

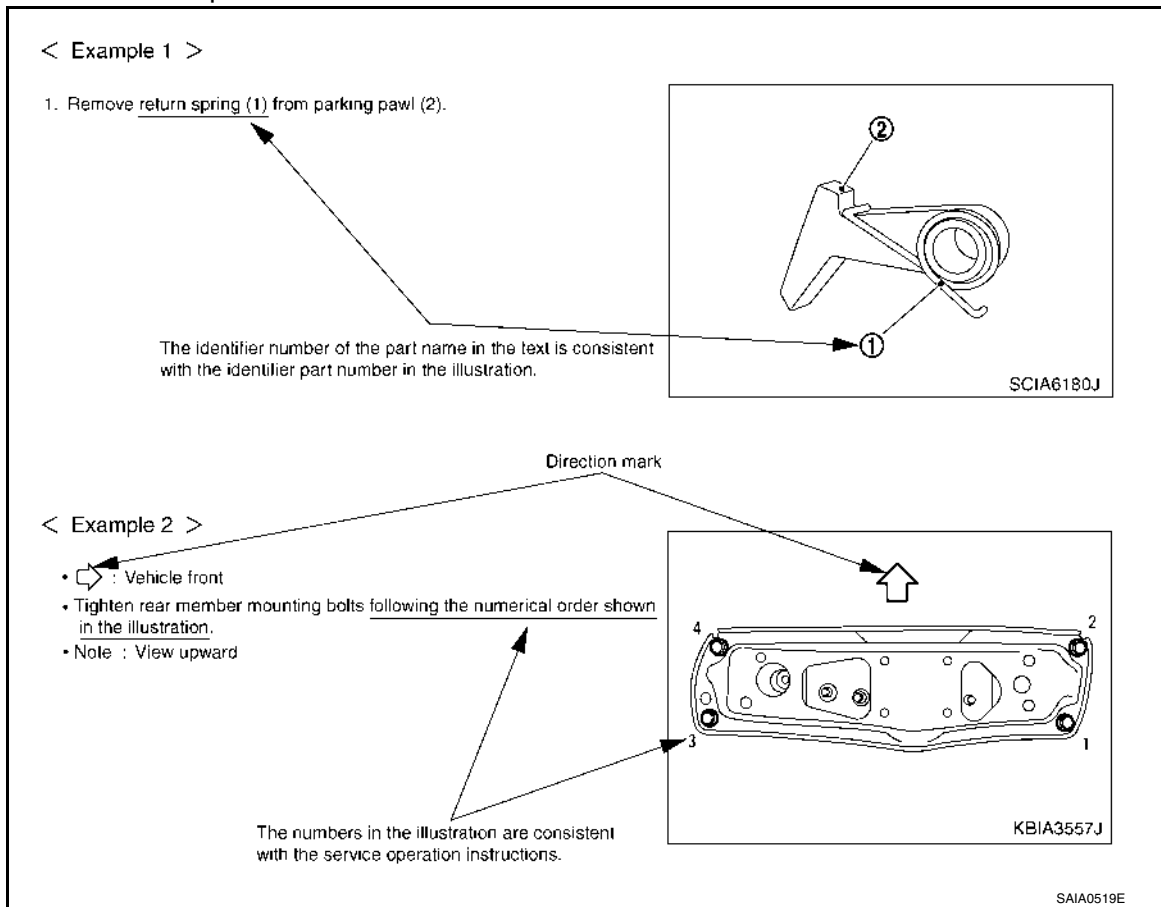
# HOW TO USE THIS MANUAL

## < HOW TO USE THIS MANUAL >

### Relation between Illustrations and Descriptions

INFOID:000000009981448

The following sample explains the relationship between the part description in an illustration, the part name in the text and the service procedures.



## Components

INFOID:000000009981449

- **THE LARGE ILLUSTRATIONS** are exploded views (see the following) and contain tightening torques, lubrication points, section number of the **PARTS CATALOG** (e.g. SEC. 440) and other information necessary to perform repairs.

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

Components shown in an illustration may be identified by a circled number. When this style of illustration is used, the text description of the components will follow the illustration.

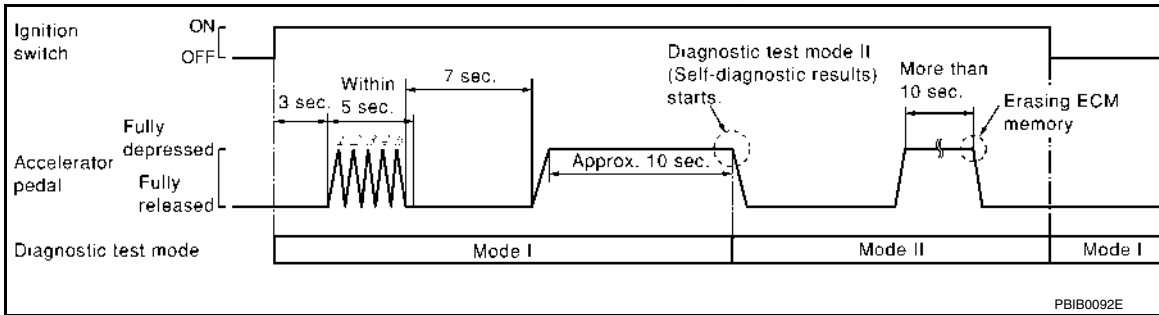
# DIAGNOSIS SYSTEM (ECM)

< SYSTEM DESCRIPTION >

[QR25DE]

**NOTE:**

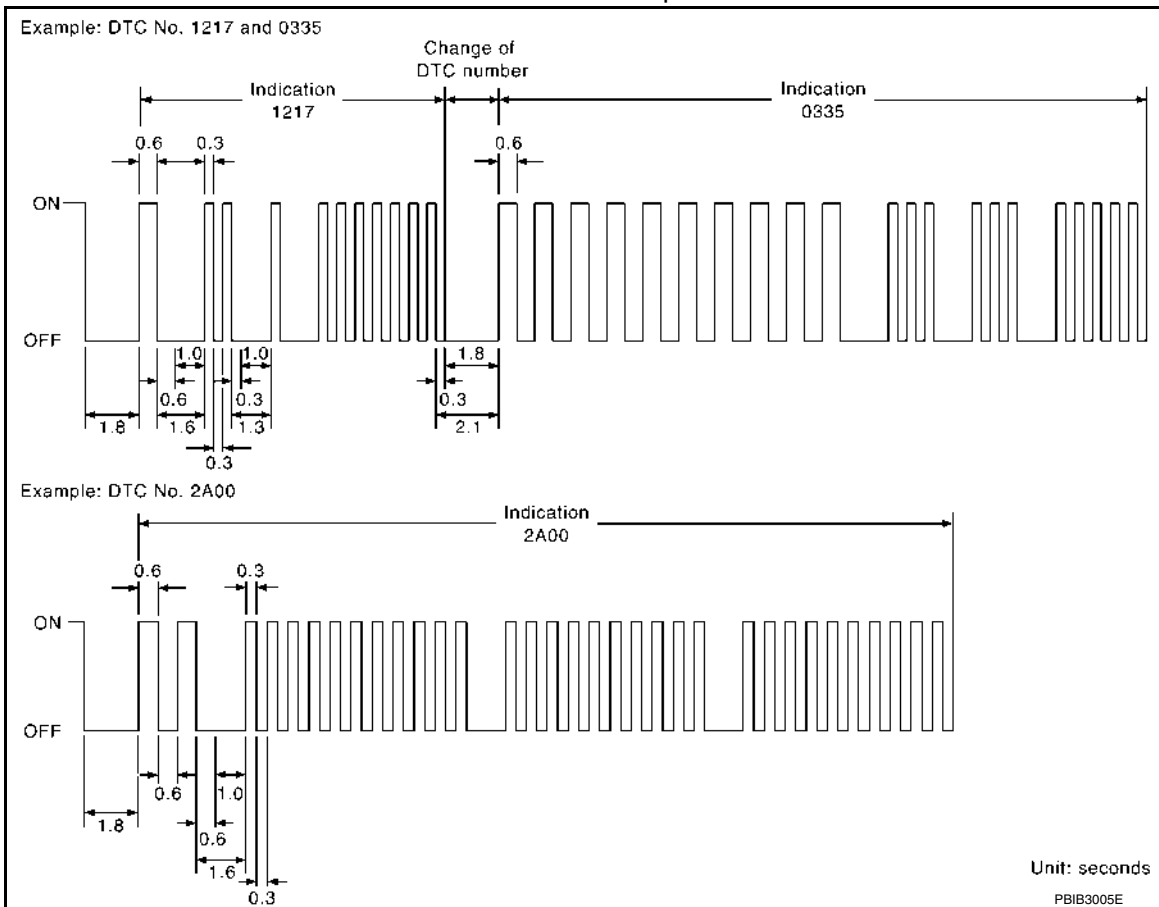
Wait until the same DTC (or 1st trip DTC) appears to completely confirm all DTCs.



**How to Read Self-diagnostic Results**

The DTC and 1st trip DTC are indicated by the number of blinks of the MIL as shown below.

The DTC and 1st trip DTC are displayed at the same time. If the MIL does not illuminate in diagnostic test mode I (Malfunction warning), all displayed items are 1st trip DTCs. If only one code is displayed when the MIL illuminates in "malfunction warning" mode, it is a DTC; if two or more codes are displayed, they may be either DTCs or 1st trip DTCs. DTC No. is same as that of 1st trip DTC. These unidentified codes can be identified by using the CONSULT or GST. A DTC will be used as an example for how to read a code.



A particular trouble code can be identified by the number of four-digit numeral flashes per the following.

Number	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Flashes	10	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16

The length of time the 1,000th-digit numeral flashes on and off is 1.2 seconds consisting of an ON (0.6-seconds) - OFF (0.6-seconds) cycle.

The 100th-digit numeral and lower digit numerals consist of a 0.3-seconds ON and 0.3-seconds OFF cycle.

A change from one digit numeral to another occurs at an interval of 1.0-second OFF. In other words, the later numeral appears on the display 1.3 seconds after the former numeral has disappeared.

A change from one trouble code to another occurs at an interval of 1.8-seconds OFF.

# P1564 ASCD STEERING SWITCH

[QR25DE]

< DTC/CIRCUIT DIAGNOSIS >

NO >> GO TO 2.

## 2. CHECK ASCD STEERING SWITCH CIRCUIT

 With CONSULT

1. Turn ignition switch ON.
2. Select "CANCEL SW", "RESUME/ACC SW" and "SET SW" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
3. Check each item indication as per the following conditions.

Monitor item	Condition		Indication
MAIN SW	MAIN switch	Pressed	ON
		Released	OFF
CANCEL SW	CANCEL switch	Pressed	ON
		Released	OFF
RESUME/ACC SW	ACCEL/RES switch	Pressed	ON
		Released	OFF
SET SW	COAST/SET switch	Pressed	ON
		Released	OFF

 Without CONSULT

1. Turn ignition switch ON.
2. Check the voltage between ECM harness connector terminals.

ECM			Condition	Voltage (Approx.)
Connector	+	-		
		Terminal		
E16	110	111	MAIN switch: Pressed	0 V
			CANCEL switch: Pressed	1 V
			COAST/SET switch: Pressed	2 V
			ACCEL/RES switch: Pressed	3 V
			All ASCD steering switches: Released	4 V

Is the inspection result normal?

- YES >> GO TO 6.  
NO >> GO TO 3.

## 3. CHECK ASCD STEERING SWITCH GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Disconnect combination switch (spiral cable) harness connector.
4. Check the continuity between combination switch (spiral cable) and ECM harness connector.

+		-		Continuity
Combination switch (Spiral cable)		ECM		
Connector	Terminal	Connector	Terminal	
M30	7	E16	111	Existed

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

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Repair or replace error-detected parts.

## 4. CHECK ASCD STEERING SWITCH INPUT SIGNAL CIRCUIT

# FRONT DRIVE SHAFT

< REMOVAL AND INSTALLATION >

[FWD]

**Tool : KV40107500 ( — )**

## INSTALLATION

1. Install a new differential side oil seal. Refer to [TM-210, "Removal and Installation"](#).

**CAUTION:**

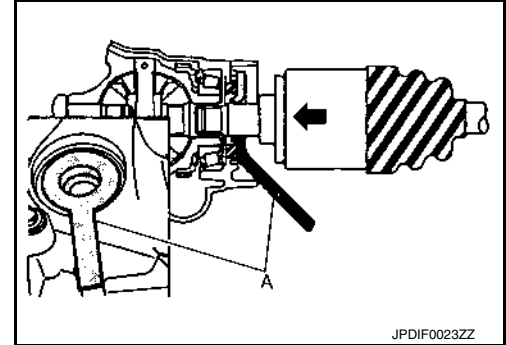
**Do not reuse the differential side oil seal.**

2. Place Tool (A) onto transaxle assembly to prevent damage to the differential side oil seal while inserting drive shaft. Slide drive shaft sliding joint and tap with a suitable tool to install securely.

**CAUTION:**

**Check that circular clip is completely engaged.**

**Tool : KV38107900 ( — )**

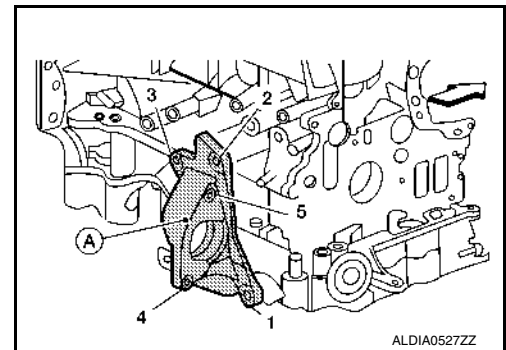


## Support bearing bracket

1. Install front drive shaft and bearing retainer with notch (A) facing upward.
2. Tighten bolts in the numerical order as shown.
  - Refer to the following for the installation positions of bolts.

⇐ : Front

<b>M12 bolts</b>	<b>: No. 1</b>	<b>97.1 N·m (9.9 kg-m, 72 ft-lb)</b>
<b>M10 bolts</b>	<b>: No. 2, 3</b>	<b>48.0 N·m (4.9 kg-m, 35 ft-lb)</b>
<b>M8 bolts</b>	<b>: No. 4, 5</b>	<b>25.0 N·m (2.6 kg-m, 18 ft-lb)</b>



3. Clean the matching surface of wheel hub lock nut and wheel hub and bearing.

**CAUTION:**

**Do not apply lubricating oil to these matching surface.**

4. Clean the mating surfaces of the joint sub-assembly and the wheel hub and bearing. Apply Molykote M77 lubricant to the surface (A) of the joint sub-assembly.

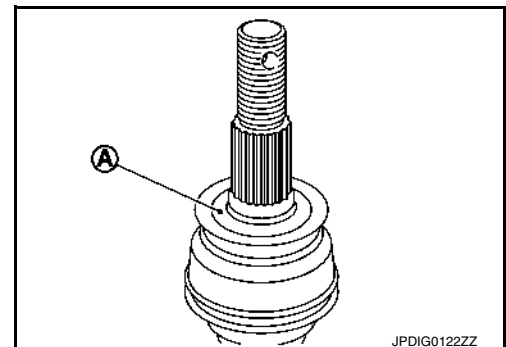
**CAUTION:**

**Apply lubricant to cover the entire flat mating surface of the joint sub-assembly.**

**Amount of lubricant : FAX-32, "Drive Shaft"**

**NOTE:**

Always check with the Parts Department for the latest parts information.



5. Hold the wheel hub and bearing using a suitable tool. Tighten the wheel hub lock nut.

**CAUTION:**

  - **Since the drive shaft is assembled by press-fitting, use a torque wrench to tighten the wheel hub lock nut. Do not use a power tool.**
  - **Too much torque causes axle noise. Too little torque causes wheel bearing looseness. Tighten the wheel hub lock nut to the specification.**
6. Align the matching marks that have been made during removal when reusing the disc brake rotor.

# DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

[MANUAL AIR CONDITIONING]

## DIAGNOSIS SYSTEM (IPDM E/R)

### CONSULT Function (IPDM E/R)

INFOID:000000010256044

#### APPLICATION ITEM

CONSULT performs the following functions via CAN communication with IPDM E/R.

Direct Diagnostic Mode	Description
Ecu Identification	The IPDM E/R part number is displayed.
Self Diagnostic Result	The IPDM E/R self diagnostic results are displayed.
Data Monitor	The IPDM E/R input/output data is displayed in real time.
Active Test	The IPDM E/R activates outputs to test components.
CAN Diag Support Mntr	The result of transmit/receive diagnosis of CAN communication is displayed.

#### ECU IDENTIFICATION

The IPDM E/R part number is displayed.

#### SELF DIAGNOSTIC RESULT

Refer to [PCS-20, "DTC Index"](#).

#### DATA MONITOR

Monitor Item [Unit]	Description
REVERSE SIGNAL [Open/Close]	Indicates condition of transmission range switch R (Reverse) position.
IGN RELAY [Open/Close]	Indicates condition of ignition relay-1.
PUSH SW [Open/Close]	Indicates condition of push-button ignition switch.
INTERLOCK/PNP SW [Open/Close]	Indicates condition of transmission range switch P (Park) and N (Neutral) positions.
OIL PRESSURE SW [Open/Close]	Indicates condition of oil pressure switch.
HOOD SW [Open/Close]	Indicates condition of hood switch.
COMPRESSOR [OFF/ON]	Indicates condition of A/C compressor.
HORN RELAY [OFF/ ON]	Indicates condition of horn relay.
COOLING FAN [OFF/ON]	Indicates condition of cooling fan relay-1.
FRONT WIPER HI/LO RELAY [OFF/ON]	Indicates condition of front wiper high relay.
FRONT WIPER RELAY [OFF/ON]	Indicates condition of front wiper relay.
IGN RELAY OFF STATUS [OFF/ON]	Indicates condition of ignition relay-1 OFF status.
IGN RELAY ON STATUS [OFF/ON]	Indicates condition of ignition relay-1 ON status.
COOLING FAN RELAY 1 [OFF/ON]	Indicates condition of cooling fan relay-1.
STARTER RELAY [OFF/ON]	Indicates condition of starter relay.
COMP ECV DUTY [%]	Indicates condition of A/C compressor.
COOLING FAN RELAY 2 [%]	Indicates condition of cooling fan relay-2.
FR FOG LAMP LH [%]	Indicates condition of front fog lamp LH.
FR FOG LAMP RH [%]	Indicates condition of front fog lamp RH.
PARKING LAMP [%]	Indicates condition of parking lamp.
TAIL LAMP LH [%]	Indicates condition of tail lamp LH.
TAIL LAMP RH [%]	Indicates condition of tail lamp RH.
DAYTIME RUNNING LIGHT LH [%]	Indicates condition of daytime running light LH.
DAYTIME RUNNING LIGHT RH [%]	Indicates condition of daytime running light RH.
HEADLAMP (HI) LH [%]	Indicates condition of headlamp high beam LH.

# DOOR SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

2. Check continuity between door switch harness connector and BCM harness connector.

Door switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
Front LH	B71	3	B16	57
Front RH	B141			53
Rear LH	B70			52
Rear RH	B142			50
Yes				

3. Check continuity between door switch harness connector and ground.

Door switch		Terminal	Ground	Continuity
Connector	Terminal			
Front LH	B71	3	Ground	No
Front RH	B141			
Rear LH	B70			
Rear RH	B142			

Is the inspection result normal?

- YES >> Replace BCM. Refer to [BCS-135, "Removal and Installation"](#).  
 NO >> Repair or replace harness.

## 3.CHECK DOOR SWITCH

Refer to [DLK-150, "Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 4.  
 NO >> Replace malfunctioning door switch. Refer to [DLK-385, "Removal and Installation"](#).

## 4.CHECK INTERMITTENT INCIDENT

Refer to [GI-41, "Intermittent Incident"](#).

>> Inspection End.

## Component Inspection

INFOID:0000000010283341

### 1.CHECK DOOR SWITCH

1. Turn ignition switch OFF.
2. Disconnect door switch connector.
3. Check door switch.

Terminal		Door switch condition	Continuity
Door switch			
3	Ground part of door switch	Pressed	No
		Released	Yes

Is the inspection result normal?

- YES >> Inspection End.  
 NO >> Replace malfunctioning door switch. Refer to [DLK-385, "Removal and Installation"](#).

# FILAMENT

< REMOVAL AND INSTALLATION >

## REMOVAL AND INSTALLATION

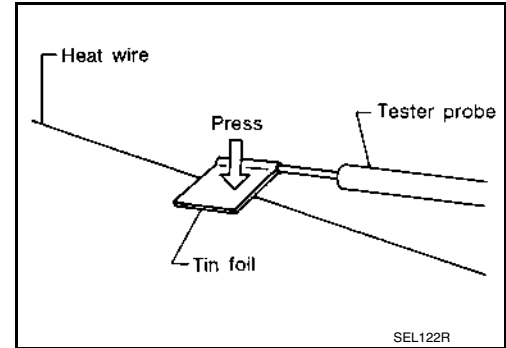
### FILAMENT

#### Inspection and Repair

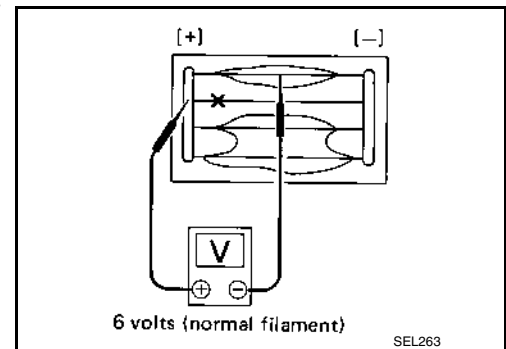
INFOID:000000009796646

#### INSPECTION

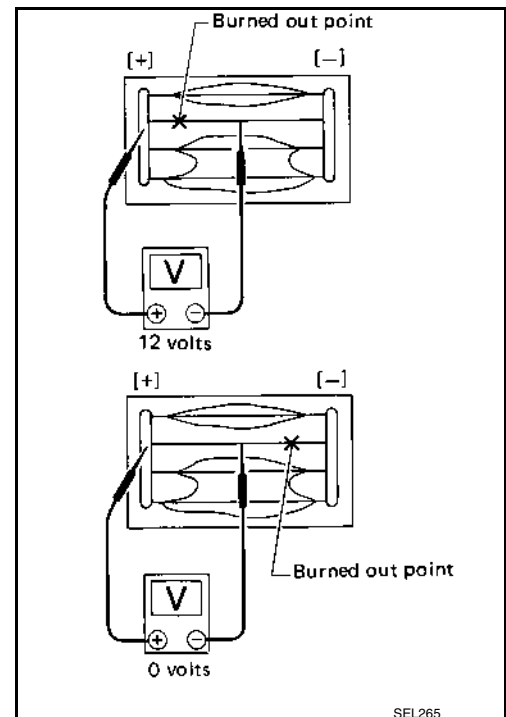
1. When measuring voltage, wrap tin foil around the top of the negative probe. Then press the foil against the wire with your finger.



2. Attach probe circuit tester (in Volt range) to middle portion of each filament.



3. If a filament is burned out, circuit tester registers 0 or battery voltage.
4. To locate burned out point, move probe to left and right along filament. Test needle will swing abruptly when probe passes the point.



#### REPAIR

##### REPAIR EQUIPMENT

- Conductive silver composition (Dupont No. 4817 or equivalent)

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
DEF  
M  
N  
O  
P

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## DTC/CIRCUIT DIAGNOSIS

### POWER SUPPLY AND GROUND CIRCUIT COMBINATION METER

#### COMBINATION METER : Diagnosis Procedure

INFOID:000000010339917

Regarding Wiring Diagram information, refer to [MWI-32. "Wiring Diagram"](#).

#### 1. CHECK FUSES

Check that the following fuses are not blown.

Unit	Power source	Fuse No.
Combination meter	Battery	13
	Ignition switch ON or START	31

#### Is the fuse blown?

YES >> Replace the blown fuse after repairing the affected circuit.

NO >> GO TO 2.

#### 2. POWER SUPPLY CIRCUIT CHECK

1. Disconnect combination meter connector.
2. Check voltage between combination meter harness connector M77 terminals 45, 46 and ground.

Terminals		Ignition switch position			
(+)		(-)	OFF	ON	START
Connector	Terminal				
M77	45	Ground	Battery voltage	Battery voltage	Battery voltage
	46		0V	Battery voltage	Battery voltage

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connector.

#### 3. GROUND CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Check continuity between combination meter harness connector and ground.

Terminals		Continuity
(+)		
Connector	Terminal	
M76	1	Ground
M77	52	

#### Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connector.

### BCM (BODY CONTROL SYSTEM) (WITH INTELLIGENT KEY SYSTEM)

#### BCM (BODY CONTROL SYSTEM) (WITH INTELLIGENT KEY SYSTEM) : Diagnosis Procedure

INFOID:000000010339920



# REAR VIEW CAMERA CALIBRATION

< BASIC INSPECTION >

[DRIVER ASSISTANCE SYSTEM]

(A) : Side of the black or white area = 200 mm (7.87 in)

(B) : Side of the square target = 400 mm (15.75 in)

>> Refer to [DAS-90, "Work Procedure \(Target Setting\)"](#).

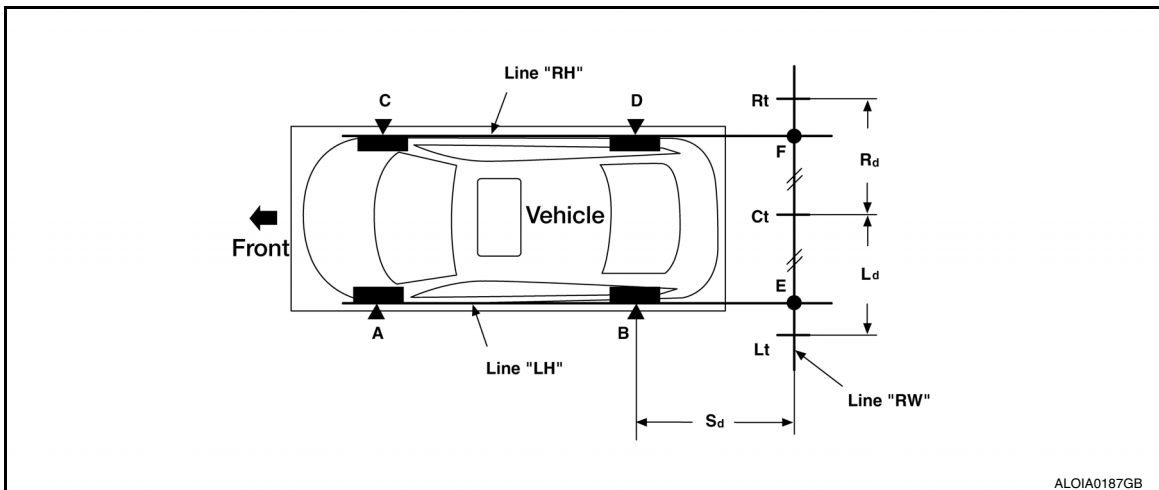
## Work Procedure (Target Setting)

INFOID:000000010351318

### CAUTION:

- Perform this operation in a horizontal position where there is a clear view for 3 m (9.84 ft) backward and 4 m (13.12 ft) wide.
- Place the target in a well-lighted location. (Poor lighting may make it hard to adjust.)
- The target may not be detected when it shines by the reflected light of the sun or lighting.
- The target may not be detected when there is the same pattern of black and white as the target when the pattern is within 0.5 m (1.64 ft) from either side and upward/downward position from the target. (It is desirable that the vehicle is positioned on a single-color floor.)

### 1. TARGET SETTING



Side distance (Sd): "B"–"E" ("D"–"F") : 2125 mm (83.66 in)

Left distance (Ld): "Ct"–"Lt" : 1500 mm (59.06 in)

Right distance (Rd): "Ct"–"Rt" : 1500 mm (59.06 in)

1. Mark points "A", "B", "C" and "D" at the center of the lateral surface of each wheel.

#### NOTE:

Hang a string with a cone from the fender so as to pass through the center of wheel, and then mark a point at the center of the lateral surface of the wheel.

2. Draw line "LH" passing through points "A" and "B" on the left side of vehicle.

#### NOTE:

Approximately 2.2 m (7.22 ft) or more at the rear from the rear axle.

3. Mark point "E" on the line "LH" at the positions 2125 mm (83.66 in) from point "B".

4. Draw line "RH" passing through points "C" and "D" on the right side of vehicle in the same way as step 2.

5. Mark point "F" on the line "RH" at the positions 2125 mm (83.66 in) from point "D".

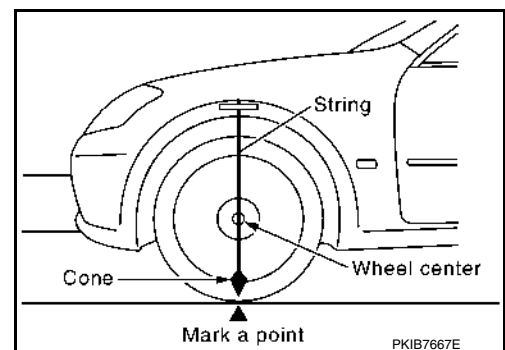
6. Draw line "RW" passing through the points "E" and "F" on the rear of the vehicle.

#### NOTE:

Approximately 1.8 m (5.91 ft) or more at both left and right sides from vehicle center.

7. Mark point "Ct" at the center of point "E" and "F" on the line "RW".

### CAUTION:





# DIAGNOSIS SYSTEM (TCM)

[CVT: RE0F10D]

## < SYSTEM DESCRIPTION >

- When the self-diagnosis result is acceptable at the 2nd trip (conforming to driving condition B), DTC of the 1st trip is erased.

## COUNTER SYSTEM LIST

Item	Driving condition	Trip
MIL (OFF)	B	3
DTC (clear)	A	40
DTC at 1st trip (clear)	B	1

## DRIVING CONDITION

### Driving condition A

Driving condition A is the driving condition that provides warm-up.

In specific, count-up is performed when all of the following conditions are satisfied.

- Engine speed is 400 rpm or more.
- After start of the engine, the water temperature increased by 20°C (36°F) or more.
- Water temperature was 70°C (158°F) or more.
- The ignition switch was changed from ON to OFF.

### NOTE:

- If the same malfunction is detected regardless of the driving condition, reset the A counter.
- When the above is satisfied without detecting the same malfunction, count up the A counter.
- When MIL goes off due to the malfunction and the A counter reaches 40, the DTC is erased.

### Driving condition B

Driving condition B is the driving condition that performs all diagnoses once.

In specific, count-up is performed when all of the following conditions are satisfied.

- Engine speed is 400 rpm or more.
- Water temperature was 70°C (158°F) or more.
- In closed loop control, vehicle speed of 70 – 120 km/h (43 – 75 MPH) continued for 60 seconds or more.
- In closed loop control, vehicle speed of 30 – 60 km/h (19 – 37 MPH) continued for 10 seconds or more.
- In closed loop control, vehicle speed of 4 km/h (2 MPH) or less and idle determination ON continued for 12 seconds or more.
- After start of the engine, 22 minutes or more have passed.
- The condition that the vehicle speed is 10 km/h (6 MPH) or more continued for 10 seconds or more in total.
- The ignition switch was changed from ON to OFF.

### NOTE:

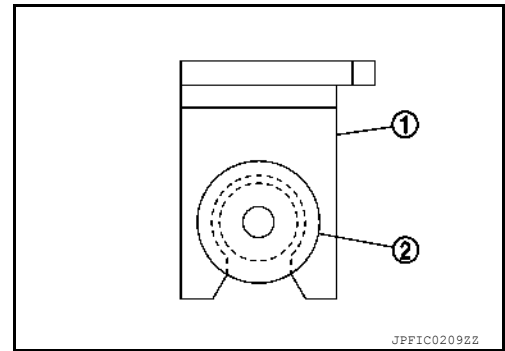
- If the same malfunction is detected regardless of the driving condition, reset the B counter.
- When the above is satisfied without detecting the same malfunction, count up the B counter.
- When the B counter reaches 3 without malfunction, MIL goes off.
- When the B counter is counted once without detecting the same malfunction after TCM memorizes DTC of the 1st trip, DTC of the 1st trip is erased.

# WHEEL SENSOR

< REMOVAL AND INSTALLATION >

[VDC/TCS/ABS]

- Do not twist front wheel sensor harness when installing front wheel sensor. Check that grommet (2) is fully inserted to bracket (1). Check that front wheel sensor harness is not twisted after installation.

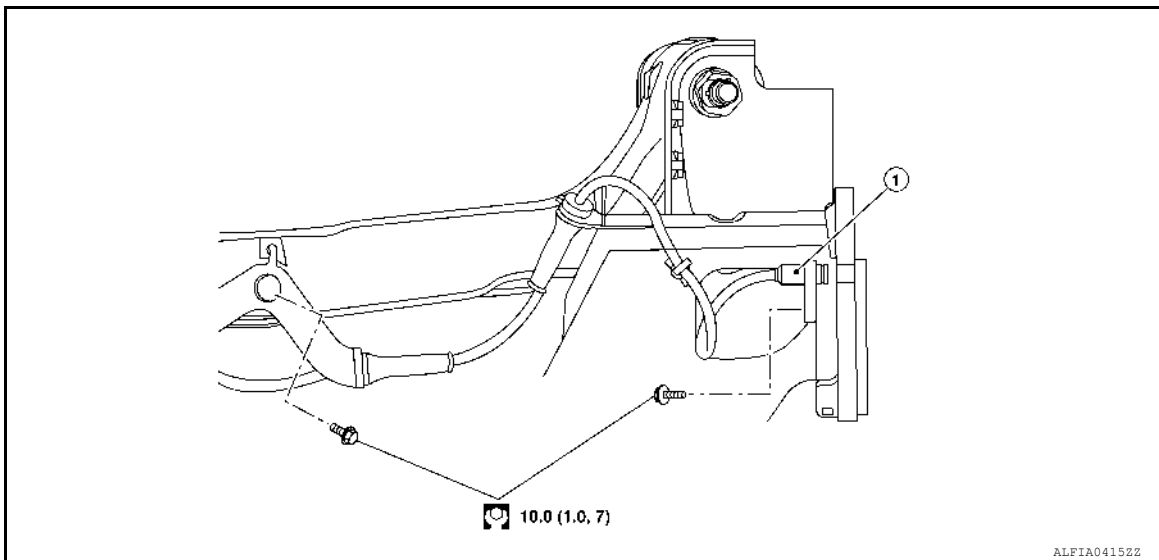


## REAR WHEEL SENSOR

### REAR WHEEL SENSOR : Exploded View

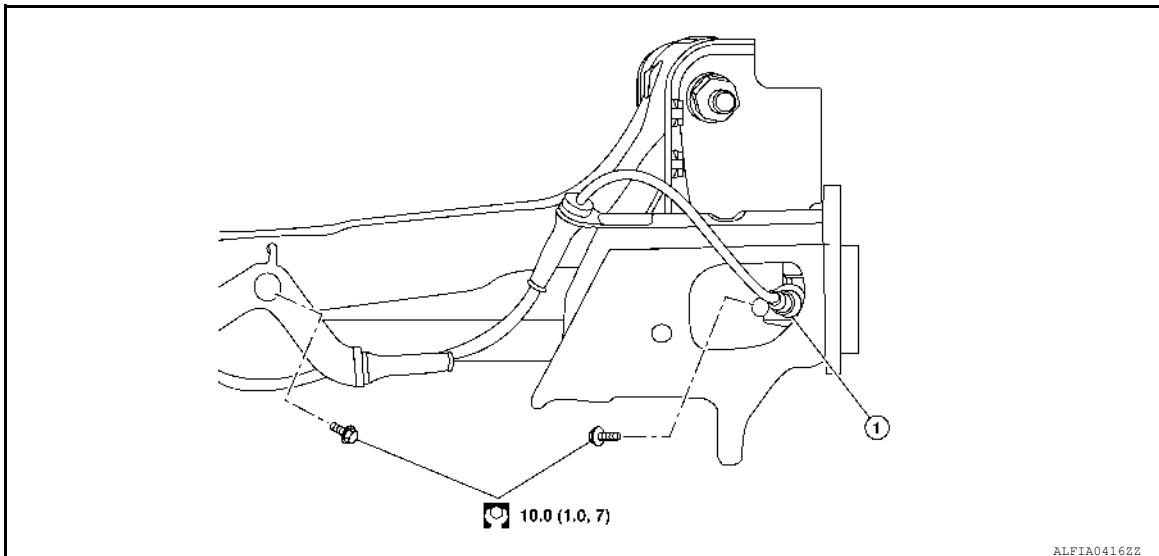
INFOID:0000000011280672

FWD



1. Rear LH wheel sensor

AWD



1. Rear LH wheel sensor

A  
B  
C  
D  
E  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P

BRC

# MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

< REMOVAL AND INSTALLATION >

## REMOVAL AND INSTALLATION

### MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

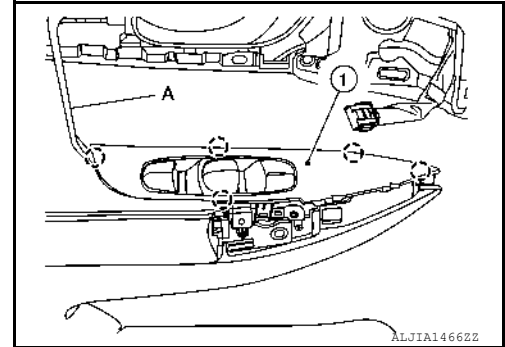
#### Removal and Installation

INFOID:0000000011278744

#### REMOVAL

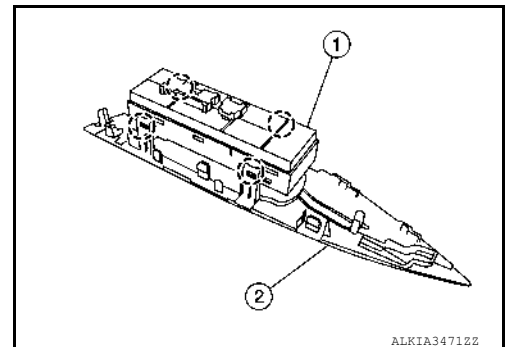
1. Remove the front door pull handle bracket (LH). Refer to [INT-15, "Exploded View"](#).
2. Release pawls using a suitable tool (A) and remove main power window and door lock/unlock switch finisher (1).

⊖: Pawl



3. Disconnect the harness connectors from the main power window and door lock/unlock switch.
4. Release the pawls, then separate the main power window and door lock/unlock switch (1) from the switch finisher (2).

⊖: Pawl



#### INSTALLATION

Installation is in the reverse order of removal.

#### NOTE:

When the main power window and door lock/unlock switch is removed or replaced, it is necessary to perform the initialization procedure. Refer to [PWC-28, "ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Description"](#).

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
L  
M  
N  
O  
P

PWC

# WASHER TANK

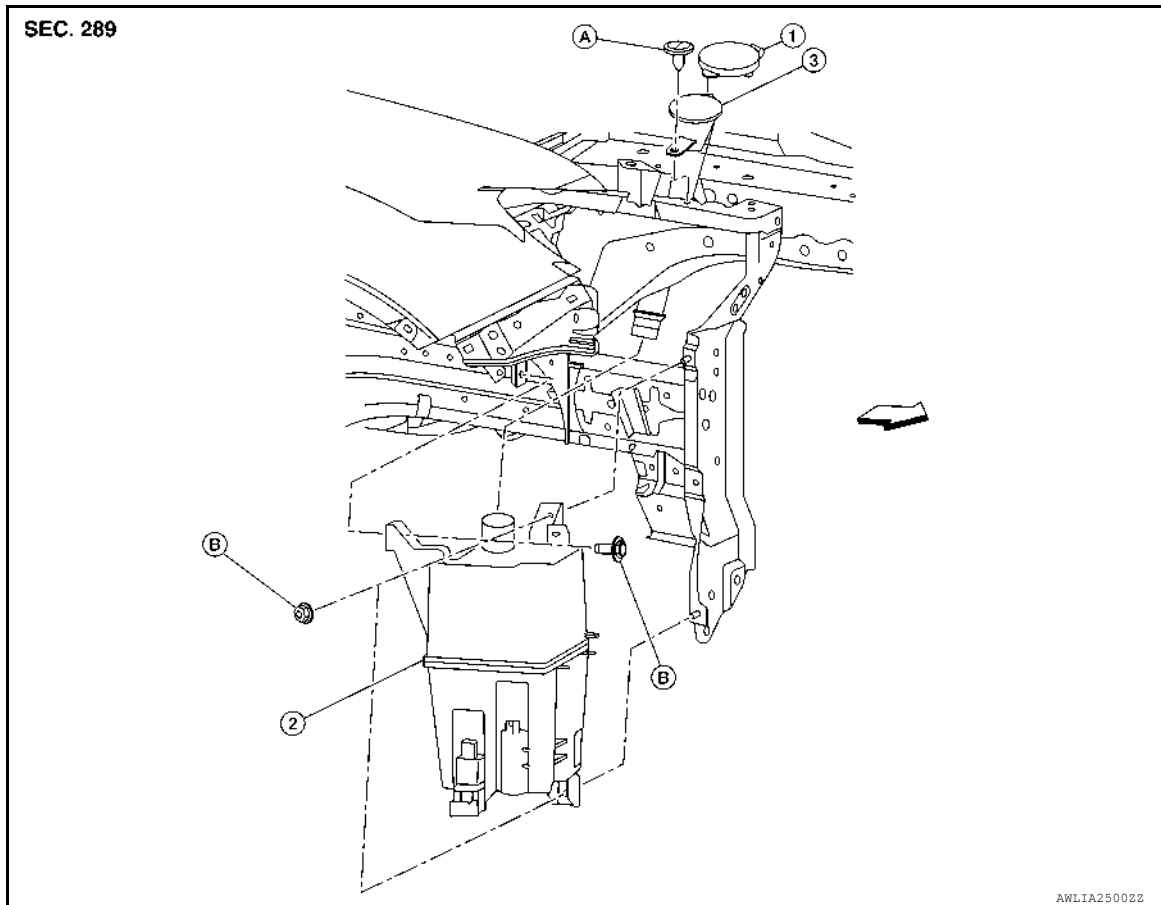
< REMOVAL AND INSTALLATION >

## REMOVAL AND INSTALLATION

### WASHER TANK

Exploded View

INFOID:000000011280410



1. Cap  
A. Clip

2. Washer tank  
B. Refer to INSTALLATION

3. Washer tank inlet  
← Front

## Removal and Installation

INFOID:000000011280411

### REMOVAL

1. Drain washer fluid.
2. Using a suitable tool release washer tank inlet clip and remove washer tank inlet.
3. Remove front over fender (RH). Refer to [EXT-30, "FRONT OVER FENDER : Removal and Installation"](#).
4. Remove wind deflector (RH). Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).
5. Remove engine side cover (RH). Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).
6. Partially remove front fender protector (RH). Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).
7. Disconnect harness connector from rear view camera washer motor then front and rear washer motor.
8. Disconnect washer level switch harness connector (if equipped).
9. Disconnect front and rear washer motor tubes and the rear view camera washer motor tube (if equipped).
10. Remove washer tank nuts and bolt and remove the washer tank.

### INSTALLATION

Installation is in the reverse order of removal.

**CAUTION:**

# GENERATOR

< REMOVAL AND INSTALLATION >

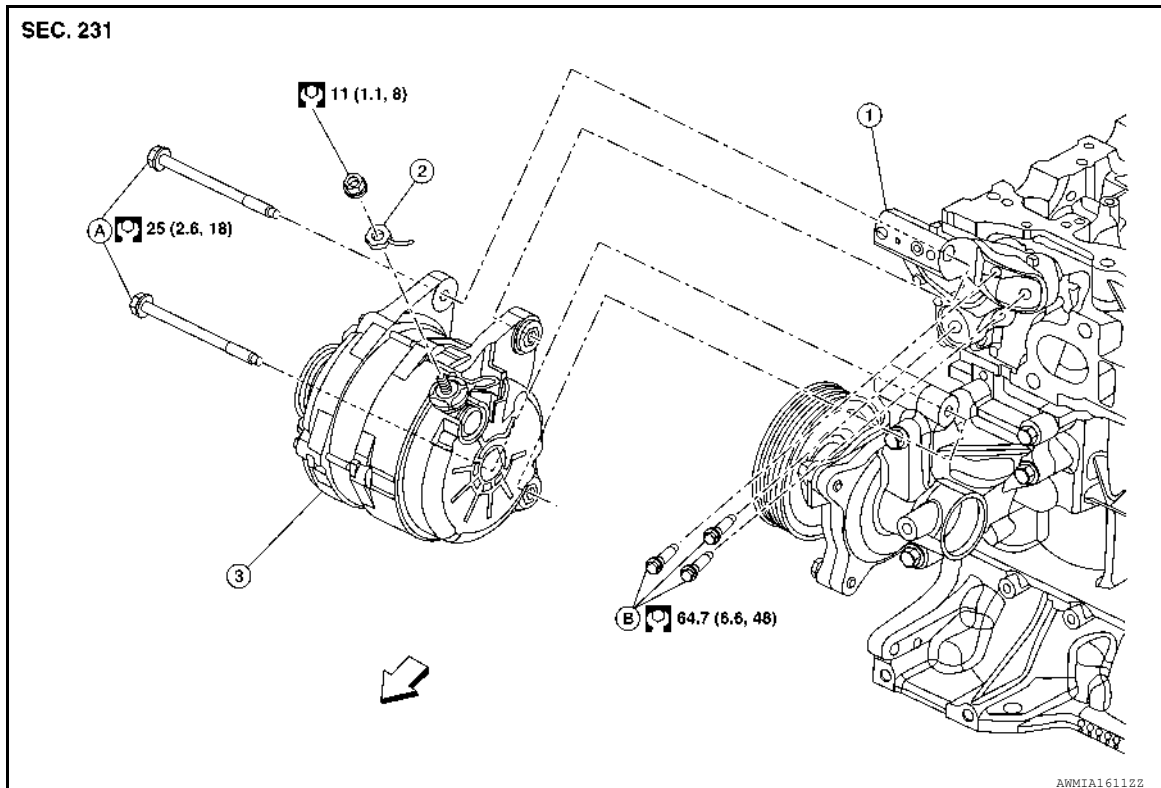
## REMOVAL AND INSTALLATION

### GENERATOR

Exploded View

INFOID:000000011278231

#### REMOVAL



- |                          |                          |              |
|--------------------------|--------------------------|--------------|
| 1. Generator bracket     | 2. "B" terminal harness  | 3. Generator |
| A. Refer to INSTALLATION | B. Refer to INSTALLATION | ⇐ Front      |

#### Removal and Installation

INFOID:000000011278232

#### REMOVAL

1. Disconnect negative terminal from battery. Refer to [PG-78. "Exploded View"](#).
2. Remove front air spoiler. Refer to [EXT-28. "FENDER PROTECTOR : Exploded View"](#).
3. Remove drive belt. Refer to [EM-15. "Removal and Installation"](#).
4. Remove oil level gauge (1).
5. Remove oil level gauge guide (2).
6. Remove oil level gauge guide O-ring (3).

