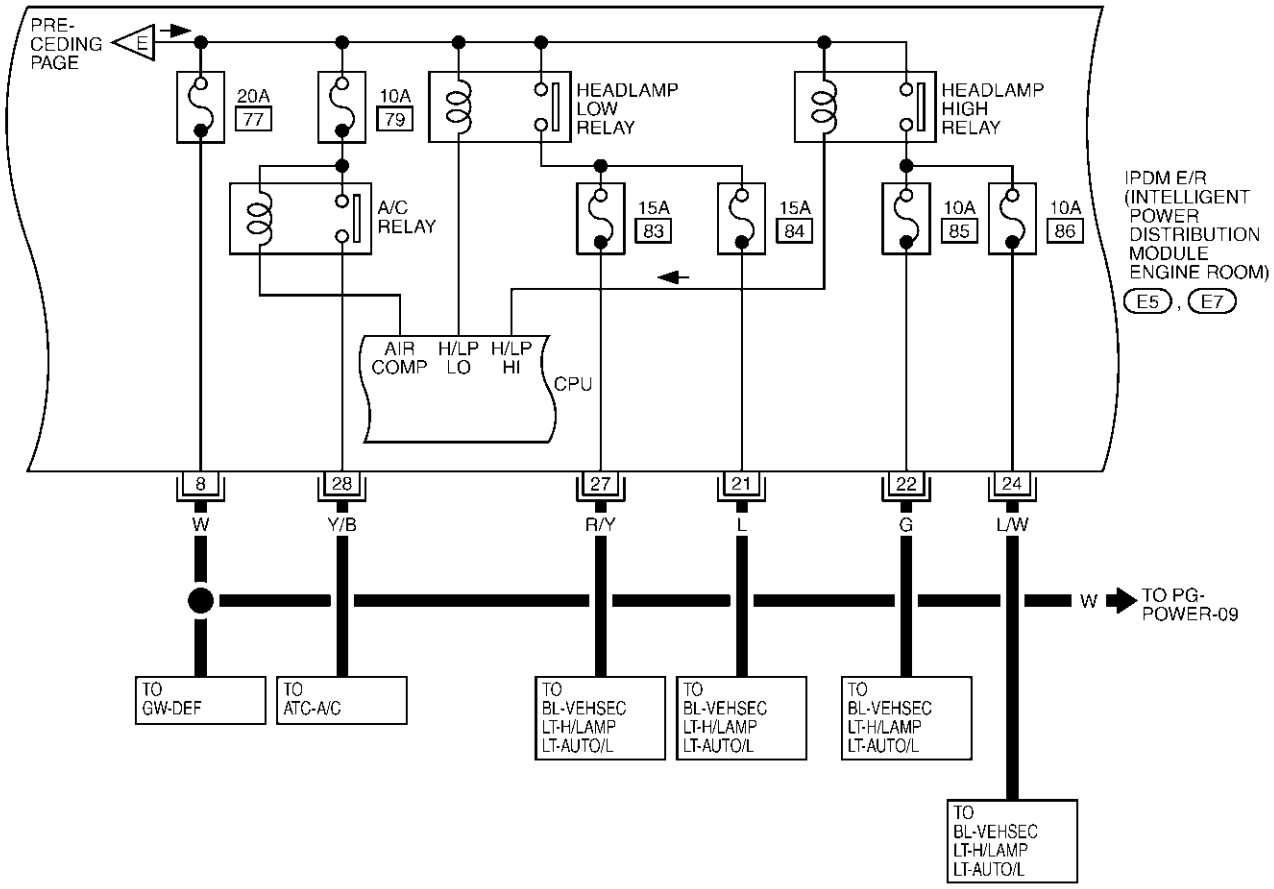

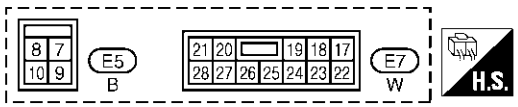

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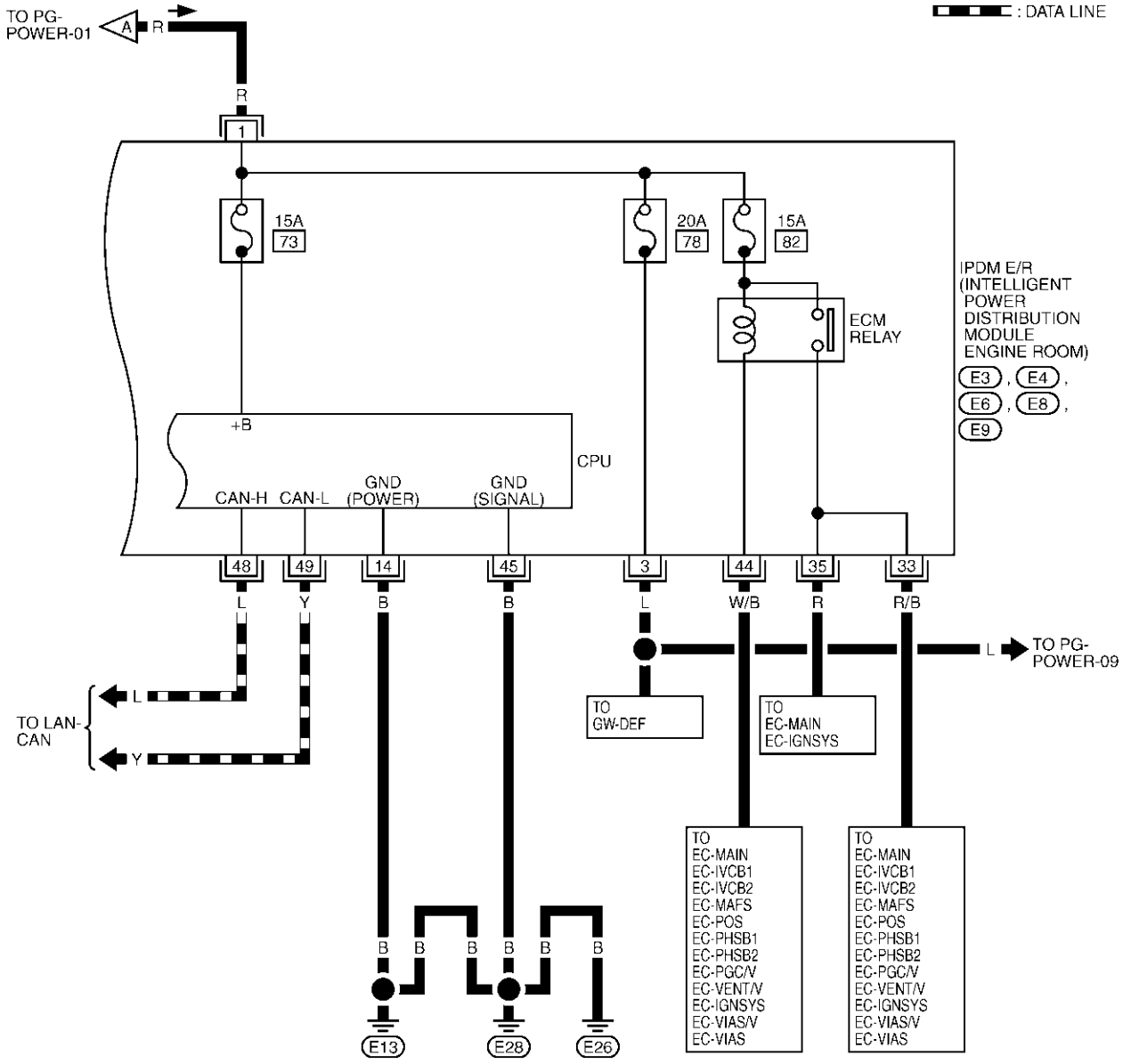
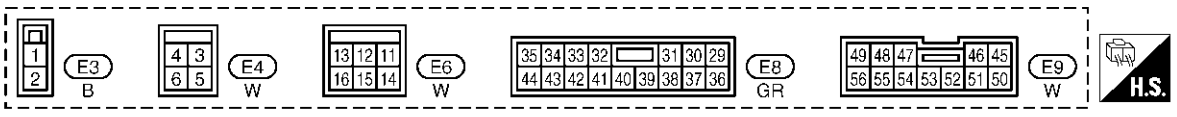
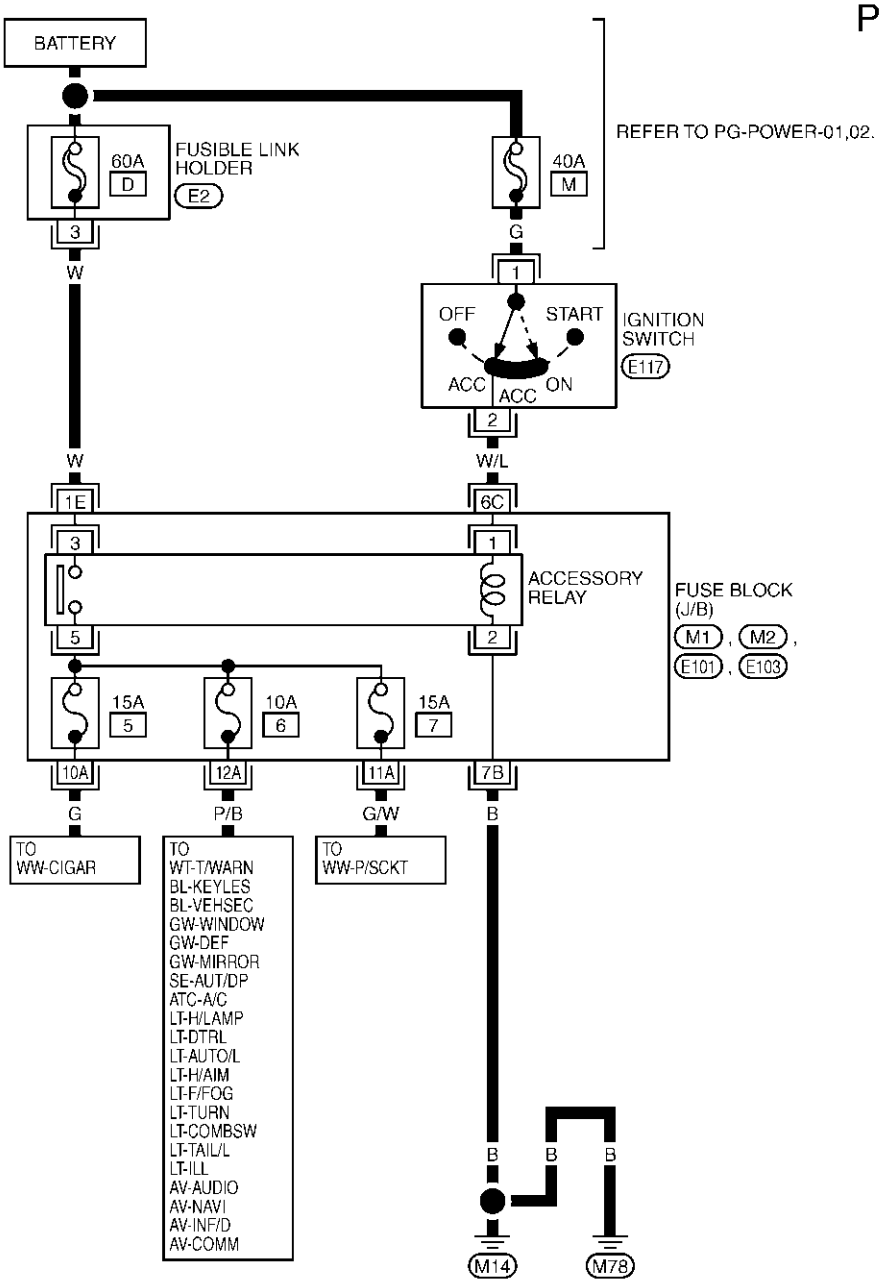


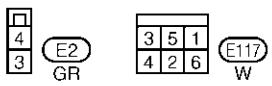


TKWA0798E

ACCESSORY POWER SUPPLY - IGNITION SW. IN “ACC” OR “ON”

PG-POWER-06





REFER TO THE FOLLOWING.

M1 , M2 , E101 , E103

-FUSE BLOCK-JUNCTION BOX (J/B)

1	2	3	4	5	6	7		8	9	10	11
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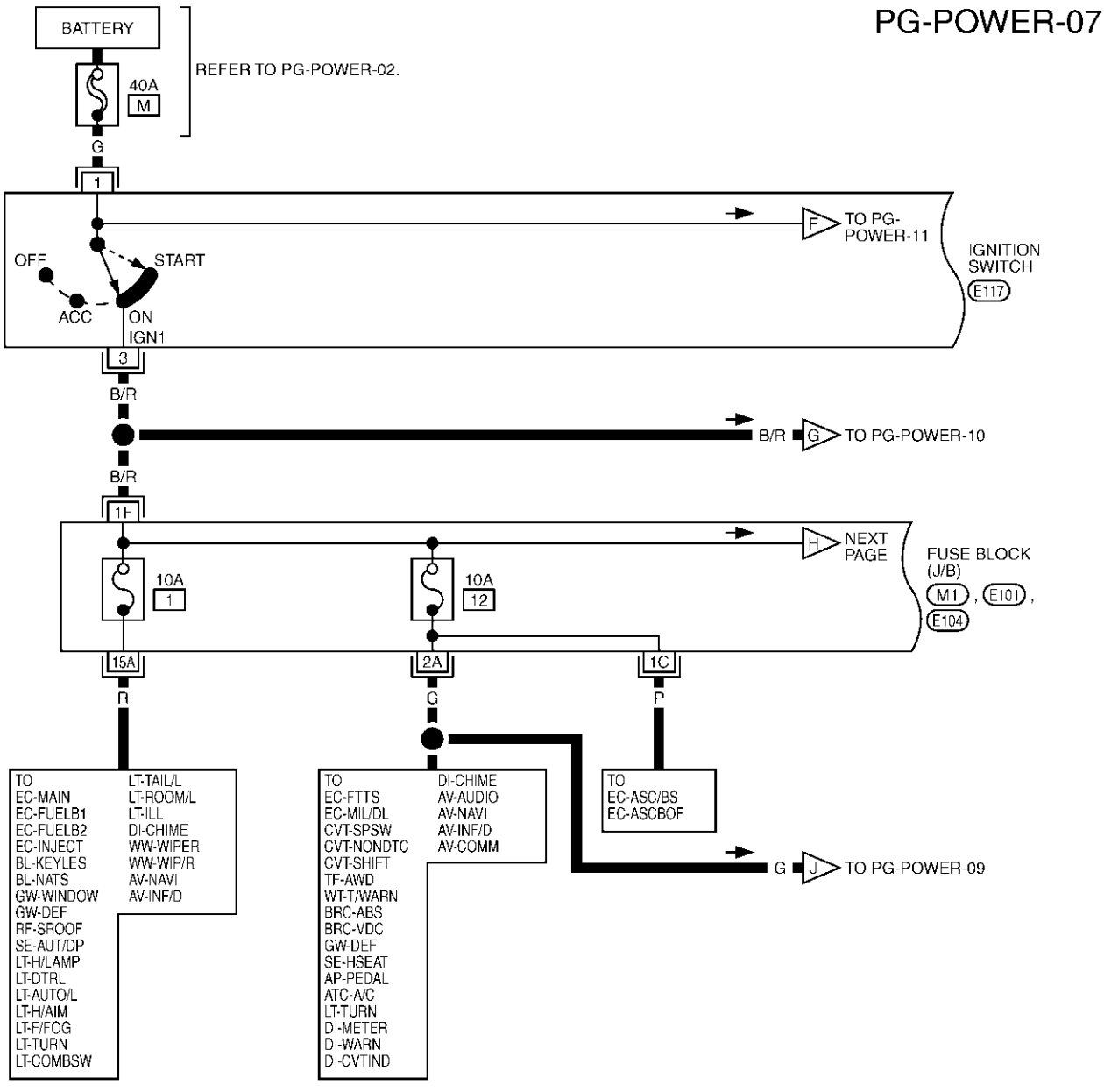
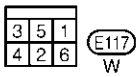
TKWA0799E

IGNITION POWER SUPPLY - IGNITION SW. IN “ON” AND/OR “START”





REFER TO THE FOLLOWING.

M1, E101, E104

-FUSE BLOCK-JUNCTION BOX (J/B)

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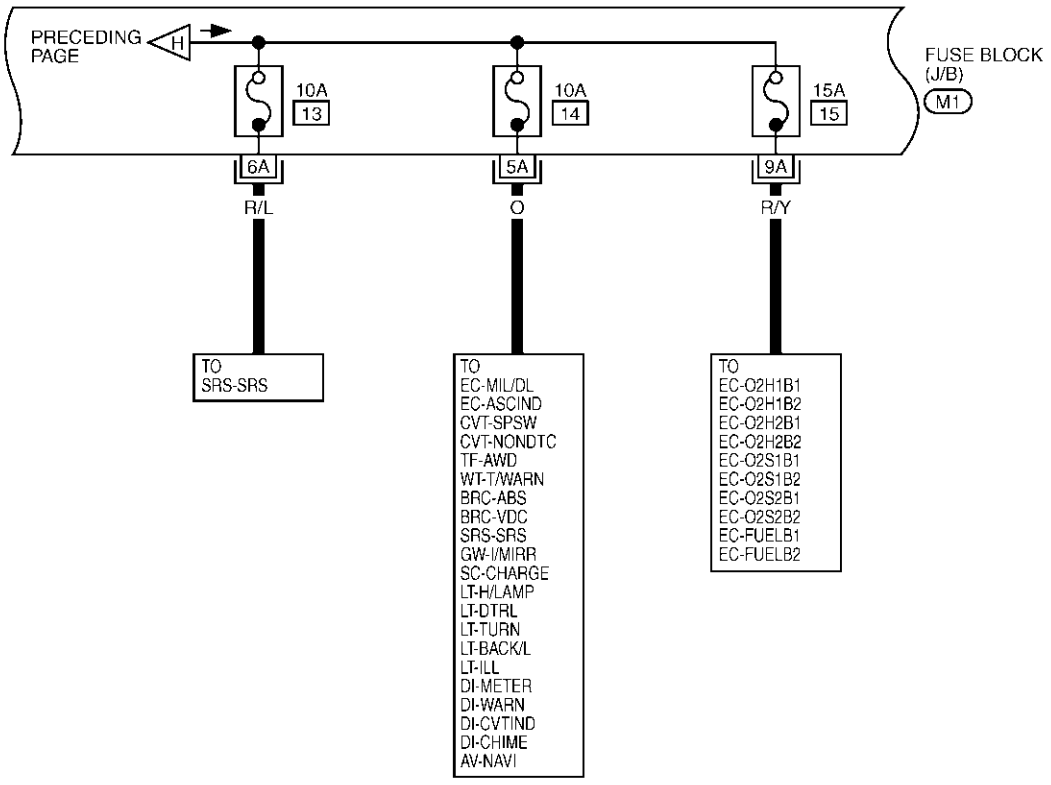
12	13	14	15	16	17	18	19	20	21	22

TKWA0800E

PG-POWER-08



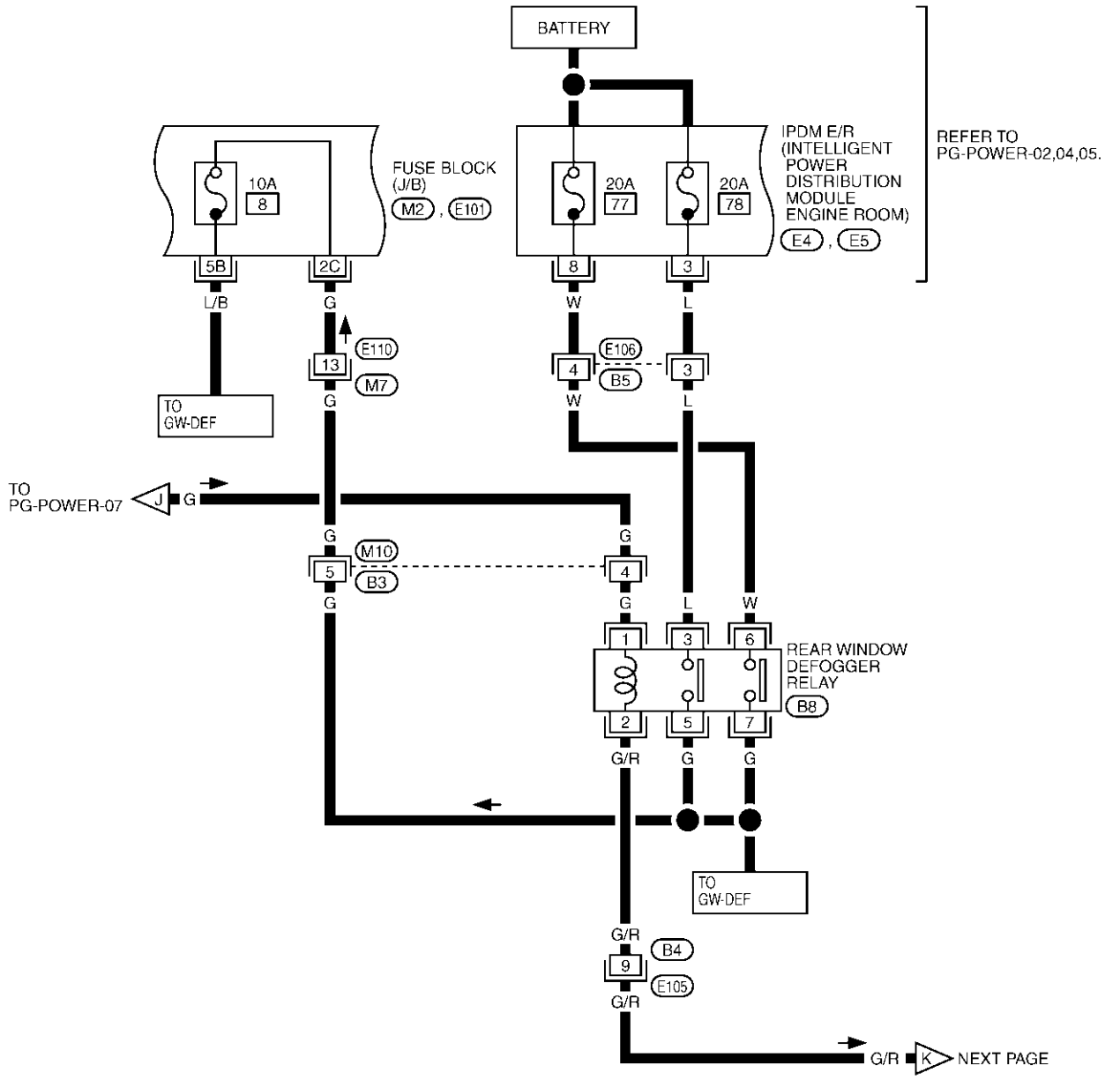
REFER TO THE FOLLOWING.

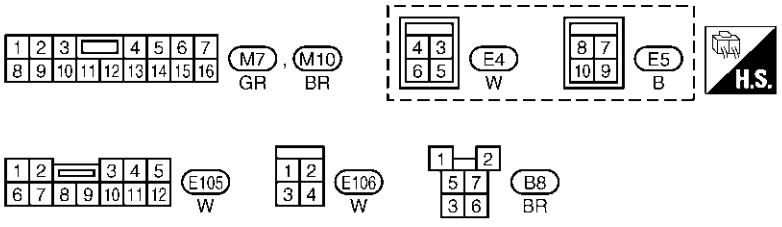
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22

TKWA0801E

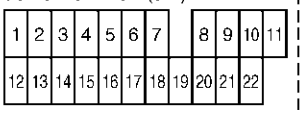
PG-POWER-09





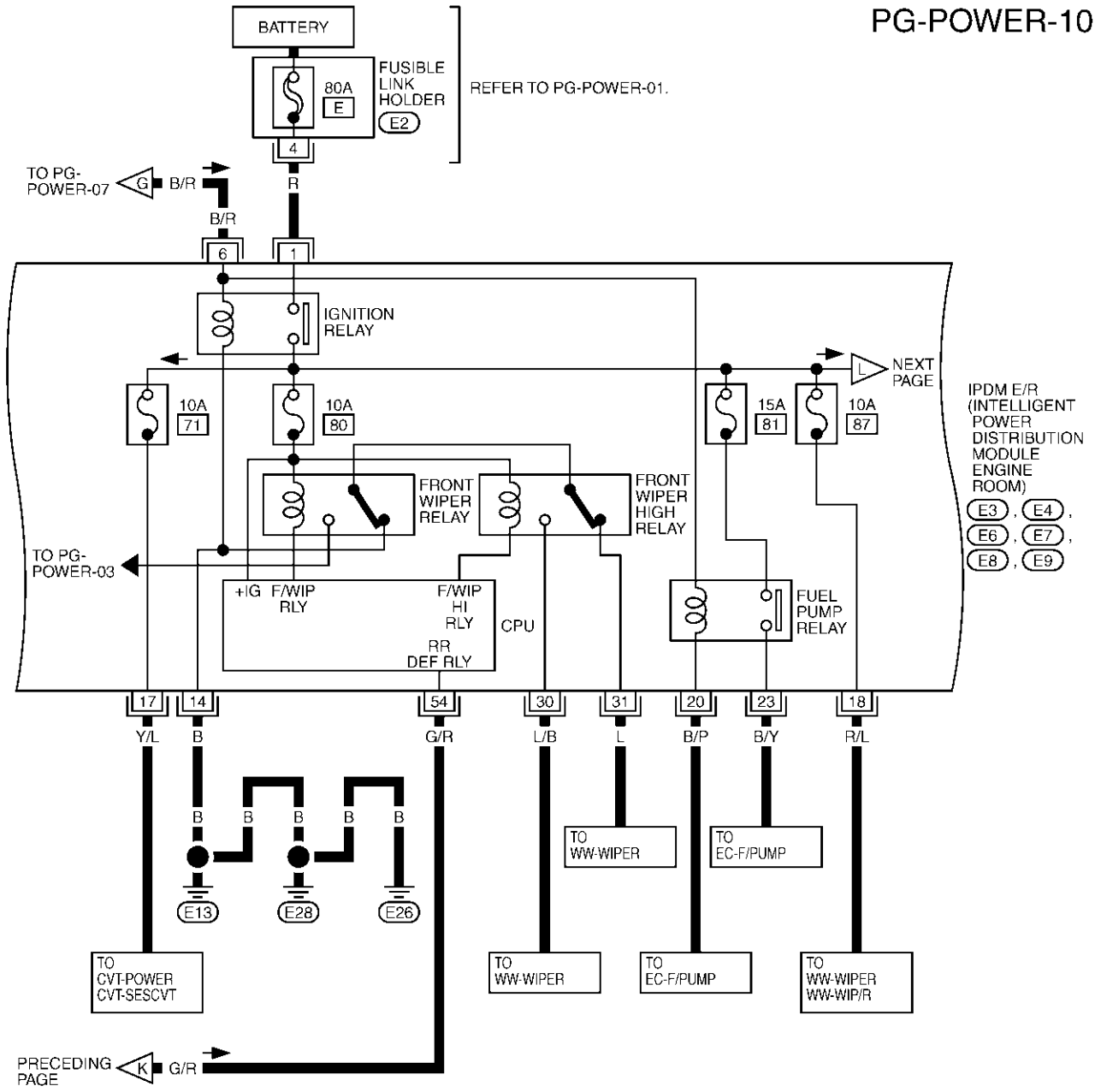
REFER TO THE FOLLOWING.

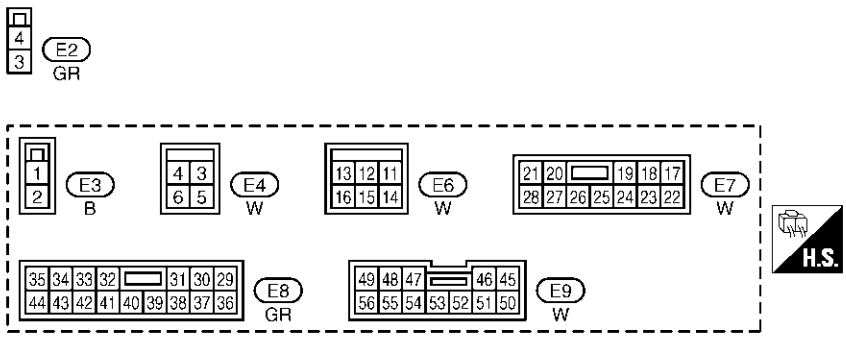
M2 , E101 -FUSE BLOCK-JUNCTION BOX (J/B)



TKWA0802E

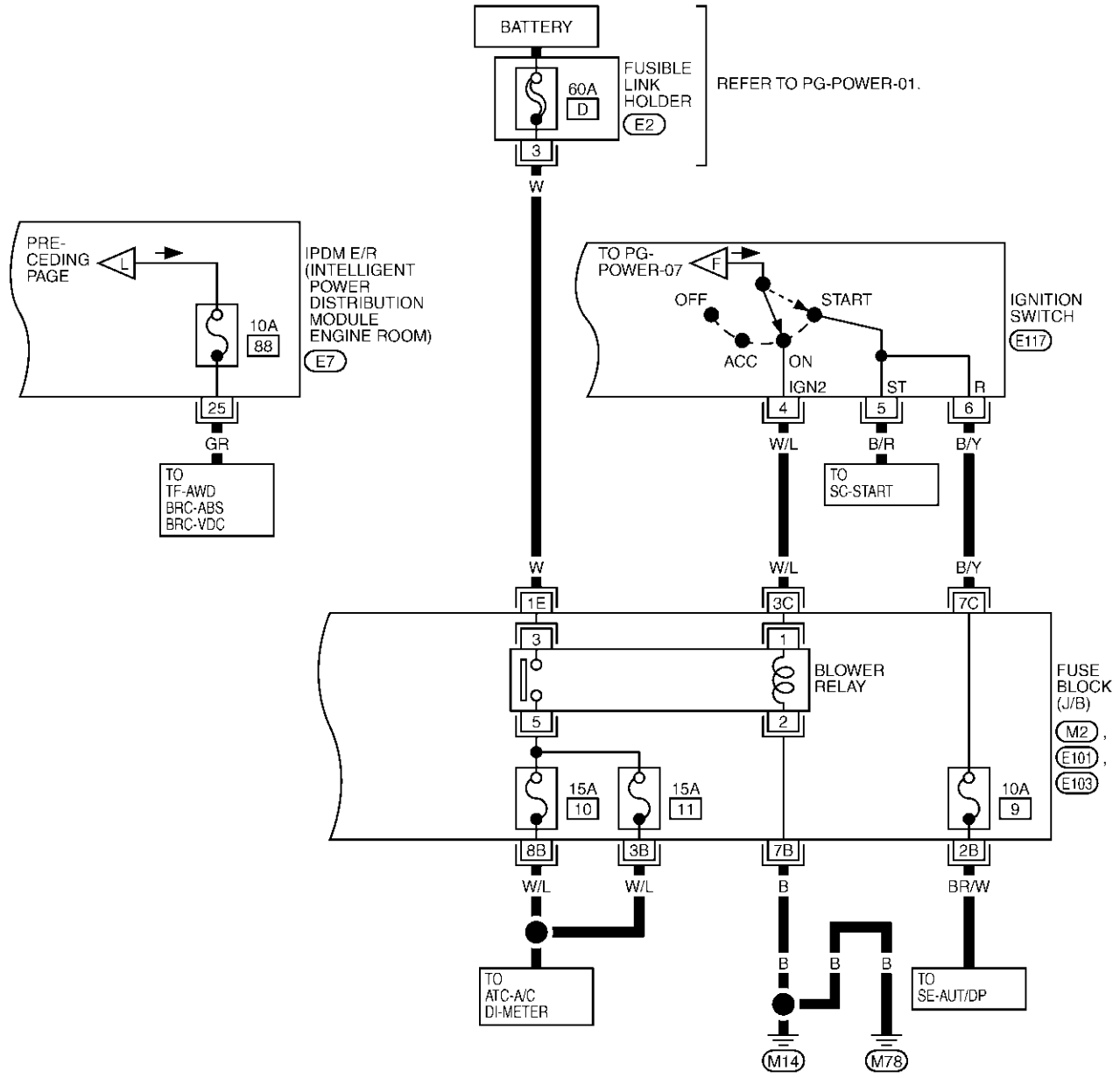
PG-POWER-10

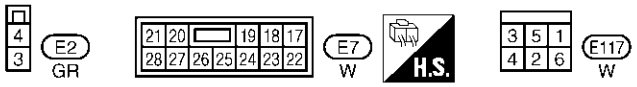




TKWB0138E

PG-POWER-11





REFER TO THE FOLLOWING.

M2 , E101 , E103 -FUSE BLOCK-JUNCTION BOX (J/B)

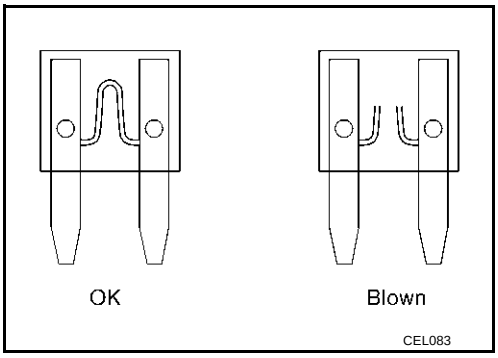
1	2	3	4	5	6	7		8	9	10	11
12	13	14	15	16	17	18	19	20	21	22	

TKWA0804E

Fuse

AKS007HG

- If fuse is blown, be sure to eliminate cause of incident before installing new fuse.
- Use fuse of specified rating. Never use fuse of more than specified rating.
- Do not partially install fuse; always insert it into fuse holder properly.
- Remove fuse for “ELECTRICAL PARTS (BAT)” if vehicle is not used for a long period of time.



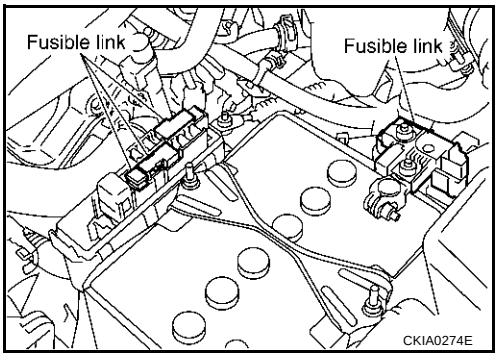
Fusible Link

AKS007HH

A melted fusible link can be detected either by visual inspection or by feeling with finger tip. If its condition is questionable, use circuit tester or test lamp.

CAUTION:

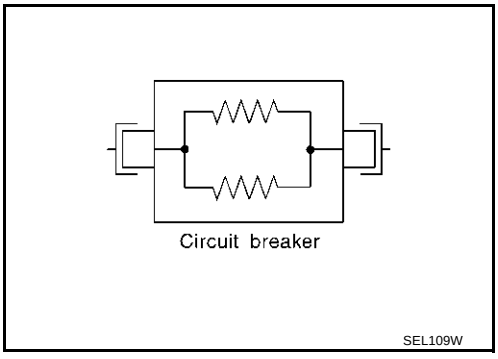
- **If fusible link should melt, it is possible that critical circuit (power supply or large current carrying circuit) is shorted. In such a case, carefully check and eliminate cause of incident.**
- **Never wrap outside of fusible link with vinyl tape. Important: Never let fusible link touch any other wiring harness, vinyl or rubber parts.**



Circuit Breaker

AKS007HI

The PTC thermistor generates heat in response to current flow. The temperature (and resistance) of the thermistor element varies with current flow. Excessive current flow will cause the element's temperature to rise. When the temperature reaches a specified level, the electrical resistance will rise sharply to control the circuit current. Reduced current flow will cause the element to cool. Resistance falls accordingly and normal circuit current flow is allowed to resume.



IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

PFP:284B7

System Description

AKS004CK

- IPDM E/R (Intelligent Power Distribution Module Engine Room) integrates the relay box and fuse block which were originally placed in engine compartment. It controls integrated relay via IPDM E/R control circuit.
- IPDM E/R-integrated control circuit performs ON-OFF operation of relay, CAN communication control, oil pressure switch signal reception, etc.
- It controls operation of each electrical part via BCM and CAN communication lines.

CAUTION:

None of the IPDM E/R-integrated relays can be removed.

SYSTEMS CONTROLLED BY IPDM E/R

1. Lamp control
   Using CAN communication line, it receives signal from BCM and controls the following lamps:
   - Head lamps (Hi, Lo)
   - Parking lamps
   - Tail lamps
   - Front fog lamps
2. Wiper control
   Using CAN communication line, it receives signals from BCM and controls the front wipers.
3. Rear window defogger relay control
   Using CAN communication line, it receives signals from BCM and controls the rear window defogger relay.
4. A/C compressor control
   Using CAN communication line, it receives signals from ECM and controls the A/C compressor (magnet clutch).
5. Cooling fan control
   Using CAN communication line, it receives signals from ECM and controls cooling fan.
6. Horn control
   Using CAN communication line, it receives signals from BCM and controls horn relay.

CAN COMMUNICATION LINE CONTROL

With CAN communication, by connecting each control unit using two communication lines (CAN L-line, CAN H-line), it is possible to transmit maximum amount of information with minimum wiring. Each control unit can transmit and receive data, and reads necessary information only.

1. Fail-safe control
   - When CAN communication with other control units is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.
   - Operation of control parts by IPDM E/R during fail-safe mode is as follows:

Controlled system	Fail-safe mode
Headlamp	● With the ignition switch ON, the headlamp (low) is ON. ● With the ignition switch OFF, the headlamp (low) is OFF.
Tail and parking lamps	Tail and parking lamps OFF.
Cooling fan	● With the ignition switch ON, the cooling fan HI operates. ● With the ignition switch OFF, the cooling fan stops.
Front wiper	Until the ignition switch is turned off, the front wiper LO and HI remains in the same status it was in just before fail–safe control was initiated.
Rear window defogger	Rear window defogger relay OFF
A/C compressor	A/C compressor OFF
Front fog lamps	Front fog lamp relay OFF

IPDM E/R STATUS CONTROL

In order to save power, IPDM E/R switches status by itself based on each operating condition.

1. CAN communication status
   - CAN communication is normally performed with other control units.
   - Individual unit control by IPDM E/R is normally performed.
   - When sleep request signal is received from BCM, mode is switched to sleep waiting status.
2. Sleep waiting status
   - Process to stop CAN communication is activated.
   - All systems controlled by IPDM E/R are stopped. When 3 seconds have elapsed after CAN communication with other control units is stopped, mode switches to sleep status.
3. Sleep status
   - IPDM E/R operates in low current-consumption mode.
   - CAN communication is stopped.
   - When a change in CAN communication signal is detected, mode switches to CAN communication status.
   - When a change hood switch signal is detected, mode switches to CAN communication status.

CAN Communication System Description

AKS007UG

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. Modern vehicles are equipped with many electronic control units 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.

CAN Communication Unit For 2WD Models

AKS007UH

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

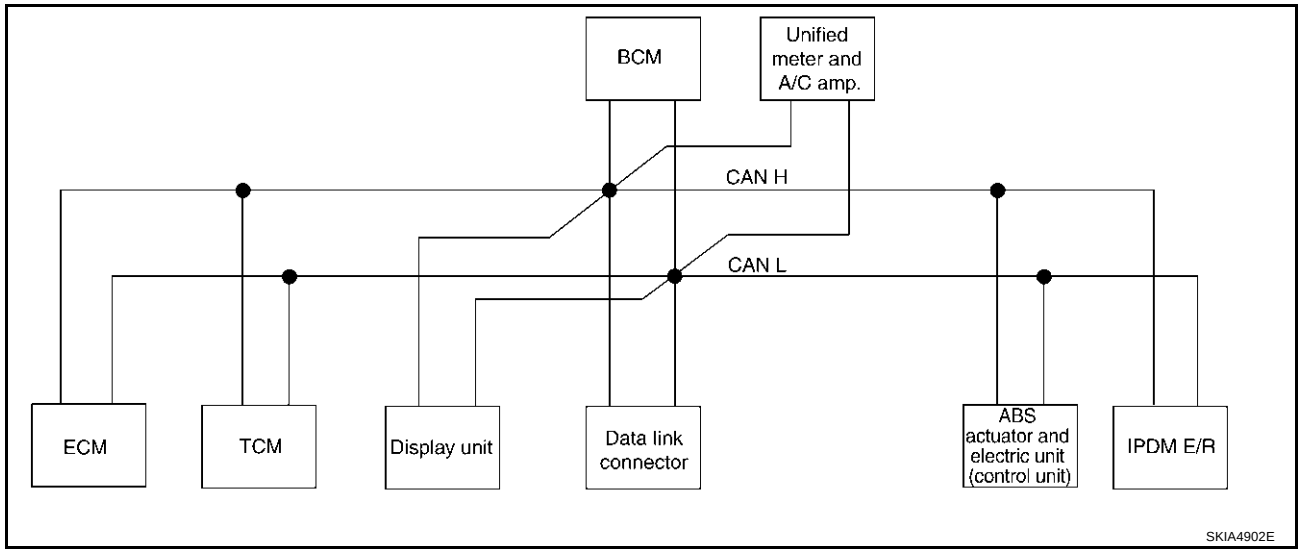
Body type	Wagon															
Axle	2WD															
Engine	VQ35DE															
Transmission	CVT															
Brake control	ABS								VDC							
Low tire pressure warning system		×			×	×		×		×			×	×		×
Navigation system			×		×		×	×			×		×		×	×
Automatic drive positioner				×		×	×	×				×		×	×	×
CAN communication unit																
ECM	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
TCM	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Low tire pressure warning control unit		×			×	×		×		×			×	×		×
Display unit	×	×		×		×			×	×		×		×		
Display control unit			×		×		×	×			×		×		×	×
Data link connector	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
BCM	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Unified meter and A/C amp.	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Steering angle sensor									×	×	×	×	×	×	×	×
Driver seat control unit				×		×	×	×				×		×	×	×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
IPDM E/R	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
CAN communication type	PG-19, "TYPE 1/TYPE 2/TYPE 3/TYPE 4/TYPE 5/TYPE 6/TYPE 7/TYPE 8"								PG-24, "TYPE 9/TYPE10/TYPE 11/TYPE 12/ TYPE 13/TYPE 14/TYPE 15/TYPE 16"							

×: Applicable

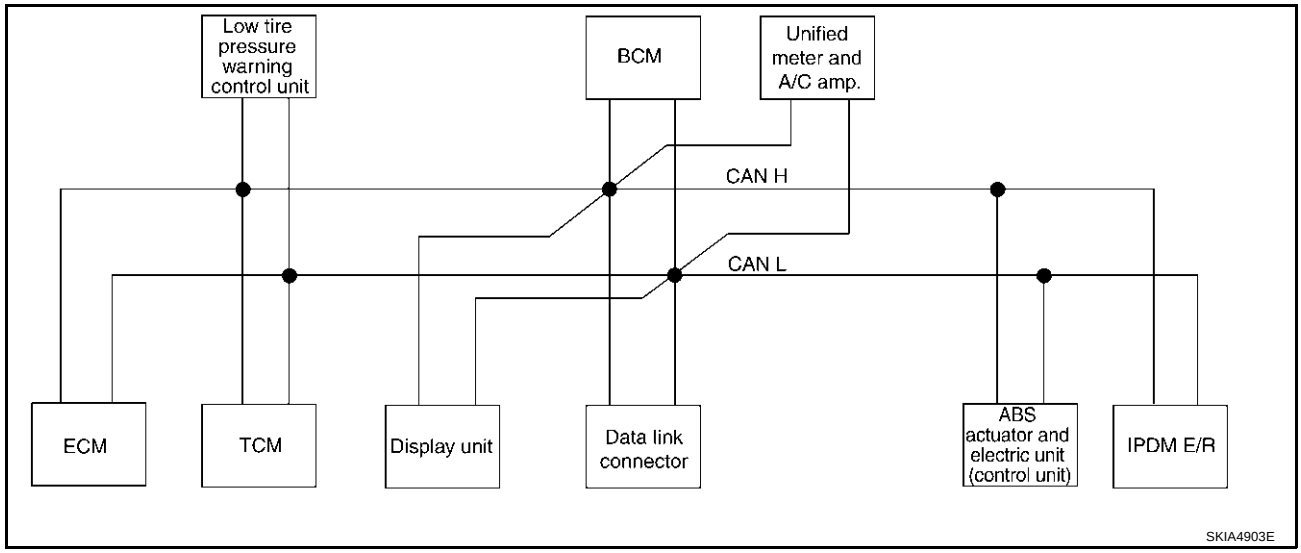
TYPE 1/TYPE 2/TYPE 3/TYPE 4/TYPE 5/TYPE 6/TYPE 7/TYPE 8

System Diagram

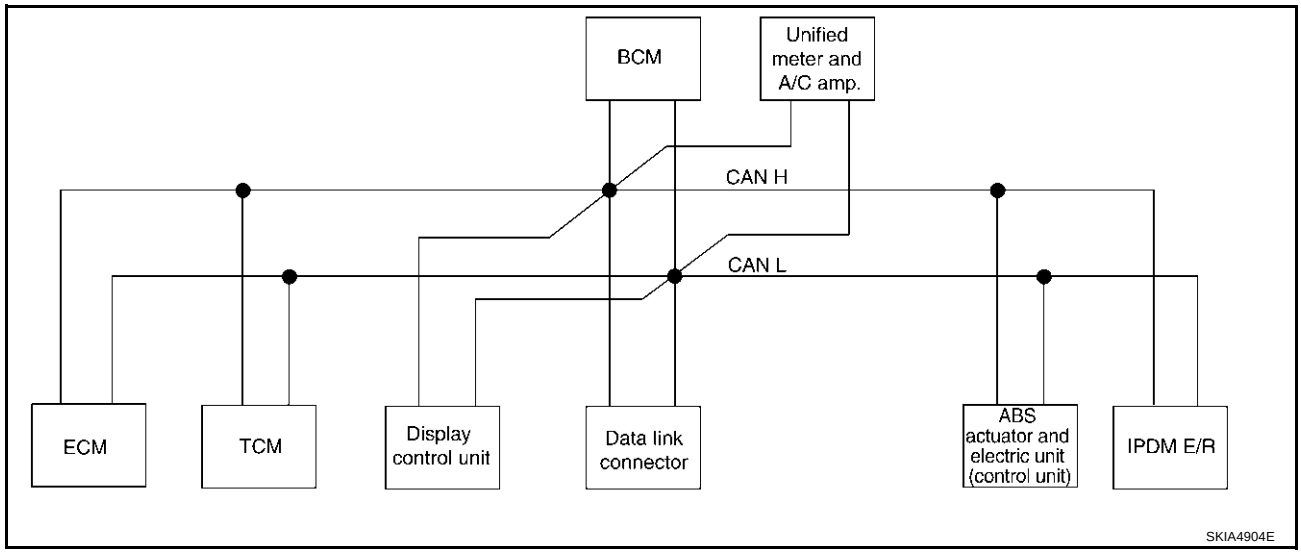
- Type1



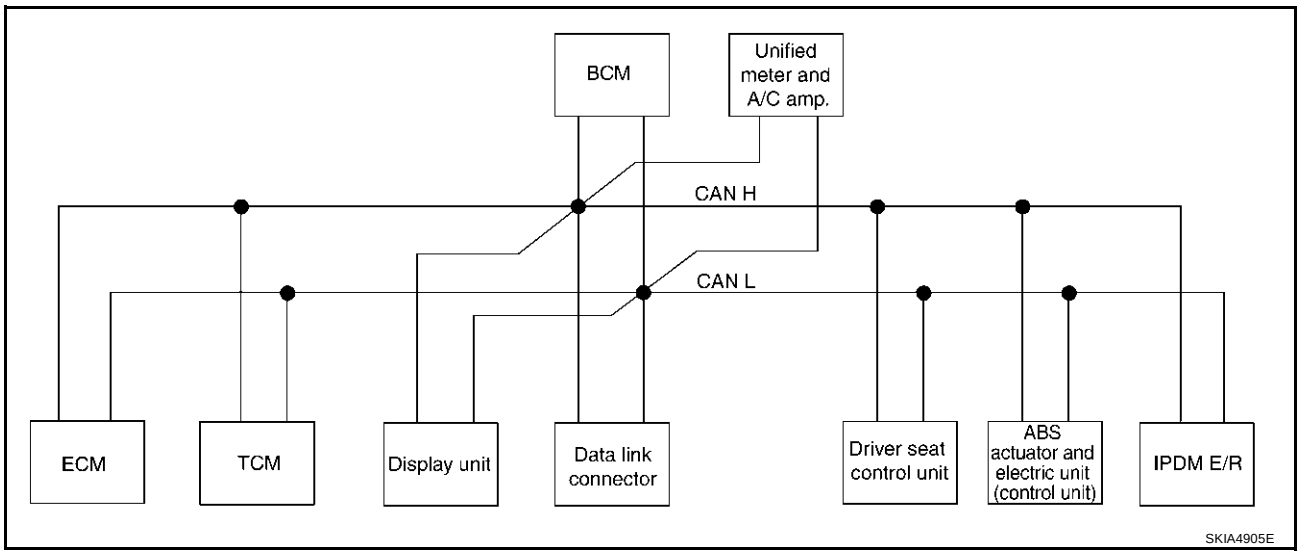
- Type2



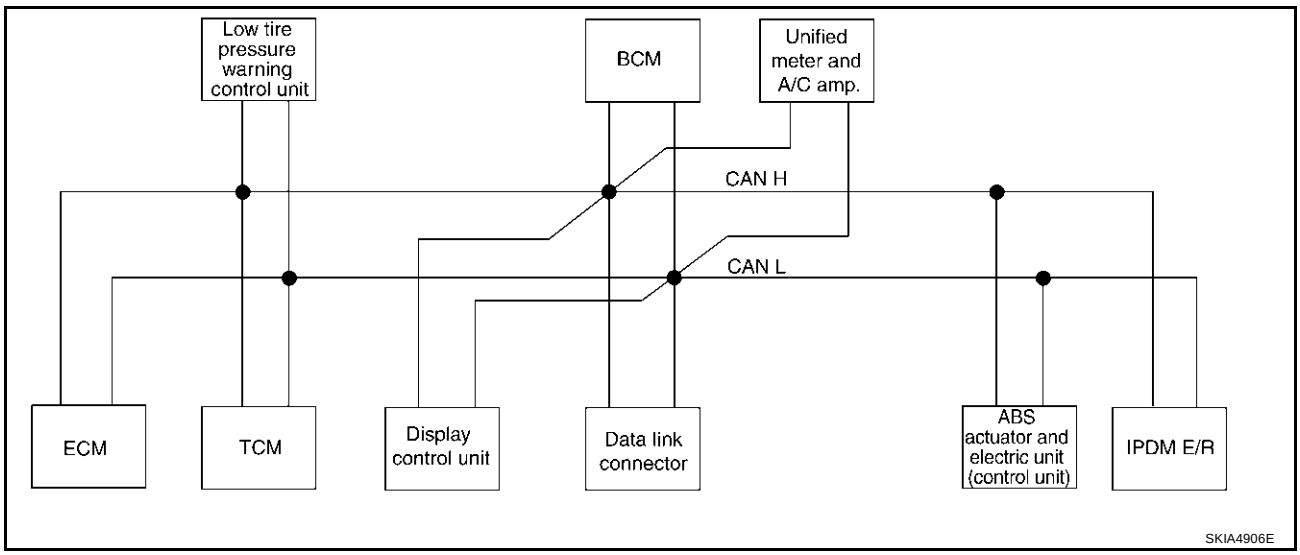
- Type3



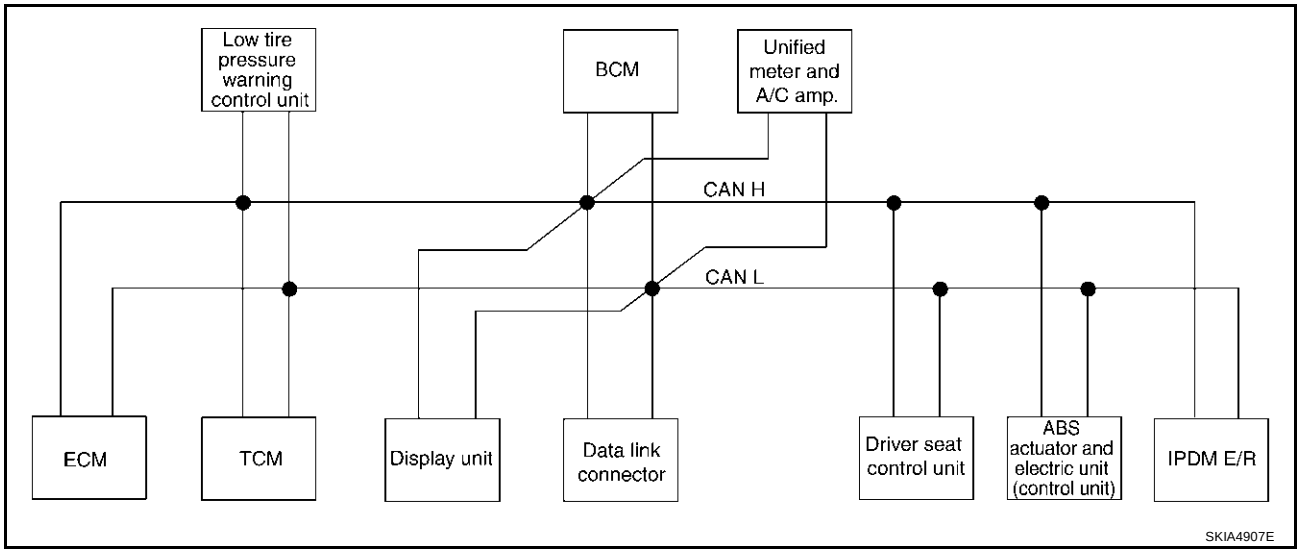
- Type4



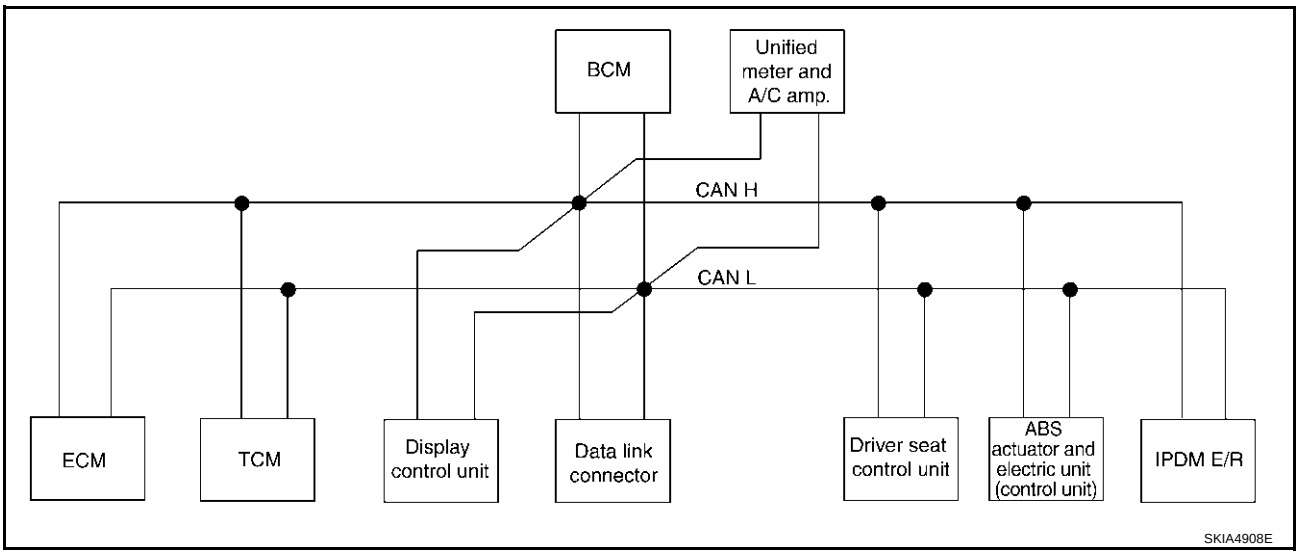
- Type5



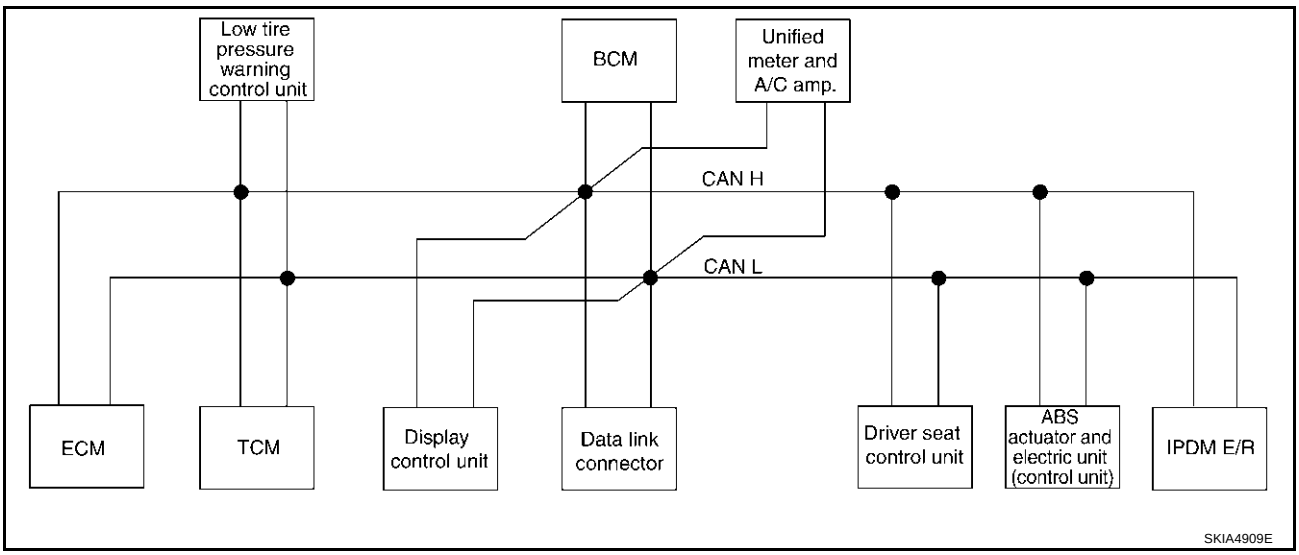
- Type6



- Type7


BCM
Unified meter and A/C amp.
CAN H
CAN L
ECM
TCM
Display control unit
Data link connector
Driver seat control unit
ABS actuator and electric unit (control unit)
IPDM E/R
SKIA4908E

- Type8


Low tire pressure warning control unit
BCM
Unified meter and A/C amp.
CAN H
CAN L
ECM
TCM
Display control unit
Data link connector
Driver seat control unit
ABS actuator and electric unit (control unit)
IPDM E/R
SKIA4909E

Input/output Signal Chart

T: Transmit R: Receive

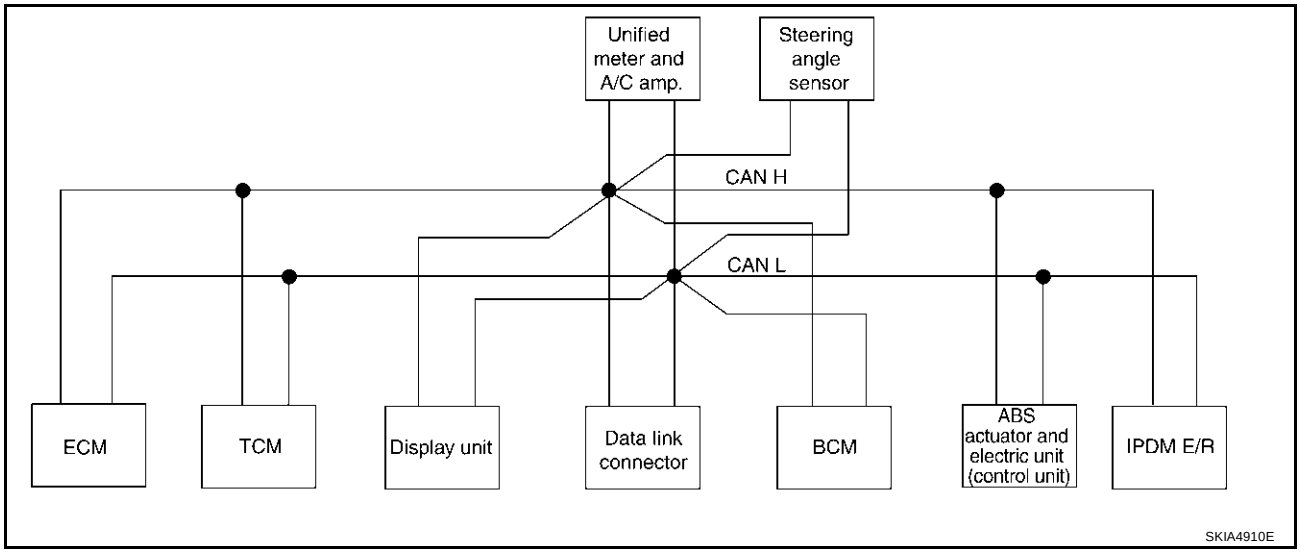
Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R			R	R	R			
Engine status signal	T					R				
Engine coolant temperature signal	T						R			
CVT position indicator signal		T					R			
Second position signal		R					T			
Second position indicator signal		T					R			
Engine and CVT integrated control signal	T	R								
	R	T								
Accelerator pedal position signal	T	R								
Closed throttle position signal	T	R								
Wide open throttle position signal	T	R								
Key switch signal						T		R		
Ignition switch signal						T		R		R
P range signal		T						R		
Stop lamp switch signal		R					T			
Fuel consumption monitor signal	T						R			
CVT self-diagnosis signal	R	T								
ABS operation signal		R							T	
Air conditioner switch signal	R					T				
A/C compressor request signal	T									R
A/C compressor feedback signal	T						R			
Blower fan motor switch signal	R					T				
A/C control signal				T	T		R			
				R	R		T			
Cooling fan speed request signal	T									R
Position lights request signal						T	R			R
Low beam request signal						T				R
Low beam status signal	R									T
High beam request signal						T	R			R
High beam status signal	R									T
Front fog lights request signal						T				R
Vehicle speed signal		R					R		T	
	R		R		R	R	T	R		
Sleep request 1 signal						T	R			
Sleep request 2 signal						T				R
Door switch signal						R	T			
				R	R	T	R	R		R
Turn indicator signal						T	R			

Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Key fob ID signal						T		R		
Key fob door unlock signal						T		R		
Seat belt buckle switch signal						R	T			
Oil pressure switch signal						R				T
						T	R			
Buzzer output signal						T	R			
Fuel level sensor signal	R						T			
Fuel level low warning signal				R	R		T			
Malfunction indicator lamp signal	T						R			
ASCD SET lamp signal	T						R			
ASCD CRUISE lamp signal	T						R			
Input shaft revolution signal	R	T								
Output shaft revolution signal	R	T								
Front wiper request signal						T				R
Front wiper stop position signal						R				T
Rear window defogger switch signal						T				R
Rear window defogger control signal	R			R	R					T
Hood switch signal						R				T
Theft warning horn request signal						T				R
Horn chirp signal						T				R
Tire pressure signal			T				R			
Tire pressure data signal			T	R	R					
ABS warning lamp signal							R		T	
Brake warning lamp signal							R		T	
System setting signal				T	T			R		
Parking brake switch signal						R	T			

TYPE 9/TYPE10/TYPE 11/TYPE 12/TYPE 13/TYPE 14/TYPE 15/TYPE 16

System Diagram

- Type9



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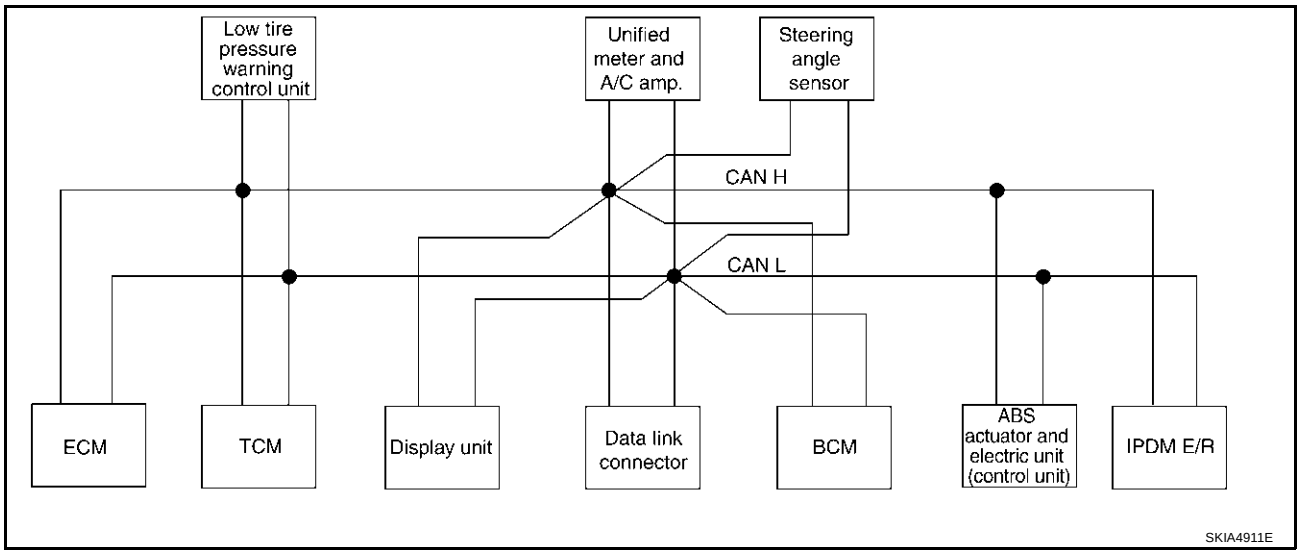
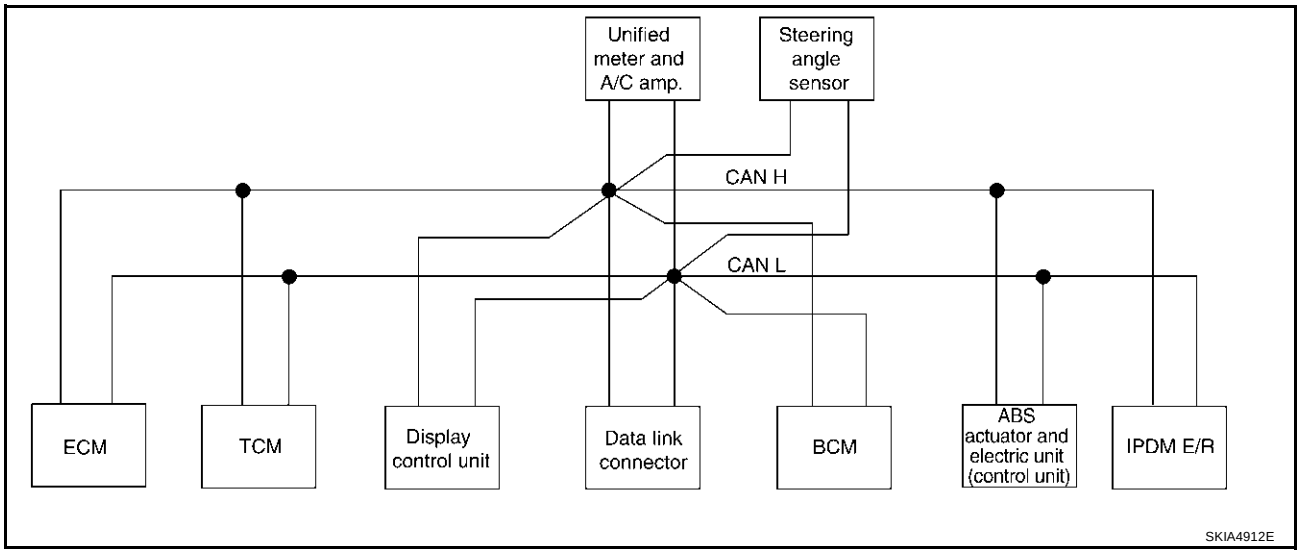
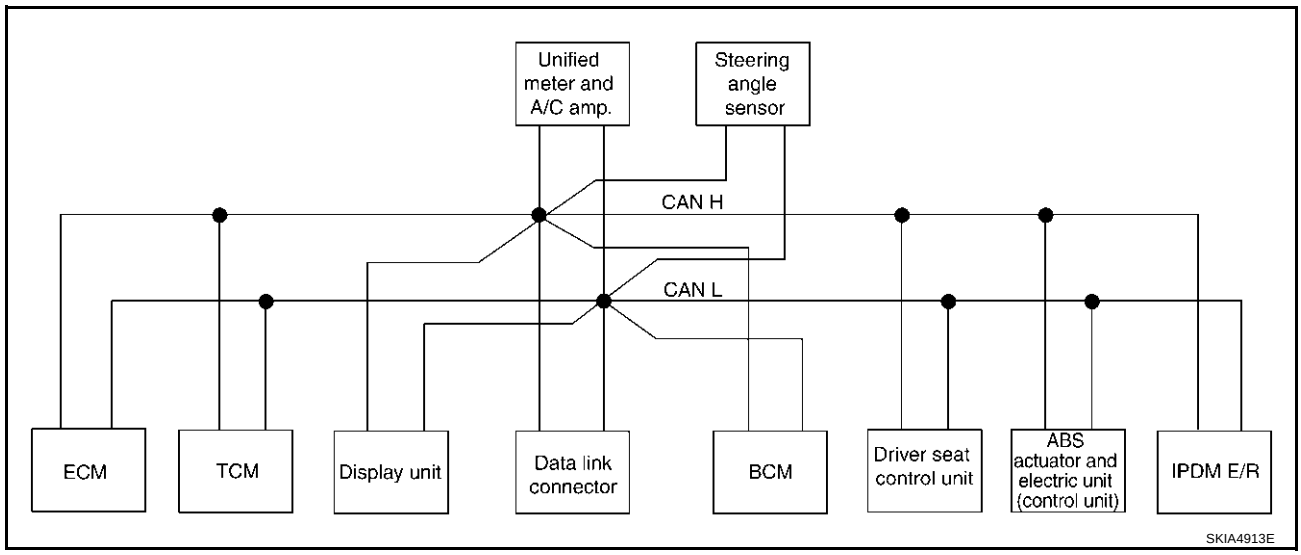


- Type11



- Type12



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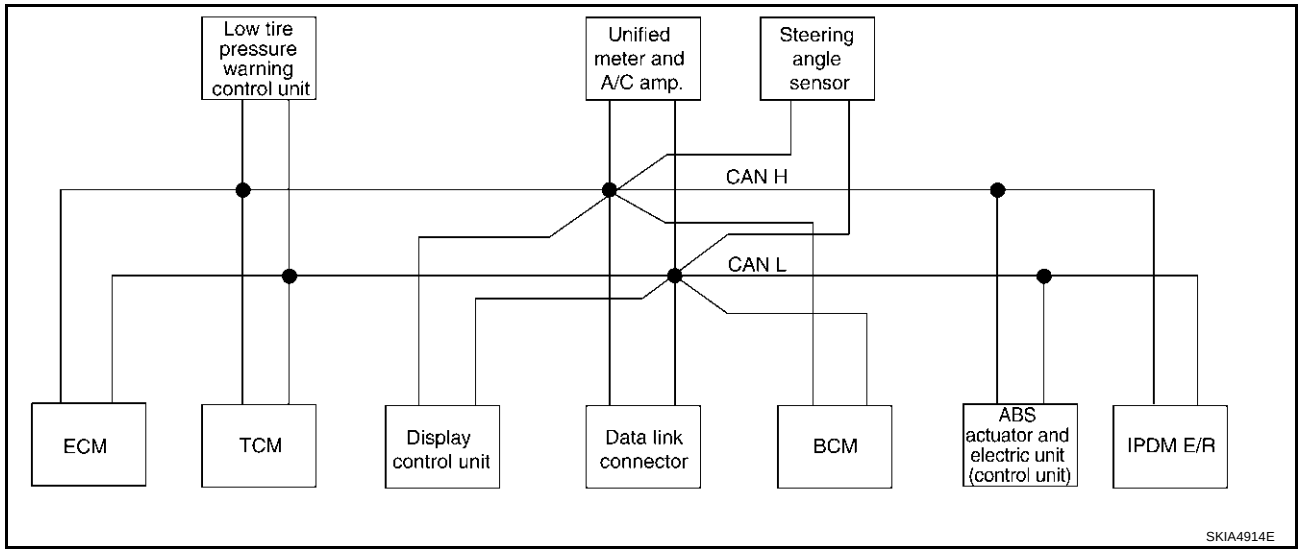
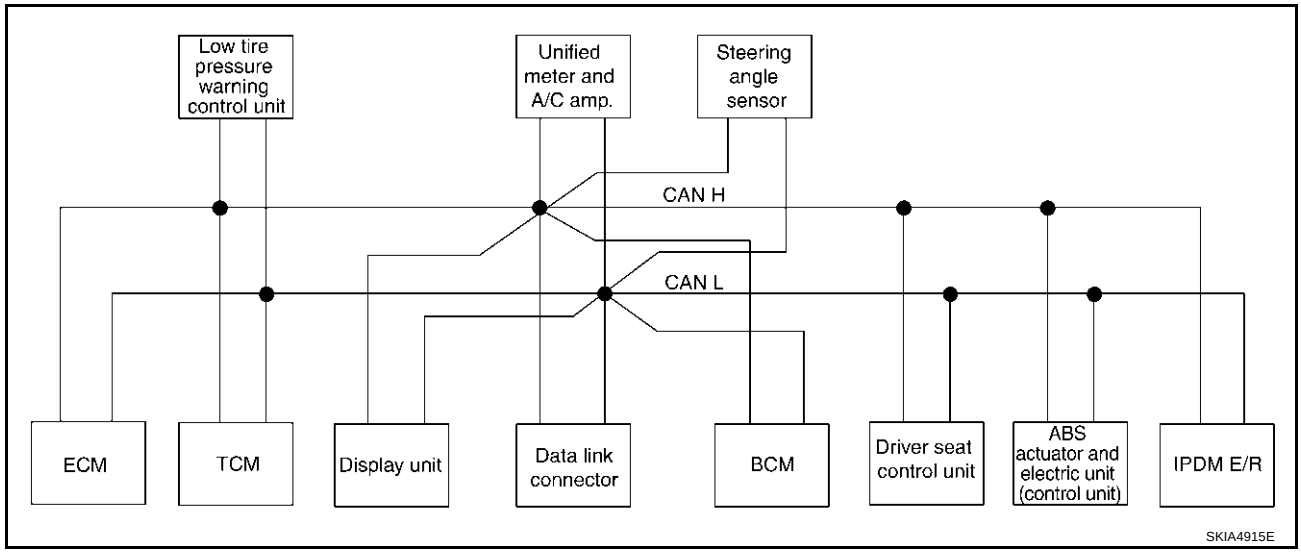


- Type14



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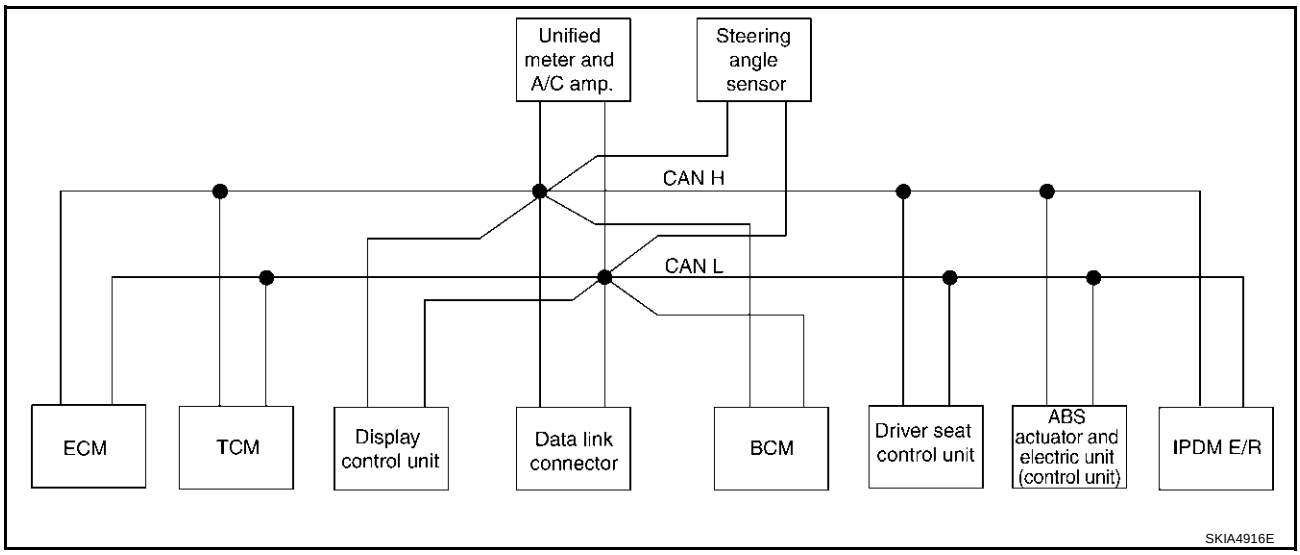
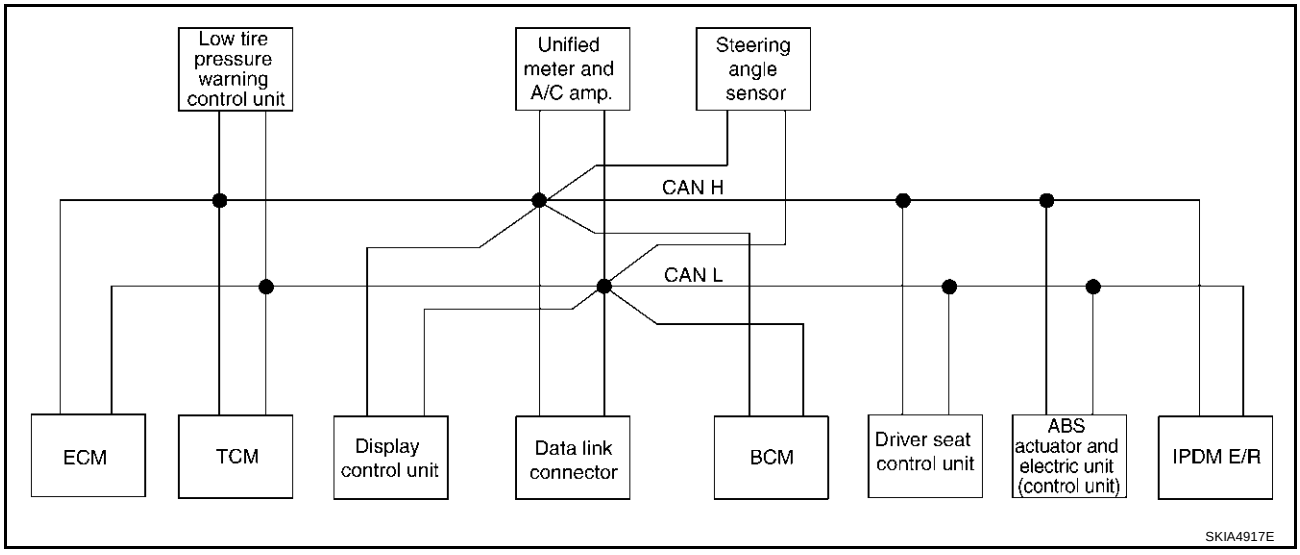


- Type16



Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Steering angle sensor	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R			R	R	R			R	
Engine status signal	T					R					
Engine coolant temperature signal	T						R				
Engine and CVT integrated control signal	T	R									
	R	T									
Accelerator pedal position signal	T	R								R	
Closed throttle position signal	T	R									
Wide open throttle position signal	T	R									
Key switch signal						T			R		
Ignition switch signal						T			R		R
P range signal		T							R	R	
Stop lamp switch signal		R					T				
VDC operation signal		R								T	
Second position indicator signal		T					R			R	
Second position signal		R					T				
Fuel consumption monitor signal	T						R				
CVT self-diagnosis signal	R	T									
Input shaft revolution signal	R	T								R	
Output shaft revolution signal	R	T								R	
Air conditioner switch signal	R					T					
A/C compressor request signal	T										R
A/C compressor feedback signal	T						R				
Blower fan motor switch signal	R					T					
A/C control signal				T	T		R				
				R	R		T				
Cooling fan speed request signal	T										R
Position lights request signal						T	R				R
Low beam request signal						T					R
Low beam status signal	R										T
High beam request signal						T	R				R
High beam status signal	R										T
Front fog lights request signal						T					R
Vehicle speed signal		R					R			T	
	R		R		R	R	T		R		
Sleep request 1 signal						T	R				
Sleep request 2 signal						T					R

Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Steering angle sensor	Driver seat control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Door switch signal						R	T				
				R	R	T	R		R		R
Turn indicator signal						T	R				
Key fob ID signal						T			R		
Key fob door unlock signal						T			R		
Seat belt buckle switch signal						R	T				
Oil pressure switch signal						R					T
						T	R				
Buzzer output signal						T	R				
Fuel level sensor signal	R						T				
Fuel level low warning signal				R	R		T				
Malfunction indicator signal	T						R				
ASCD SET lamp signal	T						R				
ASCD CRUISE lamp signal	T						R				
Front wiper request signal						T					R
Front wiper stop position signal						R					T
Rear window defogger switch signal						T					R
Rear window defogger control signal	R			R	R						T
Hood switch signal						R					T
Theft warning horn request signal						T					R
Horn chirp signal						T					R
Steering angle sensor signal								T		R	
Tire pressure signal			T				R				
Tire pressure data signal			T	R	R						
CVT position indicator signal		T					R			R	
ABS warning lamp signal							R			T	
VDC OFF indicator lamp signal							R			T	
SLIP indicator lamp signal							R			T	
Brake warning lamp signal							R			T	
System setting signal				T	T				R		
Parking brake switch signal						R	T				

CAN Communication Unit For AWD Models

AKS007UI

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

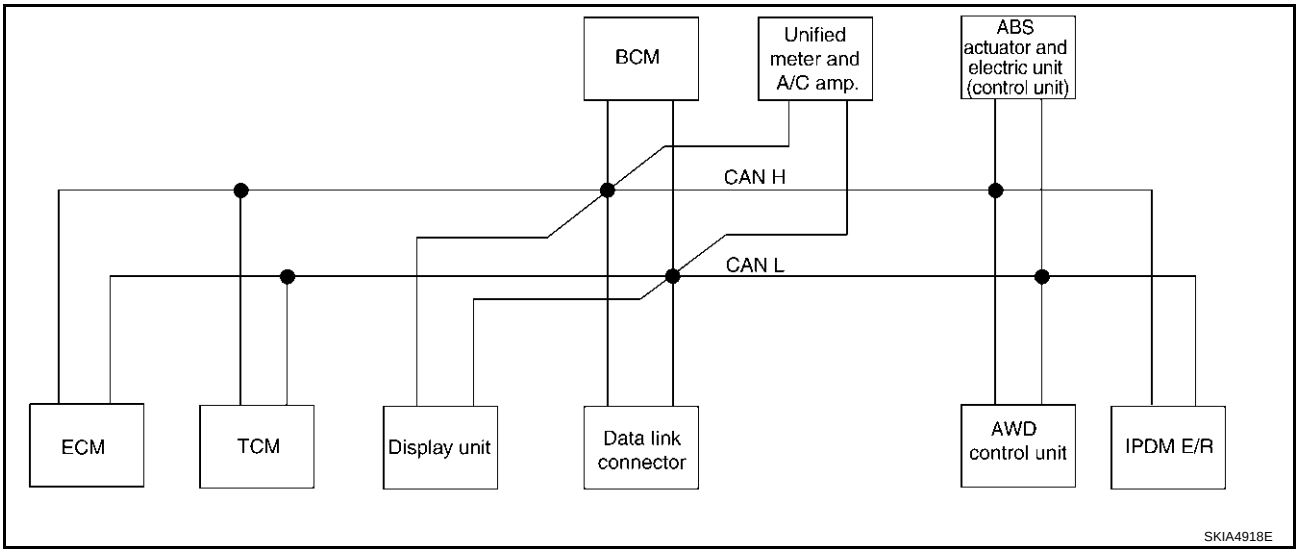
Body type	Wagon															
Axle	AWD															
Engine	VQ35DE															
Transmission	CVT															
Brake control	ABS								VDC							
Low tire pressure warning system		×			×	×		×		×			×	×		×
Navigation system			×		×		×	×			×		×		×	×
Automatic drive positioner				×		×	×	×				×		×	×	×
CAN communication unit																
ECM	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
TCM	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Low tire pressure warning control unit		×			×	×		×		×			×	×		×
Display unit	×	×		×		×			×	×		×		×		
Display control unit			×		×		×	×			×		×		×	×
Data link connector	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
BCM	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Unified meter and A/C amp.	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Steering angle sensor									×	×	×	×	×	×	×	×
Driver seat control unit				×		×	×	×				×		×	×	×
AWD control unit	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
IPDM E/R	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
CAN communication type	PG-29, "TYPE 17/TYPE 18/TYPE 19/TYPE 20/ TYPE 21/TYPE 22/TYPE 23/TYPE 24"								PG-35, "TYPE 25/TYPE26/TYPE 27/TYPE 28/ TYPE 29/TYPE 30/TYPE 31/TYPE 32"							

×: Applicable

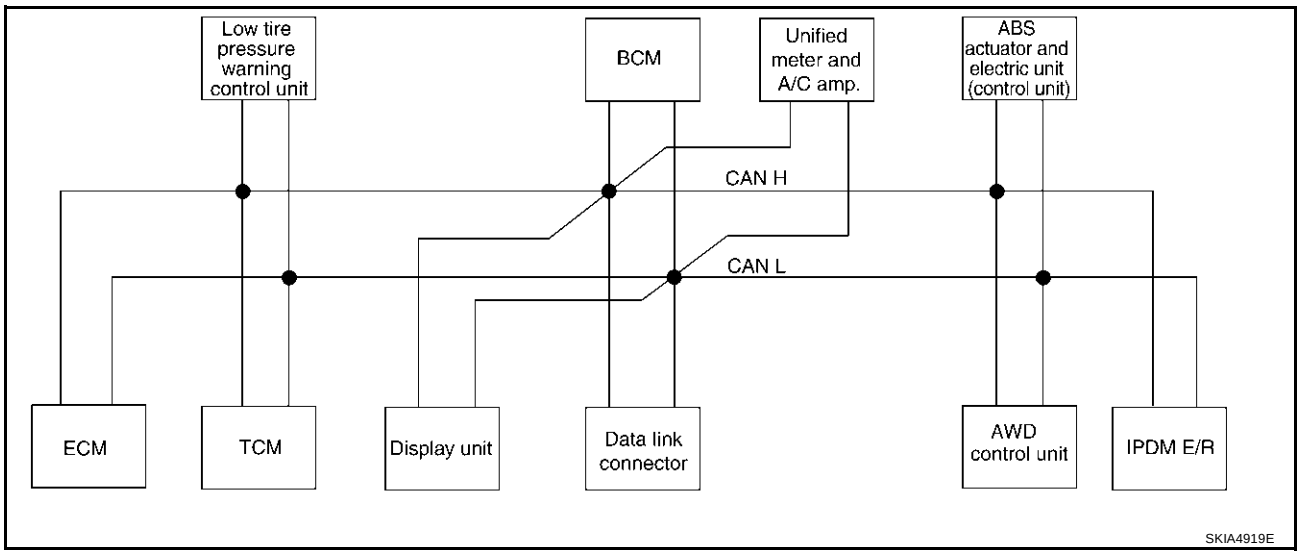
TYPE 17/TYPE 18/TYPE 19/TYPE 20/TYPE 21/TYPE 22/TYPE 23/TYPE 24

System Diagram

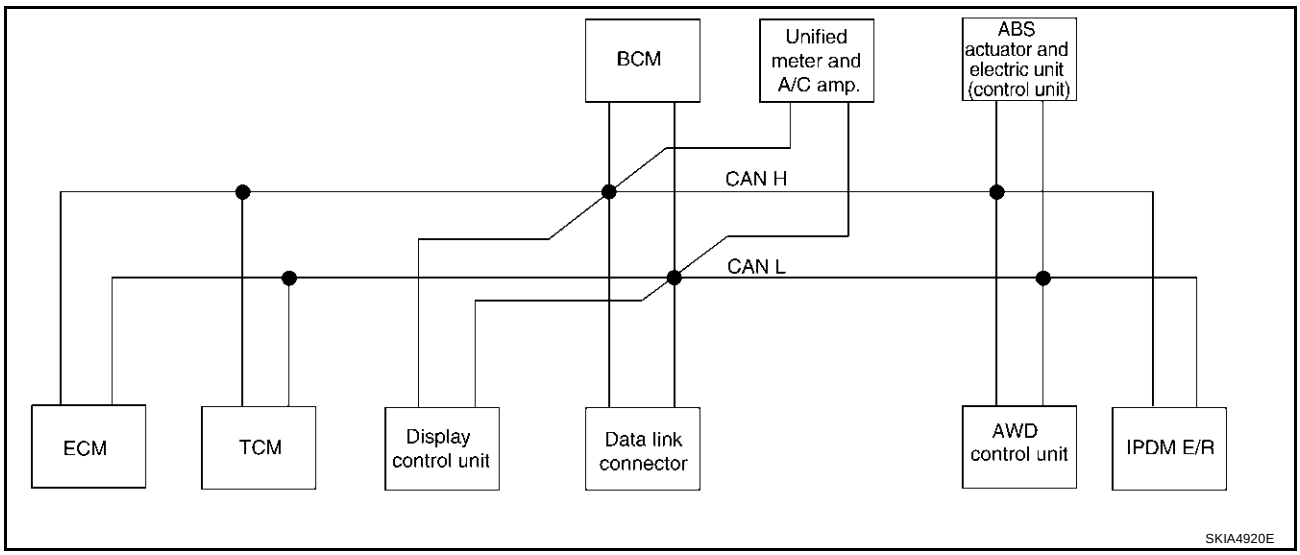
- Type17



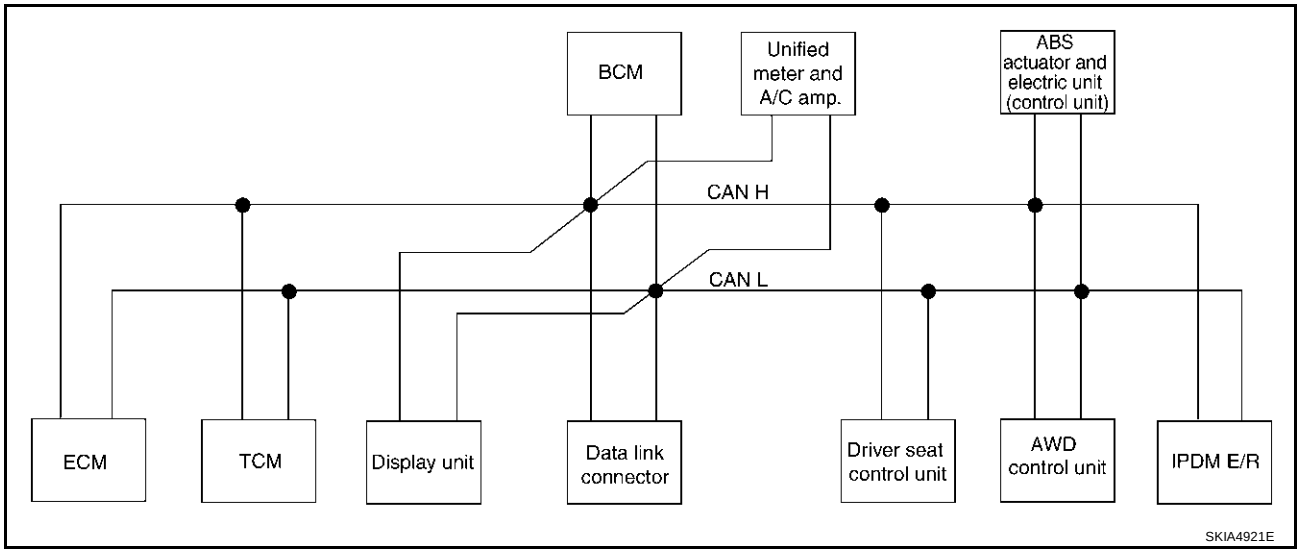
- Type18



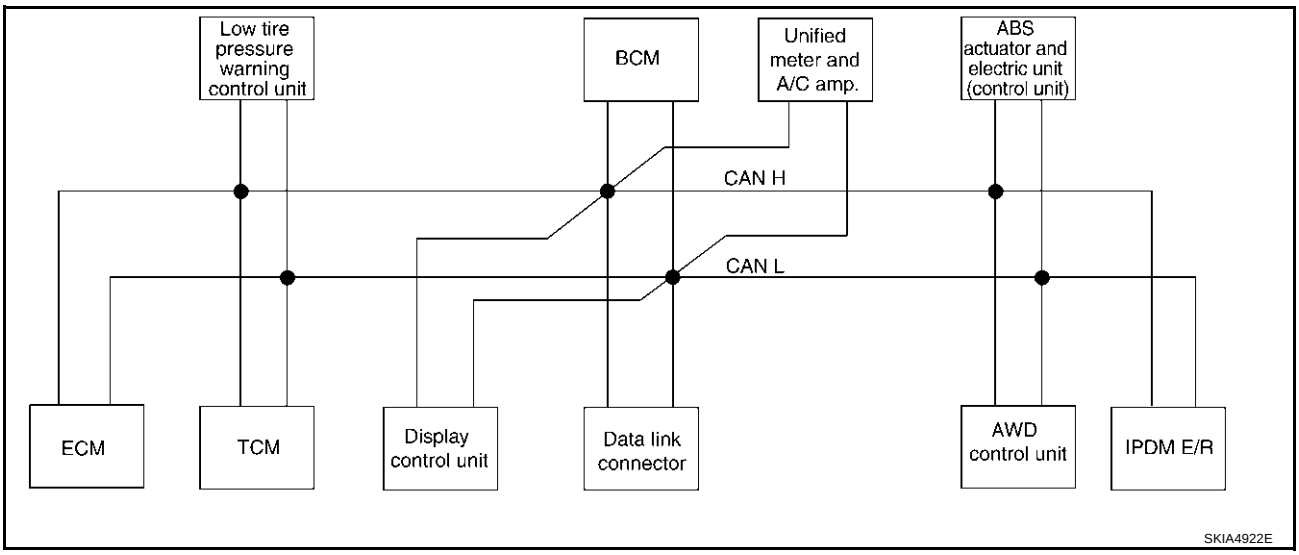
- Type19



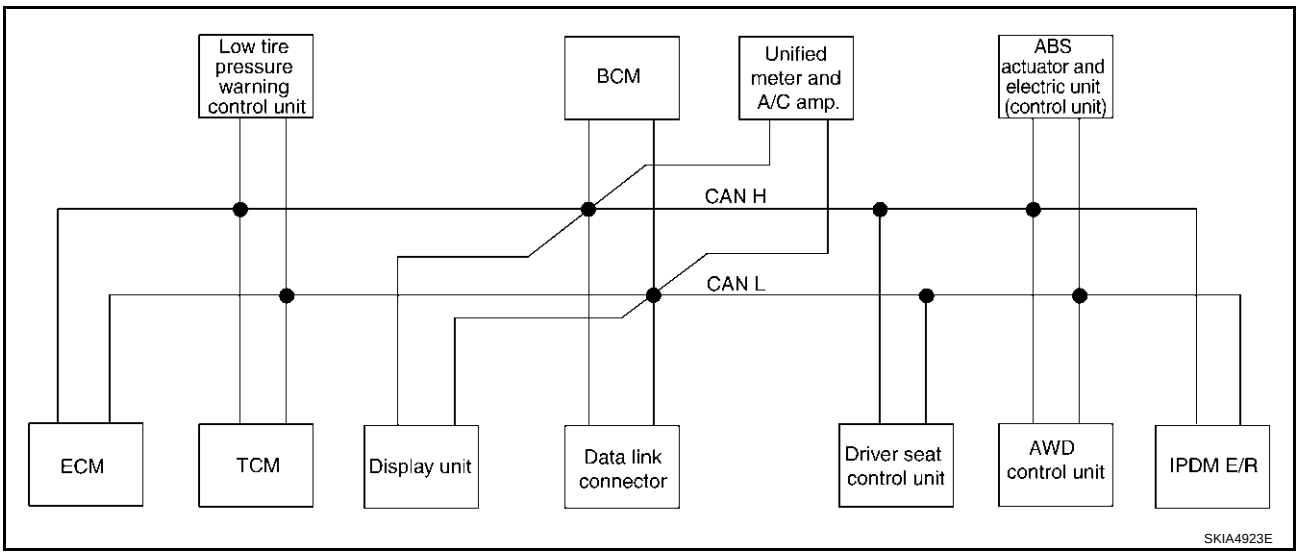
- Type20



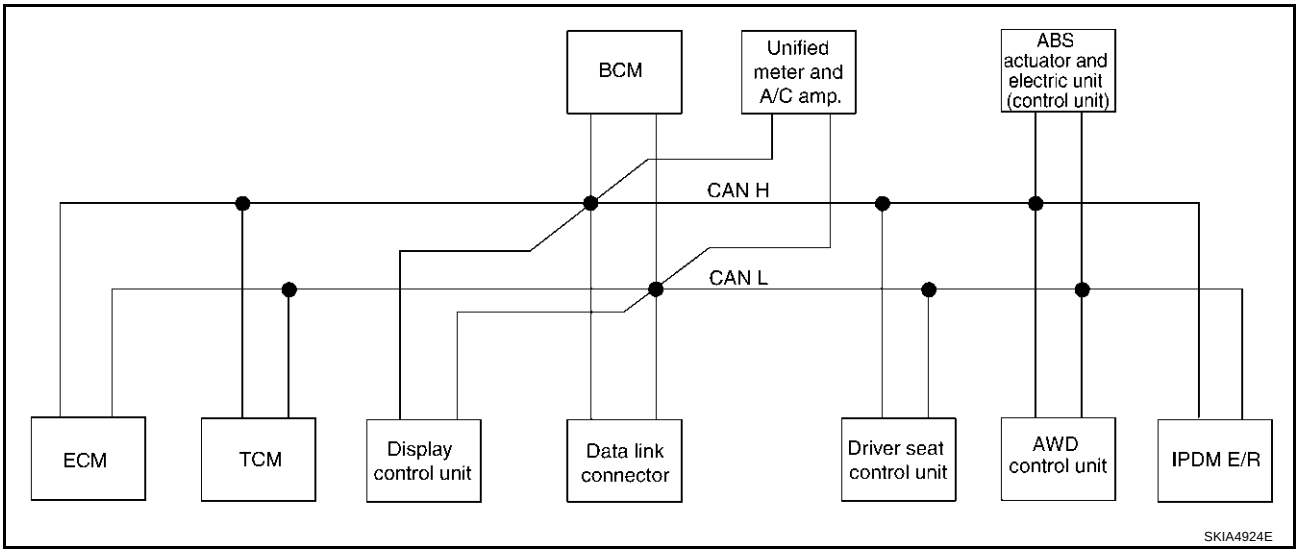
- Type21



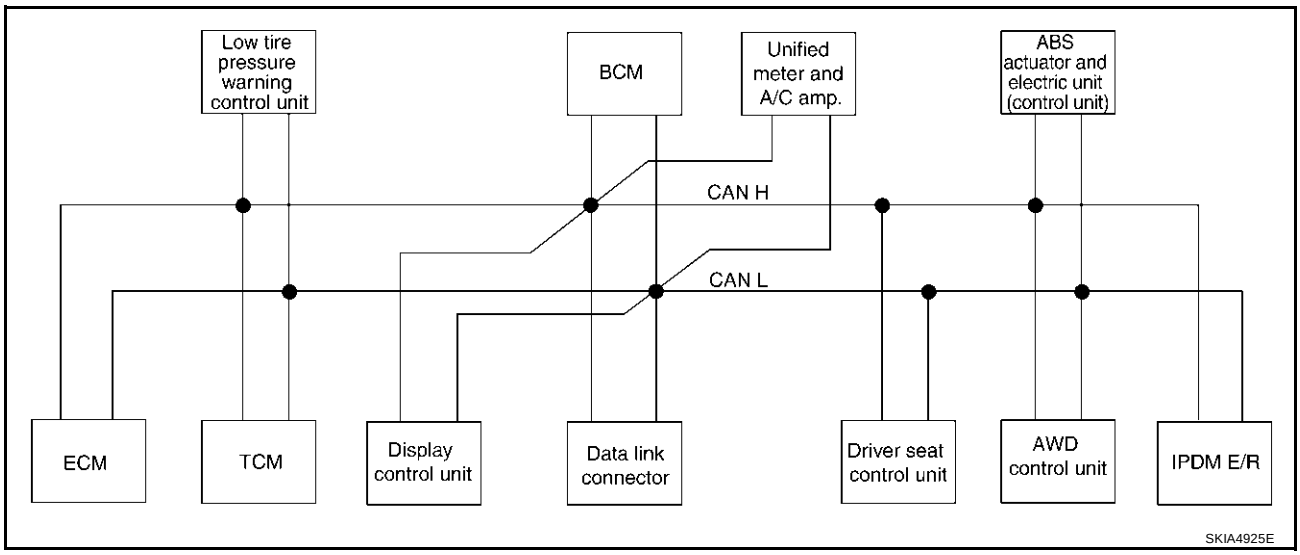
- Type22



- Type23



- Type24


Low tire pressure warning control unit
BCM
Unified meter and A/C amp.
ABS actuator and electric unit (control unit)
CAN H
CAN L
ECM
TCM
Display control unit
Data link connector
Driver seat control unit
AWD control unit
IPDM E/R
SKIA4925E

Input/output Signal Chart

T: Transmit R: Receive

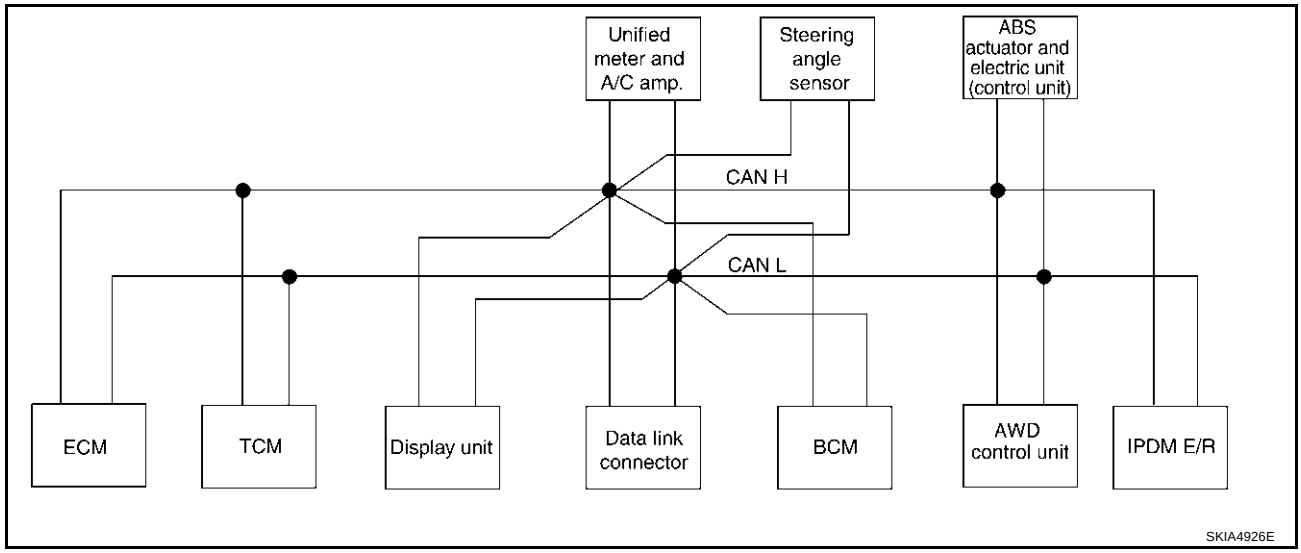
Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Driver seat control unit	AWD control unit	ABS actuator and electric unit (control unit)	IPDM E/R
CVT position indicator signal		T					R				
Second position signal		R					T				
Second position indicator signal		T					R				
Engine speed signal	T	R	R		R	R	R		R		
Engine status signal	T					R					
Engine coolant temperature signal	T						R				
Accelerator pedal position signal	T	R							R		
Closed throttle position signal	T	R									
Wide open throttle position signal	T	R									
Key switch signal						T		R			
Ignition switch signal						T		R			R
P range signal		T						R			
Stop lamp switch signal		R					T		R		
Fuel consumption monitor signal	T						R				
CVT self-diagnosis signal	R	T									
ABS operation signal		R							R	T	
Air conditioner switch signal	R					T					
A/C compressor request signal	T										R
A/C compressor feedback signal	T						R				
Blower fan motor switch signal	R					T					
A/C control signal				T	T		R				
				R	R		T				
Cooling fan speed request signal	T										R
Position lights request signal						T	R				R
Low beam request signal						T					R
Low beam status signal	R										T
High beam request signal						T	R				R
High beam status signal	R										T
Front fog lights request signal						T					R
Vehicle speed signal		R					R		R	T	
	R		R		R	R	T	R			
Sleep request 1 signal						T	R				
Sleep request 2 signal						T					R
Door switch signal						R	T				
				R	R	T	R	R			R
Key fob ID signal						T		R			
Key fob door unlock signal						T		R			

Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Driver seat control unit	AWD control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Turn indicator signal						T	R				
Seat belt buckle switch signal						R	T				
Oil pressure switch signal						R					T
						T	R				
Buzzer output signal						T	R				
Fuel level sensor signal	R						T				
Fuel level low warning signal				R	R		T				
Malfunction indicator lamp signal	T						R				
ASCD SET lamp signal	T						R				
ASCD CRUISE lamp signal	T						R				
Input shaft revolution signal	R	T									
Output shaft revolution signal	R	T									
Front wiper request signal						T					R
Front wiper stop position signal						R					T
Rear window defogger switch signal						T					R
Rear window defogger control signal	R			R	R						T
Engine and CVT integrated control signal	T	R									
	R	T									
Hood switch signal						R					T
Theft warning horn request signal						T					R
Horn chirp signal						T					R
Tire pressure signal			T				R				
Tire pressure data signal			T	R	R						
ABS warning lamp signal							R			T	
Brake warning lamp signal							R			T	
System setting signal				T	T			R			
AWD warning lamp signal							R		T		
AWD lock indicator lamp signal							R		T		
AWD lock switch signal							T		R		
Parking brake switch signal						R	T		R		

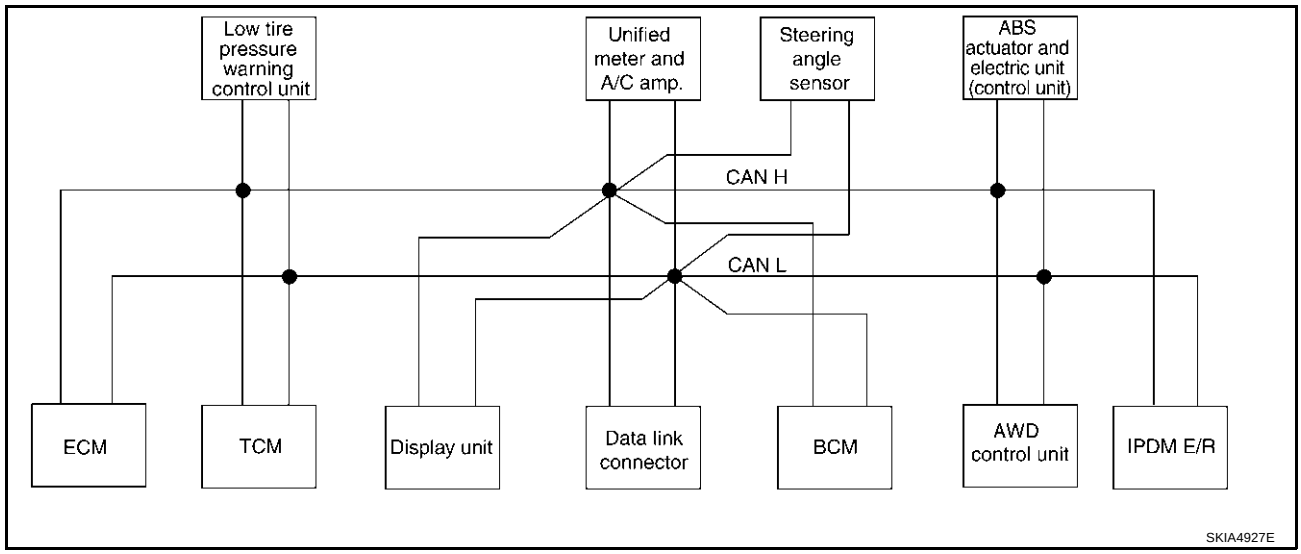
TYPE 25/TYPE26/TYPE 27/TYPE 28/TYPE 29/TYPE 30/TYPE 31/TYPE 32

System Diagram

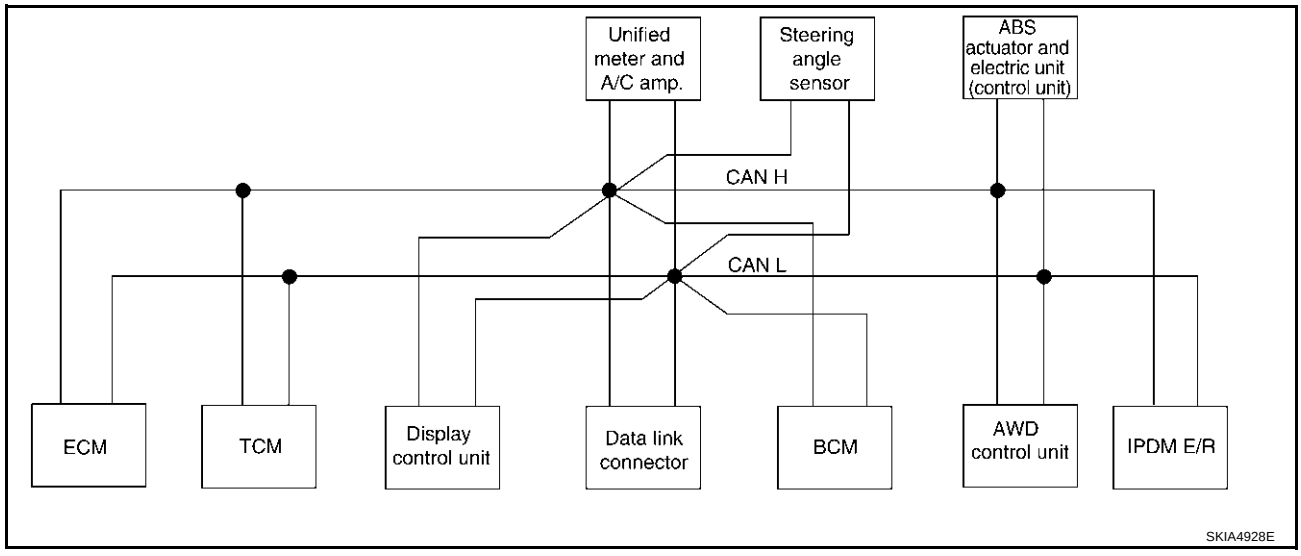
- Type25



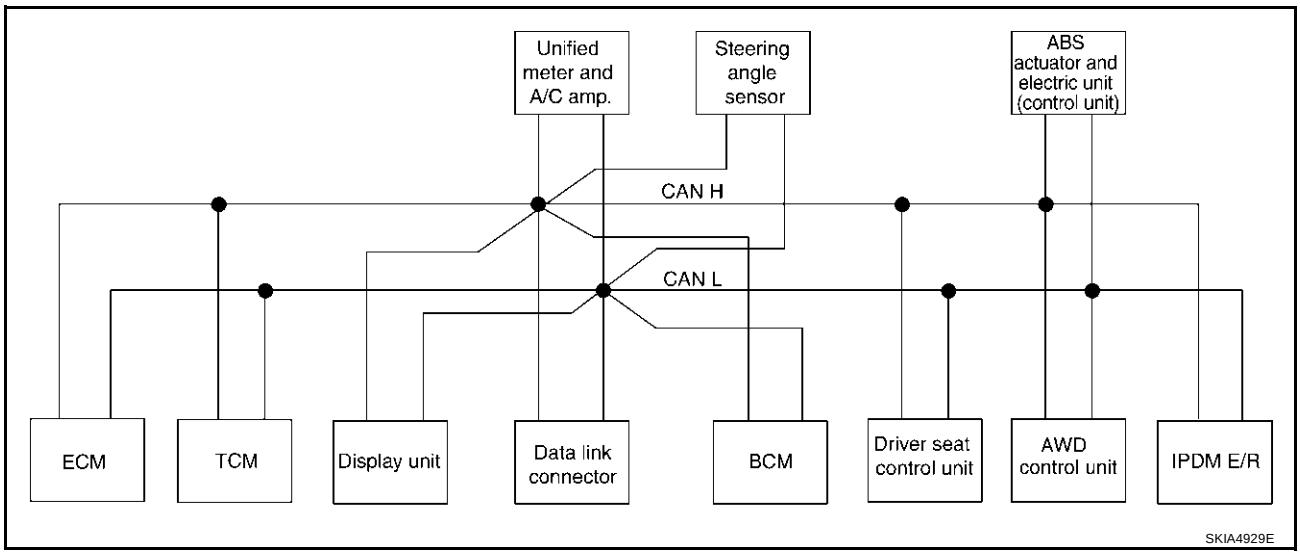
- Type26



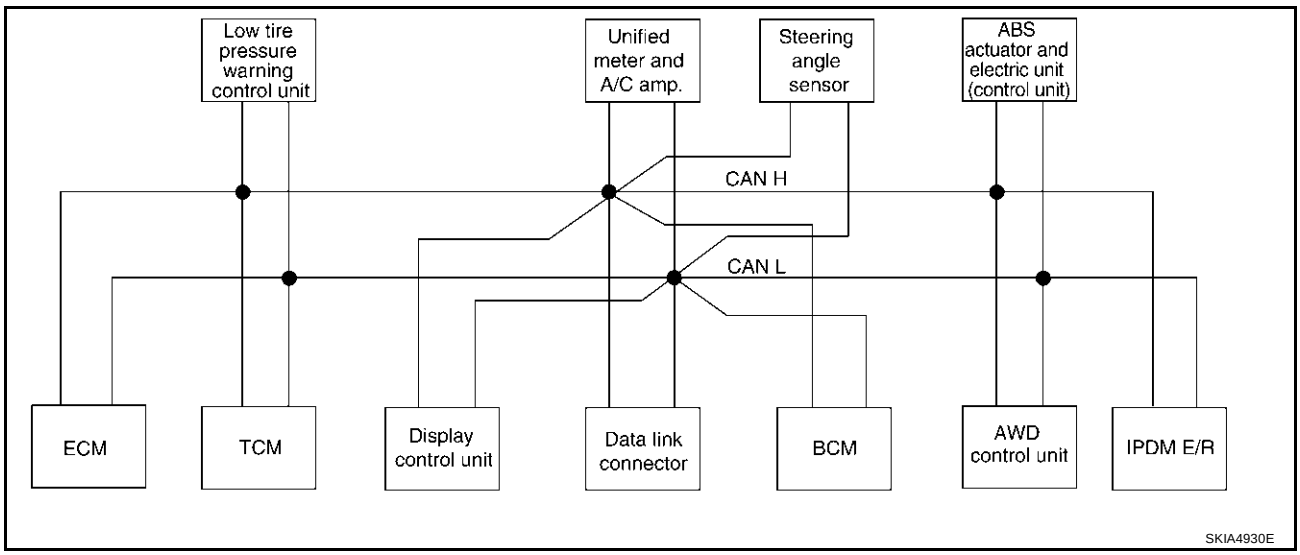
- Type27



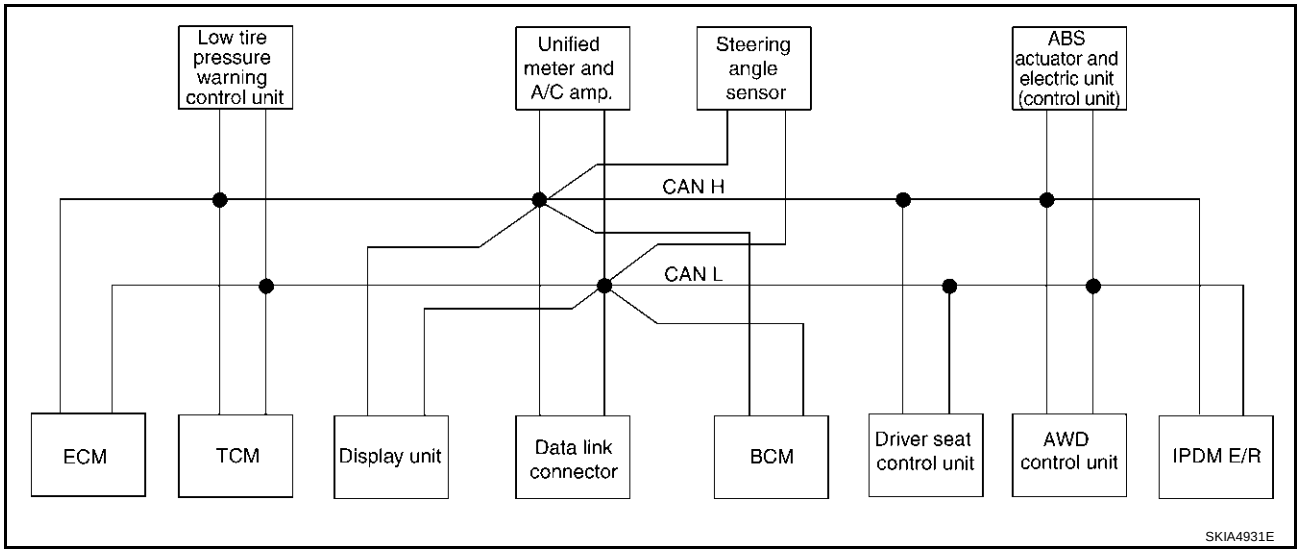
- Type28



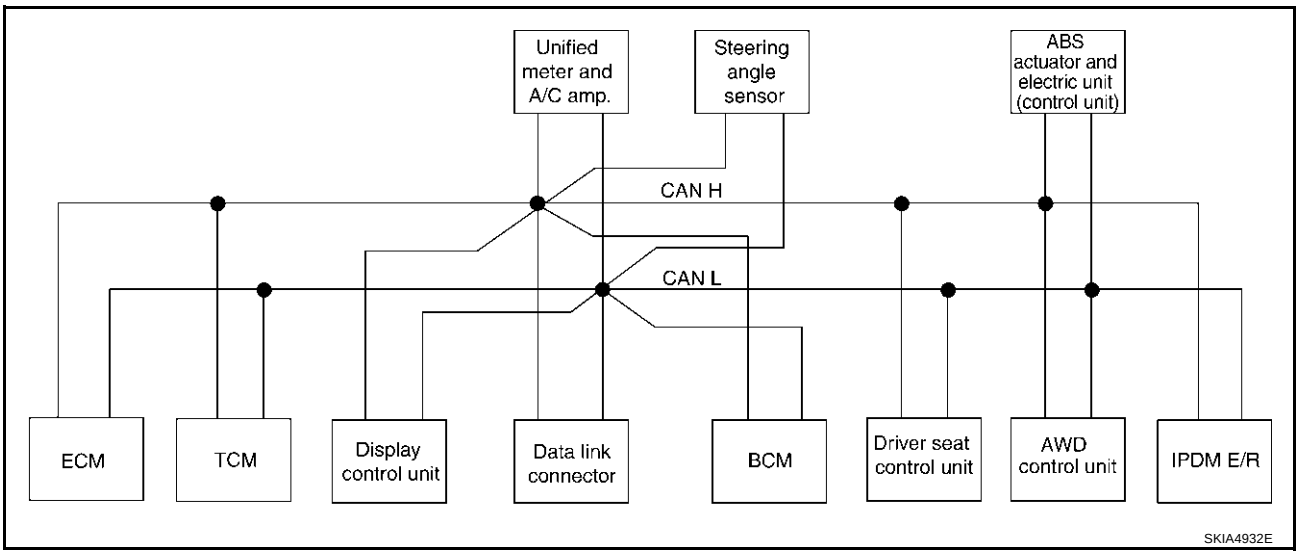
- Type29



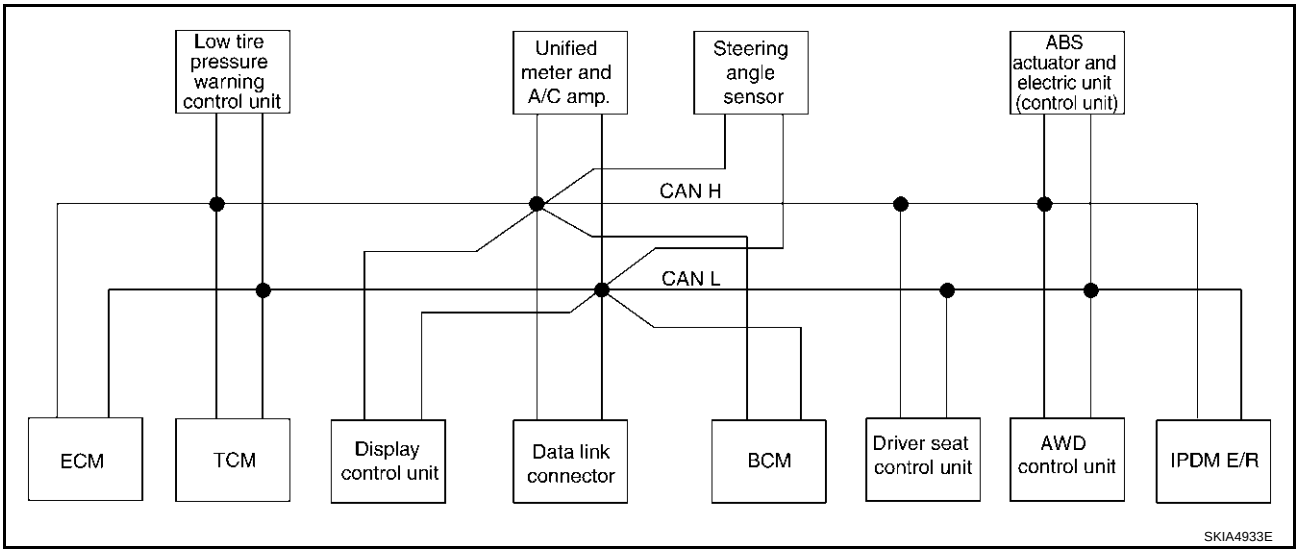
- Type30



- Type31



- Type32



Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Steering angle sensor	Driver seat control unit	AWD control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Engine and CVT integrated control signal	T	R										
	R	T										
Second position signal		R					T					
VDC operation signal		R								R	T	
Stop lamp switch signal		R					T			R		
Key switch signal						T			R			
Ignition switch signal						T			R			R
P range signal		T							R		R	
Closed throttle position signal	T	R										
Wide open throttle position signal	T	R										
Second position indicator signal		T					R				R	
Engine speed signal	T	R			R	R	R			R	R	
Engine status signal	T					R						
Engine coolant temperature signal	T						R					
Accelerator pedal position signal	T	R								R	R	
Fuel consumption monitor signal	T						R					
CVT self-diagnosis signal	R	T										
Input shaft revolution signal	R	T									R	
Output shaft revolution signal	R	T									R	
Air conditioner switch signal	R					T						
A/C compressor request signal	T											R
A/C compressor feedback signal	T						R					T
Blower fan motor switch signal	R					T						
A/C control signal				T	T		R					
				R	R		T					
Cooling fan speed request signal	T											R
Position lights request signal						T	R					R
Low beam request signal						T						R
Low beam status signal	R											T
High beam request signal						T	R					R
High beam status signal	R											T
Front fog lights request signal						T						R
Vehicle speed signal		R					R			R	T	
	R		R		R	R	T		R			
Sleep request 1 signal						T	R					
Sleep request 2 signal						T						R

Signals	ECM	TCM	Low tire pressure warning control unit	Display unit	Display control unit	BCM	Unified meter and A/C amp.	Steering angle sensor	Driver seat control unit	AWD control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Door switch signal						R	T					
				R	R	T	R		R			R
Turn indicator signal						T	R					
Key fob ID signal						T			R			
Key fob door unlock signal						T			R			
Seat belt buckle switch signal						R	T					
Oil pressure switch signal						R						T
						T	R					
Buzzer output signal						T	R					
Fuel level sensor signal	R						T					
Fuel level low warning signal				R	R		T					
Malfunction indicator signal	T						R					
ASCD SET lamp signal	T						R					
ASCD CRUISE lamp signal	T						R					
Front wiper request signal						T						R
Front wiper stop position signal						R						T
Rear window defogger switch signal						T						R
Rear window defogger control signal	R			R	R							T
Hood switch signal						R						T
Theft warning horn request signal						T						R
Horn chirp signal						T						R
Steering angle sensor signal								T			R	
Tire pressure signal			T				R					
Tire pressure data signal			T	R	R							
CVT position indicator signal		T					R				R	
ABS warning lamp signal							R				T	
VDC OFF indicator lamp signal							R				T	
SLIP indicator lamp signal							R				T	
Brake warning lamp signal							R				T	
System setting signal				T	T				R			
AWD warning lamp signal							R			T		
AWD lock indicator lamp signal							R			T		
AWD lock switch signal							T			R		
Parking brake switch signal						R	T			R		

Function of Detecting Ignition Relay Malfunction

AKS004CM

- When contact point of integrated ignition relay is stuck and cannot be turned OFF, IPDM E/R turns ON tail and parking lamps for 10 minutes to indicate IPDM E/R malfunction.

  NOTE:
  When the ignition switch is turned ON, the tail lamp is OFF.

Auto Active Test

AKS004CN

DESCRIPTION

- In auto active test mode, operation inspection can be performed when IPDM E/R sends a drive signal to the following systems:
  - Rear window defogger
  - Front wipers
  - Tail and parking lamps
  - Front fog lamps
  - Headlamps (Hi, Lo)
  - A/C compressor (magnetic clutch)
  - Cooling fan

OPERATION PROCEDURE

1. Close hood front door RH and lift wiper arms away from windshield (to prevent glass damage by wiper operation).

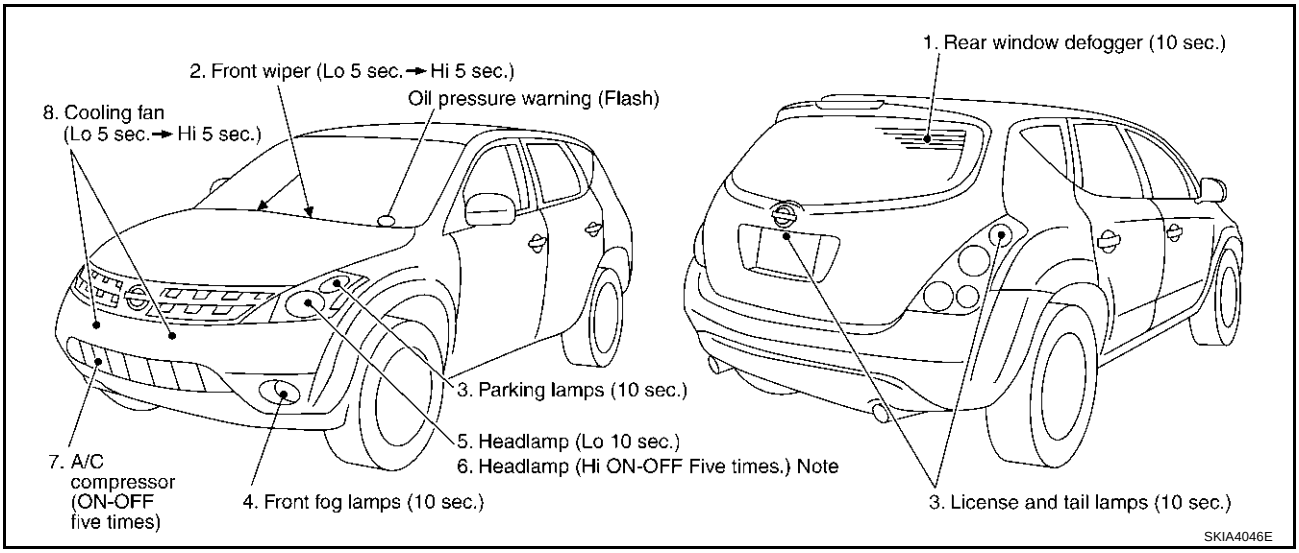
   NOTE:
   When auto active test is performed with hood opened, sprinkle water on windshield beforehand.
2. Turn ignition switch OFF.
3. Turn ignition switch ON and, within 20 seconds, open and close ten times of front door LH. Then turn ignition switch OFF.
4. Turn ignition switch ON within 10 seconds after ignition switch OFF.
5. When auto active test mode is actuated, horn chirps once.
6. After a series of operations is repeated three times, auto active test is completed.

   NOTE:
   When auto active test mode has to be cancelled halfway, turn ignition switch OFF.

   CAUTION:
   Be sure to inspect BL-61, "CHECK DOOR SWITCH (EXCEPT BACK DOOR SWITCH)" when the auto active test cannot be performed.

INSPECTION IN AUTO ACTIVE TEST MODE

- When auto active test mode is actuated, the following eight steps are repeated three times.



NOTE:
The vehicle with the xenon headlamp turns ON-OFF the solenoid to switch Hi/Lo. In this case, the bulb does not illuminate.

Concept of Auto Active Test

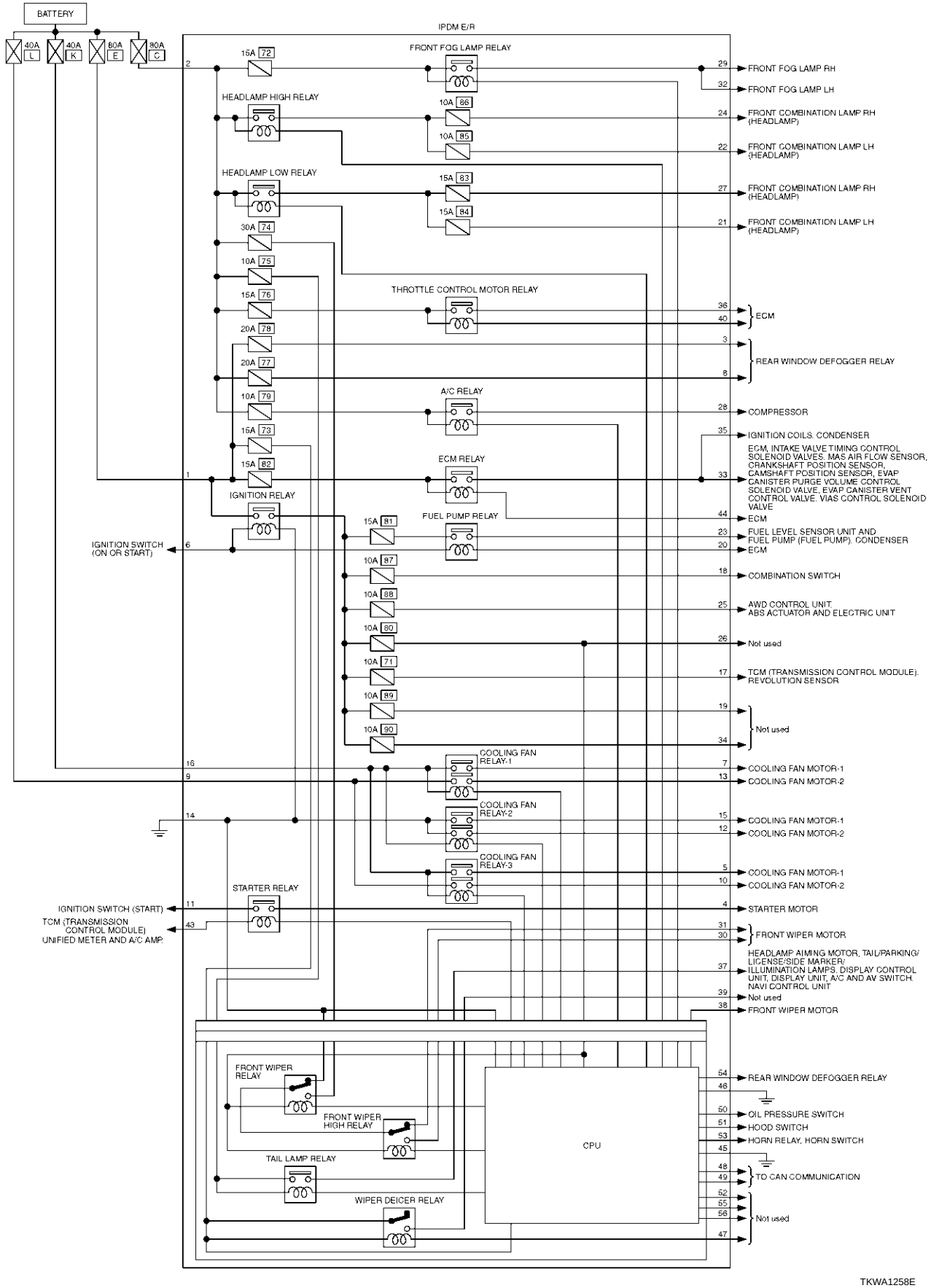
- IPDM E/R actuates auto active test mode when it receives door switch signal from BCM via CAN communication line. Therefore, when auto active test mode is activated successfully, CAN communication between IPDM E/R and BCM is normal.
- If any of systems controlled by IPDM E/R cannot be operated, possible cause can be easily diagnosed using auto active test.

Diagnosis chart in auto active test mode

Symptom	Inspection contents		Possible cause
Any of front wipers, tail and parking lamps, front fog lamps, and head lamps (Hi, Lo) do not operate.	Perform auto active test. Does system in question operate?	YES	● BCM signal input system
		NO	● Lamp/wiper motor malfunction ● Lamp/wiper motor ground circuit malfunction ● Harness/connector malfunction between IPDM E/R and system in question ● IPDM E/R (integrated relay) malfunction
Rear window defogger does not operate.	Perform auto active test. Does rear window defogger operate?	YES	● BCM signal input circuit
		NO	● Rear window defogger relay circuit ● Open circuit of rear window defogger ● IPDM E/R malfunction
A/C compressor does not operate.	Perform auto active test. Does magnetic clutch operate?	YES	● BCM signal input circuit ● CAN communication signal between BCM and ECM. ● CAN communication signal between ECM and IPDM E/R
		NO	● Magnetic clutch malfunction ● Harness/connector malfunction between IPDM E/R and magnetic clutch ● IPDM E/R (integrated relay) malfunction
Cooling fan does not operate.	Perform auto active test. Does cooling fan operate?	YES	● ECM signal input circuit ● CAN communication signal between ECM and IPDM E/R
		NO	● Cooling fan motor malfunction ● Harness/connector malfunction between IPDM E/R and cooling fan motor ● IPDM E/R (integrated relay) malfunction
Oil pressure warning lamp does not operate.	Perform auto active test. Does oil pressure warning lamp blink?	YES	● Harness/connector malfunction between IPDM E/R and oil pressure switch ● Oil pressure switch malfunction
		NO	● CAN communication signal between IPDM E/R and BCM ● CAN communication signal between BCM and Unified Meter and A/C Amp ● Combination meter

Schematic

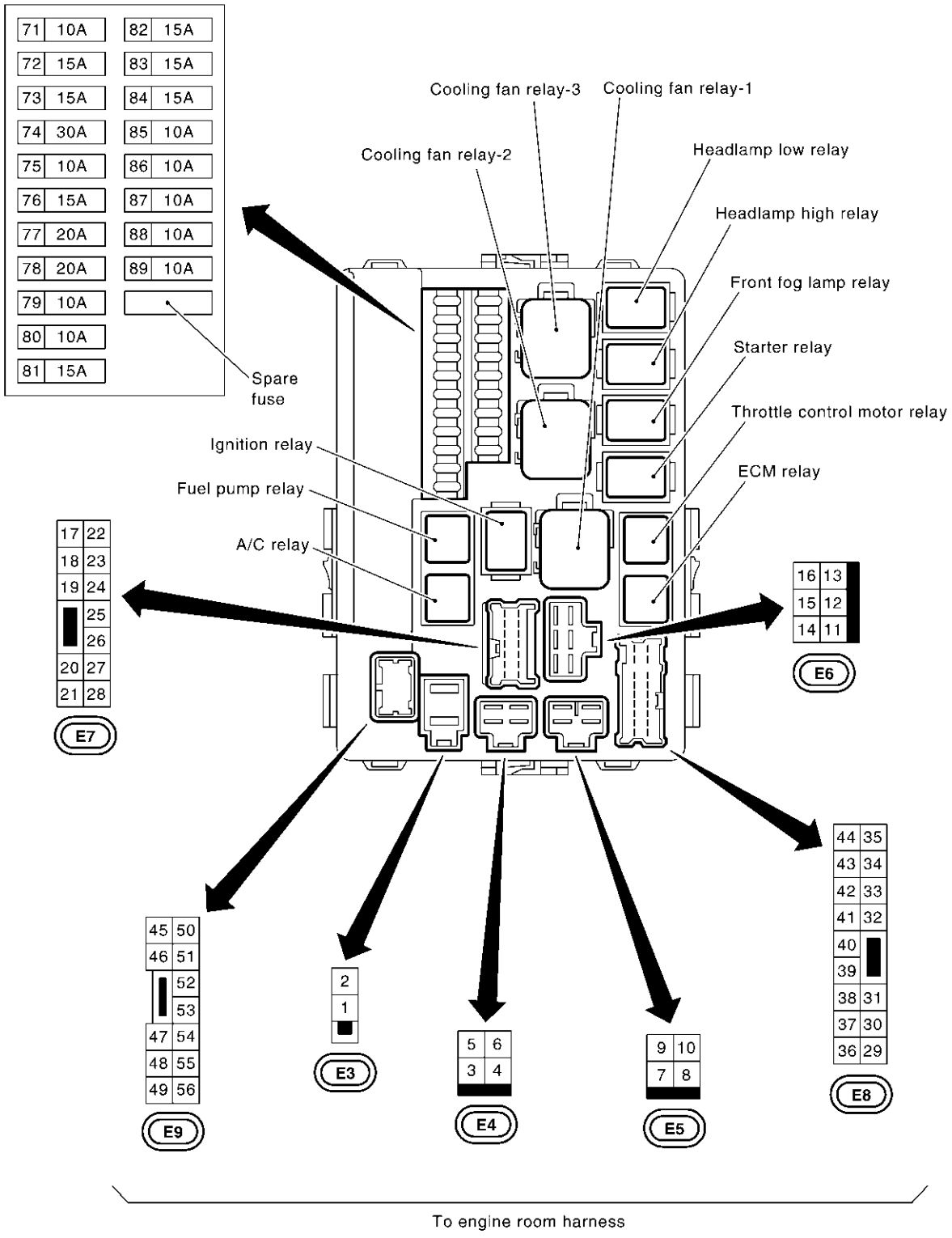
AKS004CO



TKWA1258E

IPDM E/R Terminal Arrangement

AKS004CP



CKIA0275E

IPDM E/R Power/Ground Circuit Inspection

AKS004CR

1. FUSE AND FUSIBLE LINK INSPECTION

- Check that the following fusible links or IPDM E/R fuses are not blown.

Terminal No.	Signal name	Fuse, fusible link No.
1, 2	Battery power	F/L–C, F/L–E, Fuse No. 73
–	Ignition power	Fuse No. 80

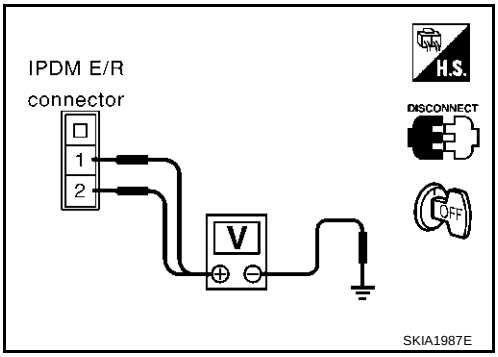
OK or NG?

OK >> GO TO 2.
NG >> Replace fuse or fusible link.

2. POWER CIRCUIT INSPECTION

1. Disconnect IPDM E/R harness connector E3.
2. Check voltage between IPDM E/R harness connector E3 terminals 1 (R), 2 (B/Y) and ground.

Battery voltage should exist



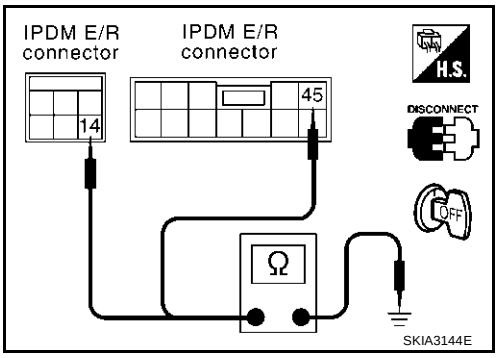
OK or NG

OK >> GO TO 3.
NG >> Replace IPDM E/R power circuit harness.

3. GROUND CIRCUIT INSPECTION

1. Disconnect IPDM E/R harness connectors E6 and E9.
2. Check continuity between IPDM E/R harness connectors E6 terminal 14 (B), E9 terminal 45 (B) and ground.

Continuity should exist



OK or NG

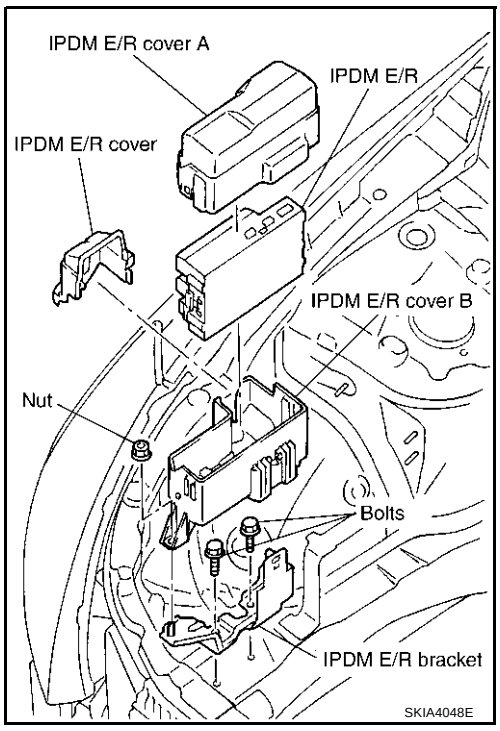
OK >> Inspection end.
NG >> Replace ground circuit harness of IPDM E/R.

Removal and Installation of IPDM E/R

AKS004CS

REMOVAL

1. Remove IPDM E/R cover A and IPDM E/R cover.
2. While spreading pawls on both side of IPDM E/R cover B, remove IPDM E/R from IPDM E/R cover B.
3. Remove harness connector from IPDM E/R.



INSTALLATION

Install in the revers order of removal.

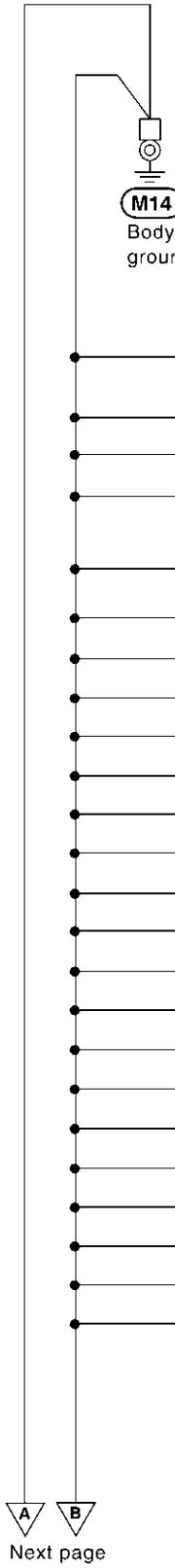
GROUND

PFP:00011

Ground Distribution

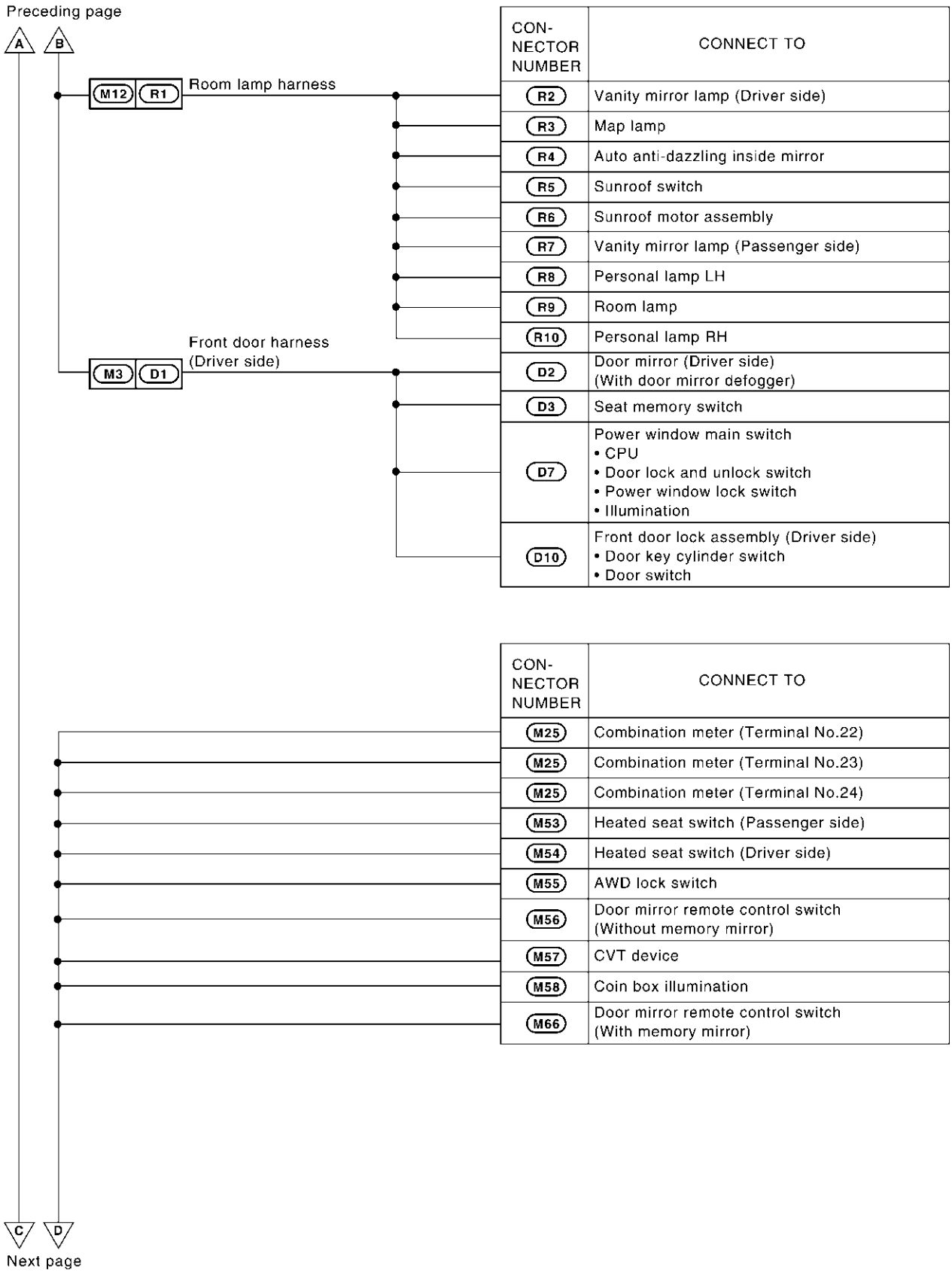
AKS007HJ

MAIN HARNESS



CON-NECTOR NUMBER	CONNECT TO
M2	Fuse block (J/B) (Terminal No.7B) • Accessory relay • Blower relay
M17	VDC off switch
M18	Headlamp aiming switch
M20	Automatic drive positioner control unit (Terminal No. 40)
M20	Automatic drive positioner control unit (Terminal No. 48)
M22	Power socket relay
M24	Data link connector (Terminal No. 4)
M24	Data link connector (Terminal No. 5)
M27	Shift lock control unit
M29	Combination switch
M33	Steering angle sensor
M38	Display (With navigation system)
M39	Display unit (Without navigation system)
M42	Display control unit (With navigation system)
M48	A/C and AV switch
M50	Unified meter and A/C amp. (Terminal No. 29)
M50	Unified meter and A/C amp. (Terminal No. 30)
M60	Front power socket (Center console)
M62	NAVI control unit (Terminal No. 1)
M62	NAVI control unit (Terminal No. 4)
M64	Air bag diagnosis sensor unit
M73	Front power socket (Center cluster)
M88	Pedal adjusting control unit
M90	Cigarette lighter socket

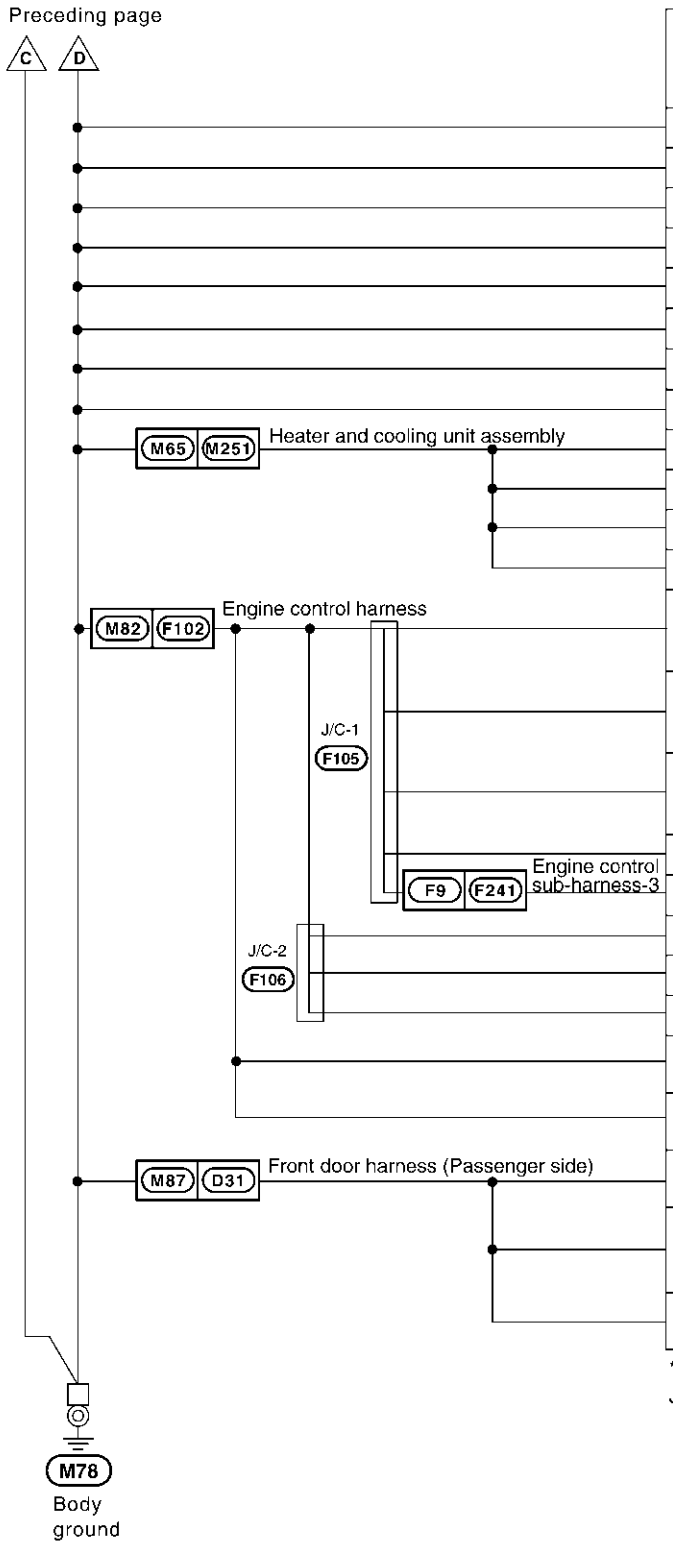
CKIA0276E



CON-NECTOR NUMBER	CONNECT TO
R2	Vanity mirror lamp (Driver side)
R3	Map lamp
R4	Auto anti-dazzling inside mirror
R5	Sunroof switch
R6	Sunroof motor assembly
R7	Vanity mirror lamp (Passenger side)
R8	Personal lamp LH
R9	Room lamp
R10	Personal lamp RH
D2	Door mirror (Driver side) (With door mirror defogger)
D3	Seat memory switch
D7	Power window main switch • CPU • Door lock and unlock switch • Power window lock switch • Illumination
D10	Front door lock assembly (Driver side) • Door key cylinder switch • Door switch

CON-NECTOR NUMBER	CONNECT TO
M25	Combination meter (Terminal No.22)
M25	Combination meter (Terminal No.23)
M25	Combination meter (Terminal No.24)
M53	Heated seat switch (Passenger side)
M54	Heated seat switch (Driver side)
M55	AWD lock switch
M56	Door mirror remote control switch (Without memory mirror)
M57	CVT device
M58	Coin box illumination
M66	Door mirror remote control switch (With memory mirror)

CKIA0277E

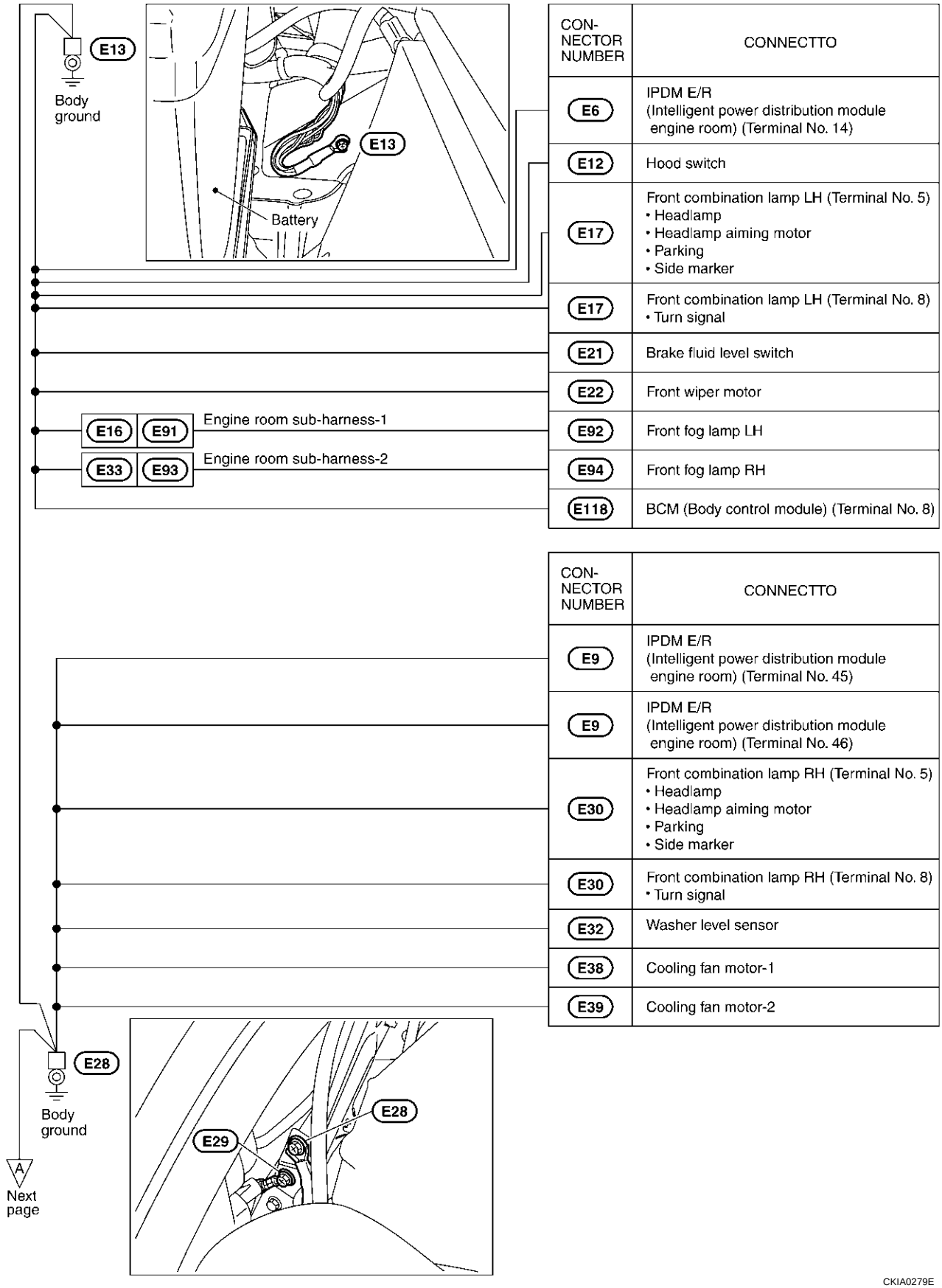


CONNECTOR NUMBER	CONNECT TO
M70	Blower motor
M75	Glove box lamp
M80	ECM (Terminal No. 115)
M80	ECM (Terminal No. 116)
M81	Low tire pressure warning control unit
M91	Condenser
M92	Condenser
M93	Condenser
M252	Mode door motor
M253	Air mix door motor (Driver side)
M254	Air mix door motor (Passenger side)
M255	Intake door motor
F33	Shield wire [Electric throttle control actuator (Throttle position sensor)] (For circuit from terminal No. 1)
F33	Shield wire [Electric throttle control actuator (Throttle position sensor)] (For circuit from terminal No. 2,4,5)
F33	Shield wire [Electric throttle control actuator (Throttle control motor)] (For circuit from terminal No. 3,6)
F101	ECM (Terminal No. 1)
F242	Shield wire (Knock sensor)
F8	Camshaft position sensor (PHASE) (Bank 2)
F20	Crankshaft position sensor (POS)
F34	Camshaft position sensor (PHASE) (Bank 1)
F104	TCM (Transmission control module) (Terminal No. 25)
F104	TCM (Transmission control module) (Terminal No. 48)
D32	Door mirror (Passenger side) (With door mirror defogger)
D35	Front power window switch (Passenger side) • CPU • Illumination
D38	Front door lock assembly (Passenger side) • Door switch

* : This sub-harness is not shown in "HARNESS LAYOUT".
J/C : Joint connector

CKIA0318E

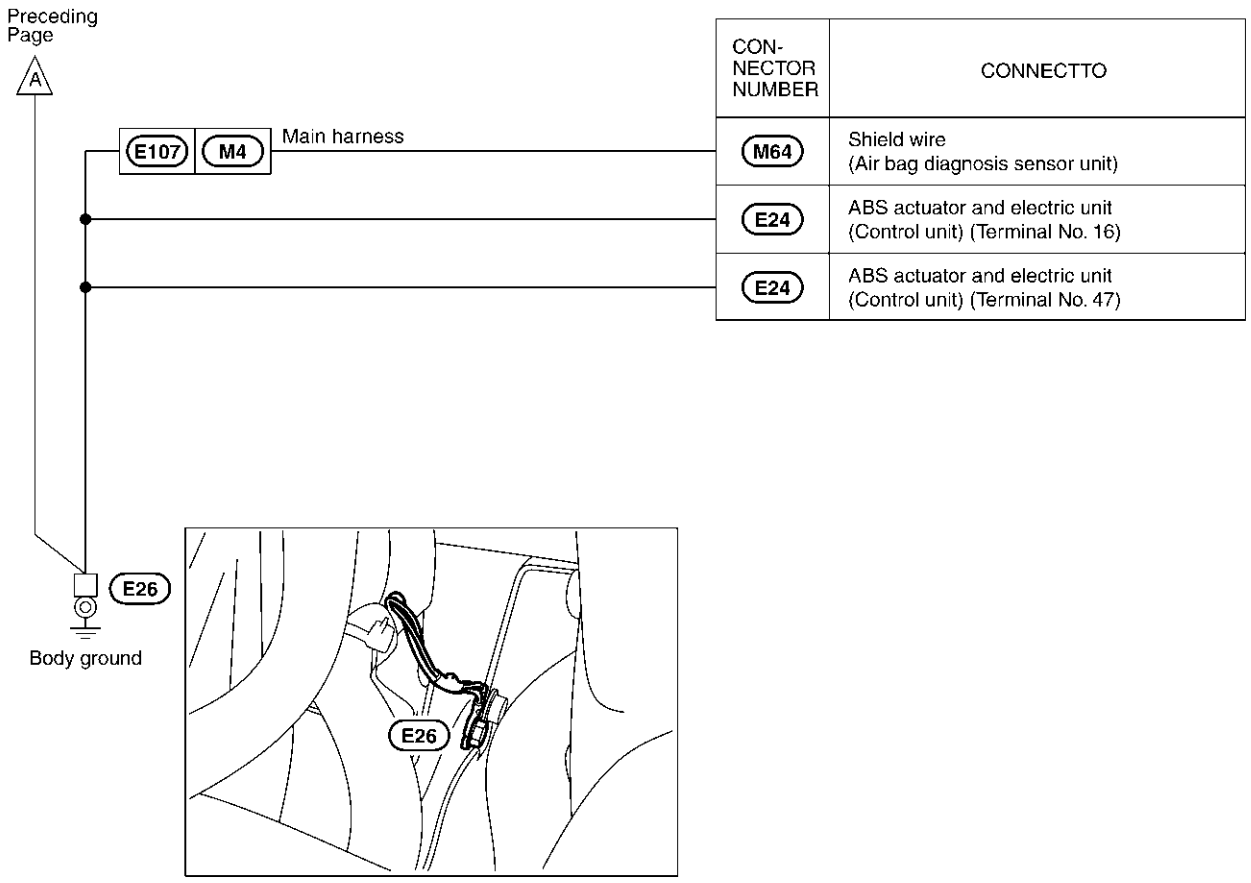
ENGINE ROOM HARNESS



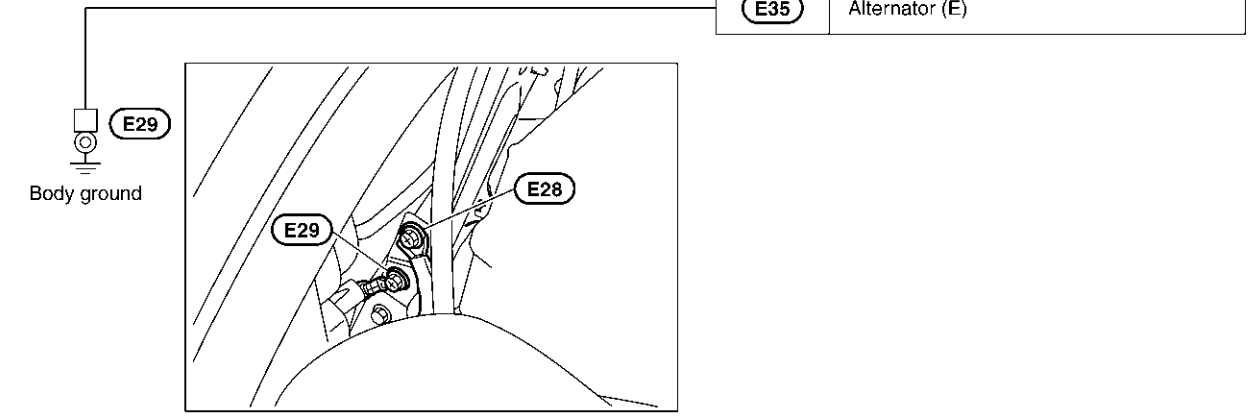
CON-NECTOR NUMBER	CONNECTTO
E6	IPDM E/R (Intelligent power distribution module engine room) (Terminal No. 14)
E12	Hood switch
E17	Front combination lamp LH (Terminal No. 5) • Headlamp • Headlamp aiming motor • Parking • Side marker
E17	Front combination lamp LH (Terminal No. 8) • Turn signal
E21	Brake fluid level switch
E22	Front wiper motor
E92	Front fog lamp LH
E94	Front fog lamp RH
E118	BCM (Body control module) (Terminal No. 8)

CON-NECTOR NUMBER	CONNECTTO
E9	IPDM E/R (Intelligent power distribution module engine room) (Terminal No. 45)
E9	IPDM E/R (Intelligent power distribution module engine room) (Terminal No. 46)
E30	Front combination lamp RH (Terminal No. 5) • Headlamp • Headlamp aiming motor • Parking • Side marker
E30	Front combination lamp RH (Terminal No. 8) • Turn signal
E32	Washer level sensor
E38	Cooling fan motor-1
E39	Cooling fan motor-2

CKIA0279E



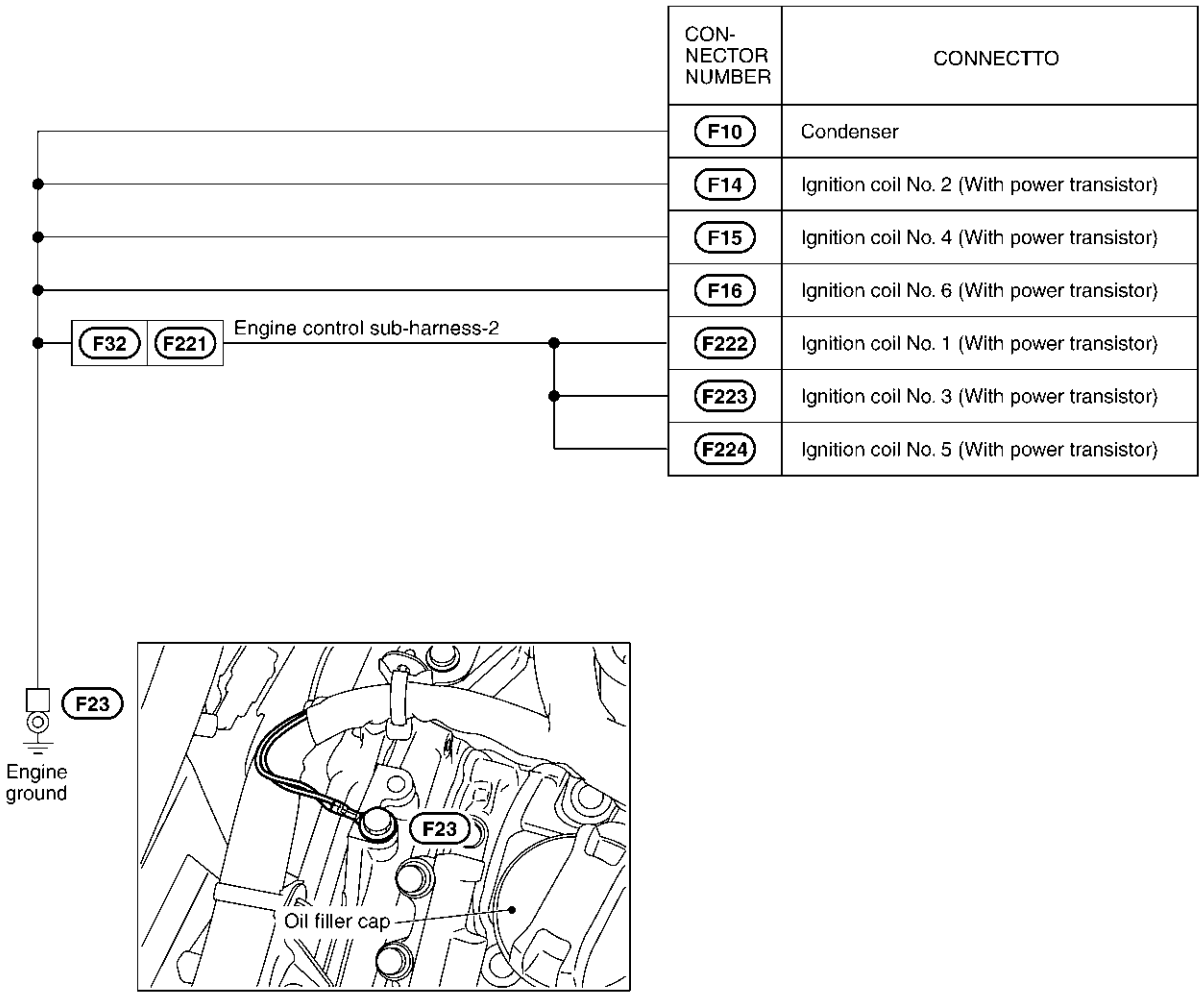
CON-NECTOR NUMBER	CONNECTTO
M64	Shield wire (Air bag diagnosis sensor unit)
E24	ABS actuator and electric unit (Control unit) (Terminal No. 16)
E24	ABS actuator and electric unit (Control unit) (Terminal No. 47)



CON-NECTOR NUMBER	CONNECTTO
E35	Alternator (E)

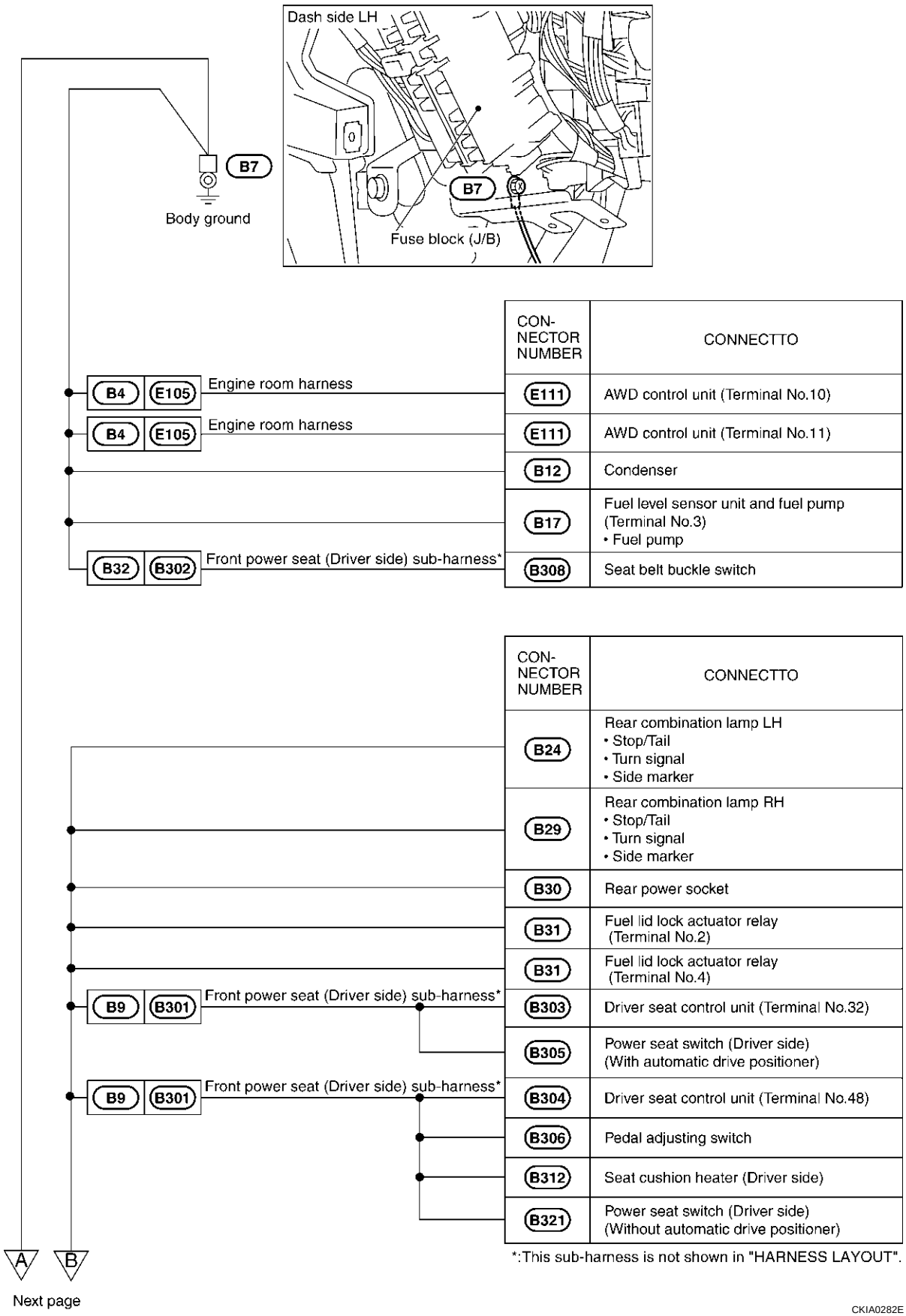
CKIA0280E

ENGINE CONTROL HARNESS



CKIA0281E

BODY HARNESS

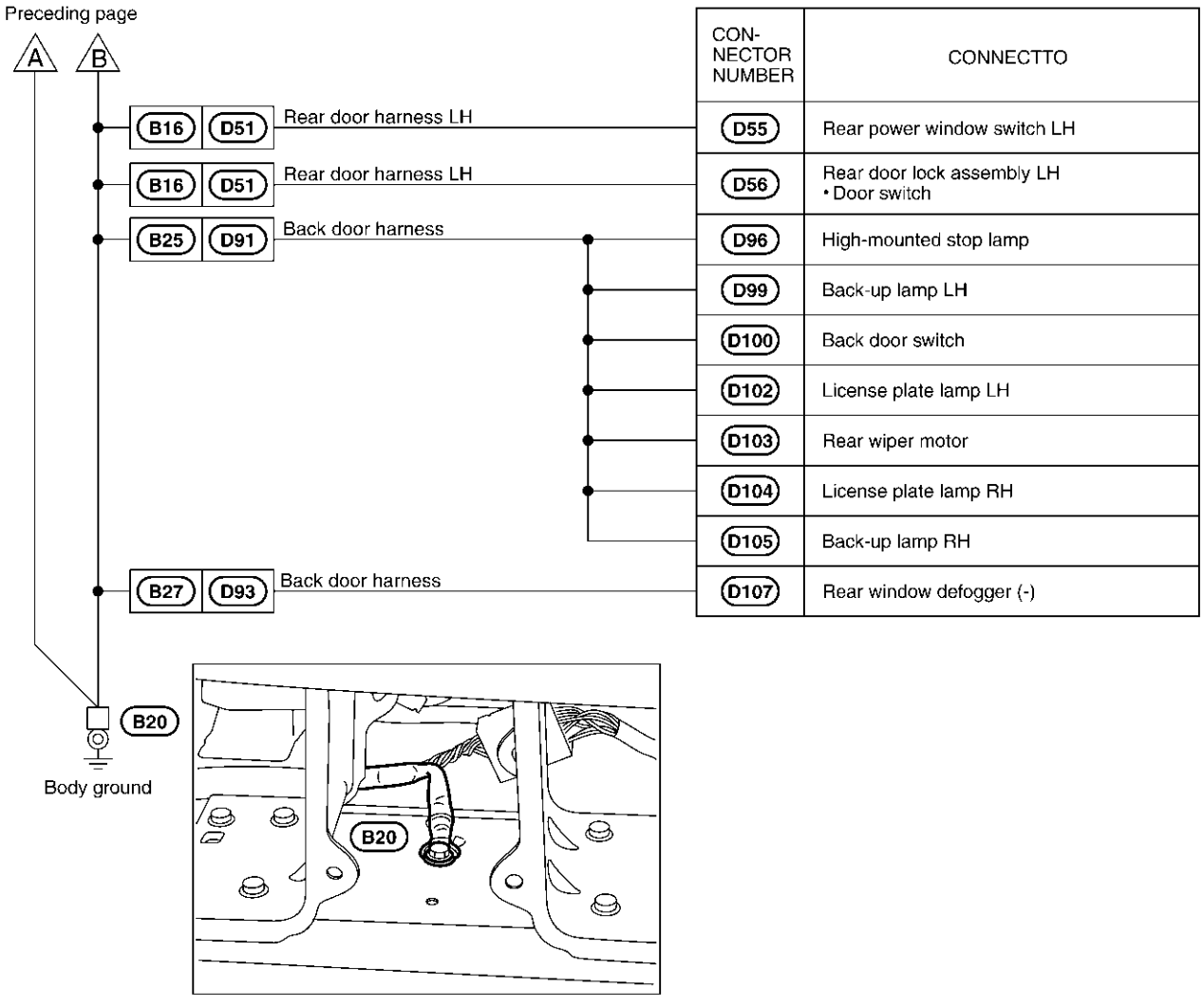


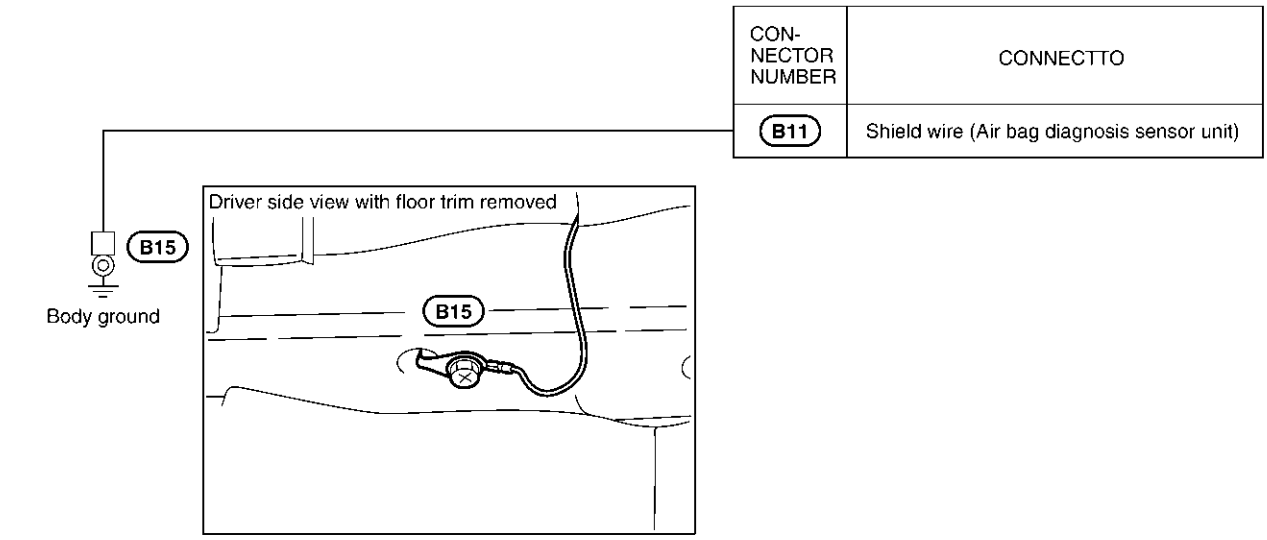
CON-NECTOR NUMBER	CONNECTTO
E111	AWD control unit (Terminal No.10)
E111	AWD control unit (Terminal No.11)
B12	Condenser
B17	Fuel level sensor unit and fuel pump (Terminal No.3) • Fuel pump
B308	Seat belt buckle switch

CON-NECTOR NUMBER	CONNECTTO
B24	Rear combination lamp LH • Stop/Tail • Turn signal • Side marker
B29	Rear combination lamp RH • Stop/Tail • Turn signal • Side marker
B30	Rear power socket
B31	Fuel lid lock actuator relay (Terminal No.2)
B31	Fuel lid lock actuator relay (Terminal No.4)
B303	Driver seat control unit (Terminal No.32)
B305	Power seat switch (Driver side) (With automatic drive positioner)
B304	Driver seat control unit (Terminal No.48)
B306	Pedal adjusting switch
B312	Seat cushion heater (Driver side)
B321	Power seat switch (Driver side) (Without automatic drive positioner)

*:This sub-harness is not shown in "HARNESS LAYOUT".

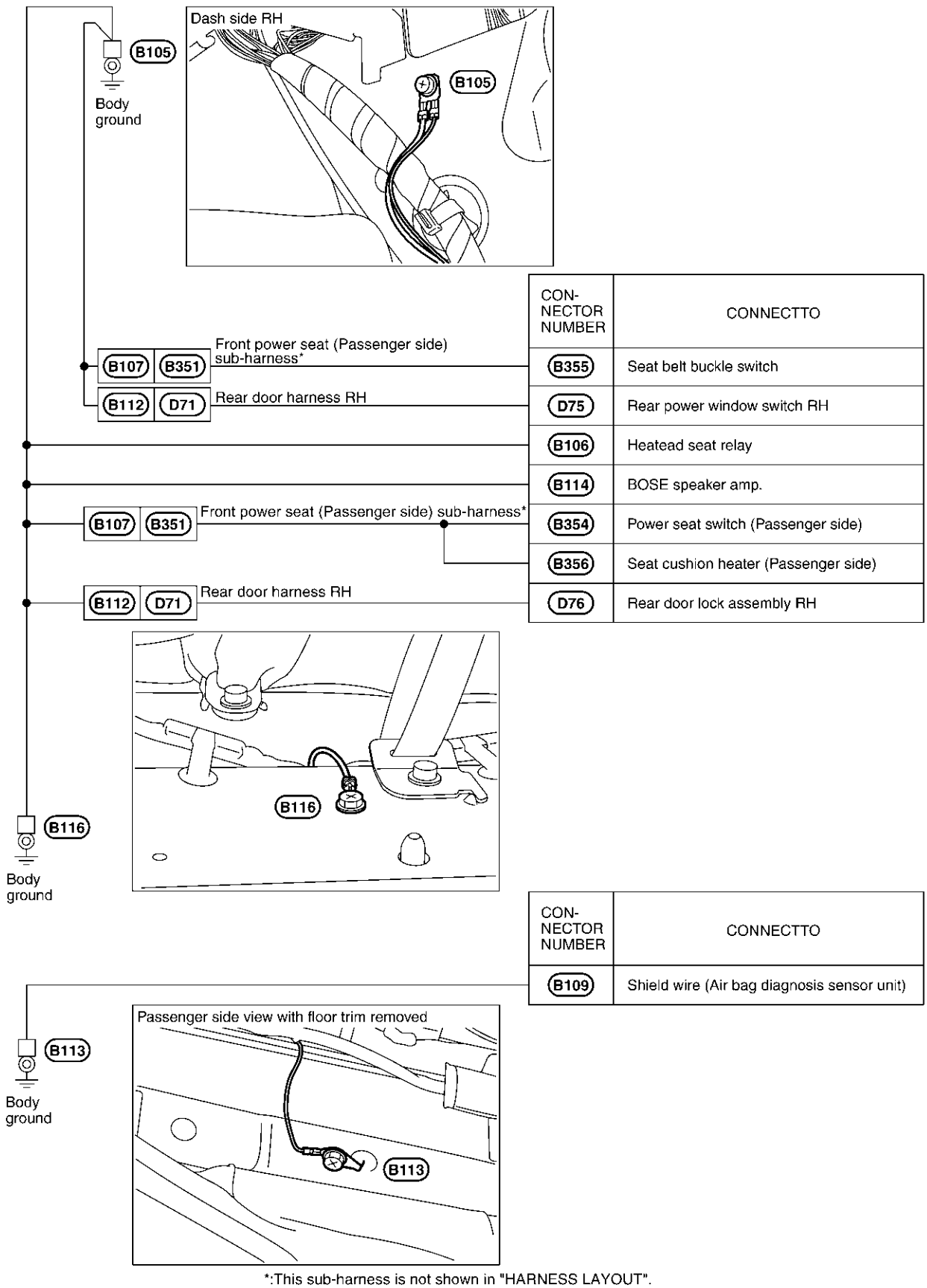
CKIA0282E


Preceding page
A
B
B16
D51
Rear door harness LH
B16
D51
Rear door harness LH
B25
D91
Back door harness
B27
D93
Back door harness
B20
Body ground
B20
CON-NECTOR NUMBER
CONNECTTO
D55
Rear power window switch LH
D56
Rear door lock assembly LH
• Door switch
D96
High-mounted stop lamp
D99
Back-up lamp LH
D100
Back door switch
D102
License plate lamp LH
D103
Rear wiper motor
D104
License plate lamp RH
D105
Back-up lamp RH
D107
Rear window defogger (-)


CON-NECTOR NUMBER
CONNECTTO
B11
Shield wire (Air bag diagnosis sensor unit)
B15
Body ground
Driver side view with floor trim removed
B15

CKIA0283E

BODY NO.2 HARNESS



CON-NECTOR NUMBER	CONNECTTO
B355	Seat belt buckle switch
D75	Rear power window switch RH
B106	Heatead seat relay
B114	BOSE speaker amp.
B354	Power seat switch (Passenger side)
B356	Seat cushion heater (Passenger side)
D76	Rear door lock assembly RH

CON-NECTOR NUMBER	CONNECTTO
B109	Shield wire (Air bag diagnosis sensor unit)

*:This sub-harness is not shown in "HARNESS LAYOUT".

CKIA0284E

HARNESS

PFP:00011

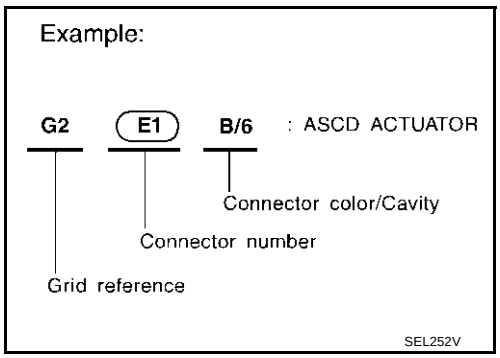
Harness Layout

AKS007HK

HOW TO READ HARNESS LAYOUT

The following Harness Layouts use a map style grid to help locate connectors on the drawings:

- Main Harness
- Engine Room Harness (Engine Compartment)
- Engine Control Harness
- Body Harness



To use the grid reference

1. Find the desired connector number on the connector list.
2. Find the grid reference.
3. On the drawing, find the crossing of the grid reference letter column and number row.
4. Find the connector number in the crossing zone.
5. Follow the line (if used) to the connector.

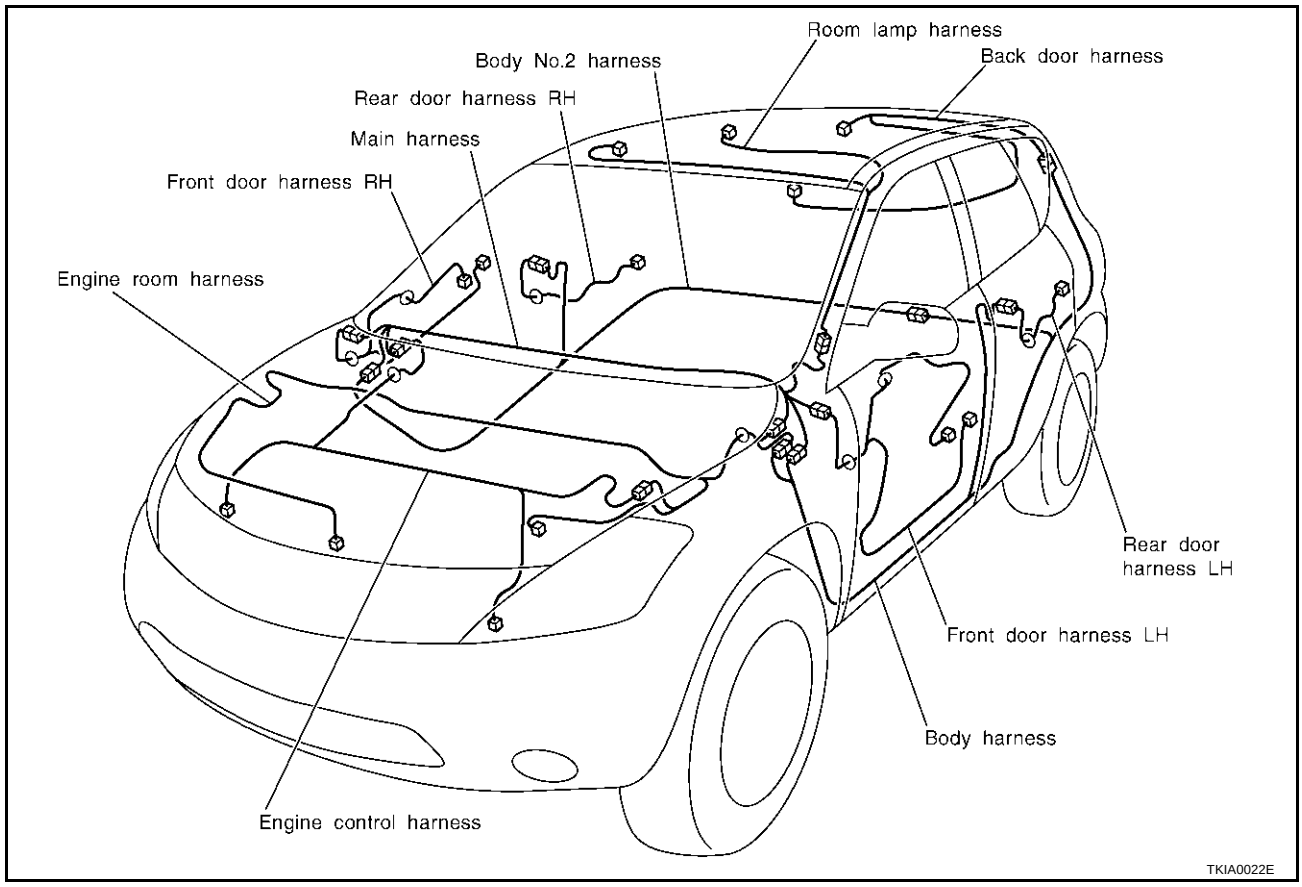
CONNECTOR SYMBOL

Main symbols of connector (in Harness Layout) are indicated in the below.

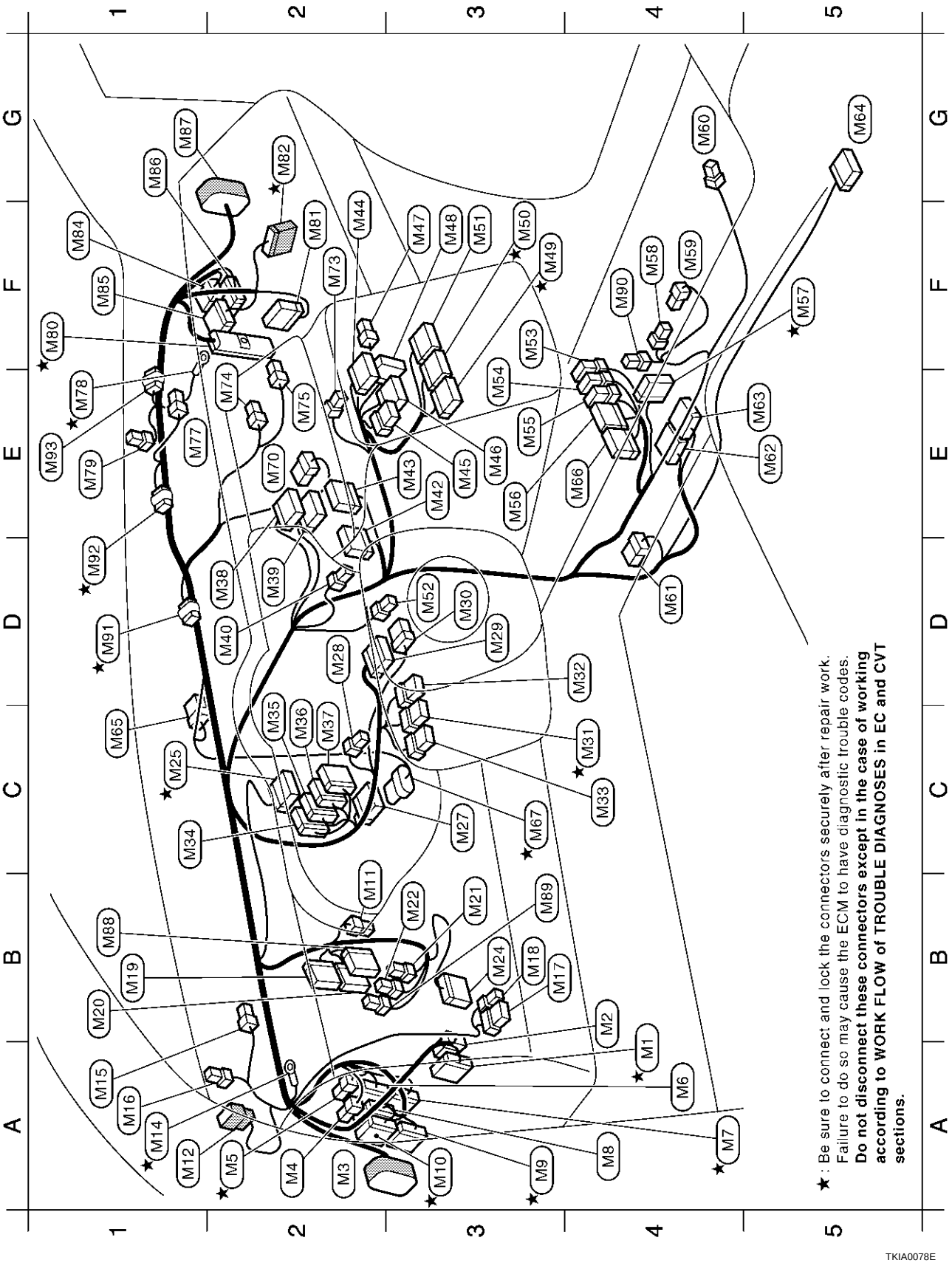
Connector type	Water proof type		Standard type	
	Male	Female	Male	Female
• Cavity: Less than 4 • Relay connector				
• Cavity: From 5 to 8				
• Cavity: More than 9				
• Ground terminal etc.	—			

CKIT0108E

OUTLINE


Room lamp harness
Back door harness
Body No.2 harness
Rear door harness RH
Main harness
Front door harness RH
Engine room harness
Rear door harness LH
Front door harness LH
Body harness
Engine control harness
TKIA0022E

MAIN HARNESS



TKIA0078E

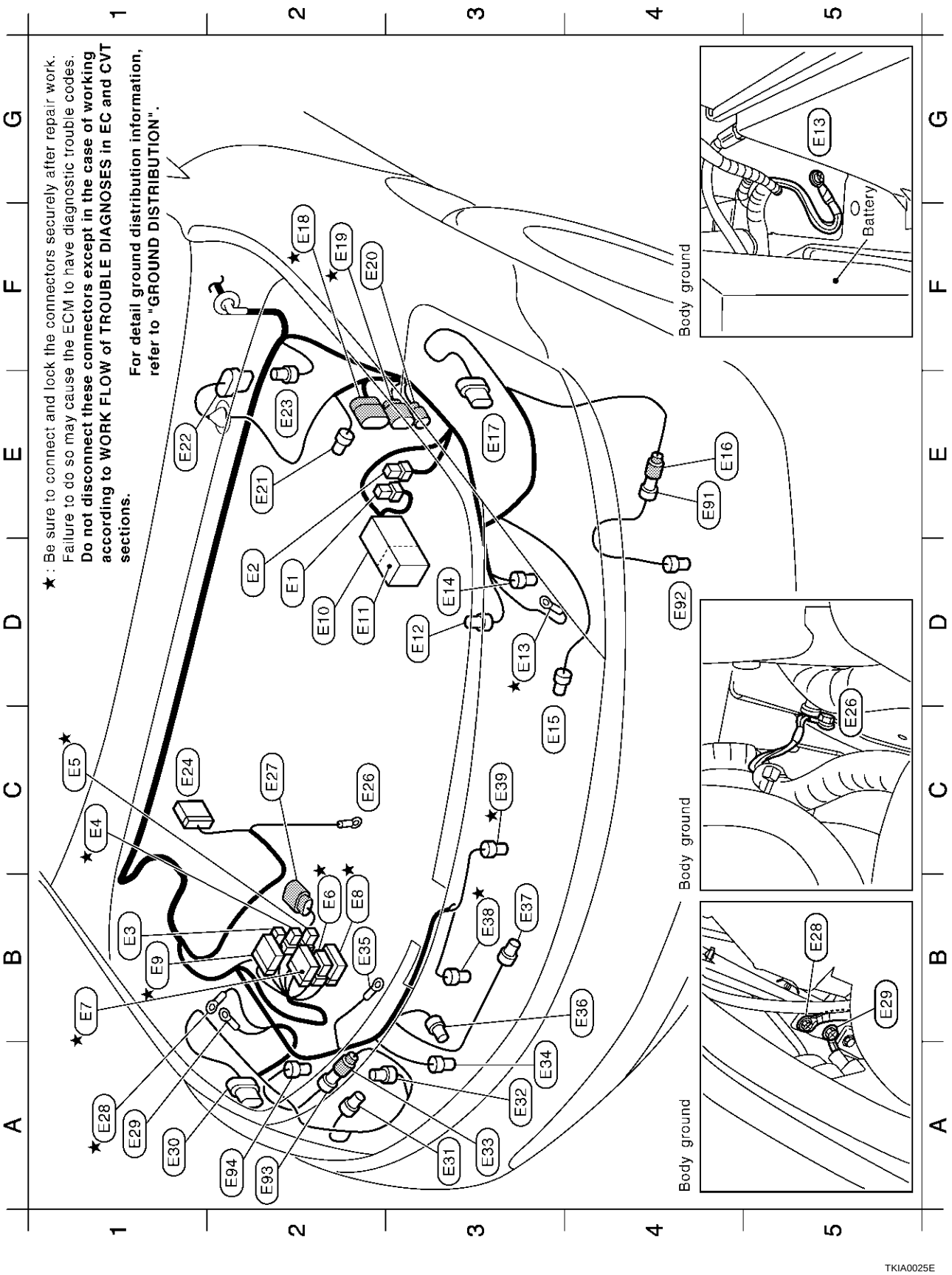
B4	★ M1	W/16	:	Fuse block (J/B)
B4	M2	W/8	:	Fuse block (J/B)
A2	M3	SMJ	:	To D1
A2	M4	Y/4	:	To E107
A2	★ M5	GR/1	:	To E108
A4	M6	W/24	:	To E109
A4	★ M7	GR/16	:	To E110
A4	M8	BR/12	:	To B1
A3	★ M9	W/20	:	To B2
A3	★ M10	BR/16	:	To B3
B2	M11	W/2	:	Tire pressure warning check connector
A1	M12	W/8	:	To R1
A1	★ M14	—	:	Body ground
A1	M15	BR/2	:	Tweeter LH
A1	M16	W/3	:	Optical sensor
B3	M17	GR/6	:	VDC off switch
B3	M18	W/4	:	Headlamp aiming switch
B1	M19	W/32	:	Automatic drive positioner control unit
B1	M20	W/16	:	Automatic drive positioner control unit
B3	M21	L/4	:	Back-up lamp relay
B3	M22	L/4	:	Power socket relay
B3	M24	W/16	:	Data link connector
C1	★ M25	W/24	:	Combination meter
C3	M27	GR/10	:	Shift lock control unit
D2	M28	W/4	:	Key switch and key lock solenoid
D3	M29	W/16	:	Combination switch
D3	M30	W/8	:	NATS antenna amp.
C4	★ M31	GR/8	:	Combination switch (Spiral cable)
D4	M32	Y/6	:	Combination switch (Spiral cable)
C4	M33	W/8	:	Steering angle sensor
C1	M34	W/12	:	BCM (Body control module)
C2	M35	W/16	:	BCM (Body control module)
C2	M36	W/16	:	BCM (Body control module)
C2	M37	BR/24	:	BCM (Body control module)
D2	M38	W/24	:	Display (With NAVI)
D2	M39	W/24	:	Display unit (Without NAVI)
D2	M40	W/2	:	Ignition keyhole illumination
E3	M42	W/24	:	Display control unit (With NAVI)
E3	M43	W/32	:	Display control unit (With NAVI)
F2	M44	W/10	:	Audio unit
E3	M45	W/6	:	Audio unit
E3	M46	W/16	:	Audio unit
F3	M47	BR/2	:	Antenna amp.
F3	M48	W/16	:	A/C and AV switch
F3	★ M49	GR/20	:	Unified meter and A/C amp.
F3	★ M50	GR/16	:	Unified meter and A/C amp.
F3	M51	W/24	:	Unified meter and A/C amp.
D3	M52	W/2	:	In-vehicle sensor
F3	M53	BR/6	:	Heated seat switch (Passenger side)
E3	M54	W/6	:	Heated seat switch (Driver side)
E3	M55	W/6	:	AWD lock switch
E3	M56	W/10	:	Door mirror remote control switch (Without memory mirror)
F5	★ M57	W/16	:	CVT device
F4	M58	W/2	:	Coin box illumination
F4	M59	BR/2	:	CVT illumination
G4	M60	B/2	:	Front power socket (Center console)
D4	M61	B/6	:	Yaw rate / side / decel G sensor
E5	M62	W/24	:	NAVI control unit
E5	M63	GR/24	:	NAVI control unit
G5	M64	Y/28	:	Air bag diagnosis sensor unit
C1	M65	W/6	:	Heater & cooling unit assembly
E4	M66	W/12	:	Door mirror remote control switch (With memory mirror)
C3	★ M67	B/8	:	Accelerator pedal position sensor
E2	M70	W/6	:	Blower motor
F2	M73	B/2	:	Front power socket (Center cluster)
E2	M74	Y/4	:	Front passenger air bag module
E2	M75	W/2	:	Glove box lamp
E1	M77	BR/2	:	Tweeter RH
E1	★ M78	—	:	Body ground
E1	M79	B/2	:	Sunload sensor
F1	★ M80	SMJ	:	ECM
F2	M81	W/24	:	Low tire pressure warning control unit
G2	★ M82	W/18	:	To F102
F1	M84	W/6	:	To B101
F1	M85	W/18	:	To B102
G1	M86	BR/16	:	To B103
G1	M87	SMJ	:	To D31
B1	M88	W/16	:	Pedal adjusting control unit
B3	M89	W/2	:	Circuit breaker
F4	M90	B/2	:	Cigarette lighter socket
D1	★ M91	GR/2	:	Condenser
D1	★ M92	GR/2	:	Condenser
E1	M93	W/2	:	Condenser

★ : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. **Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and CVT sections.**

TKIA0079E

ENGINE ROOM HARNESS

Engine Compartment



TKIA0025E

D2 (E1) BR/2 : Fusible link holder
D2 (E2) GR/2 : Fusible link holder
B1 (E3) B/2 : IPDM E/R (intelligent power distribution module engine room)
C1 ★ (E4) W/4 : IPDM E/R (intelligent power distribution module engine room)
C1 ★ (E5) B/4 : IPDM E/R (intelligent power distribution module engine room)
B2 ★ (E6) W/6 : IPDM E/R (intelligent power distribution module engine room)
B1 ★ (E7) W/12 : IPDM E/R (intelligent power distribution module engine room)
B2 ★ (E8) GR/16 : IPDM E/R (intelligent power distribution module engine room)
B1 ★ (E9) W/12 : IPDM E/R (intelligent power distribution module engine room)
D2 (E10) — : Fuse and fusible link block
D2 (E11) -/3 : Horn relay
D3 (E12) GR/2 : Hood switch
D3 ★ (E13) — : Body ground
D3 (E14) B/1 : Horn (Low)
C3 (E15) B/2 : Ambient sensor
E4 (E16) B/2 : To (E91)
E3 (E17) GR/8 : Front combination lamp LH
F2 ★ (E18) GR/9 : To (F2)
F2 ★ (E19) B/8 : To (F3)
F2 (E20) L/2 : Front wheel sensor LH
E2 (E21) GR/2 : Brake fluid level switch
E1 (E22) GR/6 : Front wiper motor
E2 (E23) B/3 : Pressure sensor
C1 (E24) B/47 : ABS actuator and electric unit
C2 (E26) — : Body ground
C2 (E27) GR/2 : Front wheel sensor RH
A1 ★ (E28) — : Body ground
A1 (E29) — : Body ground
A1 (E30) GR/8 : Front combination lamp RH
A3 (E31) GR/2 : Front and rear washer motor
A3 (E32) BR/2 : Washer level sensor
A3 (E33) B/2 : To (E93)
A3 (E34) B/1 : Horn (High)
B2 (E35) — : Alternator (E)
B4 (E36) B/3 : Refrigerant pressure sensor
B3 (E37) Y/2 : Crash zone sensor
B3 ★ (E38) GR/4 : Cooling fan motor-1
C3 ★ (E39) GR/4 : Cooling fan motor-2

Engine room sub-harness-1

E4 (E91) B/2 : To (E16)
D4 (E92) BR/2 : Front fog lamp LH

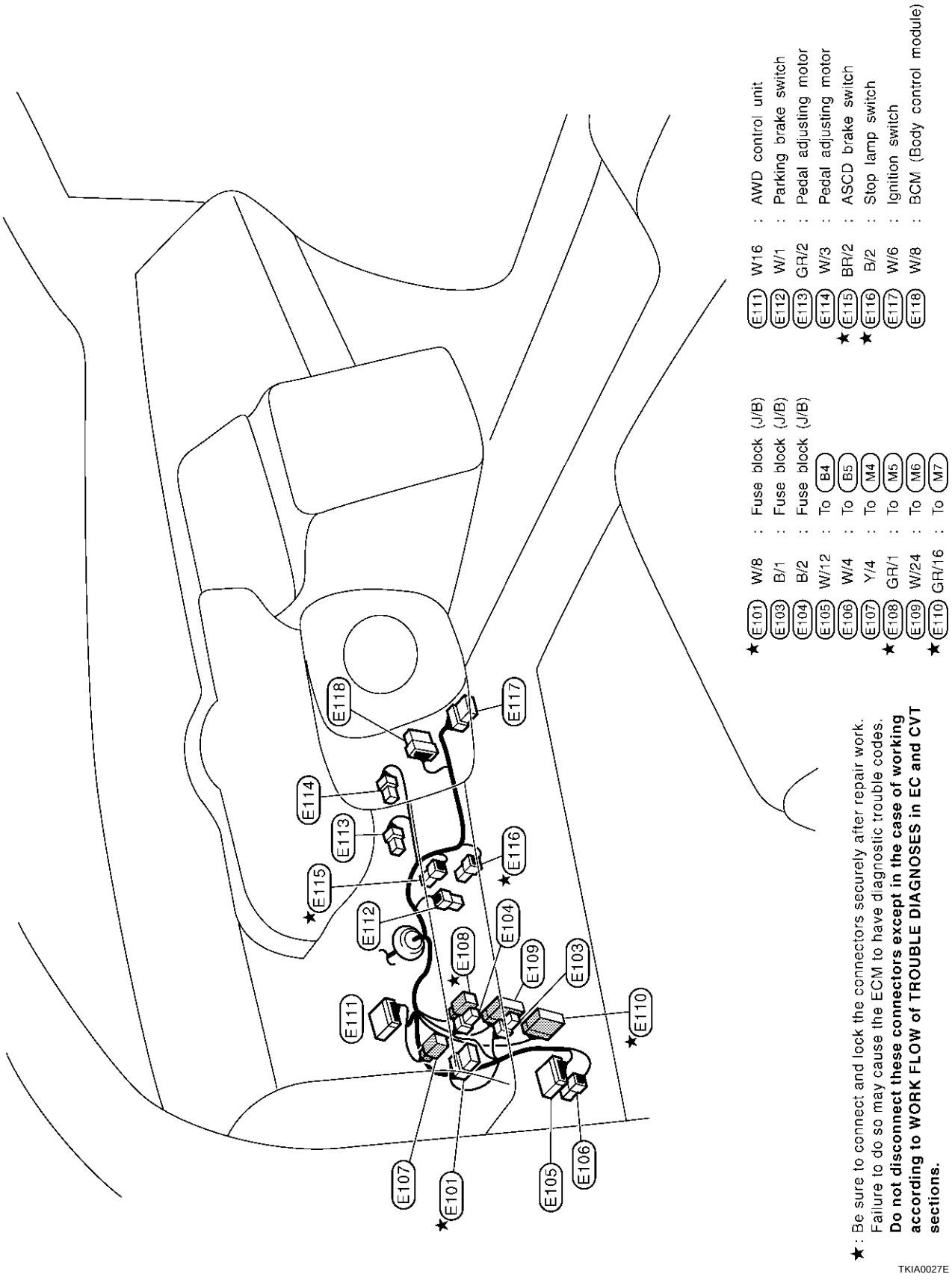
Engine room sub-harness-2

A2 (E93) B/2 : To (E33)
A2 (E94) BR/2 : Front fog lamp RH

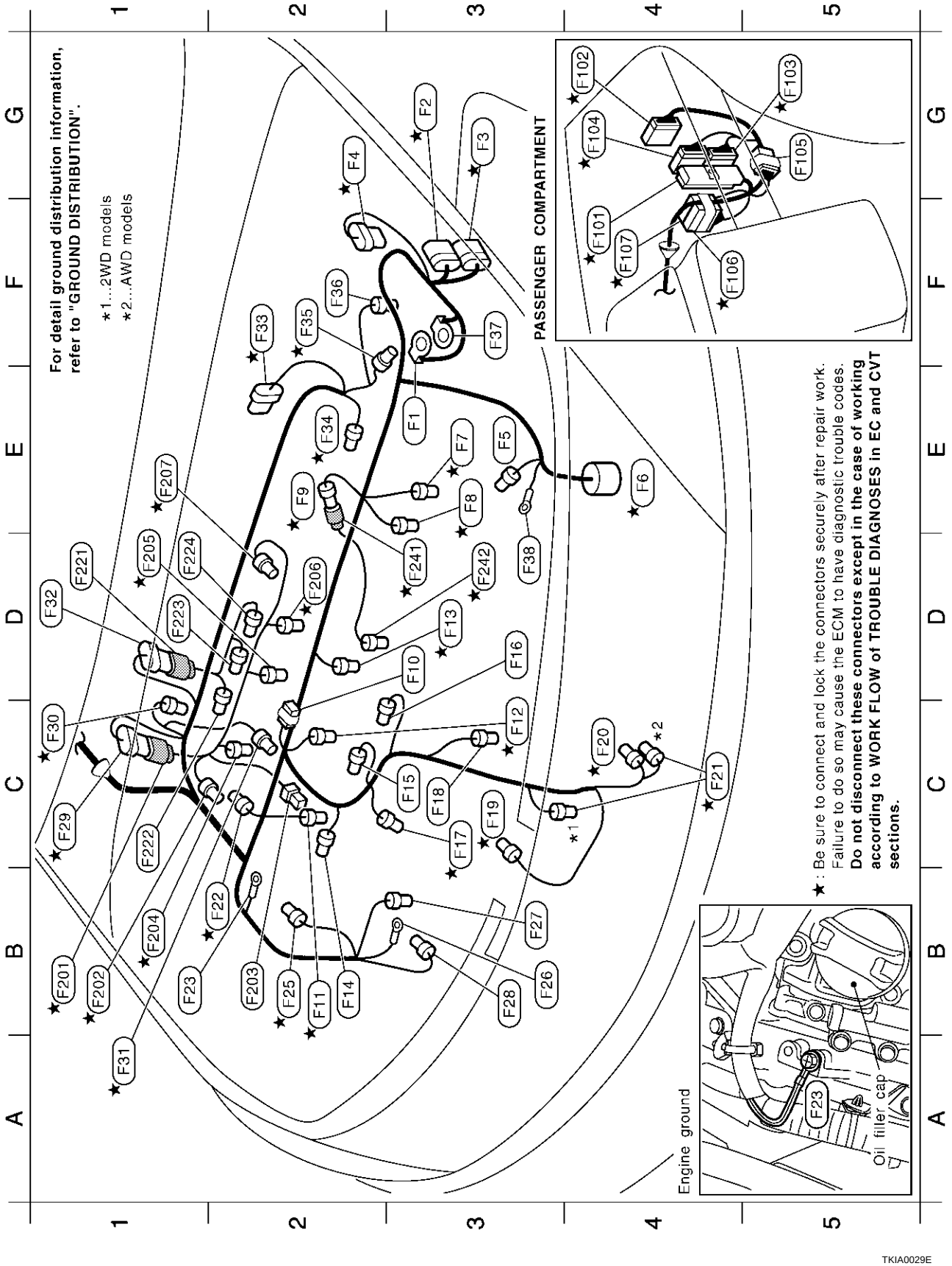
★: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. **Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and CVT sections.**

TKIA0080E

Passenger Compartment



ENGINE CONTROL HARNESS



TKIA0029E

Engine control harness

E3	F1	—	:	Fusible link holder
G3 ★	F2	GR/9	:	To E18
G3 ★	F3	B/8	:	To E19
G2 ★	F4	B/6	:	Mass air flow sensor
E3	F5	GR/1	:	Starter motor
E4 ★	F6	-/22	:	CVT unit
E3 ★	F7	GR/2	:	Engine coolant temperature sensor
E3 ★	F8	B/3	:	Camshaft position sensor (PHASE) (Bank 2)
E2 ★	F9	GR/2	:	To F241
D3	F10	GR/2	:	Condenser
B2 ★	F11	GR/2	:	Injector No.2
C3 ★	F12	GR/2	:	Injector No.4
D3 ★	F13	GR/2	:	Injector No.6
B2	F14	GR/3	:	Ignition coil No.2 (With power transistor)
C3	F15	GR/3	:	Ignition coil No.4 (With power transistor)
D3	F16	GR/3	:	Ignition coil No.6 (With power transistor)
C3 ★	F17	G/4	:	Heated oxygen sensor 1 (Bank 2)
C3	F18	BR/3	:	Front electronic controlled engine mount
C3 ★	F19	G/4	:	Heated oxygen sensor 2 (Bank 1)
C4 ★	F20	B/3	:	Crankshaft position sensor (POS)
C4 ★	F21	G/4	:	Heated oxygen sensor 2 (Bank 2)
B2 ★	F22	B/2	:	VIAS control solenoid valve
B1	F23	—	:	Engine ground
B2 ★	F25	LGR/2	:	Intake valve timing control solenoid valve (Bank 2)
B3	F26	—	:	Alternator (B)
B3	F27	GR/4	:	Alternator (S, L)
B3	F28	B/1	:	Compressor
C1 ★	F29	GR/8	:	To F201
C1 ★	F30	GR/4	:	Heated oxygen sensor 1 (Bank 1)
A1 ★	F31	B/3	:	Power steering pressure sensor
D1	F32	DGR/6	:	To F221
F2 ★	F33	DGR/6	:	Electric throttle control actuator
E2 ★	F34	G/3	:	Camshaft position sensor (PHASE) (Bank 1)
F2 ★	F35	B/3	:	Secondary speed sensor
F2	F36	BR/3	:	Rear electronic controlled engine mount (AWD models)
F3	F37	—	:	Fusible link holder
D3	F38	—	:	Starter motor
F4 ★	F101	SMJ	:	ECM
G4 ★	F102	W/18	:	To M82
G5 ★	F103	W/24	:	TCM (Transmission control module)
G4 ★	F104	GR/24	:	TCM (Transmission control module)
G5	F105	GR/6	:	Joint connector-1
F4 ★	F106	L/12	:	Joint connector-2
F4 ★	F107	L/12	:	Joint connector-3

Engine control sub-harness-1

B1 ★	F201	G/8	:	To F29
B1 ★	F202	G/2	:	Intake valve timing control solenoid valve (Bank 1)
B2	F203	GR/1	:	Oil pressure switch
B1 ★	F204	GR/2	:	Injector No.1
D1 ★	F205	GR/2	:	Injector No.3
D2 ★	F206	GR/2	:	Injector No.5
E1 ★	F207	L/2	:	EVAP canister purge volume control solenoid valve

Engine control sub-harness-2

D1	F221	G/6	:	To F32
C1	F222	GR/3	:	Ignition coil No.1 (With power transistor)
D1	F223	GR/3	:	Ignition coil No.3 (With power transistor)
D1	F224	GR/3	:	Ignition coil No.5 (With power transistor)

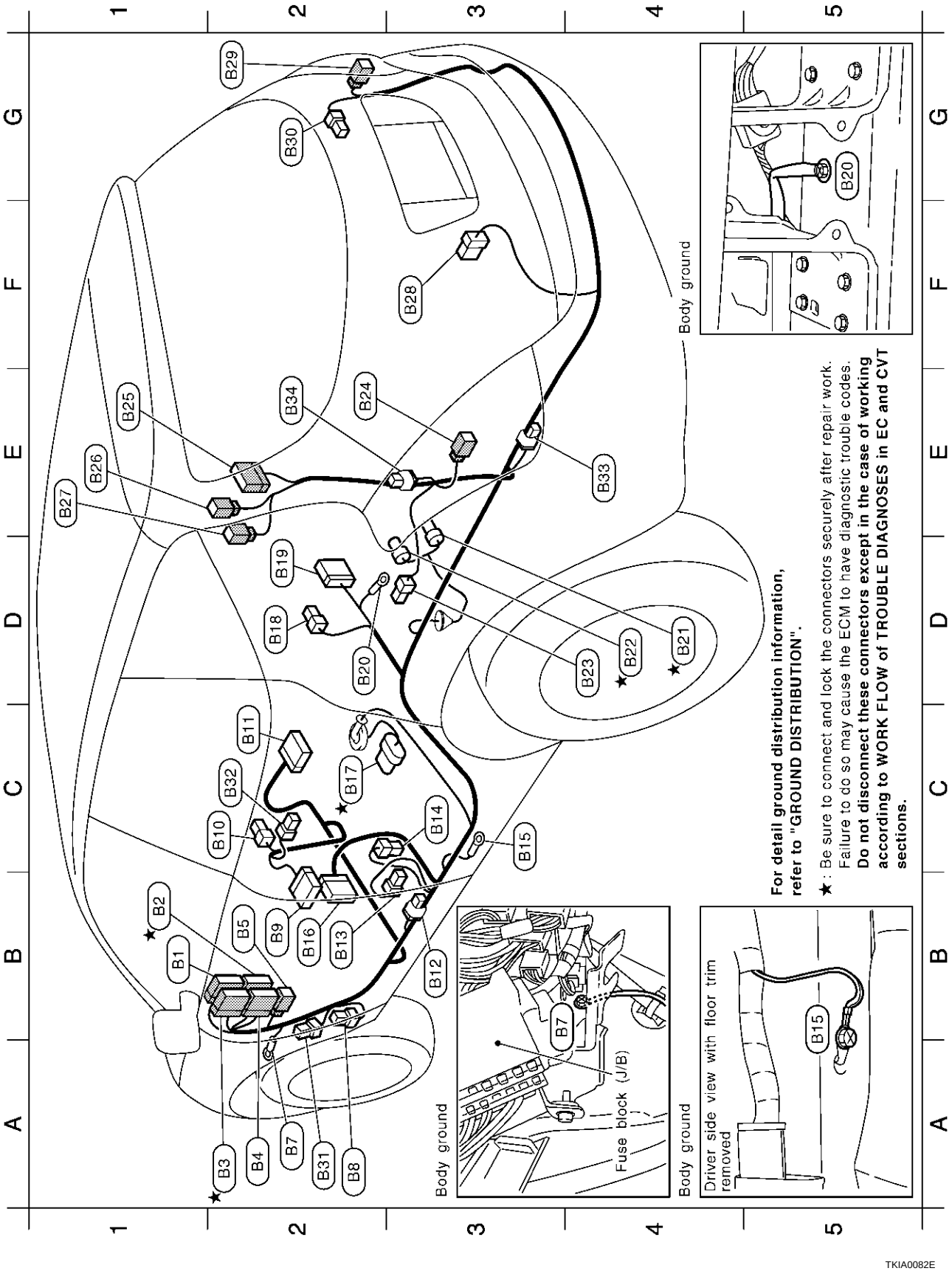
Engine control sub-harness-3

D3 ★	F241	GR/2	:	To F9
D3 ★	F242	L/2	:	Knock sensor

★ : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. **Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and CVT sections.**

TKIA0081E

BODY HARNESS

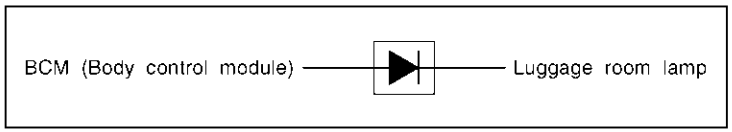


TKIA0082E

B1	(B1)	BR/12	:	To (M8)
B1 ★	(B2)	W/20	:	To (M9)
A2 ★	(B3)	BR/16	:	To (M10)
A2	(B4)	W/12	:	To (E105)
B2	(B5)	W/4	:	To (E106)
A2	(B7)	—	:	Body ground
A2	(B8)	BR/6	:	Rear window defogger relay
B2	(B9)	W/16	:	Front power seat (Driver side)
C2	(B10)	Y/2	:	Front LH side air bag module
C2	(B11)	Y/12	:	Air bag diagnosis sensor unit
B3	(B12)	W/2	:	Condenser
B2	(B13)	Y/2	:	LH side air bag (satellite) sensor
C3	(B14)	Y/2	:	Front LH seat belt pre-tensioner
C3	(B15)	—	:	Body ground
B2	(B16)	W/18	:	To (D51)
C2 ★	(B17)	GR/5	:	Fuel level sensor unit and fuel pump
D2	(B18)	Y/2	:	To (B118)
D2	(B19)	W/12	:	To (B117)
D2	(B20)	—	:	Body ground
D4 ★	(B21)	B/2	:	EVAP canister vent control valve
D4 ★	(B22)	GR/3	:	EVAP control system pressure sensor
D4	(B23)	W/4	:	Fuel lid lock actuator
E2	(B24)	W/4	:	Rear combination lamp LH
E1	(B25)	W/12	:	To (D91)
E1	(B26)	Y/4	:	To (D92)
E1	(B27)	W/2	:	To (D93)
F3	(B28)	GR/6	:	Woofer
G2	(B29)	W/4	:	Rear combination lamp RH
G2	(B30)	B/2	:	Rear power socket
A2	(B31)	B/5	:	Fuel lid lock actuator relay
C2	(B32)	W/2	:	Front power seat (Driver side)
E4	(B33)	W/1	:	Not used
E2	(B34)	W/2	:	Diode

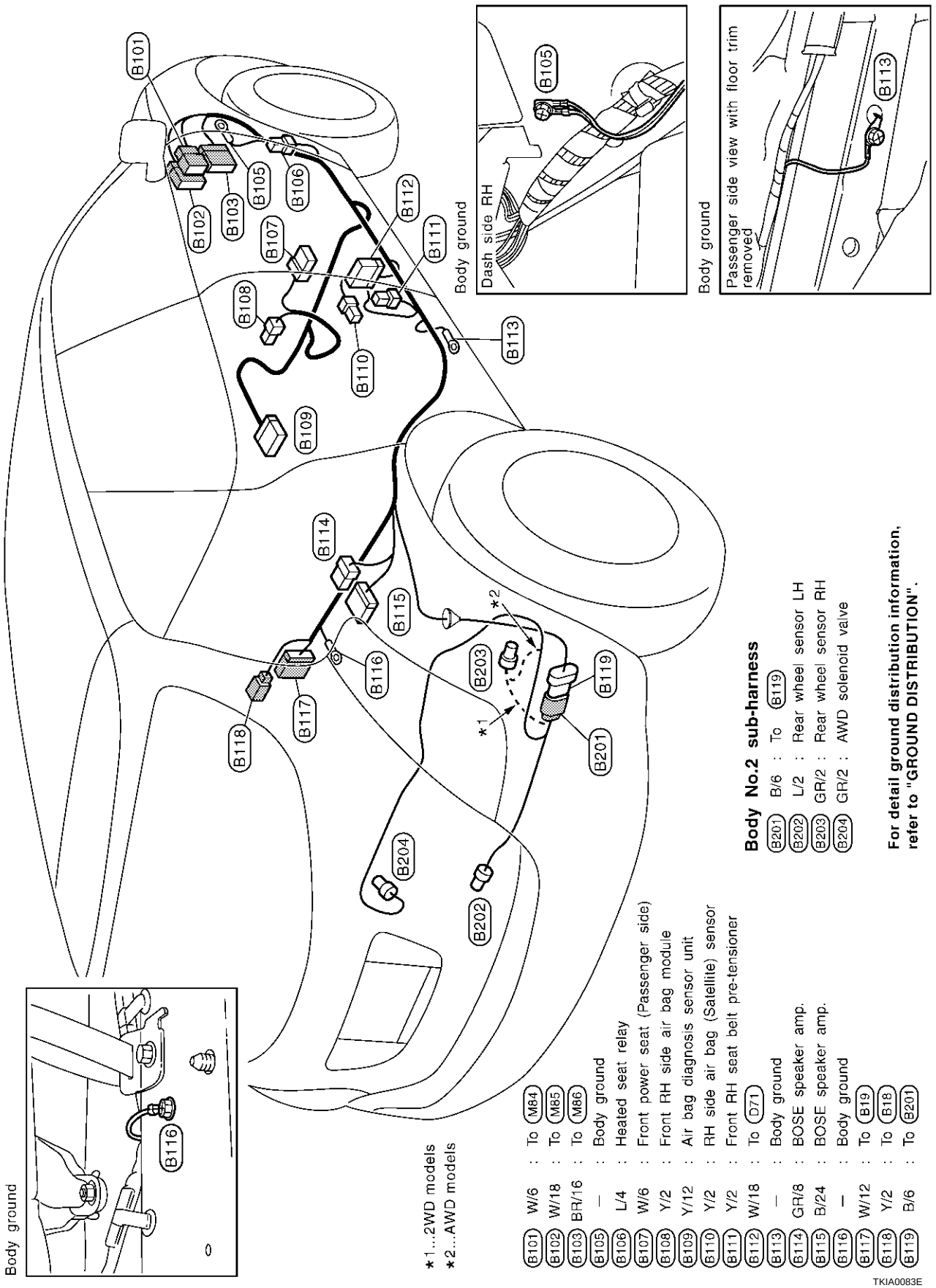
★: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. **Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and CVT sections.**

Diode (B34)

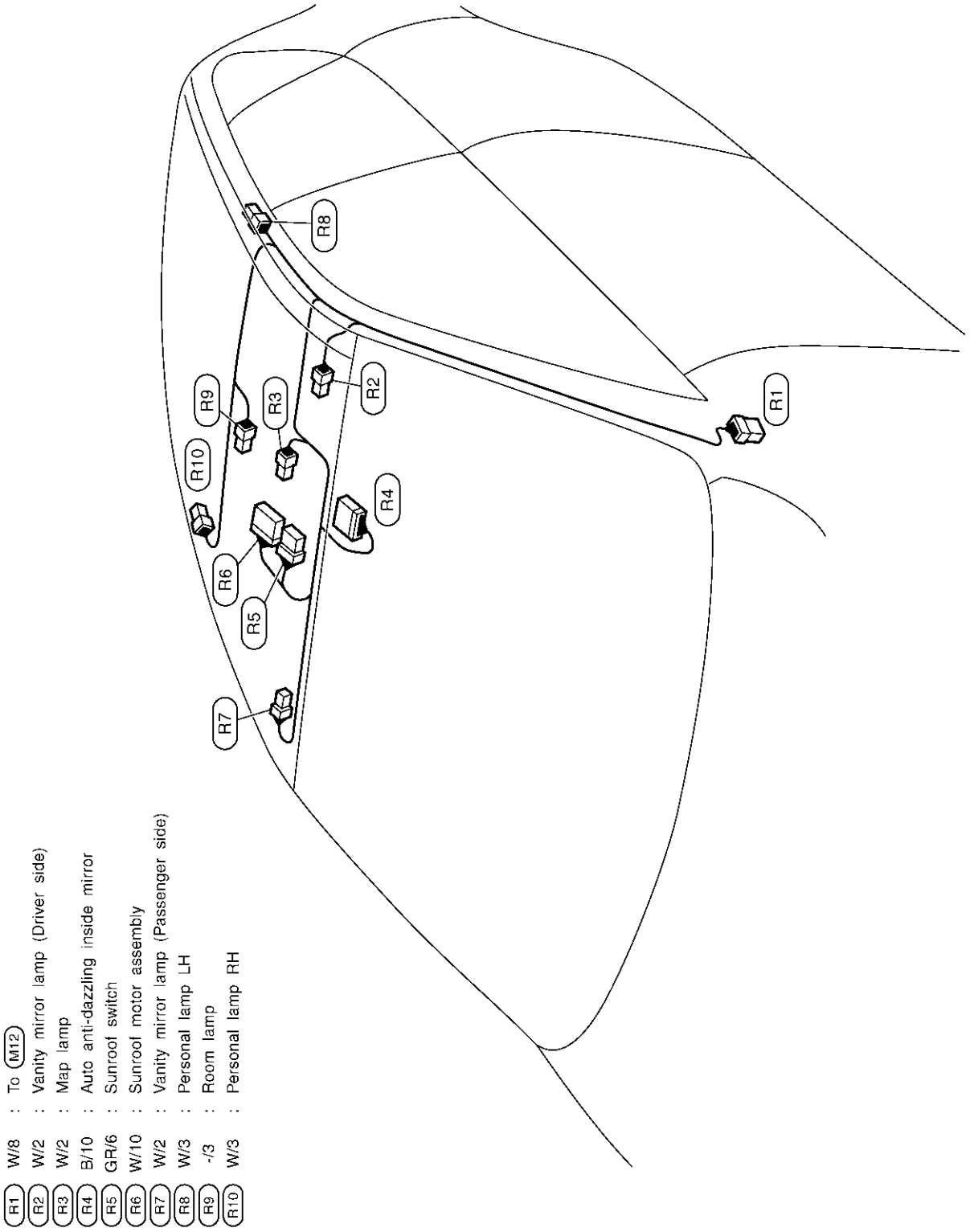


TKIA0032E

BODY NO.2 HARNESS



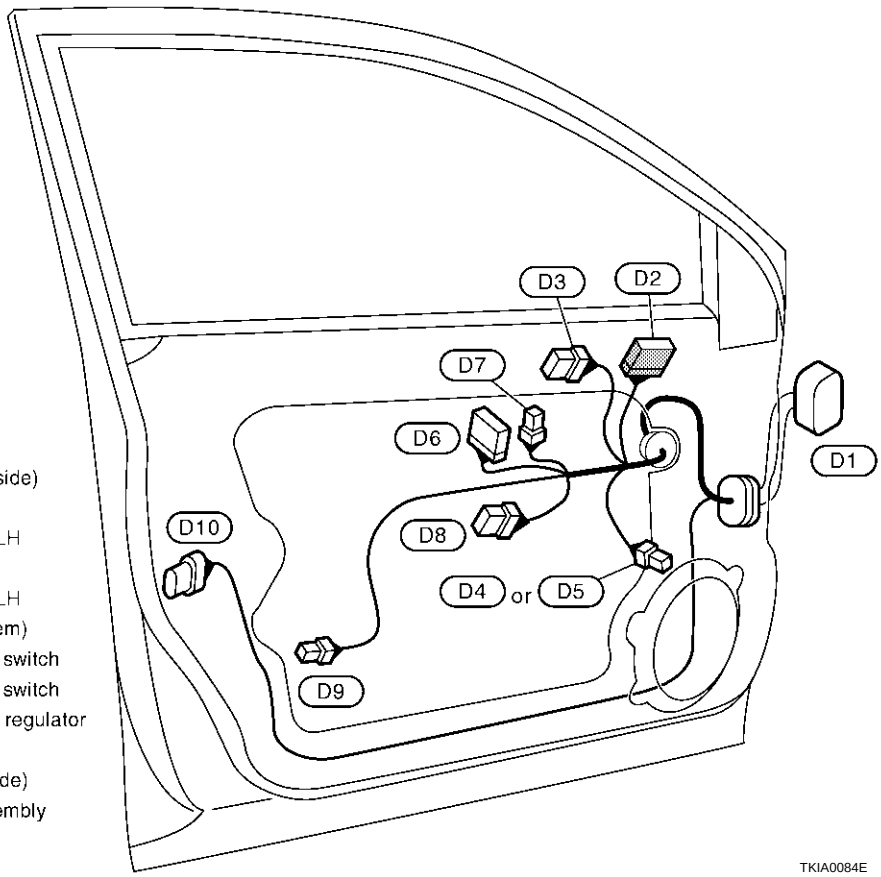
ROOM LAMP HARNESS



TKIA0035E

FRONT DOOR HARNESS

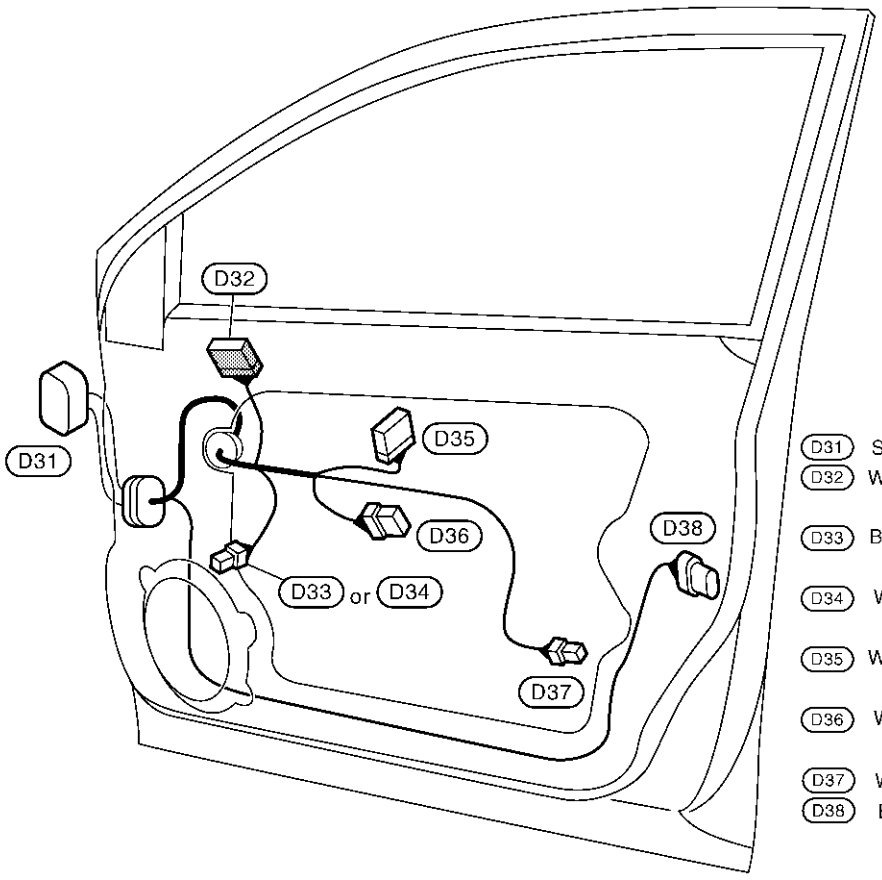
LH Side



TKIA0084E

D1	SMJ	:	To M3
D2	W/10	:	Door mirror (Driver side)
D3	W/8	:	Seat memory switch
D4	BR/2	:	Front door speaker LH (With BOSE system)
D5	W/2	:	Front door speaker LH (Without BOSE system)
D6	W/16	:	Power window main switch
D7	W/3	:	Power window main switch
D8	W/6	:	Front power window regulator (Driver side)
D9	W/2	:	Step lamp (Driver side)
D10	B/6	:	Front door lock assembly (Driver side)

RH Side

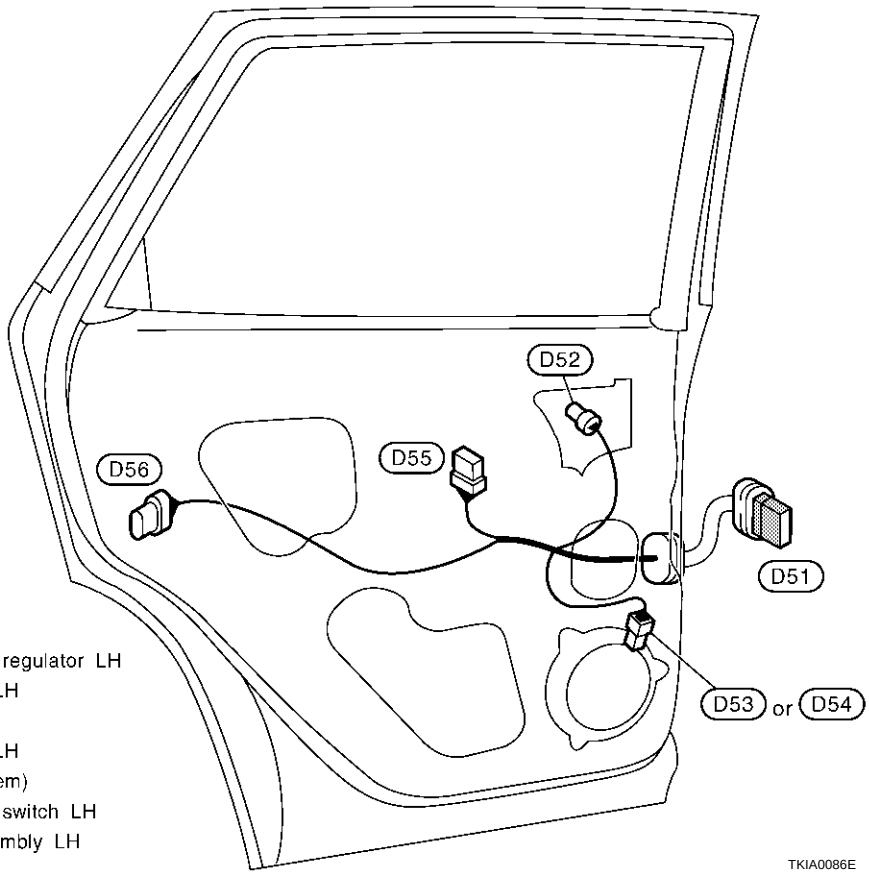


TKIA0085E

D31	SMJ	:	To M87
D32	W/10	:	Door mirror (Passenger side)
D33	BR/2	:	Front door speaker RH (With BOSE system)
D34	W/2	:	Front door speaker RH (Without BOSE system)
D35	W/16	:	Front power window switch (Passenger side)
D36	W/6	:	Front power window regulator (Passenger side)
D37	W/2	:	Step lamp (Passenger side)
D38	B/6	:	Front door lock assembly (Passenger side)

REAR DOOR HARNESS

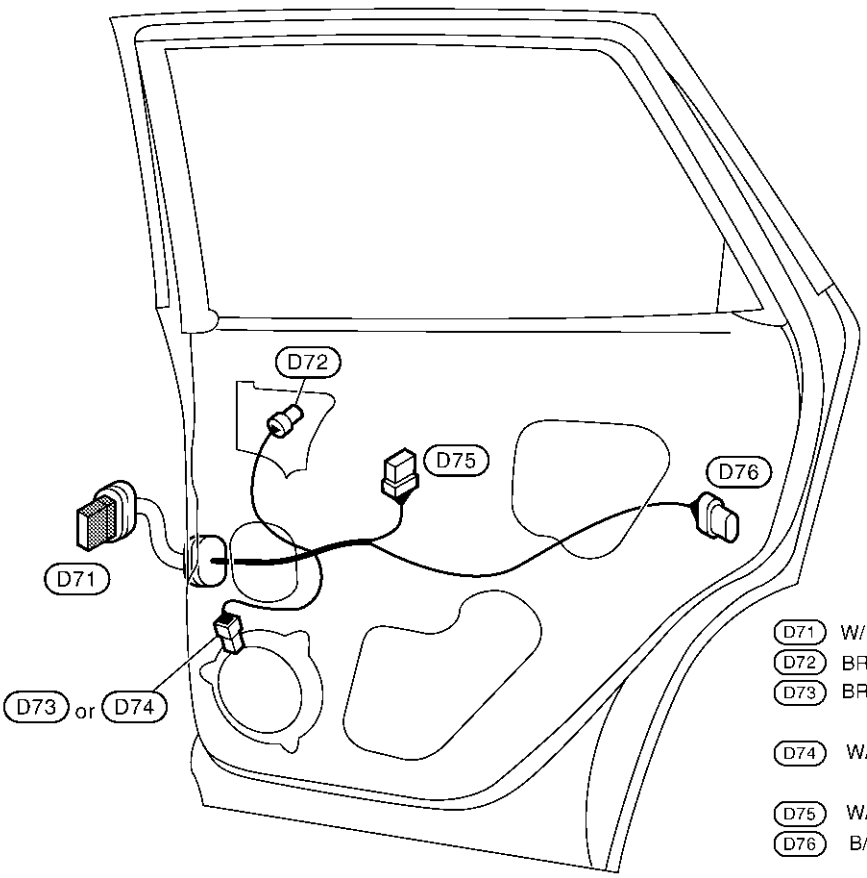
LH Side



TKIA0086E

D51 W/18 : To B16
D52 BR/2 : Rear power window regulator LH
D53 BR/2 : Rear door speaker LH (With BOSE system)
D54 W/2 : Rear door speaker LH (Without BOSE system)
D55 W/8 : Rear power window switch LH
D56 B/6 : Rear door lock assembly LH

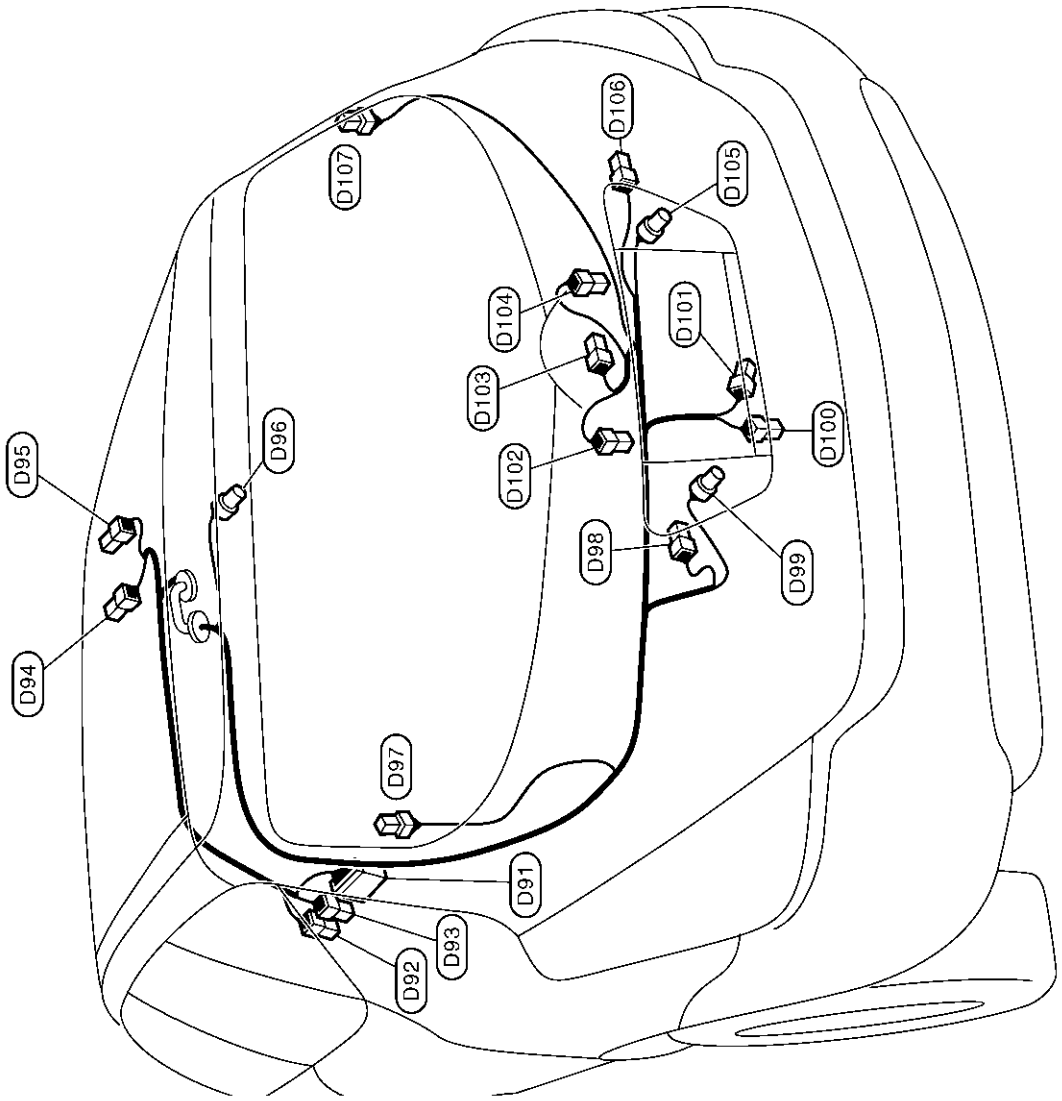
RH Side



D71 W/18 : To B112
D72 BR/2 : Rear power window regulator RH
D73 BR/2 : Rear door speaker RH (With BOSE system)
D74 W/2 : Rear door speaker RH (Without BOSE system)
D75 W/8 : Rear power window switch RH
D76 B/6 : Rear door lock assembly RH

TKIA0039E

BACK DOOR HARNESS



D91 W/12 : To B25
D92 Y/4 : To B26
D93 W/2 : To B27
D94 O/2 : LH side curtain air bag module
D95 Y/2 : RH side curtain air bag module
D96 W/2 : High-mounted stop lamp
D97 B/1 : Rear window defogger (+)
D98 W/4 : Luggage room lamp LH
D99 W/2 : Back-up lamp LH
D100 W/3 : Back door switch
D101 W/4 : Back door lock actuator
D102 BR/2 : License plate lamp LH
D103 W/4 : Rear wiper motor
D104 BR/2 : License plate lamp RH
D105 W/2 : Back-up lamp RH
D106 W/4 : Luggage room lamp RH
D107 B/1 : Rear window defogger (-)

TKIA0087E

Wiring Diagram Codes (Cell Codes)

AKS007HU

Use the chart below to find out what each wiring diagram code stands for.
Refer to the wiring diagram code in the alphabetical index to find the location (page number) of each wiring diagram.

Code	Section	Wiring Diagram Name
A/C	ATC	Air Conditioner
ABS	BRC	Anti-lock Brake System
APPS1	EC	Accelerator Pedal Position Sensor
APPS2	EC	Accelerator Pedal Position Sensor
APPS3	EC	Accelerator Pedal Position Sensor
ASC/BS	EC	Automatic Speed Control Device (ASCD) Brake Switch
ASC/SW	EC	Automatic Speed Control Device (ASCD) Steering Switch
ASCBOF	EC	Automatic Speed Control Device (ASCD) Brake Switch
ASCIND	EC	Automatic Speed Control Device (ASCD) Indicator
AUDIO	AV	Audio
AUT/DP	SE	Automatic Drive Positioner
AUTO/L	LT	Automatic Light System
AWD	TF	AWD System
BACK/L	LT	Back-Up Lamp
BRK/SW	EC	Brake Switch
CAN	CVT	CAN Communication Line
CAN	EC	CAN Communication Line
CAN	LAN	CAN System
CHARGE	SC	Charging System
CHIME	DI	Warning Chime
CIGAR	WW	Cigarette Lighter
COMBSW	LT	Combination Switch
COMM	AV	Audio Visual Communication Line
COOL/F	EC	Cooling Fan Control
CVTIND	DI	CVT Indicator Lamp
D/LOCK	BL	Power Door Lock
DEF	GW	Rear Window Defogger
DTRL	LT	Daytime Light System
ECM/PW	EC	ECM Power Supply For Back-Up
ECTS	EC	Engine Coolant Temperature Sensor
EMNT	EC	Engine Mount
ETC1	EC	Electrical Throttle Control Function
ETC2	EC	Electrical Throttle Control Motor Relay
ETC3	EC	Electrical Throttle Control Motor
F/FOG	LT	Front Fog Lamp
F/PUMP	EC	Fuel Pump
FTS	CVT	CVT Fluid Temperature Sensor Circuit
FTTS	EC	Fuel Tank Temperature Sensor
FUELB1	EC	Fuel Injection System Function (Bank 1)
FUELB2	EC	Fuel Injection System Function (Bank 2)
H/AIM	LT	Headlamp Aiming Control System

Code	Section	Wiring Diagram Name
H/LAMP	LT	Headlamp
HORN	WW	Horn
HSEAT	SE	Heated Seat
I/MIRR	GW	Inside Mirror (Auto Anti-Dazzling Mirror)
IATS	EC	Intake Air Temperature Sensor
IGNSYS	EC	Ignition System
ILL	LT	Illumination
INF/D	AV	Vehicle Information And Integrated Switch System
INJECT	EC	Injector
IVCB1	EC	Intake Valve Timing Control Solenoid Valve Bank 1
IVCB2	EC	Intake Valve Timing Control Solenoid Valve Bank 2
KEYLES	BL	Remote Keyless Entry System
KS	EC	Knock Sensor
L/USSV	CVT	Lock-Up Select Solenoid Valve
LPSV	CVT	Line Pressure Solenoid Valve
MAFS	EC	Mass Air Flow Sensor
MAIN	EC	Main Power Supply And Ground Circuit
METER	DI	Speedometer, Tachometer, Temp., And Fuel Gauges
MIL/DL	EC	Mil & Data Link Connectors
MIRROR	GW	Power Door Mirror
NATS	BL	Nissan Anti - Theft System
NAVI	AV	Navigation System
NONDTC	CVT	Non-Detective Items
O2H1B1	EC	Heated Oxygen Sensor 1 Heater Bank 1
O2H1B2	EC	Heated Oxygen Sensor 1 Heater Bank 2
O2H2B1	EC	Rear Heated Oxygen Sensor 2 Heater Bank 1
O2H2B2	EC	Rear Heated Oxygen Sensor 2 Heater Bank 2
O2S1B1	EC	Heated Oxygen Sensor 1 Bank 1
O2S1B2	EC	Heated Oxygen Sensor 1 Bank 2
O2S2B1	EC	Rear Heated Oxygen Sensor 2 Bank 1
O2S2B2	EC	Rear Heated Oxygen Sensor 2 Bank 2
P/SCKT	WW	Power Socket
PEDAL	AP	Adjustable Pedal System
PGC/V	EC	EVAP Canister Purge Volume Control Solenoid Valve
PHSB1	EC	Camshaft Position Sensor (PHASE) (Bank1)
PHSB2	EC	Camshaft Position Sensor (PHASE) (Bank2)
PNP/SW	CVT	Park / Neutral Position Switch
PNP/SW	EC	Park / Neutral Position Switch
POS	EC	Crankshaft Position Sensor (CKPS) (POS)
POWER	CVT	Transmission Control Module (Power Supply)
POWER	PG	Power Supply Routing
PRE/SE	EC	EVAP Control System Pressure Sensor
PRIPS	CVT	Primary Pressure Sensor
PRSCVT	CVT	Primary Speed Sensor CVT (Revolution Sensor)

Code	Section	Wiring Diagram Name
PS/SEN	EC	Power Steering Pressure Sensor
ROOM/L	LT	Interior Room Lamp
RP/SEN	EC	Refrigerant Pressure Sensor
SEAT	SE	Power Seat
SECPS	CVT	Secondary Pressure Sensor
SECPSV	CVT	Secondary Pressure Solenoid Valve
SEN/PW	EC	Sensor Power Supply
SESCVT	CVT	Secondary Speed Sensor CVT (Revolution Sensor)
SHIFT	CVT	CVT Shift Lock System
SPSW	CVT	Second position Switch
SROOF	RF	Sunroof
SRS	SRS	Supplemental Restraint System
START	SC	Starting System
STM	CVT	Step Motor
STOP/L	LT	Stop Lamp
STSIG	CVT	Start Signal Circuit
T/WARN	WT	Low Tire Pressure Warning System
TAIL/L	LT	Parking, License and Tail Lamps
TCV	CVT	Torque Converter Clutch Solenoid Valve
TPS1	EC	Throttle Position Sensor (Sensor 1)
TPS2	EC	Throttle Position Sensor (Sensor 2)
TPS3	EC	Throttle Position Sensor
TRANSCV	BL	Homelink Universal Transceiver
TURN	LT	Turn Signal and Hazard Warning Lamp
VDC	BRC	Vehicle Dynamics Control System
VEHSEC	BL	Vehicle Security System
VENT/V	EC	EVAP Canister Vent Control Valve
VIAS	EC	Variable Induction Air Control System
VIAS/V	EC	VIAS Control Solenoid Valve
WARN	DI	Warning Lamps
WINDOW	GW	Power Window
WIP/R	WW	Rear Wiper and Washer
WIPER	WW	Front Wiper and Washer

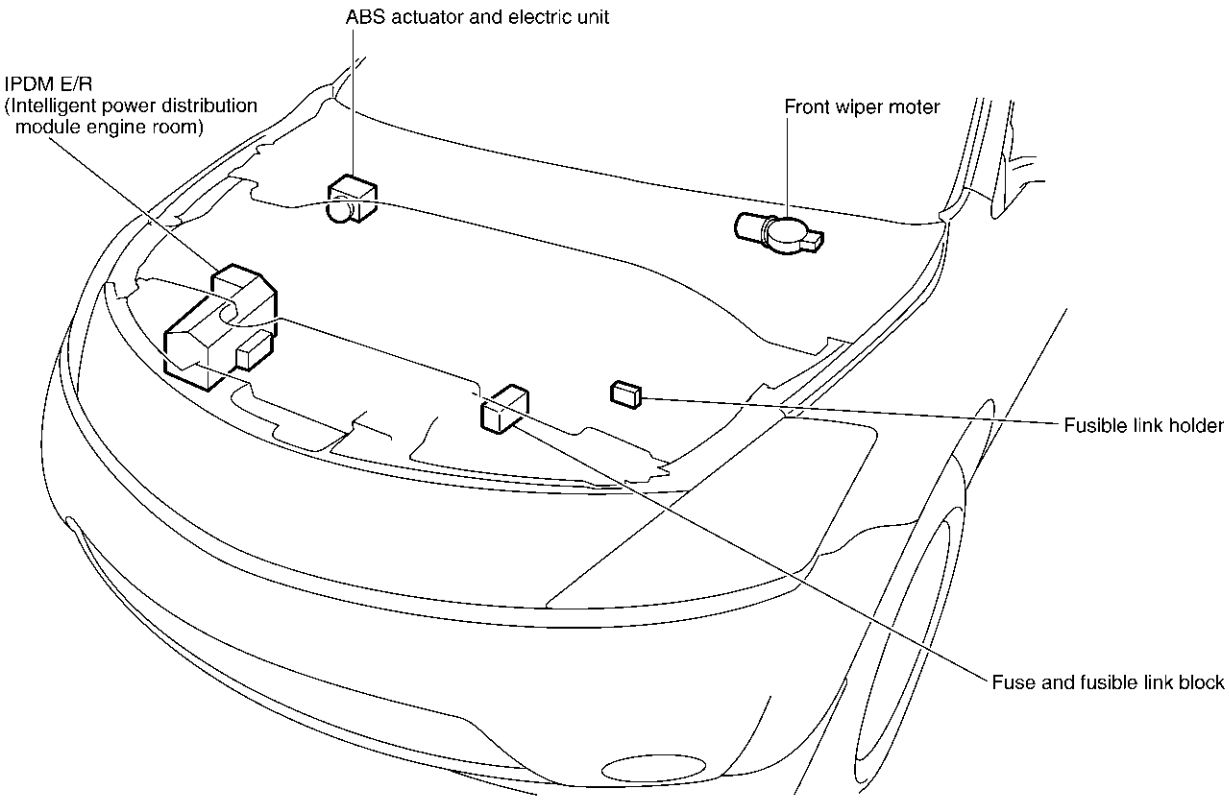
ELECTRICAL UNITS LOCATION

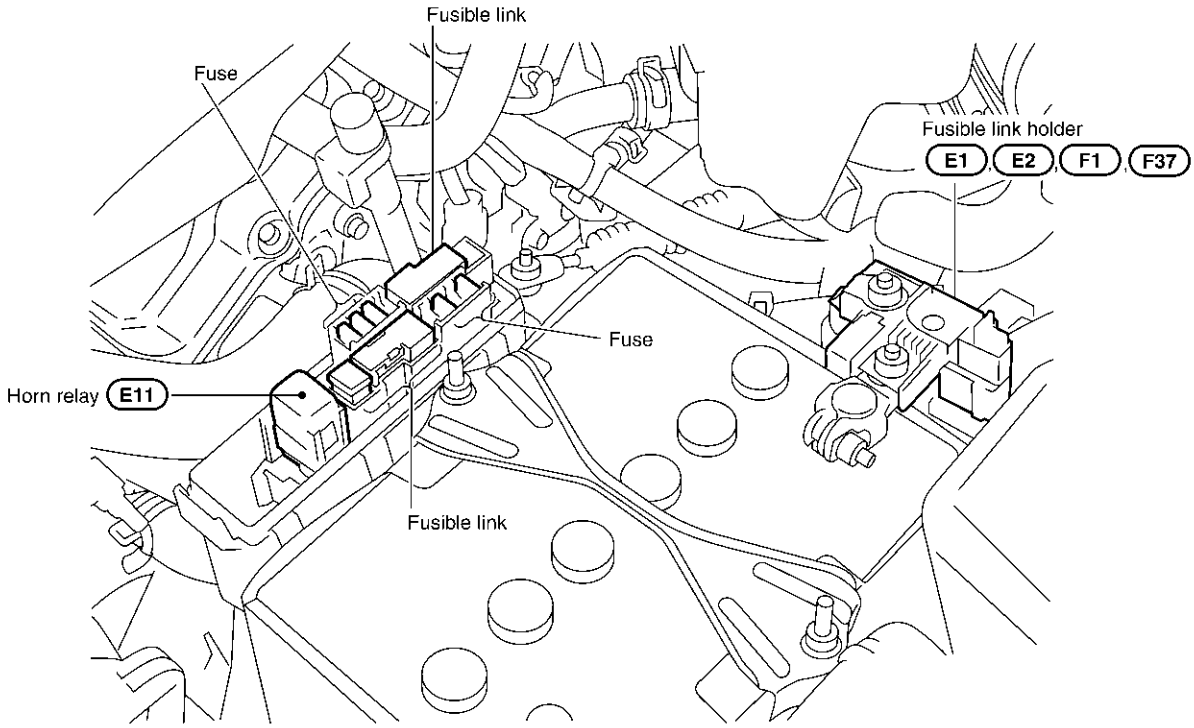
PFP:25230

Electrical Units Location

AKS007HM

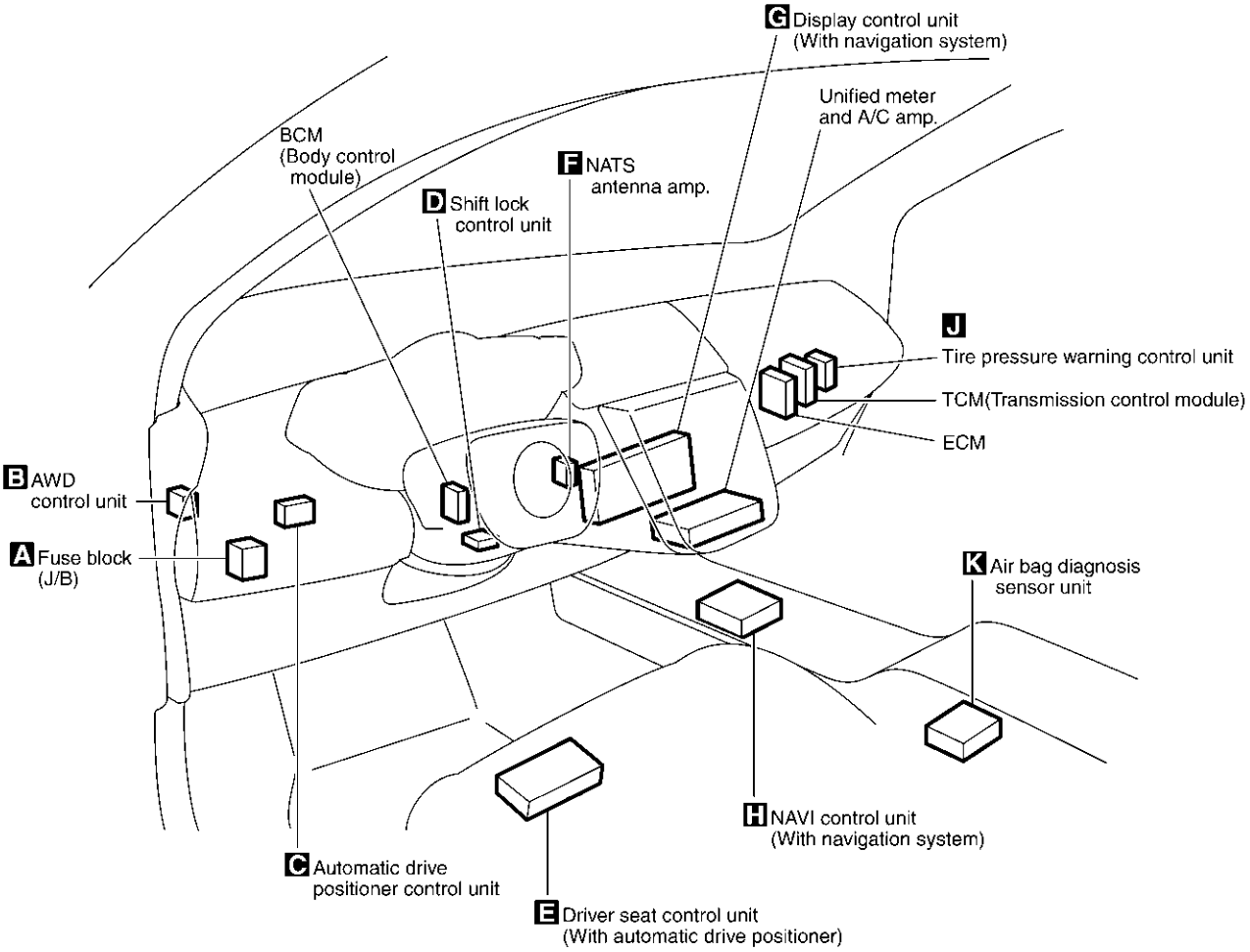
ENGINE COMPARTMENT



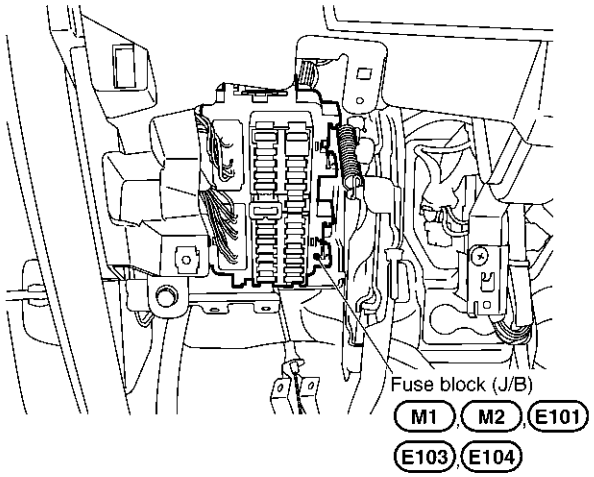


CKIA0319E

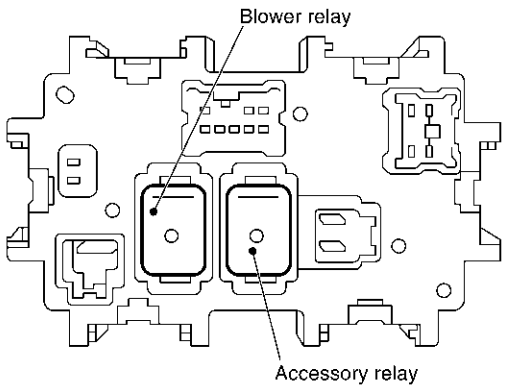
PASSENGER COMPARTMENT



A Driver side view with lower instrument panel removed

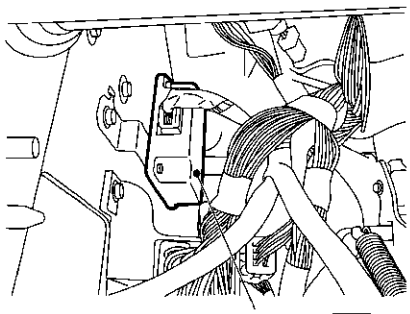


Fuse block (J/B) rear view

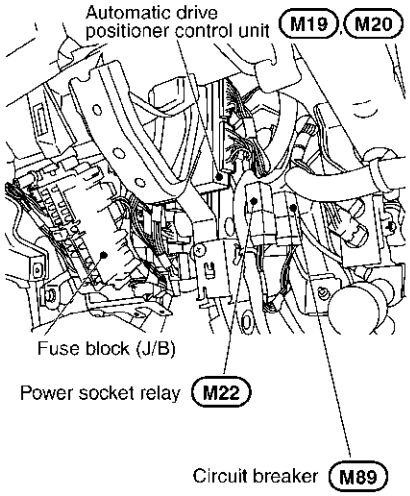


CKIA0320E

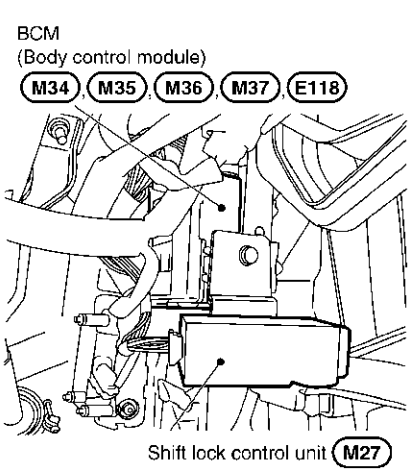
B Dash side LH



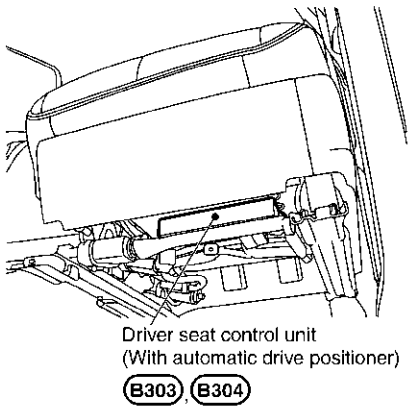
C Driver side view with lower instrument panel removed



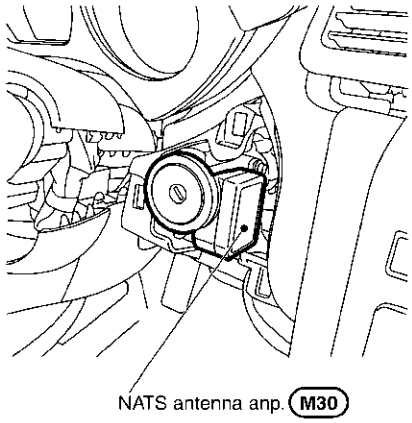
D Driver side view with lower instrument panel removed



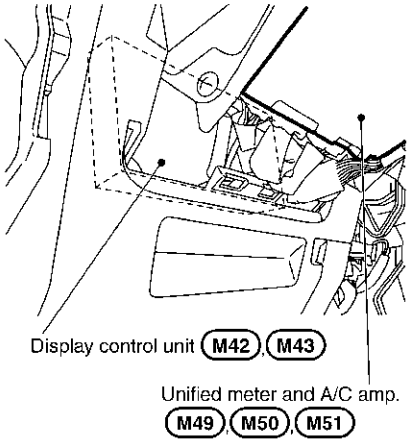
E Under driver seat



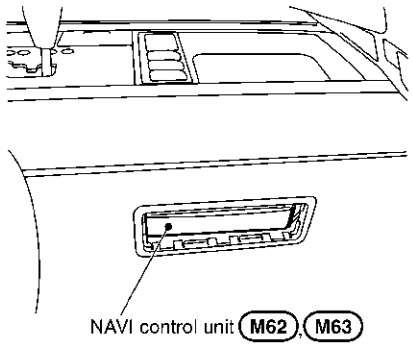
F Driver side view with cluster lid A removed



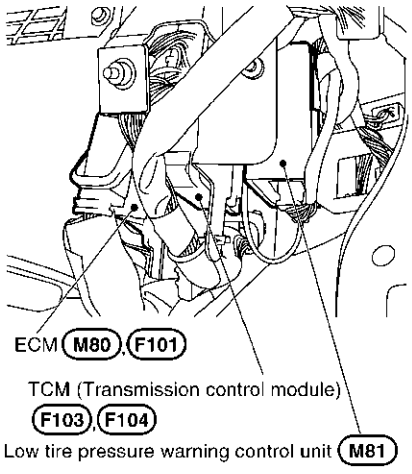
G View with instrument panel center removed



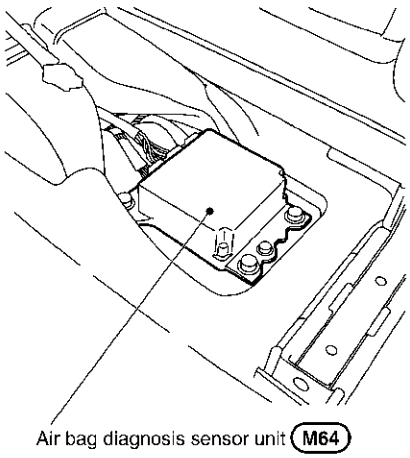
H



J Behind lower instrument panel on passenger side

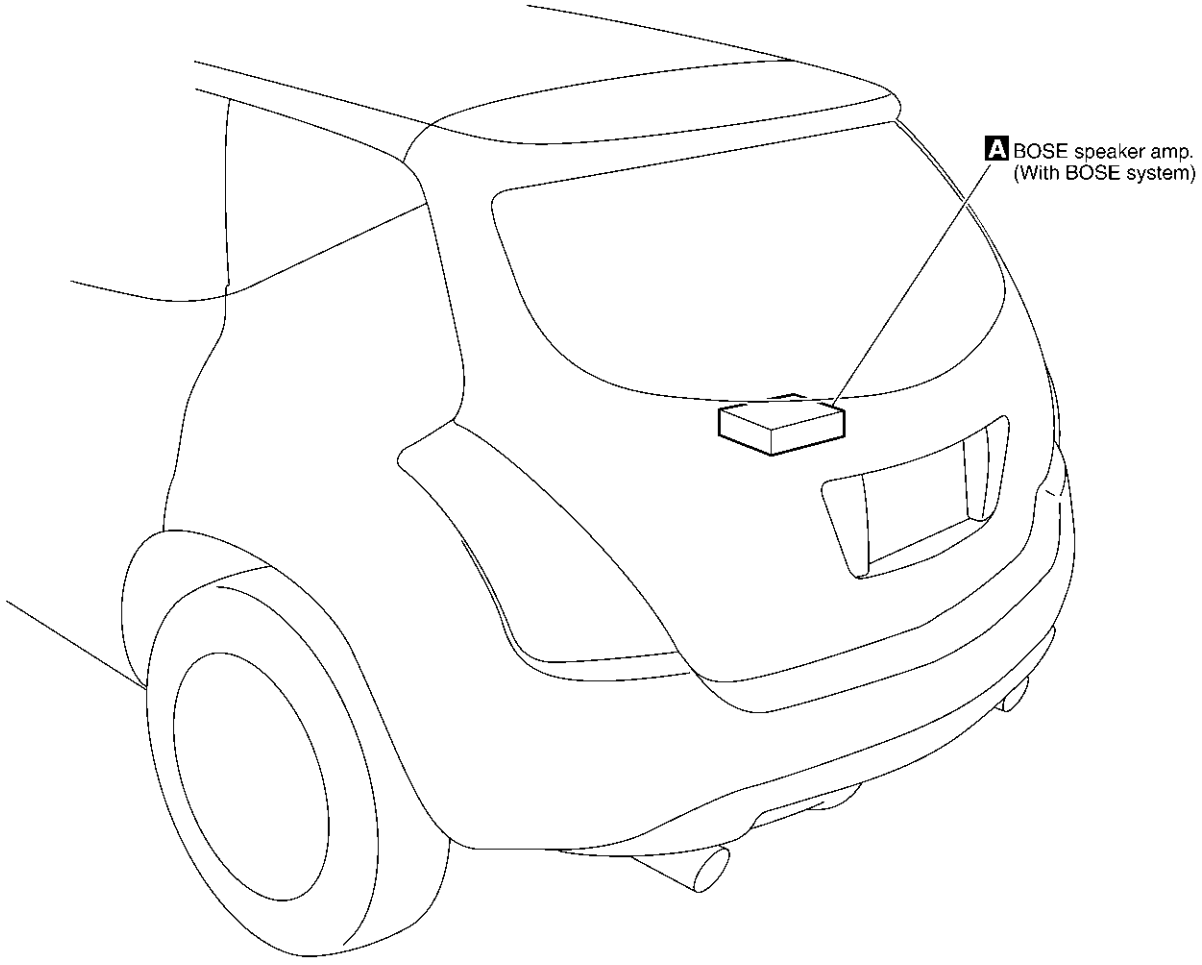


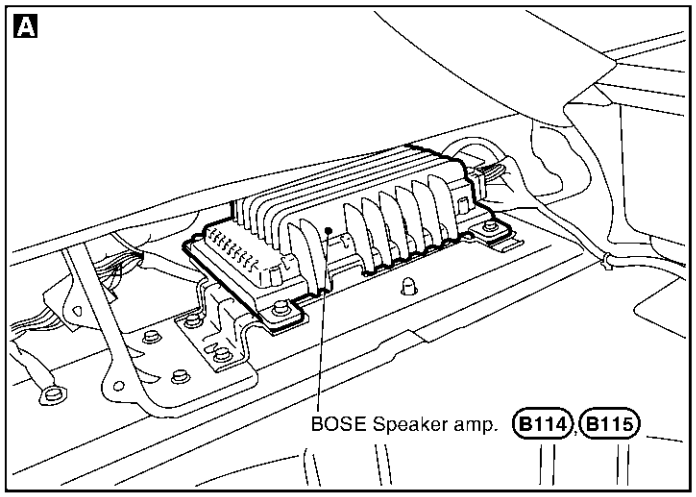
K View with floor console box removed



CKIA0321E

LUGGAGE COMPARTMENT





CKIA0288E

HARNESS CONNECTOR

PFP:00011

Description

AKS007HN

HARNESS CONNECTOR (TAB-LOCKING TYPE)

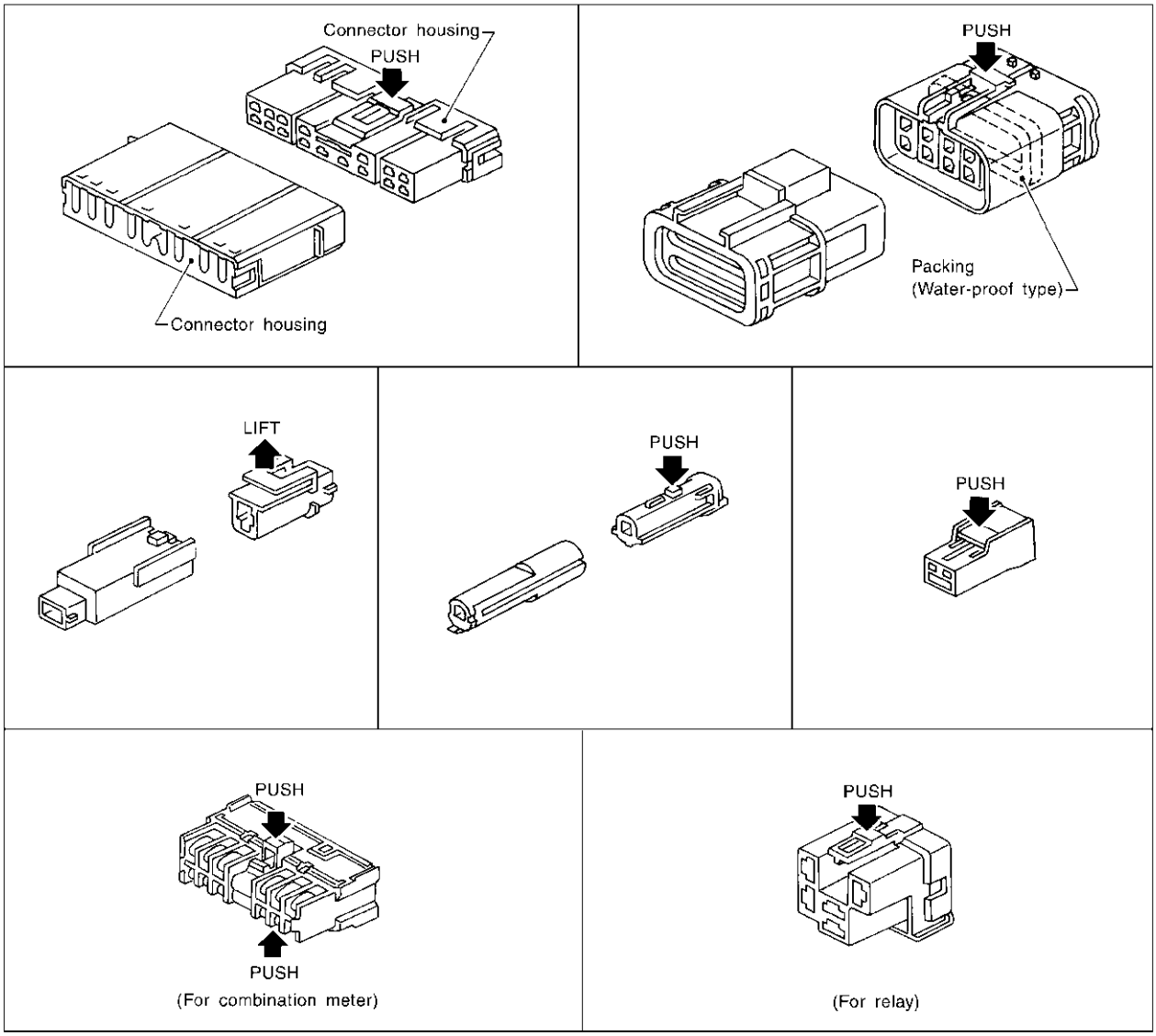
- The tab-locking type connectors help prevent accidental looseness or disconnection.
- The tab-locking type connectors are disconnected by pushing or lifting the locking tab(s). Refer to the illustration below.

Refer to the next page for description of the slide-locking type connector.

CAUTION:

Do not pull the harness or wires when disconnecting the connector.

[Example]



SEL769DA

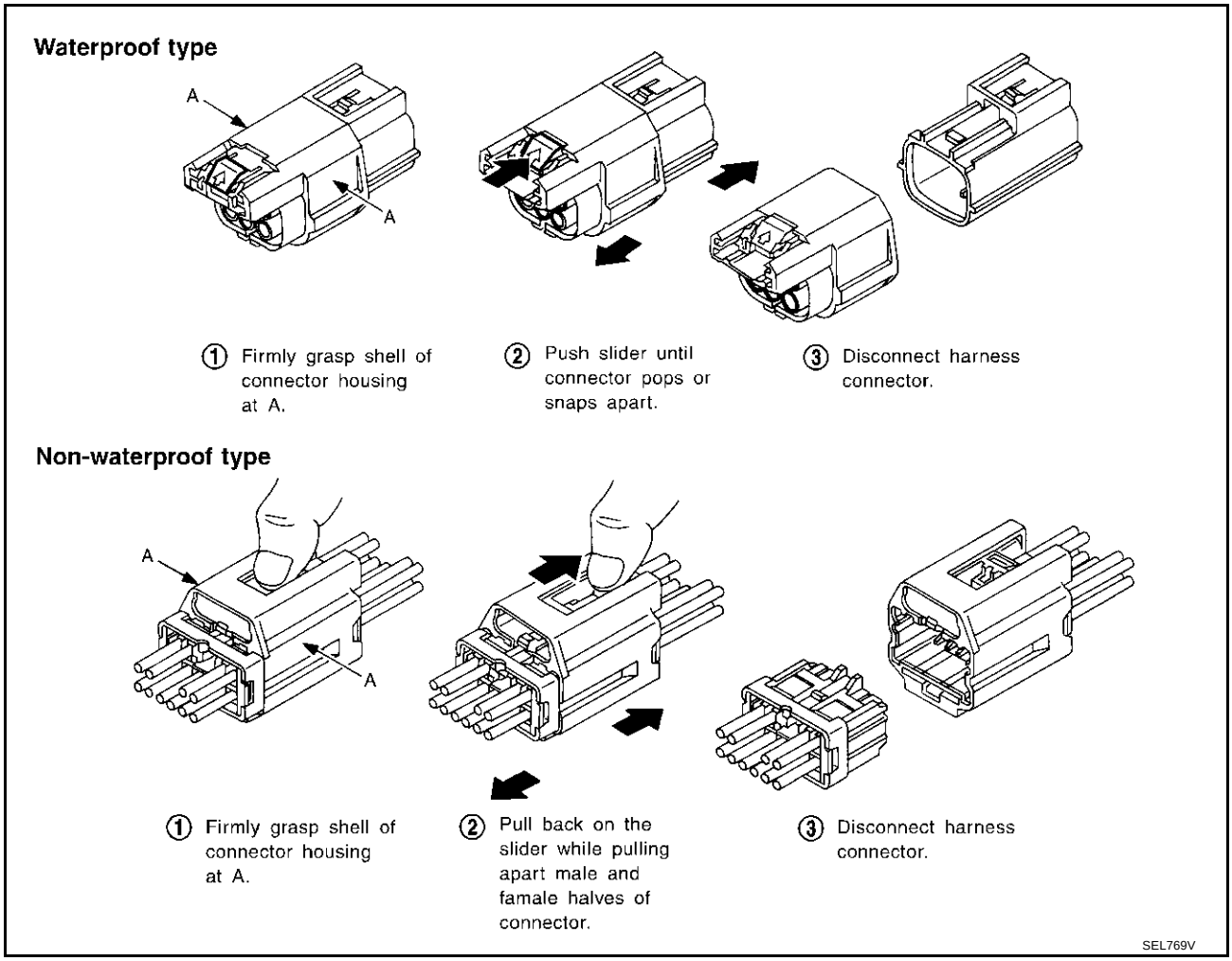
HARNESS CONNECTOR (SLIDE-LOCKING TYPE)

- A new style slide-locking type connector is used on certain systems and components, especially those related to OBD.
- The slide-locking type connectors help prevent incomplete locking and accidental looseness or disconnection.
- The slide-locking type connectors are disconnected by pushing or pulling the slider. Refer to the illustration below.

CAUTION:

- **Do not pull the harness or wires when disconnecting the connector.**
- **Be careful not to damage the connector support bracket when disconnecting the connector.**

[Example]

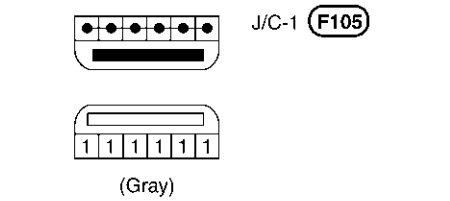


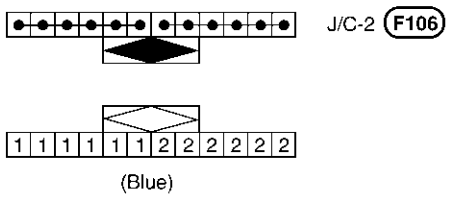
JOINT CONNECTOR (J/C)

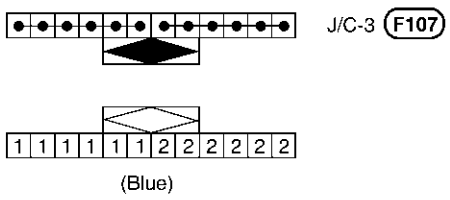
PFP:B4341

Terminal Arrangement

AKS007HO







CKIA0289E

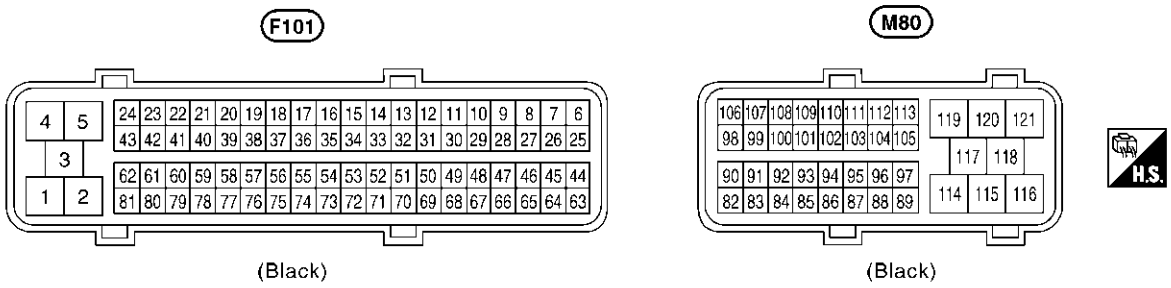
ELECTRICAL UNITS

PFP:00011

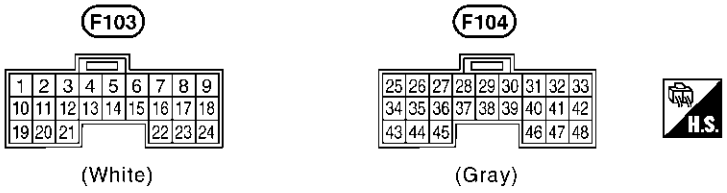
Terminal Arrangement

AKS007HP

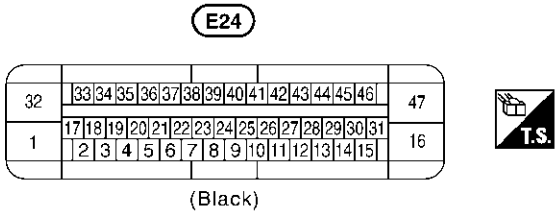
ECM



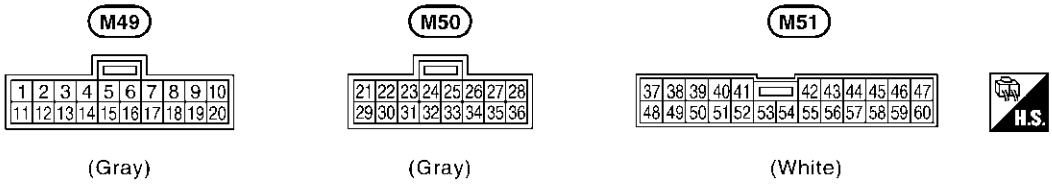
TCM (TRANSMISSION CONTROL MODULE)



ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

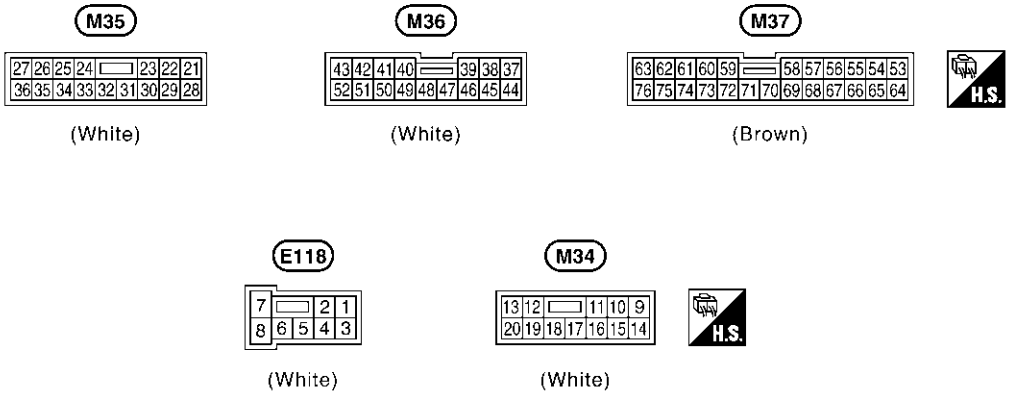


UNIFIED METER AND A/C AMP.



CKIA0322E

BCM (BODY CONTROL MODULE)



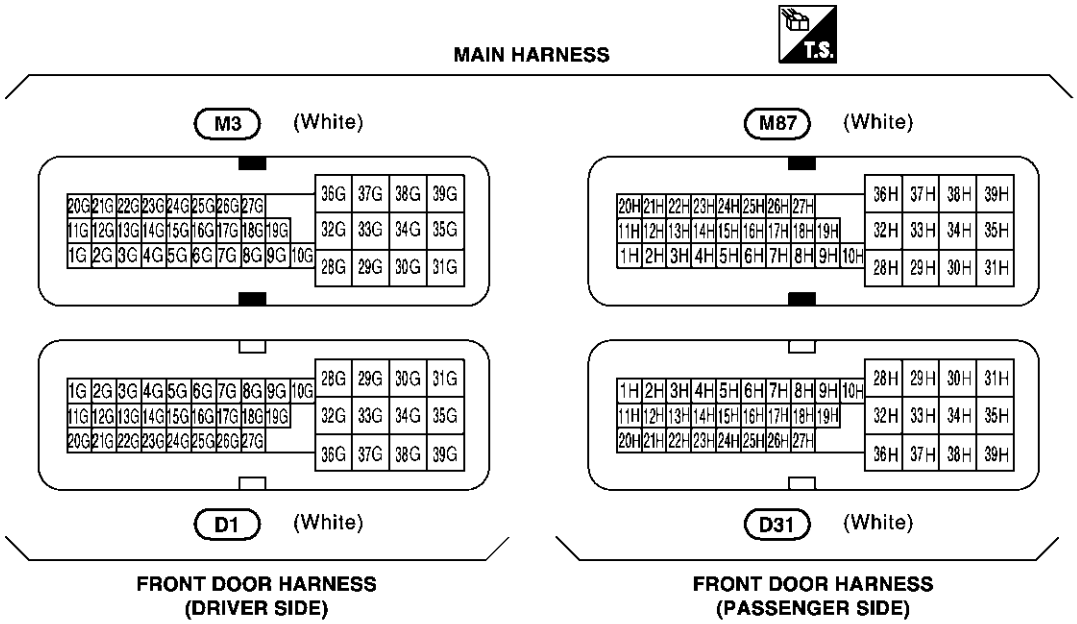
CKIA0291E

SMJ (SUPER MULTIPLE JUNCTION)

PFP:B4341

Terminal Arrangement

AKS007HQ



CKIA0292E

STANDARDIZED RELAY

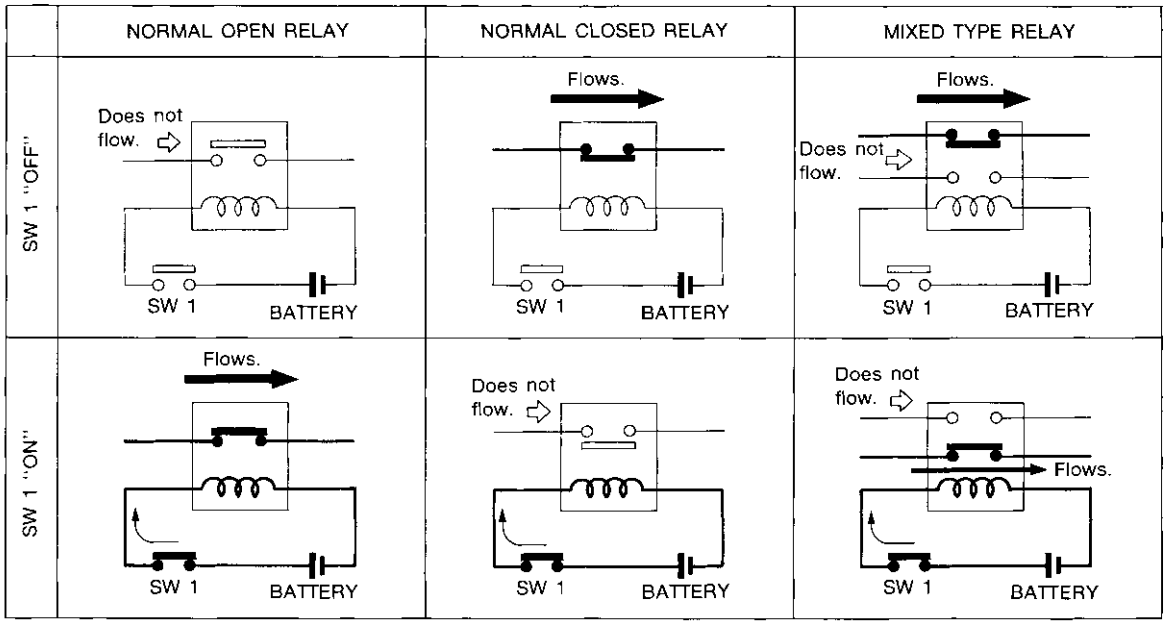
PFP:00011

Description

AKS007HR

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

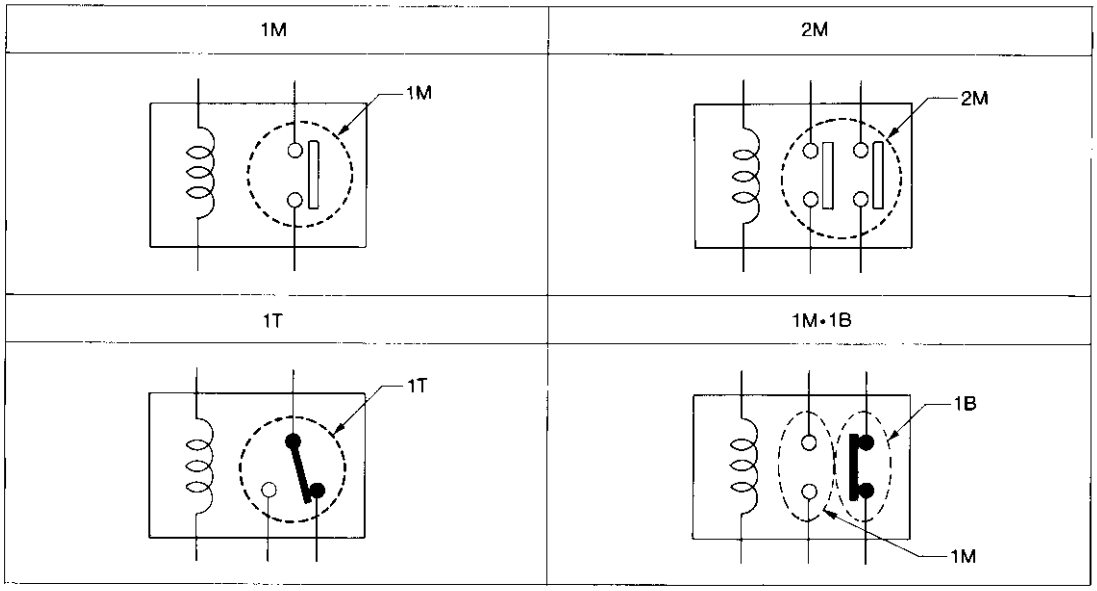
Relays can mainly be divided into three types: normal open, normal closed and mixed type relays.



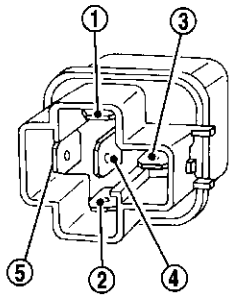
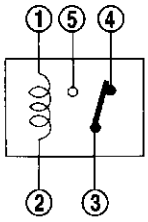
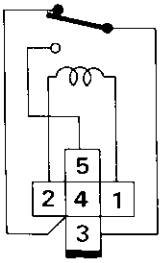
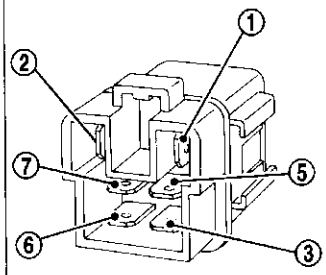
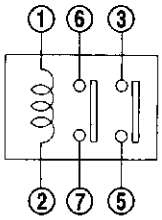
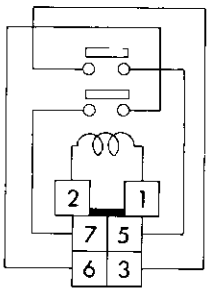
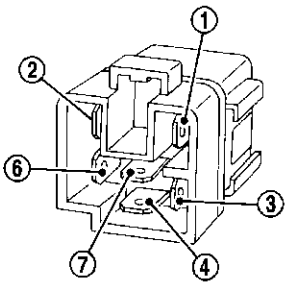
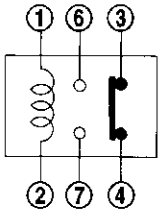
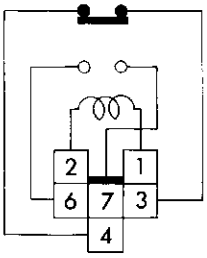
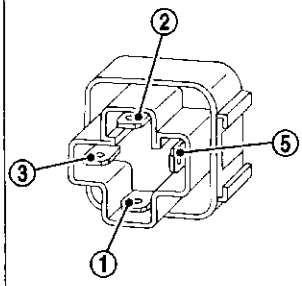
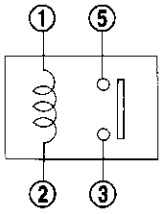
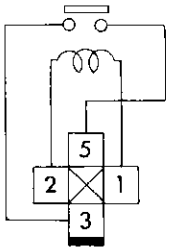
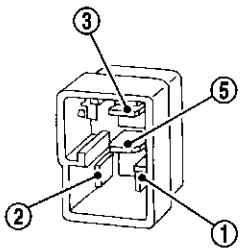
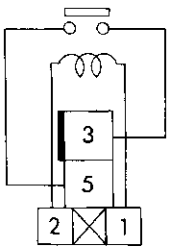
SEL881H

TYPE OF STANDARDIZED RELAYS

1M ..... 1 Make
2M ..... 2 Make
1T ..... 1 Transfer
1M·1B ..... 1 Make 1 Break



SEL882H

Type	Outer view	Circuit	Connector symbol and connection	Case color
1T				BLACK
2M				BROWN
1M•1B				GRAY
1M				BLUE
				

The arrangement of terminal numbers on the actual relays may differ from those shown above.

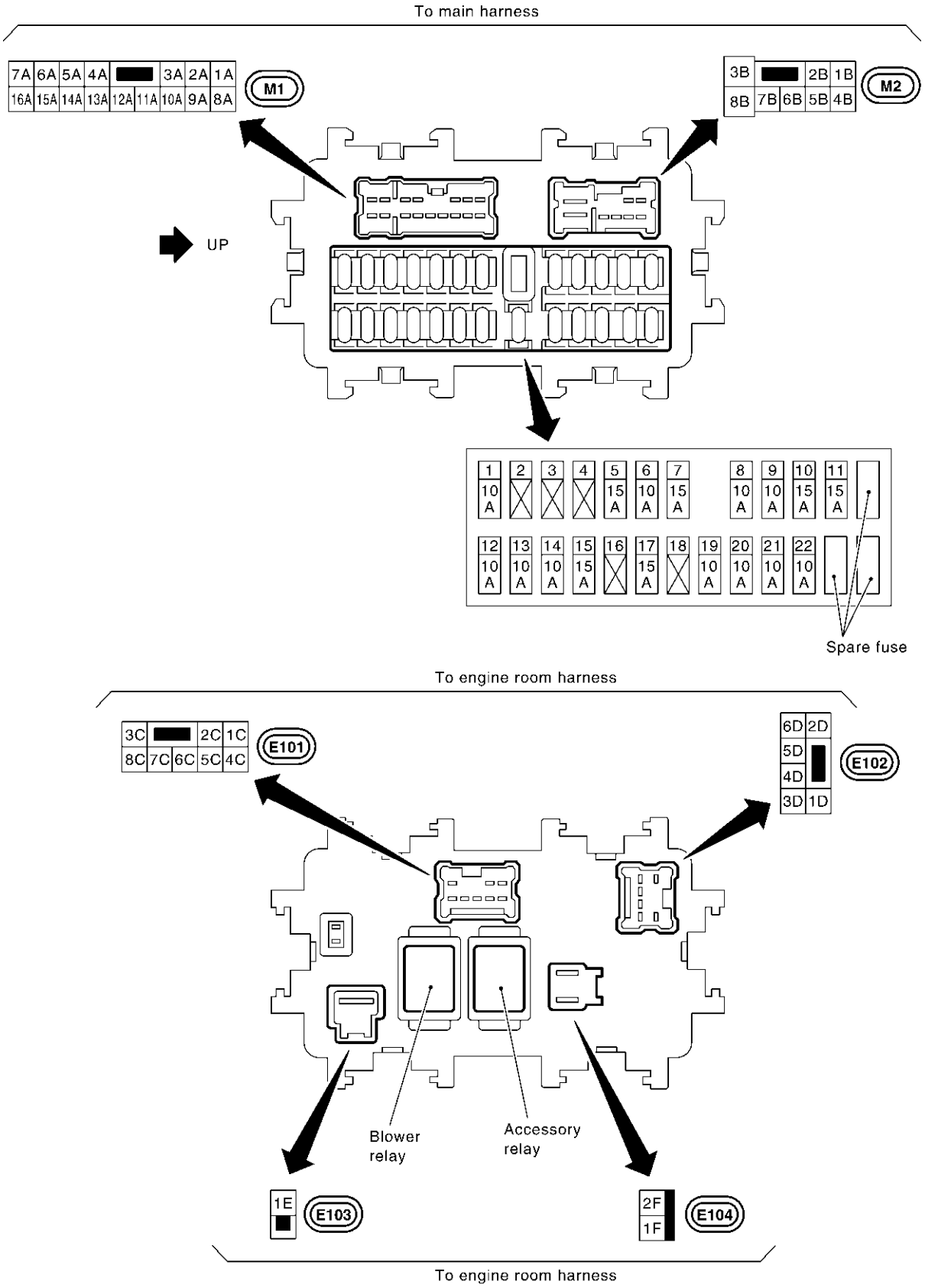
SEL188W

FUSE BLOCK - JUNCTION BOX (J/B)

PFP:24350

Terminal Arrangement

AKS007HS



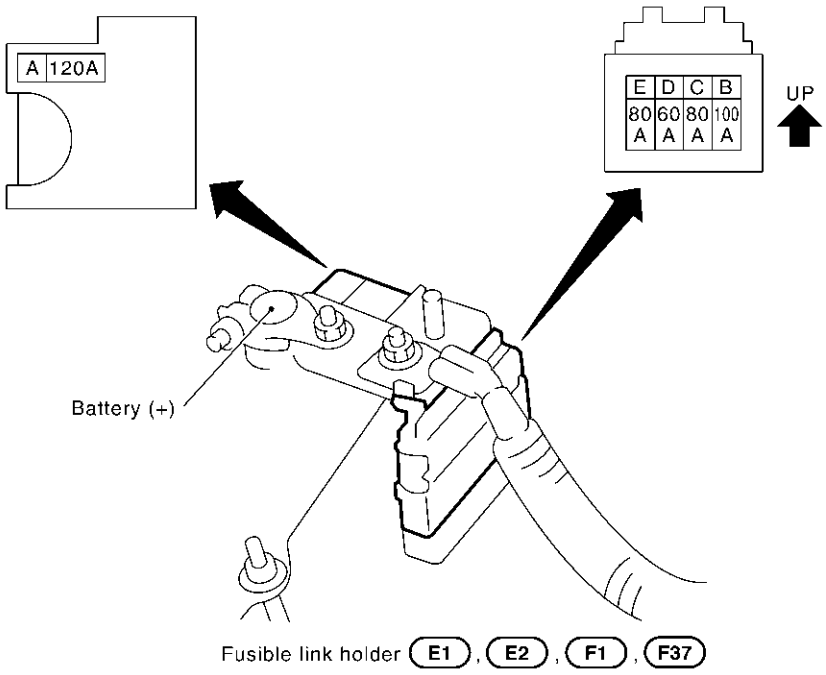
CKIA0293E

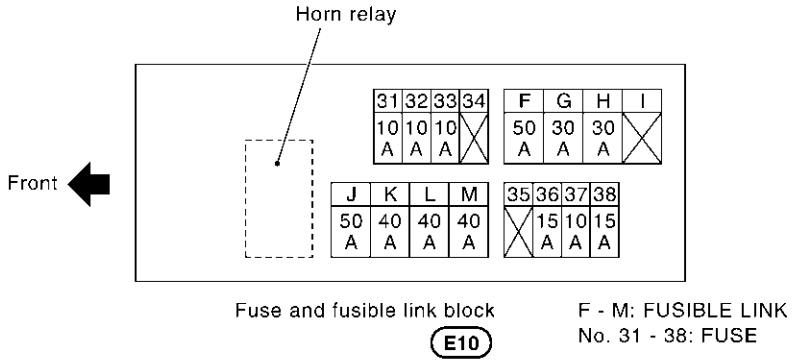
FUSE, FUSIBLE LINK AND RELAY BOX

PFP:24382

Terminal Arrangement

AKS007HT





CKIA0323E