

# PRECAUTIONS

## PRECAUTIONS

PFP:00001

### Description

EAS000PE

Observe the following precautions to ensure safe and proper servicing. These precautions are not described in each individual section.

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

EAS000PF

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

#### **WARNING:**

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

### Precautions for NATS (NISSAN ANTI-THEFT SYSTEM)

EAS000PG

NATS will immobilize the engine if someone tries to start it without the registered key of NATS.

Both of the originally supplied ignition key IDs have been NATS registered.

The security indicator is located on the instrument panel. The indicator blinks when the immobilizer system is functioning.

Therefore, NATS warns outsiders that the vehicle is equipped with the anti-theft system.

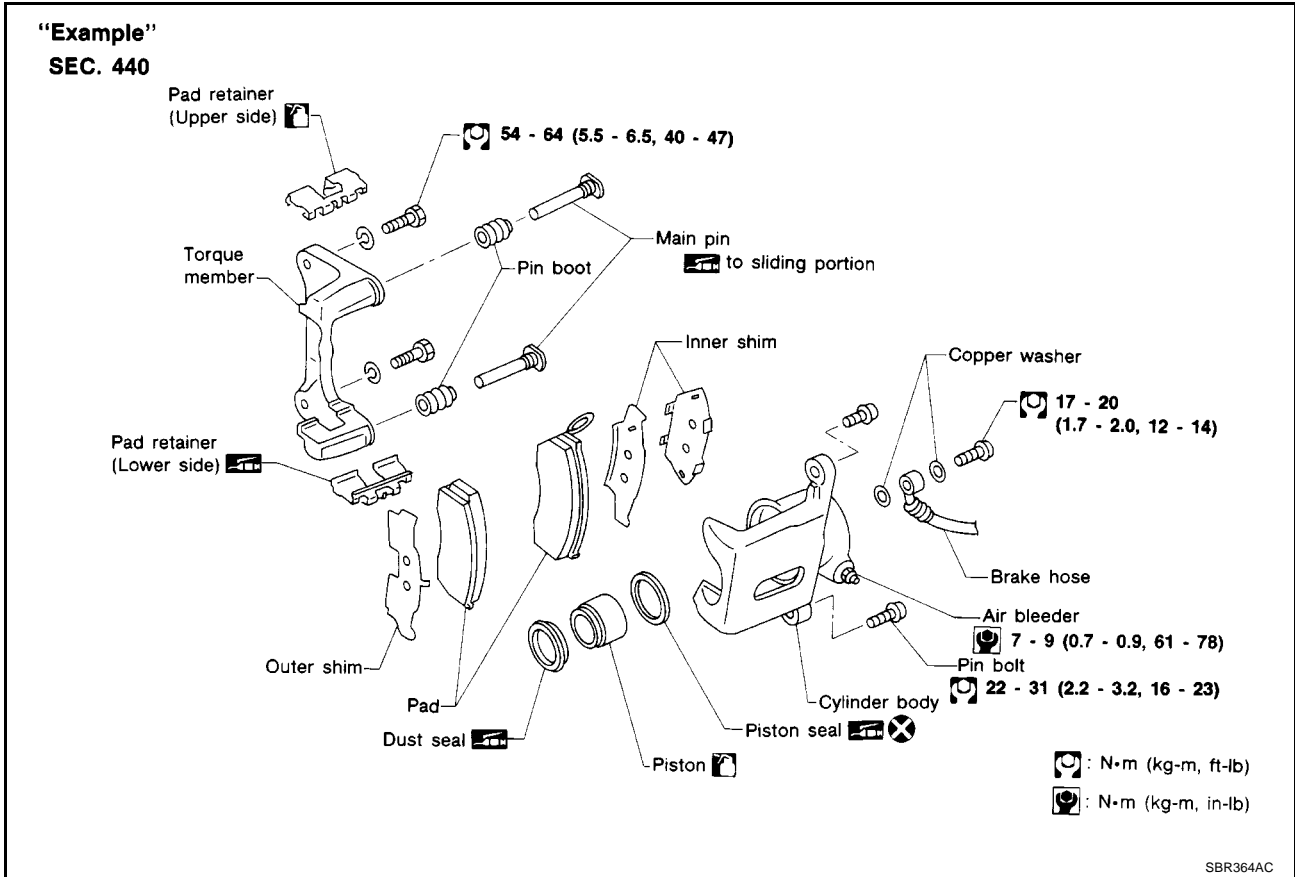
- When NATS detects trouble, the security indicator lamp lights up while ignition switch is in "ON" position. This lighting up indicates that the anti-theft is not functioning, so prompt service is required.
- When servicing NATS (trouble diagnoses, system initialization and additional registration of other NATS ignition key IDs), CONSULT-II hardware and CONSULT-II NATS software is necessary. Regarding the procedures of NATS initialization and NATS ignition key ID registration, refer to CONSULT-II operation manual, NATS.

**Therefore, CONSULT-II NATS software (program card and operation manual) must be kept strictly confidential to maintain the integrity of the anti-theft function.**

- When servicing NATS (trouble diagnoses, system initialization and additional registration of other NATS ignition key IDs), it may be necessary to re-register original key identification. Therefore, be sure to receive all keys from vehicle owner. A maximum of four or five key IDs can be registered into NATS.
- When failing to start the engine first time using the key of NATS, start as follows.
  1. Leave the ignition key in "ON" position for approximately 5 seconds.
  2. Turn ignition key to "OFF" or "LOCK" position and wait approximately 5 seconds.
  3. Repeat step 1 and 2 again.
  4. Restart the engine while keeping the key separate from any others on key-chain.

# HOW TO USE THIS MANUAL

The illustrations should be used in reference to service matters only. When ordering parts, refer to the appropriate **PARTS CATALOG**.



## SYMBOLS

SYMBOL	DESCRIPTION
	Tightening torque
	Should be lubricated with grease. Unless otherwise indicated, use recommended multi-purpose grease.
	Should be lubricated with oil.
	Sealing point
	Checking point
	Always replace after every disassembly.
 P	Apply petroleum jelly.
	Apply ATF.
★	Select with proper thickness.
☆	Adjustment is required.

## How to Follow Trouble Diagnoses

### DESCRIPTION

#### NOTICE:

Trouble diagnoses indicate work procedures required to diagnose problems effectively. Observe the following instructions before diagnosing.

EAS000PU

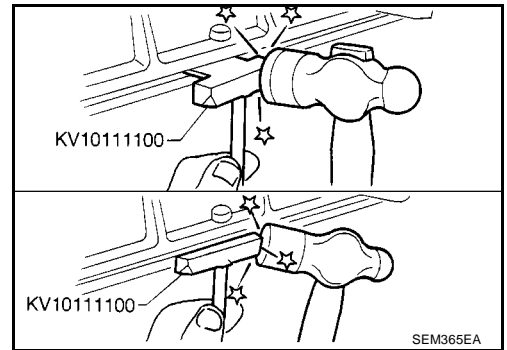
# OIL PAN

[K9K]

- Insert seal cutter (special service tool) between upper oil pan and cylinder block. Slide tool by tapping on the side of the tool with a hammer.

**CAUTION:**

Exercise care not to damage mating surface.



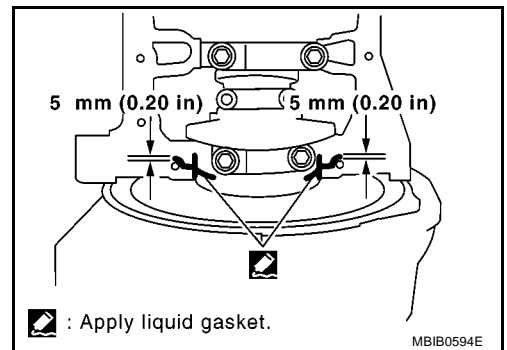
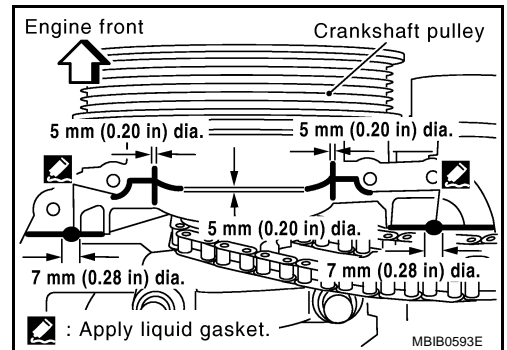
12. Remove oil pan and baffle plate.

## INSPECTION AFTER REMOVAL

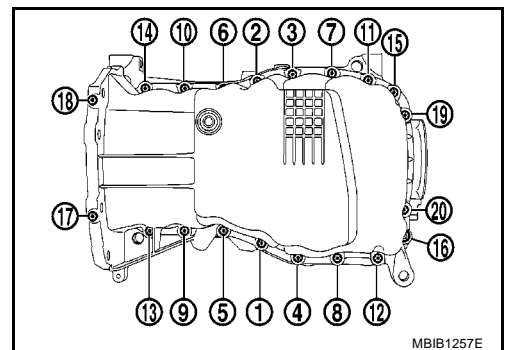
Clean oil pump assembly if any object attached.

## INSTALLATION

- Install in the reverse order of removal paying attention to the following.
1. Apply liquid gasket as shown.
    - Use Genuine Liquid Gasket or equivalent.



2. Install baffle plate.
3. Install oil pan bolts in numerical order as shown.
  - Tighten the bolts in the numerical order shown in the figure to a torque of 8 N·m (0.8 kg·m, 71 in·lb).
  - Tighten the mounting bolts of oil pan on the clutch housing without locking.
  - Tighten the bolts in the numerical order shown in the figure to a torque of 15 N·m (1.5 kg·m, 11 ft·lb).
  - Tighten the mounting bolts of oil pan on the clutch housing to a torque of 44 N·m (4.5 kg·m, 32 ft·lb).
4. At least 30 minutes after oil pan is installed, pour engine oil.



## INSPECTION AFTER INSTALLATION

- Inspect the engine oil level. Refer to [LU-12, "ENGINE OIL"](#).
- Start the engine, and make sure there is no leak of engine oil. Refer to [LU-12, "ENGINE OIL"](#).

### Accelerator Pedal Released Position Learning

*EBS00036*

#### DESCRIPTION

Accelerator Pedal Released Position Learning is an operation to learn the fully released position of the accelerator pedal by monitoring the accelerator pedal position sensor output signal. It must be performed each time harness connector of accelerator pedal position sensor or ECM is disconnected.

#### OPERATION PROCEDURE

1. Make sure that accelerator pedal is fully released.
2. Turn ignition switch ON and wait at least 2 seconds.
3. Turn ignition switch OFF wait at least 10 seconds.
4. Turn ignition switch ON and wait at least 2 seconds.
5. Turn ignition switch OFF wait at least 10 seconds.

### Throttle Valve Closed Position Learning

*EBS00037*

#### DESCRIPTION

Throttle Valve Closed Position Learning is an operation to learn the fully closed position of the throttle valve by monitoring the throttle position sensor output signal. It must be performed each time harness connector of electric throttle control actuator or ECM is disconnected.

#### OPERATION PROCEDURE

1. Make sure that accelerator pedal is fully released.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.  
Make sure that throttle valve moves during above 10 seconds by confirming the operating sound.

### Idle Air Volume Learning

*EBS00038*

#### DESCRIPTION

Idle Air Volume Learning is an operation to learn the idle air volume that keeps each engine within the specific range. It must be performed under any of the following conditions:

- Each time electric throttle control actuator or ECM is replaced.
- Idle speed or ignition timing is out of specification.

#### PREPARATION

Before performing Idle Air Volume Learning, make sure that all of the following conditions are satisfied. Learning will be cancelled if any of the following conditions are missed for even a moment.

- Battery voltage: More than 12.9V (At idle)
- Engine coolant temperature: 70 - 95°C (158 - 203°F)
- PNP switch: ON
- Electric load switch: OFF  
(Air conditioner, headlamp, rear window defogger)  
**On vehicles equipped with daytime light systems, set lighting switch to the 1st position to light only small lamps.**
- Steering wheel: Neutral (Straight-ahead position)
- Vehicle speed: Stopped
- Transmission: Warmed-up  
For A/T models with CONSULT-II, drive vehicle until "FLUID TEMP SE" in "DATA MONITOR" mode of "A/T" system indicates less than 0.9V.  
For A/T models without CONSULT-II and M/T models, drive vehicle for 10 minutes.

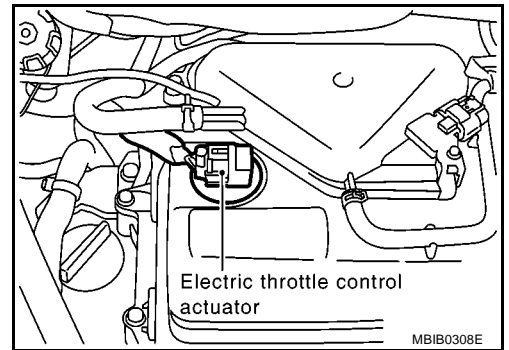
#### OPERATION PROCEDURE

##### With CONSULT-II

1. Perform [EC-42, "Accelerator Pedal Released Position Learning"](#) .
2. Perform [EC-42, "Throttle Valve Closed Position Learning"](#) .
3. Start engine and warm it up to normal operating temperature.
4. Check that all items listed under the topic PREPARATION (previously mentioned) are in good order.

## 2. CHECK THROTTLE POSITION SENSOR 1 POWER SUPPLY CIRCUIT

1. Disconnect electric throttle control actuator harness connector.
2. Turn ignition switch ON.



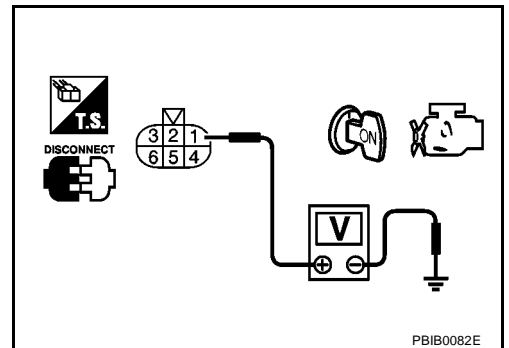
3. Check voltage between electric throttle control actuator terminal 1 and ground with CONSULT-II or tester.

**Voltage: Approximately 5V**

OK or NG

OK >> GO TO 3.

NG >> Repair open circuit or short to ground or short to power in harness or connectors.



## 3. CHECK THROTTLE POSITION SENSOR 1 GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check harness continuity between ECM terminal 66 and electric throttle control actuator terminal 5. Refer to Wiring Diagram.

**Continuity should exist.**

4. Also check harness for short to ground and short to power.

OK or NG

OK >> GO TO 4.

NG >> Repair open circuit or short to ground or short to power in harness or connectors.

## 4. CHECK THROTTLE POSITION SENSOR 1 INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check harness continuity between ECM terminal 49 and electric throttle control actuator terminal 4. Refer to Wiring Diagram.

**Continuity should exist.**

2. Also check harness for short to ground and short to power.

OK or NG

OK >> GO TO 5.

NG >> Repair open circuit or short to ground or short to power in harness or connectors.

## 5. CHECK THROTTLE POSITION SENSOR

Refer to [EC-232, "Component Inspection"](#) .

OK or NG

OK >> GO TO 7.

NG >> GO TO 6.

TROUBLE DIAGNOSIS

PFP:00004

Trouble Diagnosis Introduction  
INTRODUCTION

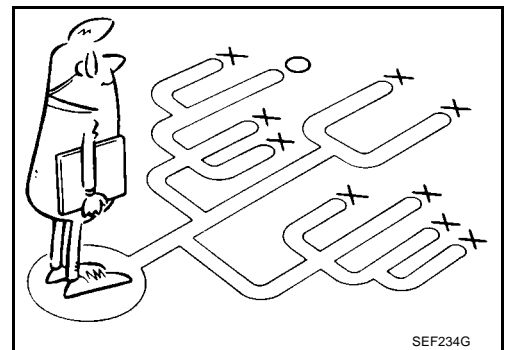
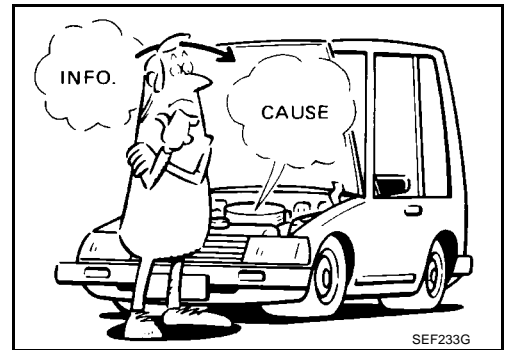
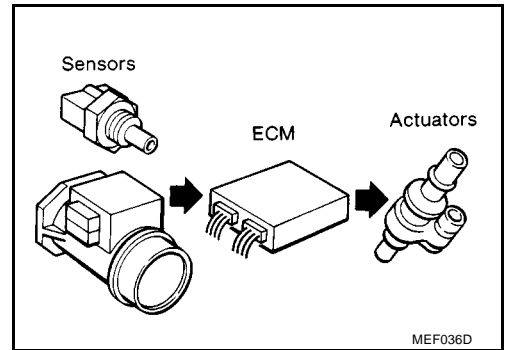
EBS000KI

The engine has an ECM to control major systems such as fuel control, ignition control, idle air control system, etc. The ECM accepts input signals from sensors and instantly drives actuators. It is essential that both input and output signals are proper and stable. At the same time, it is important that there are no malfunctions such as vacuum leaks, fouled spark plugs, or other malfunctions with the engine. It is much more difficult to diagnose an incident that occurs intermittently rather than continuously. Most intermittent incidents are caused by poor electric connections or improper wiring. In this case, careful checking of suspected circuits may help prevent the replacement of good parts.

A visual check only may not find the cause of the incidents. A road test with CONSULT-II or a circuit tester connected should be performed. Follow the Work Flow on [EC-516](#).

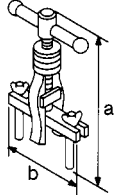
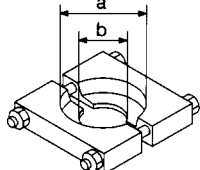
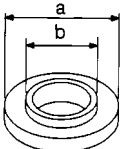
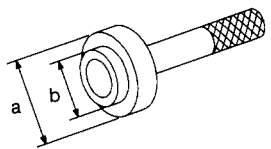
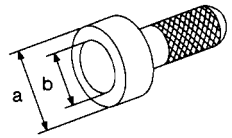
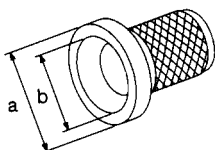
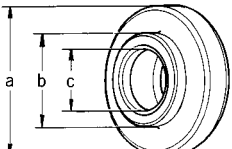
Before undertaking actual checks, take a few minutes to talk with a customer who approaches with a driveability complaint. The customer can supply good information about such incidents, especially intermittent ones. Find out what symptoms are present and under what conditions they occur. A Diagnostic Worksheet like the example on [EC-518](#) should be used.

Start your diagnosis by looking for conventional malfunctions first. This will help troubleshoot driveability malfunctions on an electronically controlled engine vehicle.



A  
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M

# PREPARATION

Tool number Tool name	Description
KV381054S0 Puller	 <p style="text-align: right;">NT414</p> <ul style="list-style-type: none"> <li>● Removing differential side oil seals</li> <li>● Removing differential side bearing outer race</li> <li>● Removing idler gear bearing outer race</li> </ul> <p><b>a: 250 mm (9.84 in)</b> <b>b: 160 mm (6.30 in)</b></p>
ST30031000 Puller	 <p style="text-align: right;">NT411</p> <ul style="list-style-type: none"> <li>● Removing reduction gear bearing inner race</li> </ul> <p><b>a: 90 mm (3.54 in) dia.</b> <b>b: 50 mm (1.97 in) dia.</b></p>
ST35272000 Drift	 <p style="text-align: right;">NT426</p> <ul style="list-style-type: none"> <li>● Installing reduction gear bearing inner race</li> <li>● Installing idler gear bearing inner race</li> </ul> <p><b>a: 72 mm (2.83 in) dia.</b> <b>b: 35.5 mm (1.398 in) dia.</b></p>
ST37830000 Drift	 <p style="text-align: right;">NT427</p> <ul style="list-style-type: none"> <li>● Installing idler gear bearing outer race</li> </ul> <p><b>a: 72 mm (2.83 in) dia.</b> <b>b: 35.5 mm (1.398 in) dia.</b></p>
ST35271000 Drift	 <p style="text-align: right;">NT115</p> <ul style="list-style-type: none"> <li>● Installing idler gear</li> </ul> <p><b>a: 72 mm (2.83 in) dia.</b> <b>b: 63 mm (2.48 in) dia.</b></p>
ST3340001 Drift	 <p style="text-align: right;">NT086</p> <ul style="list-style-type: none"> <li>● Installing oil pump housing oil seal</li> </ul> <p><b>a: 60 mm (2.36 in) dia.</b> <b>b: 47 mm (1.85 in) dia.</b></p>
ST36723000 Drift	 <p style="text-align: right;">ZZA0978D</p> <ul style="list-style-type: none"> <li>● Installing idler output shaft bearing</li> </ul> <p><b>a: 70 mm (2.76 in) dia.</b> <b>b: 40 mm (1.57 in) dia.</b> <b>c: 31 mm (1.22 in) dia.</b></p>

# BLOWER MOTOR

PFP:27226

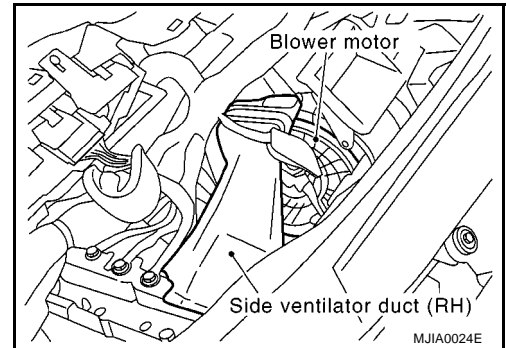
EJS004T

## BLOWER MOTOR

### Removal and Installation

#### REMOVAL

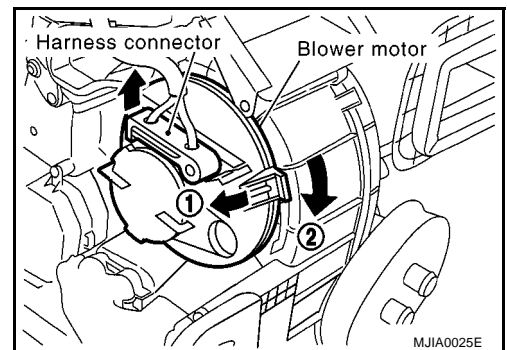
1. Remove instrument panel. Refer to [IP-5, "Removal and Installation"](#).
2. Remove the side ventilator duct (RH). Refer to [ATC-82, "SIDE VENTILATOR DUCT"](#).



3. Disconnect the harness connector, and remove the blower motor.

#### **CAUTION:**

When the blower fan and blower motor are assembled, the balance is adjusted, so do not replace the individual parts.



#### INSTALLATION

Install in the reverse order of removal.

#### **CAUTION:**

Correctly install the blower motor flange holding hooks in the air conditioner unit.



# DRIVE COMPUTER

EKS0088R

## Steering Wheel Switch Does Not Operate

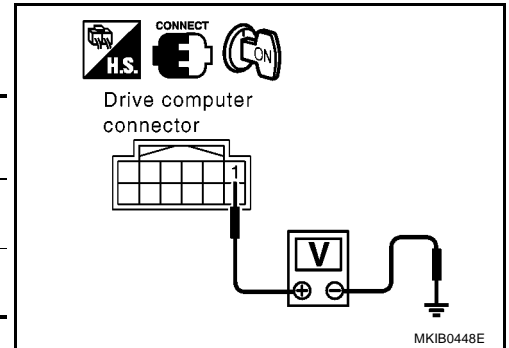
### 1. CHECK DRIVE COMPUTER INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between drive computer and ground.

Connector	Terminals (Wire color)		Condition	Voltage [V] (Approx.)
	(+)	(-)		
M28	1 (G)	Ground	Steering wheel switch is pushed.	0
			Steering wheel switch is released.	Battery voltage

OK or NG

- OK >> Replace drive computer.  
 NG >> GO TO 2.



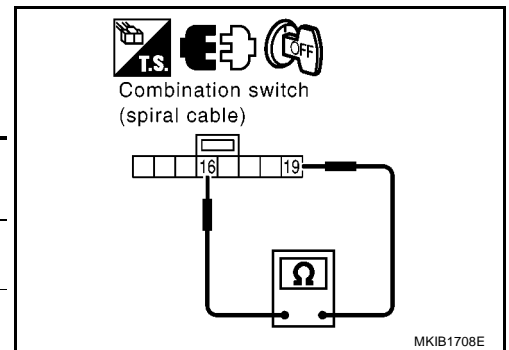
### 2. CHECK STEERING WHEEL SWITCH

1. Turn ignition switch OFF.
2. Disconnect steering wheel switch.
3. Check steering wheel switch (drive computer).

Connector	Terminals (Wire color)		Condition	Continuity
	(+)	(-)		
M502	16	19	Steering wheel switch is pushed.	No
			Steering wheel switch is released.	Yes

OK or NG

- OK >> GO TO 3.  
 NG >> Replace steering wheel switch.



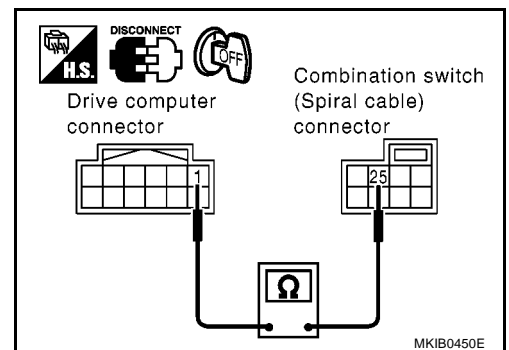
### 3. CHECK STEERING WHEEL SWITCH CIRCUIT

1. Disconnect drive computer connector.
2. Check continuity between drive computer harness connector M28 terminal 1(G) and combination switch (spiral cable) harness connector M29 terminal 25 (G).

**1 (G) - 25 (G) : Continuity should exist.**

OK or NG

- OK >> GO TO 4.  
 NG >> Replace harness or connector.



# CAN SYSTEM (TYPE 1)

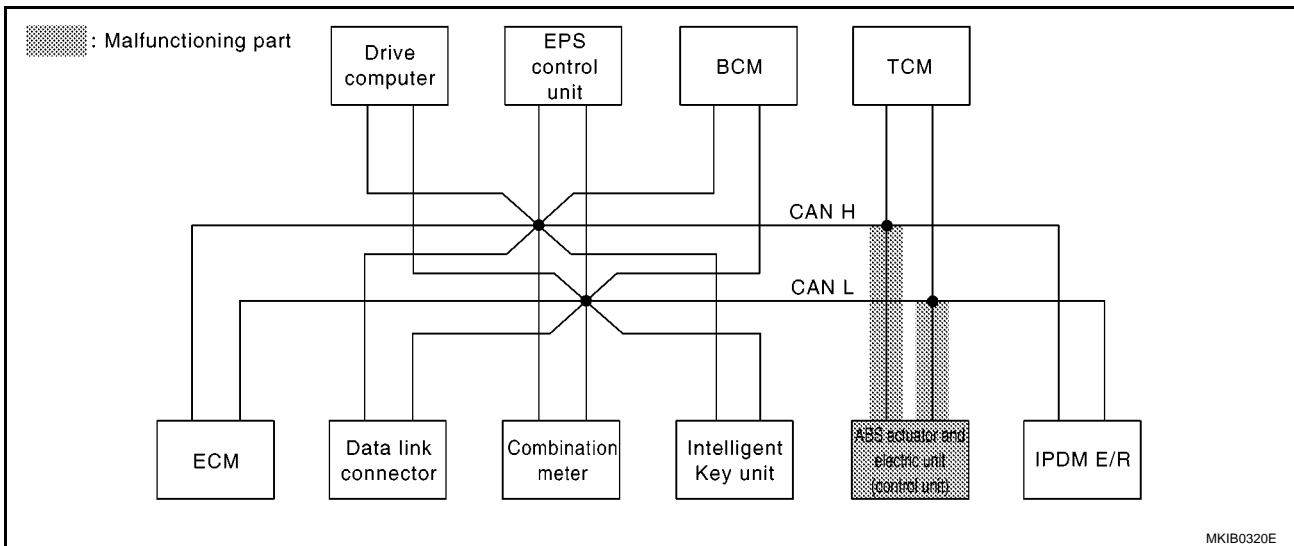
[CAN]

## Case 8

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-45, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

	CONSULT indication	CAN system	Tx	Rx							
				ECM	Combination meter	Intelligent Key	EPS	BCM	ABS	TCM	IPDM E/R
ENGINE	—	CAN COMM	CAN CIRC 1	—	CAN CIRC 4	—	CAN CIRC 9	CAN CIRC 6	CAN CIRC 3	CAN CIRC 2	CAN CIRC 7
INTELLIGENT KEY	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 4	CAN CIRC 3	—	—	CAN CIRC 2	—	—	—
EPS	No indication	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	CAN CIRC 5	CAN CIRC 3	—	—
BCM	No indication	—	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 5	—	—	—	CAN CIRC 6	CAN CIRC 3
ABS	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	—	—	—	—	—
A/T	—	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	—	—	—	—	—	—
IPDM E/R	No indication	—	CAN CIRC 1	CAN CIRC 3	—	—	—	CAN CIRC 3	—	—	—

MKIB1618E



MKIB0320E

**EPS Control Unit Circuit Check****1. CHECK CONNECTOR**

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

OK or NG

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

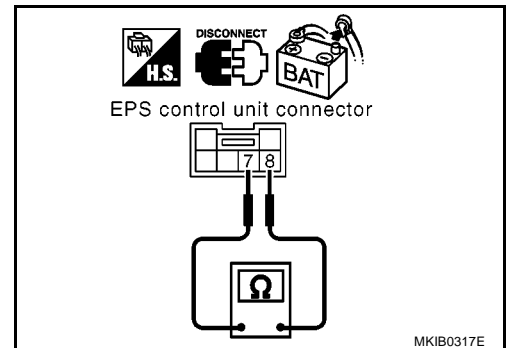
**2. CHECK HARNESS FOR OPEN CIRCUIT**

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

**8 (R) – 7 (W) : Approx. 54 – 66Ω**

OK or NG

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



A

B

C

D

E

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I

J

LAN

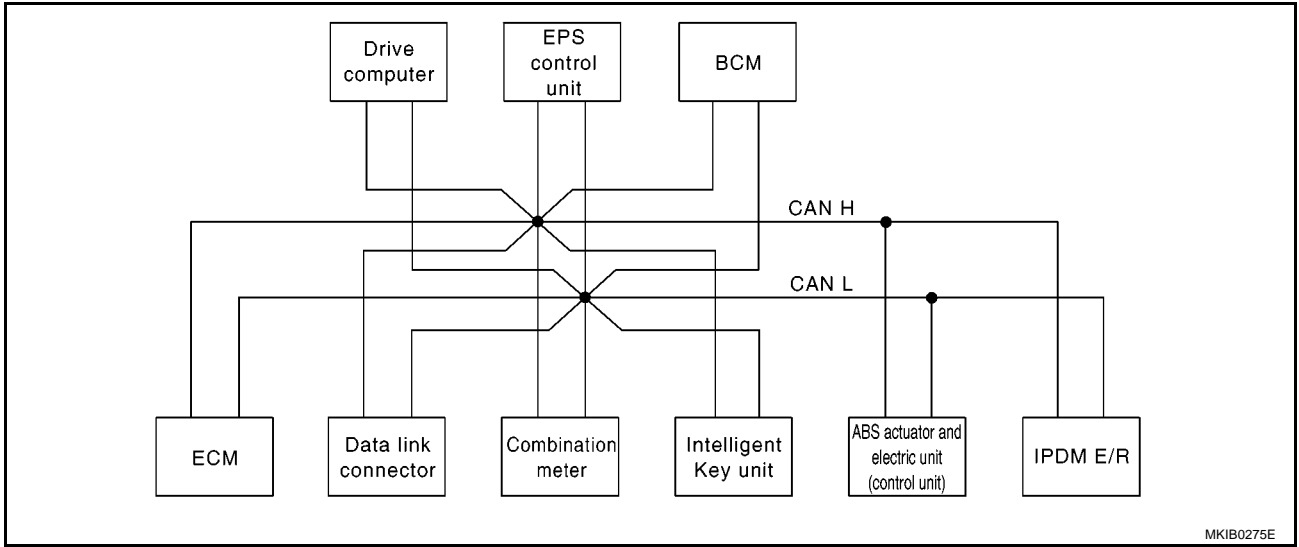
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M

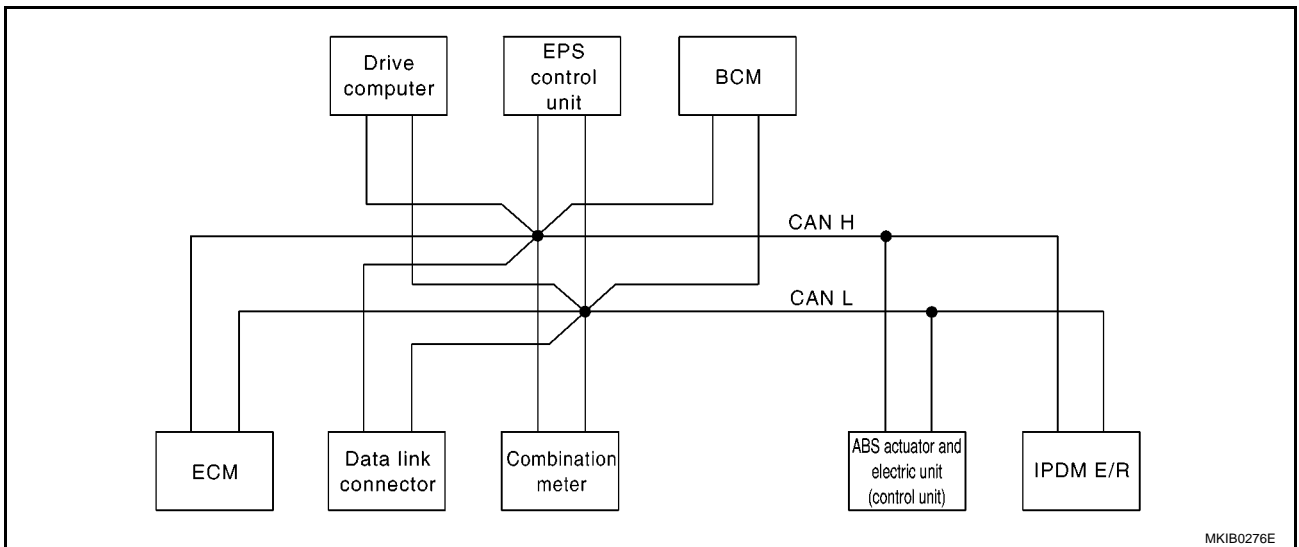
# HEADLAMP - CONVENTIONAL TYPE-

## TYPE 7/TYPE 8 System diagram

- Type 7



- Type 8



## Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combina- tion meter.	Intelli- gent Key unit	Drive computer	EPS con- trol unit	BCM	ABS actuator and elec- tric unit (control unit)	IPDM E/ R
Engine speed signal	T	R		R	R		R	
Engine coolant temperature signal	T	R						
Fuel consumption monitor signal	T	R						
Accelerator pedal position signal	T						R	
Oil pressure switch signal		R		R				T
A/C compressor request signal	T							R
A/C switch signal	R							T
Heater fan switch signal	R					T		
Cooling fan speed request signal	T							R

# INTERIOR ROOM LAMP

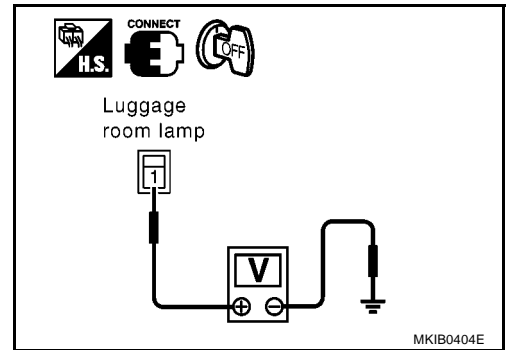
## 2. CHECK LUGGAGE ROOM LAMP INPUT SIGNAL

Check voltage between luggage room lamp harness connector B40 terminal 1(Y) and ground.

**Battery voltage should exist.**

OK or NG

- OK >> GO TO 3.
- NG >> Check harness for open or short between luggage room lamp and fuse. If NG, repair or replace the harness or fuse.



## 3. CHECK BACK DOOR SWITCH CIRCUIT

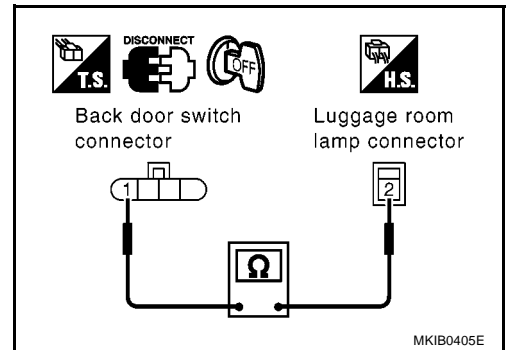
1. Turn ignition switch OFF.
2. Disconnect back door release actuator connector and luggage room lamp connector.
3. Check continuity between back door release actuator harness connector B55 terminal 1(OR) and luggage room lamp harness connector B41 terminal 2(L).

**Continuity should exist.**

4. Check continuity between

OK or NG

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



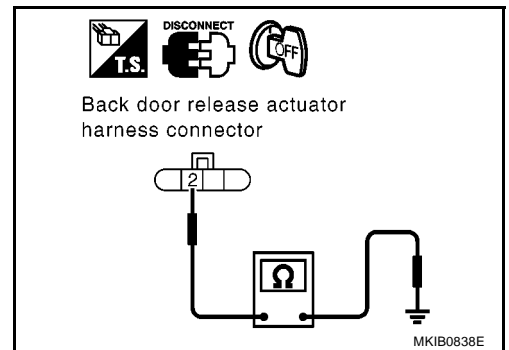
## 4. CHECK BACK DOOR SWITCH GROUND CIRCUIT

Check continuity between back door release actuator harness connector B55 terminal 2(B) and ground.

**Continuity should exist.**

OK or NG

- OK >> GO TO 5.
- NG >> Repair or harness connector.



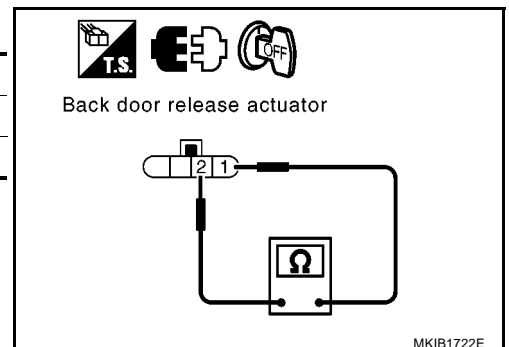
## 5. CHECK BACK DOOR SWITCH

Check continuity back door switch terminals.

Terminals		Condition	Continuity
1	2	Back door : OPEN	Yes
		Back door : CLOSED	No

OK or NG

- OK >> Check condition of the harness and connector.
- NG >> Replace the back door release actuator.



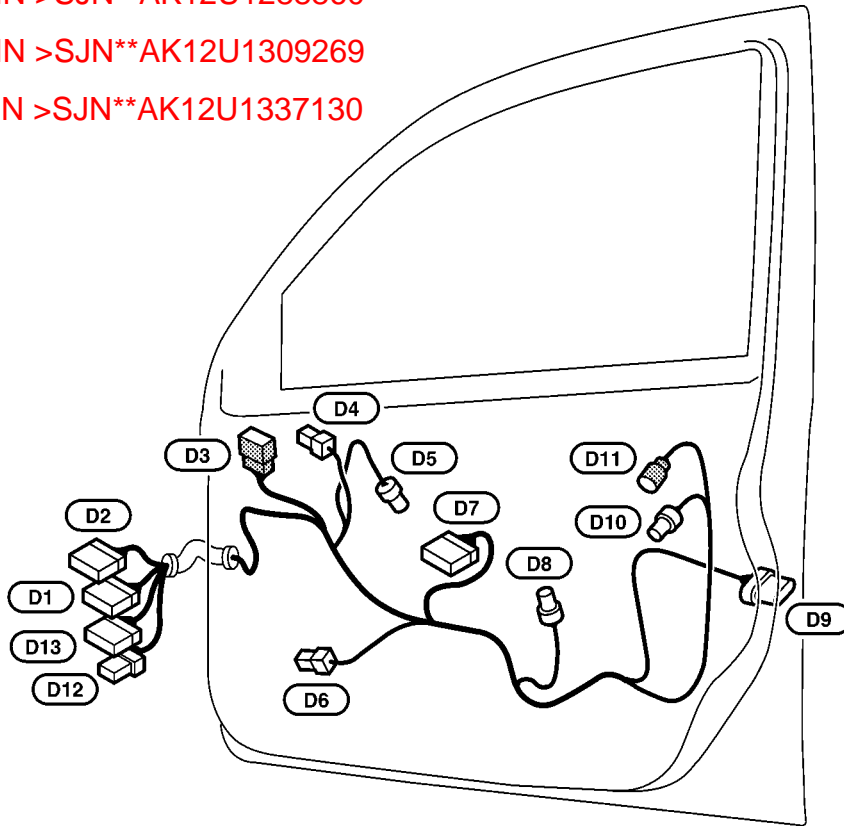
# HARNESS

## FRONT DOOR HARNESS RH SIDE/RHD MODELS

SMA for VIN >SJN\*\*AK12U1288860

SMA for VIN >SJN\*\*AK12U1309269

SMA for VIN >SJN\*\*AK12U1337130



- D1** W/10 : To **M6** (Without ESP)
- D2** W/12 : To **M5** (Without ESP)
- D3** GY/6 : Door mirror actuator (Driver side)
- D4** BR/2 : Tweeter RH (With 6 speakers)
- D5** GY/2 : Front power window motor (Driver side)
- D6** W/2 : Front door speaker RH
- D7** W/16 : Power window main switch
- D8** BR/2 : Intelligent Key warning buzzer (With Intelligent Key system)
- D9** B/6 : Door lock actuator (Driver side)
- D10** GY/2 : Door request switch (Driver side) (With Intelligent Key system)
- D11** W/2 : Outside antenna (Driver side) (With Intelligent Key system)
- D12** GY/6 : To **M86** (With ESP)
- D13** W/12 : To **M87** (With ESP)

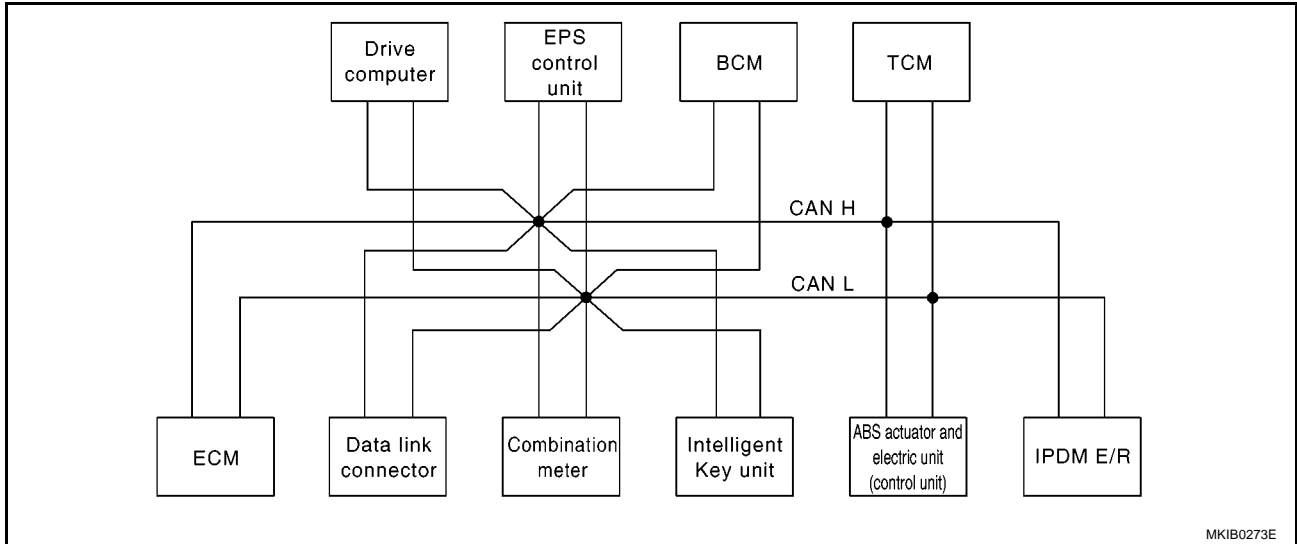
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# FRONT WIPER AND WASHER SYSTEM (WITH RAIN SENSOR)

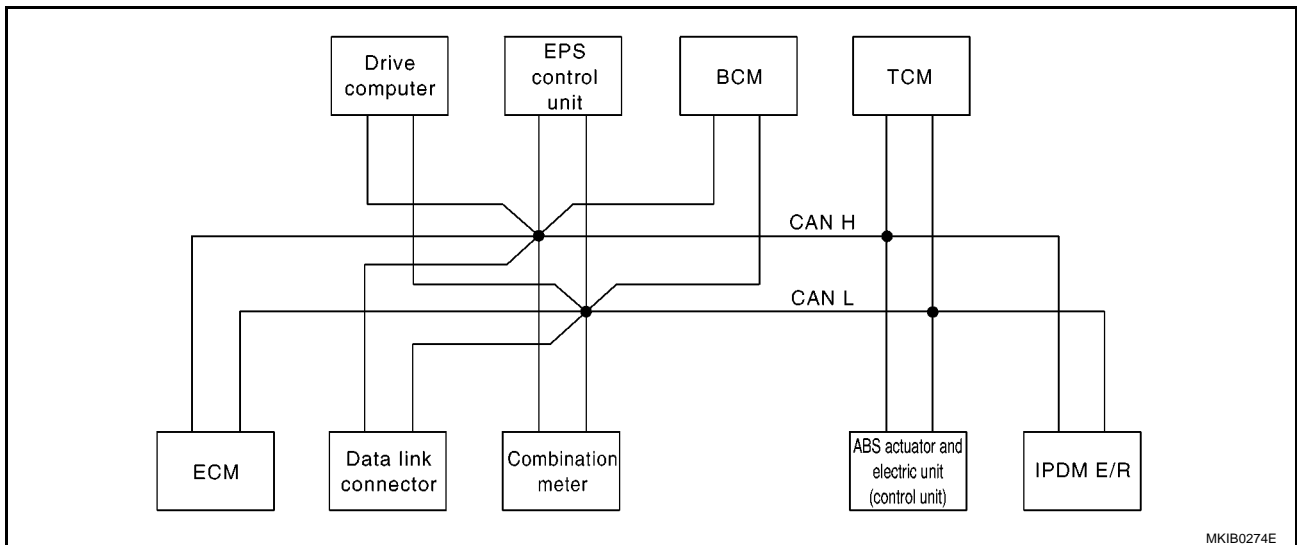
## TYPE 5/TYPE 6

### System diagram

- Type 5



- Type 6



### Input/output signal chart

T: Transmit R: Receive

Signals	ECM	Combination meter.	Intelligent Key unit	Drive computer	EPS control unit	BCM	ABS actuator and electric unit (control unit)	TCM	IPDM E/R
Engine speed signal	T	R		R	R		R		
Engine coolant temperature signal	T	R							
A/T self-diagnosis signal	R							T	
Output shaft revolution signal	R							T	
Accelerator pedal position signal	T						R	R	
Closed throttle position signal	T							R	
Wide open throttle position signal	T						R	R	

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