SECTION LAN

LAN SYSTEM

CONTENTS

CAN

PRECAUTIONS

PFP:00001

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

EKS0089Q

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.**

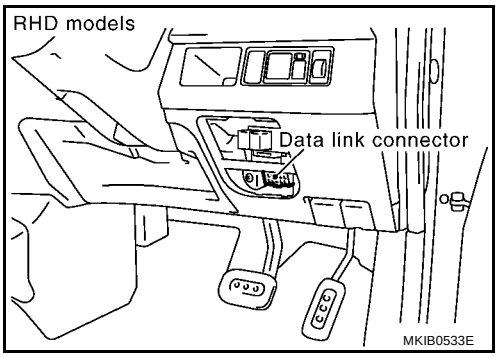
Precautions When Using CONSULT-II

EKS0073H

When connecting CONSULT-II to data link connector, connect them through CONSULT-II CONVERTER.

CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.



CHECK POINTS FOR USING CONSULT-II

1. Has CONSULT-II been used without connecting CONSULT-II CONVERTER on this vehicle?
   - If YES, GO TO 2.
   - If NO, GO TO 5.
2. Is there any indication other than indications relating to CAN communication system in the self-diagnosis results?
   - If YES, GO TO 3.
   - If NO, GO TO 4.
3. Based on self-diagnosis results unrelated to CAN communication, carry out the inspection.
4. Malfunctions may be detected in self-diagnosis depending on control units carrying out CAN communication. Therefore, erase the self-diagnosis results.
5. Diagnose CAN communication system. Refer to LAN-5, "CAN Communication Unit" .

Precautions For Trouble Diagnosis

EKS0073I

CAN SYSTEM

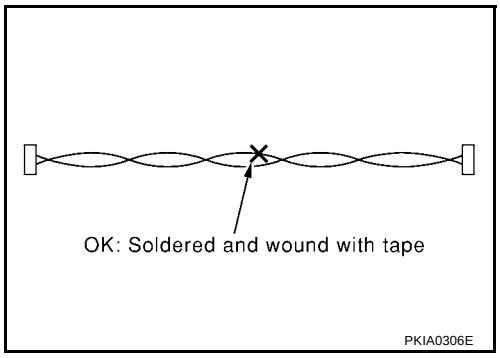
- Do not apply voltage of 7.0V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0V or less.
- Be sure to turn ignition switch off and disconnect negative battery terminal before checking the circuit.

Precautions For Harness Repair

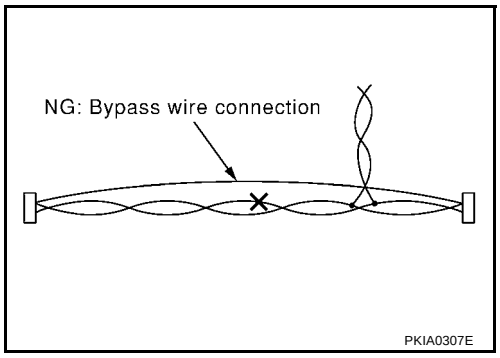
EKS0073J

CAN SYSTEM

- Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in)]



- Do not perform bypass wire connections for the repair parts. (The spliced wire will become separated and the characteristics of twisted line will be lost.)



Maintenance Information

EKS008WQ

If any of following part is replaced, always replace with new* one.
If it's not (or fail to do so), the electrical system may not be operated properly.
*: New one means a virgin control unit that has never been energized on-board.

RHD MODELS

- BCM (Models without Intelligent Key system)
- Intelligent Key unit (Models with Intelligent Key system)
- ECM
- IPDM E/R
- Combination meter
- EPS control unit

LHD MODELS

- BCM (Models without Intelligent Key system)
- Intelligent Key unit (Models with Intelligent Key system)
- ECM

CAN COMMUNICATION

PFP:23710

System Description

EKS007UG

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.

CAN Communication Unit

EKS007UH

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

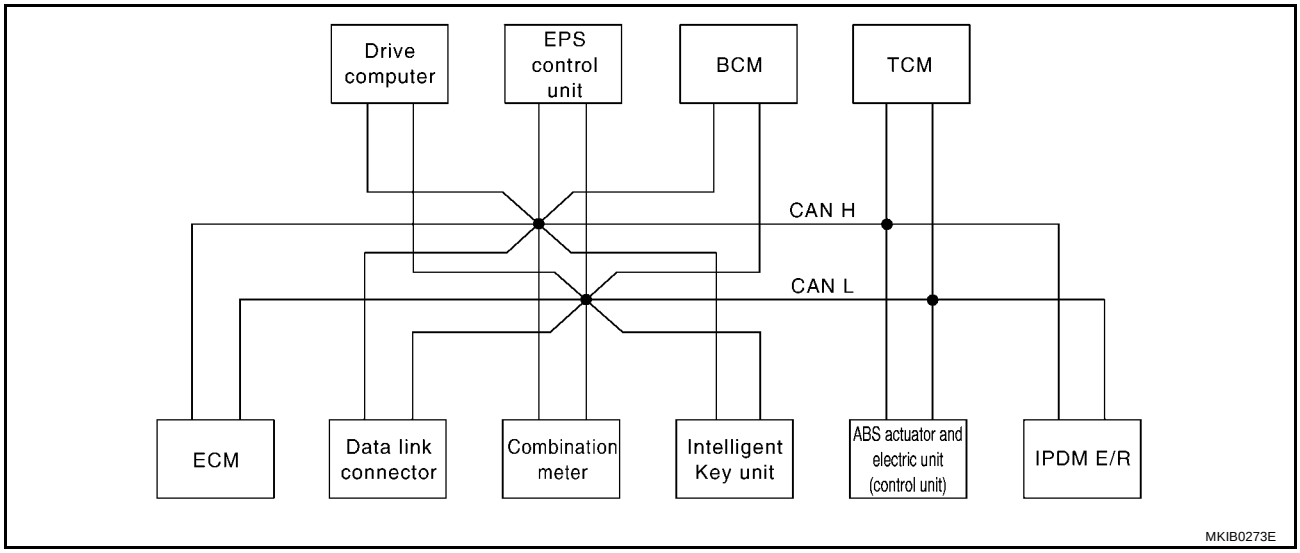
Body type	3door/5door							
Axle	2WD							
Engine	CR10DE/CR12DE/CR14DE							
Handle	LHD/RHD							
Brake control	ABS							
Transmission	A/T				M/T			
Intelligent Key system	Applicable		Not applicable		Applicable		Not applicable	
CAN communication unit								
ECM	×	×	×	×	×	×	×	×
Data link connector	×	×	×	×	×	×	×	×
Combination meter	×	×	×	×	×	×	×	×
Intelligent Key unit	×	×			×	×		
Drive computer	×		×		×		×	
EPS control unit	×	×	×	×	×	×	×	×
BCM	×	×	×	×	×	×	×	×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×	×
TCM	×	×	×	×				
IPDM E/R	×	×	×	×	×	×	×	×
CAN communication type	LAN-6, "TYPE 1/TYPE2"				LAN-9, "TYPE 3/TYPE4"			
CAN system trouble diagnosis	LAN-11, "CAN SYSTEM (TYPE 1)"		LAN-37, "CAN SYSTEM (TYPE 2)"		LAN-61, "CAN SYSTEM (TYPE 3)"		LAN-85, "CAN SYSTEM (TYPE 4)"	

×: Applicable

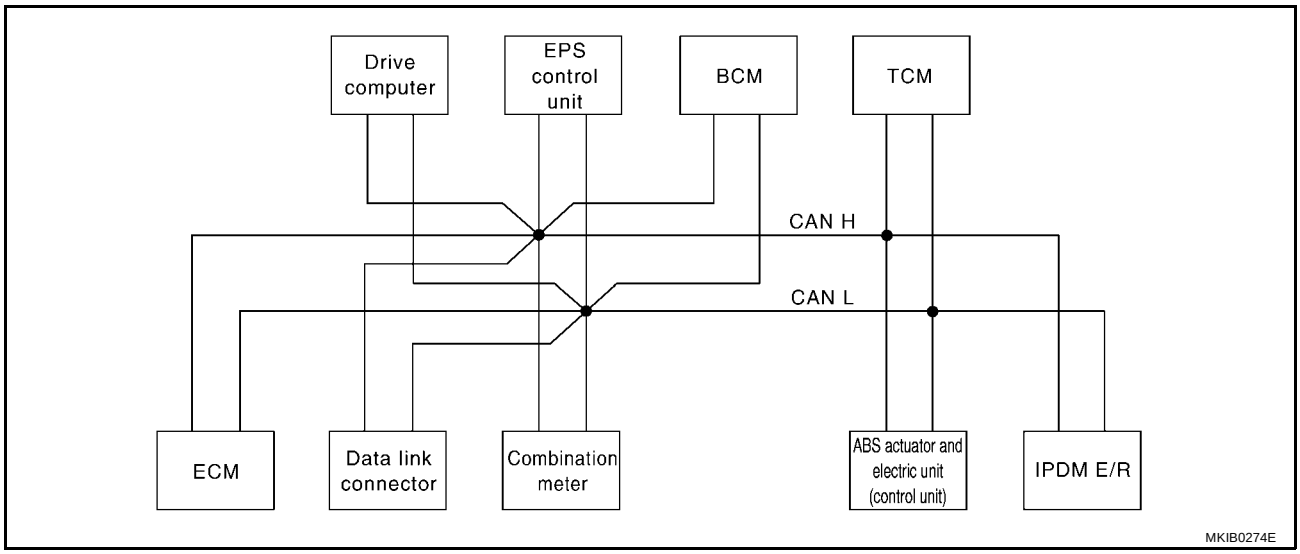
TYPE 1/TYPE2

System diagram

- Type1



- Type2



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combi-nation meter.	Intelli-gent Key unit	Drive com-puter	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Engine speed signal	T	R		R	R				
Engine coolant temperature sig-nal	T	R							
A/T self-diagnosis signal	R							T	
Output shaft revolution signal	R							T	
Accelerator pedal position signal	T							R	
Closed throttle position signal	T							R	
Wide open throttle position sig-nal	T							R	

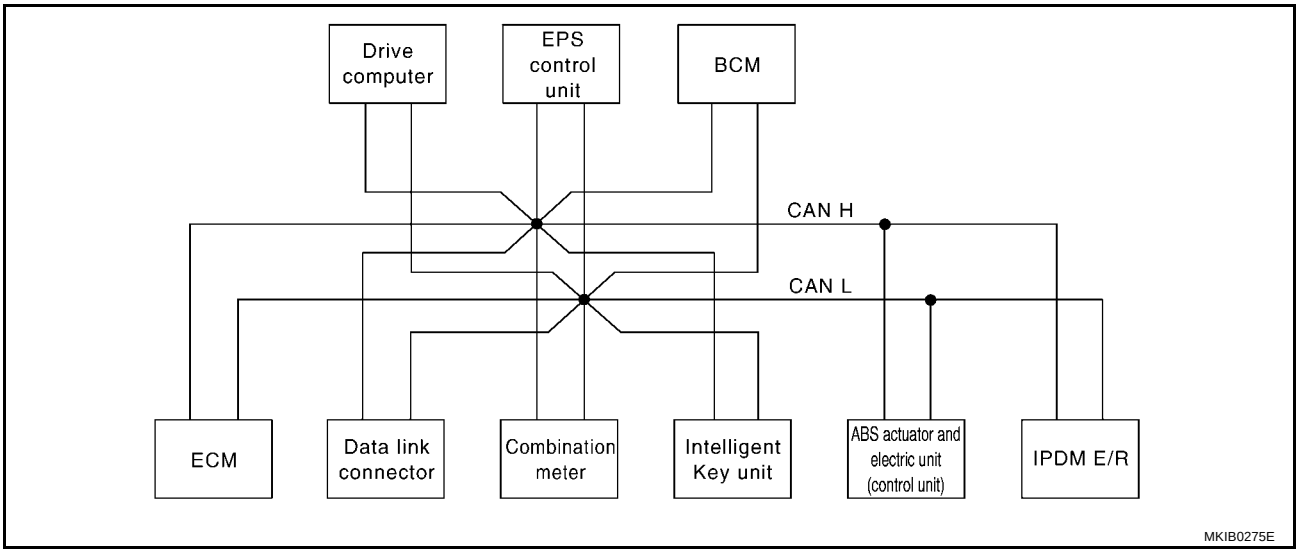
Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
A/T shift position signal		R						T	
Stop lamp switch signal		T						R	
O/D OFF indicator lamp signal		R						T	
Engine and A/T integrated control signal	T							R	
	R							T	
Fuel consumption monitor signal	T	R							
Oil pressure switch signal		R		R					T
A/C compressor request signal	T								R
Heater fan switch signal	R					T			
Cooling fan speed request signal	T								R
Cooling fan speed status signal	R								T
Position lights request signal		R		R		T			R
Position light status signal	R								T
Low beam request signal						T			R
Low beam status signal	R								T
High beam request signal		R				T			R
High beam status signal	R								T
Day time light request signal						T			R
Vehicle speed signal	R	R			R		T		
	R	T	R	R	R	R			
Sleep/wake up signal		R	R			T			R
Door switch signal		R	R	R		T			R
Turn indicator signal		R				T			
Buzzer output signal		R				T			
		R	T						
MI signal	T	R		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								T
Drive computer signal		T		R					
EPS warning lamp signal		R		R	T				
ABS warning lamp signal		R		R			T		
ABS operation signal	R						T		
Brake warning lamp signal		R		R			T		
Buck-up lamp signal					R	T			
Fuel low warning signal		T		R					
Battery charge malfunction signal		T		R					

Signals	ECM	Combi-nation meter.	Intelli-gent Key unit	Drive com-puter	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Air bag system warning signal		T		R					
Brake fluid level warning signal		T		R					
Engine coolant temperature warning signal		T		R					
Front fog lamp request signal		R				T			R
Rear fog lamp status signal		R				T			
Headlamp washer request signal						T			R
Door lock/unlock request signal			R			T			
Door lock/unlock status signal			R			T			
KEY indicator signal		R	T						
LOCK indicator signal		R	T						

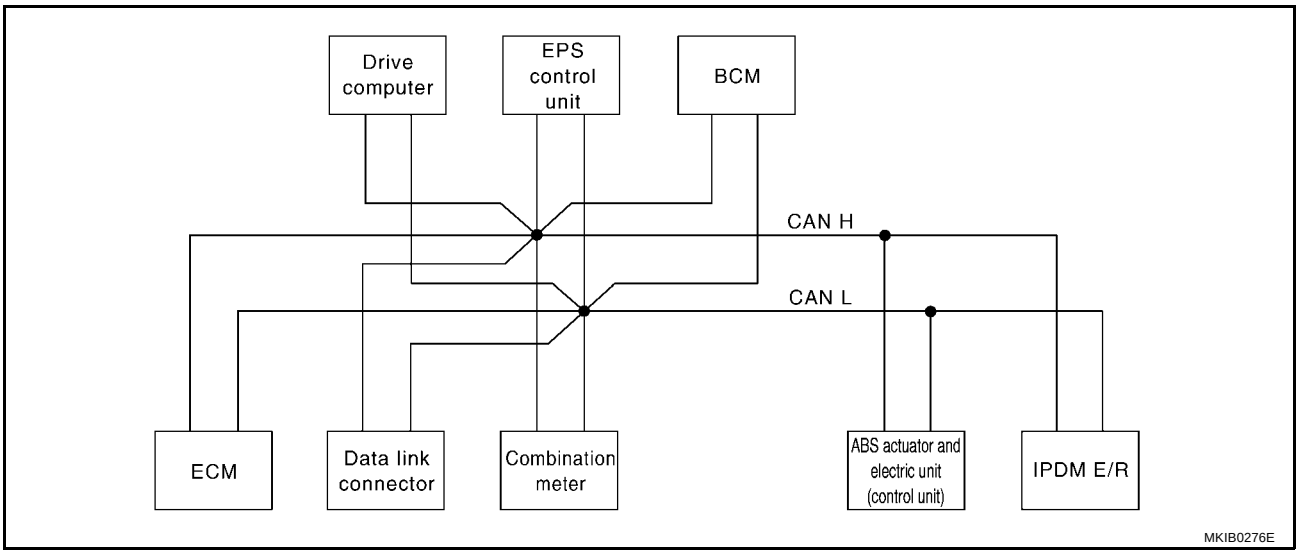
TYPE 3/TYPE4

System diagram

- Type3



- Type4



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R		R	R			
Engine coolant temperature signal	T	R						
Fuel consumption monitor signal	T	R						
Oil pressure switch signal		R		R				T
A/C compressor request signal	T							R
Heater fan switch signal	R					T		
Cooling fan speed request signal	T							R
Cooling fan speed status signal	R							T
Position lights request signal		R		R		T		R

Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	IPDM E/R
Position light status signal	R							T
Low beam request signal						T		R
Low beam status signal	R							T
High beam request signal		R				T		R
High beam status signal	R							T
Day time light request signal						T		R
Vehicle speed signal	R	R			R		T	
	R	T	R	R	R	R		
Sleep/wake up signal		R	R			T		R
Door switch signal		R	R	R		T		R
Turn indicator signal		R				T		
Buzzer output signal		R				T		
		R	T					
MI signal	T	R		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							T
Drive computer signal		T		R				
EPS warning indicator signal		R		R	T			
ABS warning lamp signal		R		R			T	
ABS operation signal	R			R			T	
Brake warning lamp signal		R					T	
Buck-up lamp signal					R	T		
Fuel low warning signal		T		R				
Battery charge malfunction signal		T		R				
Air bag system warning signal		T		R				
Brake fluid level warning signal		T		R				
Engine coolant temperature warning signal		T		R				
Front fog lamp request signal		R				T		R
Rear fog lamp status signal		R				T		
Headlamp washer request signal						T		R
Door lock/unlock request signal			R			T		
Door lock/unlock status signal			R			T		
KEY indicator signal		R	T					
LOCK indicator signal		R	T					

CAN SYSTEM (TYPE 1)

PFP:23710

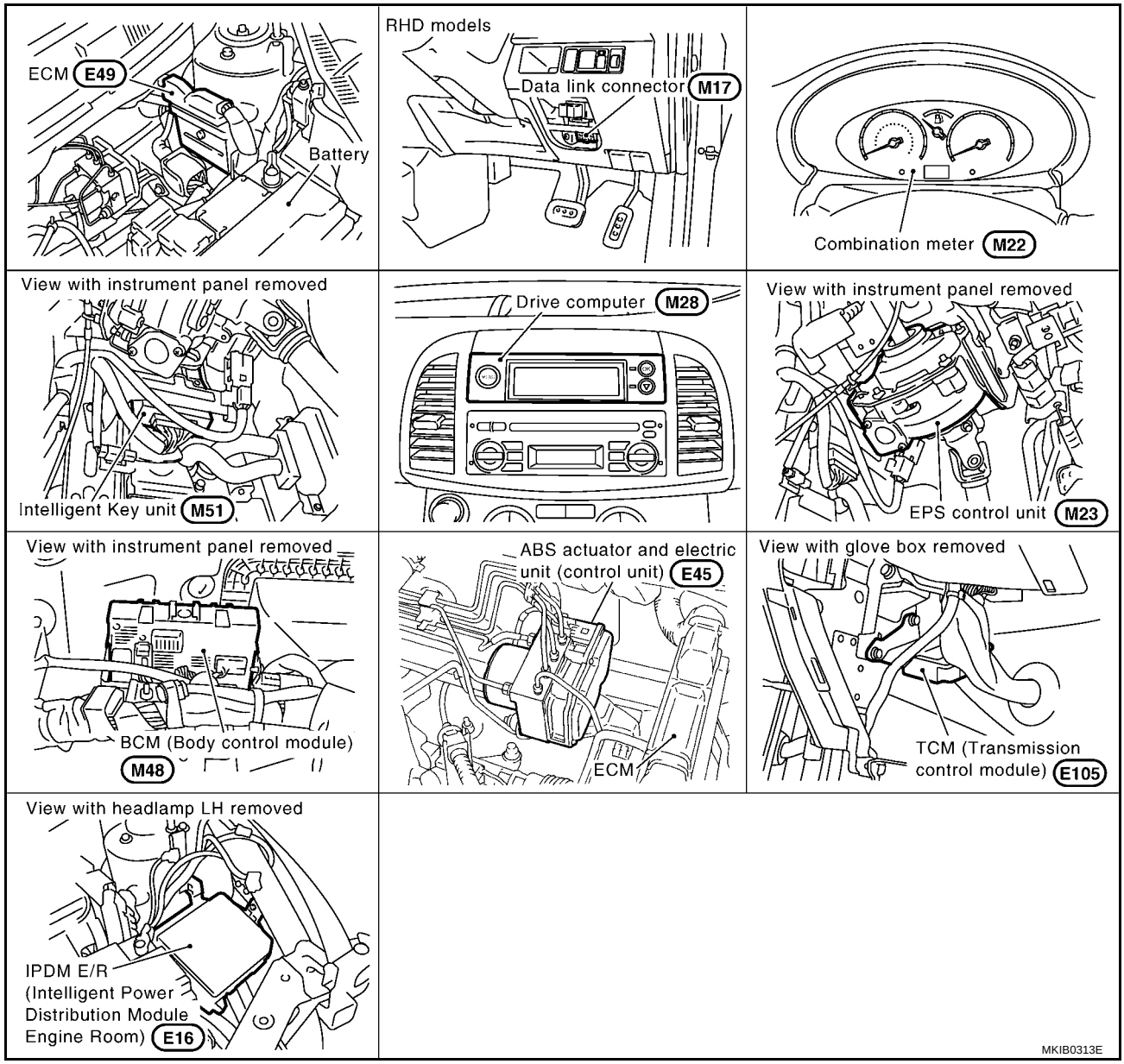
System Description

EKS0073M

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.

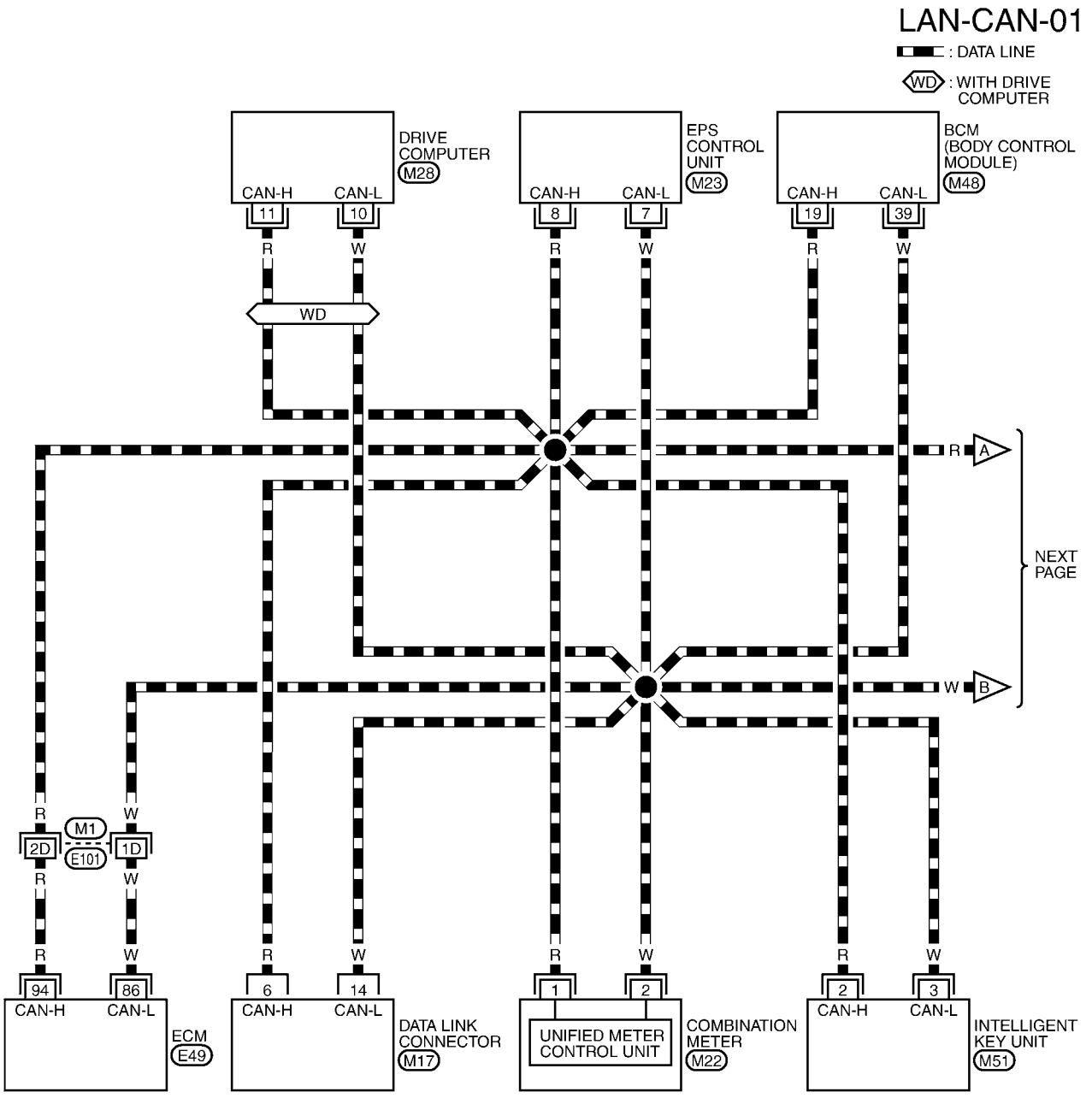
Component Parts and Harness Connector Location

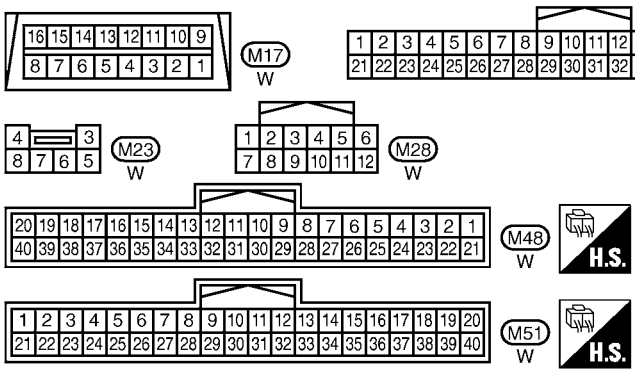
EKS0073N



Wiring Diagram — CAN —

EKS0073O





REFER TO THE FOLLOWING.

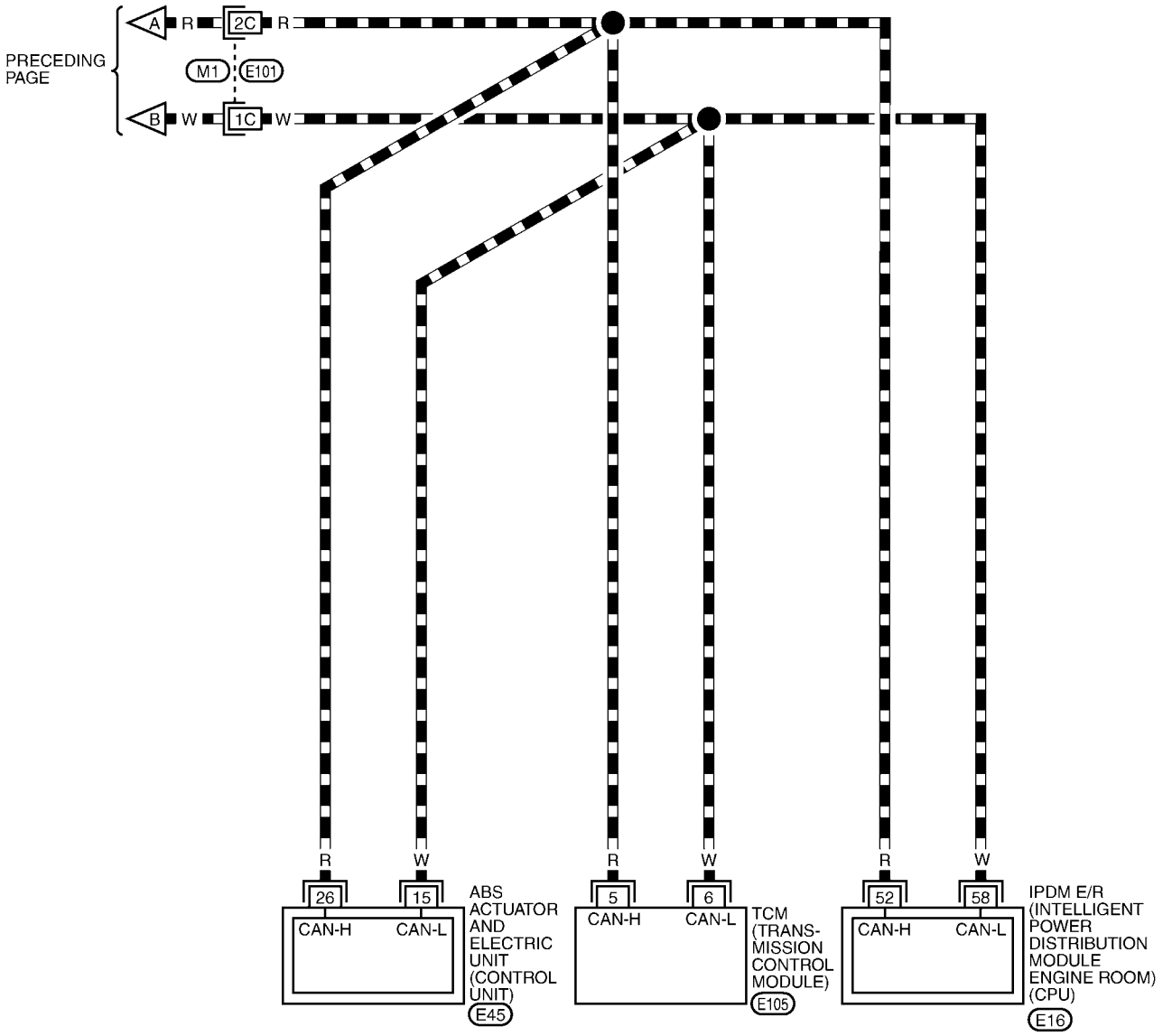
M1 -SUPER MULTIPLE JUNCTION (SMJ)

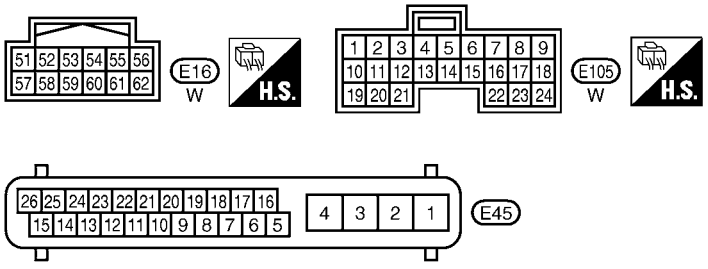
E49 -ELECTRICAL UNITS

MKWA0790E

LAN-CAN-02

: DATA LINE





REFER TO THE FOLLOWING.

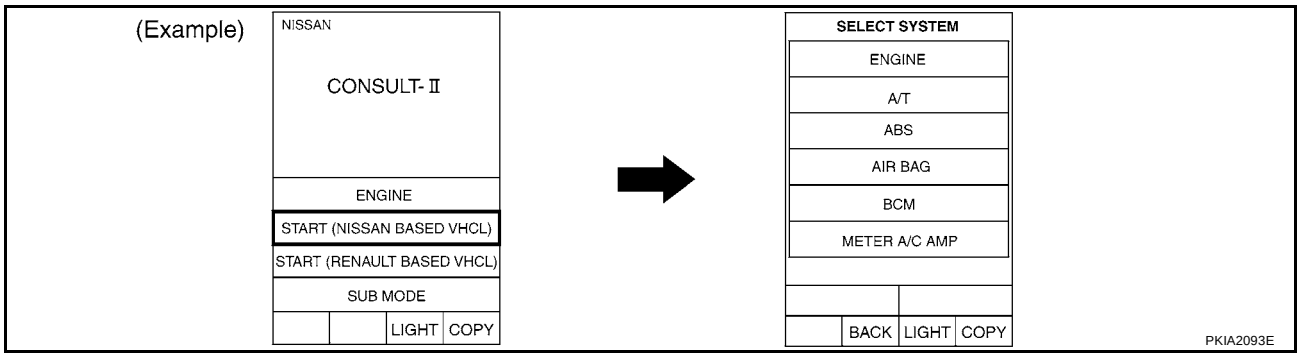
M1 -SUPER MULTIPLE JUNCTION (SMJ)

MKWA0791E

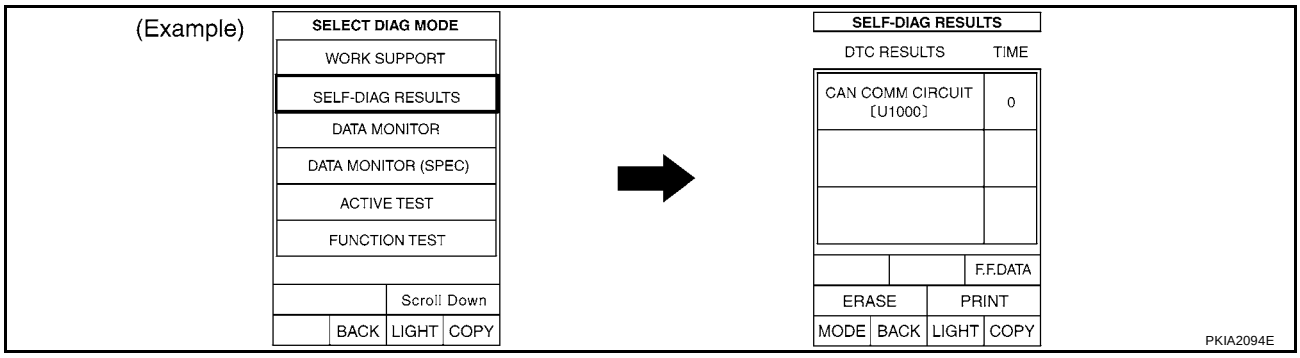
Work Flow

EKS0073P

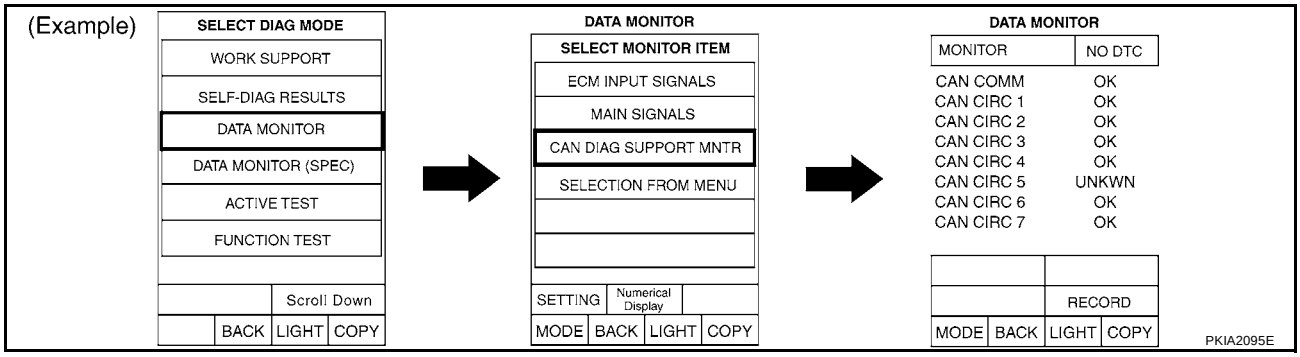
1. When there are no indications of “INTELLIGENT KEY”, “EPS”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “INTELLIGENT KEY”, “EPS”, “BCM”, “ABS”, “A/T” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “DATA MONITOR (CAN DIAG SUPPORT MNTR)” for “ENGINE”, “INTELLIGENT KEY”, “EPS”, “BCM”, “ABS”, “A/T” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “DATA MONITOR (CAN DIAG SUPPORT MNTR)” onto the check sheet. Refer to LAN-15, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “DATA MONITOR (CAN DIAG SUPPORT MNTR)”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-15, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “CAN COMM” as “DATA MONITOR (CAN DIAG SUPPORT MNTR)” for the diagnosed control unit, replace the control unit.
   - The “DATA MONITOR (CAN DIAG SUPPORT MNTR)” items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
     So it is not necessary to check the status of “DATA MONITOR (CAN DIAG SUPPORT MNTR)” items which are not indicated in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-17, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

Check sheet table

SELECT SYSTEM		DATA MONITOR (CAN DIAG SUPPORT MNTR)									
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

Symptoms:

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

MKIB0277E

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
INTELLIGENT KEY
SELF-DIAG RESULTS

Attach copy of
EPS
SELF-DIAG RESULTS

Attach copy of
BCM
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
A/T
SELF-DIAG RESULTS

Attach copy of
IPDM E/R
SELF-DIAG RESULTS

Attach copy of
ENGINE
DATA MONITOR

Attach copy of
INTELLIGENT KEY
DATA MONITOR

Attach copy of
EPS
DATA MONITOR

Attach copy of
BCM
DATA MONITOR

Attach copy of
ABS
DATA MONITOR

Attach copy of
A/T
DATA MONITOR

Attach copy of
IPDM
DATA MONITOR

MKIB0278E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	—	CAN COMM ✓	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4 ✓	—	CAN CIRC 9 ✓	CAN CIRC 6 ✓	CAN CIRC 3 ✓	CAN CIRC 2 ✓	CAN CIRC 7 ✓
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

Case 2: Replace intelligent Key unit

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM ✓	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4 ✓	CAN CIRC 3 ✓	—	—	CAN CIRC 2 ✓	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

Case 3: Replace EPS control unit

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	—	—	CAN CIRC 5 ✓	CAN CIRC 3 ✓	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

Case 4: Replace BCM

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 5 ✓	—	—	—	CAN CIRC 6 ✓	CAN CIRC 3 ✓
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

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Case 5: Replace ABS actuator and electric unit (control unit)

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3 ✓	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3 ✓	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

Case 6: Replace TCM

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2 ✓	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6 ✓	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

Case 7: Replace IPDM E/R

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3 ✓	—	—	—	CAN CIRC 3 ✓	—	—	—

Case 8

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3 ✓	CAN CIRC 2 ✓	CAN CIRC 7 ✓
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3 ✓	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6 ✓	CAN CIRC 3 ✓
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	—	—	—	—	—	—
IPDM E/R	No indication ✓	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

Case 9

ENGINE	—	CAN COMM	CAN CIRC 1 ✓	—	CAN CIRC 4	—	CAN CIRC 9 ✓	CAN CIRC 6 ✓	CAN CIRC 3 ✓	CAN CIRC 2 ✓	CAN CIRC 7 ✓
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4 ✓	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3 ✓	—	—	—	CAN CIRC 3	—	—	—

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Case 10

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication ✓	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication ✓	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

Case 11

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4 ✓	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3 ✓	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

Case 12

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5 ✓	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

Case 13

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9 ✓	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

Case 14

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6 ✓	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2 ✓	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5 ✓	CAN CIRC 3	—	—
BCM	No indication ✓	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3 ✓	—	—	—

Case 15

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3 ✓	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3 ✓	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

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Case 16

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

Case 17

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

Case 18

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

Case 19

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

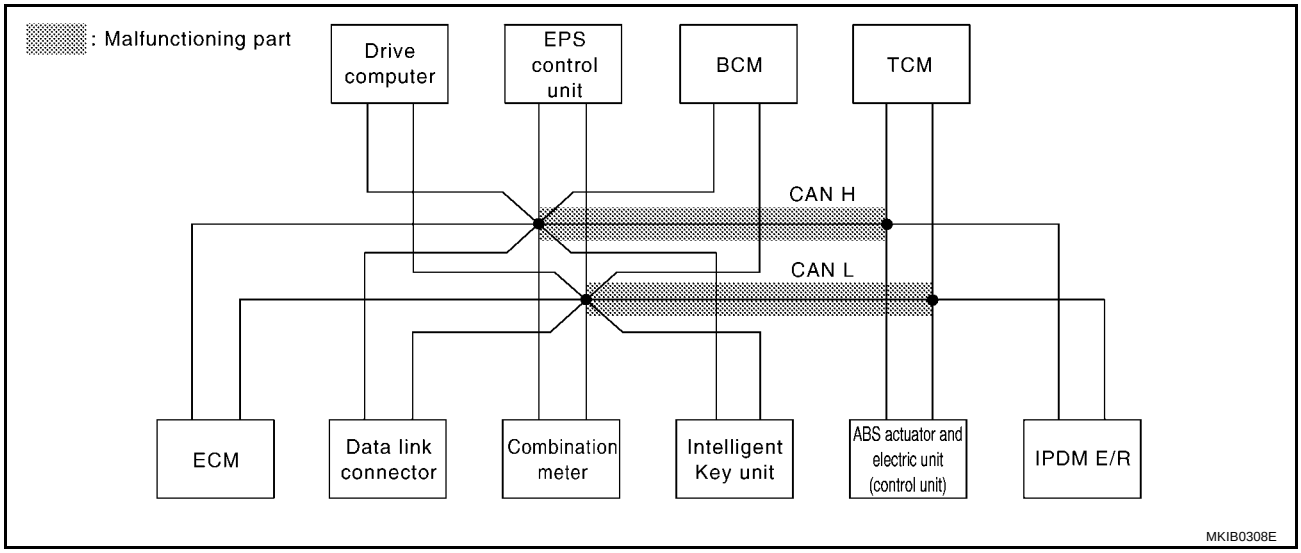
MKIB0285E

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1: Replace ECM.
Case 2: Replace Intelligent Key unit.
Case 3: Replace EPS control unit.
Case 4: Replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .
Case 5: Replace ABS actuator and electric unit (control unit).
Case 6: Replace TCM.
Case 7: Replace IPDM E/R.
Case 8: Check harness between BCM and ABS actuator and electric unit (control unit). Refer to LAN-22, "Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)" .
Case 9: Check ECM circuit. Refer to LAN-24, "ECM Circuit Check" .
Case 10: Check data link connector circuit. Refer to LAN-25, "Data Link Connector Circuit Check" .
Case 11: Check combination meter circuit. Refer to LAN-26, "Combination Meter Circuit Check" .
Case 12: Check Intelligent Key unit circuit. Refer to LAN-27, "Intelligent Key Unit Circuit Check"
Case 13: Check EPS control unit circuit. Refer to LAN-28, "EPS Control Unit Circuit Check"
Case 14: Check BCM circuit. Refer to LAN-29, "BCM Circuit Check" .
Case 15: Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-30, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .
Case 16: Check TCM circuit. Refer to LAN-31, "TCM Circuit Check" .
Case 17: Check IPDM E/R circuit. Refer to LAN-32, "IPDM E/R Circuit Check" .
Case 18: Check CAN communication circuit. Refer to LAN-33, "CAN Communication Circuit Check" .
Case 19: Check IPDM E/R ignition relay circuit. Refer to LAN-36, "IPDM E/R Ignition Relay Circuit Check" .

Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)

EKS0073Q



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).

- Harness connector M1
- Harness connector E101

OK or NG

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

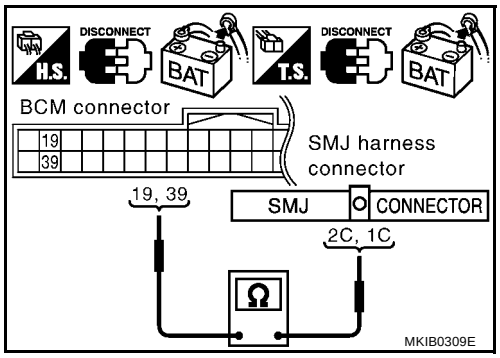
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.

- Harness connector M1
- Combination meter connector
- Intelligent Key unit connector
- Drive computer connector
- EPS control unit connector
- BCM connector

2. Check continuity between BCM harness connector M48 terminals 19 (R), 39 (W) and harness connector M1 terminals 2C (R), 1C (W).

19 (R) – 2C (R) : Continuity should exist.
39 (W) –1C (W) : Continuity should exist.



OK or NG

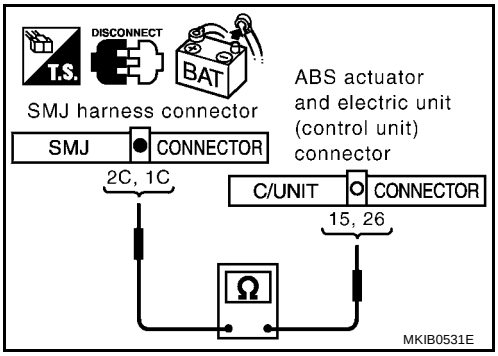
OK >> GO TO 3.
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W).

2C (R) – 26 (R) : Continuity should exist.

1C (W) – 15 (W) : Continuity should exist.



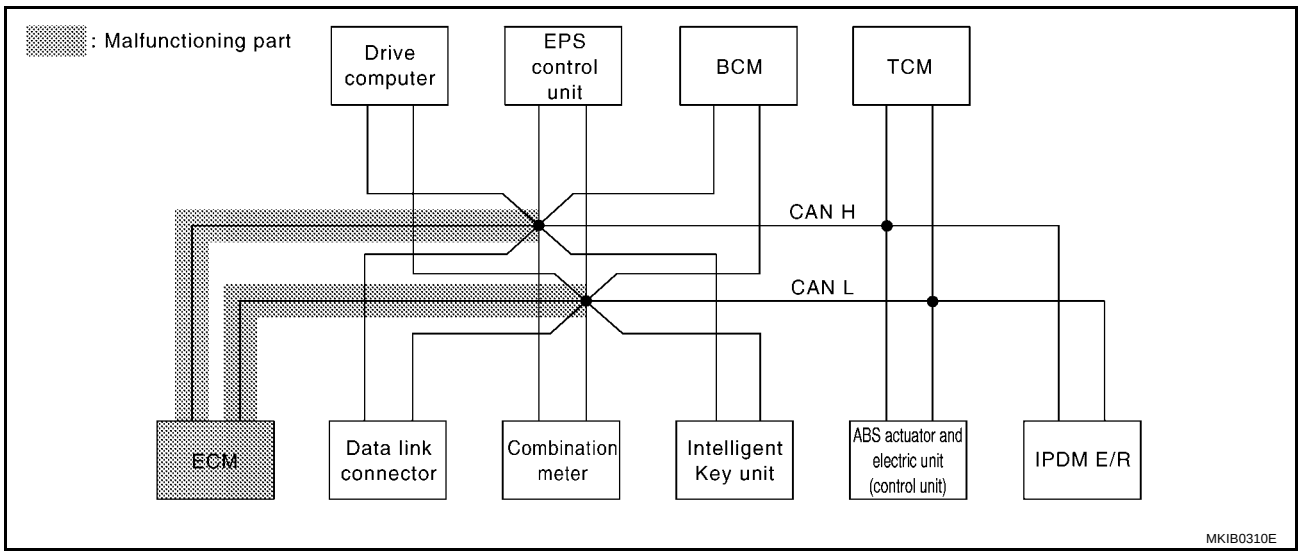
OK or NG

OK >> Reconnect all connectors to perform “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “DATA MONITOR (CAN DIAG SUPPORT MNTR)” displayed on CONSULT-II. Refer to LAN-14, "Work Flow" .

NG >> Repair harness.

ECM Circuit Check

EKS0073U



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).

- ECM connector
- Harness connector M1
- Harness connector E101

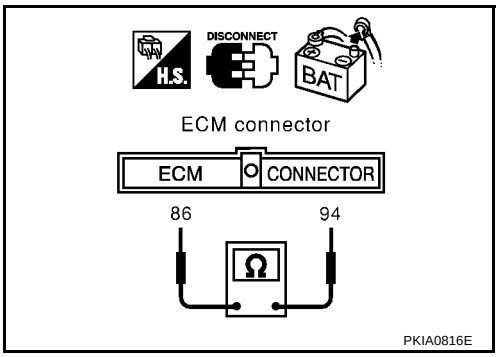
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W) : Approx. 108 – 132Ω

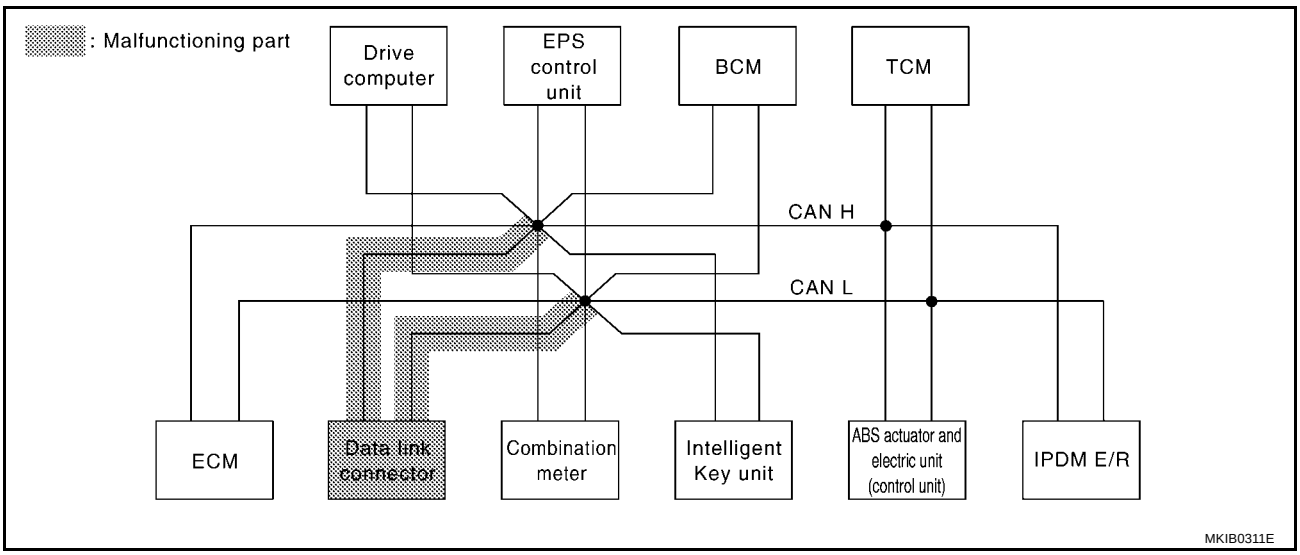


OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and data link connector.

Data Link Connector Circuit Check

EKS0073W



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check date link connector and terminals for damage, bend and loose connection (connector side and harness side).

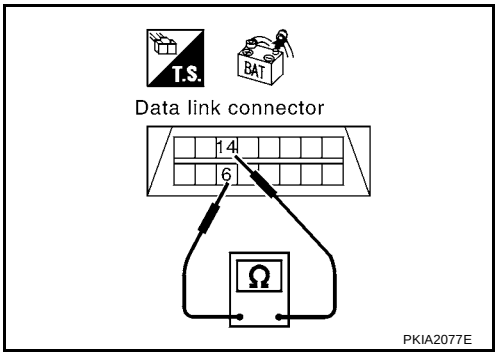
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

6 (R) – 14 (W) : Approx. 54 – 66Ω

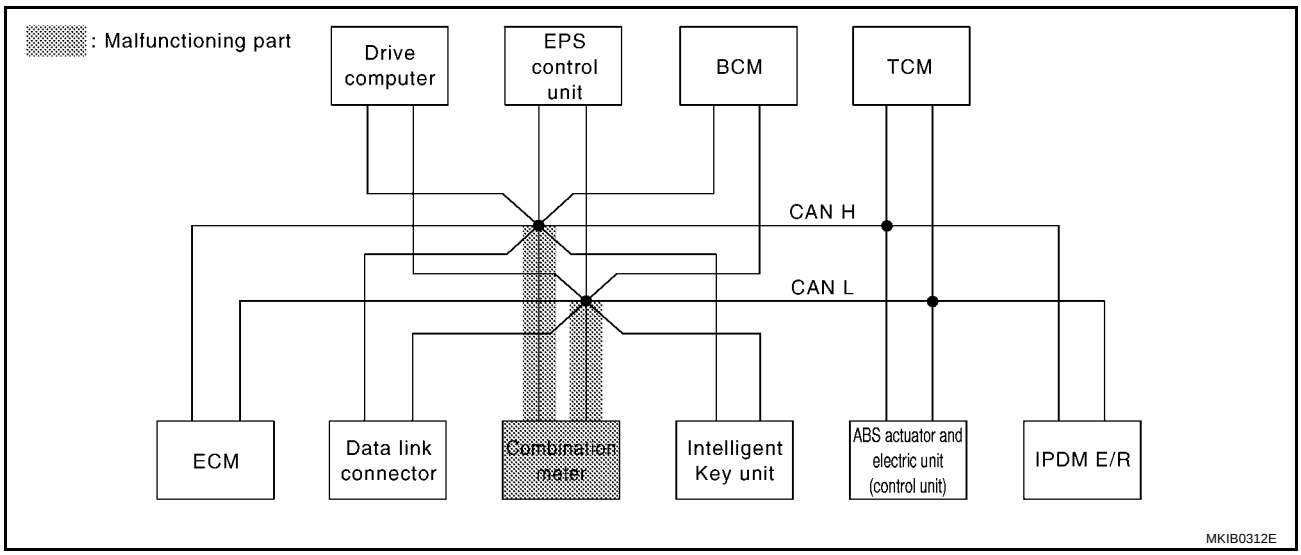


OK or NG

OK >> Perform “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “DATA MONITOR (CAN DIAG SUPPORT MNTR)” displayed on CONSULT-II. Refer to LAN-14, "Work Flow" .
NG >> Repair harness between data link connector and combination meter

Combination Meter Circuit Check

EKS0073X



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

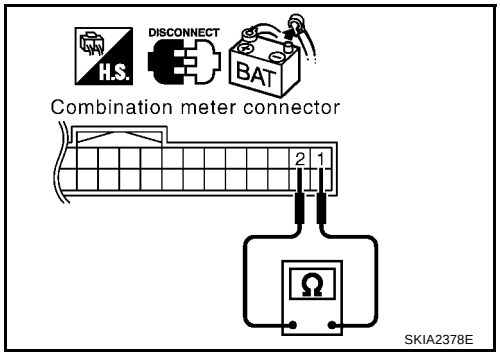
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

1 (R) – 2 (W) : Approx. 54 – 66Ω

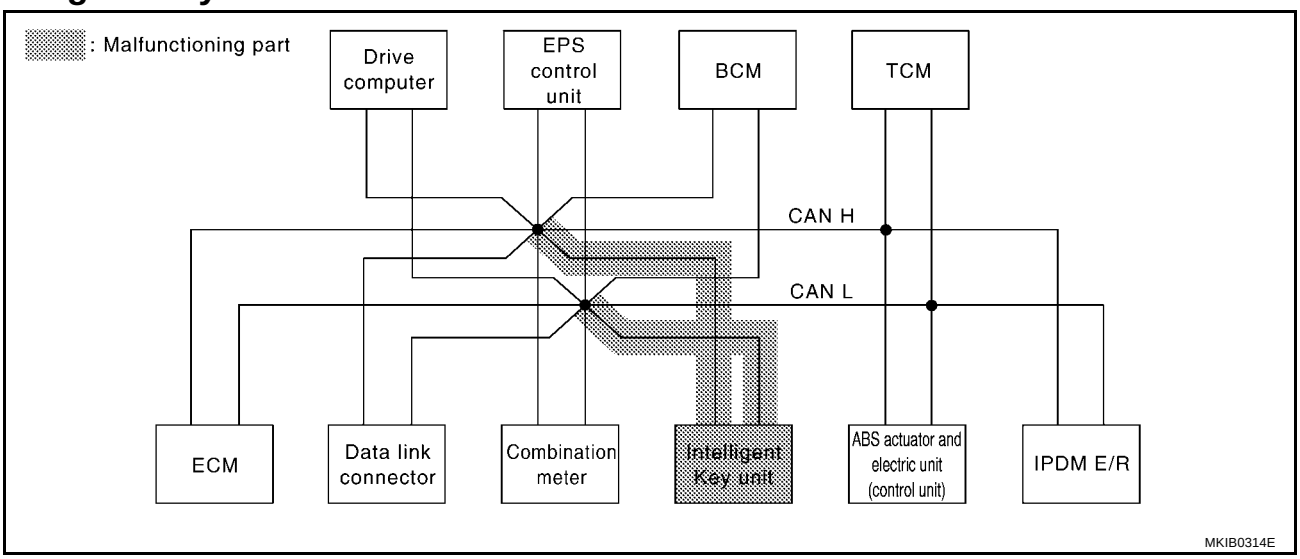


OK or NG

OK >> Replace combination meter
NG >> Repair harness between combination meter and data link connector.

Intelligent Key Unit Circuit Check

EKS007XM



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of Intelligent Key unit for damage, bend and loose connection (control unit side and harness side).

OK or NG

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

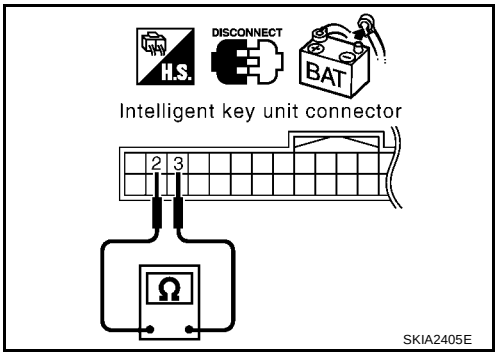
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect Intelligent Key unit connector.
2. Check resistance between Intelligent Key unit harness connector M51 terminals 2 (R) and 3 (W).

2 (R) – 3 (W) : Approx. 54 – 66Ω

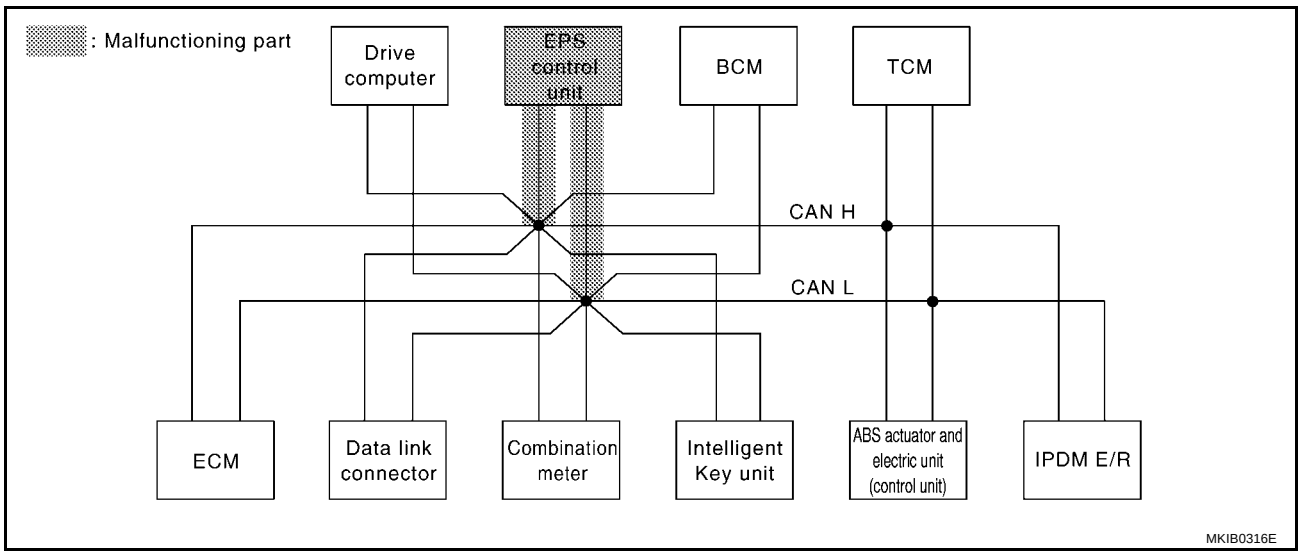
OK or NG

OK >> Replace Intelligent Key unit.
NG >> Repair harness between Intelligent Key unit and data link connector.



EPS Control Unit Circuit Check

EKS007XN



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of EPS control unit for damage, bend and loose connection (control unit side and harness side).

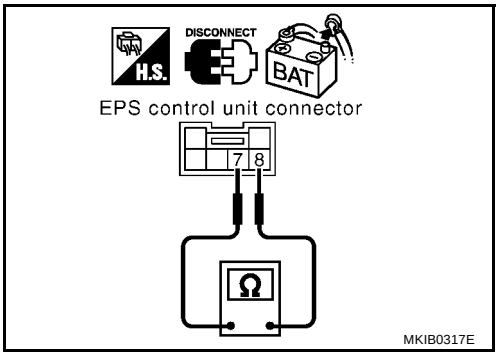
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

8 (R) – 7 (W) : Approx. 54 – 66Ω

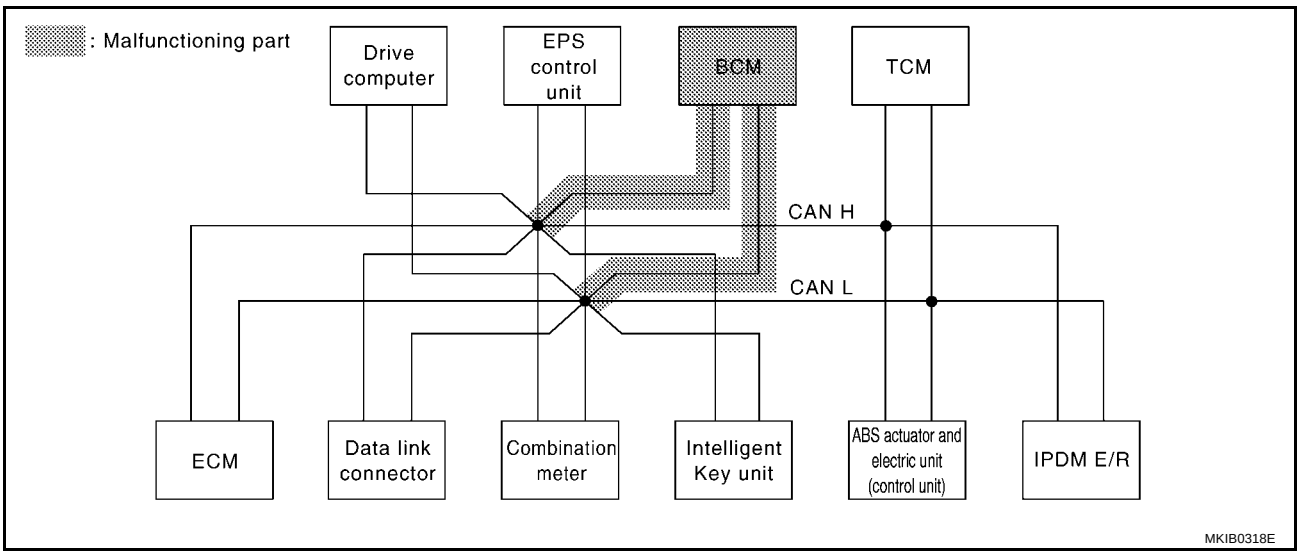


OK or NG

OK >> Replace EPS control unit.
NG >> Repair harness between EPS control unit and data link connector.

BCM Circuit Check

EKS0073Y



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of BCM for damage, bend and loose connection (control module side and harness side).

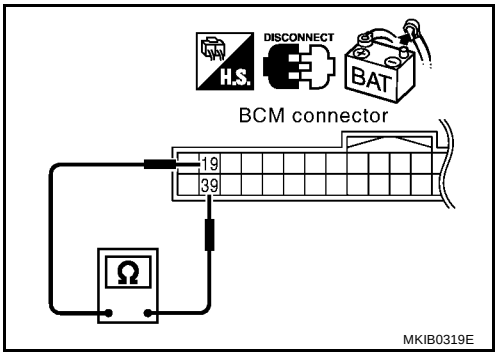
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

19 (R) – 39 (W) : Approx. 54 – 66Ω

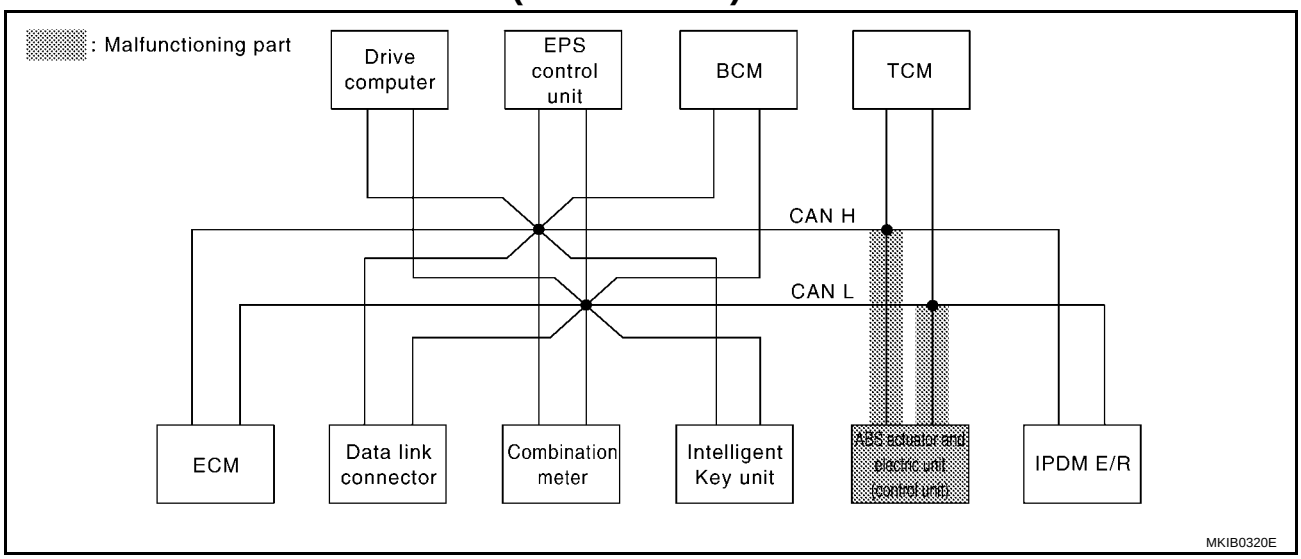


OK or NG

OK >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

ABS Actuator and Electric Unit (Control Unit) Circuit Check

EKS0073Z



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

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

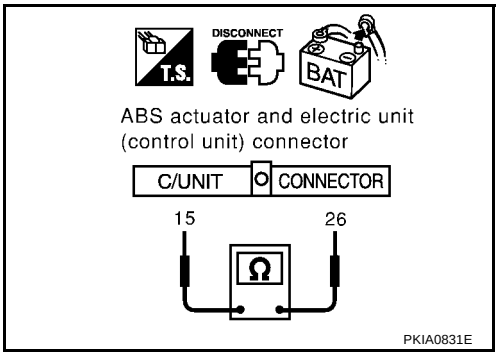
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

26 (R) – 15 (W) : Approx. 54 – 66Ω

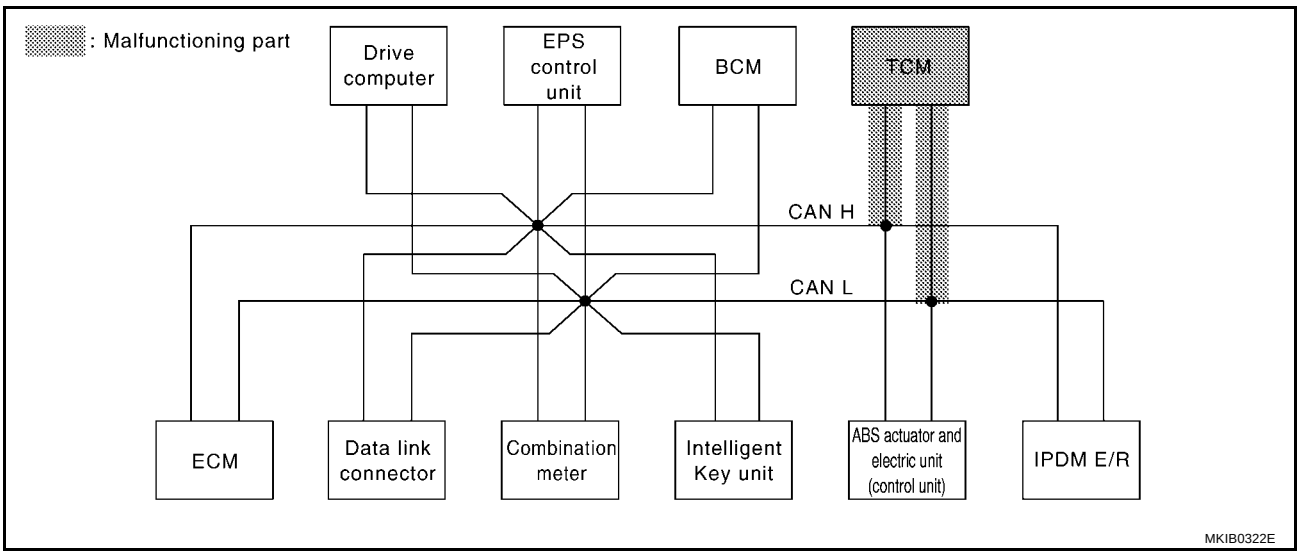
OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) and TCM.



TCM Circuit Check

EKS0073V



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of TCM for damage, bend and loose connection (control module side and harness side).

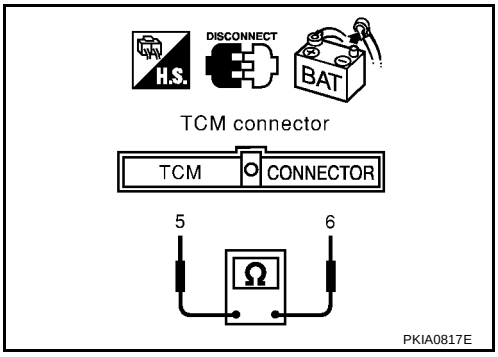
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector E105 terminals 5 (R) and 6 (W).

5 (R) – 6 (W) : Approx. 54 – 66Ω

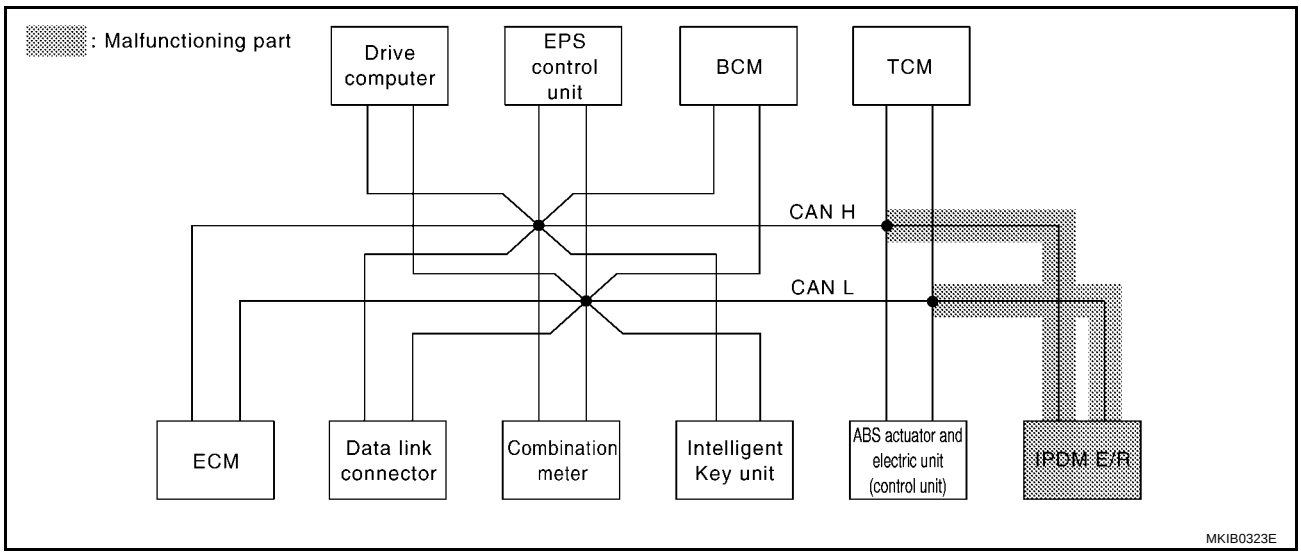


OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM and IPDM E/R.

IPDM E/R Circuit Check

EKS00740



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

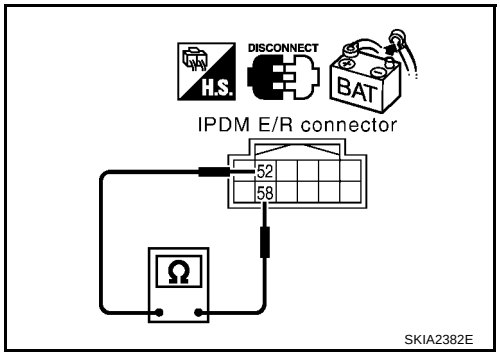
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

52 (R) – 58 (W) : Approx. 108 – 132Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and TCM.

CAN Communication Circuit Check

EKS00741

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side, meter side, control unit side and harness side).

- ECM
- Combination meter
- Intelligent Key unit
- Drive computer
- EPS control unit
- BCM
- ABS actuator and electric unit (control unit)
- TCM
- IPDM E/R
- Between ECM and IPDM E/R

OK or NG

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

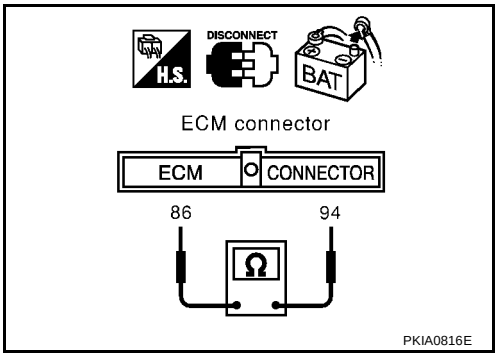
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 3.
NG >> Repair harness between ECM and harness connector E101.



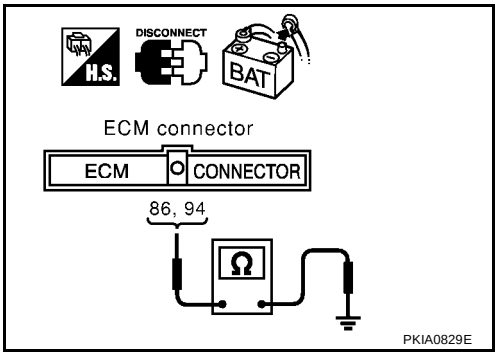
3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E49 terminals 94 (R), 86 (W) and ground.

94 (R) – Ground : Continuity should not exist.
86 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 4.
NG >> Repair harness between ECM and harness connector E101.

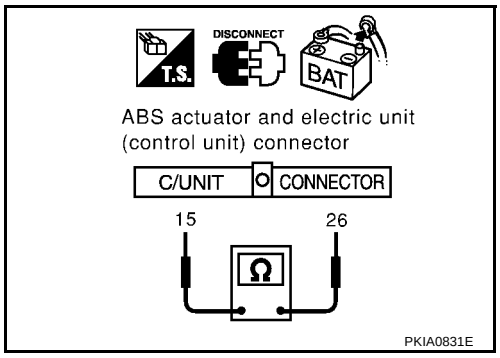


4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- ABS actuator and electric unit (control unit) connector
- TCM connector
- IPDM E/R connector

2. Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

26 (R) – 15 (W) : Continuity should not exist.



OK or NG

OK >> GO TO 5.

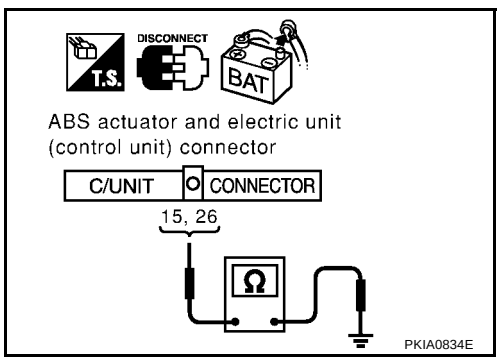
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W) and ground.

26 (R) – Ground : Continuity should not exist.

15 (W) – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 6.

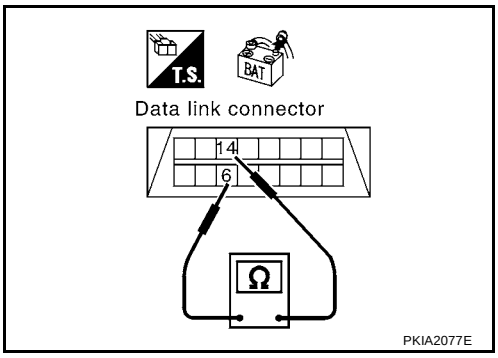
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Combination meter connector
- Intelligent Key unit connector
- Drive computer connector
- EPS control unit connector
- BCM connector

2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

6 (R) – 14 (W) : Continuity should not exist.



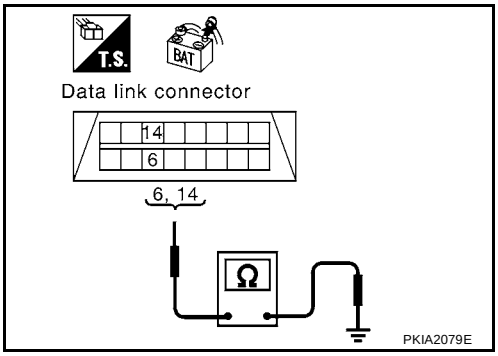
OK or NG

OK >> GO TO 7.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

6 (R) – Ground : Continuity should not exist.
14 (W) – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 8.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM

8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-36, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .

OK or NG

OK >> Reconnect all connectors to perform “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “DATA MONITOR (CAN DIAG SUPPORT MNTR)” displayed on CONSULT-II. Refer to LAN-14, "Work Flow" .
NG >> Replace ECM and/or IPDM E/R.

IPDM E/R Ignition Relay Circuit Check

EKS00742

Perform the self-diagnosis for IPDM E/R. Refer to PG-35, "Inspection With CONSULT-II (Self-Diagnosis)" . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to PG-38, "IPDM E/R Power Supply and Ground Circuit Check" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN “ON” AND/OR “START”" .

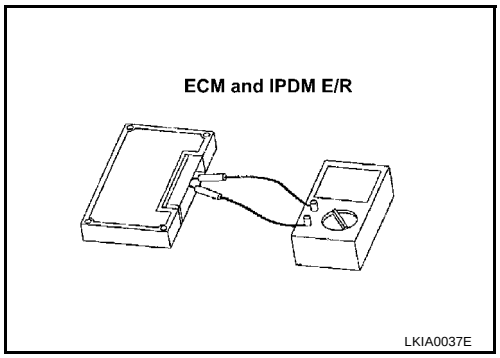
Component Inspection

EKS00743

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 52 and 58.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58	



CAN SYSTEM (TYPE 2)

PFP:23710

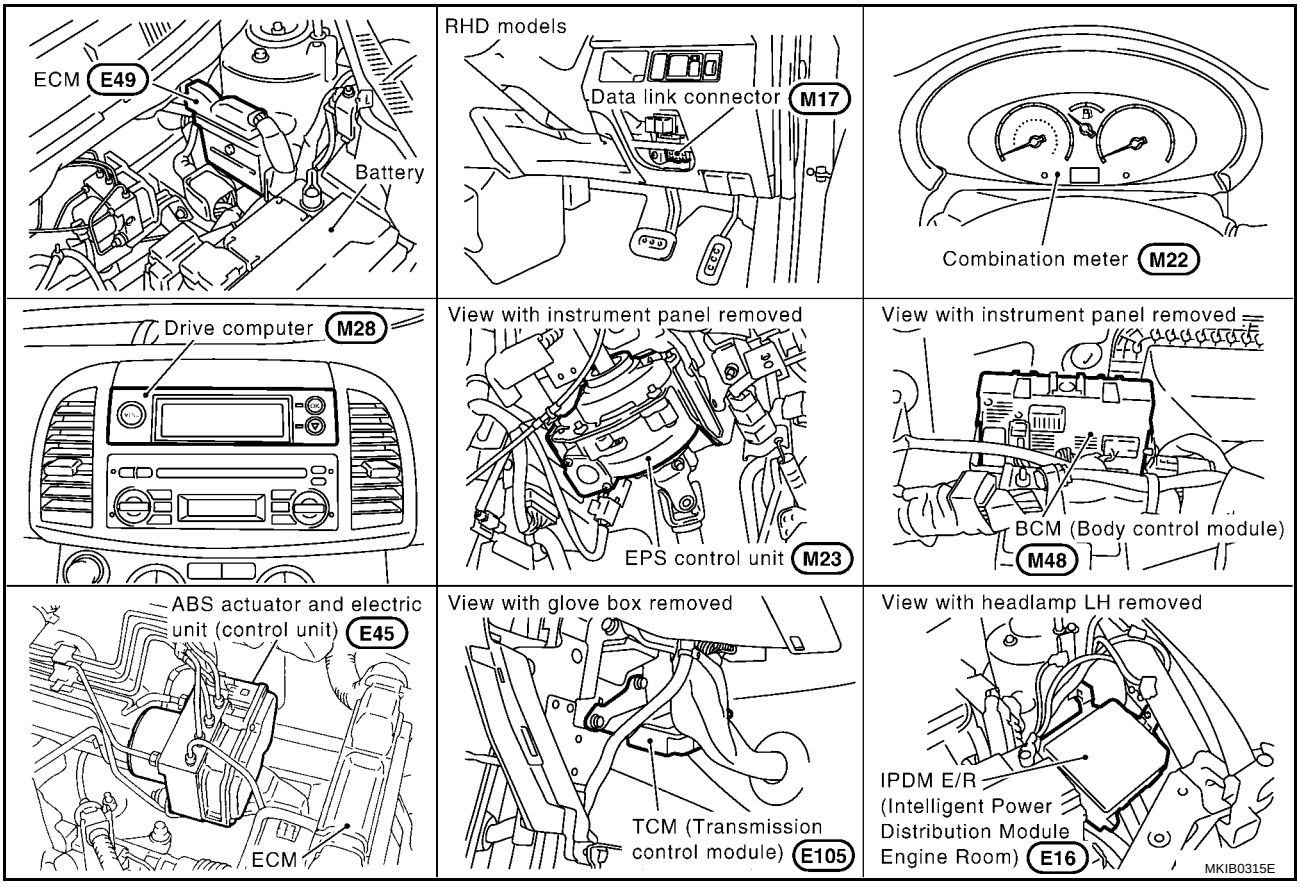
System Description

EKS00744

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.

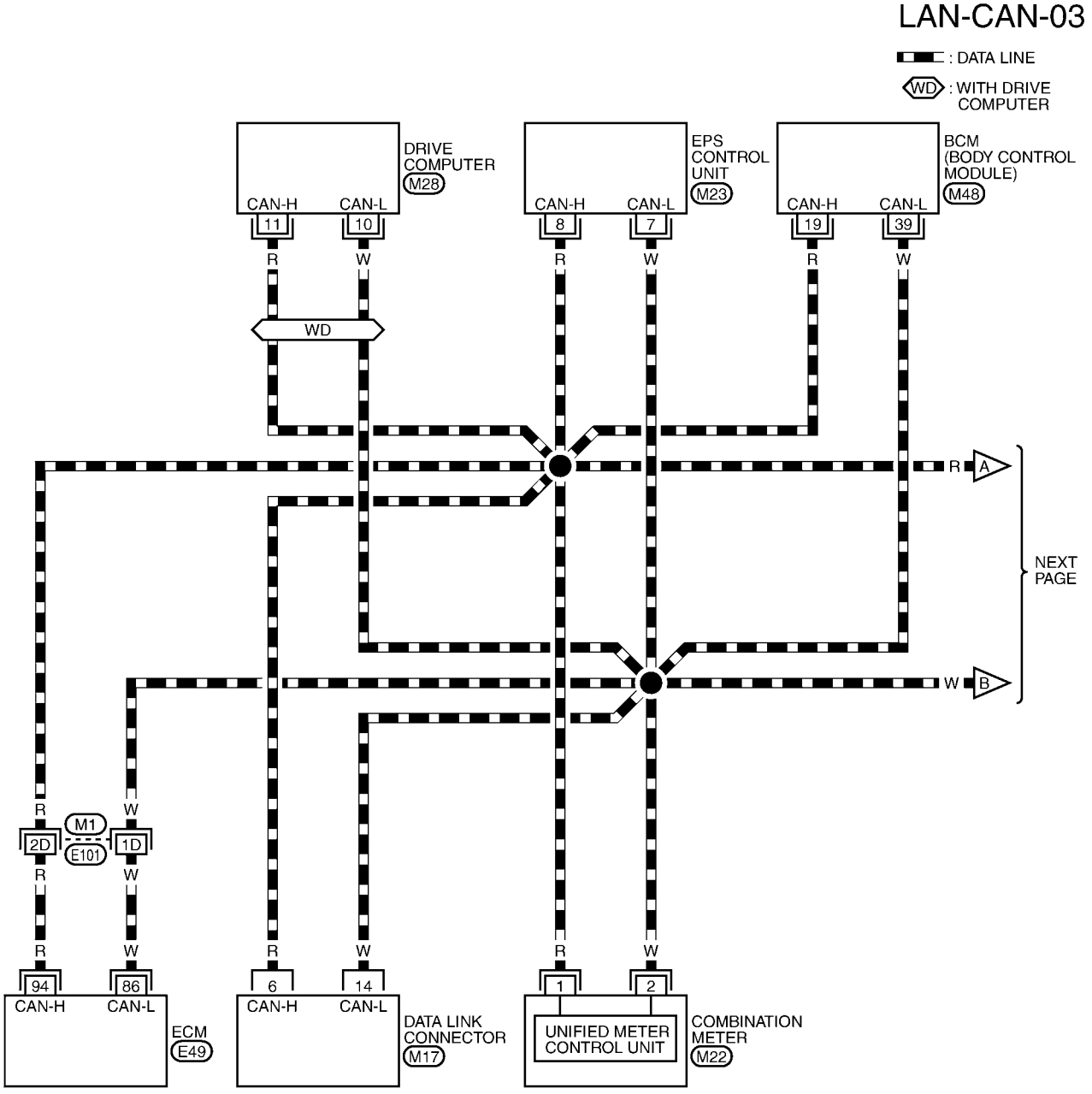
Component Parts and Harness Connector Location

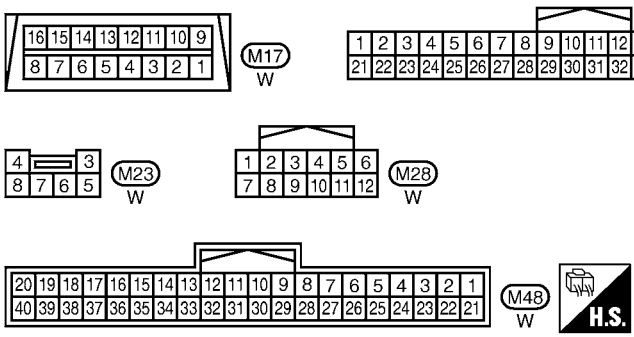
EKS00745



Wiring Diagram — CAN —

EKS007Y0





REFER TO THE FOLLOWING.

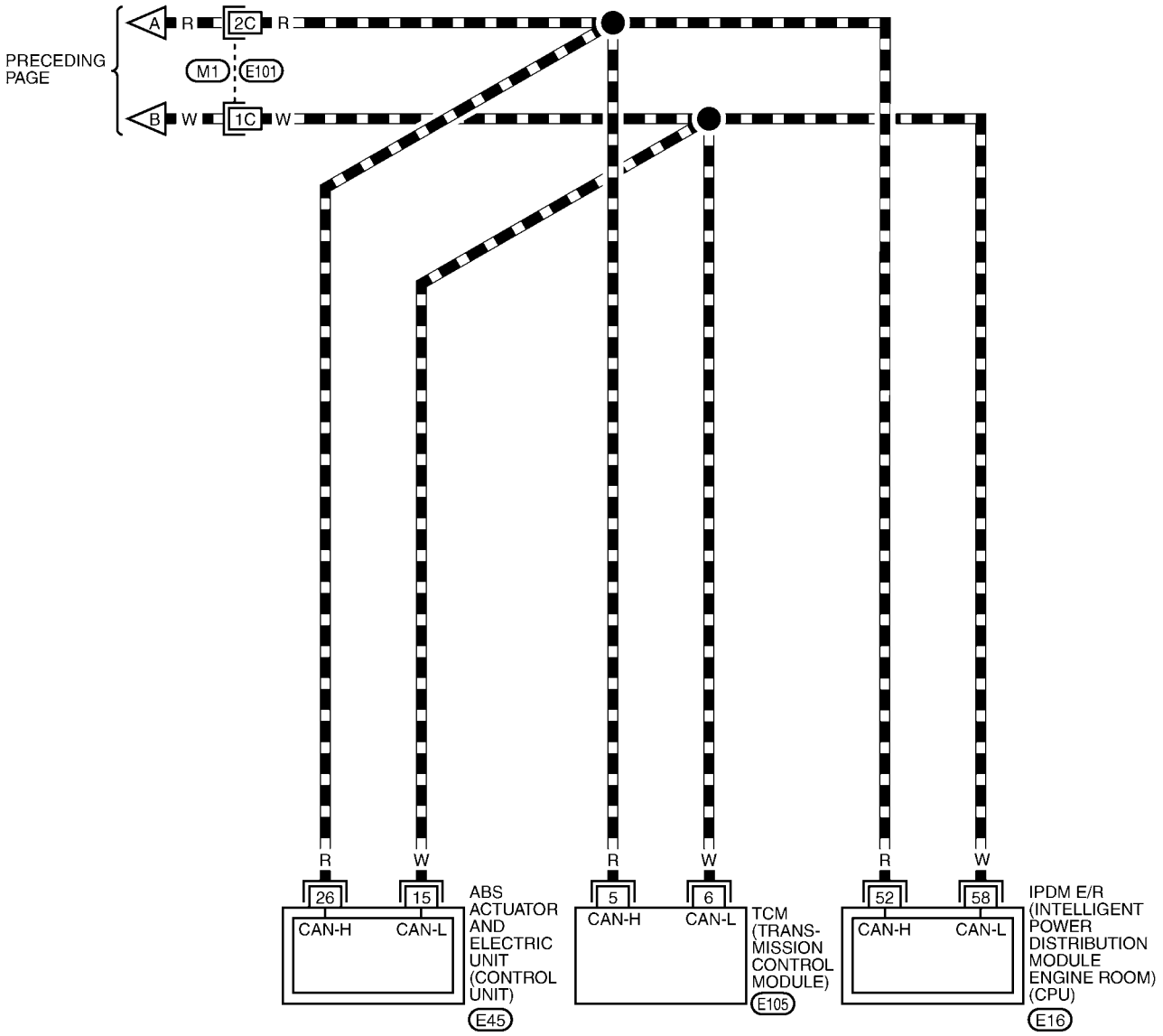
M1 -SUPER MULTIPLE JUNCTION (SMJ)

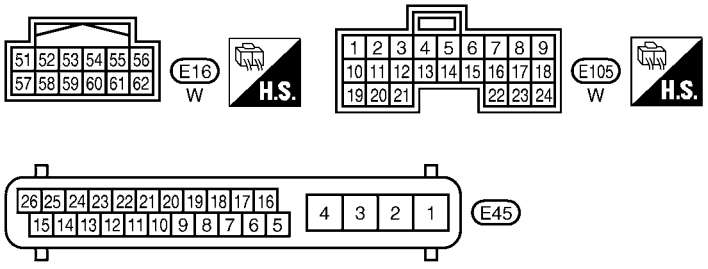
E49 -ELECTRICAL UNITS

MKWA0792E

LAN-CAN-04

: DATA LINE





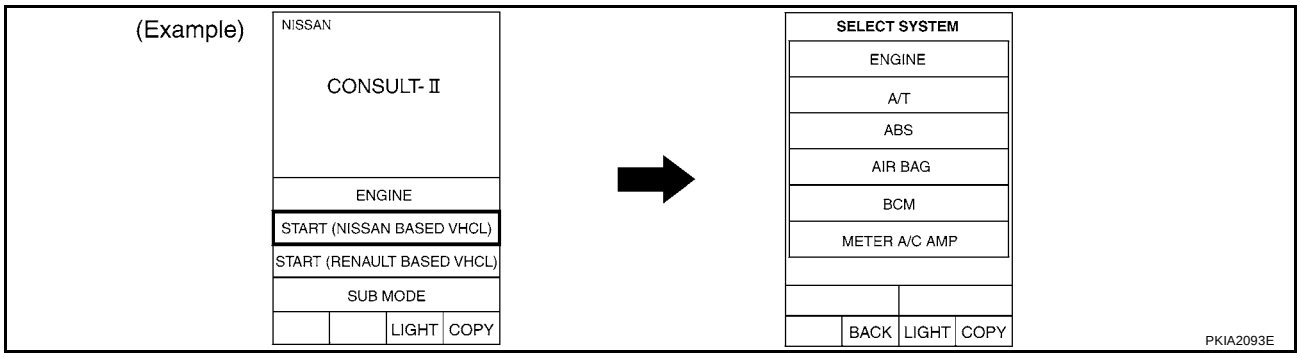
REFER TO THE FOLLOWING.
M1 -SUPER MULTIPLE JUNCTION (SMJ)

MKWA1307E

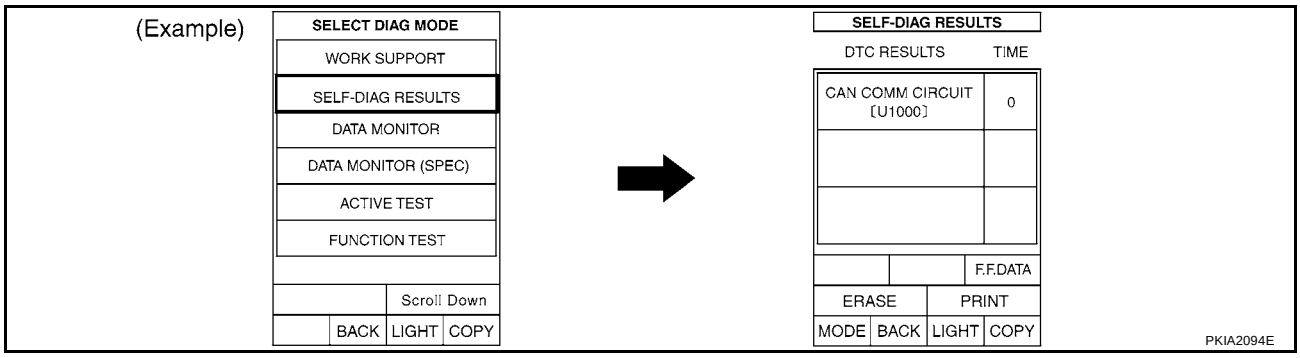
Work Flow

EKS00810

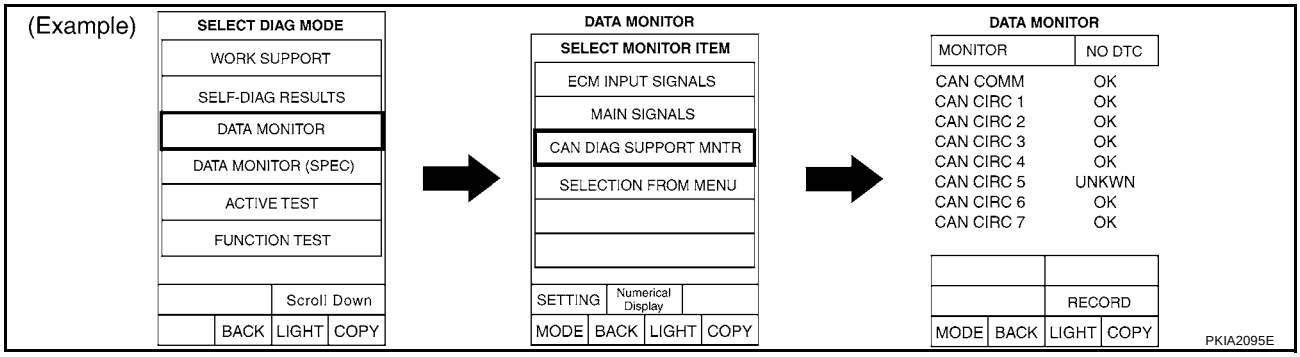
1. When there are no indications of “EPS”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “EPS”, “BCM”, “ABS”, “A/T” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “DATA MONITOR (CAN DIAG SUPPORT MNTR)” for “ENGINE”, “EPS”, “BCM”, “ABS”, “A/T” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “DATA MONITOR (CAN DIAG SUPPORT MNTR)” onto the check sheet. Refer to LAN-41, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “DATA MONITOR (CAN DIAG SUPPORT MNTR)”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-41, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “CAN COMM” as “DATA MONITOR (CAN DIAG SUPPORT MNTR)” for the diagnosed control unit, replace the control unit.
   - The “DATA MONITOR (CAN DIAG SUPPORT MNTR)” items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
     So it is not necessary to check the status of “DATA MONITOR (CAN DIAG SUPPORT MNTR)” items which are not indicated in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-43, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

Check sheet table

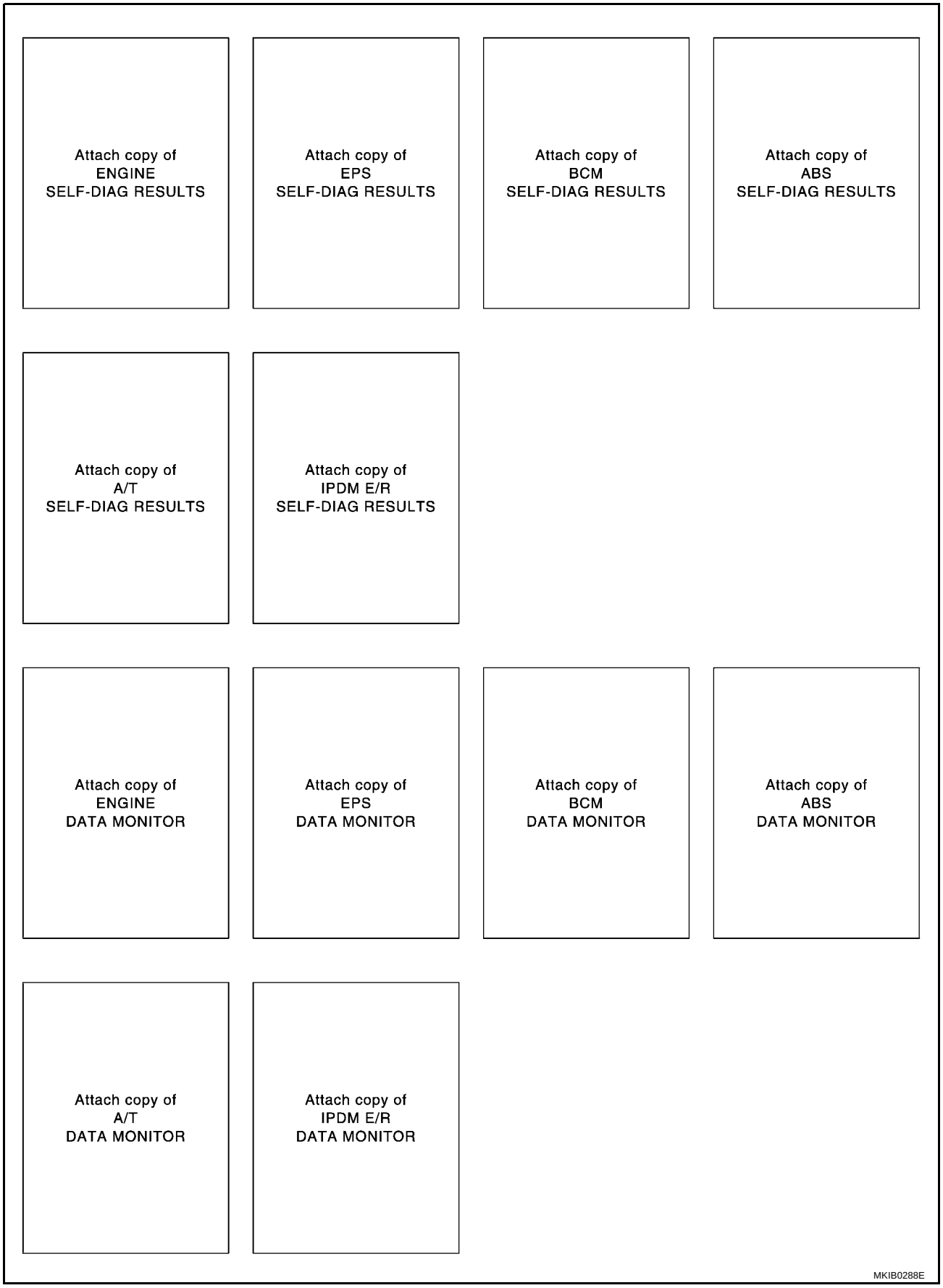
SELECT SYSTEM		DATA MONITOR (CAN DIAG SUPPORT MNTR)								
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

Symptoms:

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

MKIB0287E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
EPS
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
DATA MONITOR
Attach copy of
EPS
DATA MONITOR
Attach copy of
BCM
DATA MONITOR
Attach copy of
ABS
DATA MONITOR
Attach copy of
A/T
DATA MONITOR
Attach copy of
IPDM E/R
DATA MONITOR
MKIB0288E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	—	CAN COMM ✓	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4 ✓	CAN CIRC 9 ✓	CAN CIRC 6 ✓	CAN CIRC 3 ✓	CAN CIRC 2 ✓	CAN CIRC 7 ✓
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

Case 2: Replace EPS control unit

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	—	CAN CIRC 5 ✓	CAN CIRC 3 ✓	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

Case 3: Replace BCM

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	—	—	—	CAN CIRC 6 ✓	CAN CIRC 3 ✓
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

Case 4: Replace ABS actuator and electric unit (control unit)

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3 ✓	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3 ✓	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

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Case 5: Replace TCM

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

Case 6: Replace IPDM E/R

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

Case 7

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

Case 8

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

Case 9

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

Case 10

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

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Case 11

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

Case 12

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6 ✓	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5 ✓	CAN CIRC 3	—	—
BCM	No indication ✓	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3 ✓	—	—	—

Case 13

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3 ✓	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3 ✓	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

Case 14

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2 ✓	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6 ✓	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 4 ✓	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

Case 15

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7 ✓
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3 ✓
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication ✓	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

Case 16

ENGINE	—	CAN COMM	CAN CIRC 1 ✓	—	CAN CIRC 4 ✓	CAN CIRC 9 ✓	CAN CIRC 6 ✓	CAN CIRC 3 ✓	CAN CIRC 2 ✓	CAN CIRC 7 ✓
EPS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication ✓	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	CAN CIRC 4 ✓	—	—	—	—	—
IPDM E/R	No indication ✓	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

MKIB0293E

Case 17

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4 ✓	CAN CIRC 9 ✓	CAN CIRC 6 ✓	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7 ✓
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4 ✓	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3 ✓	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4	—	—	—	CAN CIRC 6 ✓	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3 ✓	—	—	CAN CIRC 3	—	—	—

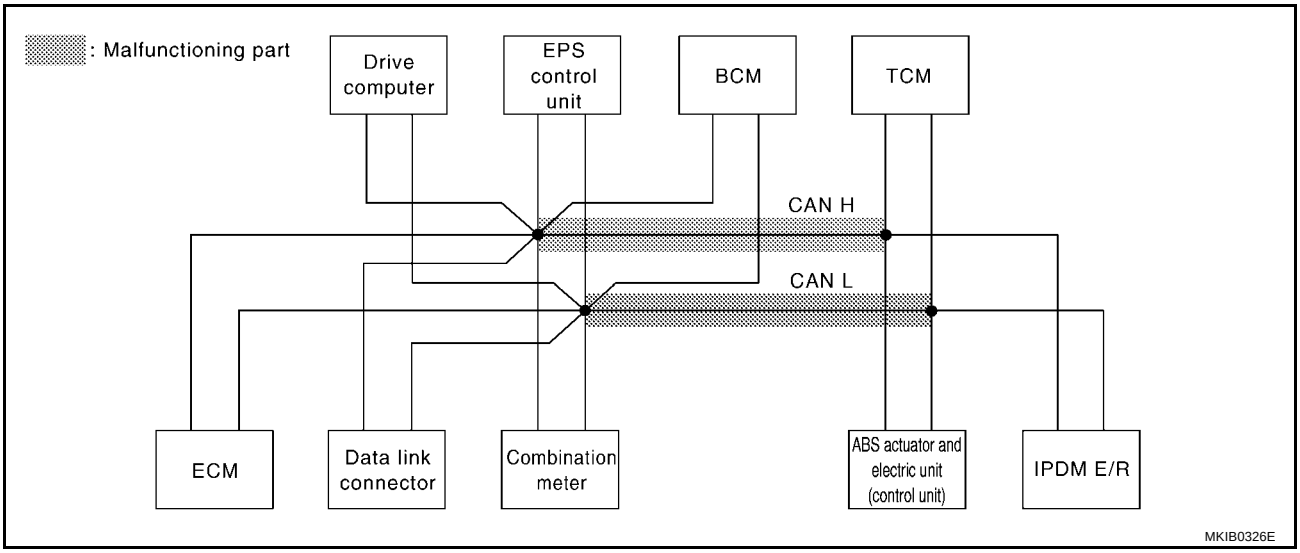
MKIB0294E

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1: Replace ECM.
Case 2: Replace EPS control unit.
Case 3: Replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .
Case 4: Replace ABS actuator and electric unit (control unit).
Case 5: Replace TCM.
Case 6: Replace IPDM E/R.
Case 7: Check harness between BCM and ABS actuator and electric unit (control unit). Refer to LAN-47, "Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)" .
Case 8: Check ECM circuit. Refer to LAN-49, "ECM Circuit Check" .
Case 9: Check data link connector circuit. Refer to LAN-50, "Data Link Connector Circuit Check" .
Case 10: Check combination meter circuit. Refer to LAN-51, "Combination Meter Circuit Check" .
Case 11: Check EPS control unit circuit. Refer to LAN-52, "EPS Control Unit Circuit Check"
Case 12: Check BCM circuit. Refer to LAN-53, "BCM Circuit Check" .
Case 13: Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-54, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .
Case 14: Check TCM circuit. Refer to LAN-55, "TCM Circuit Check" .
Case 15: Check IPDM E/R circuit. Refer to LAN-56, "IPDM E/R Circuit Check" .
Case 16: Check CAN communication circuit. Refer to LAN-57, "CAN Communication Circuit Check" .
Case 17: Check IPDM E/R ignition relay circuit. Refer to LAN-60, "IPDM E/R Ignition Relay Circuit Check" .

Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)

EKS00811



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).

- Harness connector M1
- Harness connector E101

OK or NG

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

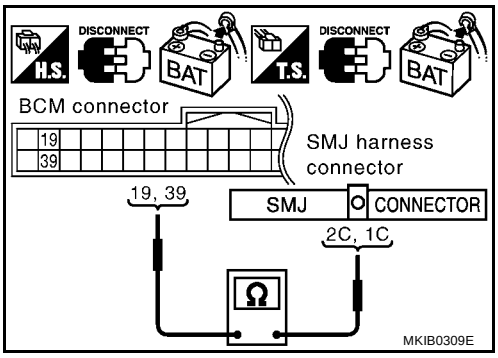
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.

- Harness connector M1
- Combination meter connector
- Drive computer connector
- EPS control unit connector
- BCM connector

2. Check continuity between BCM harness connector M48 terminals 19 (R), 39 (W) and harness connector M1 terminals 2C (R), 1C (W).

19 (R) – 2C (R) : Continuity should exist.
39 (W) –1C (W) : Continuity should exist.



OK or NG

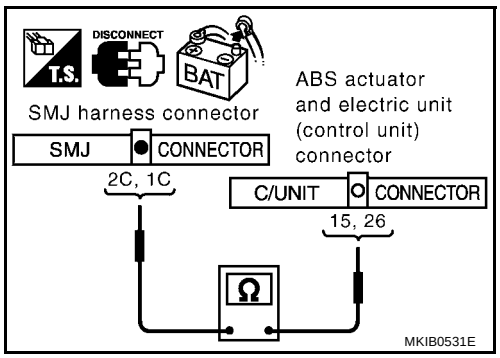
OK >> GO TO 3.
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W).

2C (R) – 26 (R) : Continuity should exist.

1C (W) – 15 (W) : Continuity should exist.



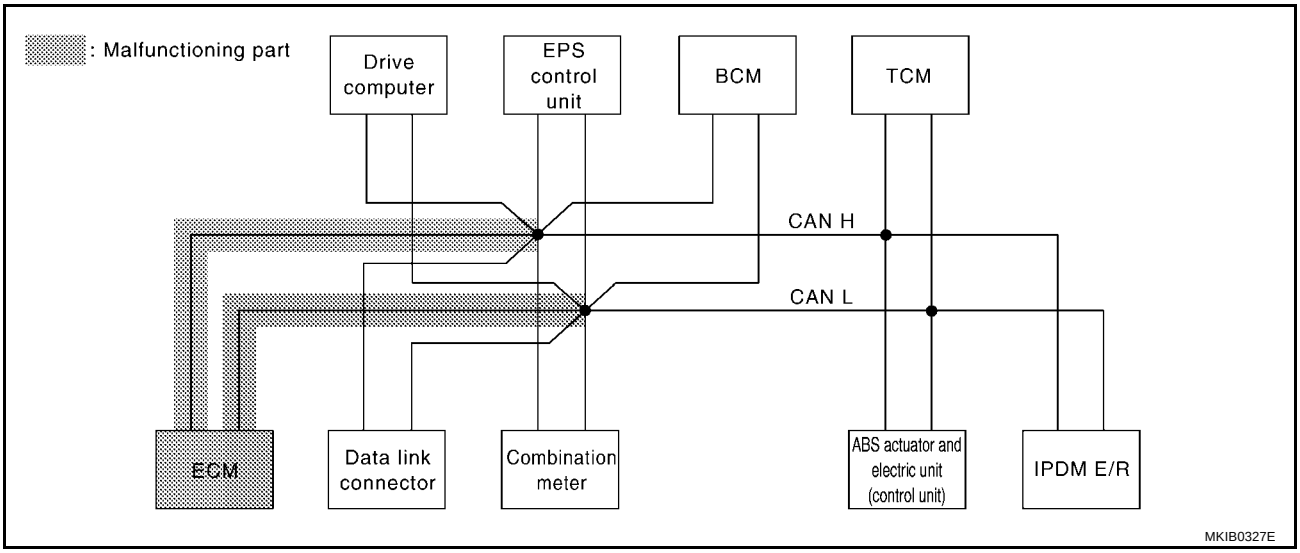
OK or NG

OK >> Reconnect all connectors to perform “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “DATA MONITOR (CAN DIAG SUPPORT MNTR)” displayed on CONSULT-II. Refer to LAN-40, "Work Flow" .

NG >> Repair harness.

ECM Circuit Check

EKS00812



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).

- ECM connector
- Harness connector M1
- Harness connector E101

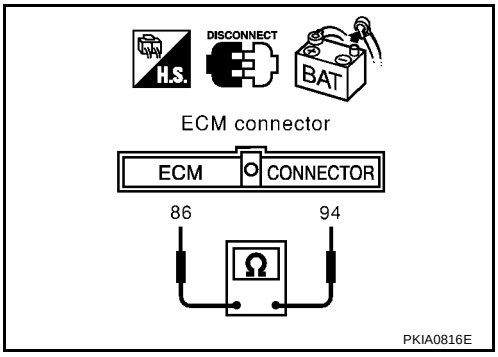
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W) : Approx. 108 – 132Ω

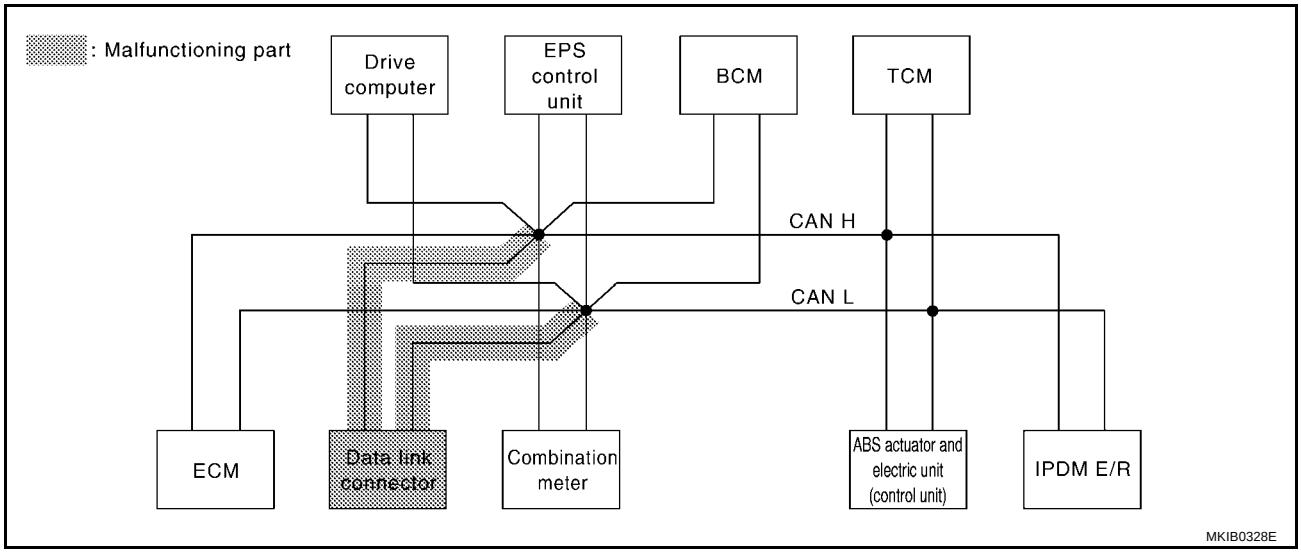


OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and data link connector.

Data Link Connector Circuit Check

EKS00813



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector and terminals for damage, bend and loose connection (connector side and harness side).

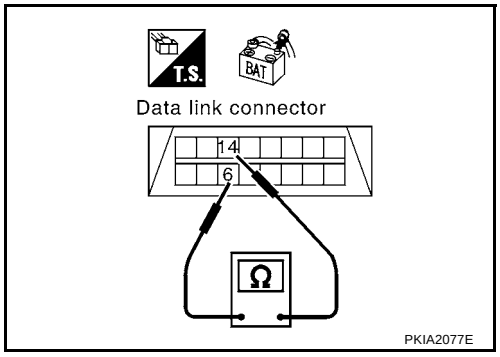
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

6 (R) – 14 (W) : Approx. 54 – 66Ω

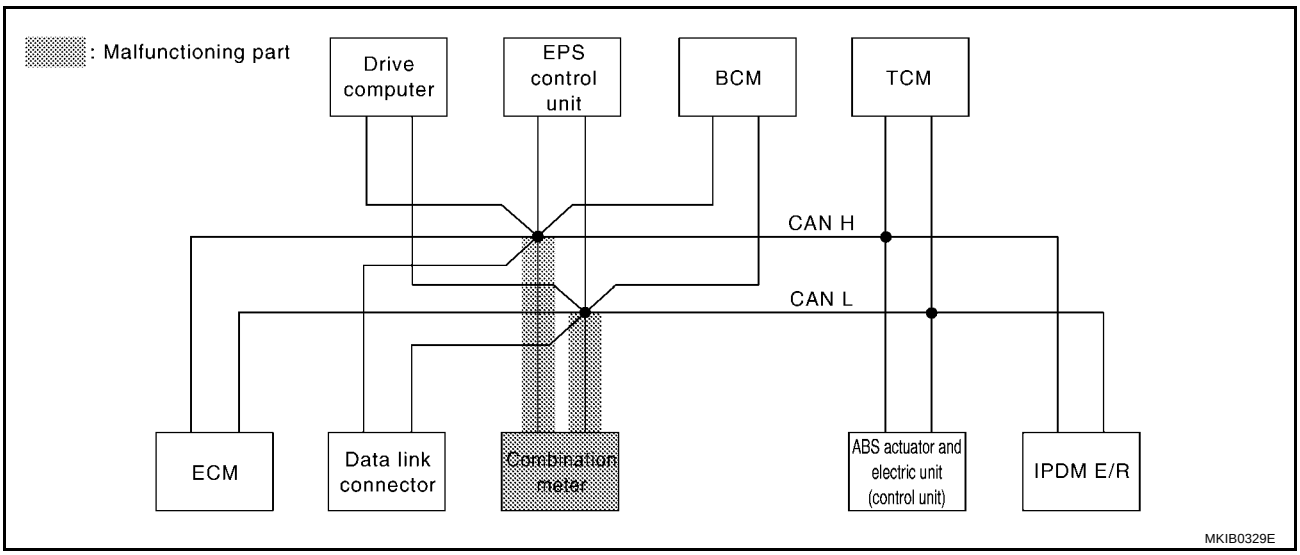


OK or NG

OK >> Perform “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “DATA MONITOR (CAN DIAG SUPPORT MNTR)” displayed on CONSULT-II. Refer to LAN-40, "Work Flow" .
NG >> Repair harness between data link connector and combination meter

Combination Meter Circuit Check

EKS00814



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

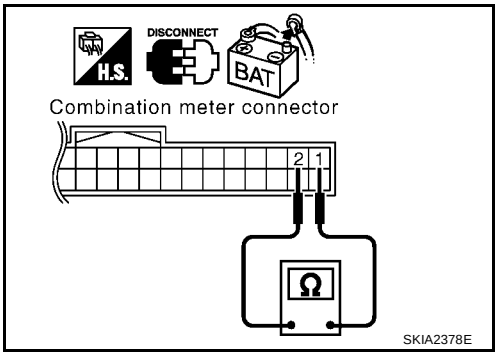
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

1 (R) – 2 (W) : Approx. 54 – 66Ω

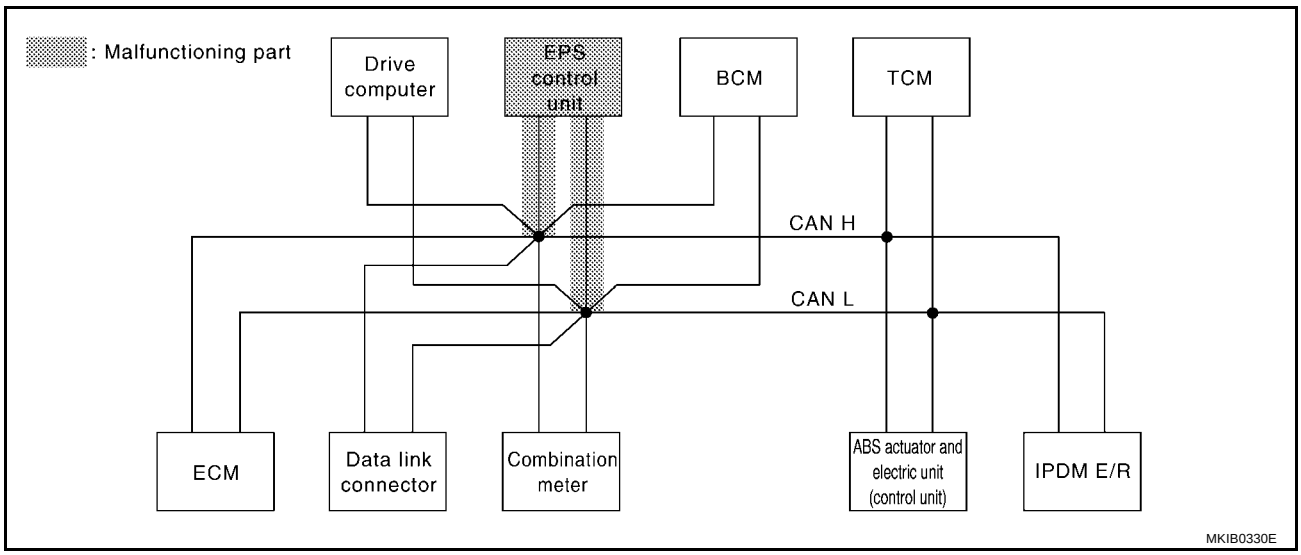


OK or NG

OK >> Replace combination meter
NG >> Repair harness between combination meter and data link connector.

EPS Control Unit Circuit Check

EKS00815



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of EPS control unit for damage, bend and loose connection (control unit side and harness side).

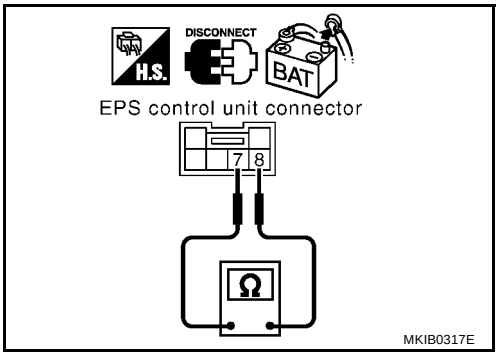
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

8 (R) – 7 (W) : Approx. 54 – 66Ω

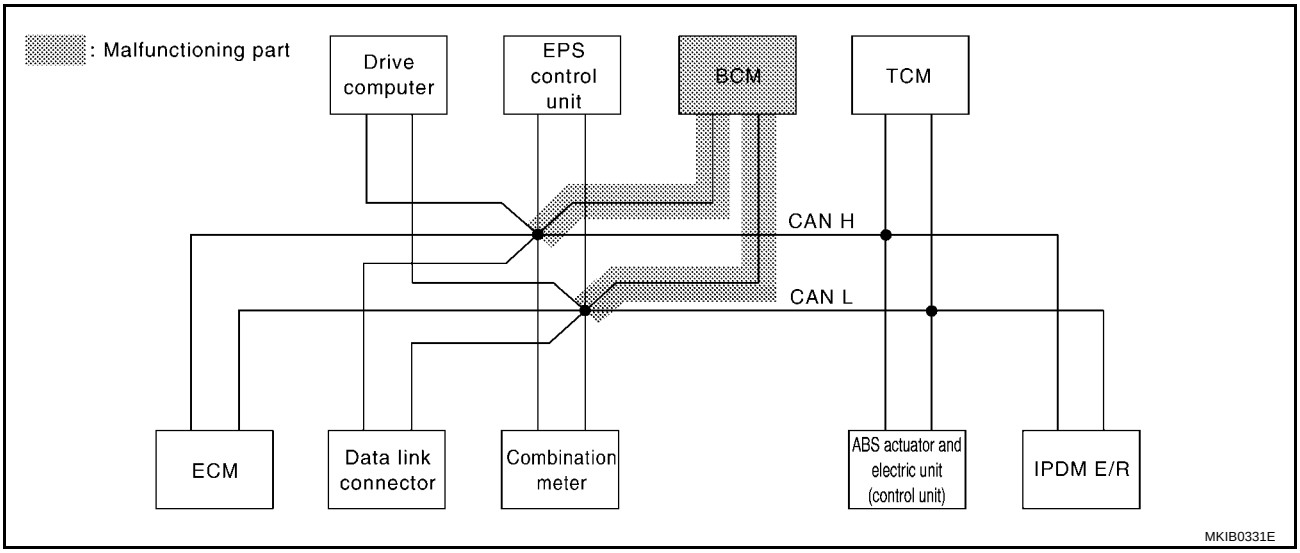


OK or NG

OK >> Replace EPS control unit.
NG >> Repair harness between EPS control unit and data link connector.

BCM Circuit Check

EKS00816



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of BCM for damage, bend and loose connection (control module side and harness side).

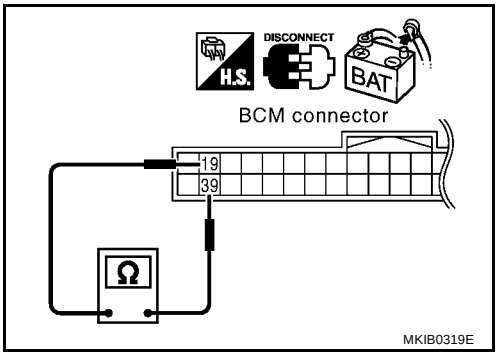
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

19 (R) – 39 (W) : Approx. 54 – 66Ω

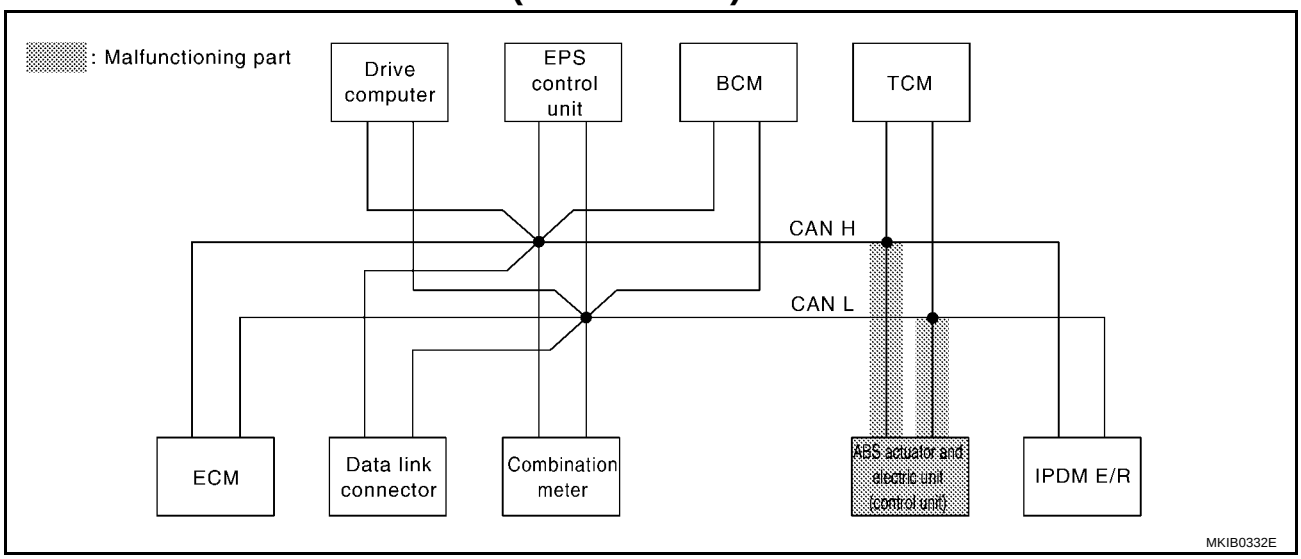


OK or NG

OK >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

ABS Actuator and Electric Unit (Control Unit) Circuit Check

EKS00817



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

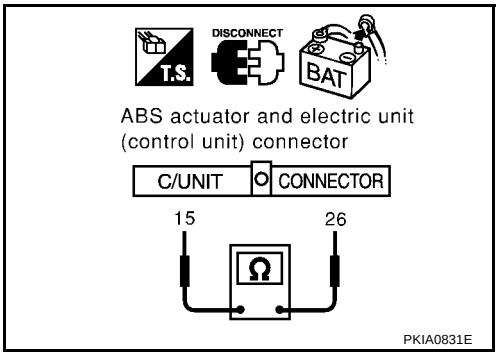
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

26 (R) – 15 (W) : Approx. 54 – 66Ω

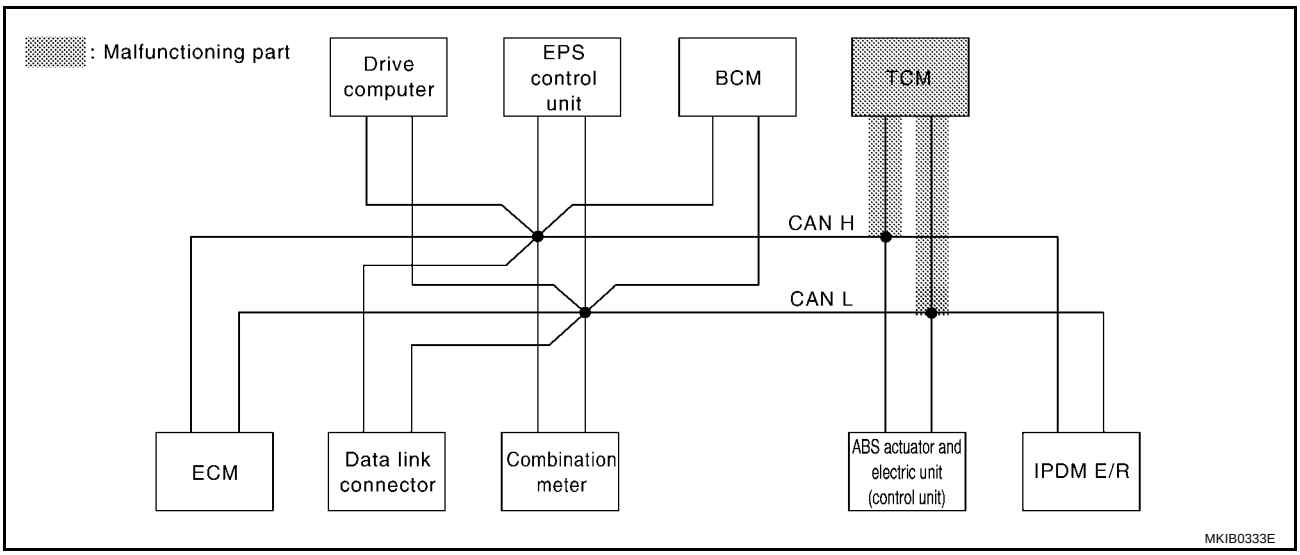


OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) and TCM.

TCM Circuit Check

EKS00818



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of TCM for damage, bend and loose connection (control module side and harness side).

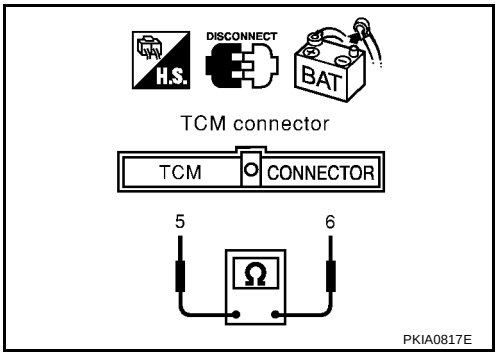
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect TCM connector.
2. Check resistance between TCM harness connector E105 terminals 5 (R) and 6 (W).

5 (R) – 6 (W) : Approx. 54 – 66Ω

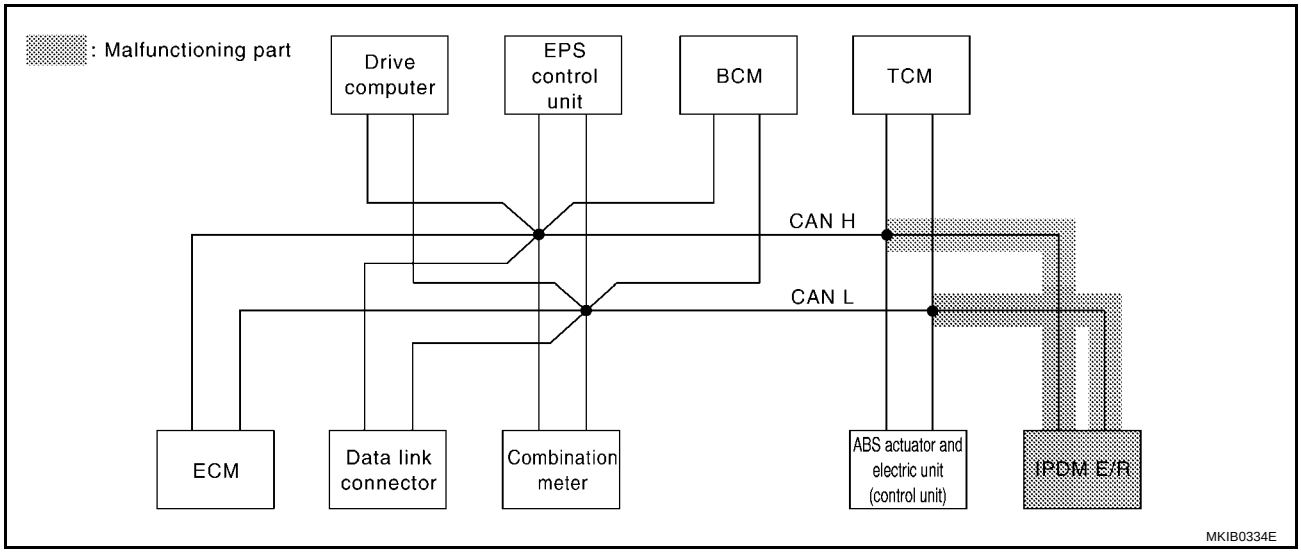


OK or NG

OK >> Replace TCM.
NG >> Repair harness between TCM and IPDM E/R.

IPDM E/R Circuit Check

EKS00819



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

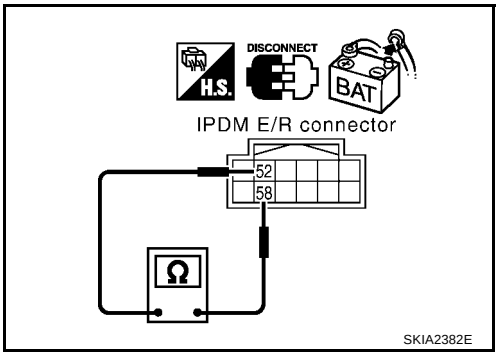
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

52 (R) – 58 (W) : Approx. 108 – 132Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and TCM.

CAN Communication Circuit Check

EKS0081A

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side, meter side, control unit side and harness side).

- ECM
- Combination meter
- Drive computer
- EPS control unit
- BCM
- ABS actuator and electric unit (control unit)
- TCM
- IPDM E/R
- Between ECM and IPDM E/R

OK or NG

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

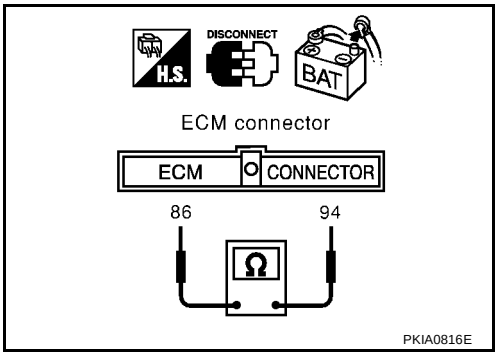
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 3.
NG >> Repair harness between ECM and harness connector E101.



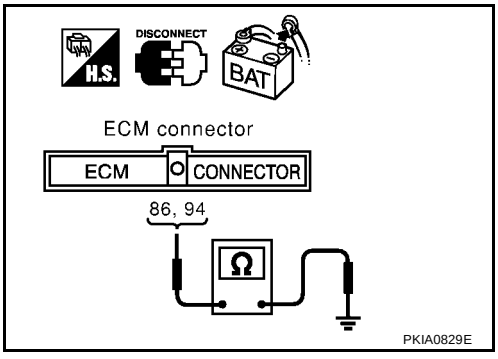
3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E49 terminals 94 (R), 86 (W) and ground.

94 (R) – Ground : Continuity should not exist.
86 (W) – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 4.
NG >> Repair harness between ECM and harness connector E101.

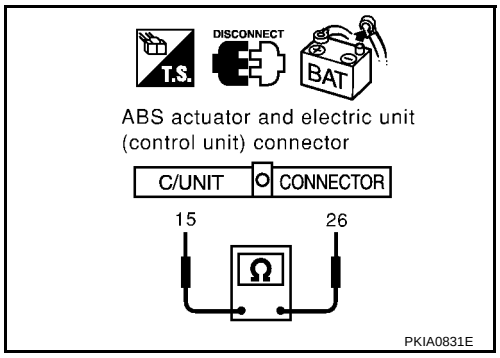


4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- ABS actuator and electric unit (control unit) connector
- TCM connector
- IPDM E/R connector

2. Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

26 (R) – 15 (W) : Continuity should not exist.



OK or NG

OK >> GO TO 5.

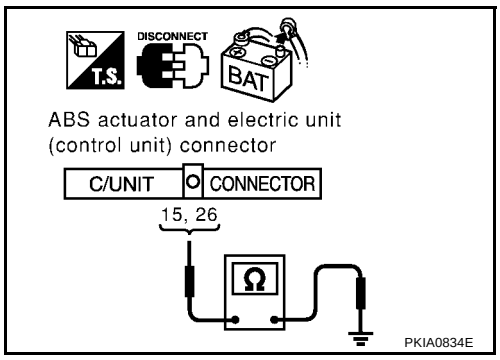
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W) and ground.

26 (R) – Ground : Continuity should not exist.

15 (W) – Ground : Continuity should not exist.



OK or NG

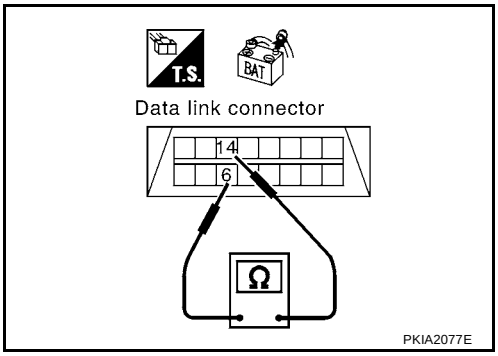
OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ABS actuator and electric unit (control unit) and TCM
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Combination meter connector
- Drive computer connector
- EPS control unit connector
- BCM connector
2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

6 (R) – 14 (W) : Continuity should not exist.



OK or NG

OK >> GO TO 7.

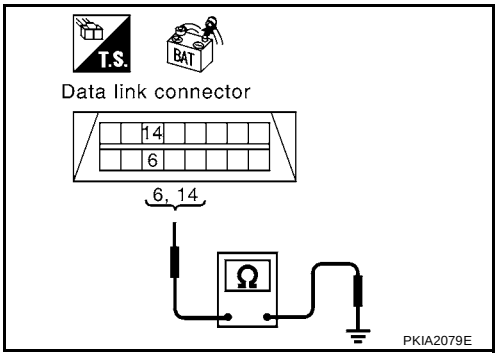
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM.

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

6 (R) – ground : Continuity should not exist.

14 (W) – ground : Continuity should not exist.



OK or NG

OK >> GO TO 8.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM.

8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-60, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .

OK or NG

OK >> Reconnect all connectors to perform “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “DATA MONITOR (CAN DIAG SUPPORT MNTR)” displayed on CONSULT-II. Refer to LAN-40, "Work Flow" .

NG >> Replace ECM and/or IPDM E/R.

IPDM E/R Ignition Relay Circuit Check

EKS0081B

Perform the self-diagnosis for IPDM E/R. Refer to PG-35, "Inspection With CONSULT-II (Self-Diagnosis)" . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to PG-38, "IPDM E/R Power Supply and Ground Circuit Check" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN “ON” AND/OR “START”" .

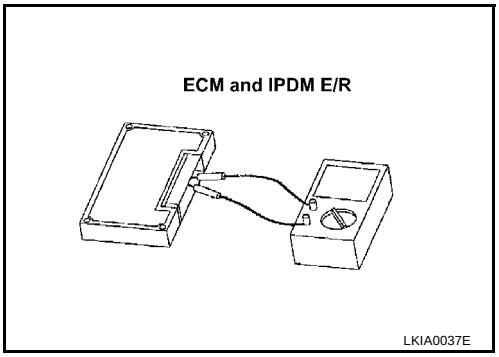
Component Inspection

EKS0081C

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 52 and 58.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58	



CAN SYSTEM (TYPE 3)

PFP:23710

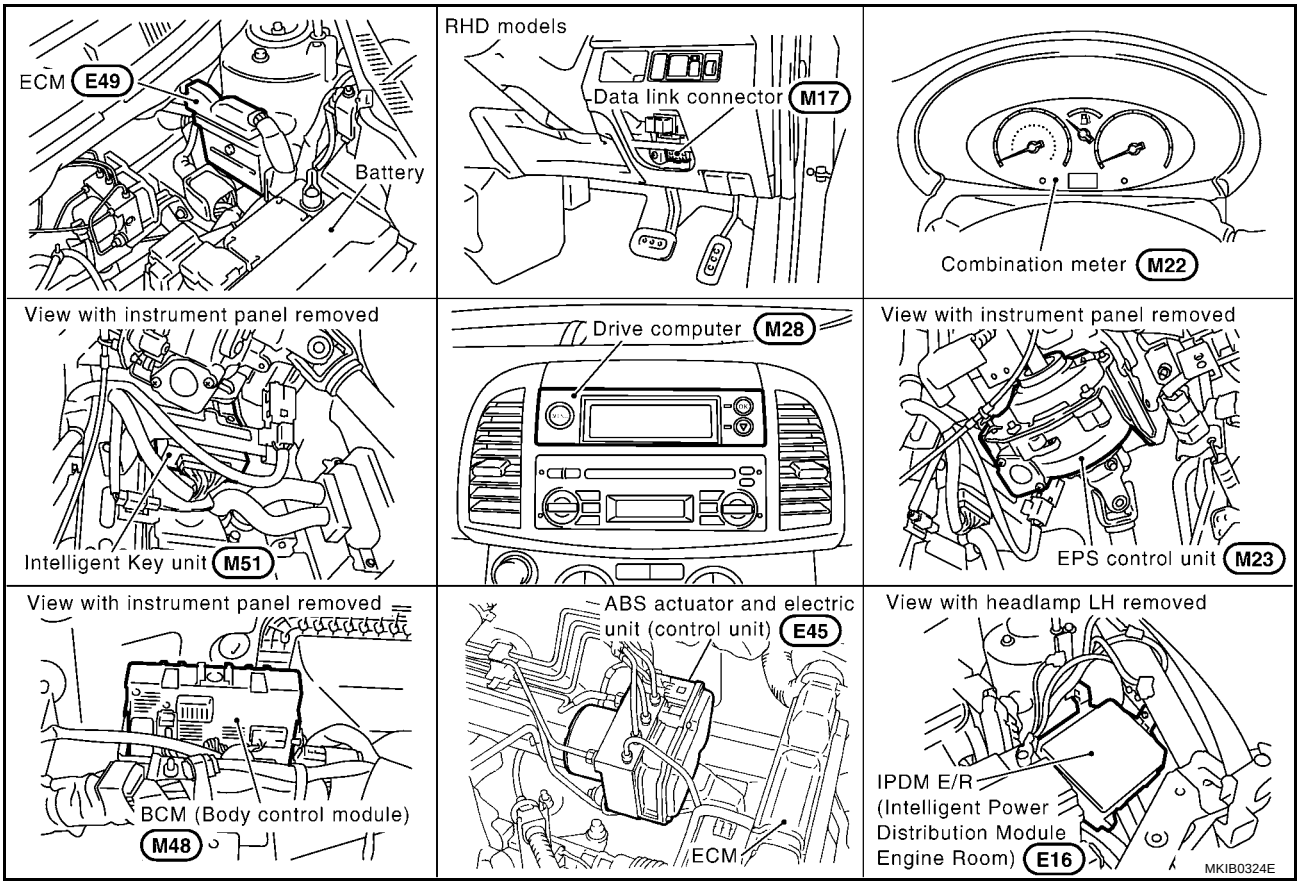
System Description

EKS0074L

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.

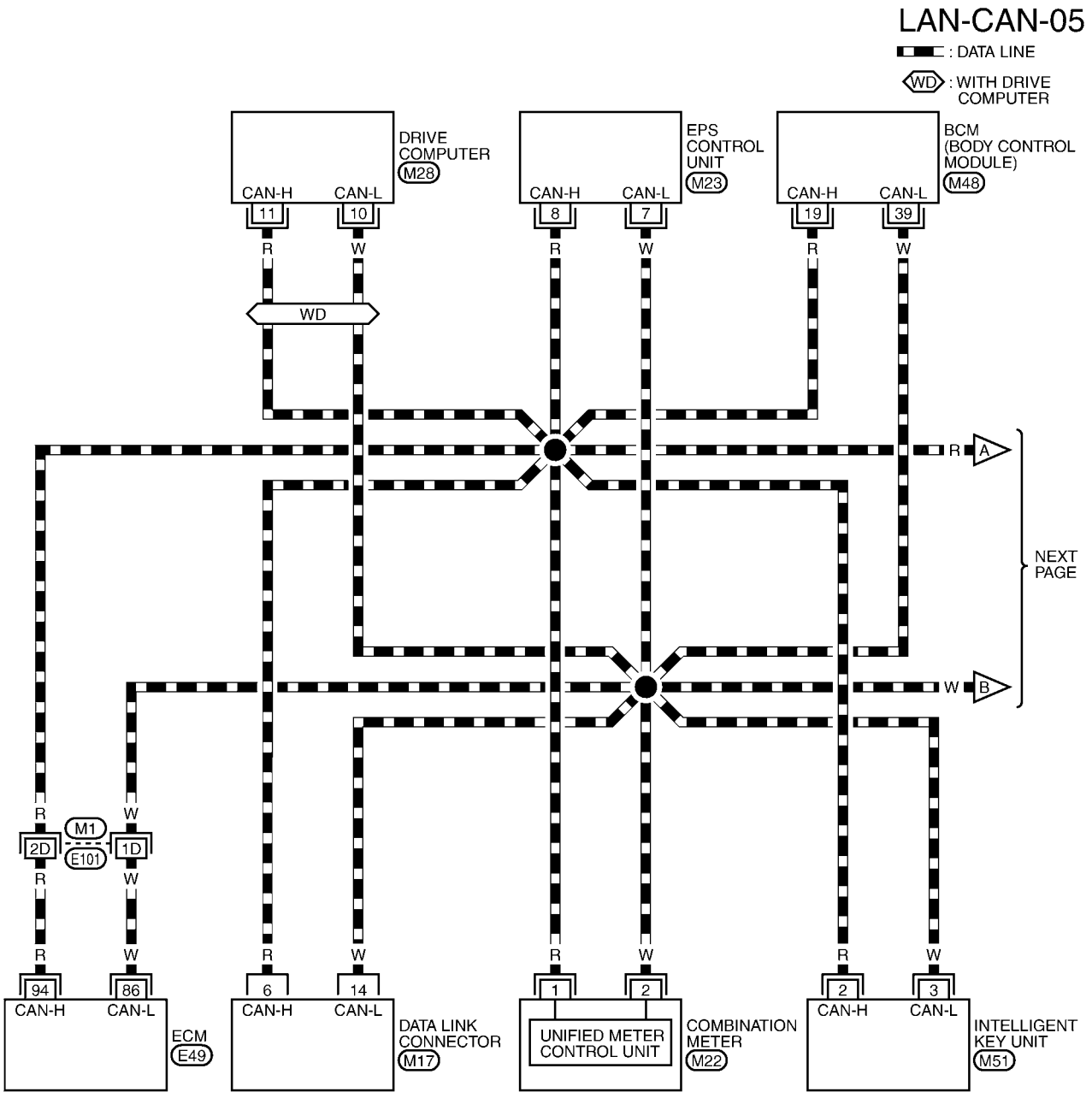
Component Parts and Harness Connector Location

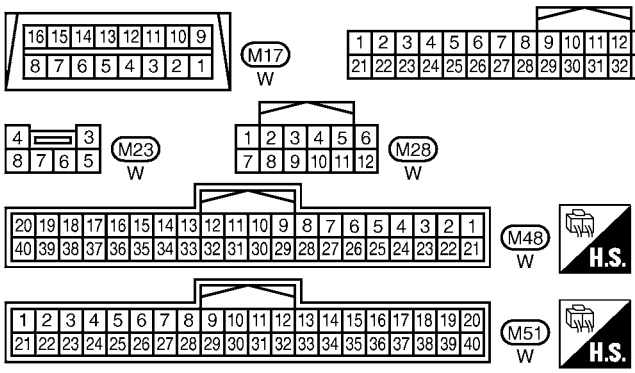
EKS0074M



Wiring Diagram — CAN —

EKS007YF





REFER TO THE FOLLOWING.

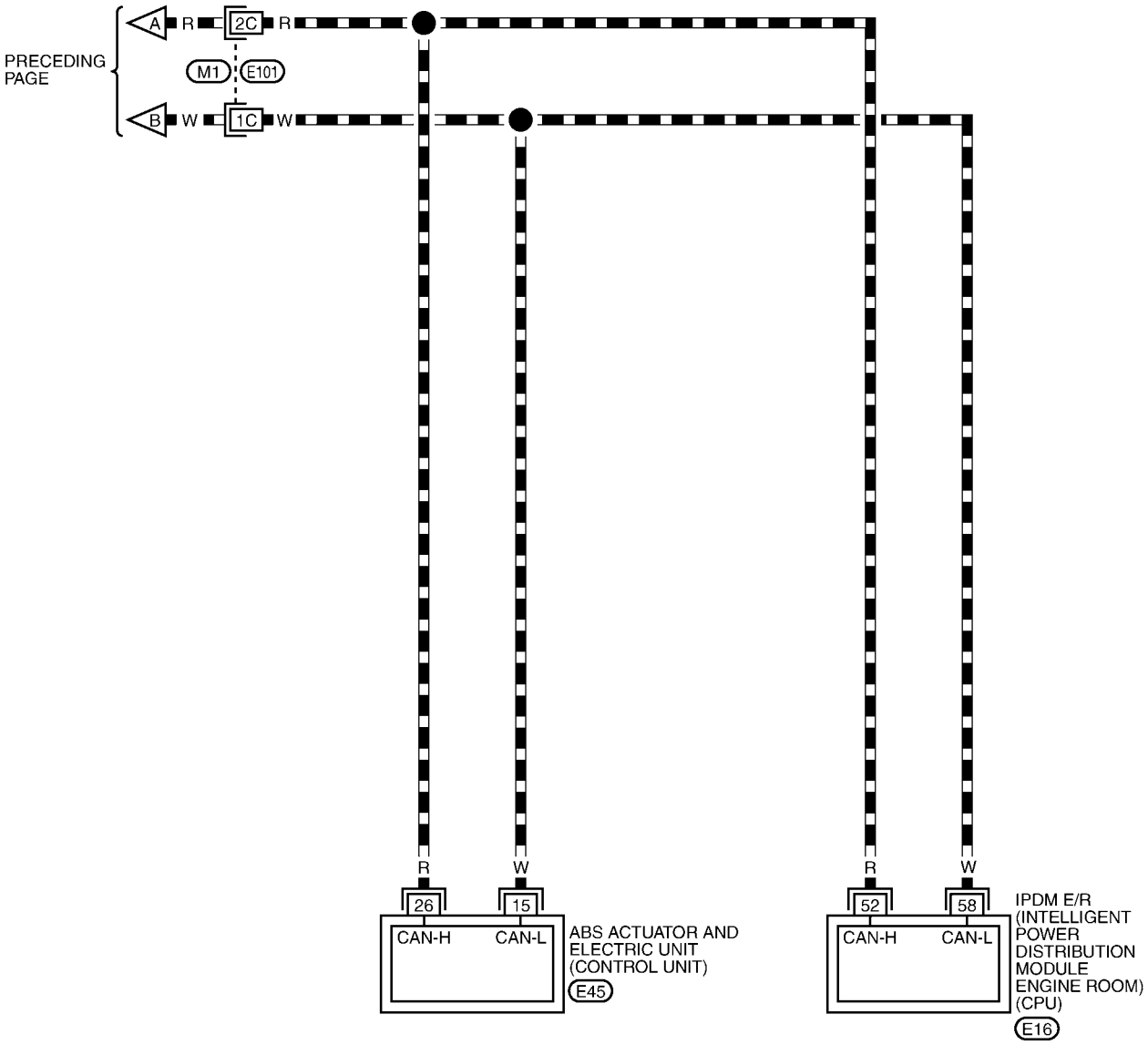
M1 -SUPER MULTIPLE JUNCTION (SMJ)

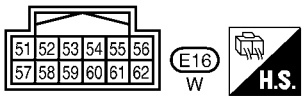
E49 -ELECTRICAL UNITS

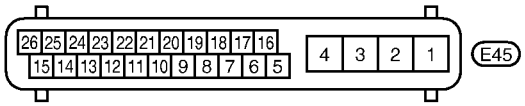
MKWA1308E

LAN-CAN-06

: DATA LINE







REFER TO THE FOLLOWING.

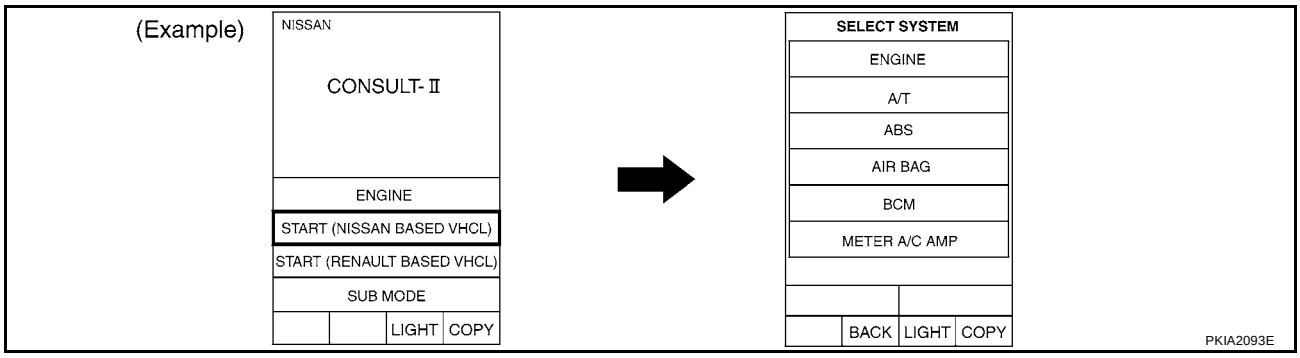
M1 -SUPER MULTIPLE JUNCTION (SMJ)

MKWA1309E

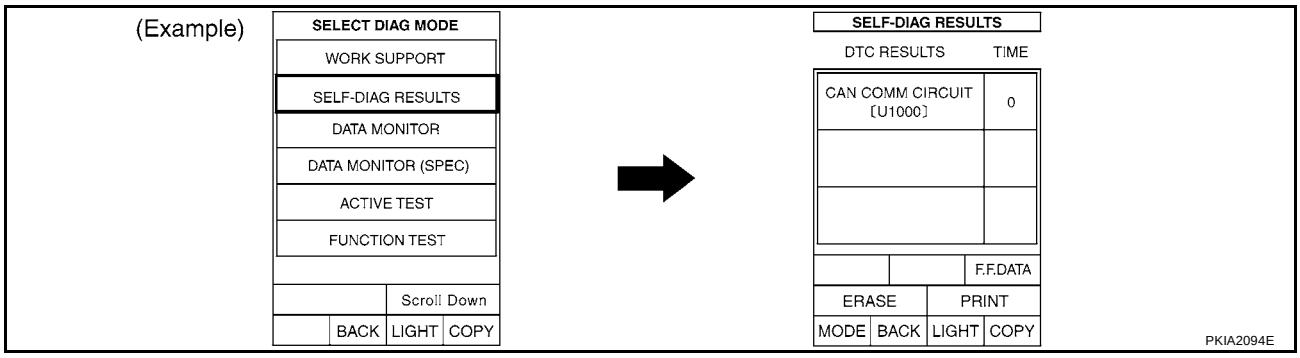
Work Flow

EKS0081D

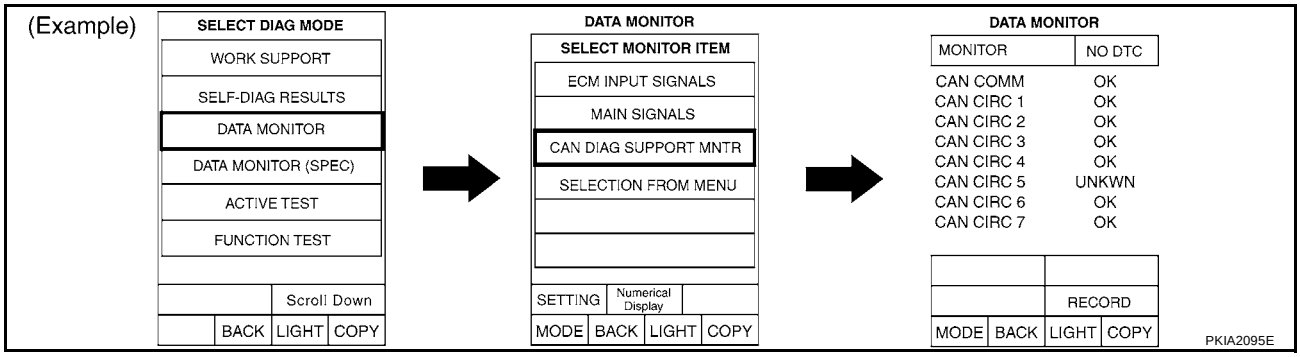
1. When there are no indications of “INTELLIGENT KEY”, “EPS”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “INTELLIGENT KEY”, “EPS”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “DATA MONITOR (CAN DIAG SUPPORT MNTR)” for “ENGINE”, “INTELLIGENT KEY”, “EPS”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “DATA MONITOR (CAN DIAG SUPPORT MNTR)” onto the check sheet. Refer to LAN-65, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “DATA MONITOR (CAN DIAG SUPPORT MNTR)”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-65, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “CAN COMM” as “DATA MONITOR (CAN DIAG SUPPORT MNTR)” for the diagnosed control unit, replace the control unit.
   - The “DATA MONITOR (CAN DIAG SUPPORT MNTR)” items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
     So it is not necessary to check the status of “DATA MONITOR (CAN DIAG SUPPORT MNTR)” items which are not indicated in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-67, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

Check sheet table

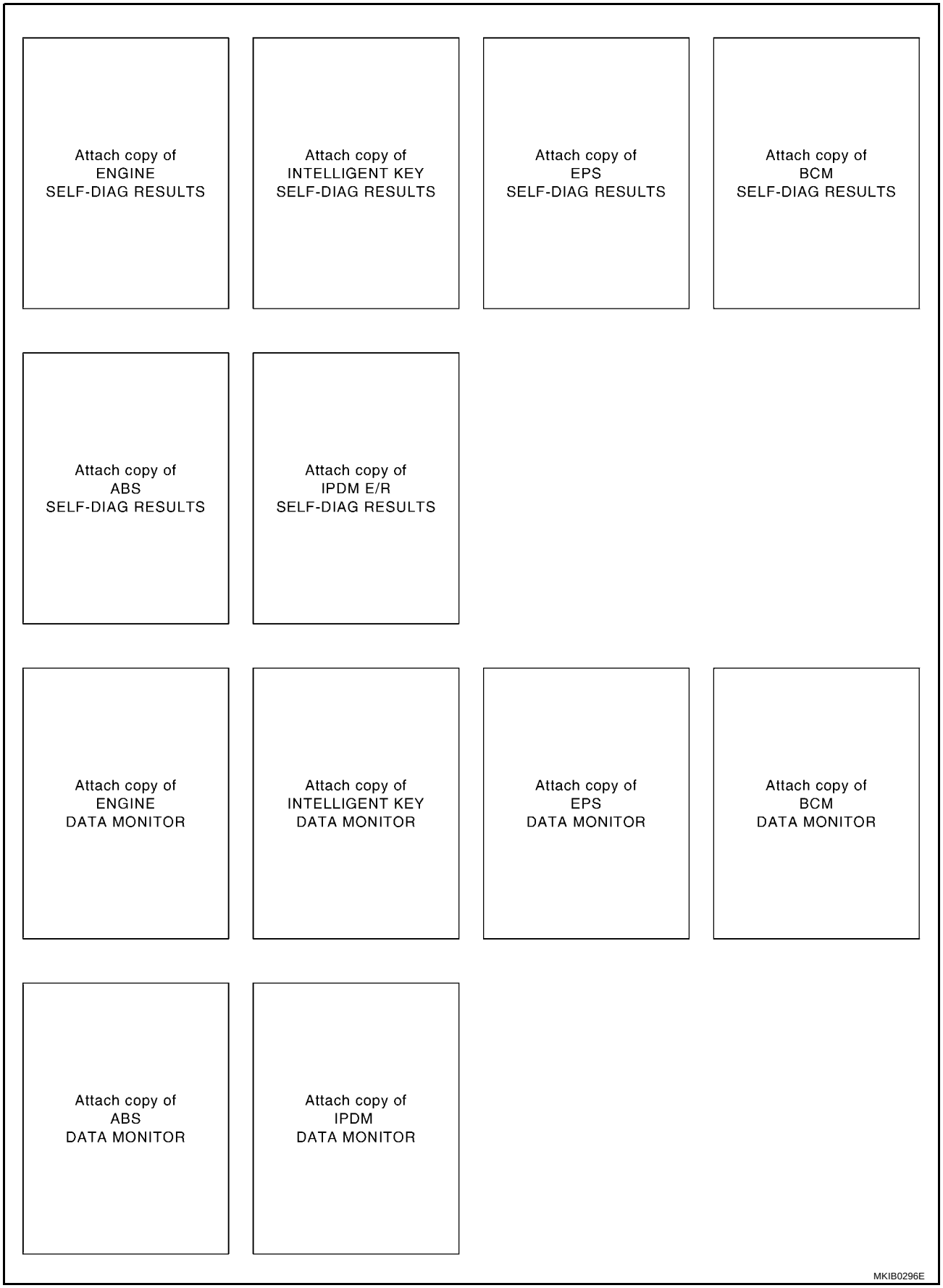
SELECT SYSTEM		DATA MONITOR (CAN DIAG SUPPORT MNTR)								
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

Symptoms:

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

MKIB0295E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
INTELLIGENT KEY
SELF-DIAG RESULTS
Attach copy of
EPS
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
DATA MONITOR
Attach copy of
INTELLIGENT KEY
DATA MONITOR
Attach copy of
EPS
DATA MONITOR
Attach copy of
BCM
DATA MONITOR
Attach copy of
ABS
DATA MONITOR
Attach copy of
IPDM
DATA MONITOR
MKIB0296E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	—	CAN COMM ✓	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4 ✓	—	CAN CIRC 9 ✓	CAN CIRC 6 ✓	CAN CIRC 3 ✓	CAN CIRC 7 ✓
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

Case 2: Replace intelligent Key unit

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM ✓	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4 ✓	CAN CIRC 3 ✓	—	—	CAN CIRC 2 ✓	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

Case 3: Replace EPS control unit

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM ✓	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	—	—	CAN CIRC 5 ✓	CAN CIRC 3 ✓	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

Case 4: Replace BCM

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 5 ✓	—	—	—	CAN CIRC 3 ✓
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

MKIB0297E

Case 5: Replace ABS actuator and electric unit (control unit)

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

Case 6: Replace IPDM E/R

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

Case 7

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

Case 8

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

Case 9

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

Case 10

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

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Case 11

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5 ✓	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

Case 12

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9 ✓	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

Case 13

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6 ✓	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2 ✓	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5 ✓	CAN CIRC 3	—
BCM	No indication ✓	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3 ✓	—	—

Case 14

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3 ✓	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3 ✓	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

Case 15

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7 ✓
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3 ✓
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication ✓	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

Case 16

ENGINE	—	CAN COMM	CAN CIRC 1 ✓	—	CAN CIRC 4 ✓	—	CAN CIRC 9 ✓	CAN CIRC 6 ✓	CAN CIRC 3 ✓	CAN CIRC 7 ✓
INTELLIGENT KEY	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication ✓	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication ✓	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 2 ✓	—	—	—	—	—	—
IPDM E/R	No indication ✓	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

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Case 17

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—

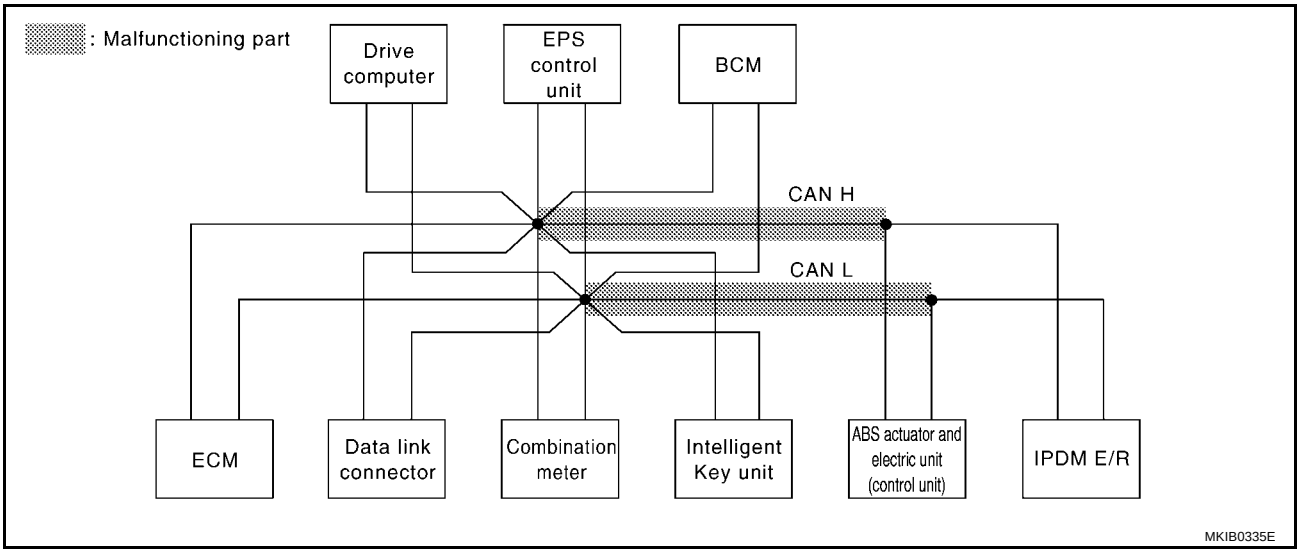
MKIB0302E

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1: Replace ECM.
Case 2: Replace Intelligent Key unit.
Case 3: Replace EPS control unit.
Case 4: Replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .
Case 5: Replace ABS actuator and electric unit (control unit).
Case 6: Replace IPDM E/R.
Case 7: Check harness between BCM and ABS actuator and electric unit (control unit). Refer to LAN-71, "Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)" .
Case 8: Check ECM circuit. Refer to LAN-73, "ECM Circuit Check" .
Case 9: Check data link connector circuit. Refer to LAN-74, "Data Link Connector Circuit Check" .
Case 10: Check combination meter circuit. Refer to LAN-75, "Combination Meter Circuit Check" .
Case 11: Check Intelligent Key unit circuit. Refer to LAN-76, "Intelligent Key Unit Circuit Check"
Case 12: Check EPS control unit circuit. Refer to LAN-77, "EPS Control Unit Circuit Check"
Case 13: Check BCM circuit. Refer to LAN-78, "BCM Circuit Check" .
Case 14: Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-79, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .
Case 15: Check IPDM E/R circuit. Refer to LAN-80, "IPDM E/R Circuit Check" .
Case 16: Check CAN communication circuit. Refer to LAN-81, "CAN Communication Circuit Check" .
Case 17: Check IPDM E/R ignition relay circuit. Refer to LAN-84, "IPDM E/R Ignition Relay Circuit Check" .

Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)

EKS0081E



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).

- Harness connector M1
- Harness connector E101

OK or NG

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

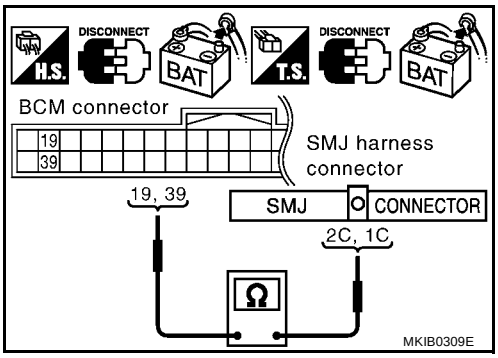
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.

- Harness connector M1
- Combination meter connector
- Intelligent Key unit connector
- Drive computer connector
- EPS control unit connector
- BCM connector

2. Check continuity between BCM harness connector M48 terminals 19 (R), 39 (W) and harness connector M1 terminals 2C (R), 1C (W).

19 (R) – 2C (R) : Continuity should exist.
39 (W) –1C (W) : Continuity should exist.



OK or NG

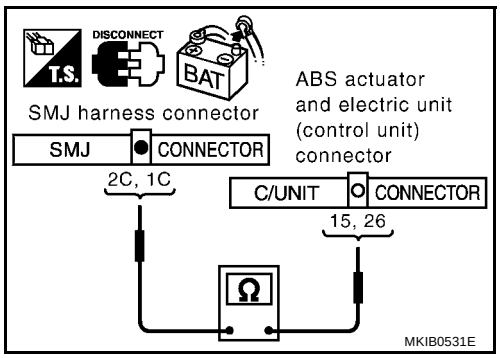
OK >> GO TO 3.
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W).

2C (R) – 26 (R) : Continuity should exist.

1C (W) – 15 (W) : Continuity should exist.



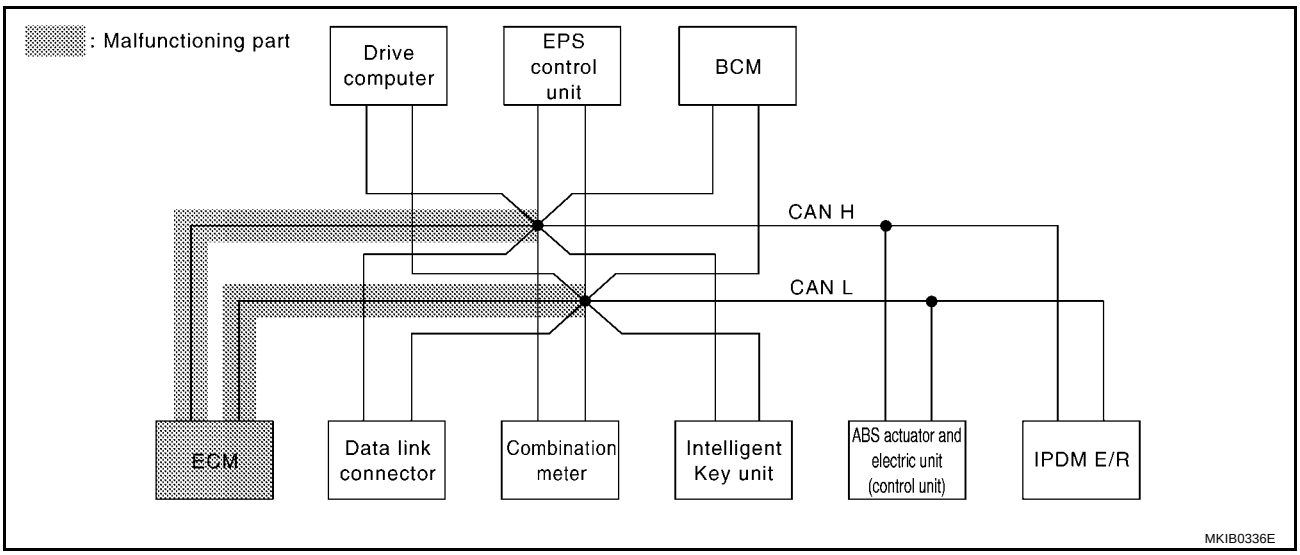
OK or NG

OK >> Reconnect all connectors to perform “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “DATA MONITOR (CAN DIAG SUPPORT MNTR)” displayed on CONSULT-II. Refer to LAN-64, "Work Flow" .

NG >> Repair harness.

ECM Circuit Check

EKS0081F



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).

- ECM connector
- Harness connector M1
- Harness connector E101

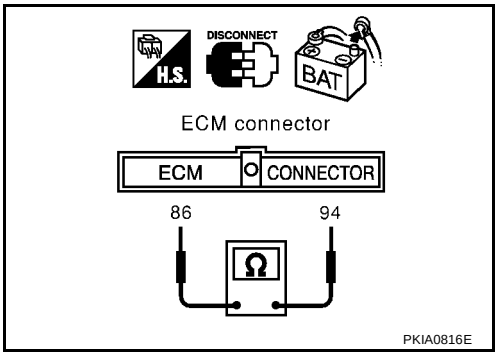
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W) : Approx. 108 – 132Ω

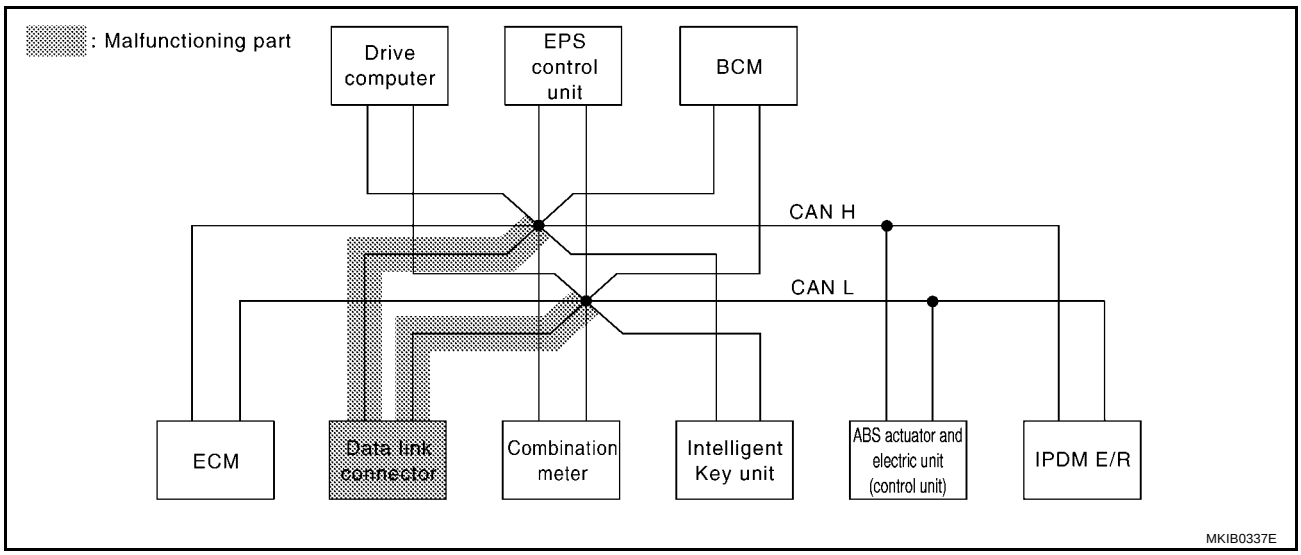


OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and data link connector.

Data Link Connector Circuit Check

EKS0081G



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check the data link connector and terminals for damage, bend and loose connection (connector side and harness side).

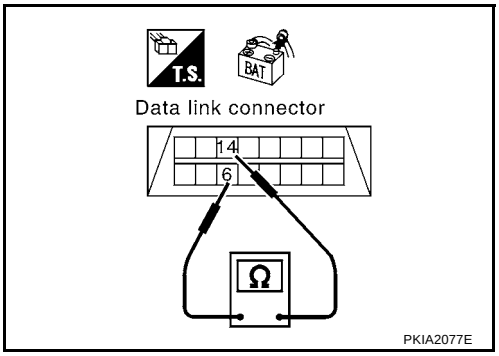
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

6 (R) – 14 (W) : Approx. 54 – 66Ω

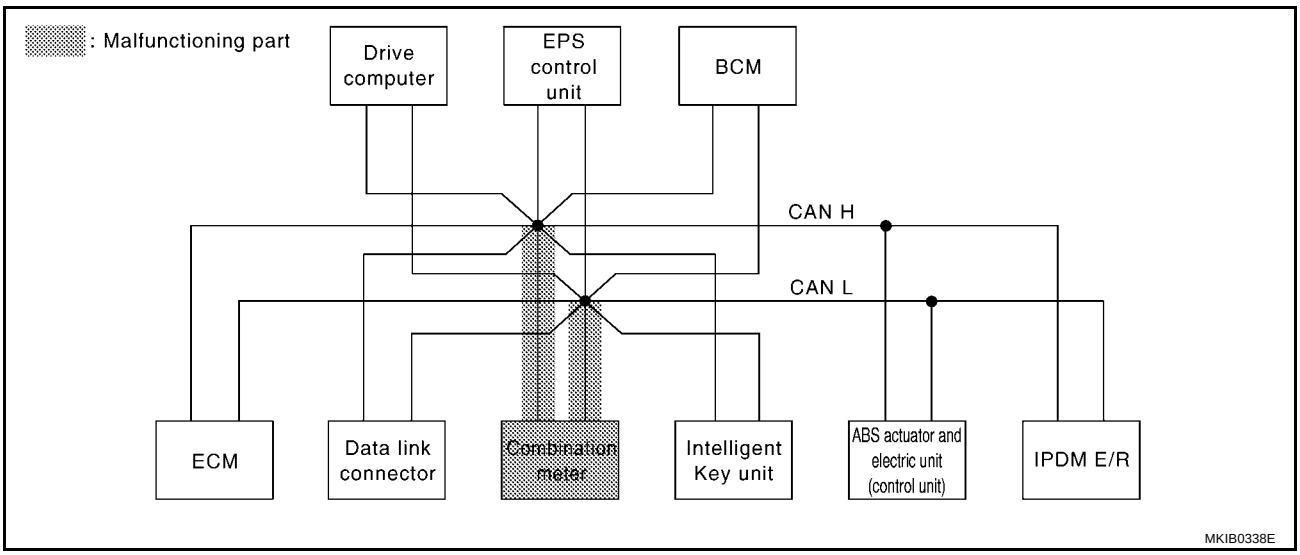


OK or NG

OK >> Perform “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “DATA MONITOR (CAN DIAG SUPPORT MNTR)” displayed on CONSULT-II. Refer to LAN-64, "Work Flow" .
NG >> Repair harness between data link connector and combination meter

Combination Meter Circuit Check

EKS0081H



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

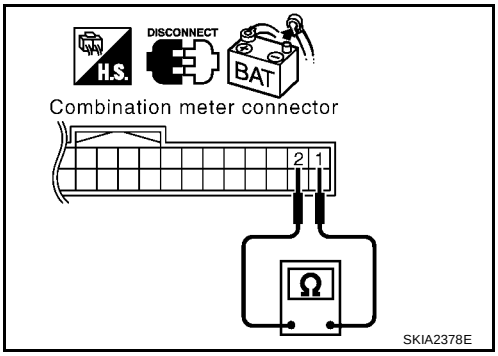
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

1 (R) – 2 (W) : Approx. 54 – 66Ω

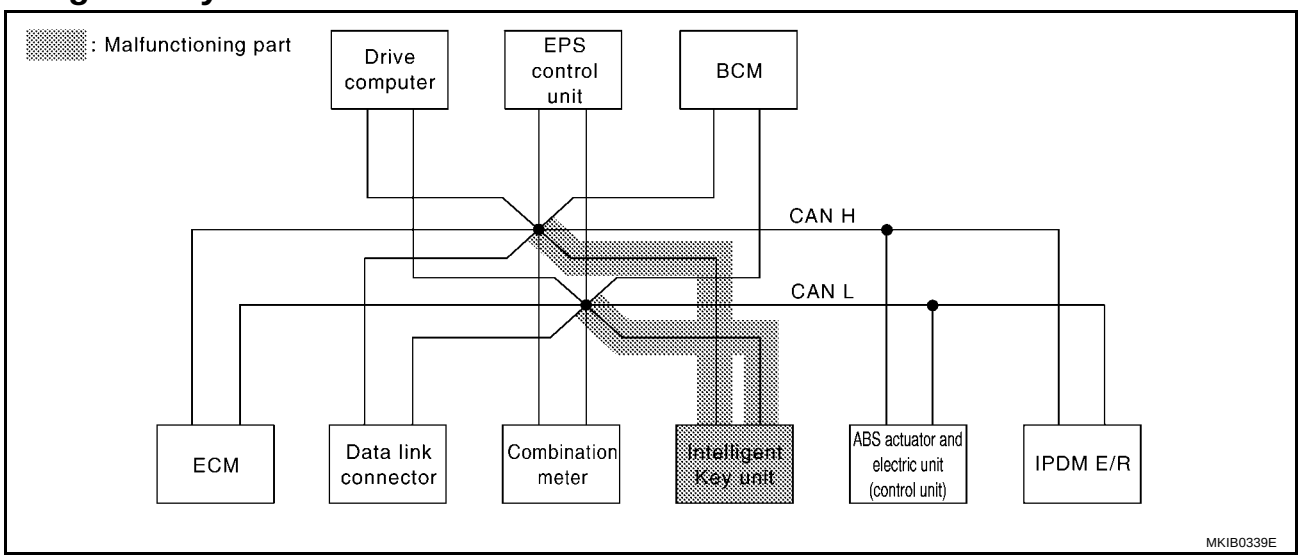


OK or NG

OK >> Replace combination meter.
NG >> Repair harness between combination meter and data link connector.

Intelligent Key Unit Circuit Check

EKS0081I



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of Intelligent Key unit for damage, bend and loose connection (control unit side and harness side).

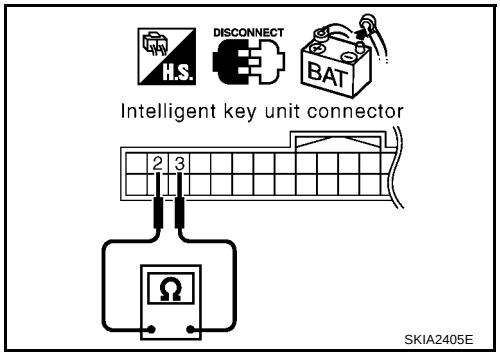
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect Intelligent Key unit connector.
2. Check resistance between Intelligent Key unit harness connector M51 terminals 2 (R) and 3 (W).

2 (R) – 3 (W) : Approx. 54 – 66Ω

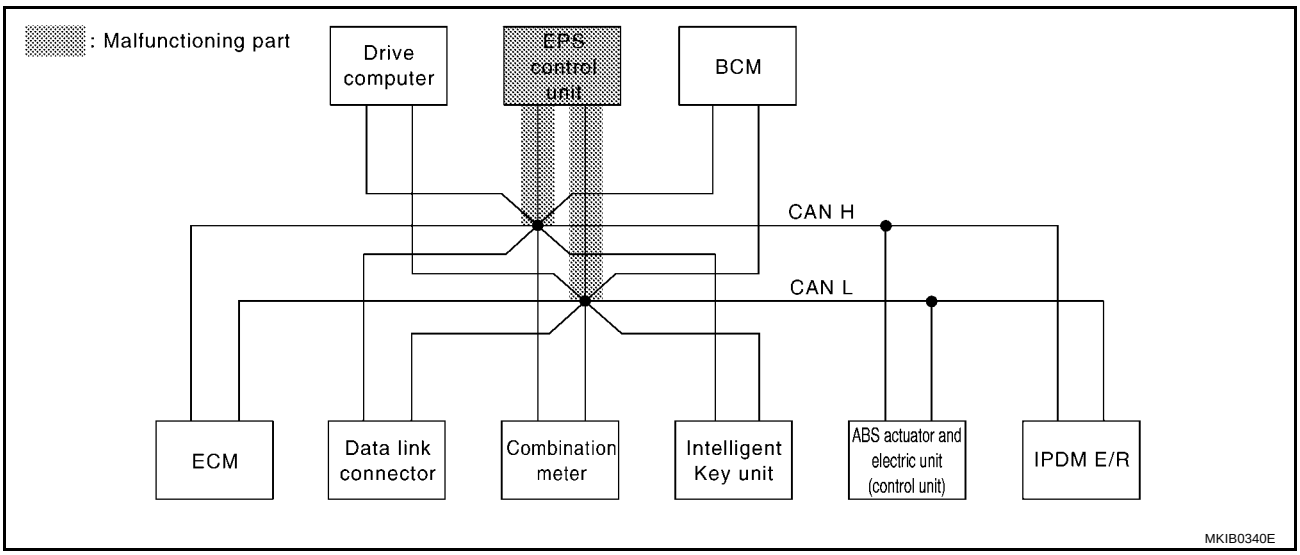


OK or NG

OK >> Replace Intelligent Key unit.
NG >> Repair harness between Intelligent Key unit and data link connector.

EPS Control Unit Circuit Check

EKS0081J



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of EPS control unit for damage, bend and loose connection (control unit side and harness side).

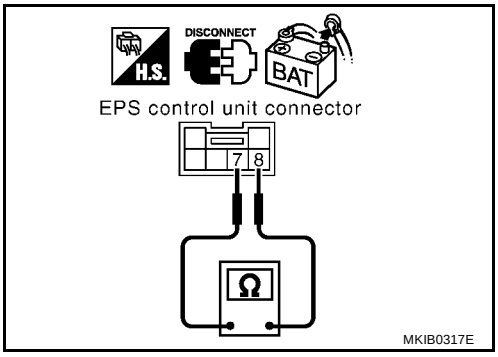
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

8 (R) – 7 (W) : Approx. 54 – 66Ω

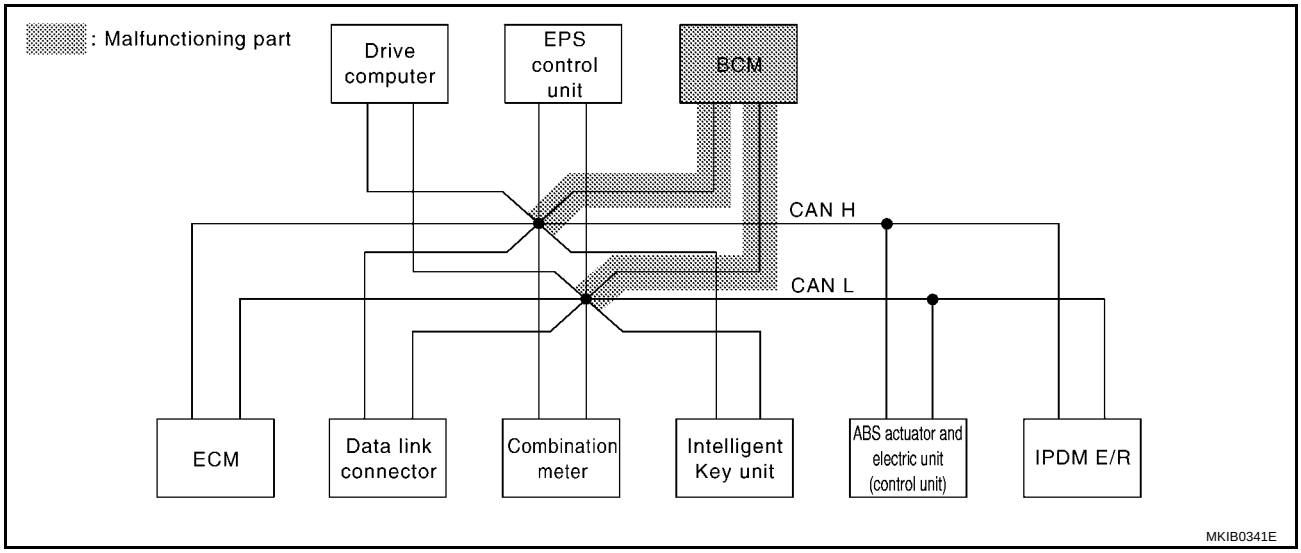


OK or NG

OK >> Replace EPS control unit.
NG >> Repair harness between EPS control unit and data link connector.

BCM Circuit Check

EKS0081K



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of BCM for damage, bend and loose connection (control module side and harness side).

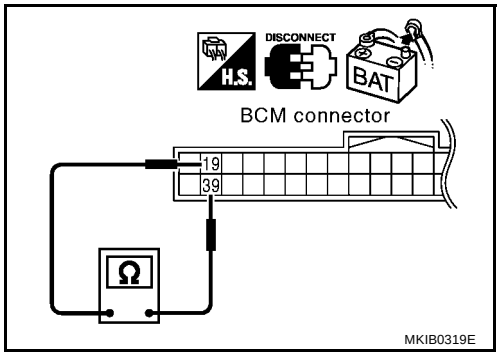
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

19 (R) – 39 (W) : Approx. 54 – 66Ω

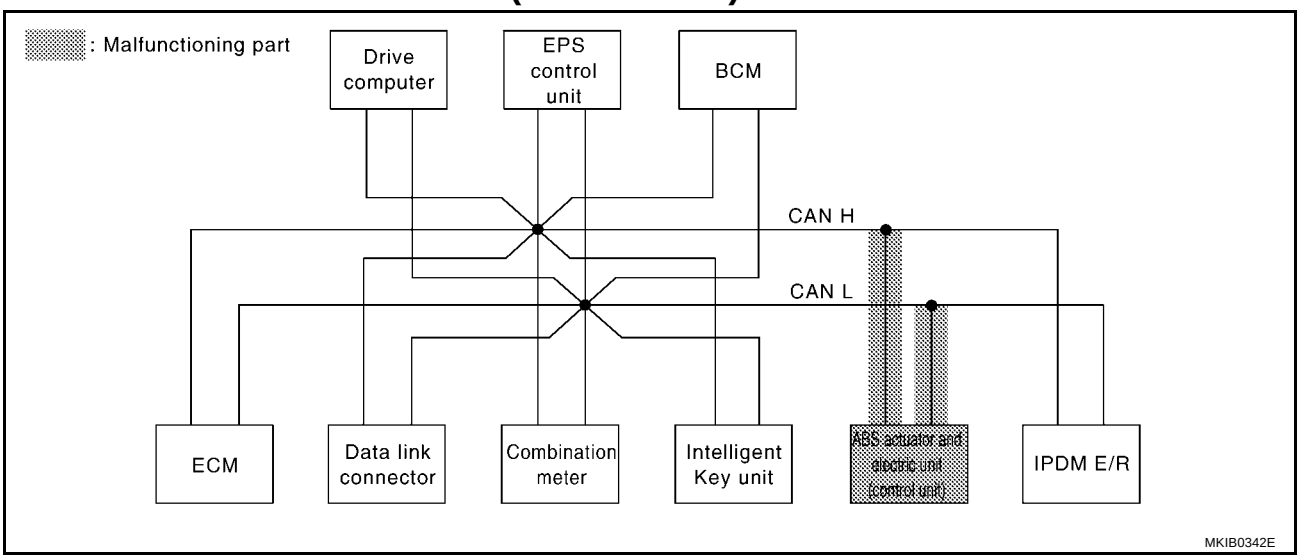


OK or NG

OK >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

ABS Actuator and Electric Unit (Control Unit) Circuit Check

EKS0081L



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

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

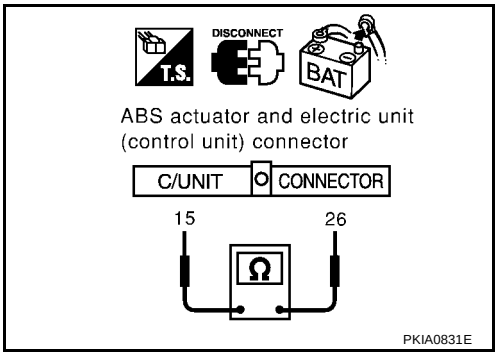
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

26 (R) – 15 (W) : Approx. 54 – 66Ω

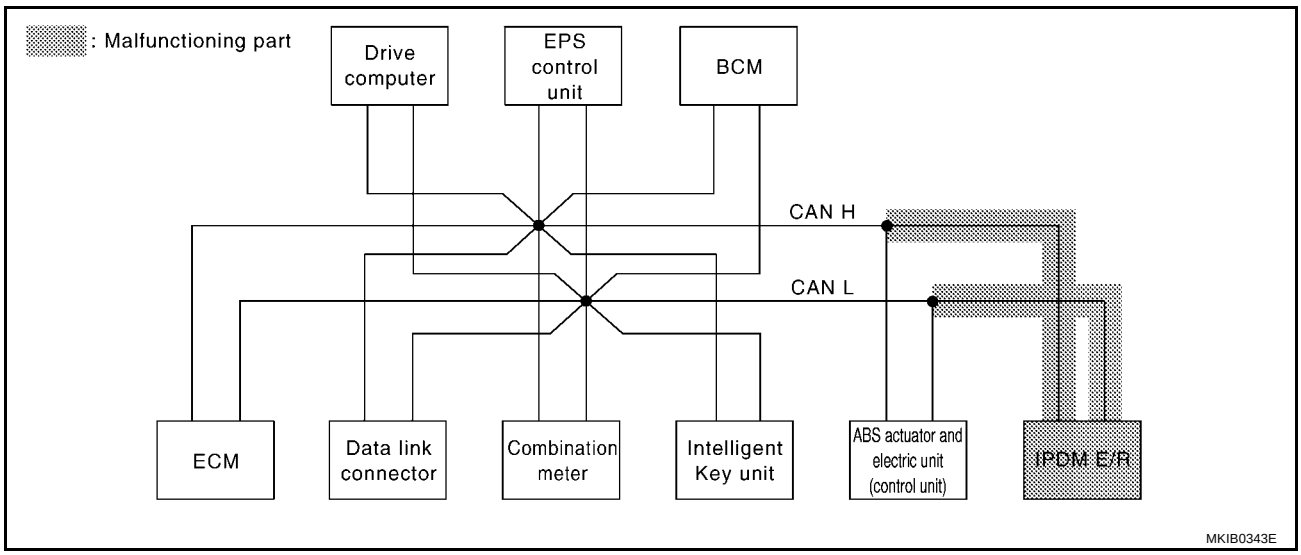
OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) and IPDM E/R.



IPDM E/R Circuit Check

EKS0081M



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

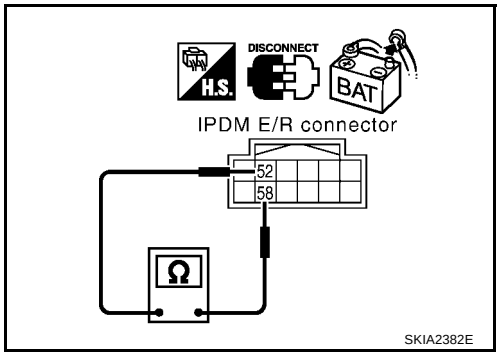
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

52 (R) – 58 (W) : Approx. 108 – 132Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and ABS actuator and electric unit (control unit).

CAN Communication Circuit Check

EKS0081N

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side, meter side, control unit side and harness side).

- ECM
- Combination meter
- Intelligent Key unit
- Drive computer
- EPS control unit
- BCM
- ABS actuator and electric unit (control unit)
- IPDM E/R
- Between ECM and IPDM E/R

OK or NG

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

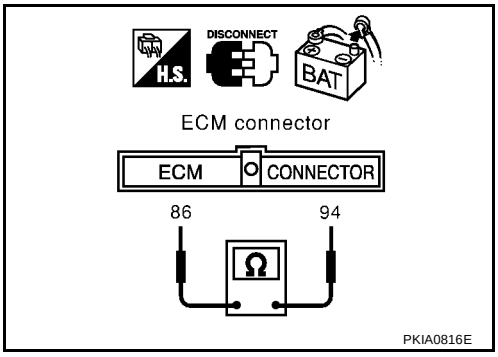
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 3.
NG >> Repair harness between ECM and harness connector E101.



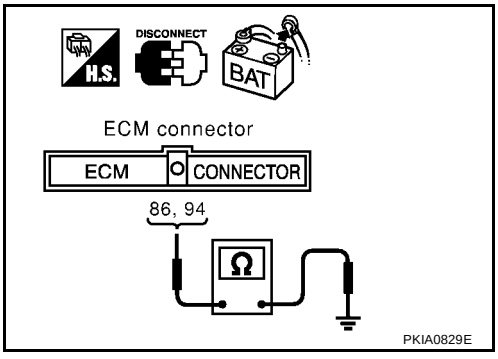
3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E49 terminals 94 (R), 86 (W) and ground.

94 (R) – Ground : Continuity should not exist.
86 (W) – Ground : Continuity should not exist.

OK or NG

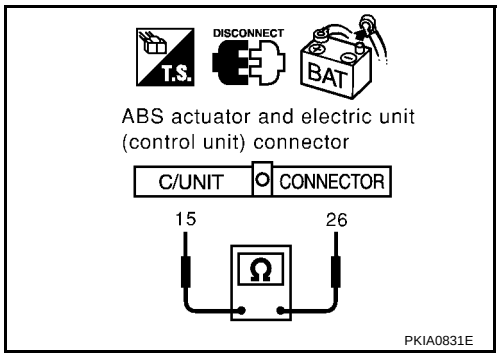
OK >> GO TO 4.
NG >> Repair harness between ECM and harness connector E101.



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- ABS actuator and electric unit (control unit) connector
- IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

26 (R) – 15 (W) : Continuity should not exist.



OK or NG

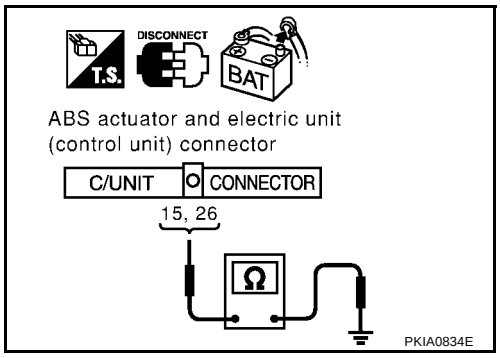
OK >> GO TO 5.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E45 terminals 26 (R), 15 (W) and ground.

26 (R) – Ground : Continuity should not exist.

15 (W) – Ground : Continuity should not exist.



OK or NG

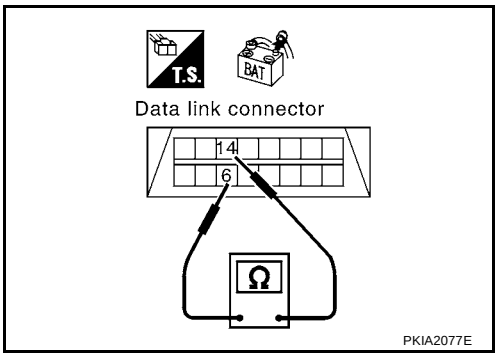
OK >> GO TO 6.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Combination meter connector
- Intelligent Key unit connector
- Drive computer connector
- EPS control unit connector
- BCM connector

2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

6 (R) – 14 (W) : Continuity should not exist.



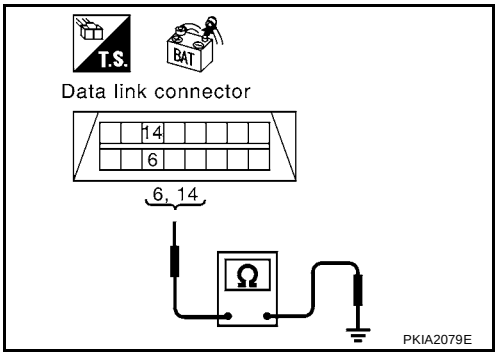
OK or NG

OK >> GO TO 7.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

6 (R) – Ground : Continuity should not exist.
14 (W) – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 8.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and Intelligent Key unit
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM

8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-84, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .

OK or NG

OK >> Reconnect all connectors to perform “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “DATA MONITOR (CAN DIAG SUPPORT MNTR)” displayed on CONSULT-II. Refer to LAN-64, "Work Flow" .
NG >> Replace ECM and/or IPDM E/R.

IPDM E/R Ignition Relay Circuit Check

EKS0081O

Perform the self-diagnosis for IPDM E/R. Refer to PG-35, "Inspection With CONSULT-II (Self-Diagnosis)" . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to PG-38, "IPDM E/R Power Supply and Ground Circuit Check" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN “ON” AND/OR “START”" .

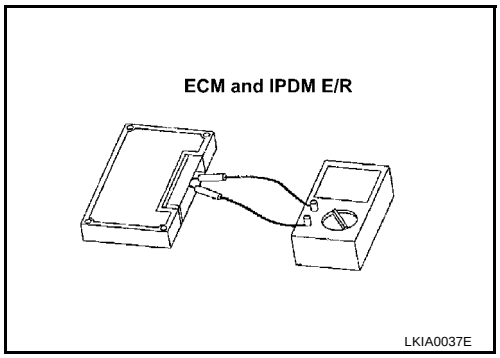
Component Inspection

EKS0081P

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 52 and 58.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58	



CAN SYSTEM (TYPE 4)

PFP:23710

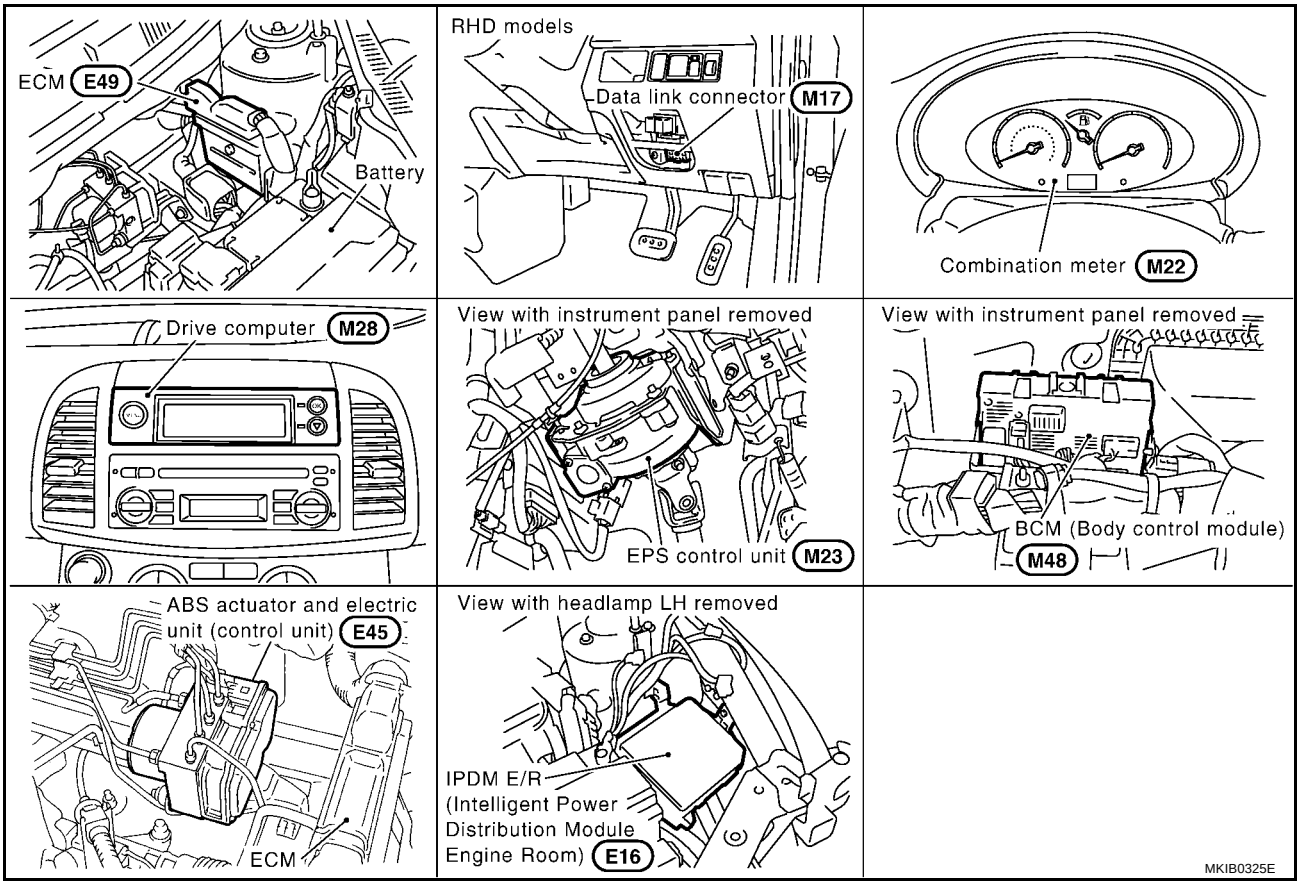
System Description

EKS00754

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.

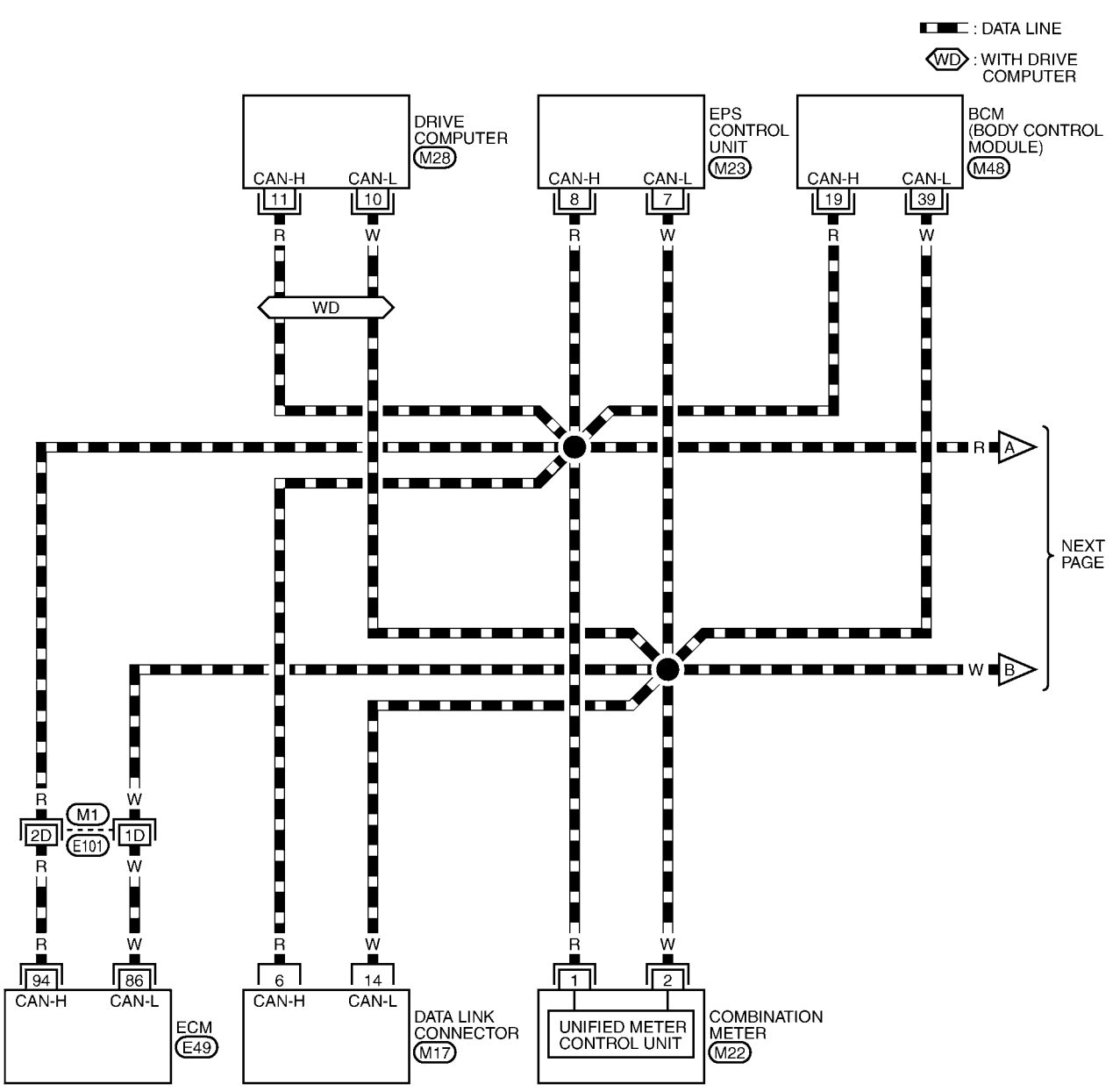
Component Parts and Harness Connector Location

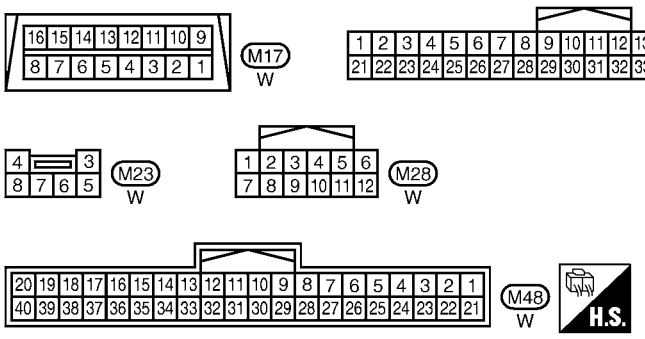
EKS00755



Wiring Diagram — CAN —

EKS007YU





REFER TO THE FOLLOWING.

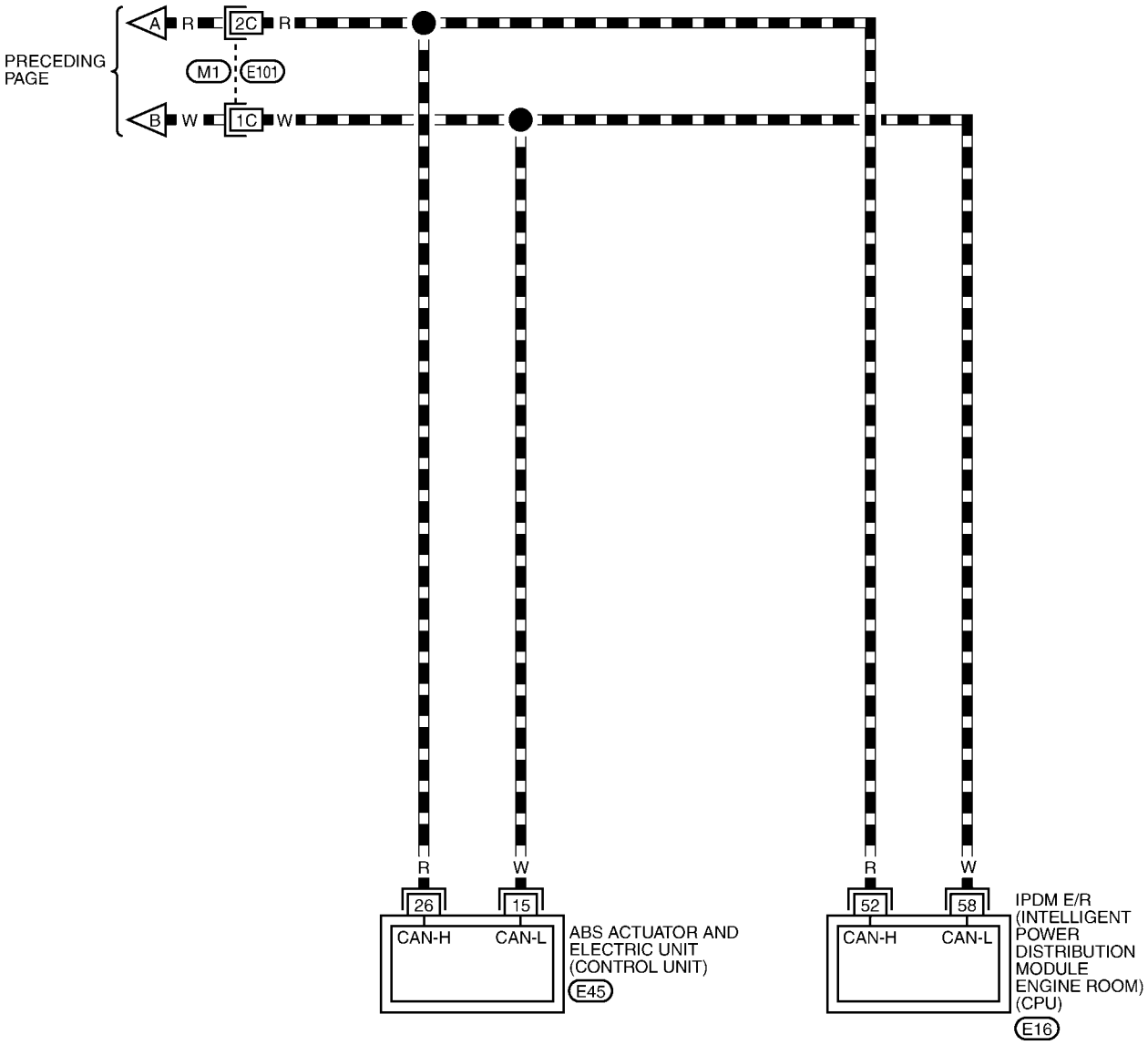
M1 -SUPER MULTIPLE JUNCTION (SMJ)

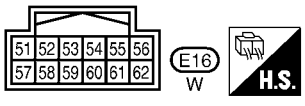
E49 -ELECTRICAL UNITS

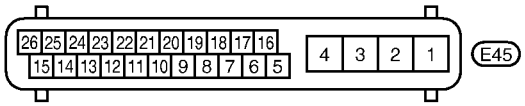
MKWA1310E

LAN-CAN-08

: DATA LINE







REFER TO THE FOLLOWING.

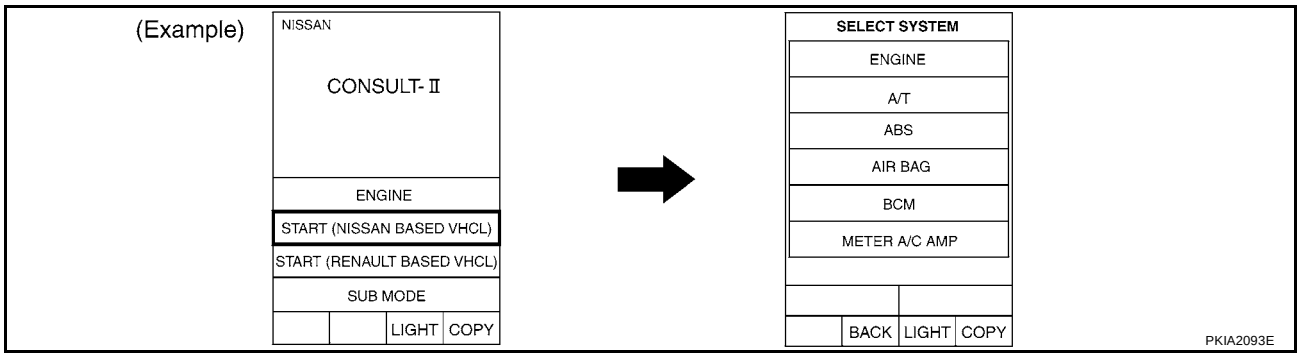
M1 -SUPER MULTIPLE JUNCTION (SMJ)

MKWA1311E

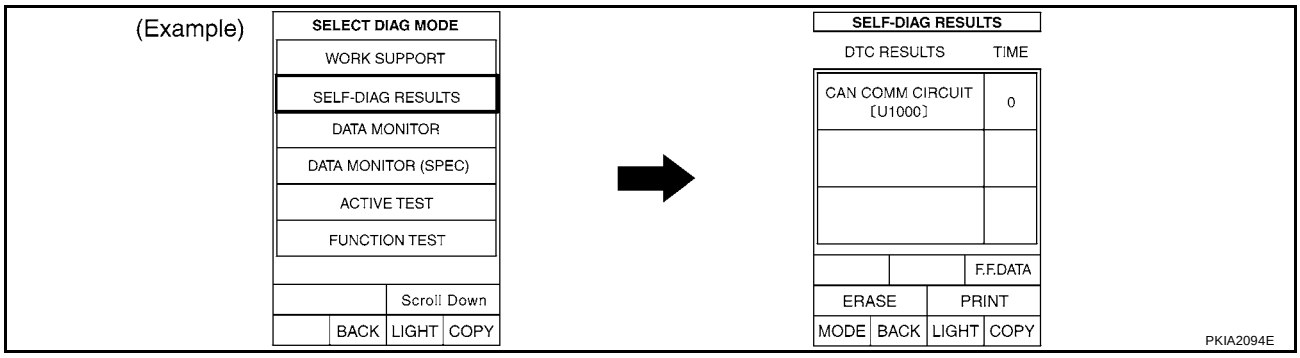
Work Flow

EKS0081Q

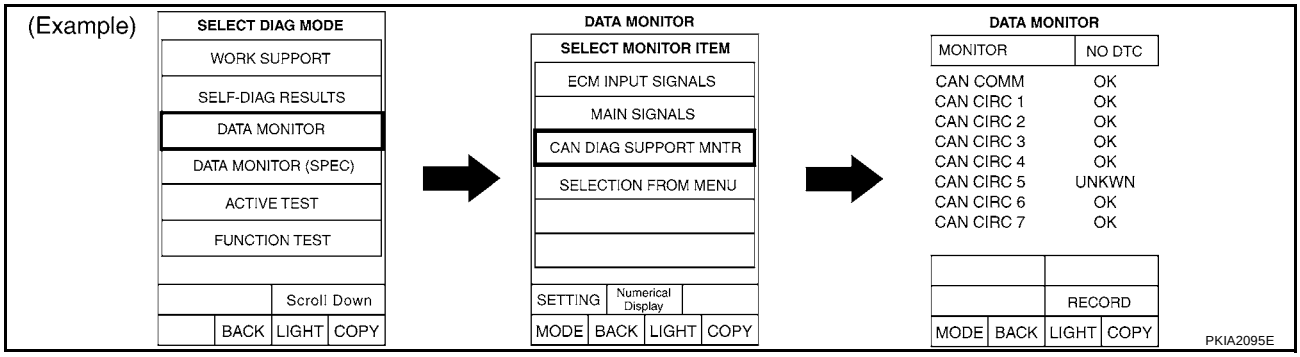
1. When there are no indications of “EPS”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “EPS”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “DATA MONITOR (CAN DIAG SUPPORT MNTR)” for “ENGINE”, “EPS”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “DATA MONITOR (CAN DIAG SUPPORT MNTR)” onto the check sheet. Refer to LAN-89, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “DATA MONITOR (CAN DIAG SUPPORT MNTR)”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-89, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “CAN COMM” as “DATA MONITOR (CAN DIAG SUPPORT MNTR)” for the diagnosed control unit, replace the control unit.
   - The “DATA MONITOR (CAN DIAG SUPPORT MNTR)” items, which are not in check sheet table, are not related to diagnostic procedure on service manual.
     So it is not necessary to check the status of “DATA MONITOR (CAN DIAG SUPPORT MNTR)” items which are not indicated in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-91, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

Check sheet table

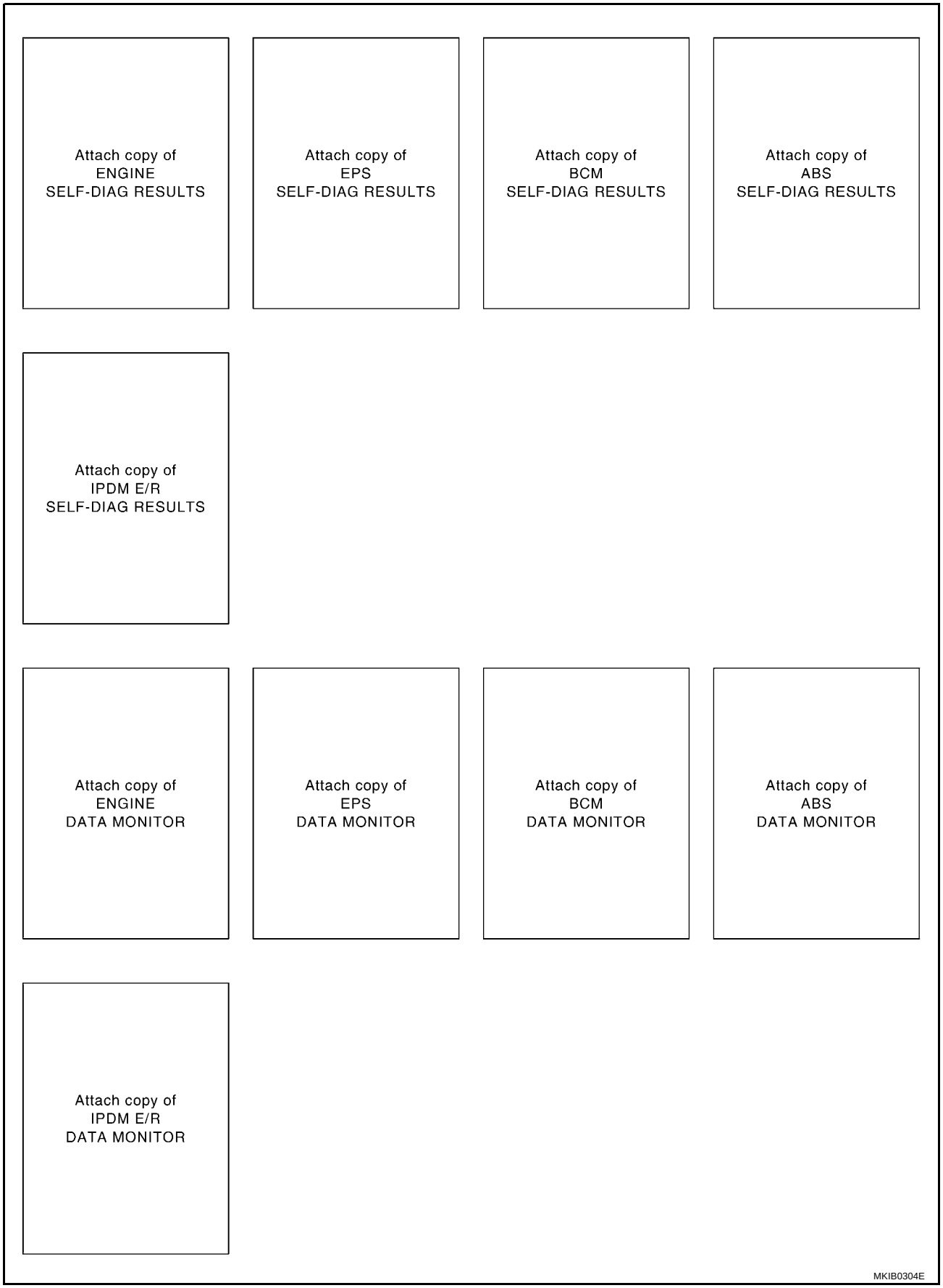
SELECT SYSTEM		DATA MONITOR (CAN DIAG SUPPORT MNTR)							
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

Symptoms:

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

MKIB0303E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
EPS
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
DATA MONITOR
Attach copy of
EPS
DATA MONITOR
Attach copy of
BCM
DATA MONITOR
Attach copy of
ABS
DATA MONITOR
Attach copy of
IPDM E/R
DATA MONITOR
MKIB0304E

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	—	CAN COMM ✔	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4 ✔	CAN CIRC 9 ✔	CAN CIRC 6 ✔	CAN CIRC 3 ✔	CAN CIRC 7 ✔
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

Case 2: Replace EPS control unit

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication ✔	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	CAN CIRC 4 ✔	—	CAN CIRC 5 ✔	CAN CIRC 3 ✔	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

Case 3: Replace BCM

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2 ✔	CAN CIRC 4 ✔	—	—	—	CAN CIRC 3 ✔
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

Case 4: Replace ABS actuator and electric unit (control unit)

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3 ✔	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3 ✔	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM ✔	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2 ✔	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

Case 5: Replace IPDM E/R

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3 ✔	—	—	CAN CIRC 3 ✔	—	—

MKIB0305E

Case 6

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

Case 7

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

Case 8

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

Case 9

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

Case 10

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

Case 11

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

Case 12

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

MKIB0306E

Case 13

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	✓ CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	✓ CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	✓ No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

Case 14

ENGINE	—	CAN COMM	✓ CAN CIRC 1	—	✓ CAN CIRC 4	✓ CAN CIRC 9	✓ CAN CIRC 6	✓ CAN CIRC 3	✓ CAN CIRC 7
EPS	✓ No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	✓ No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	✓ CAN CIRC 1	✓ CAN CIRC 2	—	—	—	—	—
IPDM E/R	✓ No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

Case 15

ENGINE	—	CAN COMM	CAN CIRC 1	—	✓ CAN CIRC 4	✓ CAN CIRC 9	✓ CAN CIRC 6	CAN CIRC 3	✓ CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 3	—	—

ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 7
EPS	No indication	CAN COMM	CAN CIRC 1	✓ CAN CIRC 2	CAN CIRC 4	—	CAN CIRC 5	✓ CAN CIRC 3	—
BCM	No indication	—	CAN CIRC 1	✓ CAN CIRC 2	CAN CIRC 4	—	—	—	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	✓ CAN CIRC 3	—	—	CAN CIRC 3	—	—

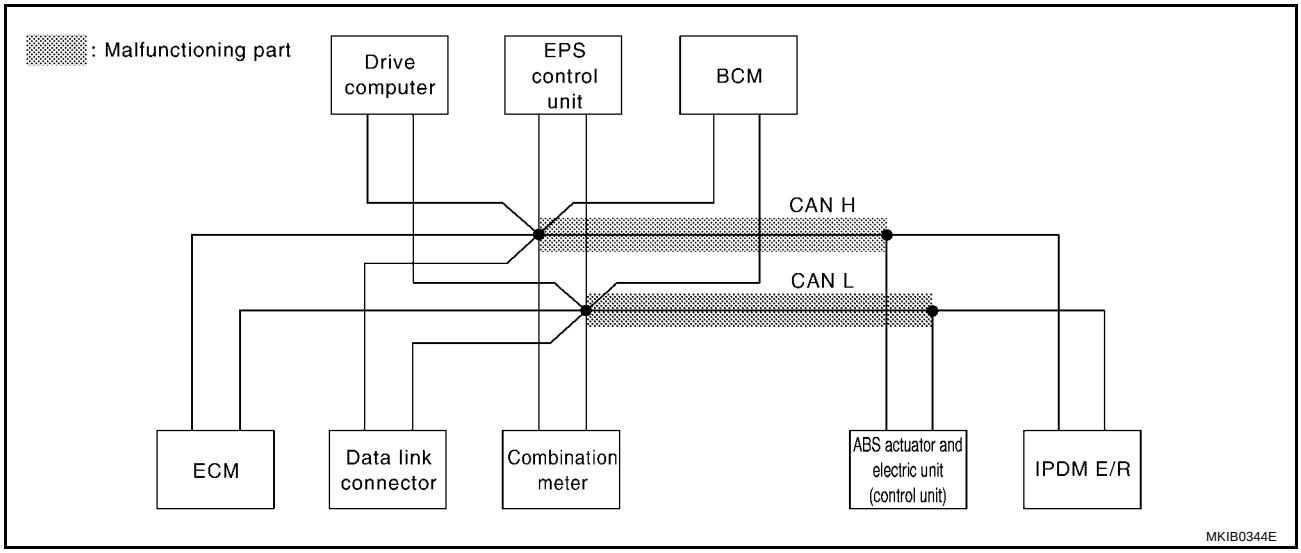
MKIB0307E

INSPECTION

Proceed trouble diagnosis according to the check sheet results (example).
Case 1: Replace ECM.
Case 2: Replace EPS control unit.
Case 3: Replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .
Case 4: Replace ABS actuator and electric unit (control unit).
Case 5: Replace IPDM E/R.
Case 6: Check harness between BCM and ABS actuator and electric unit (control unit). Refer to LAN-94, "Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)" .
Case 7: Check ECM circuit. Refer to LAN-96, "ECM Circuit Check" .
Case 8: Check data link connector circuit. Refer to LAN-97, "Data Link Connector Circuit Check" .
Case 9: Check combination meter circuit. Refer toLAN-98, "Combination Meter Circuit Check" .
Case 10: Check EPS control unit circuit. Refer to LAN-99, "EPS Control Unit Circuit Check"
Case 11: Check BCM circuit. Refer to LAN-100, "BCM Circuit Check" .
Case 12: Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-101, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .
Case 13: Check IPDM E/R circuit. Refer to LAN-102, "IPDM E/R Circuit Check" .
Case 14: Check CAN communication circuit. Refer to LAN-103, "CAN Communication Circuit Check" .
Case 15: Check IPDM E/R ignition relay circuit. Refer to LAN-106, "IPDM E/R Ignition Relay Circuit Check" .

Circuit Check Between BCM and ABS Actuator and Electric Unit (Control Unit)

EKS0081R



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (connector side and harness side).

- Harness connector M1
- Harness connector E101

OK or NG

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

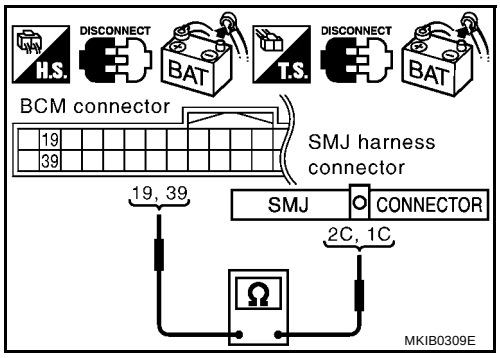
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect following connector.

- Harness connector M1
- Combination meter connector
- Drive computer connector
- EPS control unit connector
- BCM connector

2. Check continuity between BCM harness connector M48 terminals 19 (R), 39 (W) and harness connector M1 terminals 2C (R), 1C (W).

19 (R) – 2C (R) : Continuity should exist.
39 (W) –1C (W) : Continuity should exist.



OK or NG

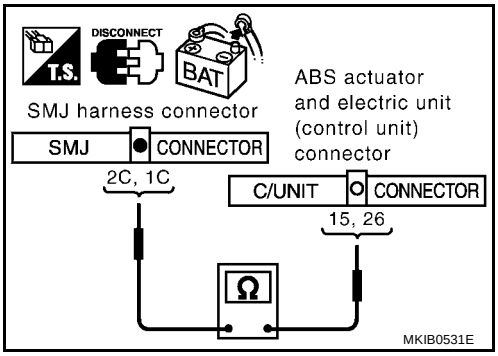
OK >> GO TO 3.
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector E101 terminals 2C (R), 1C (W) and ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R), 15 (W).

2C (R) – 26 (R) : Continuity should exist.

1C (W) – 15 (W) : Continuity should exist.



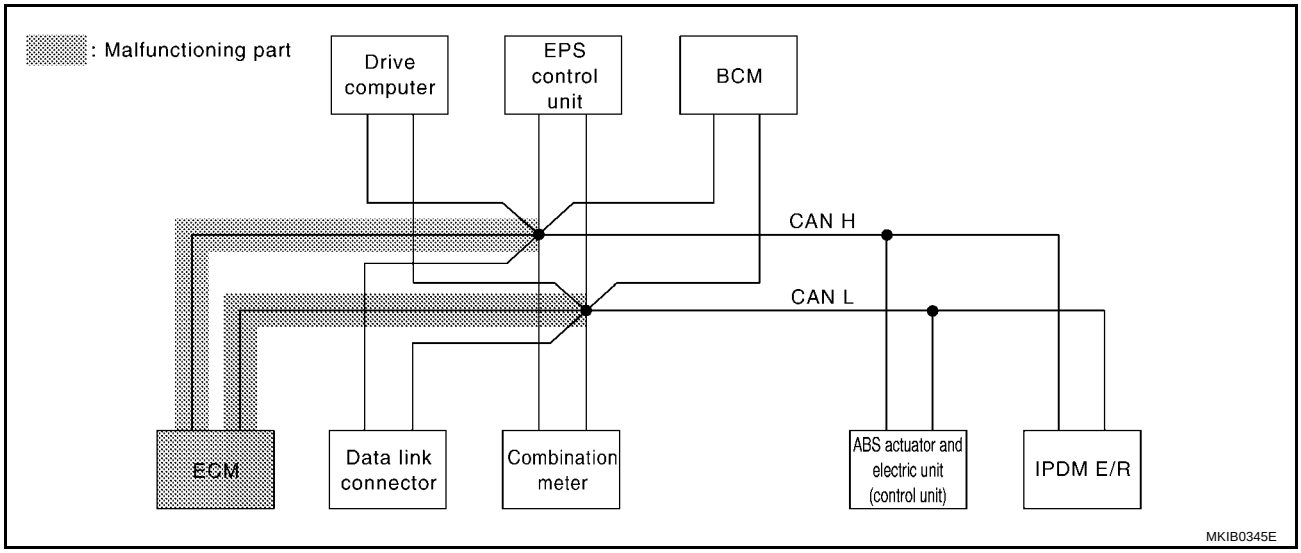
OK or NG

OK >> Reconnect all connectors to perform “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “DATA MONITOR (CAN DIAG SUPPORT MNTR)” displayed on CONSULT-II. Refer to LAN-88, "Work Flow" .

NG >> Repair harness.

ECM Circuit Check

EKS0081S



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side and harness side).

- ECM connector
- Harness connector M1
- Harness connector E101

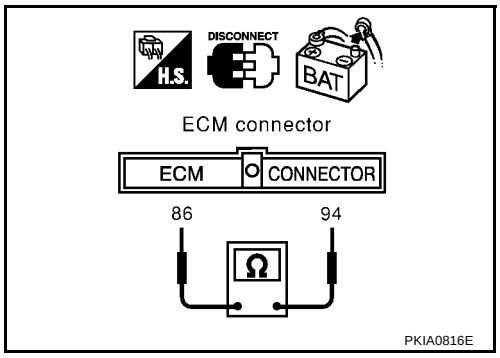
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W) : Approx. 108 – 132Ω

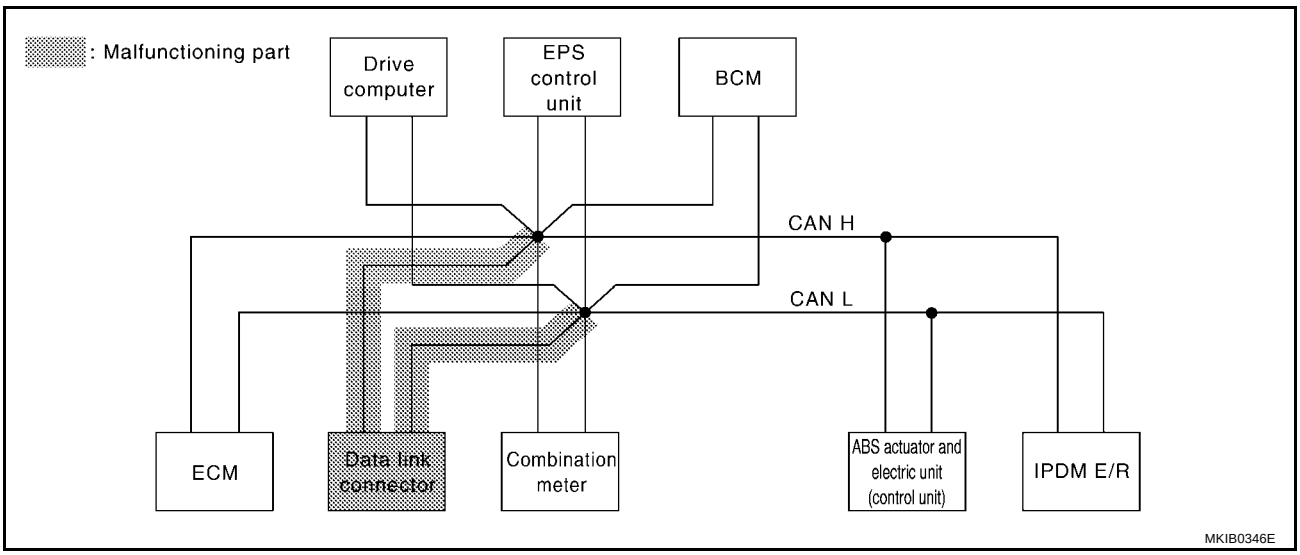


OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and data link connector.

Data Link Connector Circuit Check

EKS0081T



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check data link connector and terminals for damage, bend and loose connection (connector side and harness side).

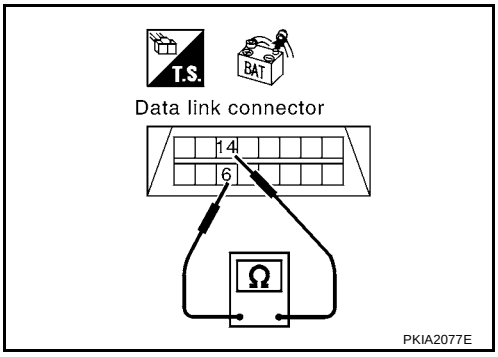
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M17 terminals 6 (R) and 14 (W).

6 (R) – 14 (W) : Approx. 54 – 66Ω

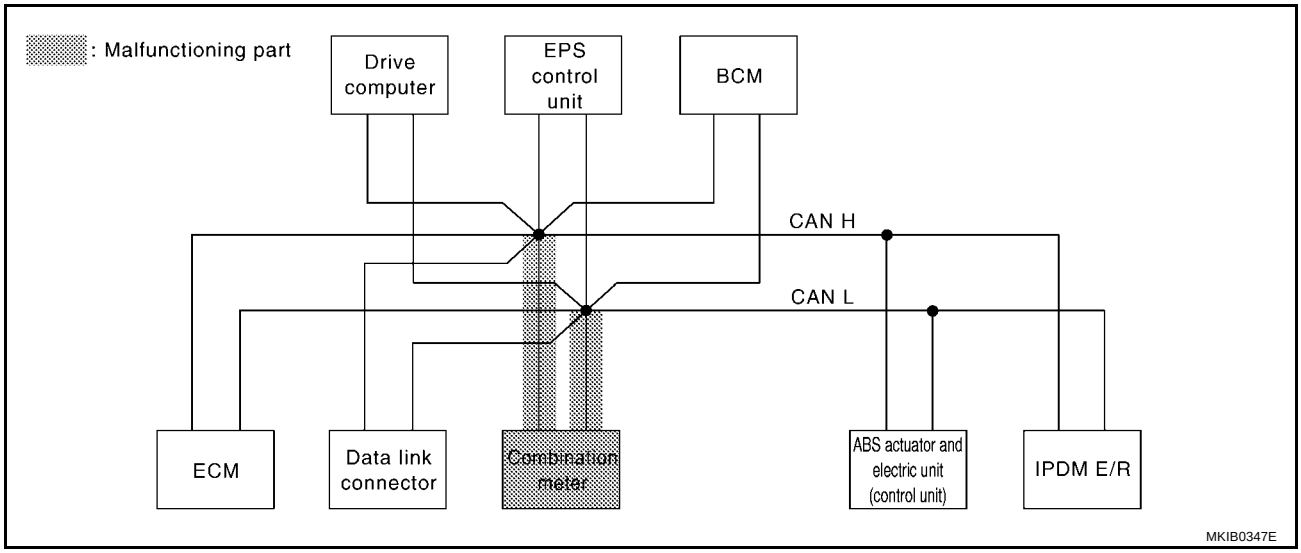


OK or NG

OK >> Perform “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “DATA MONITOR (CAN DIAG SUPPORT MNTR)” displayed on CONSULT-II. Refer to LAN-88, "Work Flow" .
NG >> Repair harness between data link connector and combination meter

Combination Meter Circuit Check

EKS0081U



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of combination meter for damage, bend and loose connection (meter side and harness side).

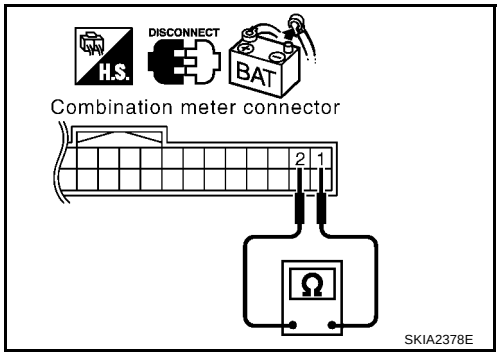
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M22 terminals 1 (R) and 2 (W).

1 (R) – 2 (W) : Approx. 54 – 66Ω

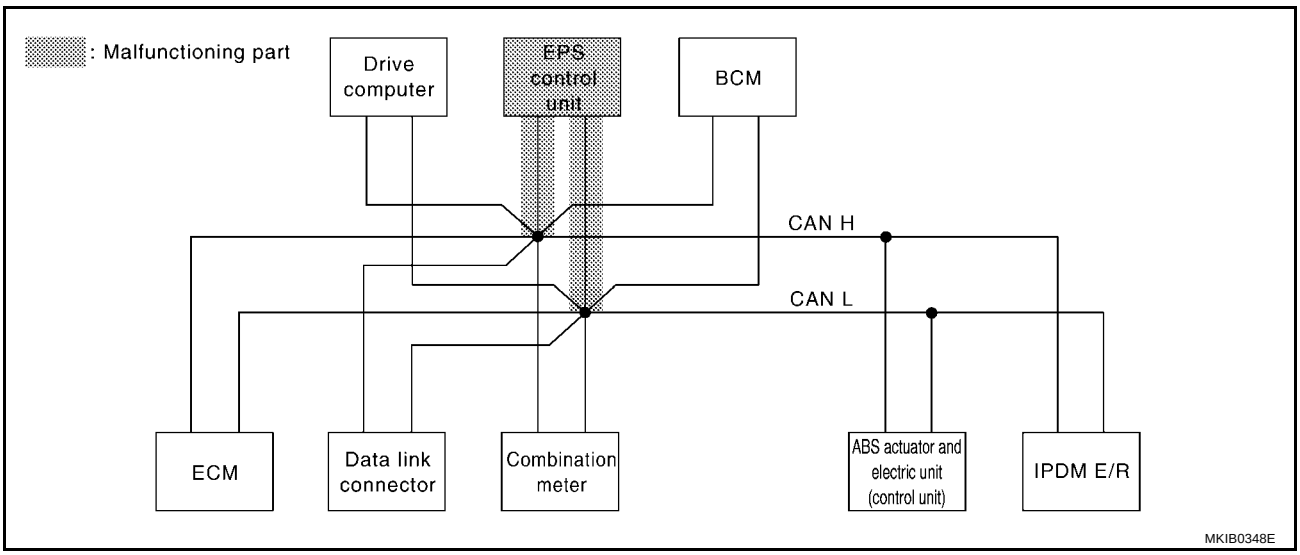


OK or NG

OK >> Replace combination meter
NG >> Repair harness between combination meter and data link connector.

EPS Control Unit Circuit Check

EKS0081V



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of EPS control unit for damage, bend and loose connection (control unit side and harness side).

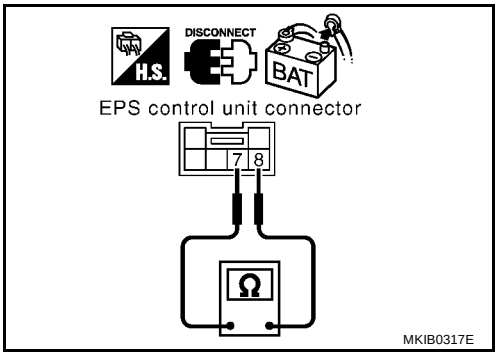
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect EPS control unit connector.
2. Check resistance between EPS control unit harness connector M23 terminals 8 (R) and 7 (W).

8 (R) – 7 (W) : Approx. 54 – 66Ω

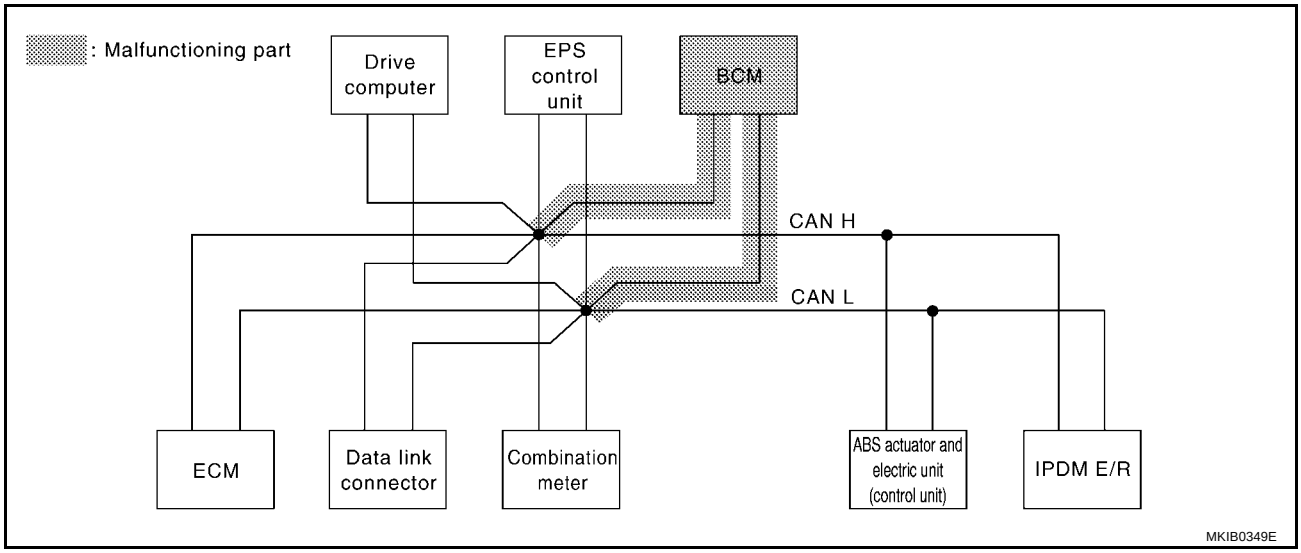


OK or NG

OK >> Replace EPS control unit.
NG >> Repair harness between EPS control unit and data link connector.

BCM Circuit Check

EKS0081W



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of BCM for damage, bend and loose connection (control module side and harness side).

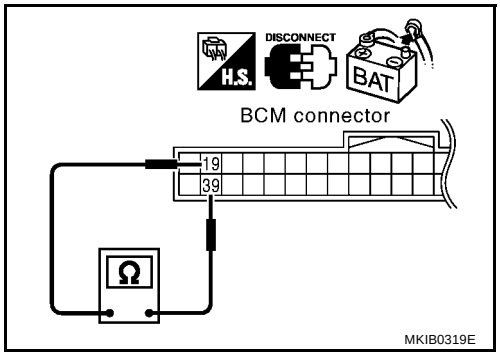
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M48 terminals 19 (R) and 39 (W).

19 (R) – 39 (W) : Approx. 54 – 66Ω

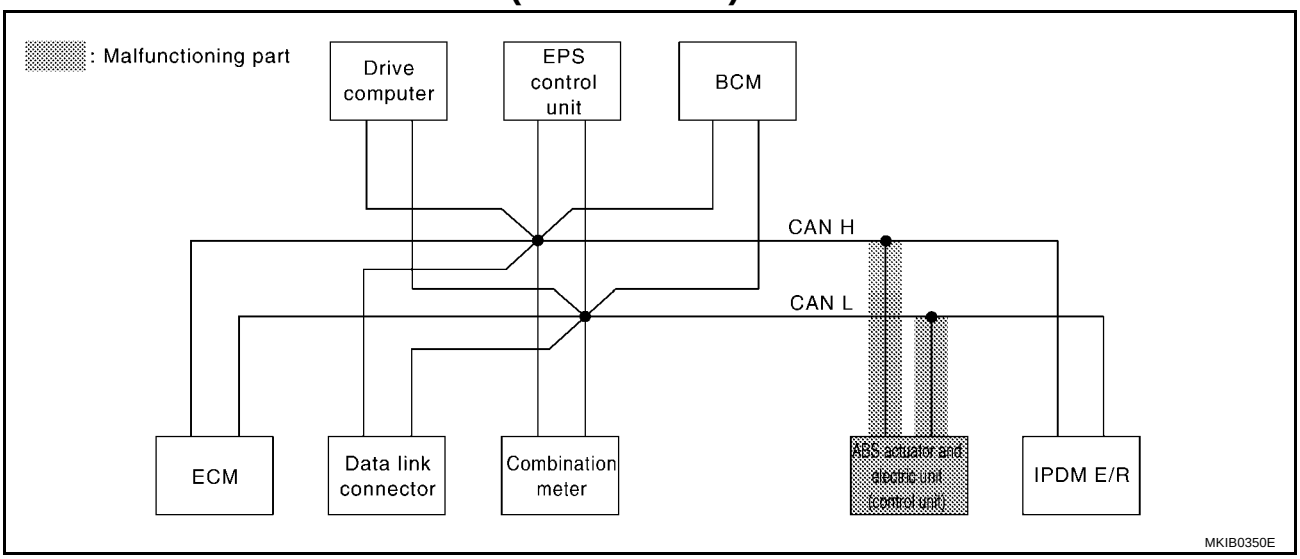


OK or NG

OK >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

ABS Actuator and Electric Unit (Control Unit) Circuit Check

EKS0081X



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

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

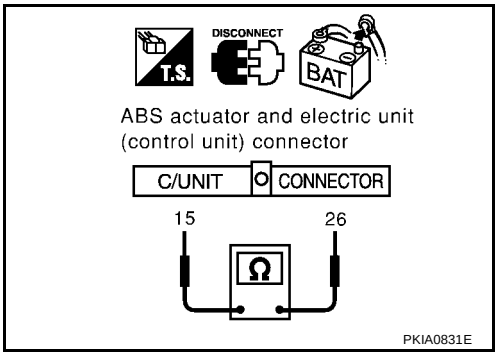
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

26 (R) – 15 (W) : Approx. 54 – 66Ω

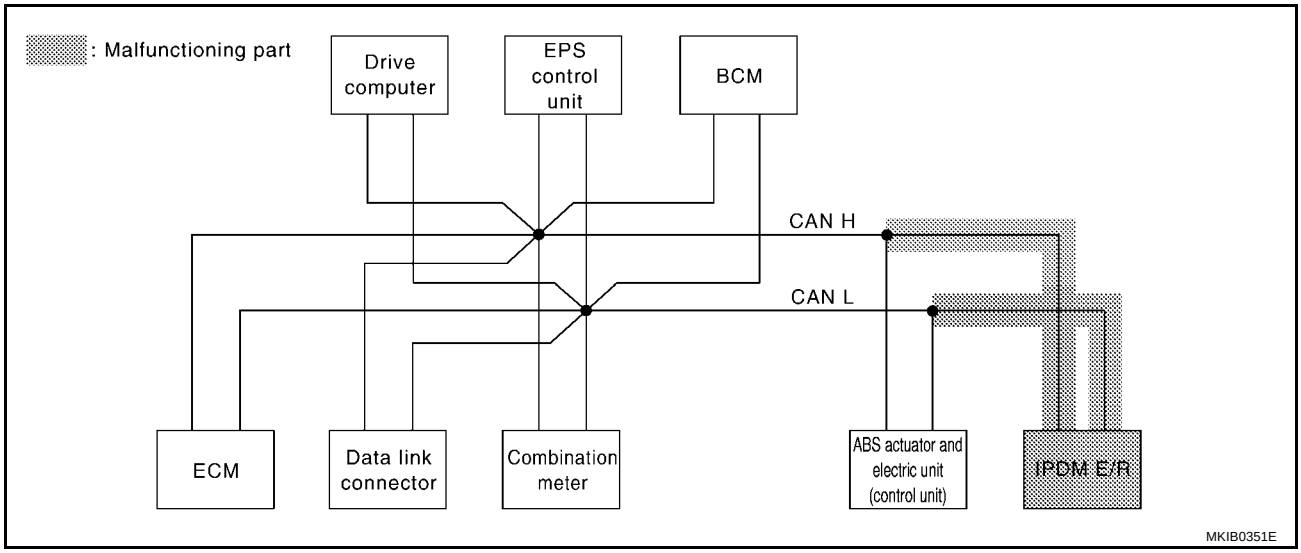
OK or NG

OK >> Replace ABS actuator and electric unit (control unit).
NG >> Repair harness between ABS actuator and electric unit (control unit) and IPDM E/R.



IPDM E/R Circuit Check

EKS0081Y



1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of IPDM E/R for damage, bend and loose connection (control module side and harness side).

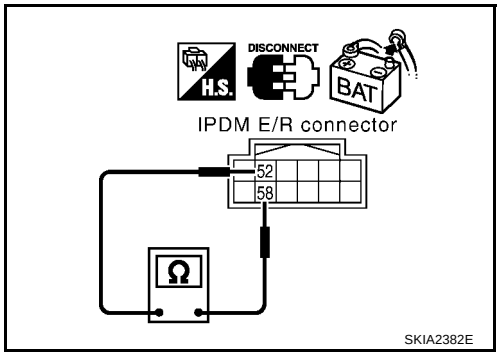
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E16 terminals 52 (R) and 58 (W).

52 (R) – 58 (W) : Approx. 108 – 132Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and ABS actuator and electric unit (control unit).

CAN Communication Circuit Check

EKS0081Z

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check following terminals and connectors for damage, bend and loose connection (control module side, meter side, control unit side and harness side).

- ECM
- Combination meter
- Drive computer
- EPS control unit
- BCM
- ABS actuator and electric unit (control unit)
- IPDM E/R
- Between ECM and IPDM E/R

OK or NG

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

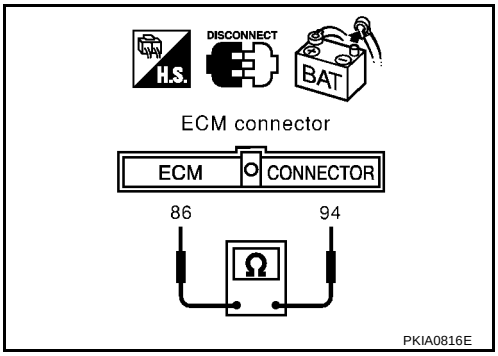
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector E101.
2. Check continuity between ECM harness connector E49 terminals 94 (R) and 86 (W).

94 (R) – 86 (W) : Continuity should not exist.

OK or NG

OK >> GO TO 3.
NG >> Repair harness between ECM and harness connector E101.



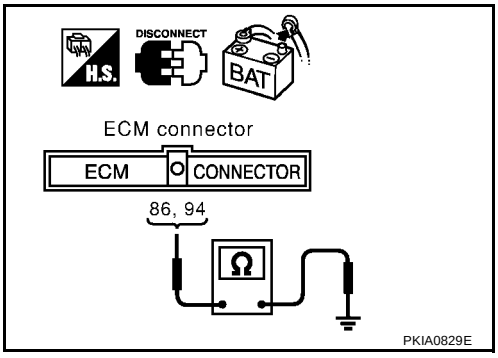
3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E49 terminals 94 (R), 86 (W) and ground.

94 (R) – Ground : Continuity should not exist.
86 (W) – Ground : Continuity should not exist.

OK or NG

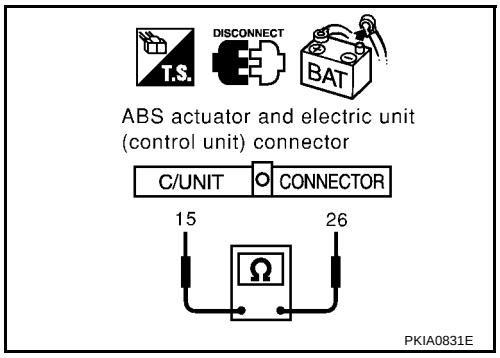
OK >> GO TO 4.
NG >> Repair harness between ECM and harness connector E101.



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- ABS actuator and electric unit (control unit) connector
- IPDM E/R connector
2. Check continuity between ABS actuator and electric unit (control unit) harness connector E45 terminals 26 (R) and 15 (W).

26 (R) – 15 (W) : Continuity should not exist.



OK or NG

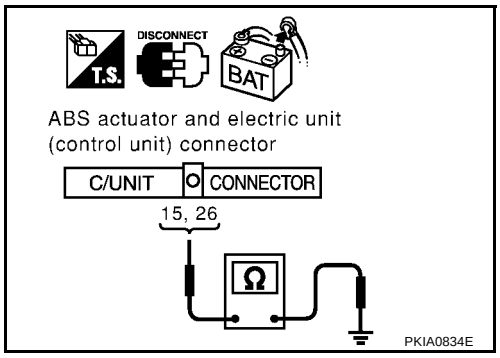
OK >> GO TO 5.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector E45 terminals 26 (R), 15 (W) and ground.

26 (R) – Ground : Continuity should not exist.

15 (W) – Ground : Continuity should not exist.



OK or NG

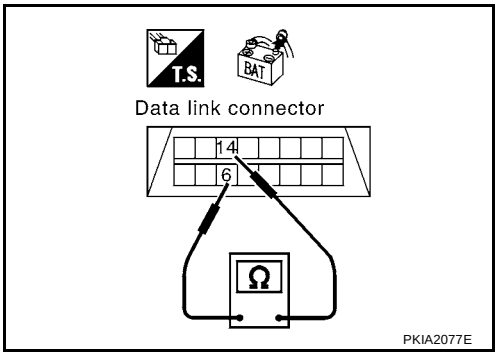
OK >> GO TO 4.
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between ABS actuator and electric unit (control unit) and harness connector E101
- Harness between ABS actuator and electric unit (control unit) and IPDM E/R

6. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
- Combination meter connector
- Drive computer connector
- EPS control unit connector
- BCM connector

2. Check continuity between data link connector M17 terminals 6 (R) and 14 (W).

6 (R) – 14 (W) : Continuity should not exist.



OK or NG

OK >> GO TO 5.

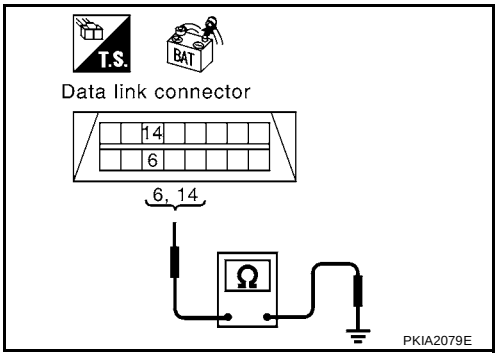
NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M17 terminals 6 (R), 14 (W) and ground.

6 (R) – Ground : Continuity should not exist.

14 (W) – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 6.

NG >> Check the following harnesses. If any harness is damaged, repair the harness.
- Harness between data link connector and harness connector M1
- Harness between data link connector and combination meter
- Harness between data link connector and drive computer
- Harness between data link connector and EPS control unit
- Harness between data link connector and BCM

8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-106, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .

OK or NG

OK >> Reconnect all connectors to perform “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “DATA MONITOR (CAN DIAG SUPPORT MNTR)” displayed on CONSULT-II. Refer to LAN-88, "Work Flow" .

NG >> Replace ECM and/or IPDM E/R.

IPDM E/R Ignition Relay Circuit Check

EKS00820

Perform the self-diagnosis for IPDM E/R. Refer to PG-35, "Inspection With CONSULT-II (Self-Diagnosis)" . If the result is OK, carry out following inspections.

- IPDM E/R power supply circuit. Refer to PG-38, "IPDM E/R Power Supply and Ground Circuit Check" .
- Ignition power supply circuit. Refer to PG-12, "IGNITION POWER SUPPLY — IGNITION SW. IN “ON” AND/OR “START”" .

Component Inspection

EKS00821

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

- Remove ECM and IPDM E/R from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between IPDM E/R terminals 52 and 58.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 – 86	108 - 132
IPDM E/R	52 – 58