SECTION LAN

LAN SYSTEM

CONTENTS

CAN

PRECAUTIONS 6
Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER” 6
Precautions When Using CONSULT-II 6
CHECK POINTS FOR USING CONSULT-II 6
Precautions For Trouble Diagnosis 6
CAN SYSTEM 6
Precautions For Harness Repair 7
CAN SYSTEM 7
CAN COMMUNICATION 8
System Description 8
CAN Communication Unit 8
TYPE 1/TYPE 2/TYPE 3 8
TYPE 4/TYPE 5/TYPE 6 11
TYPE 7/TYPE 8/TYPE 9 14
TYPE 10/TYPE 11/TYPE 12 17
TYPE 13/TYPE 14/TYPE 15 21
CAN SYSTEM (TYPE 1) 24
System Description 24
Component Parts and Harness Connector Location 24
Schematic 25
Wiring Diagram - CAN - 26
Work Flow 29
CHECK SHEET 30
CHECK SHEET RESULTS (EXAMPLE) 32
Circuit Check Between TCM and Data Link Connector 42
Circuit Check Between Data Link Connector and IPDM E/R 43
ECM Circuit Check 44
TCM Circuit Check 45
Combination Meter Circuit Check 45
BCM Circuit Check 46
Data Link Connector Circuit Check 46
ABS Actuator and Electric Unit (Control Unit) Circuit Check 47
IPDM E/R Circuit Check 47
CAN Communication Circuit Check 48
IPDM E/R Ignition Relay Circuit Check 49
Component Inspection 49
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION 49
CAN SYSTEM (TYPE 2) 50
System Description 50
Component Parts and Harness Connector Location 50
Schematic 51
Wiring Diagram - CAN - 52
Work Flow 55
CHECK SHEET 56
CHECK SHEET RESULTS (EXAMPLE) 58
Circuit Check Between TCM and Driver Seat Control Unit 70
Circuit Check Between Driver Seat Control Unit and Data Link Connector 71
Circuit Check Between Data Link Connector and IPDM E/R 72
ECM Circuit Check 73
TCM Circuit Check 73
Driver Seat Control Unit Circuit Check 74
Combination Meter Circuit Check 74
BCM Circuit Check 75
Data Link Connector Circuit Check 75
ABS Actuator and Electric Unit (Control Unit) Circuit Check 76
IPDM E/R Circuit Check 76
CAN Communication Circuit Check 77
IPDM E/R Ignition Relay Circuit Check 77
Component Inspection 78
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION 78
CAN SYSTEM (TYPE 3) 79
System Description 79
Component Parts and Harness Connector Location 79
Schematic 80
Wiring Diagram - CAN - 81
Work Flow 84
CHECK SHEET 86
CHECK SHEET RESULTS (EXAMPLE) 88

Circuit Check Between TCM and Driver Seat Control Unit 102
Circuit Check Between Driver Seat Control Unit and Data Link Connector 103
Circuit Check Between Data Link Connector and IPDM E/R 104
ECM Circuit Check 105
TCM Circuit Check 105
Driver Seat Control Unit Circuit Check 106
Combination Meter Circuit Check 106
Display Control Unit Circuit Check 107
BCM Circuit Check 107
Data Link Connector Circuit Check 108
Front Air Control Circuit Check 108
ABS Actuator and Electric Unit (Control Unit) Circuit Check 109
IPDM E/R Circuit Check 109
CAN Communication Circuit Check 110
IPDM E/R Ignition Relay Circuit Check 110
Component Inspection 111
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION 111
CAN SYSTEM (TYPE 4) 112
System Description 112
Component Parts and Harness Connector Location 112
Schematic 113
Wiring Diagram - CAN - 114
Work Flow 117
CHECK SHEET 118
CHECK SHEET RESULTS (EXAMPLE) 120
Circuit Check Between TCM and Data Link Connector 131
Circuit Check Between Data Link Connector and IPDM E/R 132
ECM Circuit Check 133
TCM Circuit Check 134
Combination Meter Circuit Check 134
BCM Circuit Check 135
Data Link Connector Circuit Check 135
Steering Angle Sensor Circuit Check 136
ABS Actuator and Electric Unit (Control Unit) Circuit Check 136
IPDM E/R Circuit Check 137
CAN Communication Circuit Check 138
IPDM E/R Ignition Relay Circuit Check 138
Component Inspection 139
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION 139
CAN SYSTEM (TYPE 5) 140
System Description 140
Component Parts and Harness Connector Location 140
Schematic 141
Wiring Diagram - CAN - 142
Work Flow 145
CHECK SHEET 146
CHECK SHEET RESULTS (EXAMPLE) 148
Circuit Check Between TCM and Driver Seat Control Unit 161
Circuit Check Between Driver Seat Control Unit and Data Link Connector 162
Circuit Check Between Data Link Connector and IPDM E/R 163
ECM Circuit Check 164
TCM Circuit Check 164
Driver Seat Control Unit Circuit Check 165
Combination Meter Circuit Check 165
BCM Circuit Check 166
Data Link Connector Circuit Check 166
Steering Angle Sensor Circuit Check 167
ABS Actuator and Electric Unit (Control Unit) Circuit Check 167
IPDM E/R Circuit Check 168
CAN Communication Circuit Check 168
IPDM E/R Ignition Relay Circuit Check 169
Component Inspection 169
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION 169
CAN SYSTEM (TYPE 6) 170
System Description 170
Component Parts and Harness Connector Location 170
Schematic 171
Wiring Diagram - CAN - 172
Work Flow 175
CHECK SHEET 177
CHECK SHEET RESULTS (EXAMPLE) 179
Circuit Check Between TCM and Driver Seat Control Unit 194
Circuit Check Between Driver Seat Control Unit and Data Link Connector 195
Circuit Check Between Data Link Connector and IPDM E/R 196
ECM Circuit Check 197
TCM Circuit Check 197
Driver Seat Control Unit Circuit Check 198
Combination Meter Circuit Check 198
Display Control Unit Circuit Check 199
BCM Circuit Check 199
Data Link Connector Circuit Check 200
Steering Angle Sensor Circuit Check 200
Front Air Control Circuit Check 201
ABS Actuator and Electric Unit (Control Unit) Circuit Check 201
IPDM E/R Circuit Check 202
CAN Communication Circuit Check 202
IPDM E/R Ignition Relay Circuit Check 203
Component Inspection 203
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION 203
CAN SYSTEM (TYPE 7) 204
System Description 204
Component Parts and Harness Connector Location 204
Schematic 205
Wiring Diagram - CAN - 206
Work Flow 209
CHECK SHEET 210
CHECK SHEET RESULTS (EXAMPLE) 212
Circuit Check Between TCM and Data Link Connector 223

Circuit Check Between Data Link Connector and IPDM E/R 224
ECM Circuit Check 225
TCM Circuit Check 226
Combination Meter Circuit Check 226
BCM Circuit Check 227
Data Link Connector Circuit Check 227
Transfer Control Unit Circuit Check 228
ABS Actuator and Electric Unit (Control Unit) Circuit Check 228
IPDM E/R Circuit Check 229
CAN Communication Circuit Check 230
IPDM E/R Ignition Relay Circuit Check 230
Component Inspection 231
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION 231
CAN SYSTEM (TYPE 8) 232
System Description 232
Component Parts and Harness Connector Location 232
Schematic 233
Wiring Diagram - CAN - 234
Work Flow 237
CHECK SHEET 238
CHECK SHEET RESULTS (EXAMPLE) 240
Circuit Check Between TCM and Driver Seat Control Unit 253
Circuit Check Between Driver Seat Control Unit and Data Link Connector 254
Circuit Check Between Data Link Connector and IPDM E/R 255
ECM Circuit Check 256
TCM Circuit Check 256
Driver Seat Control Unit Circuit Check 257
Combination Meter Circuit Check 257
BCM Circuit Check 258
Data Link Connector Circuit Check 258
Transfer Control Unit Circuit Check 259
ABS Actuator and Electric Unit (Control Unit) Circuit Check 259
IPDM E/R Circuit Check 260
CAN Communication Circuit Check 260
IPDM E/R Ignition Relay Circuit Check 261
Component Inspection 261
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION 261
CAN SYSTEM (TYPE 9) 262
System Description 262
Component Parts and Harness Connector Location 262
Schematic 263
Wiring Diagram - CAN - 264
Work Flow 267
CHECK SHEET 269
CHECK SHEET RESULTS (EXAMPLE) 271
Circuit Check Between TCM and Driver Seat Control Unit 286
Circuit Check Between Driver Seat Control Unit and Data Link Connector 287
Circuit Check Between Data Link Connector and IPDM E/R 288
ECM Circuit Check 289
TCM Circuit Check 289
Driver Seat Control Unit Circuit Check 290
Combination Meter Circuit Check 290
Display Control Unit Circuit Check 291
BCM Circuit Check 291
Data Link Connector Circuit Check 292
Front Air Control Circuit Check 292
Transfer Control Unit Circuit Check 293
ABS Actuator and Electric Unit (Control Unit) Circuit Check 293
IPDM E/R Circuit Check 294
CAN Communication Circuit Check 294
IPDM E/R Ignition Relay Circuit Check 295
Component Inspection 295
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION 295
CAN SYSTEM (TYPE 10) 296
System Description 296
Component Parts and Harness Connector Location 296
Schematic 297
Wiring Diagram - CAN - 298
Work Flow 301
CHECK SHEET 302
CHECK SHEET RESULTS (EXAMPLE) 304
Circuit Check Between TCM and Differential Lock Control Unit 317
Circuit Check Between Differential Lock Control Unit and Data Link Connector 318
Circuit Check Between Data Link Connector and IPDM E/R 319
ECM Circuit Check 320
TCM Circuit Check 320
Differential Lock Control Unit Circuit Check 321
Combination Meter Circuit Check 321
BCM Circuit Check 322
Data Link Connector Circuit Check 322
Transfer Control Unit Circuit Check 323
ABS Actuator and Electric Unit (Control Unit) Circuit Check 323
IPDM E/R Circuit Check 324
CAN Communication Circuit Check 324
IPDM E/R Ignition Relay Circuit Check 325
Component Inspection 325
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION 325
CAN SYSTEM (TYPE 11) 326
System Description 326
Component Parts and Harness Connector Location 326
Schematic 327
Wiring Diagram - CAN - 328
Work Flow 331
CHECK SHEET 332
CHECK SHEET RESULTS (EXAMPLE) 334
Circuit Check Between TCM and Differential Lock Control Unit 349
Circuit Check Between Differential Lock Control Unit and Driver Seat Control Unit 350
Circuit Check Between Driver Seat Control Unit and

Data Link Connector 351
Circuit Check Between Data Link Connector and IPDM E/R 351
ECM Circuit Check 352
TCM Circuit Check 353
Differential Lock Control Unit Circuit Check 353
Driver Seat Control Unit Circuit Check 354
Combination Meter Circuit Check 354
BCM Circuit Check 355
Data Link Connector Circuit Check 355
Transfer Control Unit Circuit Check 356
ABS Actuator and Electric Unit (Control Unit) Circuit Check 356
IPDM E/R Circuit Check 357
CAN Communication Circuit Check 358
IPDM E/R Ignition Relay Circuit Check 358
Component Inspection 359
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION 359
CAN SYSTEM (TYPE 12) 360
System Description 360
Component Parts and Harness Connector Location 360
Schematic 361
Wiring Diagram - CAN - 362
Work Flow 365
CHECK SHEET 367
CHECK SHEET RESULTS (EXAMPLE) 369
Circuit Check Between TCM and Differential Lock Control Unit 386
Circuit Check Between Differential Lock Control Unit and Driver Seat Control Unit 387
Circuit Check Between Driver Seat Control Unit and Data Link Connector 388
Circuit Check Between Data Link Connector and IPDM E/R 388
ECM Circuit Check 389
TCM Circuit Check 390
Differential Lock Control Unit Circuit Check 390
Driver Seat Control Unit Circuit Check 391
Combination Meter Circuit Check 391
Display Control Unit Circuit Check 392
BCM Circuit Check 392
Data Link Connector Circuit Check 393
Front Air Control Circuit Check 393
Transfer Control Unit Circuit Check 394
ABS Actuator and Electric Unit (Control Unit) Circuit Check 394
IPDM E/R Circuit Check 395
CAN Communication Circuit Check 396
IPDM E/R Ignition Relay Circuit Check 396
Component Inspection 397
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION 397
CAN SYSTEM (TYPE 13) 398
System Description 398
Component Parts and Harness Connector Location 398
Schematic 399
Wiring Diagram - CAN - 400
Work Flow 403
CHECK SHEET 404
CHECK SHEET RESULTS (EXAMPLE) 406
Circuit Check Between TCM and Data Link Connector 418
Circuit Check Between Data Link Connector and IPDM E/R 419
ECM Circuit Check 420
TCM Circuit Check 421
Combination Meter Circuit Check 421
BCM Circuit Check 422
Data Link Connector Circuit Check 422
Steering Angle Sensor Circuit Check 423
Transfer Control Unit Circuit Check 423
ABS Actuator and Electric Unit (Control Unit) Circuit Check 424
IPDM E/R Circuit Check 424
CAN Communication Circuit Check 425
IPDM E/R Ignition Relay Circuit Check 426
Component Inspection 426
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION 426
CAN SYSTEM (TYPE 14) 427
System Description 427
Component Parts and Harness Connector Location 427
Schematic 428
Wiring Diagram - CAN - 429
Work Flow 432
CHECK SHEET 433
CHECK SHEET RESULTS (EXAMPLE) 435
Circuit Check Between TCM and Driver Seat Control Unit 449
Circuit Check Between Driver Seat Control Unit and Data Link Connector 450
Circuit Check Between Data Link Connector and IPDM E/R 451
ECM Circuit Check 452
TCM Circuit Check 452
Driver Seat Control Unit Circuit Check 453
Combination Meter Circuit Check 453
BCM Circuit Check 454
Data Link Connector Circuit Check 454
Steering Angle Sensor Circuit Check 455
Transfer Control Unit Circuit Check 455
ABS Actuator and Electric Unit (Control Unit) Circuit Check 456
IPDM E/R Circuit Check 456
CAN Communication Circuit Check 457
IPDM E/R Ignition Relay Circuit Check 457
Component Inspection 458
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION 458
CAN SYSTEM (TYPE 15) 459
System Description 459
Component Parts and Harness Connector Location 459
Schematic 460
Wiring Diagram - CAN - 461
Work Flow 464
CHECK SHEET 466
CHECK SHEET RESULTS (EXAMPLE) 468

Circuit Check Between TCM and Driver Seat Control Unit 484
Circuit Check Between Driver Seat Control Unit and Data Link Connector 485
Circuit Check Between Data Link Connector and IPDM E/R 486
ECM Circuit Check 487
TCM Circuit Check 487
Driver Seat Control Unit Circuit Check 488
Combination Meter Circuit Check 488
Display Control Unit Circuit Check 489
BCM Circuit Check 489
Data Link Connector Circuit Check 490
Steering Angle Sensor Circuit Check 490
Front Air Control Circuit Check 491
Transfer Control Unit Circuit Check 491
ABS Actuator and Electric Unit (Control Unit) Circuit Check 492
IPDM E/R Circuit Check 492
CAN Communication Circuit Check 493
IPDM E/R Ignition Relay Circuit Check 493
Component Inspection 494
ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION 494

PRECAUTIONS

PFP:00001

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

UKS001AE

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. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. 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 harnesses or harness connectors.**

Precautions When Using CONSULT-II

UKS001AF

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-8, "CAN Communication Unit" .

Precautions For Trouble Diagnosis

UKS001AG

CAN SYSTEM

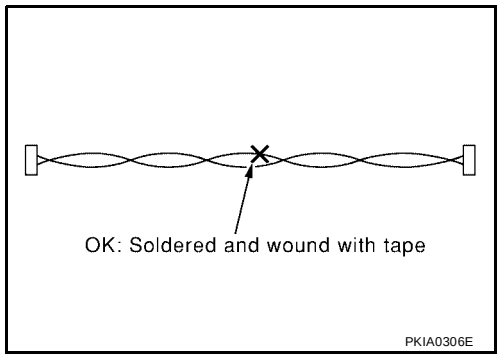
- Do not apply voltage of 7.0V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0V or less.
- Be sure to turn ignition switch off and disconnect negative battery terminal before checking the circuit.

Precautions For Harness Repair

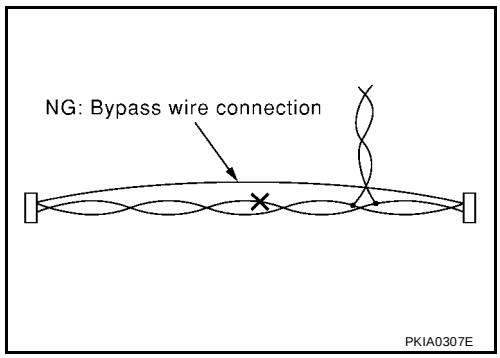
UKS001AH

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.)



CAN COMMUNICATION

PFP:23710

System Description

UKS001AI

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

UKS001AJ

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

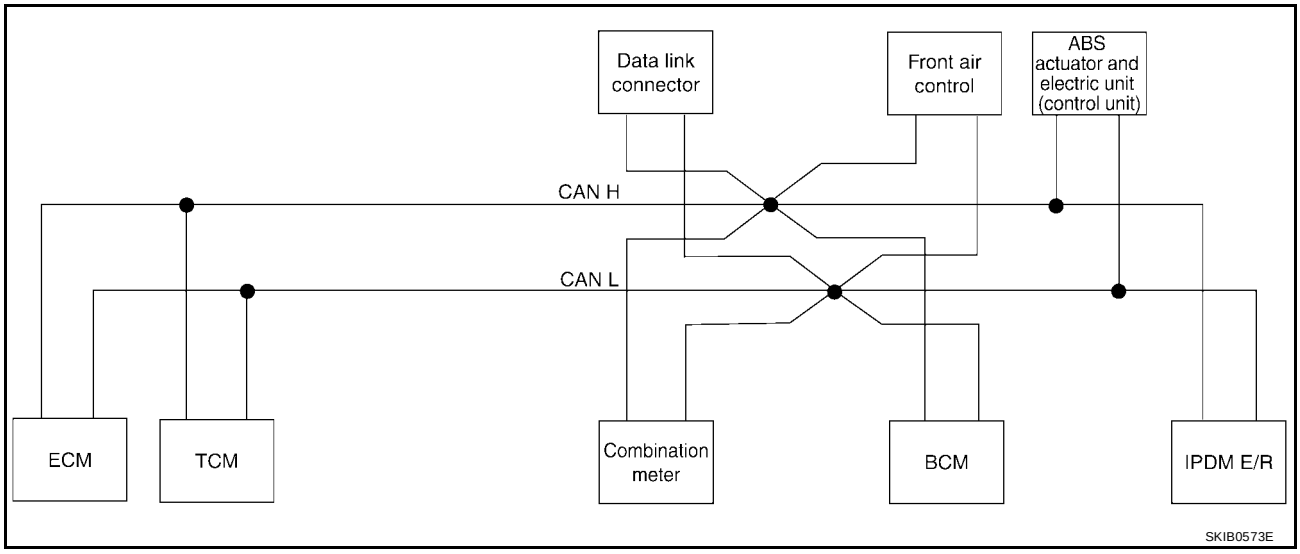
Body type	Truck														
Axle	2WD						4WD								
Engine	VK56DE														
Transmission	A/T														
Brake control	ABS			VDC			ABS						VDC		
Electronic locking rear differential										×	×	×			
Automatic drive positioner		×	×		×	×		×	×		×	×		×	×
Navigation system			×			×			×			×			×
CAN system type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CAN system trouble diagnosis	LAN-24	LAN-50	LAN-79	LAN-112	LAN-140	LAN-170	LAN-204	LAN-232	LAN-262	LAN-296	LAN-326	LAN-360	LAN-398	LAN-427	LAN-459

×: Applicable

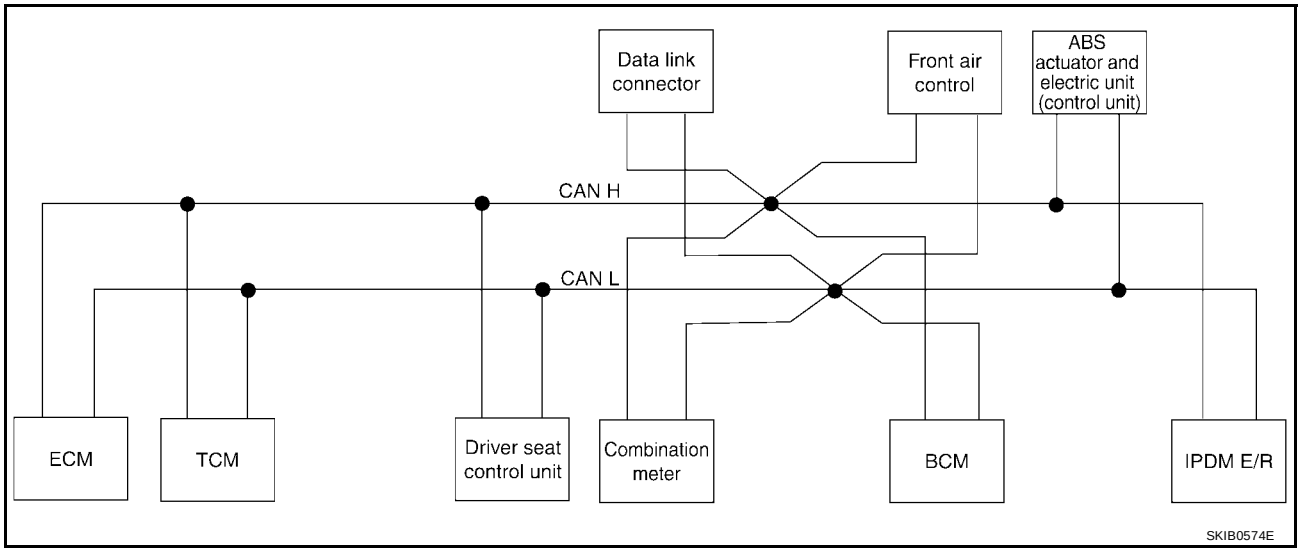
TYPE 1/TYPE 2/TYPE 3

System diagram

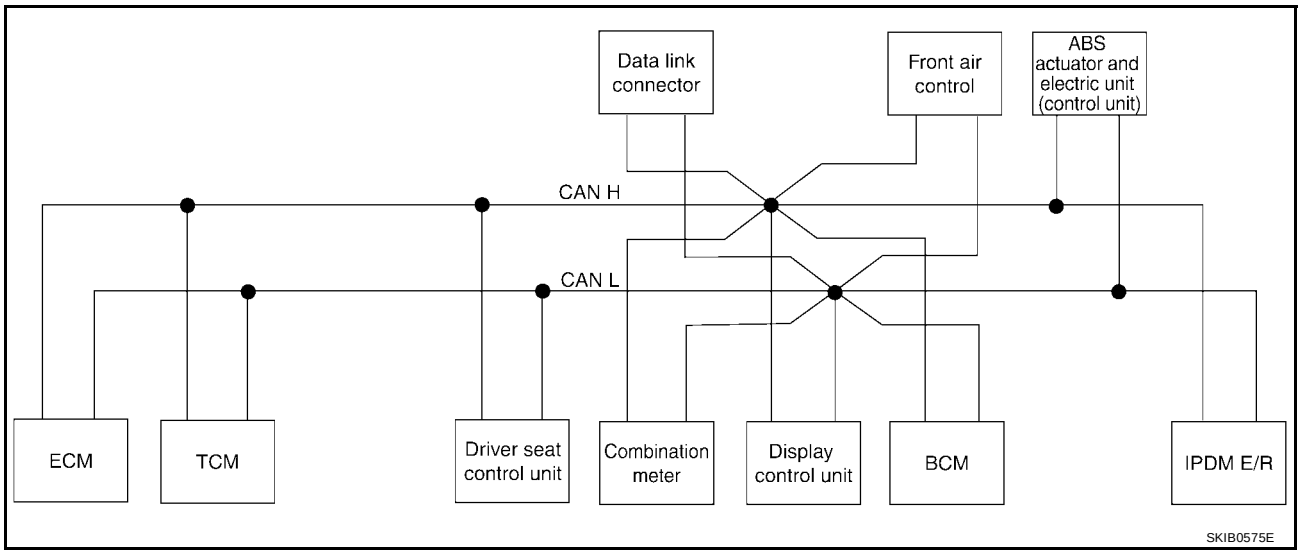
- Type 1



- Type 2



- Type 3



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	Driver seat control unit	Combination meter	Display control unit	BCM	Front air control	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R		R	R			R	
Engine status signal	T					R	R		
Engine coolant temperature signal	T	R		R			R		
A/T self-diagnosis signal	R	T							
Accelerator pedal position signal	T	R						R	
Closed throttle position signal	T	R							
Wide open throttle position signal	T	R							
Battery voltage signal	T	R							
Key switch signal			R			T			
Ignition switch signal			R			T			R

Signals	ECM	TCM	Driver seat control unit	Combination meter	Display control unit	BCM	Front air control	ABS actuator and electric unit (control unit)	IPDM E/R
P range signal		T	R						
Stop lamp switch signal		R		T					
Fuel consumption monitor signal	T			R					
				T	R				
Turbine revolution signal	R	T							
Output shaft revolution signal	R	T							
A/C switch signal	R					T			
A/C compressor request signal	T						R		R
Blower fan motor switch signal	R					T	R		
A/C switch/indicator signal					T		R		
					R		T		
Cooling fan speed request signal	T						R		R
Position light request signal				R		T			R
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
Front fog light request signal						T			R
Day time running light request signal				R		T			R
Vehicle speed signal				R			R	T	
	R	R	R	T	R	R	R		
Sleep wake up signal			R	R		T			R
Door switch signal			R	R	R	T			R
Turn indicator signal				R		T			
Key fob ID signal			R			T			
Key fob door unlock signal			R			T			
Buzzer output signal				R		T			
Fuel level sensor signal	R			T					
Fuel level low warning signal				T	R				
ASCD SET lamp signal	T			R					
ASCD CRUISE lamp signal	T			R					
Malfunction indicator lamp signal	T			R					
Front wiper request signal						T			R
Front wiper stop position signal						R			T
Theft warning horn request signal						T			R
Horn chirp signal						T			R
ABS warning lamp signal				R				T	
Brake warning lamp signal				R				T	
SLIP indicator lamp signal				R				T	

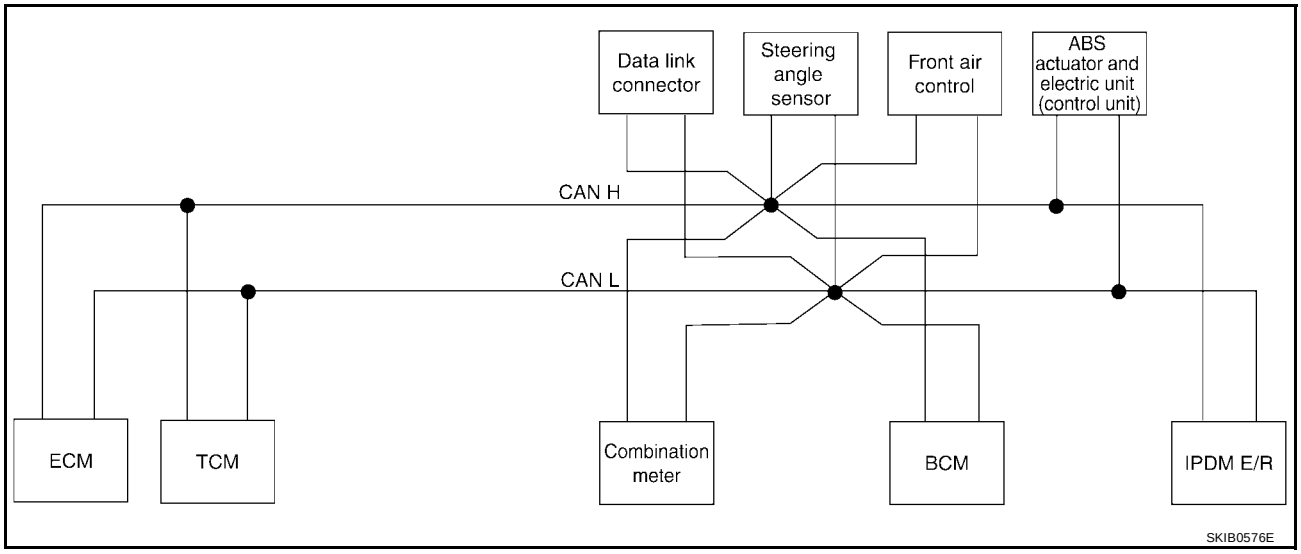
Signals	ECM	TCM	Driver seat control unit	Combination meter	Display control unit	BCM	Front air control	ABS actuator and electric unit (control unit)	IPDM E/R
System setting signal			R		T				
			T		R				
Distance to empty signal				T	R				
ASCD operation signal	T	R							
ASCD OD cancel request	T	R							
A/T CHECK indicator lamp signal		T		R					
A/T position indicator lamp signal		T		R					
Tire pressure signal				R		T			
Tire pressure data signal					R	T			
1st position switch signal*1		R		T					
4th position switch signal*1		R		T					
Manual mode switch signal*2		R		T					
Not manual mode switch signal*2		R		T					
Manual mode shift up signal*2		R		T					
Manual mode shift down signal*2		R		T					
Tow mode switch signal		R		T					
A/T fluid temperature sensor signal		T		R					

*1: Floor shift model only.
*2: Column shift model only.

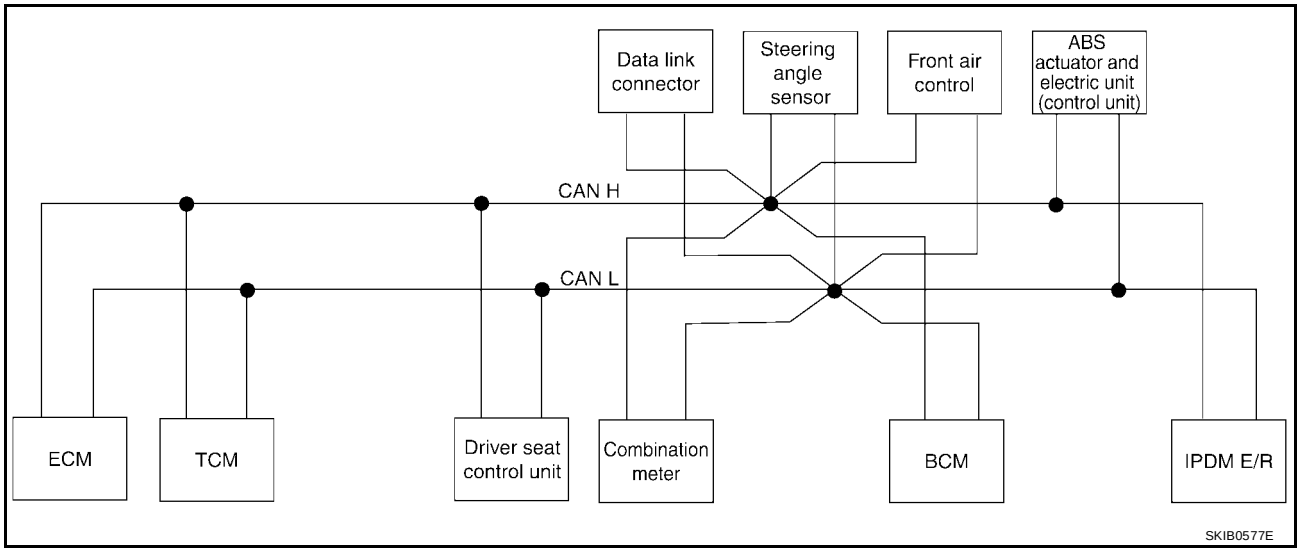
TYPE 4/TYPE 5/TYPE 6

System diagram

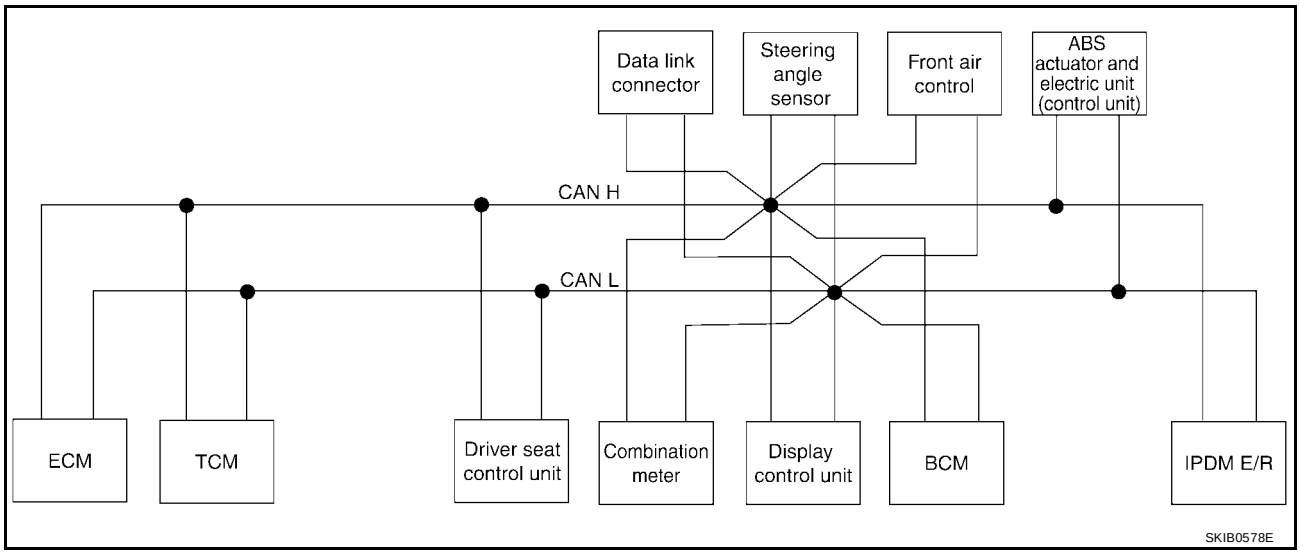
- Type 4



- Type 5



- Type 6



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	Driver seat control unit	Combination meter	Display control unit	BCM	Steering angle sensor	Front air control	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R		R	R				R	
Engine status signal	T					R		R		
Engine coolant temperature signal	T			R				R		
A/T self-diagnosis signal	R	T								
Accelerator pedal position signal	T	R							R	
Closed throttle position signal	T	R								
Wide open throttle position signal	T	R								
Battery voltage signal	T	R								
Key switch signal			R			T				

Signals	ECM	TCM	Driver seat control unit	Combination meter	Display control unit	BCM	Steering angle sensor	Front air control	ABS actuator and electric unit (control unit)	IPDM E/R
Ignition switch signal			R			T				R
P range signal		T	R							
Stop lamp switch signal		R		T						
Fuel consumption monitor signal	T			R						
				T	R					
Turbine revolution signal	R	T								
Output shaft revolution signal	R	T								
A/C switch signal	R					T				
A/C compressor request signal	T							R		R
Blower fan motor switch signal	R					T		R		
A/C switch/indicator signal					T			R		
					R			T		
Cooling fan speed request signal	T							R		R
Position light request signal				R		T				R
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
Front fog light request signal						T				R
Day time running light request signal				R		T				R
Vehicle speed signal				R				R	T	
	R	R	R	T	R	R		R		
Sleep wake up signal			R	R		T				R
Door switch signal			R	R	R	T				R
Turn indicator signal				R		T				
Key fob ID signal			R			T				
Key fob door unlock signal			R			T				
Buzzer output signal				R		T				
Fuel level sensor signal	R			T						
Fuel level low warning signal				T	R					
ASCD SET lamp signal	T			R						
ASCD CRUISE lamp signal	T			R						
Malfunction indicator lamp signal	T			R						
Front wiper request signal						T				R
Front wiper stop position signal						R				T
Theft warning horn request signal						T				R
Horn chirp signal						T				R
Steering angle sensor signal							T		R	
ABS warning lamp signal				R					T	
VDC OFF indicator lamp signal				R					T	

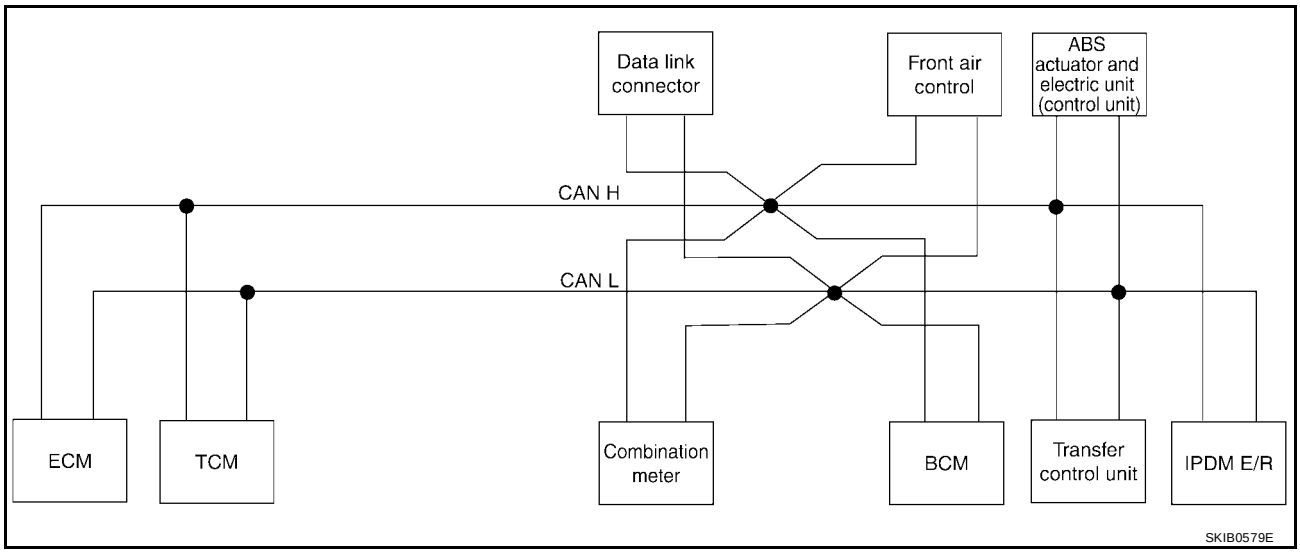
Signals	ECM	TCM	Driver seat control unit	Combination meter	Display control unit	BCM	Steering angle sensor	Front air control	ABS actuator and electric unit (control unit)	IPDM E/R
SLIP indicator lamp signal				R					T	
Brake warning lamp signal				R					T	
System setting signal			R		T					
			T		R					
Distance to empty signal				T	R					
ASCD operation signal	T	R								
ASCD OD cancel request	T	R								
A/T CHECK indicator lamp signal		T		R						
A/T position indicator lamp signal		T		R						
Tire pressure signal				R		T				
Tire pressure data signal					R	T				
1st position switch signal*1		R		T						
4th position switch signal*1		R		T						
Manual mode switch signal*2		R		T						
Not manual mode switch signal*2		R		T						
Manual mode shift up signal*2		R		T						
Manual mode shift down signal*2		R		T						
Tow mode switch signal		R		T						
A/T fluid temperature sensor signal		T		R						

*1: Floor shift model only.
*2: Column shift model only.

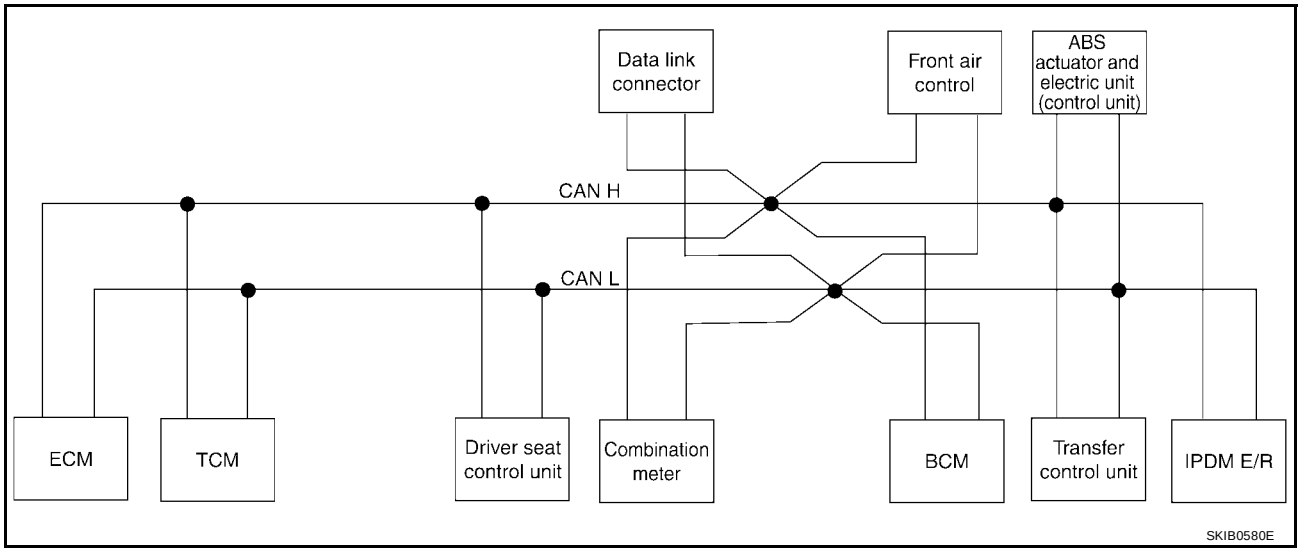
TYPE 7/TYPE 8/TYPE 9

System diagram

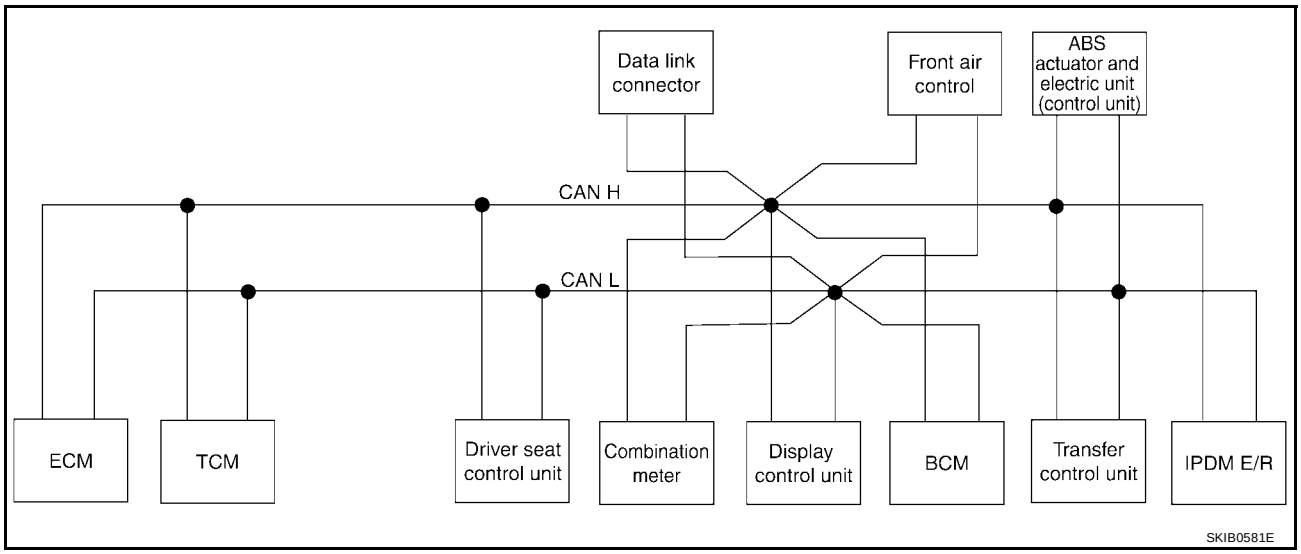
- Type 7



- Type 8



- Type 9



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	Driver seat control unit	Combination meter	Display control unit	BCM	Front air control	Transfer control unit	ABS actuator and electric unit (control unit)	IPDM E/R
A/T self-diagnosis signal	R	T								
Stop lamp switch signal		R		T						
								R	T	
Battery voltage signal	T	R								
Key switch signal			R			T				
Ignition switch signal			R			T				R
P range signal		T	R							
Closed throttle position signal	T	R								
Wide open throttle position signal	T	R								

Signals	ECM	TCM	Driver seat control unit	Combination meter	Display control unit	BCM	Front air control	Transfer control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Engine speed signal	T	R		R	R			R	R	
Engine status signal	T					R	R			
Engine coolant temperature signal	T			R			R			
Accelerator pedal position signal	T	R							R	
Fuel consumption monitor signal	T			R						
				T	R					
Turbine revolution signal	R	T								
Output shaft revolution signal	R	T								
A/C switch signal	R					T				
A/C compressor request signal	T						R			R
Blower fan motor switch signal	R					T	R			
A/C switch/indicator signal					T		R			
					R		T			
Cooling fan speed request signal	T						R			R
Position light request signal				R		T				R
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
Front fog light request signal						T				R
Day time running light request signal				R		T				R
Vehicle speed signal				R			R	R	T	
	R	R	R	T	R	R	R			
Sleep wake up signal			R	R		T				R
Door switch signal			R	R	R	T				R
Key fob ID signal			R			T				
Key fob door unlock signal			R			T				
Buzzer output signal				R		T				
Fuel level sensor signal	R			T						
ASCD SET lamp signal	T			R						
ASCD CRUISE lamp signal	T			R						
Malfunction indicator lamp signal	T			R						
Fuel level low warning signal				T	R					
Front wiper request signal						T				R
Front wiper stop position signal						R				T
Theft warning horn request signal						T				R
Horn chirp signal						T				R
ABS warning lamp signal				R					T	
SLIP indicator lamp signal				R					T	

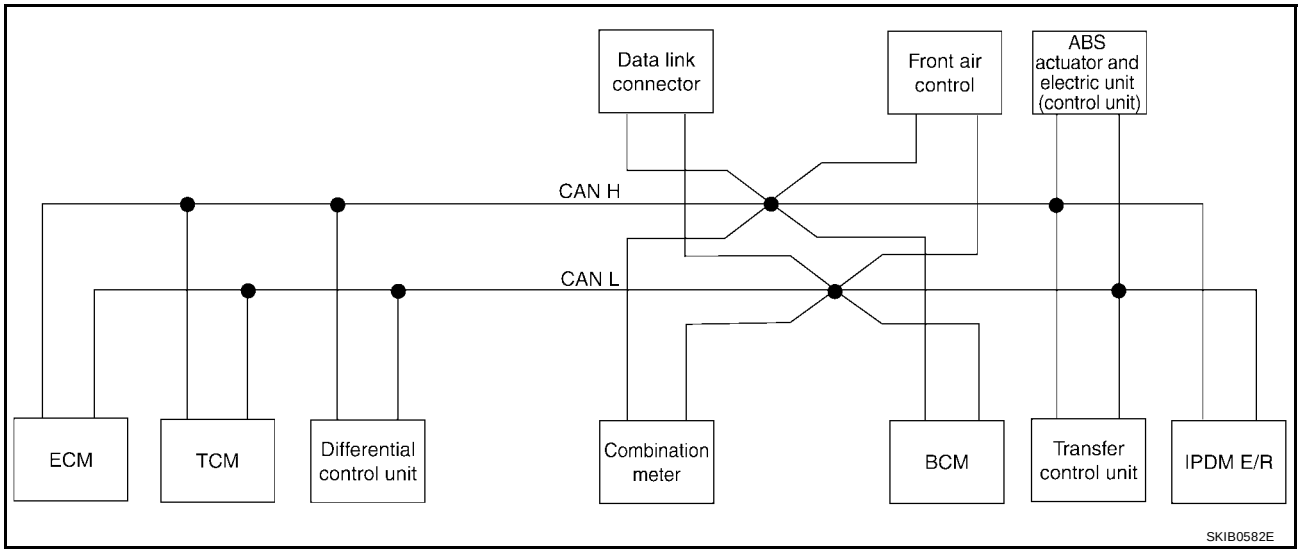
Signals	ECM	TCM	Driver seat control unit	Combination meter	Display control unit	BCM	Front air control	Transfer control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Brake warning lamp signal				R					T	
System setting signal			R		T					
			T		R					
Distance to empty signal				T	R					
ASCD operation signal	T	R								
ASCD OD cancel request	T	R								
A/T CHECK indicator lamp signal		T		R						
A/T position indicator lamp signal		T		R				R		
Tire pressure signal				R		T				
Tire pressure data signal					R	T				
1st position switch signal*1		R		T						
4th position switch signal*1		R		T						
Manual mode switch signal*2		R		T						
Not manual mode switch signal*2		R		T						
Manual mode shift up signal*2		R		T						
Manual mode shift down signal*2		R		T						
Tow mode switch signal		R		T						
A/T fluid temperature sensor signal		T		R						
4WD shift switch signal	R							T		

*1: Floor shift model only.
*2: Column shift model only.

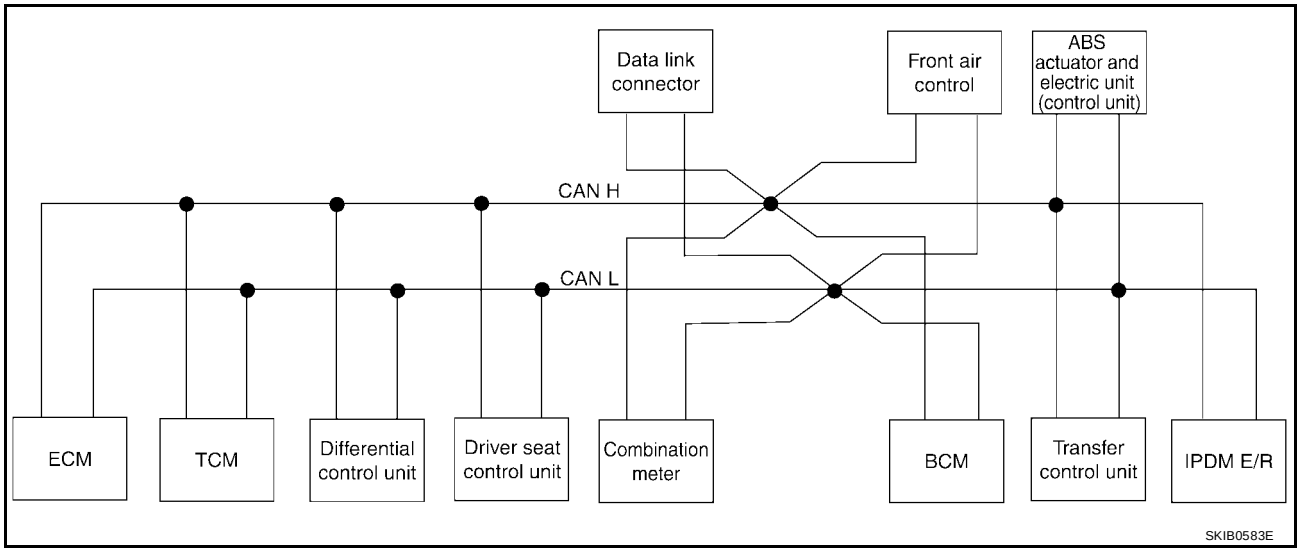
TYPE 10/TYPE 11/TYPE 12

System diagram

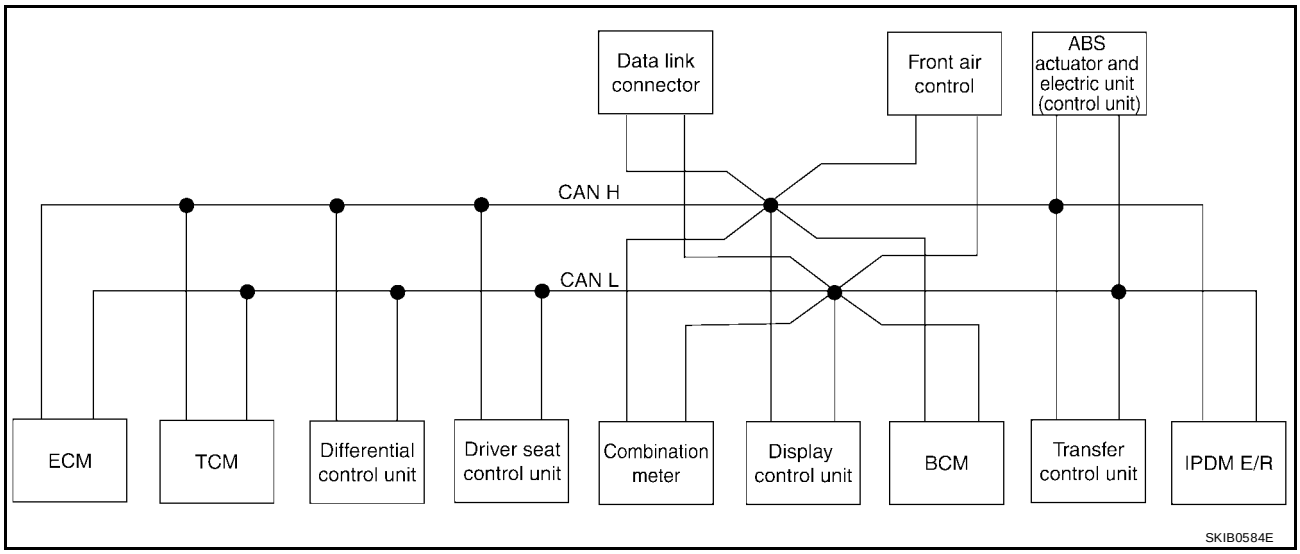
- Type 10



- Type 11



- Type 12



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	Differential lock control unit	Driver seat control unit	Combination meter	Display control unit	BCM	Front air control	Transfer control unit	ABS actuator and electric unit (control unit)	IPDM E/R
A/T self-diagnosis signal	R	T									
Stop lamp switch signal		R			T						
									R	T	
Battery voltage signal	T	R									
Key switch signal				R			T				
Ignition switch signal				R			T				R
P range signal		T		R							
Closed throttle position signal	T	R									

Signals	ECM	TCM	Differential lock control unit	Driver seat control unit	Combination meter	Display control unit	BCM	Front air control	Transfer control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Wide open throttle position signal	T	R									
Engine speed signal	T	R			R	R			R	R	
Engine status signal	T						R	R			
Engine coolant temperature signal	T				R			R			
Accelerator pedal position signal	T	R								R	
Fuel consumption monitor signal	T				R						
					T	R					
Turbine revolution signal	R	T									
Output shaft revolution signal	R	T									
A/C switch signal	R						T				
A/C compressor request signal	T							R			R
Blower fan motor switch signal	R						T	R			
A/C switch/indicator signal						T		R			
						R		T			
Cooling fan speed request signal	T							R			R
Position light request signal					R		T				R
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
Front fog light request signal							T				R
Day time running light request signal					R		T				R
Vehicle speed signal			R		R			R	R	T	
	R	R		R	T	R	R	R			
Sleep wake up signal				R	R		T				R
Door switch signal				R	R	R	T				R
Key fob ID signal				R			T				
Key fob door unlock signal				R			T				
Buzzer output signal					R		T				
Fuel level sensor signal	R				T						
ASCD SET lamp signal	T				R						
ASCD CRUISE lamp signal	T				R						
Malfunction indicator lamp signal	T				R						
Fuel level low warning signal					T	R					
Front wiper request signal							T				R
Front wiper stop position signal							R				T
Theft warning horn request signal							T				R
Horn chirp signal							T				R

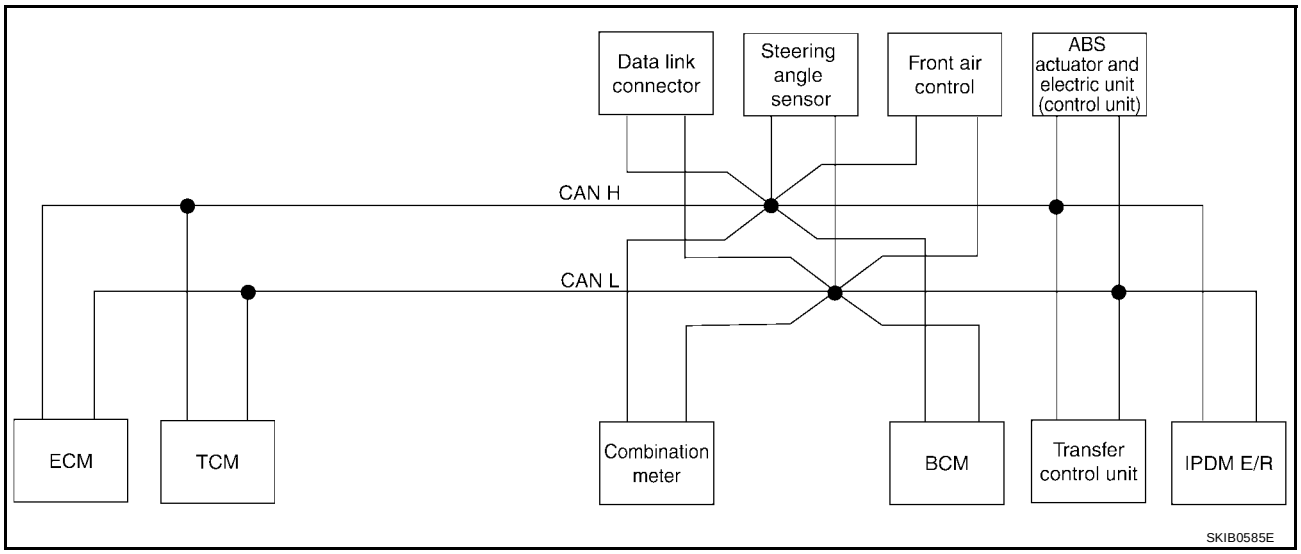
Signals	ECM	TCM	Differential lock control unit	Driver seat control unit	Combination meter	Display control unit	BCM	Front air control	Transfer control unit	ABS actuator and electric unit (control unit)	IPDM E/R
ABS warning lamp signal					R					T	
SLIP indicator lamp signal					R					T	
Brake warning lamp signal					R					T	
System setting signal				R		T					
				T		R					
Distance to empty signal					T	R					
ASCD operation signal	T	R									
ASCD OD cancel request	T	R									
A/T CHECK indicator lamp signal		T			R						
A/T position indicator lamp signal		T			R				R		
Tire pressure signal					R		T				
Tire pressure data signal						R	T				
1st position switch signal*1		R			T						
4th position switch signal*1		R			T						
Manual mode switch signal*2		R			T						
Not manual mode switch signal*2		R			T						
Manual mode shift up signal*2		R			T						
Manual mode shift down signal*2		R			T						
Tow mode switch signal		R			T						
A/T fluid temperature sensor signal		T			R						
4WD shift switch signal	R		R						T		

*1: Floor shift model only.
*2: Column shift model only.

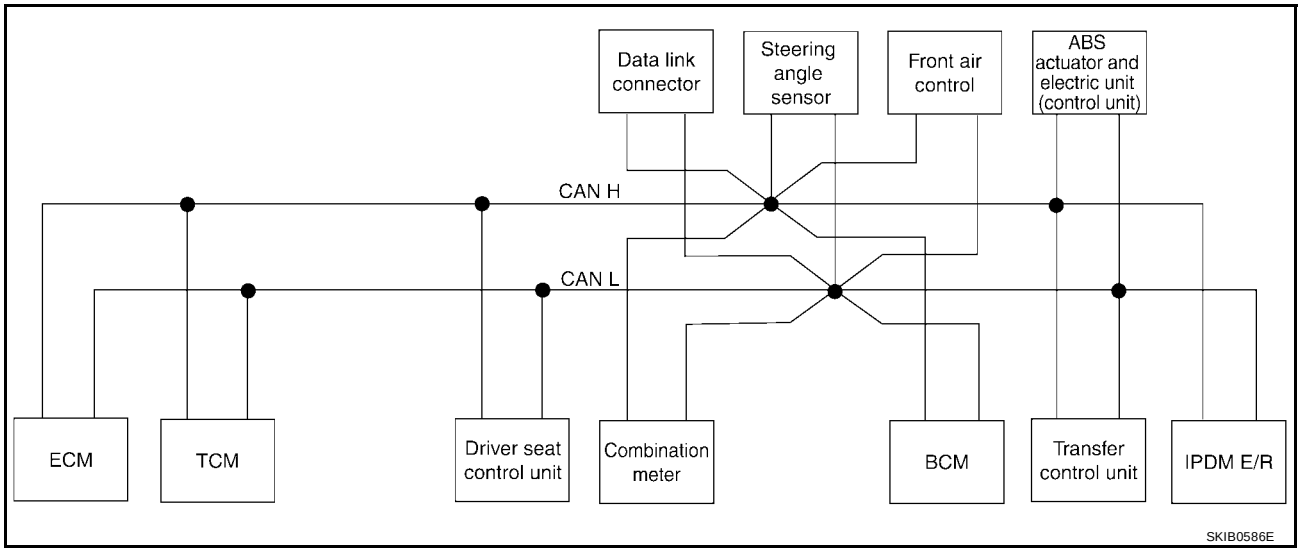
TYPE 13/TYPE 14/TYPE 15

System diagram

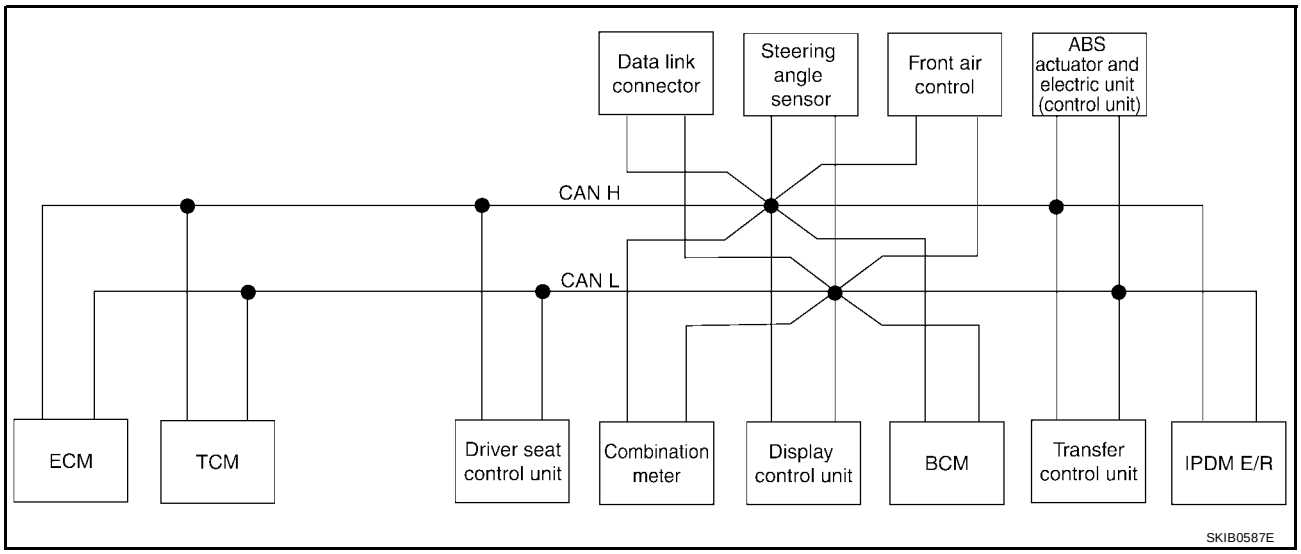
- Type 13



- Type 14



- Type 15



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	Driver seat control unit	Combination meter	Display control unit	BCM	Steering angle sensor	Front air control	Transfer control unit	ABS actuator and electric unit (control unit)	IPDM E/R
A/T self-diagnosis signal	R	T									
Stop lamp switch signal		R		T							
									R	T	
Battery voltage signal	T	R									
Key switch signal			R			T					
Ignition switch signal			R			T					R
P range signal		T	R								
Closed throttle position signal	T	R									
Wide open throttle position signal	T	R									
Engine speed signal	T	R		R	R				R	R	
Engine status signal	T					R		R			
Engine coolant temperature signal	T			R				R			
Accelerator pedal position signal	T	R								R	
Fuel consumption monitor signal	T			R							
				T	R						
Turbine revolution signal	R	T									
Output shaft revolution signal	R	T									
A/C switch signal	R					T					
A/C compressor request signal	T							R			R
Blower fan motor switch signal	R					T		R			
A/C switch/indicator signal					T			R			
					R			T			
Cooling fan speed request signal	T							R			R
Position light request signal				R		T					R
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
Front fog light request signal						T					R
Day time running light request signal				R		T					R
Vehicle speed signal				R				R	R	T	
	R	R	R	T	R	R		R			
Sleep wake up signal			R	R		T					R
Door switch signal			R	R	R	T					R
Key fob ID signal			R			T					
Key fob door unlock signal			R			T					
Buzzer output signal				R		T					

Signals	ECM	TCM	Driver seat control unit	Combination meter	Display control unit	BCM	Steering angle sensor	Front air control	Transfer control unit	ABS actuator and electric unit (control unit)	IPDM E/R
Fuel level sensor signal	R			T							
ASCD SET lamp signal	T			R							
ASCD CRUISE lamp signal	T			R							
Malfunction indicator lamp signal	T			R							
Fuel level low warning signal				T	R						
Front wiper request signal						T					R
Front wiper stop position signal						R					T
Theft warning horn request signal						T					R
Horn chirp signal						T					R
Steering angle sensor signal							T			R	
ABS warning lamp signal				R						T	
VDC OFF indicator lamp signal				R						T	
SLIP indicator lamp signal				R						T	
Brake warning lamp signal				R						T	
System setting signal			R		T						
			T		R						
Distance to empty signal				T	R						
ASCD operation signal	T	R									
ASCD OD cancel request	T	R									
A/T CHECK indicator lamp signal		T		R							
A/T position indicator lamp signal		T		R					R		
Tire pressure signal				R		T					
Tire pressure data signal					R	T					
1st position switch signal*1		R		T							
4th position switch signal*1		R		T							
Manual mode switch signal*2		R		T							
Not manual mode switch signal*2		R		T							
Manual mode shift up signal*2		R		T							
Manual mode shift down signal*2		R		T							
Tow mode switch signal		R		T							
A/T fluid temperature sensor signal		T		R							
4WD shift switch signal	R								T		

*1: Floor shift model only.
*2: Column shift model only.

CAN SYSTEM (TYPE 1)

PFP:23710

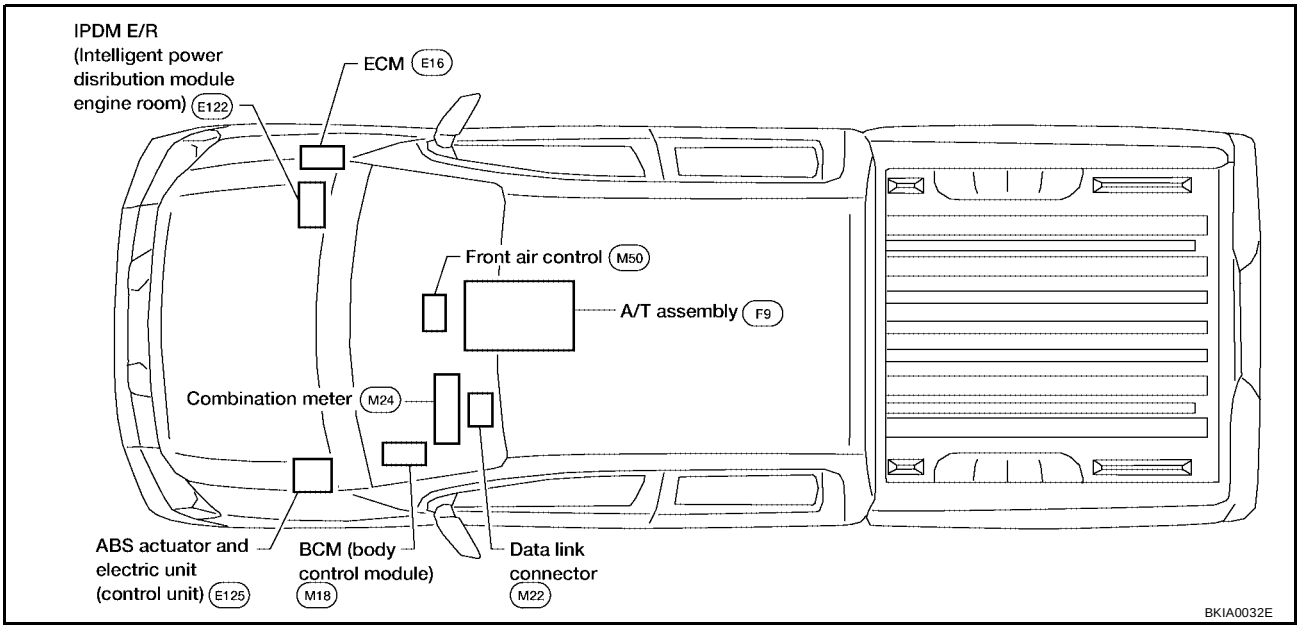
System Description

UKS001AK

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.

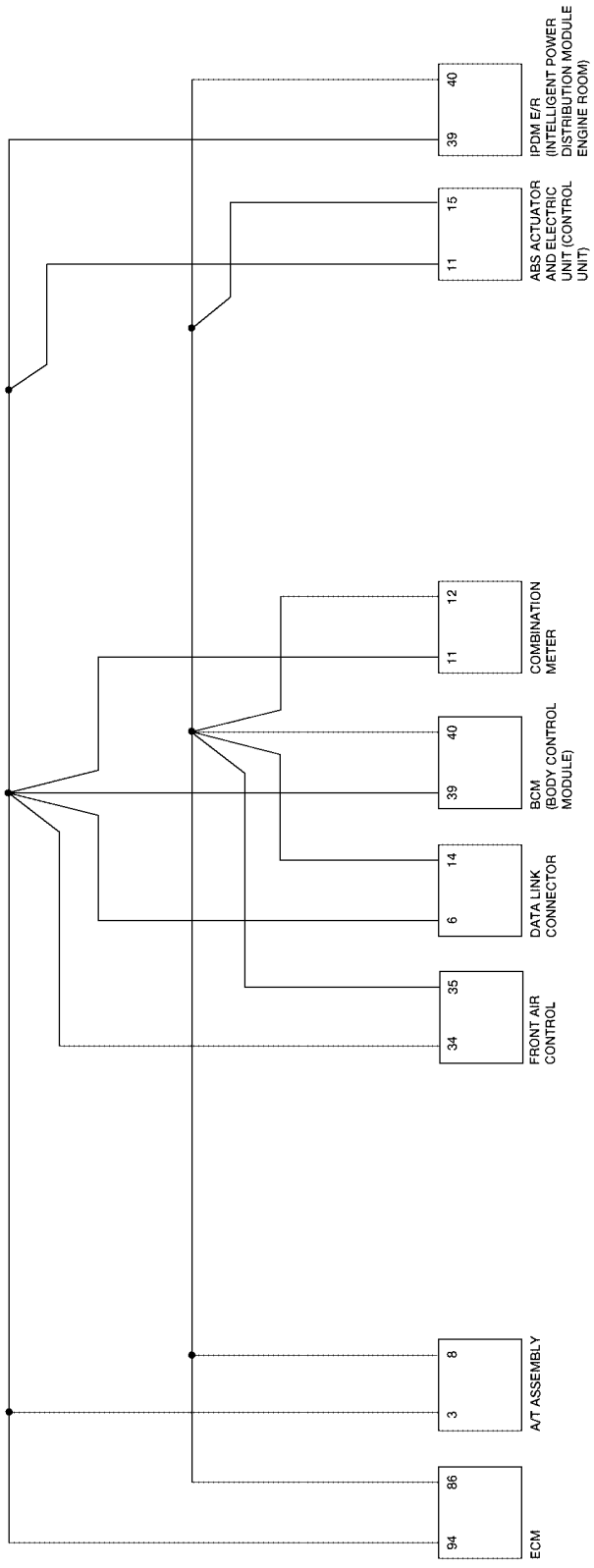
Component Parts and Harness Connector Location

UKS001AL



Schematic

UKS001AM



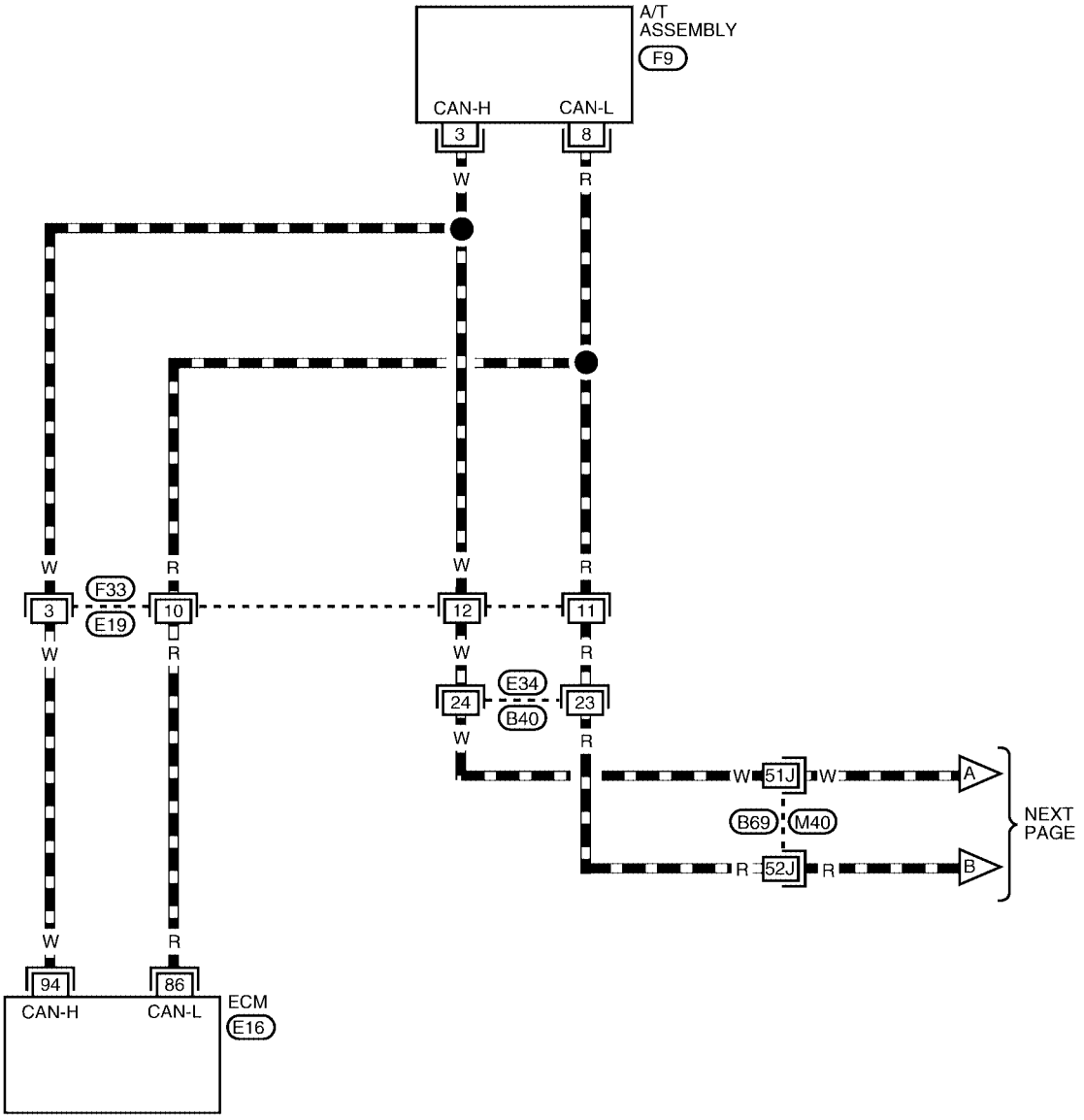
BKWA0130E

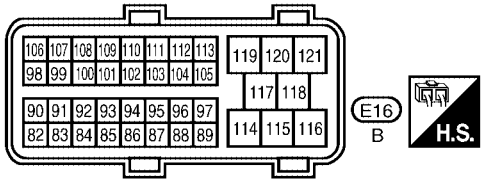
Wiring Diagram - CAN -

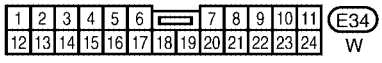
UKS001AN

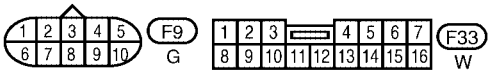
LAN-CAN-01

: DATA LINE





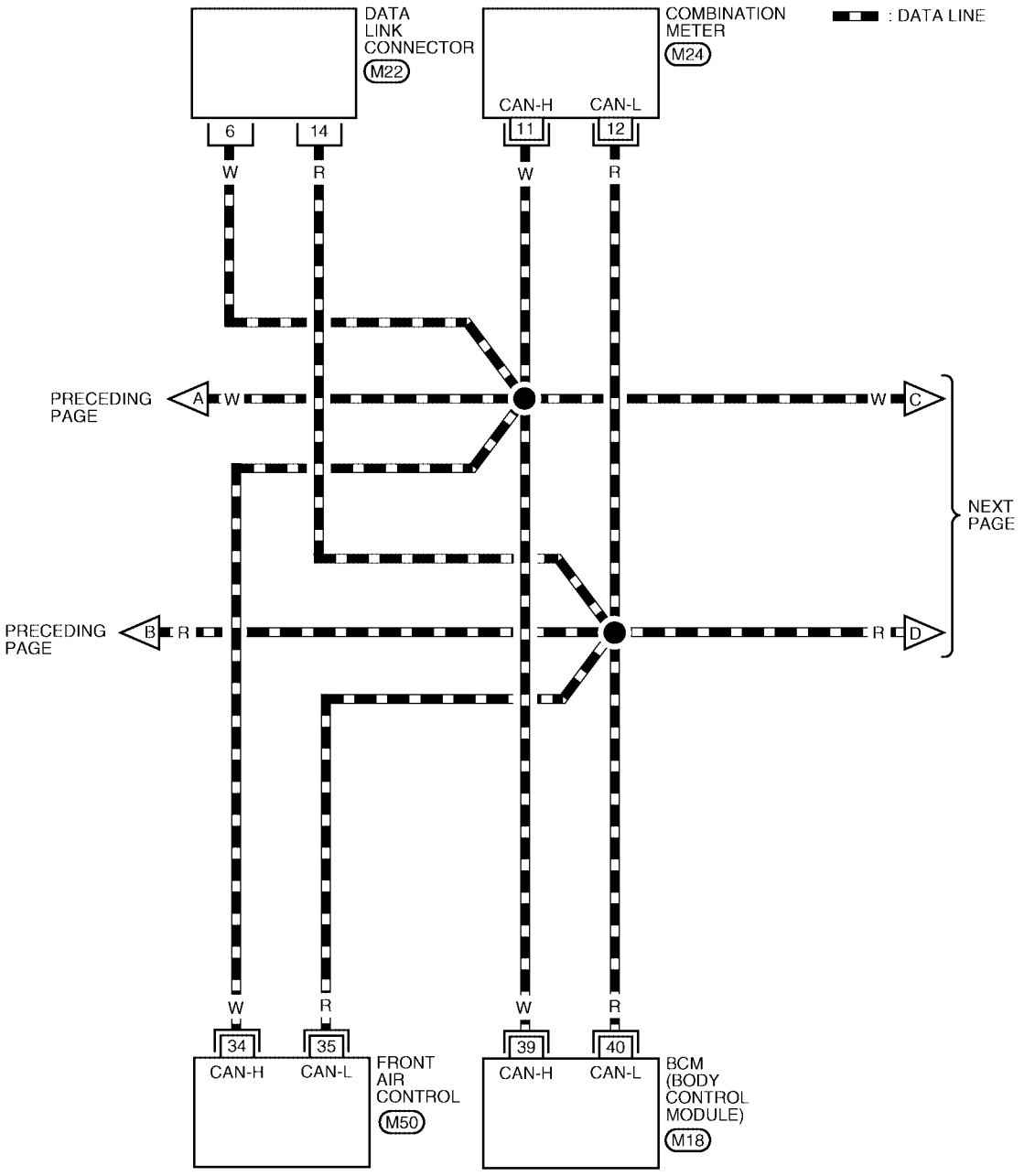


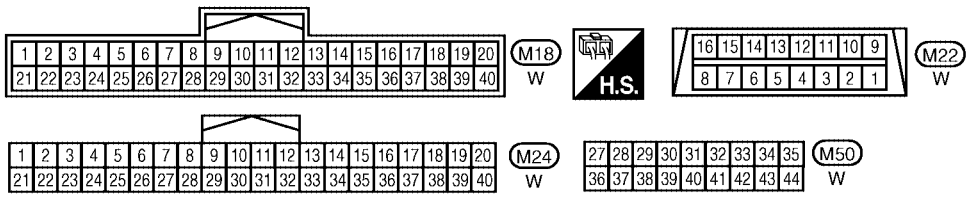


REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0010E

LAN-CAN-02

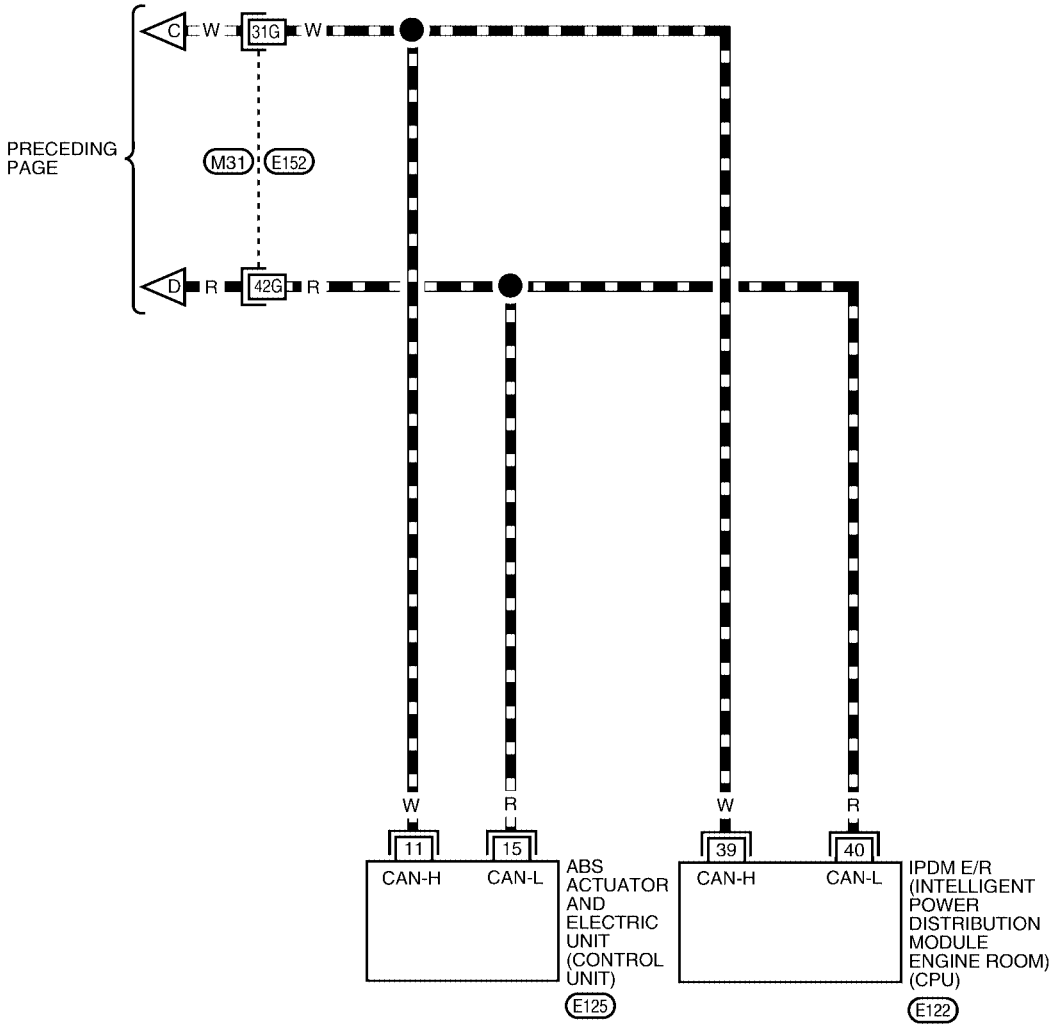


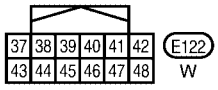


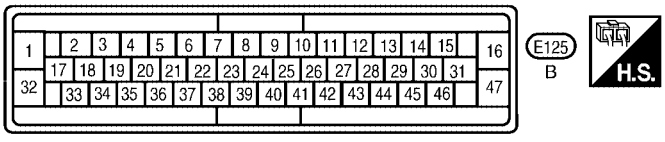
BKWA0131E

LAN-CAN-03

: DATA LINE







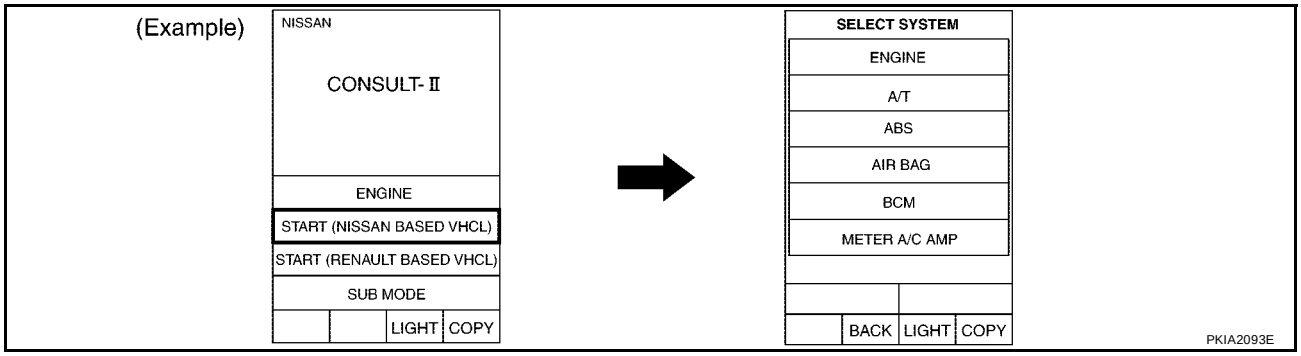
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0020E

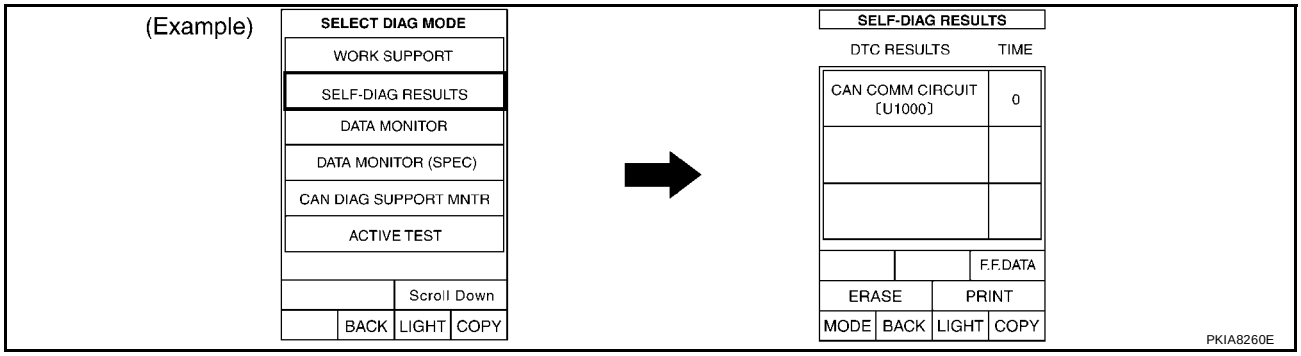
Work Flow

UKS001AO

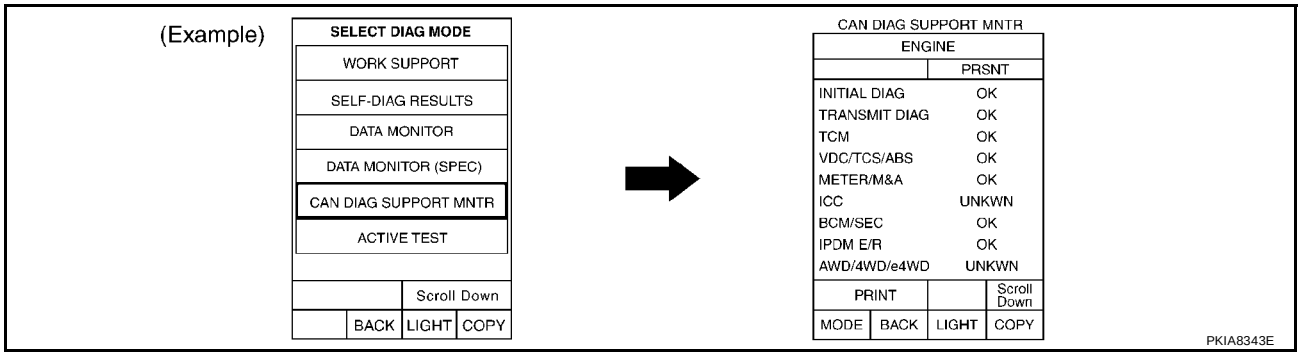
1. When there are no indications of “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



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



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



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-30, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-30, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “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 the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-32, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Check sheet table

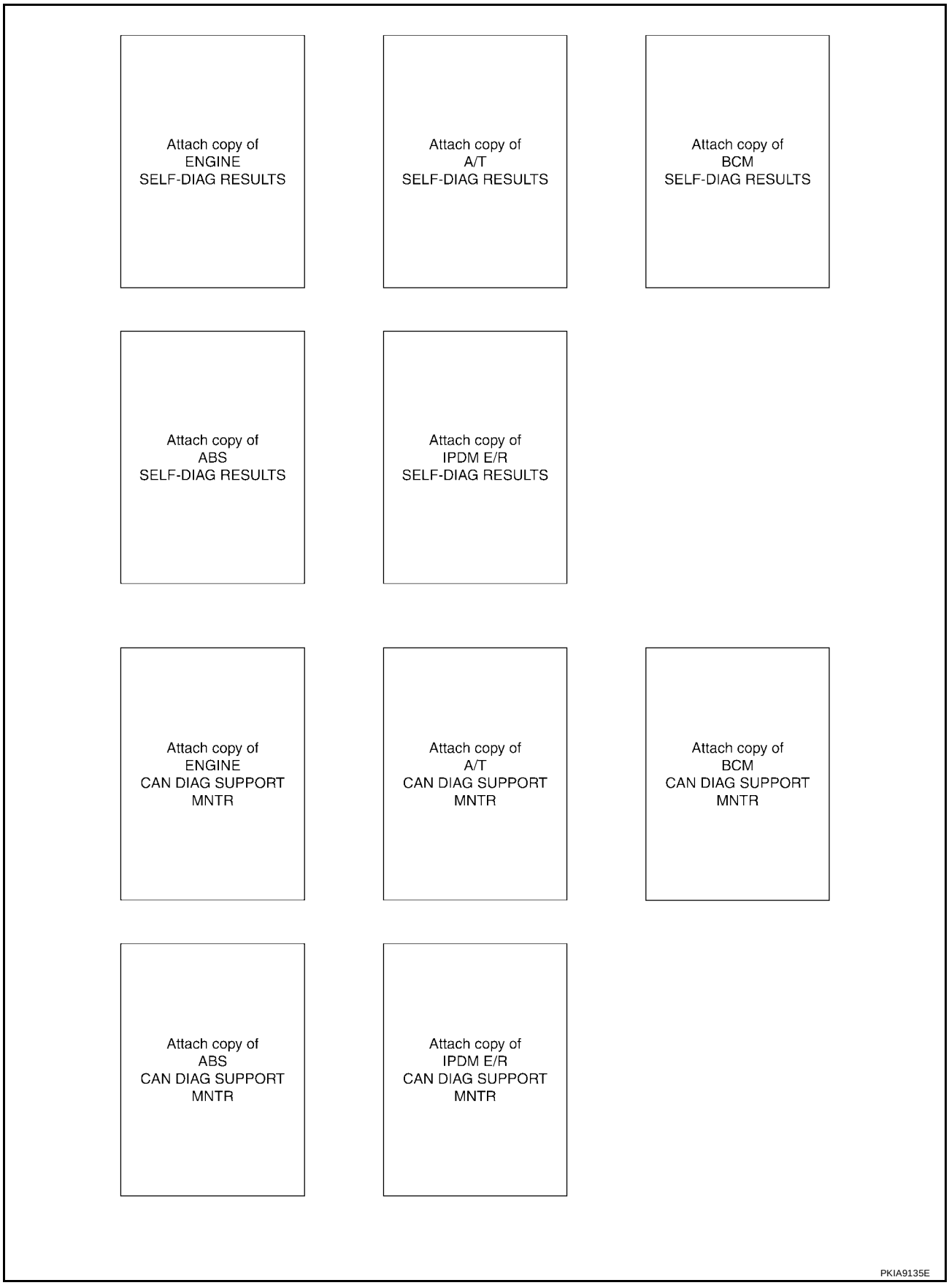
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIA9326E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
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
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA9135E

CHECK SHEET RESULTS (EXAMPLE)

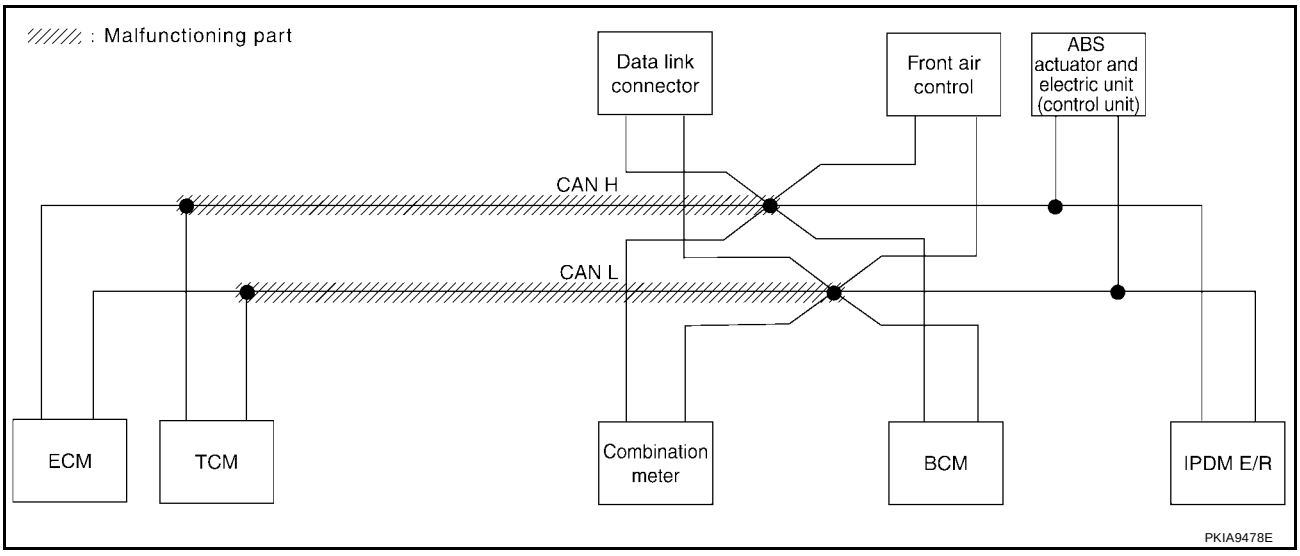
NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-42, "Circuit Check Between TCM and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN ✓	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—
BCM	No indication	NG	UNKWN	UNKWN ✓	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN ✓	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN ✓	—	—	UNKWN	—

PKIA9337E

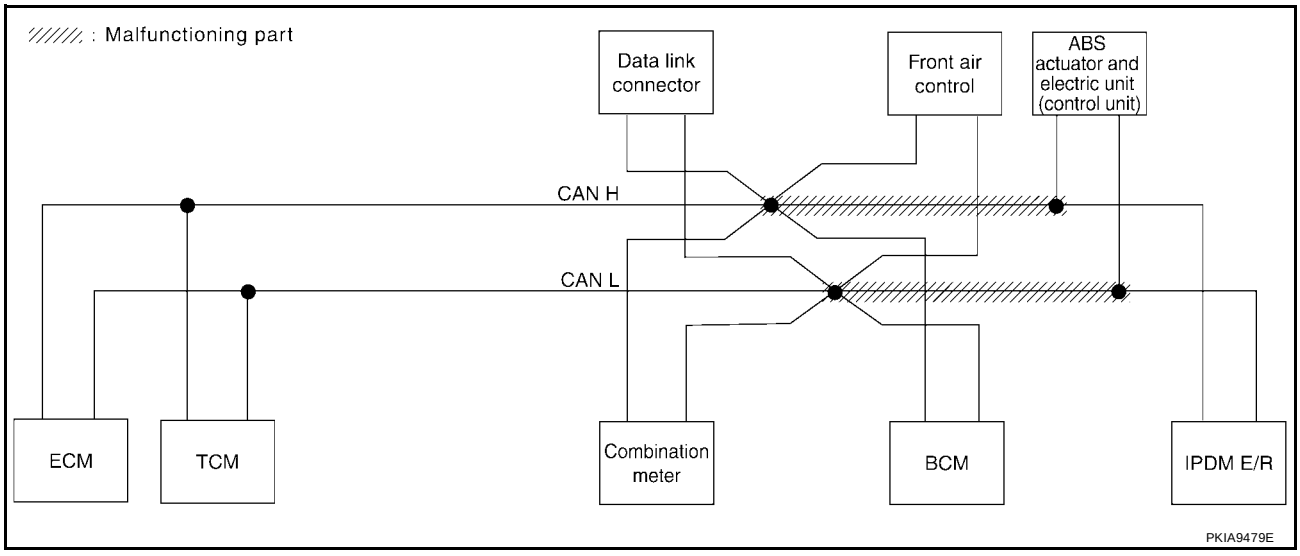


Case 2

Check harness between data link connector and IPDM E/R. Refer to LAN-43, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN ✓
ABS	—	NG	UNKWN	UNKWN ✓	—	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9341E

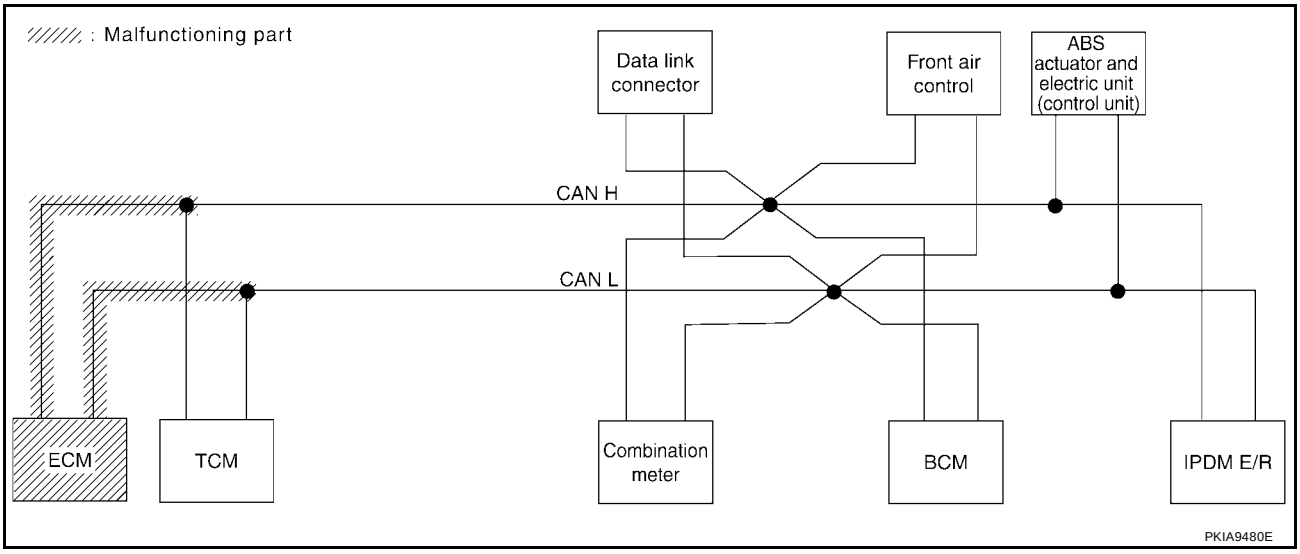


Case 3

Check ECM circuit. Refer to LAN-44, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9342E

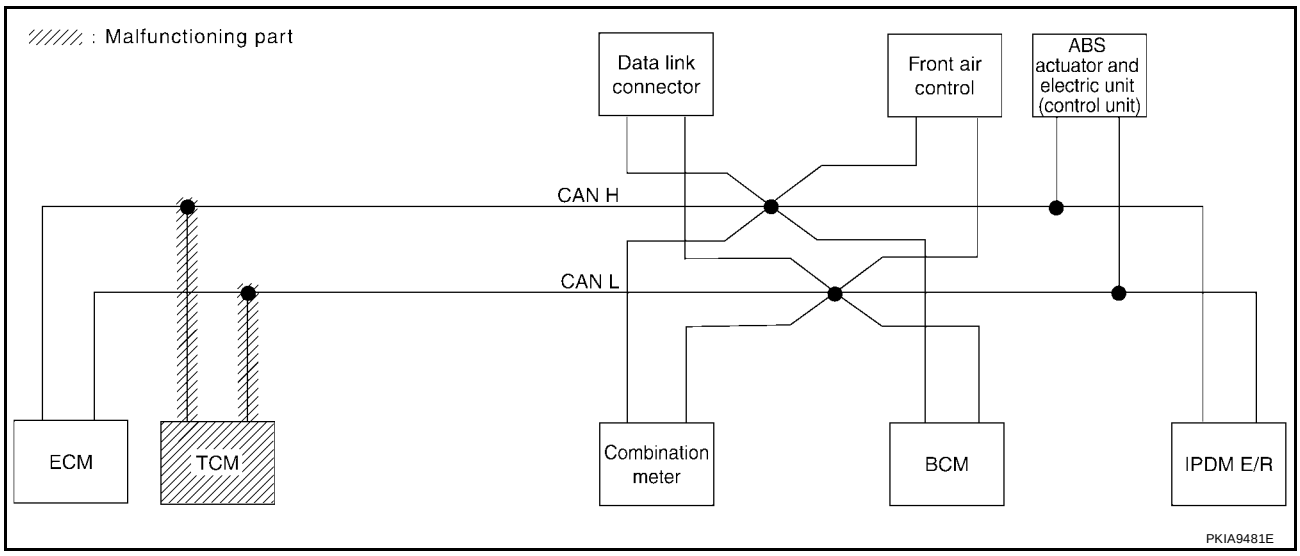


Case 4

Check TCM circuit. Refer to LAN-45, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9343E

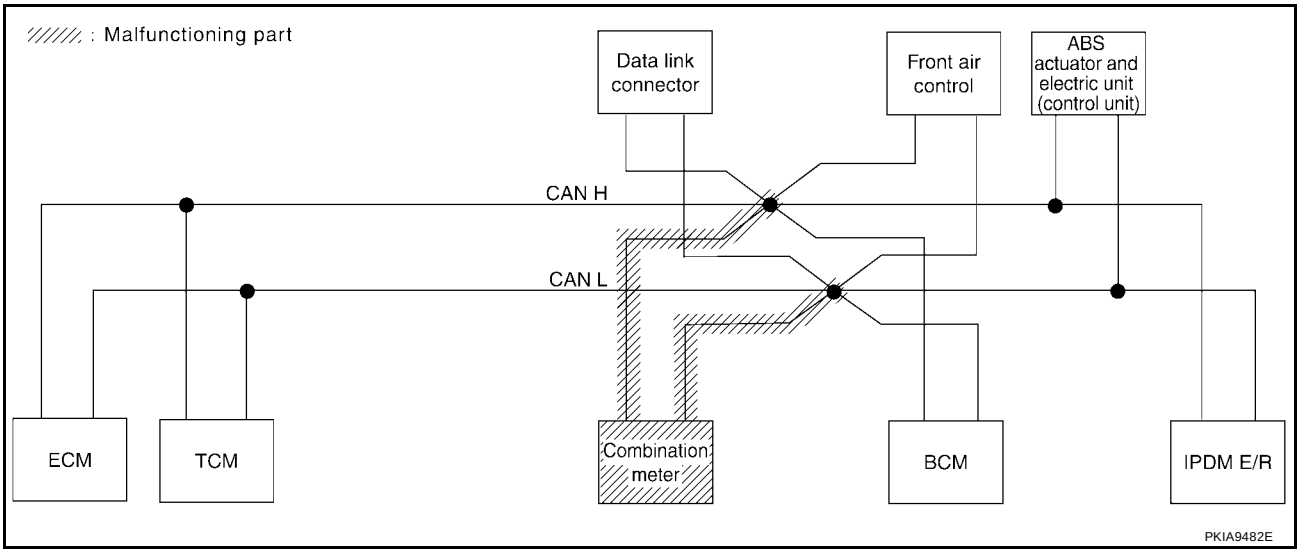


Case 5

Check combination meter circuit. Refer to LAN-45, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9344E

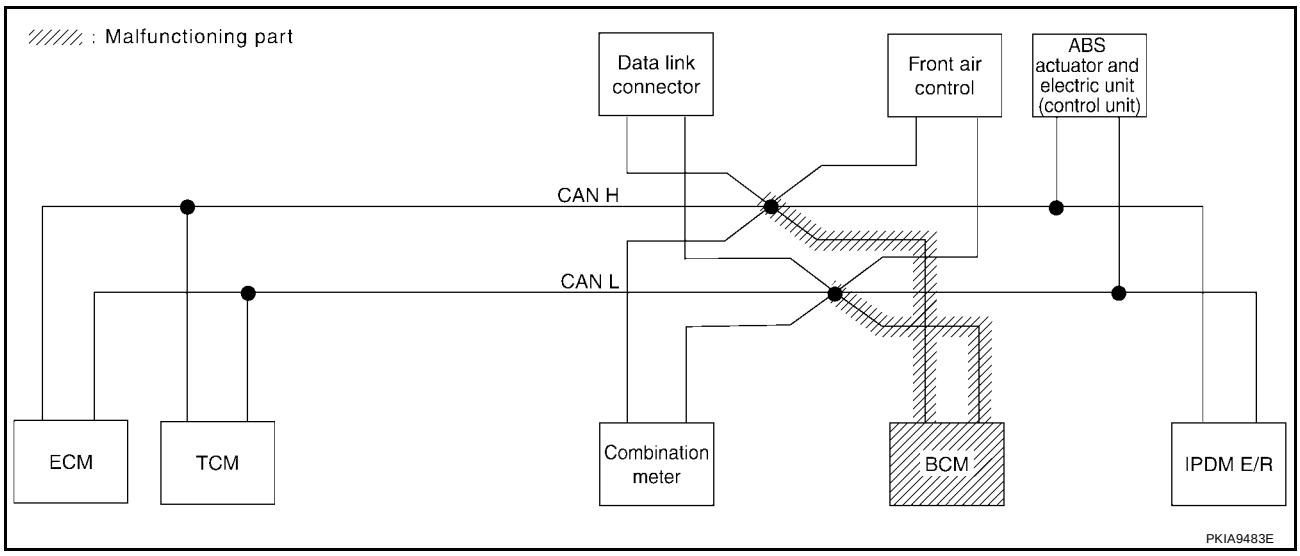


Case 6

Check BCM circuit. Refer to LAN-46, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9345E

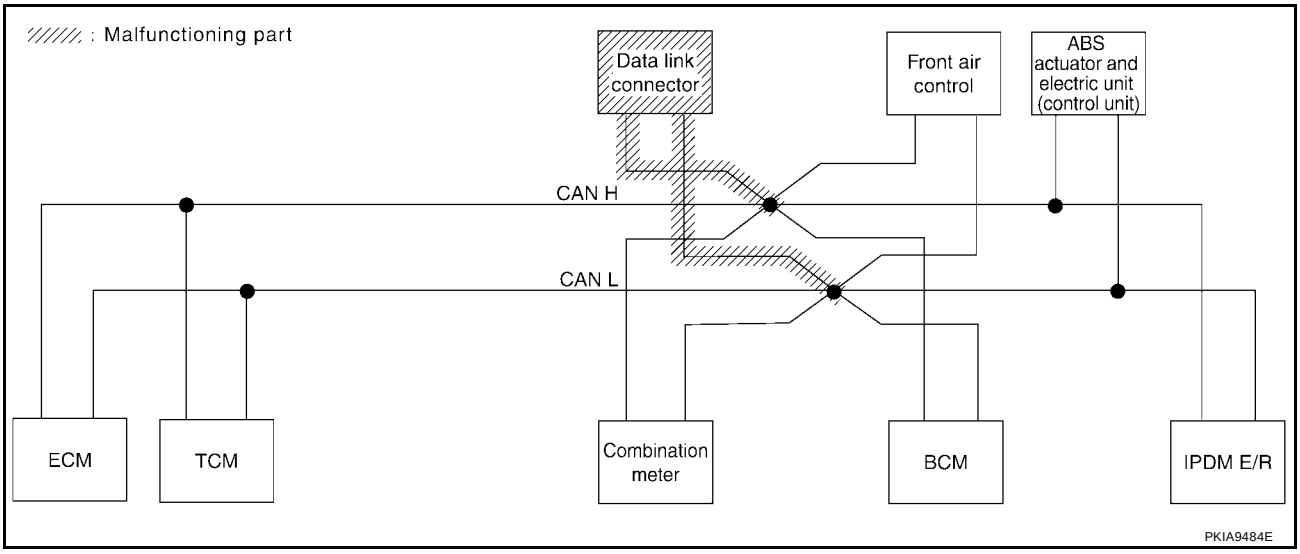


Case 7

Check data link connector circuit. Refer to LAN-46, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–
BCM	No indication ✓	NG	UNKWN	UNKWN	–	UNKWN	–	UNKWN
ABS	–	NG	UNKWN	UNKWN	–	–	–	–
IPDM E/R	No indication ✓	–	UNKWN	UNKWN	–	–	UNKWN	–

PKIA9346E



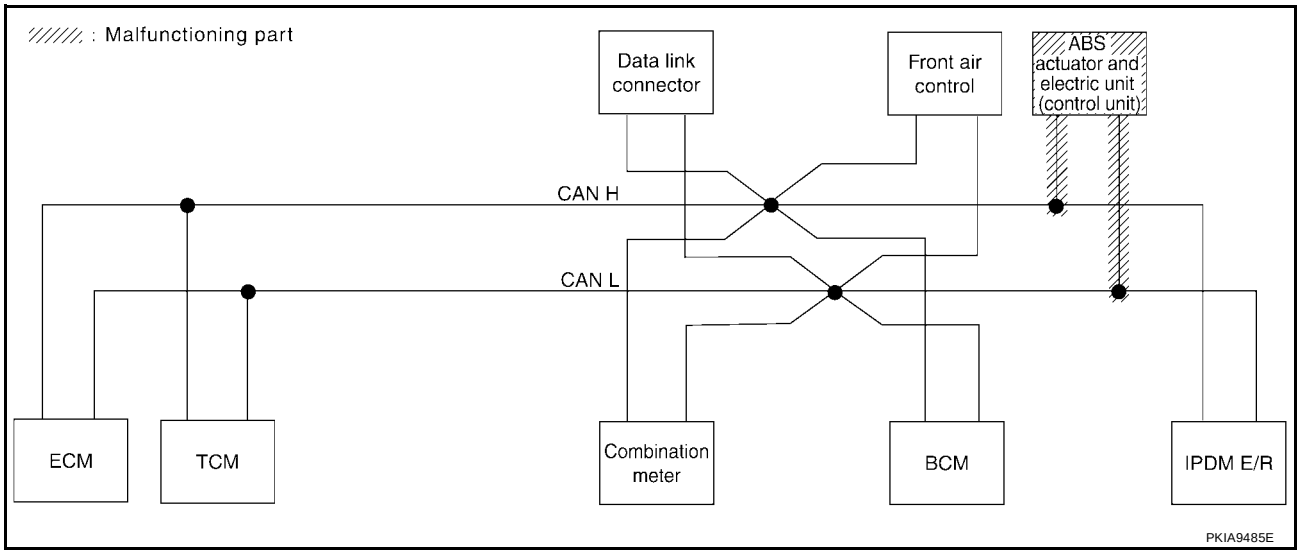
PKIA9484E

Case 8

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-47, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG ✓	UNKWN ✓	UNKWN ✓	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9347E

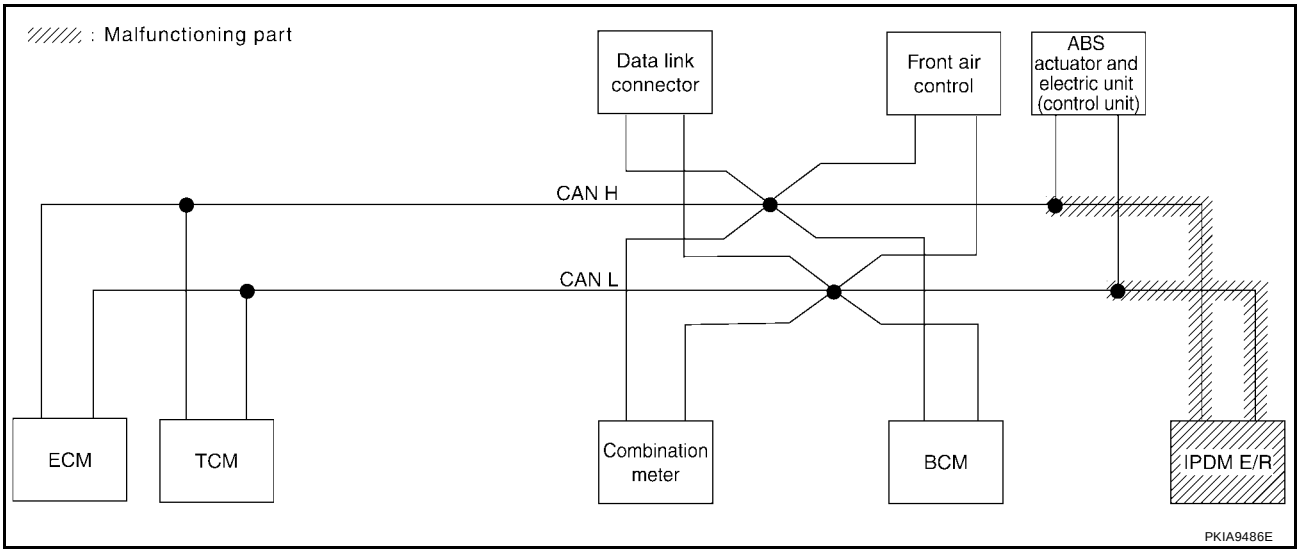


Case 9

Check IPDM E/R circuit. Refer to LAN-47, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN ✓
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	UNKWN ✓
ABS	–	NG	UNKWN	UNKWN	–	–	–	–
IPDM E/R	No indication ✓	–	UNKWN	UNKWN	–	–	UNKWN	–

PKIA9348E



Case 10

Check CAN communication circuit. Refer to LAN-48, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9349E

Case 11

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-49, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9350E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-49, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9351E

Circuit Check Between TCM and Data Link Connector

UKS001AP

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 F33
- Harness connector E19
- Harness connector E34
- Harness connector B40
- Harness connector B69
- Harness connector M40

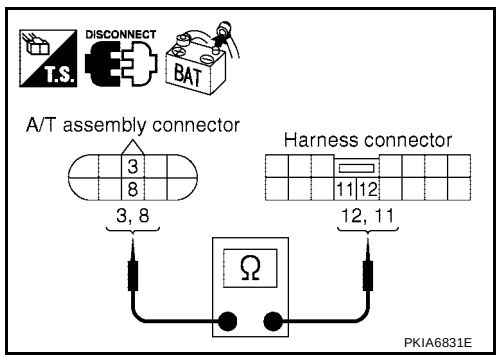
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12 (W), 11 (R).

3 (W) - 12 (W) : Continuity should exist.
8 (R) - 11 (R) : Continuity should exist.



OK or NG

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

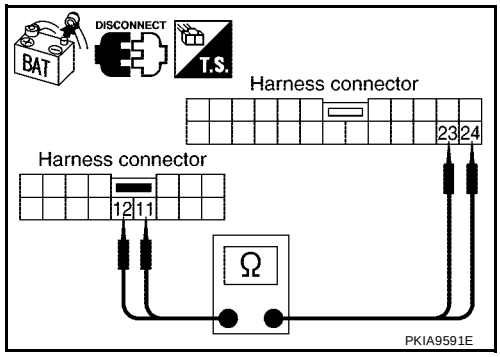
3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E34.
2. Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E34 terminals 24 (W), 23 (R).

12 (W) - 24 (W) : Continuity should exist.
11 (R) - 23 (R) : Continuity should exist.

OK or NG

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



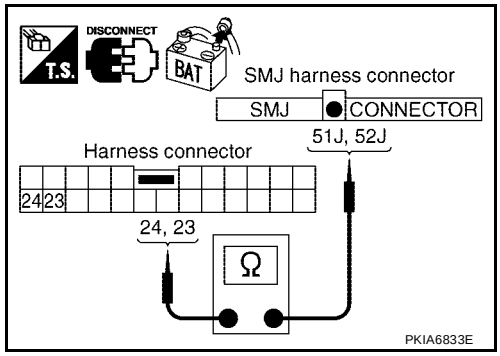
4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B69.
2. Check continuity between harness connector B40 terminals 24 (W), 23 (R) and harness connector B69 terminals 51J (W), 52J (R).

24 (W) - 51J (W) : Continuity should exist.
23 (R) - 52J (R) : Continuity should exist.

OK or NG

OK >> GO TO 5.
NG >> Repair harness.



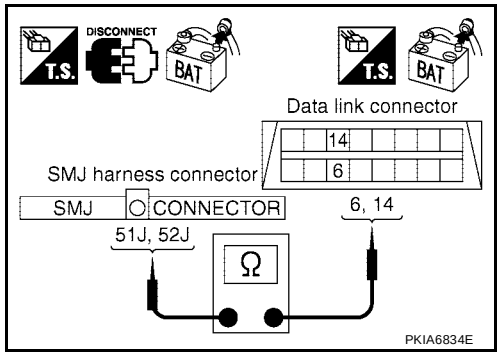
5. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

51J (W) - 6 (W) : Continuity should exist.
52J (R) - 14 (R) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-29, "Work Flow" .
NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

UKS001AQ

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 M31
- Harness connector E152

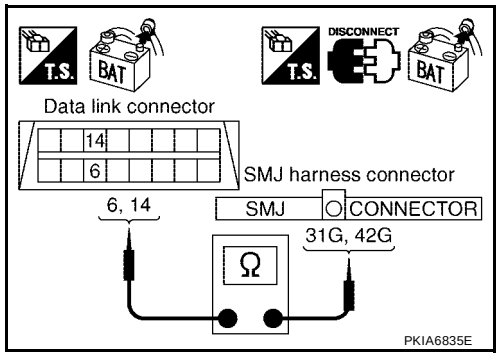
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).

6 (W) - 31G (W) : Continuity should exist.
14 (R) - 42G (R) : Continuity should exist.



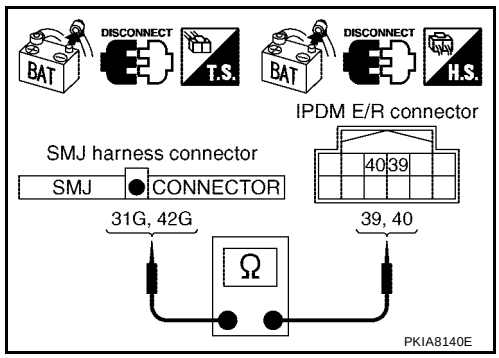
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).

31G (W) - 39 (W) : Continuity should exist.
42G (R) - 40 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-29, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS001AR

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 E19
- Harness connector F33

OK or NG

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

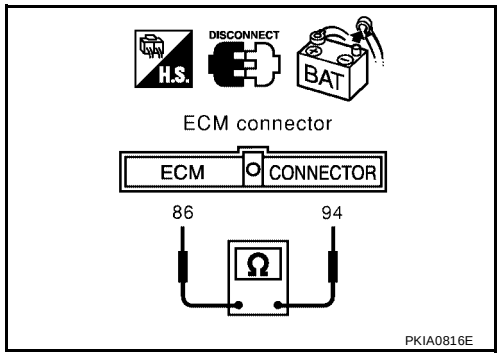
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R) : Approx. 108 - 132Ω

OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and A/T assembly.



TCM Circuit Check

UKS001AS

1. CHECK CONNECTOR

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

OK or NG

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

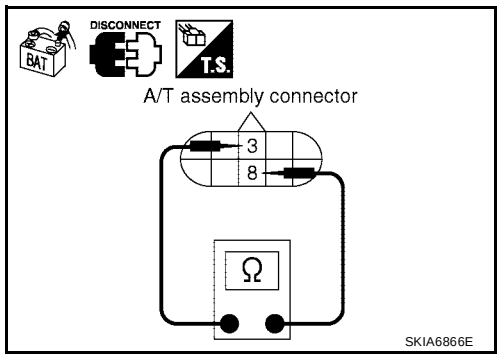
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.



Combination Meter Circuit Check

UKS001AT

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).

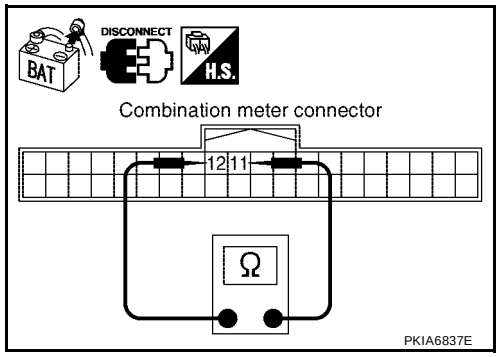
OK or NG

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 M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R) : Approx. 54 - 66Ω



OK or NG

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

BCM Circuit Check

UKS001AU

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).

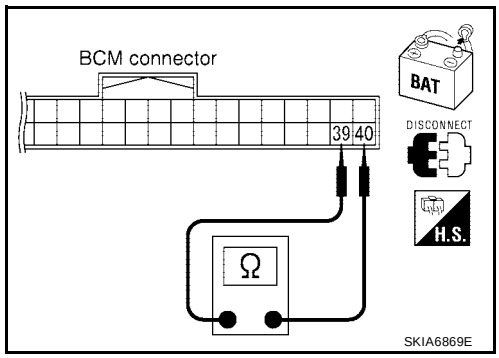
OK or NG

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 M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS001AV

1. CHECK CONNECTOR

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

OK or NG

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

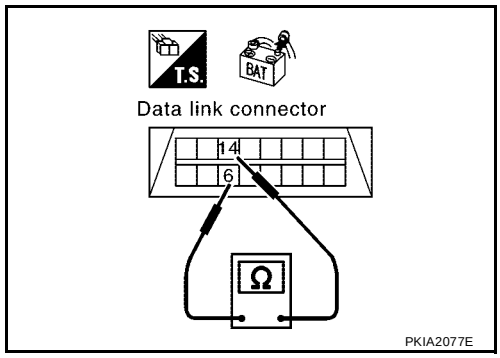
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Diagnose again. Refer to LAN-29, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001AX

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.

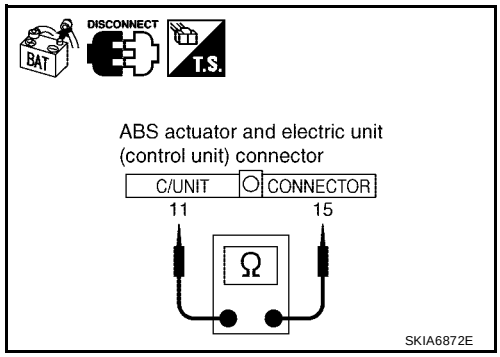
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R) : 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 harness connector E152.



IPDM E/R Circuit Check

UKS001AY

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).

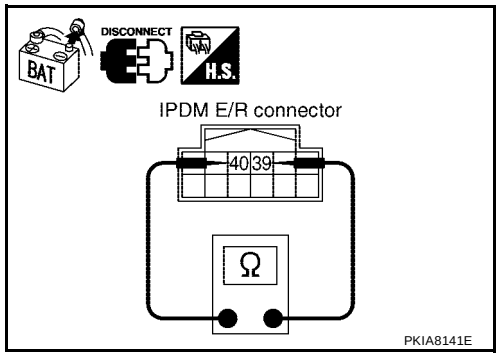
OK or NG

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 E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 108 - 132Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS001AZ

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- A/T assembly
- Combination meter
- BCM
- Front air control
- ABS actuator and electric unit (control unit)
- IPDM E/R

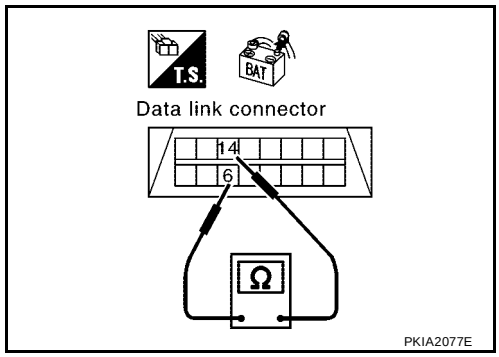
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

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



OK or NG

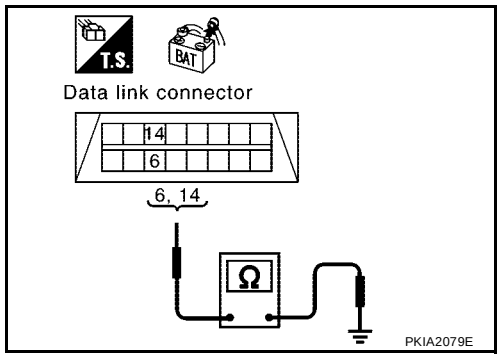
OK >> GO TO 3.
NG >> Repair harness.

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

6 (W) - Ground : Continuity should not exist.

14 (R) - Ground : Continuity should not exist.



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-49, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .

NG >> Repair harness.

IPDM E/R Ignition Relay Circuit Check

UKS001B0

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

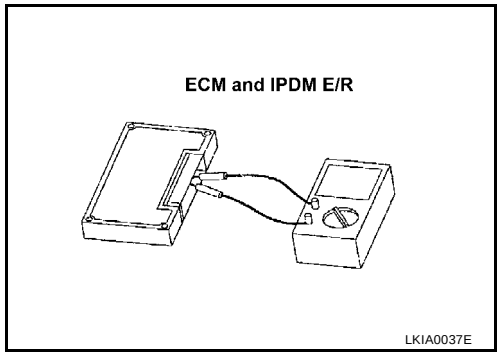
Component Inspection

UKS001B1

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 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 2)

PFP:23710

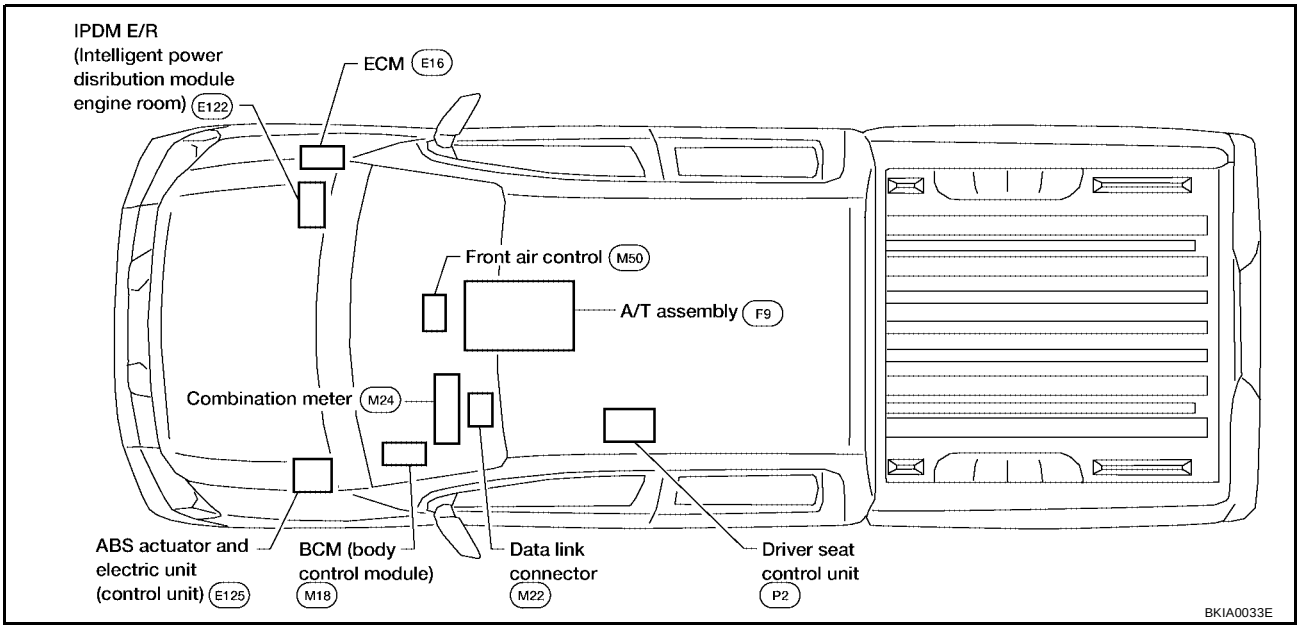
System Description

UKS001B2

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.

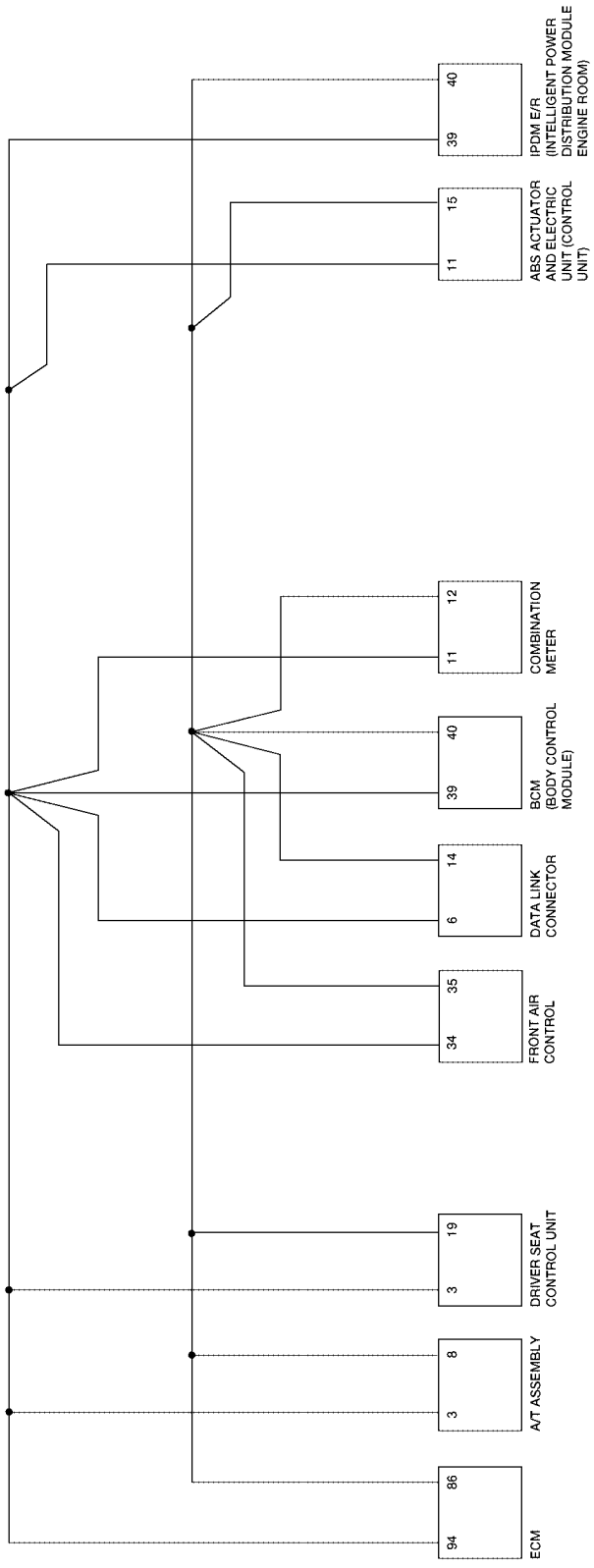
Component Parts and Harness Connector Location

UKS001B3



Schematic

UKS001B4

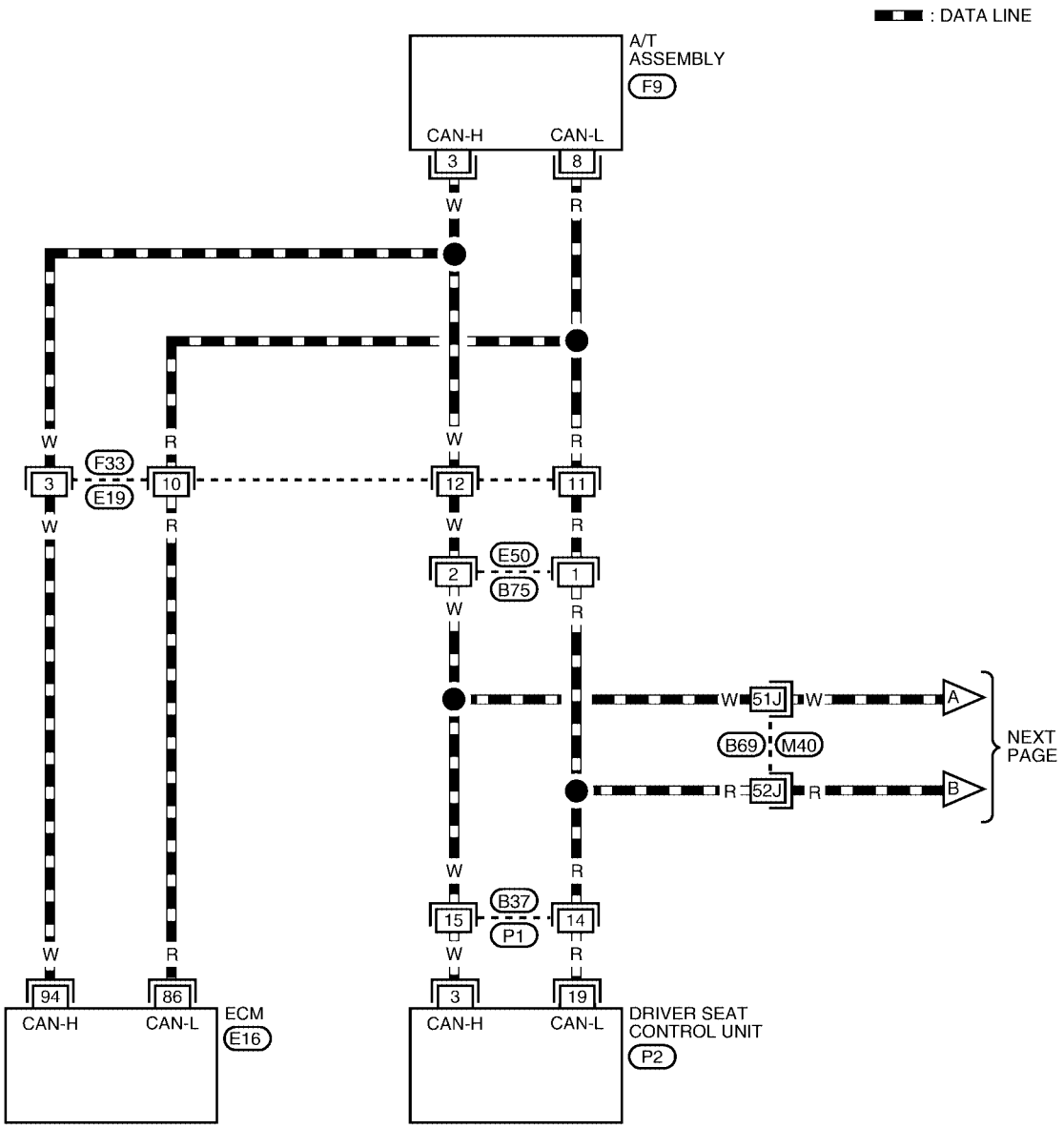


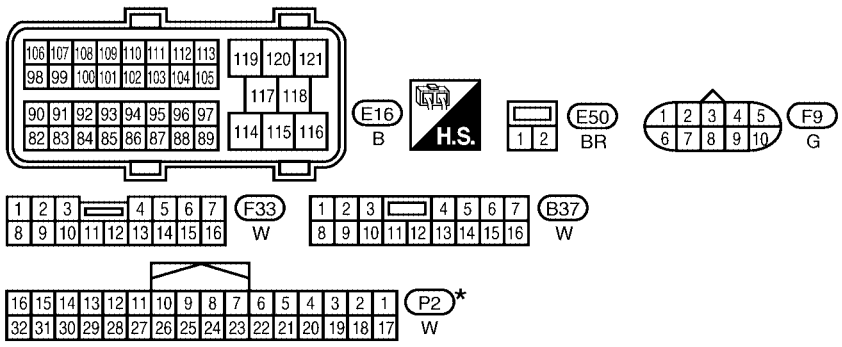
BKWA0132E

Wiring Diagram - CAN -

UKS001B5

LAN-CAN-04



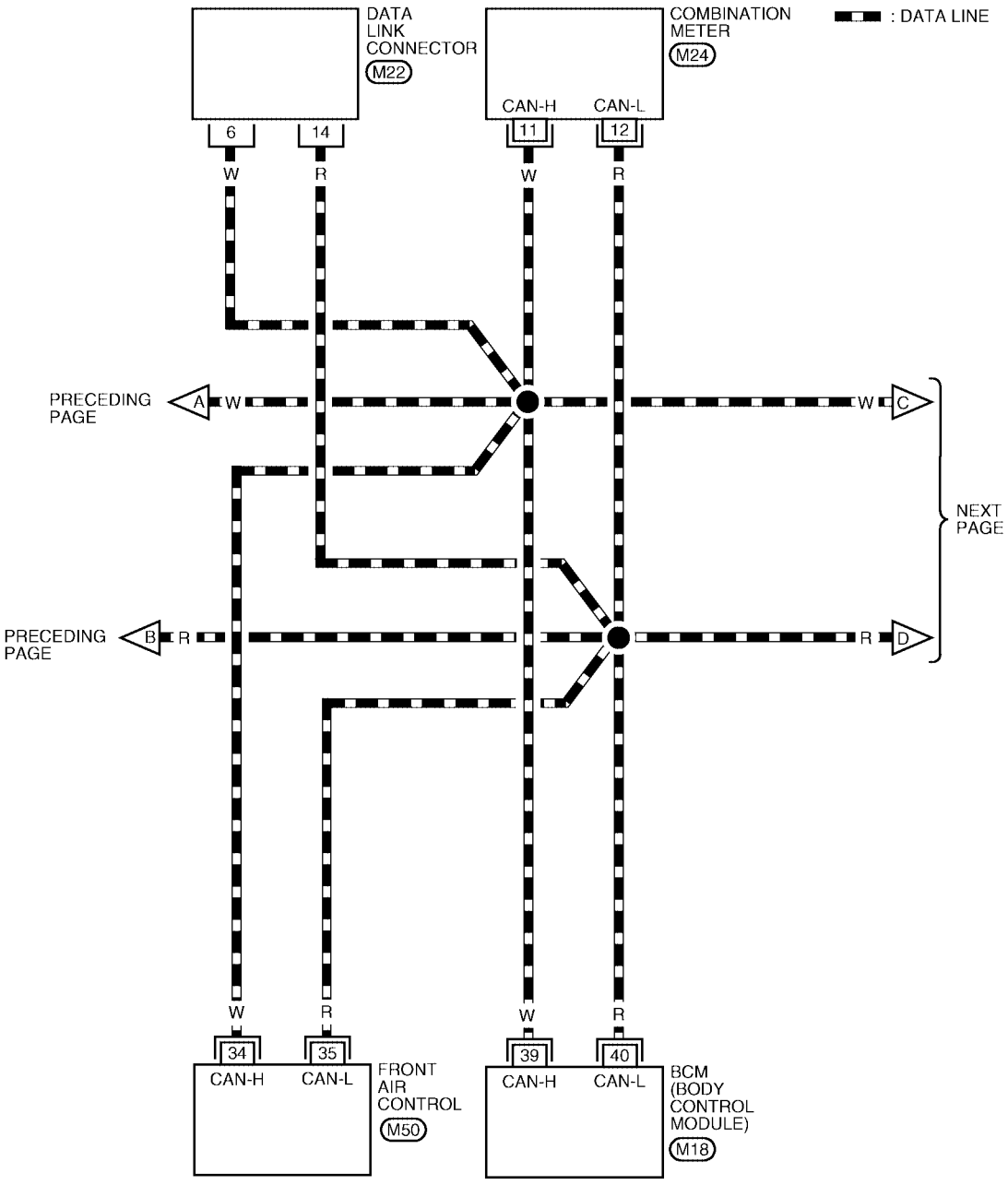


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0031E

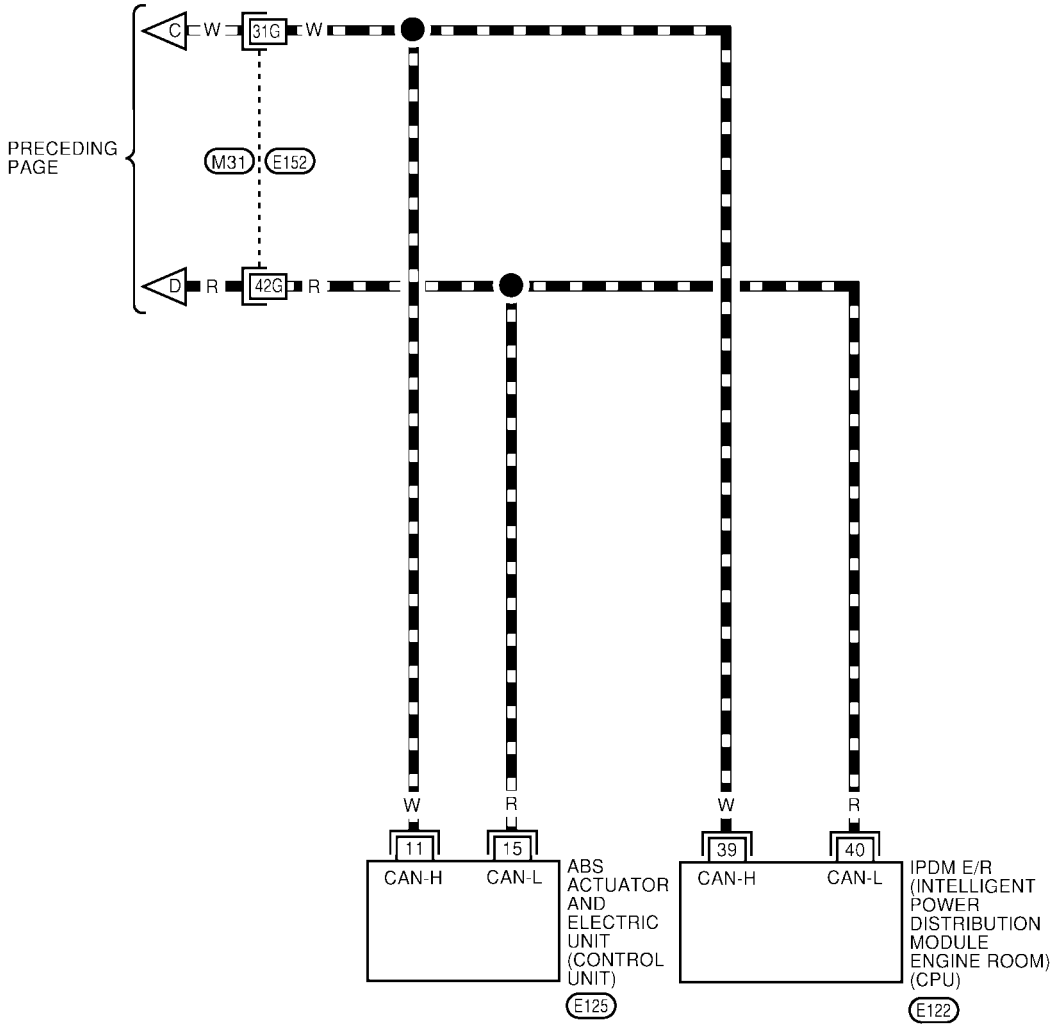
LAN-CAN-05

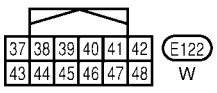


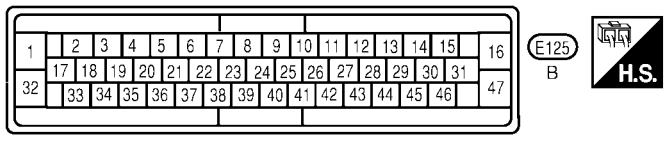
BKWA0133E

LAN-CAN-06

: DATA LINE







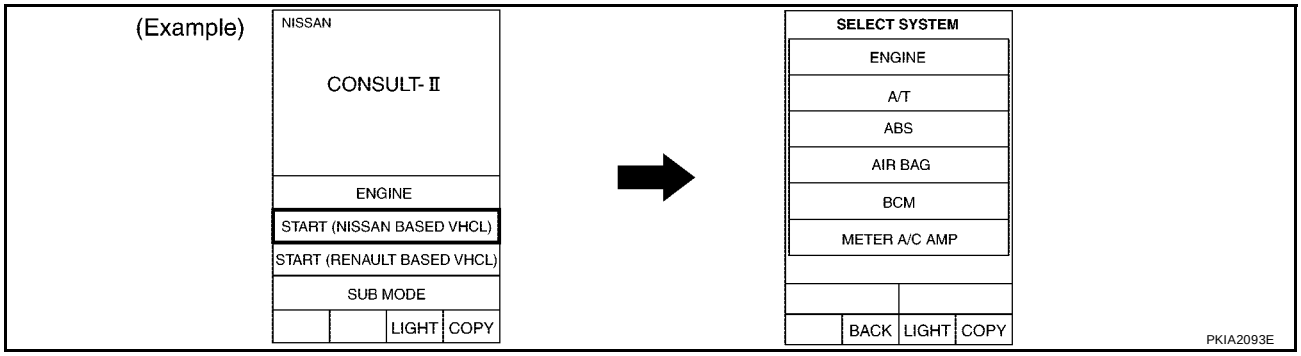
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0033E

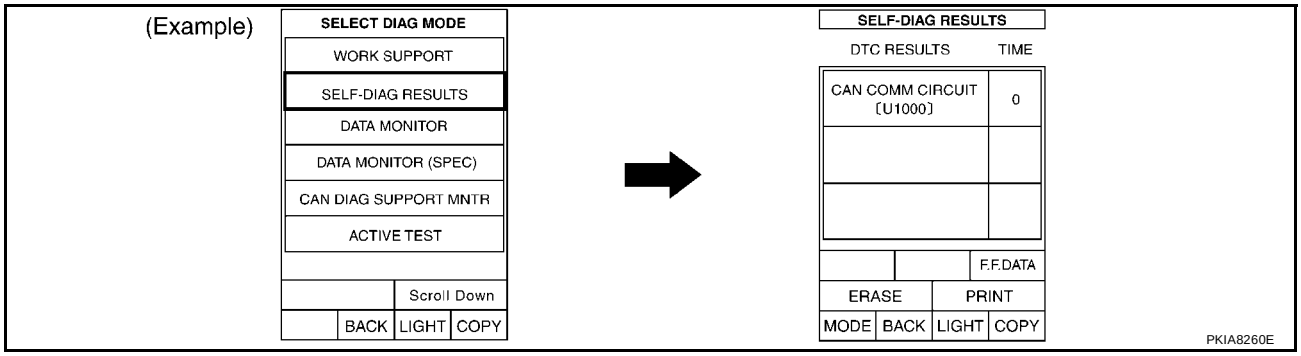
Work Flow

UKS001B6

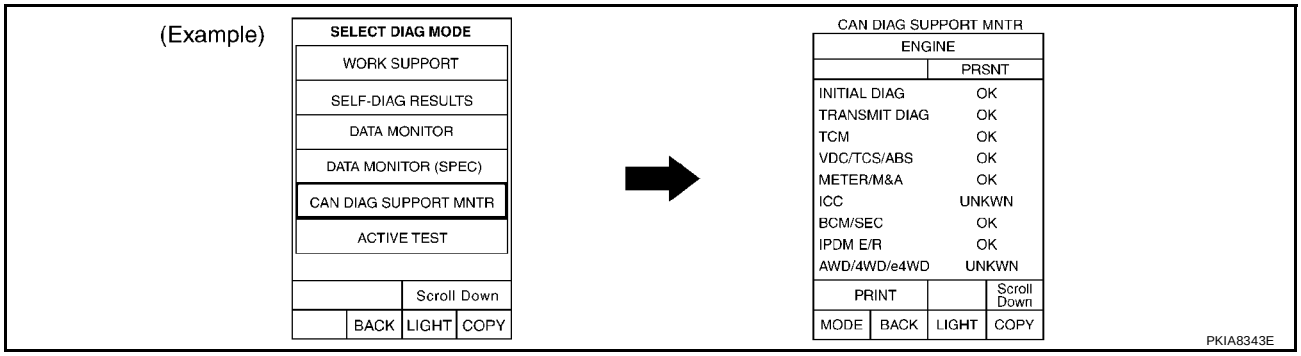
1. When there are no indications of “AUTO DRIVE POS.”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



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



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “AUTO DRIVE POS.”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-56, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-56, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “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 the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-58, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Check sheet table

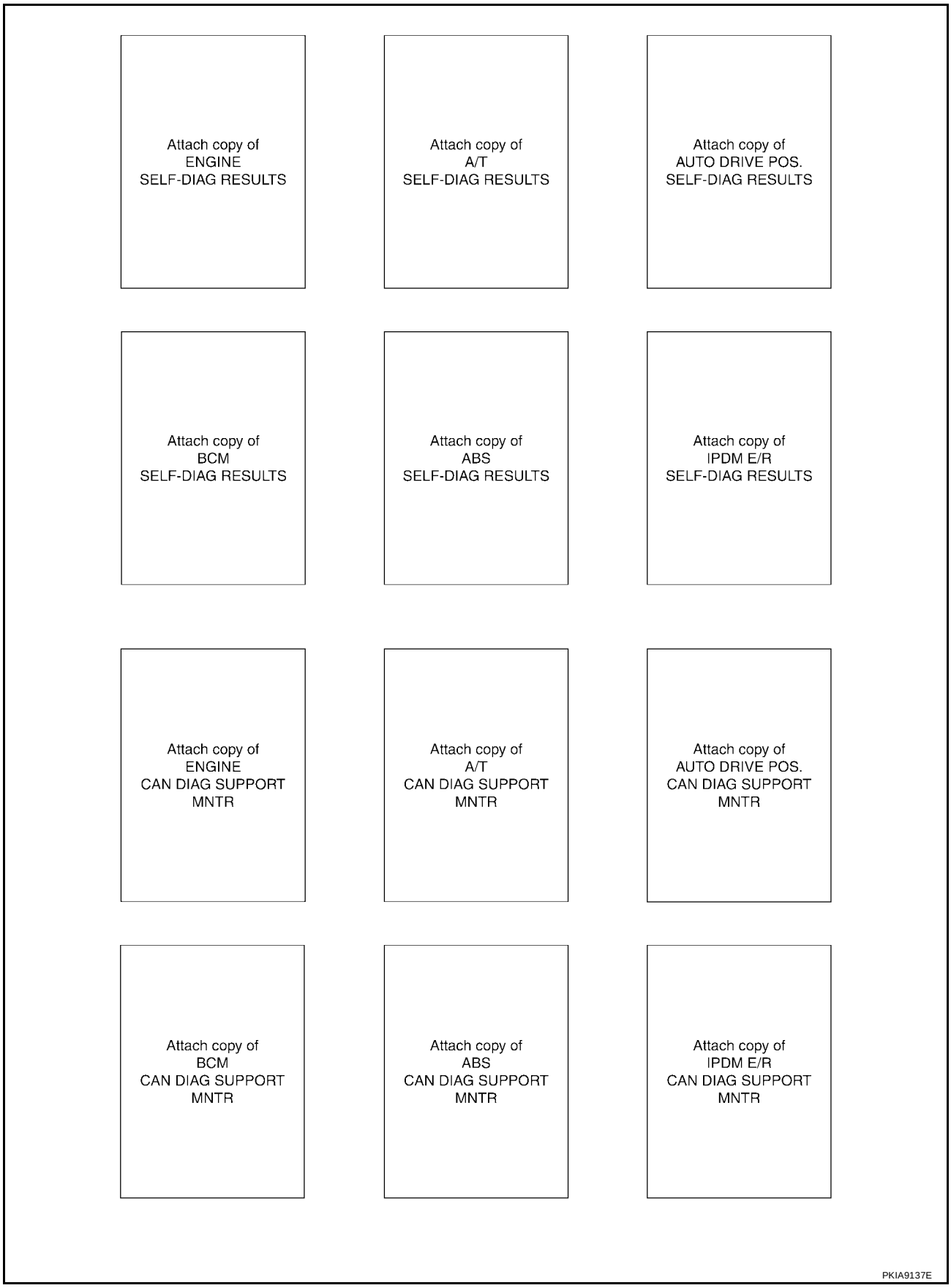
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIA9327E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
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
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA9137E

CHECK SHEET RESULTS (EXAMPLE)

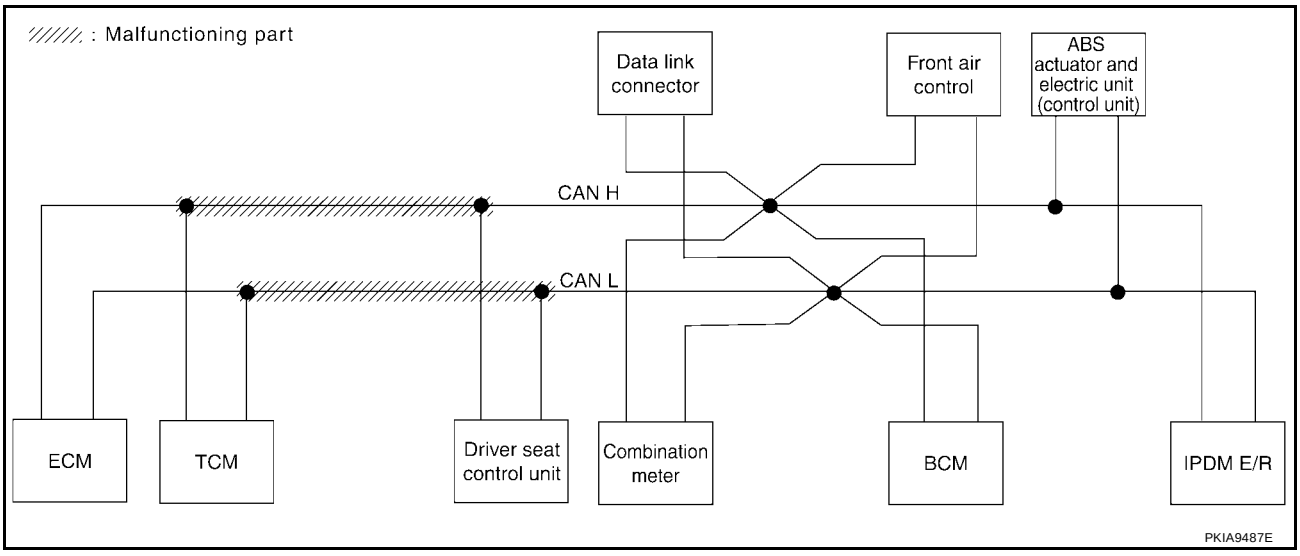
NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and driver seat control unit. Refer to LAN-70, "Circuit Check Between TCM and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN ✓	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN ✓	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN ✓	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN ✓	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN ✓	—	—	UNKWN	—

PKIA9352E

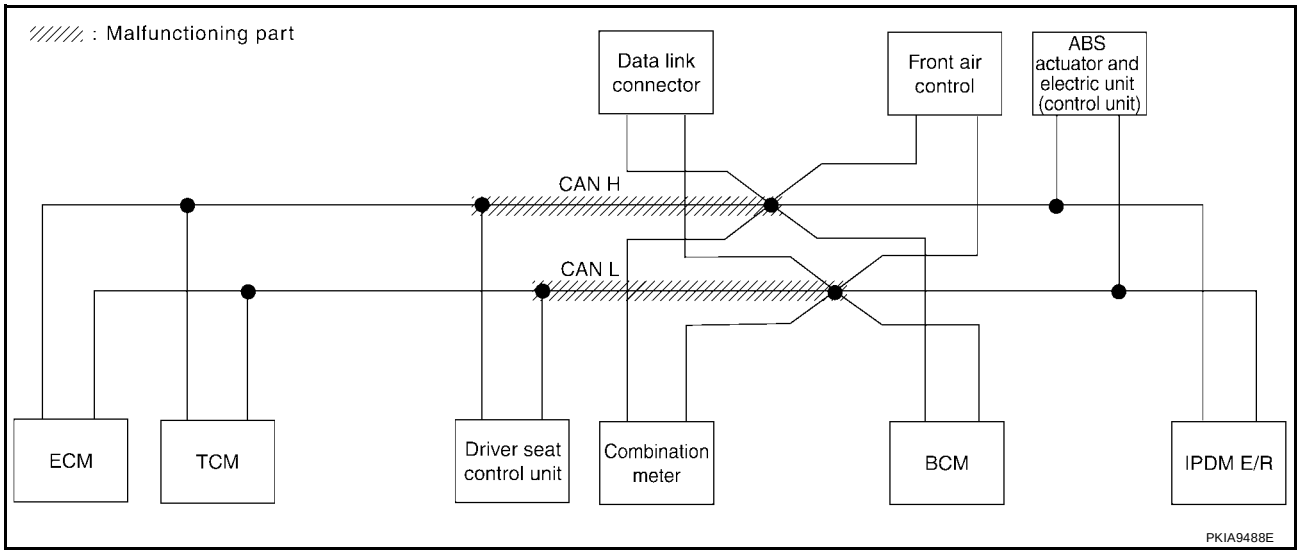


Case 2

Check harness between driver seat control unit and data link connector. Refer to LAN-71, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN ✓	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—
AUTO DRIVE POS.	No indication ✓	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN ✓	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN ✓	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN ✓	—	—	UNKWN	—

PKIA9353E

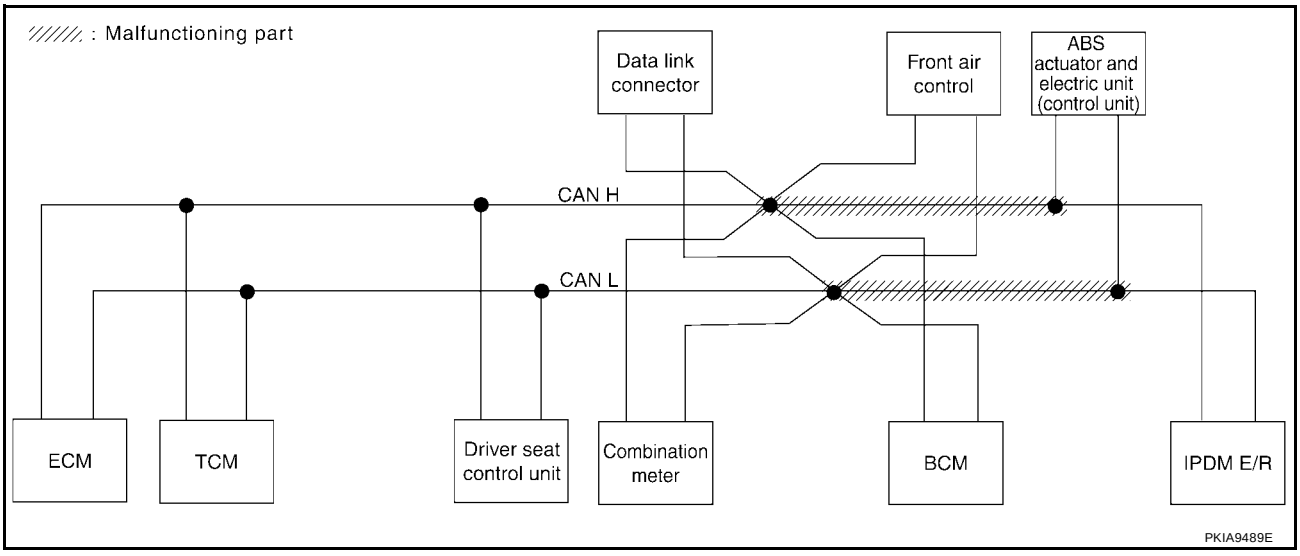


Case 3

Check harness between data link connector and IPDM E/R. Refer to LAN-72, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9354E

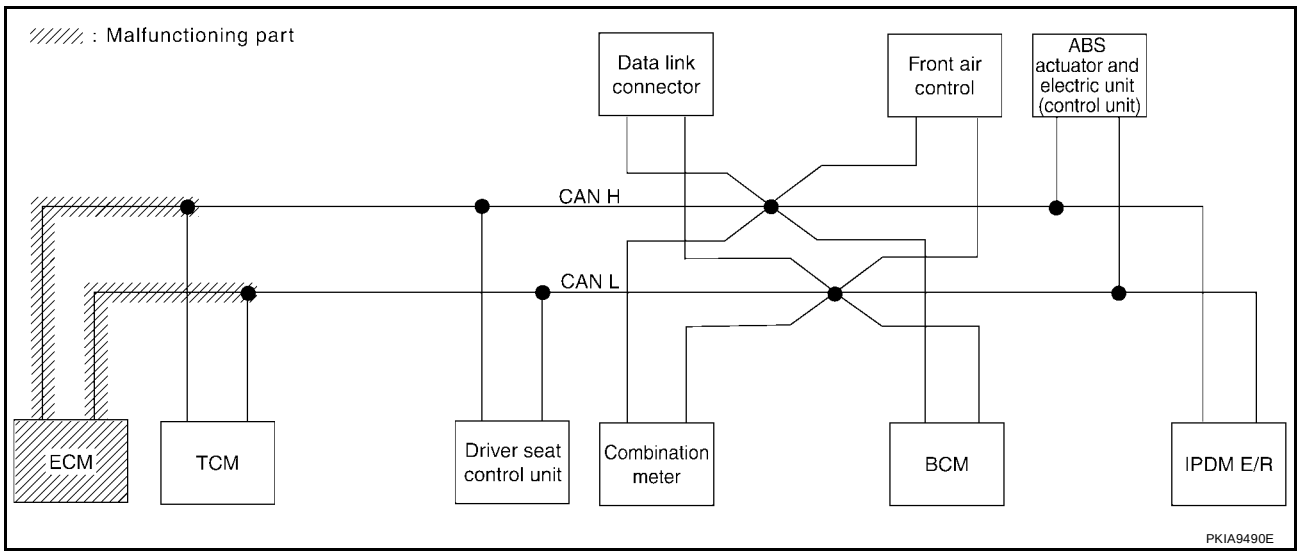


Case 4

Check ECM circuit. Refer to LAN-73, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9355E



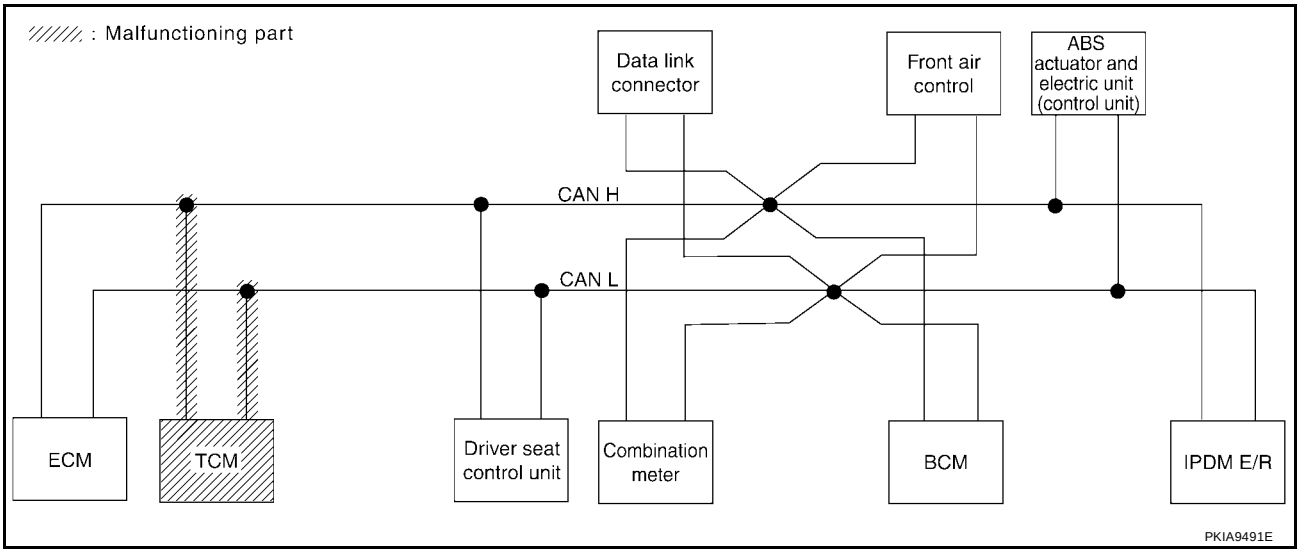
PKIA9490E

Case 5

Check TCM circuit. Refer to LAN-73, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN ✓	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	UNKWN ✓	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN ✓	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9356E

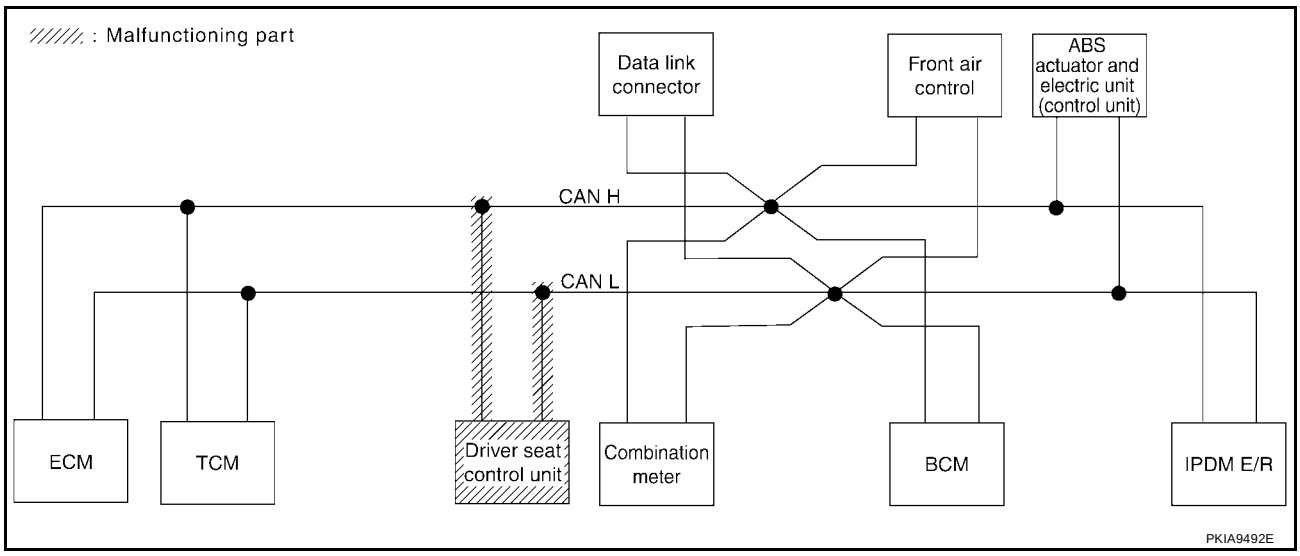


Case 6

Check driver seat control unit circuit. Refer to LAN-74, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9357E



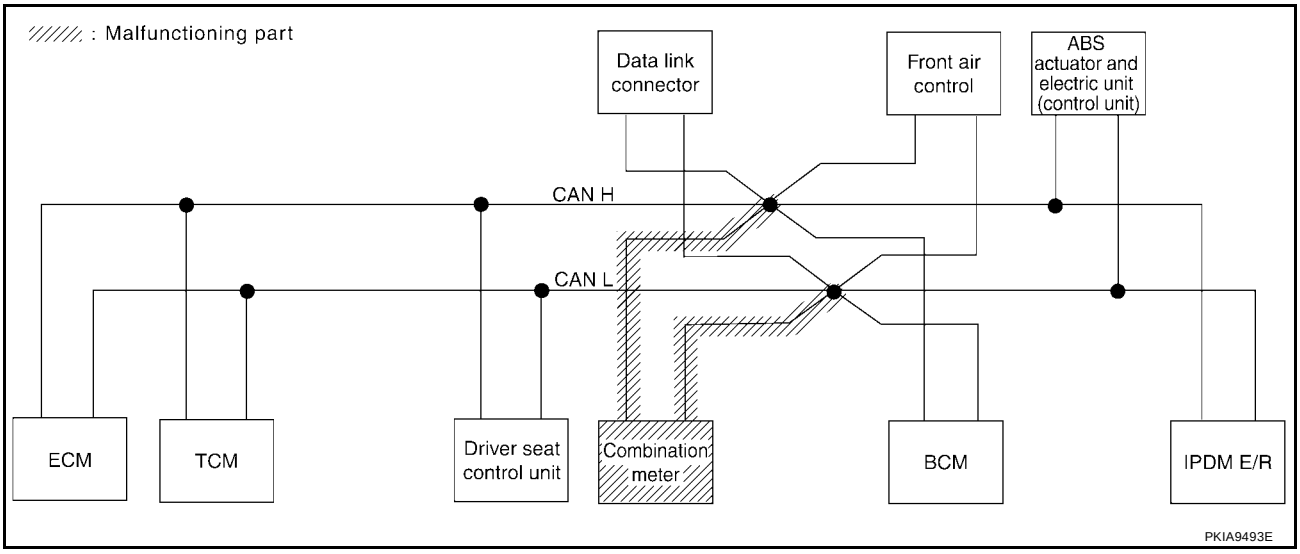
PKIA9492E

Case 7

Check combination meter circuit. Refer to LAN-74, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN ✓	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9358E

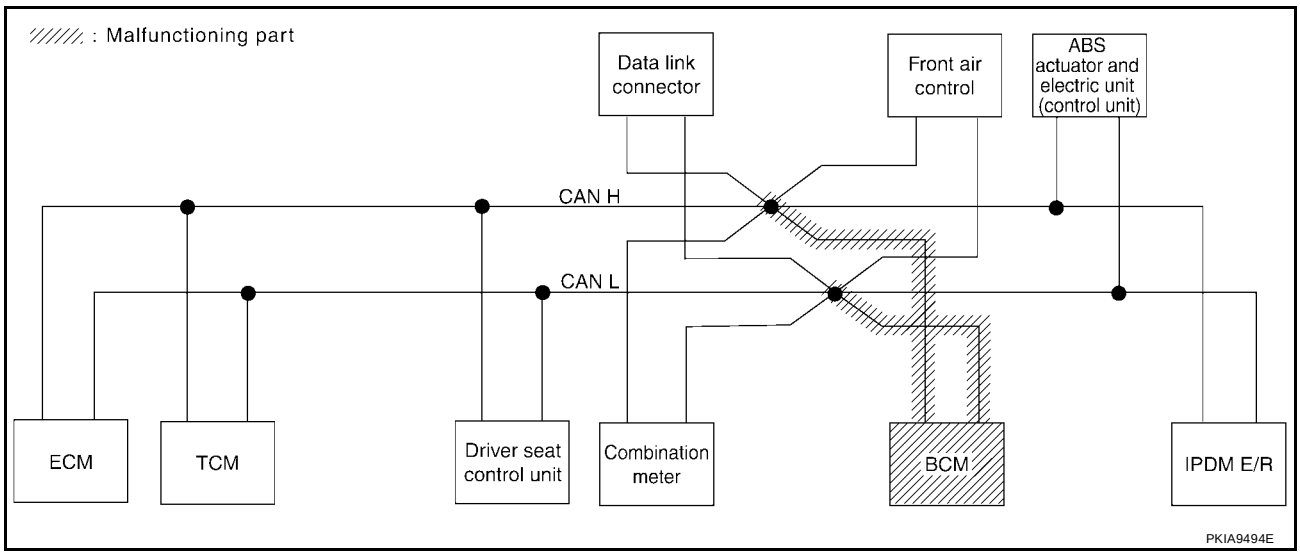


Case 8

Check BCM circuit. Refer to LAN-75, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9359E



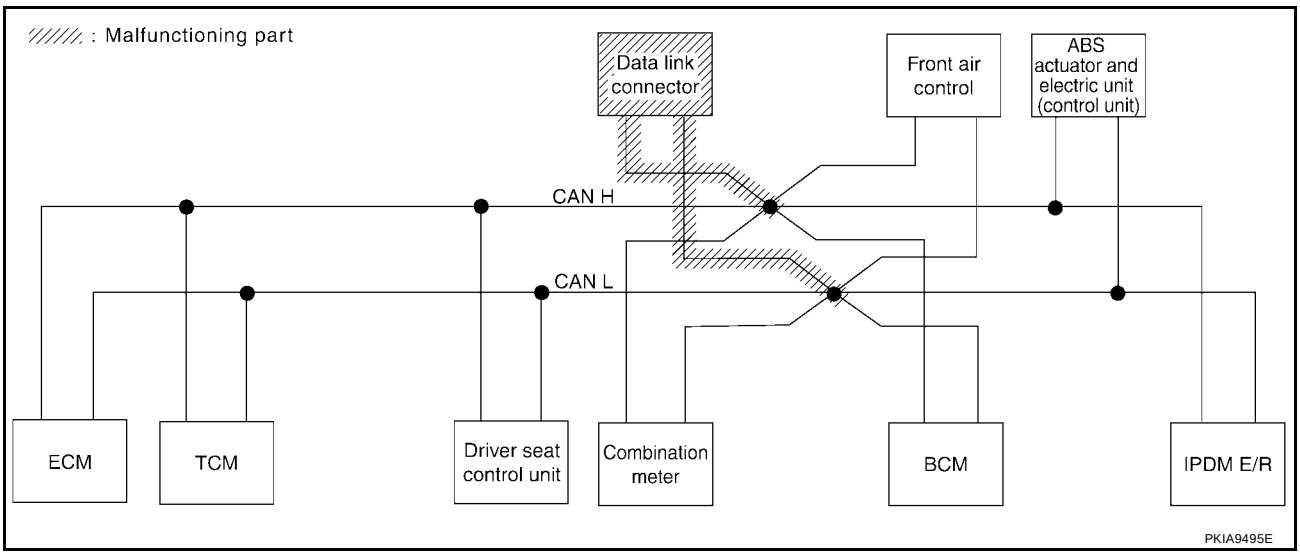
PKIA9494E

Case 9

Check data link connector circuit. Refer to LAN-75, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9360E



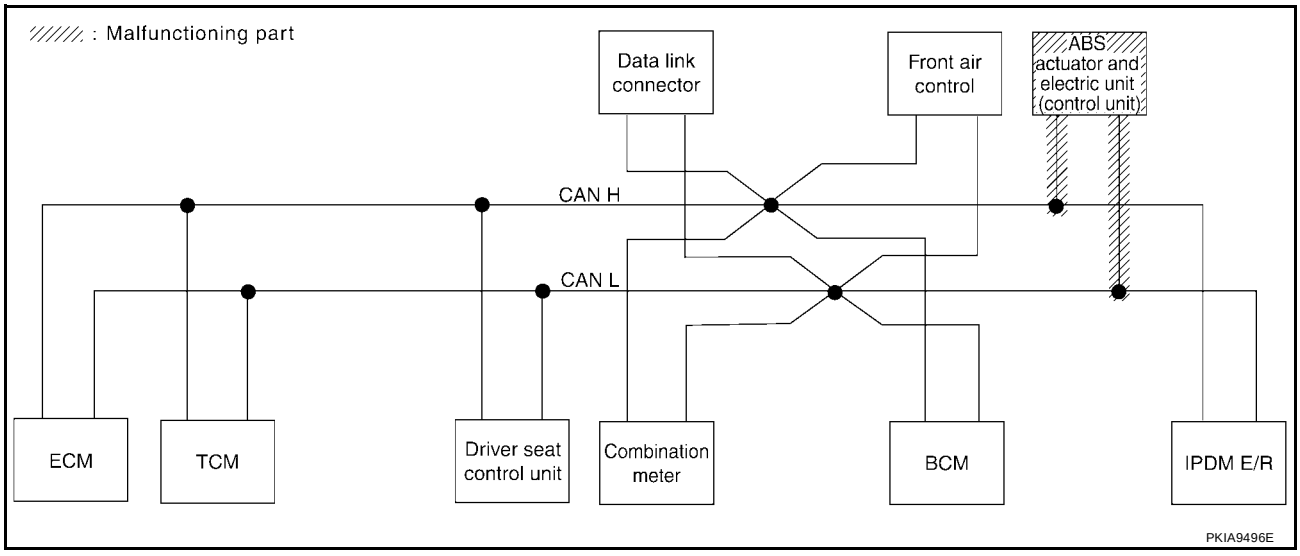
PKIA9495E

Case 10

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-76, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG ✓	UNKWN ✓	UNKWN ✓	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9361E



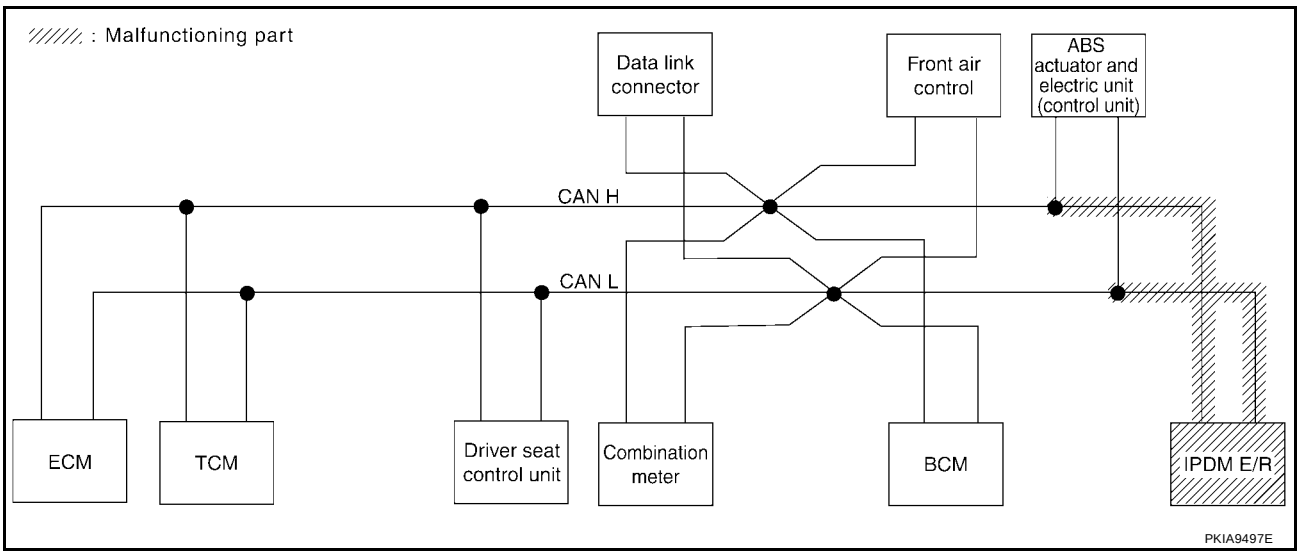
PKIA9496E

Case 11

Check IPDM E/R circuit. Refer to LAN-76, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9362E



PKIA9497E

Case 12

Check CAN communication circuit. Refer to LAN-77, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9363E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-77, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9364E

Case 14

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-77, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR						
		Initial diagnosis	Transmit diagnosis	Receive diagnosis				
				ECM	TCM	METER /M&A	BCM/SEC	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	UNKWN ✓	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN
ABS	—	NG	UNKWN	UNKWN ✓	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—

PKIA9365E

Circuit Check Between TCM and Driver Seat Control Unit

UKS001B7

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 F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

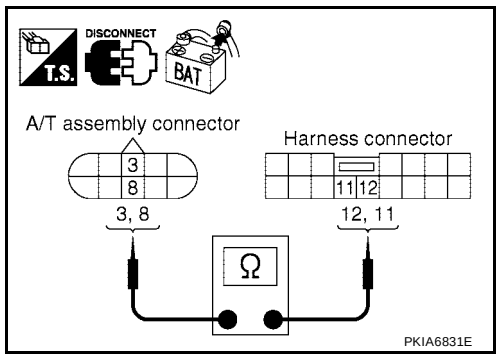
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12 (W), 11 (R).

3 (W) - 12 (W) : Continuity should exist.
8 (R) - 11 (R) : Continuity should exist.



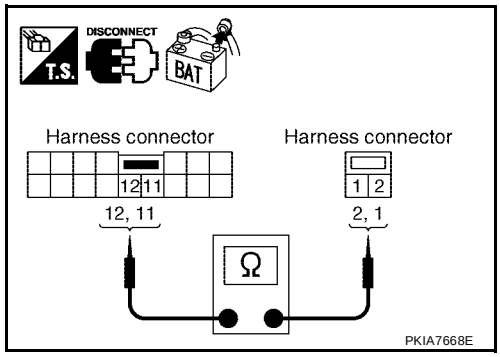
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).

12 (W) - 2 (W) : Continuity should exist.
11 (R) - 1 (R) : Continuity should exist.



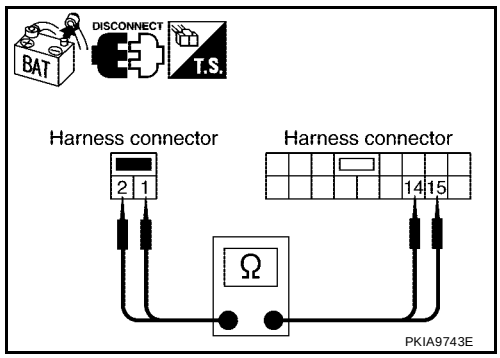
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37.
2. Check continuity between harness connector B75 terminals 2 (W), 1 (R) and harness connector B37 terminals 15 (W), 14 (R).

2 (W) - 15 (W) : Continuity should exist.
1 (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-55, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and Data Link Connector

UKS001B8

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 B69
- Harness connector M40

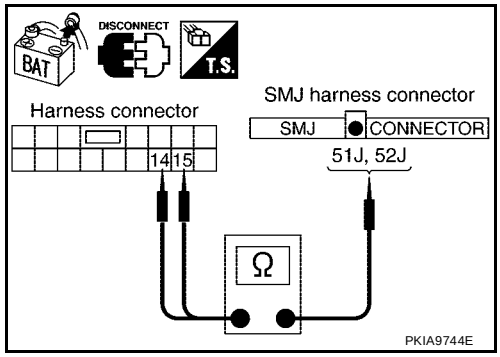
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37 and harness connector B69.
2. Check continuity between harness connector B37 terminals 15 (W), 14 (R) and harness connector B69 terminals 51J (W), 52J (R).

15 (W) - 51J (W) : Continuity should exist.
14 (R) - 52J (R) : Continuity should exist.



OK or NG

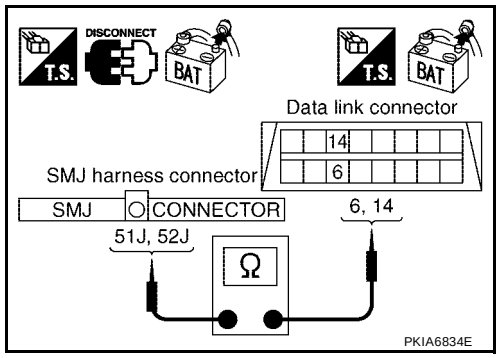
OK >> GO TO 3.
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

51J (W) - 6 (W) : Continuity should exist.

52J (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-55, "Work Flow" .

NG >> Repair harness.

Circuit Check Between Data Link Connector and IPDM E/R

UKS001B9

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 M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

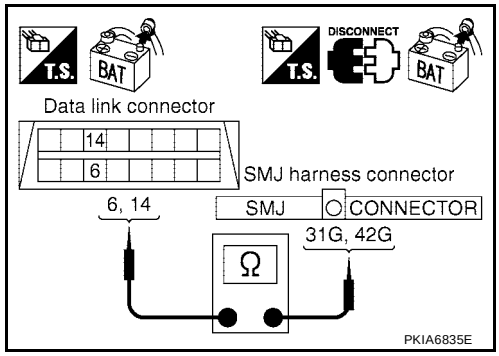
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).

6 (W) - 31G (W) : Continuity should exist.

14 (R) - 42G (R) : Continuity should exist.



OK or NG

OK >> GO TO 3.

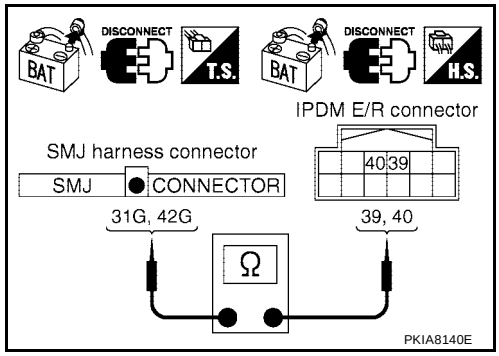
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).

31G (W) - 39 (W) : Continuity should exist.

42G (R) - 40 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-55, "Work Flow" .

NG >> Repair harness.

ECM Circuit Check

UKS001BA

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 E19
- Harness connector F33

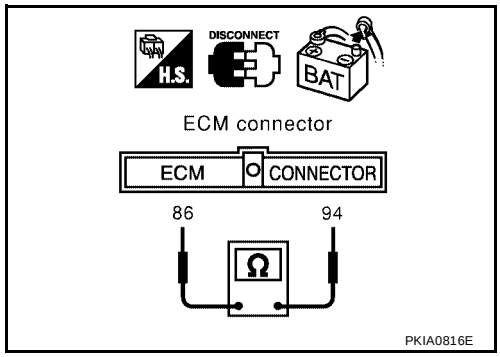
OK or NG

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 E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R) : Approx. 108 - 132Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and A/T assembly.

TCM Circuit Check

UKS001BB

1. CHECK CONNECTOR

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

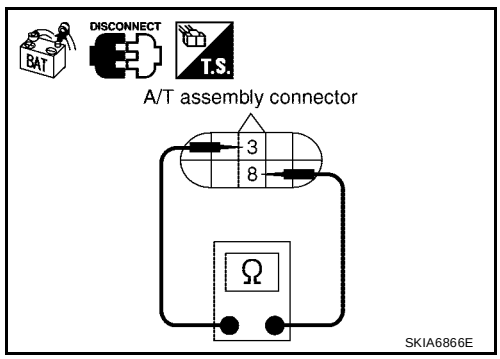
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Driver Seat Control Unit Circuit Check

UKS001BC

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 unit side and harness side).

- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

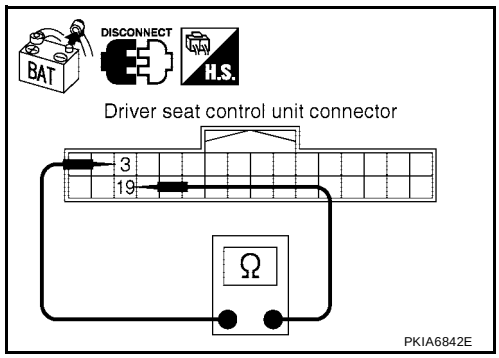
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect driver seat control unit connector.
2. Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R).

3 (W) - 19 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B69.

Combination Meter Circuit Check

UKS001BD

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).

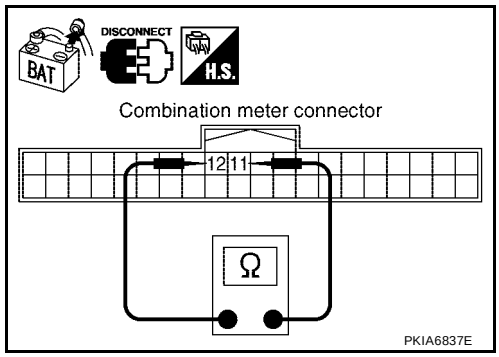
OK or NG

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 M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R) : Approx. 54 - 66Ω



OK or NG

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

BCM Circuit Check

UKS001BE

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).

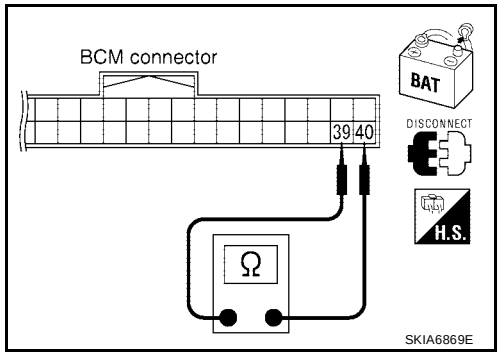
OK or NG

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 M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS001BF

1. CHECK CONNECTOR

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

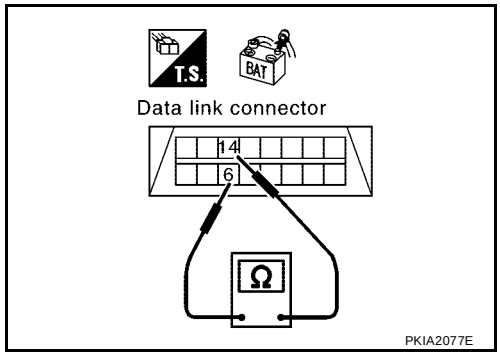
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-55, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001BH

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.

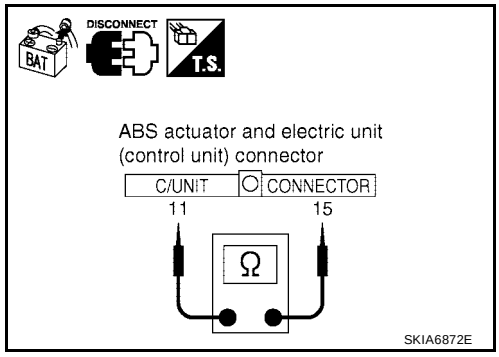
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R) : 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 harness connector E152.



IPDM E/R Circuit Check

UKS001BI

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.

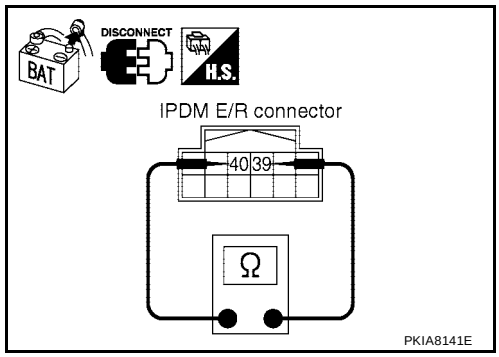
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 108 - 132Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

UKS001BJ

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- A/T assembly
- Driver seat control unit
- Combination meter
- BCM
- Front air control
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

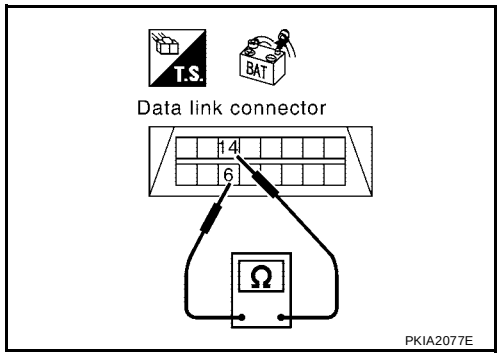
2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

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

OK or NG

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



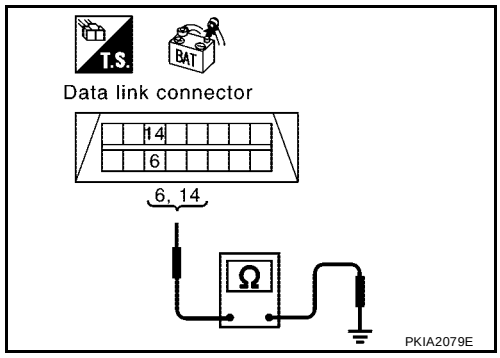
3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

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

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-78, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

UKS001BK

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

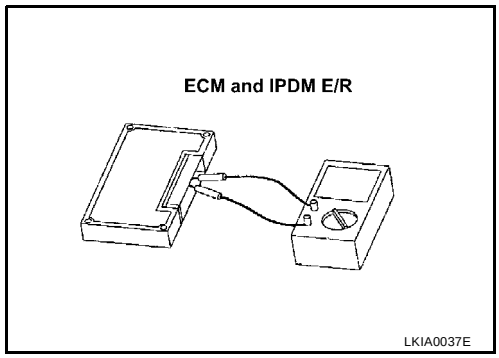
Component Inspection

UKS001BL

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 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 3)

PFP:23710

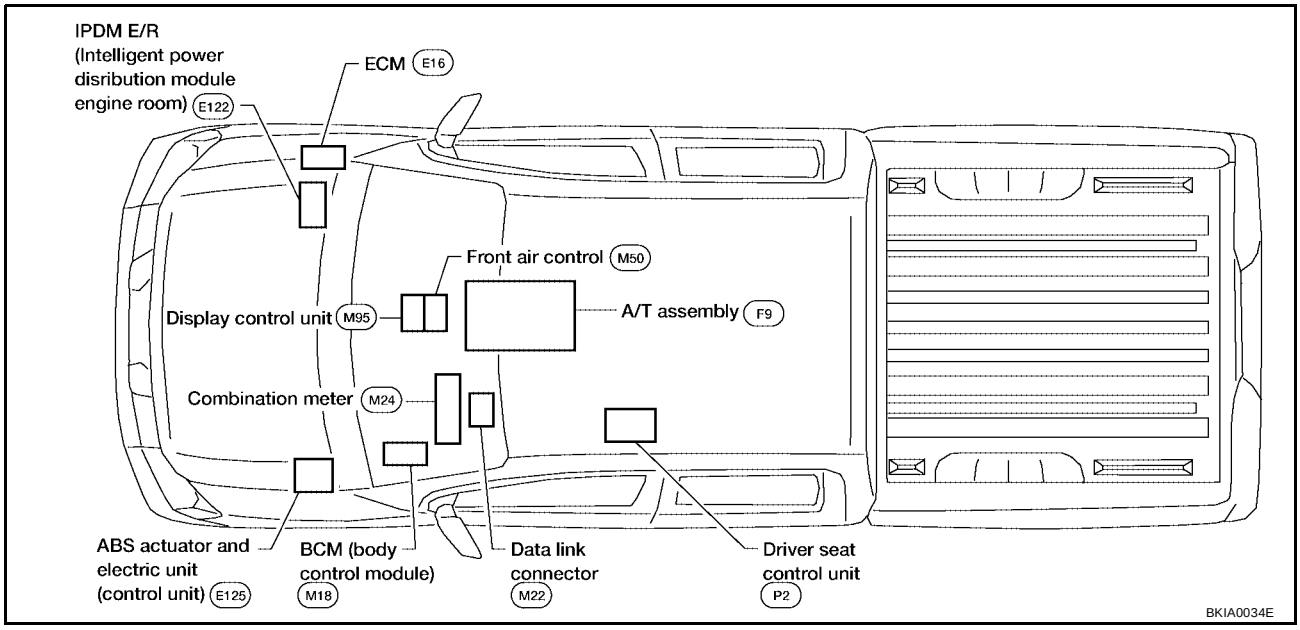
System Description

UKS001BM

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.

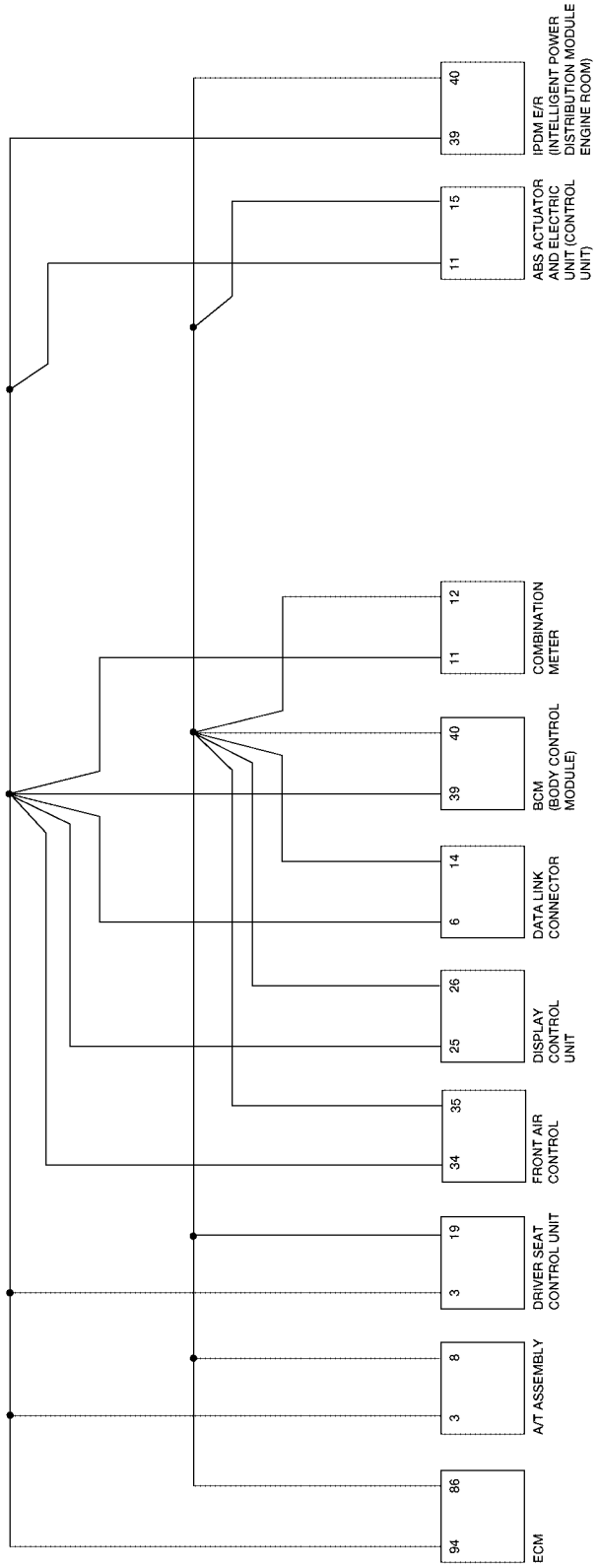
Component Parts and Harness Connector Location

UKS001BN



Schematic

UKS001BO

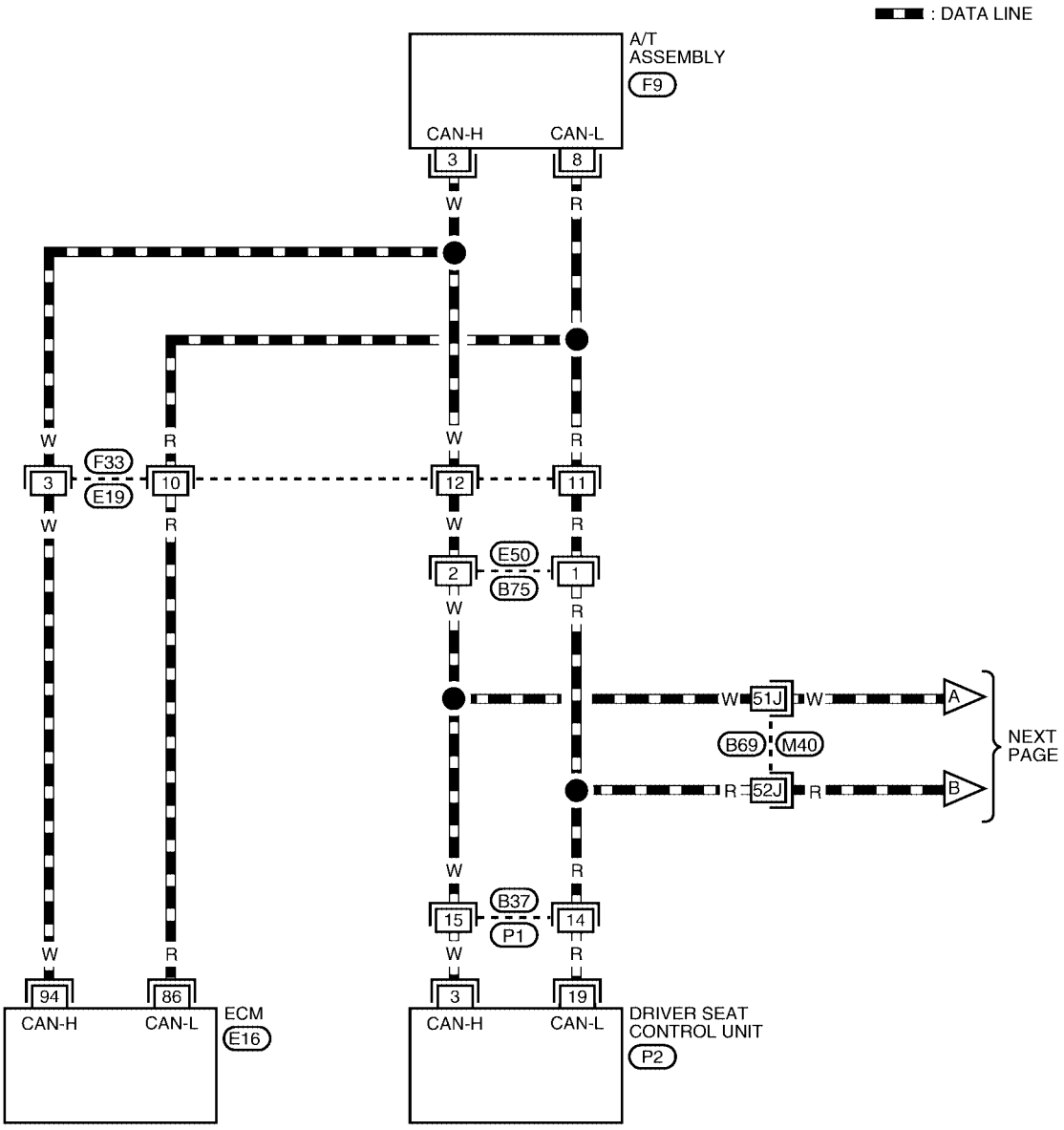


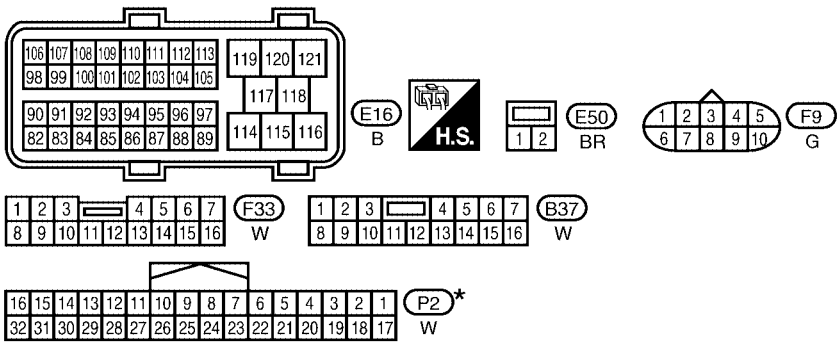
BKWA0134E

Wiring Diagram - CAN -

UKS001BP

LAN-CAN-07



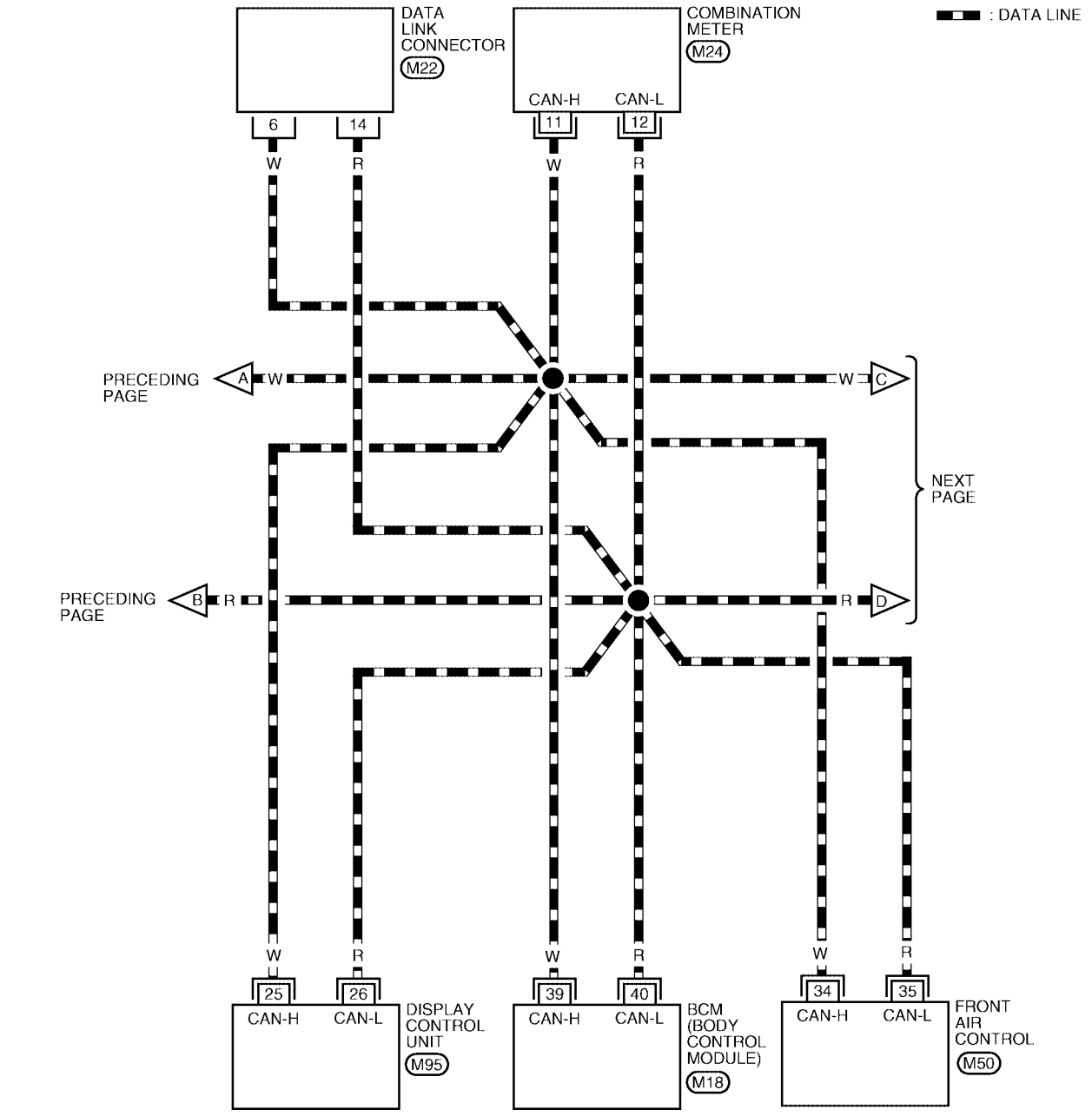


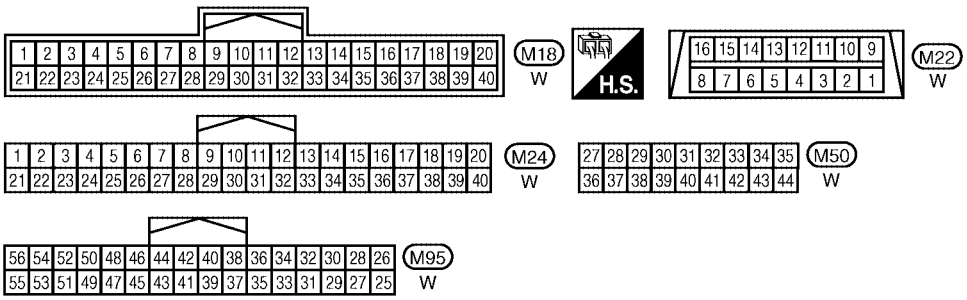
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0038E

LAN-CAN-08

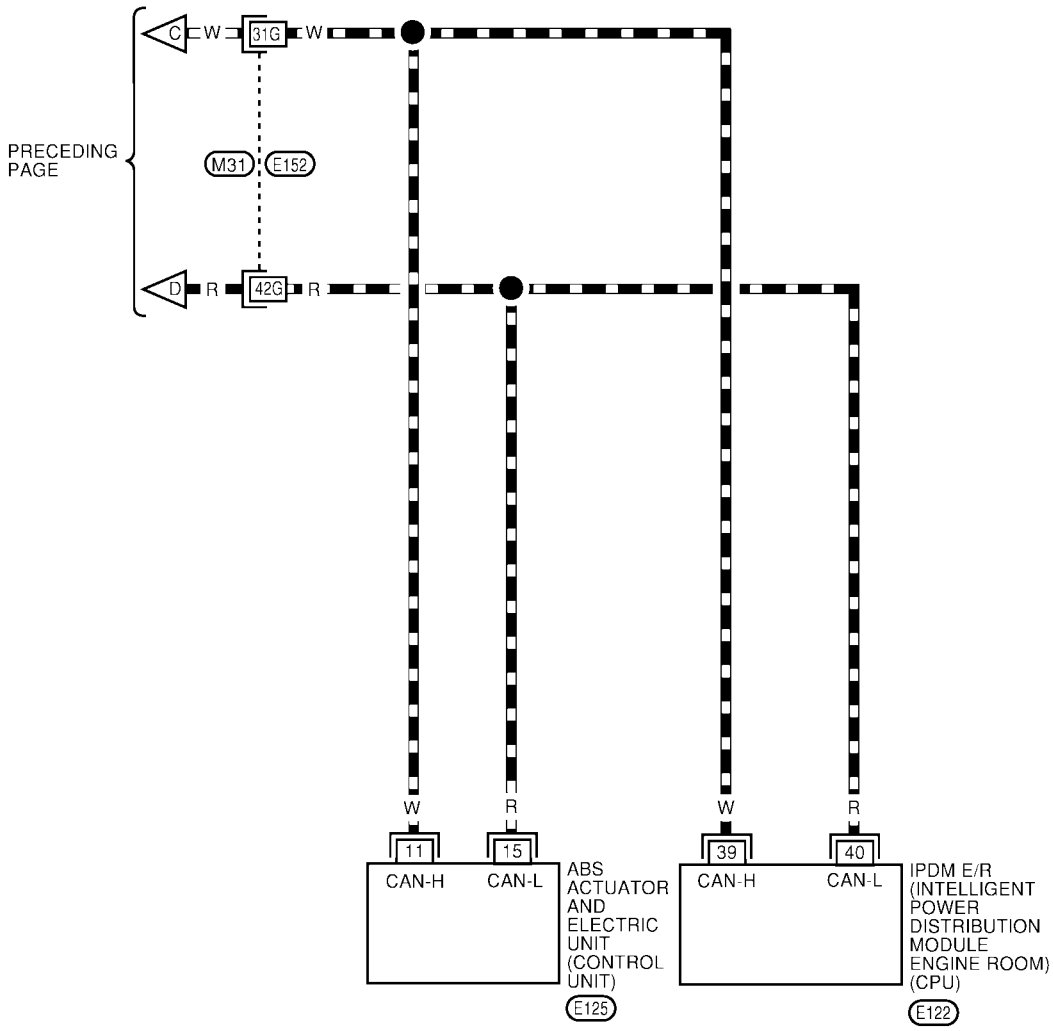


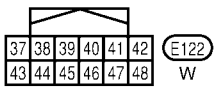


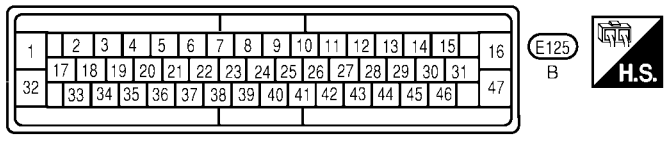
BKWA0135E

LAN-CAN-09

: DATA LINE







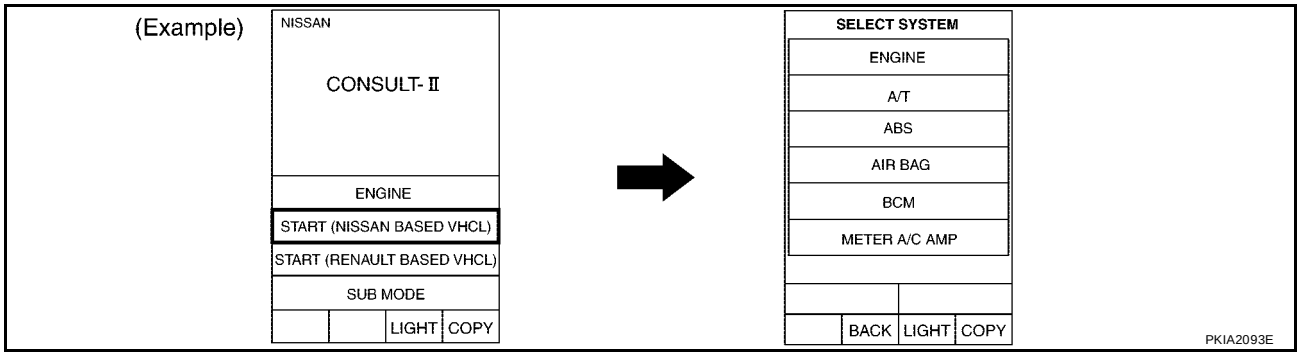
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0040E

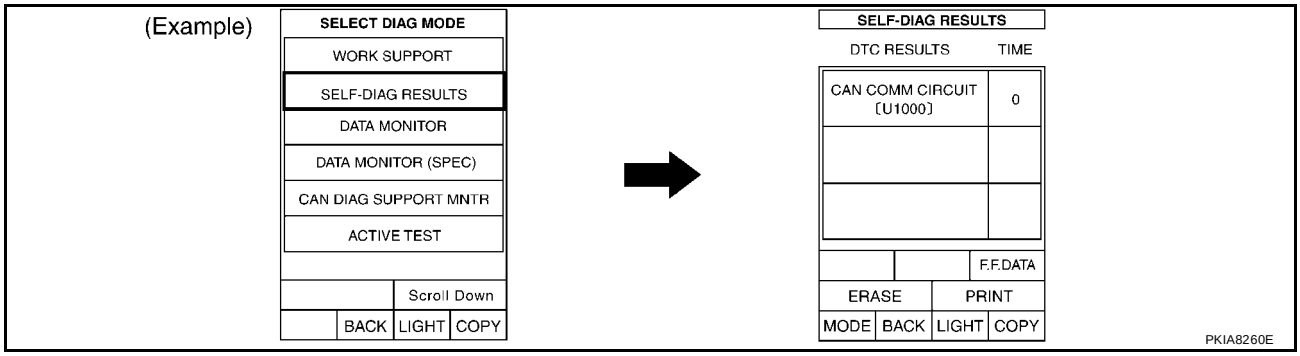
Work Flow

UKS001BQ

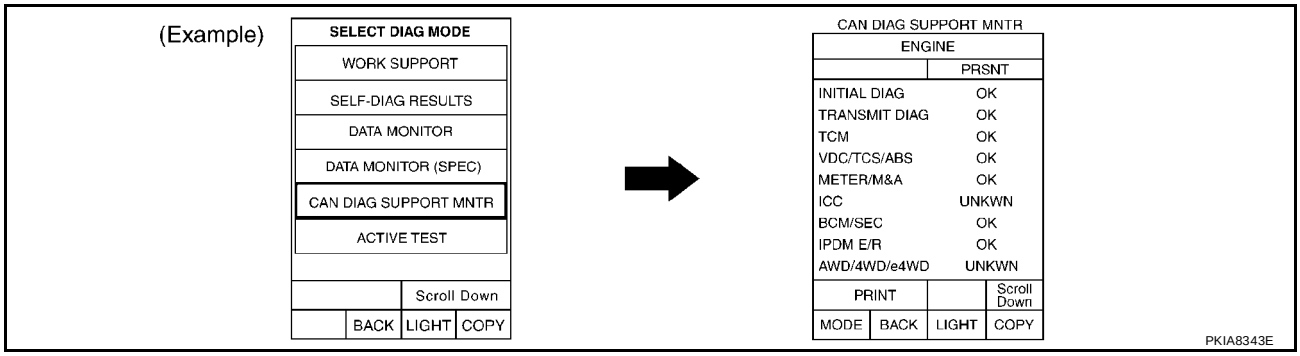
1. When there are no indications of “AUTO DRIVE POS.”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



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



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “AUTO DRIVE POS.”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-86, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-86, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “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 the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. Check CAN communication line of the navigation system. Refer to AV-149, "CAN Communication Line Check" .
7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to LAN-86, "CHECK SHEET" .

8. Mark the “NG” or “UNKWN” item of the check sheet table with “v” from the result of CAN DIAG SUPPORT MONITOR check sheet. Refer to LAN-86, "CHECK SHEET" .

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MONITOR” for the diagnosed control unit, replace the control unit. Refer to AV-149, "CAN Communication Line Check" .

9. According to the check sheet results (example), start inspection. Refer to LAN-88, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

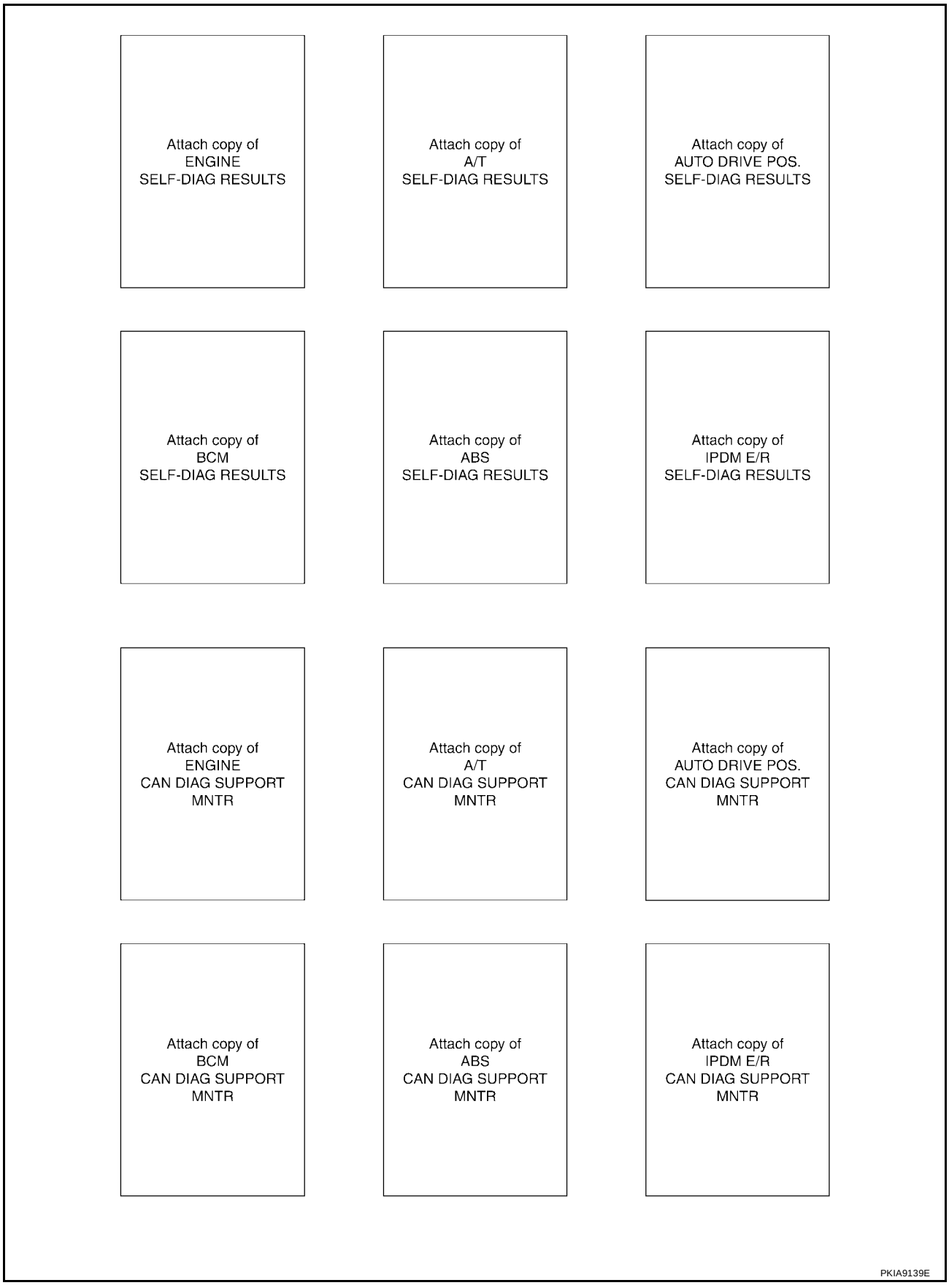
Symptoms :

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

Attach copy of
display control unit
CAN DIAG SUPPORT MONITOR check sheet

PKIA9328E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
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
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA9139E

CHECK SHEET RESULTS (EXAMPLE)

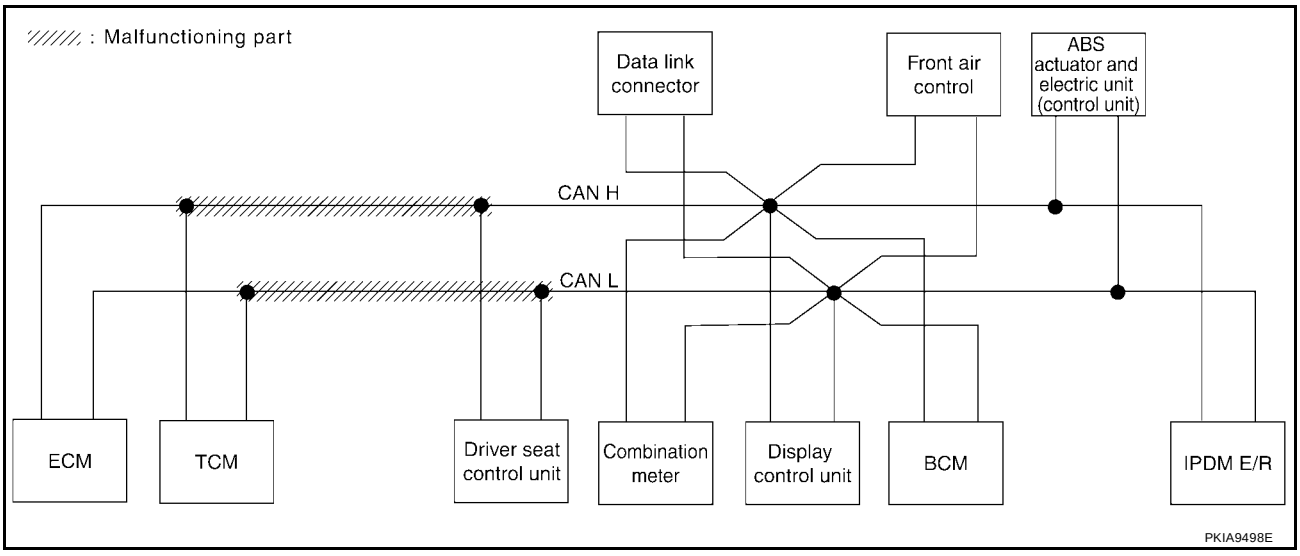
NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and driver seat control unit. Refer to LAN-102, "Circuit Check Between TCM and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

PKIA9366E



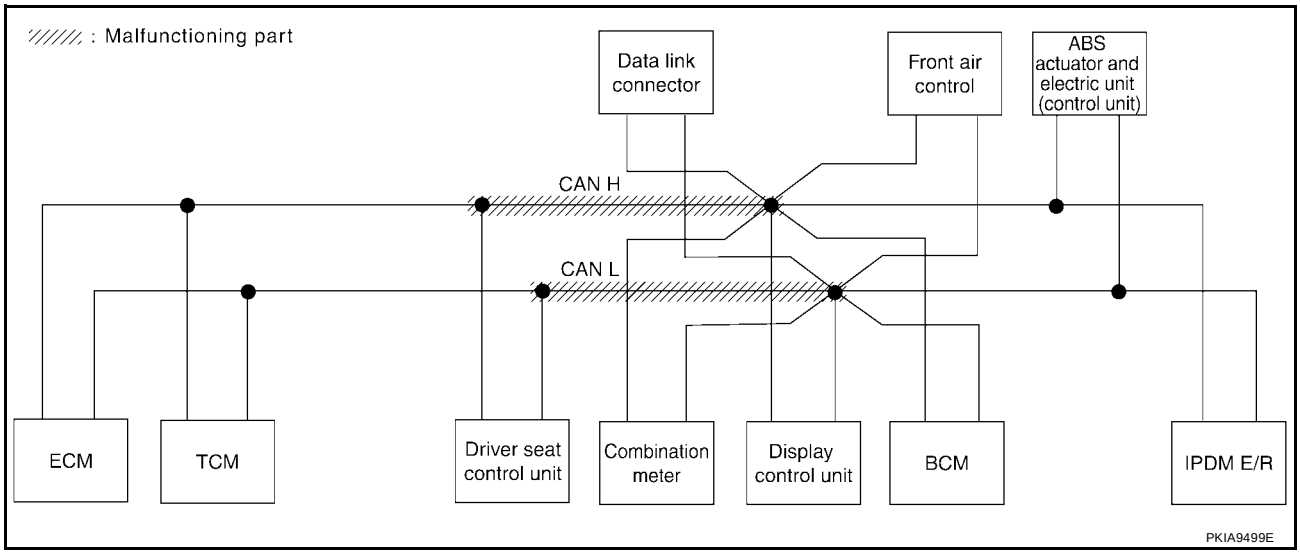
PKIA9498E

Case 2

Check harness between driver seat control unit and data link connector. Refer to LAN-103, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

PKIA9367E

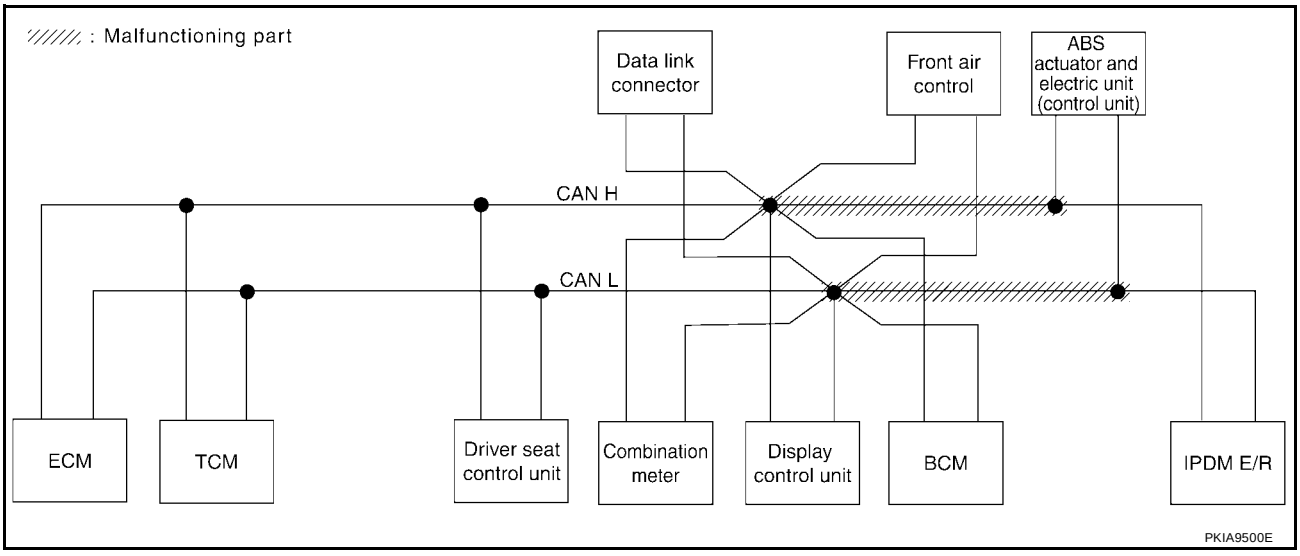


Case 3

Check harness between data link connector and IPDM E/R. Refer to LAN-104, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

PKIA9368E



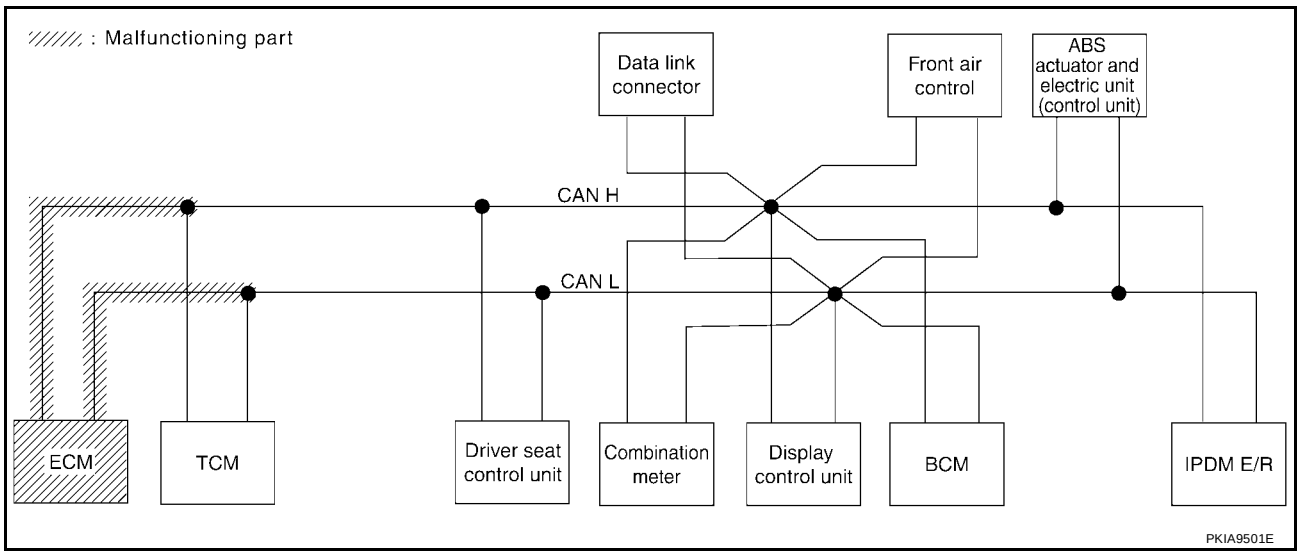
PKIA9500E

Case 4

Check ECM circuit. Refer to LAN-105, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

PKIA9369E



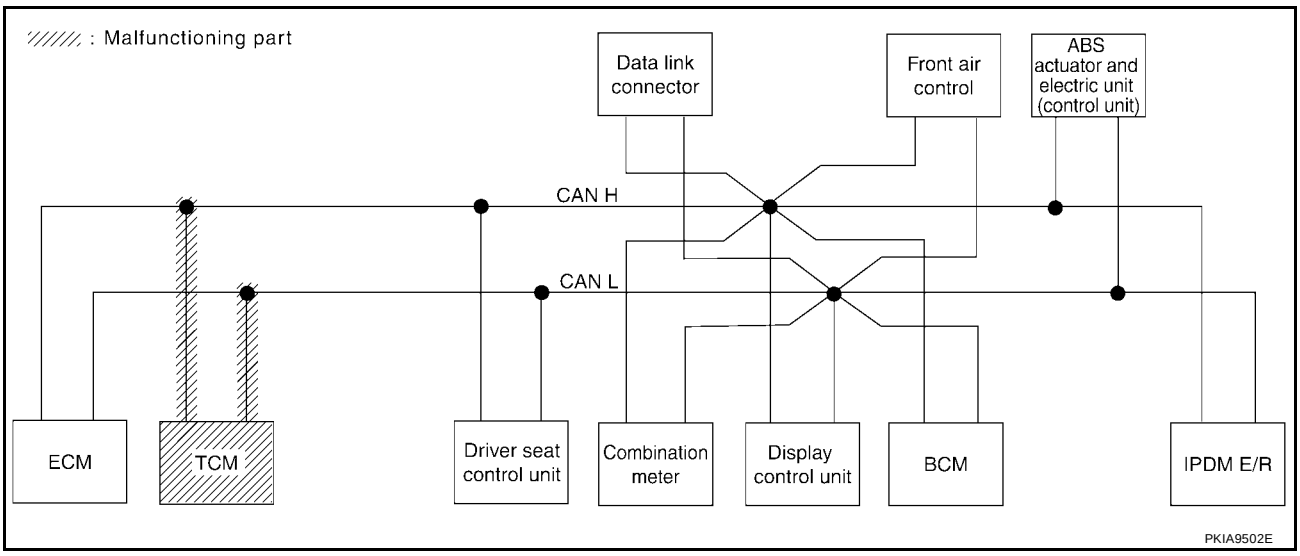
PKIA9501E

Case 5

Check TCM circuit. Refer to LAN-105, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

PKIA9370E



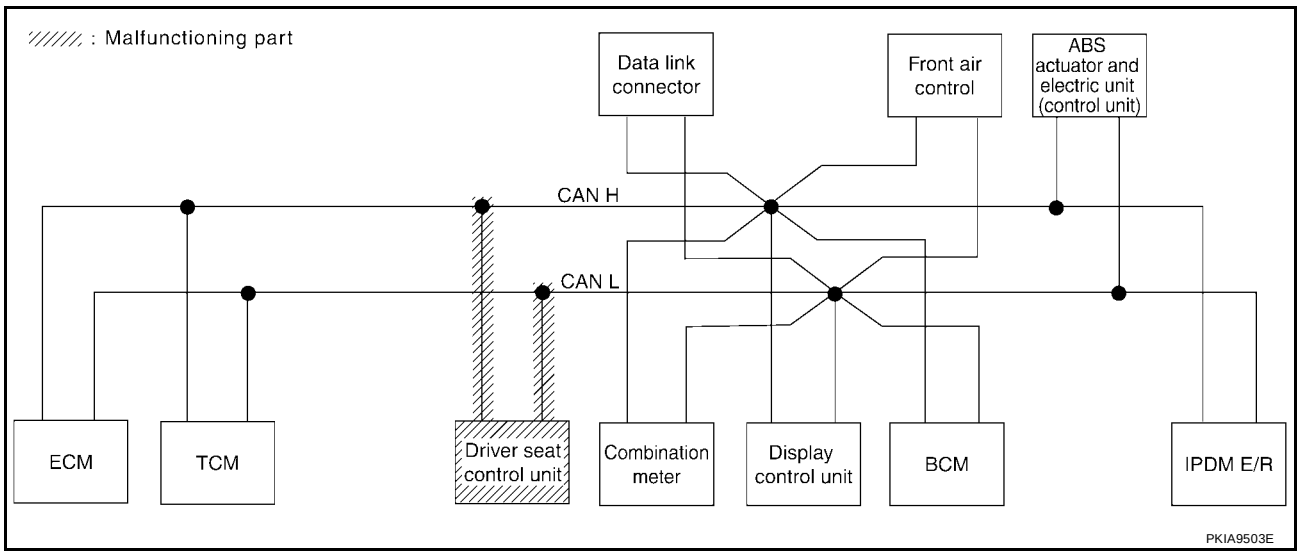
PKIA9502E

Case 6

Check driver seat control unit circuit. Refer to LAN-106, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

PKIA9371E



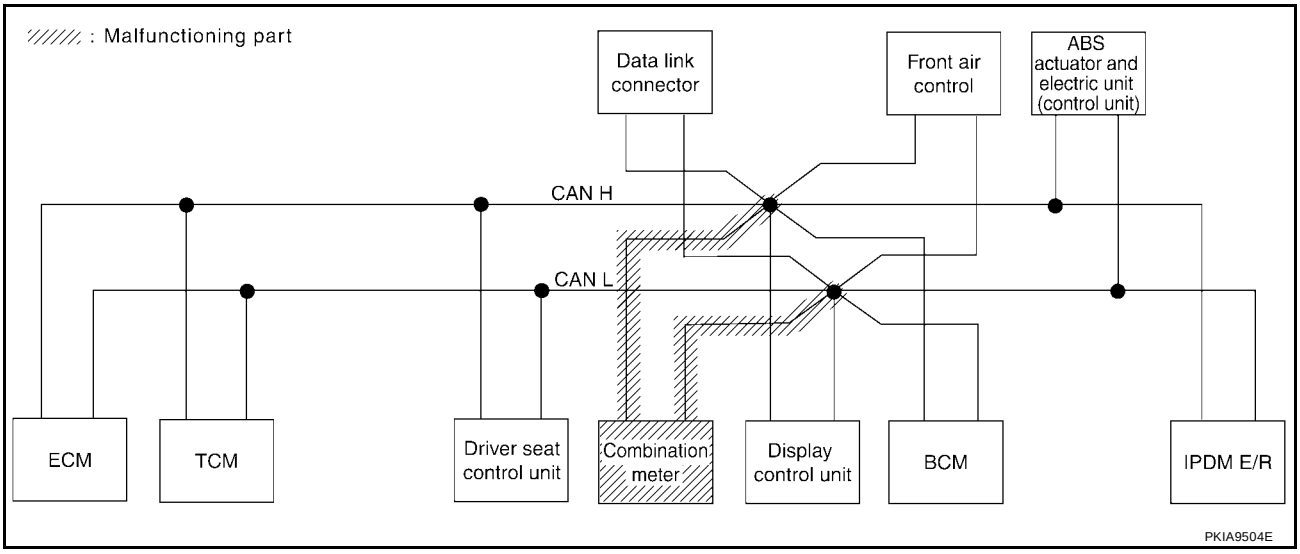
PKIA9503E

Case 7

Check combination meter circuit. Refer to LAN-106, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

PKIA9372E



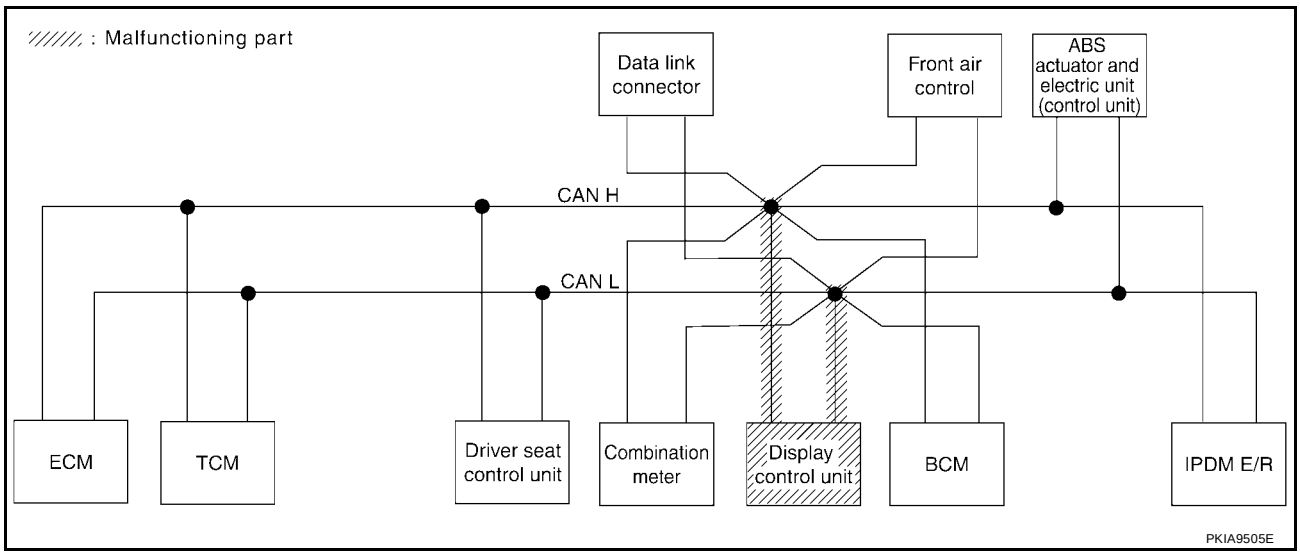
PKIA9504E

Case 8

Check display control unit circuit. Refer to LAN-107, "Display Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—
Display control unit	—	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 3 ✓	—	CAN CIRC 5 ✓	CAN CIRC 2 ✓	CAN CIRC 4 ✓	CAN CIRC 7 ✓
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

PKIA9373E



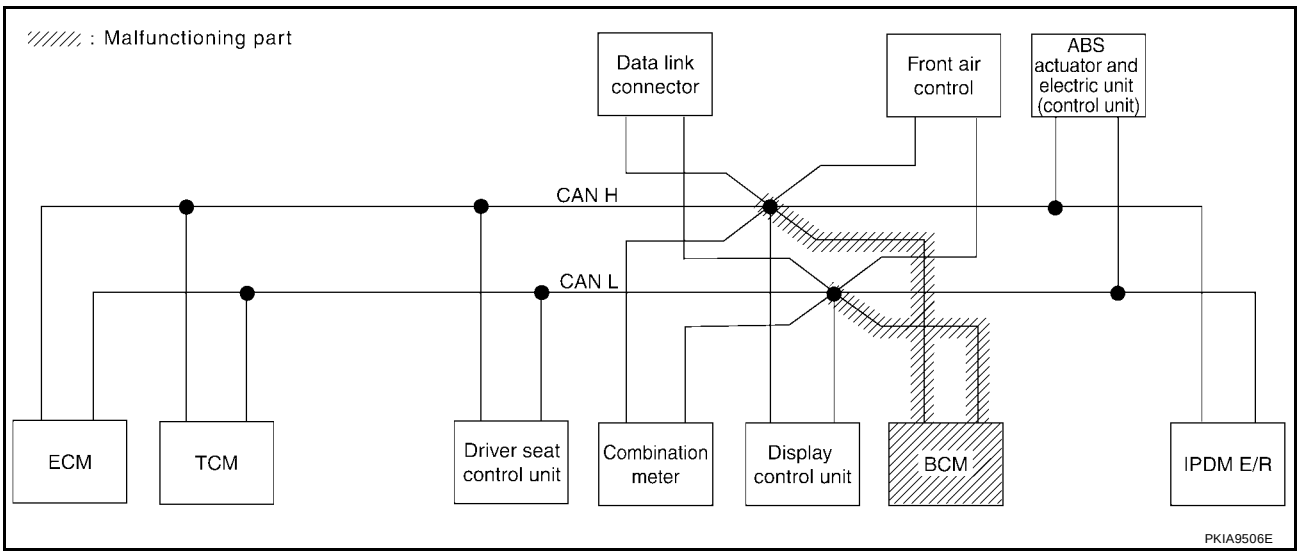
PKIA9505E

Case 9

Check BCM circuit. Refer to LAN-107, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

PKIA9374E



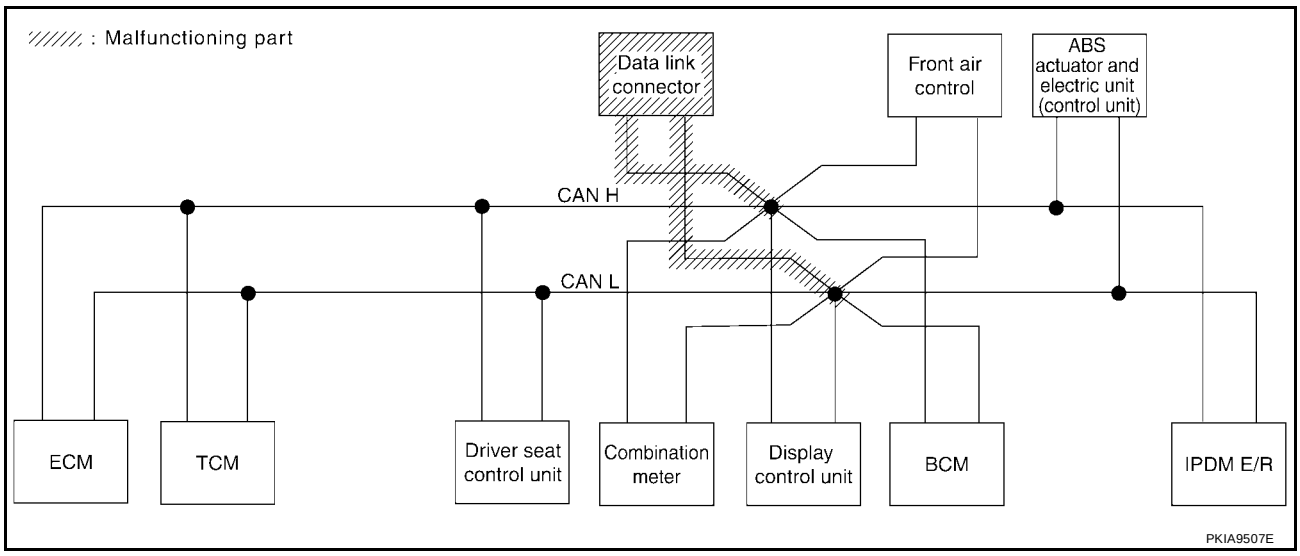
PKIA9506E

Case 10

Check data link connector circuit. Refer to LAN-108, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

PKIA9375E



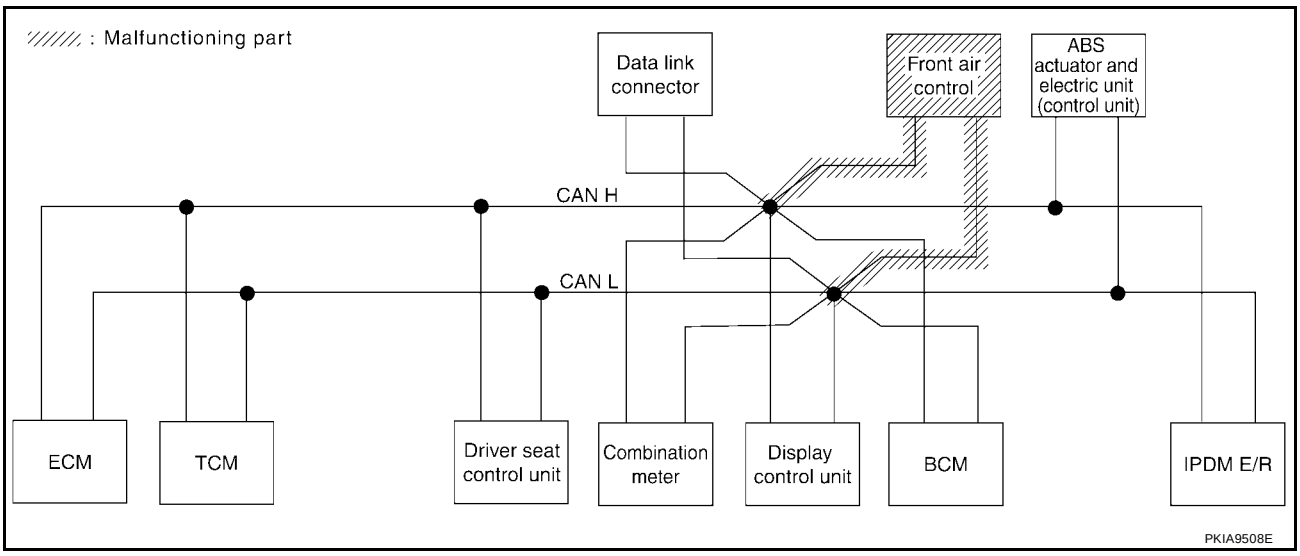
PKIA9507E

Case 11

Check front air control circuit. Refer to LAN-108, "Front Air Control Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

PKIA9376E



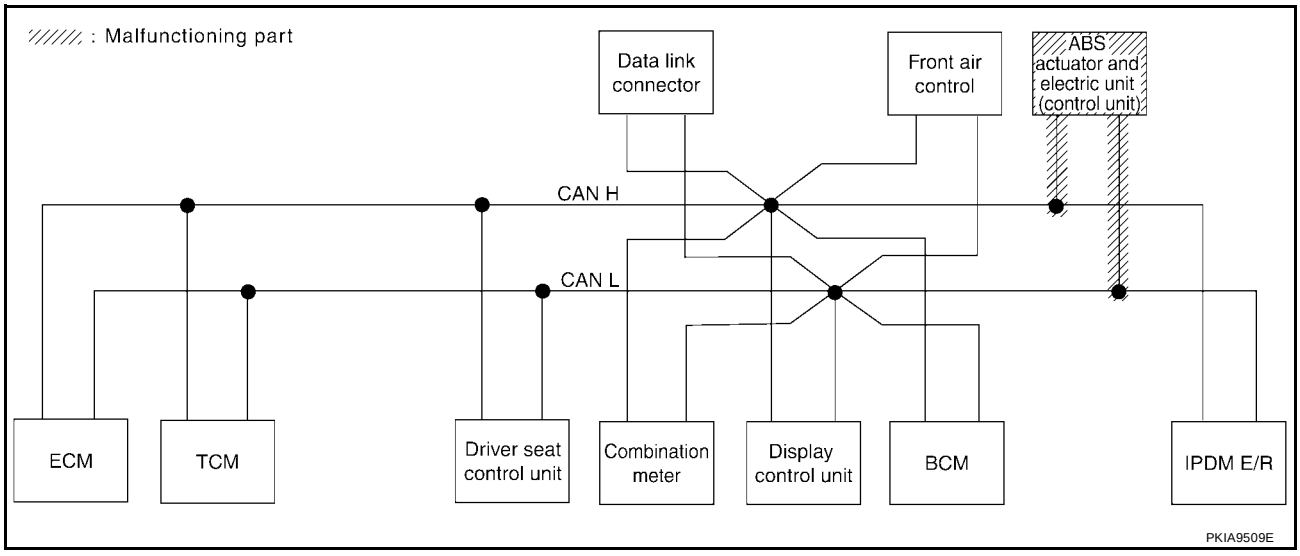
PKIA9508E

Case 12

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-109, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN
ABS	—	NG ✓	UNKWN ✓	UNKWN ✓	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

PKIA9377E



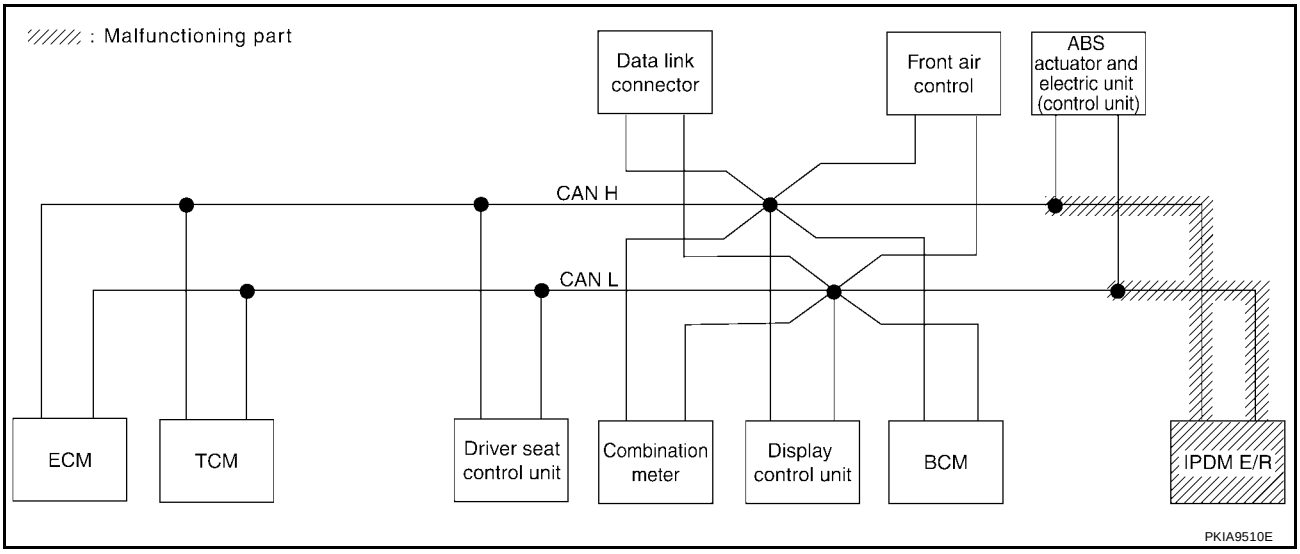
PKIA9509E

Case 13

Check IPDM E/R circuit. Refer to LAN-109, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

PKIA9378E



PKIA9510E

Case 14

Check CAN communication circuit. Refer to LAN-110, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

PKIA9379E

Case 15

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-110, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

PKIA9380E

Case 16

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-110, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR							
		Initial diagnosis	Transmit diagnosis	Receive diagnosis					
				ECM	TCM	METER /M&A	BCM/SEC	Front air control	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—

PKIA9381E

Circuit Check Between TCM and Driver Seat Control Unit

UKS001BR

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 F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

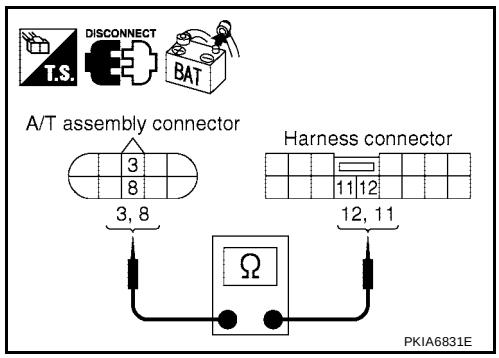
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12 (W), 11 (R).

3 (W) - 12 (W) : Continuity should exist.
8 (R) - 11 (R) : Continuity should exist.



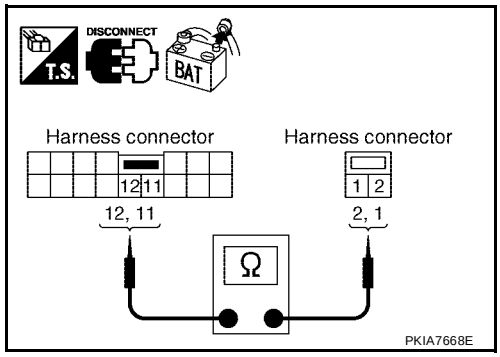
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).

12 (W) - 2 (W) : Continuity should exist.
11 (R) - 1 (R) : Continuity should exist.



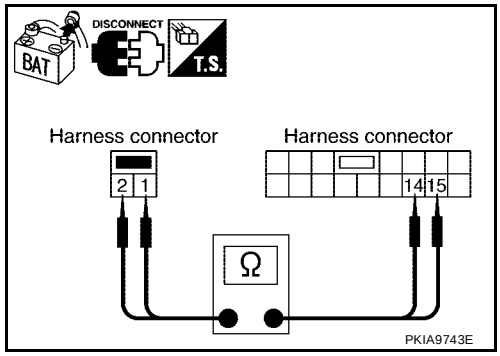
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37.
2. Check continuity between harness connector B75 terminals 2 (W), 1 (R) and harness connector B37 terminals 15 (W), 14 (R).

2 (W) - 15 (W) : Continuity should exist.
1 (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-84, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and Data Link Connector

UKS001BS

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 B69
- Harness connector M40

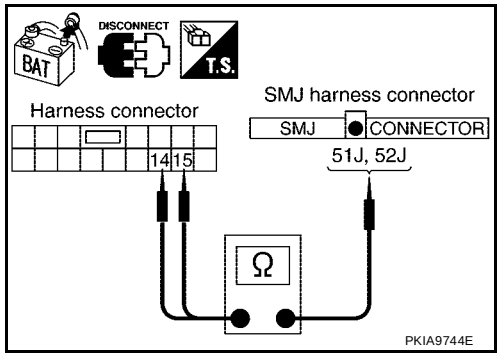
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37 and harness connector B69.
2. Check continuity between harness connector B37 terminals 15 (W), 14 (R) and harness connector B69 terminals 51J (W), 52J (R).

15 (W) - 51J (W) : Continuity should exist.
14 (R) - 52J (R) : Continuity should exist.



OK or NG

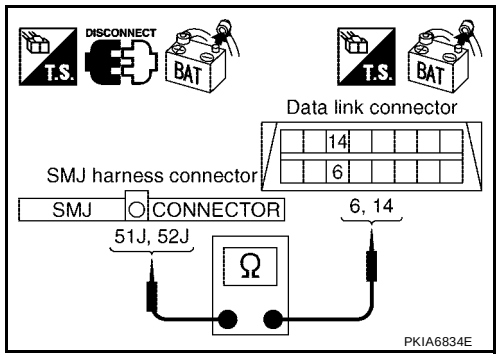
OK >> GO TO 3.
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

51J (W) - 6 (W) : Continuity should exist.

52J (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-84, "Work Flow" .

NG >> Repair harness.

Circuit Check Between Data Link Connector and IPDM E/R

UKS001BT

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 M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

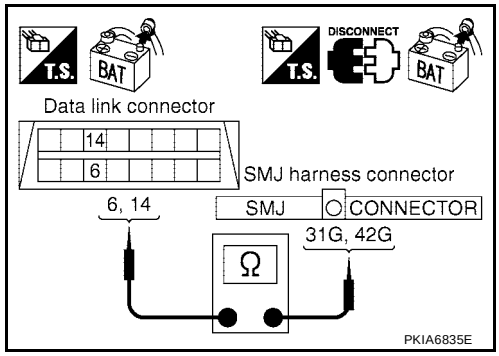
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).

6 (W) - 31G (W) : Continuity should exist.

14 (R) - 42G (R) : Continuity should exist.



OK or NG

OK >> GO TO 3.

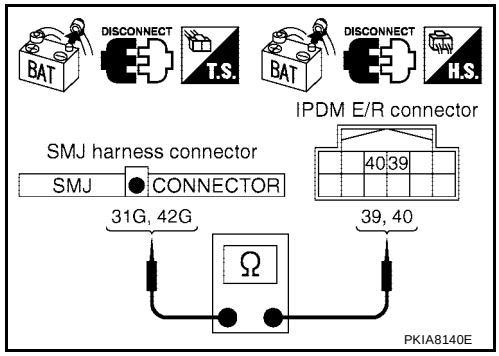
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).

31G (W) - 39 (W) : Continuity should exist.

42G (R) - 40 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-84, "Work Flow" .

NG >> Repair harness.

ECM Circuit Check

UKS001BU

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 E19
- Harness connector F33

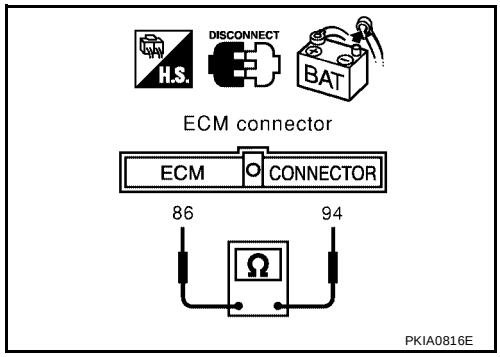
OK or NG

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 E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R) : Approx. 108 - 132Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and A/T assembly.

TCM Circuit Check

UKS001BV

1. CHECK CONNECTOR

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

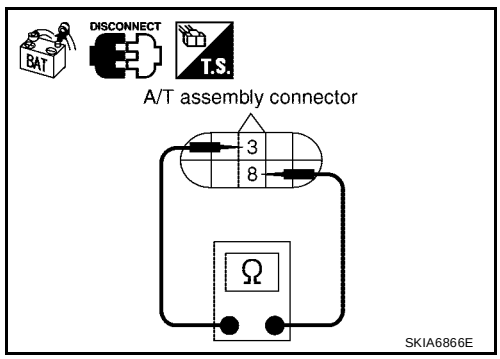
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Driver Seat Control Unit Circuit Check

UKS001BW

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 unit side and harness side).

- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

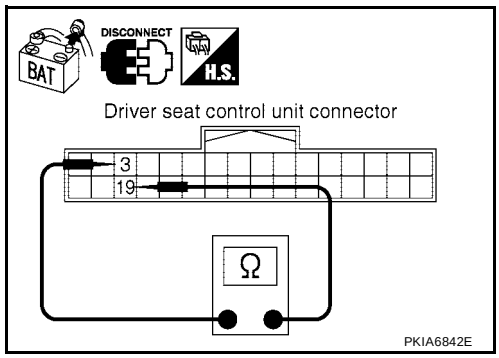
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect driver seat control unit connector.
2. Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R).

3 (W) - 19 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B69.

Combination Meter Circuit Check

UKS001BX

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).

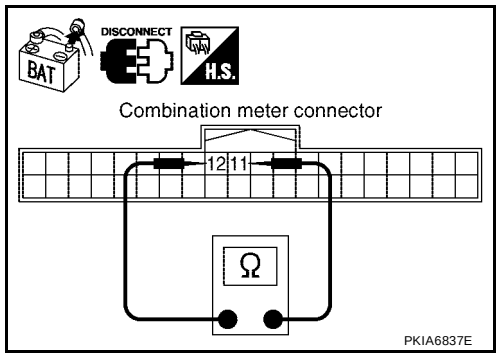
OK or NG

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 M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R) : Approx. 54 - 66Ω



OK or NG

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

Display Control Unit Circuit Check

UKS001BY

1. CHECK CONNECTOR

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

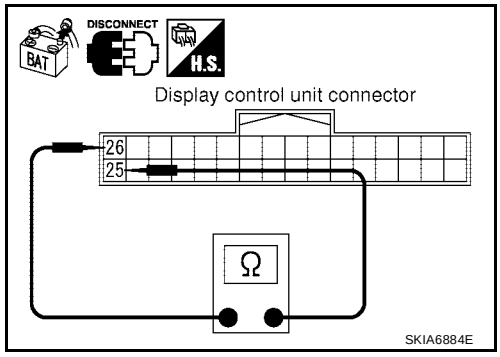
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect display control unit connector.
2. Check resistance between display control unit harness connector M95 terminals 25 (W) and 26 (R).

25 (W) - 26 (R) : Approx. 54 - 66Ω



OK or NG

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

BCM Circuit Check

UKS001BZ

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).

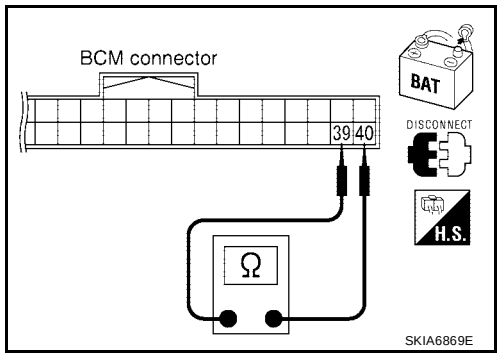
OK or NG

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 M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS001C0

1. CHECK CONNECTOR

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

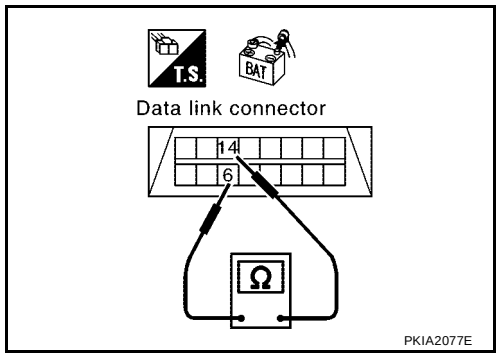
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-84, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Front Air Control Circuit Check

UKS0020D

1. CHECK CONNECTOR

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

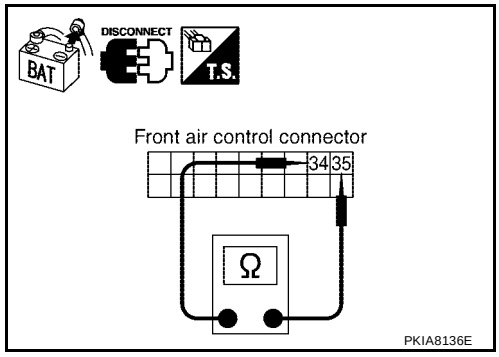
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 34 (W) and 35 (R).

34 (W) - 35 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace front air control.
NG >> Repair harness between front air control and data link connector.

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001C3

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).

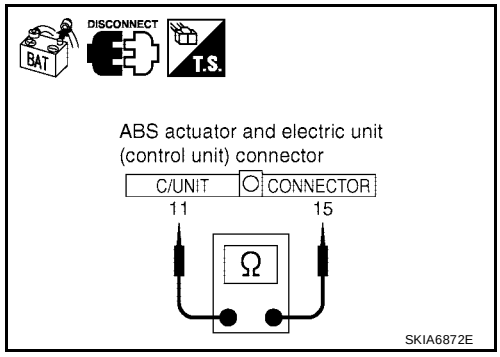
OK or NG

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 E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R) : 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 harness connector E152.

IPDM E/R Circuit Check

UKS001C4

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).

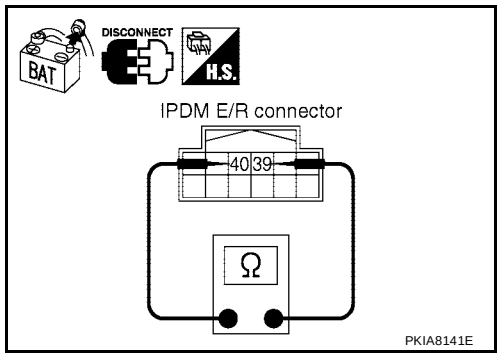
OK or NG

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 E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 108 - 132Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS001C5

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- A/T assembly
- Driver seat control unit
- Combination meter
- Display control unit
- BCM
- Front air control
- ABS actuator and electric unit (control unit)
- IPDM E/R

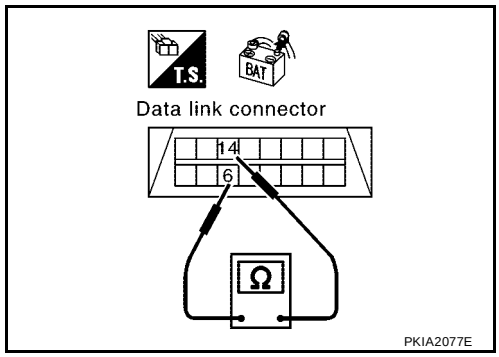
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

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



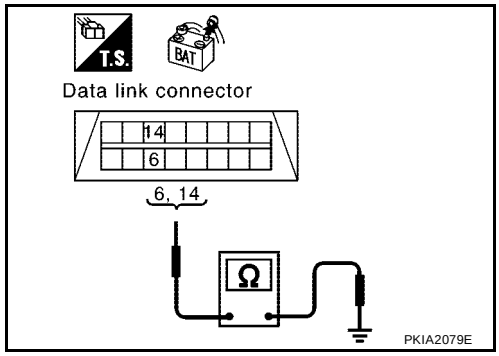
OK or NG

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

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-111, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.

IPDM E/R Ignition Relay Circuit Check

UKS001C6

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

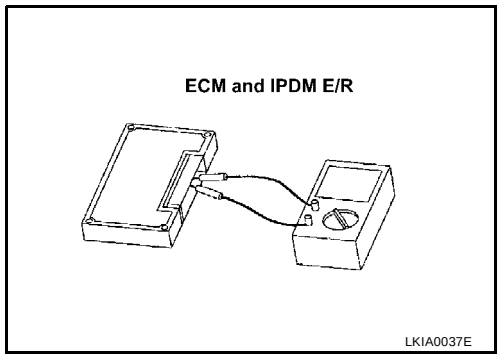
Component Inspection

UKS001C7

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 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 4)

PFP:23710

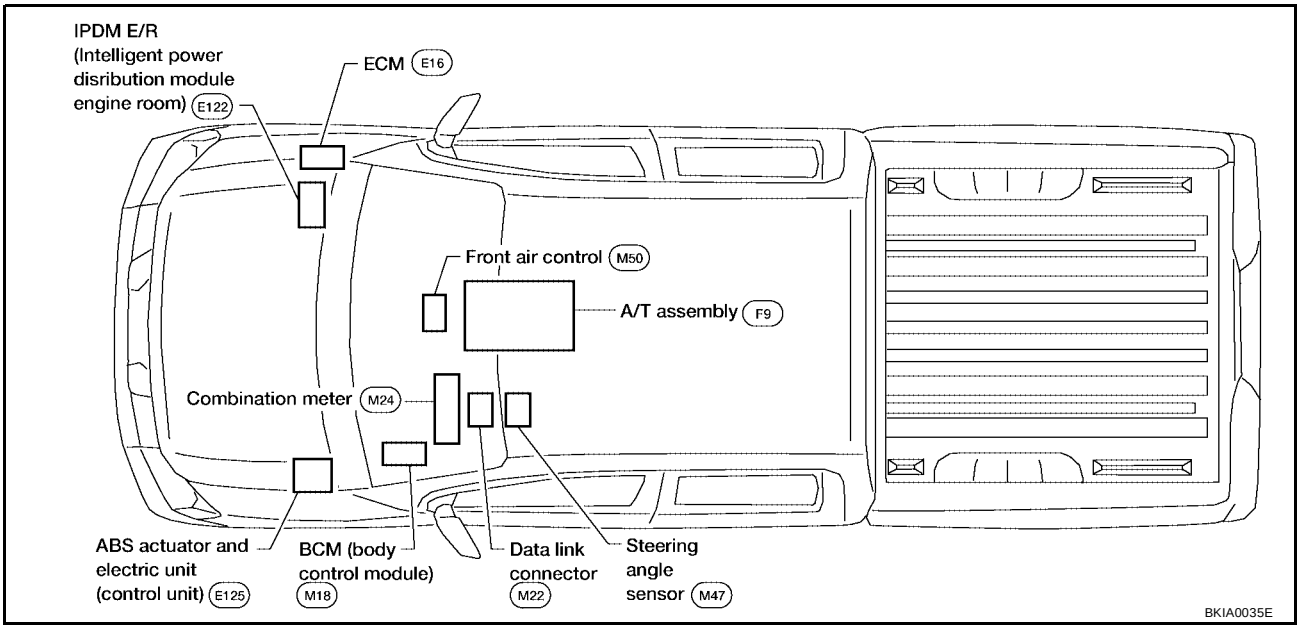
System Description

UKS001DZ

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.

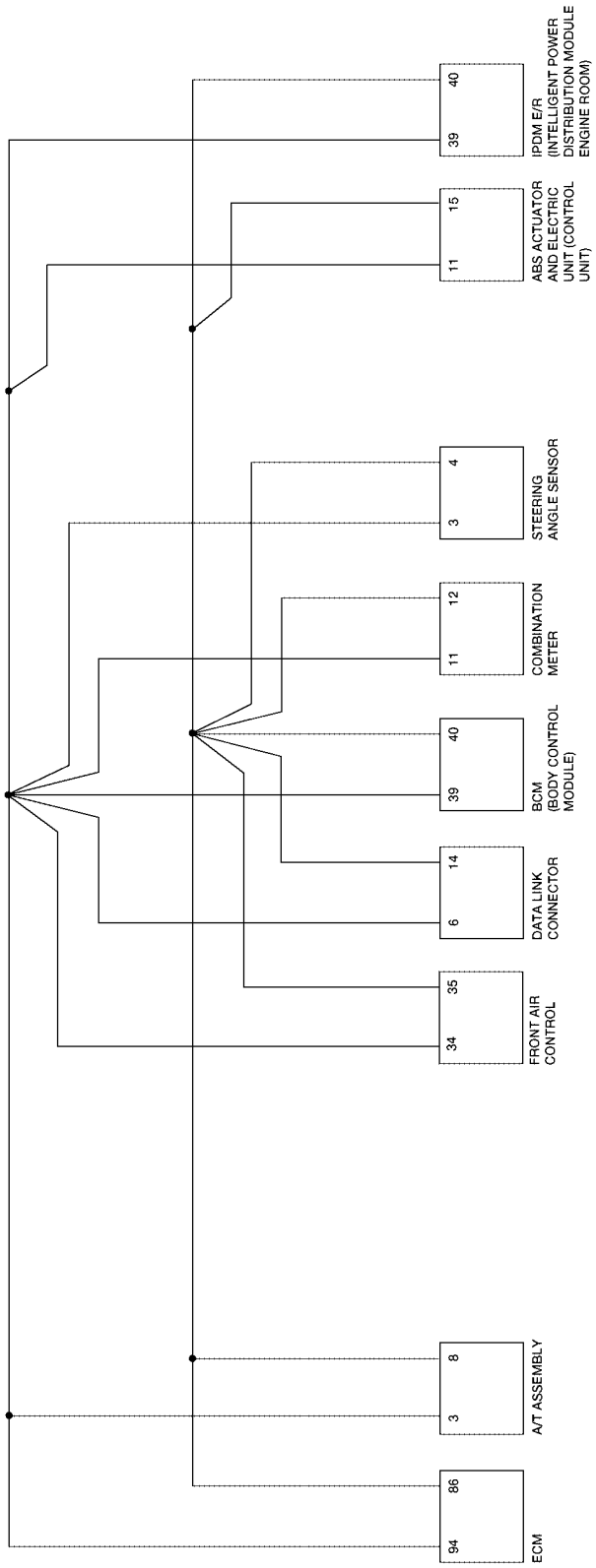
Component Parts and Harness Connector Location

UKS001E0



Schematic

UKS001E1



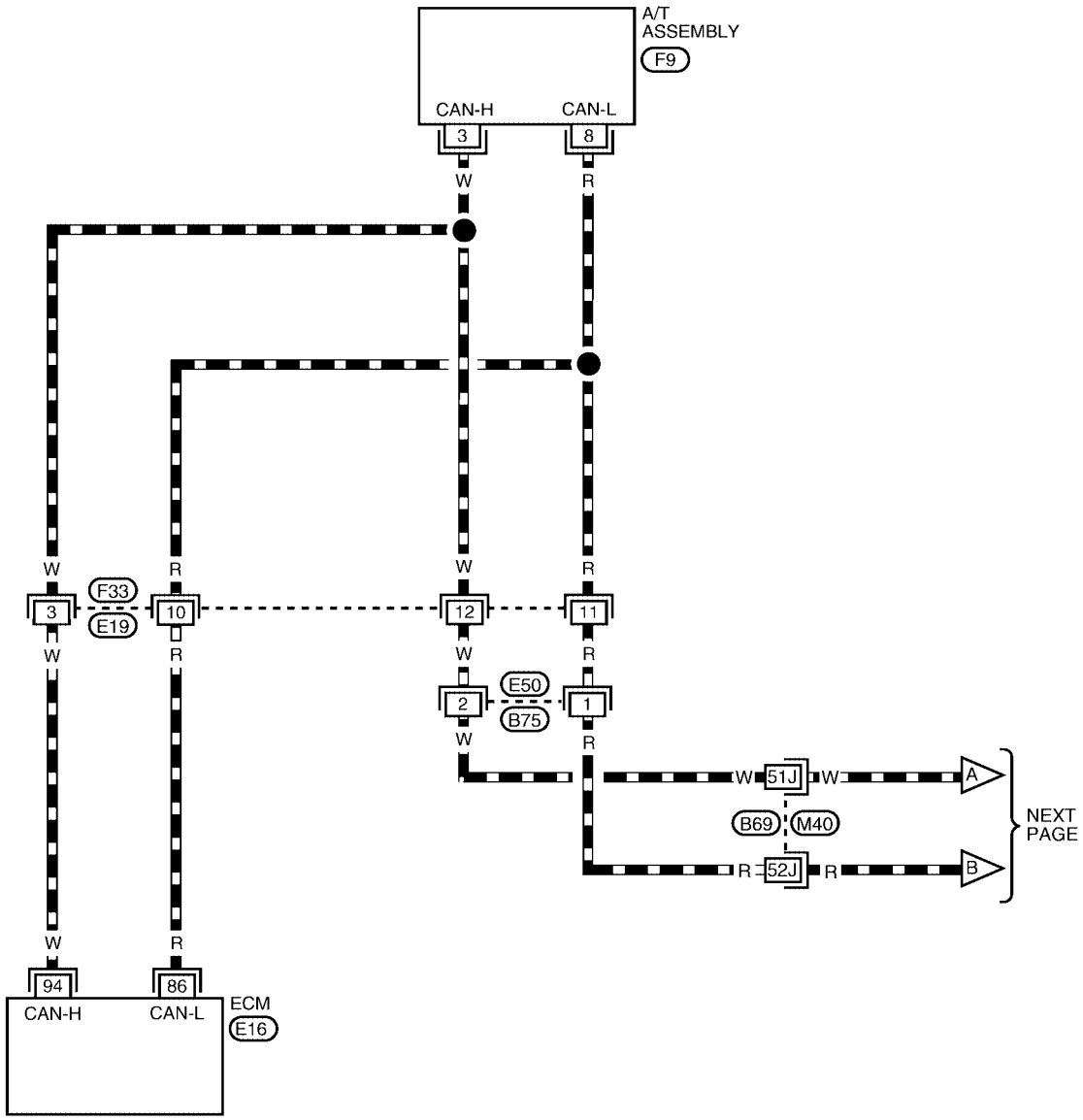
BKWA0136E

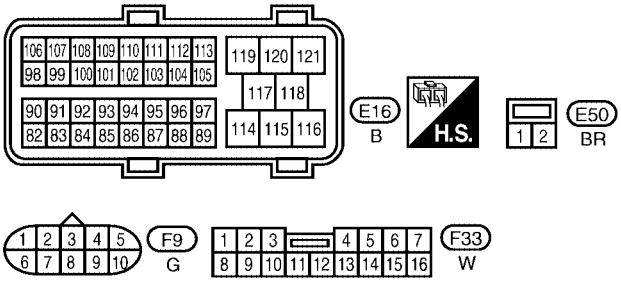
Wiring Diagram - CAN -

UKS001E2

LAN-CAN-10

: DATA LINE

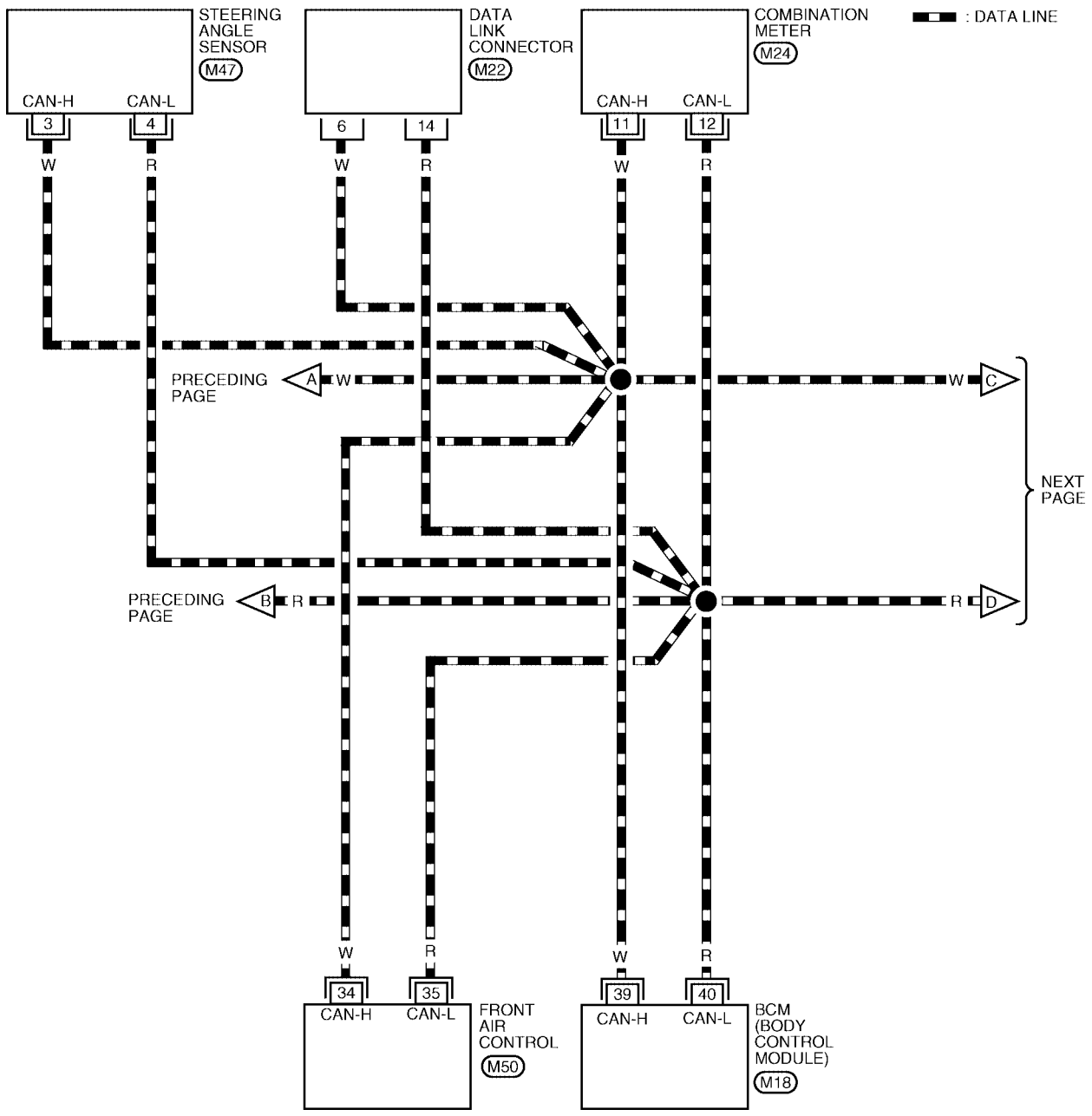


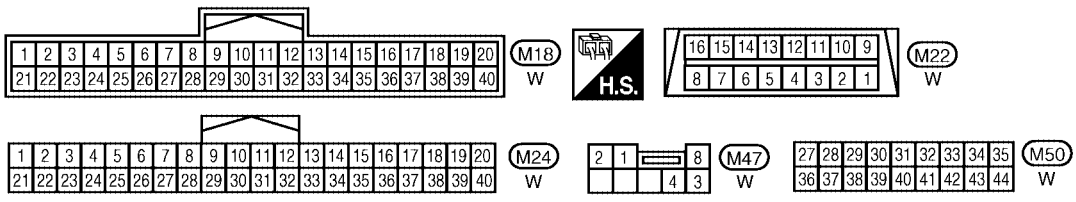


REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0027E

LAN-CAN-11

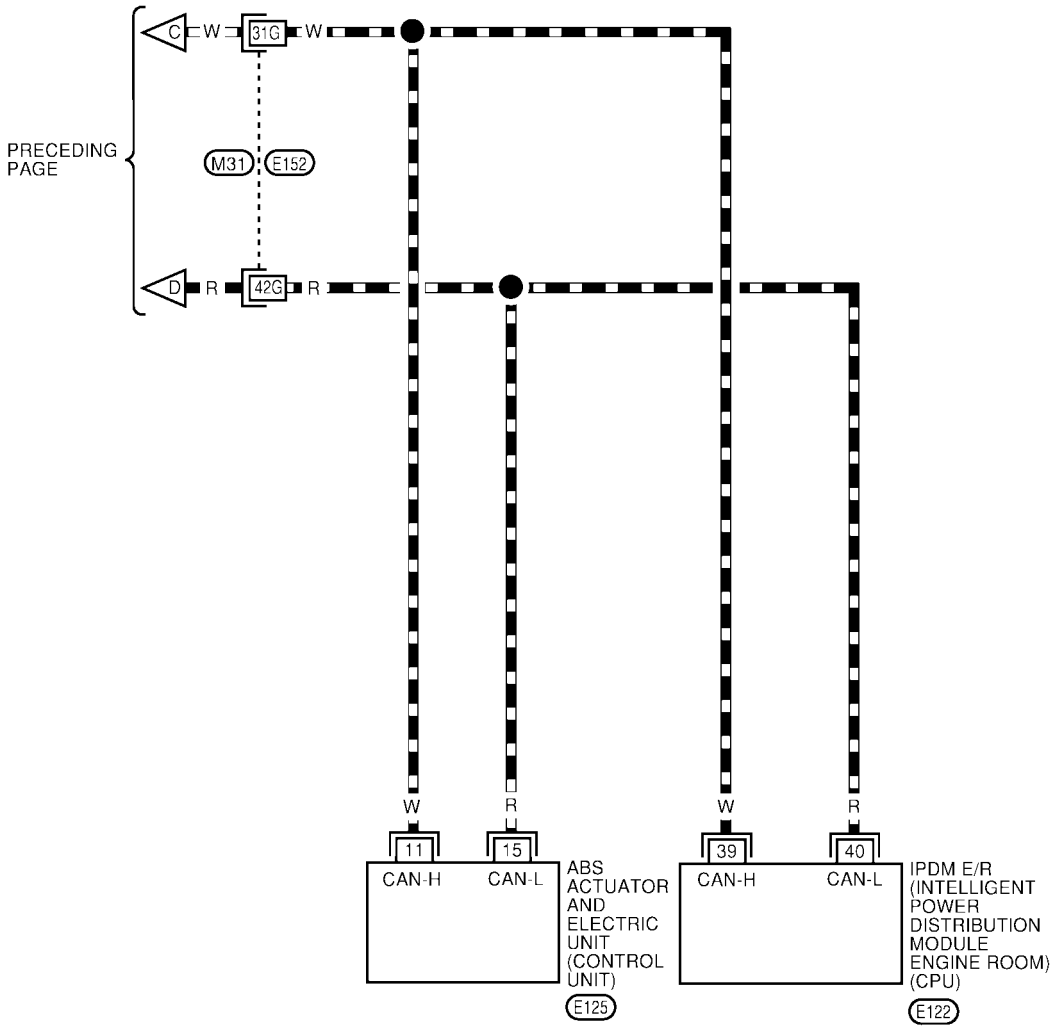


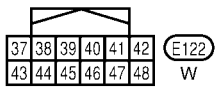


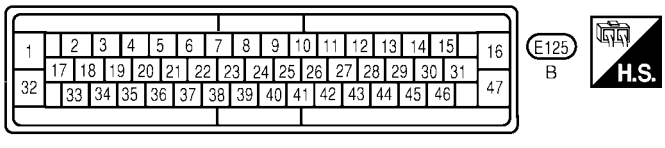
BKWA0137E

LAN-CAN-12

: DATA LINE







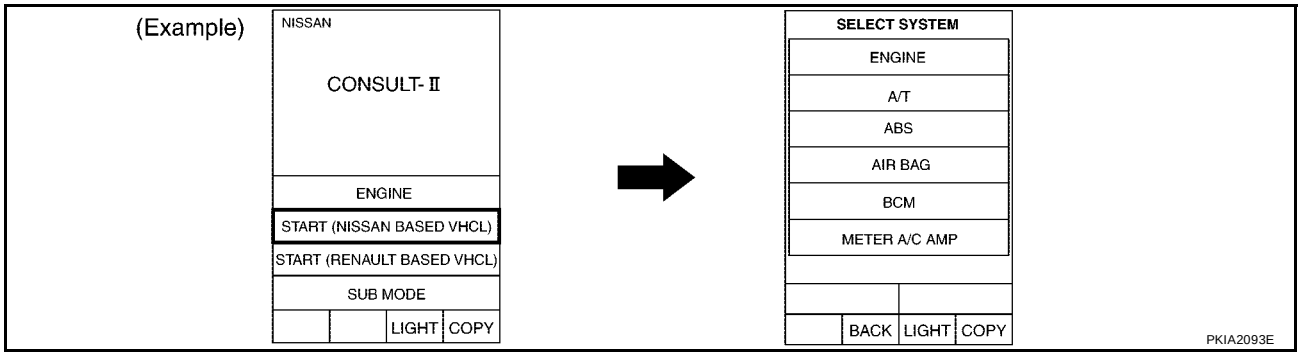
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0029E

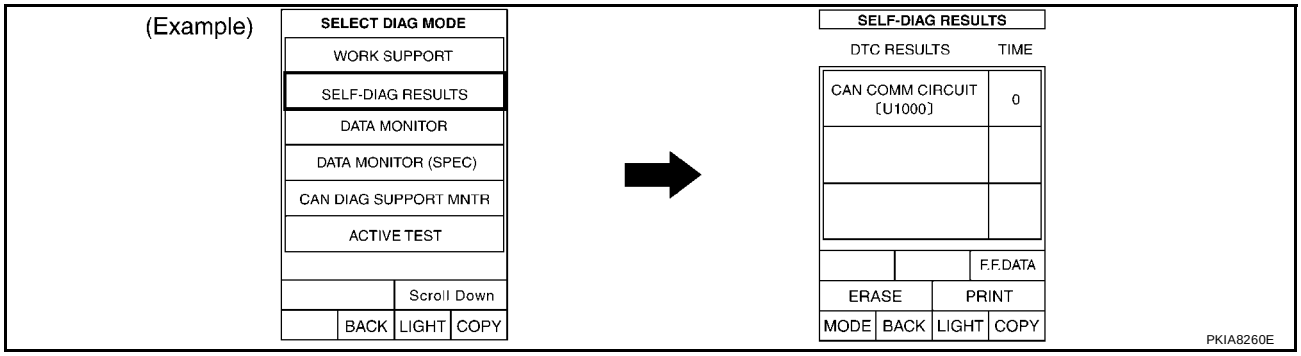
Work Flow

UKS001E3

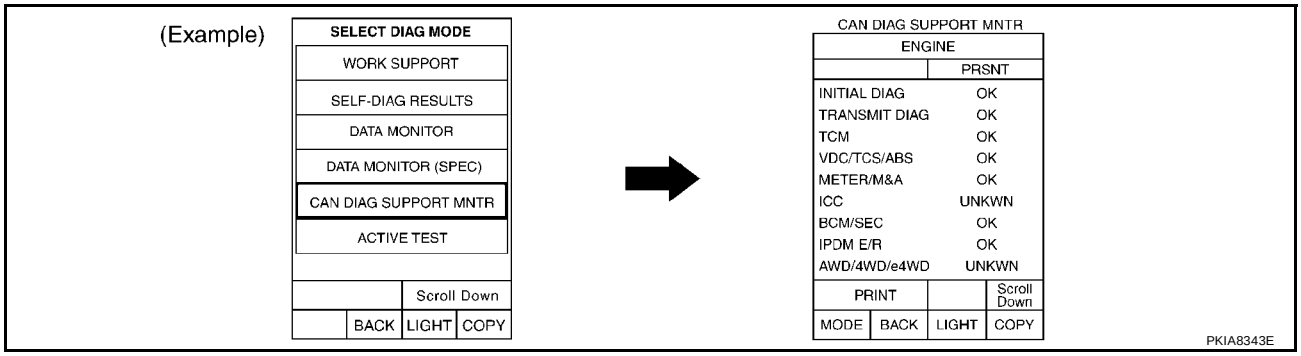
1. When there are no indications of “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



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



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



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-118, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-118, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “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 the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-120, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:

If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Check sheet table

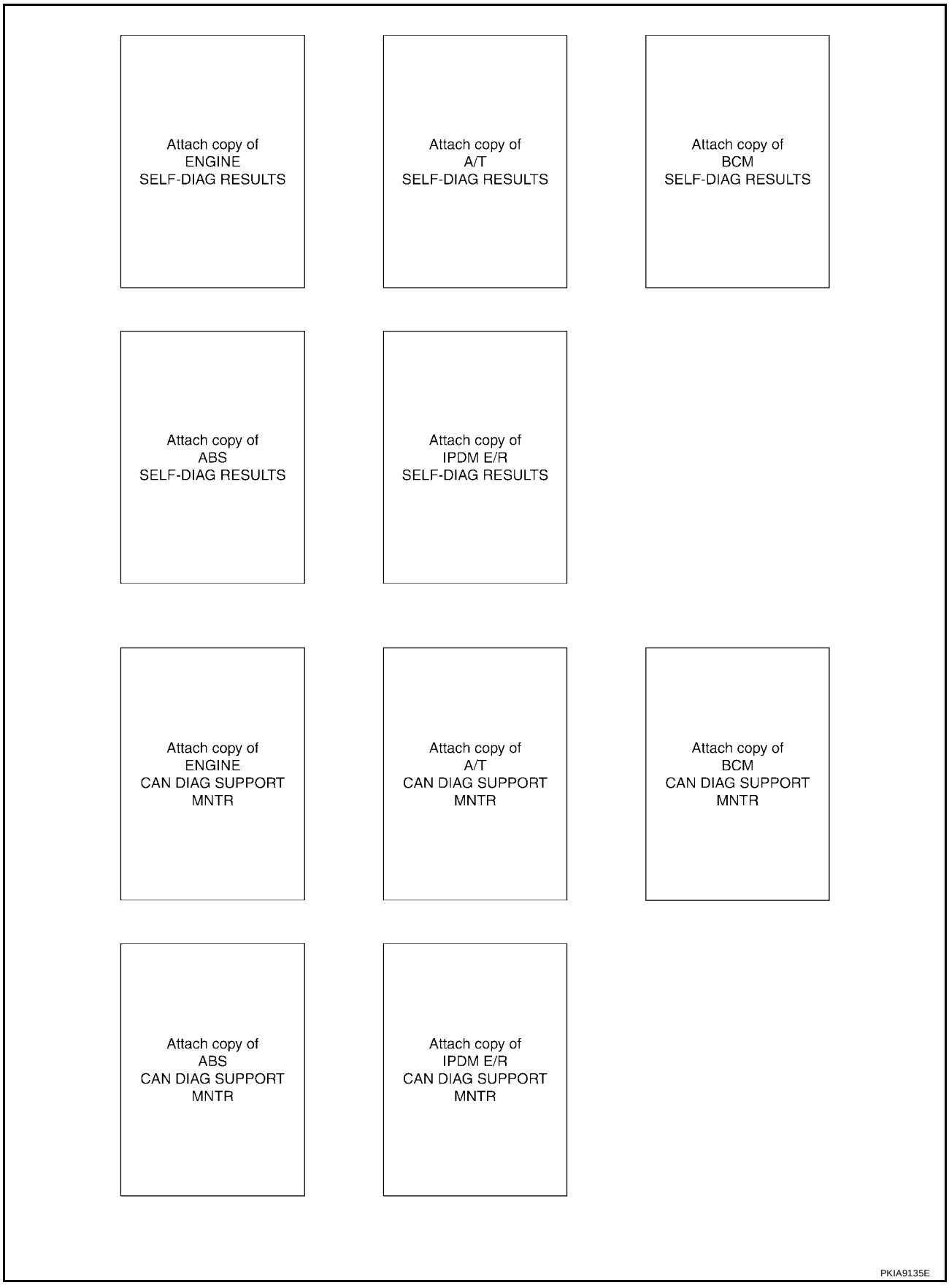
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIA9134E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
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
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA9135E

CHECK SHEET RESULTS (EXAMPLE)

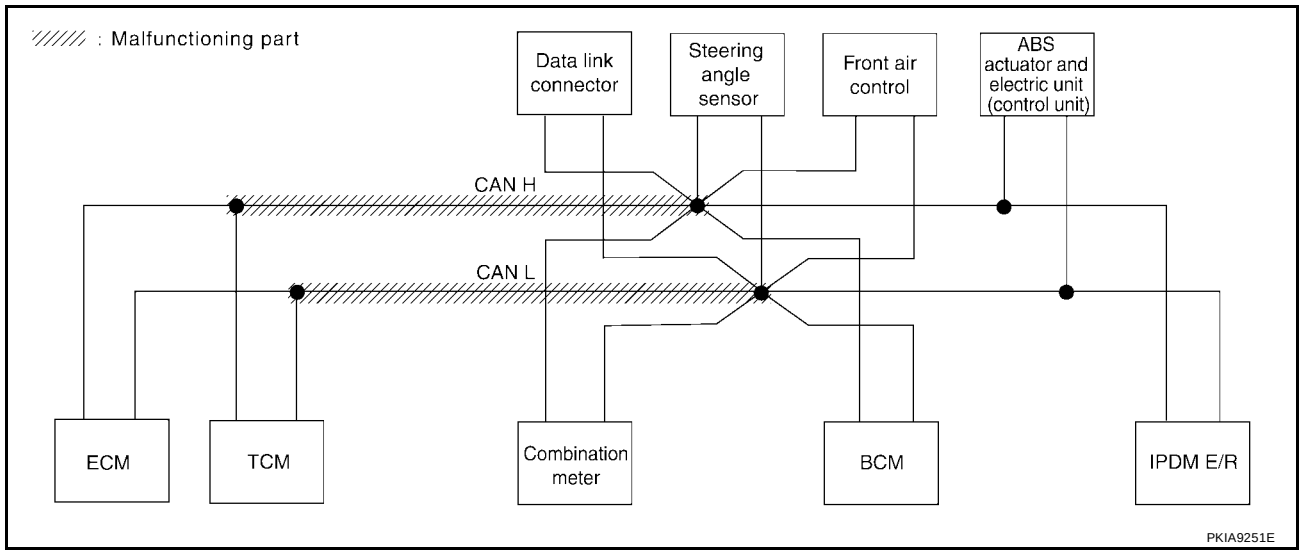
NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-131, "Circuit Check Between TCM and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN ✓	—	UNKWN ✓	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—	UNKWN ✓	—
BCM	No indication	NG	UNKWN	UNKWN ✓	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN ✓	—	—	UNKWN	—	—	—

PKIA9146E

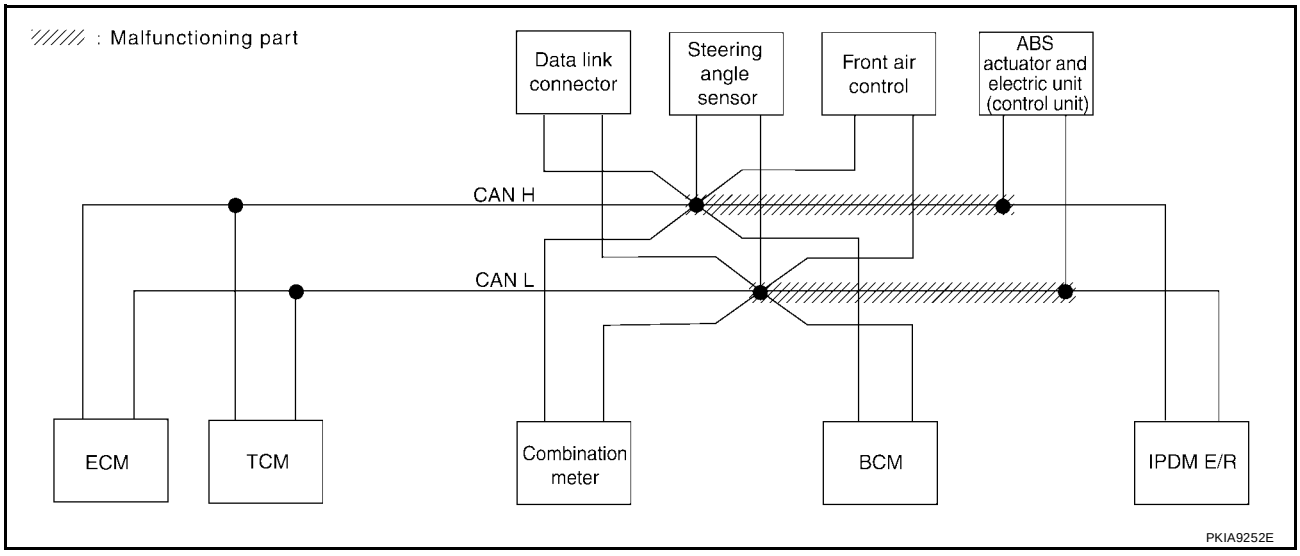


Case 2

Check harness between data link connector and IPDM E/R. Refer to LAN-132, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9147E



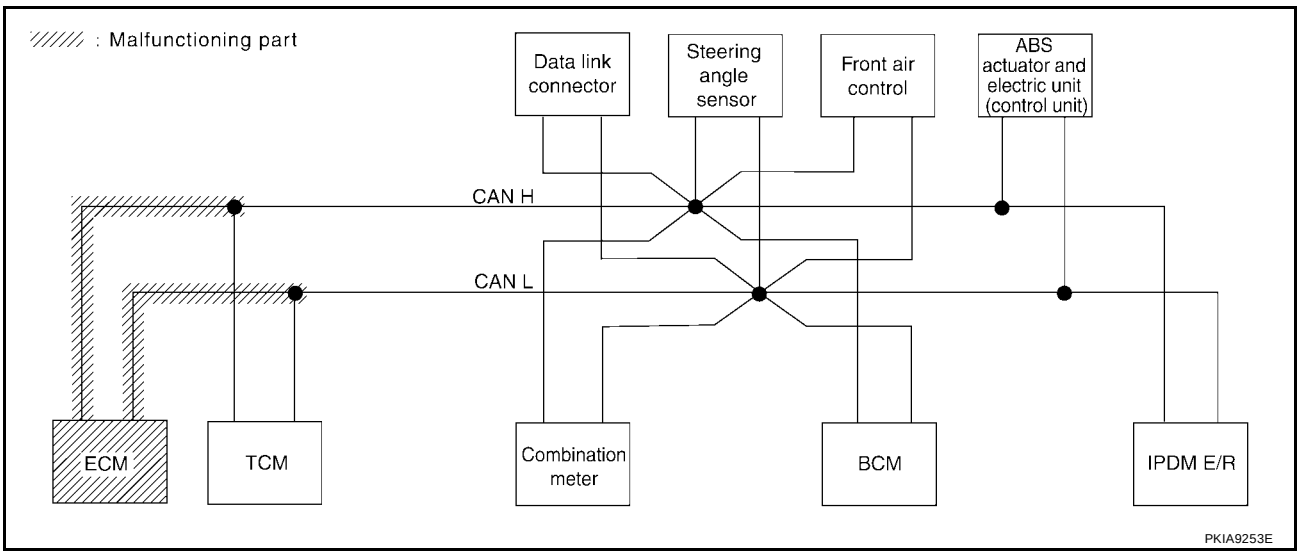
PKIA9252E

Case 3

Check ECM circuit. Refer to LAN-133, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9148E



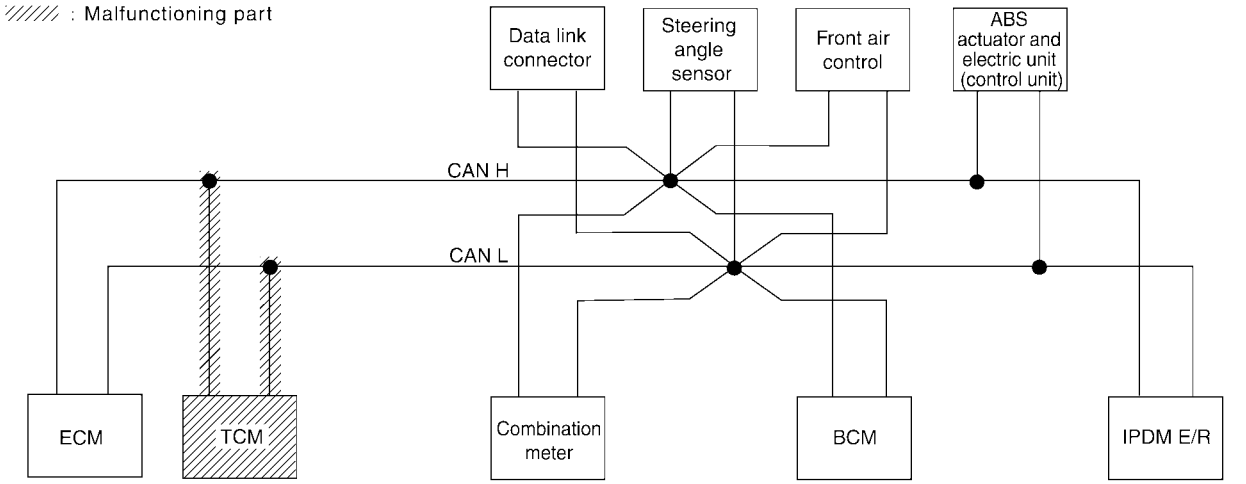
PKIA9253E

Case 4

Check TCM circuit. Refer to LAN-134, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9149E



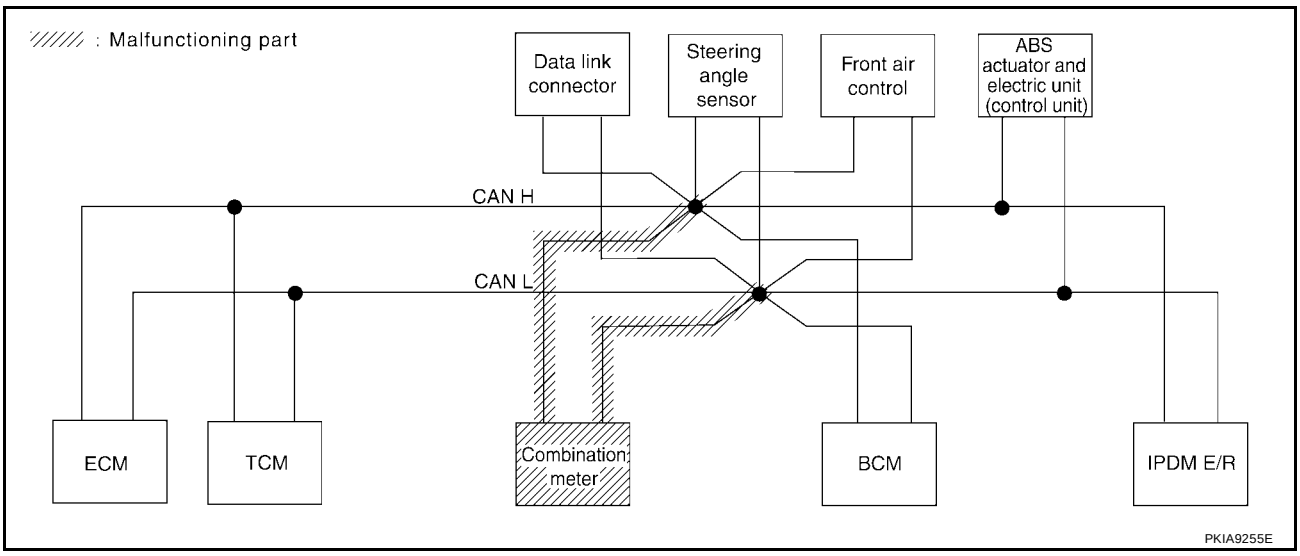
PKIA9254E

Case 5

Check combination meter circuit. Refer to LAN-134, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9150E



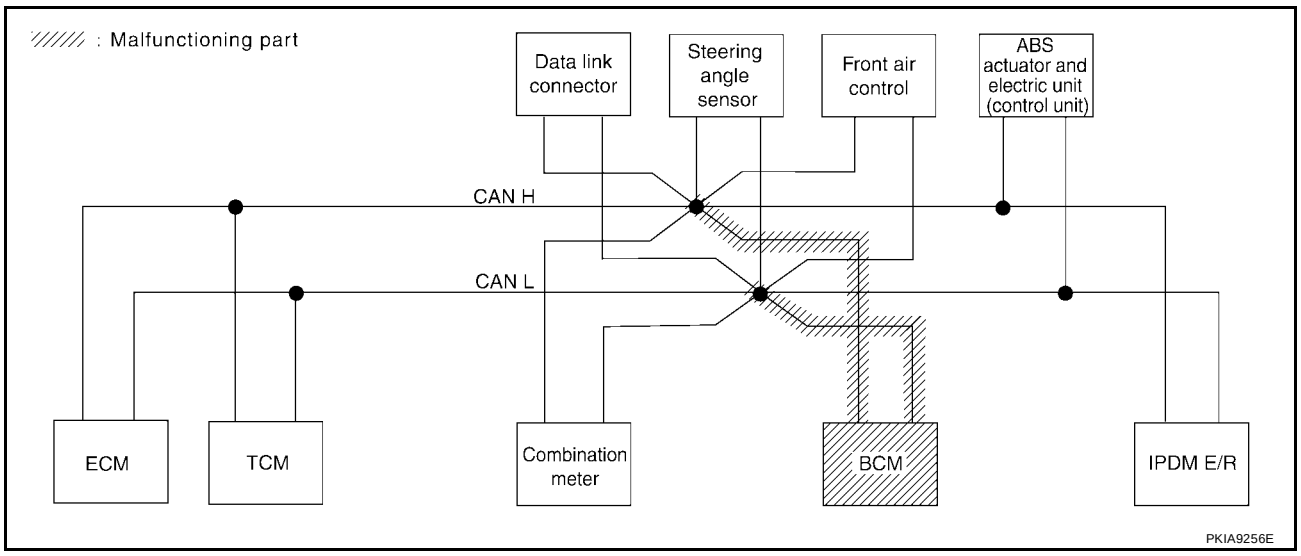
PKIA9255E

Case 6

Check BCM circuit. Refer to LAN-135, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9151E



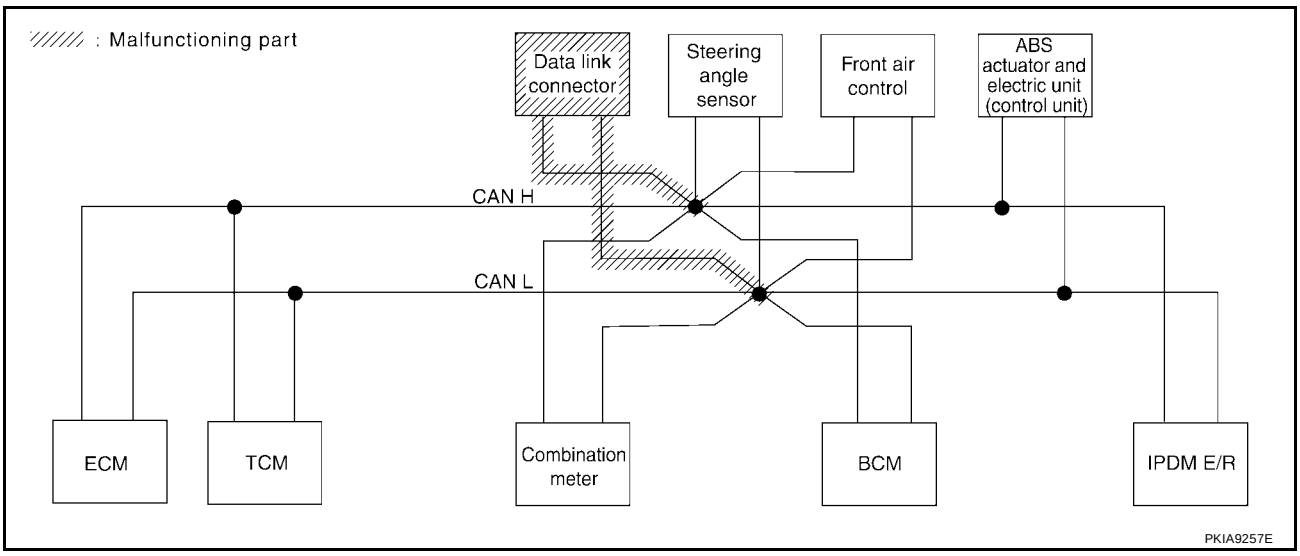
PKIA9256E

Case 7

Check data link connector circuit. Refer to LAN-135, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9152E



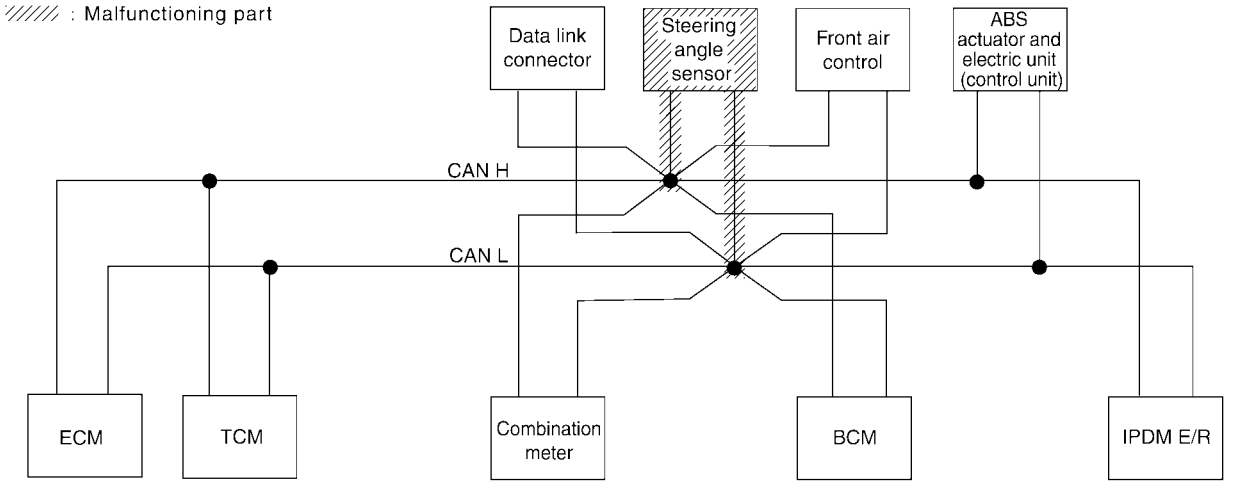
PKIA9257E

Case 8

Check steering angle sensor circuit. Refer to LAN-136, "Steering Angle Sensor Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9153E



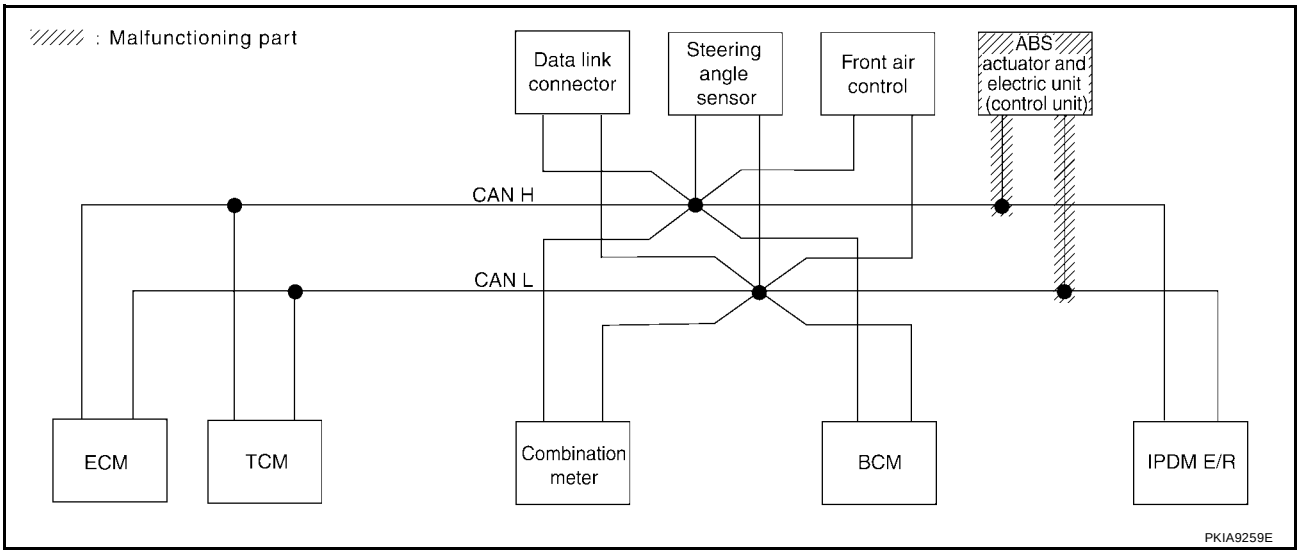
PKIA9258E

Case 9

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-136, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9154E

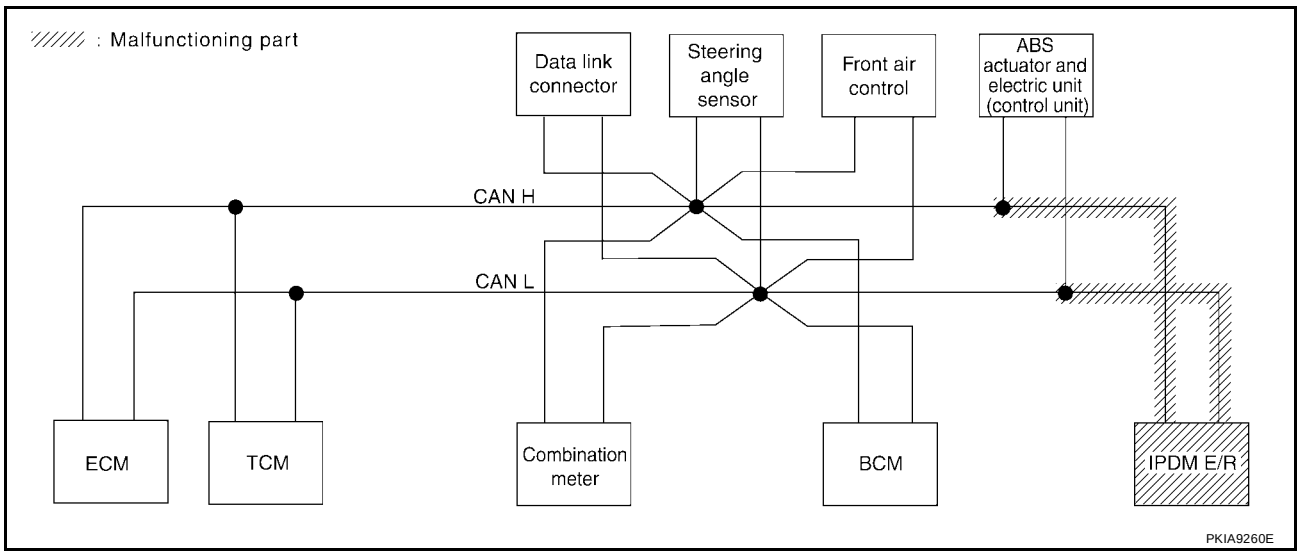


Case 10

Check IPDM E/R circuit. Refer to LAN-137, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN ✓
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9155E



PKIA9260E

Case 11

Check CAN communication circuit. Refer to LAN-138, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9156E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-138, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9157E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-138, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	UNKWN ✓	—	—	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN	—	—	UNKWN ✓	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9158E

Circuit Check Between TCM and Data Link Connector

UKS00211

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 F33
- Harness connector E19
- Harness connector E50
- Harness connector B75
- Harness connector B69
- Harness connector M40

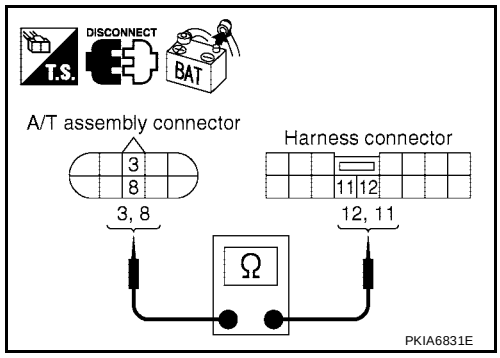
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12 (W), 11 (R).

3 (W) - 12 (W) : Continuity should exist.
8 (R) - 11 (R) : Continuity should exist.



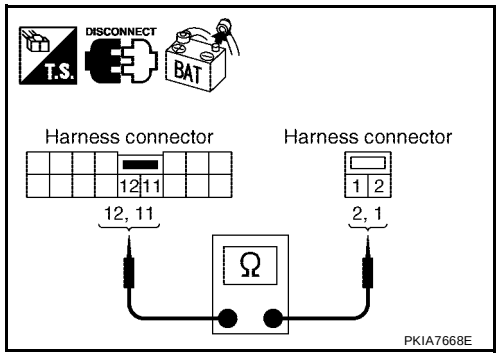
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).

12 (W) - 2 (W) : Continuity should exist.
11 (R) - 1 (R) : Continuity should exist.



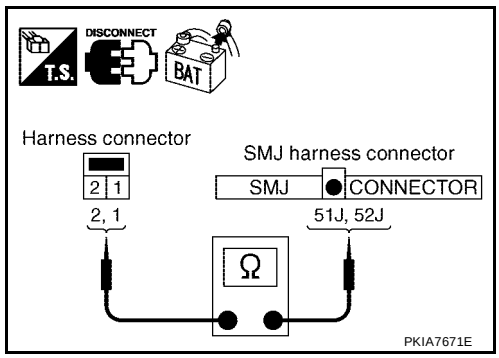
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B69.
2. Check continuity between harness connector B75 terminals 2 (W), 1 (R) and harness connector B69 terminals 51J (W), 52J (R).

2 (W) - 51J (W) : Continuity should exist.
1 (R) - 52J (R) : Continuity should exist.



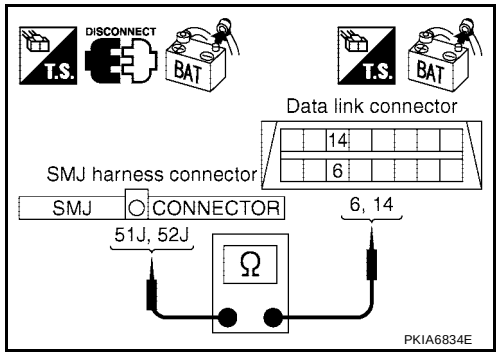
OK or NG

OK >> GO TO 5.
NG >> Repair harness.

5. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

51J (W) - 6 (W) : Continuity should exist.
52J (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-117, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Data Link Connector and IPDM E/R

UKS00212

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 M31
- Harness connector E152

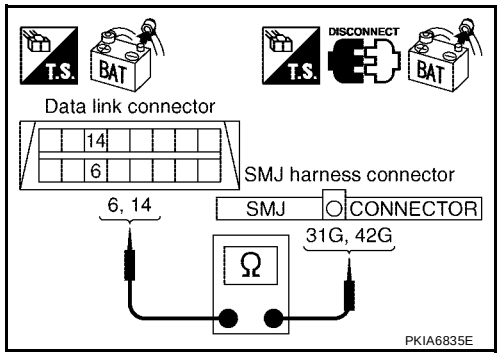
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).

6 (W) - 31G (W) : Continuity should exist.
14 (R) - 42G (R) : Continuity should exist.



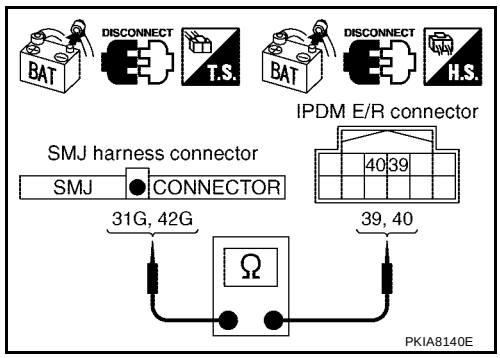
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).

31G (W) - 39 (W) : Continuity should exist.
42G (R) - 40 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-117, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS00213

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 E19
- Harness connector F33

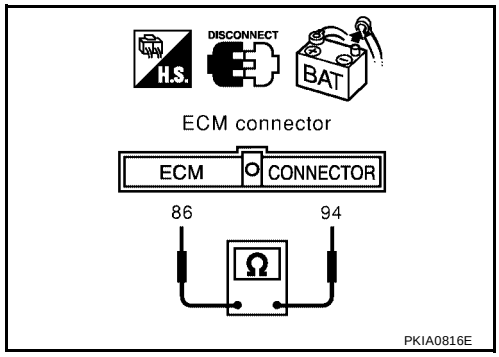
OK or NG

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 E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R) : Approx. 108 - 132Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and A/T assembly.

TCM Circuit Check

UKS00214

1. CHECK CONNECTOR

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

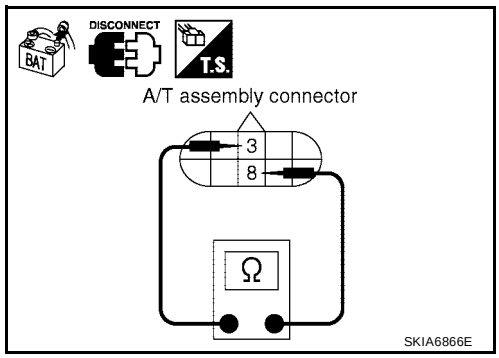
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Combination Meter Circuit Check

UKS00215

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.

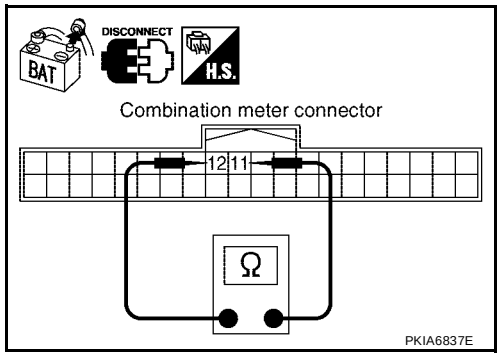
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R) : Approx. 54 - 66Ω

OK or NG

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



BCM Circuit Check

UKS00216

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.

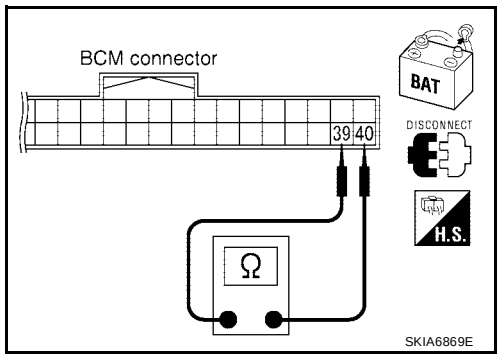
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.



Data Link Connector Circuit Check

UKS00217

1. CHECK CONNECTOR

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

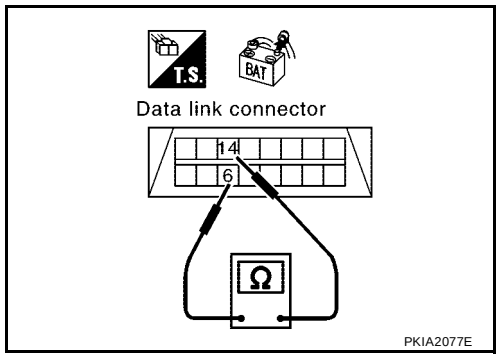
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-117, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Steering Angle Sensor Circuit Check

UKS00218

1. CHECK CONNECTOR

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

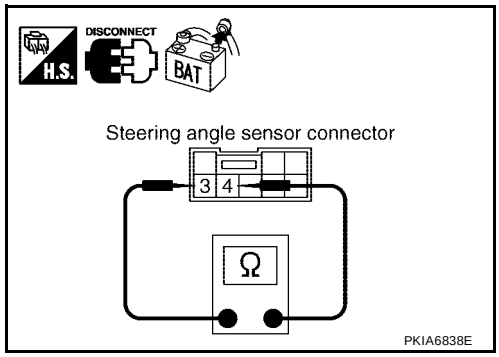
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M47 terminals 3 (W) and 4 (R).

3 (W) - 4 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor and data link connector.

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS00219

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.

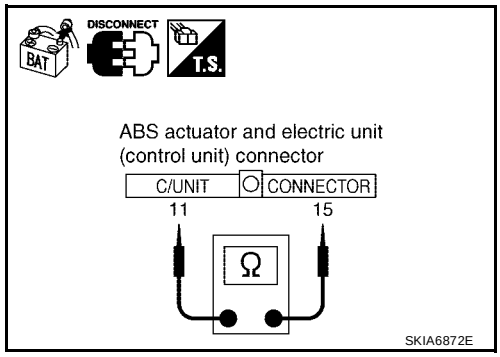
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R) : 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 harness connector E152.



IPDM E/R Circuit Check

UKS0021A

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.

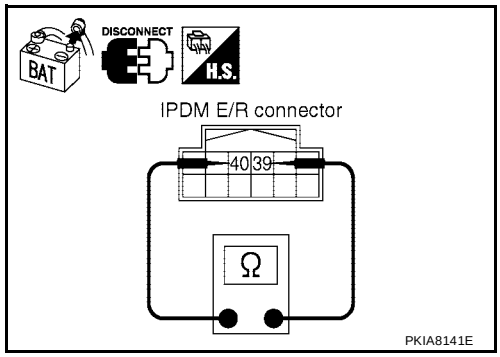
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 108 - 132Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

UKS0021B

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- A/T assembly
- Combination meter
- BCM
- Steering angle sensor
- Front air control
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

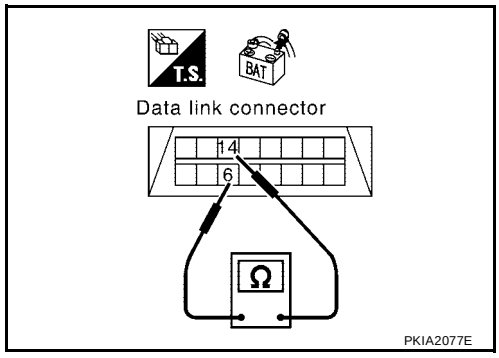
2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

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

OK or NG

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



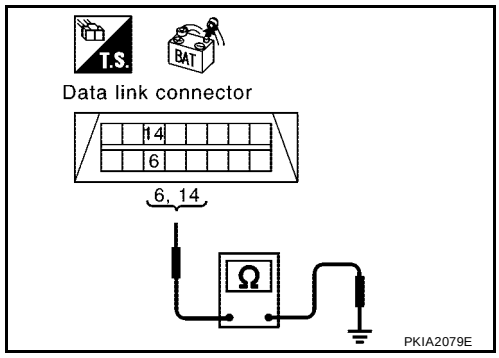
3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

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

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-139, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

UKS0021C

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

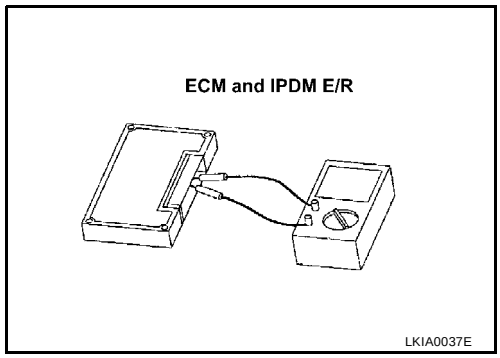
Component Inspection

UKS0021D

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 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 5)

PFP:23710

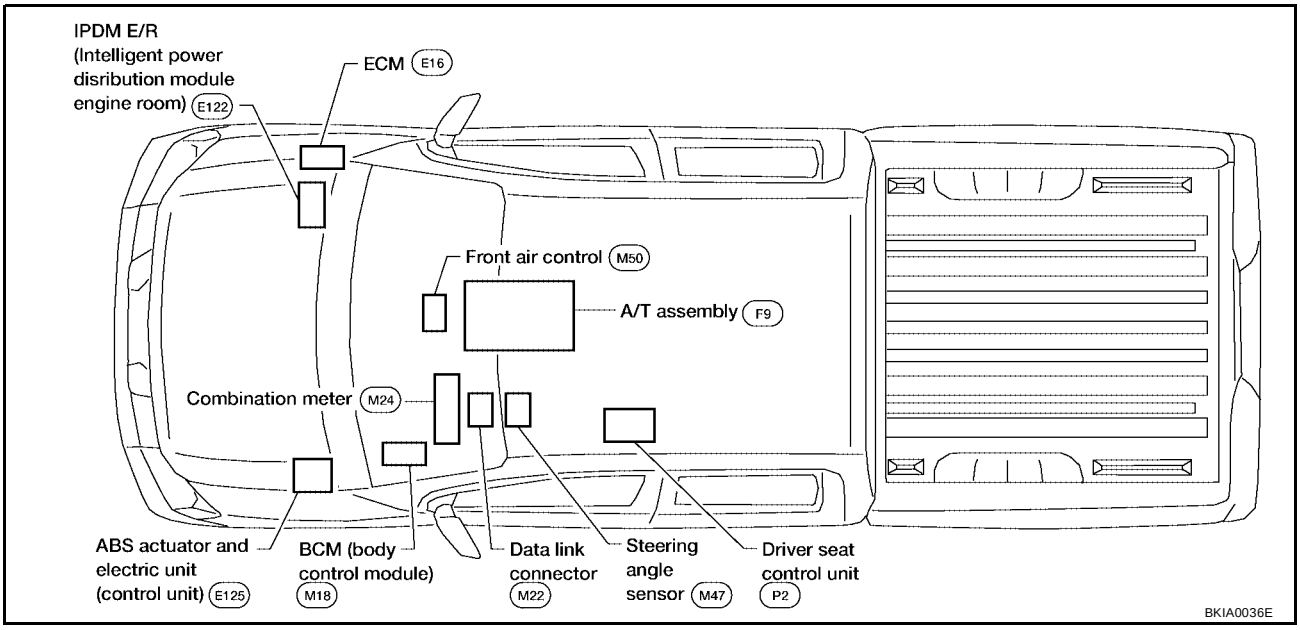
System Description

UKS001EH

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.

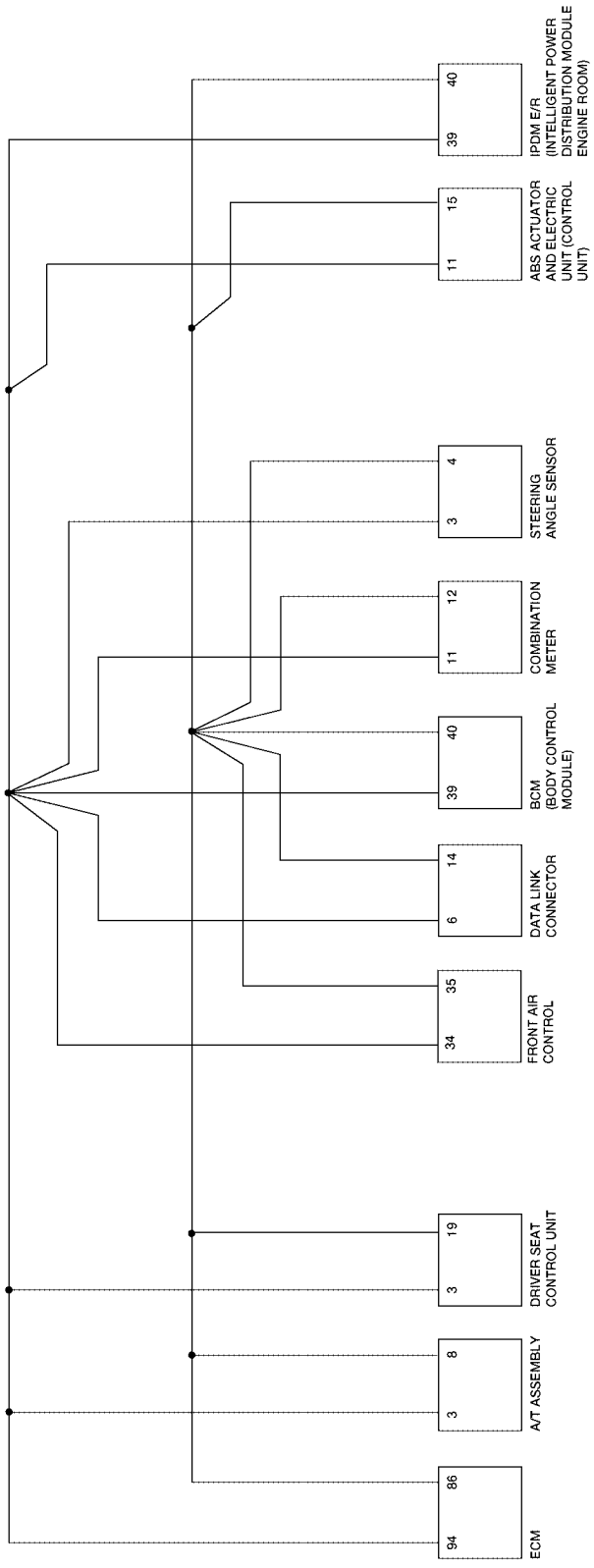
Component Parts and Harness Connector Location

UKS001EI



Schematic

UKS001EJ

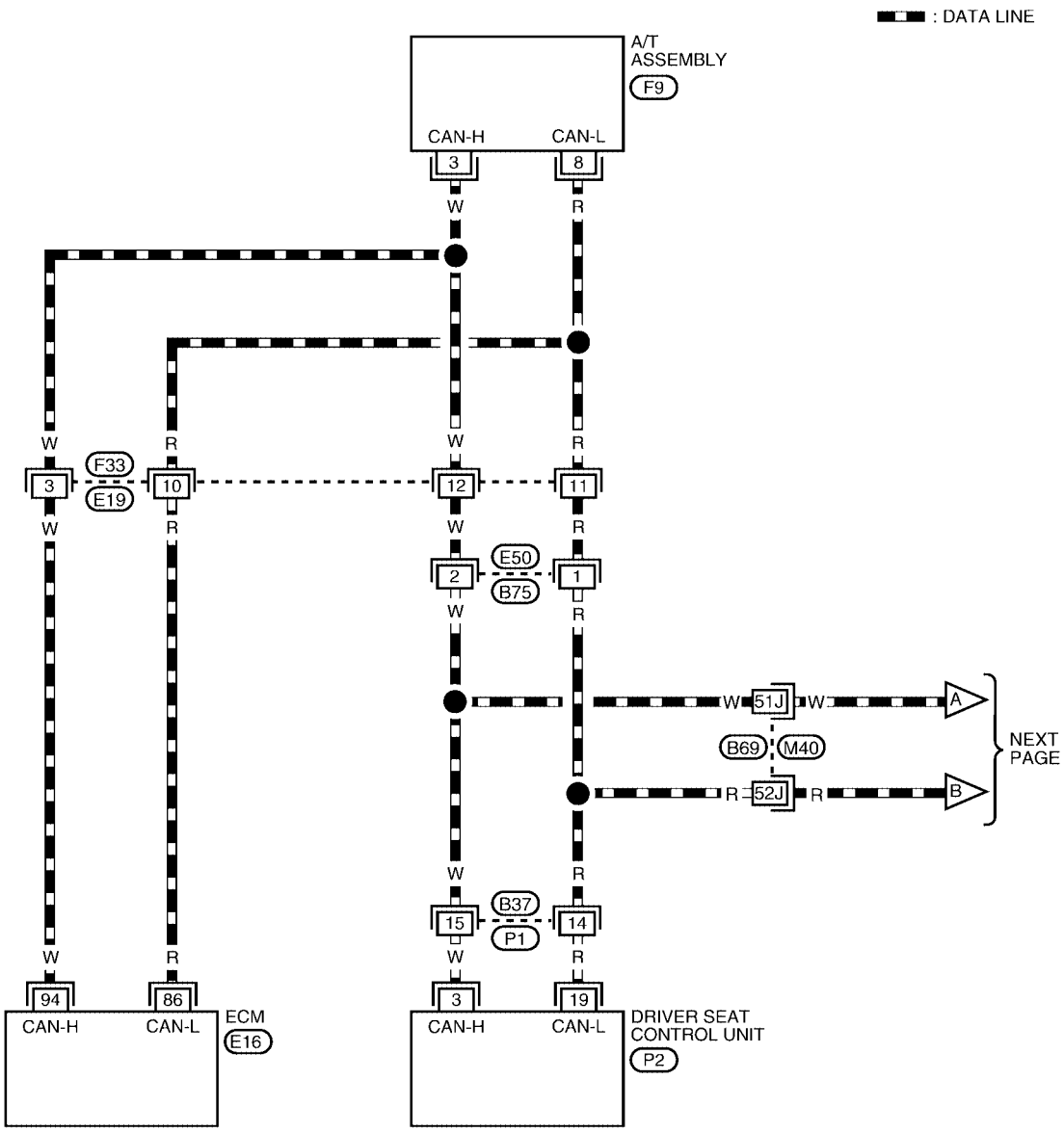


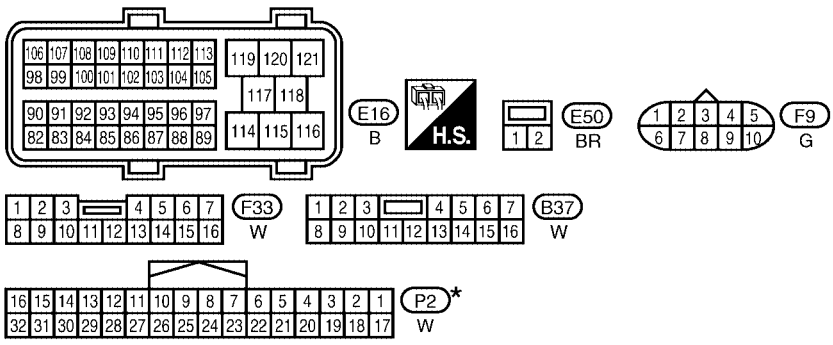
BKWA0138E

Wiring Diagram - CAN -

UKS001EK

LAN-CAN-13

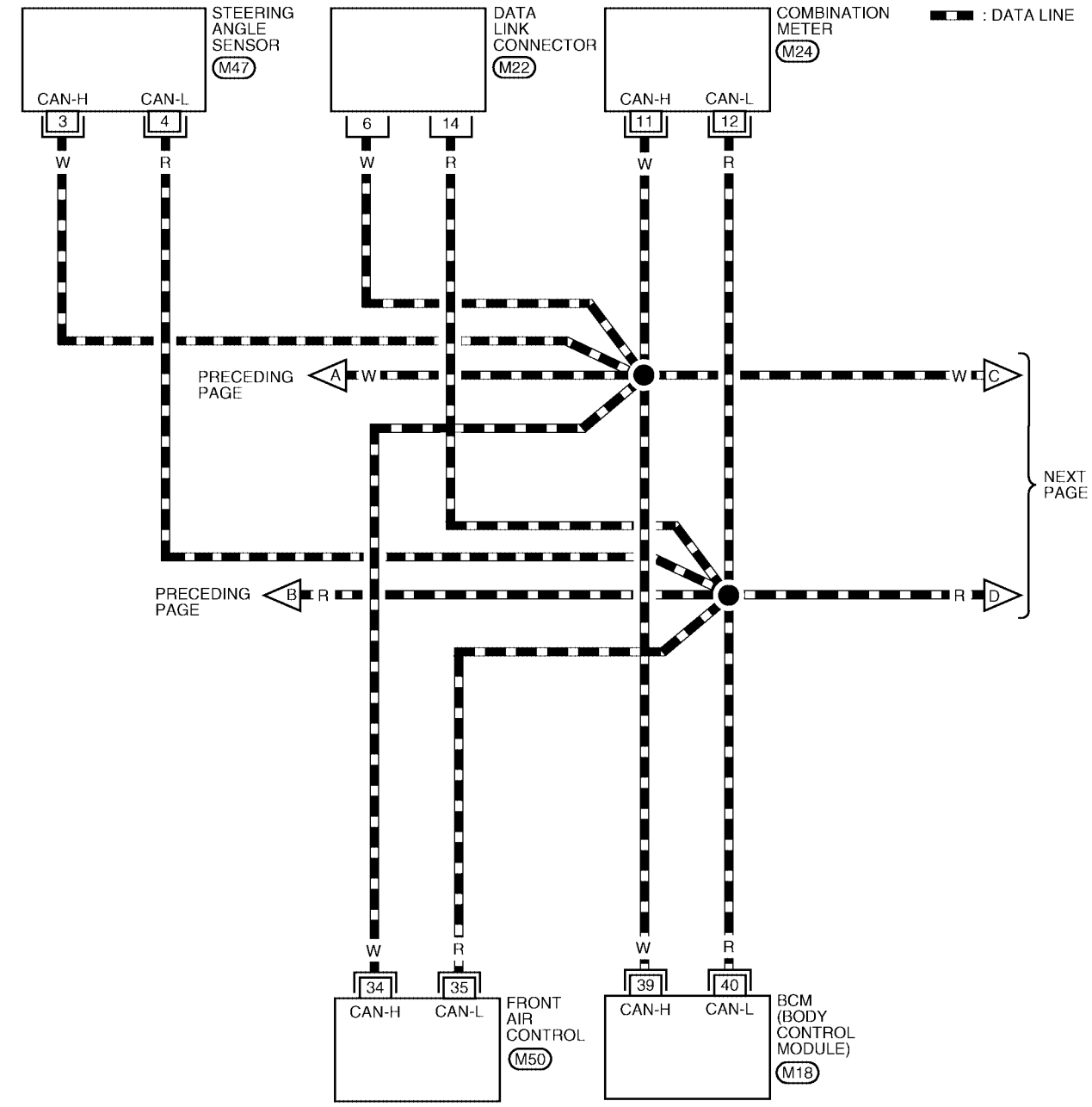


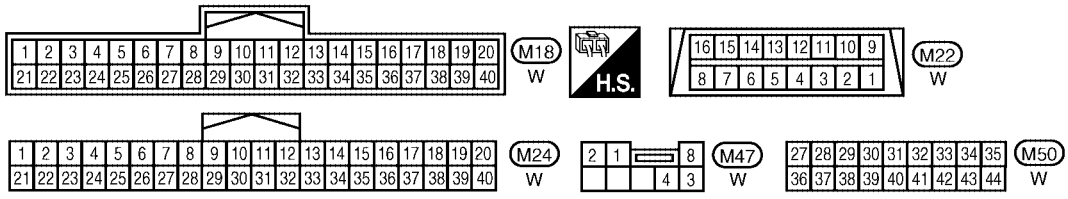


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

REFER TO THE FOLLOWING.
(M40) - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0034E

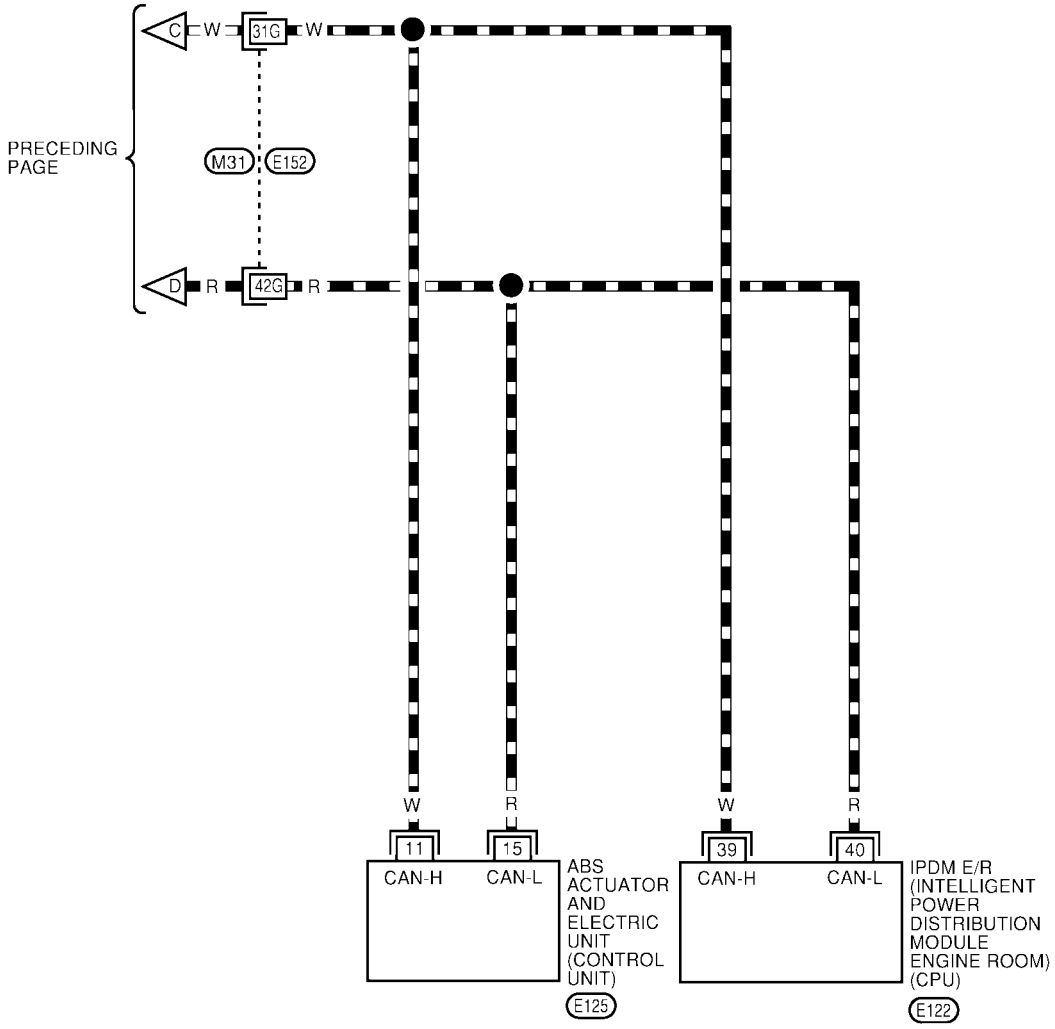

STEERING ANGLE SENSOR
M47
CAN-H
CAN-L
3
4
W
R
DATA LINK CONNECTOR
M22
6
14
W
R
COMBINATION METER
M24
CAN-H
CAN-L
11
12
W
R
: DATA LINE
PRECEDING PAGE
A
W
W
C
NEXT PAGE
PRECEDING PAGE
B
R
R
D
W
R
34
35
CAN-H
CAN-L
FRONT AIR CONTROL
M50
W
R
39
40
CAN-H
CAN-L
BCM (BODY CONTROL MODULE)
M18

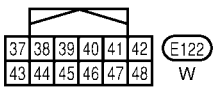

M18
W
H.S.
M22
W
M24
W
M47
W
M50
W

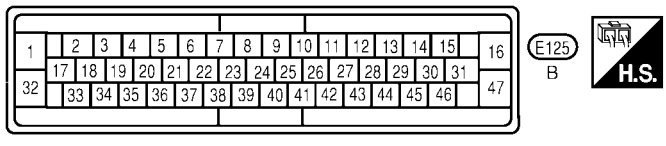
BKWA0139E

LAN-CAN-15

: DATA LINE







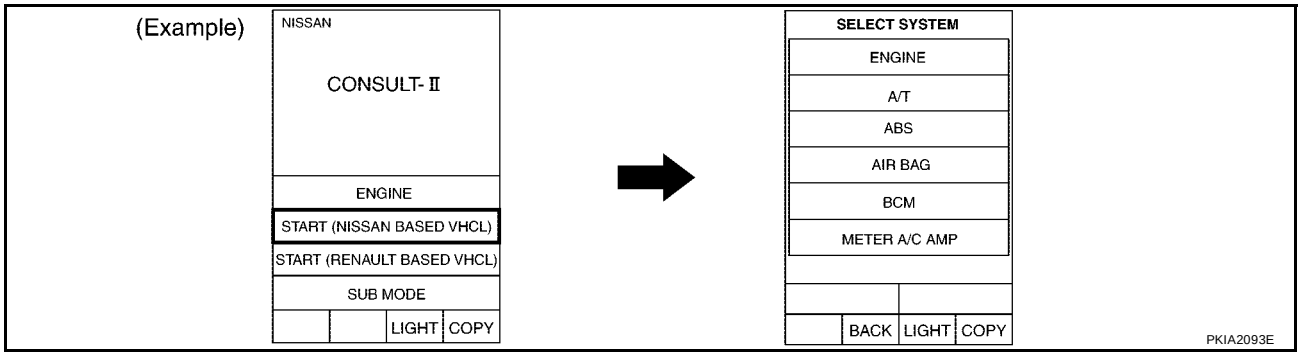
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0036E

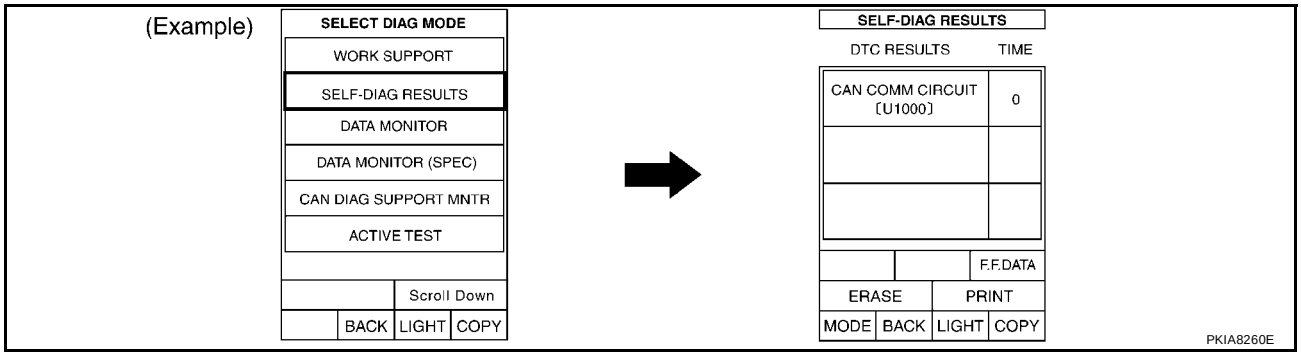
Work Flow

UKS001EL

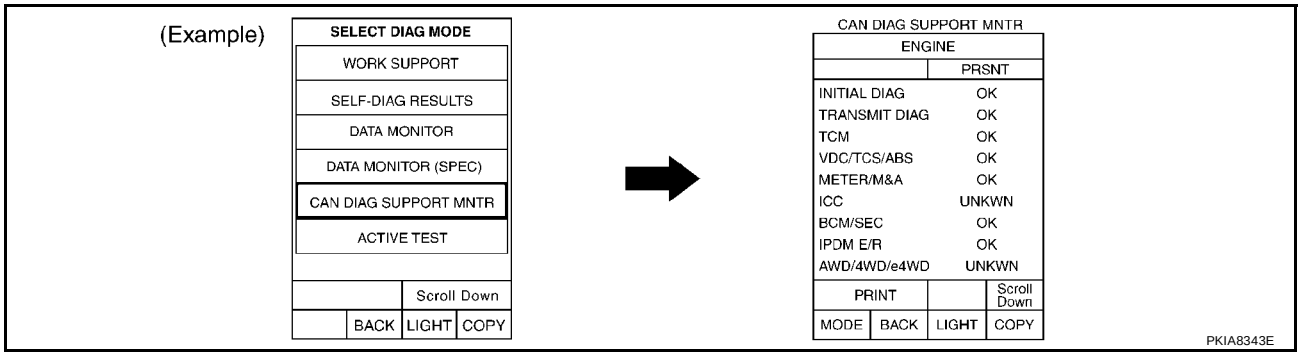
1. When there are no indications of “AUTO DRIVE POS.”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



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



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “AUTO DRIVE POS.”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-146, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-146, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “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 the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-148, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:

If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Check sheet table

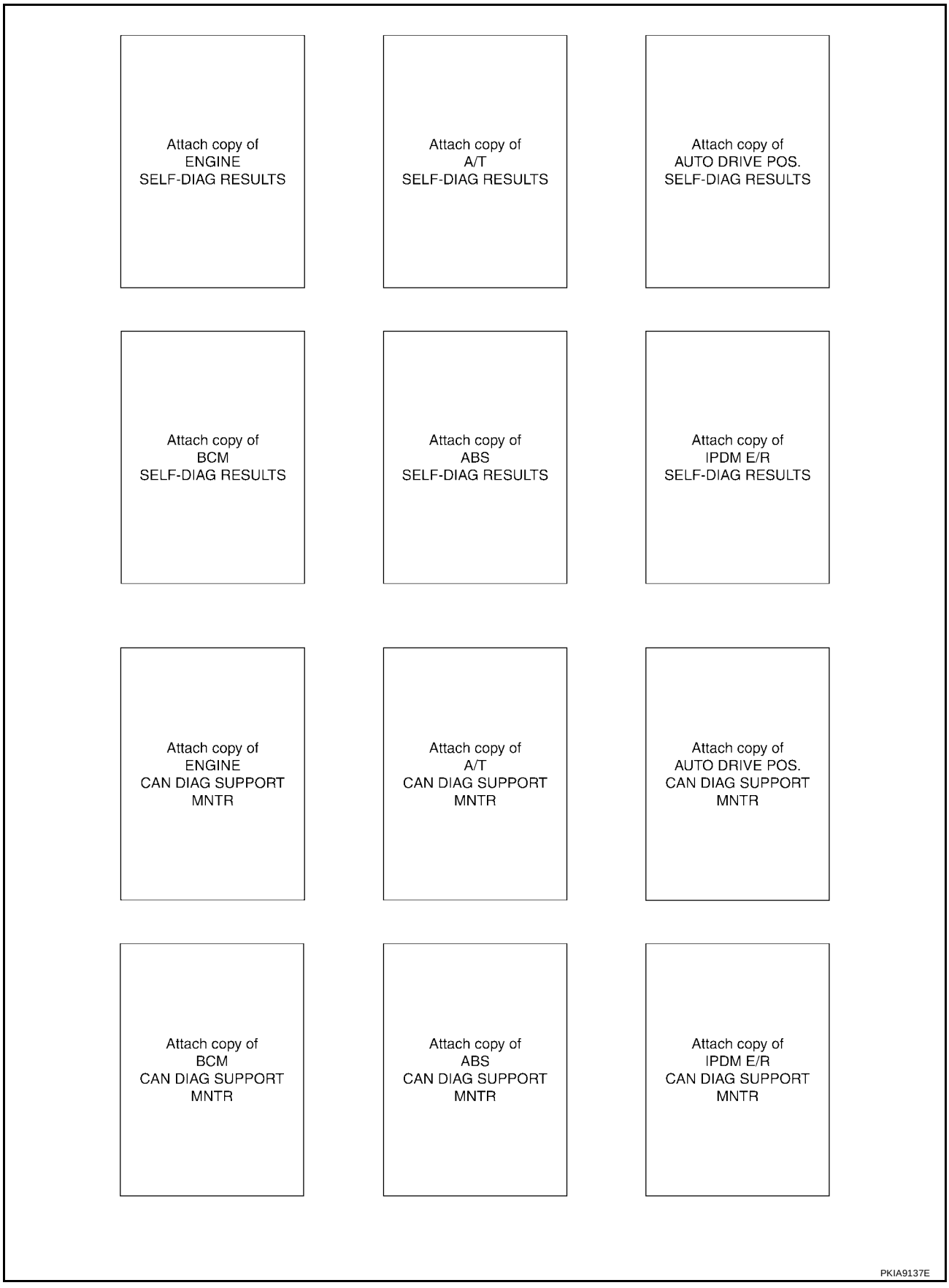
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIA9136E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
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
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA9137E

CHECK SHEET RESULTS (EXAMPLE)

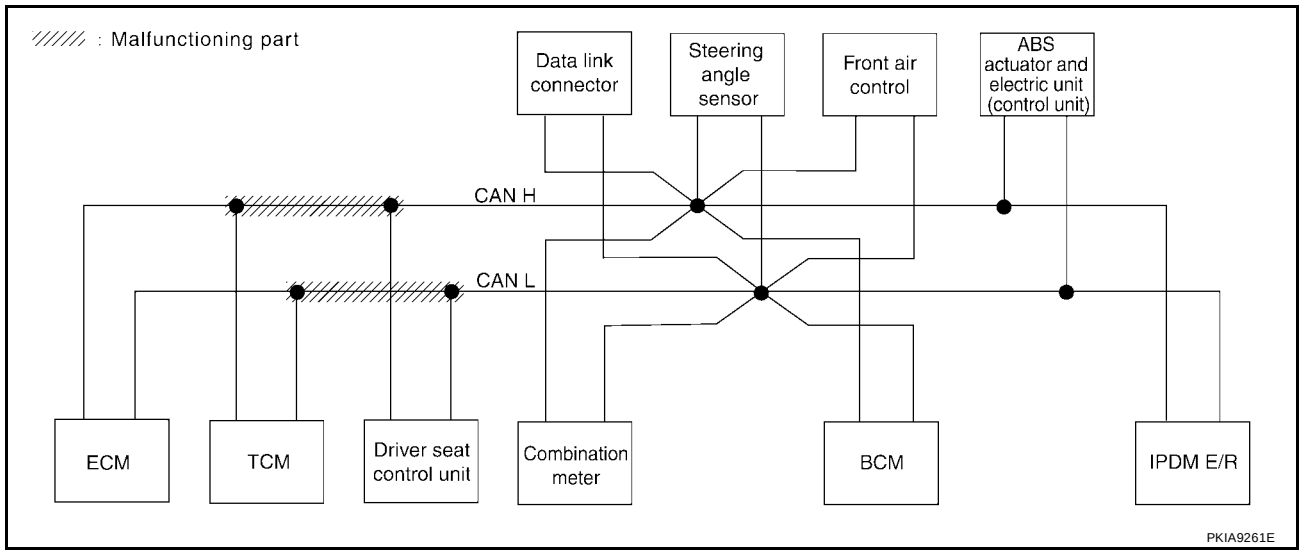
NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and driver seat control unit. Refer to LAN-161, "Circuit Check Between TCM and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN ✓	—	UNKWN ✓	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—	UNKWN ✓	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN ✓	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN ✓	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN ✓	—	—	UNKWN	—	—	—

PKIA9159E



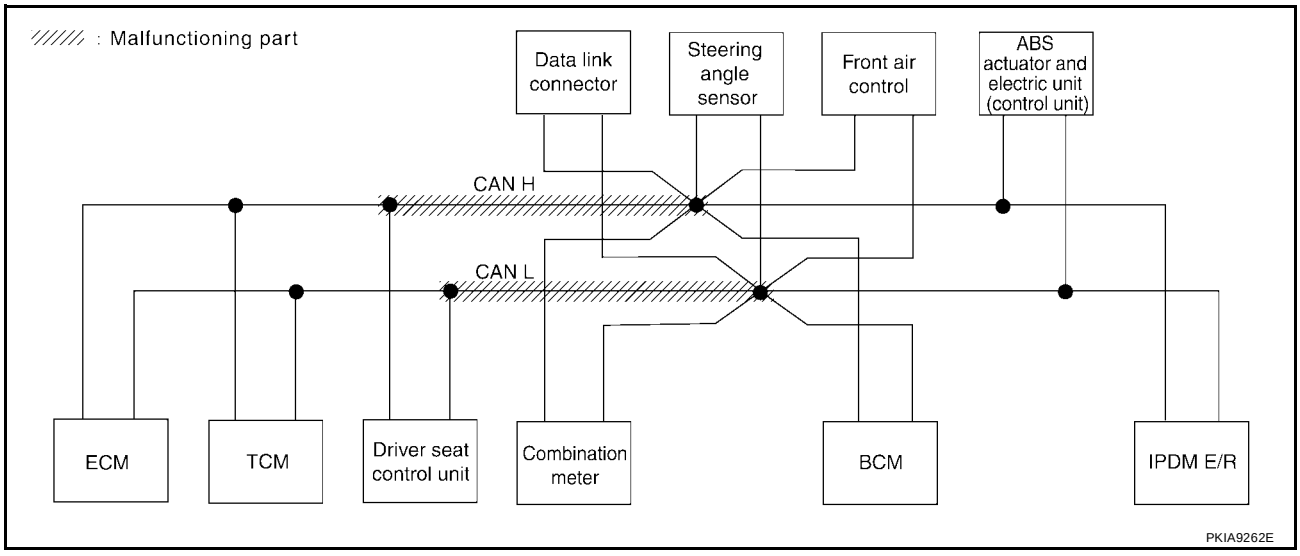
PKIA9261E

Case 2

Check harness between driver seat control unit and data link connector. Refer to LAN-162, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN ✓	UNKWN ✓	–	UNKWN ✓	UNKWN ✓
A/T	–	NG	UNKWN	UNKWN	–	UNKWN ✓	–	–	UNKWN ✓	–
AUTO DRIVE POS.	No indication ✓	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–
BCM	No indication	NG	UNKWN	UNKWN ✓	–	UNKWN	–	–	–	UNKWN
ABS	–	NG	UNKWN	UNKWN ✓	UNKWN ✓	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN ✓	–	–	UNKWN	–	–	–

PKIA9160E



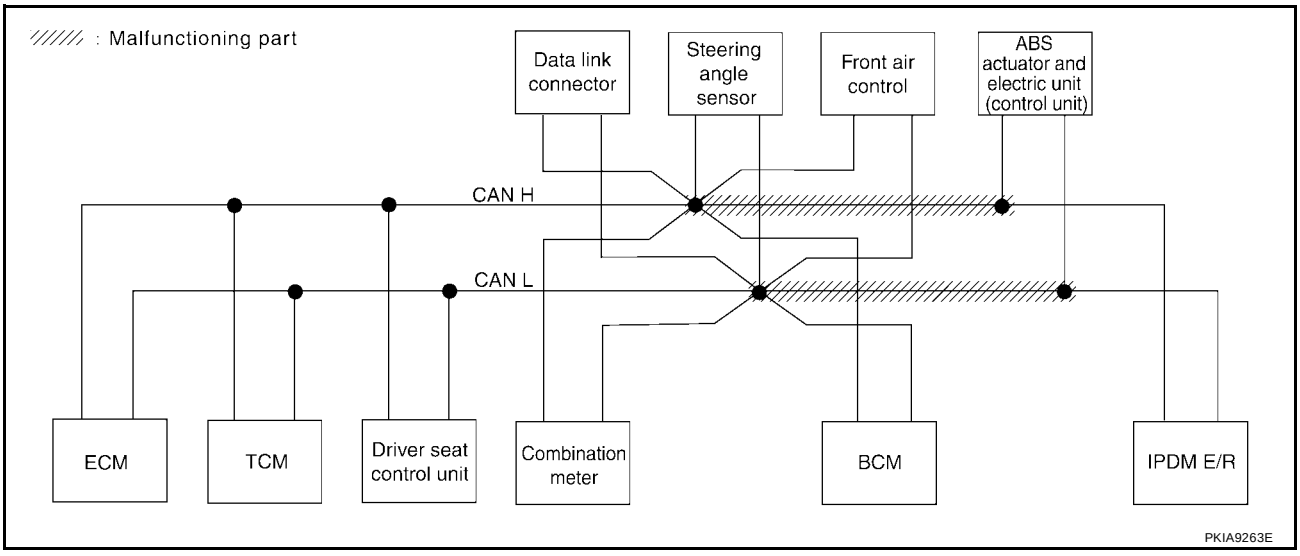
PKIA9262E

Case 3

Check harness between data link connector and IPDM E/R. Refer to LAN-163, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9161E



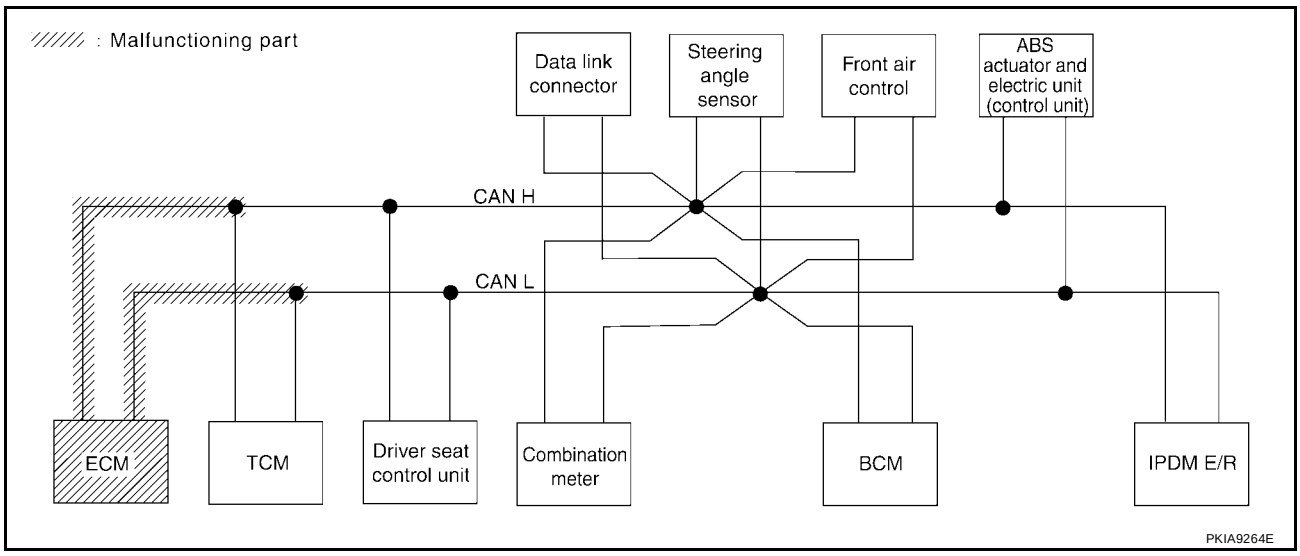
PKIA9263E

Case 4

Check ECM circuit. Refer to LAN-164, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9162E



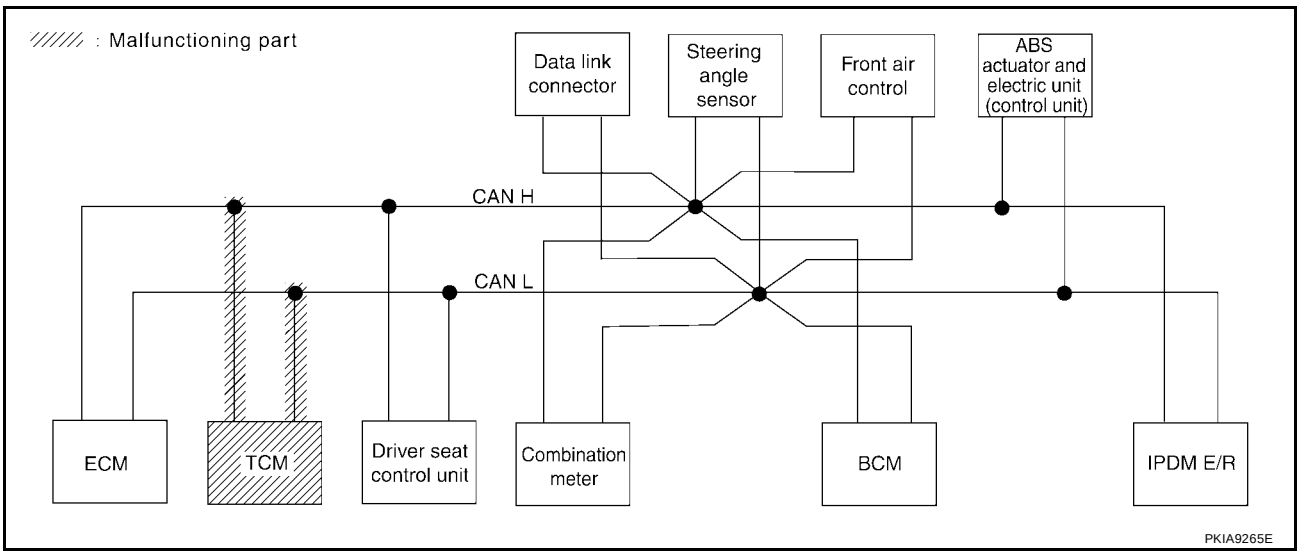
PKIA9264E

Case 5

Check TCM circuit. Refer to LAN-164, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN ✓	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	UNKWN ✓	—	—	UNKWN ✓	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN ✓	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN ✓	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9163E



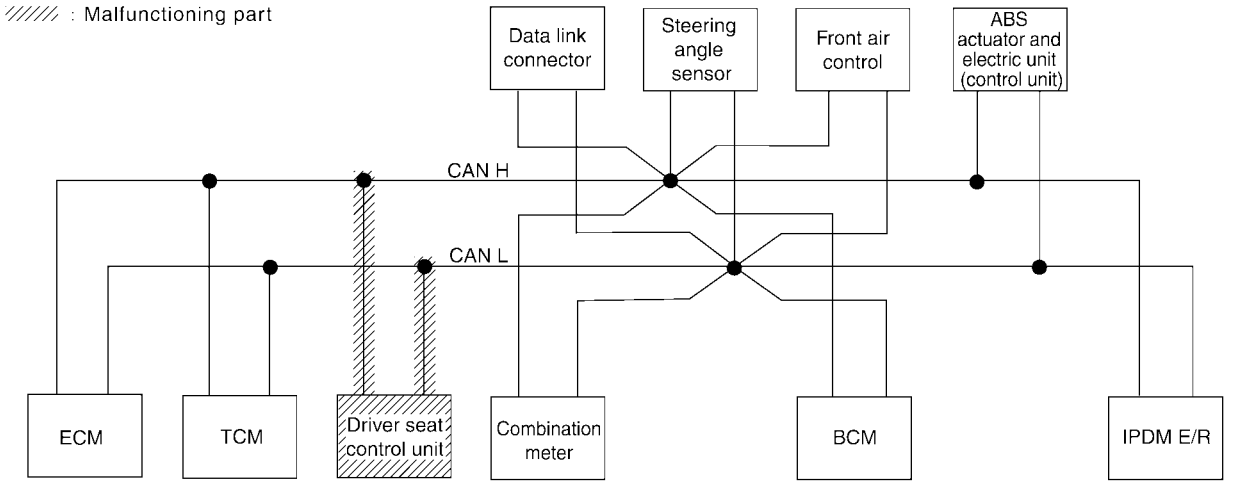
PKIA9265E

Case 6

Check driver seat control unit circuit. Refer to LAN-165, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–

PKIA9164E



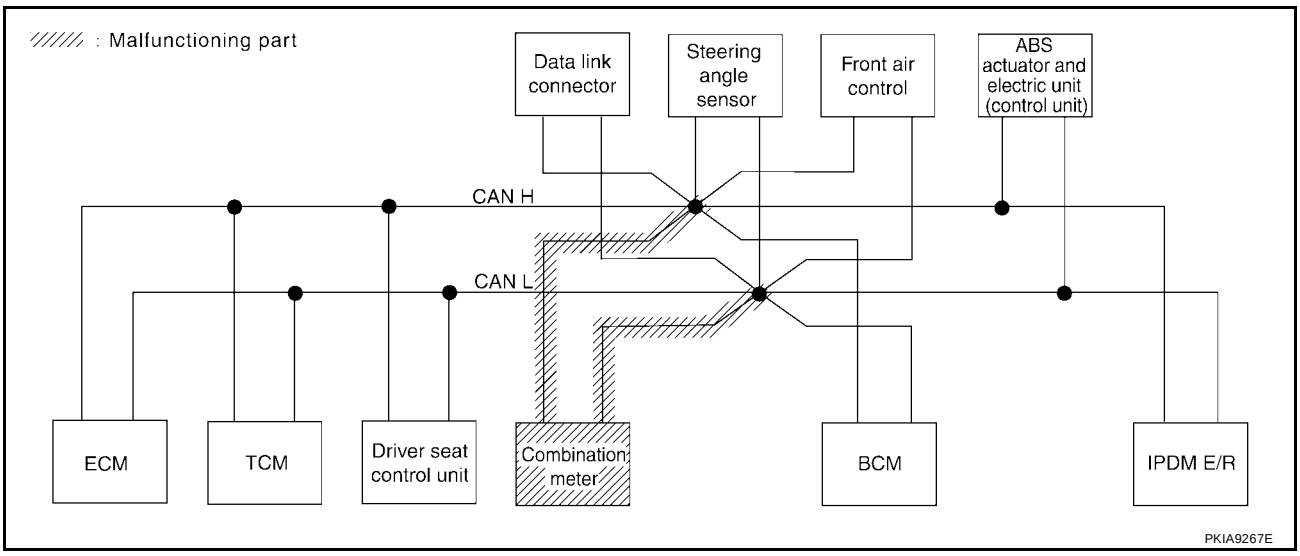
PKIA9266E

Case 7

Check combination meter circuit. Refer to LAN-165, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9165E



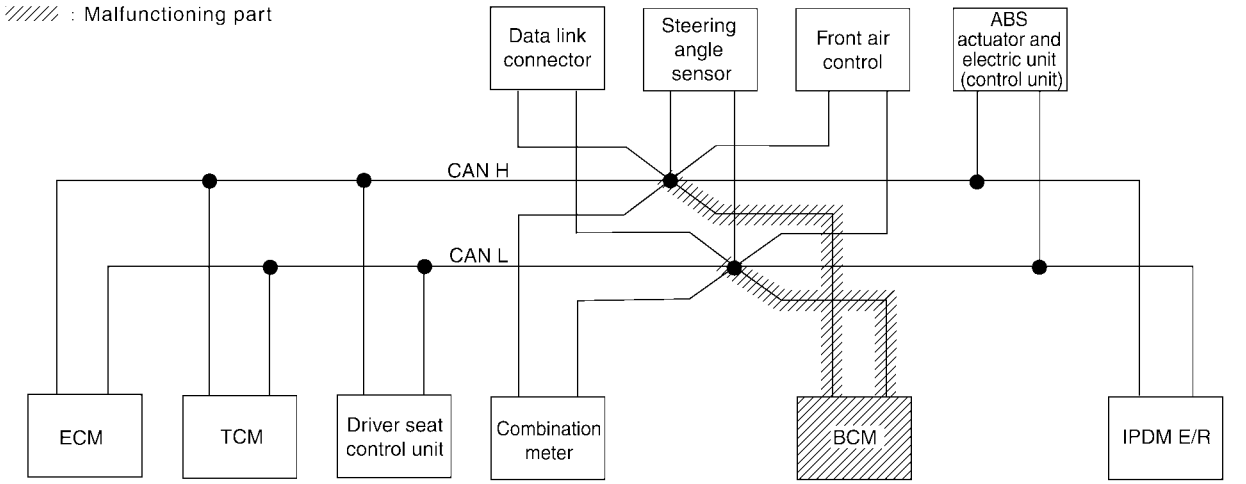
PKIA9267E

Case 8

Check BCM circuit. Refer to LAN-166, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–

PKIA9166E



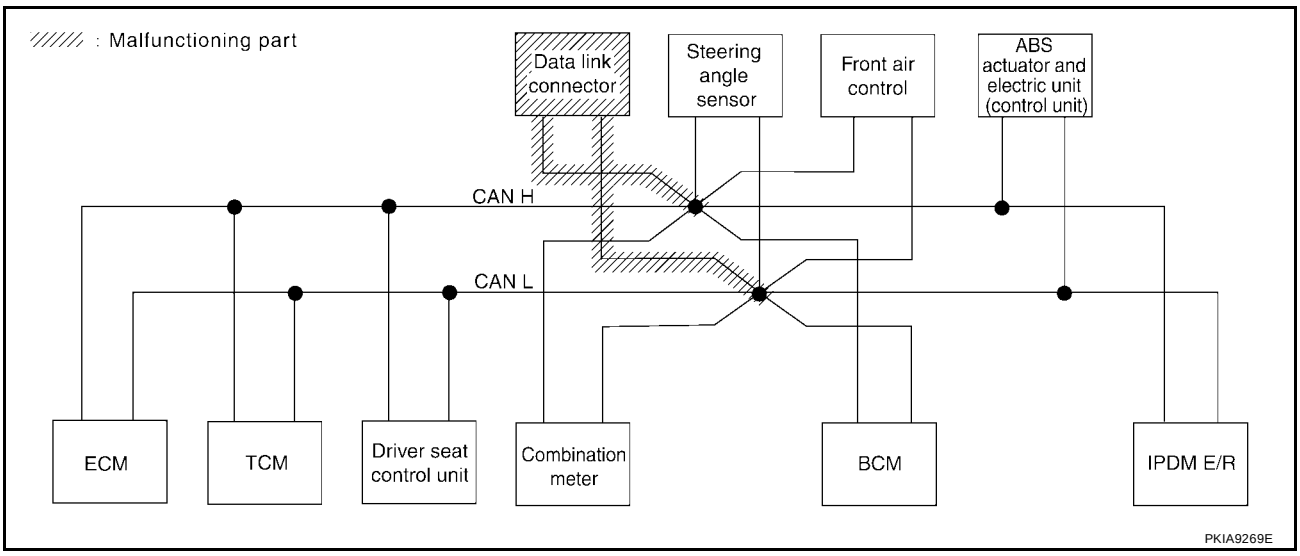
PKIA9268E

Case 9

Check data link connector circuit. Refer to LAN-166, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–

PKIA9167E



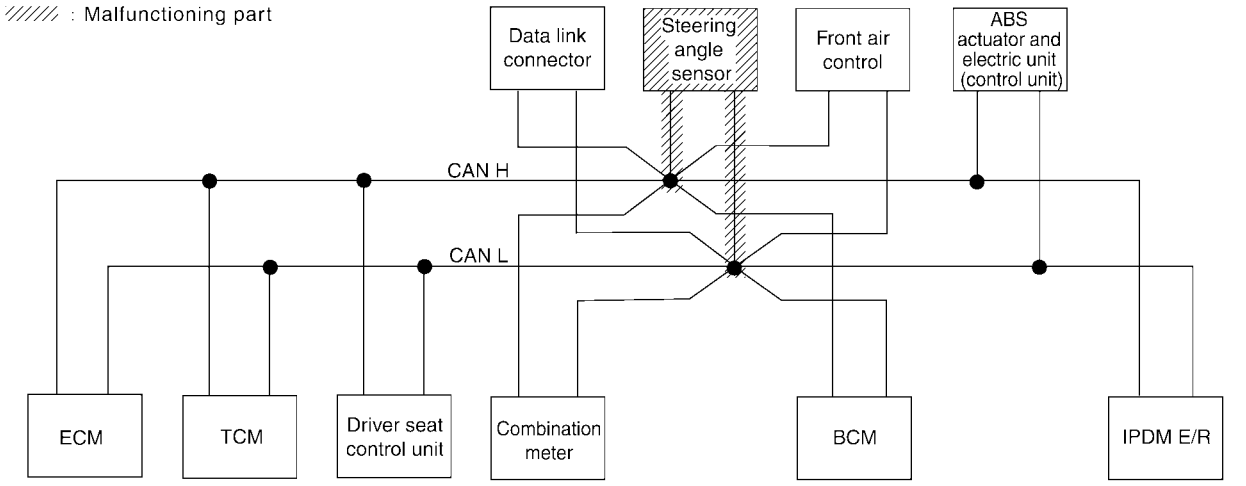
PKIA9269E

Case 10

Check steering angle sensor circuit. Refer to LAN-167, "Steering Angle Sensor Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9168E



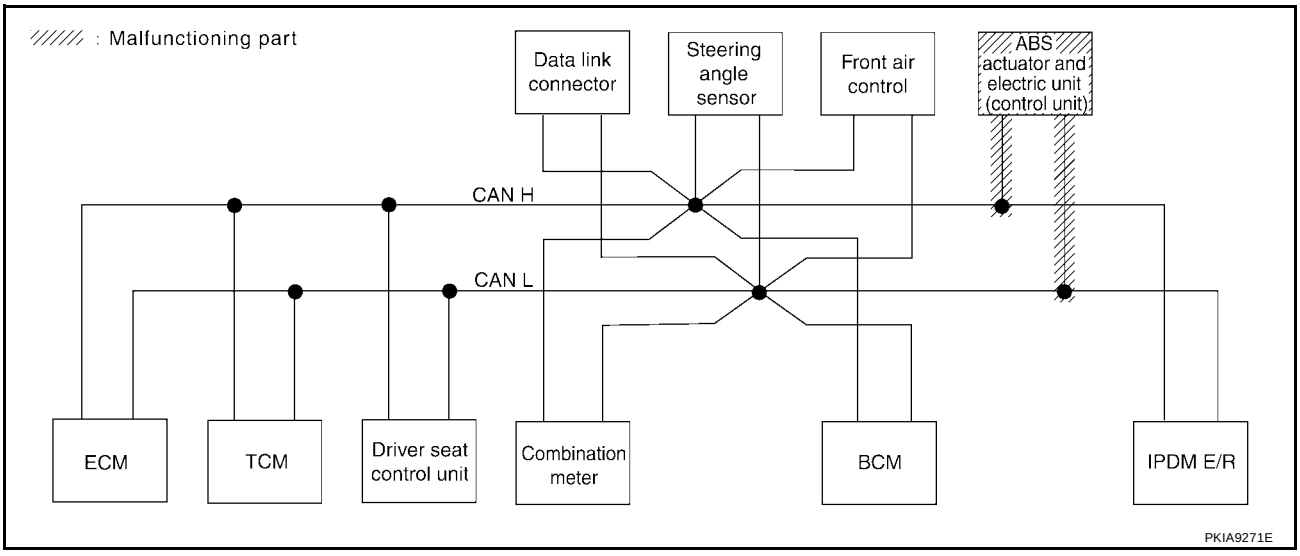
PKIA9270E

Case 11

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-167, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN ✓	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN ✓	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	—	UNKWN ✓	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9169E



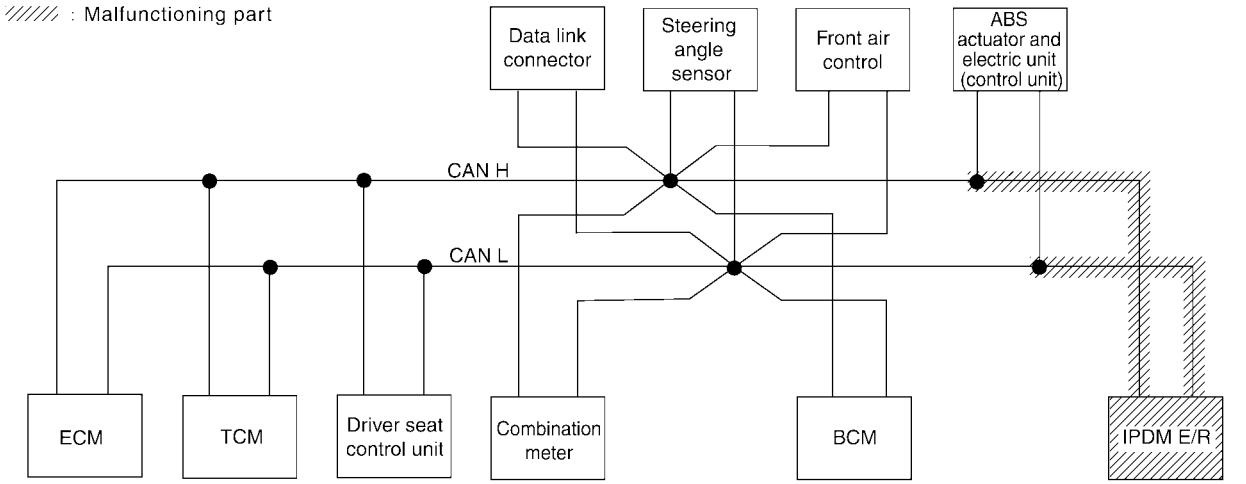
PKIA9271E

Case 12

Check IPDM E/R circuit. Refer to LAN-168, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN ✓
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9170E



PKIA9272E

Case 13

Check CAN communication circuit. Refer to LAN-168, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9171E

Case 14

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-169, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9172E

Case 15

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-169, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER /M&A	BCM/SEC	STRG	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN ✓	–	UNKWN ✓	–	–	UNKWN	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN
ABS	–	NG	UNKWN	UNKWN ✓	UNKWN	–	–	UNKWN ✓	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–

PKIA9173E

Circuit Check Between TCM and Driver Seat Control Unit

UKS0021F

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 F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

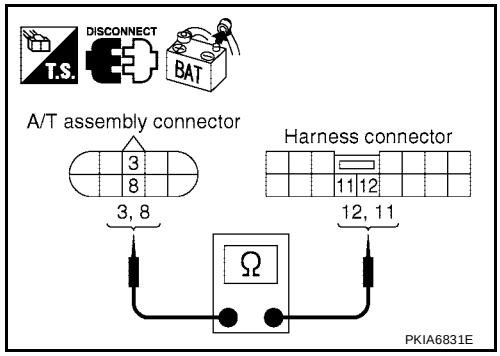
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12 (W), 11 (R).

3 (W) - 12 (W) : Continuity should exist.
8 (R) - 11 (R) : Continuity should exist.



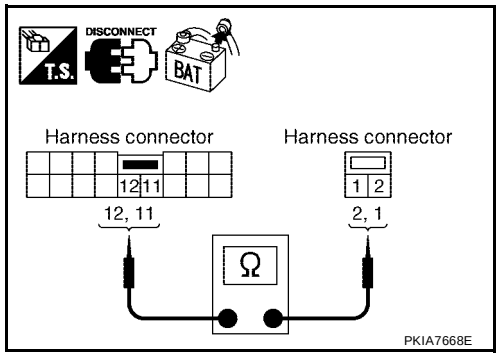
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).

12 (W) - 2 (W) : Continuity should exist.
11 (R) - 1 (R) : Continuity should exist.



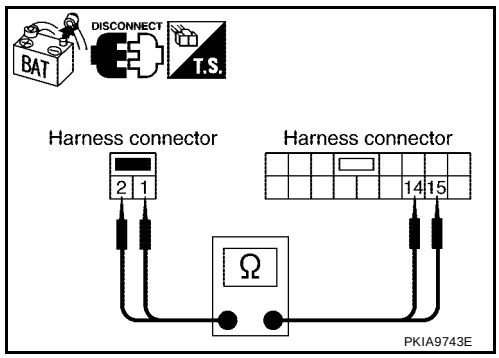
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37.
2. Check continuity between harness connector B75 terminals 2 (W), 1 (R) and harness connector B37 terminals 15 (W), 14 (R).

2 (W) - 15 (W) : Continuity should exist.
1 (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-145, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and Data Link Connector

UKS0021G

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 B69
- Harness connector M40

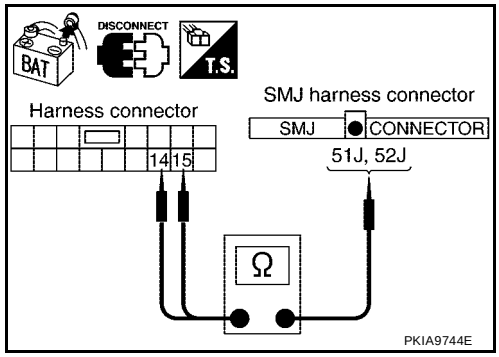
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37 and harness connector B69.
2. Check continuity between harness connector B37 terminals 15 (W), 14 (R) and harness connector B69 terminals 51J (W), 52J (R).

15 (W) - 51J (W) : Continuity should exist.
14 (R) - 52J (R) : Continuity should exist.



OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

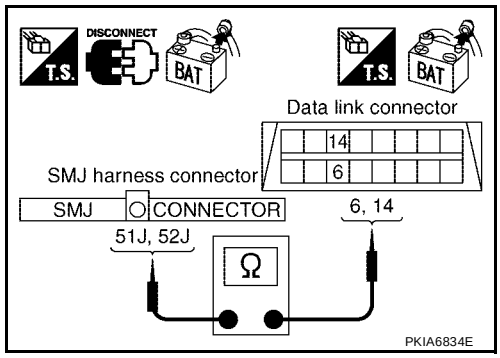
51J (W) - 6 (W) : Continuity should exist.

52J (R) - 14 (R) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-145, "Work Flow" .

NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

UKS0021H

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 M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).

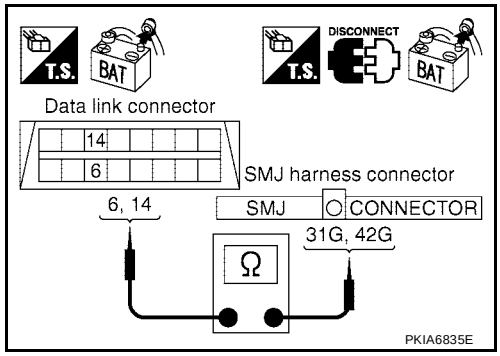
6 (W) - 31G (W) : Continuity should exist.

14 (R) - 42G (R) : Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).

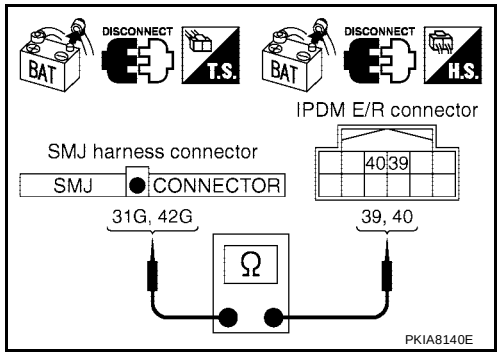
31G (W) - 39 (W) : Continuity should exist.

42G (R) - 40 (R) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-145, "Work Flow" .

NG >> Repair harness.



ECM Circuit Check

UKS0021I

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 E19
- Harness connector F33

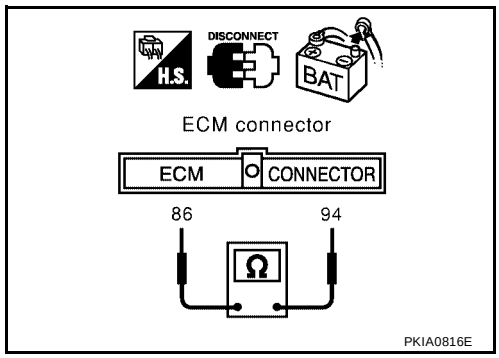
OK or NG

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 E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R) : Approx. 108 - 132Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and A/T assembly.

TCM Circuit Check

UKS0021J

1. CHECK CONNECTOR

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

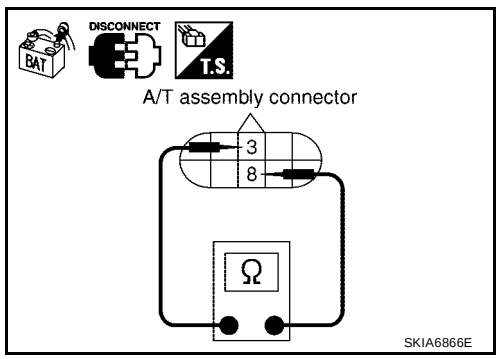
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Driver Seat Control Unit Circuit Check

UKS001ER

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 unit side and harness side).

- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

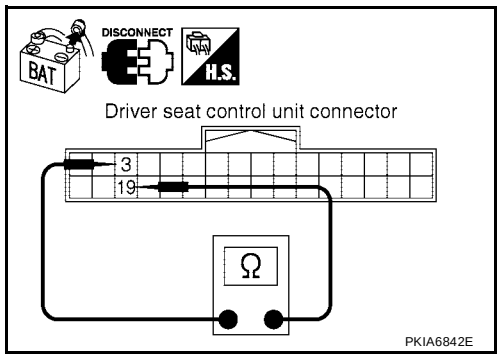
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect driver seat control unit connector.
2. Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R).

3 (W) - 19 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B69.

Combination Meter Circuit Check

UKS0021K

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).

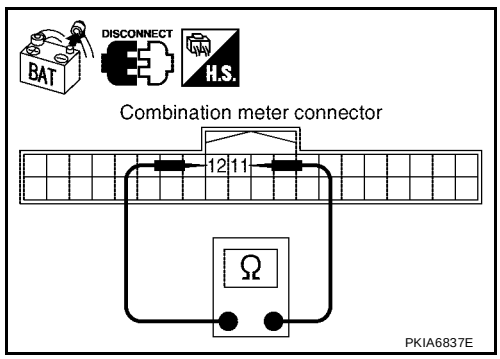
OK or NG

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 M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R) : Approx. 54 - 66Ω



OK or NG

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

BCM Circuit Check

UKS0021L

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).

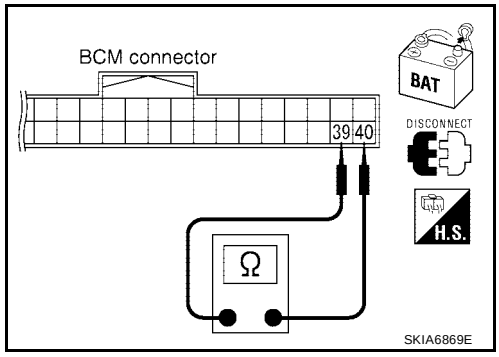
OK or NG

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 M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS0021M

1. CHECK CONNECTOR

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

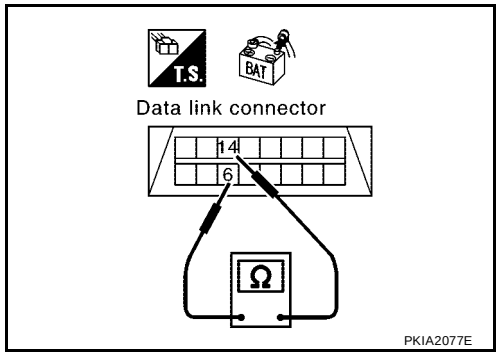
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-145, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Steering Angle Sensor Circuit Check

UKS0021N

1. CHECK CONNECTOR

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

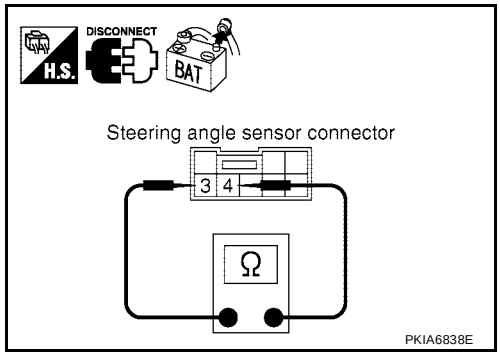
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M47 terminals 3 (W) and 4 (R).

3 (W) - 4 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor and data link connector.

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS0021O

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).

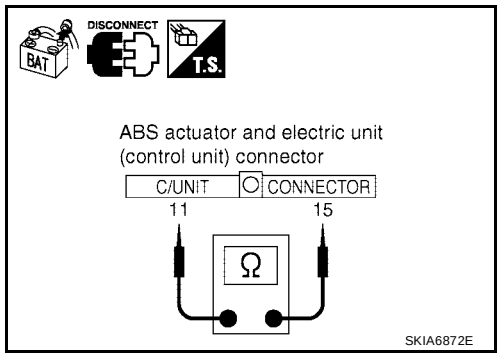
OK or NG

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 E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R) : 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 harness connector E152.

IPDM E/R Circuit Check

UKS0021P

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).

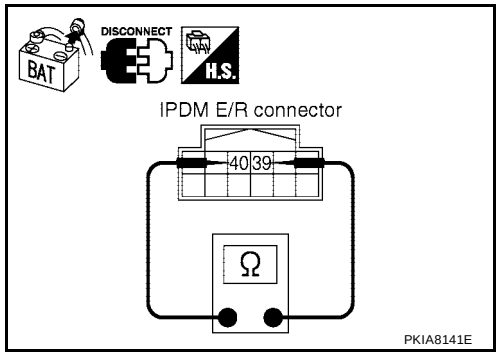
OK or NG

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 E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 108 - 132Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS0021Q

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- A/T assembly
- Driver seat control unit
- Combination meter
- BCM
- Steering angle sensor
- Front air control
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

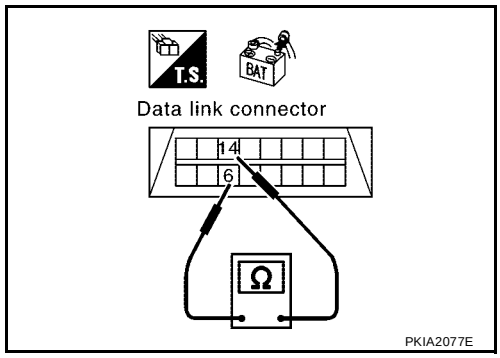
2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

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

OK or NG

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



3. CHECK HARNESS FOR SHORT CIRCUIT

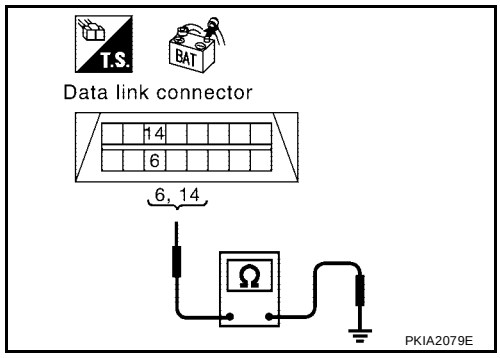
Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

6 (W) - Ground : Continuity should not exist.

14 (R) - Ground : Continuity should not exist.

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-169, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

UKS0021R

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

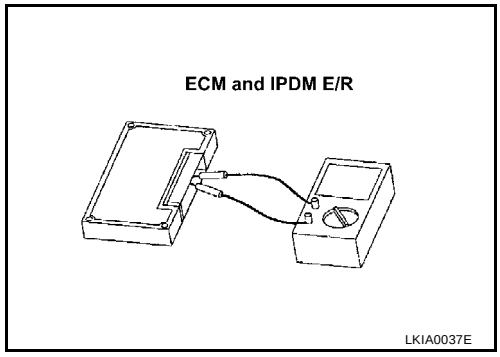
Component Inspection

UKS0021S

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 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 6)

PFP:23710

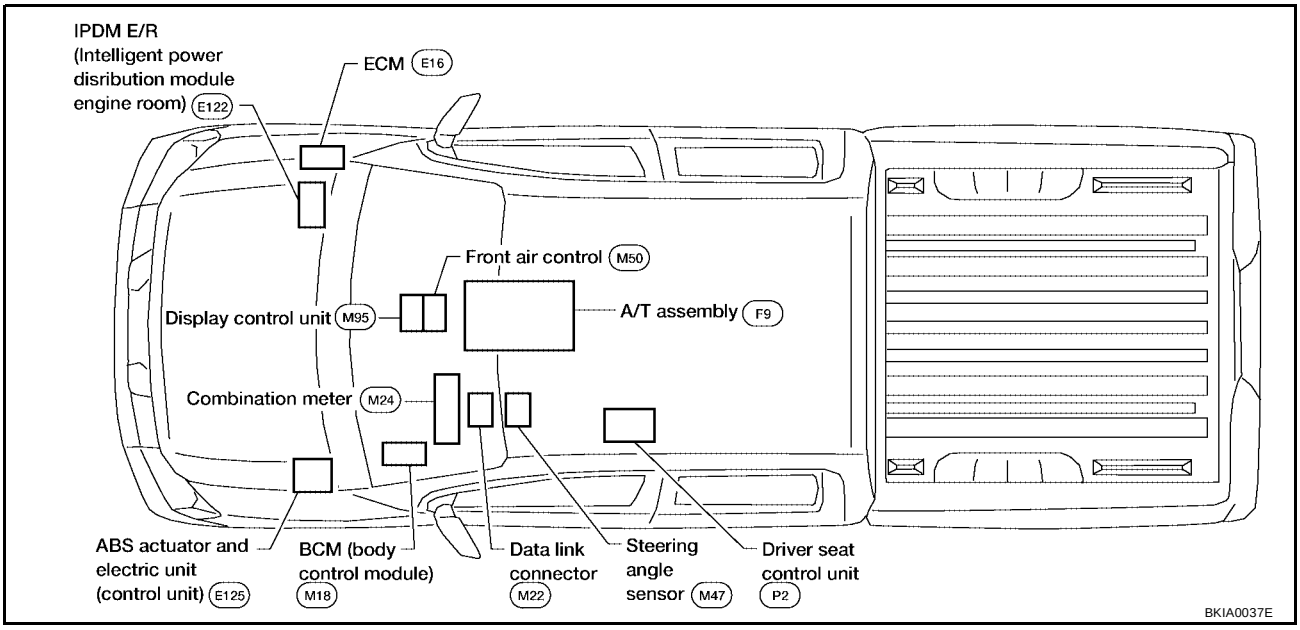
System Description

UKS001F1

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.

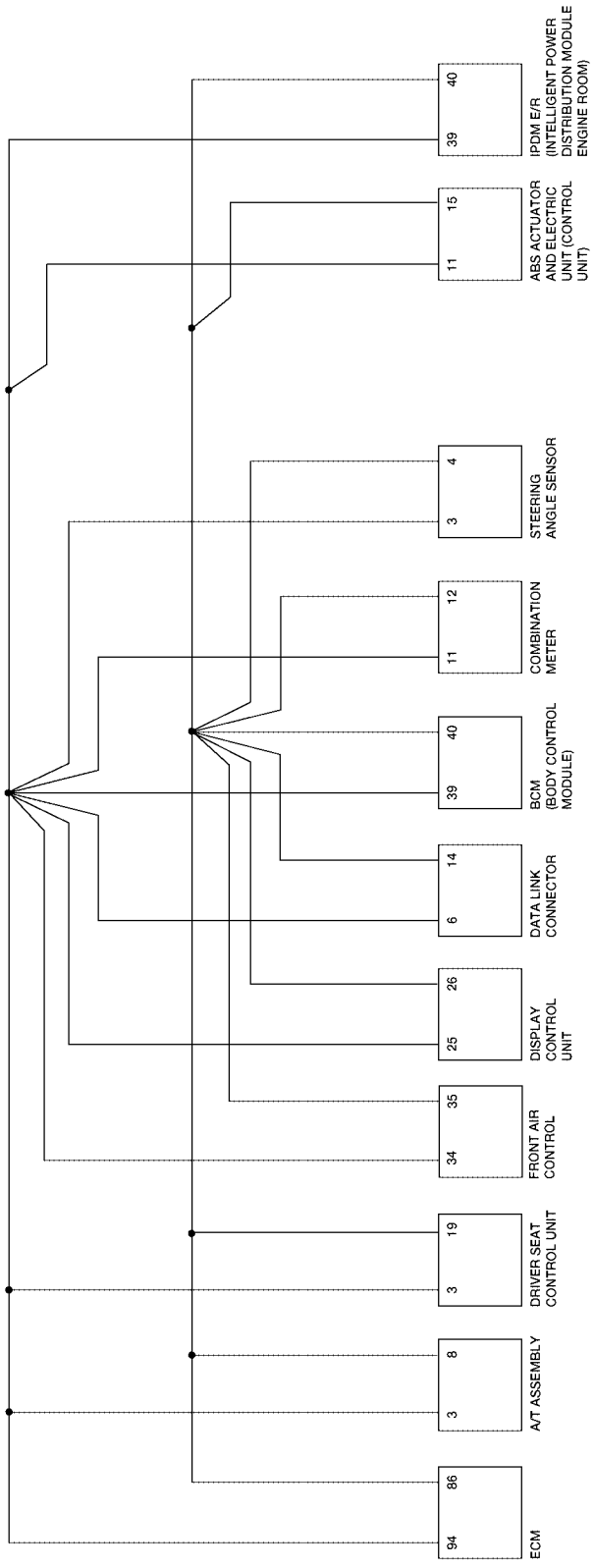
Component Parts and Harness Connector Location

UKS001F2



Schematic

UKS001F3

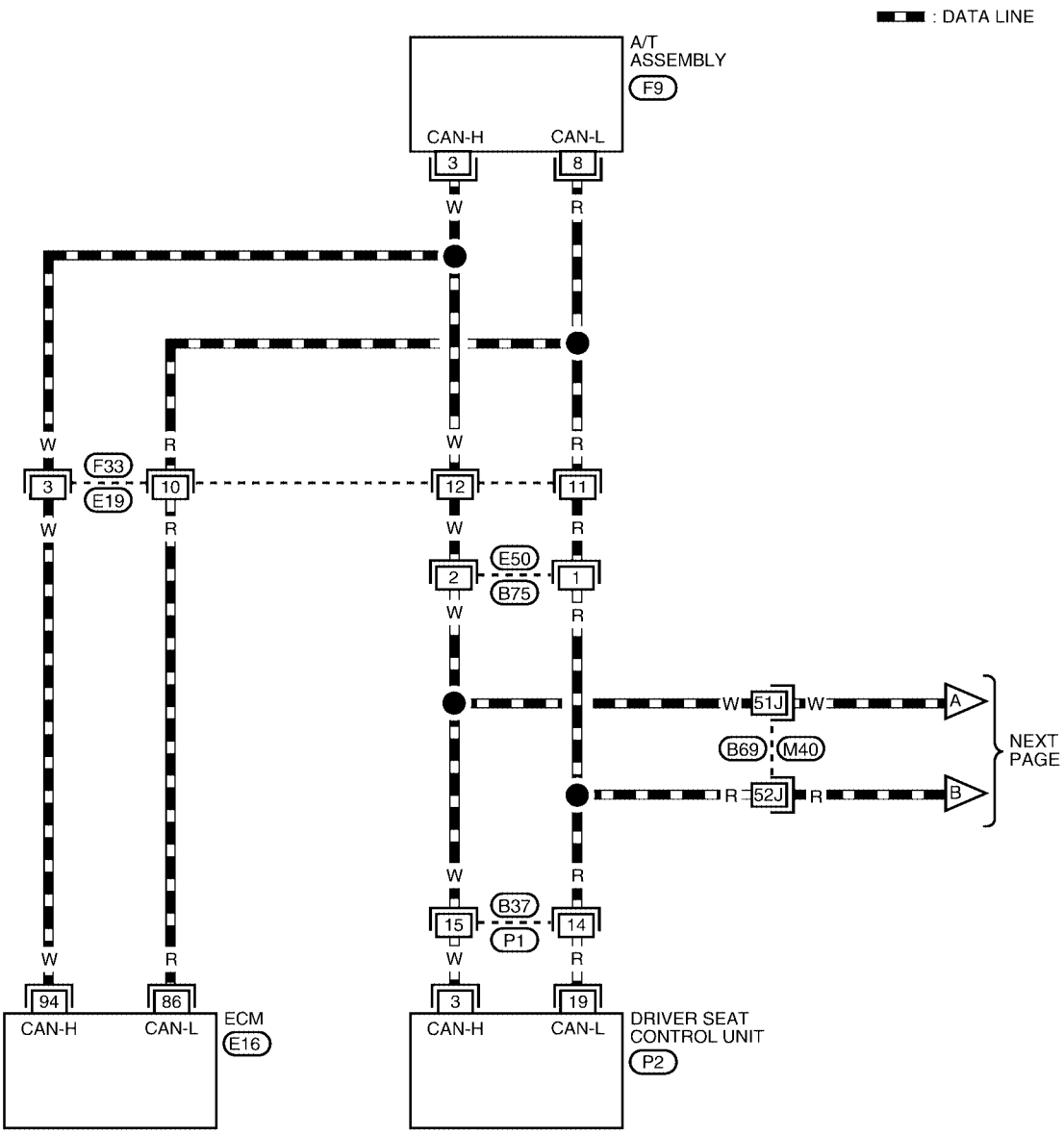


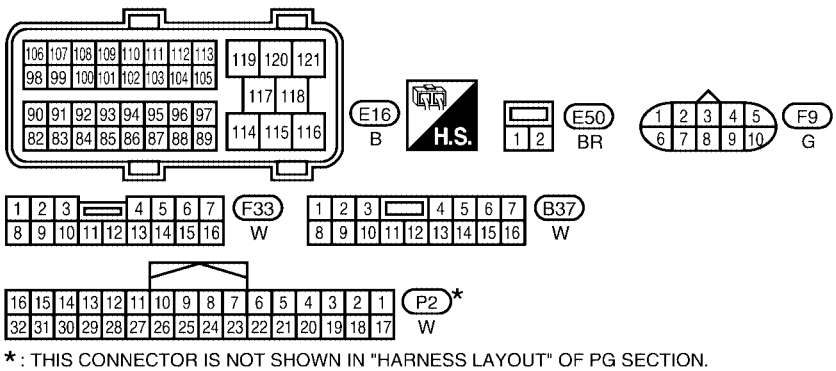
BKWA0140E

Wiring Diagram - CAN -

UKS001F4

LAN-CAN-16



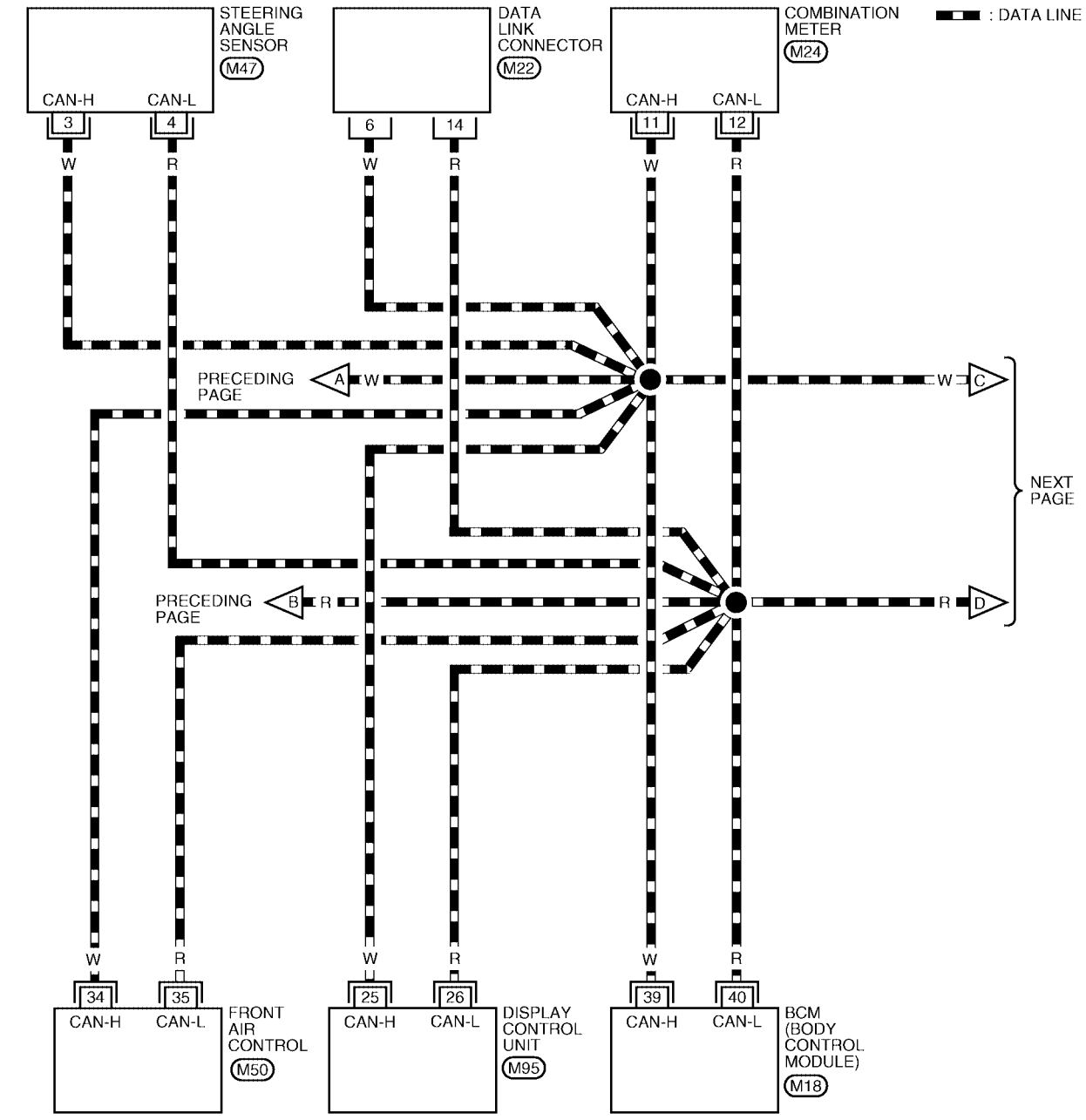


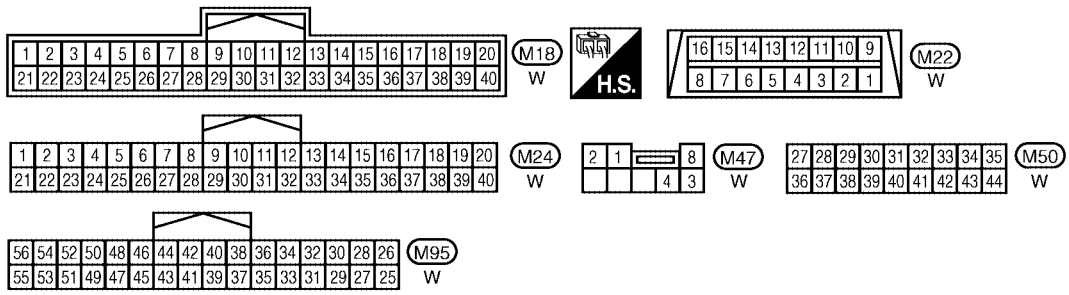
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0042E

LAN-CAN-17

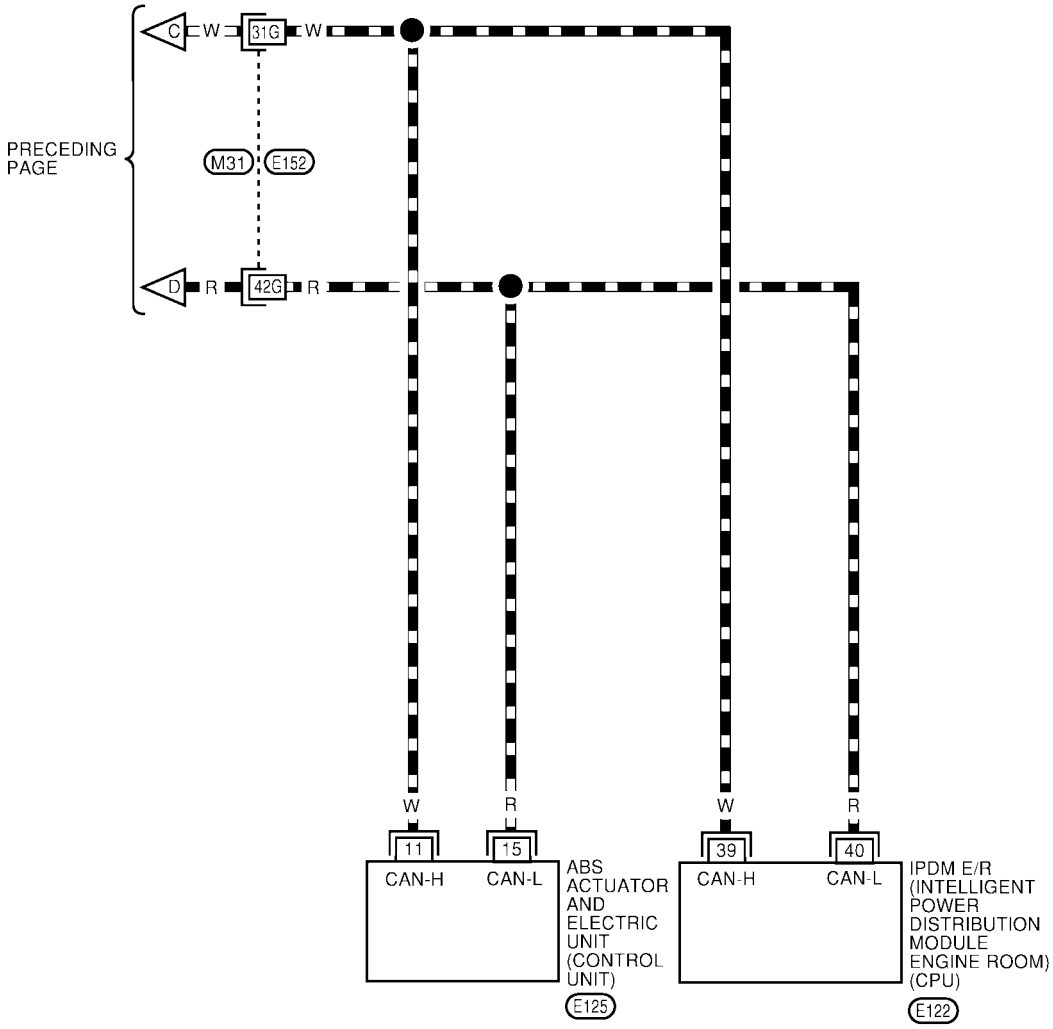


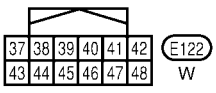


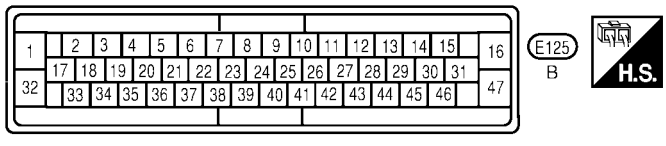
BKWA0141E

LAN-CAN-18

: DATA LINE







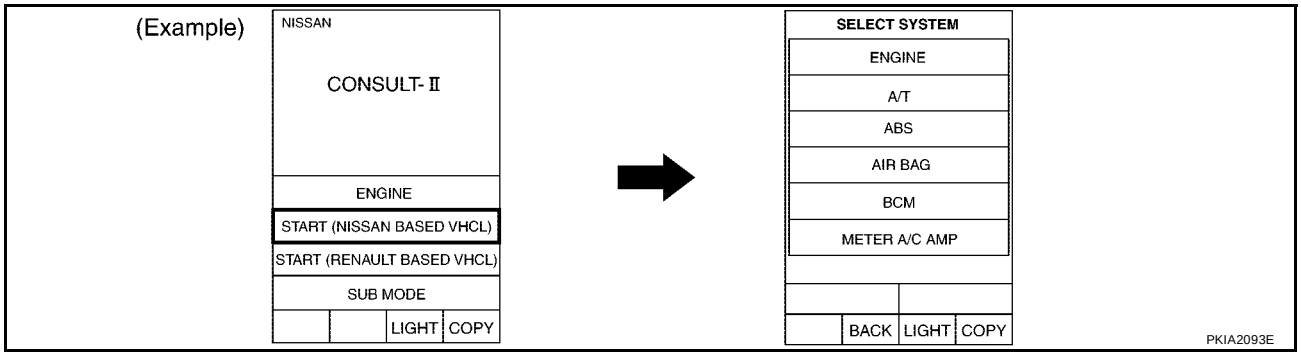
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0044E

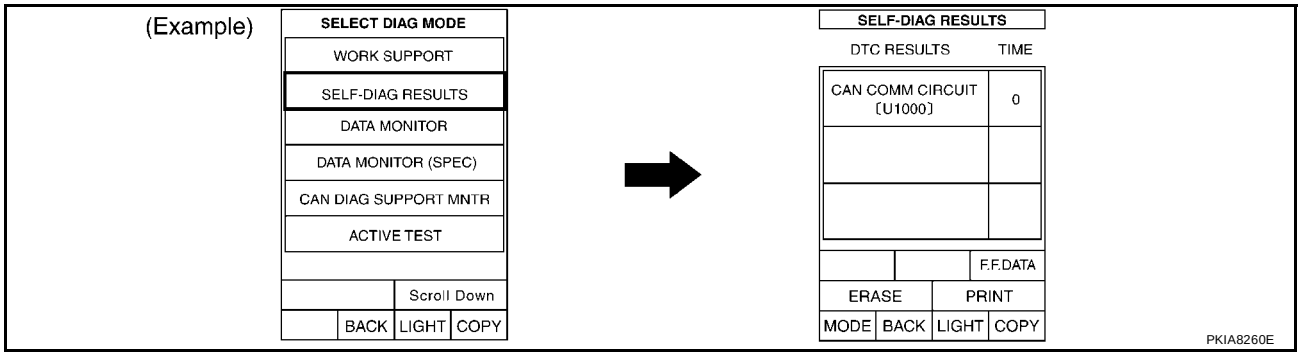
Work Flow

UKS001F5

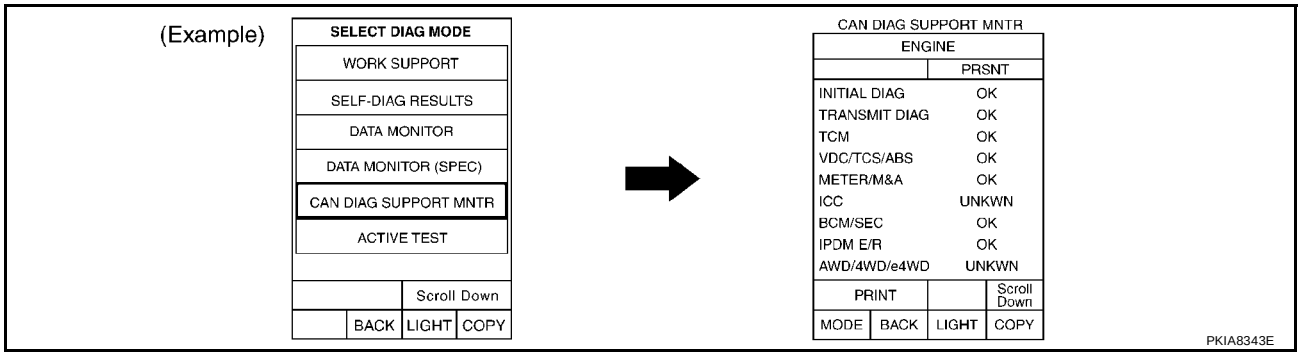
1. When there are no indications of “AUTO DRIVE POS.”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



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



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “AUTO DRIVE POS.”, “BCM”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-177, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-177, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “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 the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. Check CAN communication line of the navigation system. Refer to AV-149, "CAN Communication Line Check" .
7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to LAN-177, "CHECK SHEET" .

8. Mark the “NG” or “UNKWN” item of the check sheet table with “v” from the result of CAN DIAG SUPPORT MONITOR check sheet. Refer to LAN-177, "CHECK SHEET" .

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MONITOR” for the diagnosed control unit, replace the control unit. Refer to AV-149, "CAN Communication Line Check" .

9. According to the check sheet results (example), start inspection. Refer to LAN-179, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

Symptoms :

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

Attach copy of
display control unit
CAN DIAG SUPPORT MONITOR check sheet

PKIA9138E

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
A/T
SELF-DIAG RESULTS

Attach copy of
AUTO DRIVE POS.
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
CAN DIAG SUPPORT
MNTR

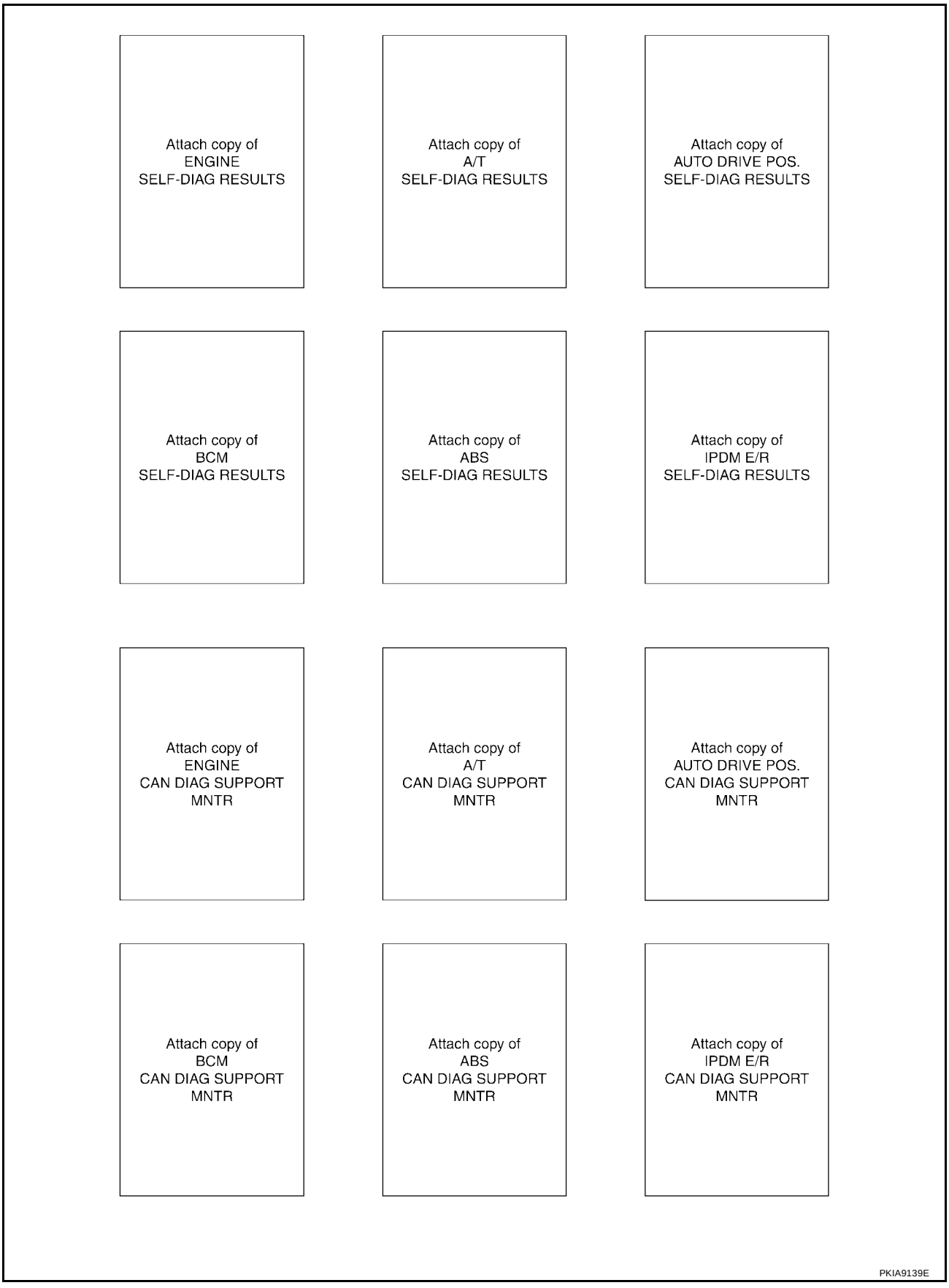
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR

Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR

Attach copy of
BCM
CAN DIAG SUPPORT
MNTR

Attach copy of
ABS
CAN DIAG SUPPORT
MNTR

Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR



PKIA9139E

CHECK SHEET RESULTS (EXAMPLE)

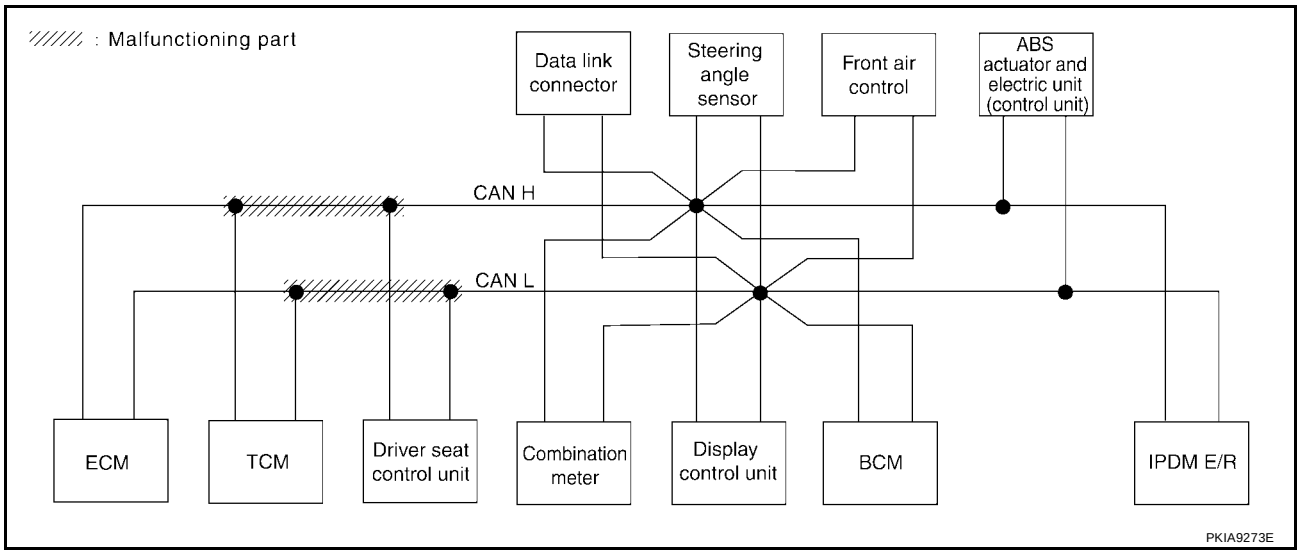
NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and driver seat control unit. Refer to LAN-194, "Circuit Check Between TCM and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	✓	✓	—	—	✓	✓
A/T	—	NG	UNKWN	UNKWN	—	✓	—	—	—	✓	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	✓	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	✓	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	✓	—	UNKWN	—	—	—	—	UNKWN
ABS	—	NG	UNKWN	✓	✓	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	✓	—	—	UNKWN	—	—	—	—

PKIA9174E



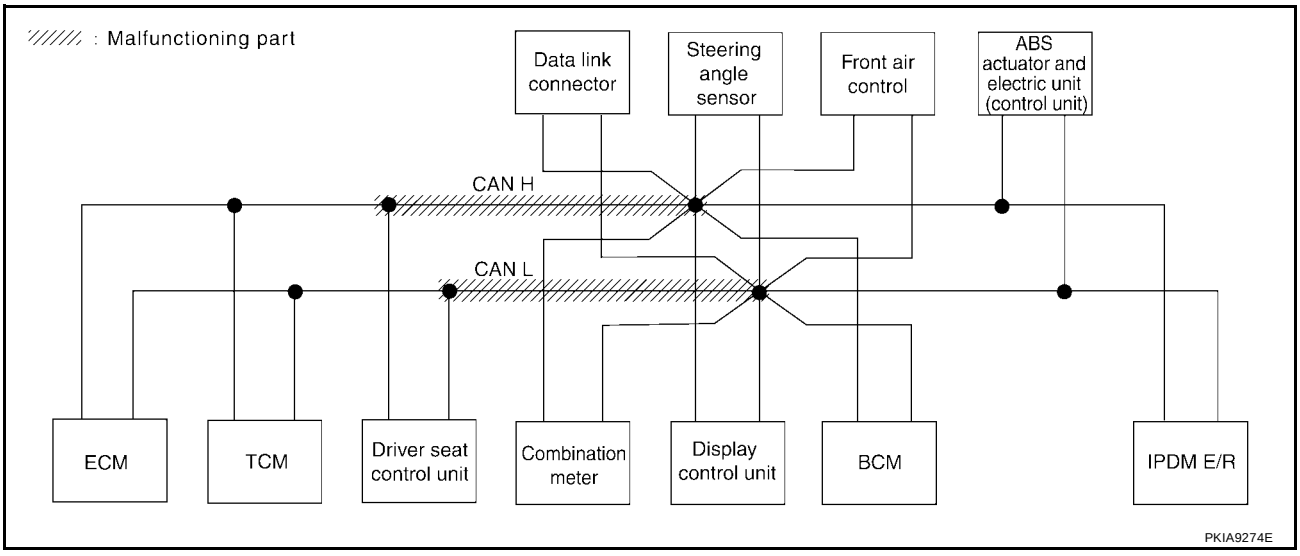
PKIA9273E

Case 2

Check harness between driver seat control unit and data link connector. Refer to LAN-195, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9175E



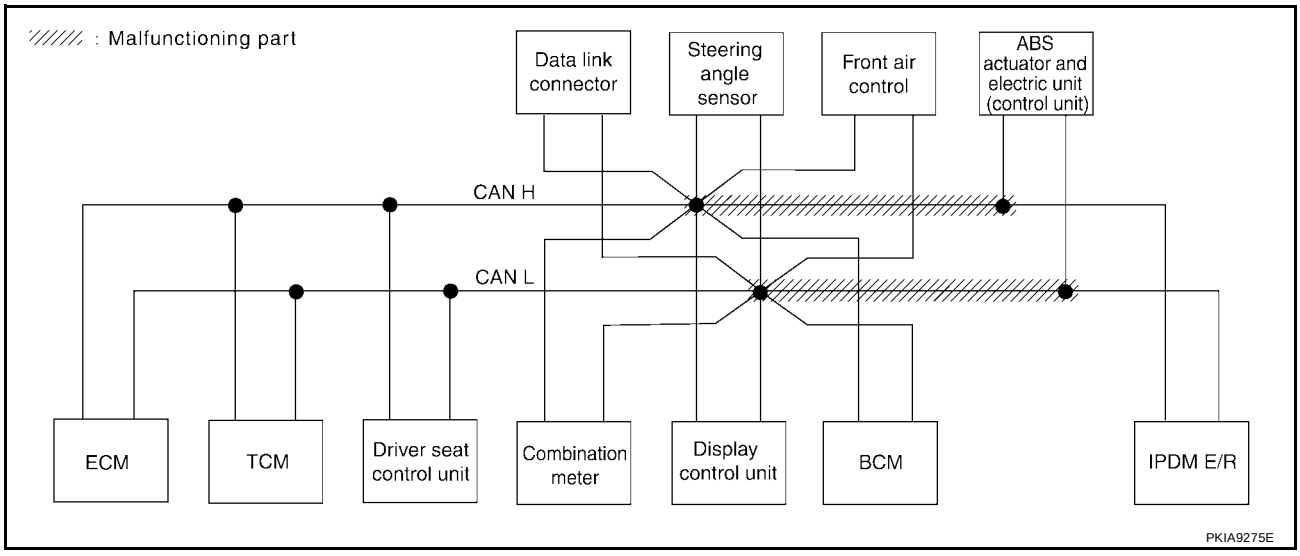
PKIA9274E

Case 3

Check harness between data link connector and IPDM E/R. Refer to LAN-196, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN ✓	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN ✓	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	CAN CIRC 7 ✓
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN ✓
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	—	UNKWN ✓	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9176E



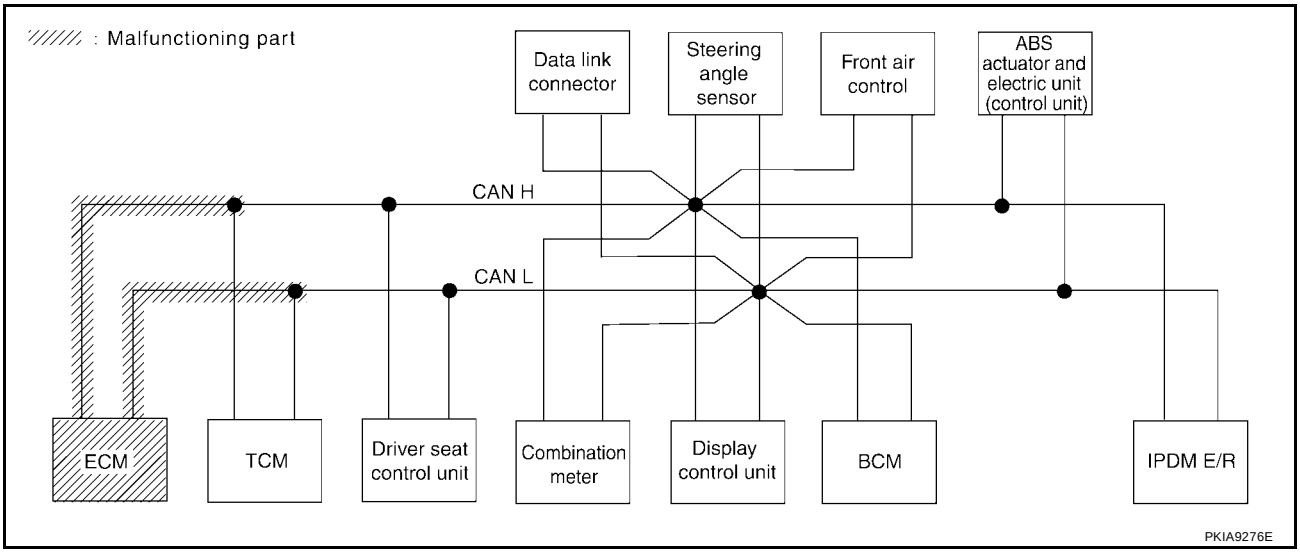
PKIA9275E

Case 4

Check ECM circuit. Refer to LAN-197, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9177E



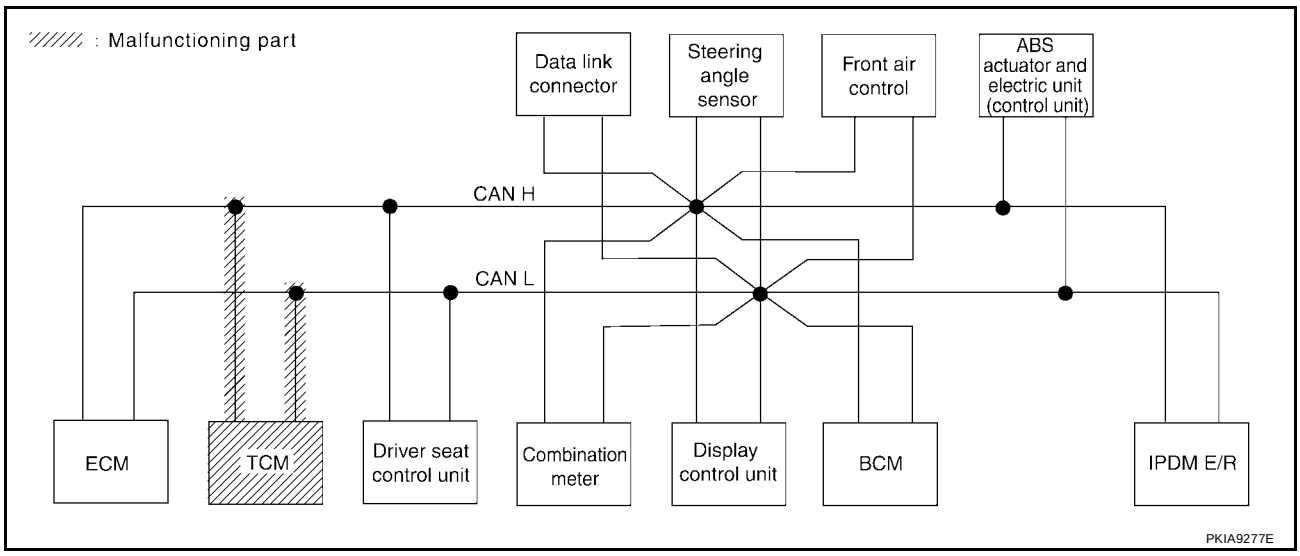
PKIA9276E

Case 5

Check TCM circuit. Refer to LAN-197, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9178E



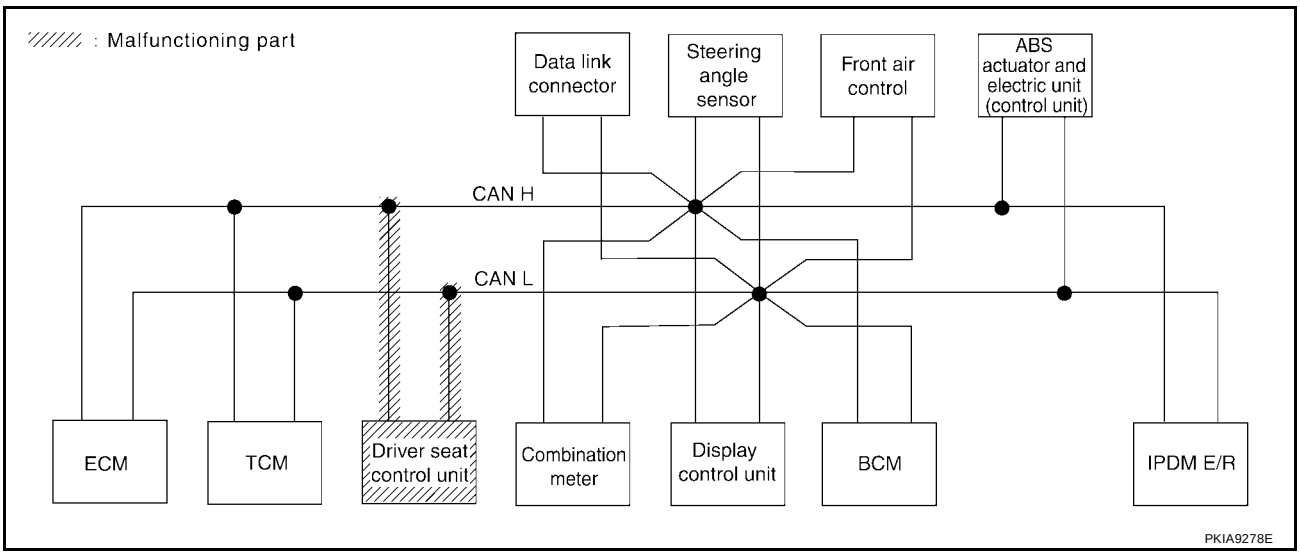
PKIA9277E

Case 6

Check driver seat control unit circuit. Refer to LAN-198, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9179E



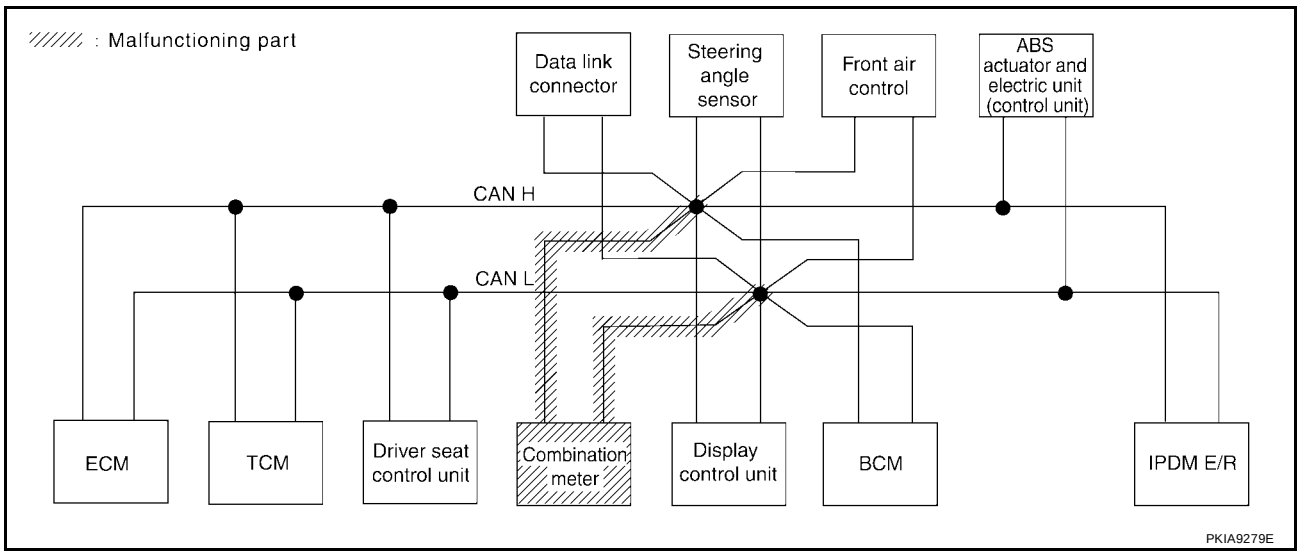
PKIA9278E

Case 7

Check combination meter circuit. Refer to LAN-198, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9180E



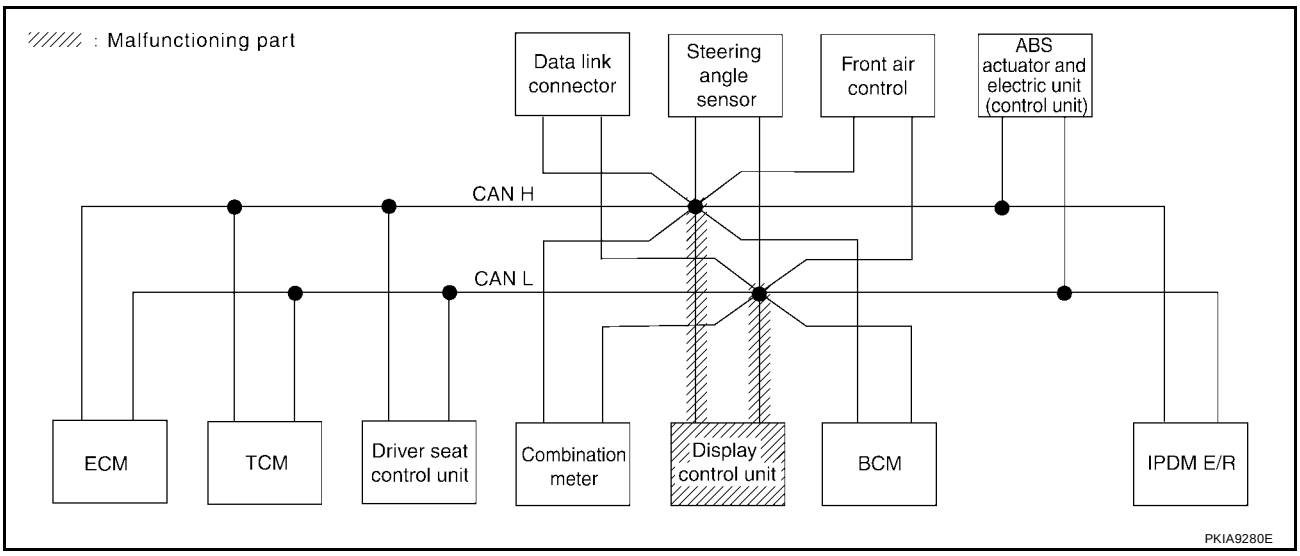
PKIA9279E

Case 8

Check display control unit circuit. Refer to LAN-199, "Display Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9181E



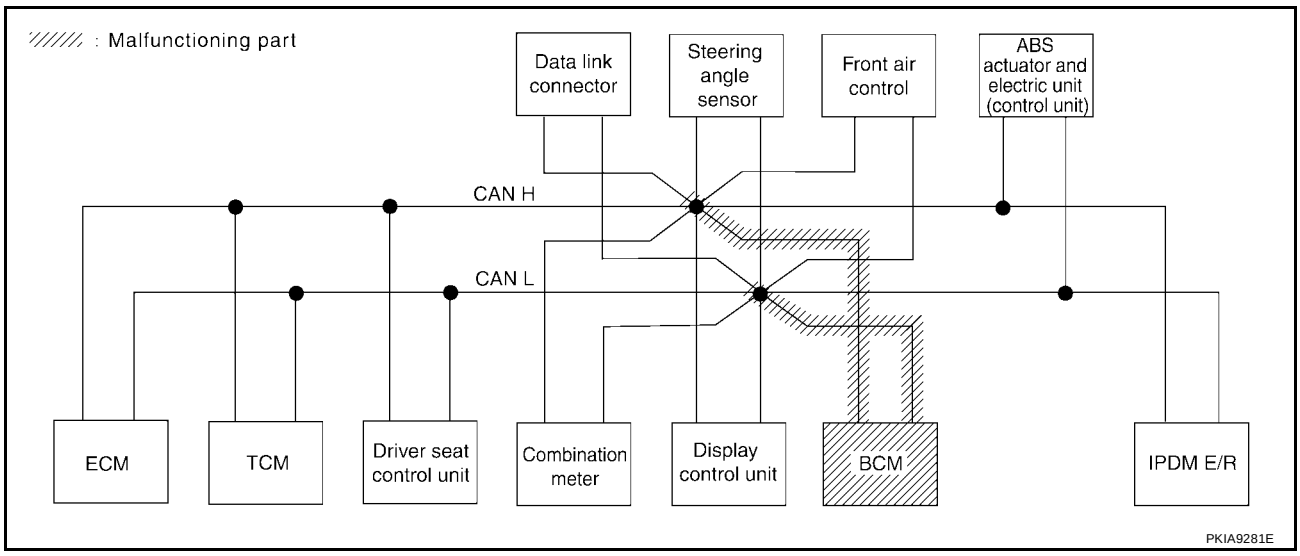
PKIA9280E

Case 9

Check BCM circuit. Refer to LAN-199, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9182E



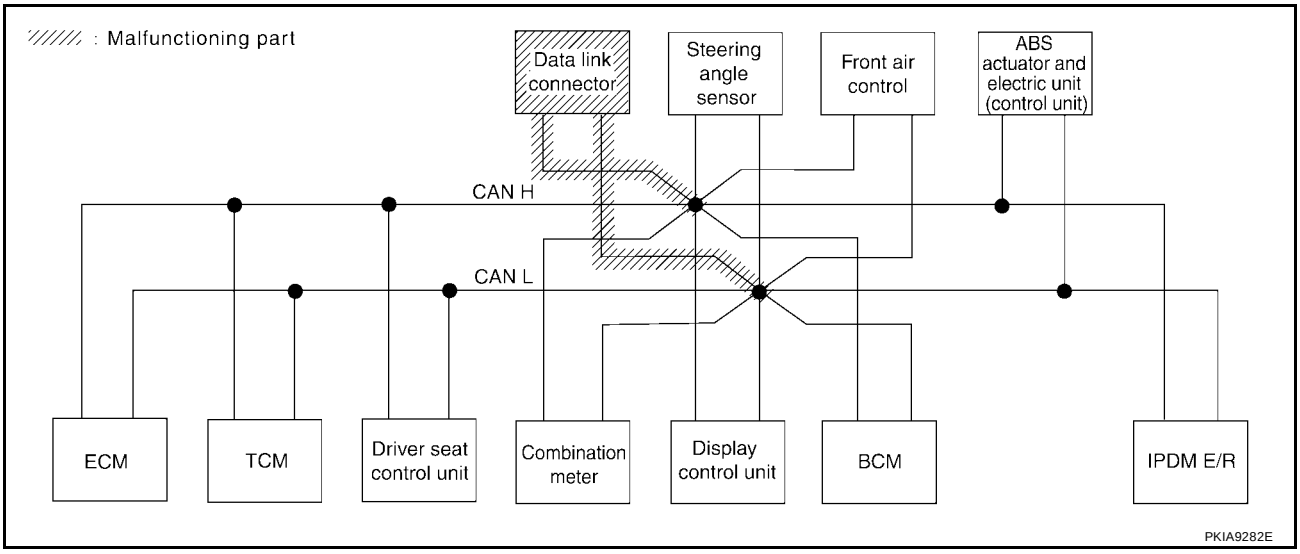
PKIA9281E

Case 10

Check data link connector circuit. Refer to LAN-200, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9183E



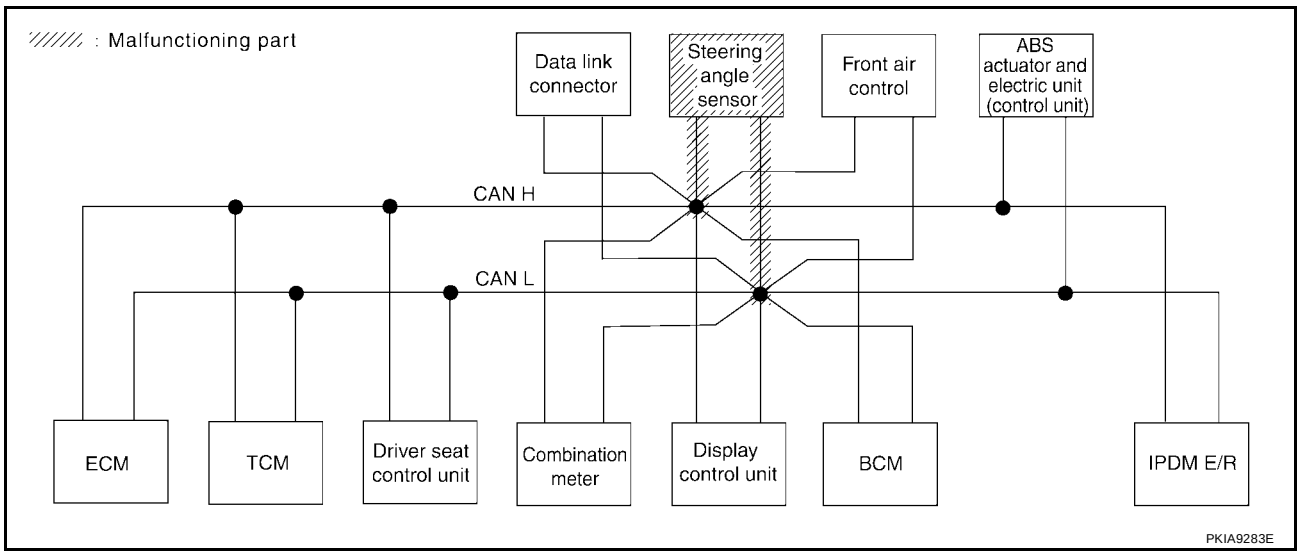
PKIA9282E

Case 11

Check steering angle sensor circuit. Refer to LAN-200, "Steering Angle Sensor Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9184E



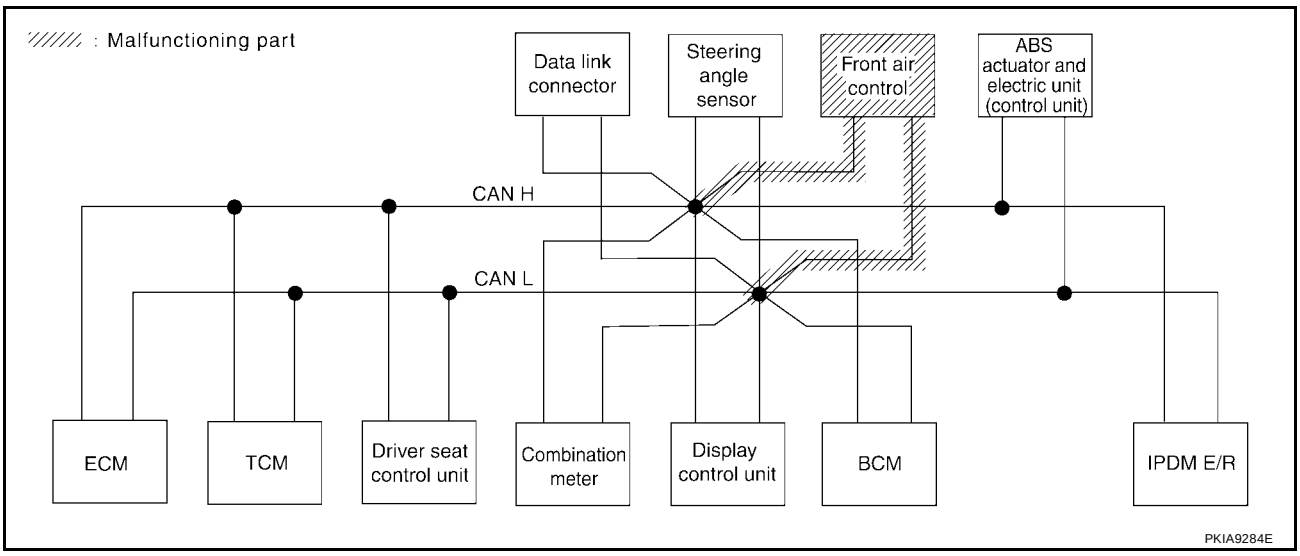
PKIA9283E

Case 12

Check front air control circuit. Refer to LAN-201, "Front Air Control Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9185E



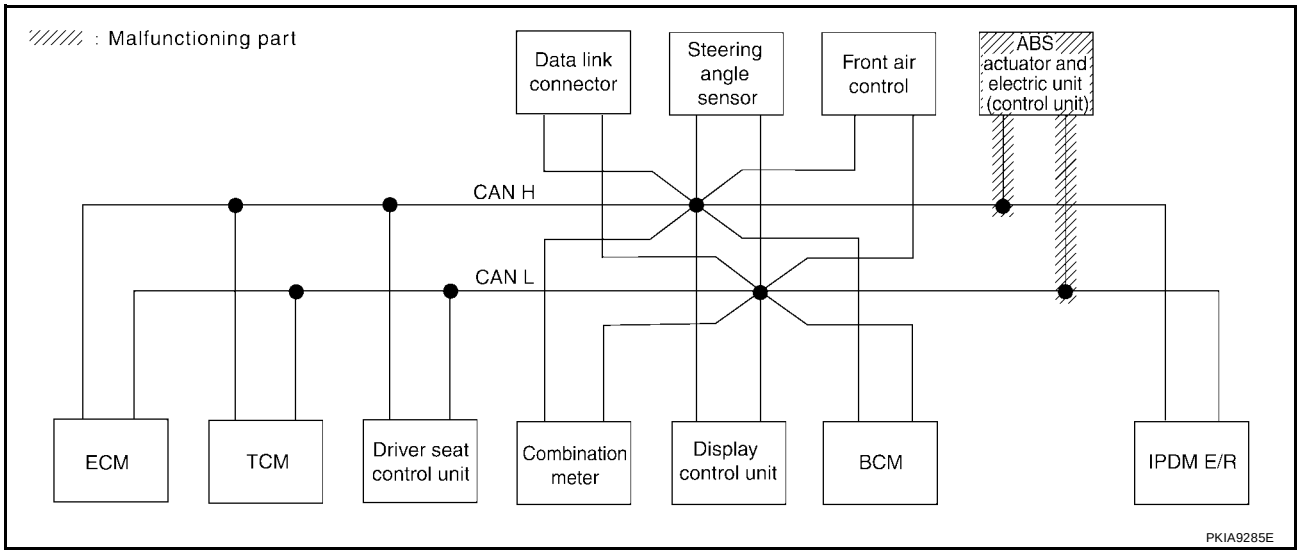
PKIA9284E

Case 13

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-201, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9186E



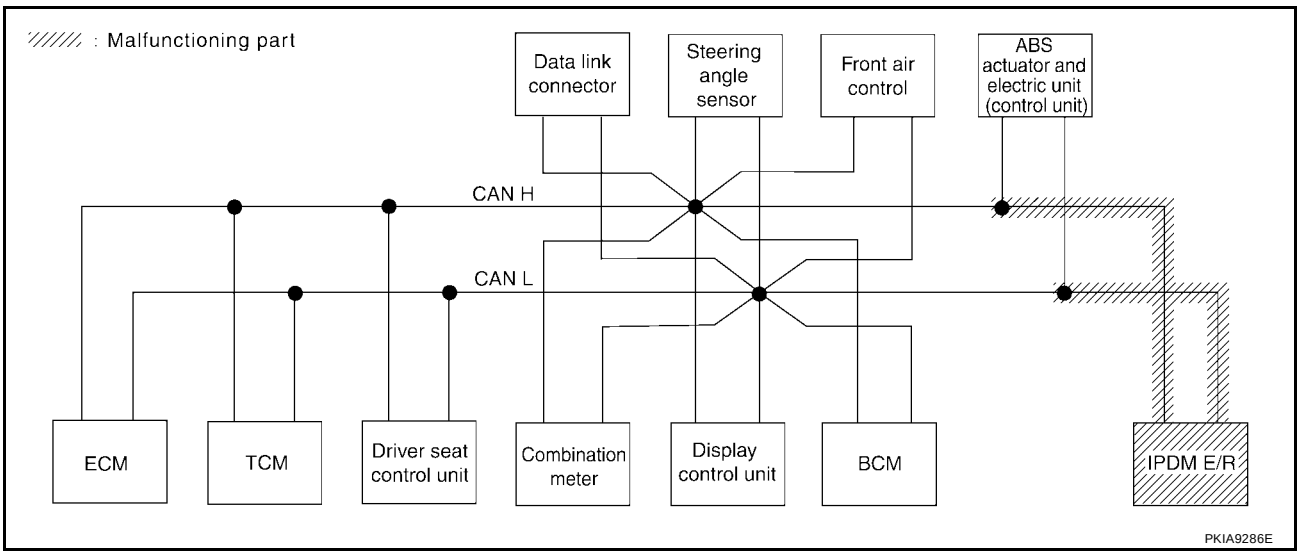
PKIA9285E

Case 14

Check IPDM E/R circuit. Refer to LAN-202, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9187E



PKIA9286E

Case 15

Check CAN communication circuit. Refer to LAN-202, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9188E

Case 16

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-203, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9189E

Case 17

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-203, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM/SEC	STRG	Front air control	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9190E

Circuit Check Between TCM and Driver Seat Control Unit

UKS0023H

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 F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

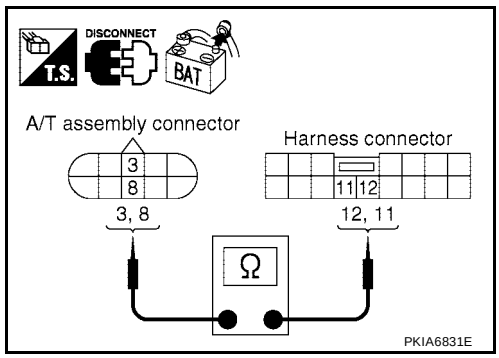
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12 (W), 11 (R).

3 (W) - 12 (W) : Continuity should exist.
8 (R) - 11 (R) : Continuity should exist.



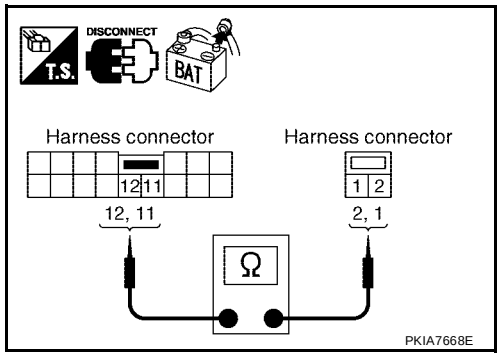
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).

12 (W) - 2 (W) : Continuity should exist.
11 (R) - 1 (R) : Continuity should exist.



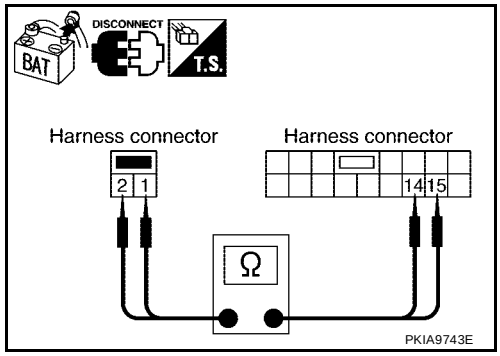
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37.
2. Check continuity between harness connector B75 terminals 2 (W), 1 (R) and harness connector B37 terminals 15 (W), 14 (R).

2 (W) - 15 (W) : Continuity should exist.
1 (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-175, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and Data Link Connector

UKS0023I

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 B69
- Harness connector M40

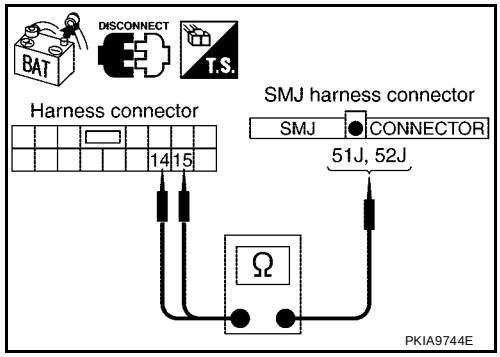
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37 and harness connector B69.
2. Check continuity between harness connector B37 terminals 15 (W), 14 (R) and harness connector B69 terminals 51J (W), 52J (R).

15 (W) - 51J (W) : Continuity should exist.
14 (R) - 52J (R) : Continuity should exist.



OK or NG

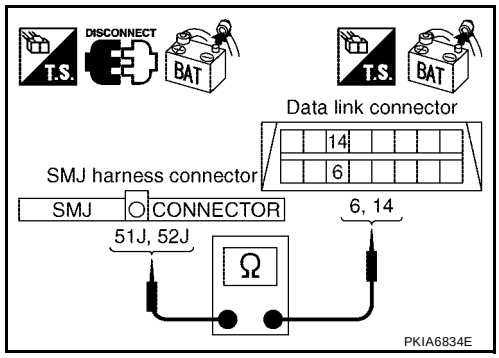
OK >> GO TO 3.
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

51J (W) - 6 (W) : Continuity should exist.

52J (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-175, "Work Flow" .

NG >> Repair harness.

Circuit Check Between Data Link Connector and IPDM E/R

UKS0023J

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 M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

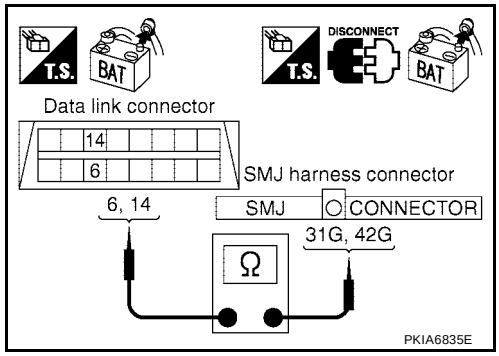
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).

6 (W) - 31G (W) : Continuity should exist.

14 (R) - 42G (R) : Continuity should exist.



OK or NG

OK >> GO TO 3.

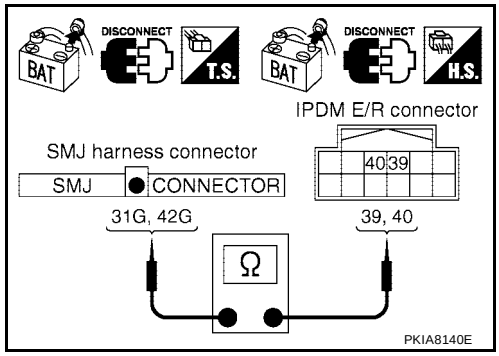
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).

31G (W) - 39 (W) : Continuity should exist.

42G (R) - 40 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-175, "Work Flow" .

NG >> Repair harness.

ECM Circuit Check

UKS0023K

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 E19
- Harness connector F33

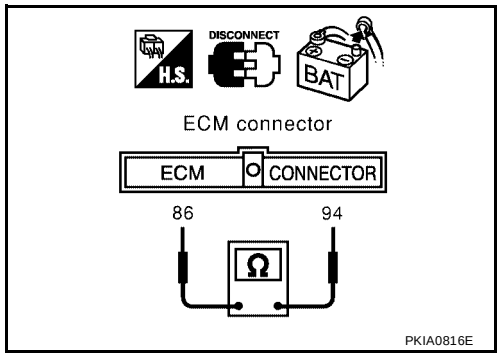
OK or NG

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 E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R) : Approx. 108 - 132Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and A/T assembly.

TCM Circuit Check

UKS0023L

1. CHECK CONNECTOR

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

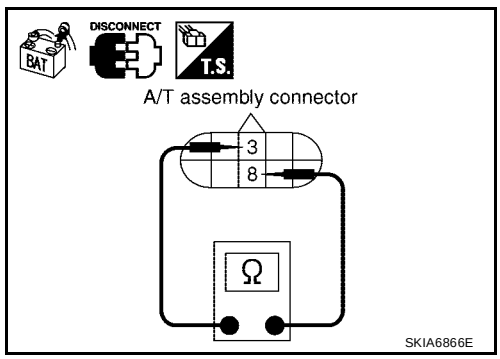
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Driver Seat Control Unit Circuit Check

UKS001FB

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 unit side and harness side).

- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

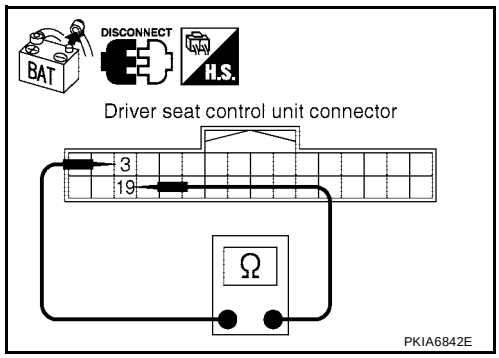
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect driver seat control unit connector.
2. Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R).

3 (W) - 19 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B69.

Combination Meter Circuit Check

UKS0023M

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).

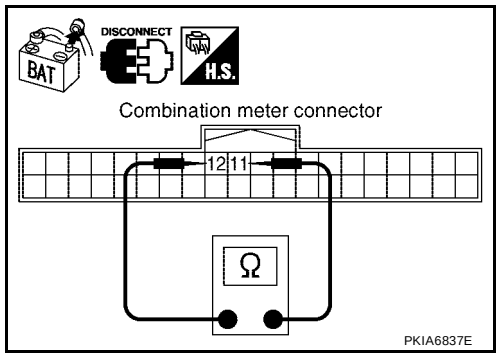
OK or NG

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 M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R) : Approx. 54 - 66Ω



OK or NG

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

Display Control Unit Circuit Check

UKS0023N

1. CHECK CONNECTOR

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

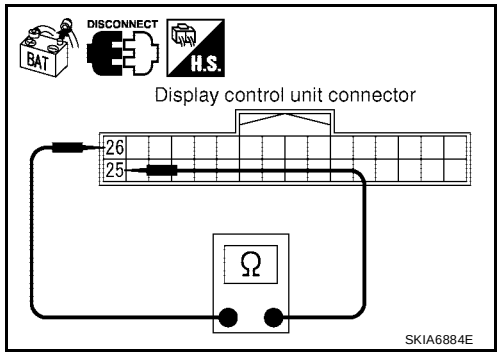
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect display control unit connector.
2. Check resistance between display control unit harness connector M95 terminals 25 (W) and 26 (R).

25 (W) - 26 (R) : Approx. 54 - 66Ω



OK or NG

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

BCM Circuit Check

UKS0023O

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).

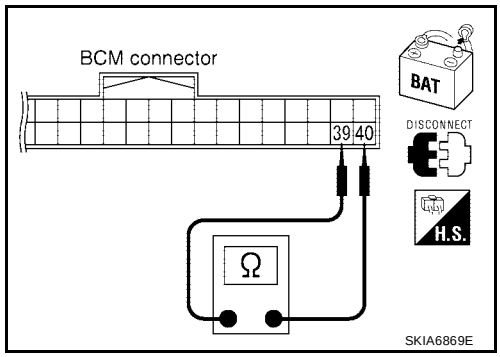
OK or NG

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 M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS0023P

1. CHECK CONNECTOR

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

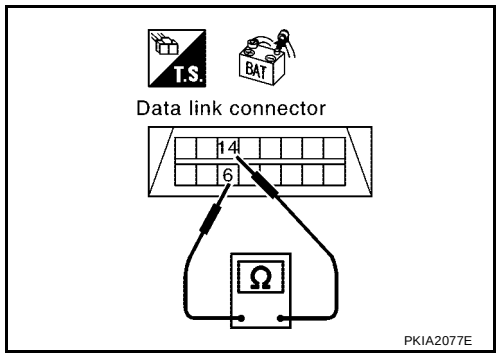
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-175, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Steering Angle Sensor Circuit Check

UKS0023Q

1. CHECK CONNECTOR

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

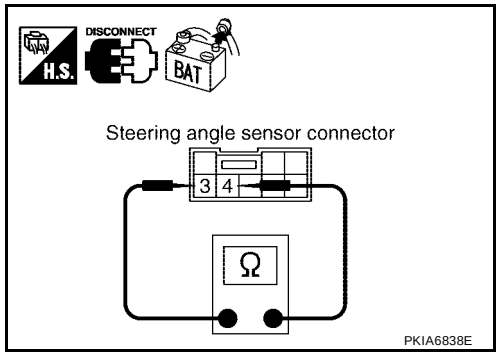
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M47 terminals 3 (W) and 4 (R).

3 (W) - 4 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor and data link connector.

Front Air Control Circuit Check

UKS0023R

1. CHECK CONNECTOR

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

OK or NG

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

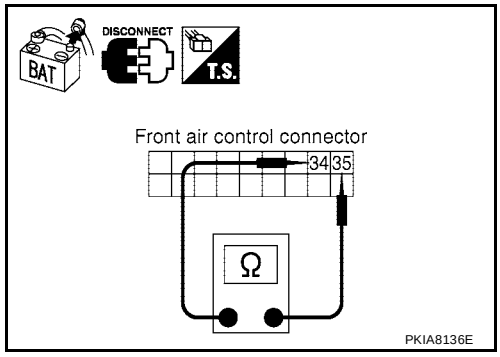
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 34 (W) and 35 (R).

34 (W) - 35 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace front air control.
NG >> Repair harness between front air control and data link connector.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS0023S

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.

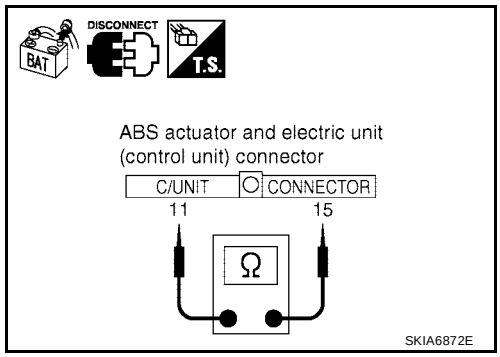
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R) : 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 harness connector E152.



IPDM E/R Circuit Check

UKS0023T

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).

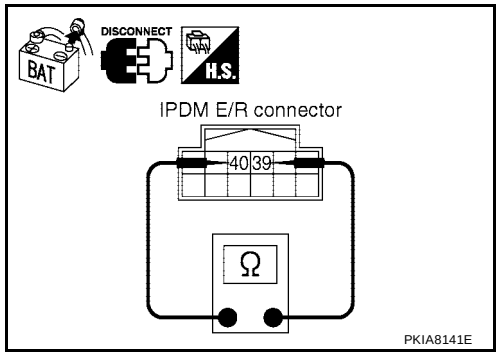
OK or NG

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 E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 108 - 132Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS0023U

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- A/T assembly
- Driver seat control unit
- Combination meter
- Display control unit
- BCM
- Steering angle sensor
- Front air control
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

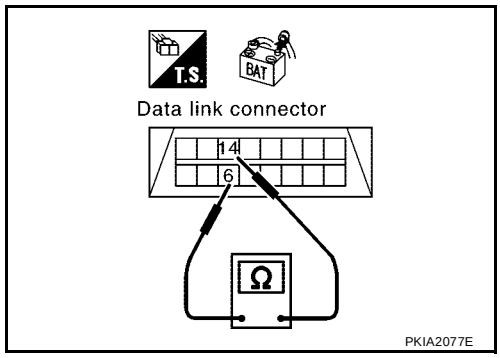
2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

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

OK or NG

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



3. CHECK HARNESS FOR SHORT CIRCUIT

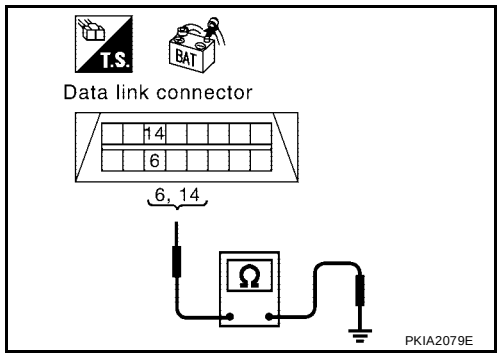
Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

6 (W) - Ground : Continuity should not exist.

14 (R) - Ground : Continuity should not exist.

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-203, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

UKS0023V

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

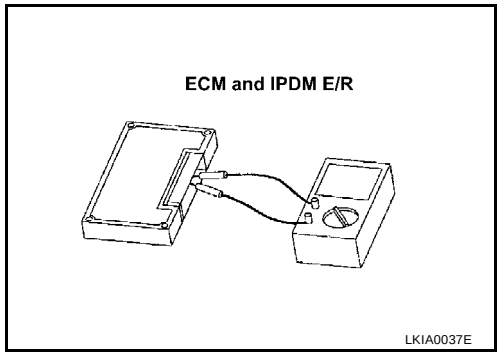
Component Inspection

UKS0023W

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 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 7)

PFP:23710

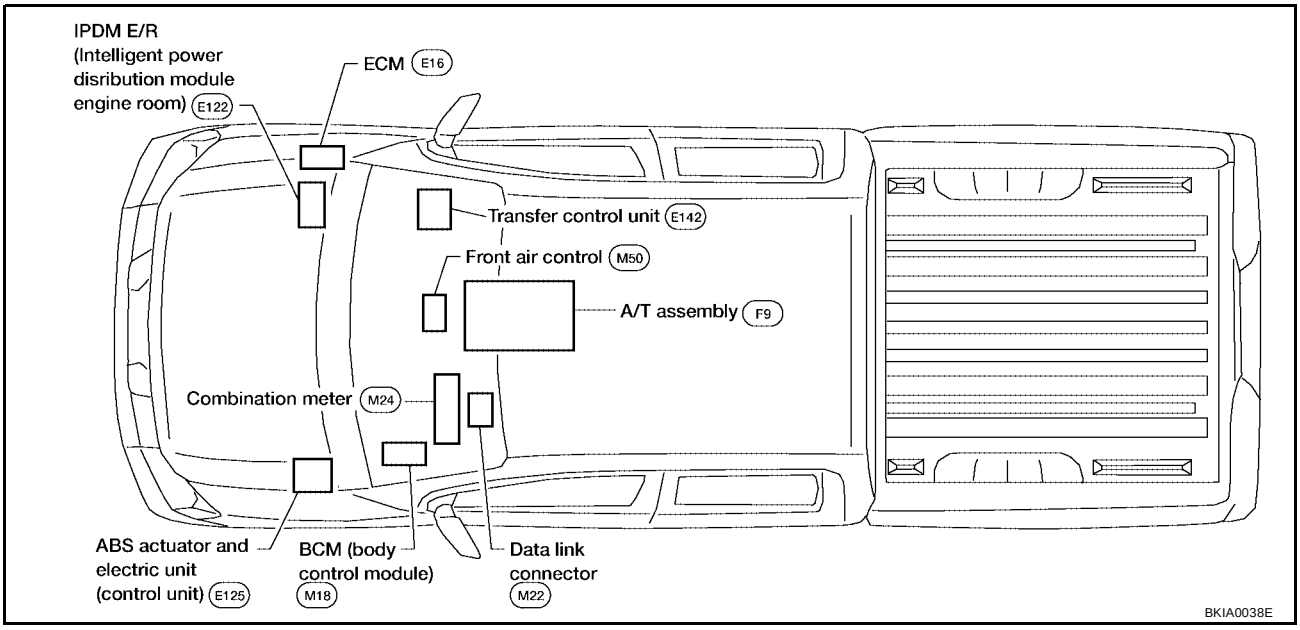
System Description

UKS001FN

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.

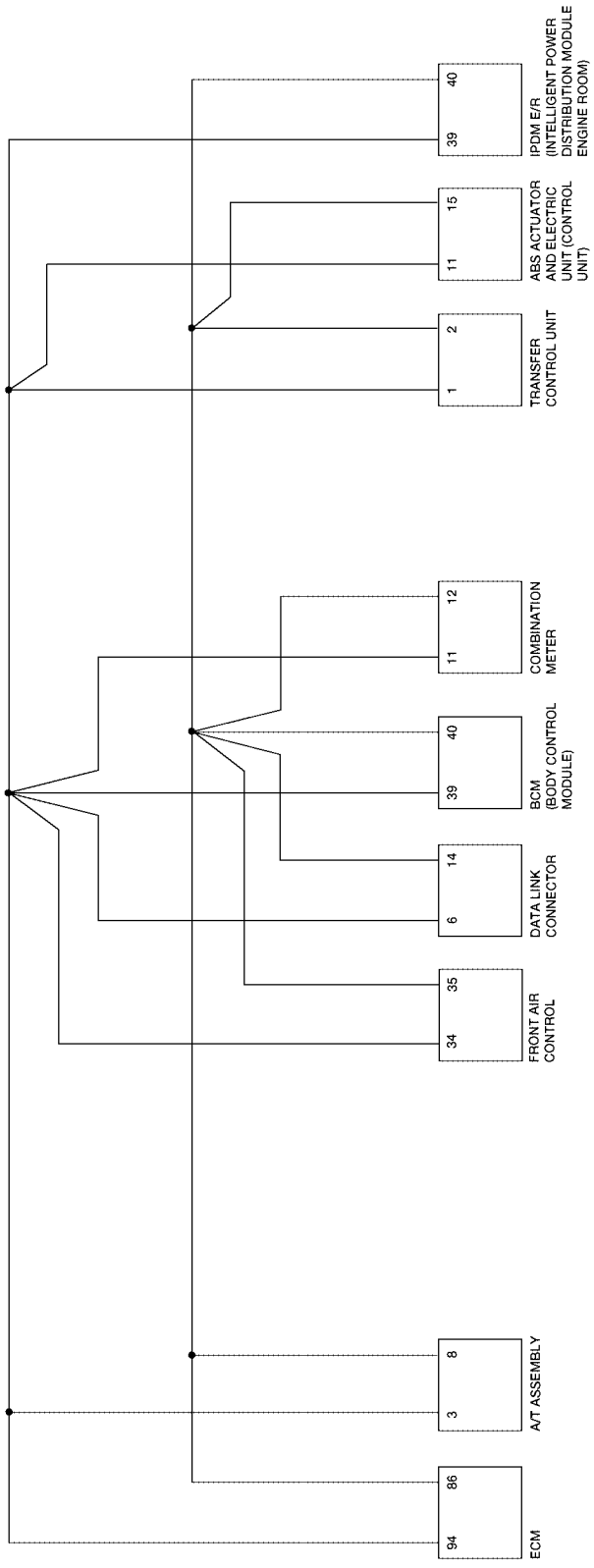
Component Parts and Harness Connector Location

UKS001FO



Schematic

UKS001FP



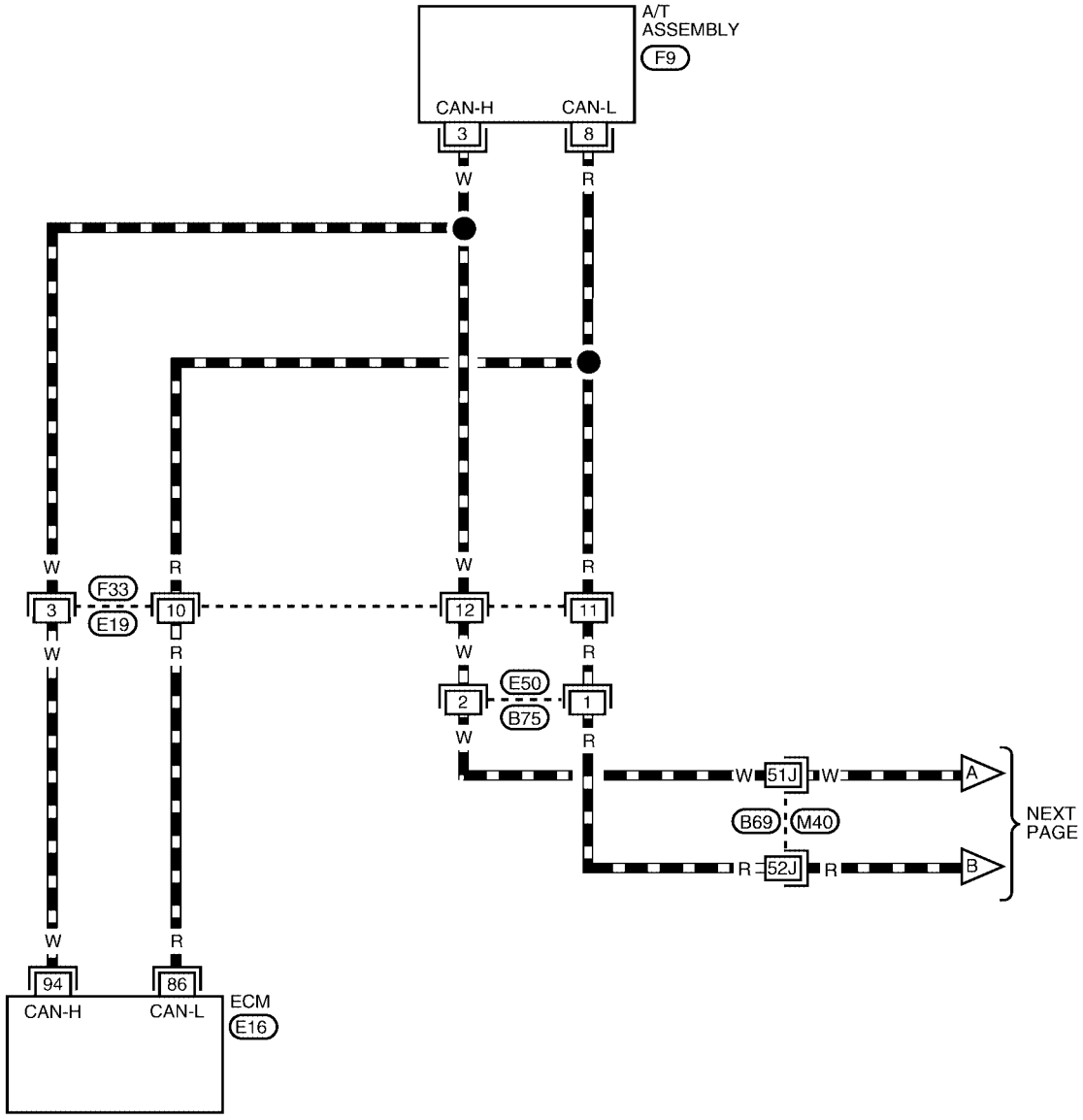
BKWA0142E

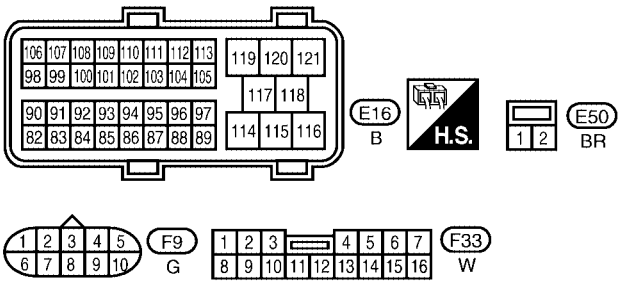
Wiring Diagram - CAN -

UKS001FQ

LAN-CAN-19

: DATA LINE

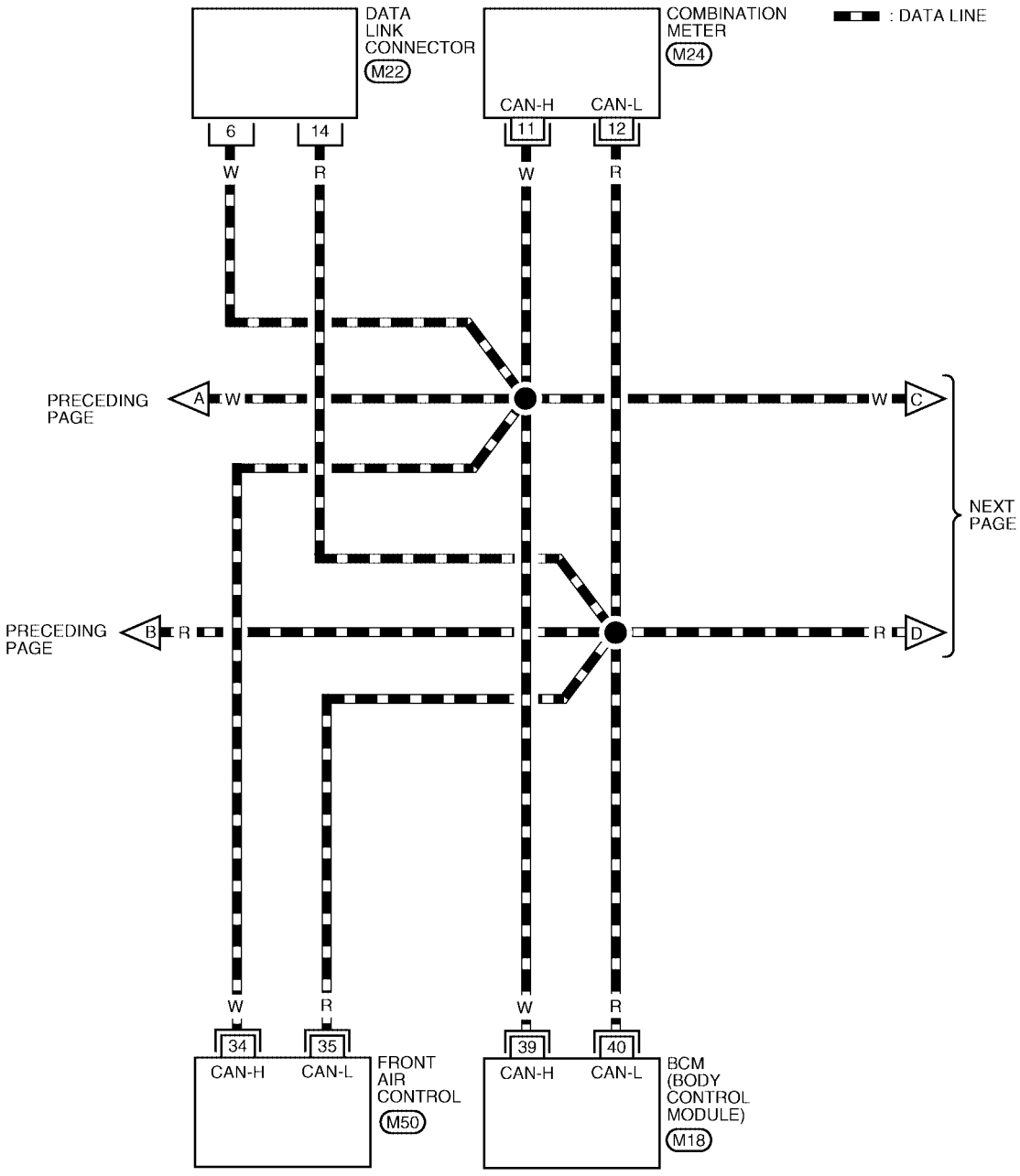


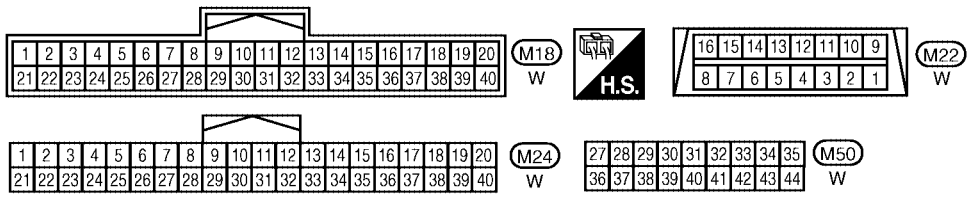


REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

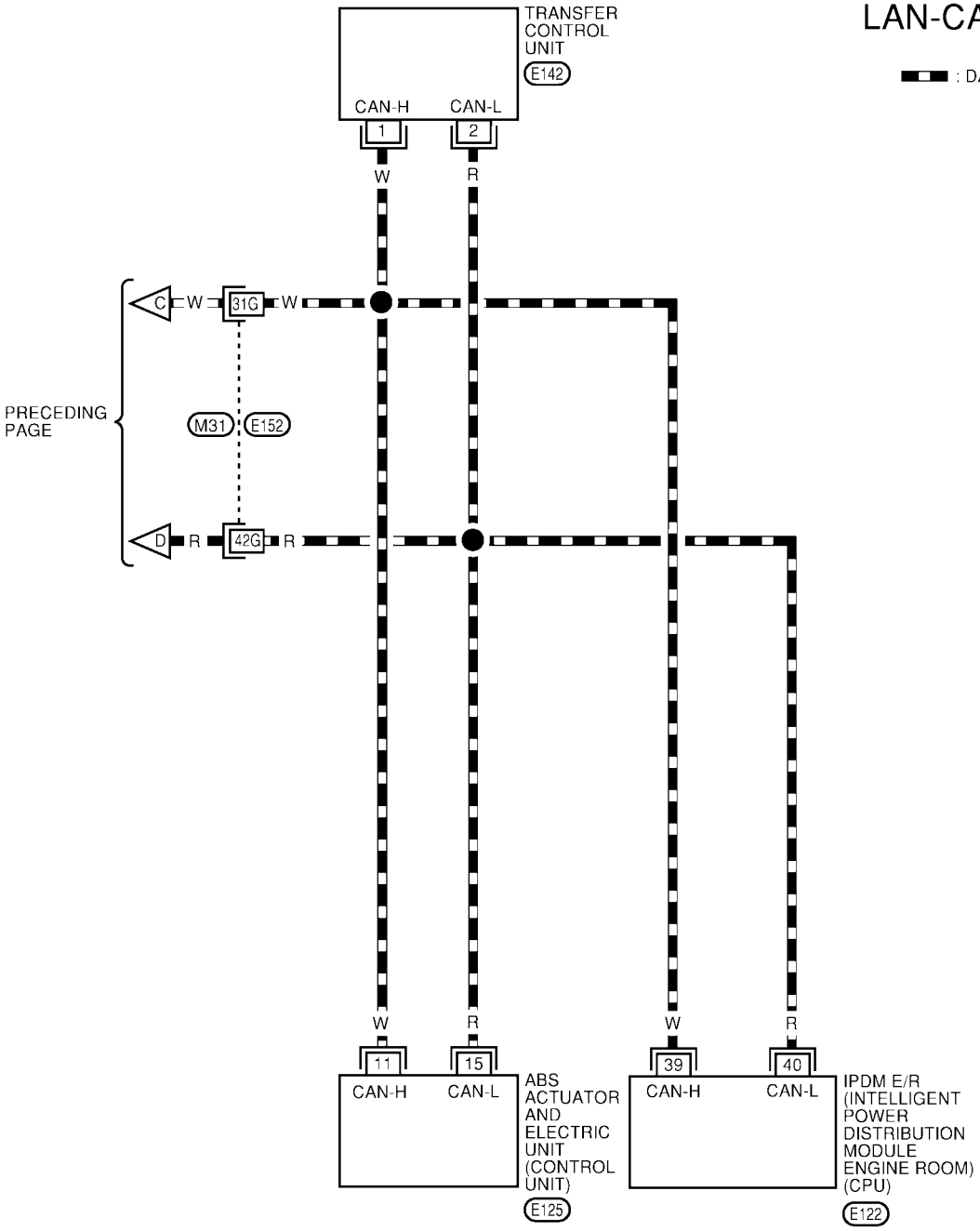
BKWA0046E

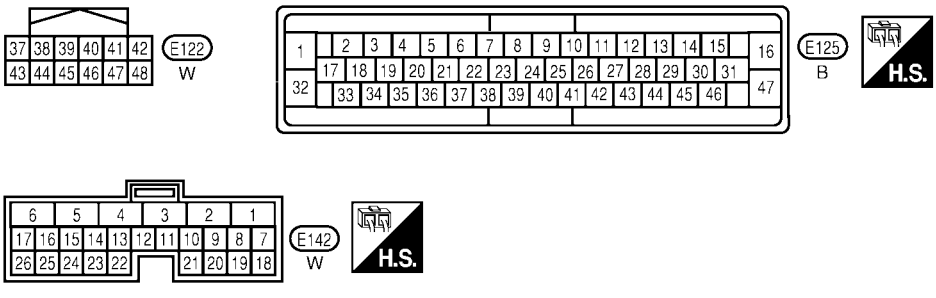
LAN-CAN-20





BKWA0143E





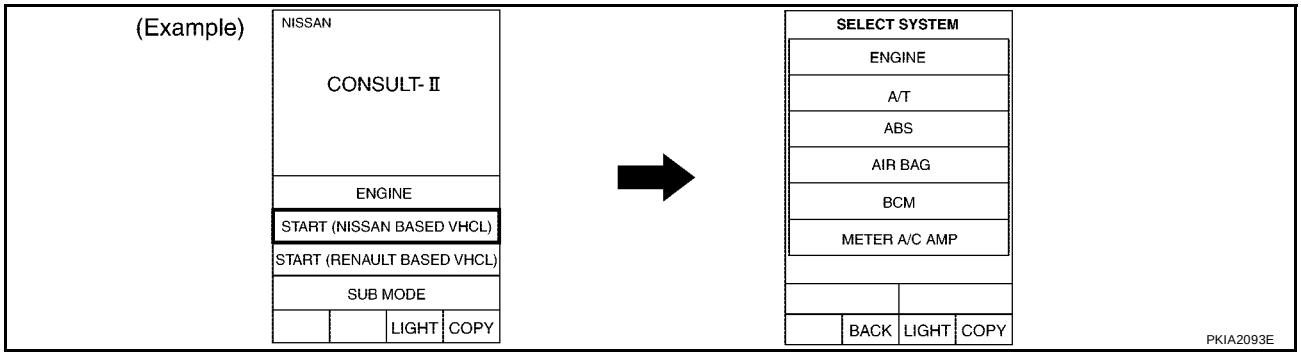
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0048E

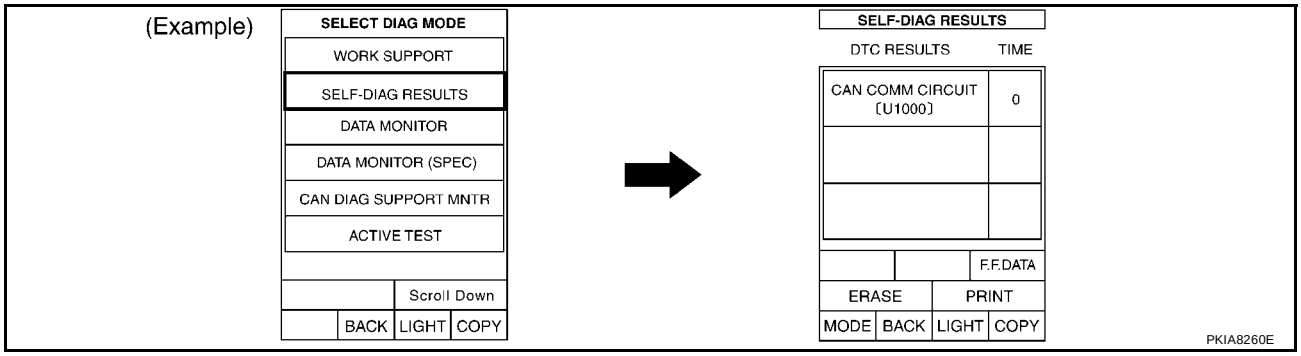
Work Flow

UKS001FR

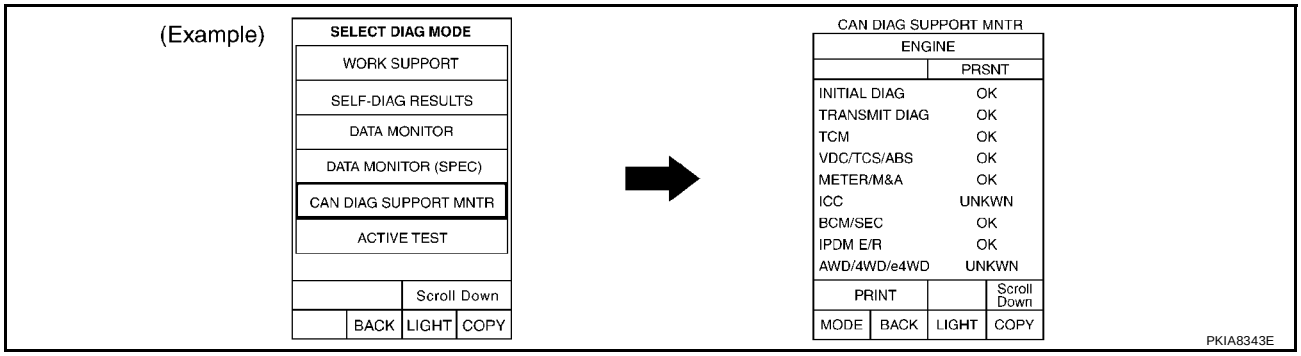
1. When there are no indications of “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “A/T”, “BCM”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “BCM”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-210, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-210, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “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 the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-212, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Check sheet table

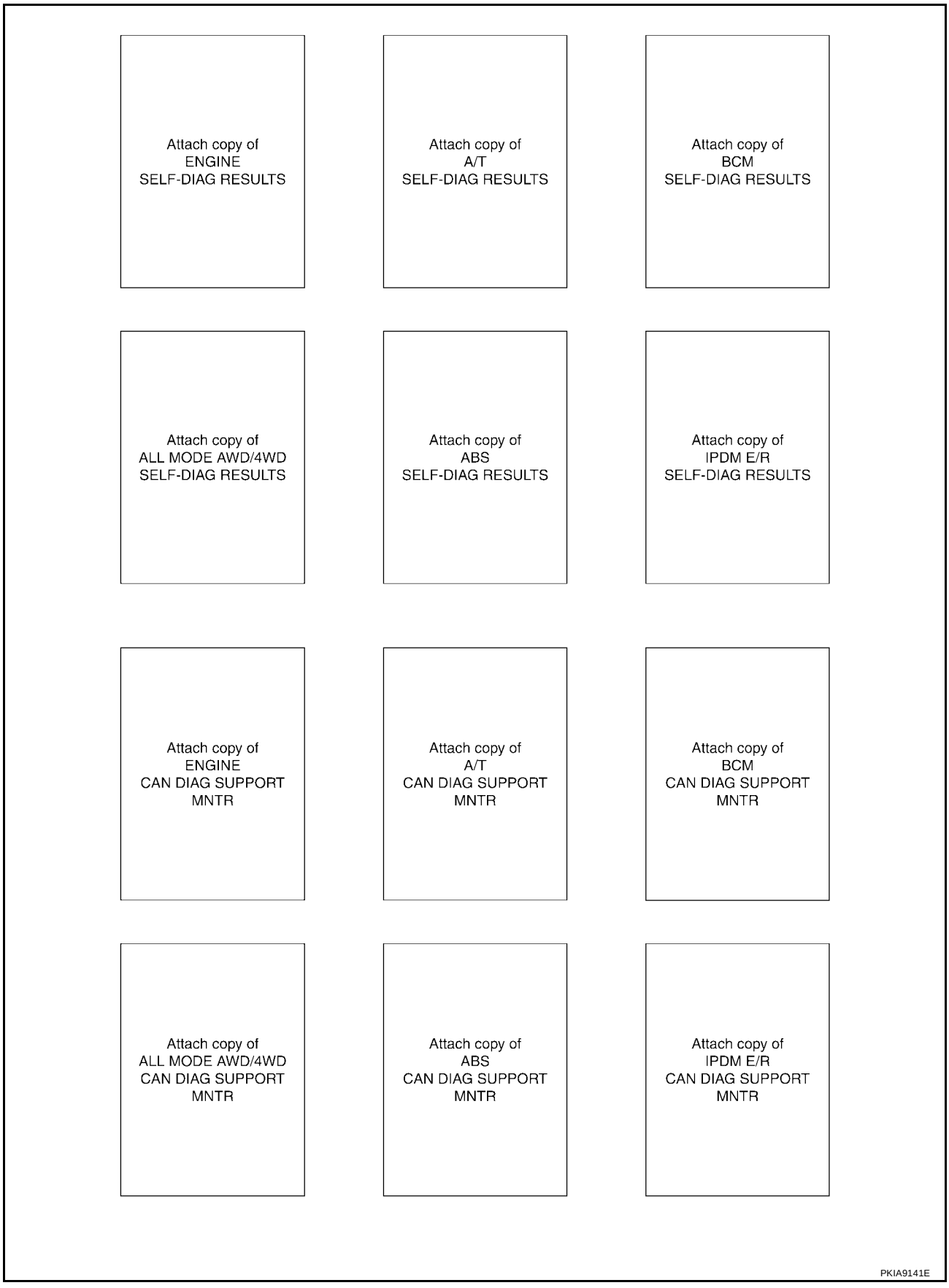
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIA9329E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ALL MODE AWD/4WD
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA9141E

CHECK SHEET RESULTS (EXAMPLE)

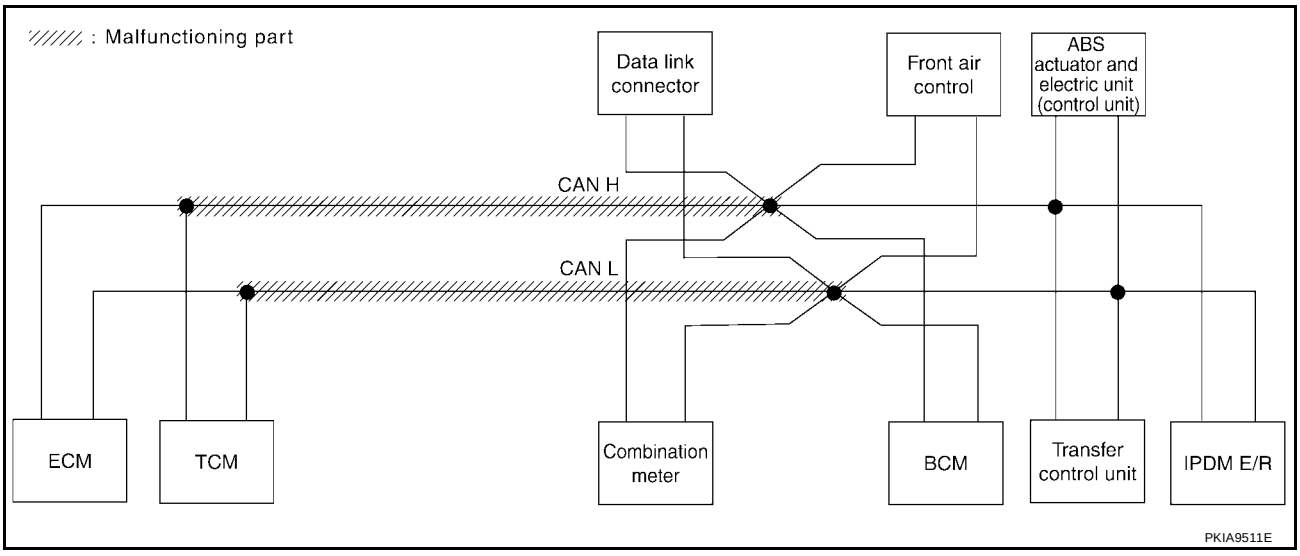
NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-223, "Circuit Check Between TCM and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	—	UNKWN ✓	—	—
BCM	No indication	NG	UNKWN	UNKWN ✓	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN ✓	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN ✓	—	—	UNKWN	—	—	—

PKIA9382E

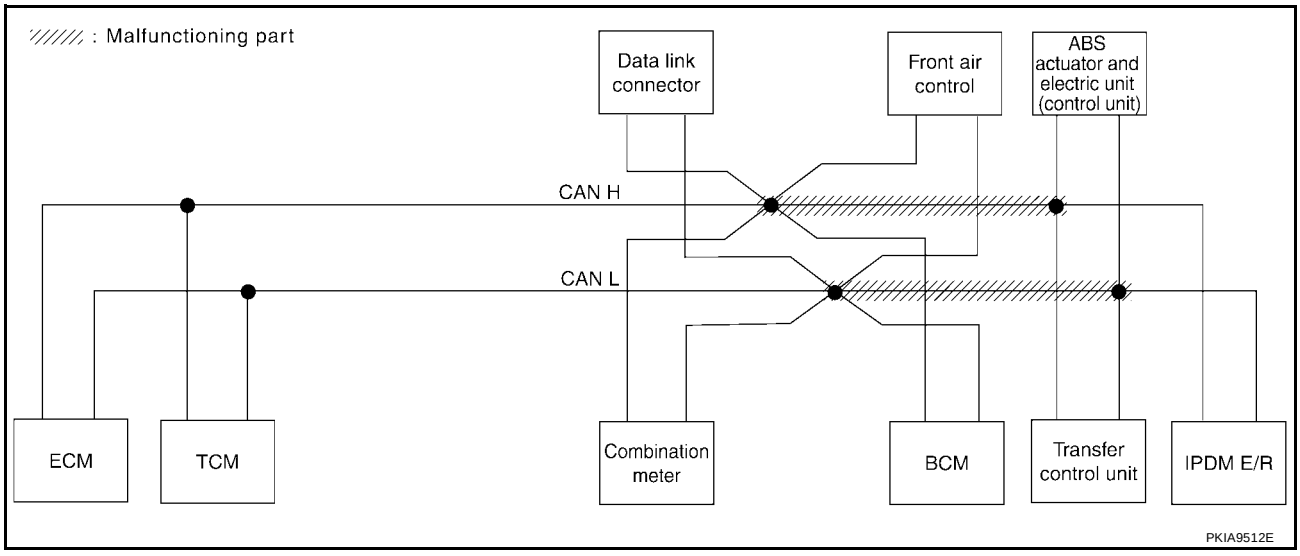


Case 2

Check harness between data link connector and IPDM E/R. Refer to LAN-224, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9383E

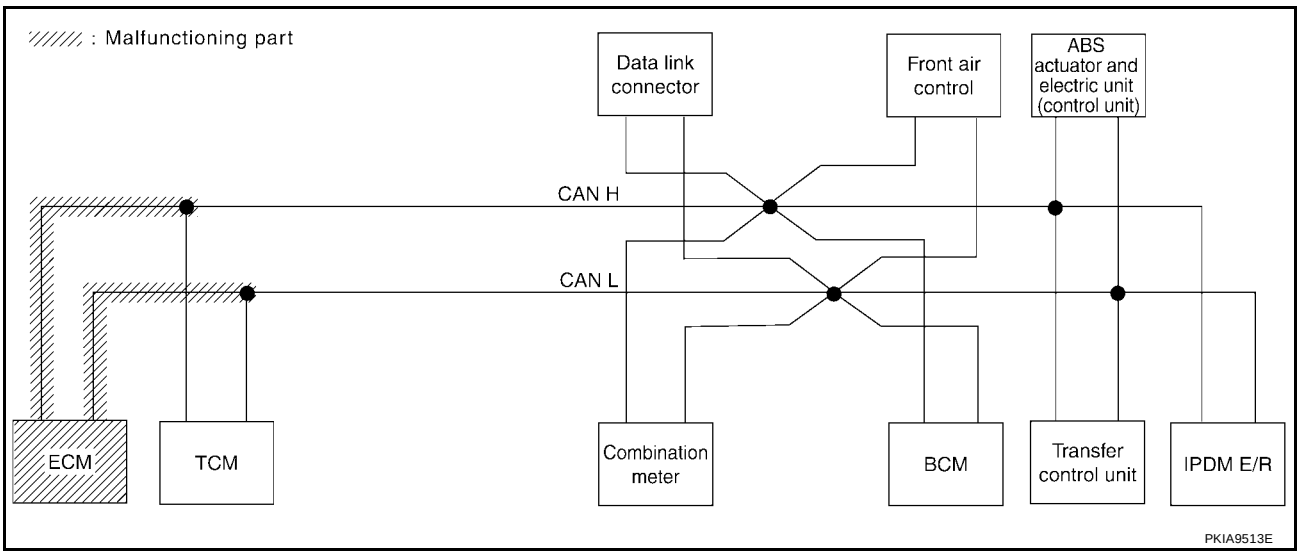


Case 3

Check ECM circuit. Refer to LAN-225, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9384E

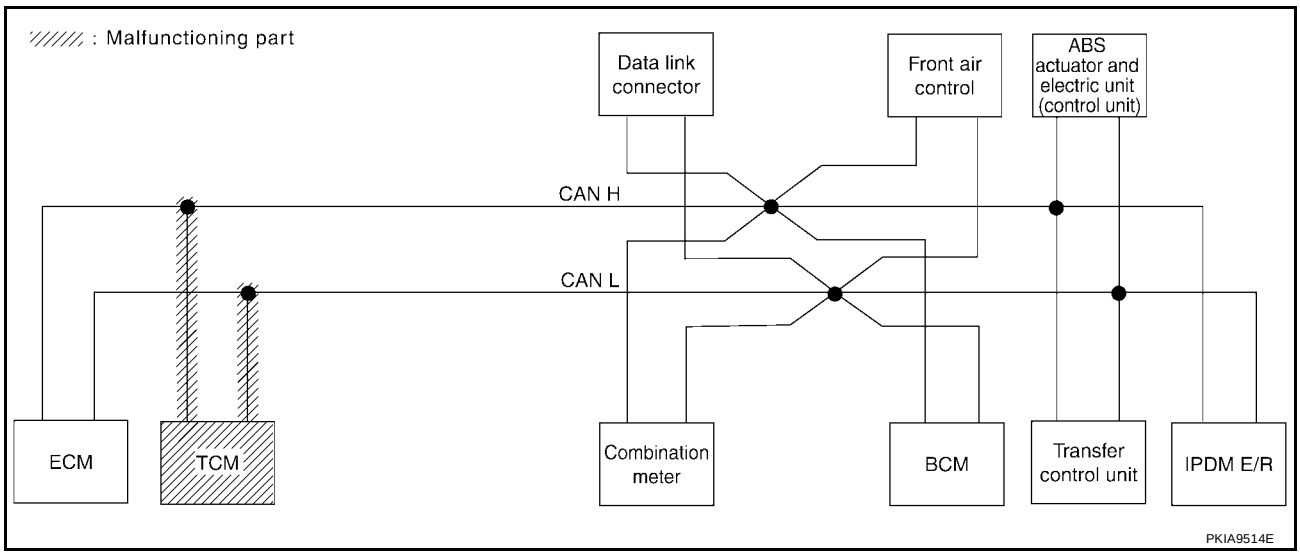


Case 4

Check TCM circuit. Refer to LAN-226, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN ✓	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	UNKWN ✓	—	UNKWN ✓	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN ✓	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9385E



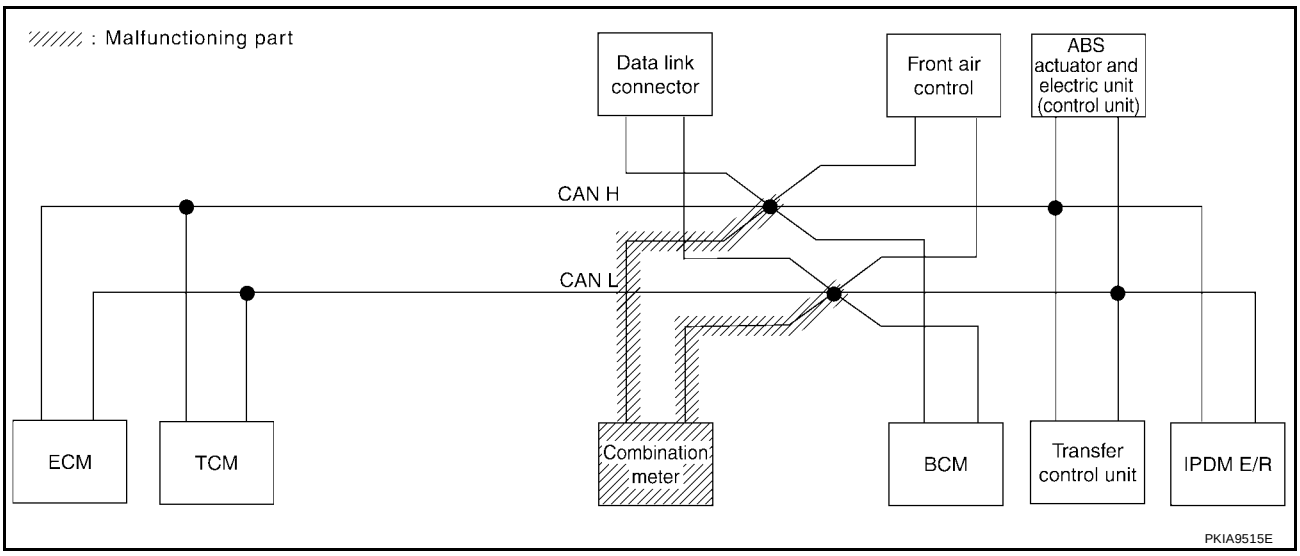
PKIA9514E

Case 5

Check combination meter circuit. Refer to LAN-226, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9386E



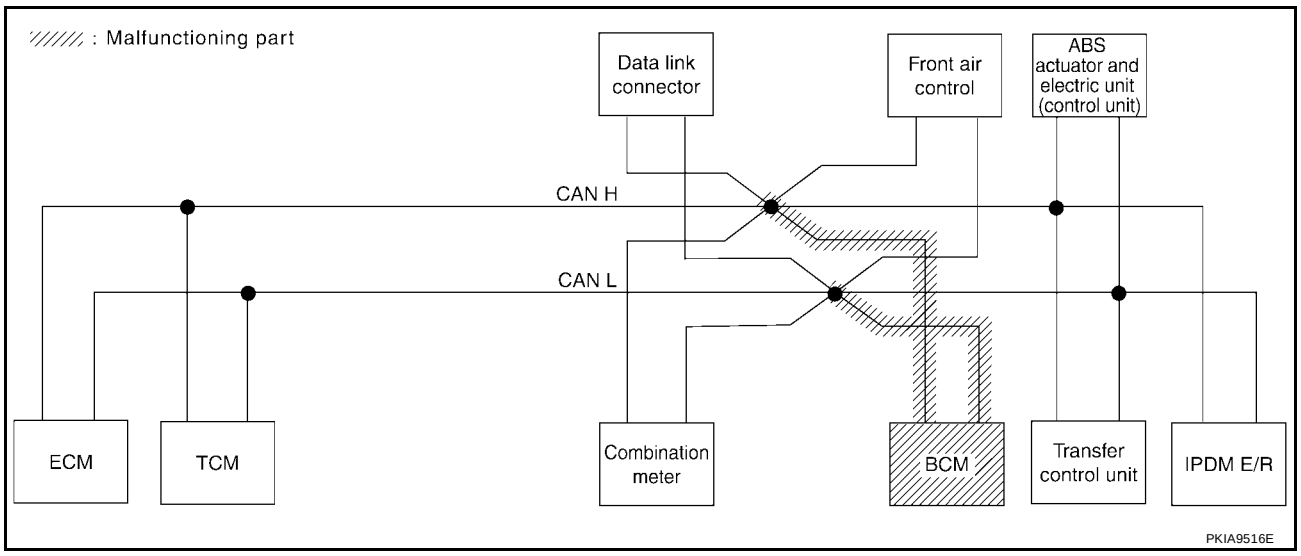
PKIA9515E

Case 6

Check BCM circuit. Refer to LAN-227, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9387E



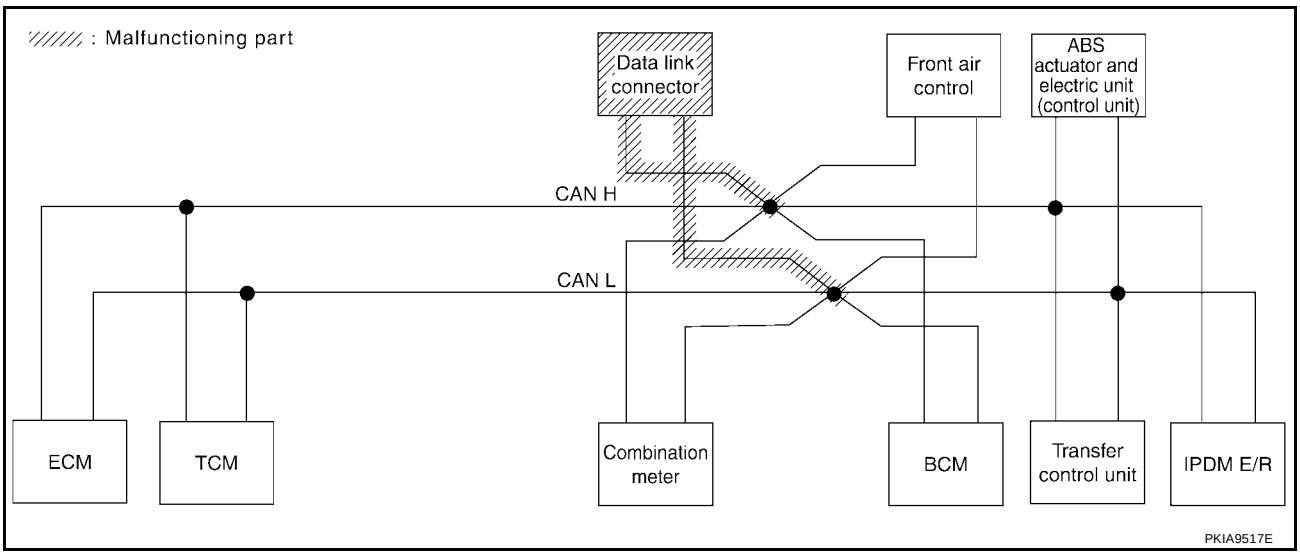
PKIA9516E

Case 7

Check data link connector circuit. Refer to LAN-227, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9388E

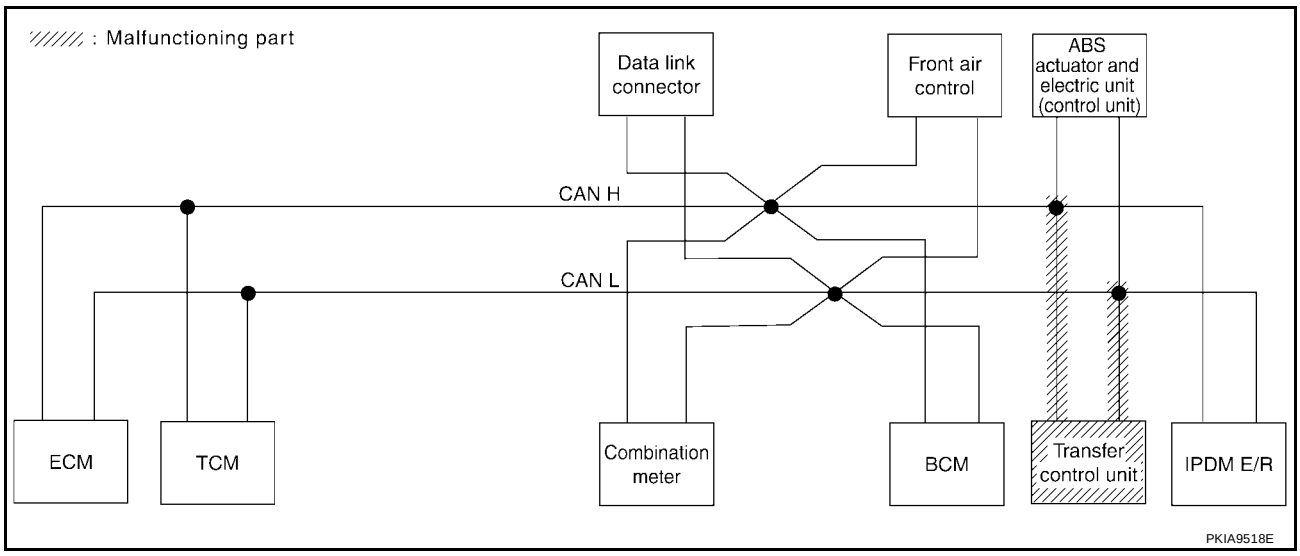


Case 8

Check transfer control unit circuit. Refer to LAN-228, "Transfer Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN ✓	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN ✓	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	—	—	UNKWN ✓	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9389E



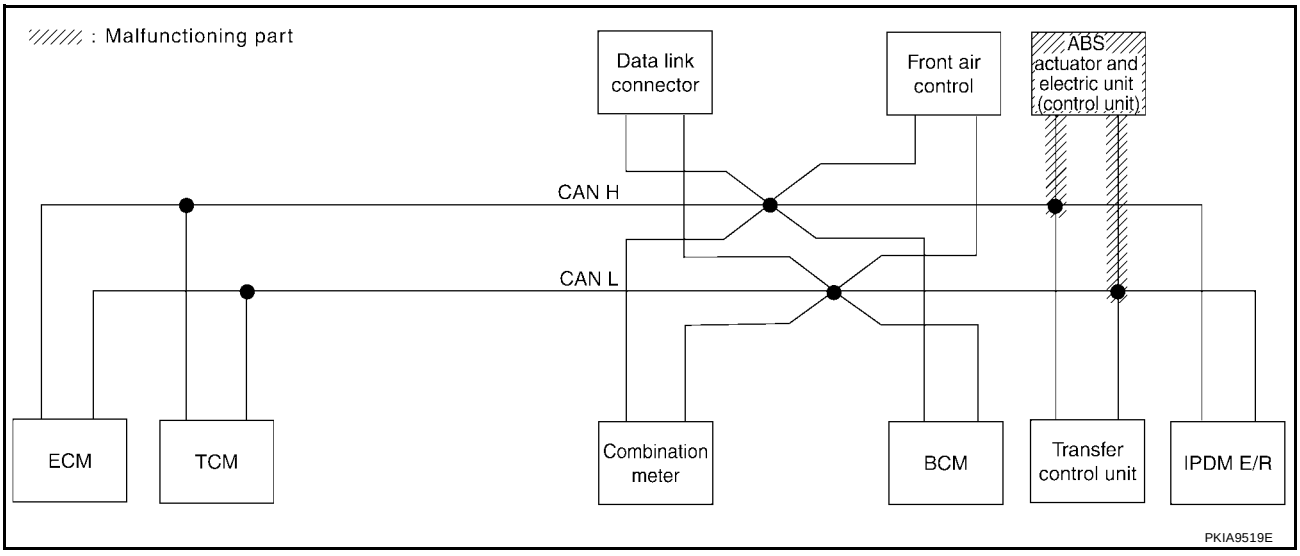
PKIA9518E

Case 9

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-228, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9390E

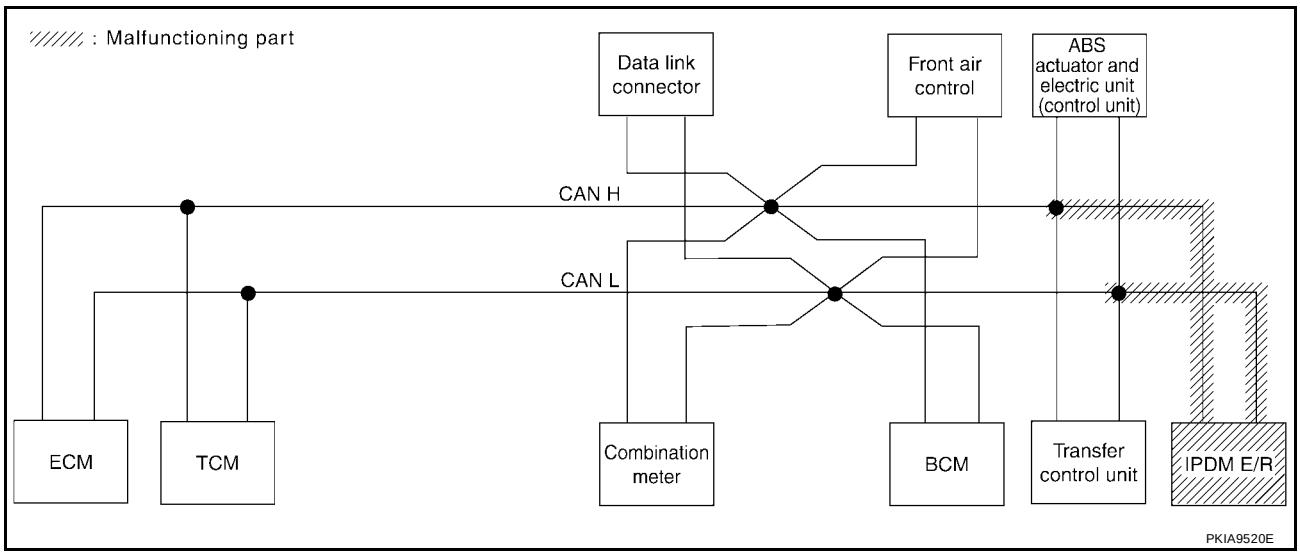


Case 10

Check IPDM E/R circuit. Refer to LAN-229, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN ✓
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9391E



PKIA9520E

Case 11

Check CAN communication circuit. Refer to LAN-230, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9392E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-230, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9393E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-230, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	–	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	UNKWN	–	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–

PKIA9394E

Circuit Check Between TCM and Data Link Connector

UKS001FS

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 F33
- Harness connector E19
- Harness connector E50
- Harness connector B75
- Harness connector B69
- Harness connector M40

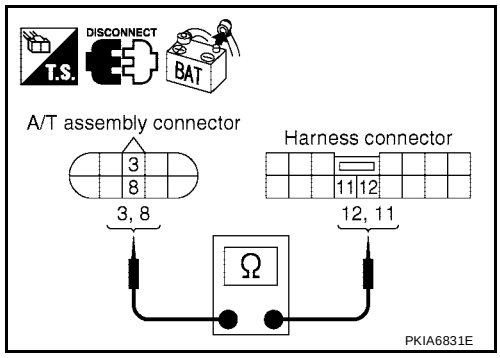
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12 (W), 11 (R).

3 (W) - 12 (W) : Continuity should exist.
8 (R) - 11 (R) : Continuity should exist.



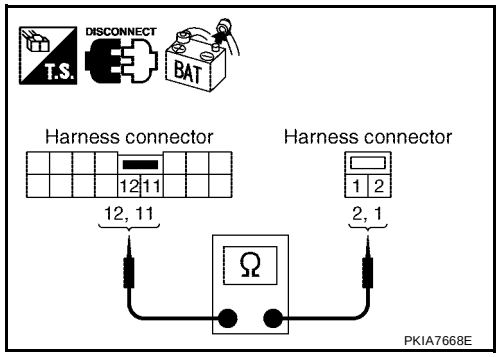
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).

12 (W) - 2 (W) : Continuity should exist.
11 (R) - 1 (R) : Continuity should exist.



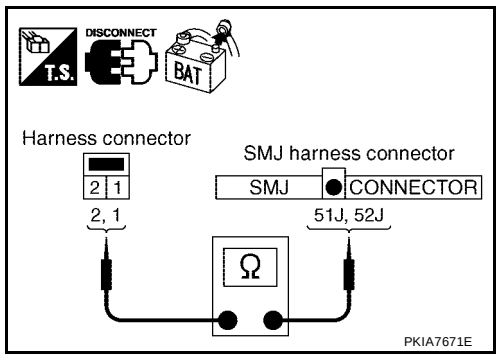
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B69.
2. Check continuity between harness connector B75 terminals 2 (W), 1 (R) and harness connector B69 terminals 51J (W), 52J (R).

2 (W) - 51J (W) : Continuity should exist.
1 (R) - 52J (R) : Continuity should exist.



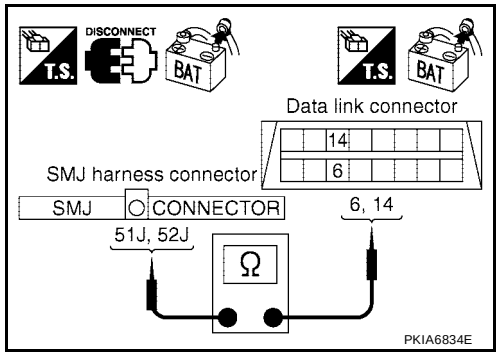
OK or NG

OK >> GO TO 5.
NG >> Repair harness.

5. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

51J (W) - 6 (W) : Continuity should exist.
52J (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-209, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Data Link Connector and IPDM E/R

UKS001FT

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 M31
- Harness connector E152

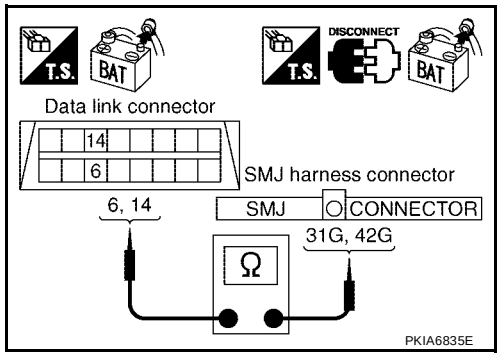
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).

6 (W) - 31G (W) : Continuity should exist.
14 (R) - 42G (R) : Continuity should exist.



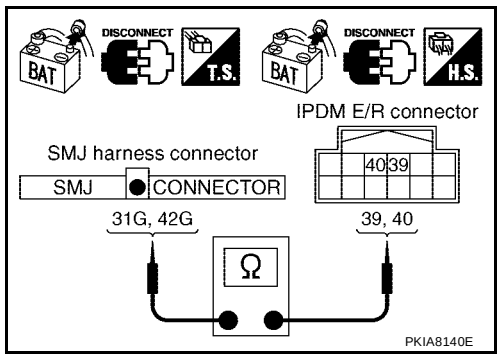
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).

31G (W) - 39 (W) : Continuity should exist.
42G (R) - 40 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-209, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS001FU

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 E19
- Harness connector F33

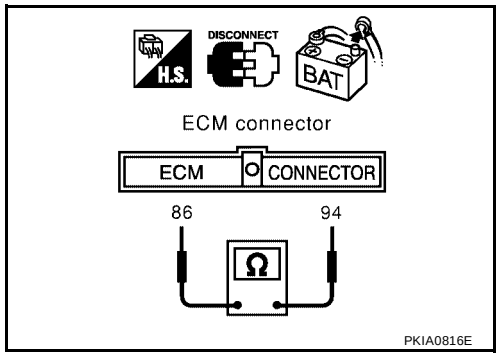
OK or NG

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 E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R) : Approx. 108 - 132Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and A/T assembly.

TCM Circuit Check

UKS001FV

1. CHECK CONNECTOR

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

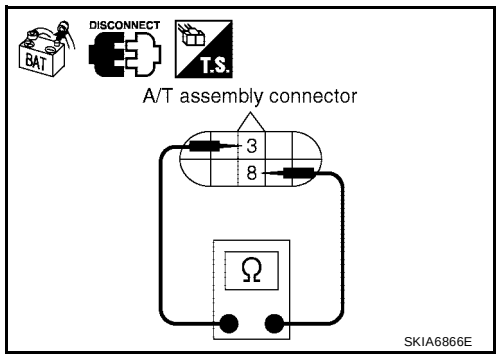
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Combination Meter Circuit Check

UKS001FW

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.

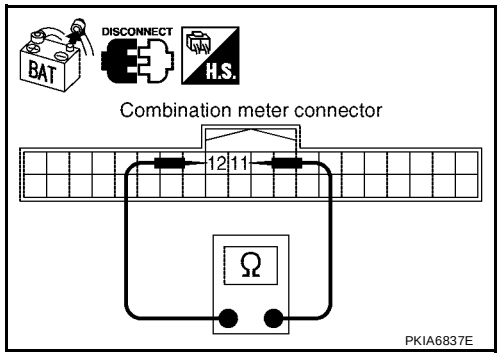
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R) : Approx. 54 - 66Ω

OK or NG

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



BCM Circuit Check

UKS001FX

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.

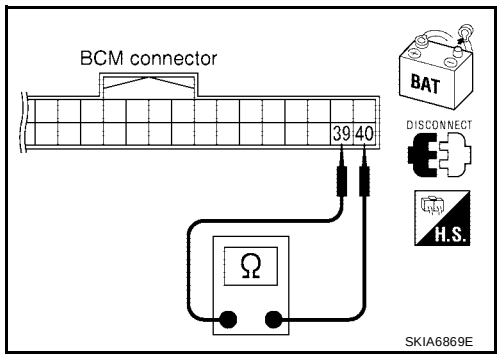
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.



Data Link Connector Circuit Check

UKS001FY

1. CHECK CONNECTOR

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

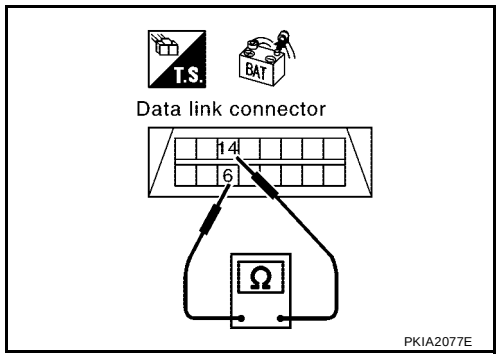
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-209, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Transfer Control Unit Circuit Check

UKS001G0

1. CHECK CONNECTOR

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

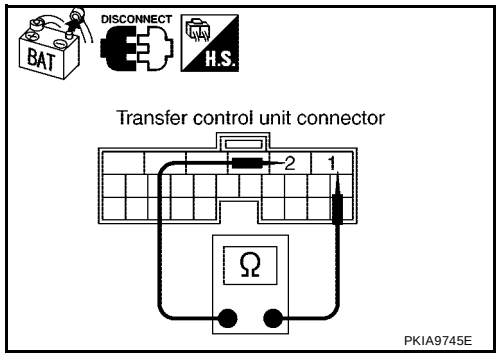
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R).

1 (W) - 2 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace transfer control unit.
NG >> Repair harness between transfer control unit and harness connector E152.

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001G1

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.

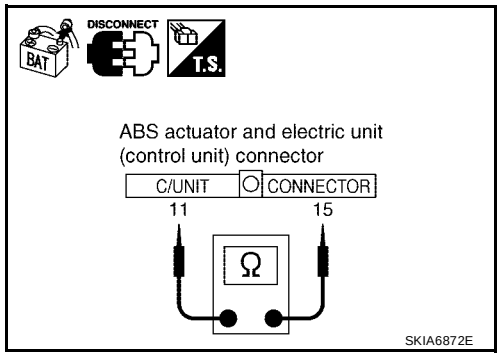
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R) : 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 harness connector E152.



UKS001G2

IPDM E/R Circuit Check

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.

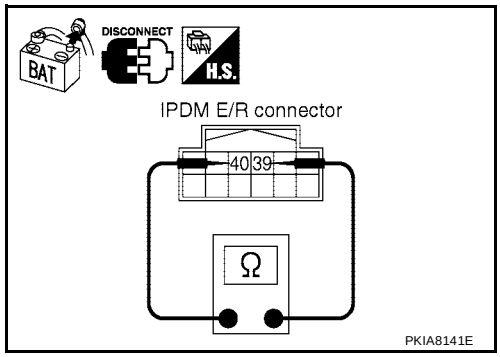
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 108 - 132Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

UKS001G3

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- A/T assembly
- Combination meter
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

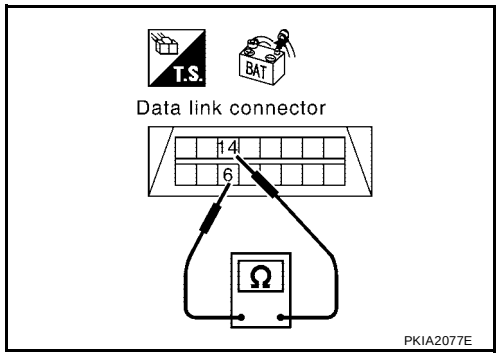
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

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



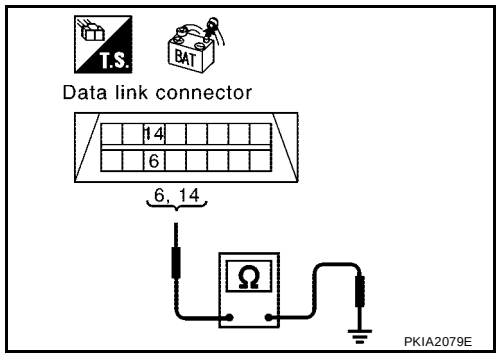
OK or NG

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

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-231, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.

IPDM E/R Ignition Relay Circuit Check

UKS001G4

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

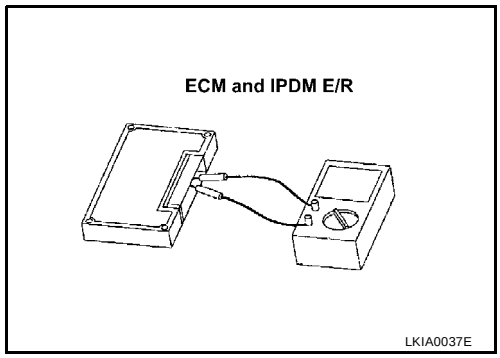
Component Inspection

UKS001G5

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 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 8)

PFP:23710

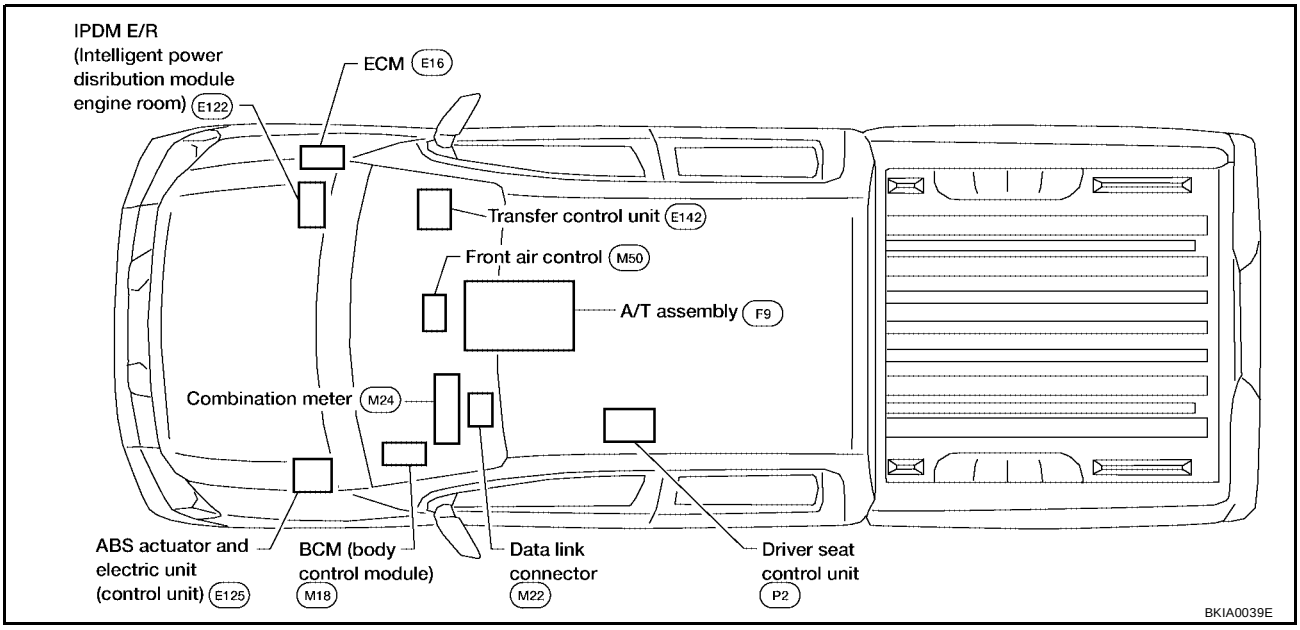
System Description

UKS001G6

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.

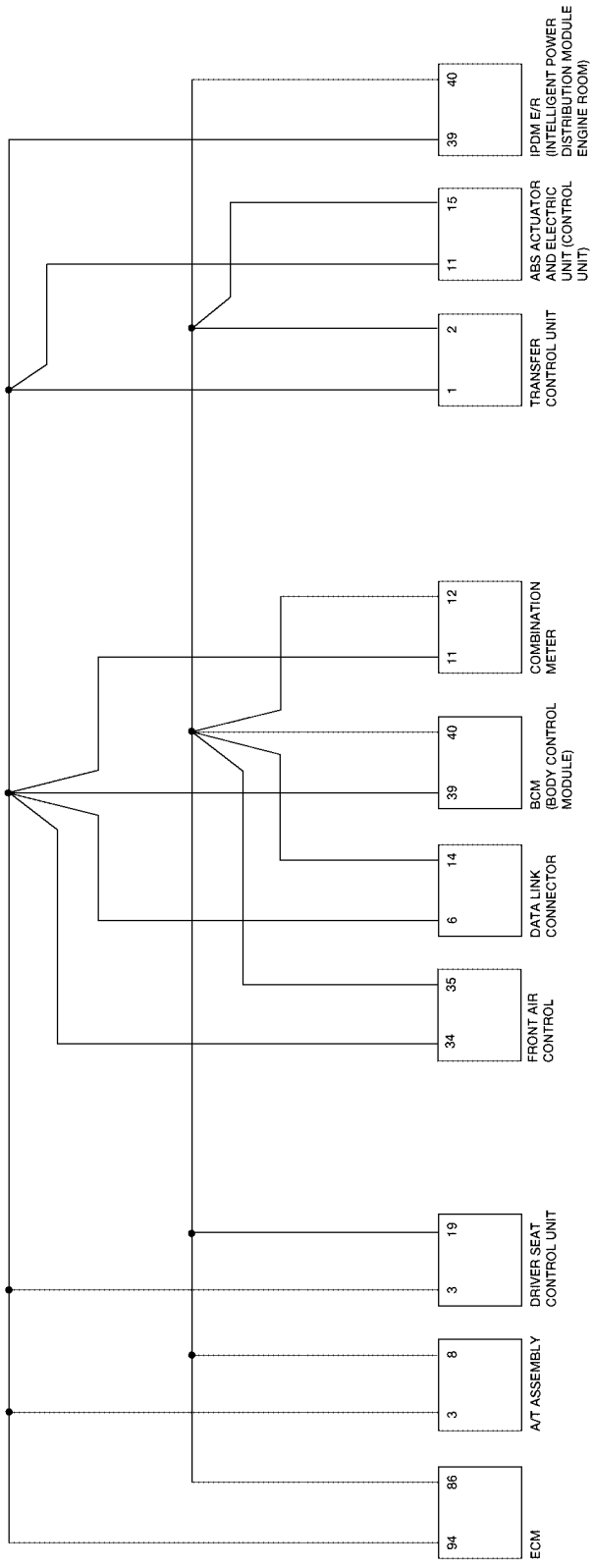
Component Parts and Harness Connector Location

UKS001G7



Schematic

UKS001G8

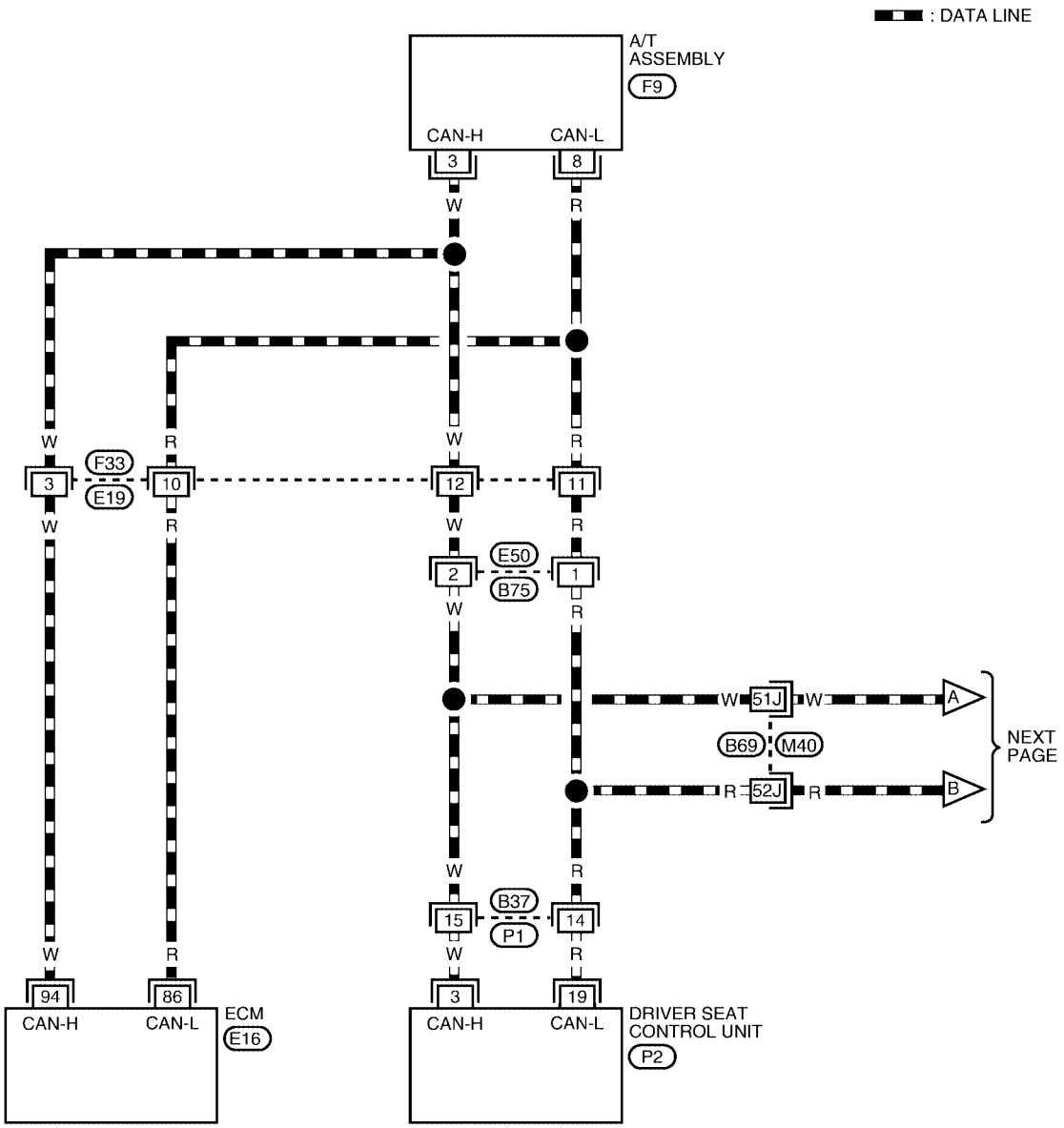


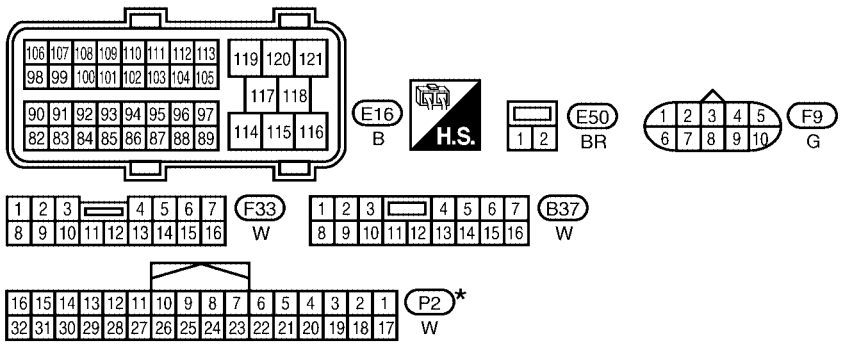
BKWA0144E

Wiring Diagram - CAN -

UKS001G9

LAN-CAN-22



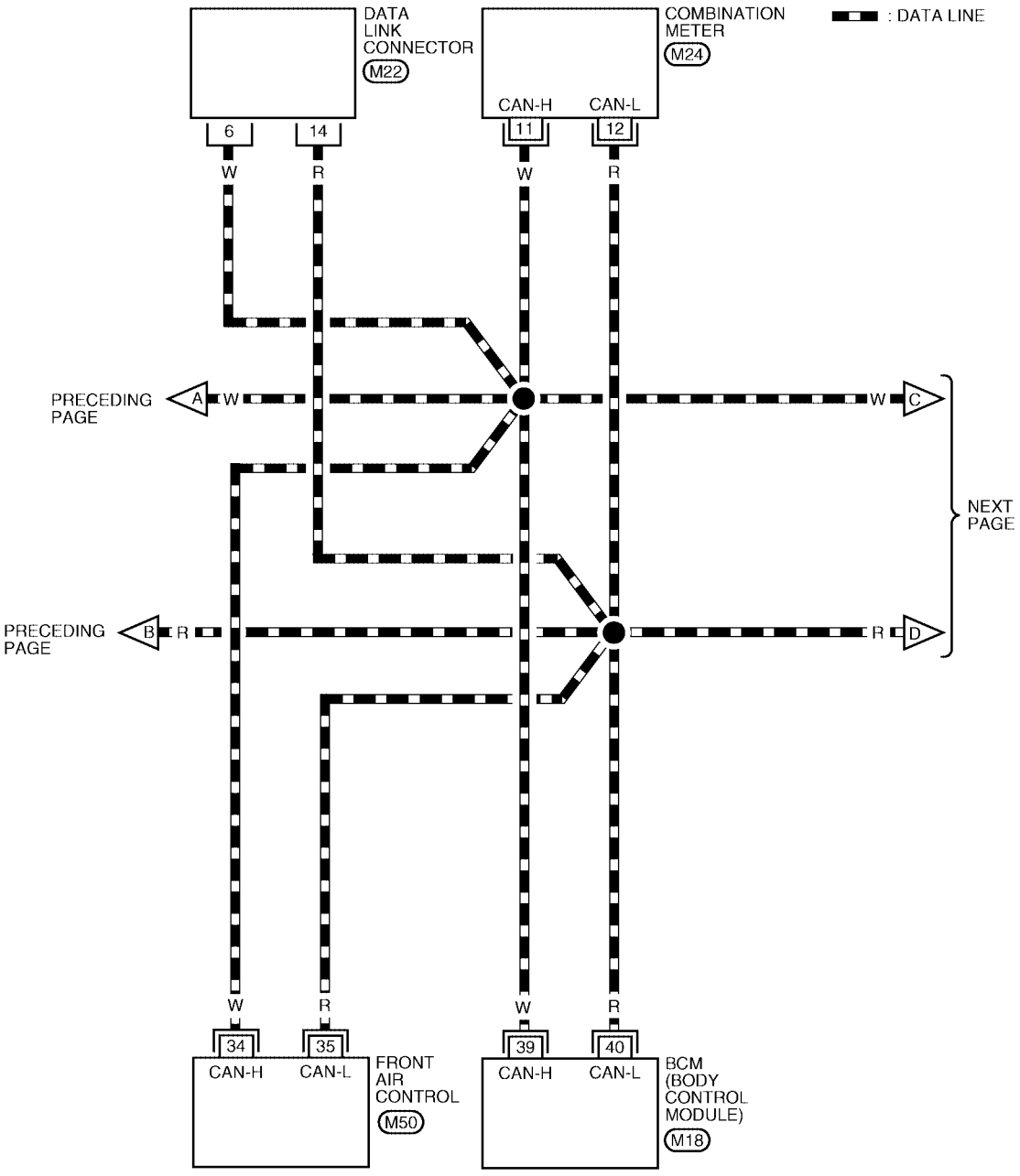


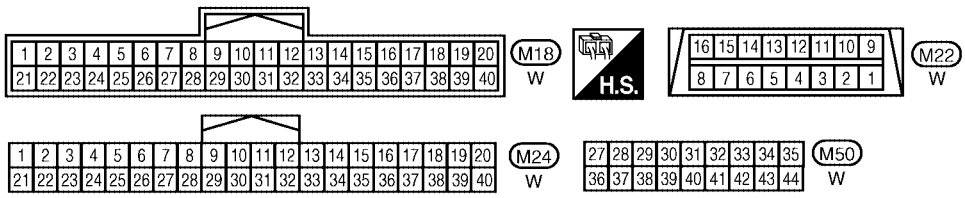
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

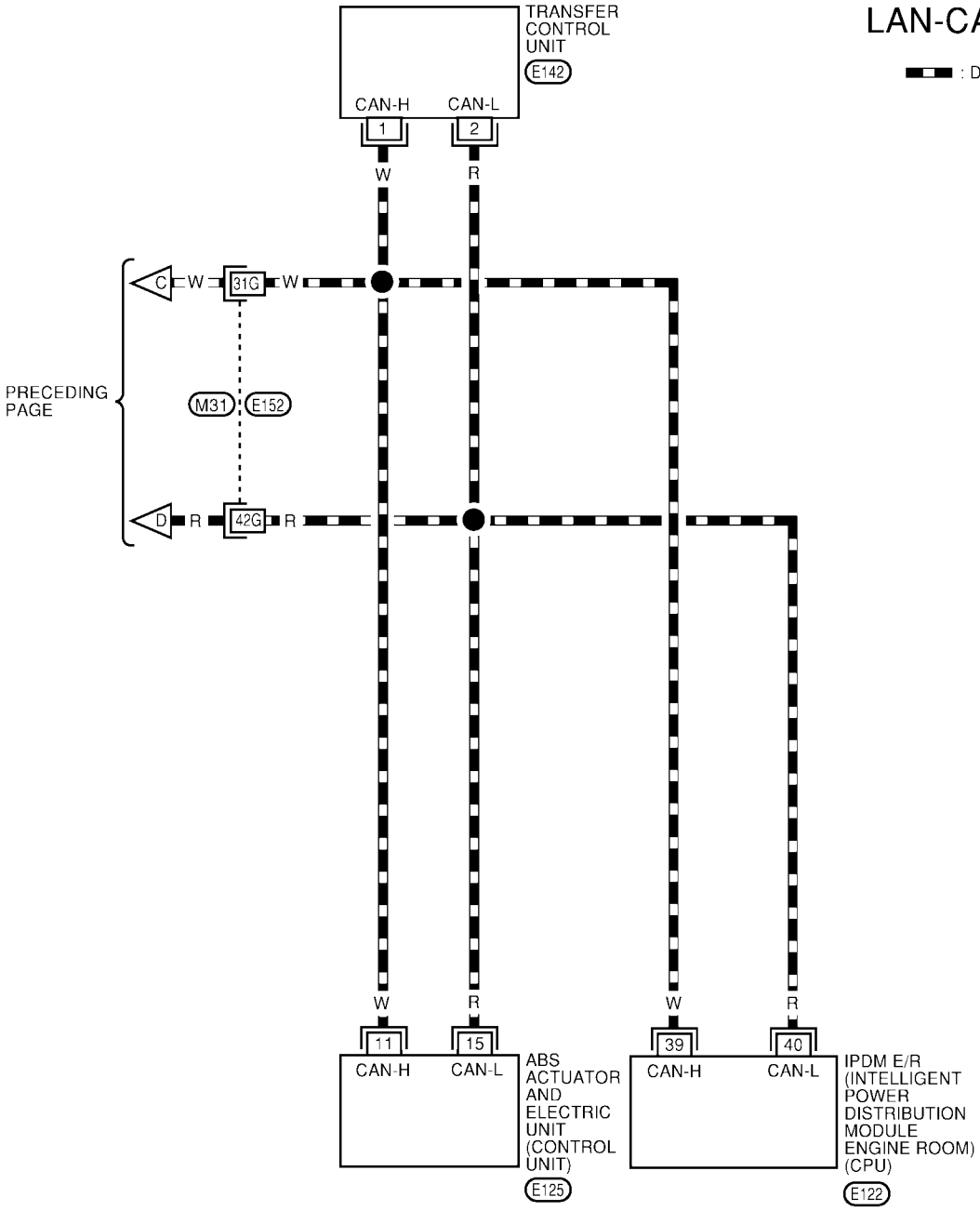
BKWA0053E

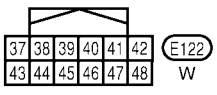
LAN-CAN-23

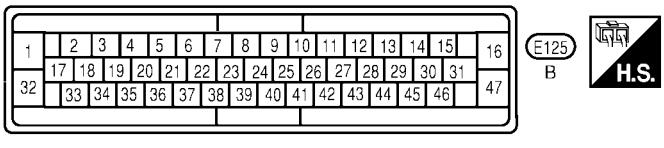


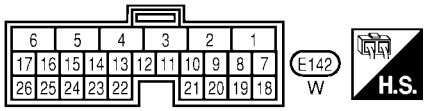


BKWA0145E









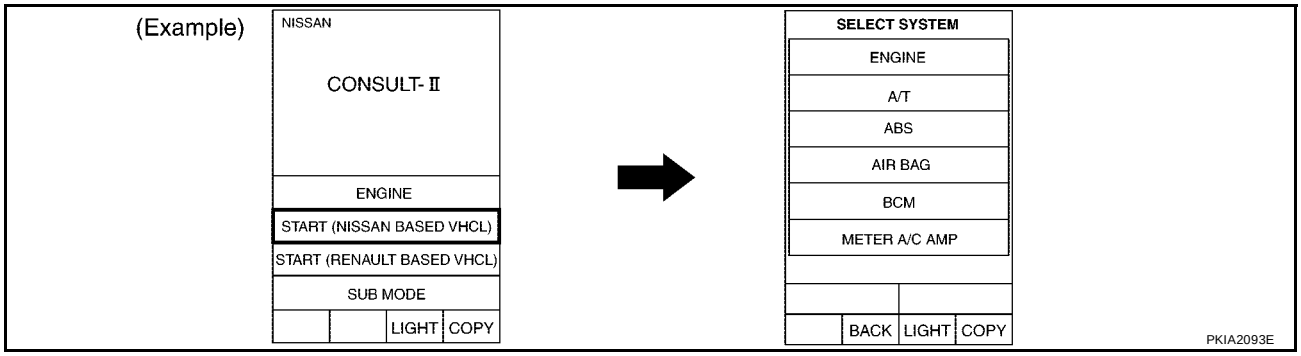
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0055E

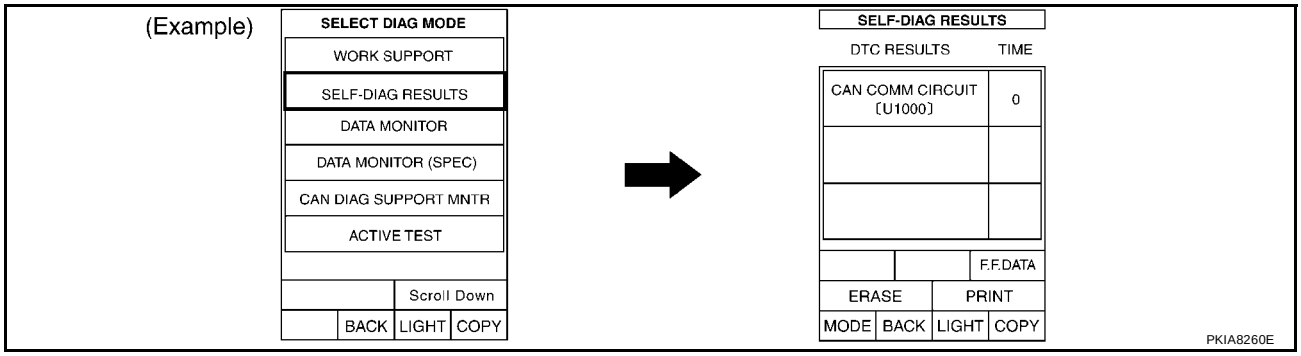
Work Flow

UKS001GA

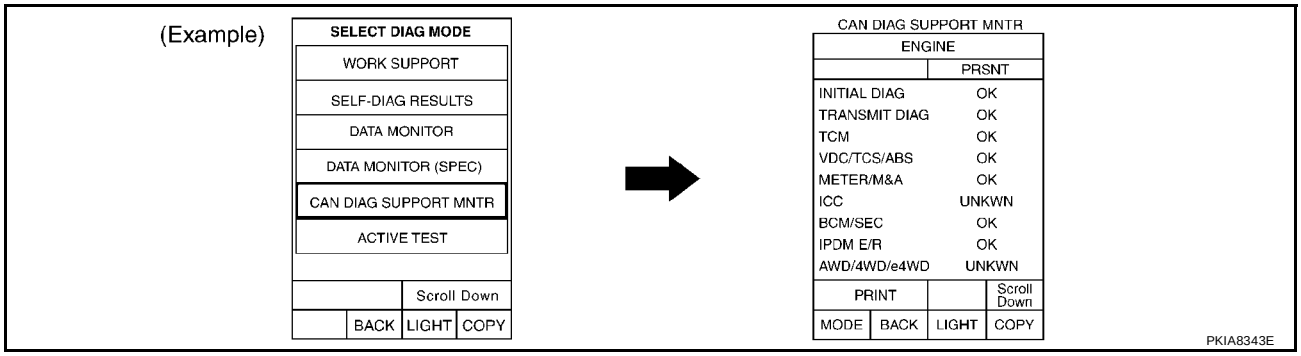
1. When there are no indications of “AUTO DRIVE POS.”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “A/T”, “AUTO DRIVE POS.”, “BCM”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “AUTO DRIVE POS.”, “BCM”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-238, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-238, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “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 the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-240, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Check sheet table

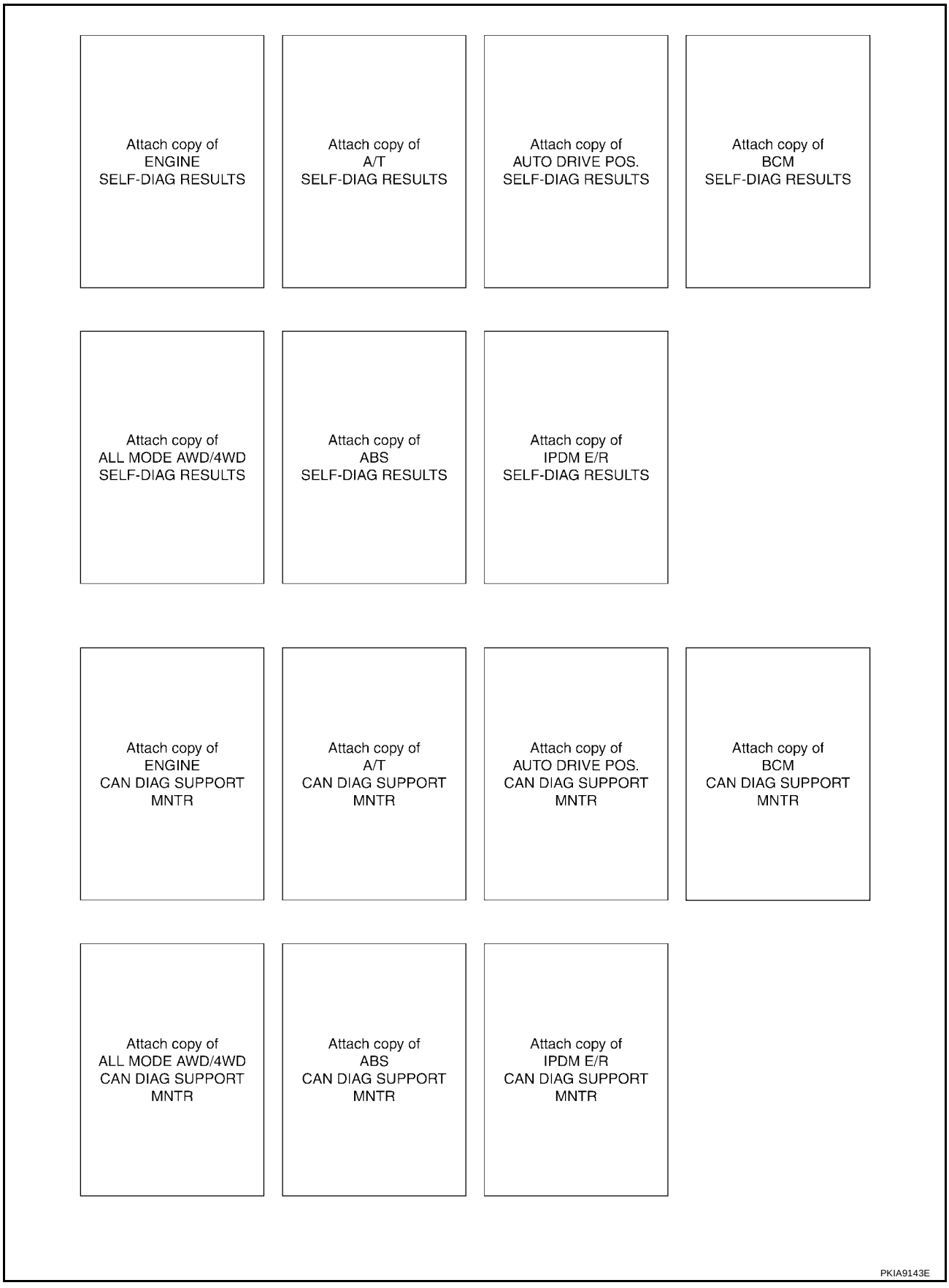
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIA9330E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ALL MODE AWD/4WD
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA9143E

CHECK SHEET RESULTS (EXAMPLE)

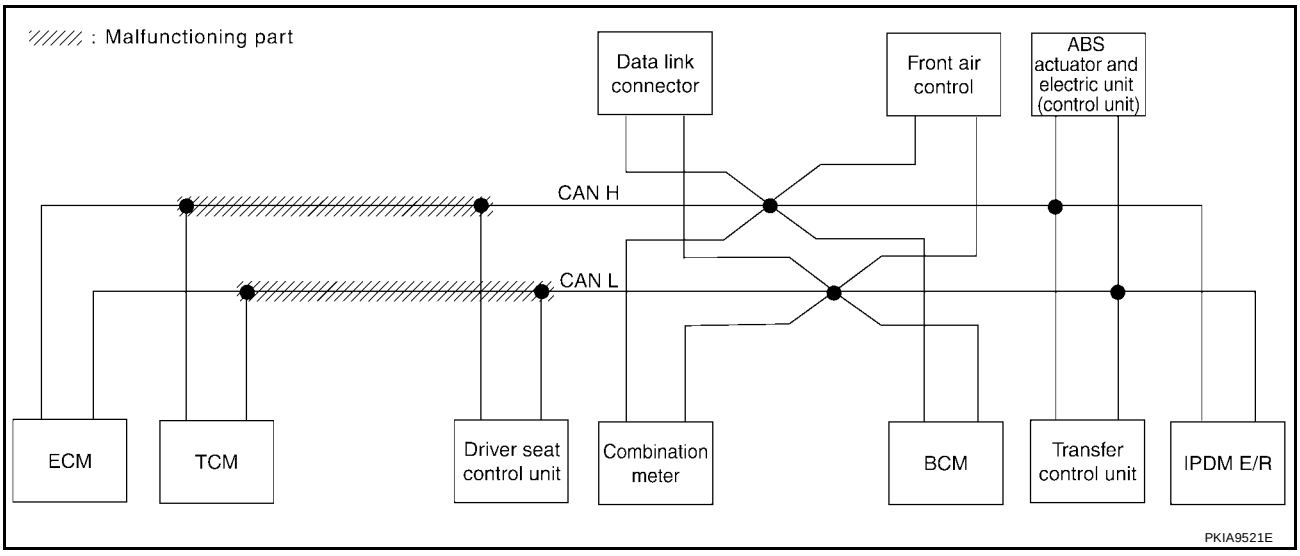
NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and driver seat control unit. Refer to LAN-253, "Circuit Check Between TCM and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9395E

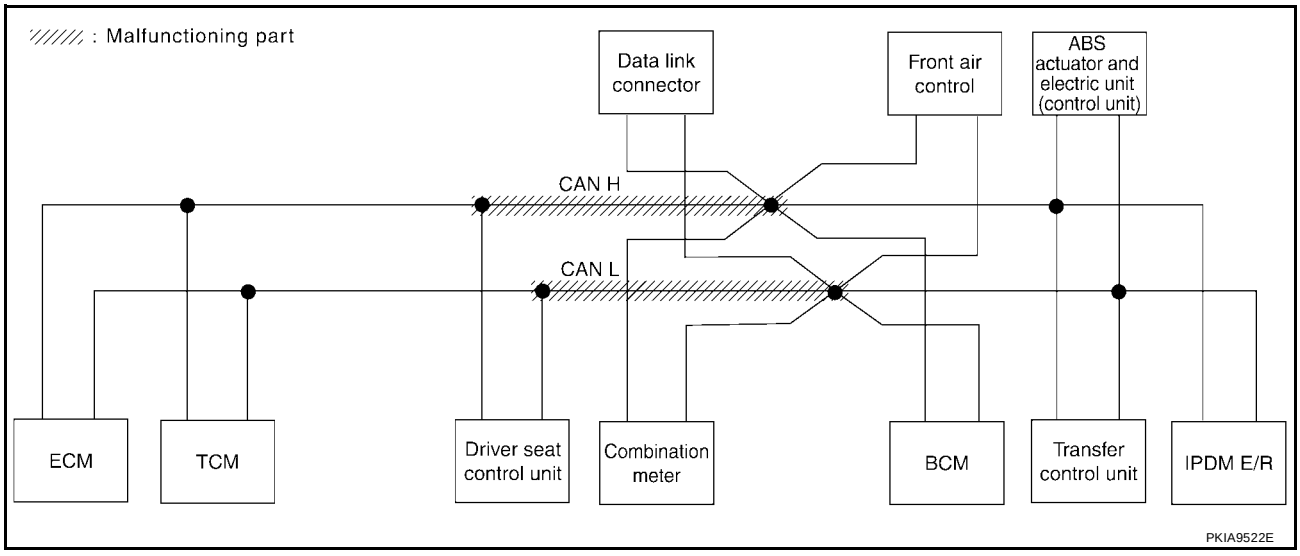


Case 2

Check harness between driver seat control unit and data link connector. Refer to LAN-254, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN ✓	UNKWN ✓	UNKWN ✓	–	UNKWN ✓
A/T	–	NG	UNKWN	UNKWN	–	UNKWN ✓	–	UNKWN ✓	–	–
AUTO DRIVE POS.	No indication ✓	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–
BCM	No indication	NG	UNKWN	UNKWN ✓	–	UNKWN	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN ✓	UNKWN ✓	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN ✓	–	–	–	–	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN ✓	–	–	UNKWN	–	–	–

PKIA9396E



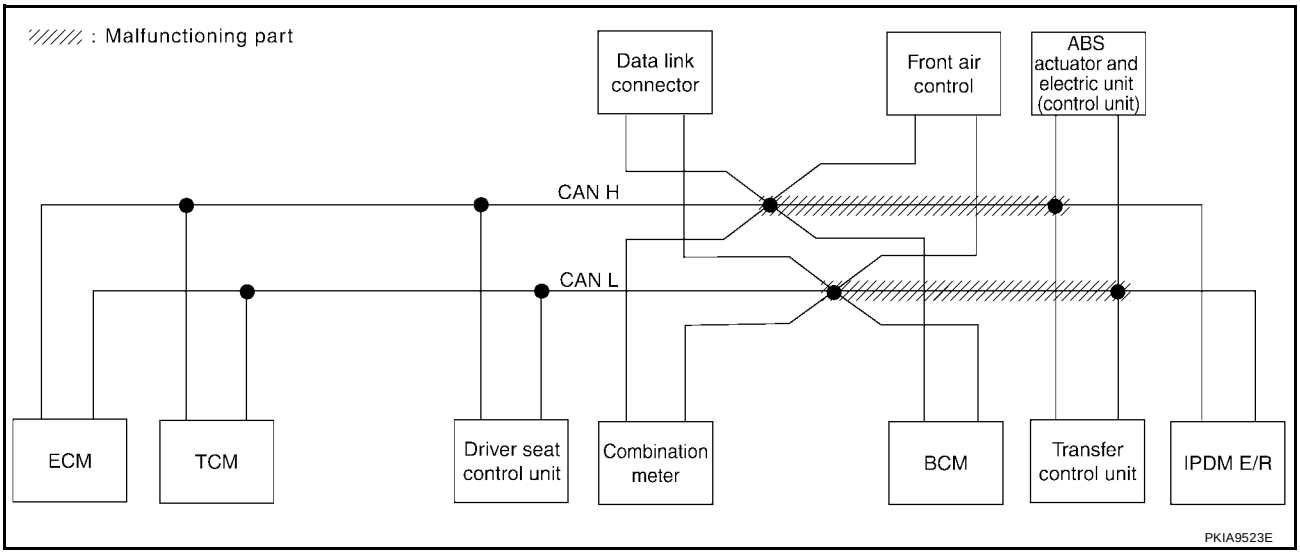
PKIA9522E

Case 3

Check harness between data link connector and IPDM E/R. Refer to LAN-255, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN ✓	—	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN ✓	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN ✓
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN ✓	—	—	—	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9397E

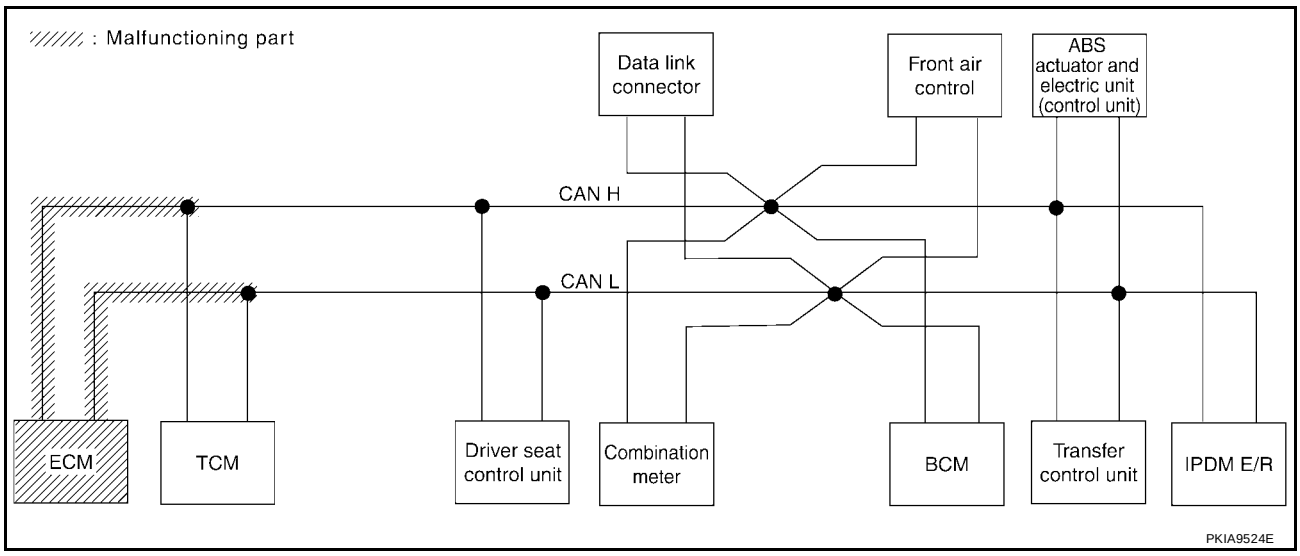


Case 4

Check ECM circuit. Refer to LAN-256, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9398E



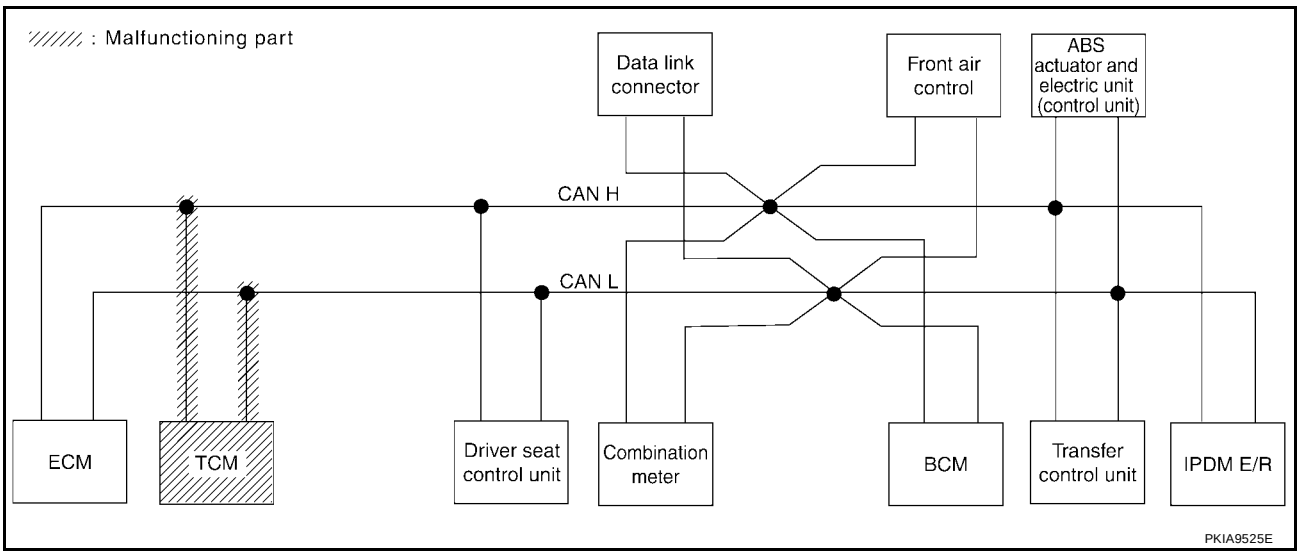
PKIA9524E

Case 5

Check TCM circuit. Refer to LAN-256, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9399E



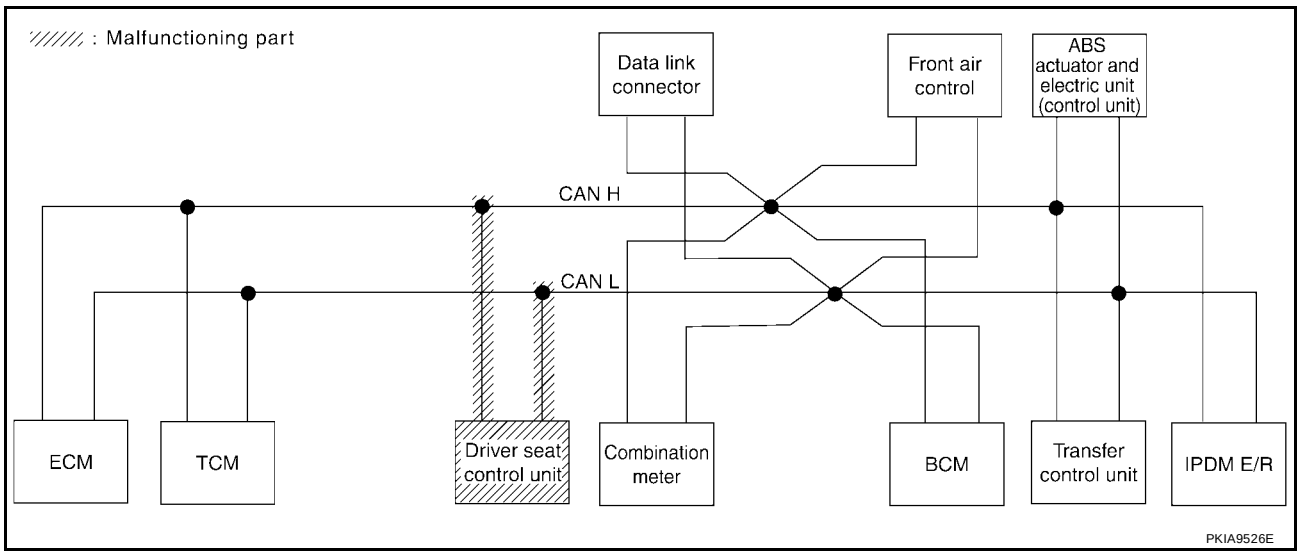
PKIA9525E

Case 6

Check driver seat control unit circuit. Refer to LAN-257, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9400E



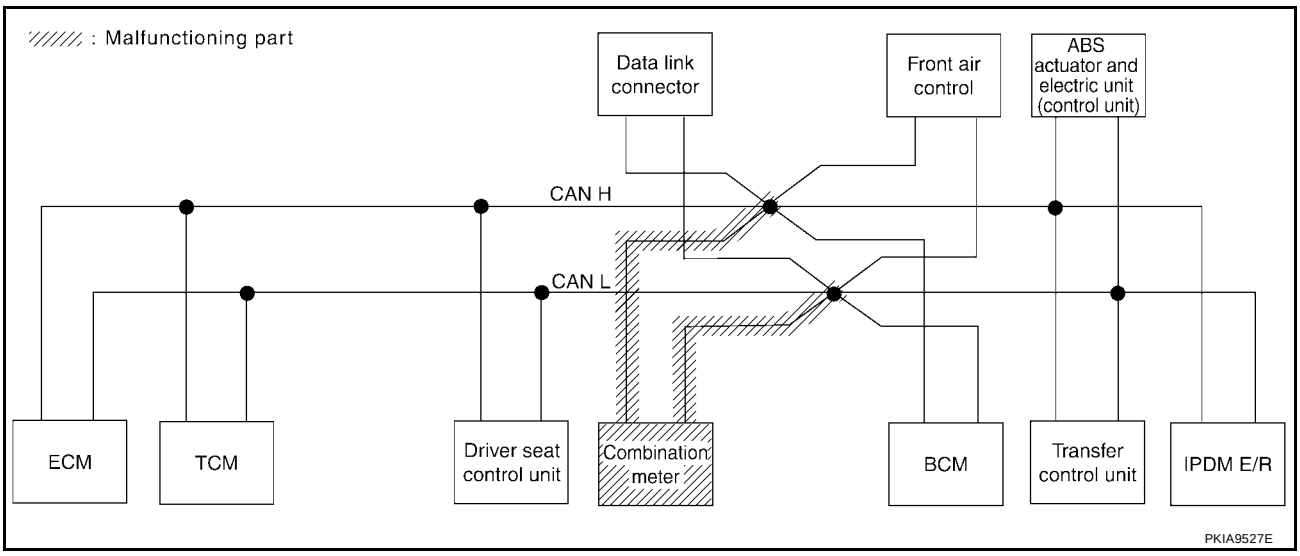
PKIA9526E

Case 7

Check combination meter circuit. Refer to LAN-257, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9401E



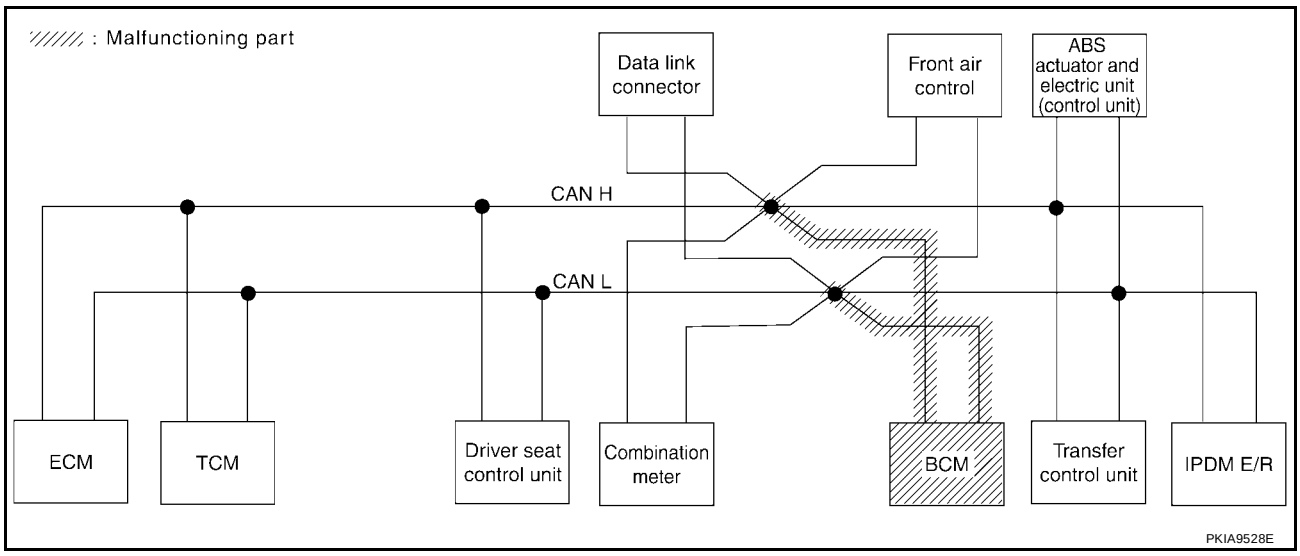
PKIA9527E

Case 8

Check BCM circuit. Refer to LAN-258, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN ✓	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN ✓	—	—	—
BCM	No indication ✓	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN ✓	—	—	—

PKIA9402E



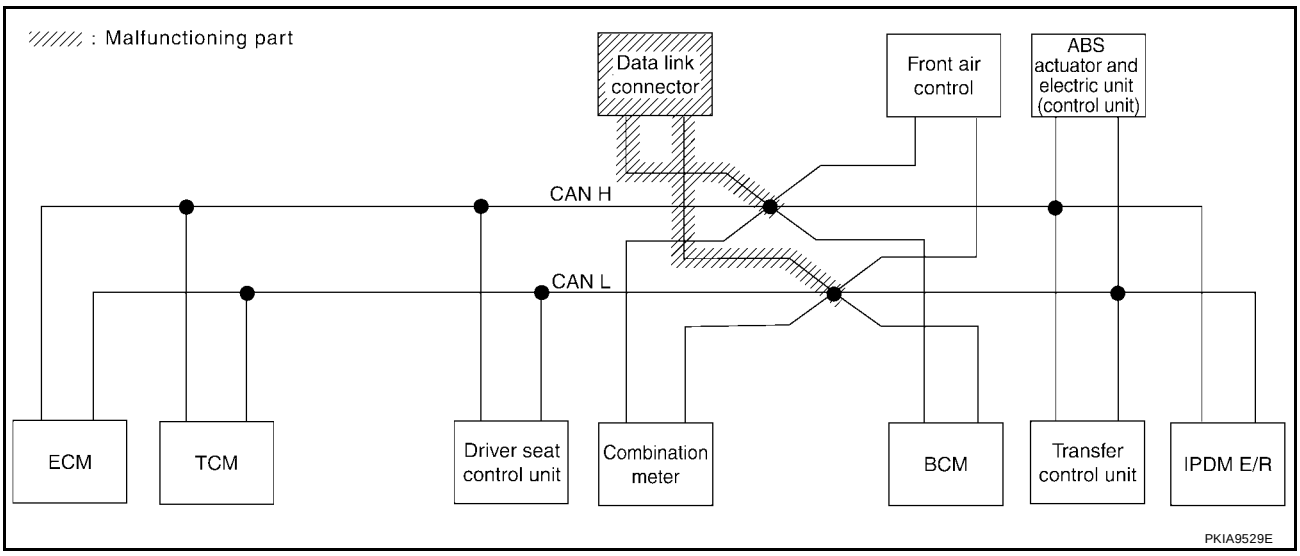
PKIA9528E

Case 9

Check data link connector circuit. Refer to LAN-258, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	–	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	UNKWN	–	–
AUTO DRIVE POS.	No indication ✓	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–
BCM	No indication ✓	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	–	–
IPDM E/R	No indication ✓	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–

PKIA9403E



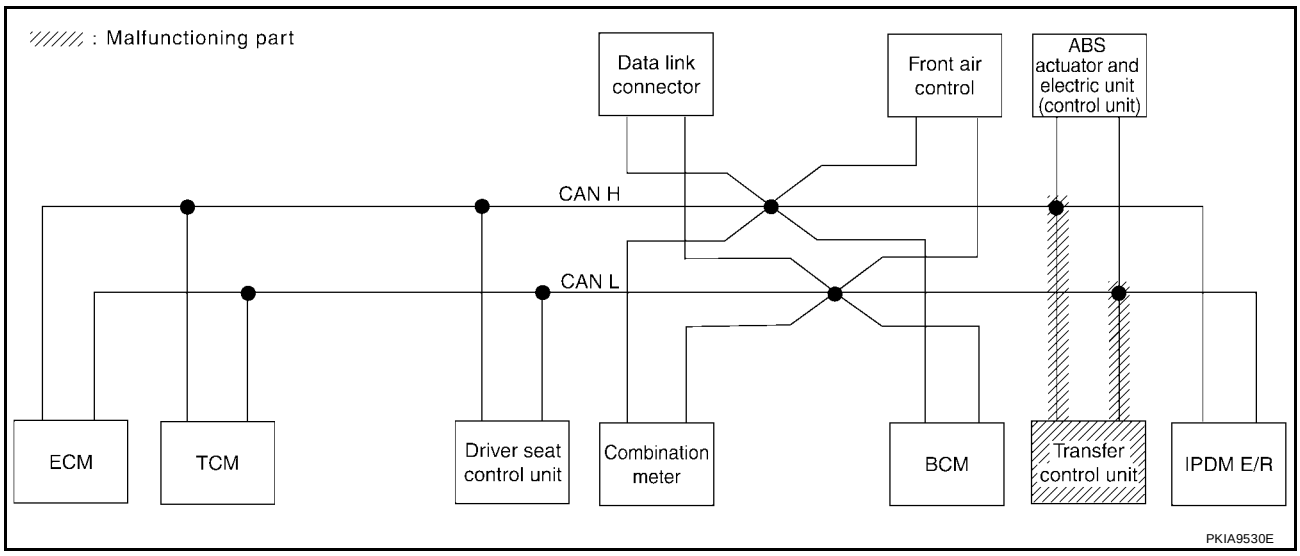
PKIA9529E

Case 10

Check transfer control unit circuit. Refer to LAN-259, "Transfer Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN ✓	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN ✓	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	—	—	UNKWN ✓	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9404E



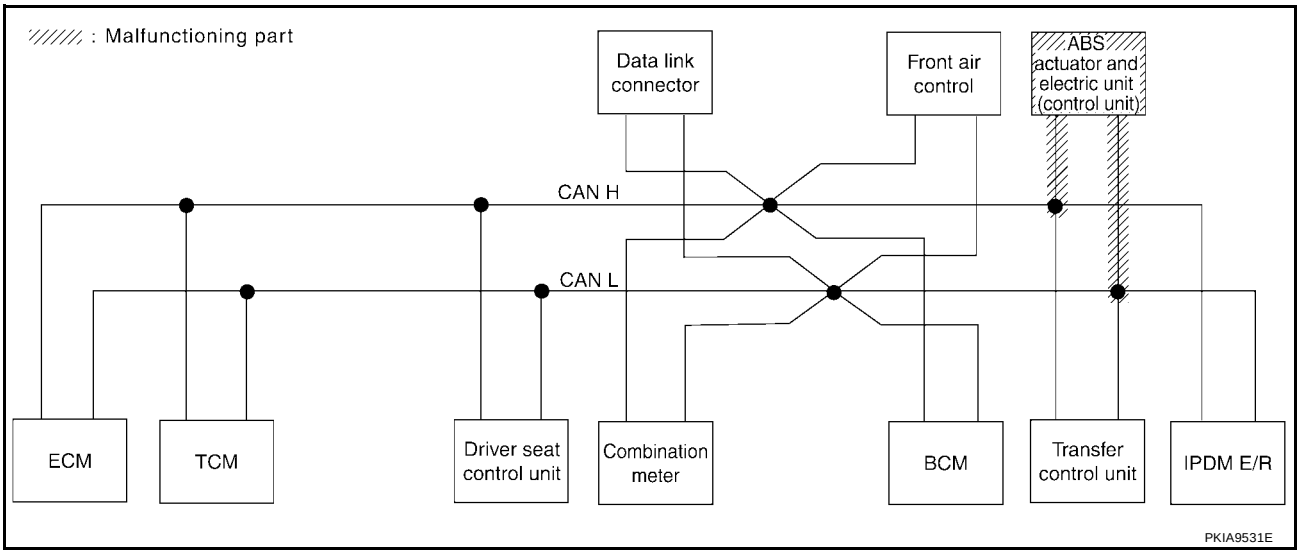
PKIA9530E

Case 11

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-259, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN ✓	—
ABS	—	NG ✓	UNKWN ✓	UNKWN ✓	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9405E

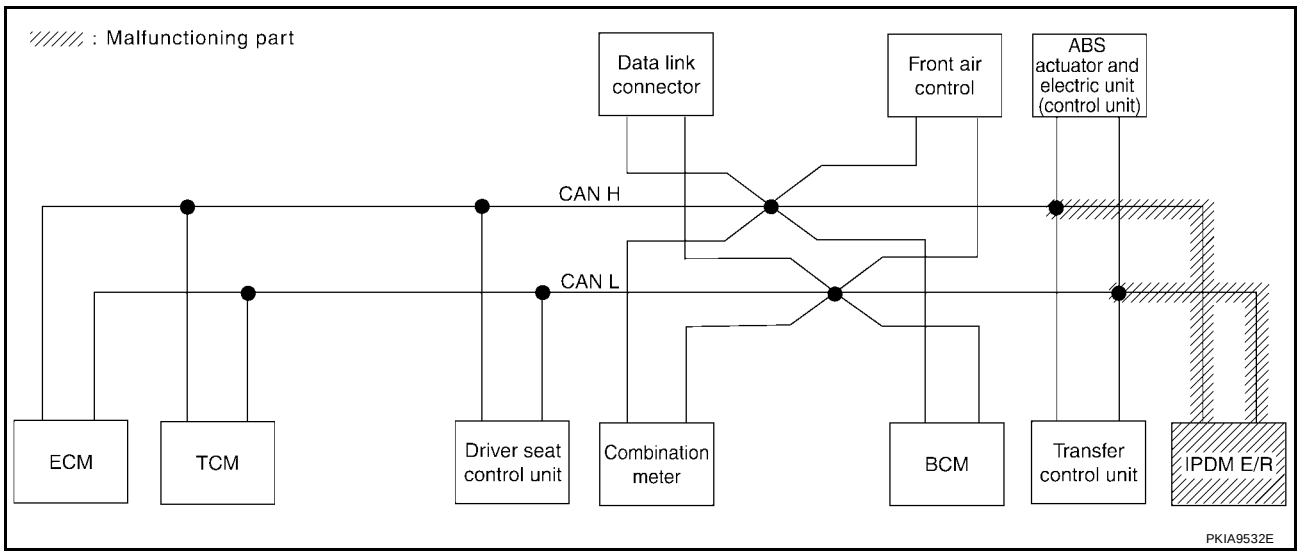


Case 12

Check IPDM E/R circuit. Refer to LAN-260, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	—	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN ✓
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—

PKIA9406E



PKIA9532E

Case 13

Check CAN communication circuit. Refer to LAN-260, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	–	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	UNKWN	–	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–

PKIA9407E

Case 14

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-261, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	–	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	UNKWN	–	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–

PKIA9408E

Case 15

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-261, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR								
		Initial diagnosis	Transmit diagnosis	Receive diagnosis						
				ECM	TCM	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	–	UNKWN
A/T	–	NG	UNKWN	UNKWN ✓	–	UNKWN ✓	–	UNKWN ✓	–	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN ✓	–	–	–	–	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–

PKIA9409E

Circuit Check Between TCM and Driver Seat Control Unit

UKS001GB

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 F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

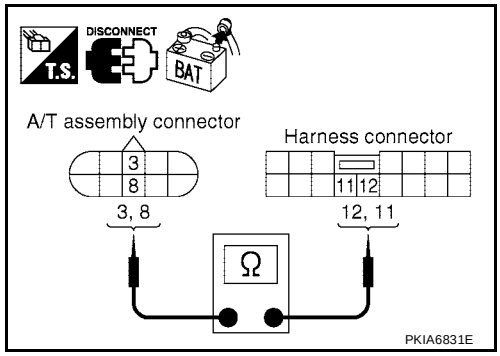
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12 (W), 11 (R).

3 (W) - 12 (W) : Continuity should exist.
8 (R) - 11 (R) : Continuity should exist.



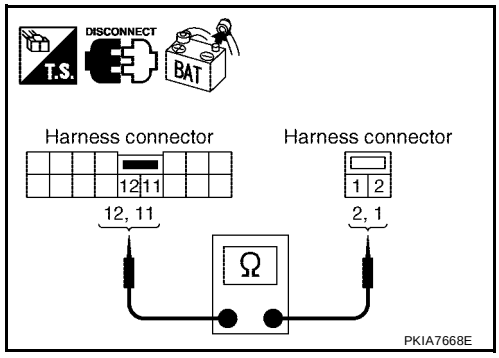
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).

12 (W) - 2 (W) : Continuity should exist.
11 (R) - 1 (R) : Continuity should exist.



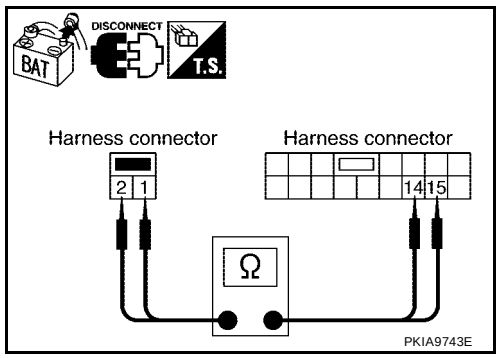
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37.
2. Check continuity between harness connector B75 terminals 2 (W), 1 (R) and harness connector B37 terminals 15 (W), 14 (R).

2 (W) - 15 (W) : Continuity should exist.
1 (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-237, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and Data Link Connector

UKS001GC

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 B69
- Harness connector M40

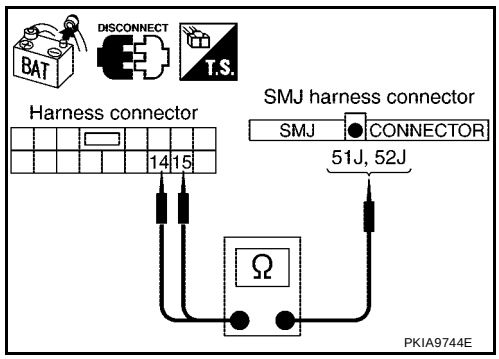
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37 and harness connector B69.
2. Check continuity between harness connector B37 terminals 15 (W), 14 (R) and harness connector B69 terminals 51J (W), 52J (R).

15 (W) - 51J (W) : Continuity should exist.
14 (R) - 52J (R) : Continuity should exist.



OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

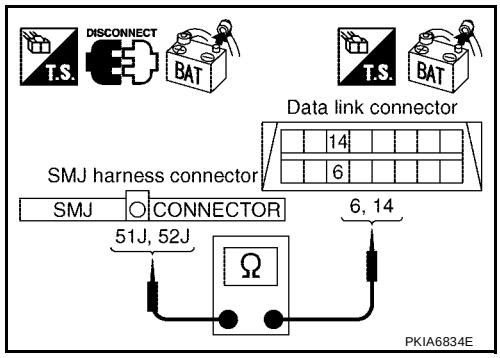
51J (W) - 6 (W) : Continuity should exist.

52J (R) - 14 (R) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-237, "Work Flow" .

NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

UKS001GD

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 M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).

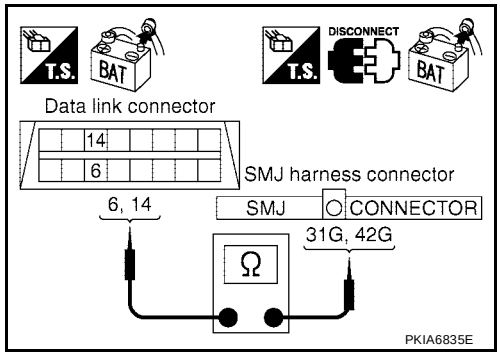
6 (W) - 31G (W) : Continuity should exist.

14 (R) - 42G (R) : Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).

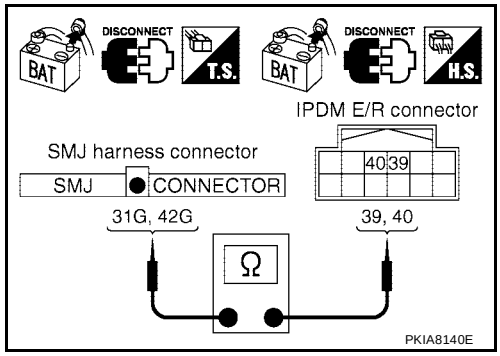
31G (W) - 39 (W) : Continuity should exist.

42G (R) - 40 (R) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-237, "Work Flow" .

NG >> Repair harness.



ECM Circuit Check

UKS001GE

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 E19
- Harness connector F33

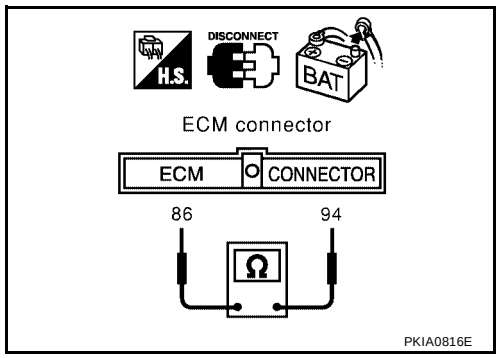
OK or NG

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 E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R) : Approx. 108 - 132Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and A/T assembly.

TCM Circuit Check

UKS001GF

1. CHECK CONNECTOR

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

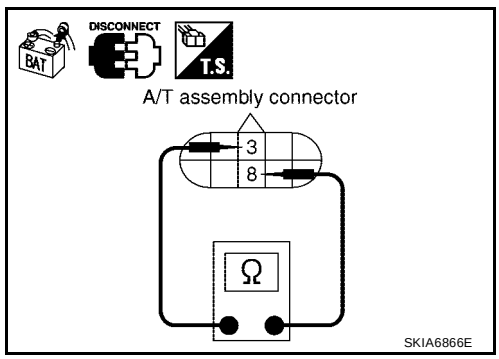
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Driver Seat Control Unit Circuit Check

UKS001GG

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 unit side and harness side).

- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

OK or NG

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

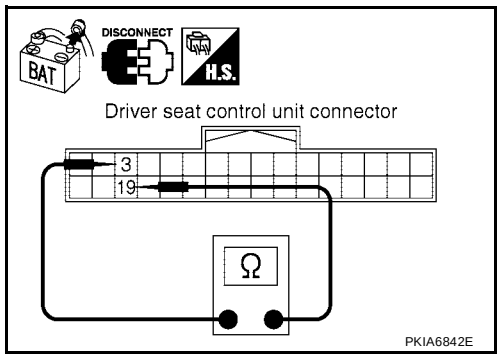
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect driver seat control unit connector.
2. Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R).

3 (W) - 19 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B69.



Combination Meter Circuit Check

UKS001GH

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.

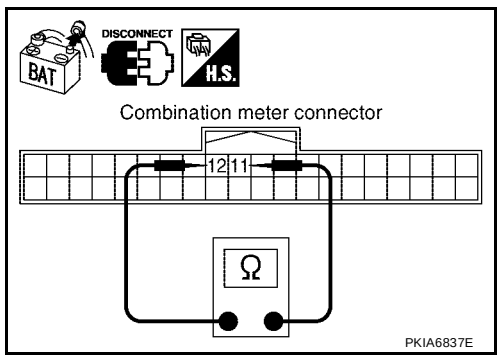
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R) : Approx. 54 - 66Ω

OK or NG

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



BCM Circuit Check

UKS001GI

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).

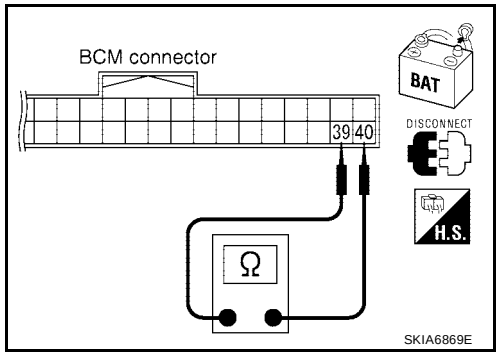
OK or NG

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 M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS001GJ

1. CHECK CONNECTOR

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

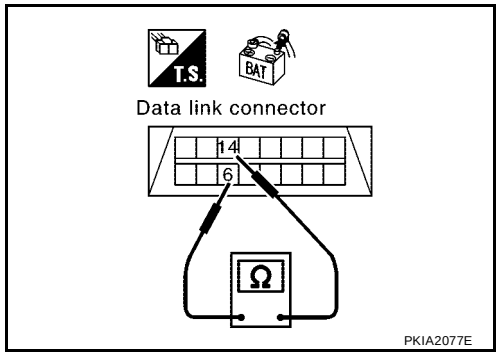
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-237, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Transfer Control Unit Circuit Check

UKS001GL

1. CHECK CONNECTOR

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

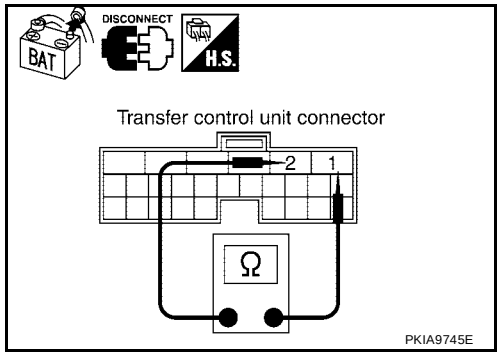
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R).

1 (W) - 2 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace transfer control unit.
NG >> Repair harness between transfer control unit and harness connector E152.

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001GM

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).

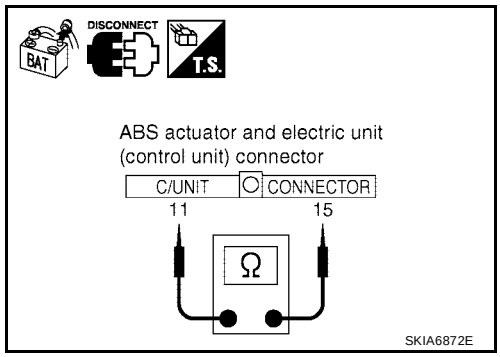
OK or NG

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 E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R) : 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 harness connector E152.

IPDM E/R Circuit Check

UKS001GN

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).

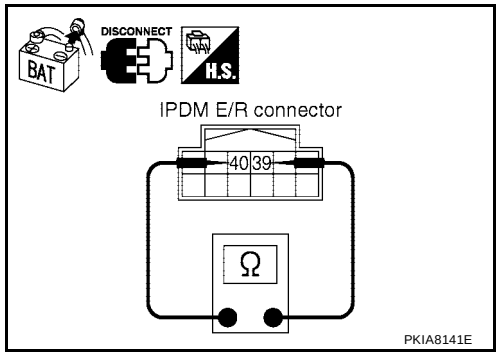
OK or NG

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 E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 108 - 132Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS001GO

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- A/T assembly
- Driver seat control unit
- Combination meter
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

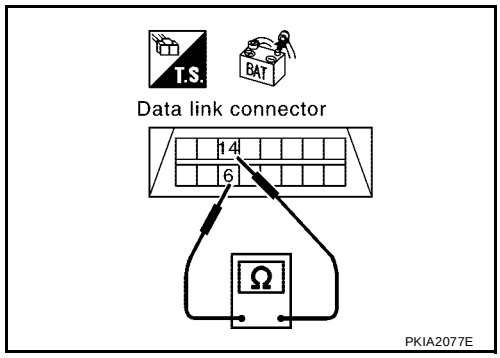
2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

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

OK or NG

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



3. CHECK HARNESS FOR SHORT CIRCUIT

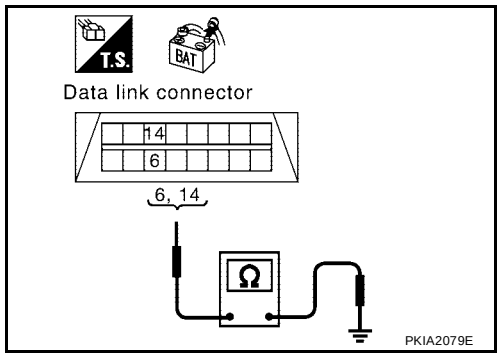
Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

6 (W) - Ground : Continuity should not exist.

14 (R) - Ground : Continuity should not exist.

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-261, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

UKS001GP

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

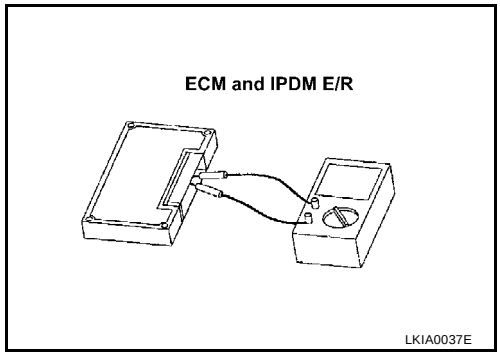
Component Inspection

UKS001GQ

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 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 9)

PFP:23710

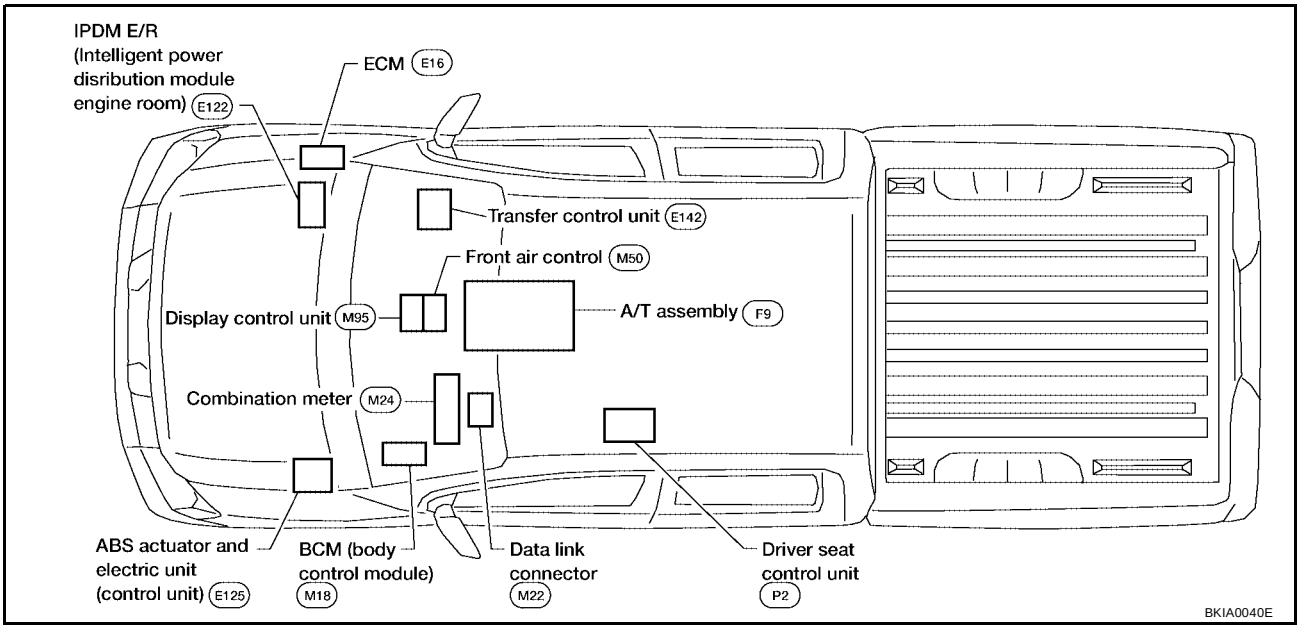
System Description

UKS001GR

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.

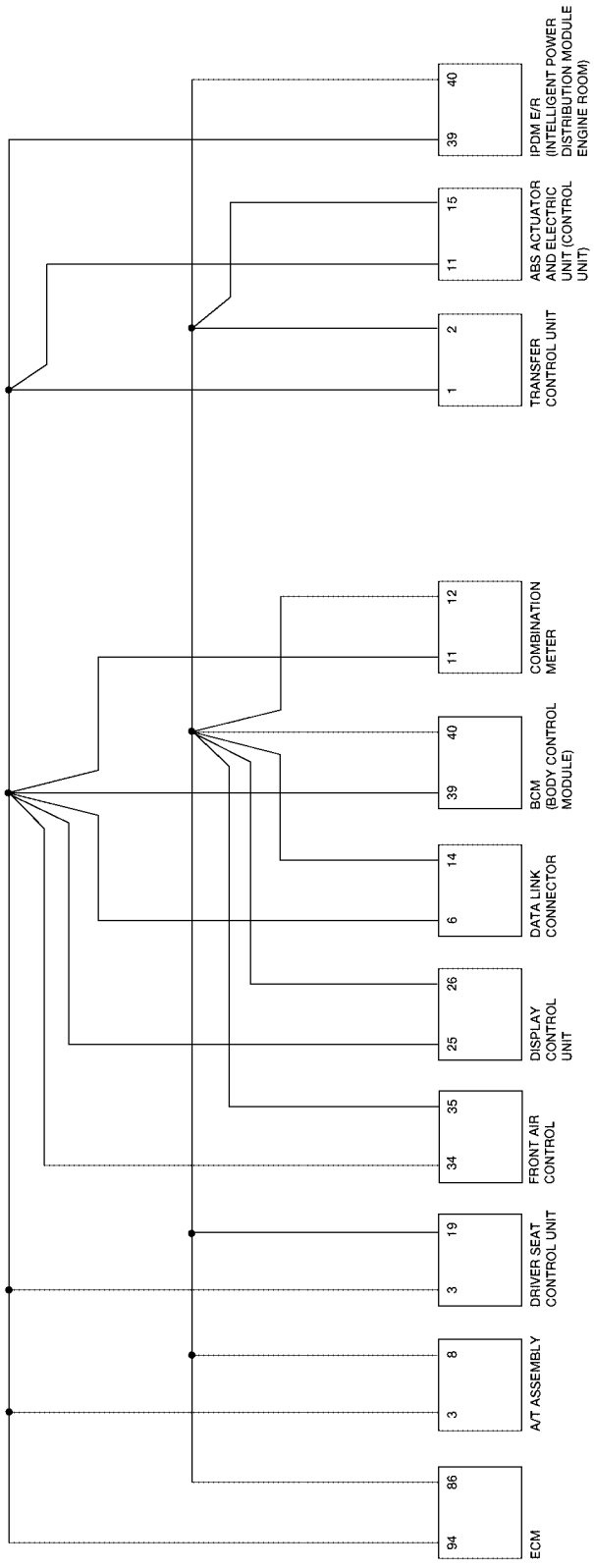
Component Parts and Harness Connector Location

UKS001GS



Schematic

UKS001GT

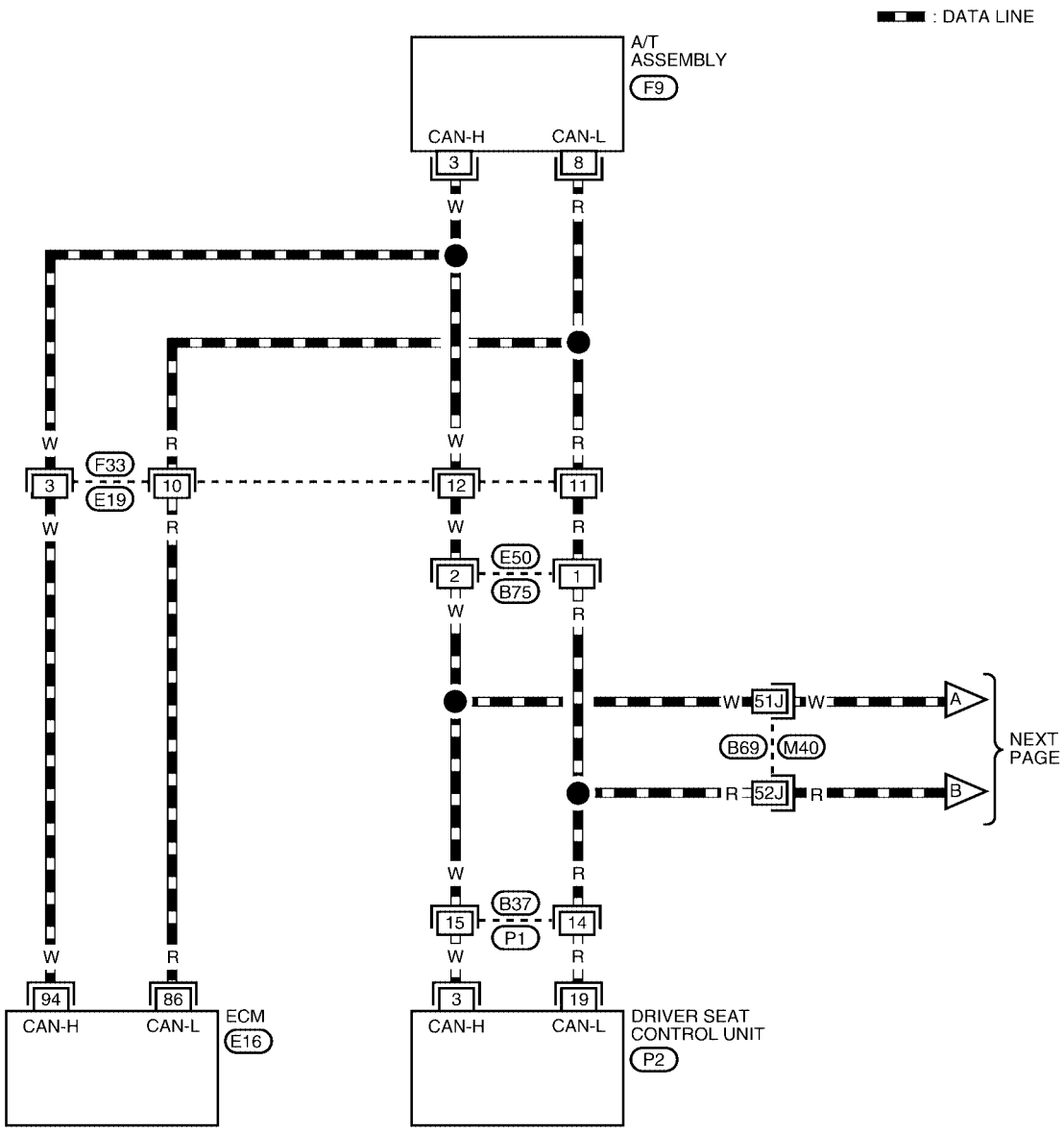


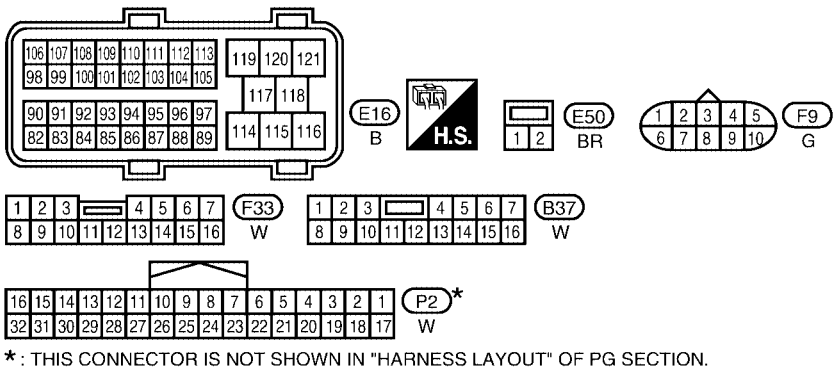
BKWA0146E

Wiring Diagram - CAN -

UKS001GU

LAN-CAN-25



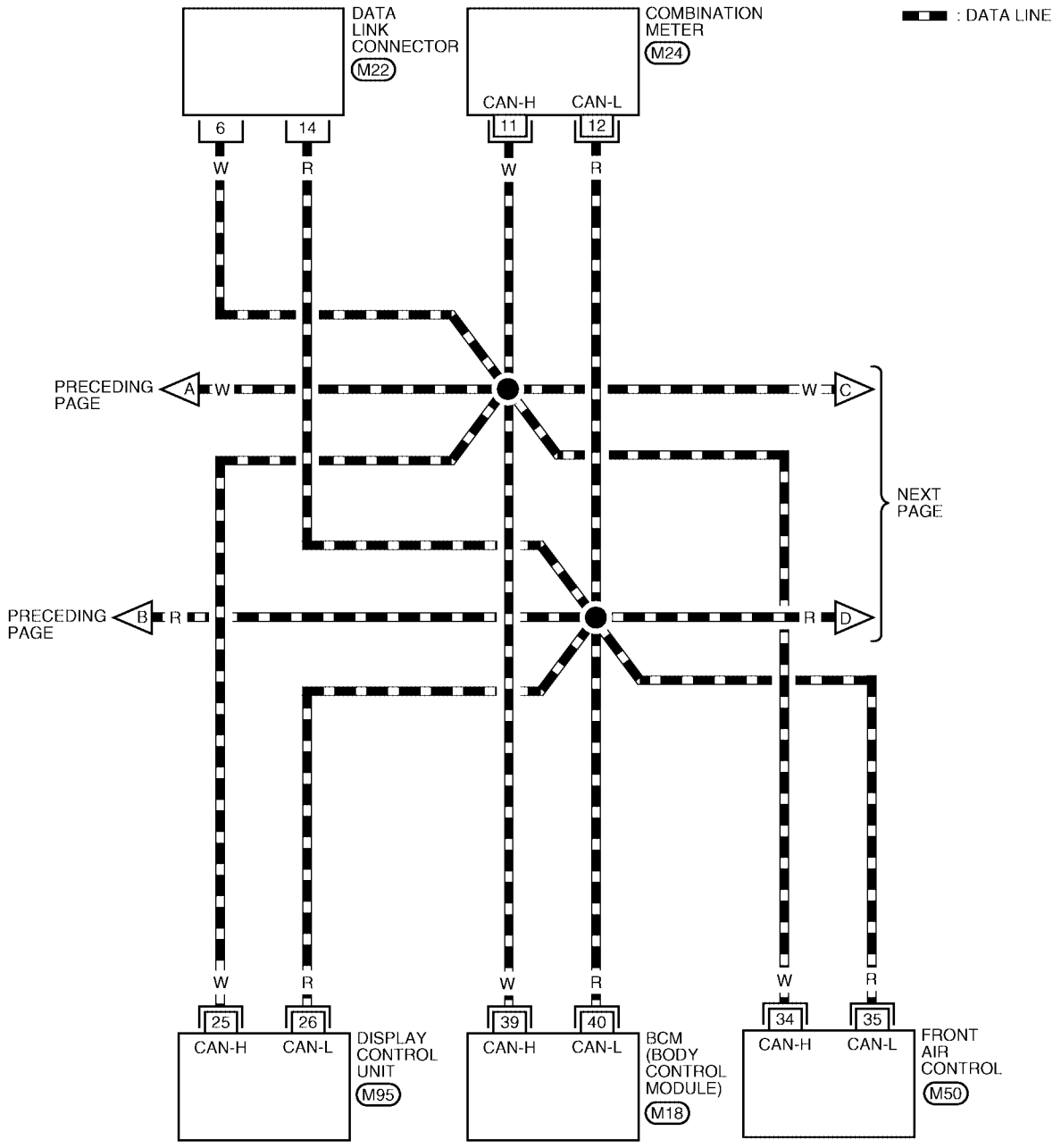


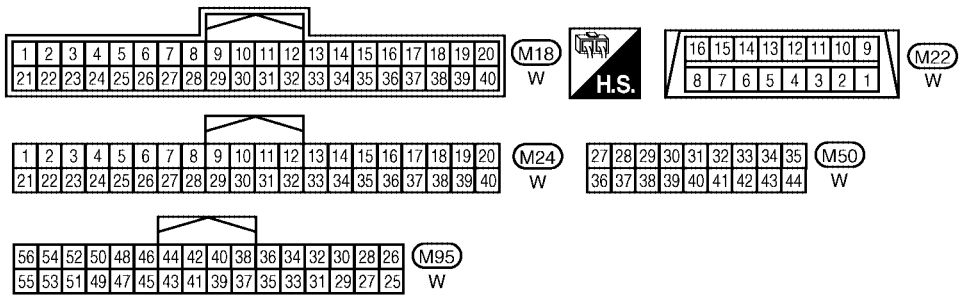
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

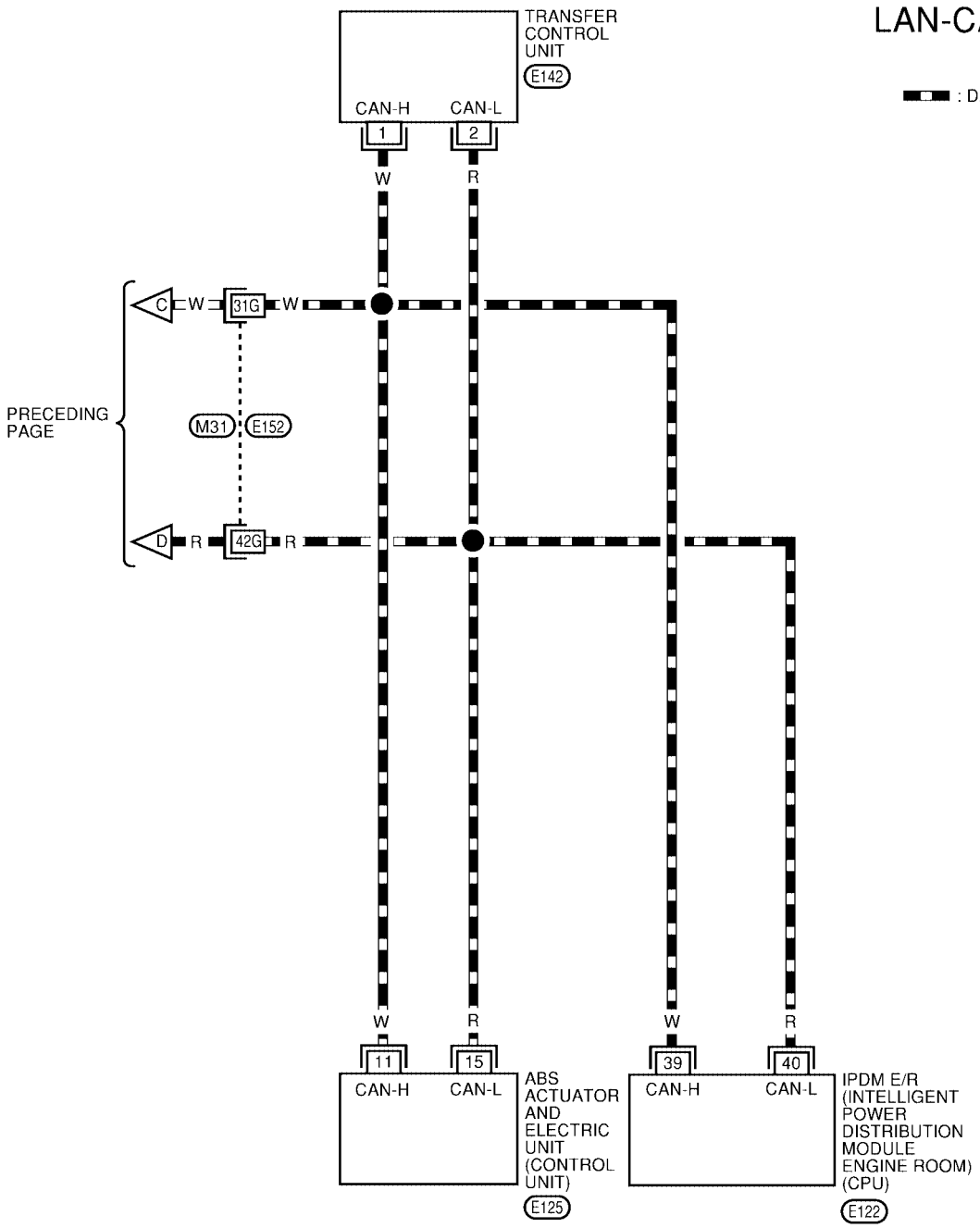
BKWA0060E

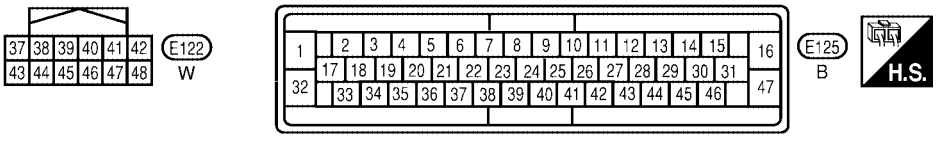
LAN-CAN-26

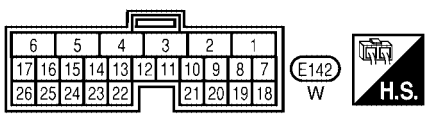




BKWA0147E







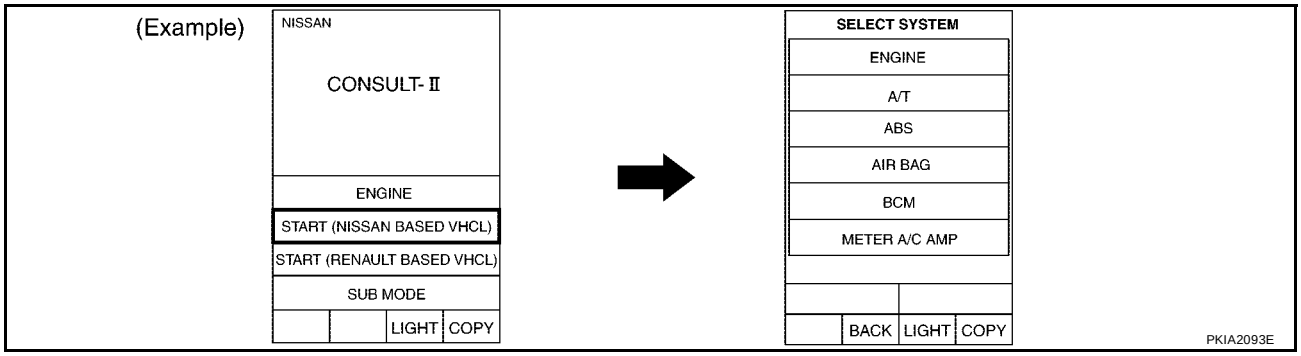
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0062E

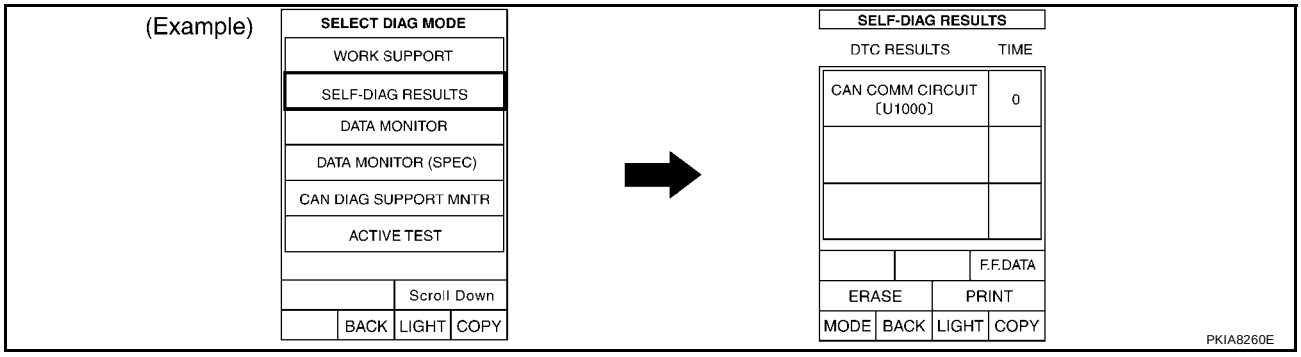
Work Flow

UKS001GV

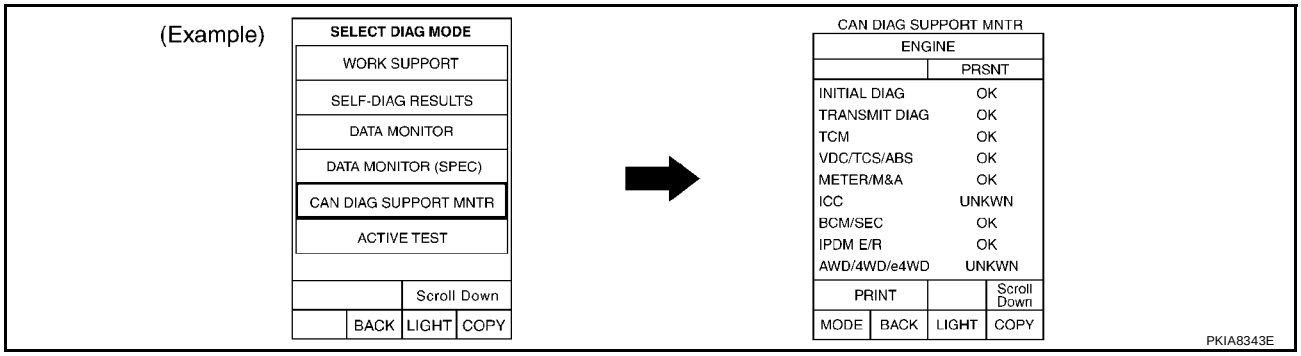
1. When there are no indications of “AUTO DRIVE POS.”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “A/T”, “AUTO DRIVE POS.”, “BCM”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “AUTO DRIVE POS.”, “BCM”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-269, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-269, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “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 the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. Check CAN communication line of the navigation system. Refer to AV-149, "CAN Communication Line Check" .
7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to LAN-269, "CHECK SHEET" .

8. Mark the “NG” or “UNKWN” item of the check sheet table with “v” from the result of CAN DIAG SUPPORT MONITOR check sheet. Refer to LAN-269, "CHECK SHEET" .

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MONITOR” for the diagnosed control unit, replace the control unit. Refer to AV-149, "CAN Communication Line Check" .

9. According to the check sheet results (example), start inspection. Refer to LAN-271, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	UNKWN	–	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	–	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–	–
Display control unit	–	CAN COMM	CAN CIRC 1	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	–	–	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	–	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–	–

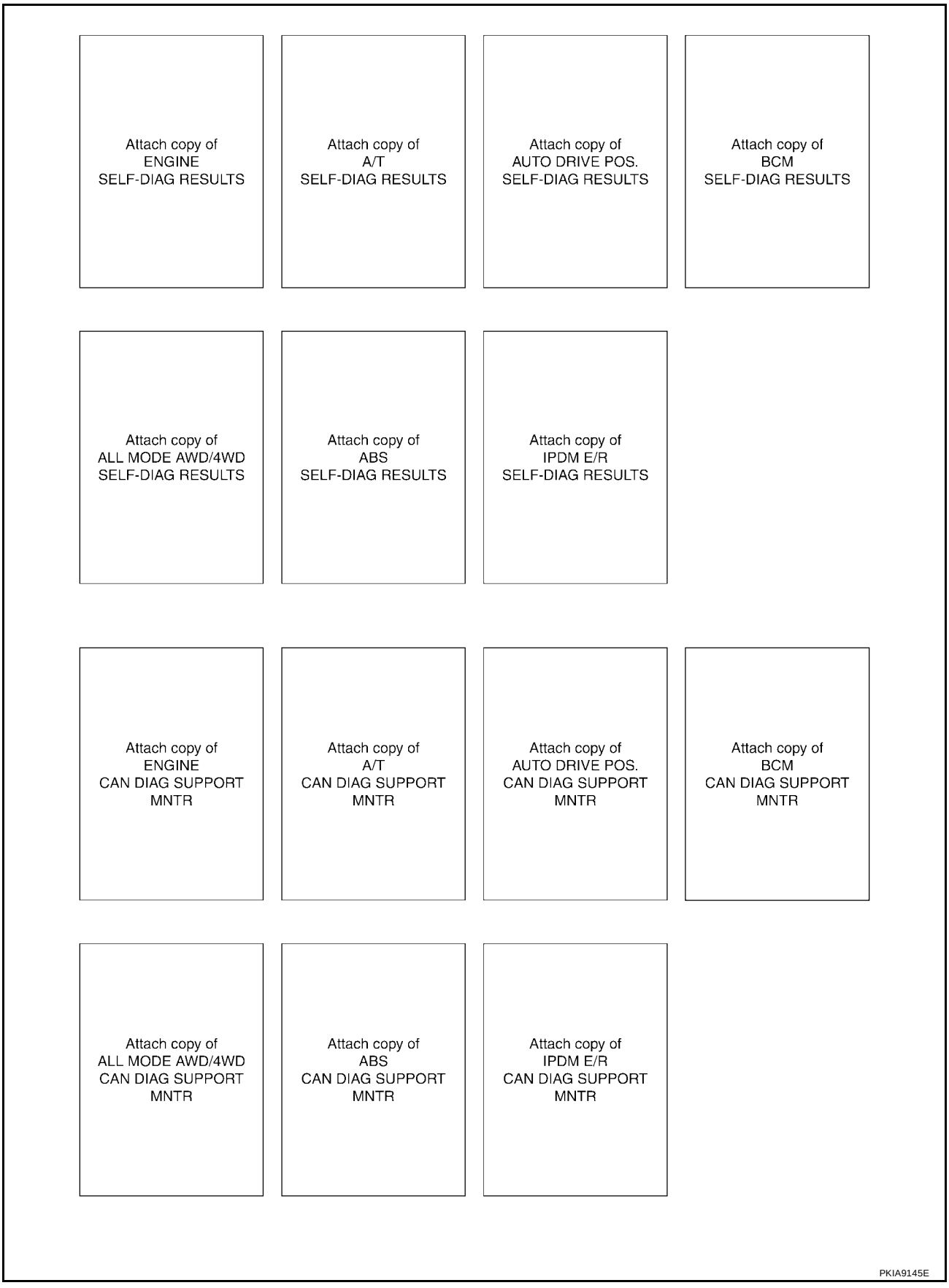
Symptoms :

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

Attach copy of
display control unit
CAN DIAG SUPPORT MONITOR check sheet

PKIA9331E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ALL MODE AWD/4WD
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA9145E

CHECK SHEET RESULTS (EXAMPLE)

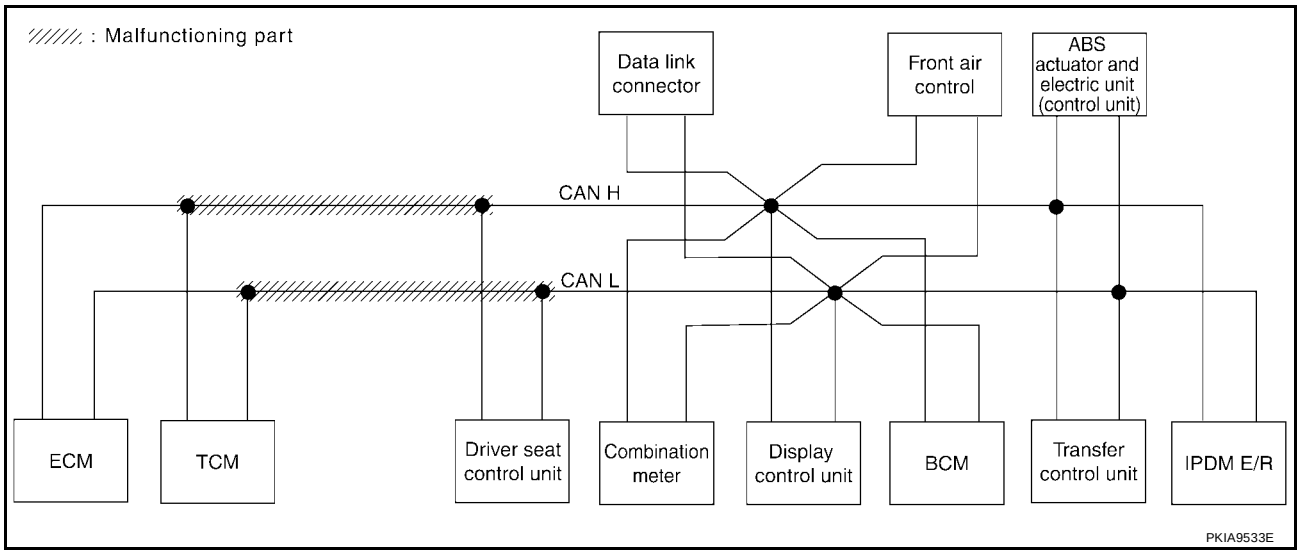
NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and driver seat control unit. Refer to LAN-286, "Circuit Check Between TCM and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN ✓	—	UNKWN ✓	—	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—	UNKWN ✓	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN ✓	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3 ✓	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN ✓	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN ✓	—	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN ✓	—	—	UNKWN	—	—	—	—

PKIA9410E



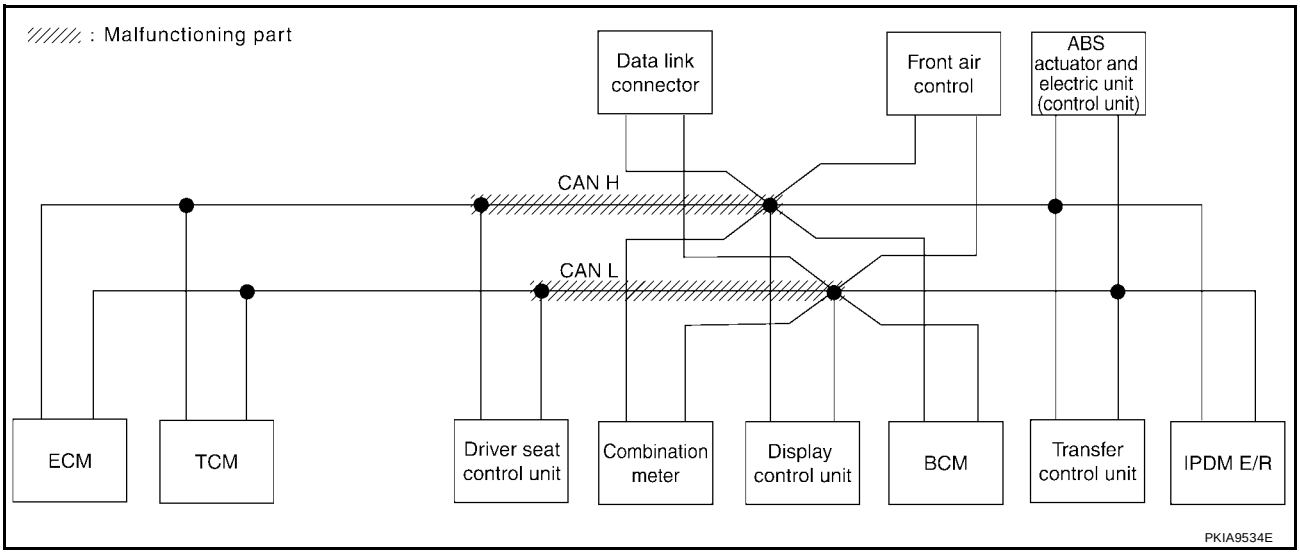
PKIA9533E

Case 2

Check harness between driver seat control unit and data link connector. Refer to LAN-287, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	UNKWN	–	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	–	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–	–
Display control unit	–	CAN COMM	CAN CIRC 1	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	–	–	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	–	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–	–

PKIA9411E

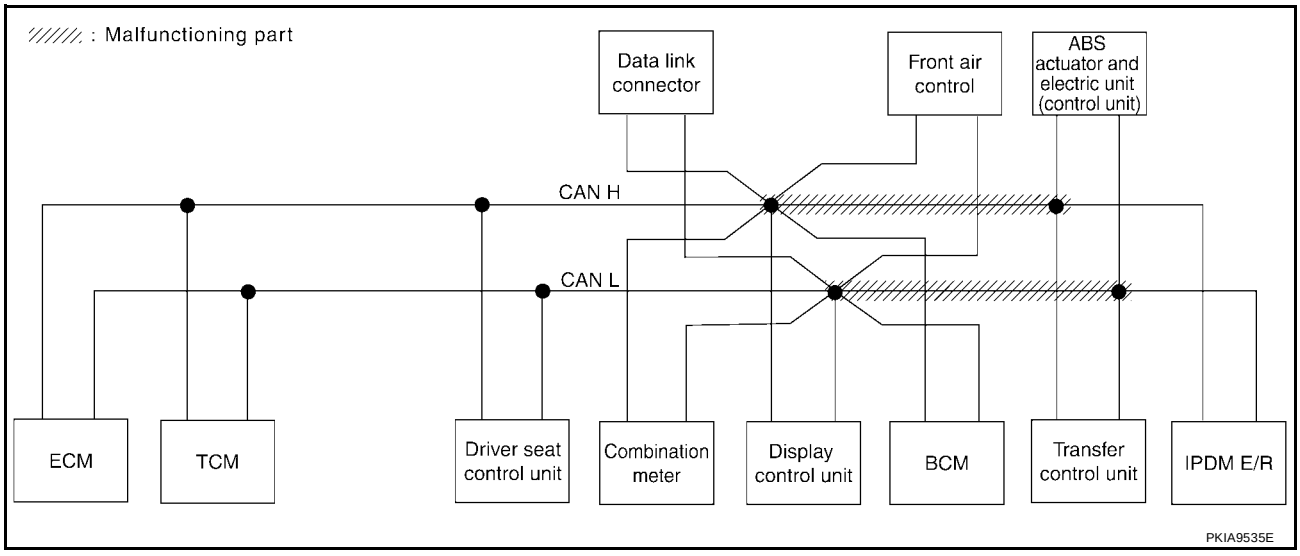


Case 3

Check harness between data link connector and IPDM E/R. Refer to LAN-288, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	UNKWN	–	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	–	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–	–
Display control unit	–	CAN COMM	CAN CIRC 1	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	–	–	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	–	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–	–

PKIA9412E



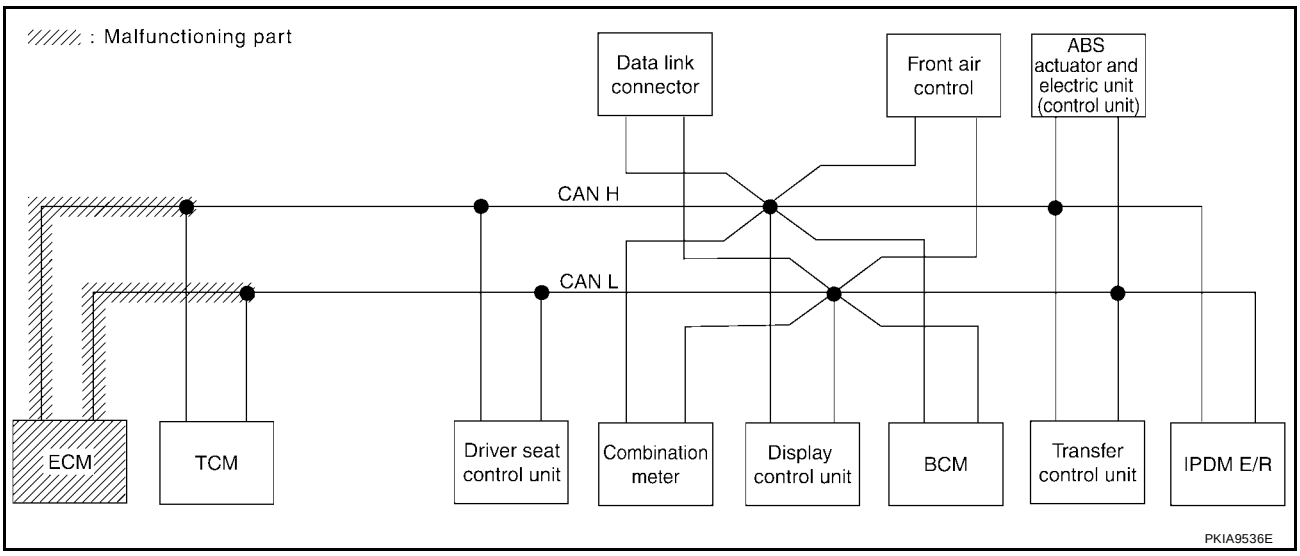
PKIA9535E

Case 4

Check ECM circuit. Refer to LAN-289, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9413E



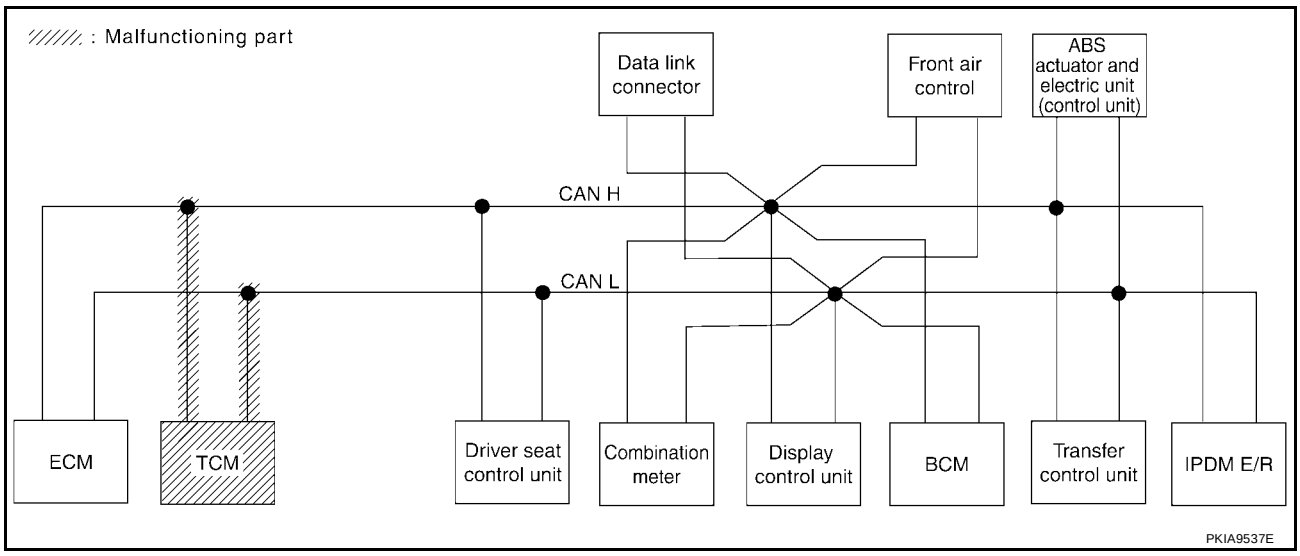
PKIA9536E

Case 5

Check TCM circuit. Refer to LAN-289, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN ✓	UNKWN	UNKWN	—	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	UNKWN ✓	—	—	UNKWN ✓	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN ✓	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN ✓	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9414E



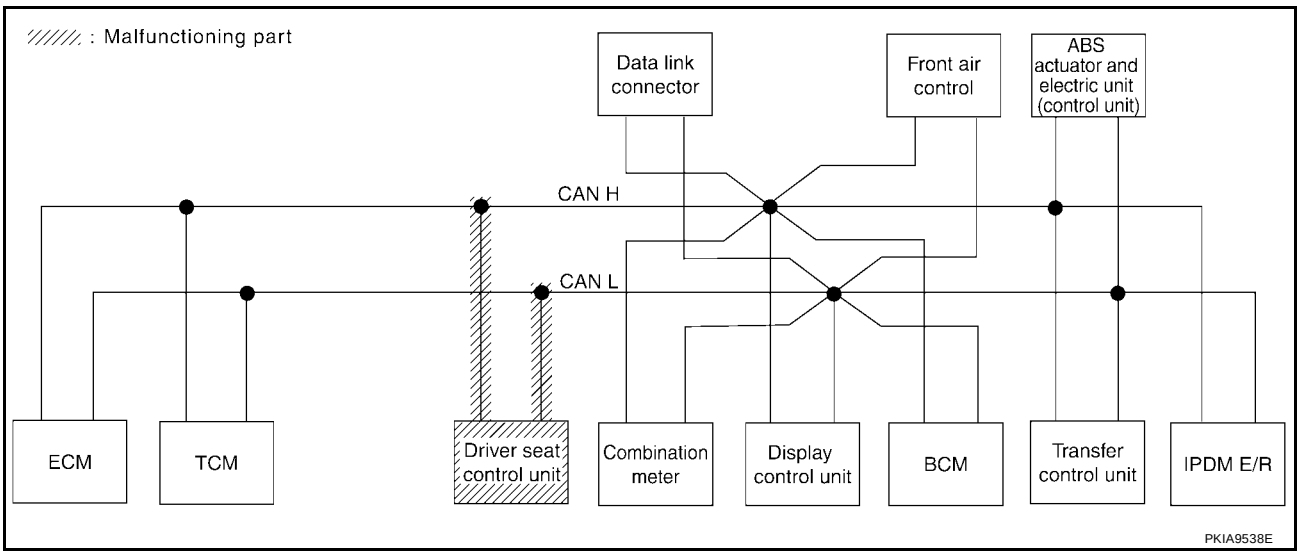
PKIA9537E

Case 6

Check driver seat control unit circuit. Refer to LAN-290, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9415E



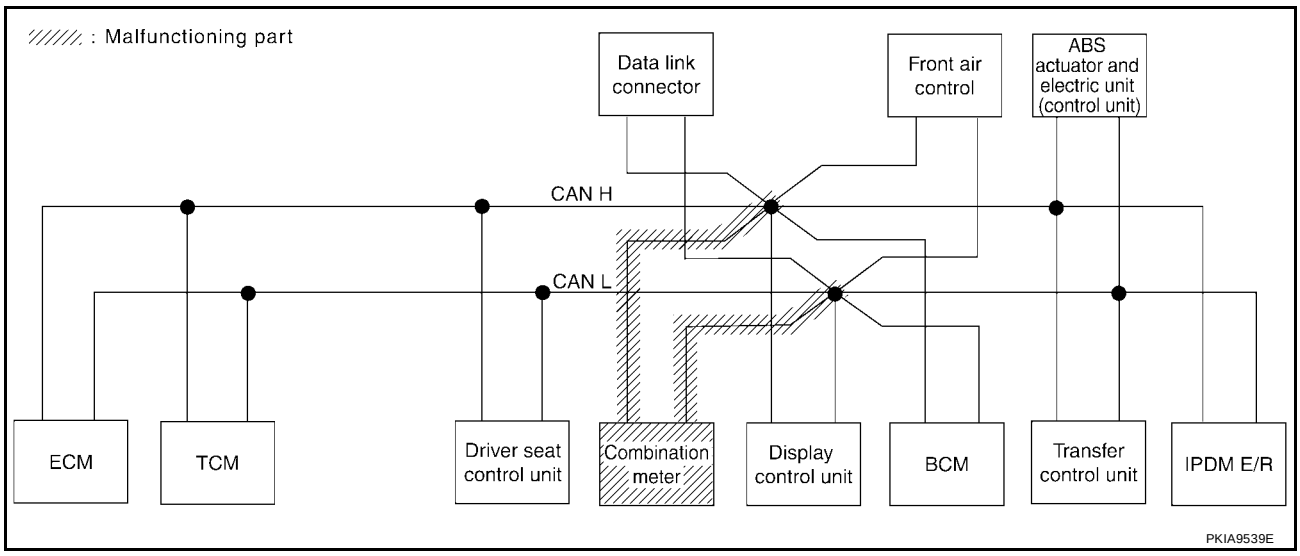
PKIA9538E

Case 7

Check combination meter circuit. Refer to LAN-290, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9416E



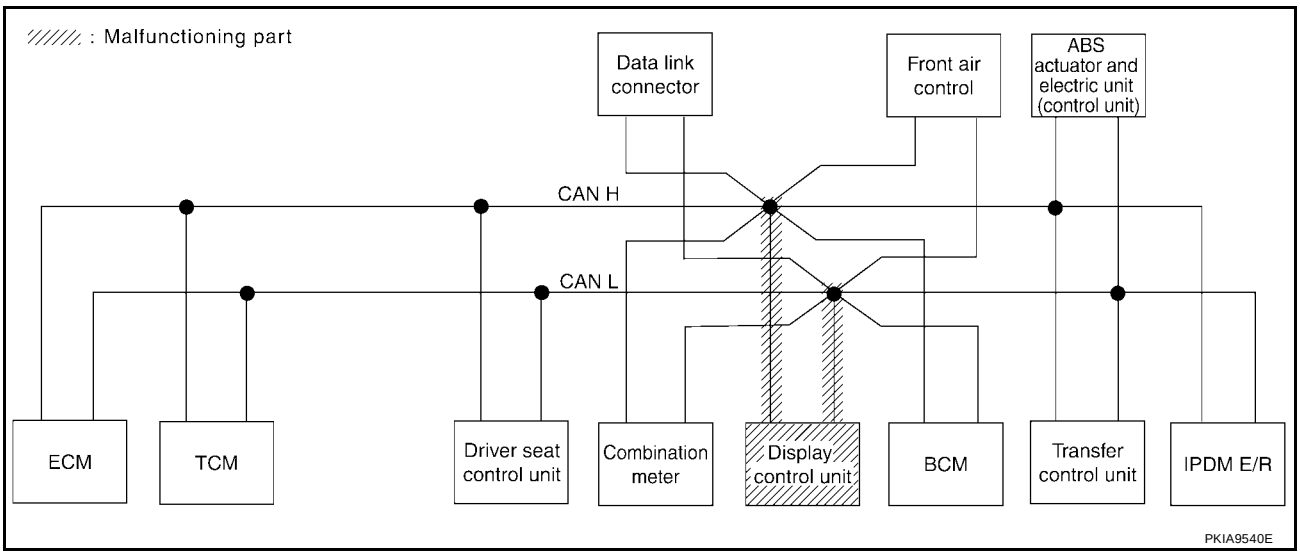
PKIA9539E

Case 8

Check display control unit circuit. Refer to LAN-291, "Display Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CRC 1 ✓	CAN CRC 3 ✓	—	CAN CRC 5 ✓	CAN CRC 2 ✓	CAN CRC 4 ✓	—	—	CAN CRC 7 ✓
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9417E



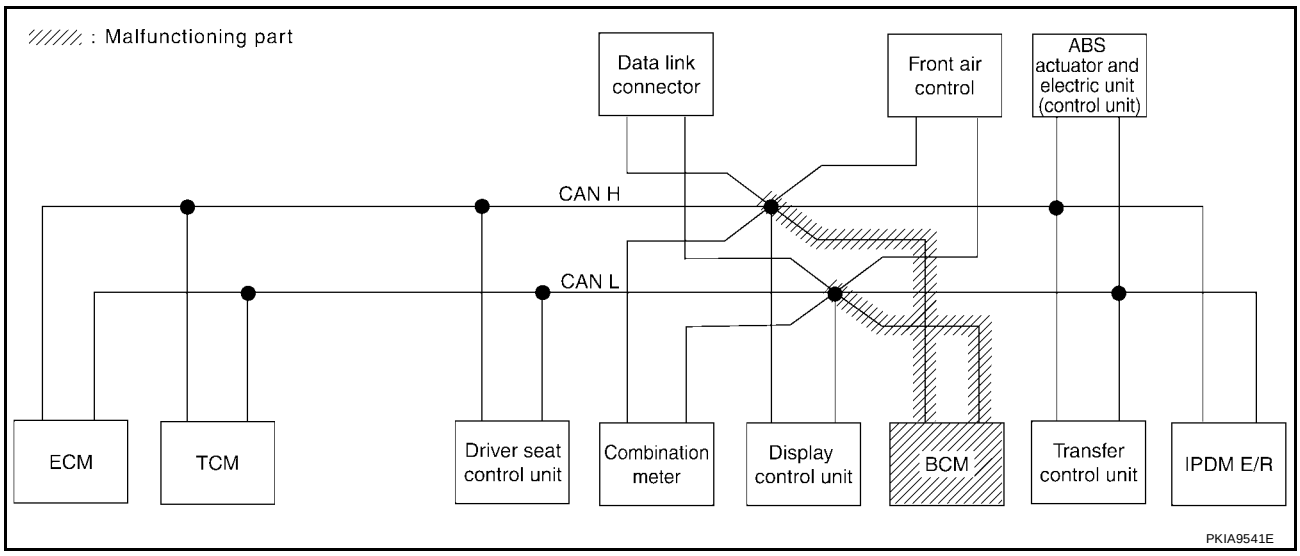
PKIA9540E

Case 9

Check BCM circuit. Refer to LAN-291, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9418E



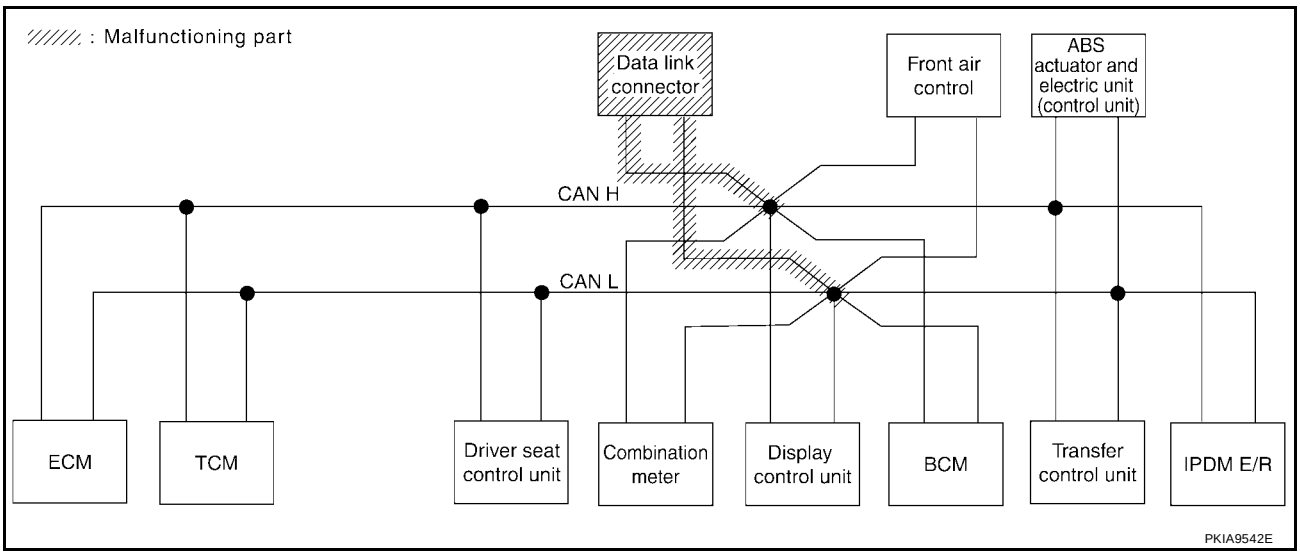
PKIA9541E

Case 10

Check data link connector circuit. Refer to LAN-292, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	UNKWN	–	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	–	–
AUTO DRIVE POS.	No indication ✓	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–	–
Display control unit	–	CAN COMM	CAN CIRC 1	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	–	–	CAN CIRC 7
BCM	No indication ✓	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	–	–	–
IPDM E/R	No indication ✓	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–	–

PKIA9419E



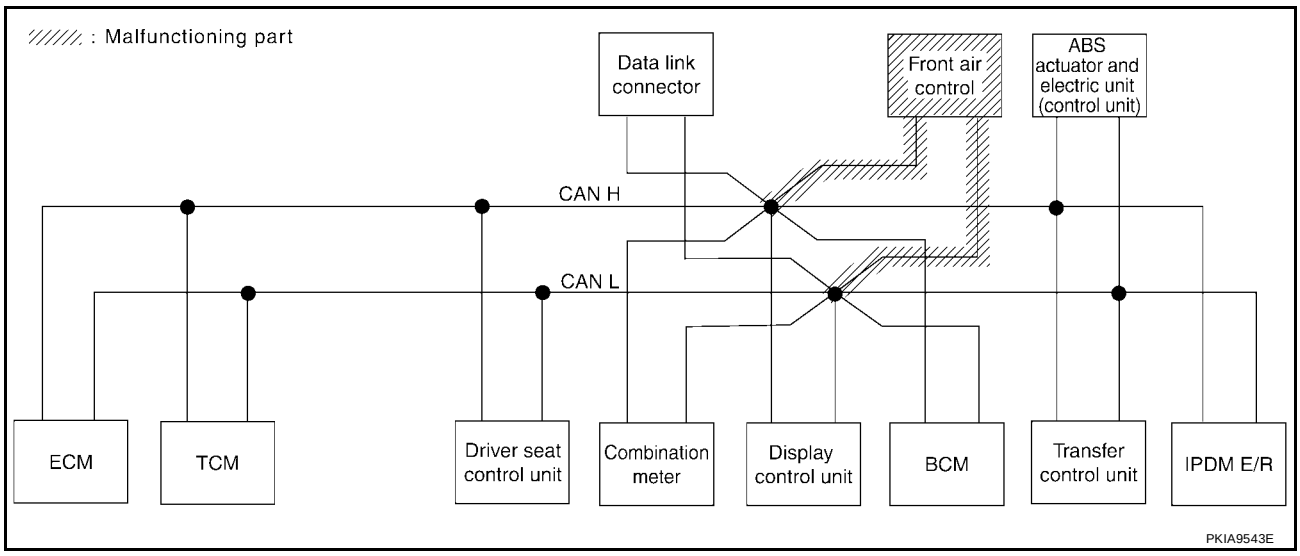
PKIA9542E

Case 11

Check front air control circuit. Refer to LAN-292, "Front Air Control Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9420E



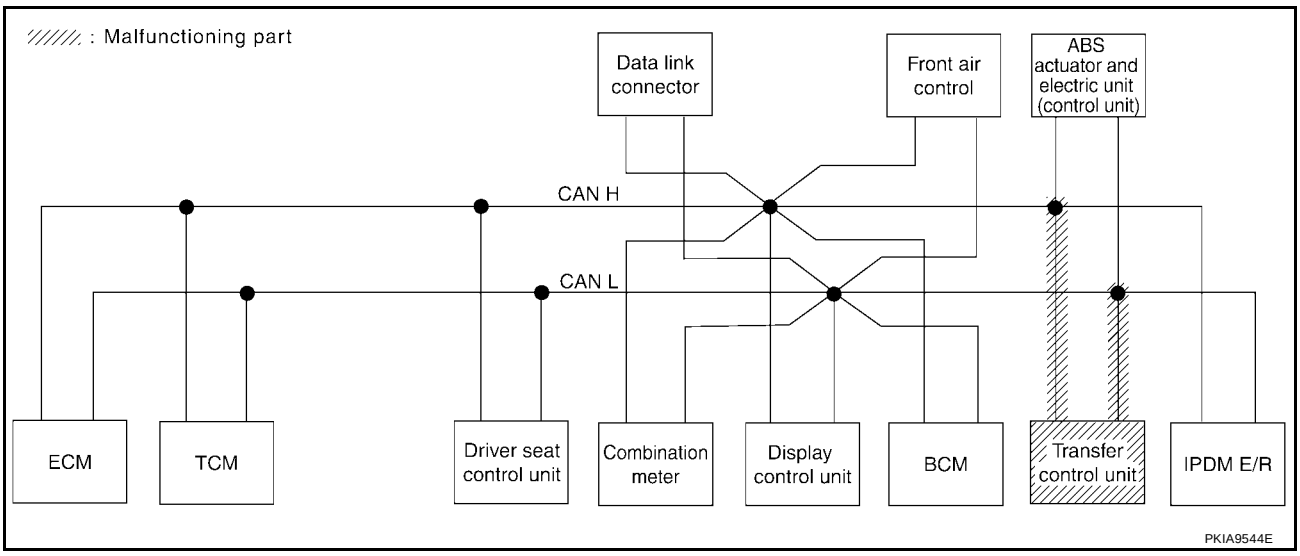
PKIA9543E

Case 12

Check transfer control unit circuit. Refer to LAN-293, "Transfer Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9421E



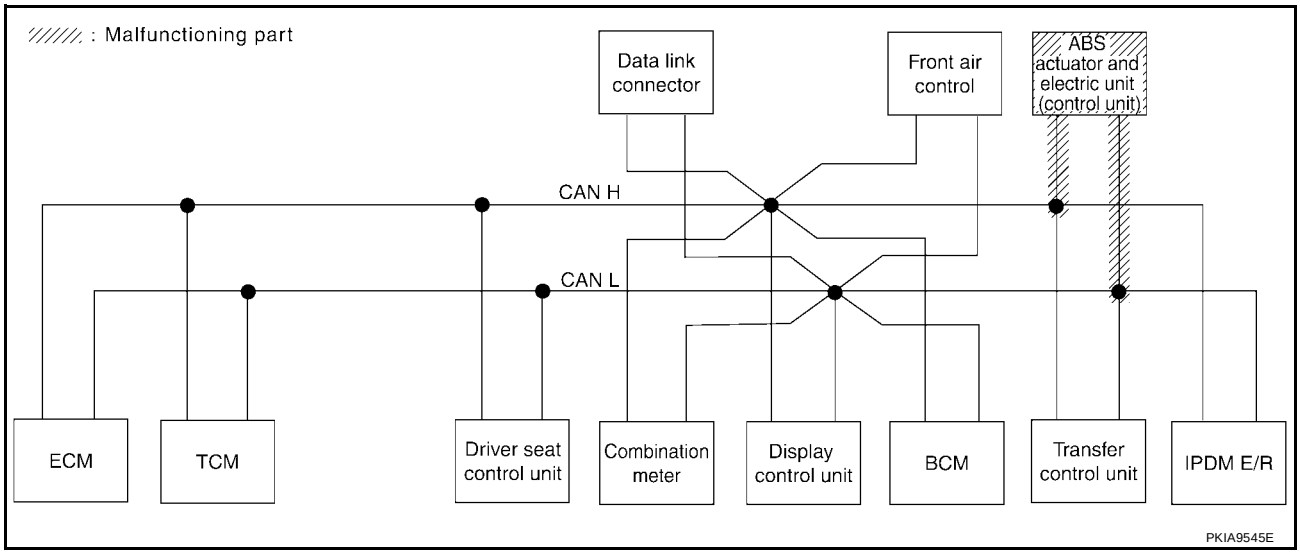
PKIA9544E

Case 13

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-293, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	UNKWN	–	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	–	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–	–
Display control unit	–	CAN COMM	CAN CIRC 1	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	–	–	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	–	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–	–

PKIA9422E



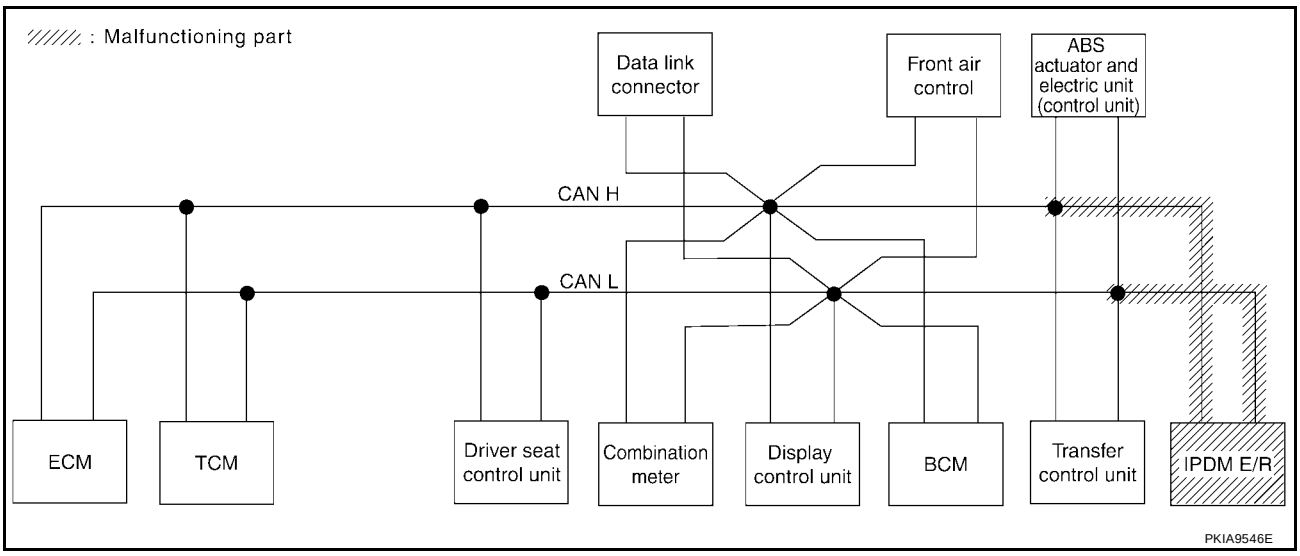
PKIA9545E

Case 14

Check IPDM E/R circuit. Refer to LAN-294, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	—	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	—	—	—	—	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9423E



PKIA9546E

Case 15

Check CAN communication circuit. Refer to LAN-294, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	UNKWN	–	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	–	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–	–
Display control unit	–	CAN COMM	CAN CIRC 1	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	–	–	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	–	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–	–

PKIA9424E

Case 16

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-295, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	UNKWN	–	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	–	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–	–
Display control unit	–	CAN COMM	CAN CIRC 1	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	–	–	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	–	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–	–

PKIA9425E

Case 17

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-295, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	UNKWN	–	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	–	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–	–
Display control unit	–	CAN COMM	CAN CIRC 1	CAN CIRC 3	–	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	–	–	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	–	–	–	–	–	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–	–

PKIA9426E

Circuit Check Between TCM and Driver Seat Control Unit

UKS001GW

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 F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

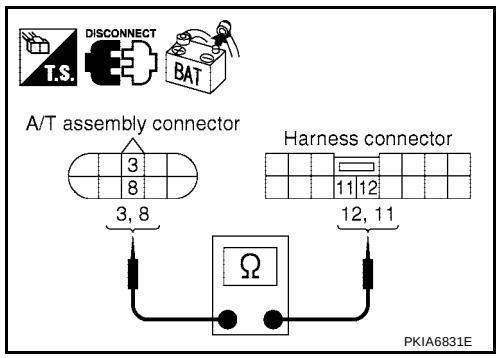
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12 (W), 11 (R).

3 (W) - 12 (W) : Continuity should exist.
8 (R) - 11 (R) : Continuity should exist.



PKIA6831E

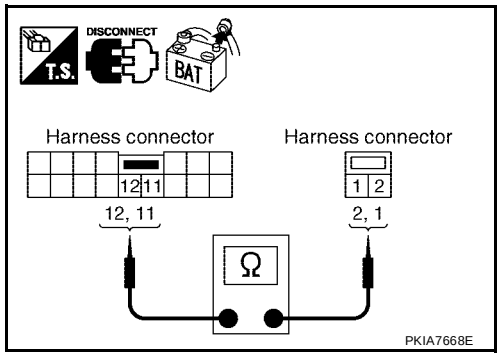
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).

12 (W) - 2 (W) : Continuity should exist.
11 (R) - 1 (R) : Continuity should exist.



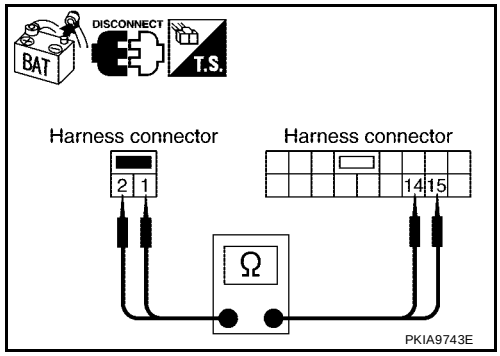
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37.
2. Check continuity between harness connector B75 terminals 2 (W), 1 (R) and harness connector B37 terminals 15 (W), 14 (R).

2 (W) - 15 (W) : Continuity should exist.
1 (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-267, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and Data Link Connector

UKS001GX

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 B69
- Harness connector M40

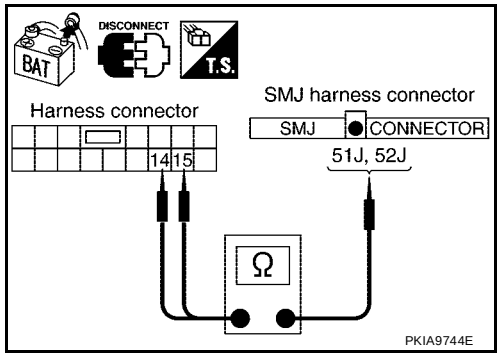
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37 and harness connector B69.
2. Check continuity between harness connector B37 terminals 15 (W), 14 (R) and harness connector B69 terminals 51J (W), 52J (R).

15 (W) - 51J (W) : Continuity should exist.
14 (R) - 52J (R) : Continuity should exist.



OK or NG

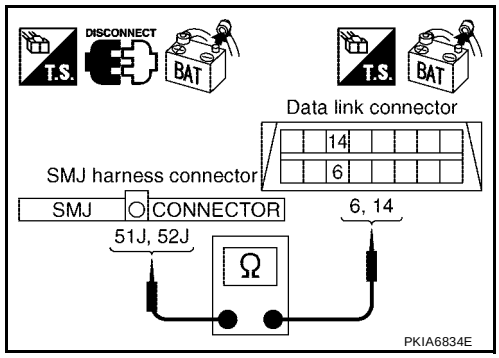
OK >> GO TO 3.
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

51J (W) - 6 (W) : Continuity should exist.

52J (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-267, "Work Flow" .

NG >> Repair harness.

Circuit Check Between Data Link Connector and IPDM E/R

UKS001GY

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 M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

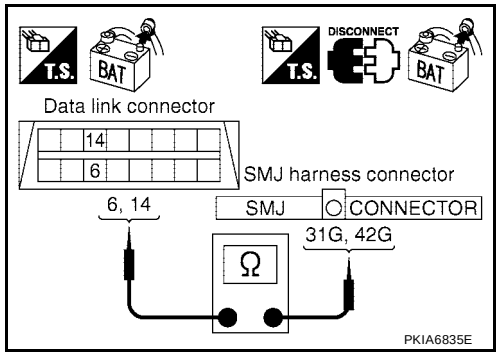
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).

6 (W) - 31G (W) : Continuity should exist.

14 (R) - 42G (R) : Continuity should exist.



OK or NG

OK >> GO TO 3.

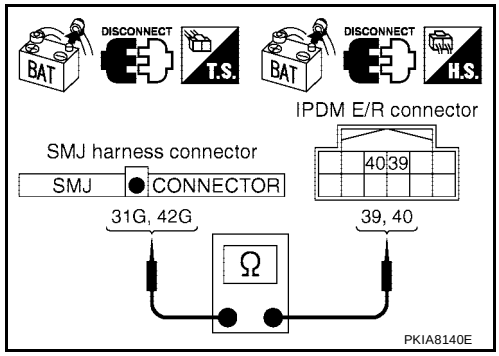
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).

31G (W) - 39 (W) : Continuity should exist.

42G (R) - 40 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-267, "Work Flow" .

NG >> Repair harness.

ECM Circuit Check

UKS001GZ

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 E19
- Harness connector F33

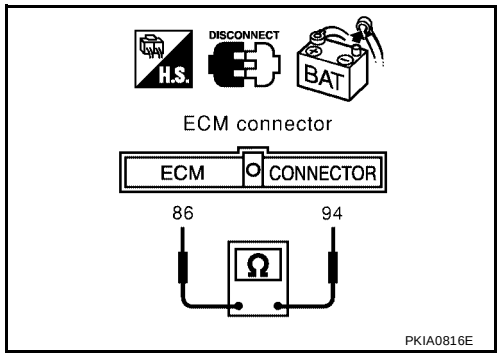
OK or NG

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 E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R) : Approx. 108 - 132Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and A/T assembly.

TCM Circuit Check

UKS001H0

1. CHECK CONNECTOR

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

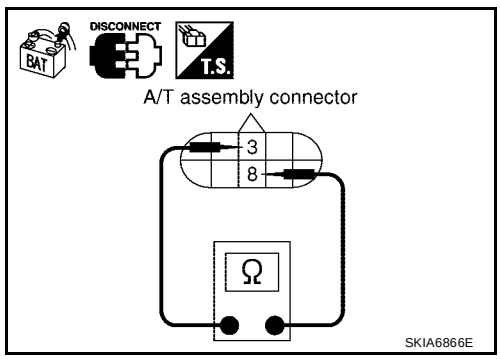
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Driver Seat Control Unit Circuit Check

UKS001H1

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 unit side and harness side).

- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

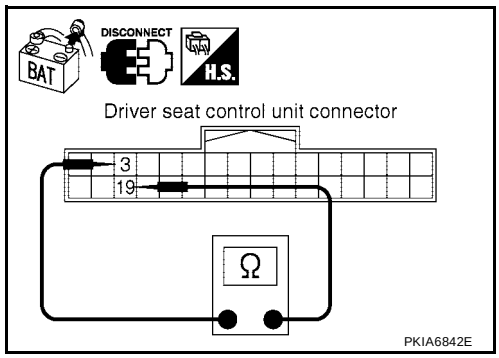
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect driver seat control unit connector.
2. Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R).

3 (W) - 19 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B69.

Combination Meter Circuit Check

UKS001H2

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).

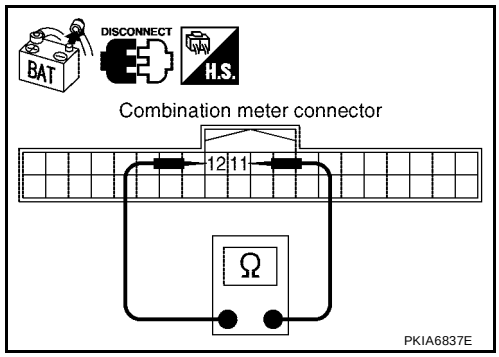
OK or NG

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 M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R) : Approx. 54 - 66Ω



OK or NG

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

Display Control Unit Circuit Check

UKS001H3

1. CHECK CONNECTOR

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

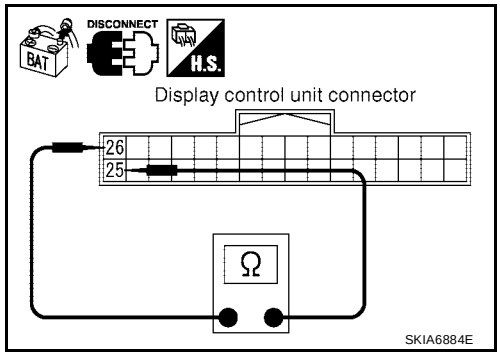
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect display control unit connector.
2. Check resistance between display control unit harness connector M95 terminals 25 (W) and 26 (R).

25 (W) - 26 (R) : Approx. 54 - 66Ω



OK or NG

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

BCM Circuit Check

UKS001H4

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).

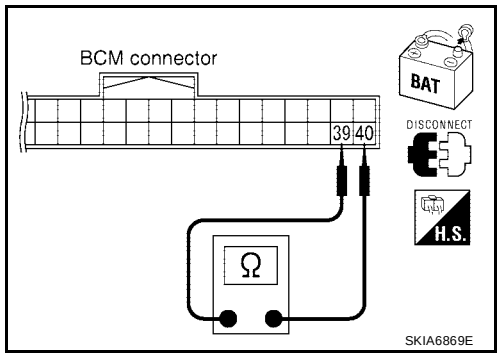
OK or NG

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 M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS001H5

1. CHECK CONNECTOR

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

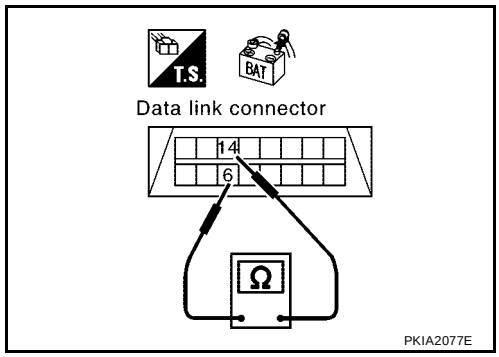
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-267, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Front Air Control Circuit Check

UKS0020E

1. CHECK CONNECTOR

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

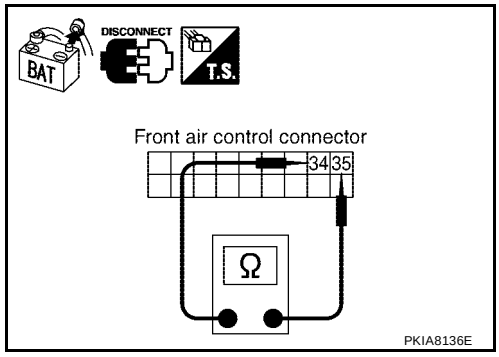
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 34 (W) and 35 (R).

34 (W) - 35 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace front air control.
NG >> Repair harness between front air control and data link connector.

Transfer Control Unit Circuit Check

UKS001H8

1. CHECK CONNECTOR

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

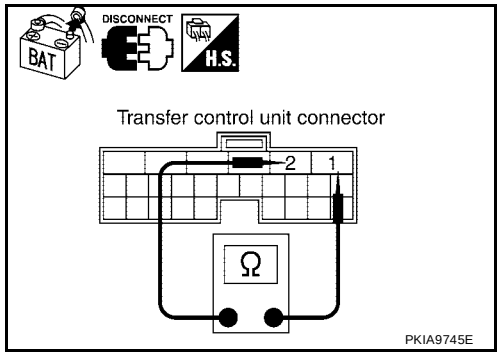
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R).

1 (W) - 2 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace transfer control unit.
NG >> Repair harness between transfer control unit and harness connector E152.

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001H9

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).

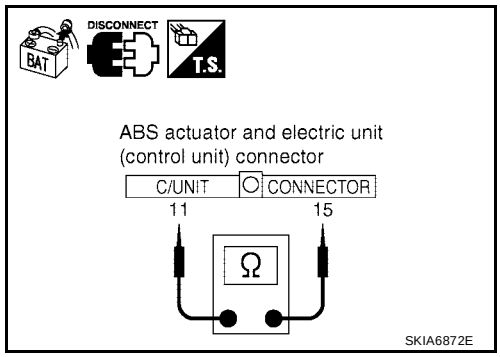
OK or NG

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 E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R) : 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 harness connector E152.

IPDM E/R Circuit Check

UKS001HA

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).

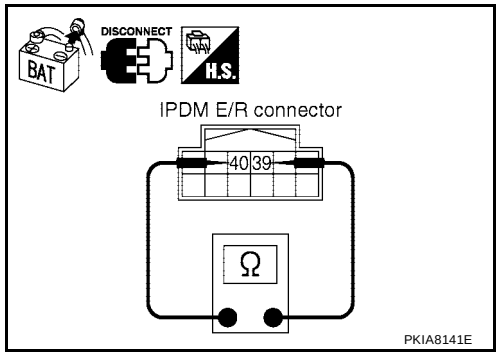
OK or NG

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 E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 108 - 132Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS001HB

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- A/T assembly
- Driver seat control unit
- Combination meter
- Display control unit
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

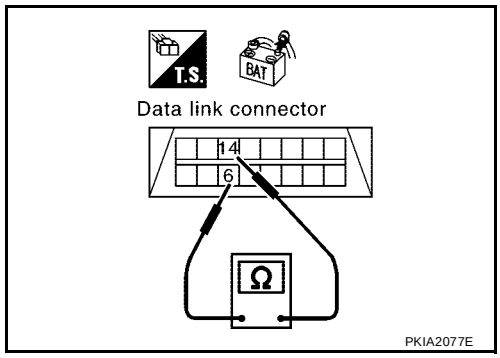
2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

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

OK or NG

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



3. CHECK HARNESS FOR SHORT CIRCUIT

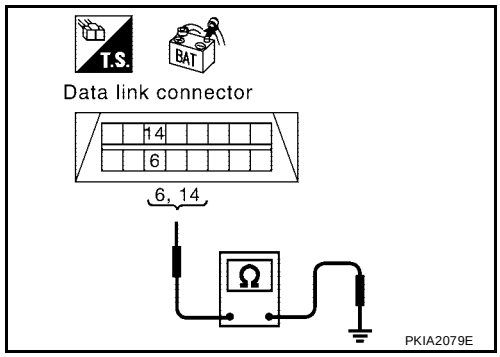
Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

6 (W) - Ground : Continuity should not exist.

14 (R) - Ground : Continuity should not exist.

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-295, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

UKS001HC

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

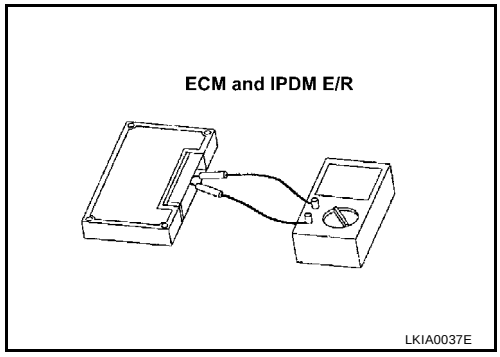
Component Inspection

UKS001HD

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 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 10)

PFP:23710

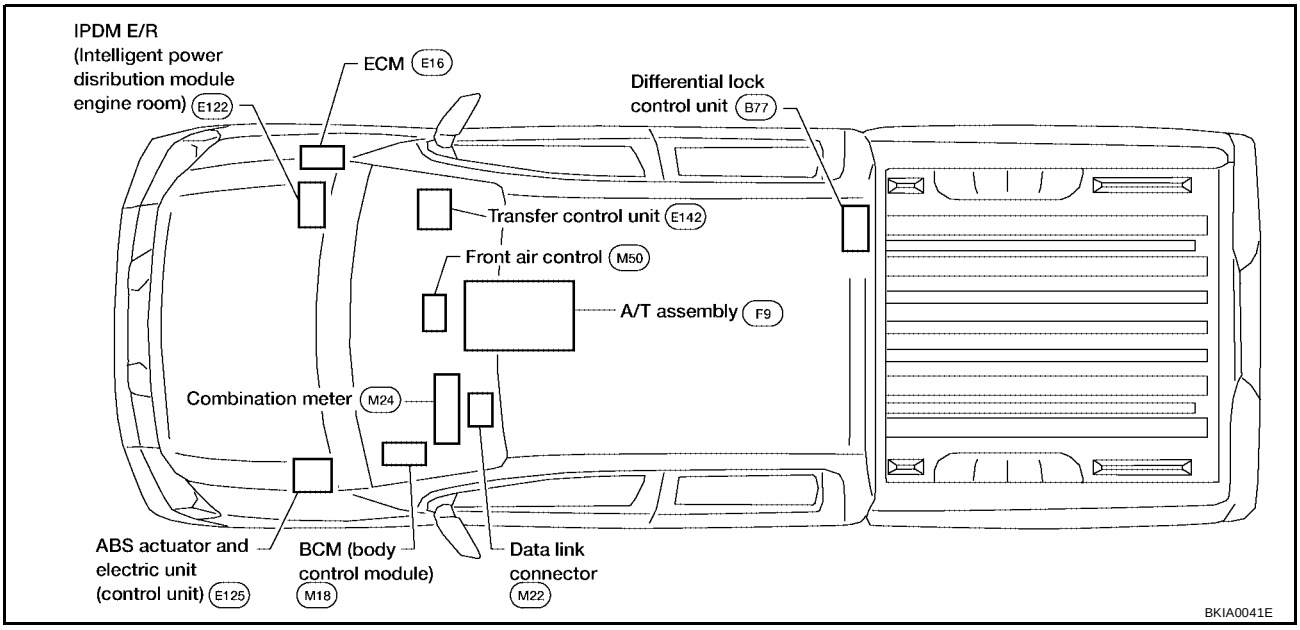
System Description

UKS001HE

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.

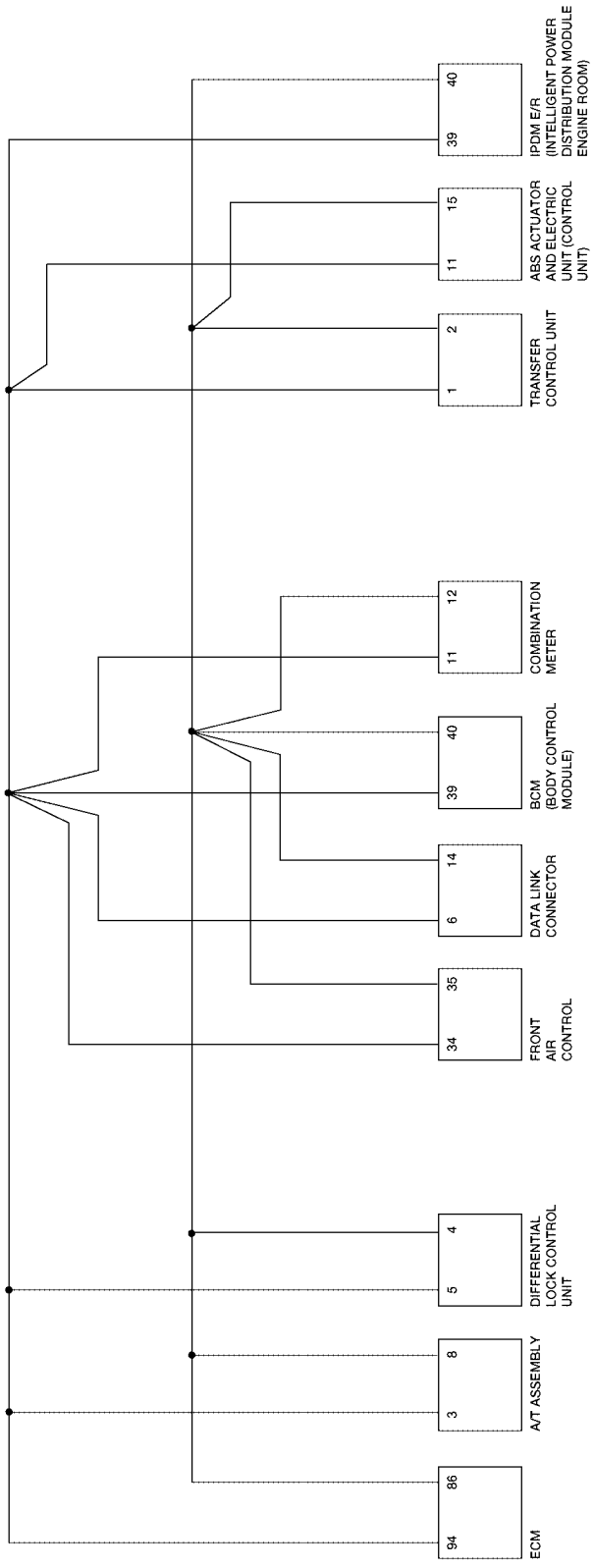
Component Parts and Harness Connector Location

UKS001HF



Schematic

UKS001HG

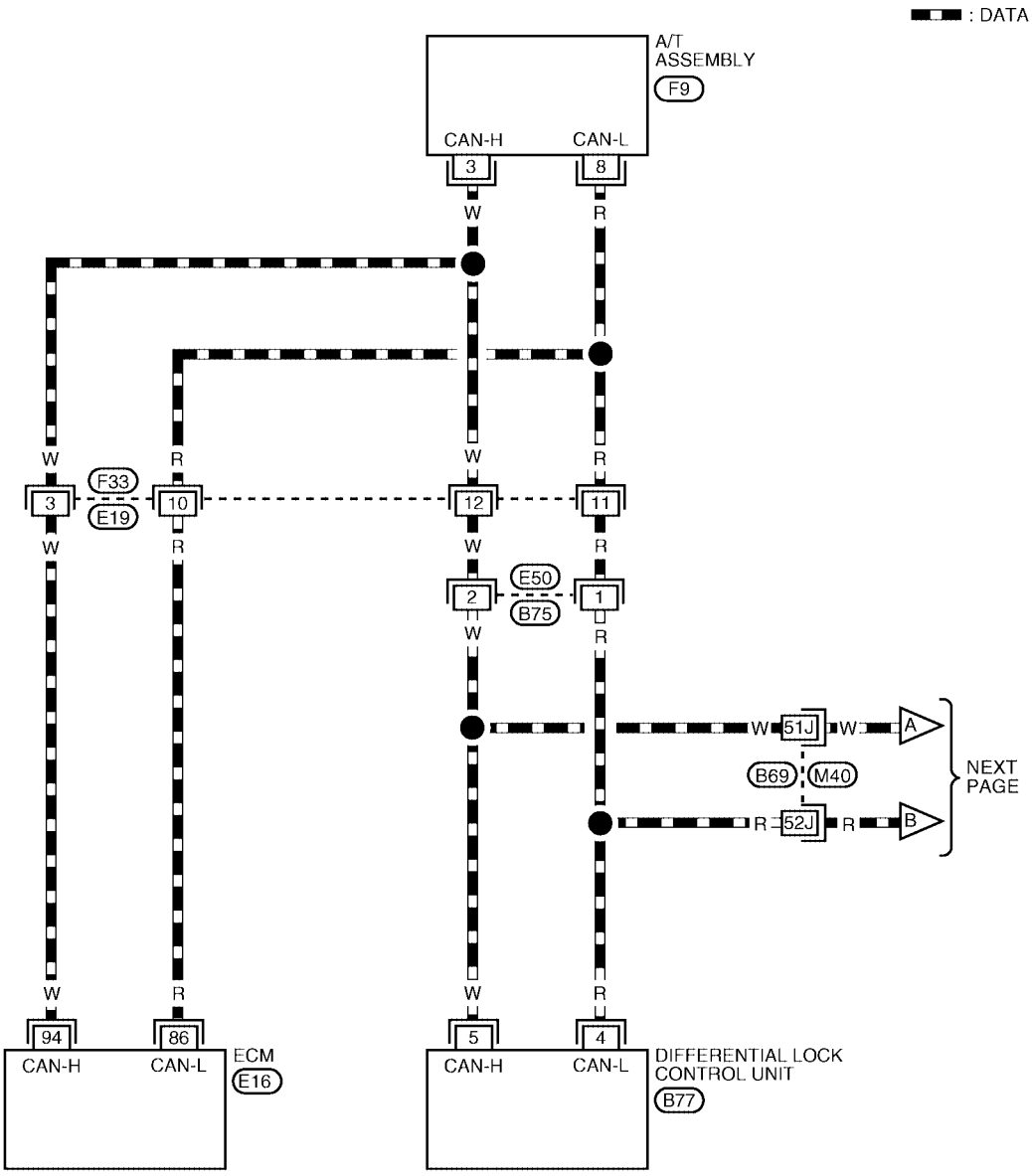


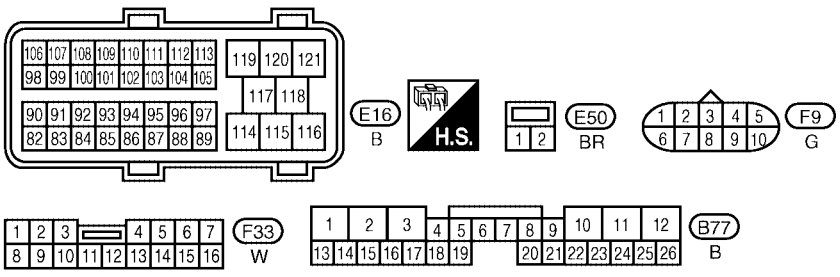
BKWA0148E

Wiring Diagram - CAN -

UKS001HH

LAN-CAN-28

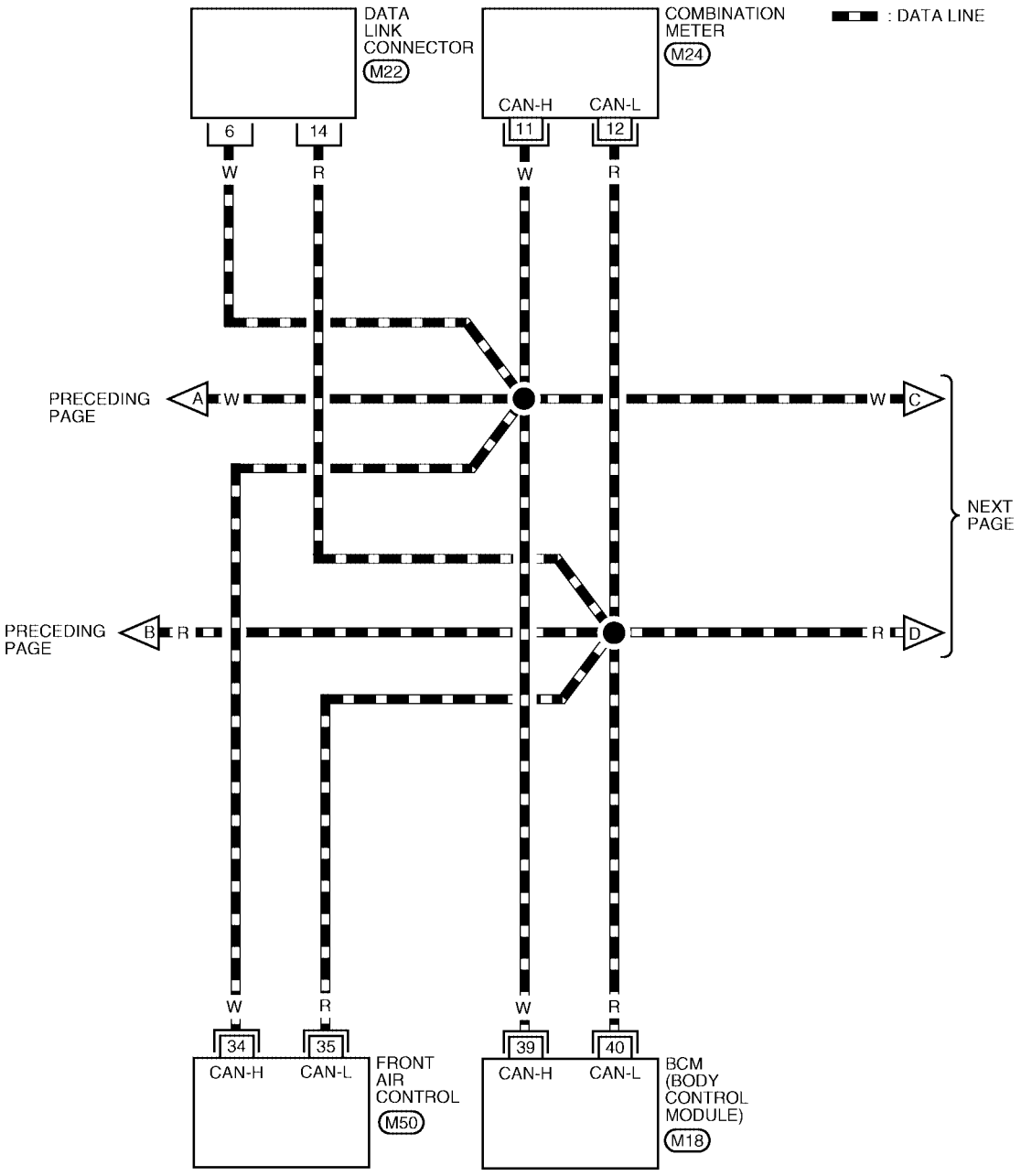


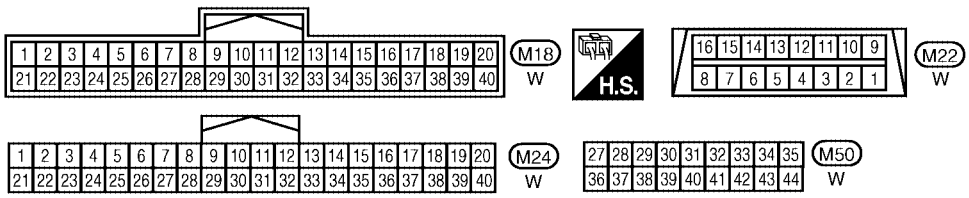


REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

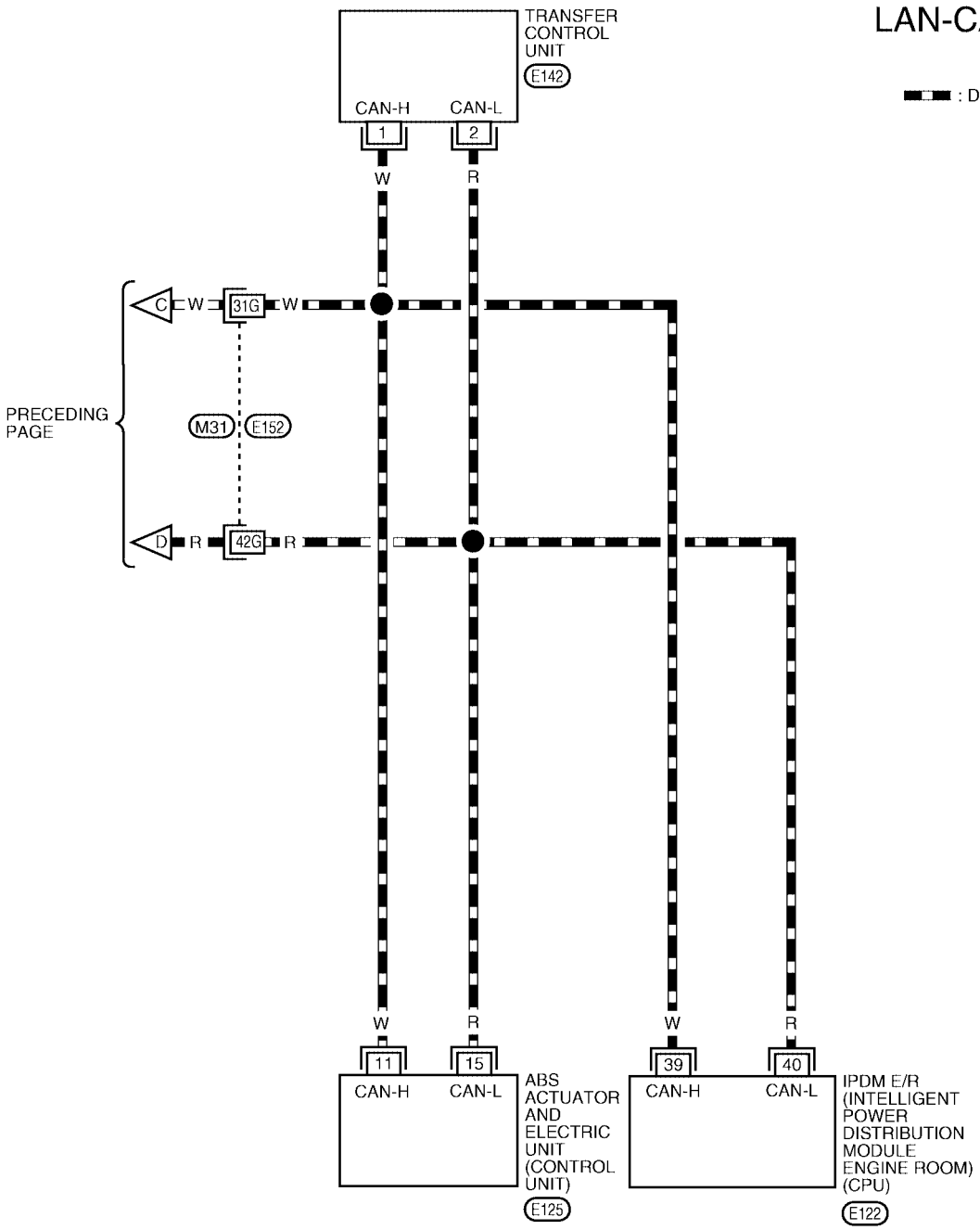
BKWA0149E

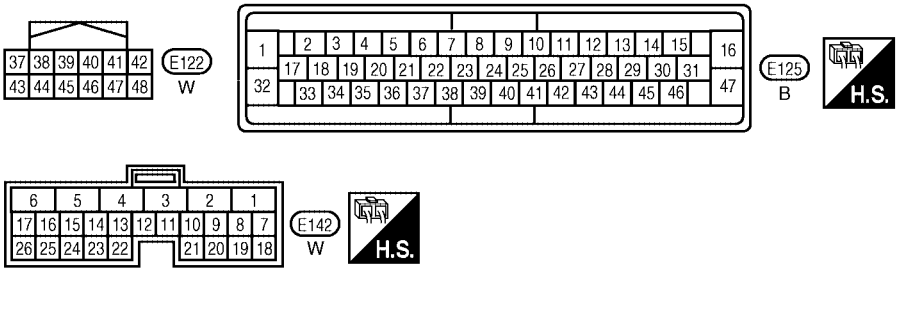
LAN-CAN-29





BKWA0150E





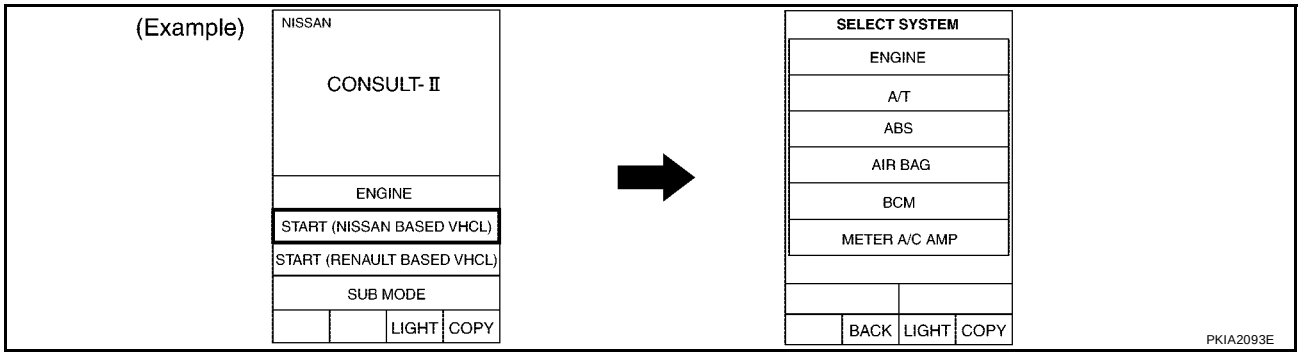
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0151E

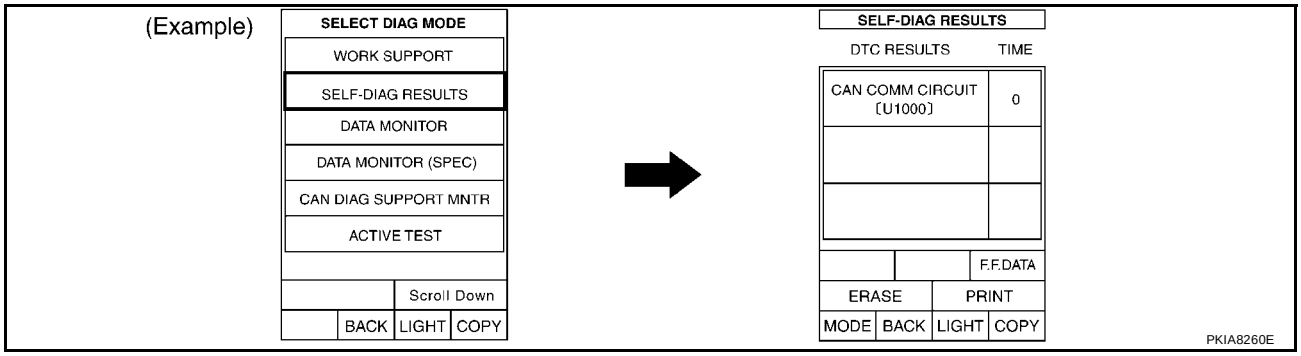
Work Flow

UKS001HI

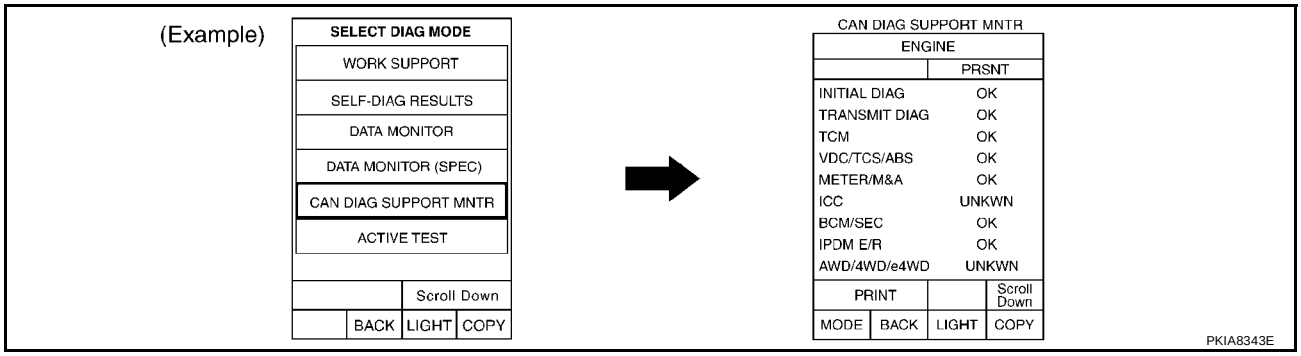
1. When there are no indications of “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “A/T”, “DIFF LOCK”, “BCM”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “DIFF LOCK”, “BCM”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-302, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-302, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “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 the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-304, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Check sheet table

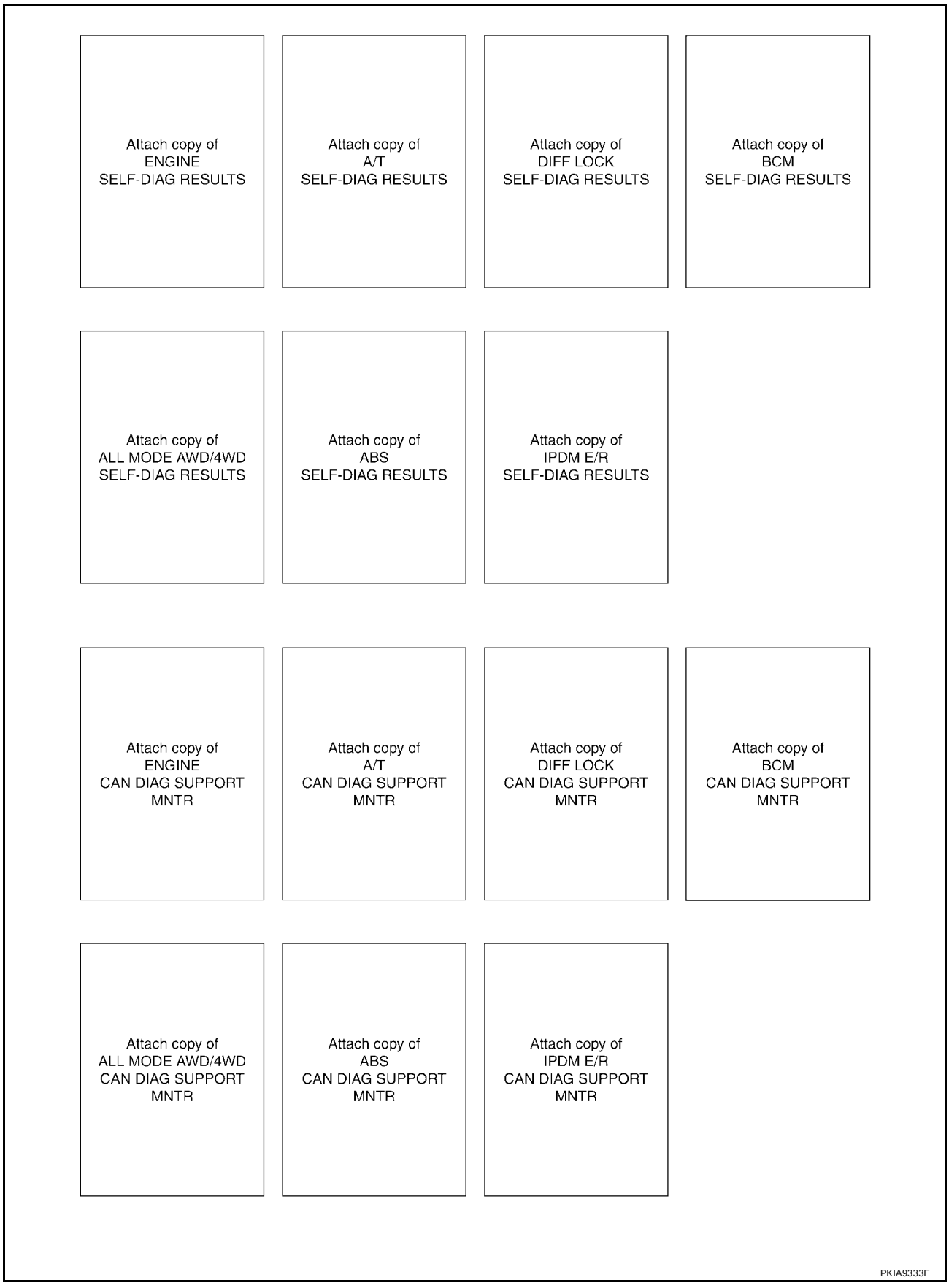
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIA9332E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
DIFF LOCK
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
DIFF LOCK
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ALL MODE AWD/4WD
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA9333E

CHECK SHEET RESULTS (EXAMPLE)

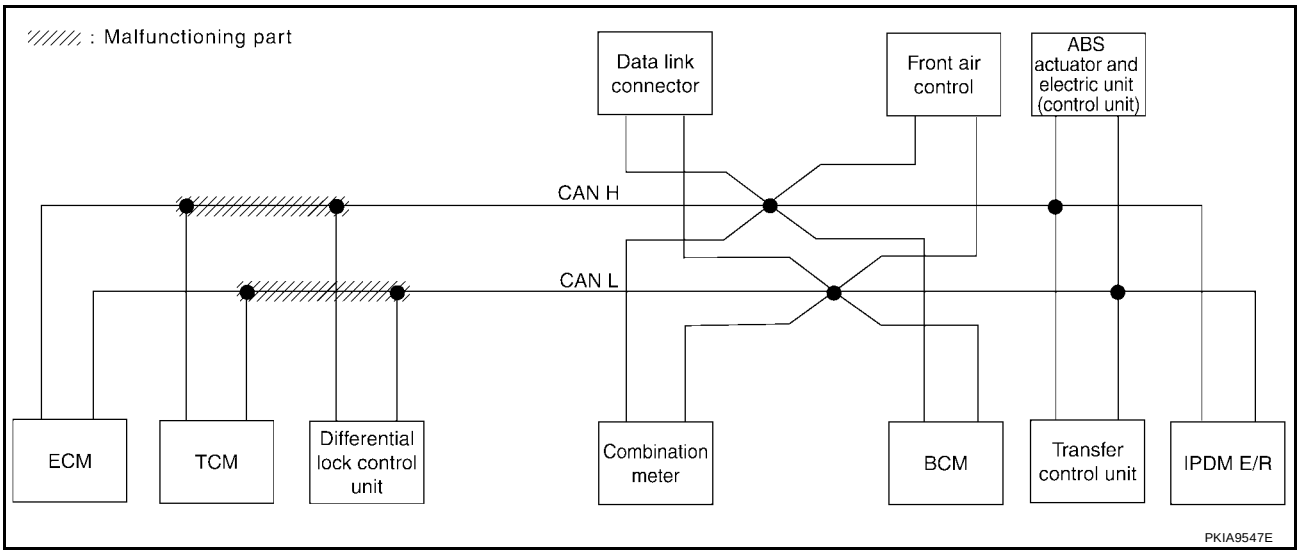
NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and differential lock control unit. Refer to LAN-317, "Circuit Check Between TCM and Differential Lock Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	–	UNKWN	–	UNKWN	UNKWN	–
DIFF LOCK	–	NG	UNKWN	UNKWN	–	–	–	–	UNKWN	UNKWN	–
BCM	No indication	NG	UNKWN	UNKWN	–	–	UNKWN	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–

PKIA9427E

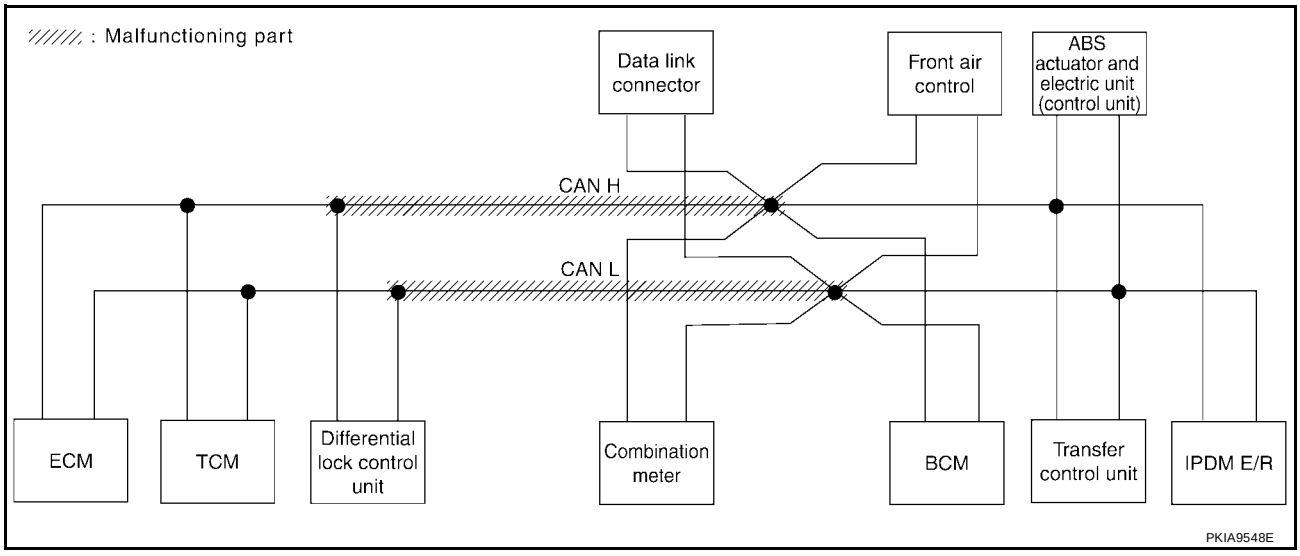


Case 2

Check harness between differential lock control unit and data link connector. Refer to LAN-318, "Circuit Check Between Differential Lock Control Unit and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	–	UNKWN	–	UNKWN	UNKWN	–
DIFF LOCK	–	NG	UNKWN	UNKWN	–	–	–	–	UNKWN	UNKWN	–
BCM	No indication	NG	UNKWN	UNKWN	–	–	UNKWN	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–

PKIA9428E



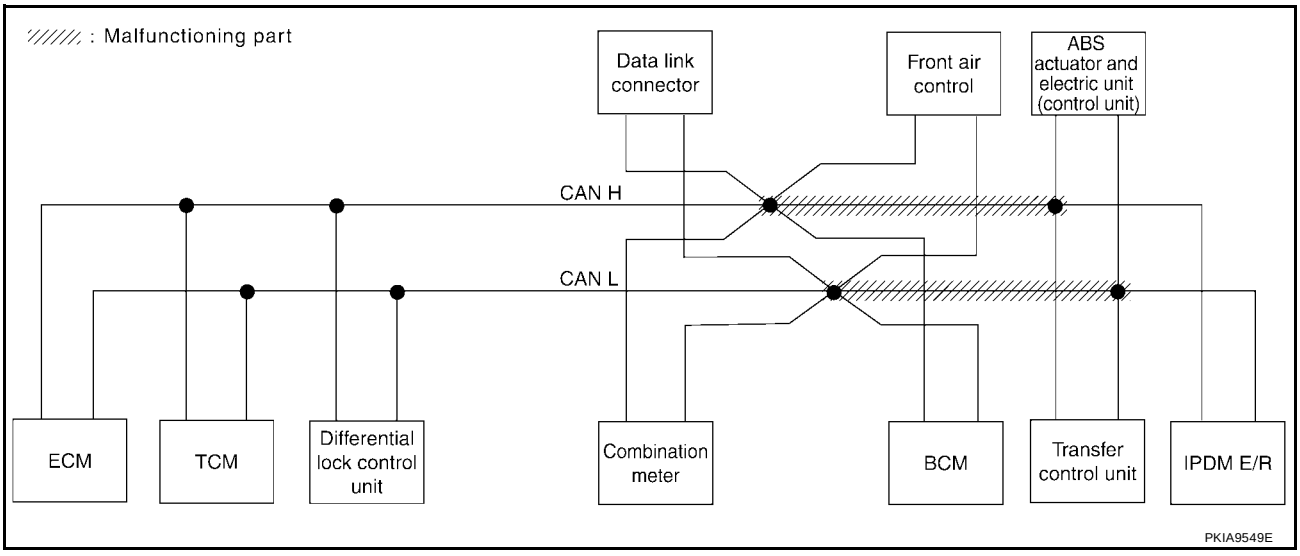
PKIA9548E

Case 3

Check harness between data link connector and IPDM E/R. Refer to LAN-319, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9429E

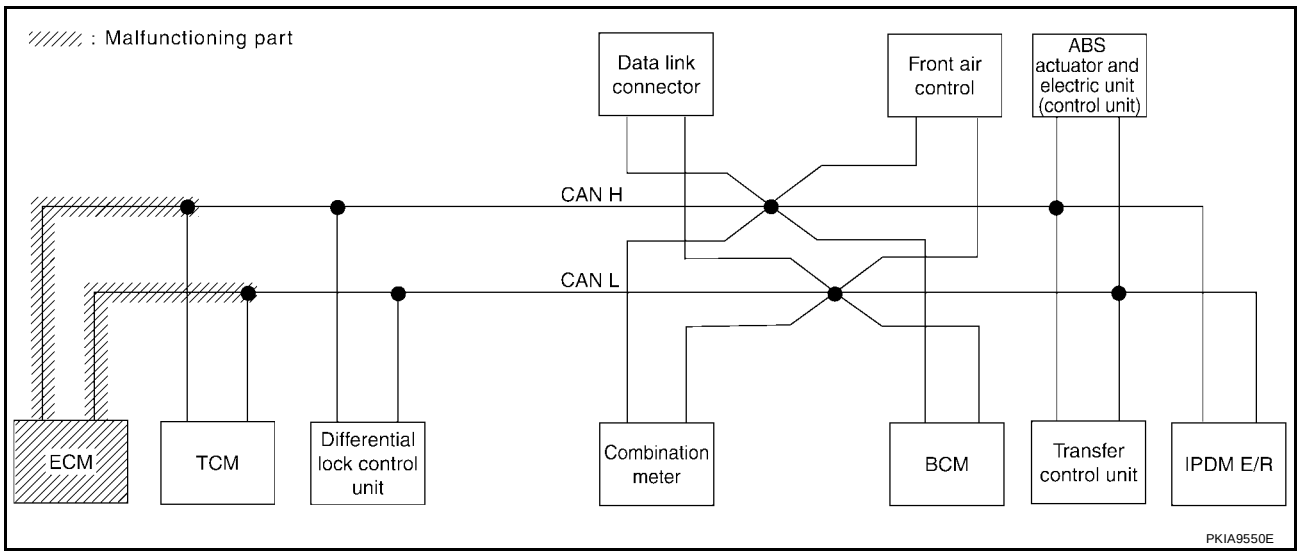


Case 4

Check ECM circuit. Refer to LAN-320, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9430E



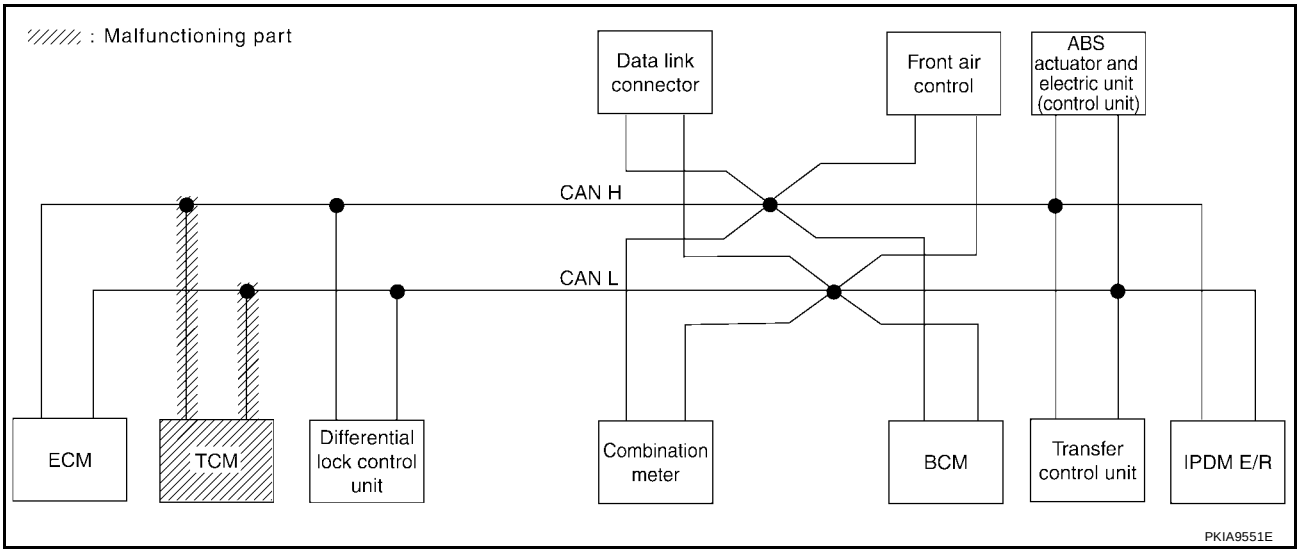
PKIA9550E

Case 5

Check TCM circuit. Refer to LAN-320, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN ✓	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	—	UNKWN ✓	—	UNKWN ✓	UNKWN ✓	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN ✓	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN ✓	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9431E

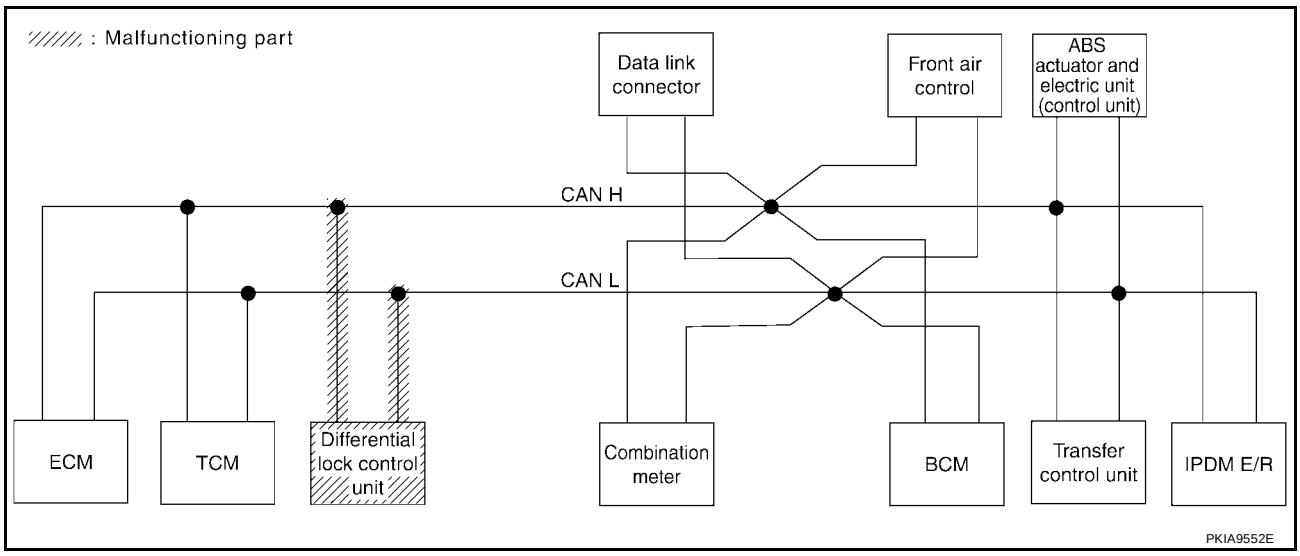


Case 6

Check differential lock control unit circuit. Refer to LAN-321, "Differential Lock Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	–	UNKWN	–	UNKWN	UNKWN	–
DIFF LOCK	–	NG	UNKWN ✓	UNKWN ✓	–	–	–	–	UNKWN ✓	UNKWN ✓	–
BCM	No indication	NG	UNKWN	UNKWN	–	–	UNKWN	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	UNKWN ✓	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–

PKIA9432E



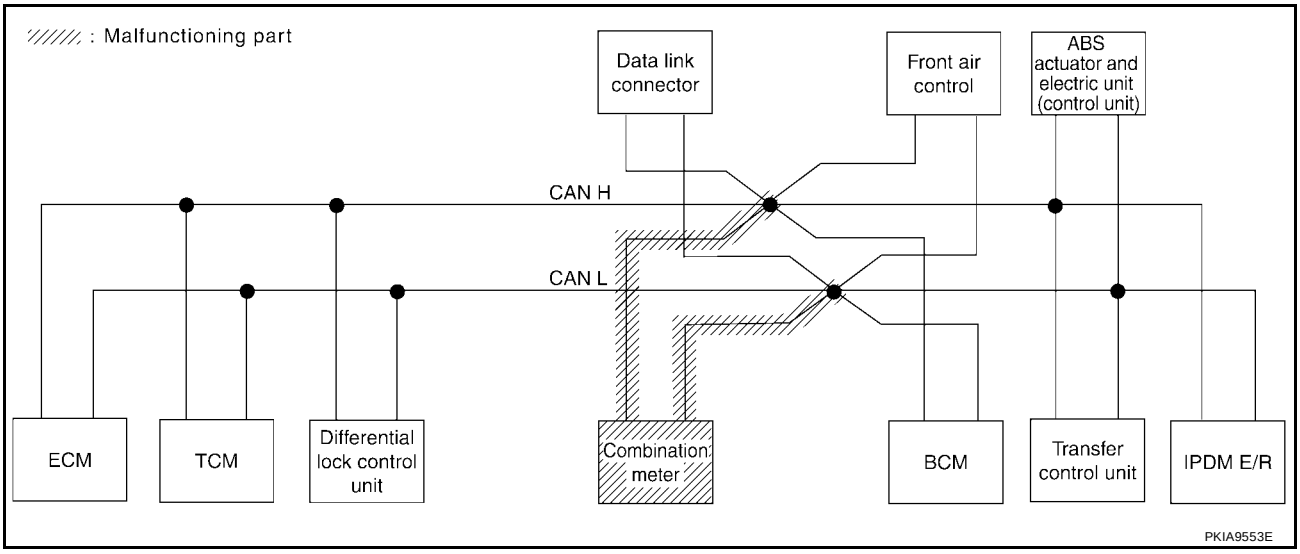
PKIA9552E

Case 7

Check combination meter circuit. Refer to LAN-321, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	–	UNKWN	–	UNKWN	UNKWN	–
DIFF LOCK	–	NG	UNKWN	UNKWN	–	–	–	–	UNKWN	UNKWN	–
BCM	No indication	NG	UNKWN	UNKWN	–	–	UNKWN	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–

PKIA9433E



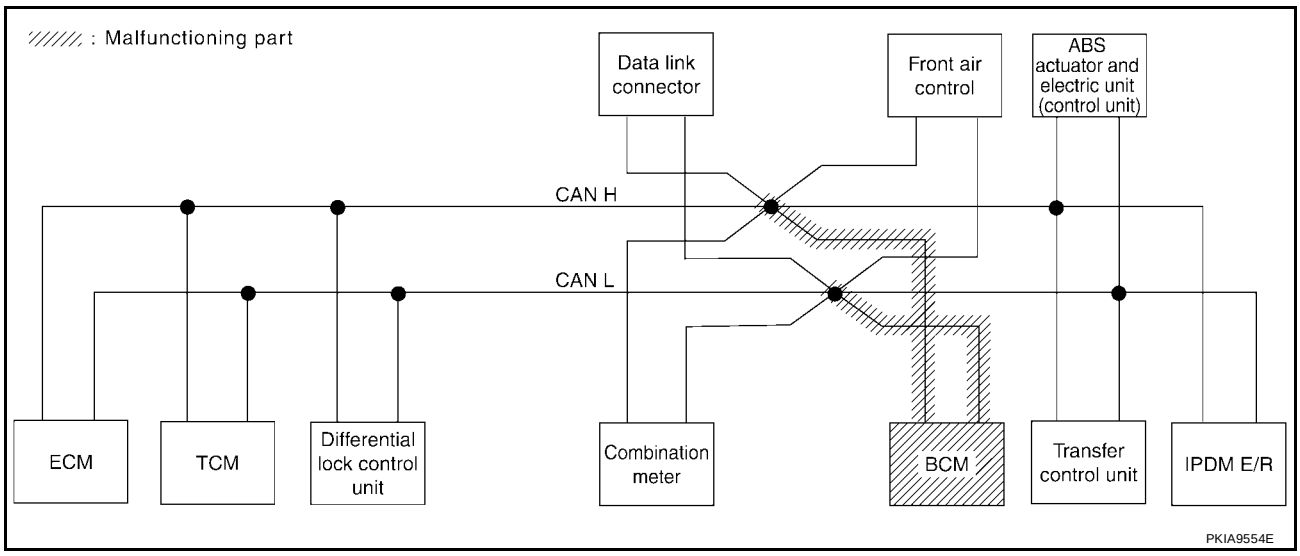
PKIA9553E

Case 8

Check BCM circuit. Refer to LAN-322, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	–	UNKWN	–	UNKWN	UNKWN	–
DIFF LOCK	–	NG	UNKWN	UNKWN	–	–	–	–	UNKWN	UNKWN	–
BCM	No indication	NG	UNKWN	UNKWN	–	–	UNKWN	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–

PKIA9434E



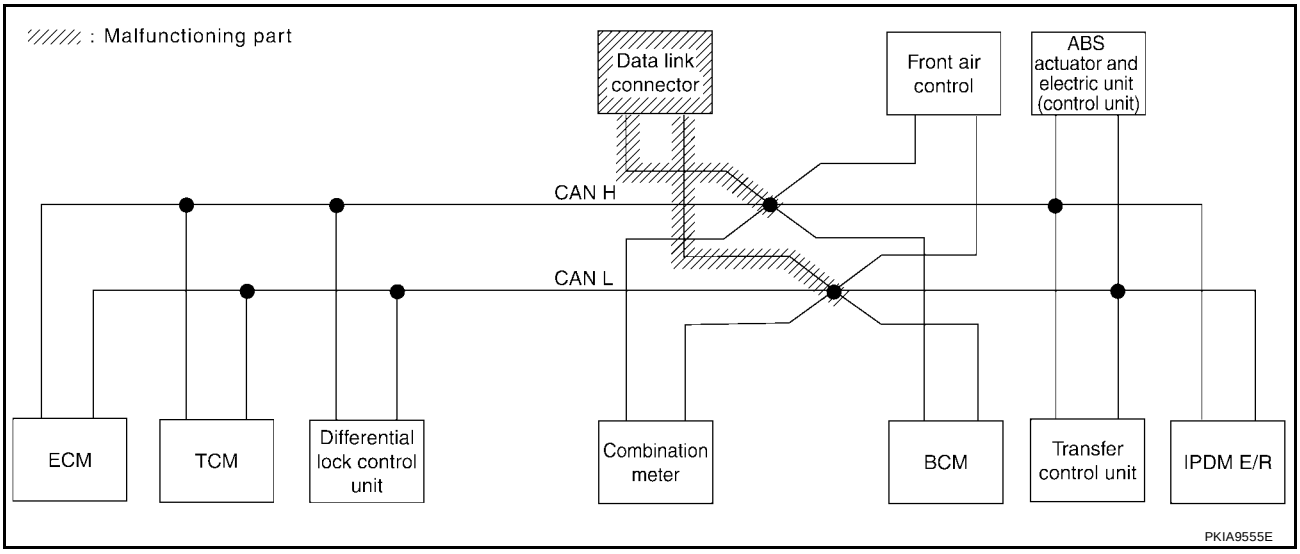
PKIA9554E

Case 9

Check data link connector circuit. Refer to LAN-322, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9435E



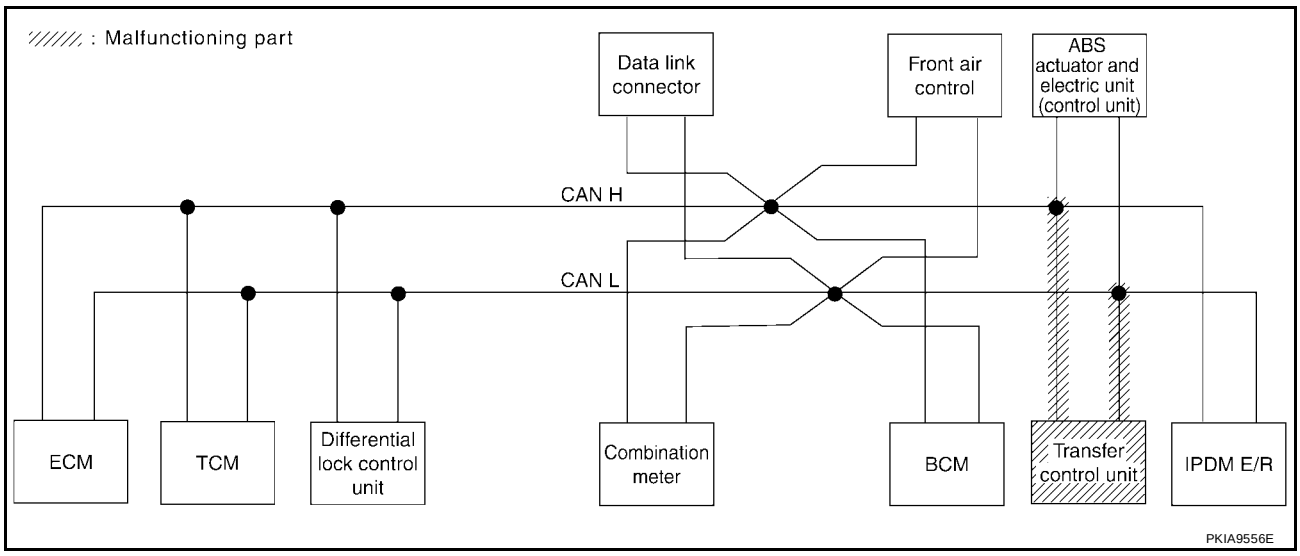
PKIA9555E

Case 10

Check transfer control unit circuit. Refer to LAN-323, "Transfer Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9436E



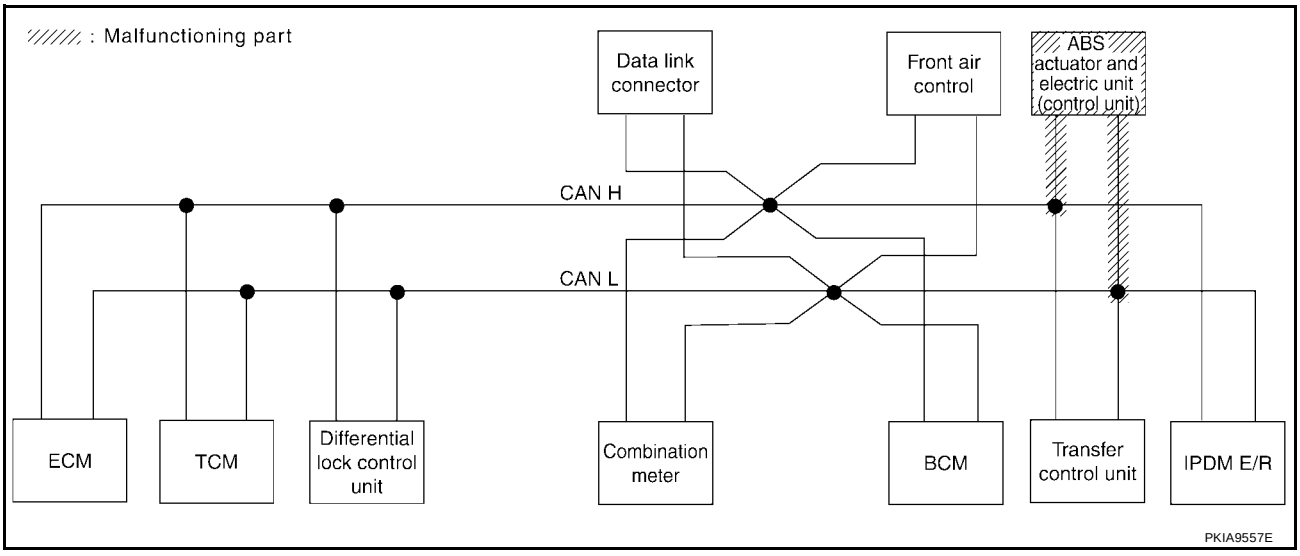
PKIA9556E

Case 11

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-323, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	–	UNKWN	–	UNKWN	UNKWN	–
DIFF LOCK	–	NG	UNKWN	UNKWN	–	–	–	–	UNKWN	UNKWN	–
BCM	No indication	NG	UNKWN	UNKWN	–	–	UNKWN	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–

PKIA9437E

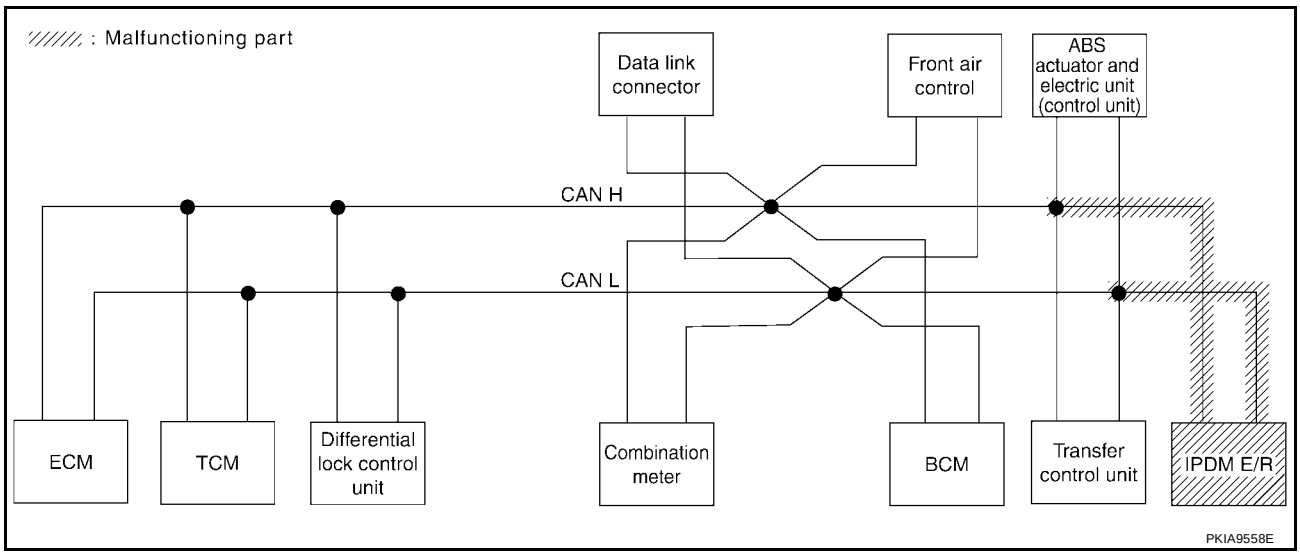


Case 12

Check IPDM E/R circuit. Refer to LAN-324, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9438E



PKIA9558E

Case 13

Check CAN communication circuit. Refer to LAN-324, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	–	UNKWN	–	UNKWN	UNKWN	–
DIFF LOCK	–	NG	UNKWN	UNKWN	–	–	–	–	UNKWN	UNKWN	–
BCM	No indication	NG	UNKWN	UNKWN	–	–	UNKWN	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–

PKIA9439E

Case 14

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-325, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	–	UNKWN	–	UNKWN	UNKWN	–
DIFF LOCK	–	NG	UNKWN	UNKWN	–	–	–	–	UNKWN	UNKWN	–
BCM	No indication	NG	UNKWN	UNKWN	–	–	UNKWN	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–

PKIA9440E

Case 15

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-325, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN ✓	–	–	UNKWN ✓	–	UNKWN ✓	UNKWN	–
DIFF LOCK	–	NG	UNKWN	UNKWN	–	–	–	–	UNKWN	UNKWN	–
BCM	No indication	NG	UNKWN	UNKWN	–	–	UNKWN	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN ✓	UNKWN	UNKWN ✓	–	–	UNKWN ✓	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–

PKIA9441E

Circuit Check Between TCM and Differential Lock Control Unit

UKS0020I

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 F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

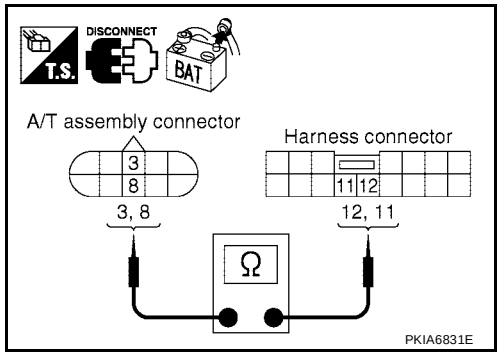
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12 (W), 11 (R).

3 (W) - 12 (W) : Continuity should exist.
8 (R) - 11 (R) : Continuity should exist.



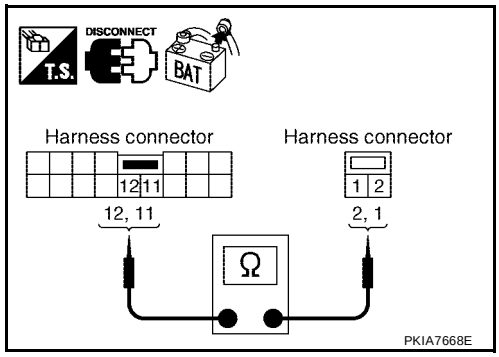
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).

12 (W) - 2 (W) : Continuity should exist.
11 (R) - 1 (R) : Continuity should exist.



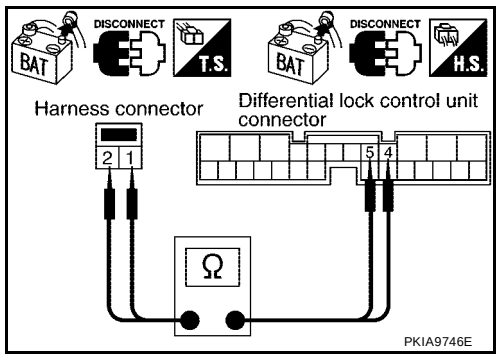
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect differential lock control unit connector.
2. Check continuity between harness connector B75 terminals 2 (W), 1 (R) and differential lock control unit harness connector B77 terminals 5 (W), 4 (R).

2 (W) - 5 (W) : Continuity should exist.
1 (R) - 4 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-301, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Differential Lock Control Unit and Data Link Connector

UKS001HJ

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 B69
- Harness connector M40

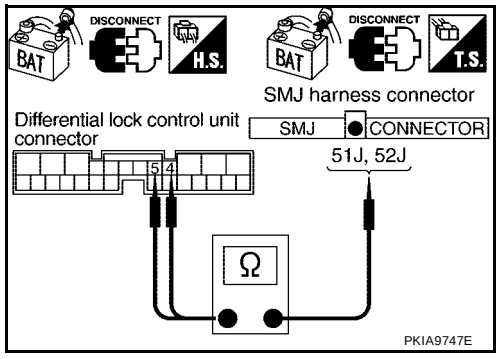
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect differential lock control unit connector and harness connector B69.
2. Check continuity between differential lock control unit harness connector B77 terminals 5 (W), 4 (R) and harness connector B69 terminals 51J (W), 52J (R).

5 (W) - 51J (W) : Continuity should exist.
4 (R) - 52J (R) : Continuity should exist.



OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

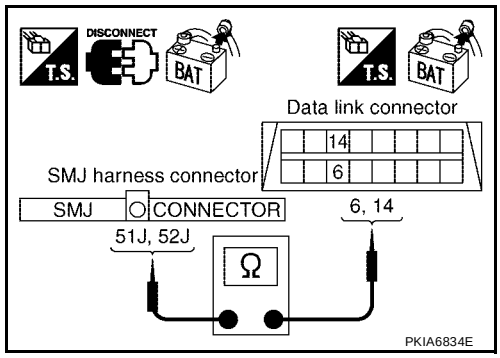
51J (W) - 6 (W) : Continuity should exist.

52J (R) - 14 (R) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-301, "Work Flow" .

NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

UKS001HK

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 M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).

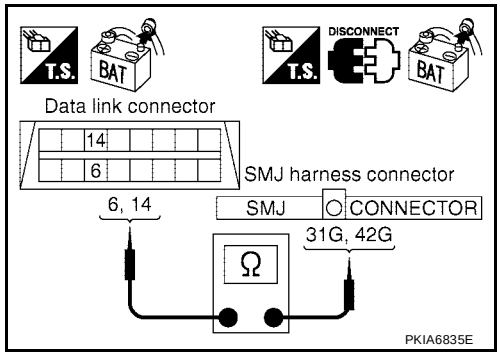
6 (W) - 31G (W) : Continuity should exist.

14 (R) - 42G (R) : Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).

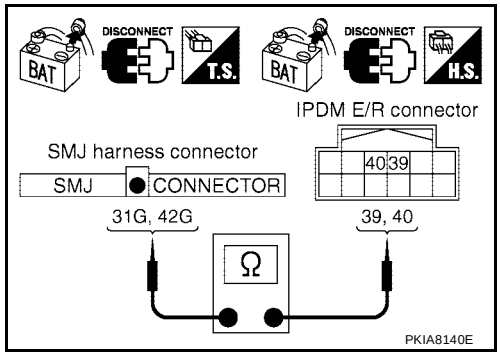
31G (W) - 39 (W) : Continuity should exist.

42G (R) - 40 (R) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-301, "Work Flow" .

NG >> Repair harness.



ECM Circuit Check

UKS001HL

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 E19
- Harness connector F33

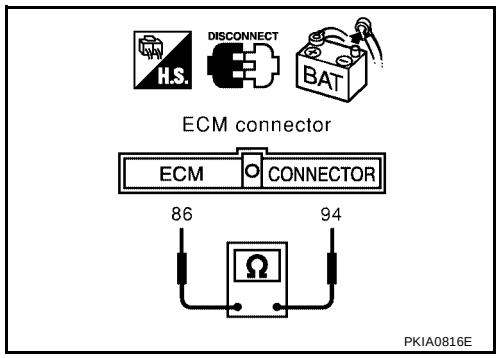
OK or NG

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 E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R) : Approx. 108 - 132Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and A/T assembly.

TCM Circuit Check

UKS001HM

1. CHECK CONNECTOR

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

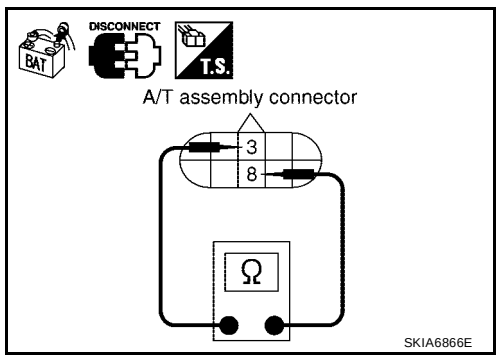
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Differential Lock Control Unit Circuit Check

UKS0020J

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of differential lock 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.

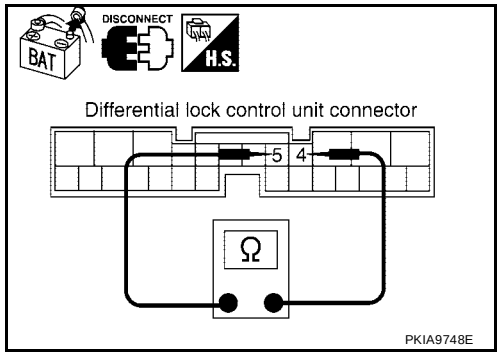
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect differential lock control unit connector.
2. Check resistance between differential lock control unit harness connector B77 terminals 5 (W) and 4 (R).

5 (W) - 4 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace differential lock control unit.
NG >> Repair harness between differential lock control unit and harness connector B75.



Combination Meter Circuit Check

UKS001HN

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.

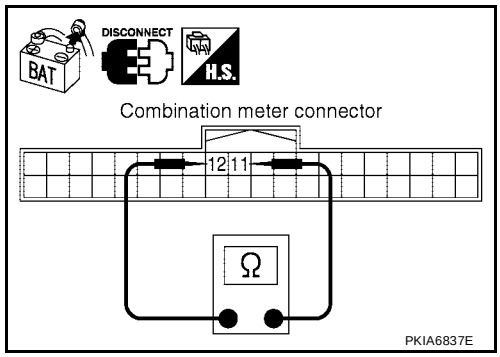
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R) : Approx. 54 - 66Ω

OK or NG

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



BCM Circuit Check

UKS001HO

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).

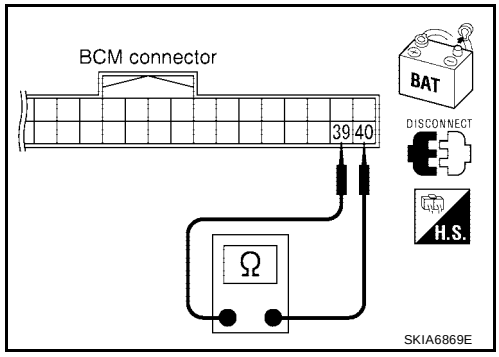
OK or NG

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 M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS001HP

1. CHECK CONNECTOR

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

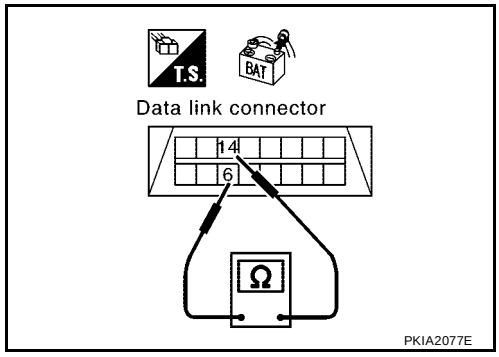
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-301, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Transfer Control Unit Circuit Check

UKS001HR

1. CHECK CONNECTOR

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

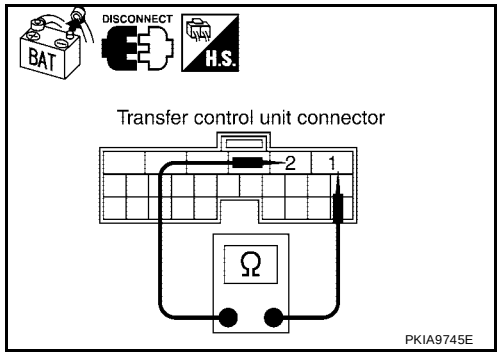
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R).

1 (W) - 2 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace transfer control unit.
NG >> Repair harness between transfer control unit and harness connector E152.

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001HS

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).

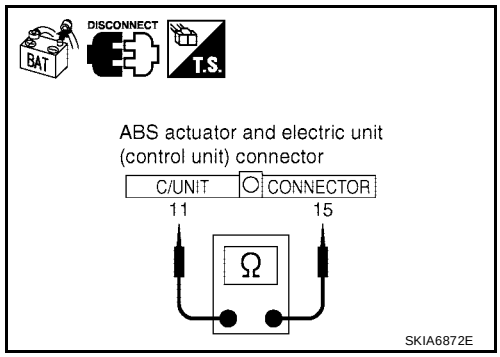
OK or NG

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 E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R) : 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 harness connector E152.

IPDM E/R Circuit Check

UKS001HT

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).

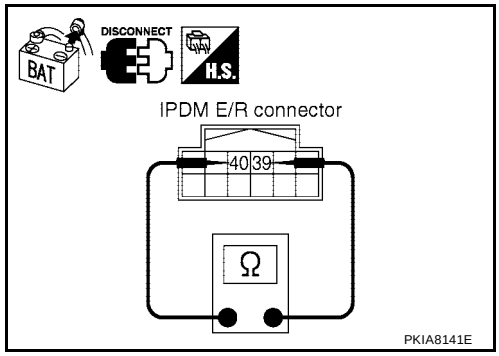
OK or NG

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 E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 108 - 132Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS001HU

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- A/T assembly
- Differential lock control unit
- Combination meter
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

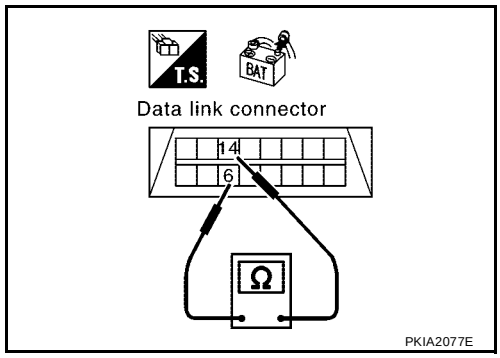
2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

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

OK or NG

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



3. CHECK HARNESS FOR SHORT CIRCUIT

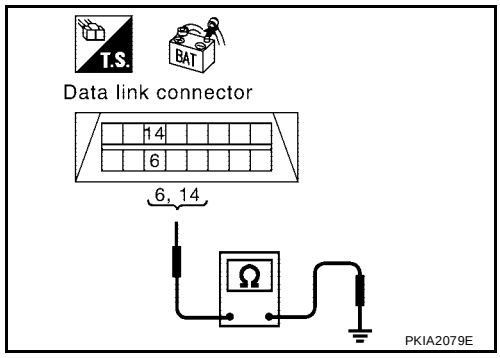
Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

6 (W) - Ground : Continuity should not exist.

14 (R) - Ground : Continuity should not exist.

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-325, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

UKS001HV

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

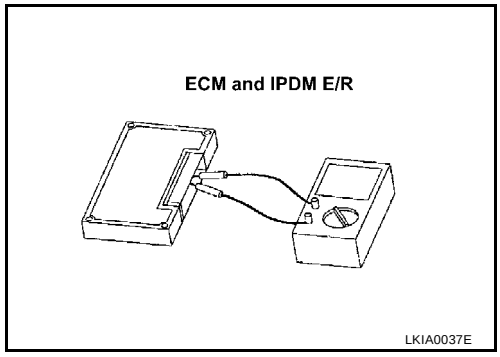
Component Inspection

UKS001HW

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 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 11)

PFP:23710

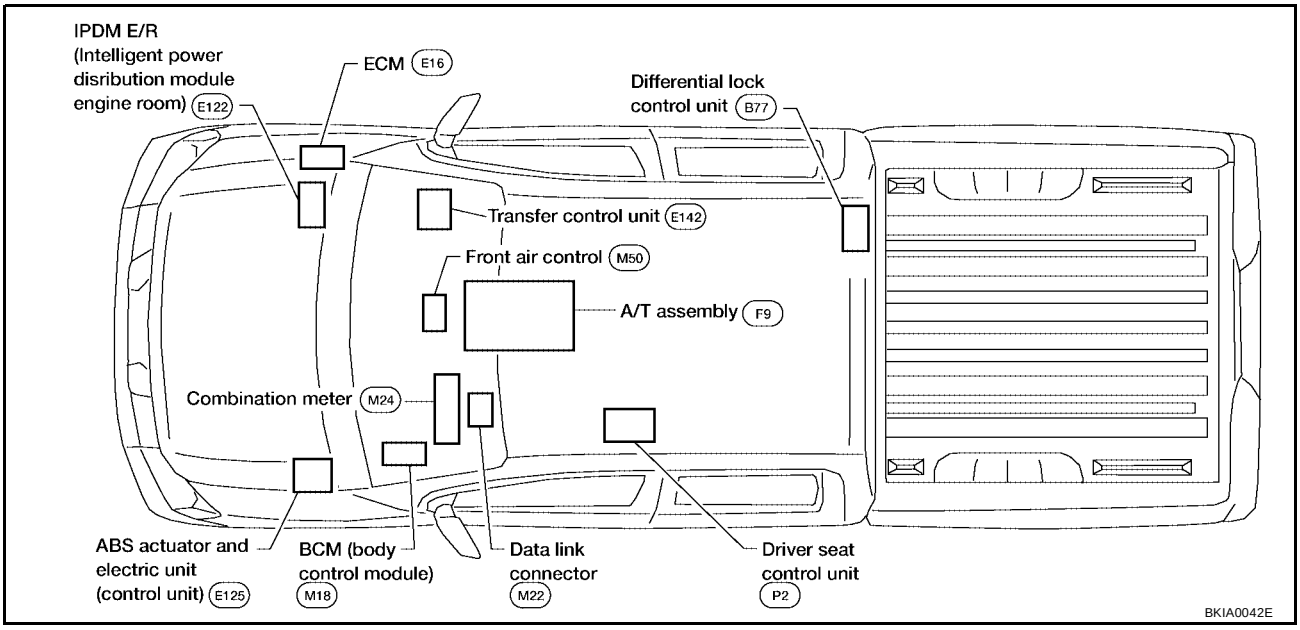
System Description

UKS001HX

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.

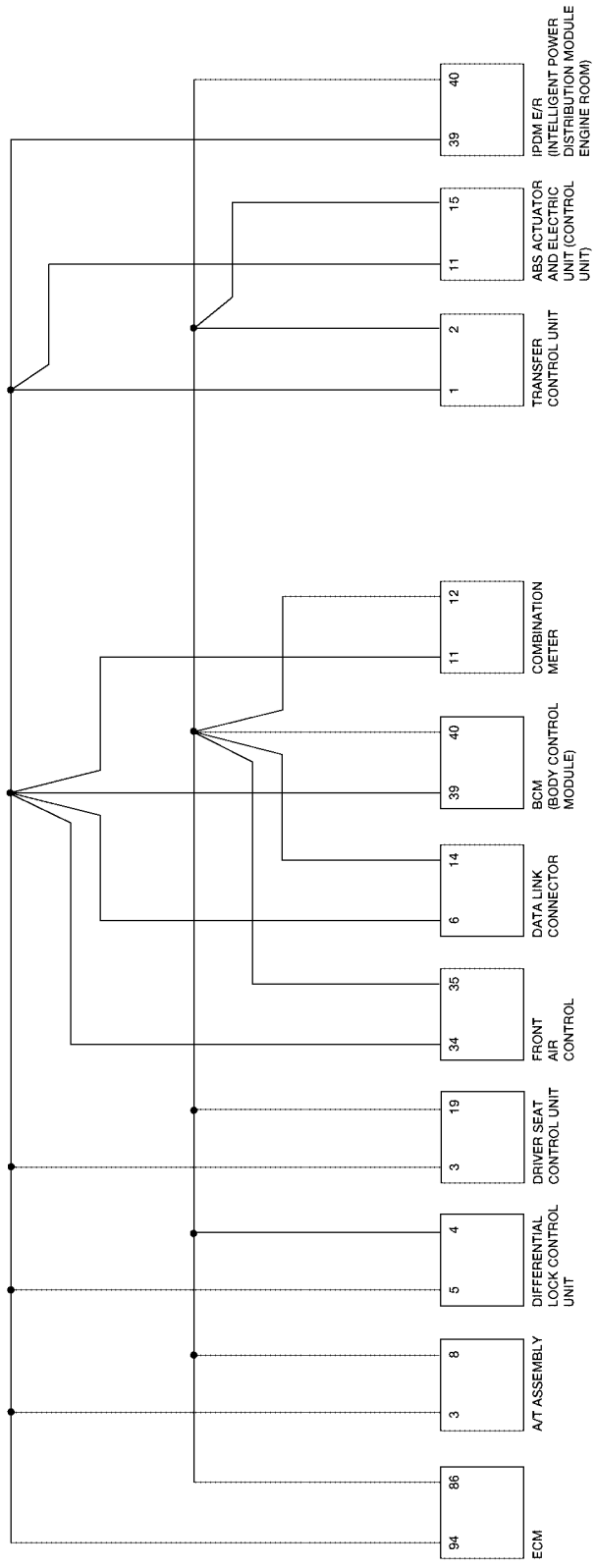
Component Parts and Harness Connector Location

UKS001HY



Schematic

UKS001HZ

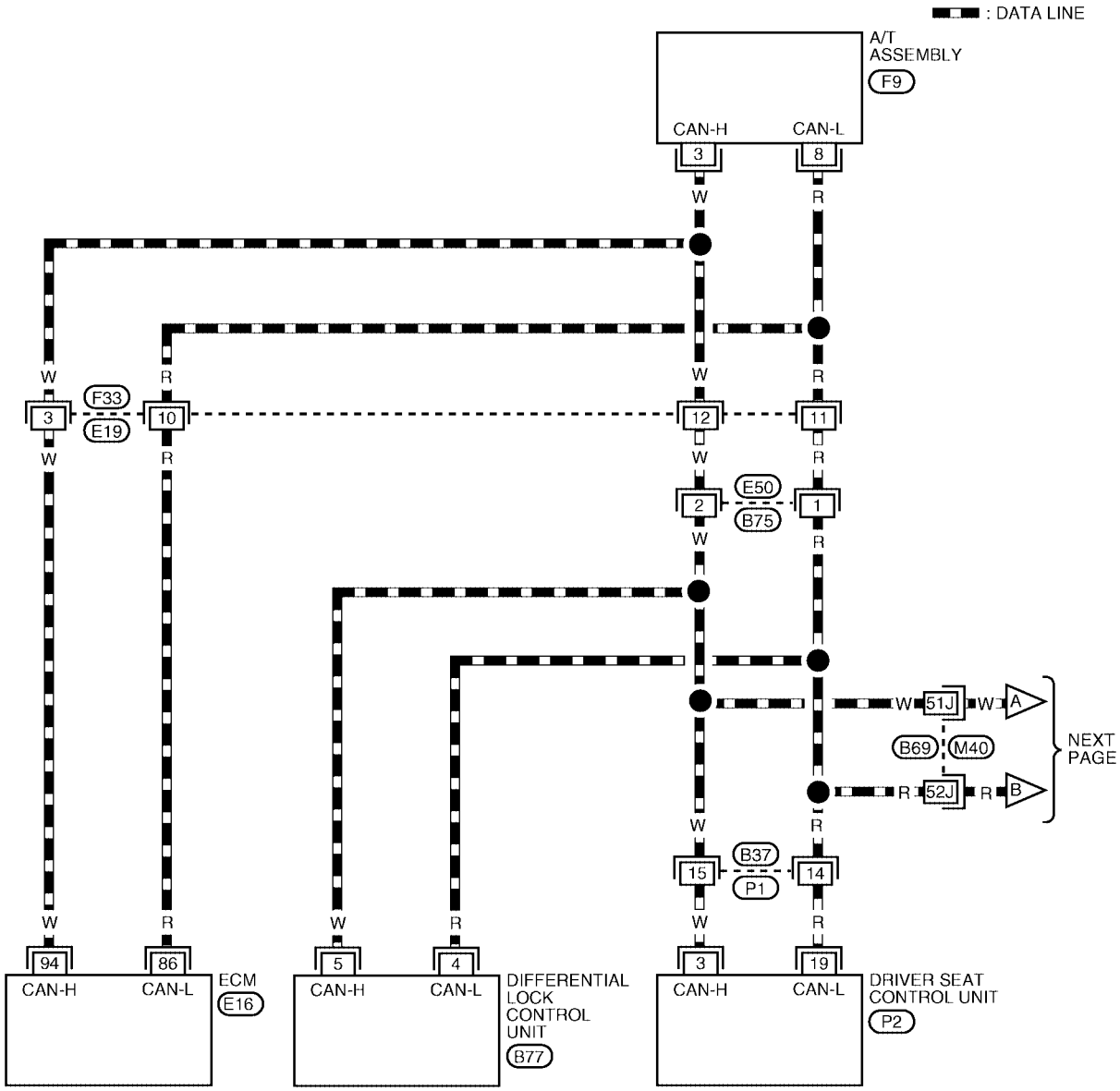


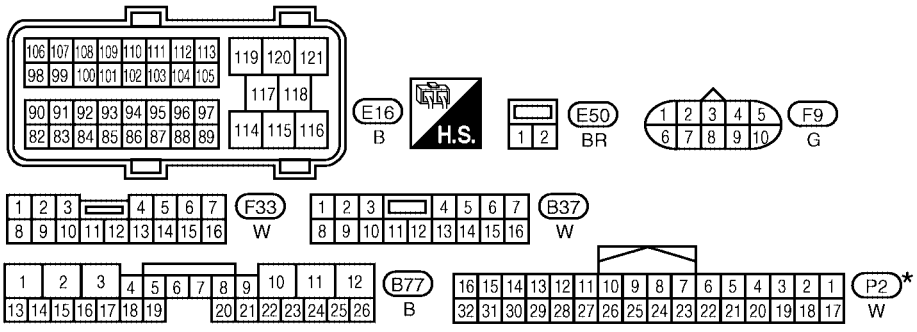
BKWA0152E

Wiring Diagram - CAN -

UKS001I0

LAN-CAN-31



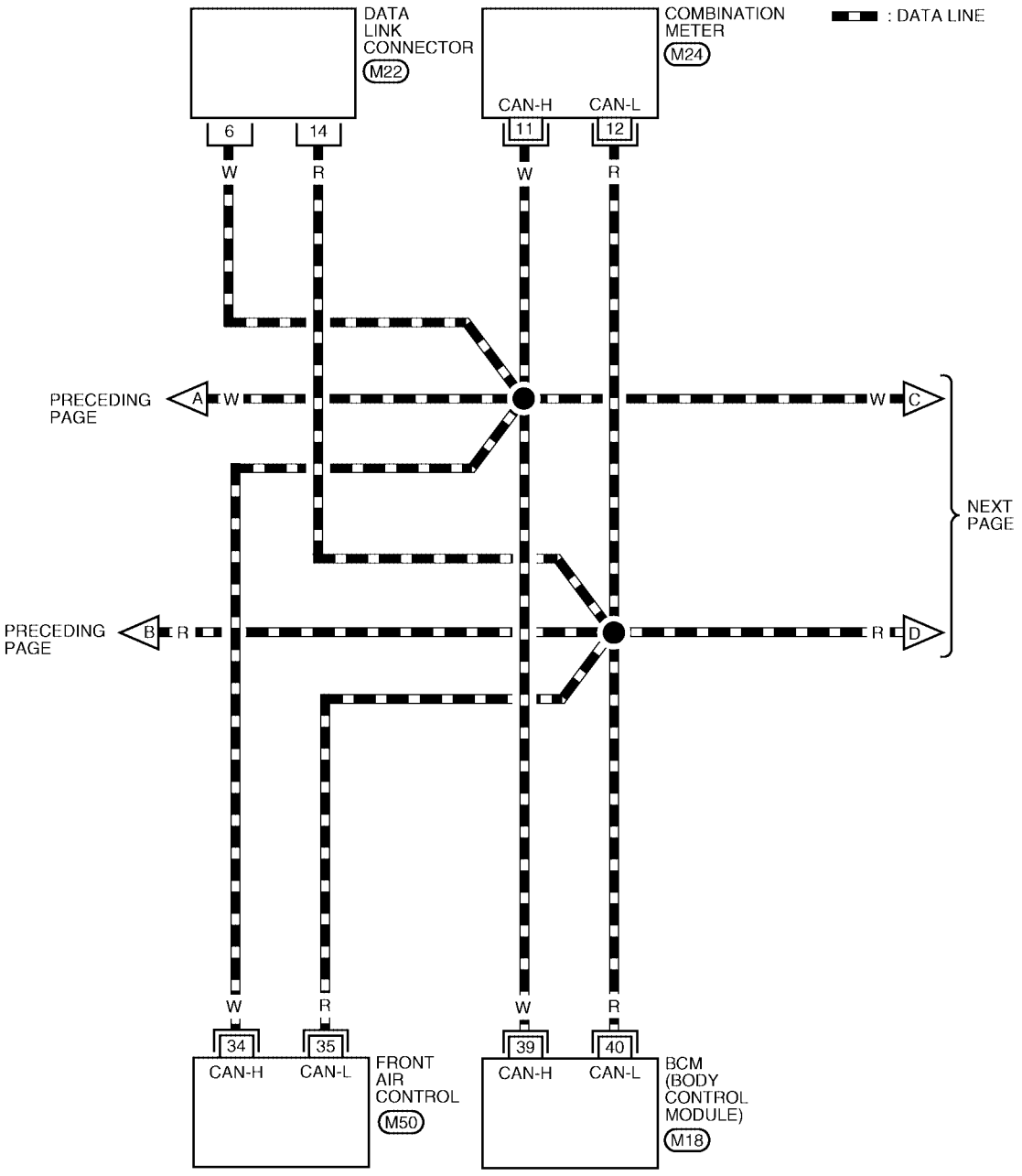


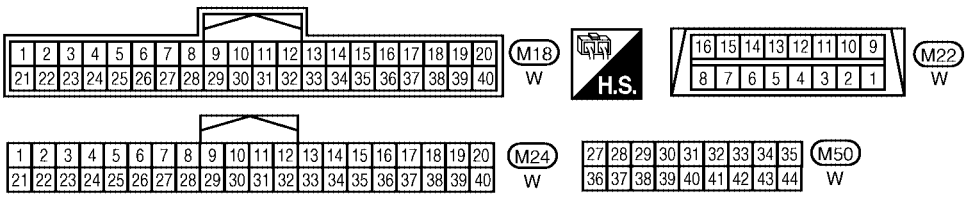
* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

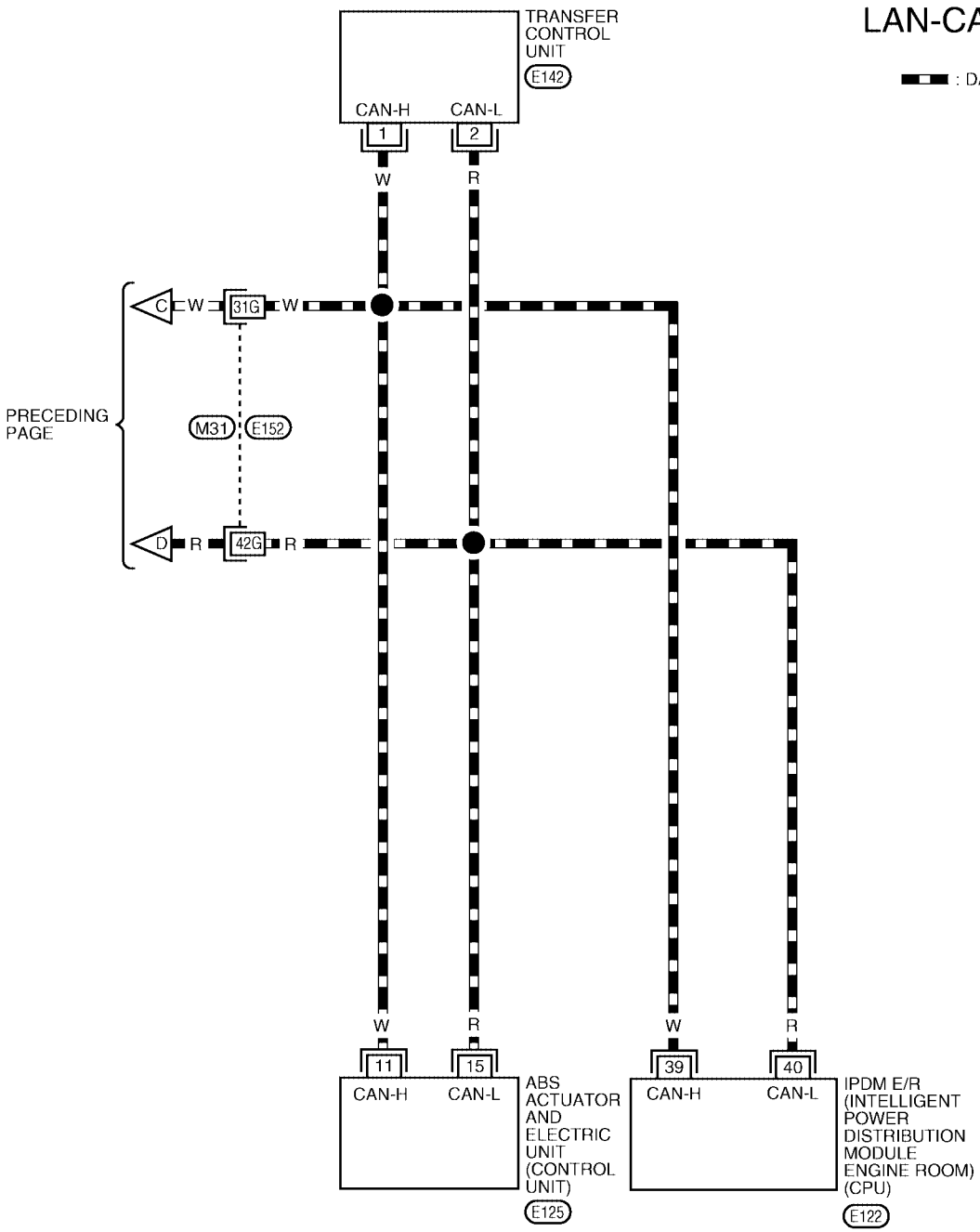
BKWA0153E

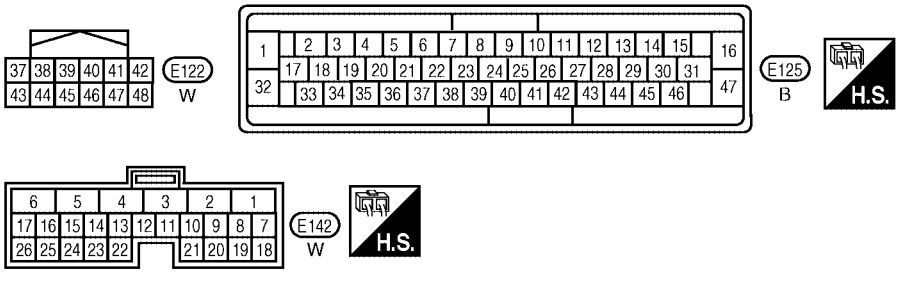
LAN-CAN-32





BKWA0154E





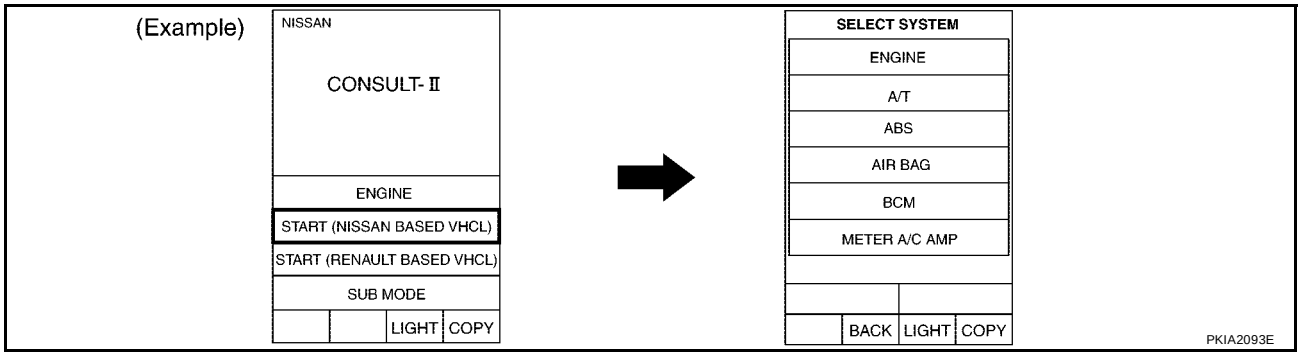
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0155E

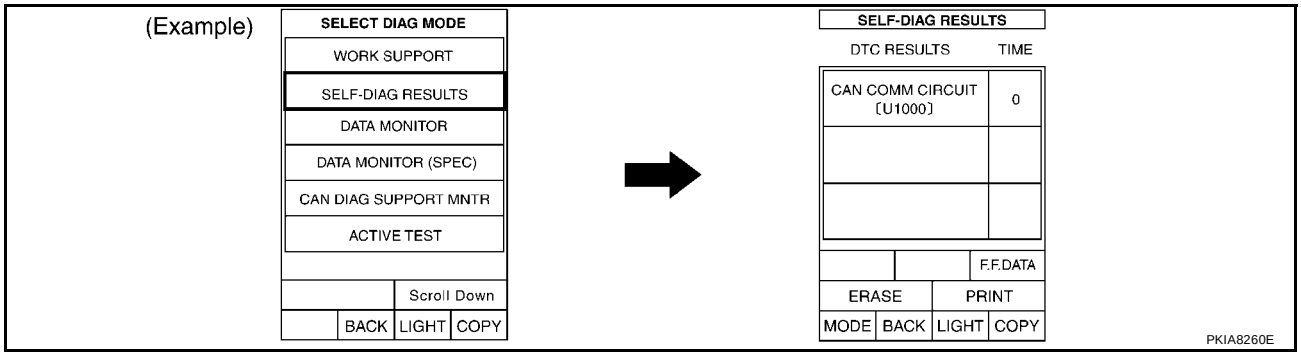
Work Flow

UKS001I1

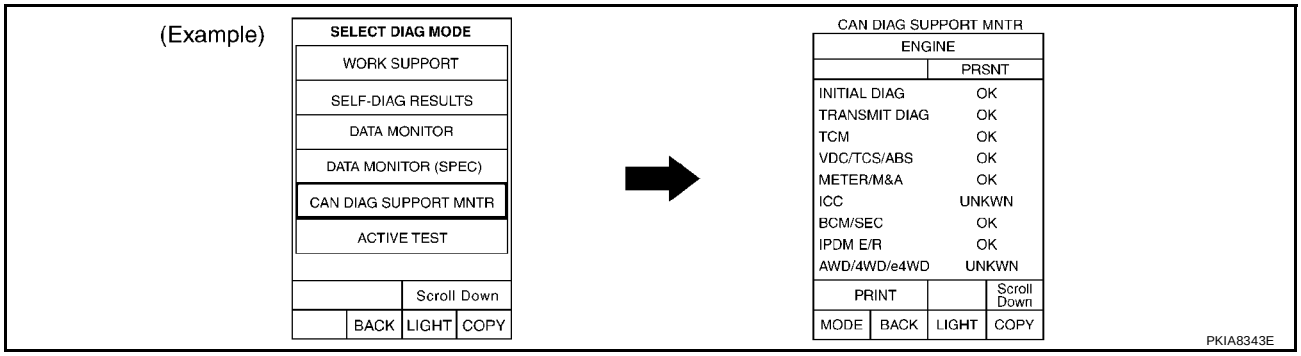
1. When there are no indications of “AUTO DRIVE POS.”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “A/T”, “DIFF LOCK”, “AUTO DRIVE POS.”, “BCM”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “DIFF LOCK”, “AUTO DRIVE POS.”, “BCM”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-332, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-332, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “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 the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-334, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Check sheet table

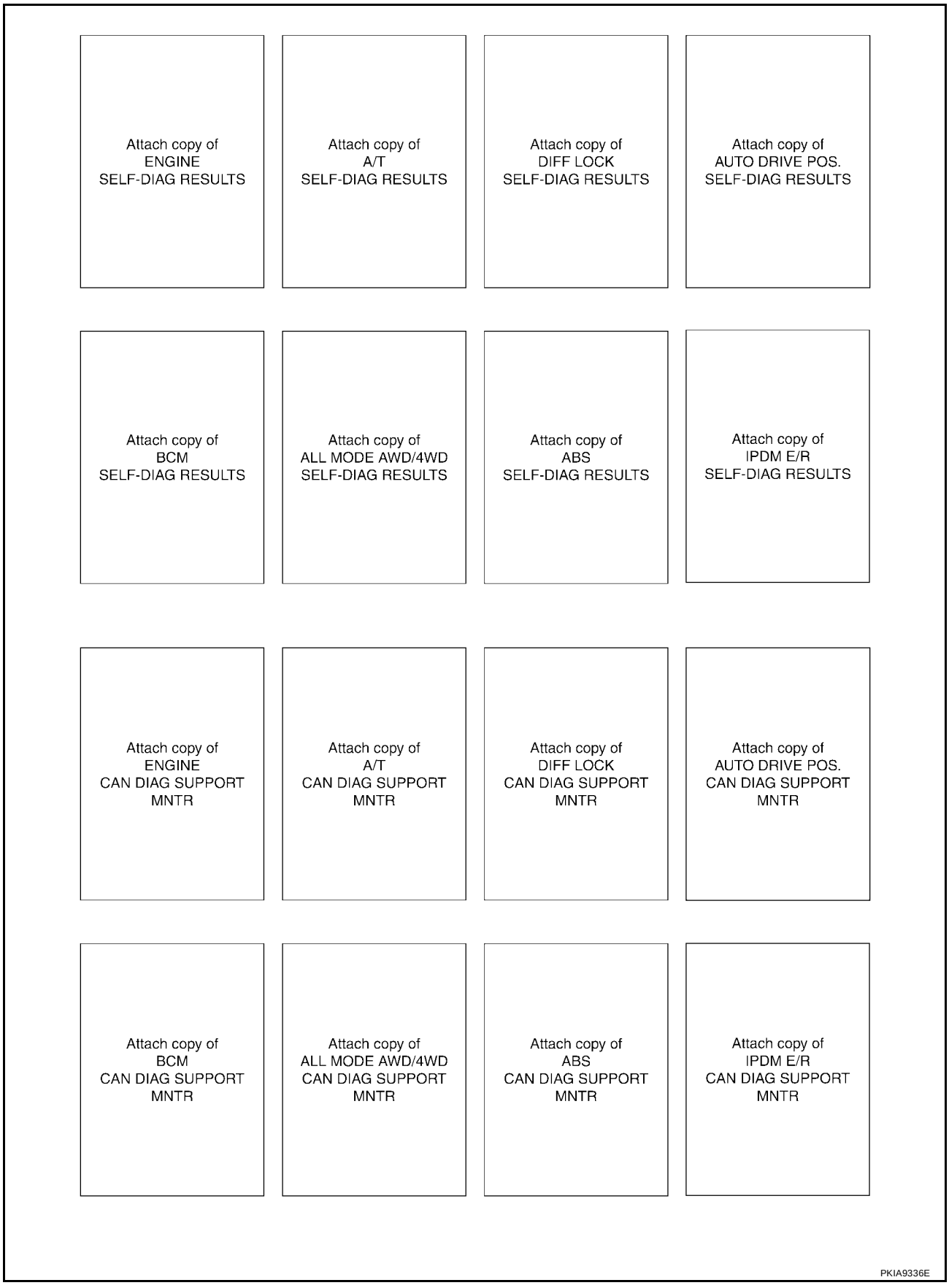
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIA9334E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
DIFF LOCK
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
DIFF LOCK
CAN DIAG SUPPORT
MNTR
Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ALL MODE AWD/4WD
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA9336E

CHECK SHEET RESULTS (EXAMPLE)

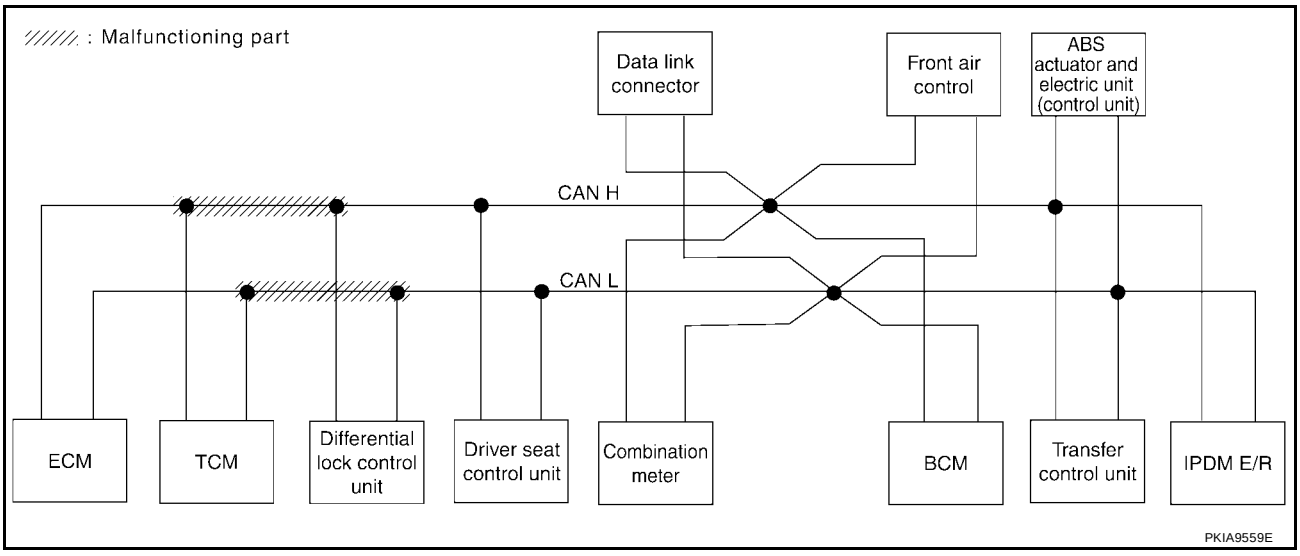
NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and differential lock control unit. Refer to LAN-349, "Circuit Check Between TCM and Differential Lock Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	✓	✓	✓	✓	✓
A/T	—	NG	UNKWN	UNKWN	—	—	✓	—	✓	✓	—
DIFF LOCK	—	NG	UNKWN	✓	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	✓	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	✓	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	✓	✓	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	✓	✓	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	✓	—	—	—	UNKWN	—	—	—

PKIA9442E



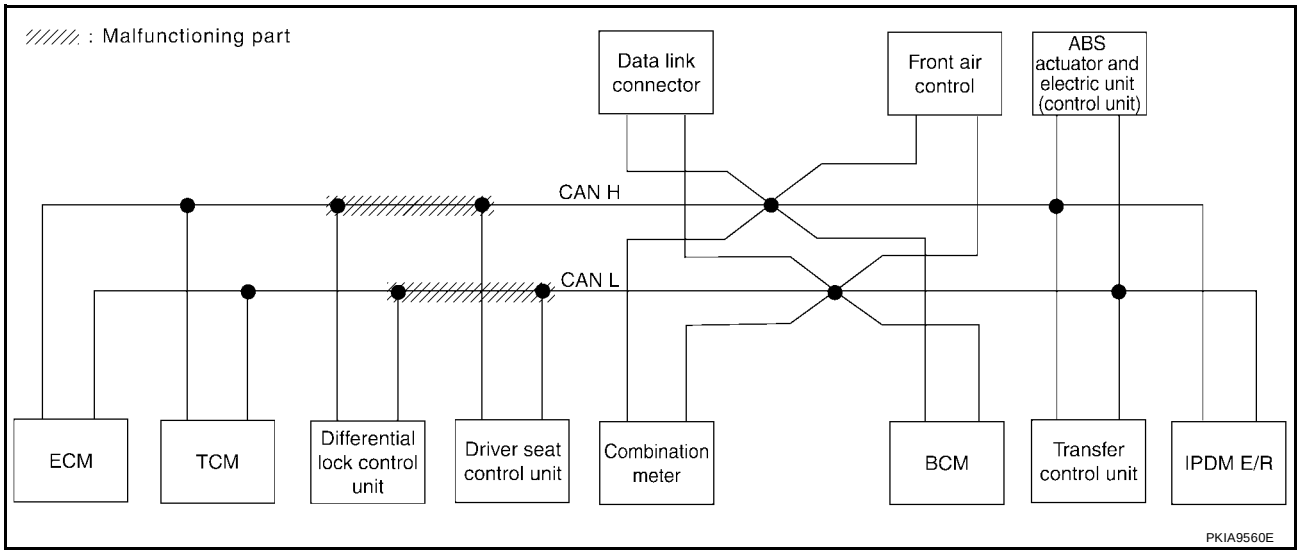
PKIA9559E

Case 2

Check harness between differential lock control unit and driver seat control unit. Refer to LAN-350, "Circuit Check Between Differential Lock Control Unit and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9443E



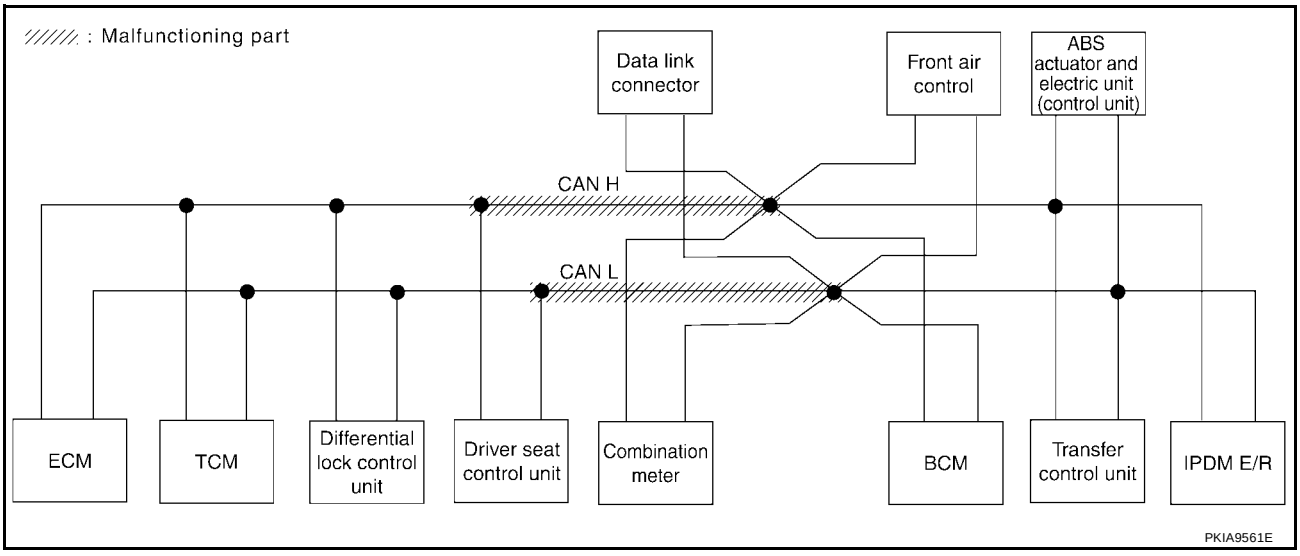
PKIA9560E

Case 3

Check harness between driver seat control unit and data link connector. Refer to LAN-351, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9444E

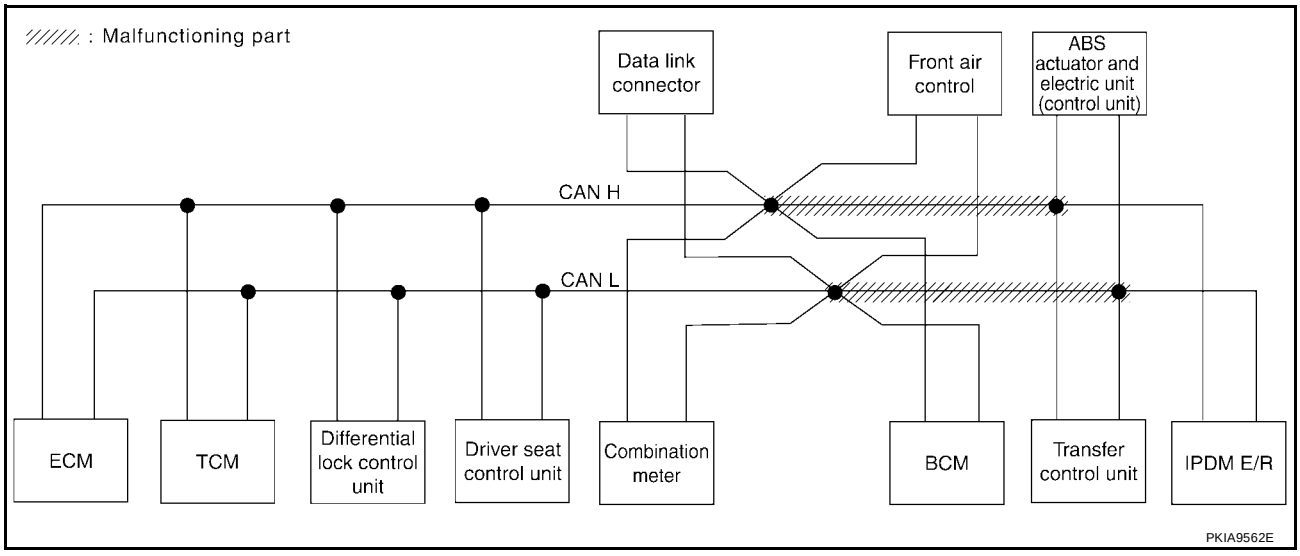


Case 4

Check harness between data link connector and IPDM E/R. Refer to LAN-351, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9445E



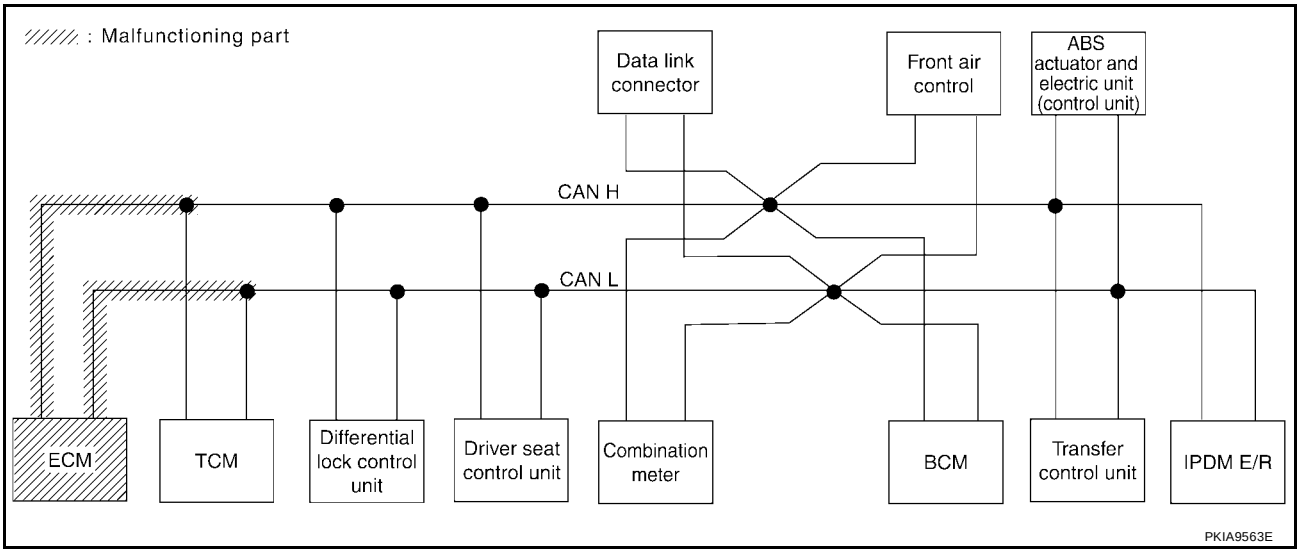
PKIA9562E

Case 5

Check ECM circuit. Refer to LAN-352, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9446E

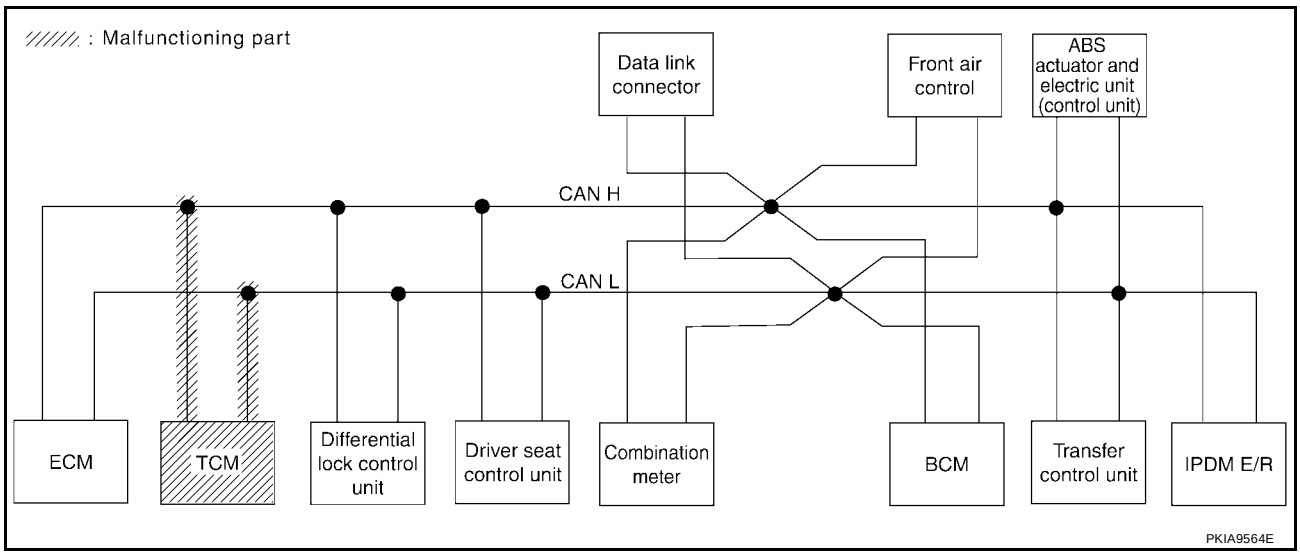


Case 6

Check TCM circuit. Refer to LAN-353, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN ✓	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	—	UNKWN ✓	—	UNKWN ✓	UNKWN ✓	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN ✓	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN ✓	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN ✓	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9447E



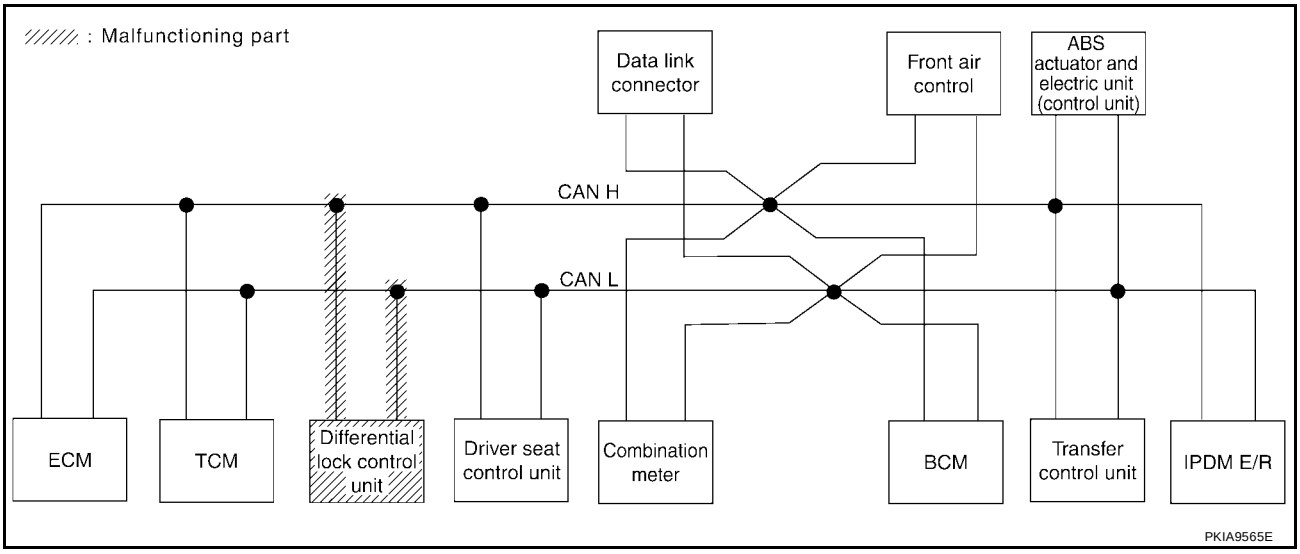
PKIA9564E

Case 7

Check differential lock control unit circuit. Refer to LAN-353, "Differential Lock Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN ✓	UNKWN ✓	—	—	—	—	UNKWN ✓	UNKWN ✓	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN ✓	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9448E



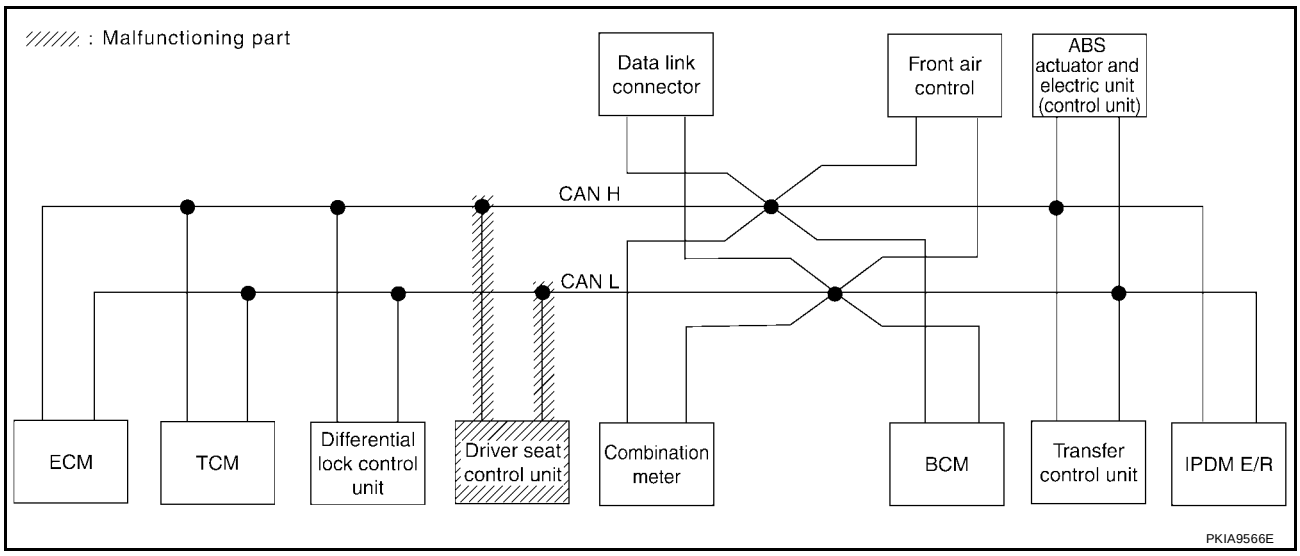
PKIA9565E

Case 8

Check driver seat control unit circuit. Refer to LAN-354, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9449E



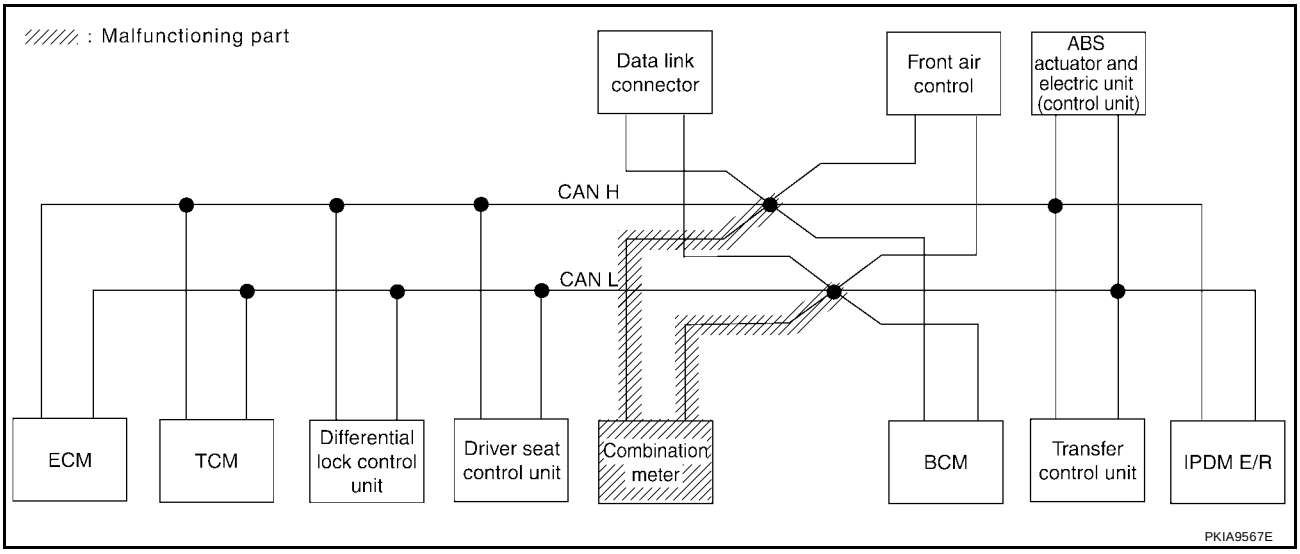
PKIA9566E

Case 9

Check combination meter circuit. Refer to LAN-354, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9450E

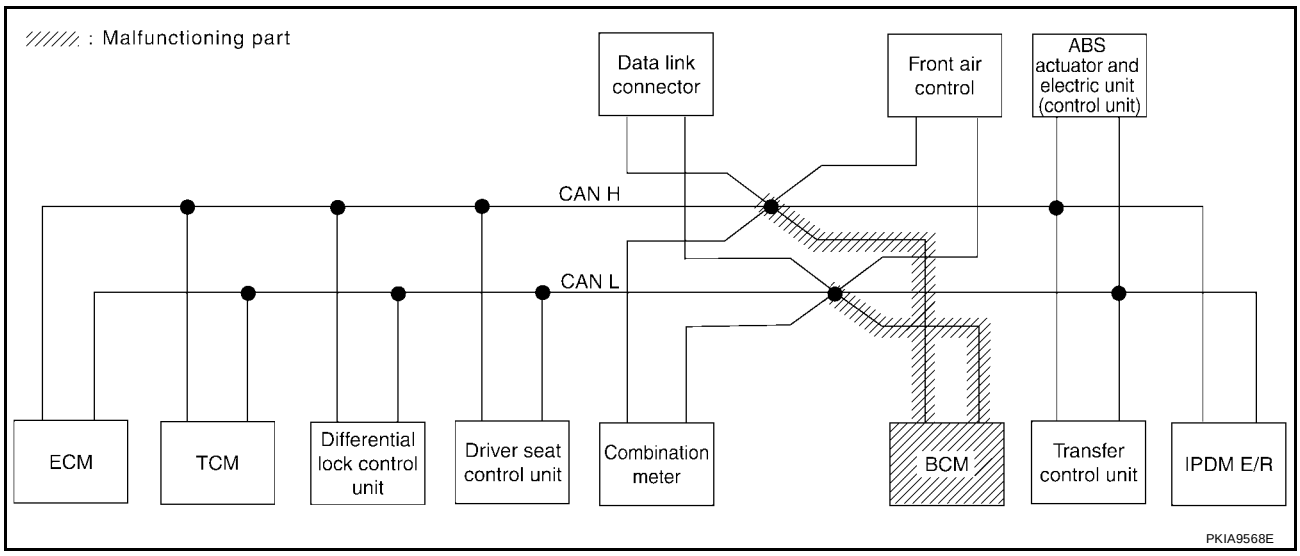


Case 10

Check BCM circuit. Refer to LAN-355, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9451E



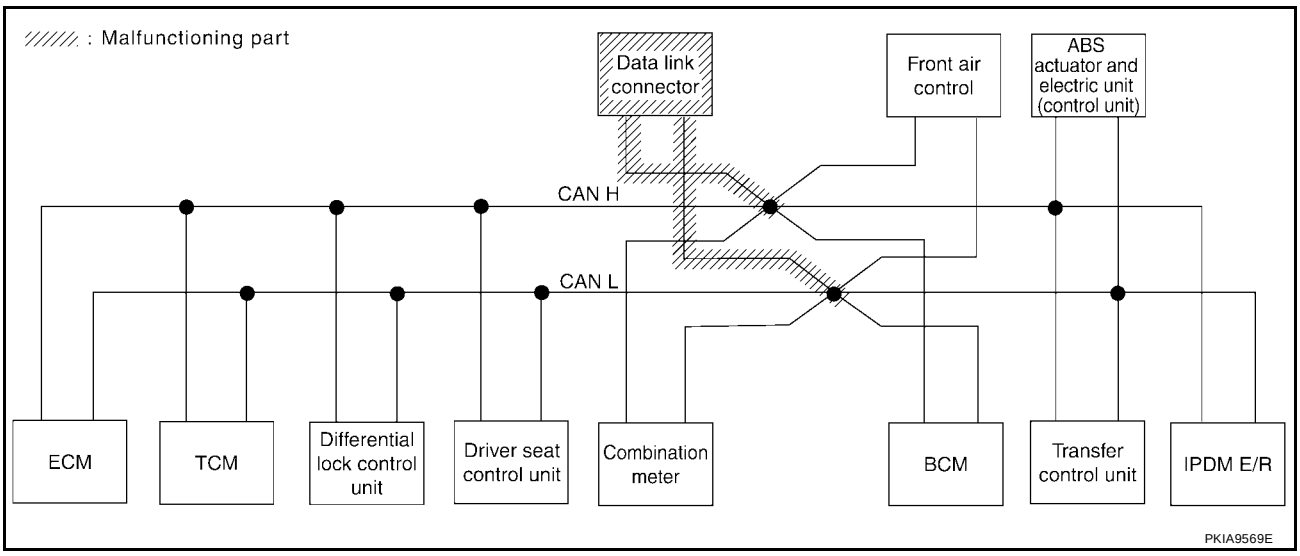
PKIA9568E

Case 11

Check data link connector circuit. Refer to LAN-355, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication ✓	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication ✓	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9452E



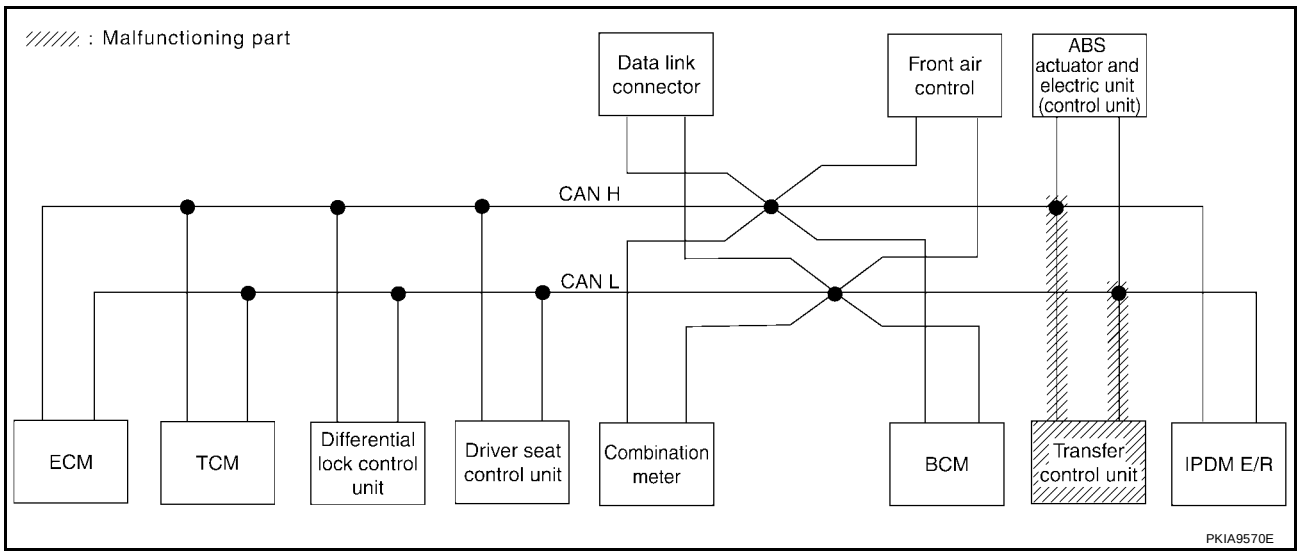
PKIA9569E

Case 12

Check transfer control unit circuit. Refer to LAN-356, "Transfer Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	—	—	—	UNKWN ✓	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN ✓	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9453E



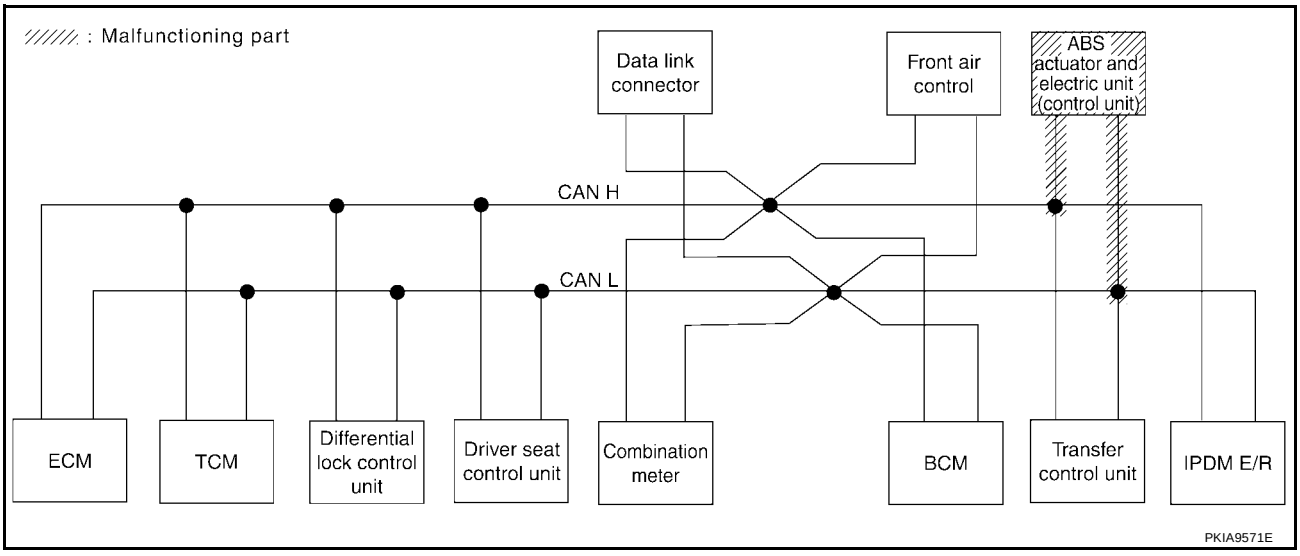
PKIA9570E

Case 13

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-356, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN ✓	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN ✓	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN ✓	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN ✓	—
ABS	—	NG ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	—	UNKWN ✓	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9454E

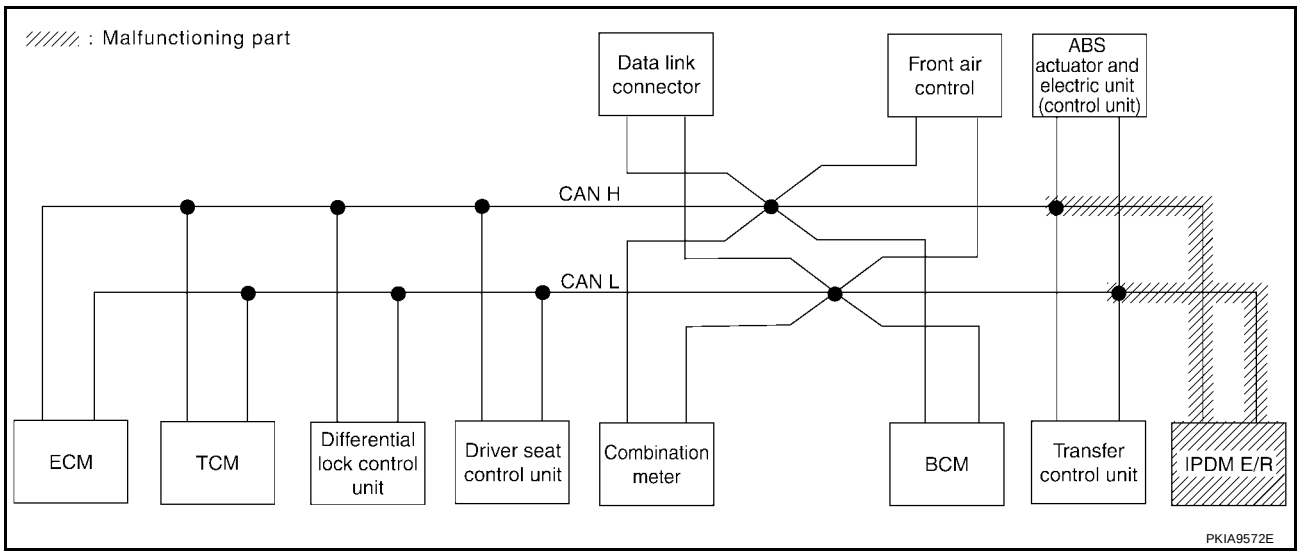


Case 14

Check IPDM E/R circuit. Refer to LAN-357, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN ✓
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9455E



PKIA9572E

Case 15

Check CAN communication circuit. Refer to LAN-358, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9456E

Case 16

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-358, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—

PKIA9457E

Case 17

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-358, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DIFF LOCK	METER/ M&A	BCM/SEC	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	–	UNKWN	–	UNKWN	UNKWN	–
DIFF LOCK	–	NG	UNKWN	UNKWN	–	–	–	–	UNKWN	UNKWN	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN	–	–	–
BCM	No indication	NG	UNKWN	UNKWN	–	–	UNKWN	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–

PKIA9458E

Circuit Check Between TCM and Differential Lock Control Unit

UKS0020K

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 F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

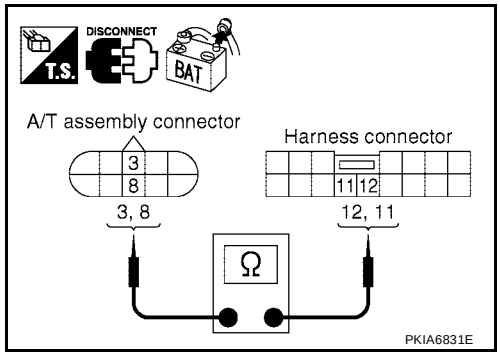
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12 (W), 11 (R).

3 (W) - 12 (W) : Continuity should exist.
8 (R) - 11 (R) : Continuity should exist.



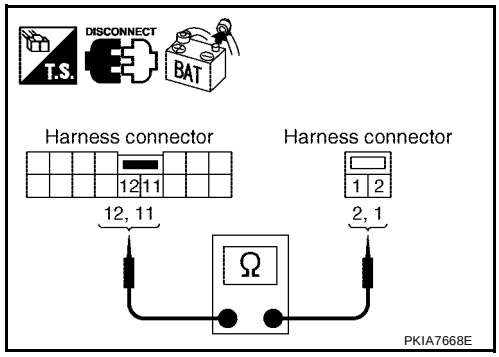
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).

12 (W) - 2 (W) : Continuity should exist.
11 (R) - 1 (R) : Continuity should exist.



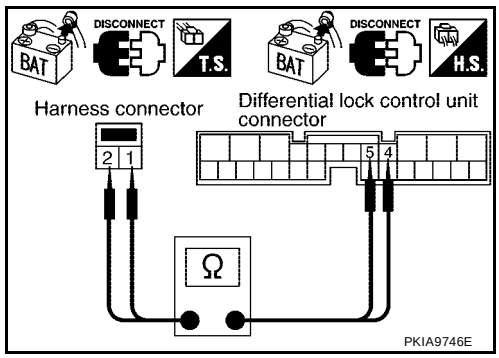
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect differential lock control unit connector.
2. Check continuity between harness connector B75 terminals 2 (W), 1 (R) and differential lock control unit harness connector B77 terminals 5 (W), 4 (R).

2 (W) - 5 (W) : Continuity should exist.
1 (R) - 4 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-331, "Work Flow" .
NG >> Repair harness.

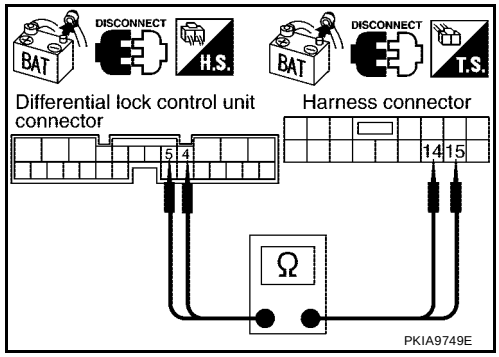
Circuit Check Between Differential Lock Control Unit and Driver Seat Control Unit

UKS001I2

1. CHECK HARNESS FOR OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect differential lock control unit connector and harness connector B37.
4. Check continuity between differential lock control unit harness connector B77 terminals 5 (W), 4 (R) and harness connector B37 terminals 15 (W), 14 (R).

5 (W) - 15 (W) : Continuity should exist.
4 (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-331, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and Data Link Connector

UKS001I3

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 B69
- Harness connector M40

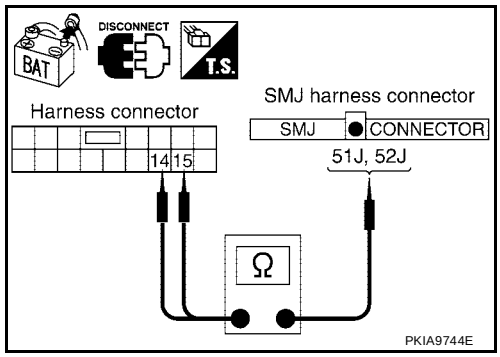
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37 and harness connector B69.
2. Check continuity between harness connector B37 terminals 15 (W), 14 (R) and harness connector B69 terminals 51J (W), 52J (R).

15 (W) - 51J (W) : Continuity should exist.
14 (R) - 52J (R) : Continuity should exist.



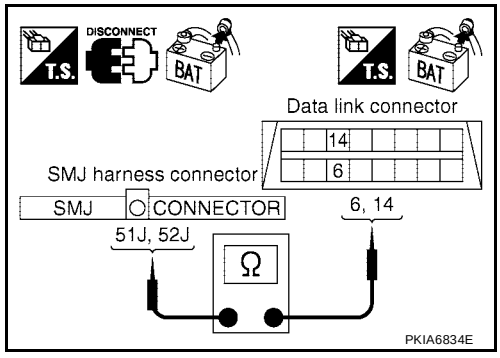
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

51J (W) - 6 (W) : Continuity should exist.
52J (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-331, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Data Link Connector and IPDM E/R

UKS001I4

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 M31
- Harness connector E152

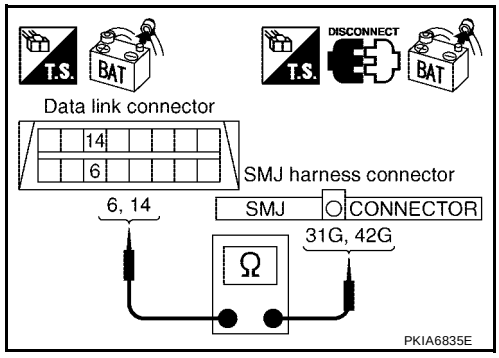
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).

6 (W) - 31G (W) : Continuity should exist.
14 (R) - 42G (R) : Continuity should exist.



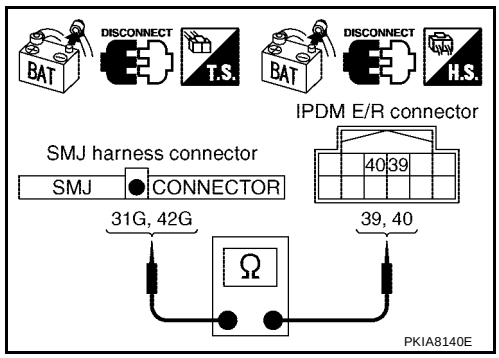
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).

31G (W) - 39 (W) : Continuity should exist.
42G (R) - 40 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-331, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS001I5

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 E19
- Harness connector F33

OK or NG

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

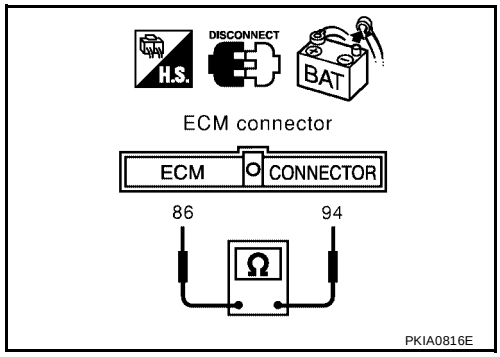
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R) : Approx. 108 - 132Ω

OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and A/T assembly.



UKS001I6

TCM Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

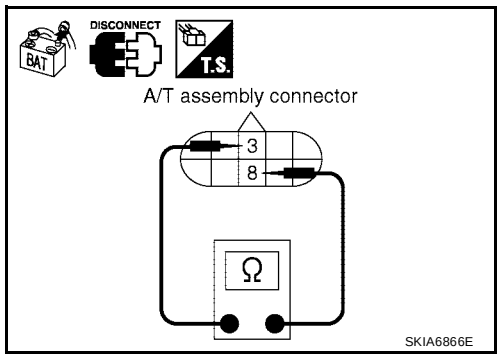
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.



Differential Lock Control Unit Circuit Check

UKS0020L

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of differential lock 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.

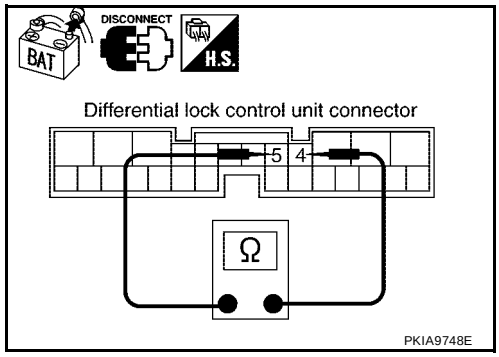
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect differential lock control unit connector.
2. Check resistance between differential lock control unit harness connector B77 terminals 5 (W) and 4 (R).

5 (W) - 4 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace differential lock control unit.
NG >> Repair harness between differential lock control unit and harness connector B75.



Driver Seat Control Unit Circuit Check

UKS001I7

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 unit side and harness side).

- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

OK or NG

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

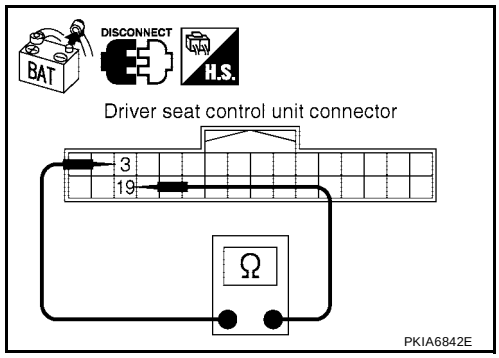
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect driver seat control unit connector.
2. Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R).

3 (W) - 19 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B69.



Combination Meter Circuit Check

UKS001I8

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.

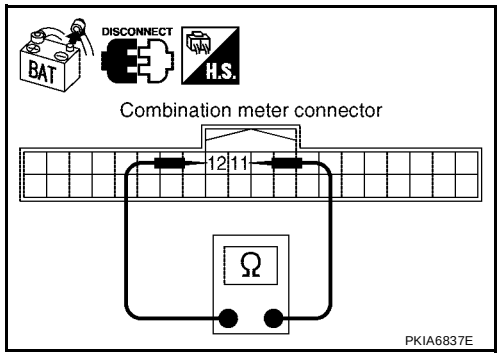
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R) : Approx. 54 - 66Ω

OK or NG

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



UKS001I9

BCM Circuit Check

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.

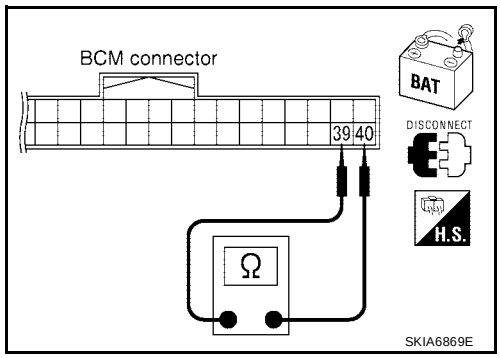
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.



UKS001IA

Data Link Connector Circuit Check

1. CHECK CONNECTOR

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

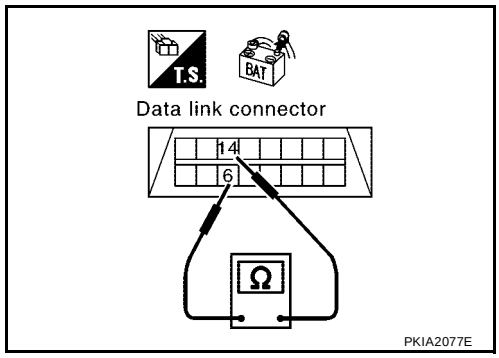
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-331, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Transfer Control Unit Circuit Check

UKS001IC

1. CHECK CONNECTOR

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

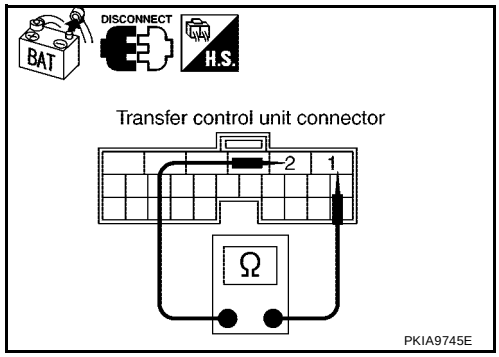
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R).

1 (W) - 2 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace transfer control unit.
NG >> Repair harness between transfer control unit and harness connector E152.

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001ID

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.

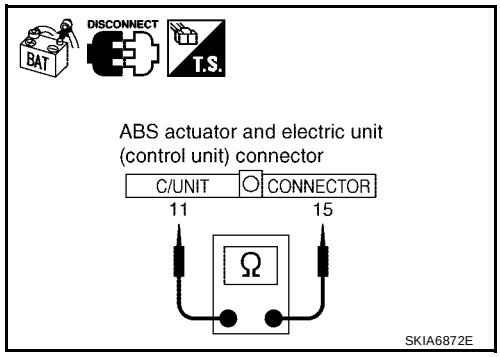
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R) : 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 harness connector E152.



IPDM E/R Circuit Check

UKS001IE

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.

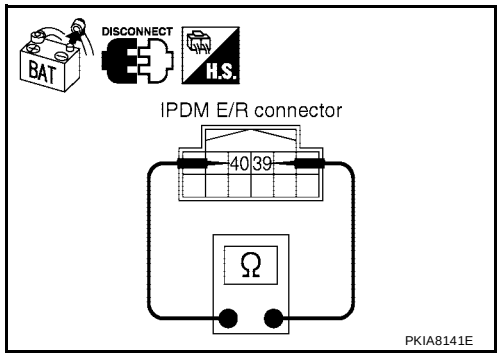
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 108 - 132Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

UKS001IF

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- A/T assembly
- Differential lock control unit
- Driver seat control unit
- Combination meter
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

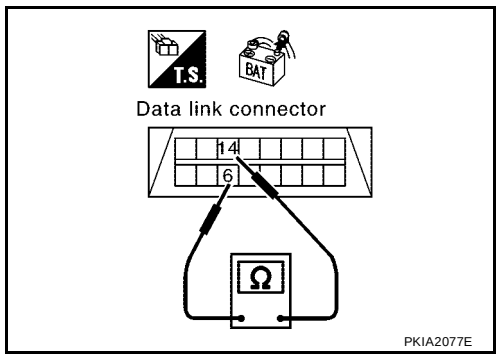
2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

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

OK or NG

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



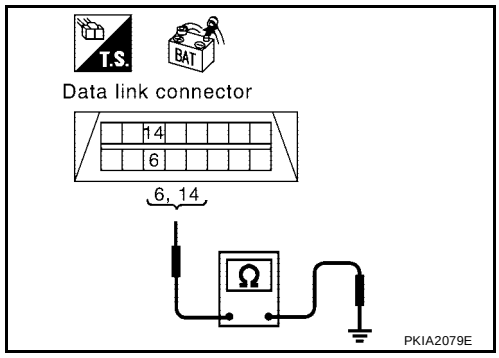
3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

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

OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-359, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.



IPDM E/R Ignition Relay Circuit Check

UKS001IG

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

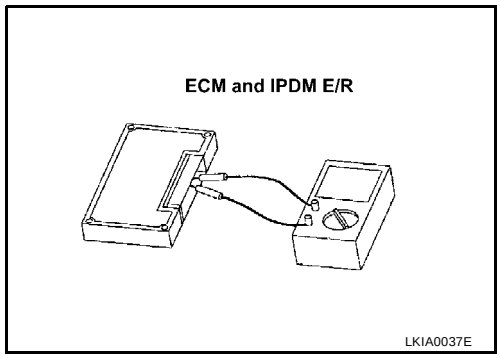
Component Inspection

UKS001IH

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 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 12)

PFP:23710

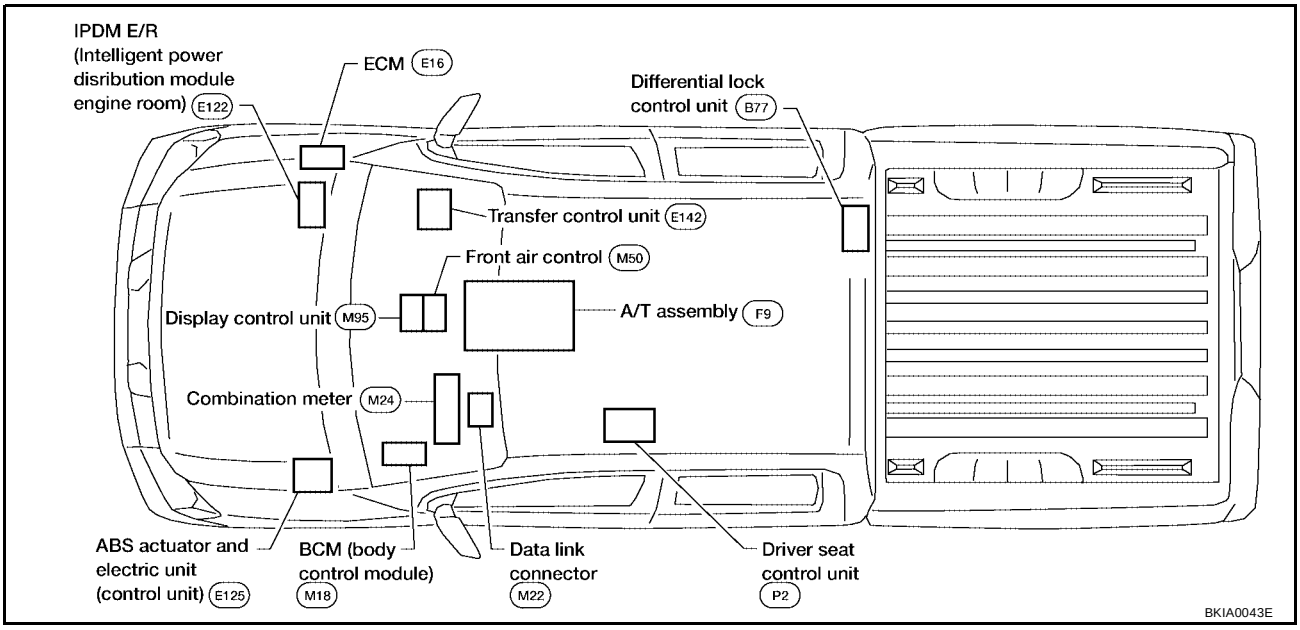
System Description

UKS001II

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.

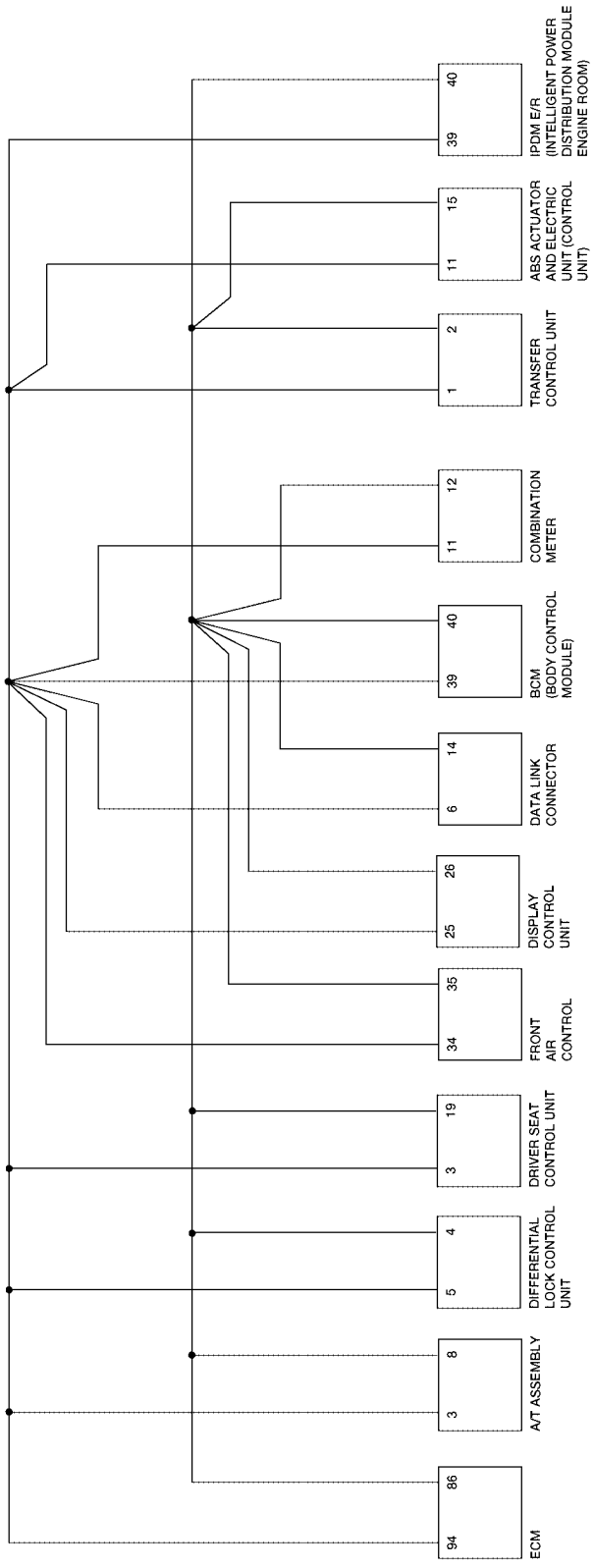
Component Parts and Harness Connector Location

UKS001IJ



Schematic

UKS001IK

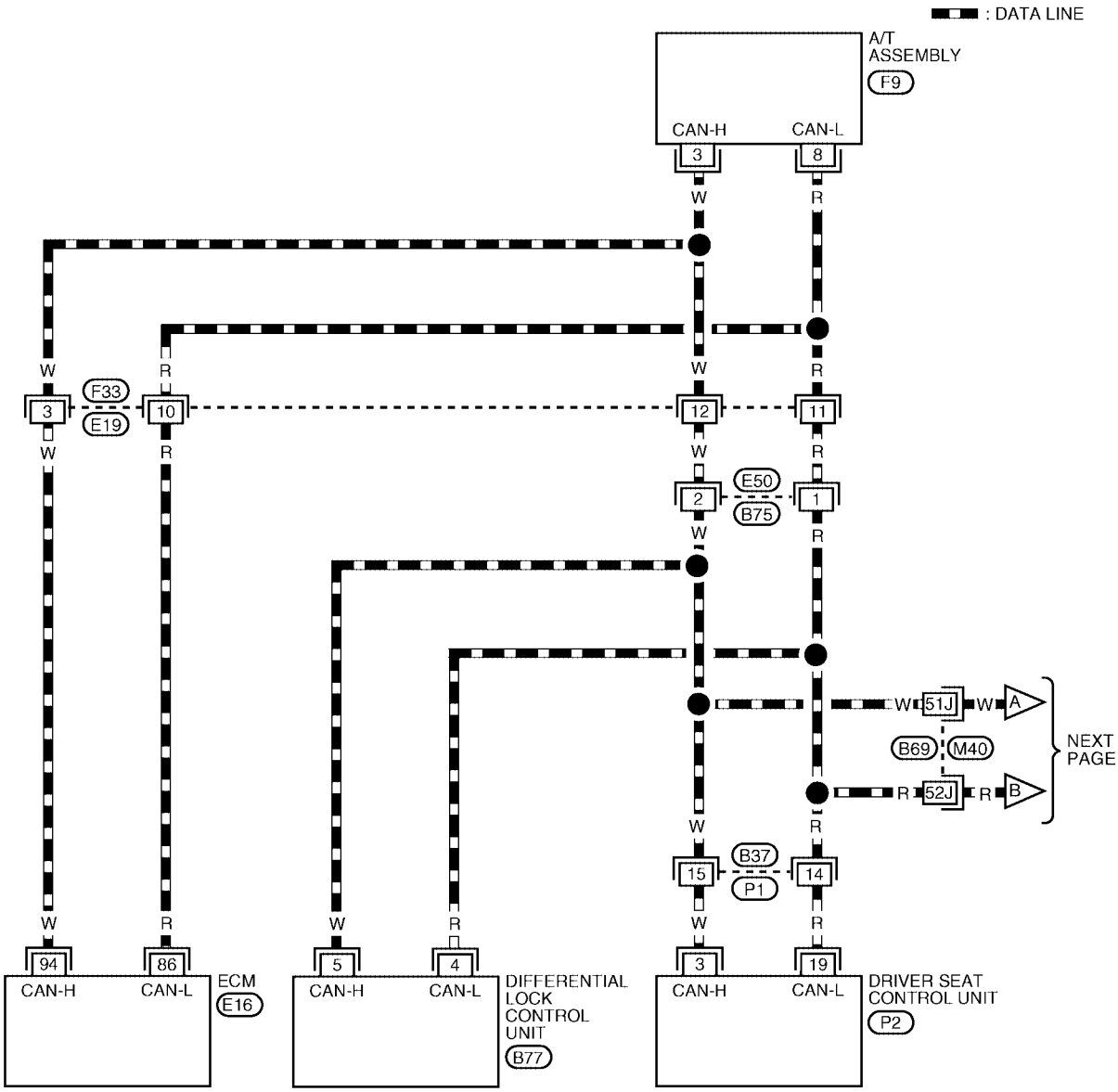


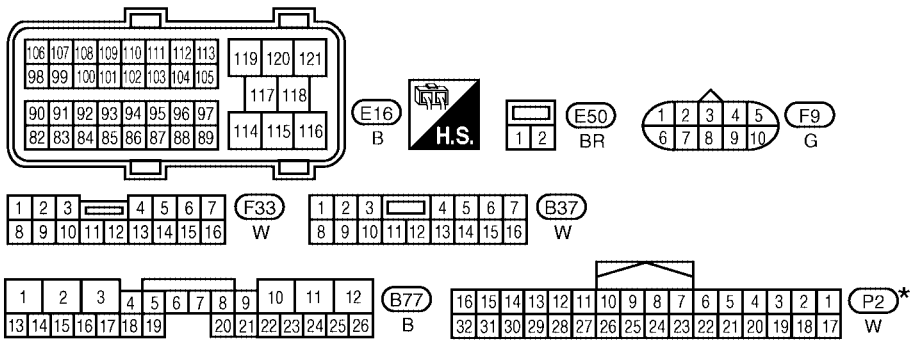
BKWA0156E

Wiring Diagram - CAN -

UKS001IL

LAN-CAN-34



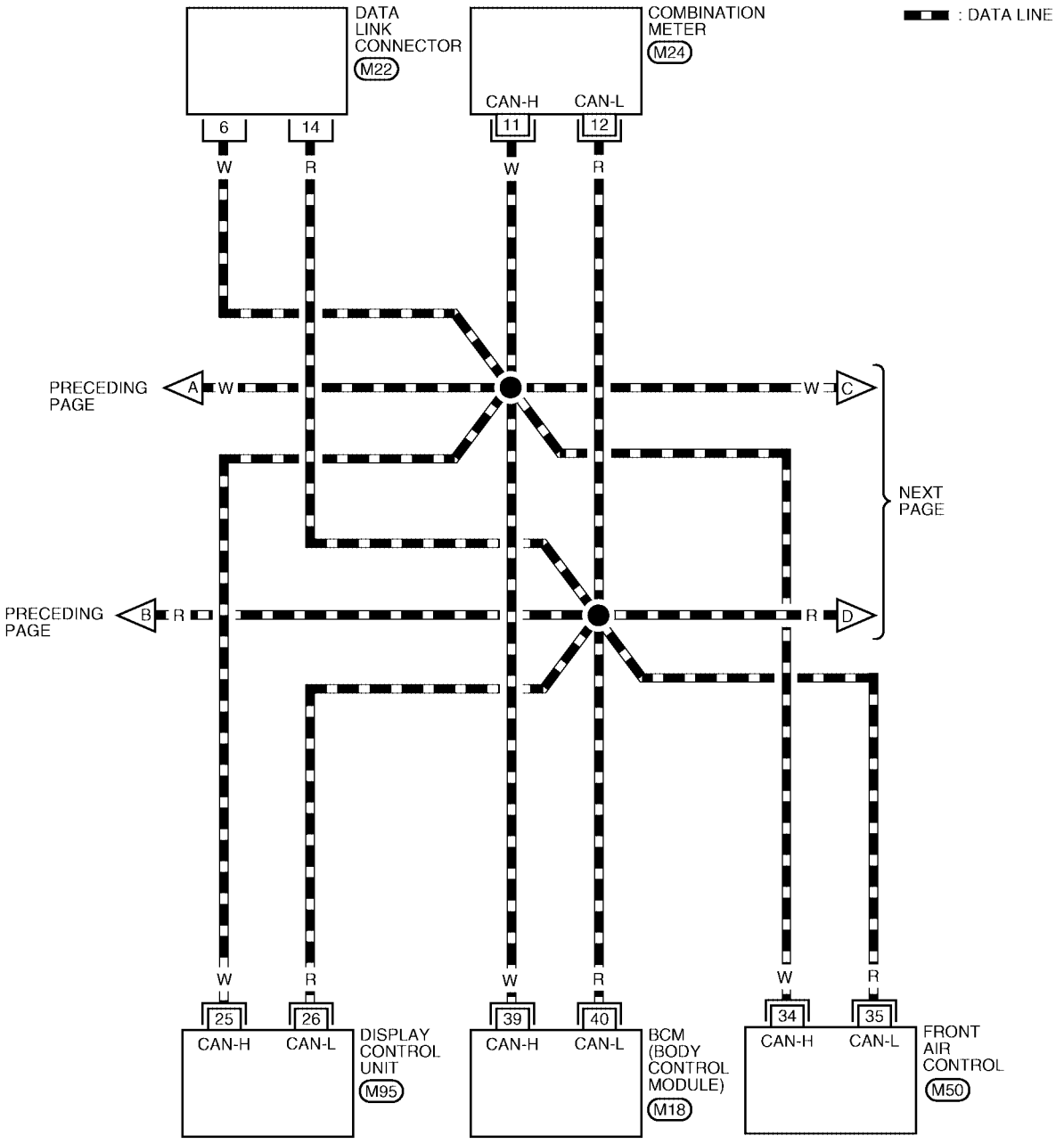


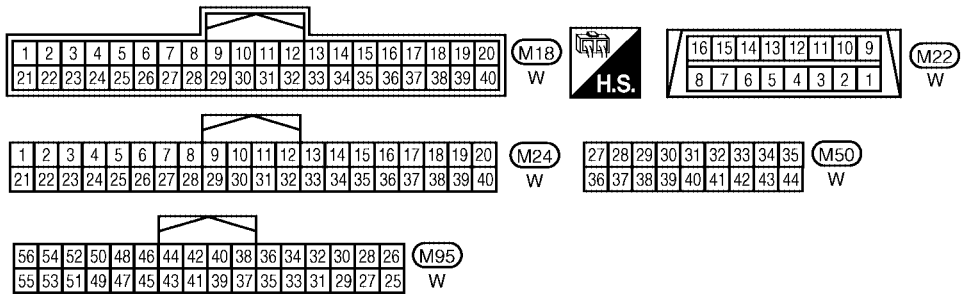
REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

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

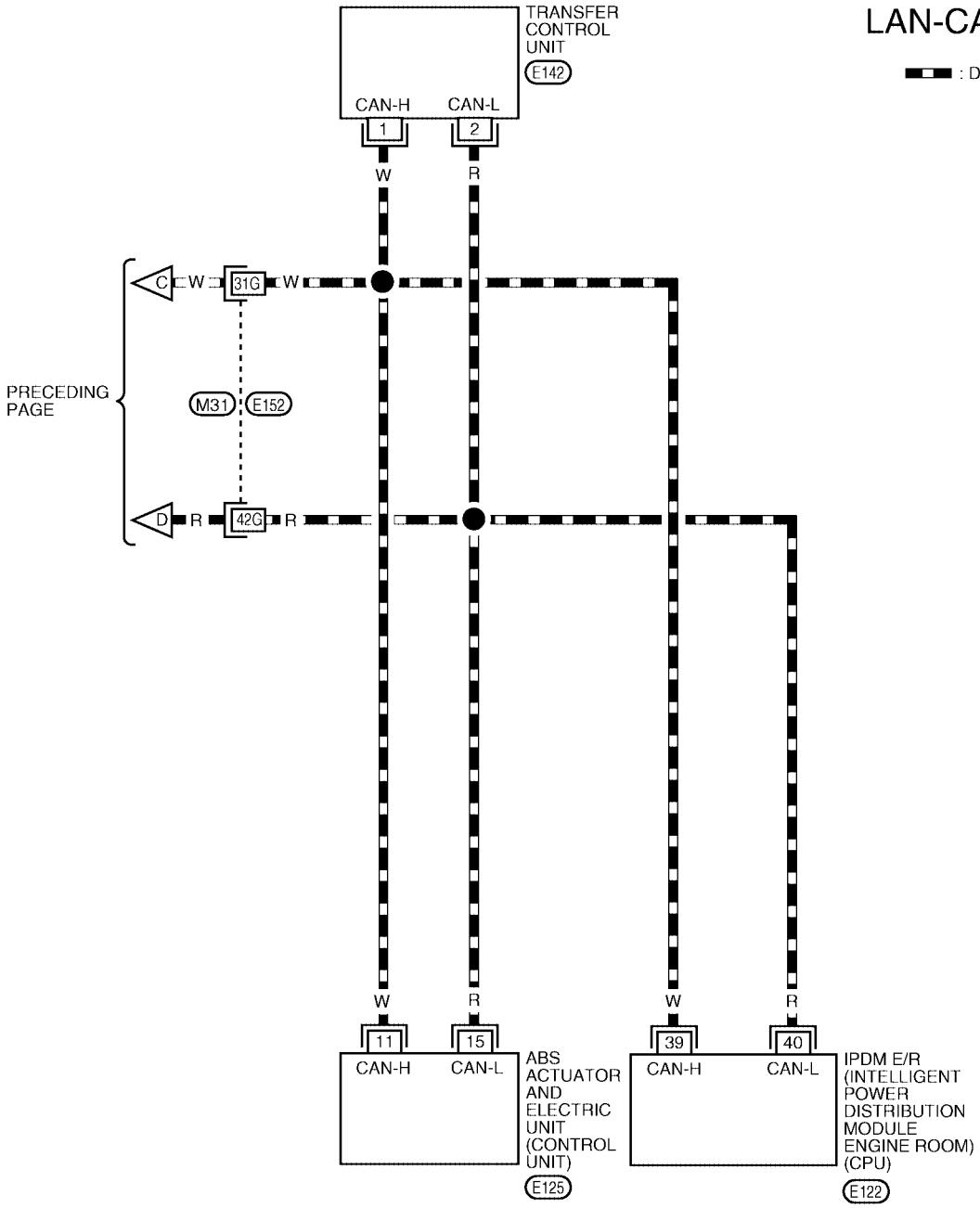
BKWA0157E

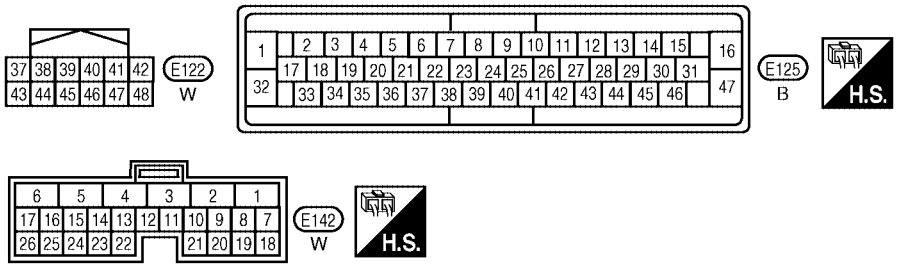
LAN-CAN-35





BKWA0158E





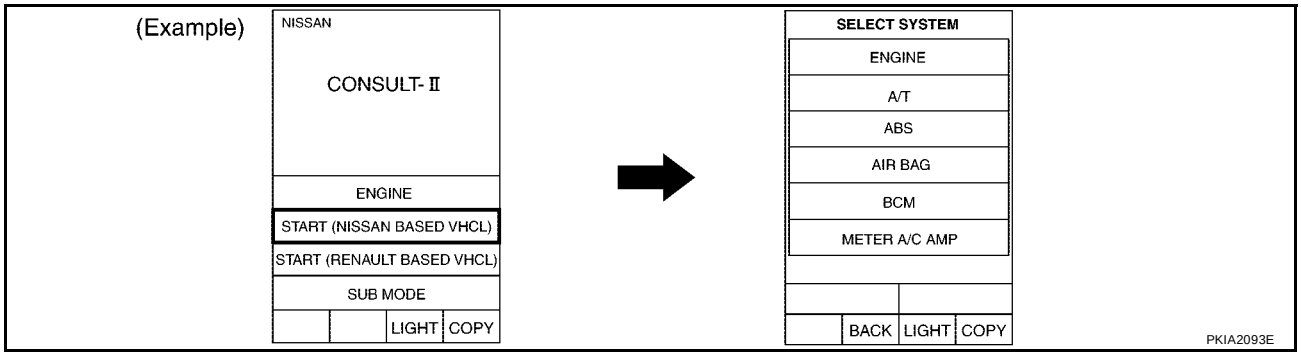
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0159E

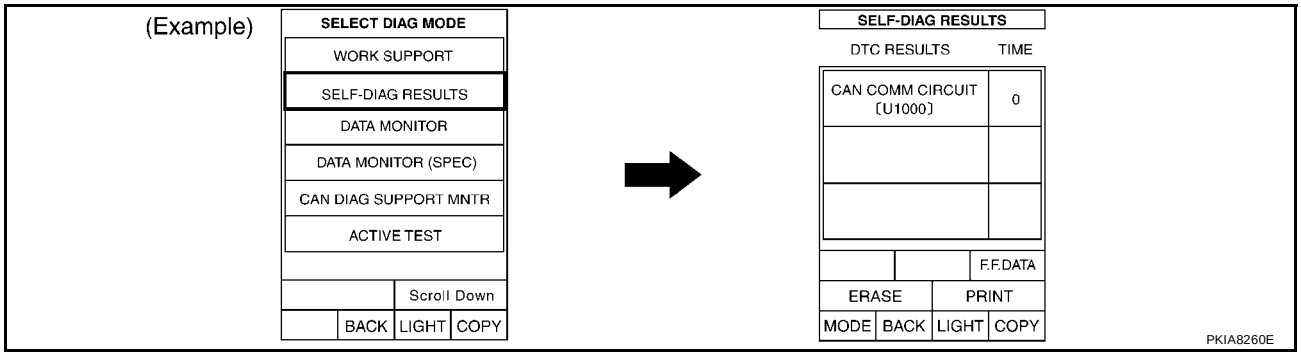
Work Flow

UKS001IM

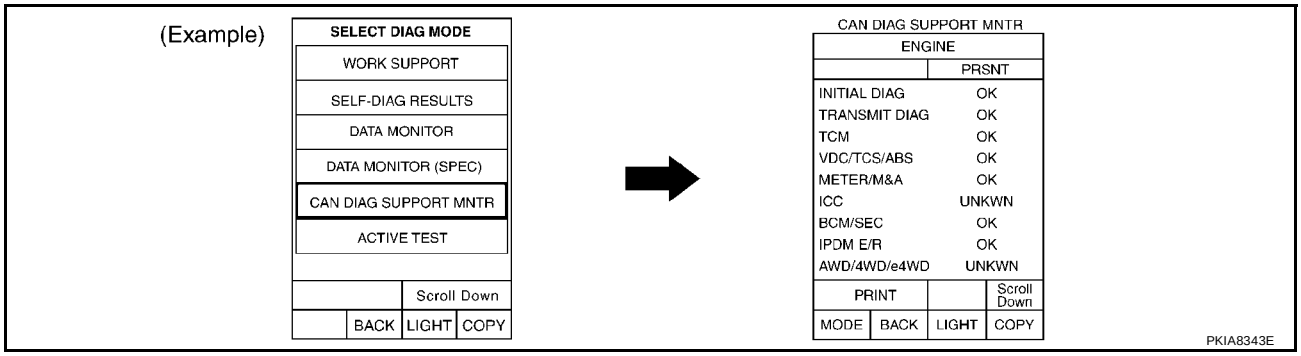
1. When there are no indications of “AUTO DRIVE POS.”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “A/T”, “DIFF LOCK”, “AUTO DRIVE POS.”, “BCM”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “DIFF LOCK”, “AUTO DRIVE POS.”, “BCM”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-367, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-367, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “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 the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. Check CAN communication line of the navigation system. Refer to AV-149, "CAN Communication Line Check" .
7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to LAN-367, "CHECK SHEET" .

8. Mark the “NG” or “UNKWN” item of the check sheet table with “v” from the result of CAN DIAG SUPPORT MONITOR check sheet. Refer to LAN-367, "CHECK SHEET" .

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MONITOR” for the diagnosed control unit, replace the control unit. Refer to AV-149, "CAN Communication Line Check" .

9. According to the check sheet results (example), start inspection. Refer to LAN-369, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

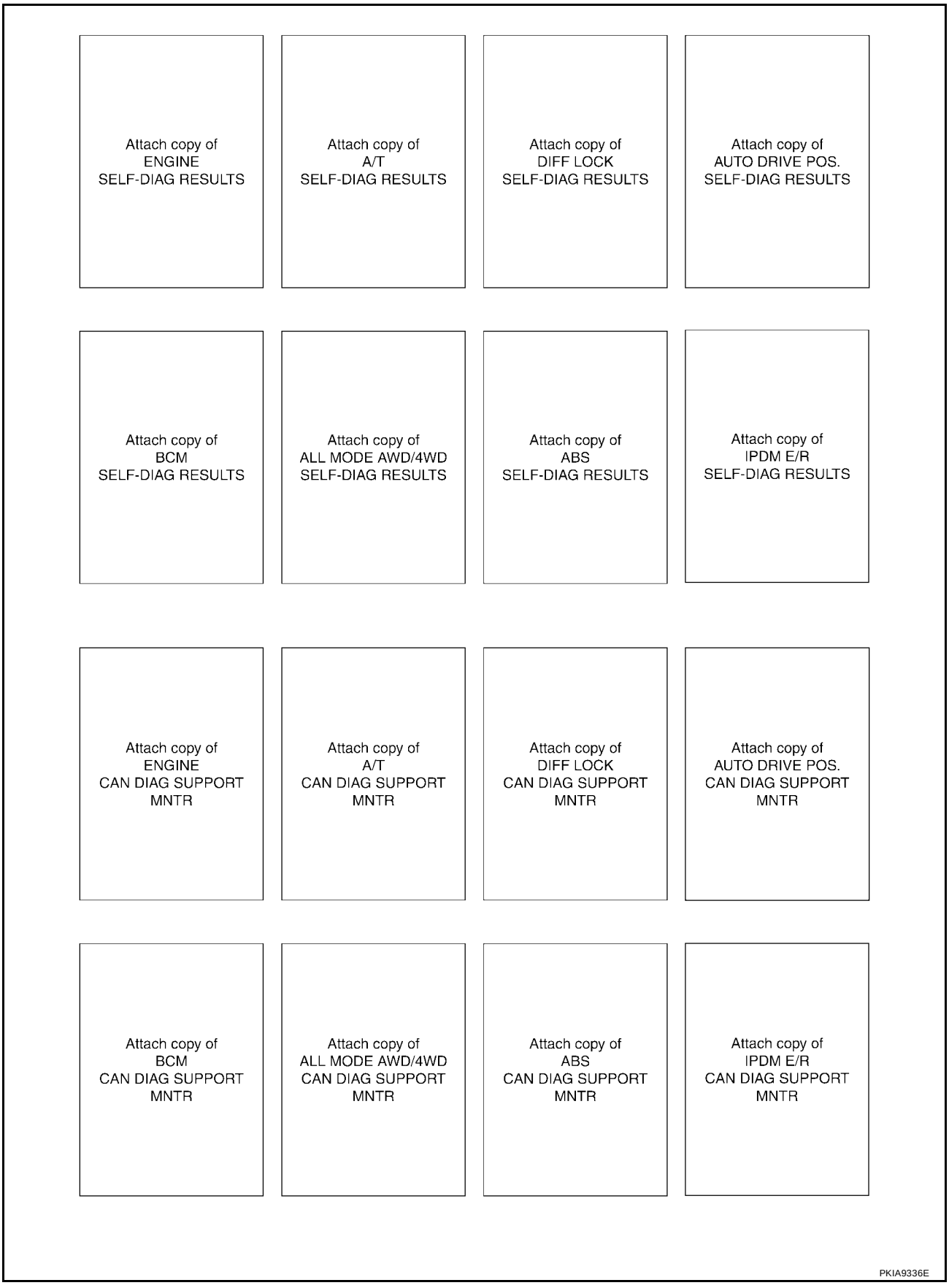
Symptoms :

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

Attach copy of
display control unit
CAN DIAG SUPPORT MONITOR check sheet

PKIA9335E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
DIFF LOCK
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
DIFF LOCK
CAN DIAG SUPPORT
MNTR
Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ALL MODE AWD/4WD
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA9336E

CHECK SHEET RESULTS (EXAMPLE)

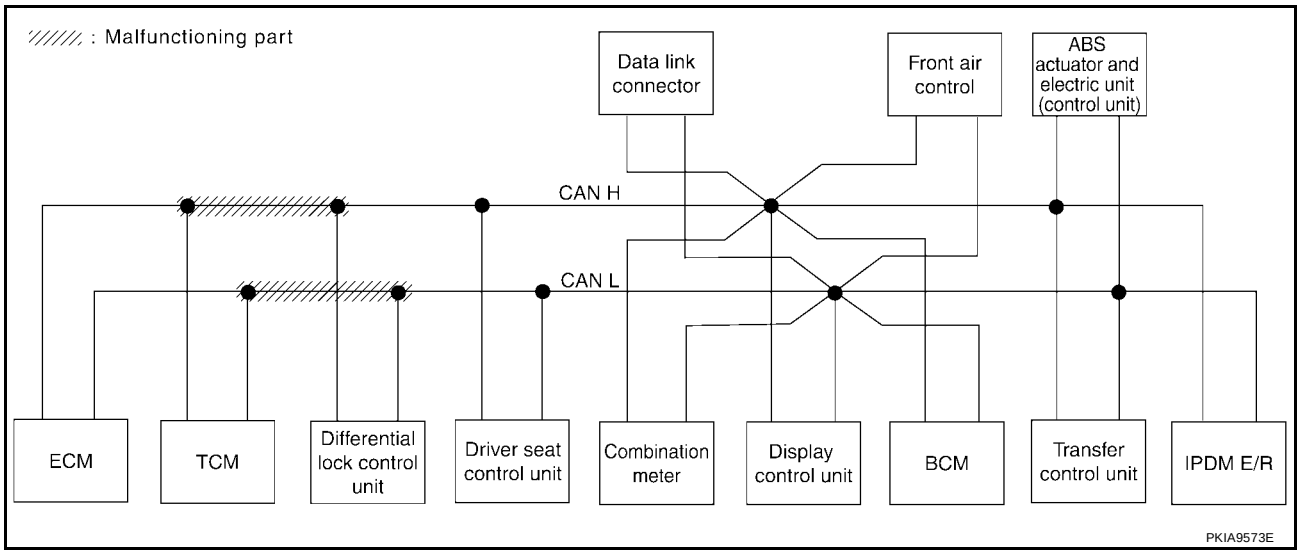
NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and differential lock control unit. Refer to LAN-386, "Circuit Check Between TCM and Differential Lock Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	✓	✓	—	✓	✓	✓
A/T	—	NG	UNKWN	UNKWN	—	—	✓	—	—	✓	✓	—
DIFF LOCK	—	NG	UNKWN	✓	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	✓	—	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	✓	—	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	✓	—	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	✓	✓	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	✓	✓	UNKWN	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	✓	—	—	—	UNKWN	—	—	—	—

PKIA9459E

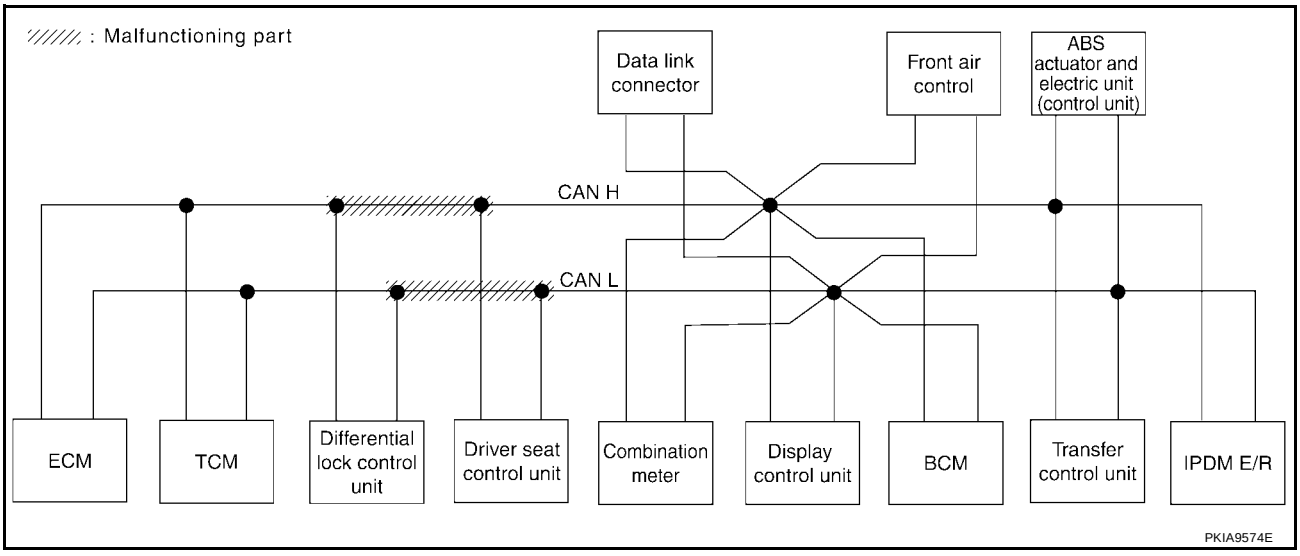


Case 2

Check harness between differential lock control unit and driver seat control unit. Refer to LAN-387, "Circuit Check Between Differential Lock Control Unit and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIA9460E

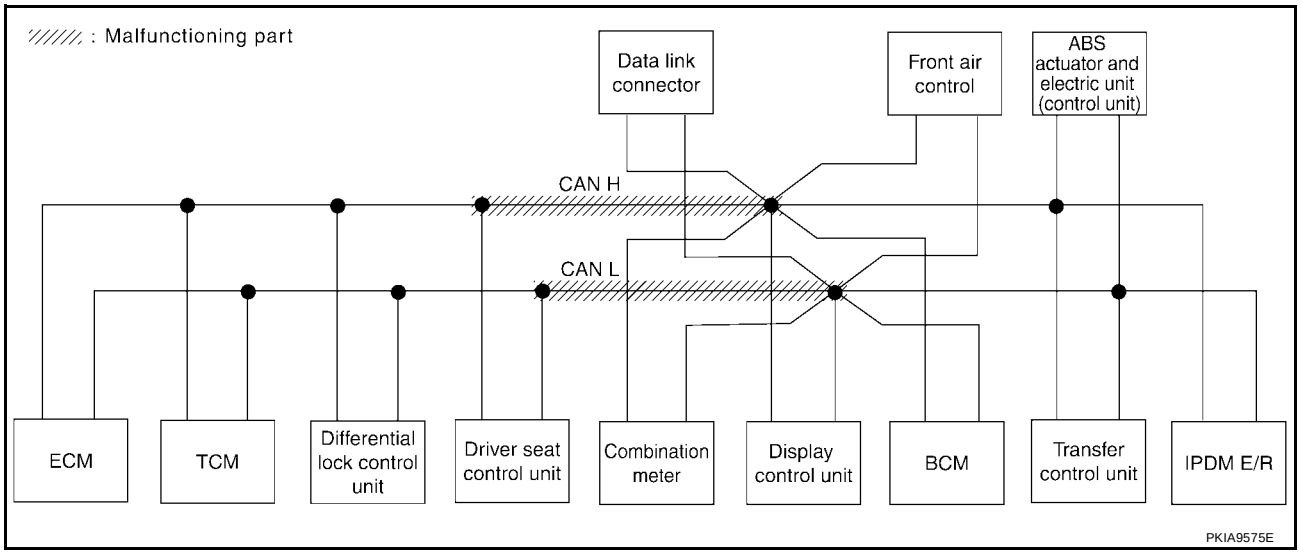


Case 3

Check harness between driver seat control unit and data link connector. Refer to LAN-388, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIA9461E



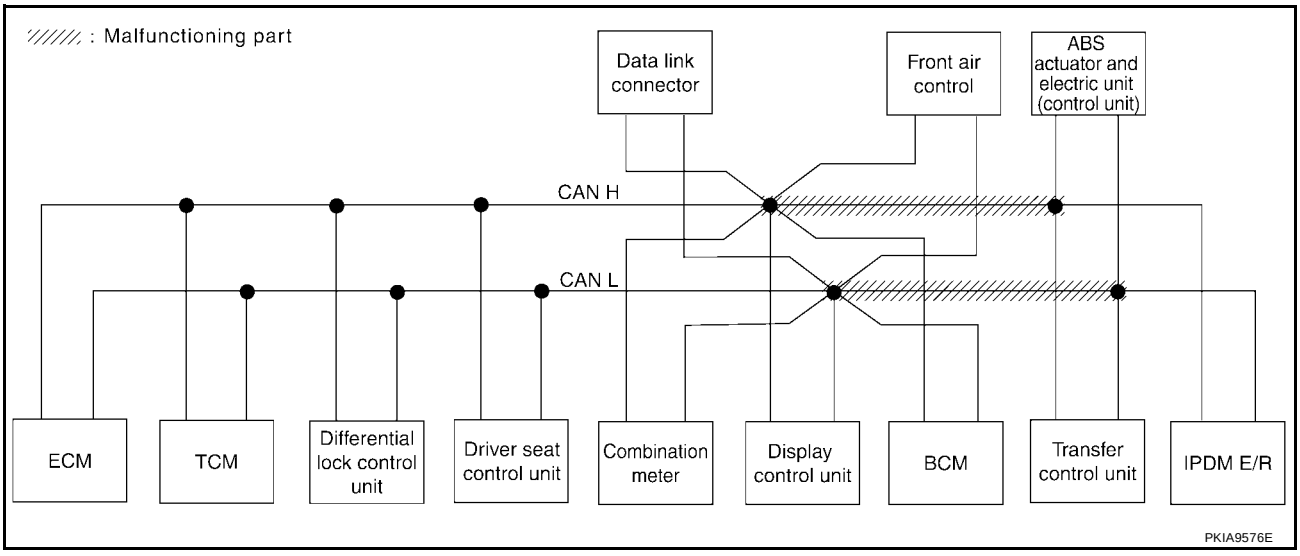
PKIA9575E

Case 4

Check harness between data link connector and IPDM E/R. Refer to LAN-388, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIA9462E



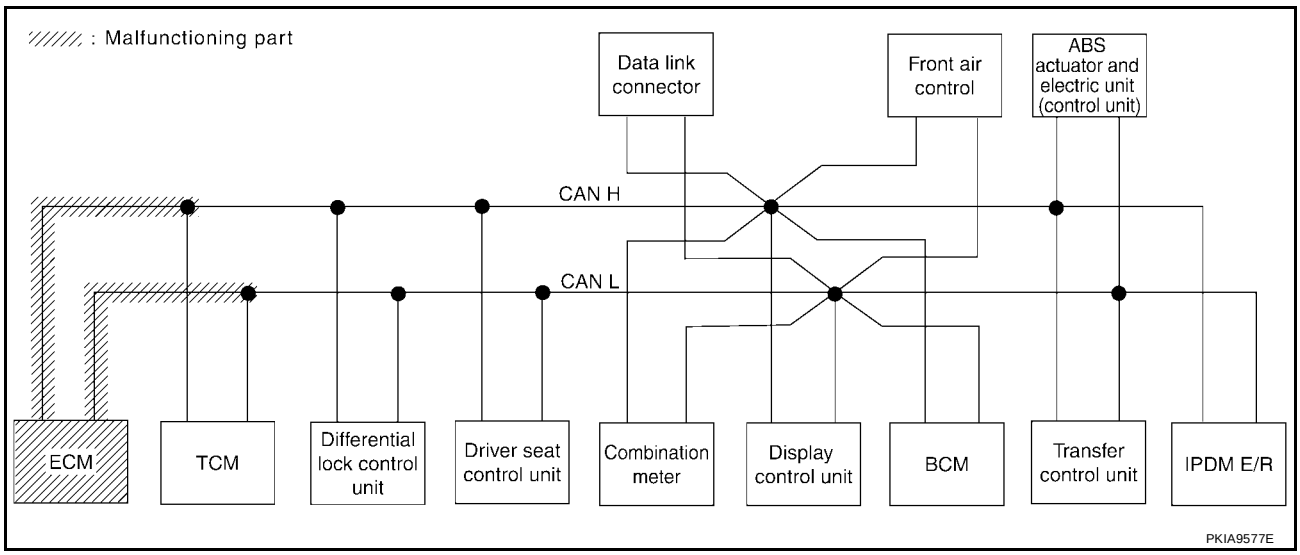
PKIA9576E

Case 5

Check ECM circuit. Refer to LAN-389, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIA9463E



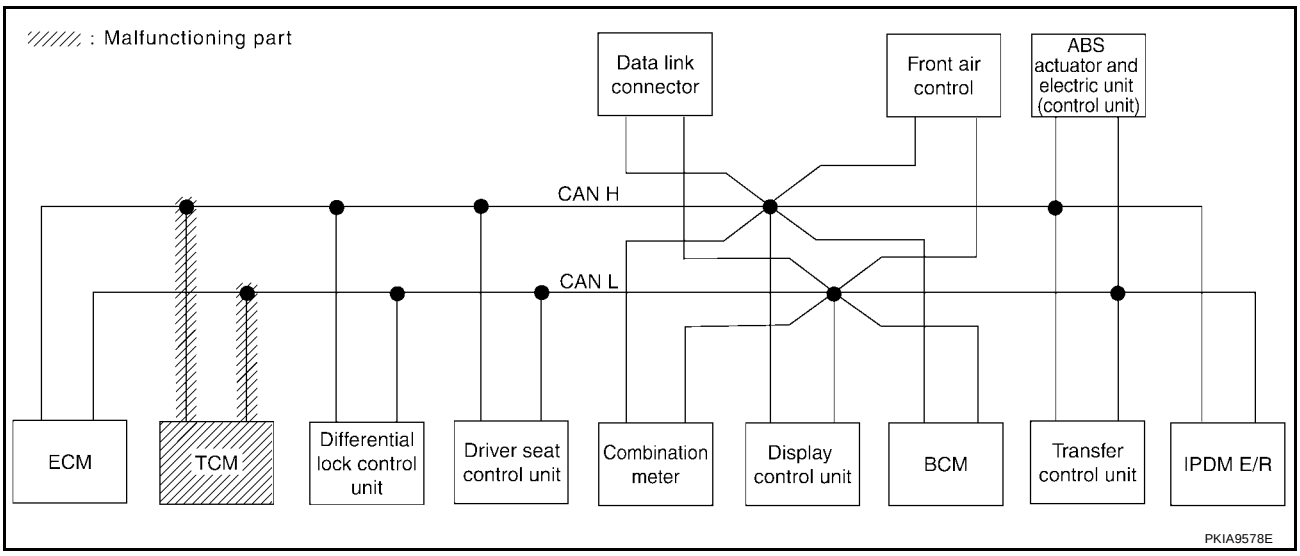
PKIA9577E

Case 6

Check TCM circuit. Refer to LAN-390, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIA9464E



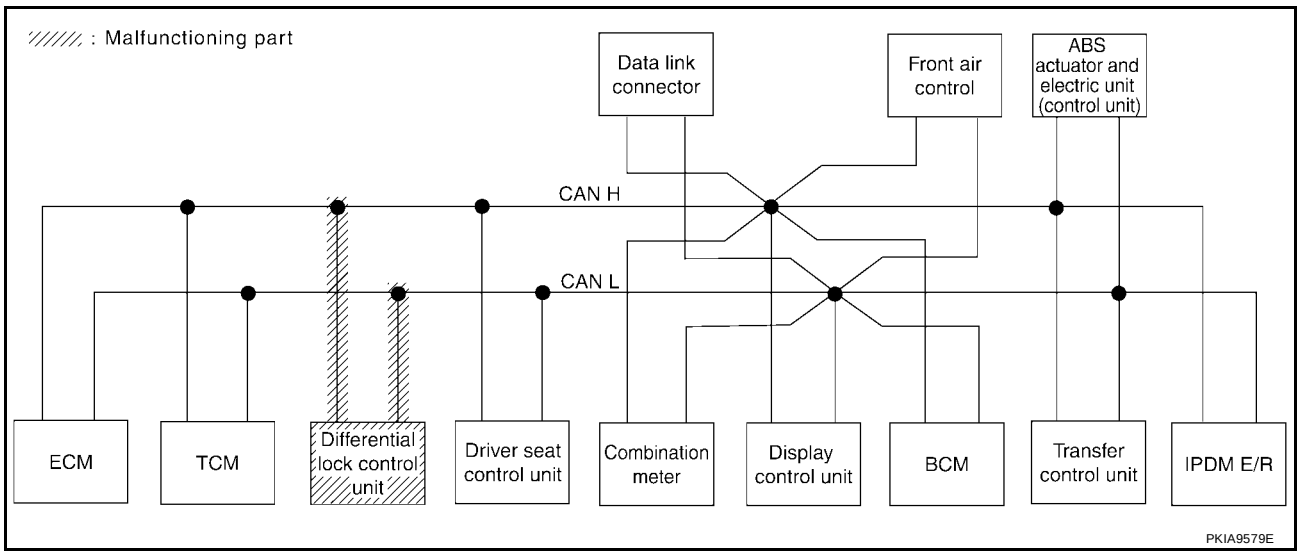
PKIA9578E

Case 7

Check differential lock control unit circuit. Refer to LAN-390, "Differential Lock Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN ✓	UNKWN ✓	—	—	—	—	—	UNKWN ✓	UNKWN ✓	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN ✓	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIA9465E



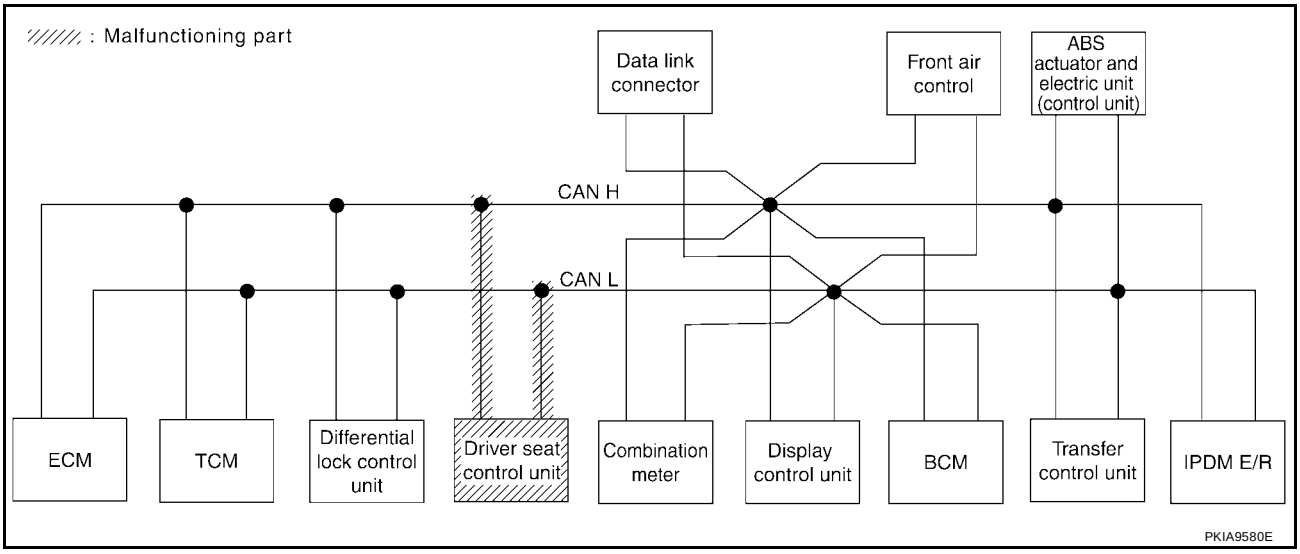
PKIA9579E

Case 8

Check driver seat control unit circuit. Refer to LAN-391, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIA9466E



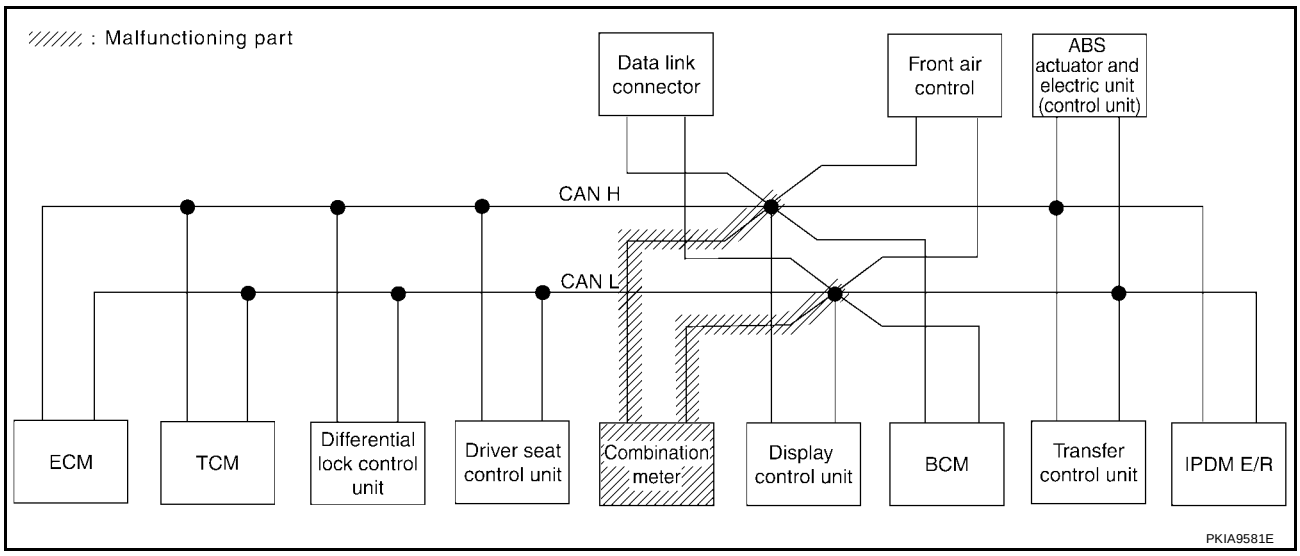
PKIA9580E

Case 9

Check combination meter circuit. Refer to LAN-391, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIA9467E



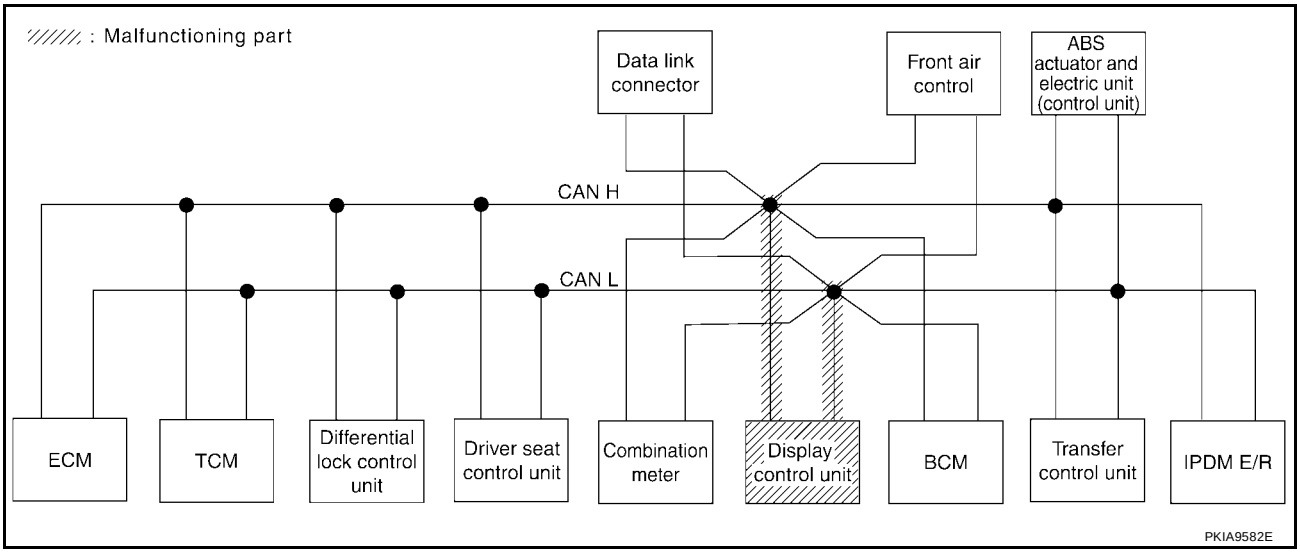
PKIA9581E

Case 10

Check display control unit circuit. Refer to LAN-392, "Display Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CRC 1 ✓	CAN CRC 3 ✓	—	—	CAN CRC 5 ✓	CAN CRC 2 ✓	CAN CRC 4 ✓	—	—	CAN CRC 7 ✓
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIA9468E



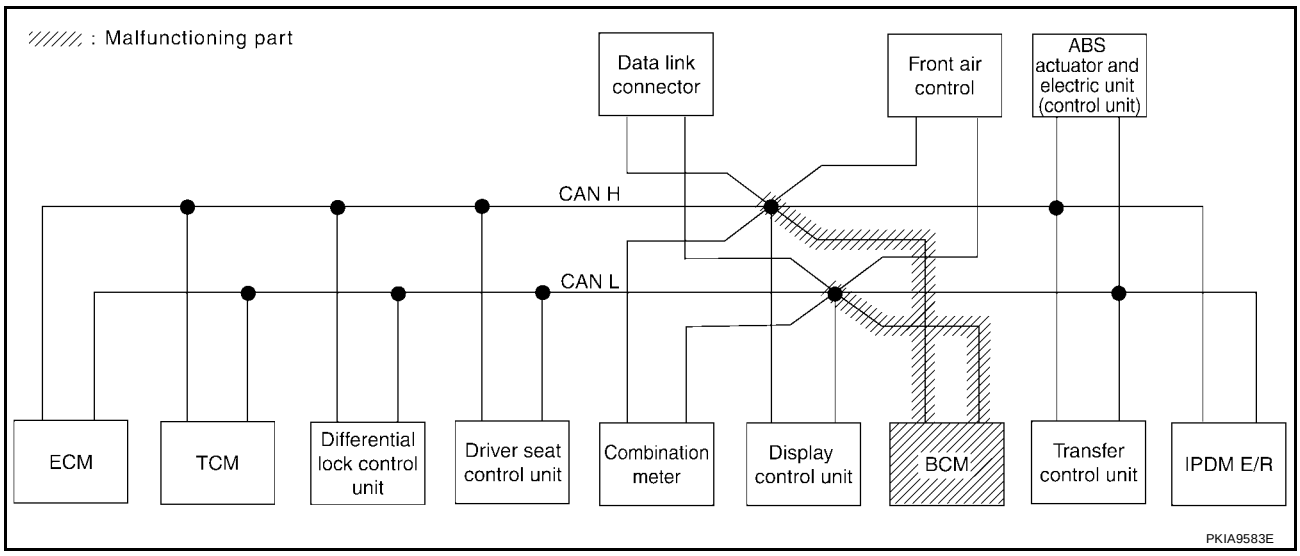
PKIA9582E

Case 11

Check BCM circuit. Refer to LAN-392, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN ✓	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN ✓	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 5	CAN CIRC 2 ✓	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication ✓	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN ✓	—	—	—	—

PKIA9469E



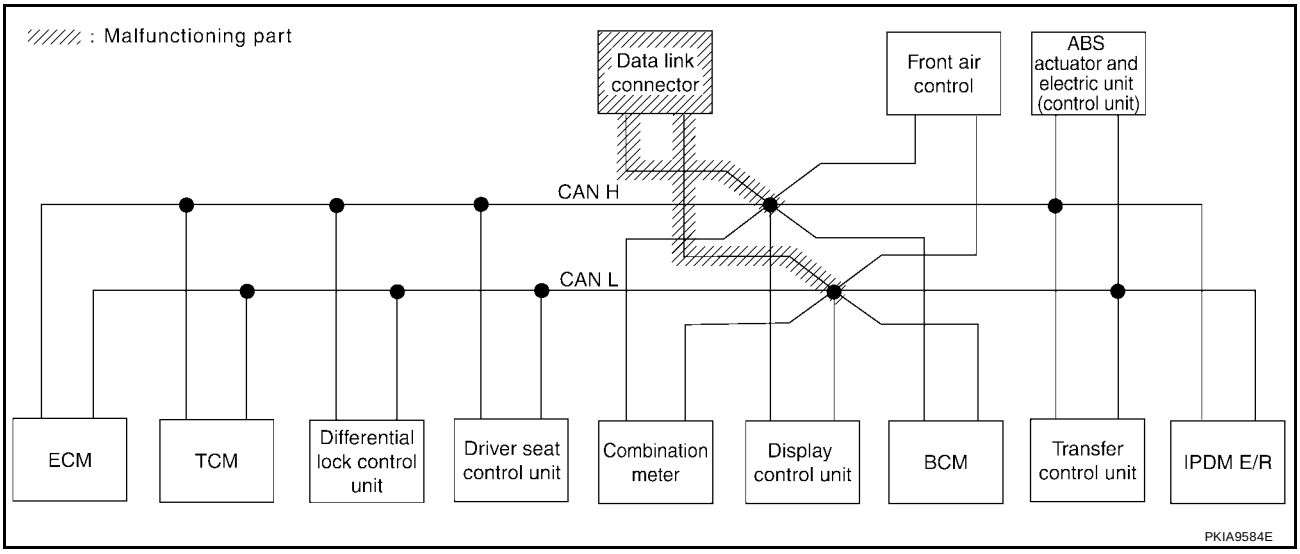
PKIA9583E

Case 12

Check data link connector circuit. Refer to LAN-393, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIA9470E

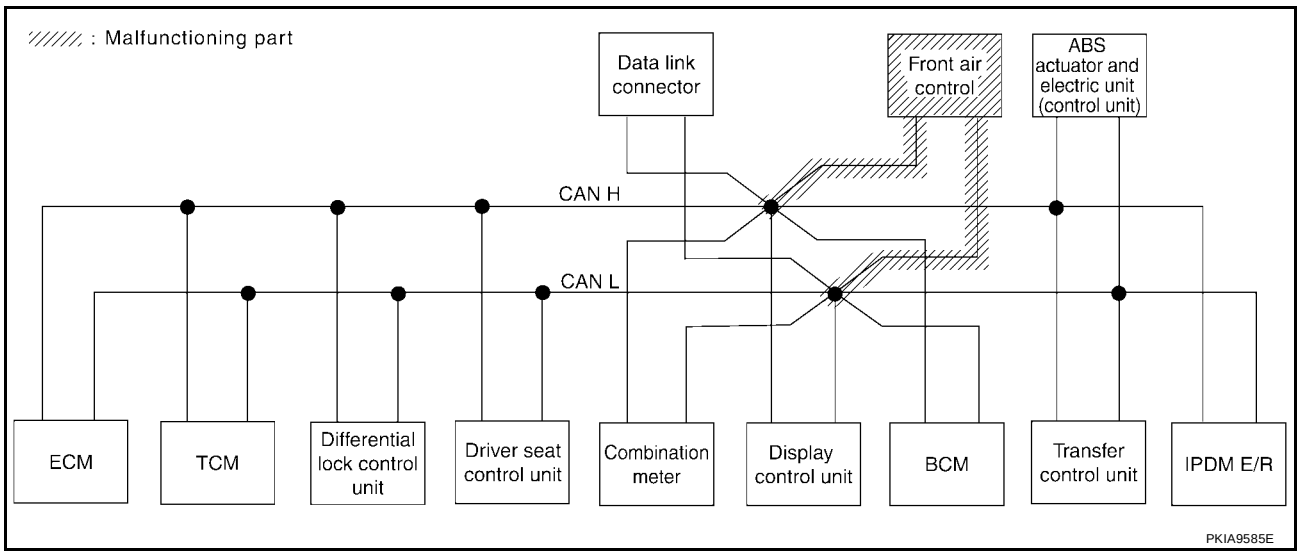


Case 13

Check front air control circuit. Refer to LAN-393, "Front Air Control Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIA9471E



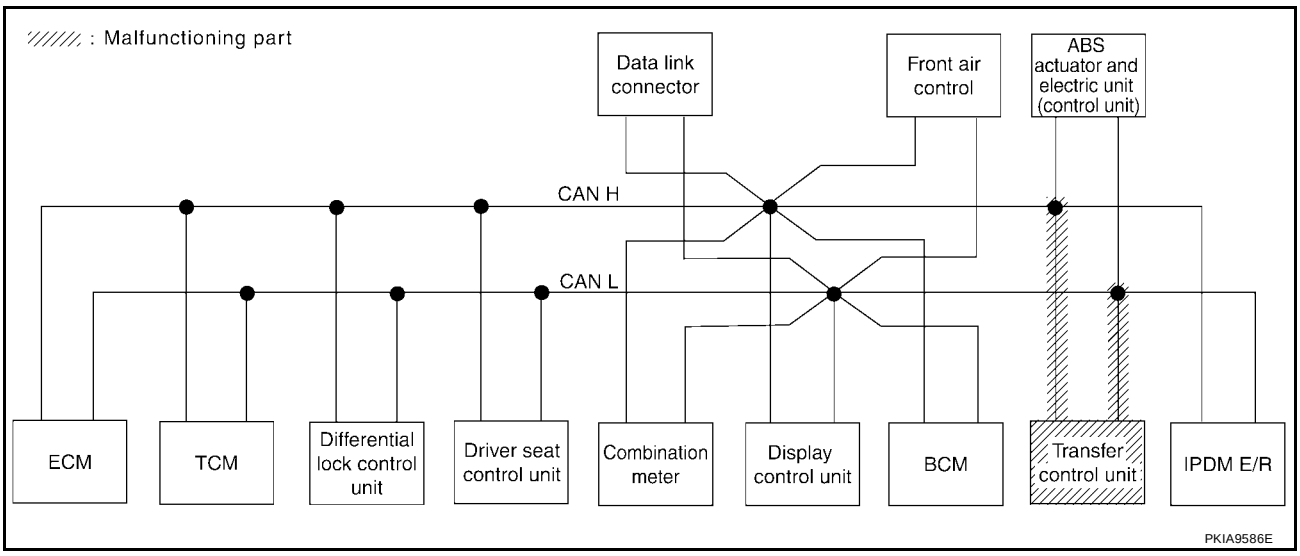
PKIA9585E

Case 14

Check transfer control unit circuit. Refer to LAN-394, "Transfer Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIA9472E



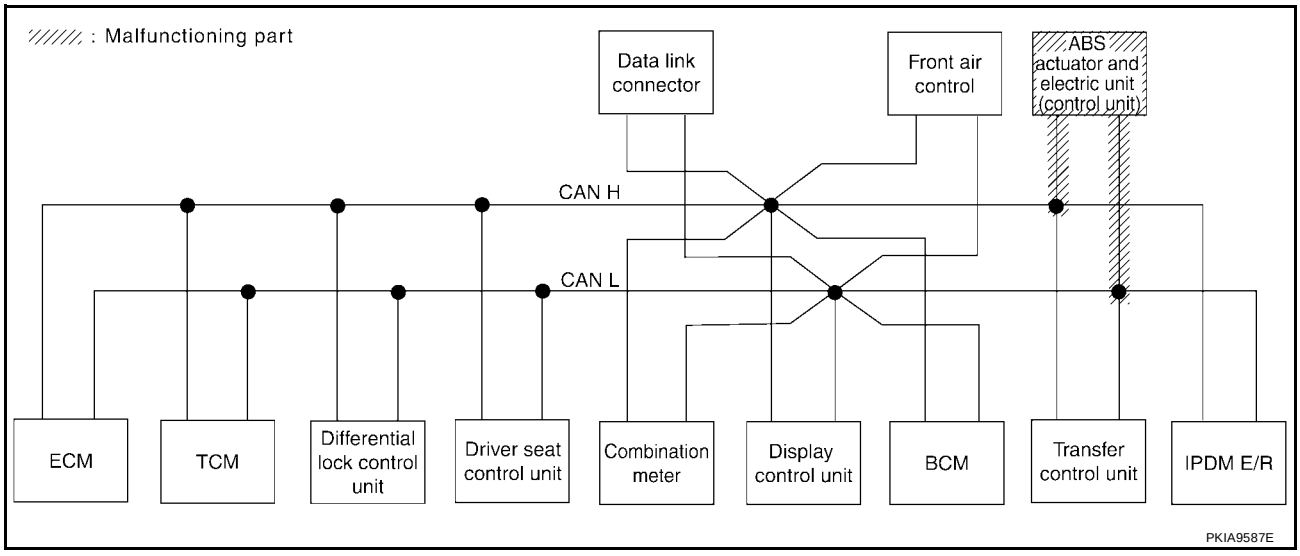
PKIA9586E

Case 15

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-394, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN ✓	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	UNKWN ✓	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	UNKWN ✓	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN ✓	—
ABS	—	NG ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	—	—	UNKWN ✓	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIA9473E



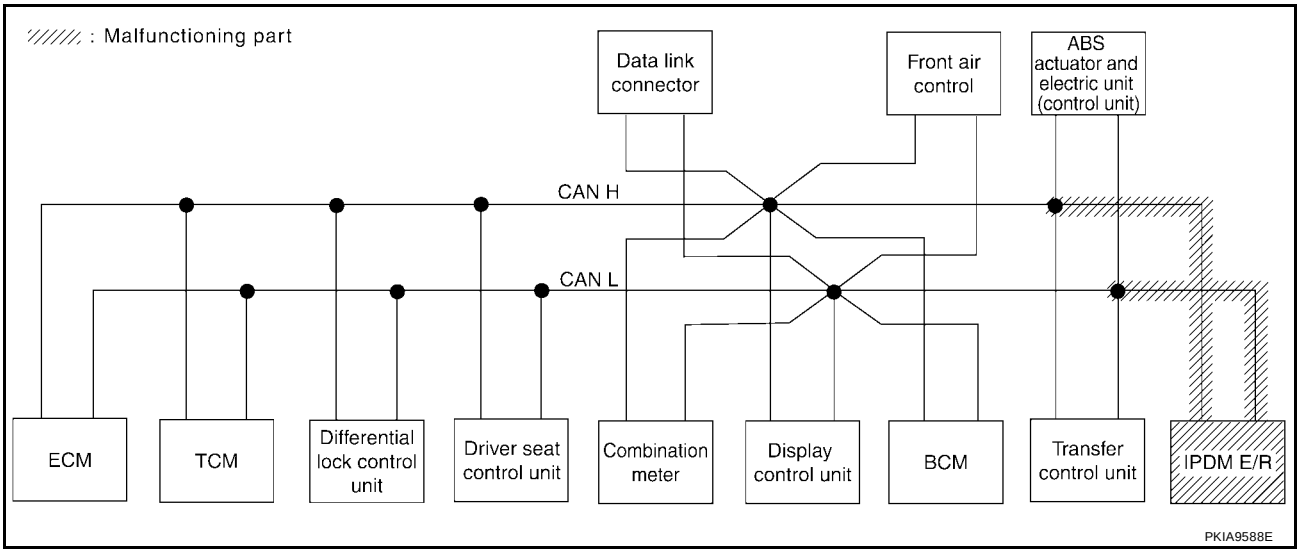
PKIA9587E

Case 16

Check IPDM E/R circuit. Refer to LAN-395, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIA9474E



PKIA9588E

Case 17

Check CAN communication circuit. Refer to LAN-396, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN	–	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	–	UNKWN	–	–	UNKWN	UNKWN	–
DIFF LOCK	–	NG	UNKWN	UNKWN	–	–	–	–	–	UNKWN	UNKWN	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN	–	–	–	–
Display control unit	–	CAN COMM	CAN CIRC 1	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	–	–	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	–	–	UNKWN	–	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–	–

PKIA9475E

Case 18

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-396, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR											
		Initial diagnosis	Transmit diagnosis	Receive diagnosis									
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN	–	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	–	UNKWN	–	–	UNKWN	UNKWN	–
DIFF LOCK	–	NG	UNKWN	UNKWN	–	–	–	–	–	UNKWN	UNKWN	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	–	UNKWN	UNKWN	–	–	–	–
Display control unit	–	CAN COMM	CAN CIRC 1	CAN CIRC 3	–	–	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	–	–	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	–	–	UNKWN	–	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	UNKWN	–	–	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	–	UNKWN	–	–	–	–

PKIA9476E

Case 19

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-396, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	DIFF LOCK	METER /M&A	BCM /SEC	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	UNKWN	UNKWN	—
DIFF LOCK	—	NG	UNKWN	UNKWN	—	—	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	UNKWN	UNKWN	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 5	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	—

PKIA9477E

Circuit Check Between TCM and Differential Lock Control Unit

UKS0020F

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 F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

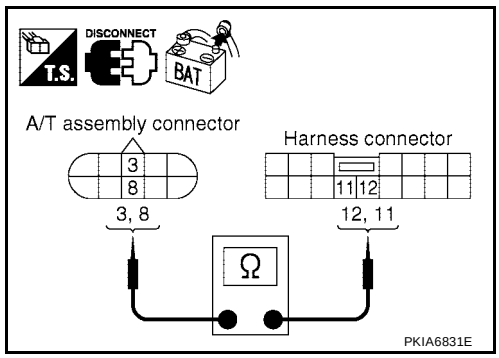
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12 (W), 11 (R).

3 (W) - 12 (W) : Continuity should exist.
8 (R) - 11 (R) : Continuity should exist.



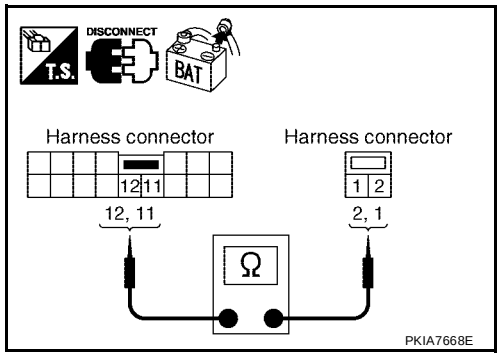
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).

12 (W) - 2 (W) : Continuity should exist.
11 (R) - 1 (R) : Continuity should exist.



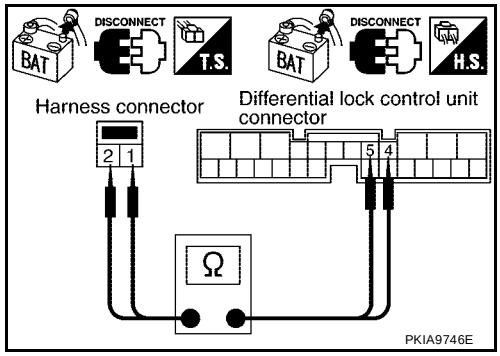
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect differential lock control unit connector.
2. Check continuity between harness connector B75 terminals 2 (W), 1 (R) and differential lock control unit harness connector B77 terminals 5 (W), 4 (R).

2 (W) - 5 (W) : Continuity should exist.
1 (R) - 4 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-365, "Work Flow" .
NG >> Repair harness.

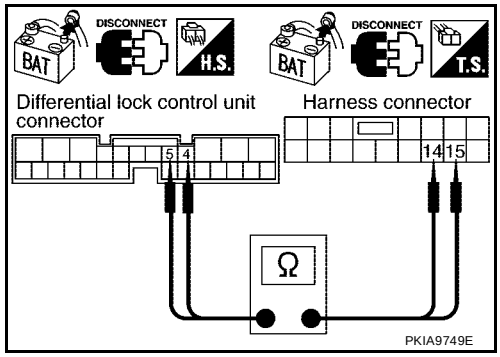
Circuit Check Between Differential Lock Control Unit and Driver Seat Control Unit

UKS001IN

1. CHECK HARNESS FOR OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect differential lock control unit connector and harness connector B37.
4. Check continuity between differential lock control unit harness connector B77 terminals 5 (W), 4 (R) and harness connector B37 terminals 15 (W), 14 (R).

5 (W) - 15 (W) : Continuity should exist.
4 (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-365, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and Data Link Connector

UKS001IO

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 B69
- Harness connector M40

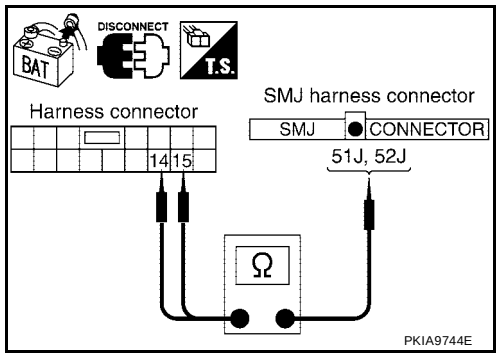
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37 and harness connector B69.
2. Check continuity between harness connector B37 terminals 15 (W), 14 (R) and harness connector B69 terminals 51J (W), 52J (R).

15 (W) - 51J (W) : Continuity should exist.
14 (R) - 52J (R) : Continuity should exist.



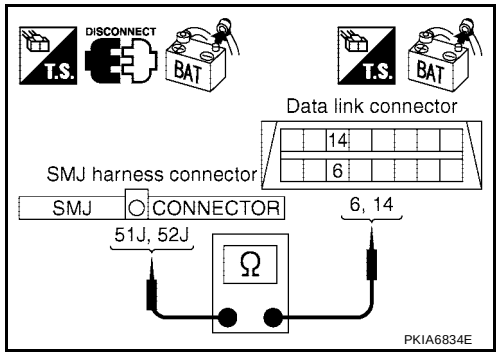
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

51J (W) - 6 (W) : Continuity should exist.
52J (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-365, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Data Link Connector and IPDM E/R

UKS001IP

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 M31
- Harness connector E152

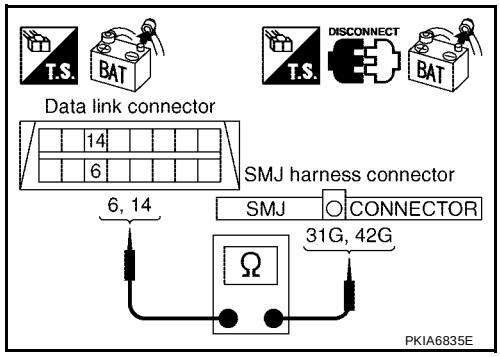
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).

6 (W) - 31G (W) : Continuity should exist.
14 (R) - 42G (R) : Continuity should exist.



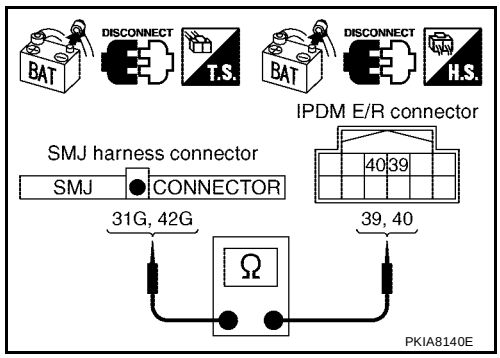
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).

31G (W) - 39 (W) : Continuity should exist.
42G (R) - 40 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-365, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS001IQ

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 E19
- Harness connector F33

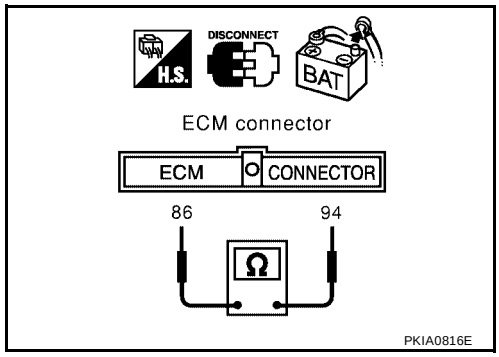
OK or NG

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 E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R) : Approx. 108 - 132Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and A/T assembly.

TCM Circuit Check

UKS001IR

1. CHECK CONNECTOR

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

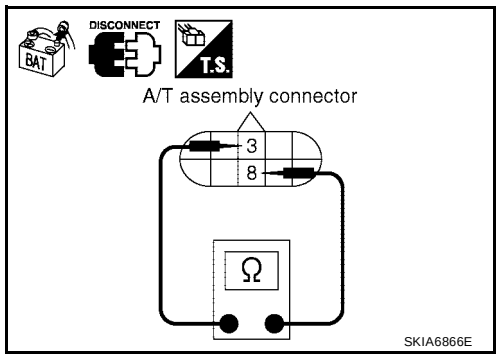
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Differential Lock Control Unit Circuit Check

UKS0020G

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of differential lock 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.

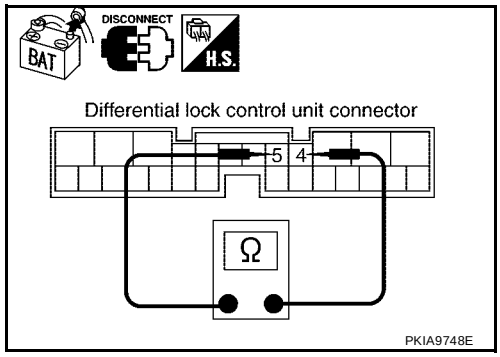
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect differential lock control unit connector.
2. Check resistance between differential lock control unit harness connector B77 terminals 5 (W) and 4 (R).

5 (W) - 4 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace differential lock control unit.
NG >> Repair harness between differential lock control unit and harness connector B75.



Driver Seat Control Unit Circuit Check

UKS001IS

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 unit side and harness side).

- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

OK or NG

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

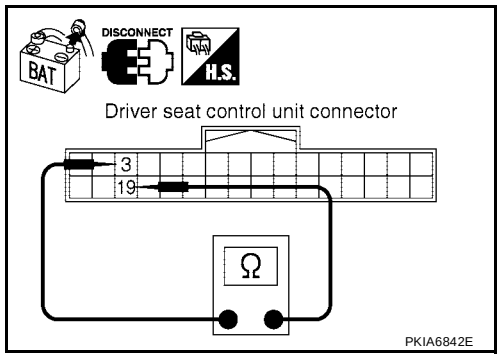
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect driver seat control unit connector.
2. Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R).

3 (W) - 19 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B69.



Combination Meter Circuit Check

UKS001IT

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.

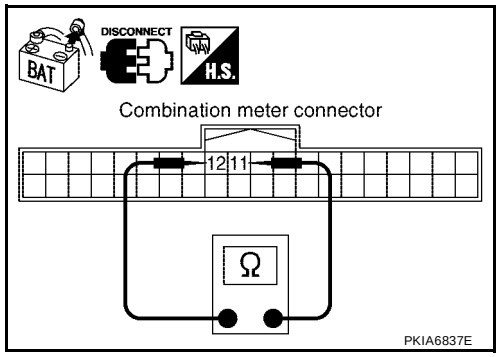
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect combination meter connector.
2. Check resistance between combination meter harness connector M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R) : Approx. 54 - 66Ω

OK or NG

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



Display Control Unit Circuit Check

UKS001IU

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of display 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.

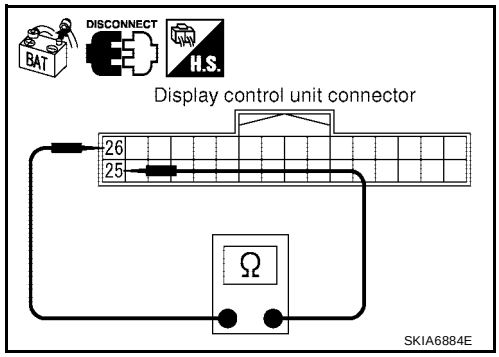
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect display control unit connector.
2. Check resistance between display control unit harness connector M95 terminals 25 (W) and 26 (R).

25 (W) - 26 (R) : Approx. 54 - 66Ω

OK or NG

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



BCM Circuit Check

UKS001IV

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

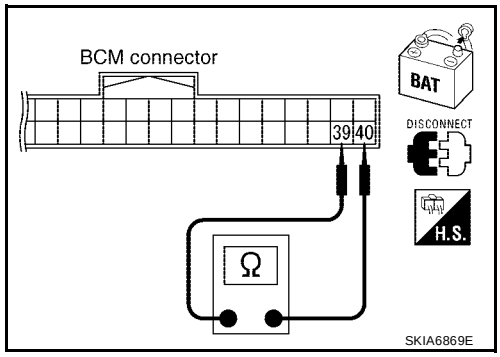
1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace BCM. Refer to BCS-25, "Removal and Installation of BCM" .

NG >> Repair harness between BCM and data link connector.



Data Link Connector Circuit Check

UKS001IW

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check the terminals and connector of data link connector 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

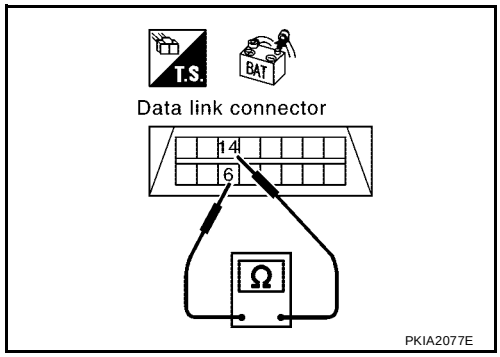
Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Diagnose again. Refer to LAN-365, "Work Flow" .

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



Front Air Control Circuit Check

UKS0020H

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

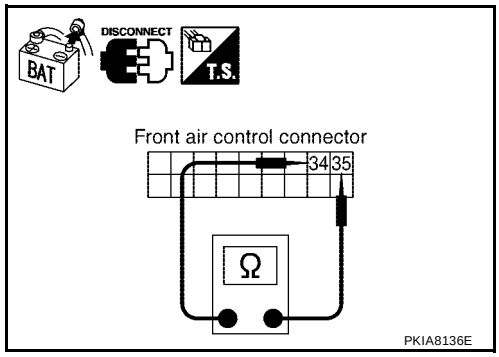
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 34 (W) and 35 (R).

34 (W) - 35 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace front air control.
NG >> Repair harness between front air control and data link connector.



Transfer Control Unit Circuit Check

UKS001IZ

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of transfer 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.

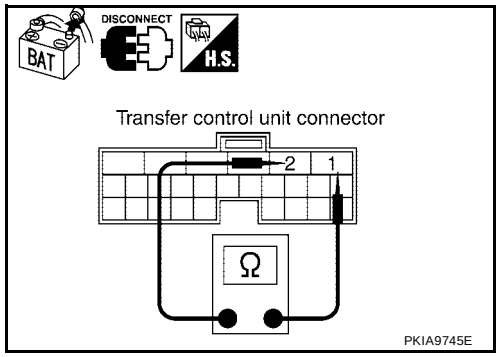
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R).

1 (W) - 2 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace transfer control unit.
NG >> Repair harness between transfer control unit and harness connector E152.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS001J0

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.

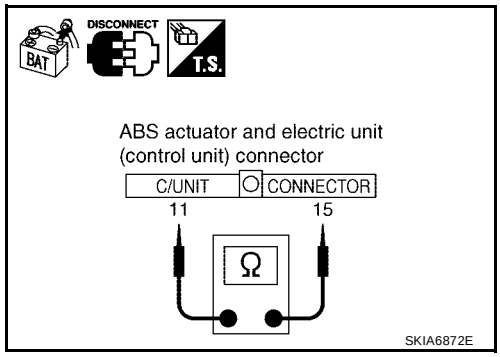
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R) : 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 harness connector E152.



IPDM E/R Circuit Check

UKS001J1

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.

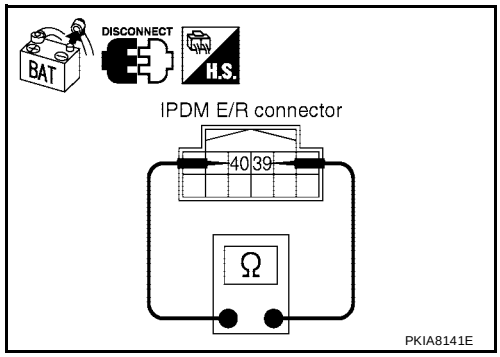
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 108 - 132Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

UKS001J2

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- A/T assembly
- Differential lock control unit
- Driver seat control unit
- Combination meter
- Display control unit
- BCM
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

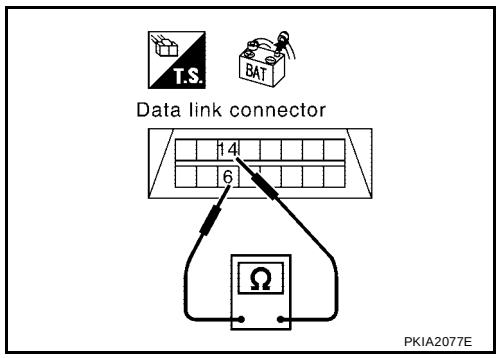
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

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



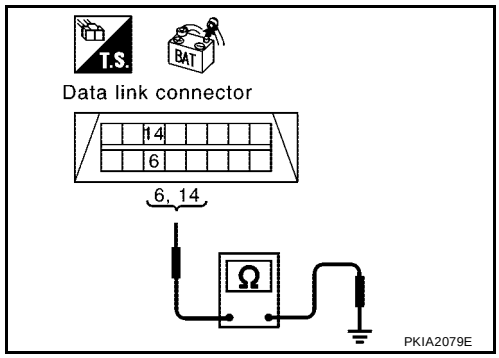
OK or NG

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

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-397, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.

IPDM E/R Ignition Relay Circuit Check

UKS001J3

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

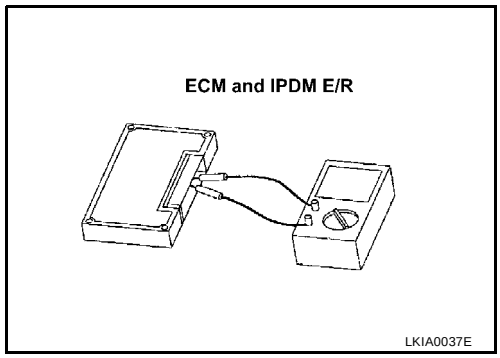
Component Inspection

UKS001J4

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 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 13)

PFP:23710

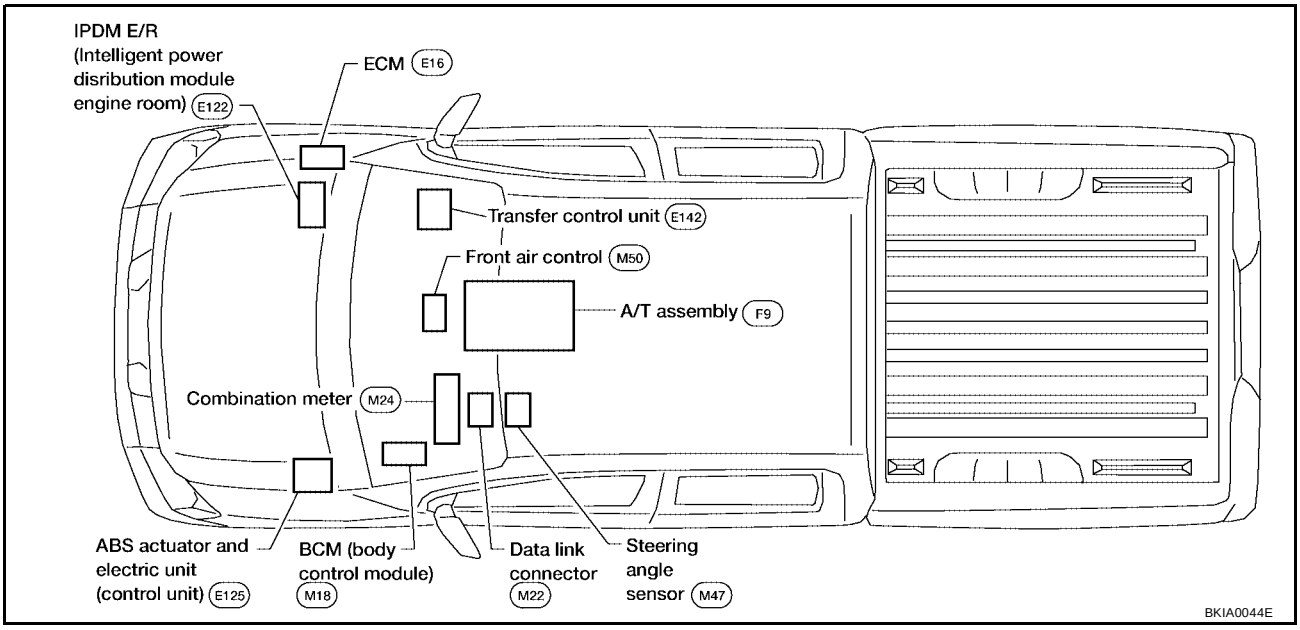
System Description

UKS001W0

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.

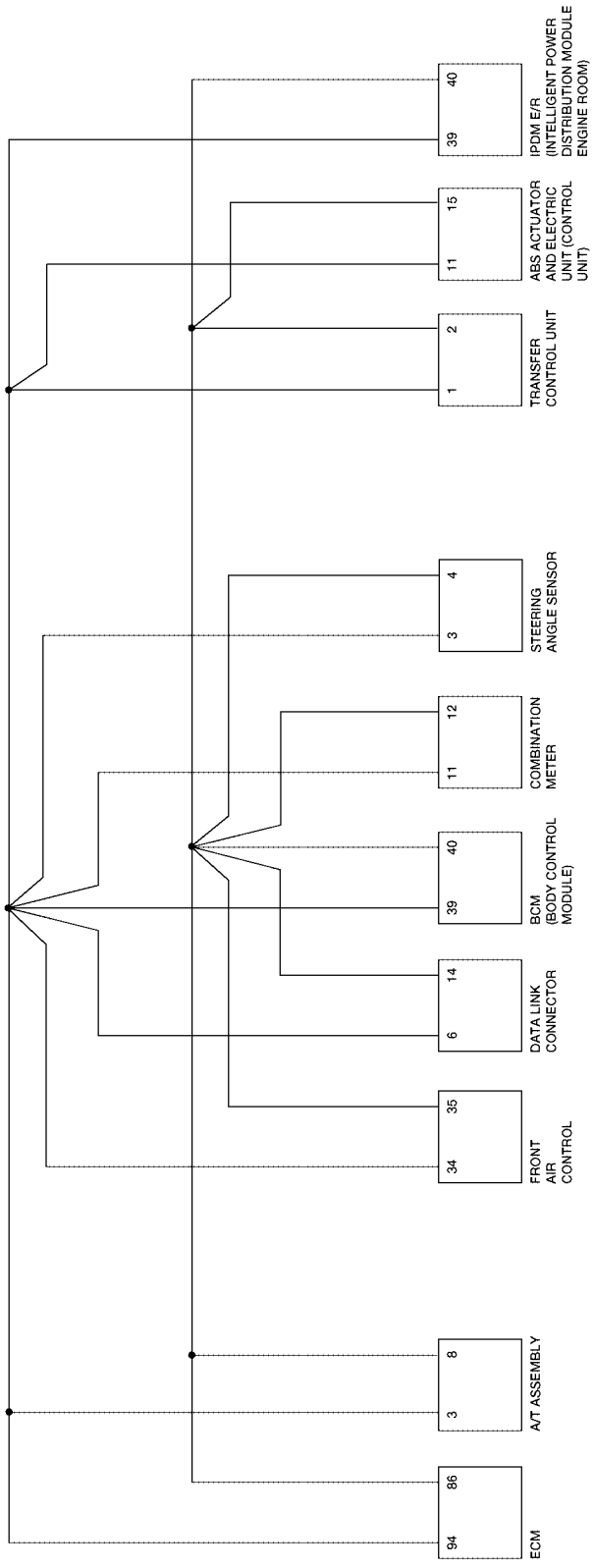
Component Parts and Harness Connector Location

UKS001W1



Schematic

UKS001W2



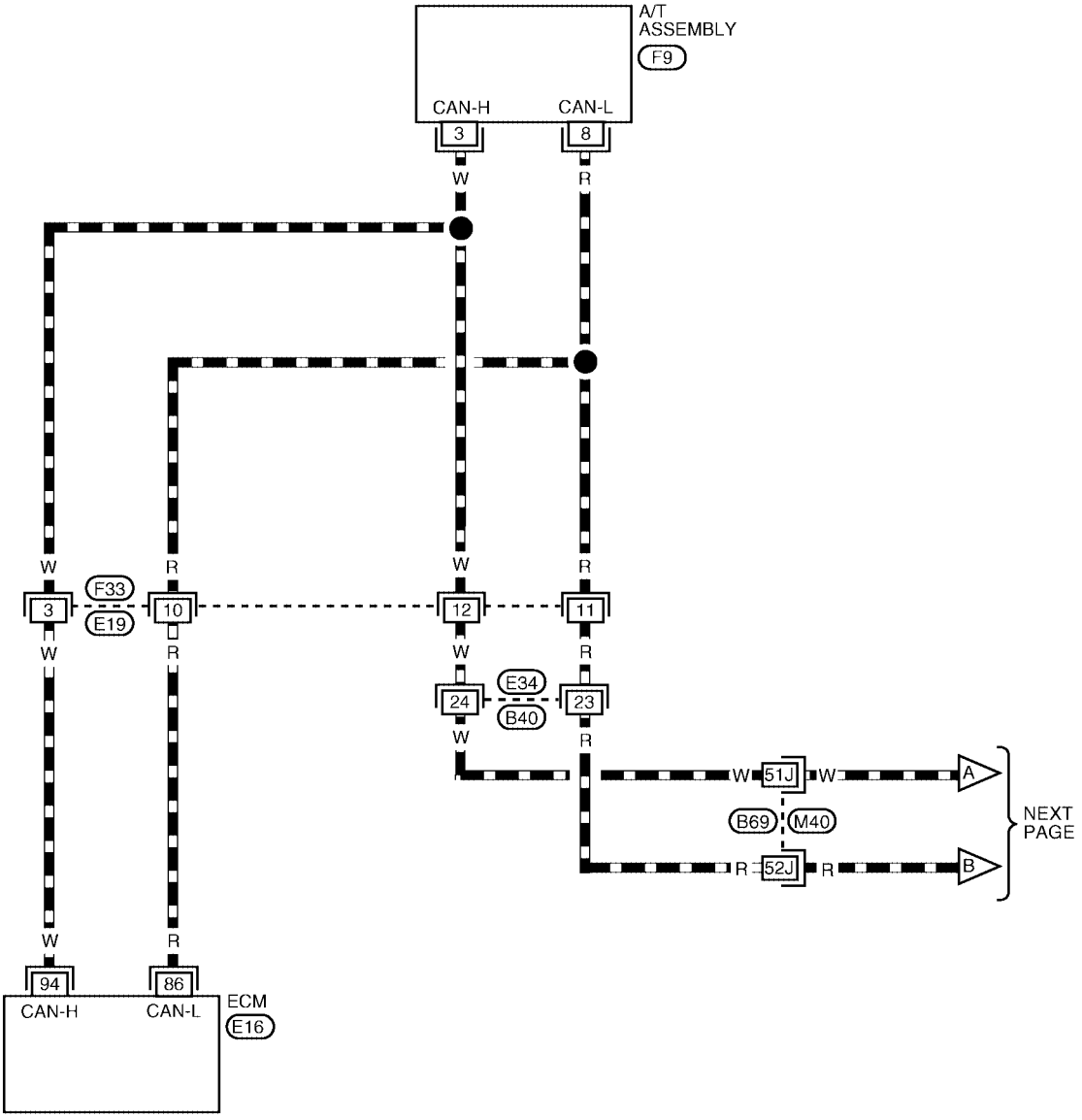
BKWA0160E

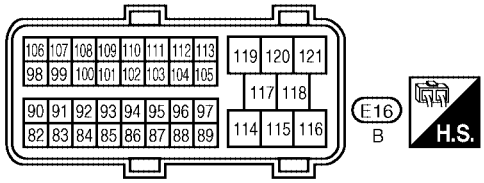
Wiring Diagram - CAN -

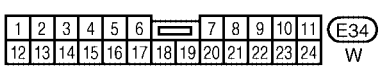
UKS001W3

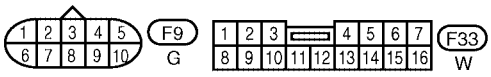
LAN-CAN-37

: DATA LINE



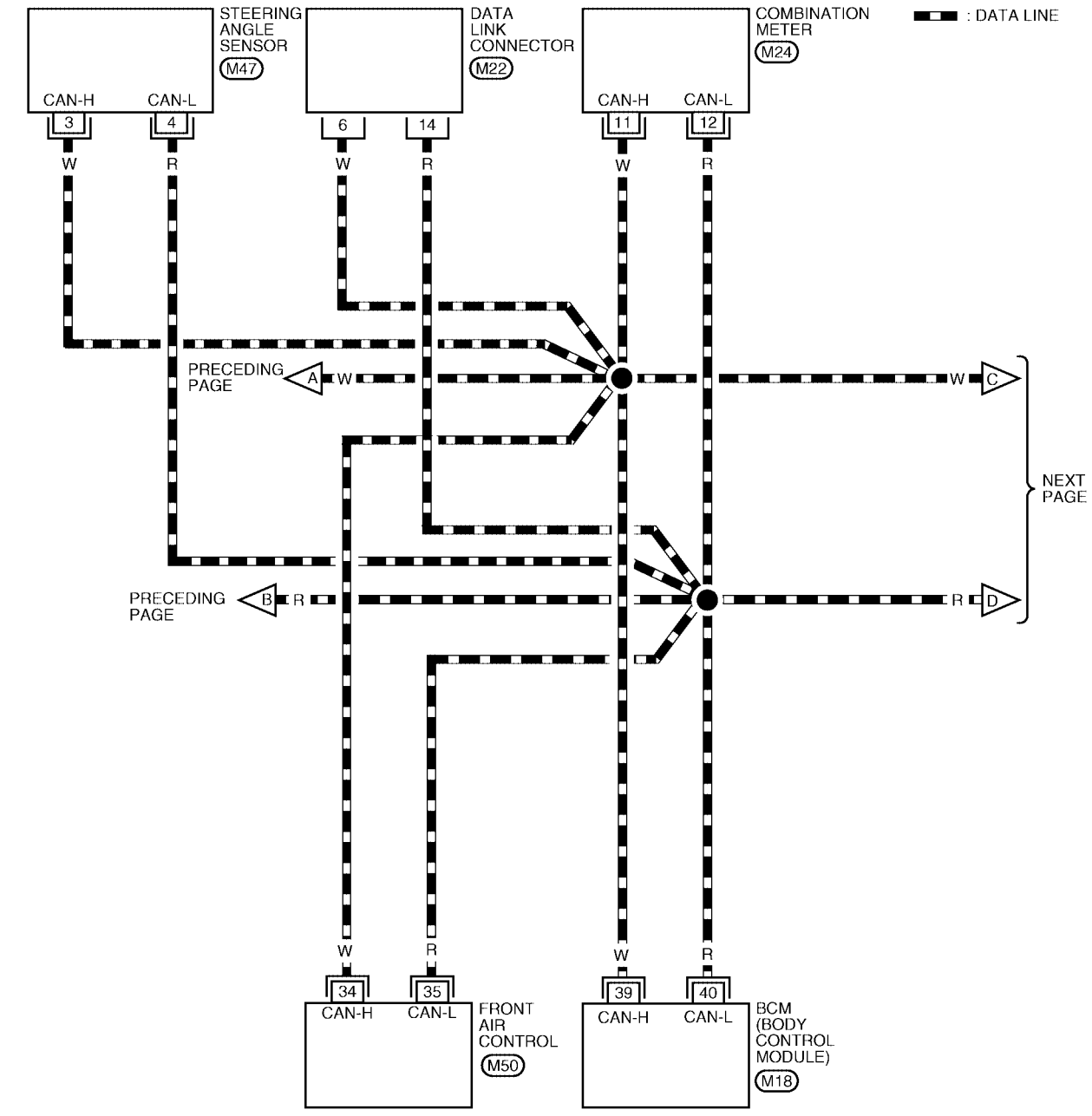


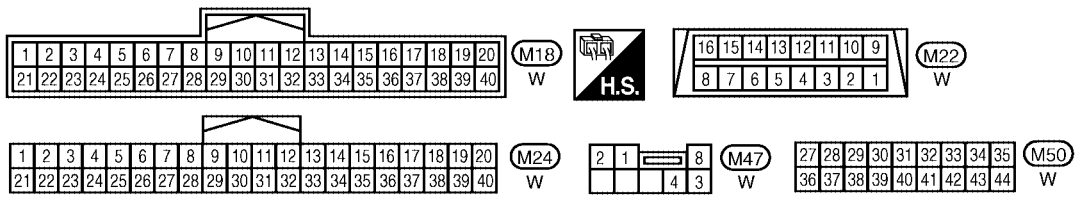




REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

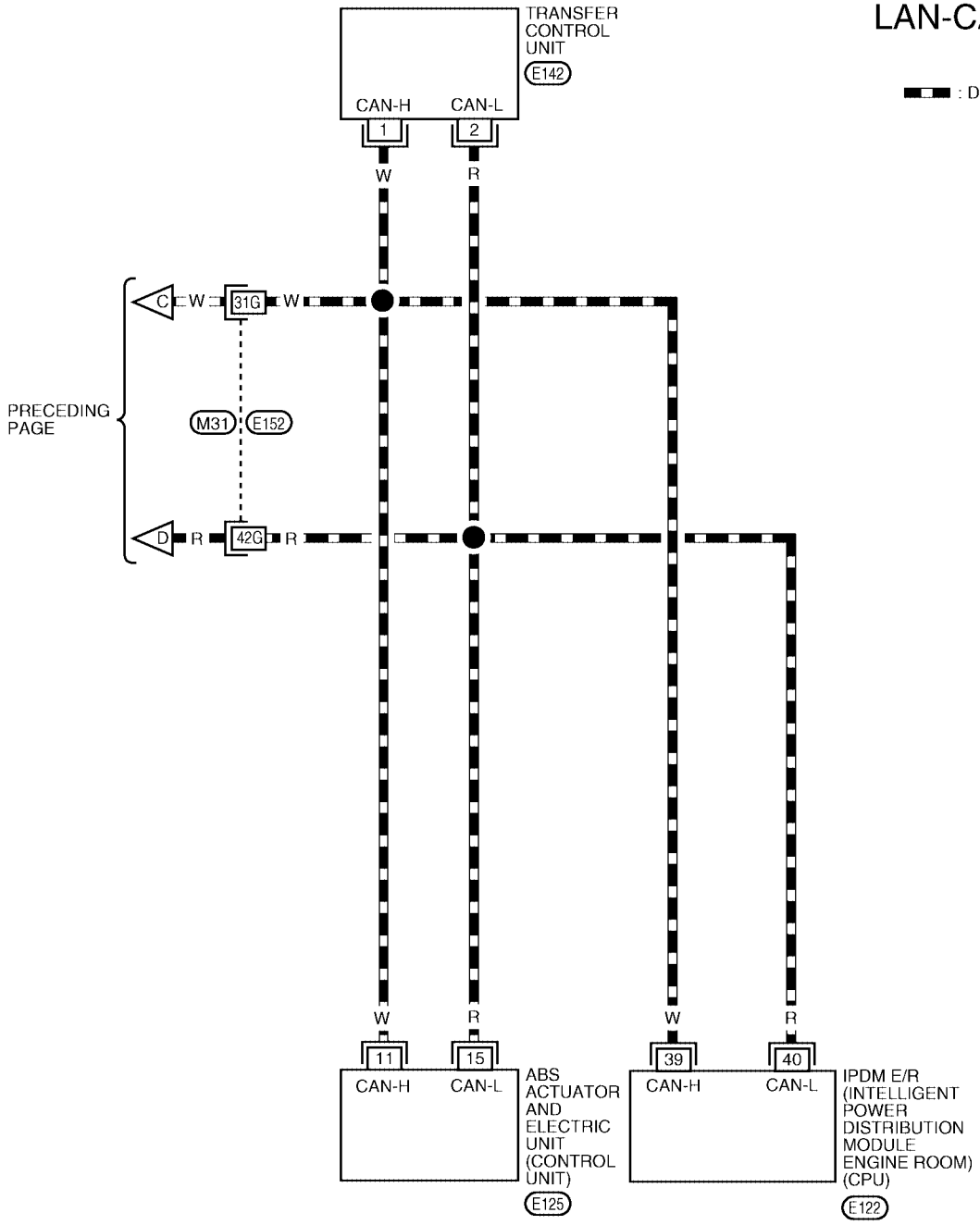
BKWA0161E

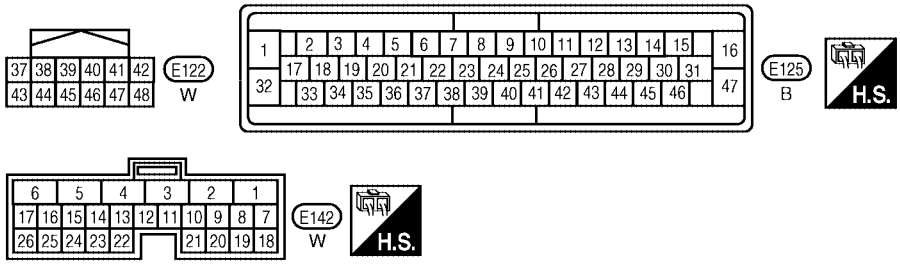

STEERING ANGLE SENSOR
M47
CAN-H
CAN-L
3
4
DATA LINK CONNECTOR
M22
6
14
COMBINATION METER
M24
CAN-H
CAN-L
11
12
: DATA LINE
W
R
PRECEDING PAGE
A
W
C
NEXT PAGE
PRECEDING PAGE
B
R
D
34
35
CAN-H
CAN-L
FRONT AIR CONTROL
M50
39
40
CAN-H
CAN-L
BCM (BODY CONTROL MODULE)
M18


M18
W
H.S.
M22
W
M24
W
M47
W
M50
W

BKWA0162E

LAN-CAN-39





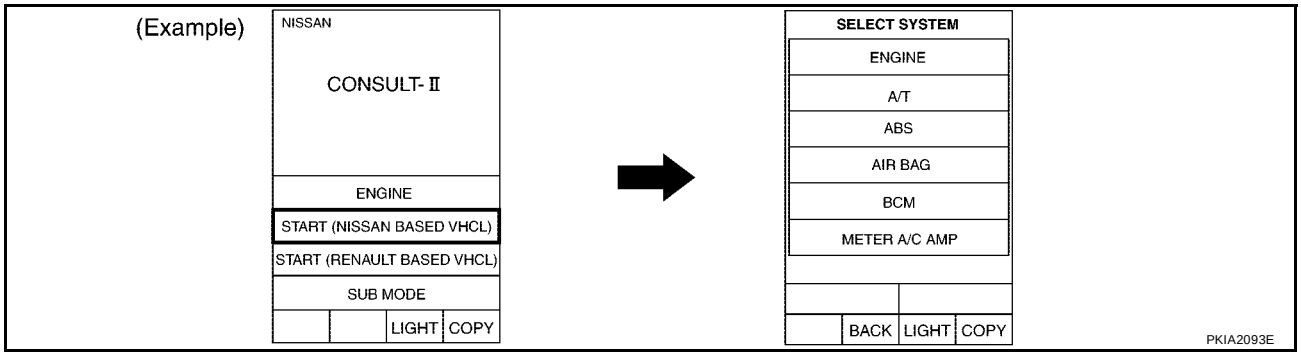
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0163E

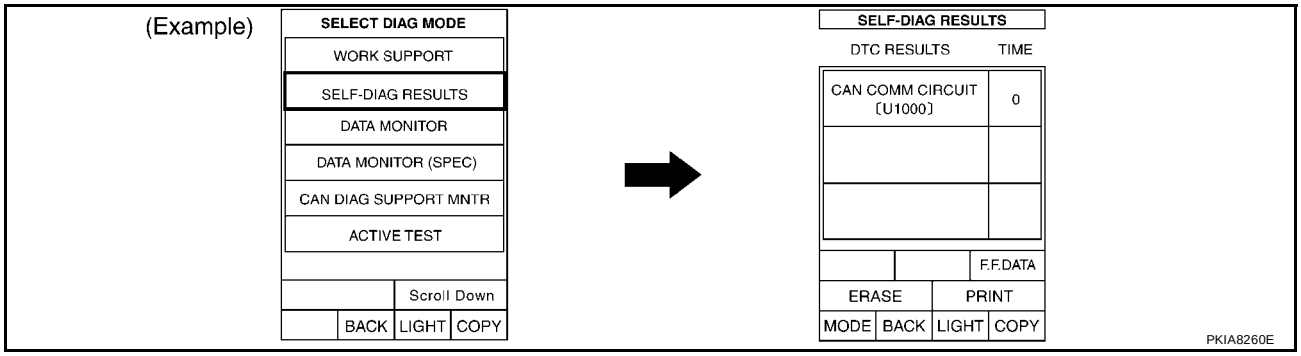
Work Flow

UKS001W4

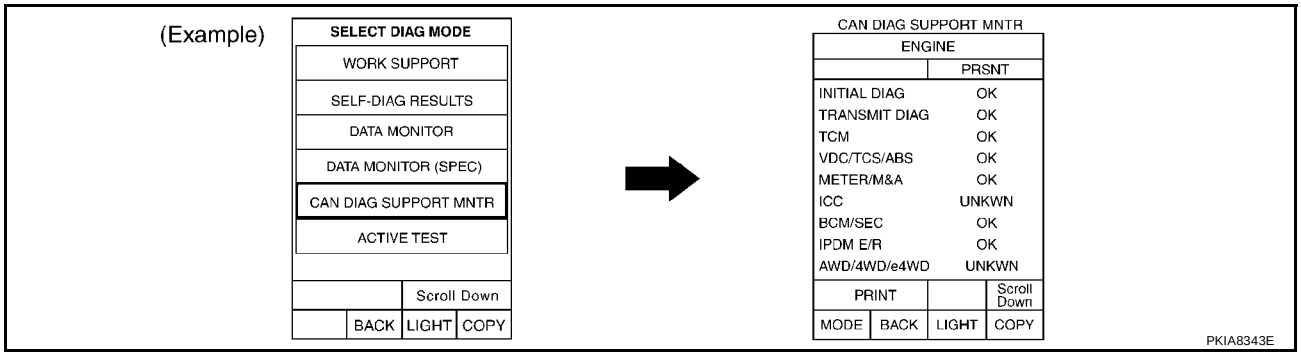
1. When there are no indications of “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “A/T”, “BCM”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “BCM”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-404, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-404, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “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 the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-406, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Check sheet table

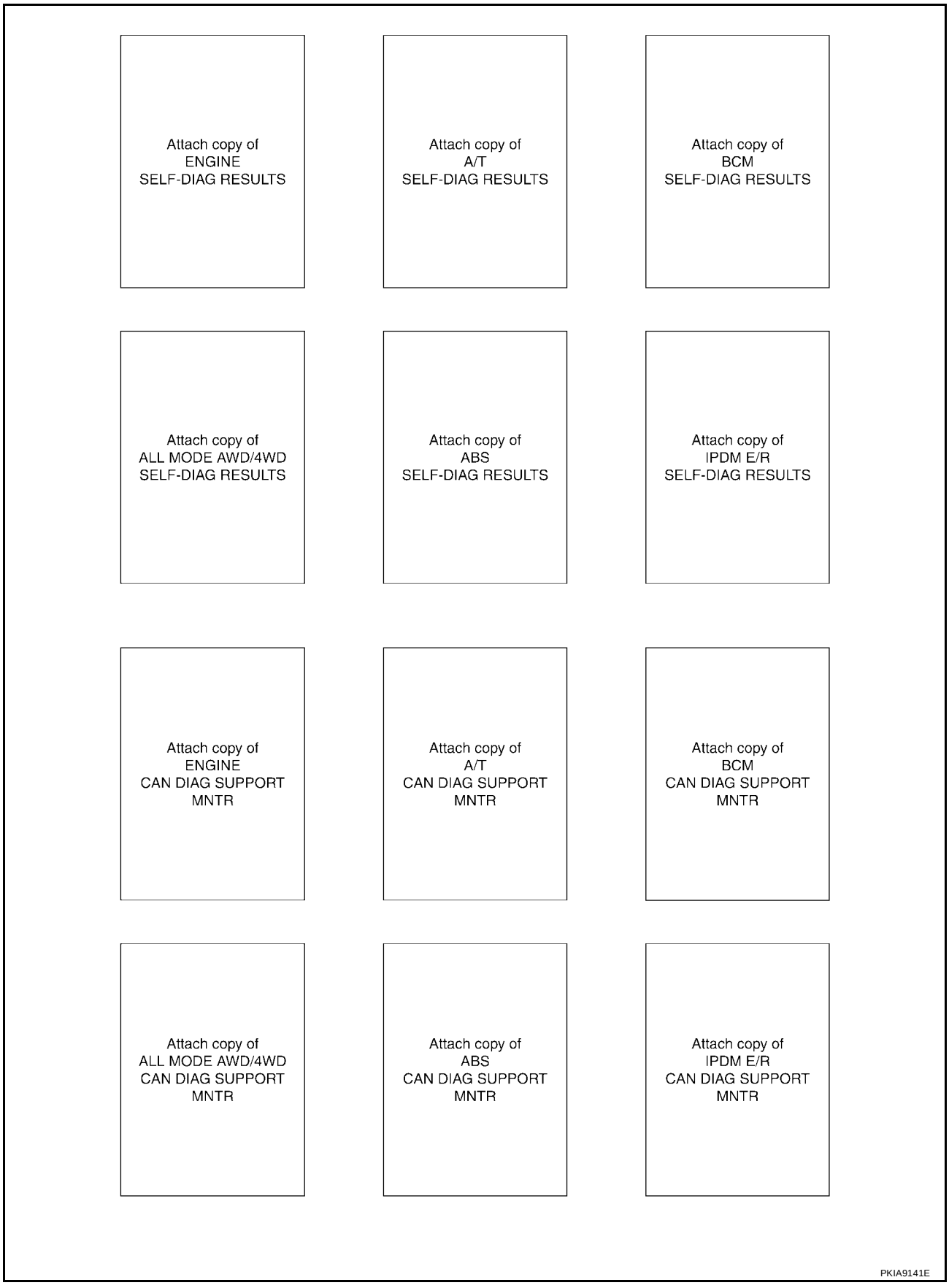
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIA9140E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ALL MODE AWD/4WD
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA9141E

CHECK SHEET RESULTS (EXAMPLE)

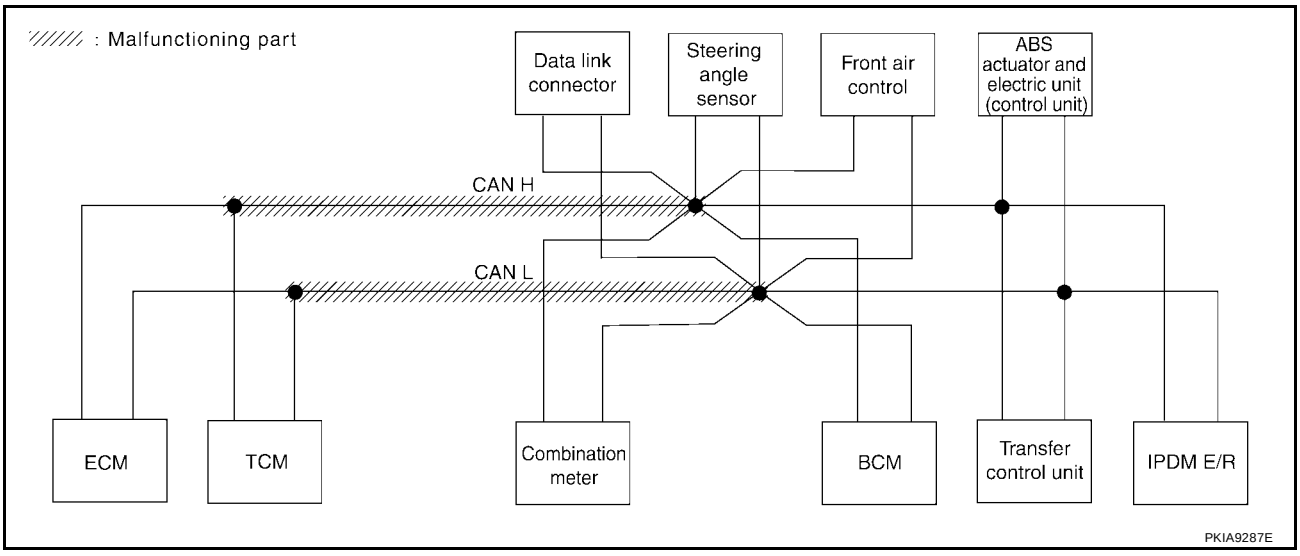
NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to LAN-418, "Circuit Check Between TCM and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN ✓	—	UNKWN ✓	UNKWN ✓	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—	UNKWN ✓	UNKWN ✓	—
BCM	No indication	NG	UNKWN	UNKWN ✓	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN ✓	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN ✓	—	—	UNKWN	—	—	—	—

PKIA9191E

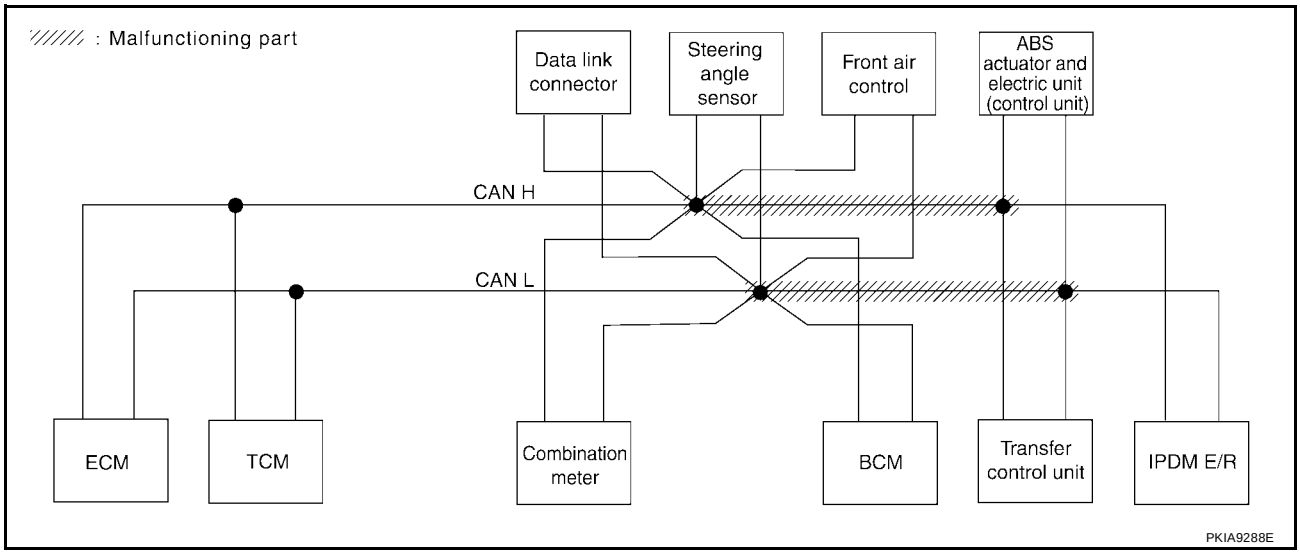


Case 2

Check harness between data link connector and IPDM E/R. Refer to LAN-419, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	UNKWN	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–	–

PKIA9192E



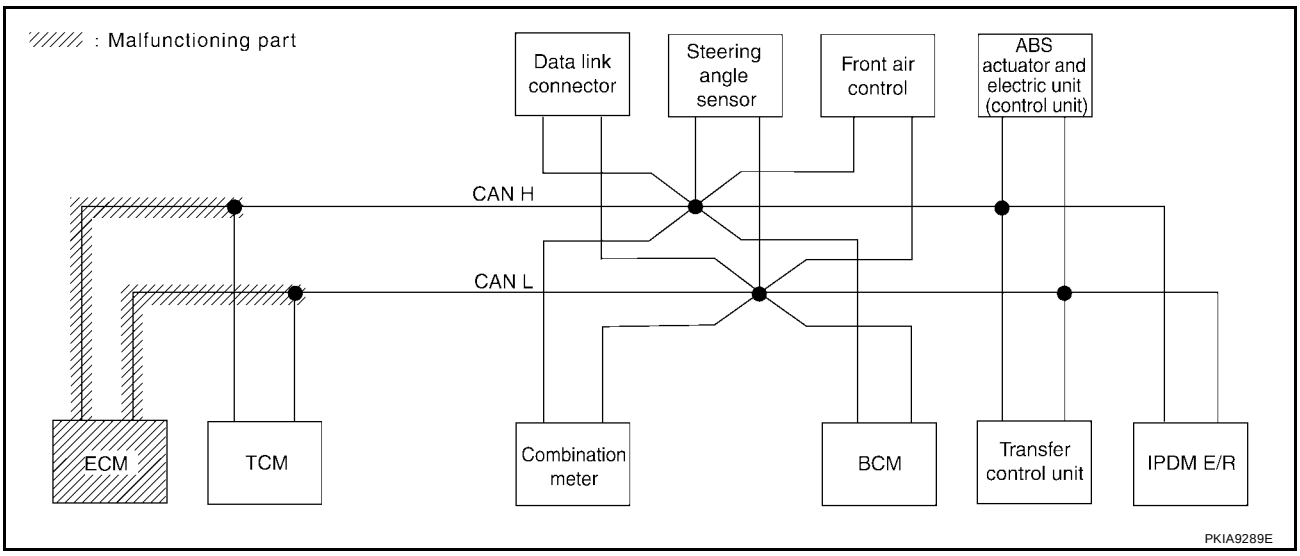
PKIA9288E

Case 3

Check ECM circuit. Refer to LAN-420, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9193E



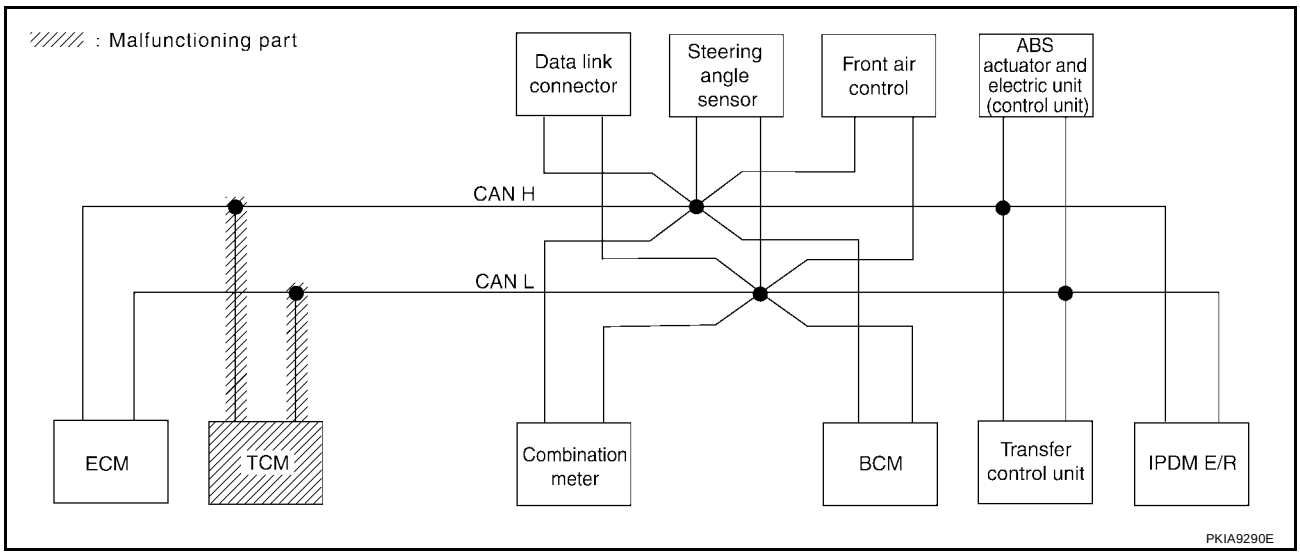
PKIA9289E

Case 4

Check TCM circuit. Refer to LAN-421, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN ✓	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	UNKWN ✓	—	—	UNKWN ✓	UNKWN ✓	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN ✓	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN ✓	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9194E



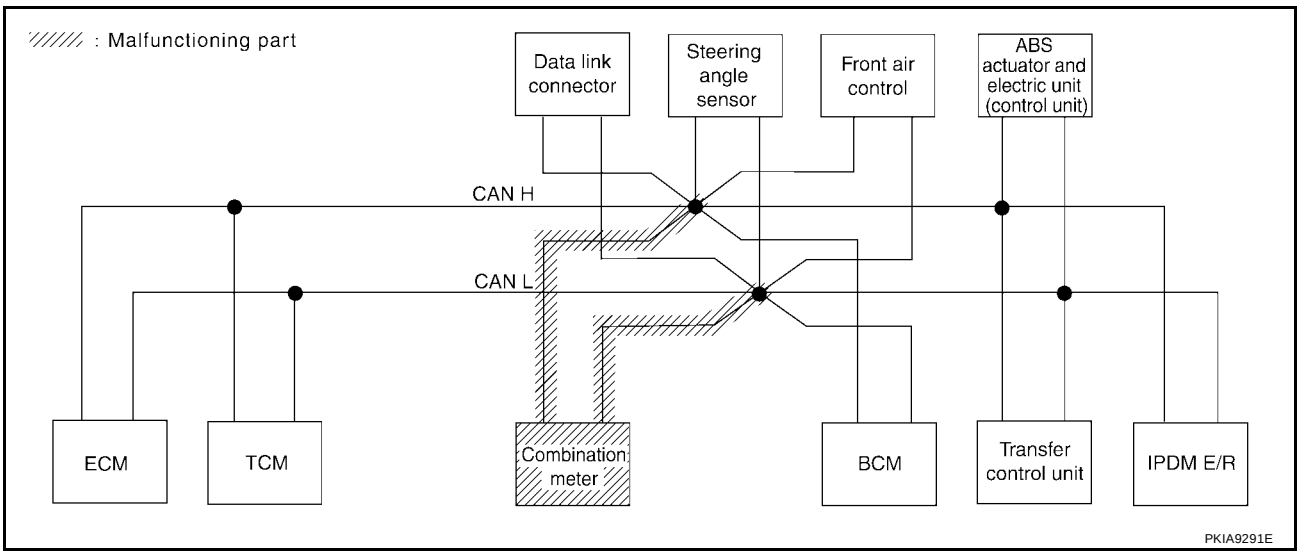
PKIA9290E

Case 5

Check combination meter circuit. Refer to LAN-421, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9195E



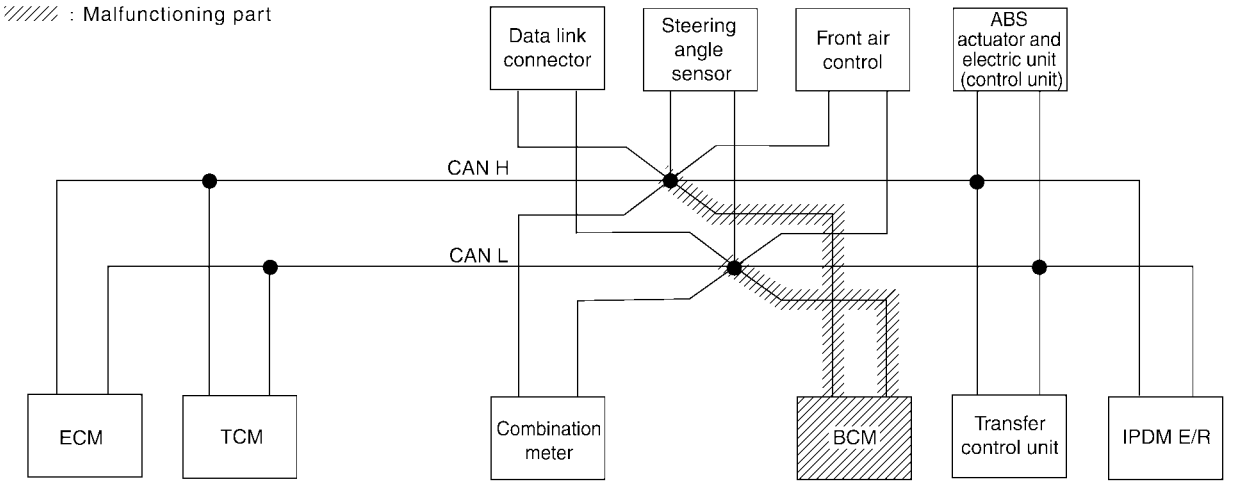
PKIA9291E

Case 6

Check BCM circuit. Refer to LAN-422, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN ✓	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication ✓	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN ✓	—	—	—	—

PKIA9196E



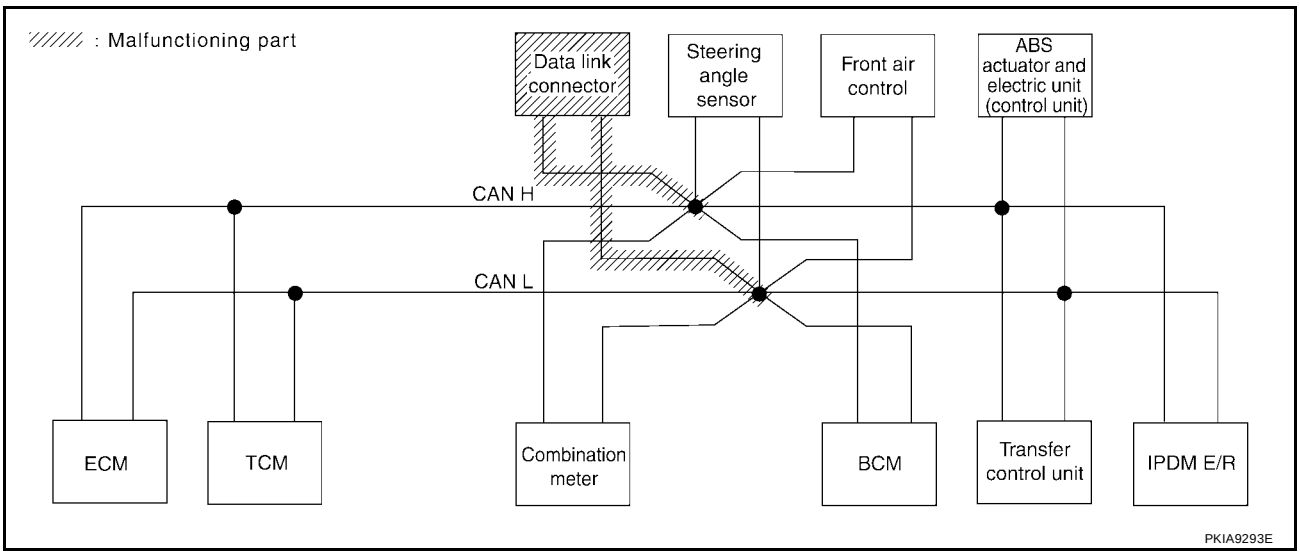
PKIA9292E

Case 7

Check data link connector circuit. Refer to LAN-422, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	UNKWN	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–	–

PKIA9197E



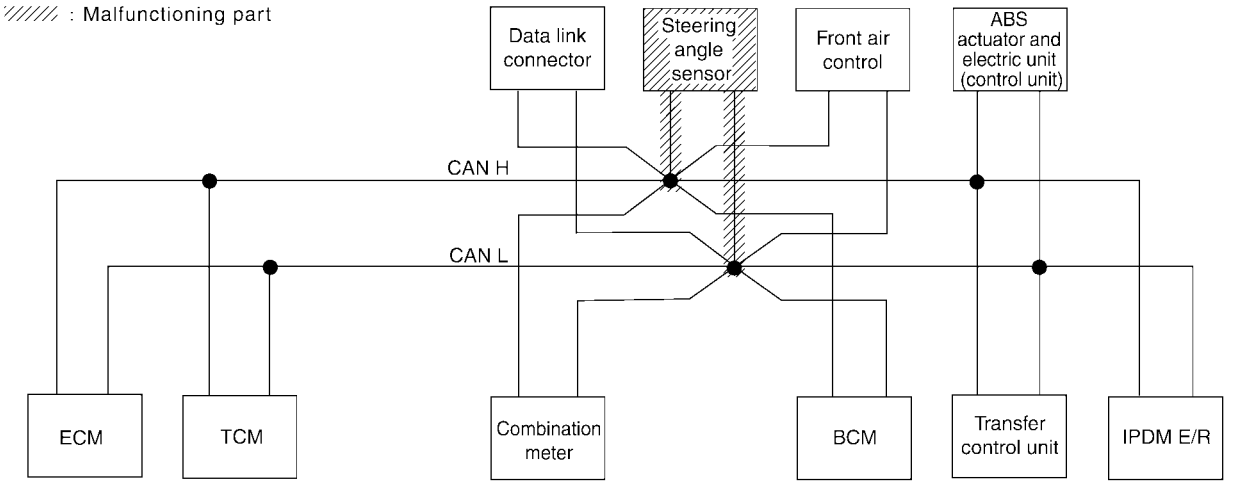
PKIA9293E

Case 8

Check steering angle sensor circuit. Refer to LAN-423, "Steering Angle Sensor Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9198E



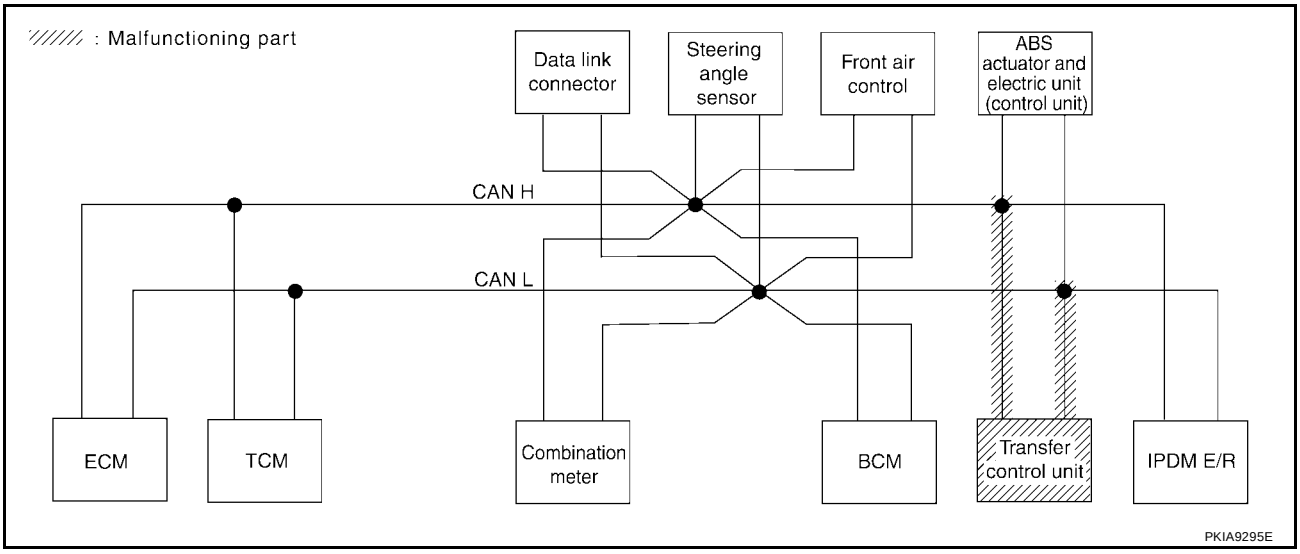
PKIA9294E

Case 9

Check transfer control unit circuit. Refer to LAN-423, "Transfer Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9199E



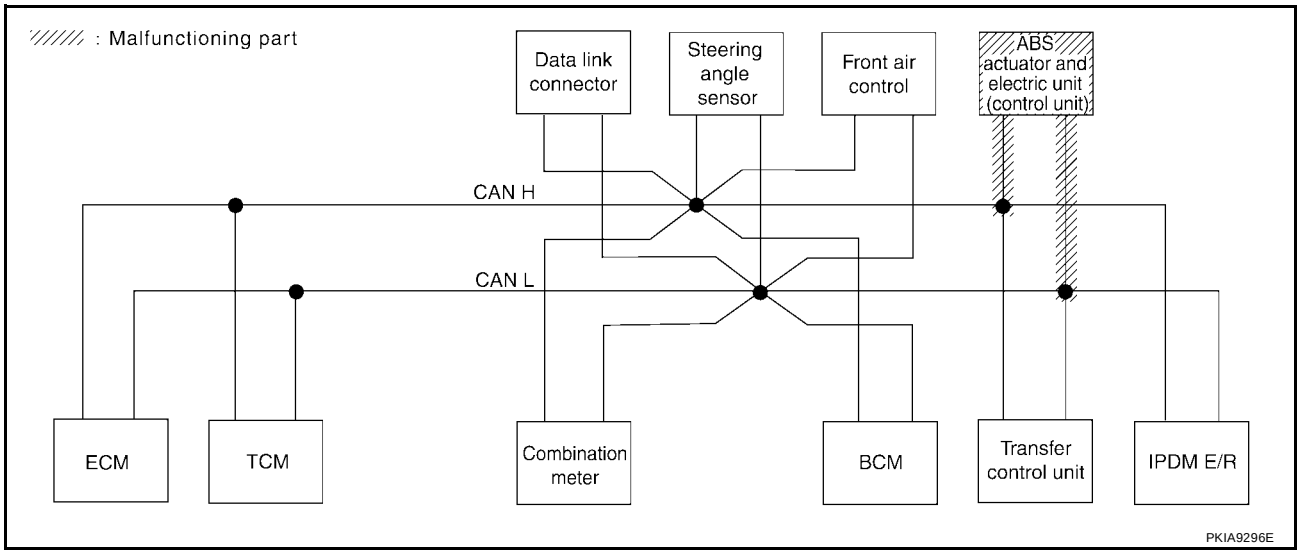
PKIA9295E

Case 10

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-424, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	UNKWN	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–	–

PKIA9200E



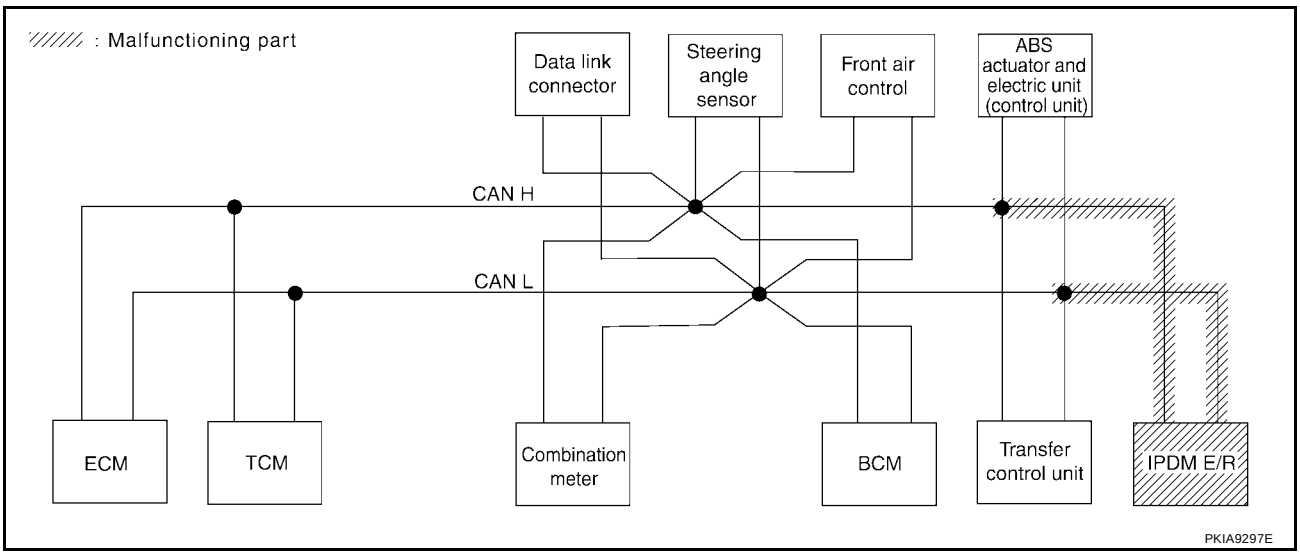
PKIA9296E

Case 11

Check IPDM E/R circuit. Refer to LAN-424, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9201E



PKIA9297E

Case 12

Check CAN communication circuit. Refer to LAN-425, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9202E

Case 13

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-426, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9203E

Case 14

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-426, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	UNKWN	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–	–

PKIA9204E

Circuit Check Between TCM and Data Link Connector

UKS00229

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 F33
- Harness connector E19
- Harness connector E34
- Harness connector B40
- Harness connector B69
- Harness connector M40

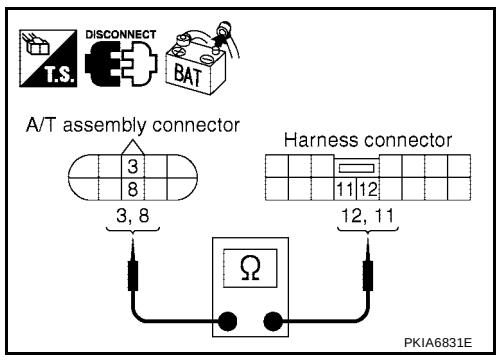
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12 (W), 11 (R).

3 (W) - 12 (W) : Continuity should exist.
8 (R) - 11 (R) : Continuity should exist.



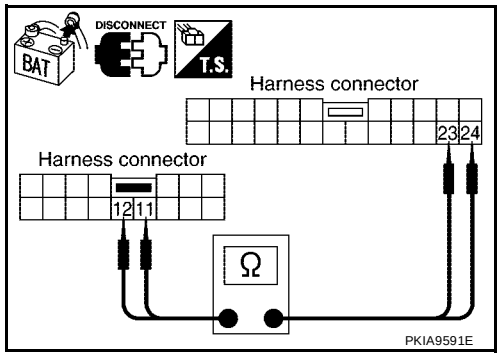
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E34.
2. Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E34 terminals 24 (W), 23 (R).

12 (W) - 24 (W) : Continuity should exist.
11 (R) - 23 (R) : Continuity should exist.



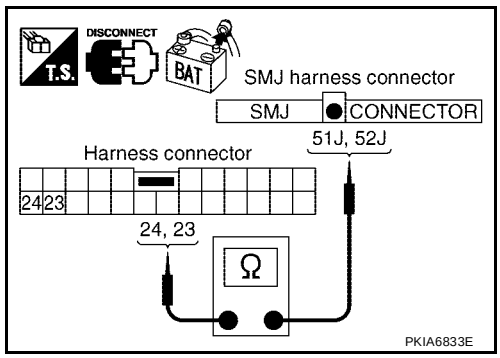
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B69.
2. Check continuity between harness connector B40 terminals 24 (W), 23 (R) and harness connector B69 terminals 51J (W), 52J (R).

24 (W) - 51J (W) : Continuity should exist.
23 (R) - 52J (R) : Continuity should exist.



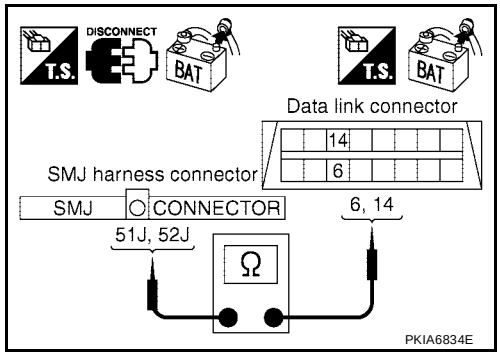
OK or NG

OK >> GO TO 5.
NG >> Repair harness.

5. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

51J (W) - 6 (W) : Continuity should exist.
52J (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-403, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Data Link Connector and IPDM E/R

UKS0022A

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 M31
- Harness connector E152

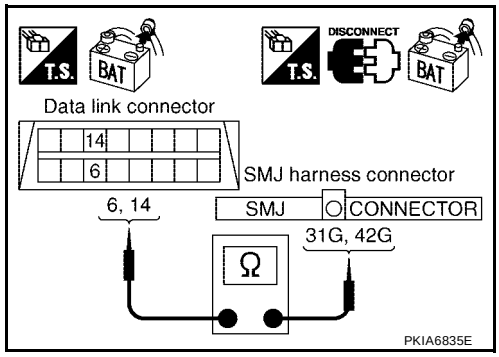
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).

6 (W) - 31G (W) : Continuity should exist.
14 (R) - 42G (R) : Continuity should exist.



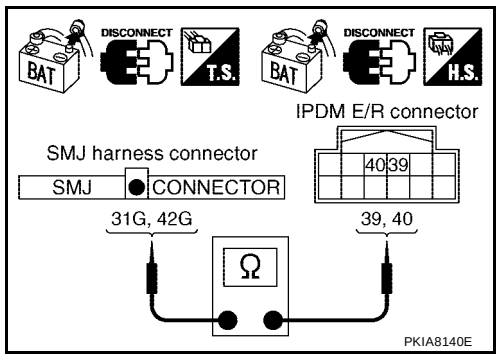
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).

31G (W) - 39 (W) : Continuity should exist.
42G (R) - 40 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-403, "Work Flow" .
NG >> Repair harness.

ECM Circuit Check

UKS0022B

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 E19
- Harness connector F33

OK or NG

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

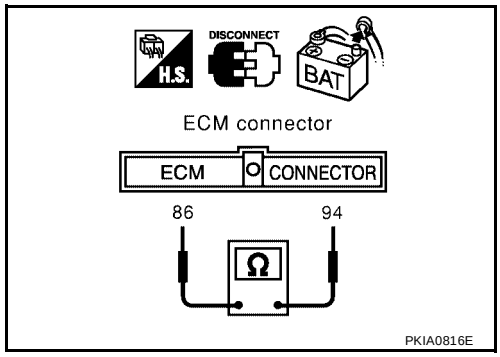
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R) : Approx. 108 - 132Ω

OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and A/T assembly.



UKS0022C

TCM Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

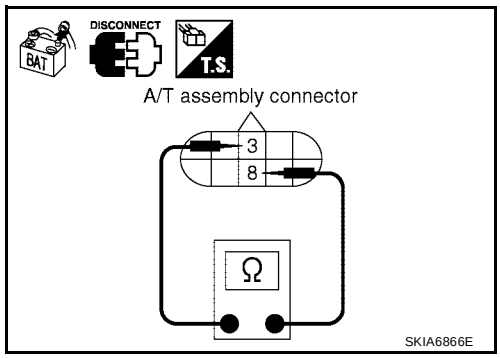
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.



UKS0022D

Combination Meter Circuit Check

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).

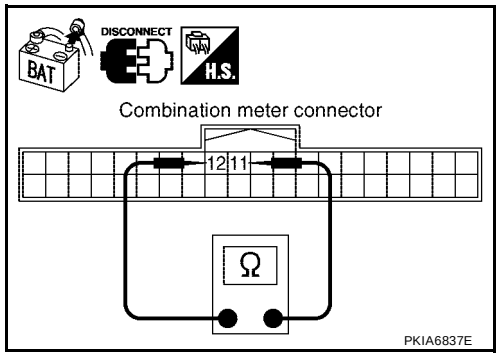
OK or NG

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 M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R) : Approx. 54 - 66Ω



OK or NG

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

BCM Circuit Check

UKS0022E

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).

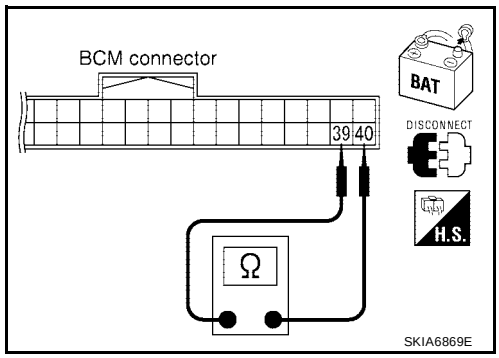
OK or NG

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 M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS0022F

1. CHECK CONNECTOR

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

OK or NG

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

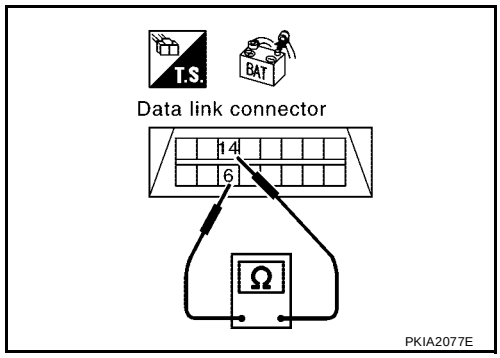
2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Diagnose again. Refer to LAN-403, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.



Steering Angle Sensor Circuit Check

UKS0022G

1. CHECK CONNECTOR

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

OK or NG

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

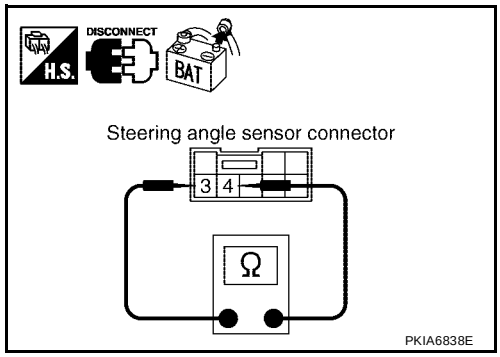
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M47 terminals 3 (W) and 4 (R).

3 (W) - 4 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor and data link connector.



Transfer Control Unit Circuit Check

UKS0022H

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of transfer 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.

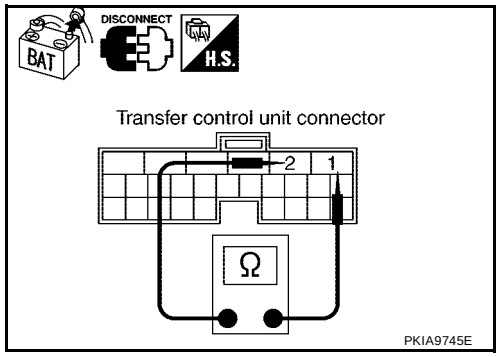
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R).

1 (W) - 2 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace transfer control unit.
NG >> Repair harness between transfer control unit and harness connector E152.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS0022I

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.

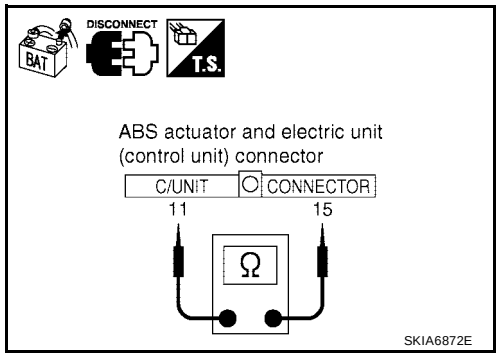
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R) : 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 harness connector E152.



IPDM E/R Circuit Check

UKS0022J

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.

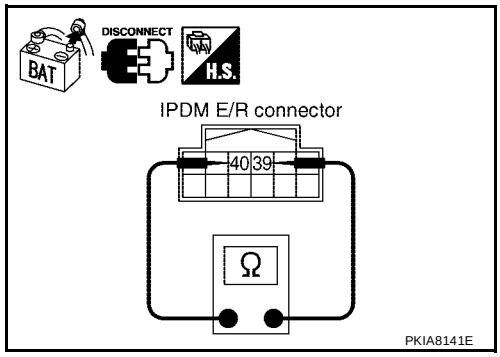
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 108 - 132Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

UKS0022K

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- A/T assembly
- Combination meter
- BCM
- Steering angle sensor
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

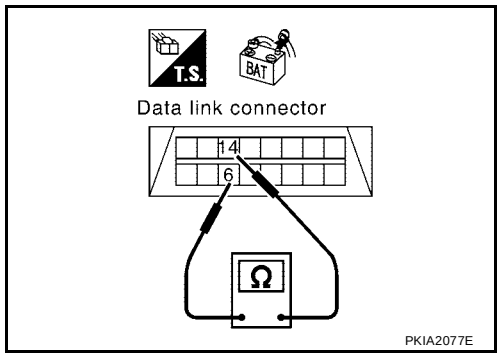
2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

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

OK or NG

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

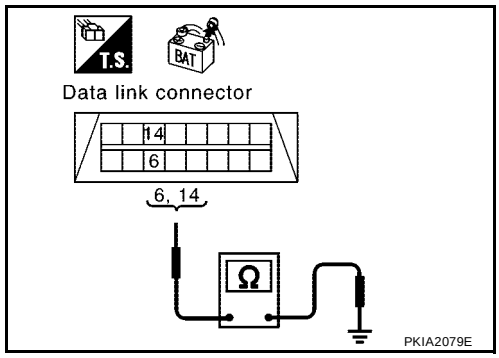


3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

6 (W) - Ground : Continuity should not exist.

14 (R) - Ground : Continuity should not exist.



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-426, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .

NG >> Repair harness.

IPDM E/R Ignition Relay Circuit Check

UKS0022L

Check the following. If no malfunction is found, replace the IPDM E/R.

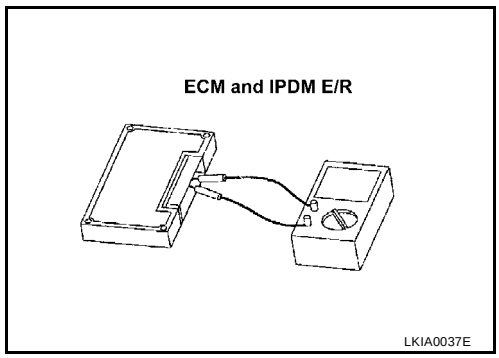
- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

Component Inspection

UKS0022M

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 39 and 40.



Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	

CAN SYSTEM (TYPE 14)

PFP:23710

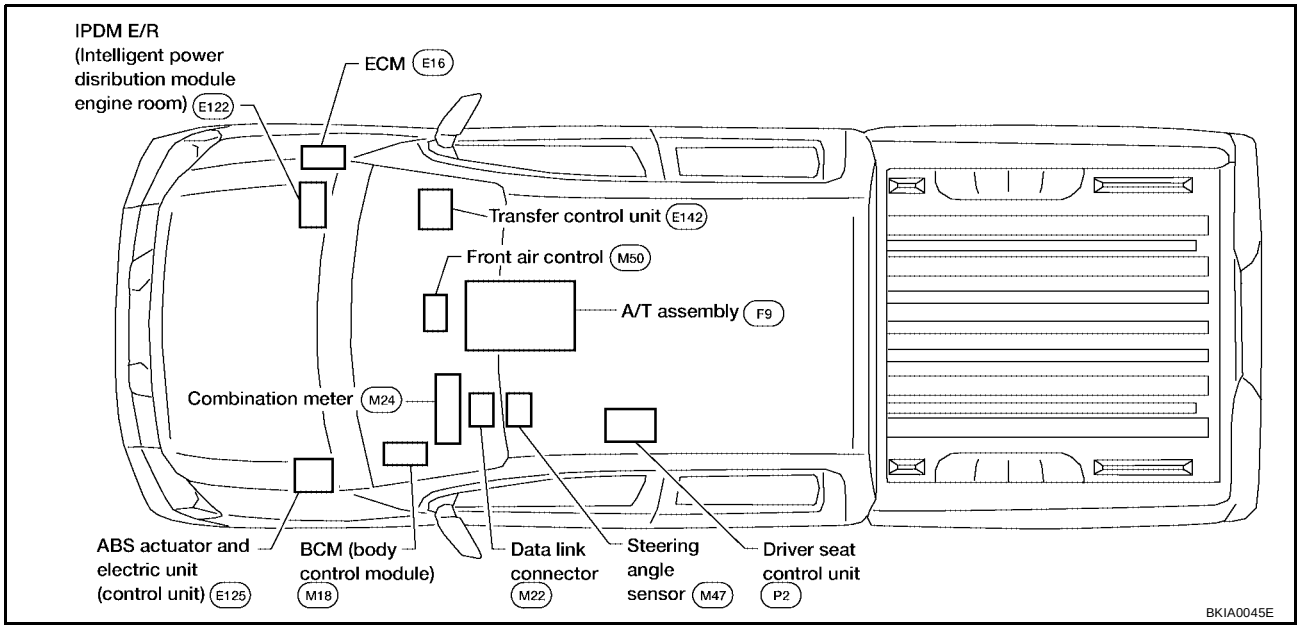
System Description

UKS001WJ

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.

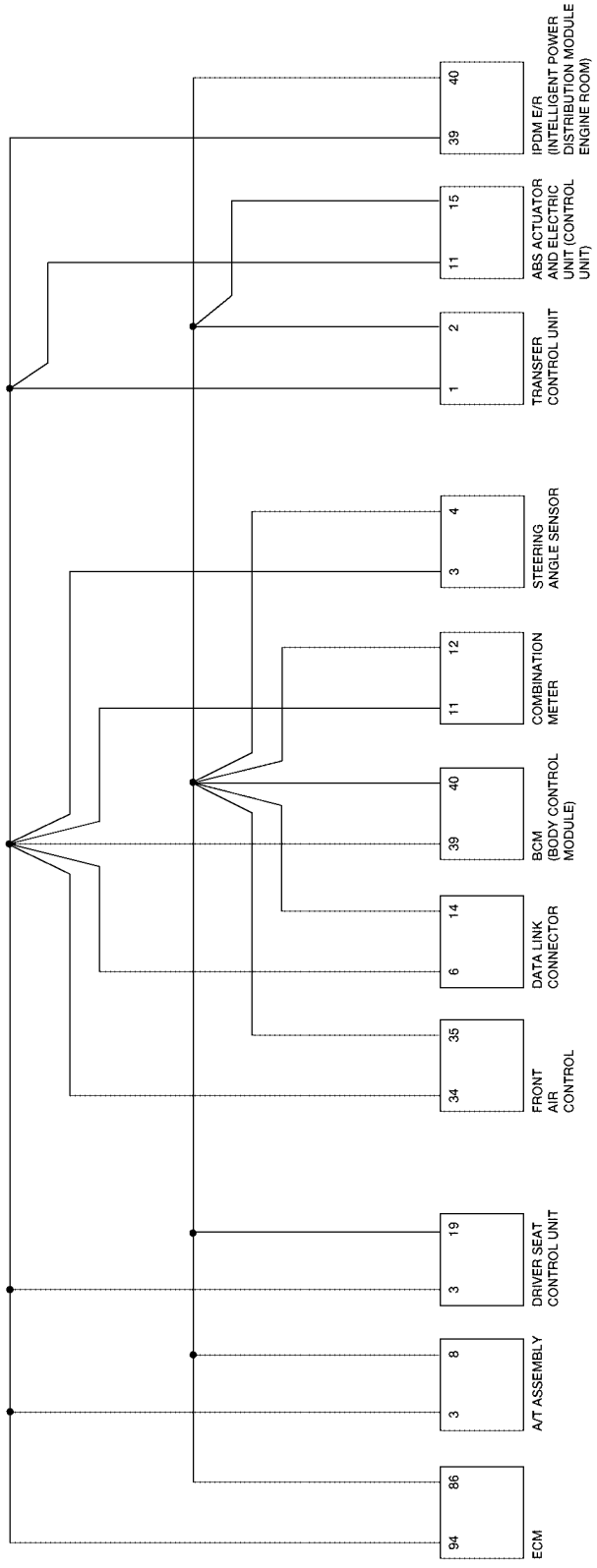
Component Parts and Harness Connector Location

UKS001WK



Schematic

UKS001WL

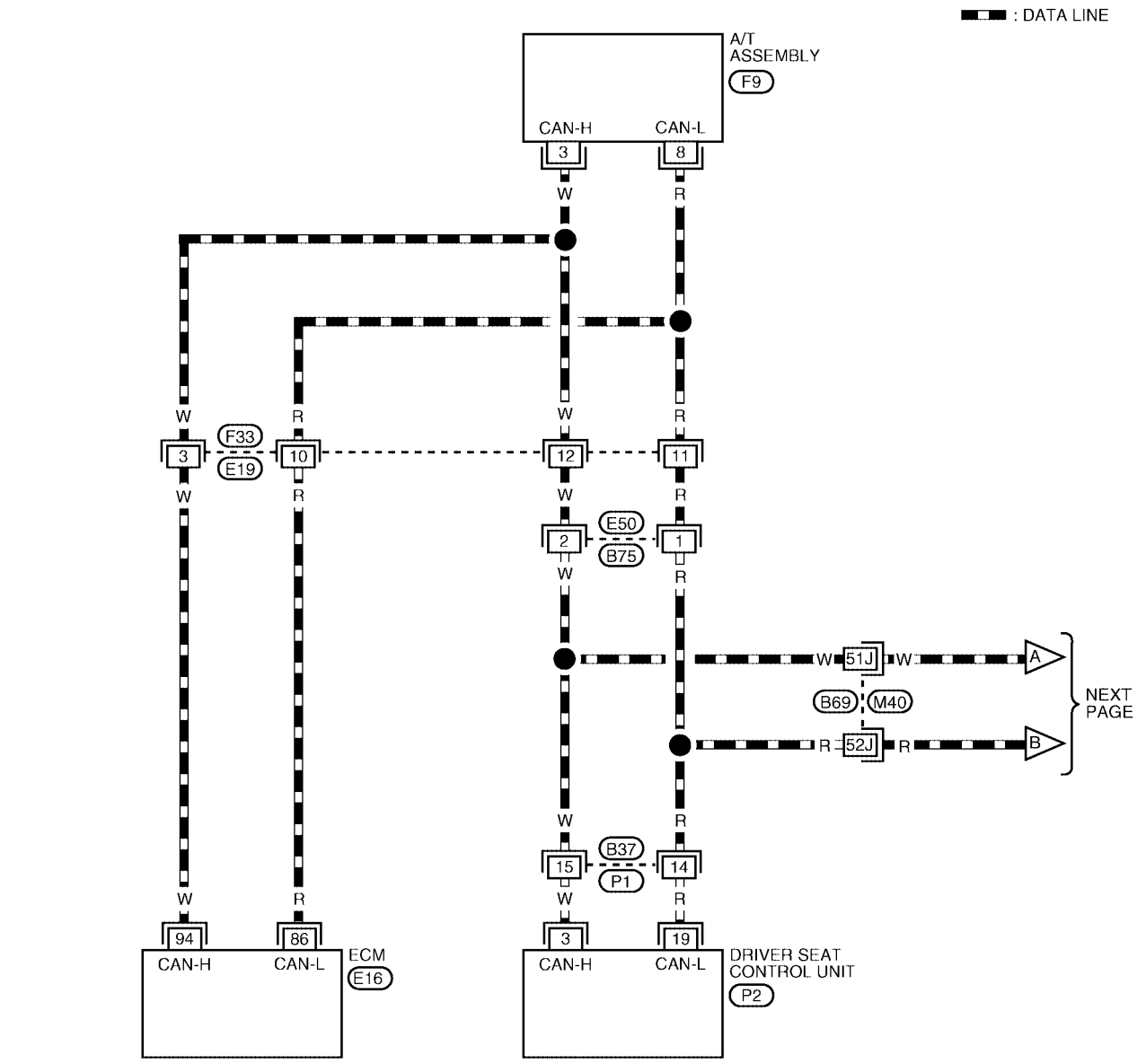


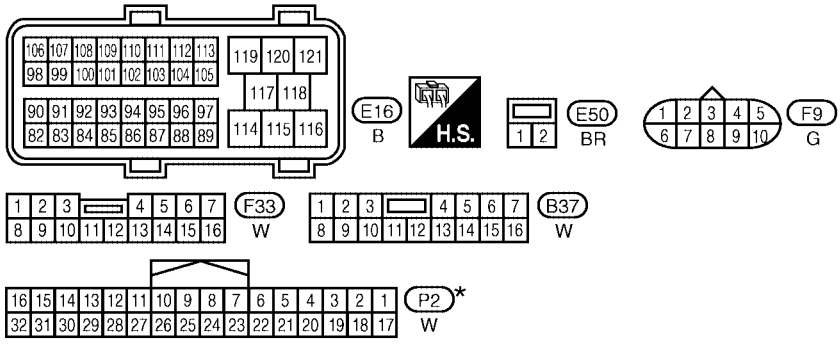
BKWA0164E

Wiring Diagram - CAN -

UKS001WM

LAN-CAN-40

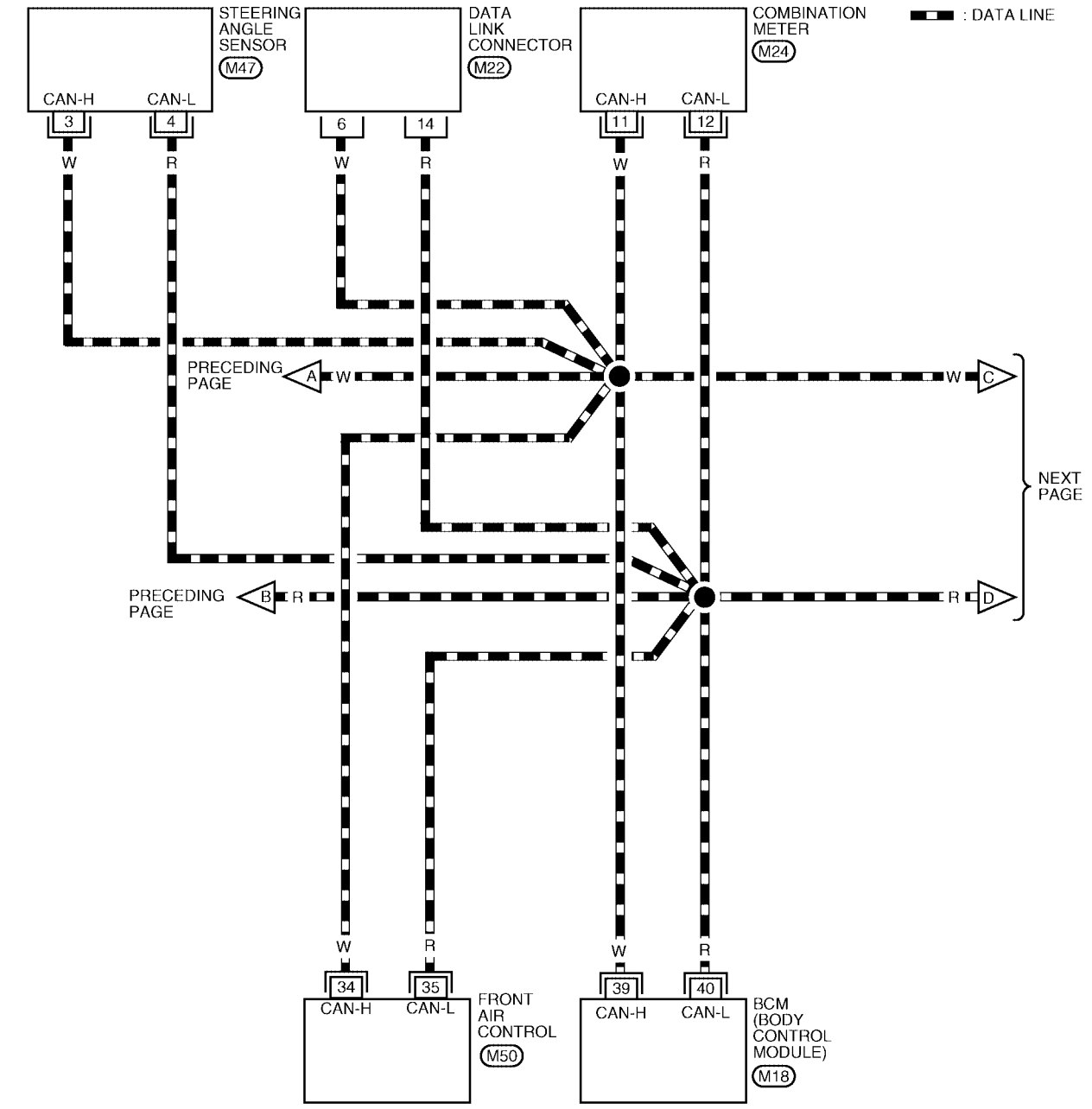


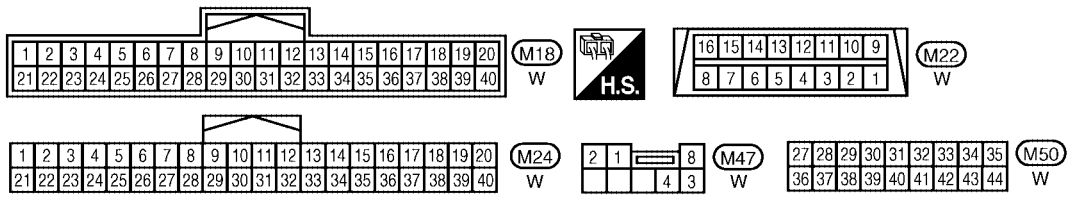


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

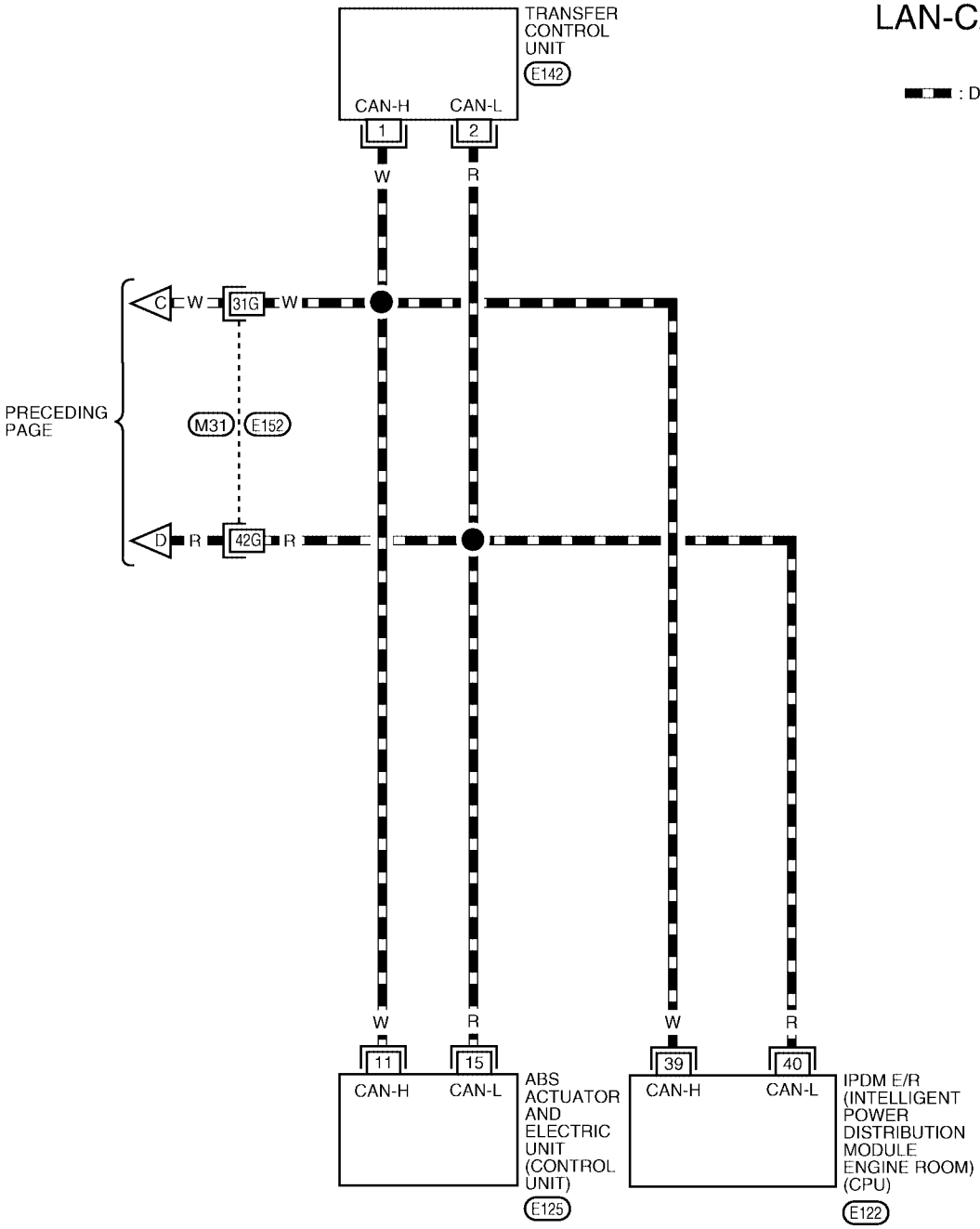
BKWA0165E

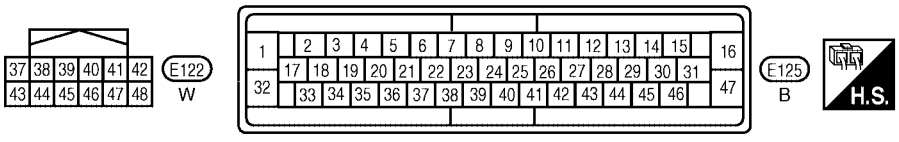

STEERING ANGLE SENSOR
M47
CAN-H
CAN-L
3
4
W
R
DATA LINK CONNECTOR
M22
6
14
W
R
COMBINATION METER
M24
CAN-H
CAN-L
11
12
W
R
: DATA LINE
PRECEDING PAGE
A
W
W
C
NEXT PAGE
PRECEDING PAGE
B
R
R
D
W
R
34
35
CAN-H
CAN-L
FRONT AIR CONTROL
M50
W
R
39
40
CAN-H
CAN-L
BCM (BODY CONTROL MODULE)
M18

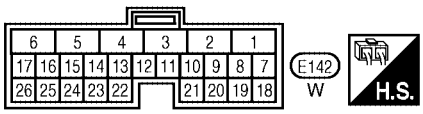

M18
W
H.S.
M22
W
M24
W
M47
W
M50
W

BKWA0166E

LAN-CAN-42







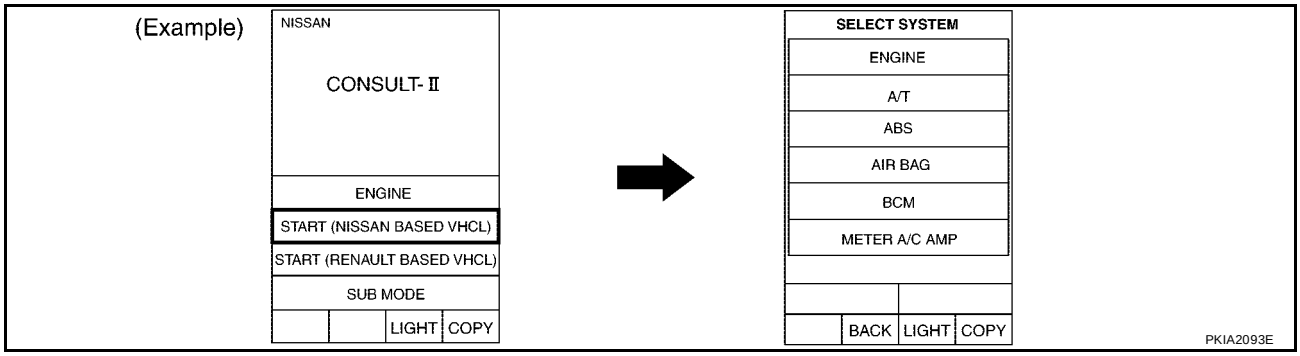
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0167E

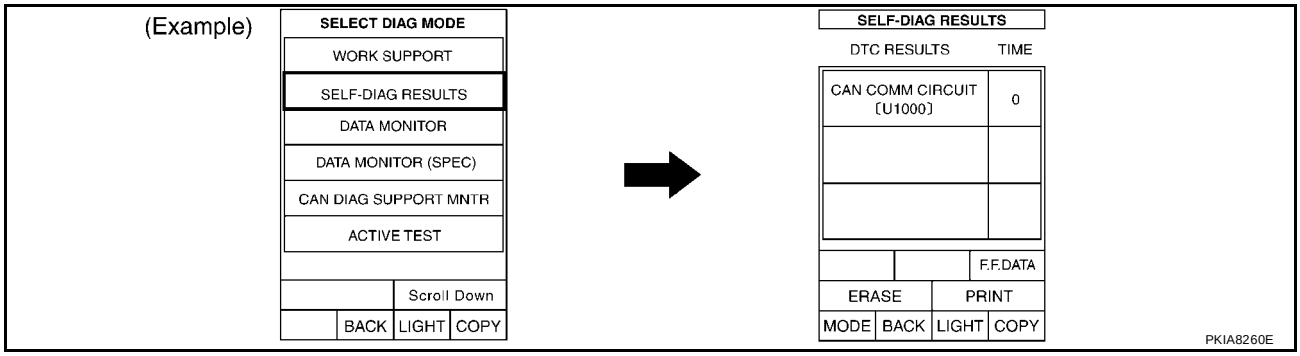
Work Flow

UKS001WN

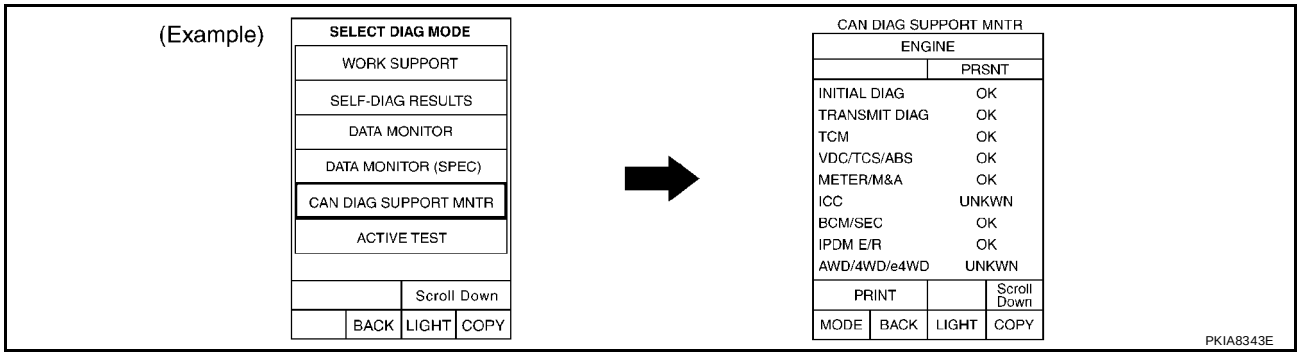
1. When there are no indications of “AUTO DRIVE POS.”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “A/T”, “AUTO DRIVE POS.”, “BCM”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “AUTO DRIVE POS.”, “BCM”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-433, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks “v” onto the items with “No indication”, “NG”, or “UNKWN” in the check sheet table. Refer to LAN-433, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “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 the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. According to the check sheet results (example), start inspection. Refer to LAN-435, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Check sheet table

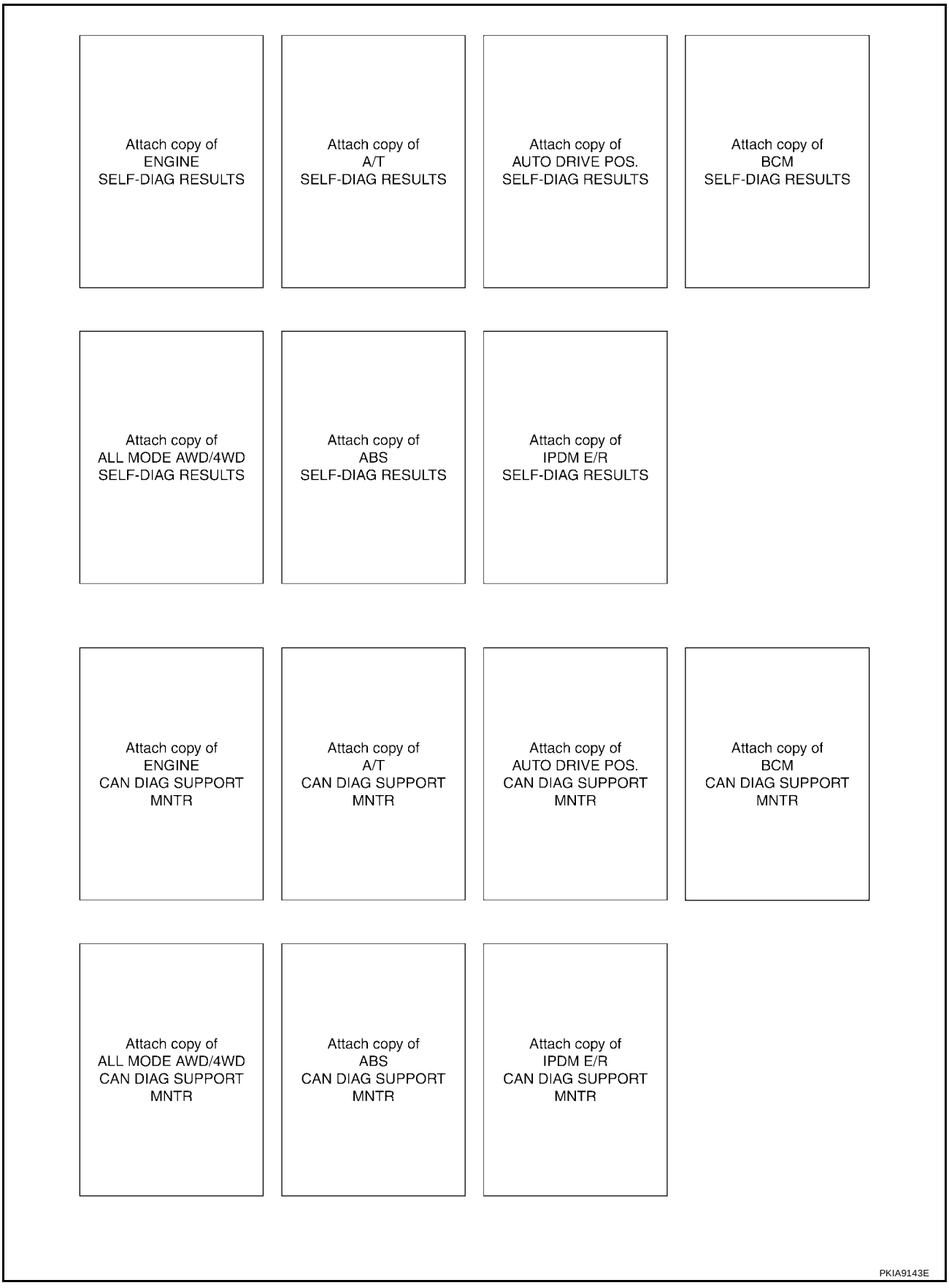
SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

Symptoms :

Attach copy of SELECT SYSTEM

Attach copy of SELECT SYSTEM

PKIA9142E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ALL MODE AWD/4WD
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA9143E

CHECK SHEET RESULTS (EXAMPLE)

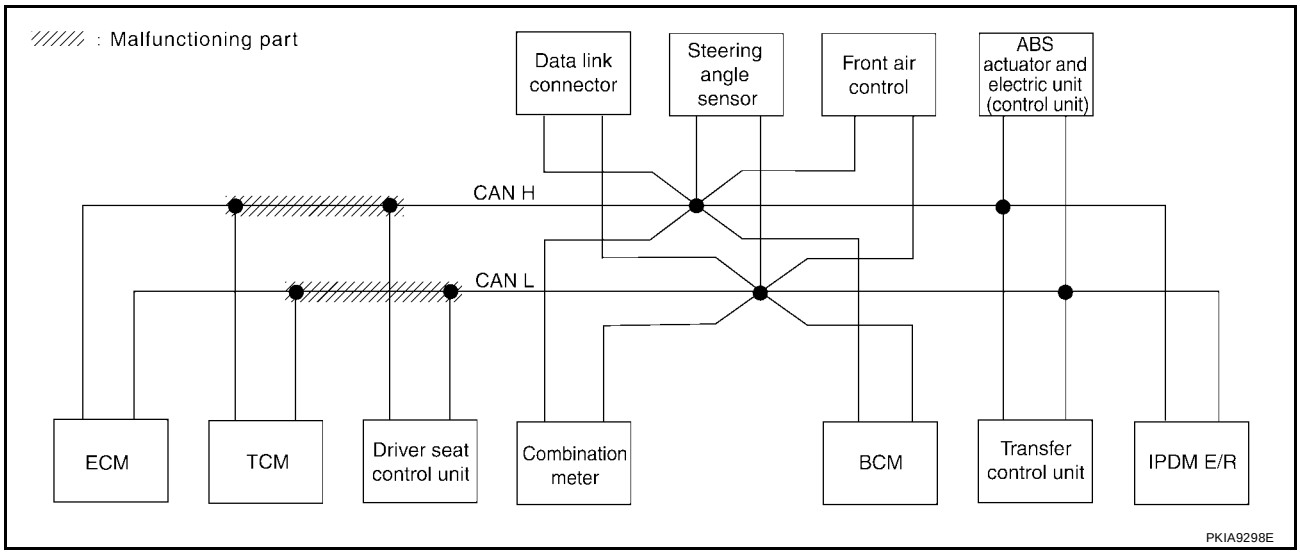
NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and driver seat control unit. Refer to LAN-449, "Circuit Check Between TCM and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9205E



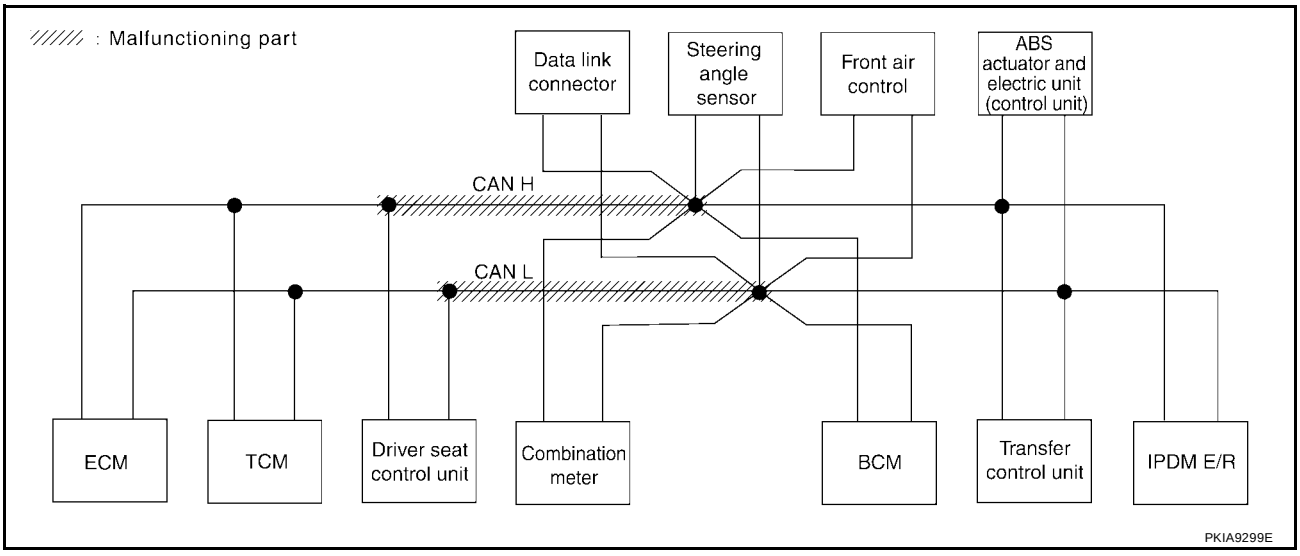
PKIA9298E

Case 2

Check harness between driver seat control unit and data link connector. Refer to LAN-450, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	UNKWN	–	–	UNKWN	UNKWN	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–	–
BCM	No indication	NG	UNKWN	UNKWN	–	UNKWN	–	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	UNKWN	UNKWN	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–	–

PKIA9206E



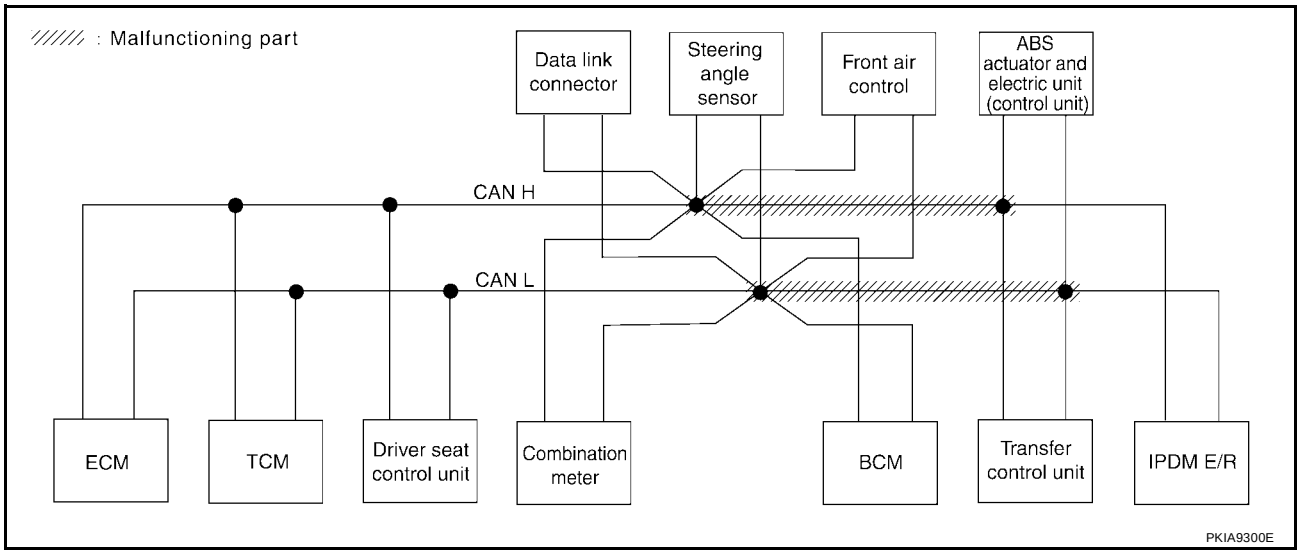
PKIA9299E

Case 3

Check harness between data link connector and IPDM E/R. Refer to LAN-451, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9207E



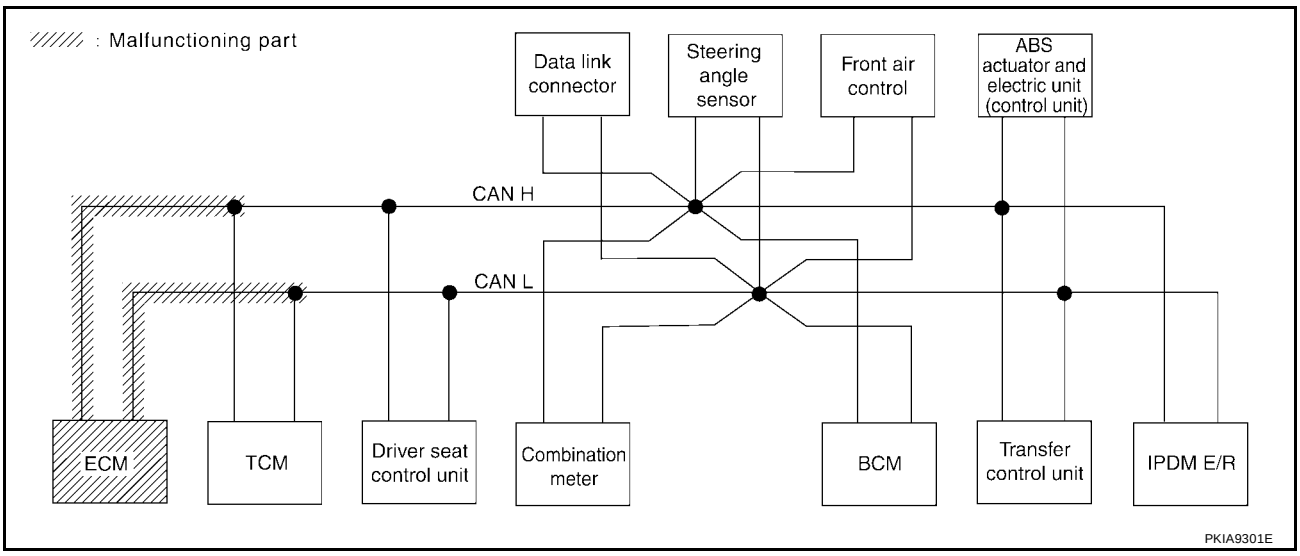
PKIA9300E

Case 4

Check ECM circuit. Refer to LAN-452, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9208E



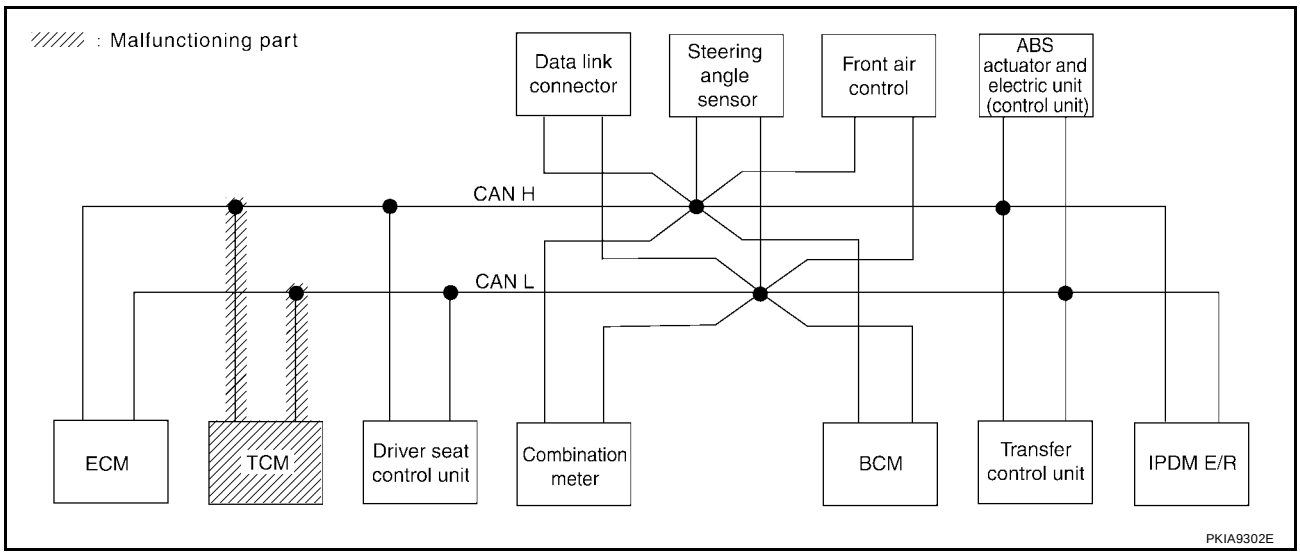
PKIA9301E

Case 5

Check TCM circuit. Refer to LAN-452, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN ✓	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	UNKWN ✓	—	—	UNKWN ✓	UNKWN ✓	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN ✓	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN ✓	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN ✓	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9209E



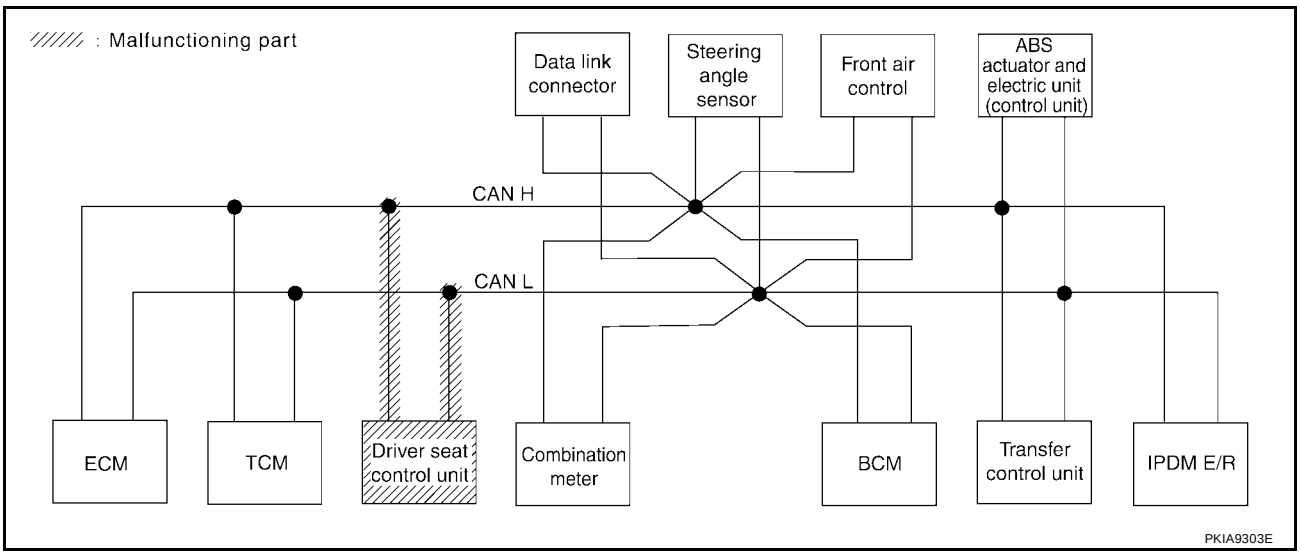
PKIA9302E

Case 6

Check driver seat control unit circuit. Refer to LAN-453, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9210E



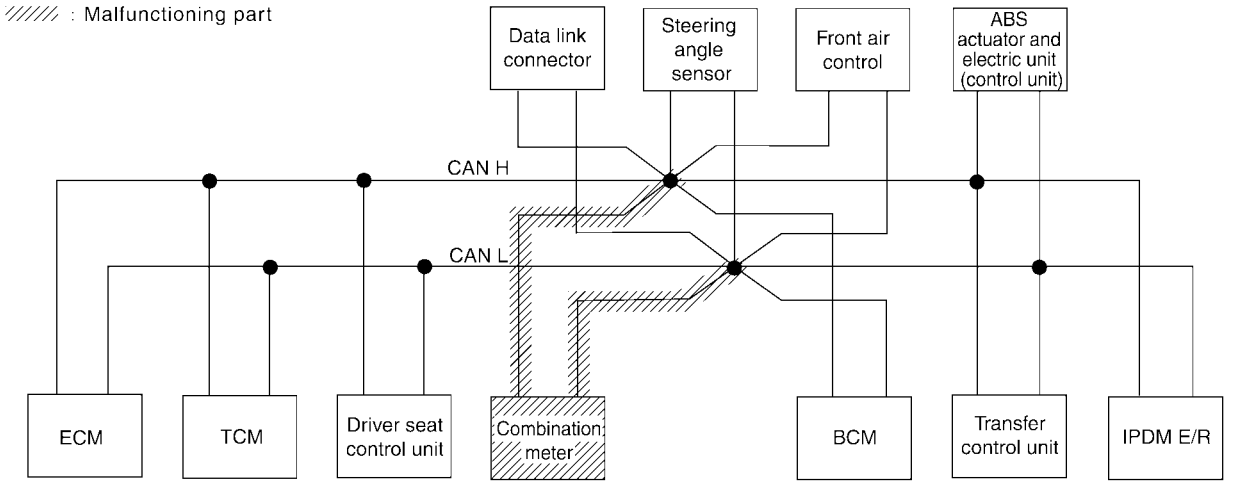
PKIA9303E

Case 7

Check combination meter circuit. Refer to LAN-453, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9211E



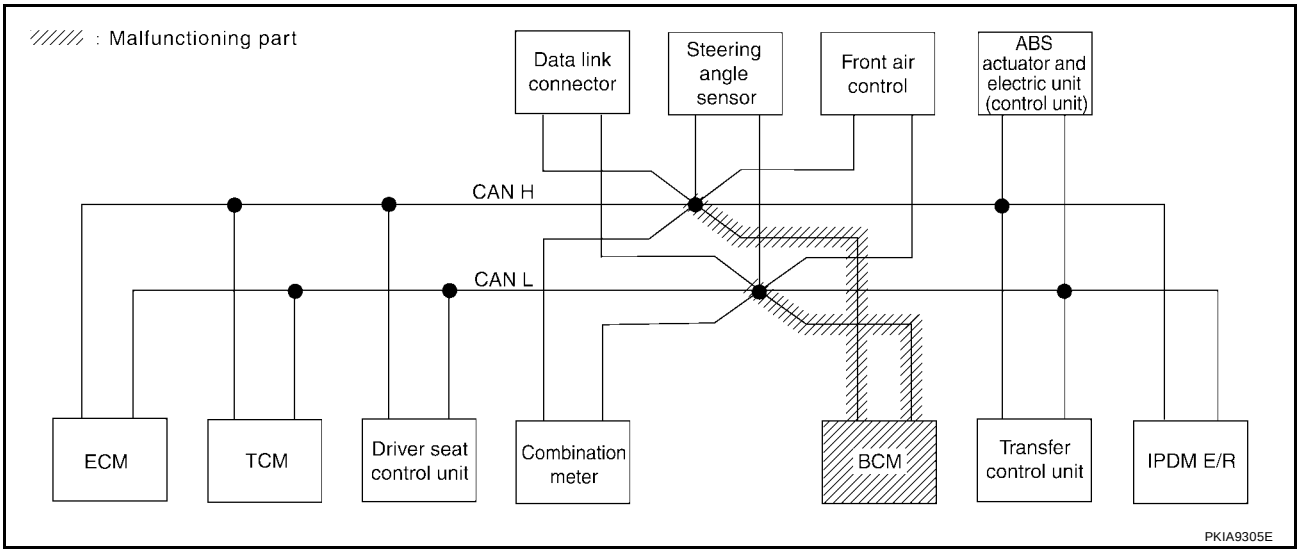
PKIA9304E

Case 8

Check BCM circuit. Refer to LAN-454, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN ✓	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN ✓	—	—	—	—
BCM	No indication ✓	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN ✓	—	—	—	—

PKIA9212E



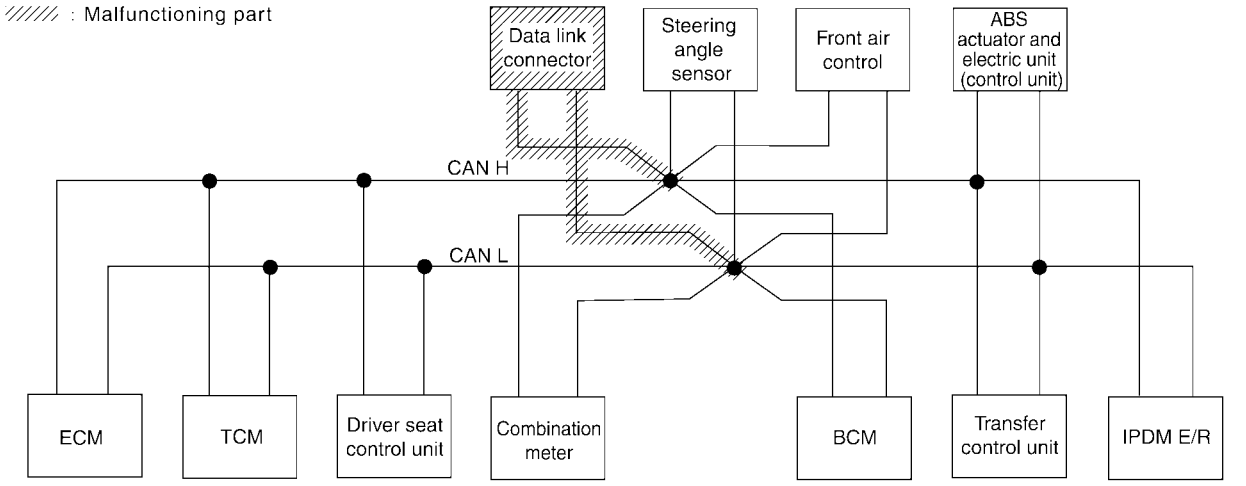
PKIA9305E

Case 9

Check data link connector circuit. Refer to LAN-454, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9213E



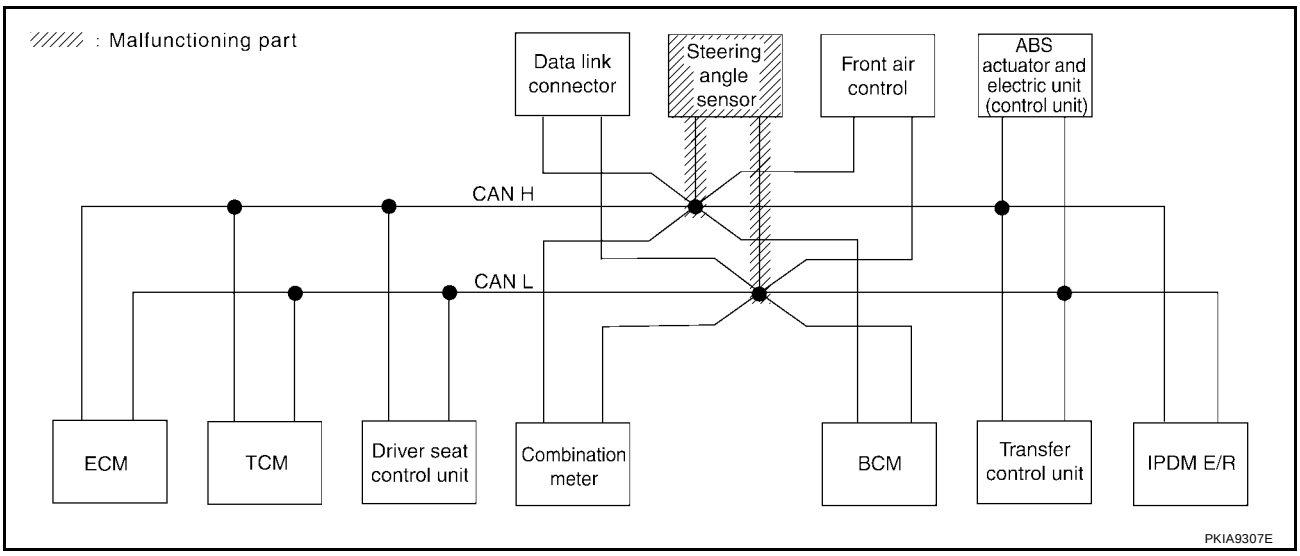
PKIA9306E

Case 10

Check steering angle sensor circuit. Refer to LAN-455, "Steering Angle Sensor Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9214E



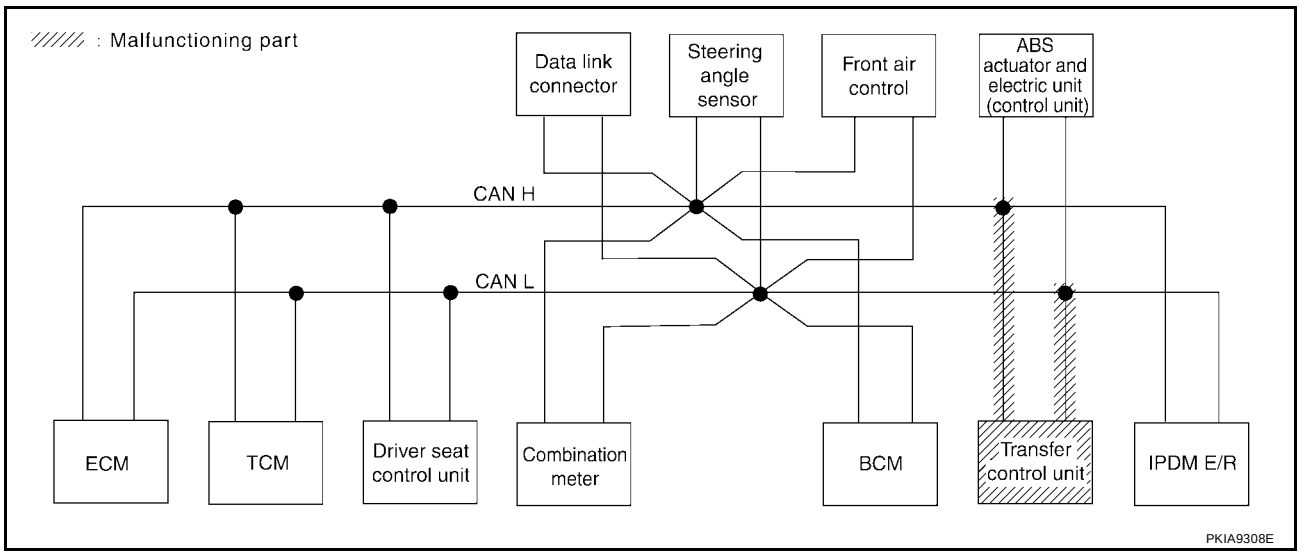
PKIA9307E

Case 11

Check transfer control unit circuit. Refer to LAN-455, "Transfer Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN ✓	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN ✓	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN ✓	UNKWN ✓	UNKWN ✓	—	—	—	—	UNKWN ✓	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN ✓	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9215E



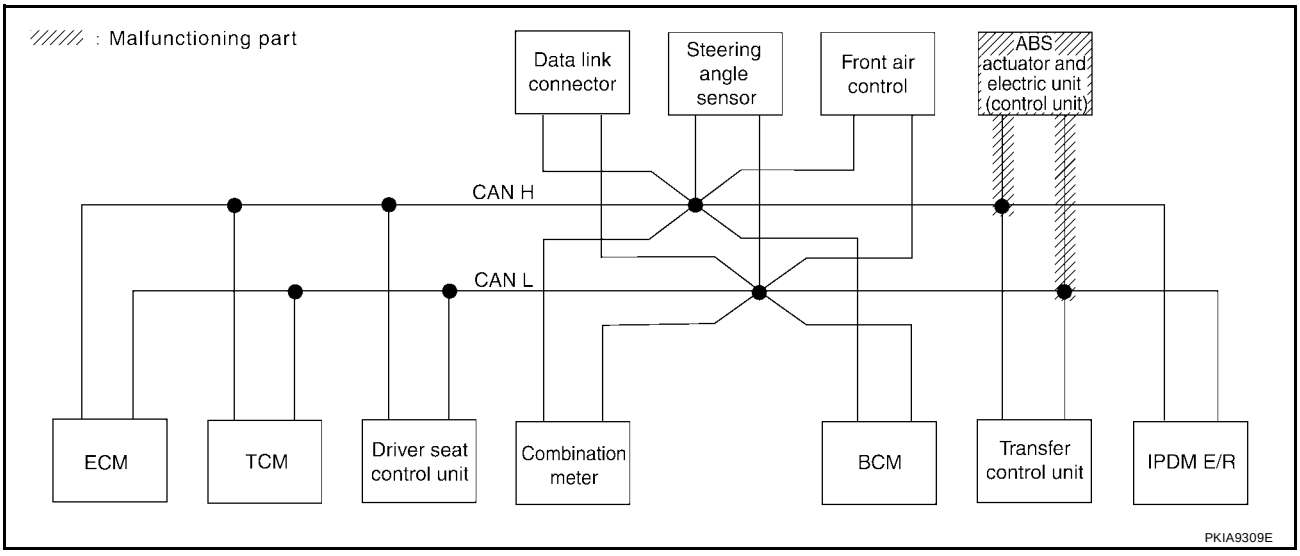
PKIA9308E

Case 12

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-456, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9216E



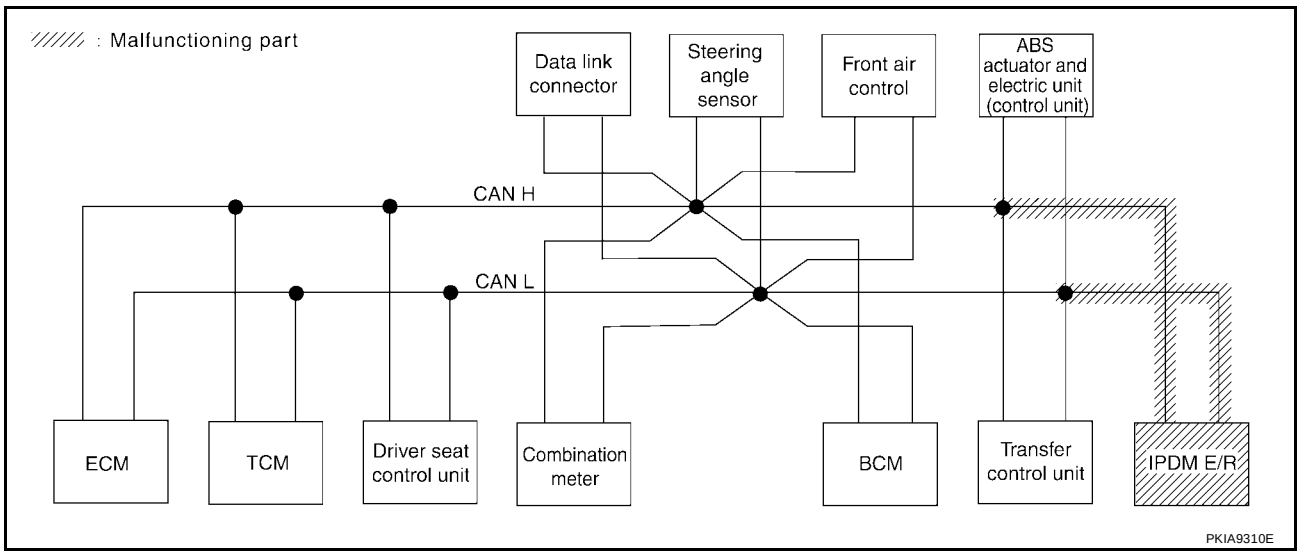
PKIA9309E

Case 13

Check IPDM E/R circuit. Refer to LAN-456, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN ✓
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9217E



PKIA9310E

Case 14

Check CAN communication circuit. Refer to LAN-457, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9218E

Case 15

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-457, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9219E

Case 16

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-457, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	METER/ M&A	BCM/SEC	STRG	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	UNKWN ✓	—	—	UNKWN ✓	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN	—	—	UNKWN ✓	UNKWN ✓	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—

PKIA9220E

Circuit Check Between TCM and Driver Seat Control Unit

UKS0023Y

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 F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

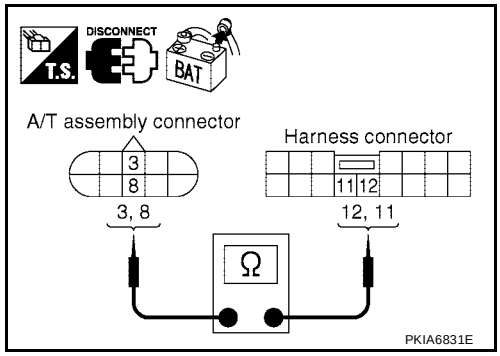
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12 (W), 11 (R).

3 (W) - 12 (W) : Continuity should exist.
8 (R) - 11 (R) : Continuity should exist.



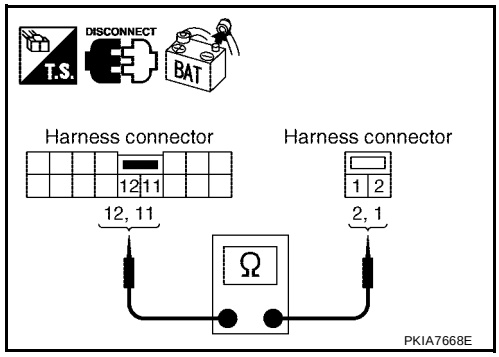
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).

12 (W) - 2 (W) : Continuity should exist.
11 (R) - 1 (R) : Continuity should exist.



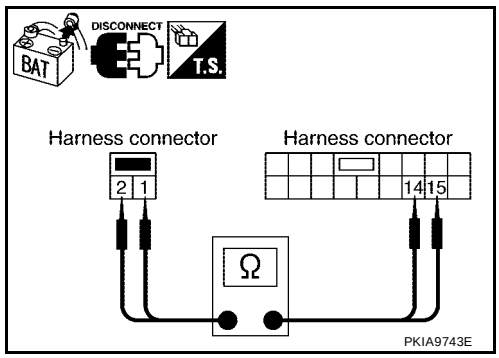
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37.
2. Check continuity between harness connector B75 terminals 2 (W), 1 (R) and harness connector B37 terminals 15 (W), 14 (R).

2 (W) - 15 (W) : Continuity should exist.
1 (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-432, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and Data Link Connector

UKS0023Z

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 B69
- Harness connector M40

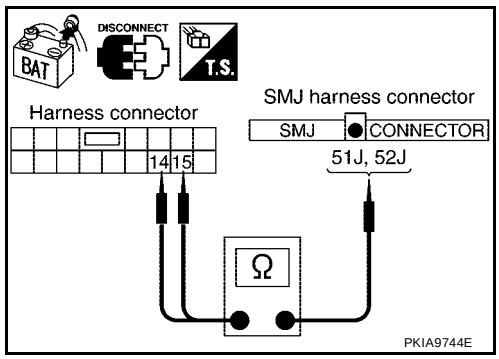
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37 and harness connector B69.
2. Check continuity between harness connector B37 terminals 15 (W), 14 (R) and harness connector B69 terminals 51J (W), 52J (R).

15 (W) - 51J (W) : Continuity should exist.
14 (R) - 52J (R) : Continuity should exist.



OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

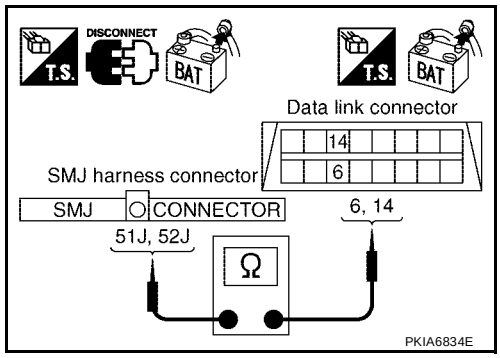
51J (W) - 6 (W) : Continuity should exist.

52J (R) - 14 (R) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-432, "Work Flow" .

NG >> Repair harness.



Circuit Check Between Data Link Connector and IPDM E/R

UKS00240

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 M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).

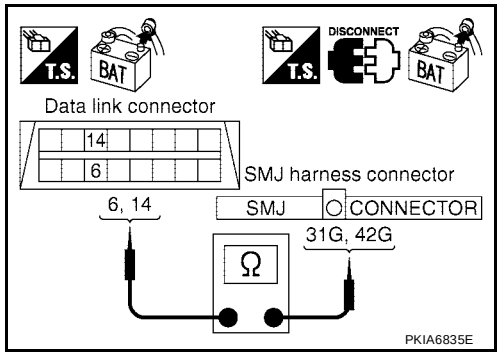
6 (W) - 31G (W) : Continuity should exist.

14 (R) - 42G (R) : Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).

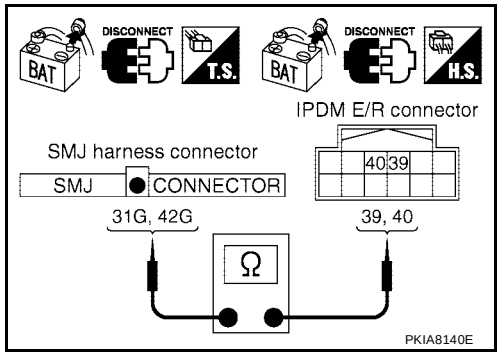
31G (W) - 39 (W) : Continuity should exist.

42G (R) - 40 (R) : Continuity should exist.

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-432, "Work Flow" .

NG >> Repair harness.



ECM Circuit Check

UKS00241

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 E19
- Harness connector F33

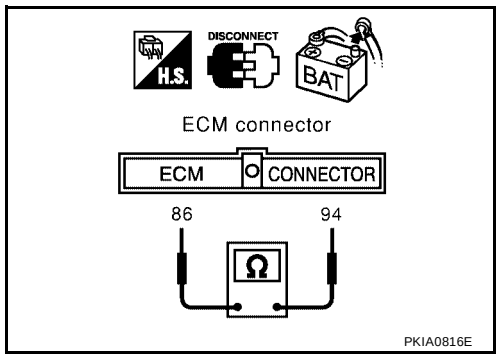
OK or NG

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 E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R) : Approx. 108 - 132Ω



OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and A/T assembly.

TCM Circuit Check

UKS00242

1. CHECK CONNECTOR

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

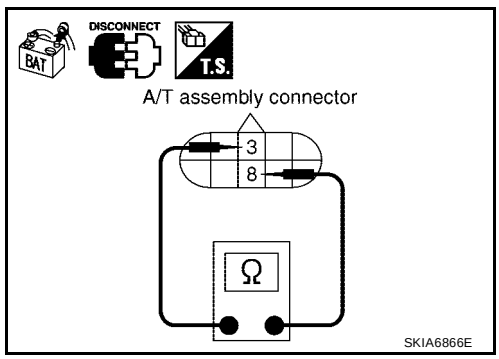
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.

Driver Seat Control Unit Circuit Check

UKS001WT

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 unit side and harness side).

- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

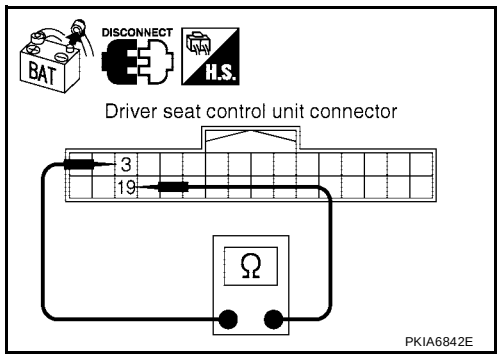
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect driver seat control unit connector.
2. Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R).

3 (W) - 19 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B69.

Combination Meter Circuit Check

UKS00243

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).

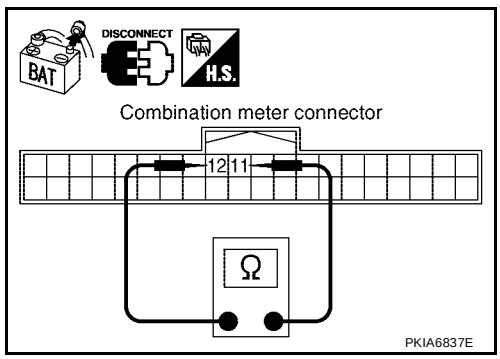
OK or NG

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 M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R) : Approx. 54 - 66Ω



OK or NG

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

BCM Circuit Check

UKS00244

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).

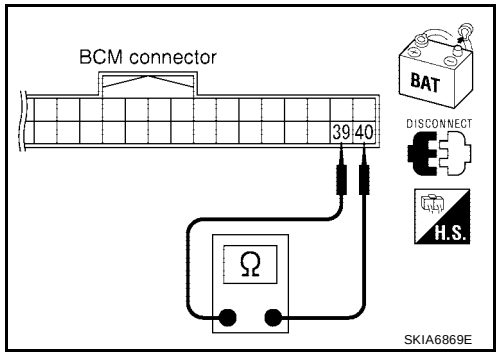
OK or NG

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 M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS00245

1. CHECK CONNECTOR

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

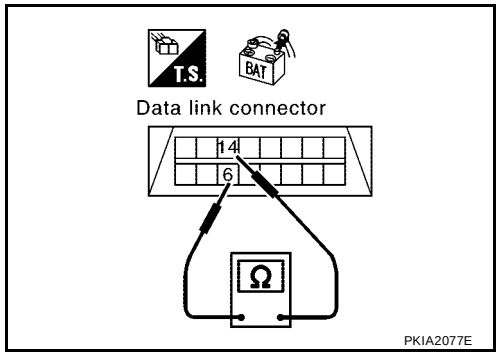
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-432, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Steering Angle Sensor Circuit Check

UKS00246

1. CHECK CONNECTOR

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

OK or NG

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

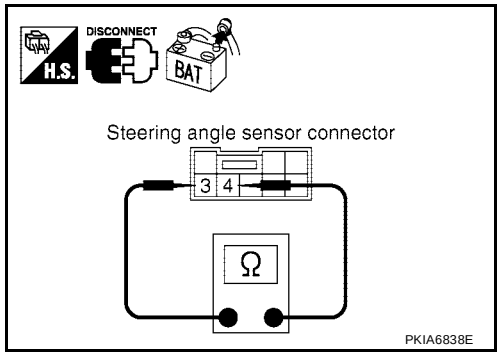
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M47 terminals 3 (W) and 4 (R).

3 (W) - 4 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor and data link connector.



Transfer Control Unit Circuit Check

UKS00247

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of transfer 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.

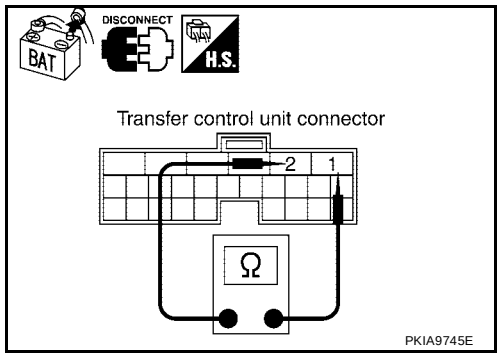
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R).

1 (W) - 2 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace transfer control unit.
NG >> Repair harness between transfer control unit and harness connector E152.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS00248

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).

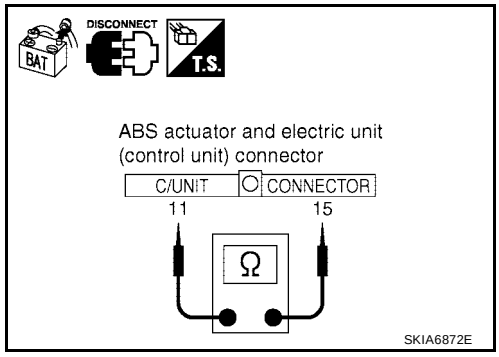
OK or NG

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 E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R) : 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 harness connector E152.

IPDM E/R Circuit Check

UKS00249

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).

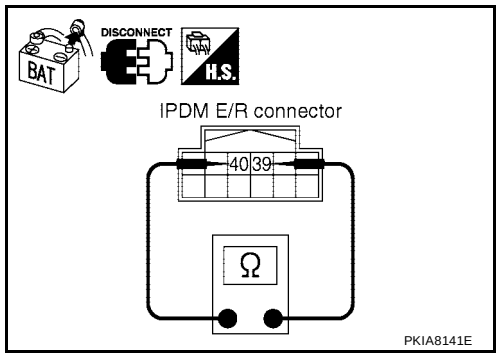
OK or NG

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 E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 108 - 132Ω



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.

CAN Communication Circuit Check

UKS0024A

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- A/T assembly
- Driver seat control unit
- Combination meter
- BCM
- Steering angle sensor
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

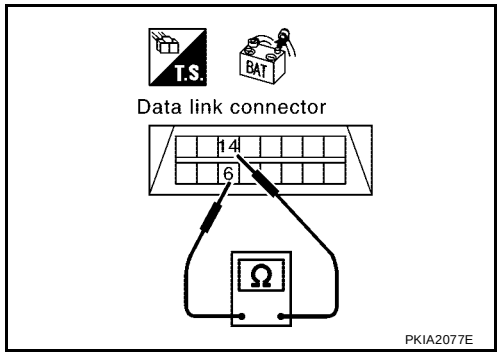
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

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



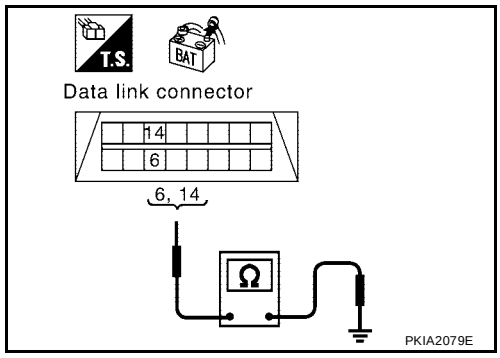
OK or NG

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

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-458, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.

IPDM E/R Ignition Relay Circuit Check

UKS0024B

Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

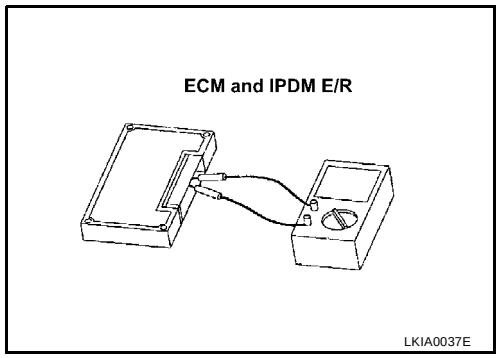
Component Inspection

UKS0024C

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 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40	



CAN SYSTEM (TYPE 15)

PFP:23710

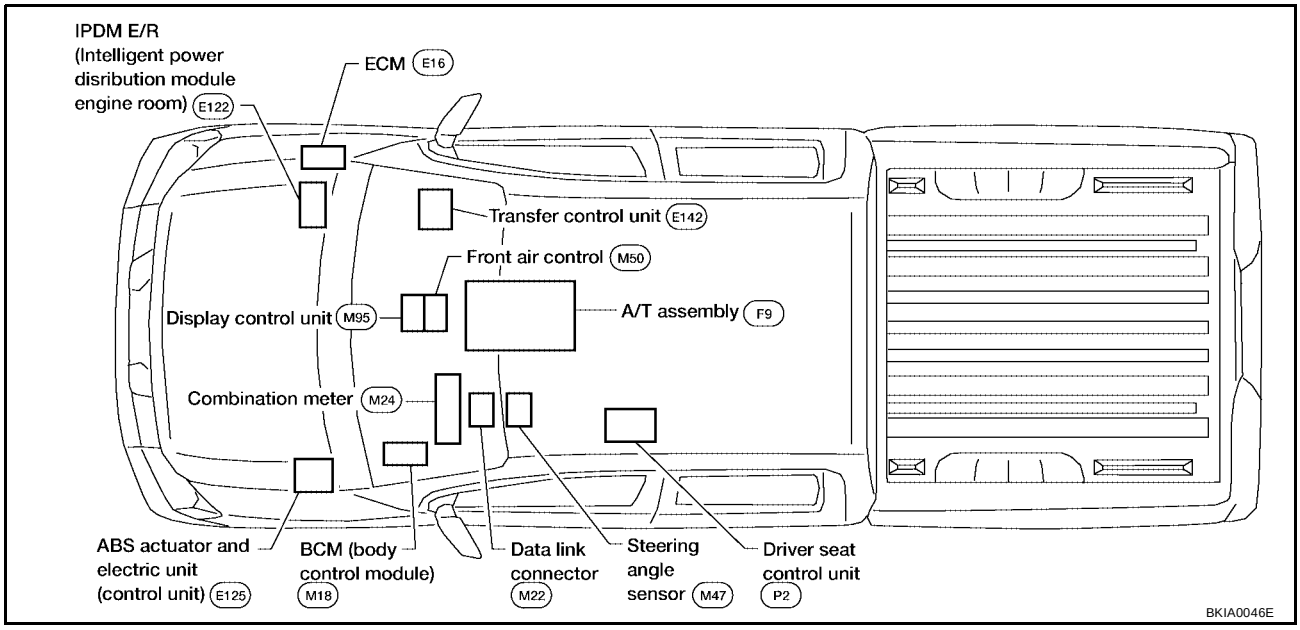
System Description

UKS001X4

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.

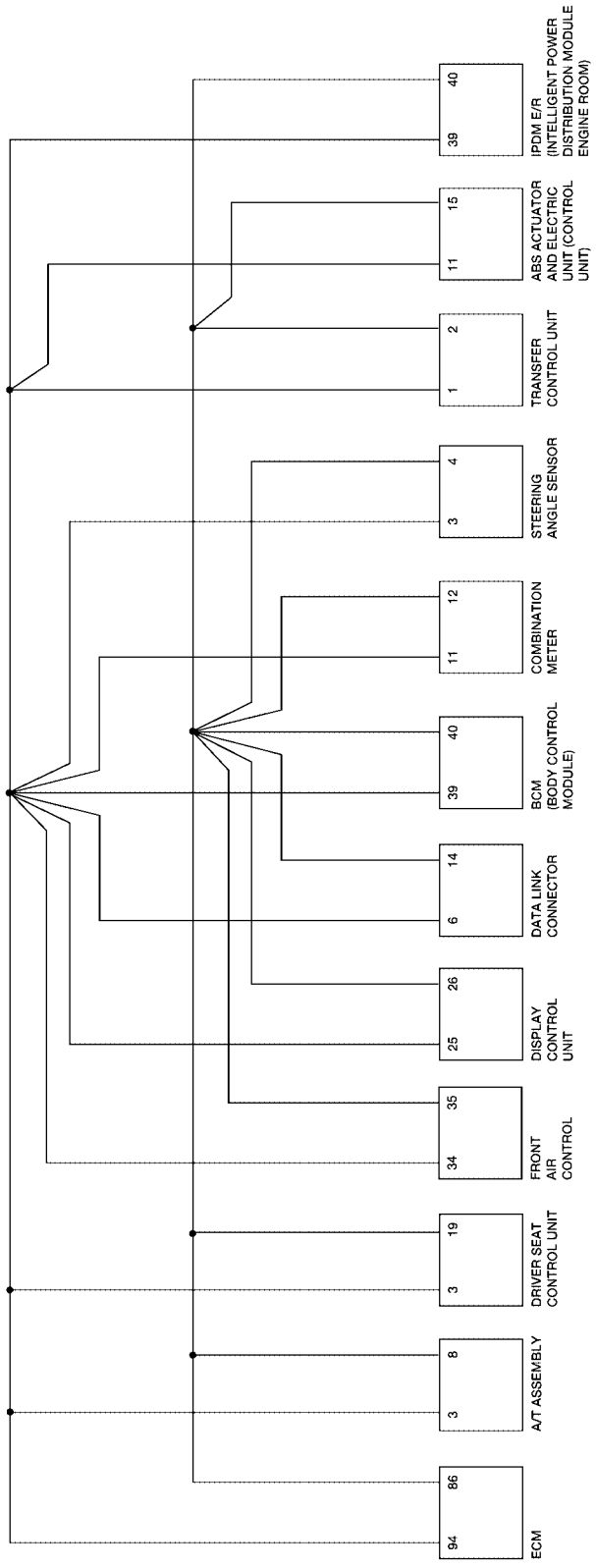
Component Parts and Harness Connector Location

UKS001X5



Schematic

UKS001X6

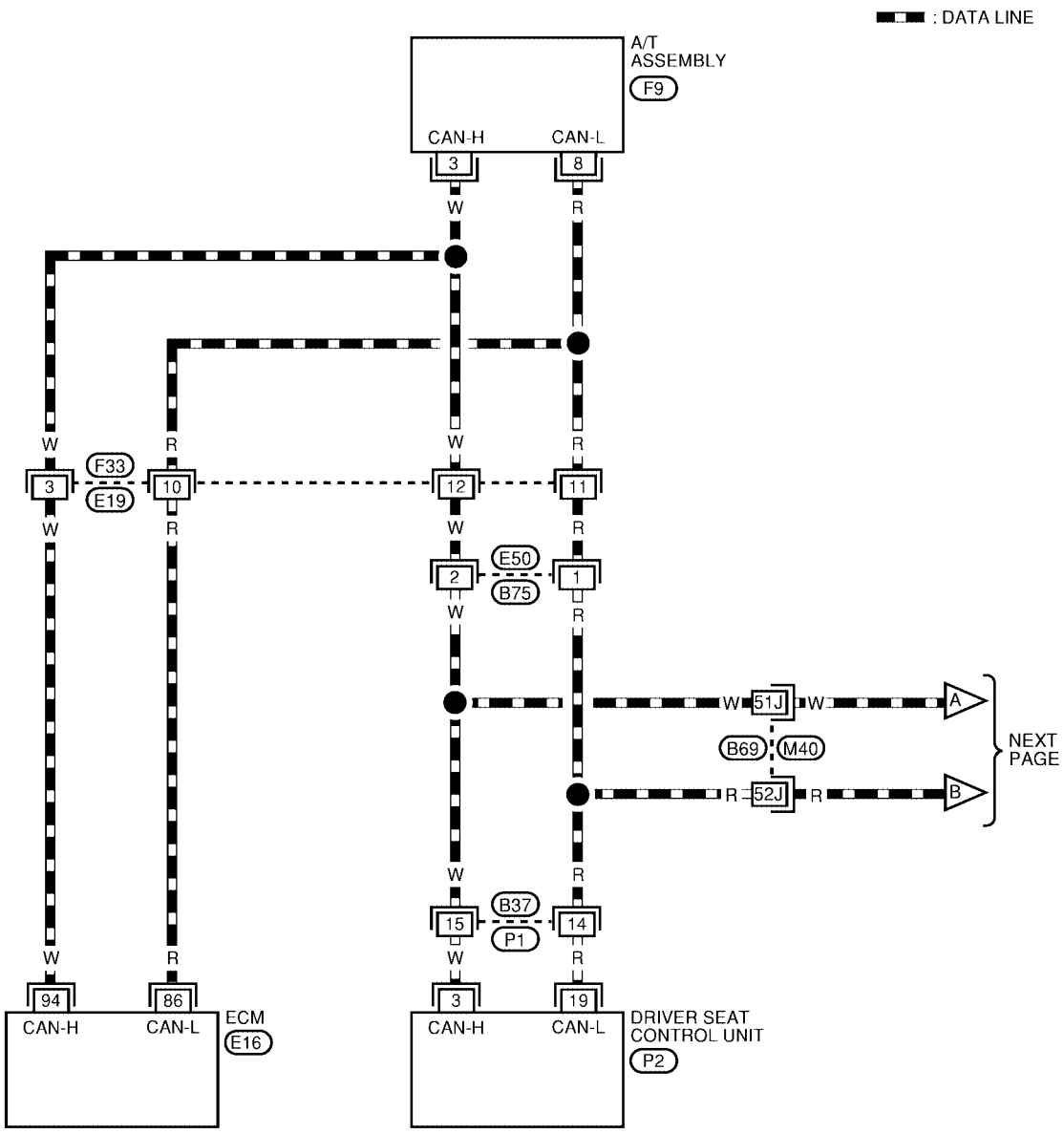


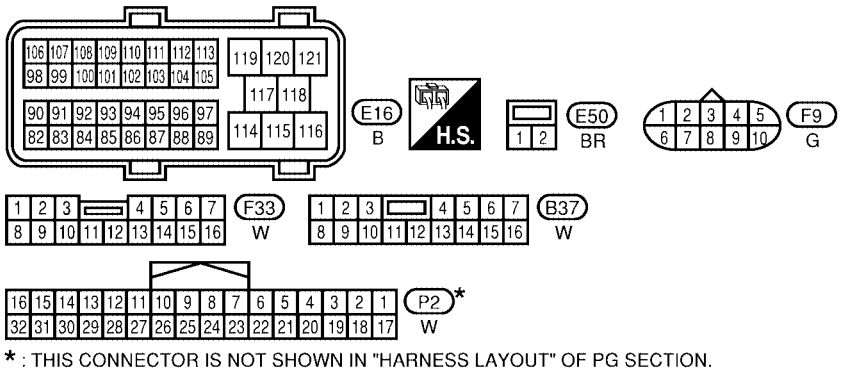
BKWA0168E

Wiring Diagram - CAN -

UKS001X7

LAN-CAN-43



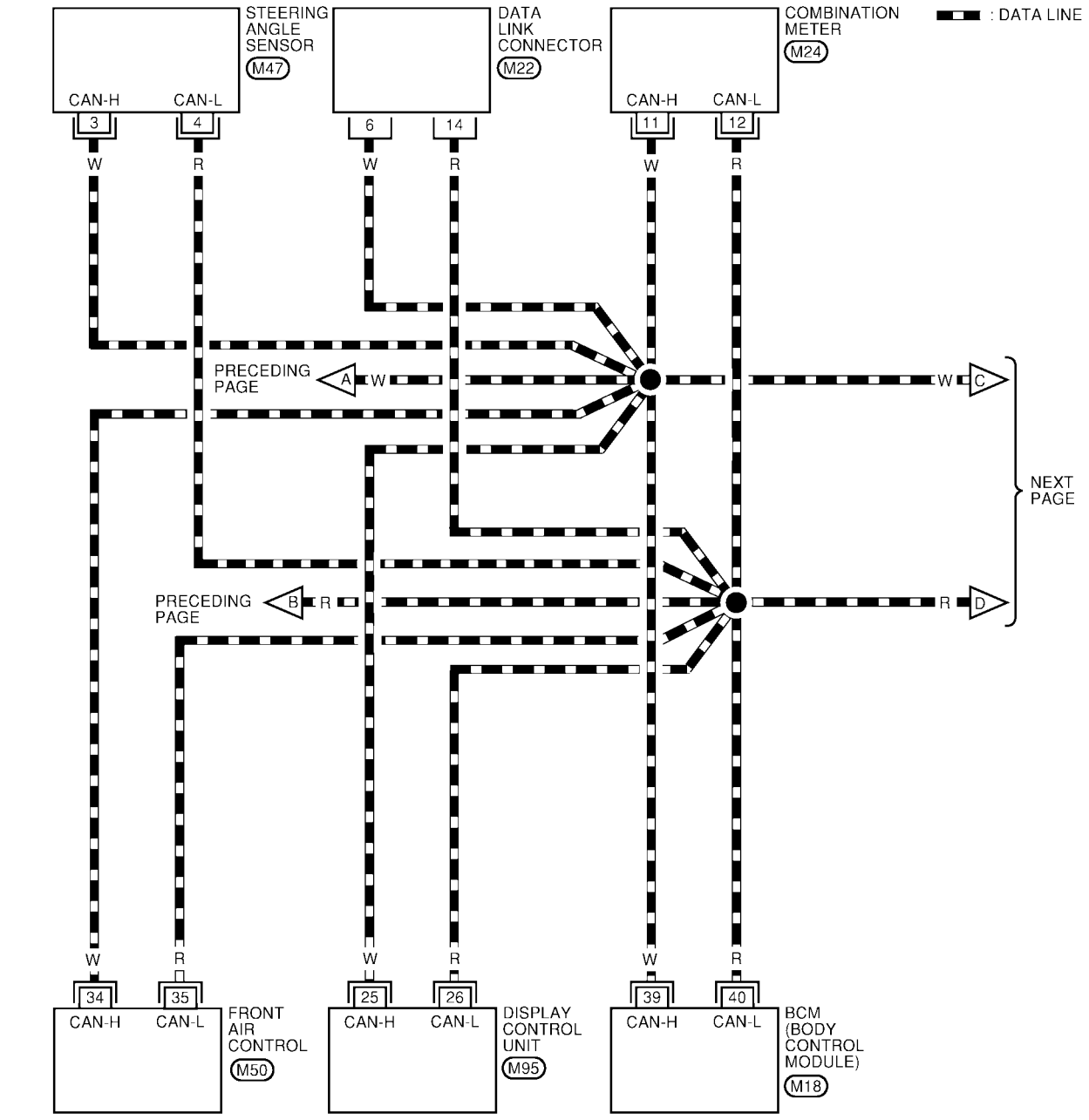


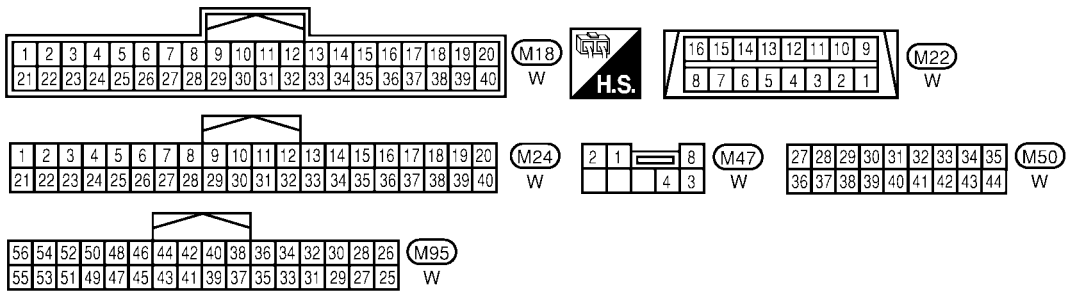
* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

REFER TO THE FOLLOWING.
M40 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0169E

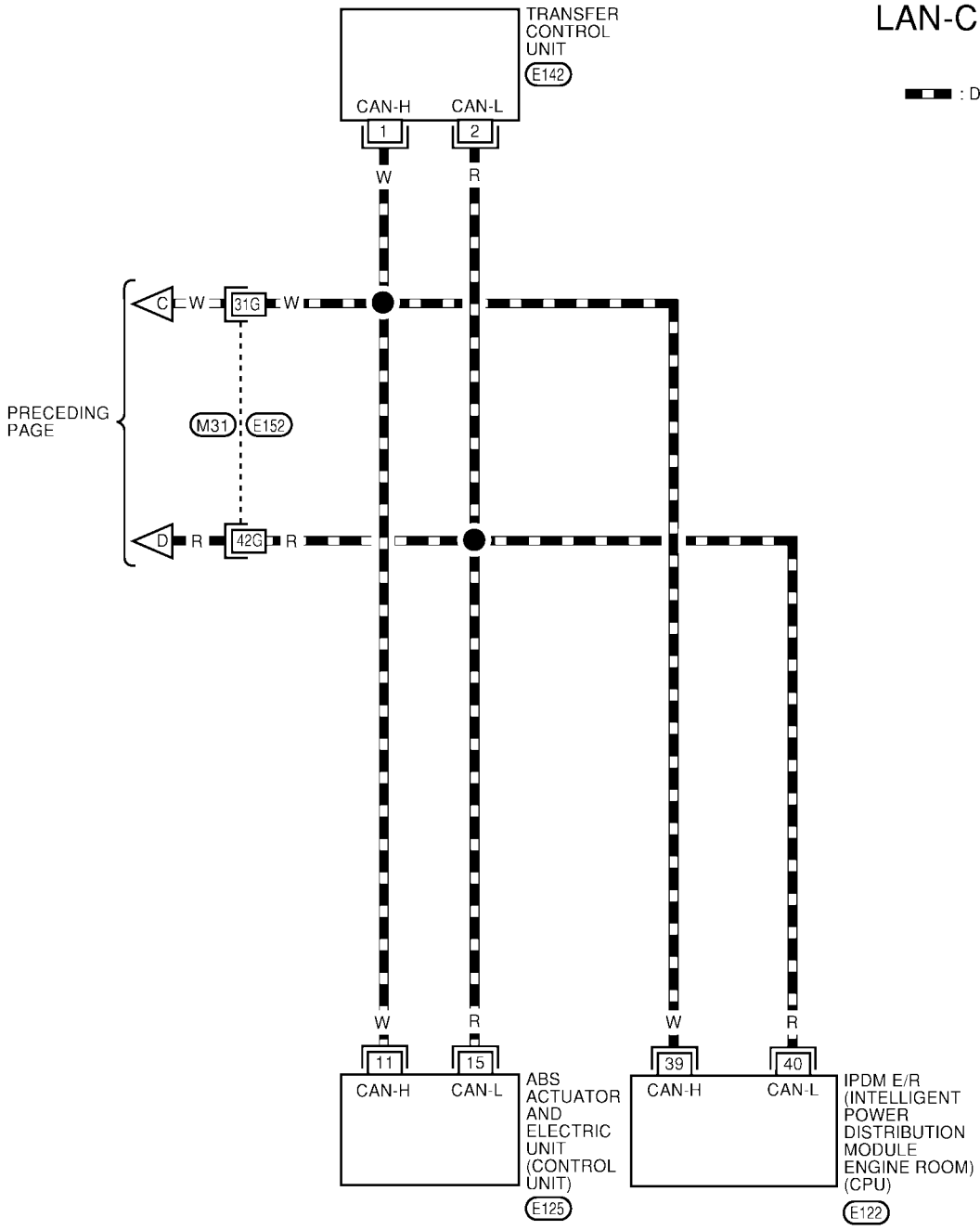
LAN-CAN-44

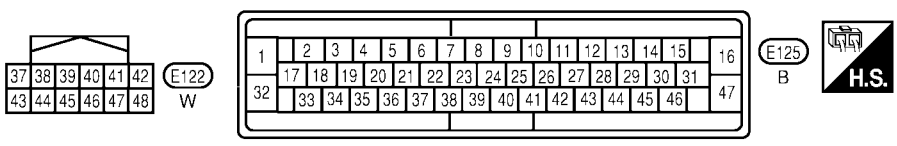


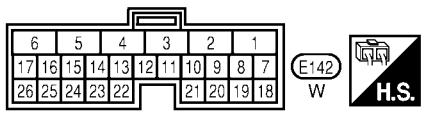


BKWA0170E

LAN-CAN-45







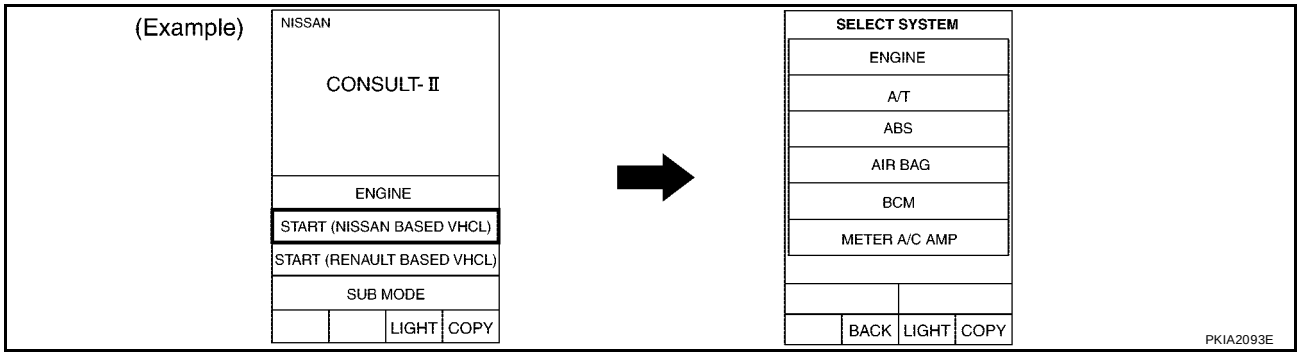
REFER TO THE FOLLOWING.
M31 - SUPER MULTIPLE JUNCTION (SMJ)

BKWA0171E

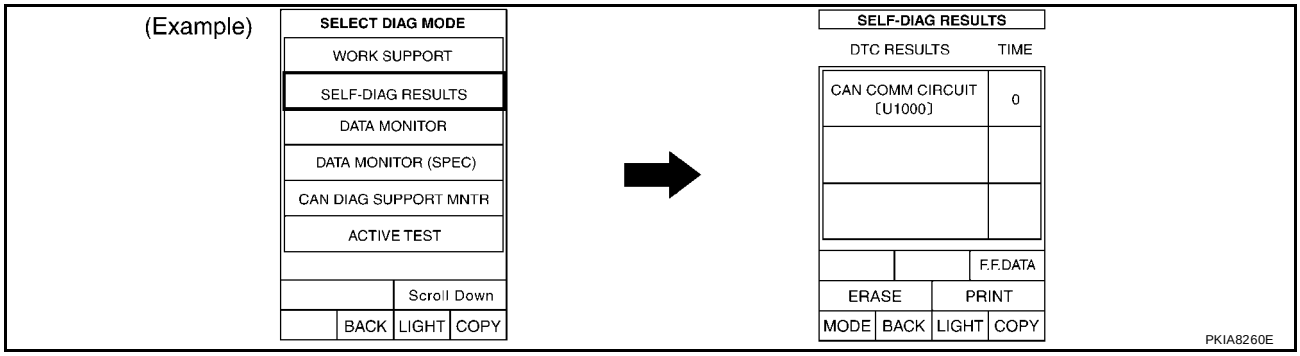
Work Flow

UKS001X8

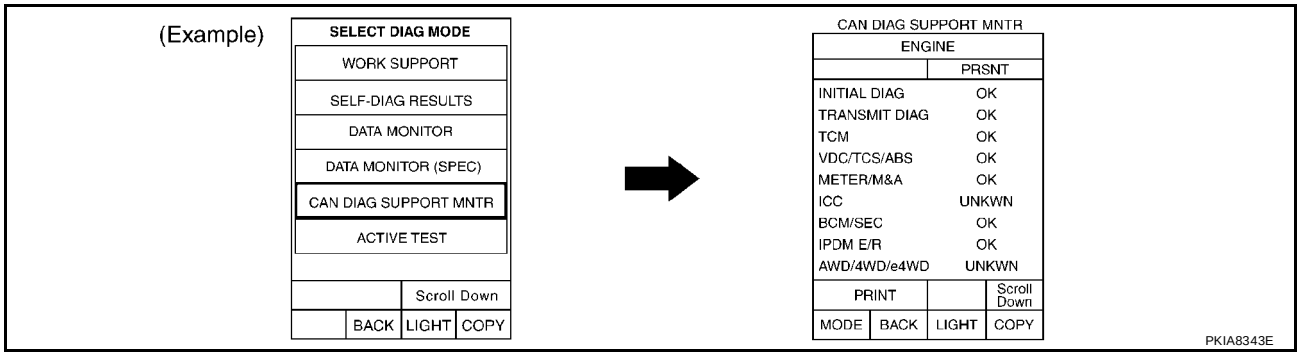
1. When there are no indications of “AUTO DRIVE POS.”, “BCM” or “IPDM E/R” on “SELECT SYSTEM” display of CONSULT-II, print the “SELECT SYSTEM”.



2. Print all the data of “SELF-DIAG RESULTS” for “ENGINE”, “A/T”, “AUTO DRIVE POS.”, “BCM”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



3. Print all the data of “CAN DIAG SUPPORT MNTR” for “ENGINE”, “A/T”, “AUTO DRIVE POS.”, “BCM”, “ALL MODE AWD/4WD”, “ABS” and “IPDM E/R” displayed on CONSULT-II.



4. Attach the printed sheet of “SELECT SYSTEM”, “SELF-DIAG RESULTS” and “CAN DIAG SUPPORT MNTR” onto the check sheet. Refer to LAN-466, "CHECK SHEET" .
5. Based on the indications of “SELECT SYSTEM” and the results of “CAN DIAG SUPPORT MNTR”, put marks “v” onto the items with “No indication”, “NG” or “UNKWN” in the check sheet table. Refer to LAN-466, "CHECK SHEET" .

   NOTE:
   - If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” as “CAN DIAG SUPPORT MNTR” for the diagnosed control unit, replace the control unit.
   - The “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 the “CAN DIAG SUPPORT MNTR” items not in check sheet table.
6. Check CAN communication line of the navigation system. Refer to AV-149, "CAN Communication Line Check" .
7. Attach the CAN DIAG SUPPORT MONITOR check sheet onto the check sheet. Refer to LAN-466, "CHECK SHEET" .

8. Mark the “NG” or “UNKWN” item of the check sheet table with “v” from the result of CAN DIAG SUPPORT MONITOR check sheet. Refer to LAN-466, "CHECK SHEET" .

   NOTE:
   If “NG” is displayed on “CAN COMM” as “CAN DIAG SUPPORT MONITOR” for the diagnosed control unit, replace the control unit. Refer to AV-149, "CAN Communication Line Check" .

9. According to the check sheet results (example), start inspection. Refer to LAN-468, "CHECK SHEET RESULTS (EXAMPLE)" .

CHECK SHEET

NOTE:

If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Check sheet table

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—

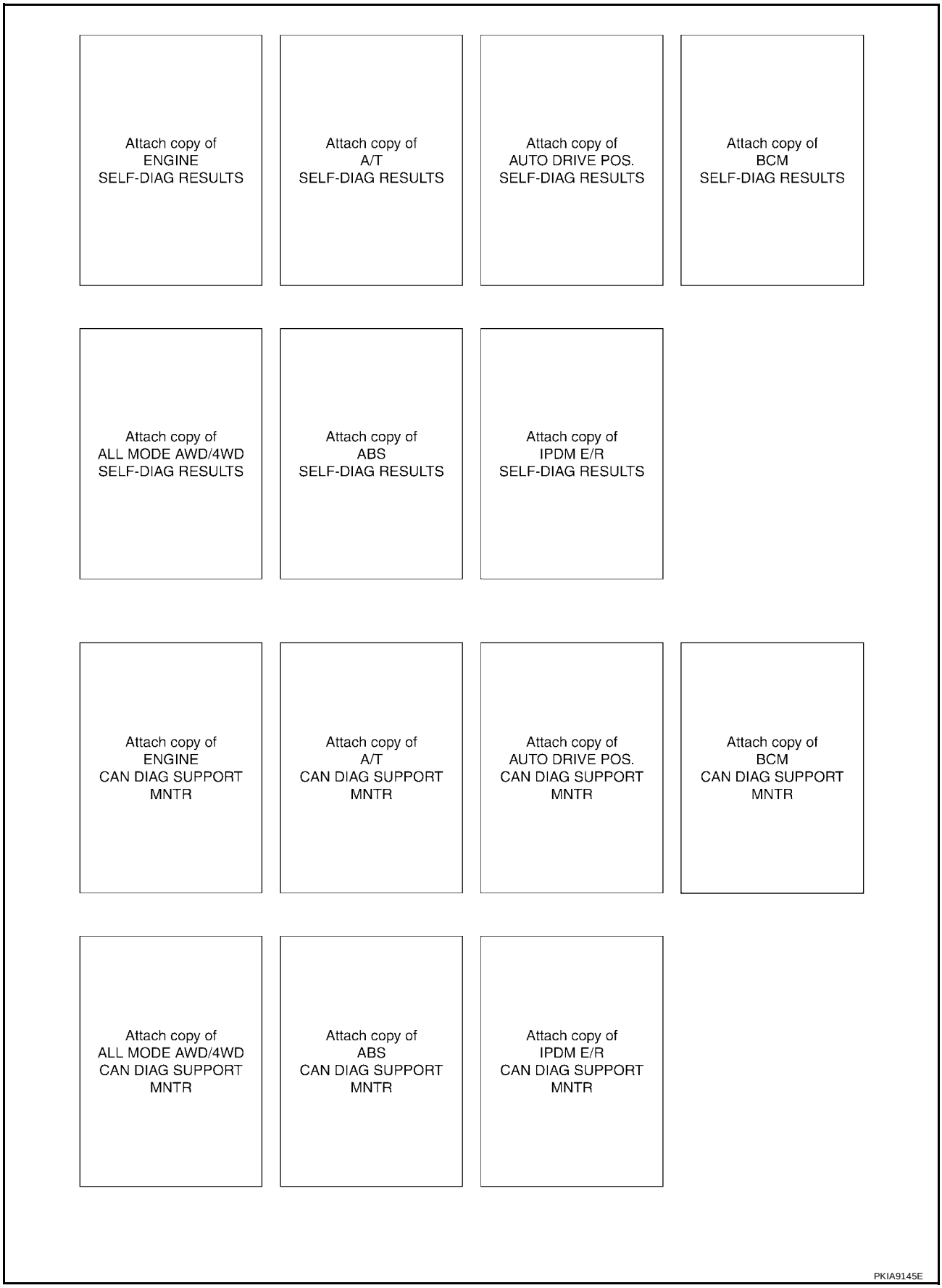
Symptoms :

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

Attach copy of
display control unit
CAN DIAG SUPPORT MONITOR check sheet

PKIA9144E


Attach copy of
ENGINE
SELF-DIAG RESULTS
Attach copy of
A/T
SELF-DIAG RESULTS
Attach copy of
AUTO DRIVE POS.
SELF-DIAG RESULTS
Attach copy of
BCM
SELF-DIAG RESULTS
Attach copy of
ALL MODE AWD/4WD
SELF-DIAG RESULTS
Attach copy of
ABS
SELF-DIAG RESULTS
Attach copy of
IPDM E/R
SELF-DIAG RESULTS
Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR
Attach copy of
A/T
CAN DIAG SUPPORT
MNTR
Attach copy of
AUTO DRIVE POS.
CAN DIAG SUPPORT
MNTR
Attach copy of
BCM
CAN DIAG SUPPORT
MNTR
Attach copy of
ALL MODE AWD/4WD
CAN DIAG SUPPORT
MNTR
Attach copy of
ABS
CAN DIAG SUPPORT
MNTR
Attach copy of
IPDM E/R
CAN DIAG SUPPORT
MNTR
PKIA9145E

CHECK SHEET RESULTS (EXAMPLE)

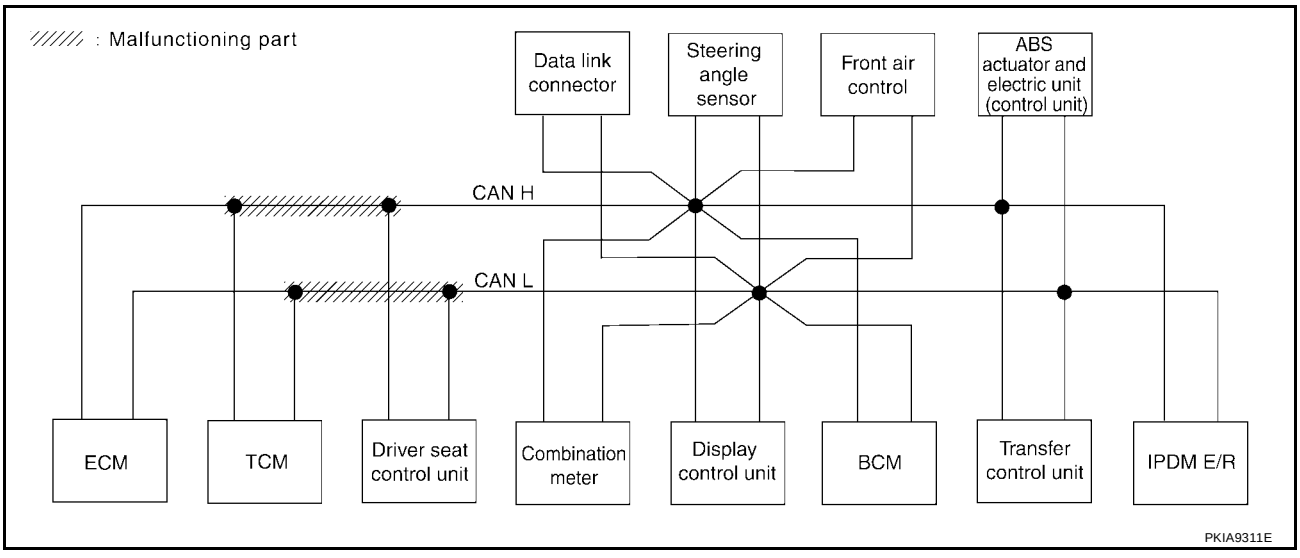
NOTE:
If “NG” is displayed on “INITIAL DIAG (Initial diagnosis)” or “CAN COMM” for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and driver seat control unit. Refer to LAN-484, "Circuit Check Between TCM and Driver Seat Control Unit" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	✓	✓	—	—	✓	✓	✓
A/T	—	NG	UNKWN	UNKWN	—	✓	—	—	—	✓	✓	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	✓	UNKWN	UNKWN	—	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	✓	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	✓	—	UNKWN	—	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	✓	✓	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	✓	✓	—	—	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	✓	—	—	UNKWN	—	—	—	—	—

PKIA9221E



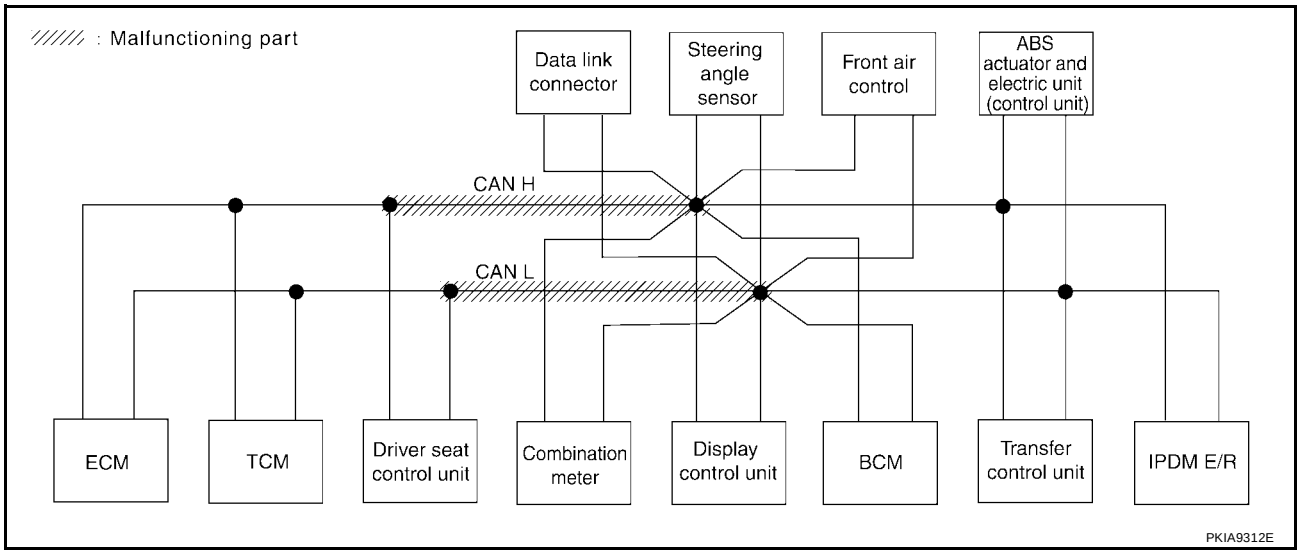
PKIA9311E

Case 2

Check harness between driver seat control unit and data link connector. Refer to LAN-485, "Circuit Check Between Driver Seat Control Unit and Data Link Connector" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	✓	✓	–	–	✓	✓	✓
A/T	–	NG	UNKWN	UNKWN	–	✓	–	–	–	✓	✓	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	UNKWN	UNKWN	–	–	–	–	–
Display control unit	–	CAN COMM	CAN CIRC 1	✓	–	CAN CIRC 5	CAN CIRC 2	–	CAN CIRC 4	–	–	CAN CIRC 7
BCM	No indication	NG	UNKWN	✓	–	UNKWN	–	–	–	–	–	UNKWN
ALL MODE AWD/4WD	–	NG	UNKWN	✓	✓	–	–	–	–	–	UNKWN	–
ABS	–	NG	UNKWN	✓	✓	–	–	UNKWN	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	✓	–	–	UNKWN	–	–	–	–	–

PKIA9222E



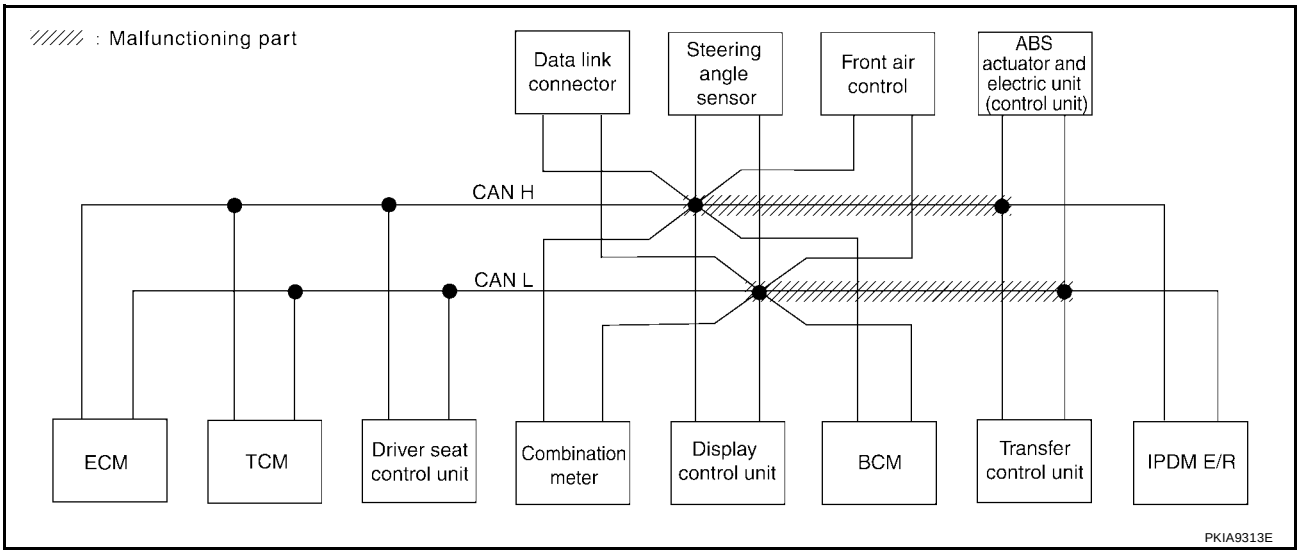
PKIA9312E

Case 3

Check harness between data link connector and IPDM E/R. Refer to LAN-486, "Circuit Check Between Data Link Connector and IPDM E/R" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—

PKIA9223E

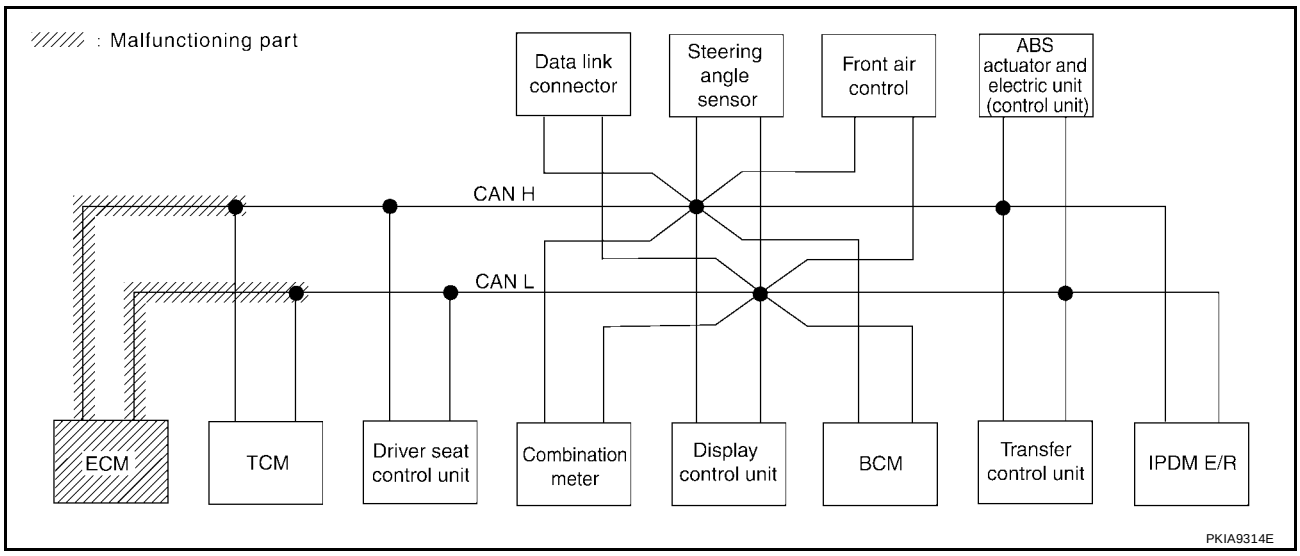


Case 4

Check ECM circuit. Refer to LAN-487, "ECM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—

PKIA9224E



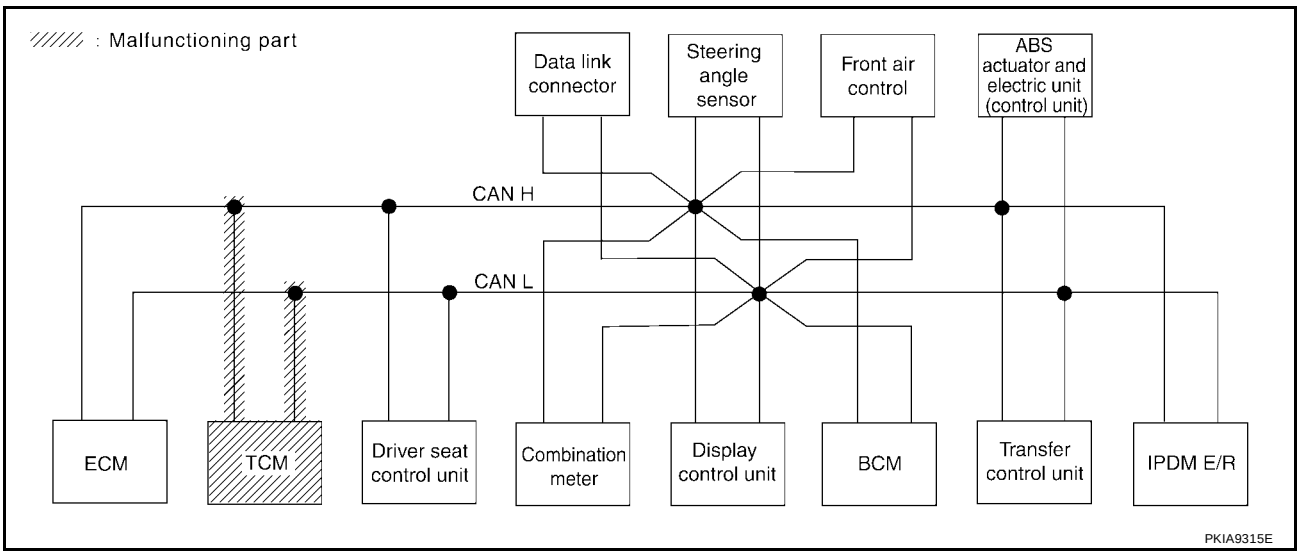
PKIA9314E

Case 5

Check TCM circuit. Refer to LAN-487, "TCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—

PKIA9225E



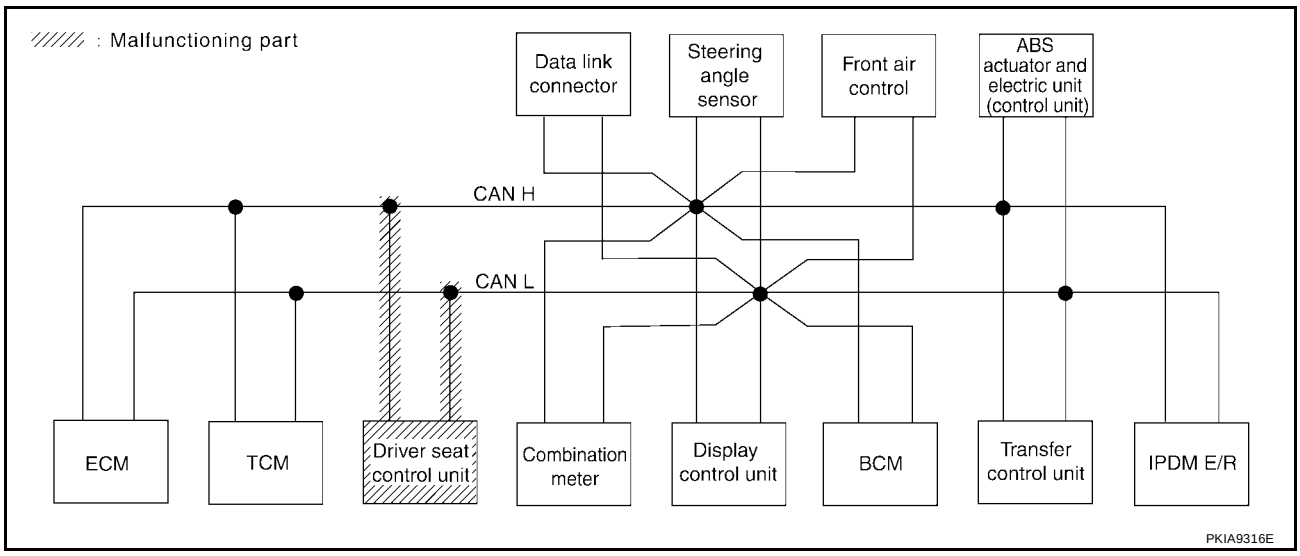
PKIA9315E

Case 6

Check driver seat control unit circuit. Refer to LAN-488, "Driver Seat Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—

PKIA9226E



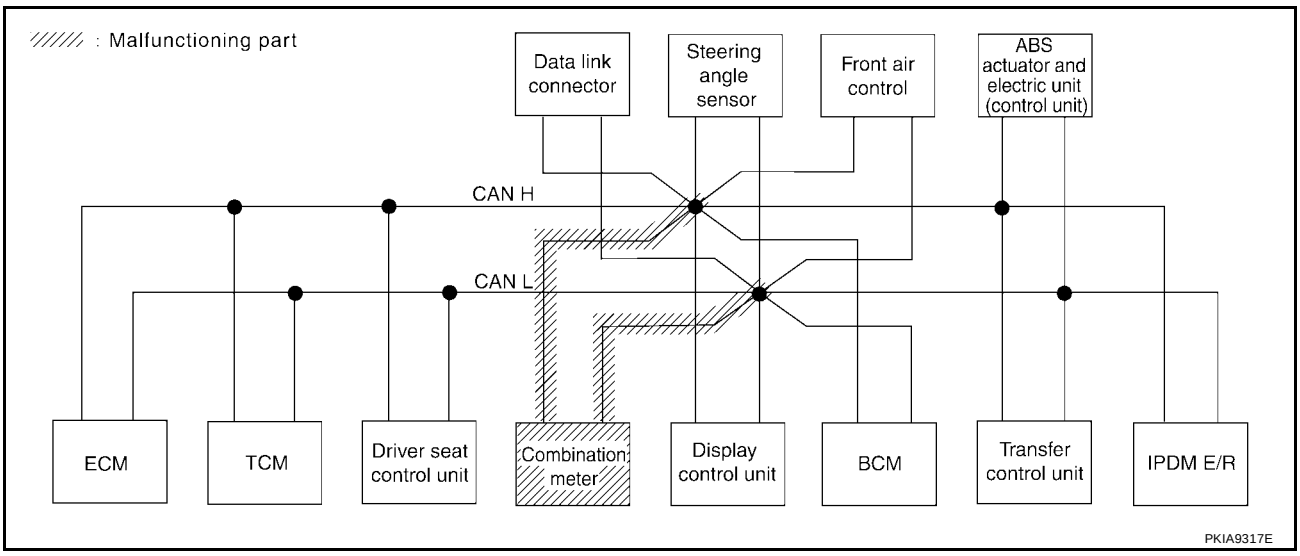
PKIA9316E

Case 7

Check combination meter circuit. Refer to LAN-488, "Combination Meter Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN	—	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN ✓	UNKWN	—	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5 ✓	CAN CIRC 2	—	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN ✓	—	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—

PKIA9227E



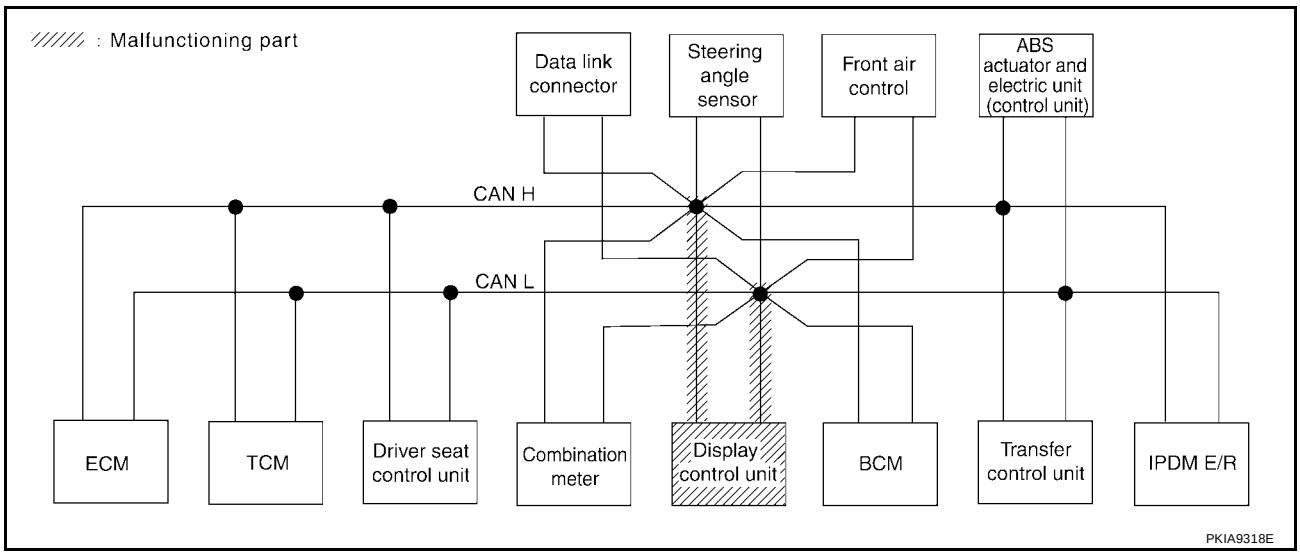
PKIA9317E

Case 8

Check display control unit circuit. Refer to LAN-489, "Display Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1 ✓	CAN CIRC 3 ✓	—	CAN CIRC 5 ✓	CAN CIRC 2 ✓	—	CAN CIRC 4 ✓	—	—	CAN CIRC 7 ✓
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—

PKIA9228E



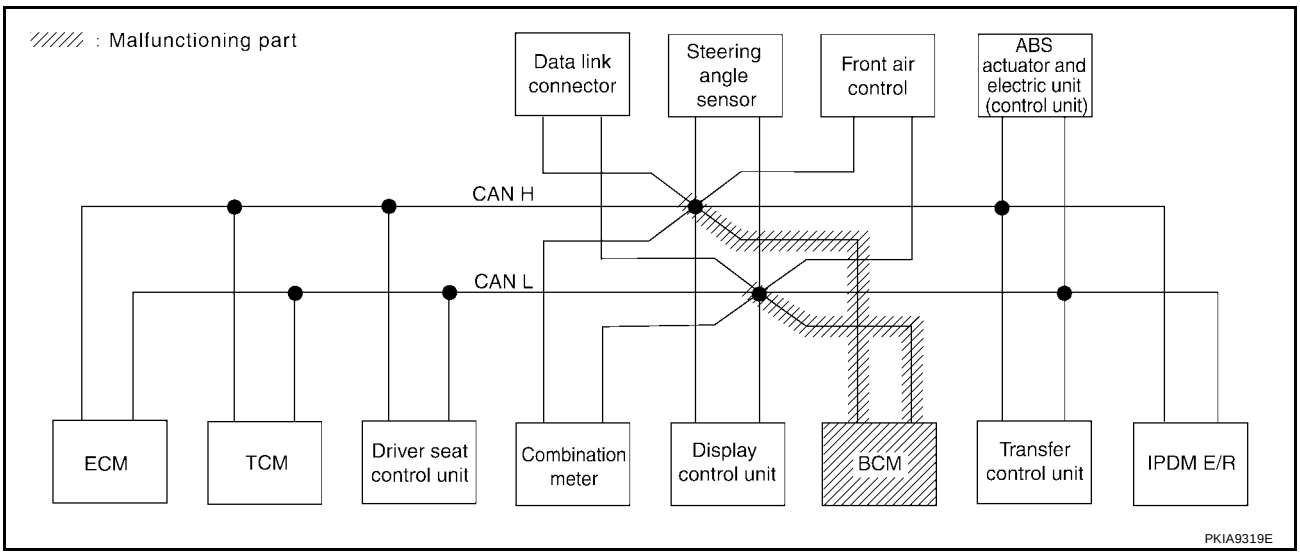
PKIA9318E

Case 9

Check BCM circuit. Refer to LAN-489, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—

PKIA9229E



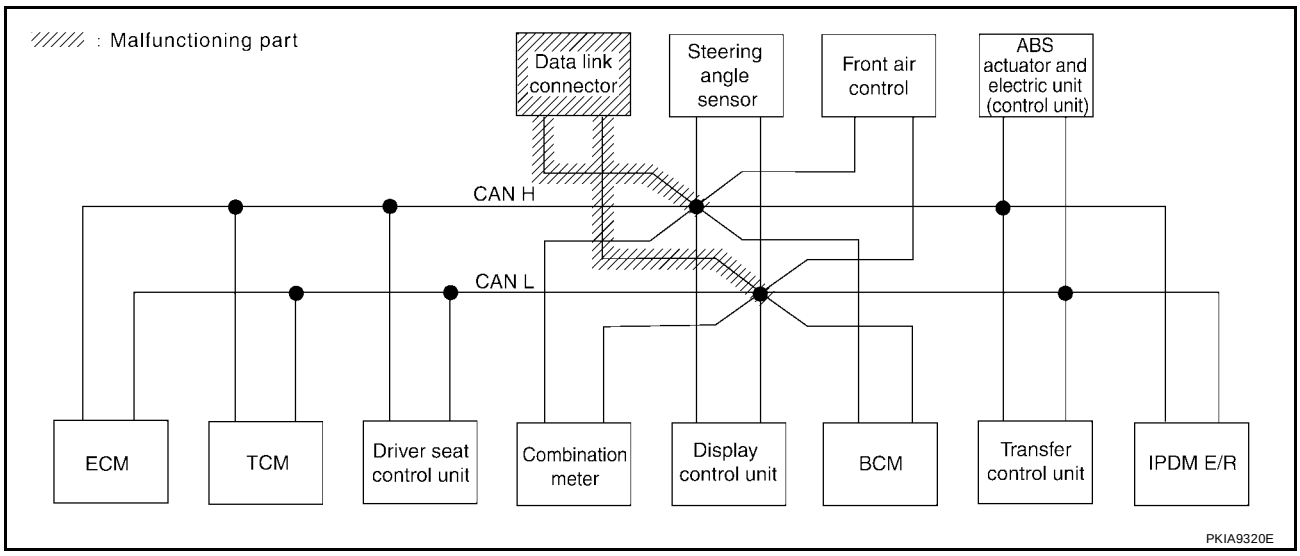
PKIA9319E

Case 10

Check data link connector circuit. Refer to LAN-490, "Data Link Connector Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication ✓	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication ✓	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—

PKIA9230E



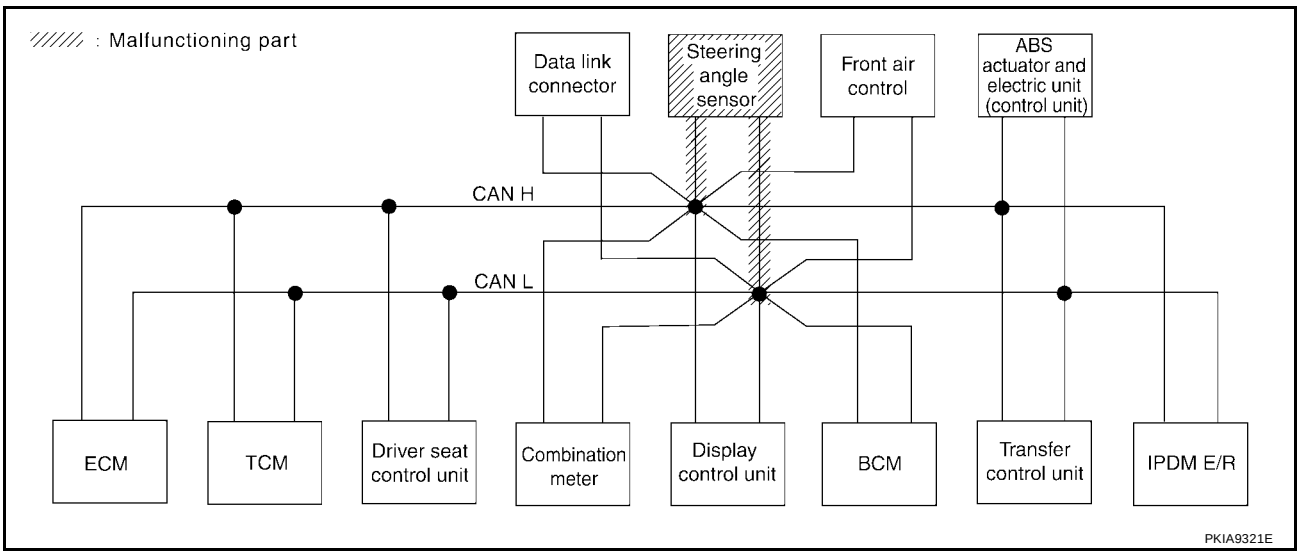
PKIA9320E

Case 11

Check steering angle sensor circuit. Refer to LAN-490, "Steering Angle Sensor Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—

PKIA9231E



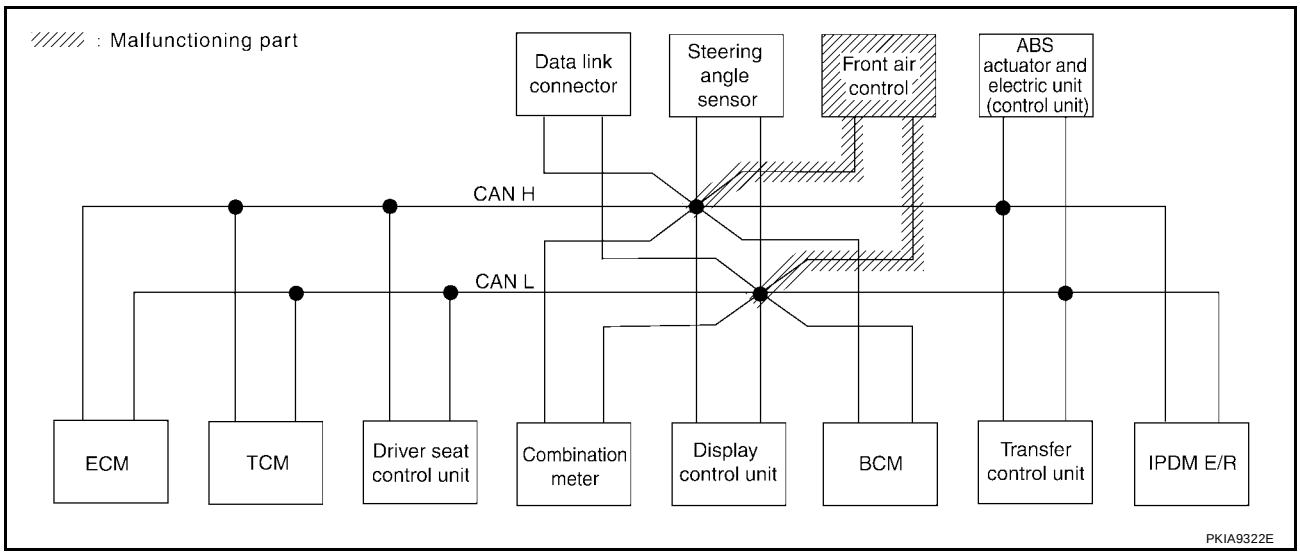
PKIA9321E

Case 12

Check front air control circuit. Refer to LAN-491, "Front Air Control Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—

PKIA9232E



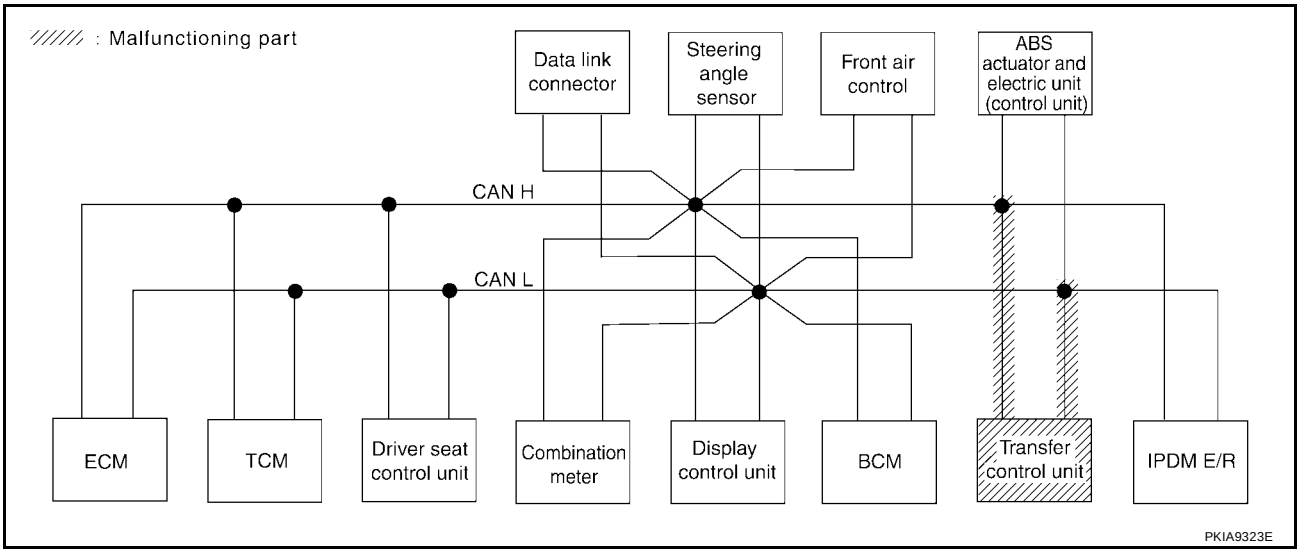
PKIA9322E

Case 13

Check transfer control unit circuit. Refer to LAN-491, "Transfer Control Unit Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—

PKIA9233E



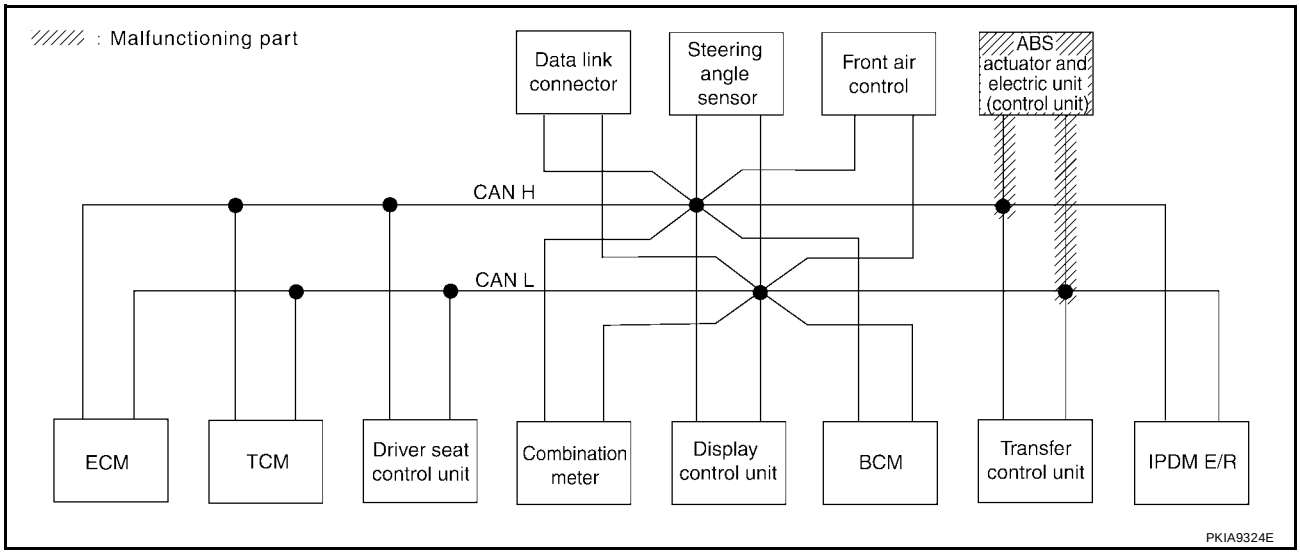
PKIA9323E

Case 14

Check ABS actuator and electric unit (control unit) circuit. Refer to LAN-492, "ABS Actuator and Electric Unit (Control Unit) Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—

PKIA9234E



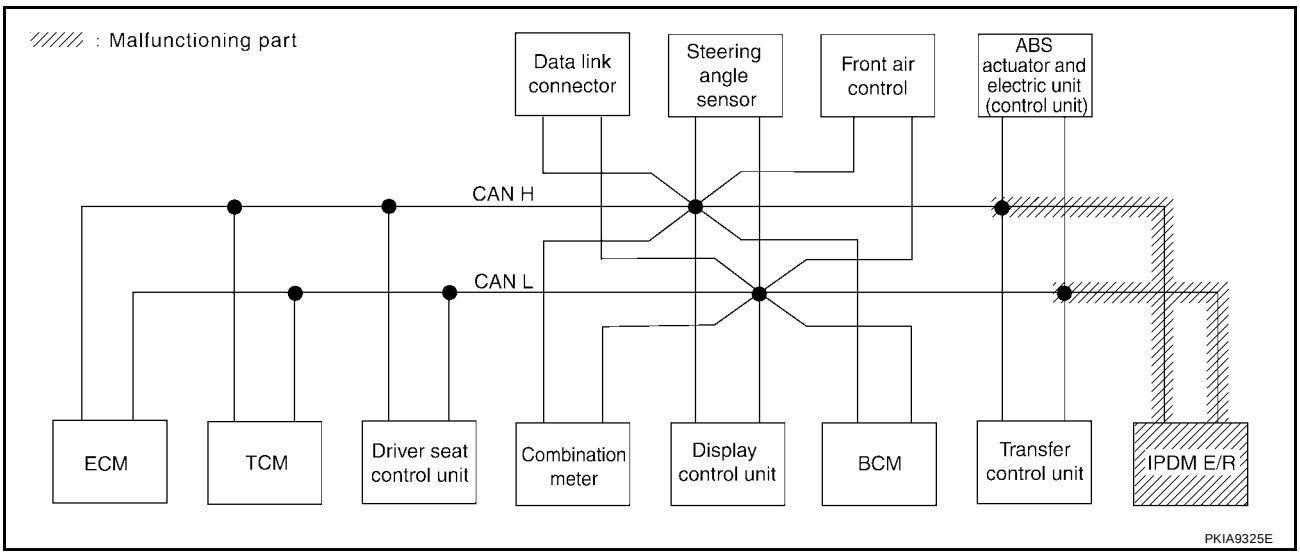
PKIA9324E

Case 15

Check IPDM E/R circuit. Refer to LAN-492, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN ✓
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	—	CAN CIRC 7 ✓
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN ✓
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication ✓	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—

PKIA9235E



PKIA9325E

Case 16

Check CAN communication circuit. Refer to LAN-493, "CAN Communication Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—

PKIA9236E

Case 17

Check IPDM E/R ignition relay circuit continuously sticks “OFF”. Refer to LAN-493, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	UNKWN	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	UNKWN	—	UNKWN	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—

PKIA9237E

Case 18

Check IPDM E/R ignition relay circuit continuously sticks “ON”. Refer to LAN-493, "IPDM E/R Ignition Relay Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR										
		Initial diagnosis	Transmit diagnosis	Receive diagnosis								
				ECM	TCM	METER /M&A	BCM /SEC	STRG	Front air control	AWD/4WD /e4WD	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	UNKWN	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN ✓	—	UNKWN ✓	—	—	—	UNKWN ✓	UNKWN	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	UNKWN	UNKWN	—	—	—	—	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	CAN CIRC 5	CAN CIRC 2	—	CAN CIRC 4	—	—	CAN CIRC 7
BCM	No indication	NG	UNKWN	UNKWN	—	UNKWN	—	—	—	—	—	UNKWN
ALL MODE AWD/4WD	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN ✓	UNKWN	—	—	UNKWN ✓	—	UNKWN ✓	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	UNKWN	—	—	—	—	—

PKIA9238E

Circuit Check Between TCM and Driver Seat Control Unit

UKS0024E

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 F33
- Harness connector E19
- Harness connector E50
- Harness connector B75

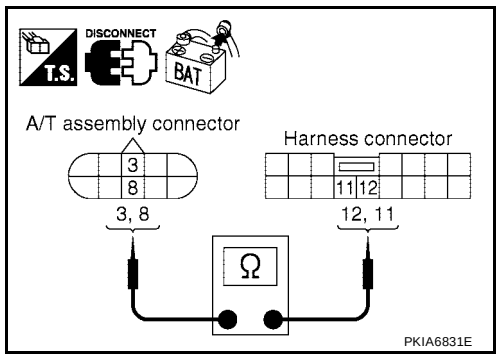
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F33.
2. Check continuity between A/T assembly harness connector F9 terminals 3 (W), 8 (R) and harness connector F33 terminals 12 (W), 11 (R).

3 (W) - 12 (W) : Continuity should exist.
8 (R) - 11 (R) : Continuity should exist.



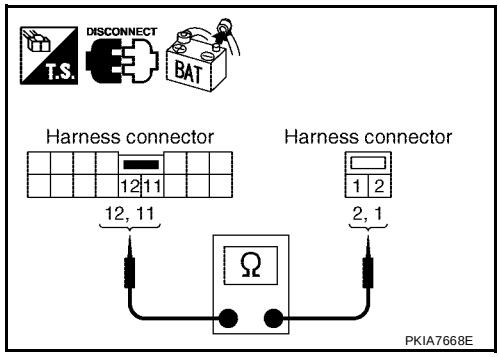
OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector E50.
2. Check continuity between harness connector E19 terminals 12 (W), 11 (R) and harness connector E50 terminals 2 (W), 1 (R).

12 (W) - 2 (W) : Continuity should exist.
11 (R) - 1 (R) : Continuity should exist.



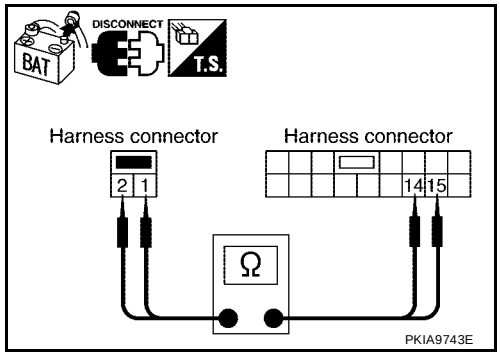
OK or NG

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

4. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37.
2. Check continuity between harness connector B75 terminals 2 (W), 1 (R) and harness connector B37 terminals 15 (W), 14 (R).

2 (W) - 15 (W) : Continuity should exist.
1 (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-464, "Work Flow" .
NG >> Repair harness.

Circuit Check Between Driver Seat Control Unit and Data Link Connector

UKS0024F

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 B69
- Harness connector M40

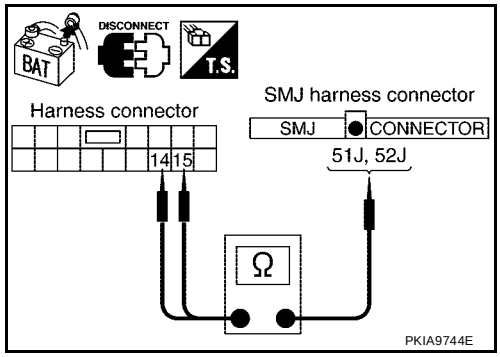
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector B37 and harness connector B69.
2. Check continuity between harness connector B37 terminals 15 (W), 14 (R) and harness connector B69 terminals 51J (W), 52J (R).

15 (W) - 51J (W) : Continuity should exist.
14 (R) - 52J (R) : Continuity should exist.



OK or NG

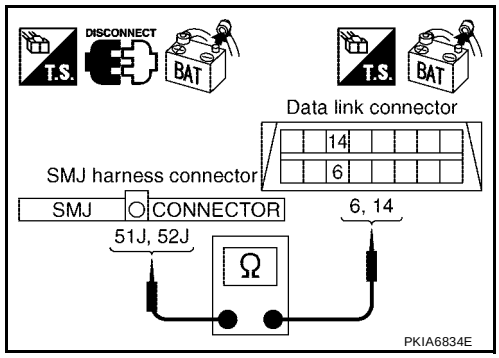
OK >> GO TO 3.
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M40 terminals 51J (W), 52J (R) and data link connector M22 terminals 6 (W), 14 (R).

51J (W) - 6 (W) : Continuity should exist.

52J (R) - 14 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-464, "Work Flow" .

NG >> Repair harness.

Circuit Check Between Data Link Connector and IPDM E/R

UKS0024G

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 M31
- Harness connector E152

OK or NG

OK >> GO TO 2.

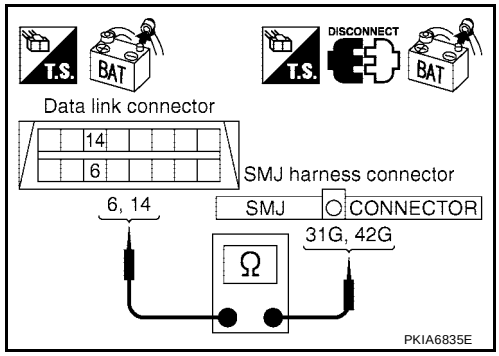
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect harness connector M31.
2. Check continuity between data link connector M22 terminals 6 (W), 14 (R) and harness connector M31 terminals 31G (W), 42G (R).

6 (W) - 31G (W) : Continuity should exist.

14 (R) - 42G (R) : Continuity should exist.



OK or NG

OK >> GO TO 3.

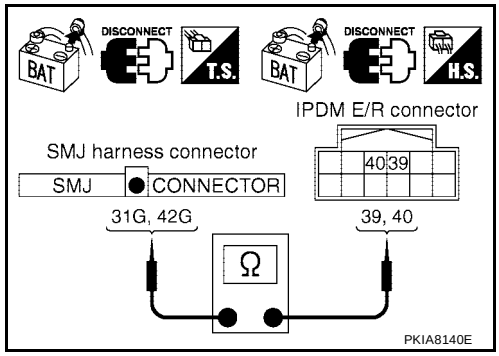
NG >> Repair harness.

3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector E152 terminals 31G (W), 42G (R) and IPDM E/R harness connector E122 terminals 39 (W), 40 (R).

31G (W) - 39 (W) : Continuity should exist.

42G (R) - 40 (R) : Continuity should exist.



OK or NG

OK >> Connect all the connectors and diagnose again. Refer to LAN-464, "Work Flow" .

NG >> Repair harness.

ECM Circuit Check

UKS0024H

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 E19
- Harness connector F33

OK or NG

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

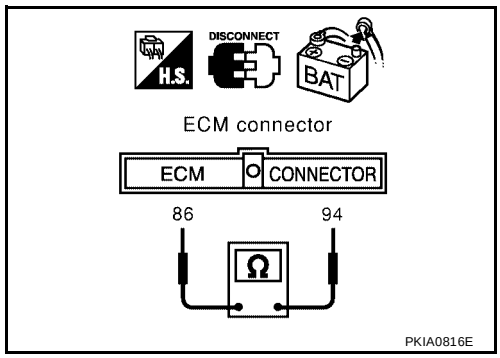
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector E16 terminals 94 (W) and 86 (R).

94 (W) - 86 (R) : Approx. 108 - 132Ω

OK or NG

OK >> Replace ECM.
NG >> Repair harness between ECM and A/T assembly.



TCM Circuit Check

UKS0024I

1. CHECK CONNECTOR

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

OK or NG

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

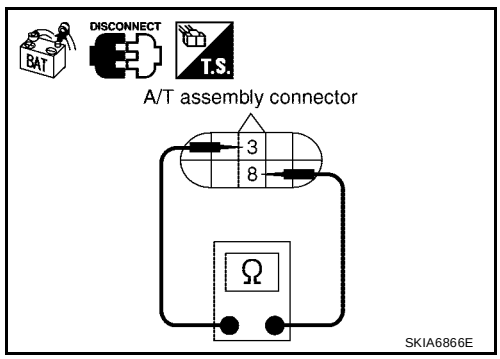
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F9 terminals 3 (W) and 8 (R).

3 (W) - 8 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace A/T assembly.
NG >> Repair harness between A/T assembly and harness connector F33.



Driver Seat Control Unit Circuit Check

UKS001XF

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 unit side and harness side).

- Driver seat control unit connector
- Harness connector P1
- Harness connector B37

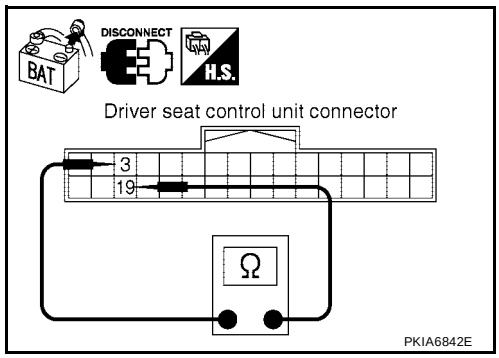
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect driver seat control unit connector.
2. Check resistance between driver seat control unit harness connector P2 terminals 3 (W) and 19 (R).

3 (W) - 19 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace driver seat control unit.
NG >> Repair harness between driver seat control unit and harness connector B69.

Combination Meter Circuit Check

UKS0024J

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).

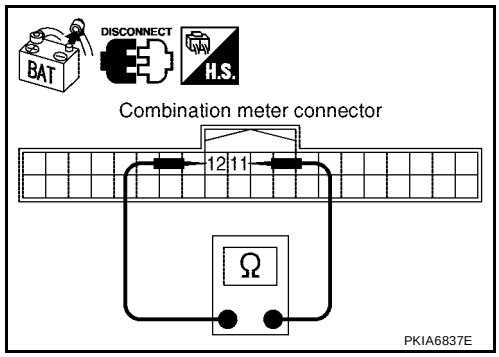
OK or NG

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 M24 terminals 11 (W) and 12 (R).

11 (W) - 12 (R) : Approx. 54 - 66Ω



OK or NG

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

Display Control Unit Circuit Check

UKS0024K

1. CHECK CONNECTOR

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

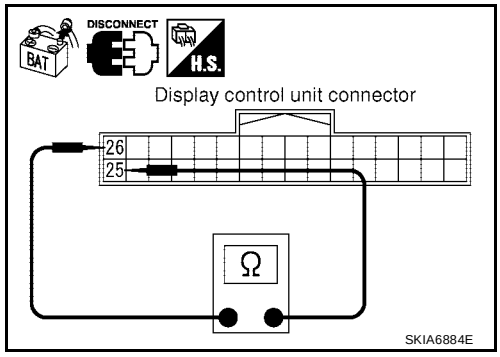
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect display control unit connector.
2. Check resistance between display control unit harness connector M95 terminals 25 (W) and 26 (R).

25 (W) - 26 (R) : Approx. 54 - 66Ω



OK or NG

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

BCM Circuit Check

UKS0024L

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).

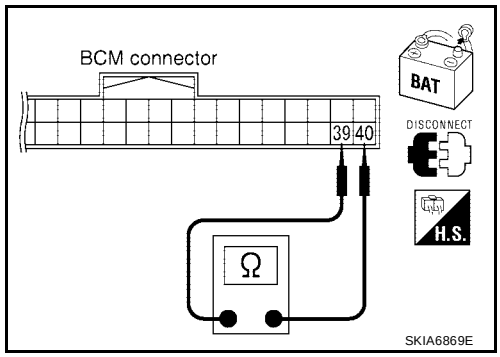
OK or NG

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 M18 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> Repair harness between BCM and data link connector.

Data Link Connector Circuit Check

UKS0024M

1. CHECK CONNECTOR

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

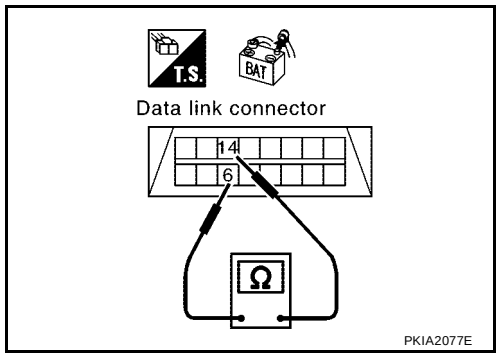
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

Check resistance between data link connector M22 terminals 6 (W) and 14 (R).

6 (W) - 14 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Diagnose again. Refer to LAN-464, "Work Flow" .
NG >> Repair harness between data link connector and combination meter.

Steering Angle Sensor Circuit Check

UKS0024N

1. CHECK CONNECTOR

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

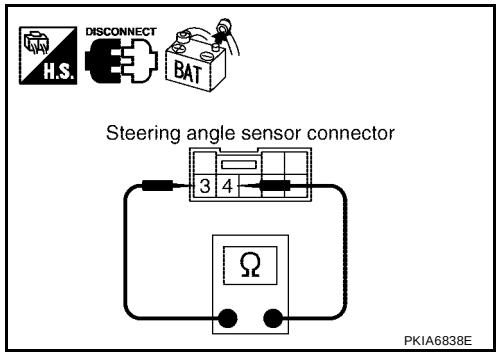
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M47 terminals 3 (W) and 4 (R).

3 (W) - 4 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor and data link connector.

Front Air Control Circuit Check

UKS0024O

1. CHECK CONNECTOR

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

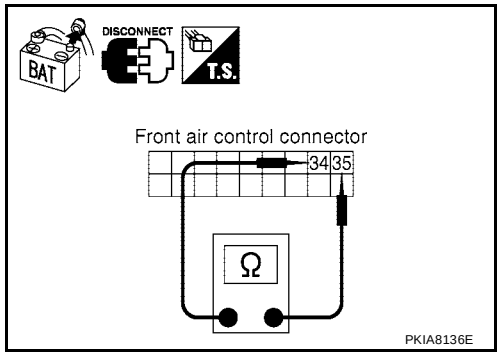
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect front air control connector.
2. Check resistance between front air control harness connector M50 terminals 34 (W) and 35 (R).

34 (W) - 35 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace front air control.
NG >> Repair harness between front air control and data link connector.

Transfer Control Unit Circuit Check

UKS0024P

1. CHECK CONNECTOR

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

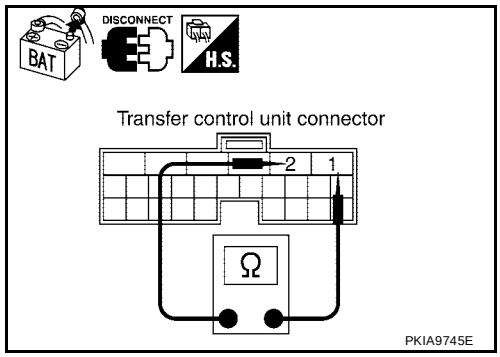
OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect transfer control unit connector.
2. Check resistance between transfer control unit harness connector E142 terminals 1 (W) and 2 (R).

1 (W) - 2 (R) : Approx. 54 - 66Ω



OK or NG

OK >> Replace transfer control unit.
NG >> Repair harness between transfer control unit and harness connector E152.

ABS Actuator and Electric Unit (Control Unit) Circuit Check

UKS0024Q

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.

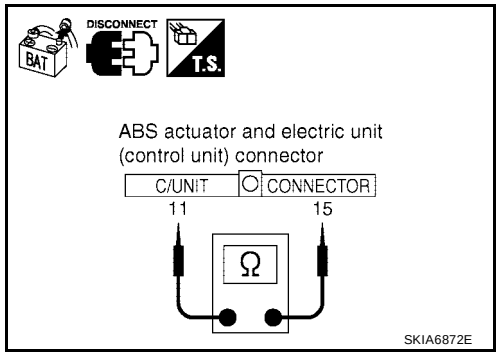
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E125 terminals 11 (W) and 15 (R).

11 (W) - 15 (R) : 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 harness connector E152.



IPDM E/R Circuit Check

UKS0024R

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.

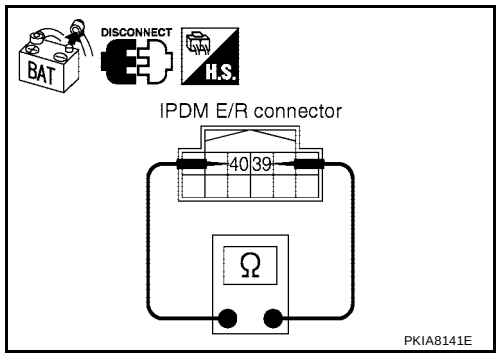
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check resistance between IPDM E/R harness connector E122 terminals 39 (W) and 40 (R).

39 (W) - 40 (R) : Approx. 108 - 132Ω

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness between IPDM E/R and harness connector E152.



CAN Communication Circuit Check

UKS0024S

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following module and control unit connectors and check terminals for deformation, disconnection, looseness or damage.

- ECM
- A/T assembly
- Driver seat control unit
- Combination meter
- Display control unit
- BCM
- Steering angle sensor
- Front air control
- Transfer control unit
- ABS actuator and electric unit (control unit)
- IPDM E/R

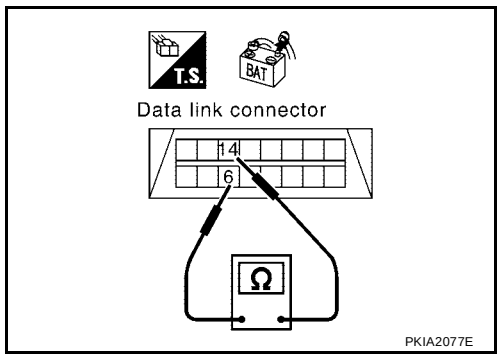
OK or NG

OK >> GO TO 2.
NG >> Repair or replace as necessary.

2. CHECK HARNESS FOR SHORT CIRCUIT

With all module and control unit connectors disconnected, check continuity between data link connector M22 terminals 6 (W) and 14 (R).

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



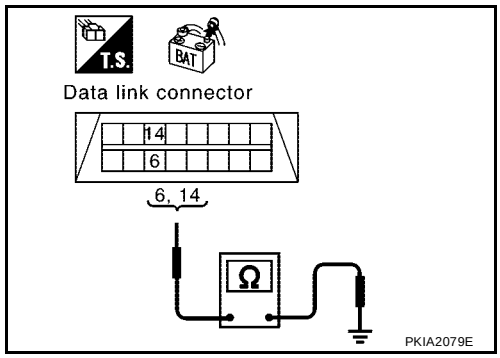
OK or NG

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

3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between data link connector M22 terminals 6 (W), 14 (R) and ground.

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



OK or NG

OK >> Check ECM and IPDM E/R. Refer to LAN-494, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION" .
NG >> Repair harness.

IPDM E/R Ignition Relay Circuit Check

UKS0024T

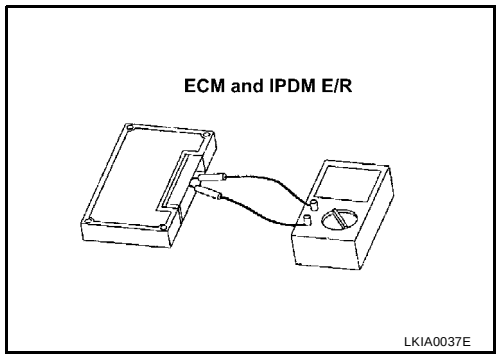
Check the following. If no malfunction is found, replace the IPDM E/R.

- IPDM E/R power supply circuit. Refer to PG-26, "IPDM E/R Power/Ground Circuit Inspection" .
- Ignition power supply circuit. Refer to PG-13, "IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START" .

Component Inspection

UKS0024U

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 39 and 40.

Unit	Terminal	Resistance value (Ω) (Approx.)
ECM	94 - 86	108 - 132
IPDM E/R	39 - 40