

SECTION **BRM**  
 BODY REPAIR

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

CONTENTS

<b>VEHICLE INFORMATION</b> .....	3	<b>REPAIR WORK FLOW</b> .....	23
<b>BODY EXTERIOR PAINT COLOR</b> .....	3	Repair Judgment Flow .....	23
Body Exterior Paint Color .....	3	<b>REMOVAL AND INSTALLATION</b> .....	25
<b>PRECAUTION</b> .....	4	<b>CORROSION PROTECTION</b> .....	25
<b>PRECAUTIONS</b> .....	4	Description .....	25
Precaution for Technicians Using Medical Electric.....	4	Undercoating .....	25
Point to Be Checked Before Starting Maintenance		Stone Guard Coat .....	26
Work .....	4	Body Sealing .....	27
Precaution for Removing 12V Battery .....	4	<b>BODY CONSTRUCTION</b> .....	31
Precaution for Supplemental Restraint System		Body Construction .....	31
(SRS) "AIR BAG" and "SEAT BELT PRE-TEN-		Rear Fender Hemming Process .....	32
SIONER" .....	5	<b>REPLACEMENT OPERATIONS</b> .....	34
High Voltage Precautions .....	5	Description .....	34
<b>REPAIRING HIGH STRENGTH STEEL</b> .....	8	Radiator Core Support .....	36
High Strength Steel (HSS) .....	8	Hoodledge .....	37
Handling of Ultra High Strength Steel Plate Parts...	10	Hoodledge (Partial Replacement) .....	38
<b>PAINTING BOOTH</b> .....	11	Front Side Member .....	39
Criteria for Battery Removal When Drying Painting		Front Side Member (Partial Replacement) .....	41
.....	11	Front Pillar .....	43
<b>PROTECTION OF VEHICLE</b> .....	12	Center Pillar .....	45
Protection of Vehicle .....	12	Outer Sill (Partial Replacement) .....	49
<b>PREPARATION</b> .....	13	Outer Sill .....	50
<b>REPAIRING MATERIAL</b> .....	13	Rear Fender .....	53
Foam Repair .....	13	Rear Fender Extension .....	57
<b>LOCATION OF PLASTIC PARTS</b> .....	14	Rear Panel .....	58
Precautions for Plastics .....	14	Rear Floor Rear .....	58
Location of Plastic Parts .....	15	Rear Side Member Extension .....	59
<b>BODY COMPONENT PARTS</b> .....	17	<b>SERVICE DATA AND SPECIFICATIONS</b>	
Underbody Component Parts .....	17	<b>(SDS)</b> .....	61
Body Component Parts .....	20	<b>BODY ALIGNMENT</b> .....	61
<b>BASIC INSPECTION</b> .....	23	Body Center Marks .....	61
		Description .....	62
		Motor Room .....	62
		Underbody .....	65
		Passenger Compartment .....	67

BRM



# BODY EXTERIOR PAINT COLOR

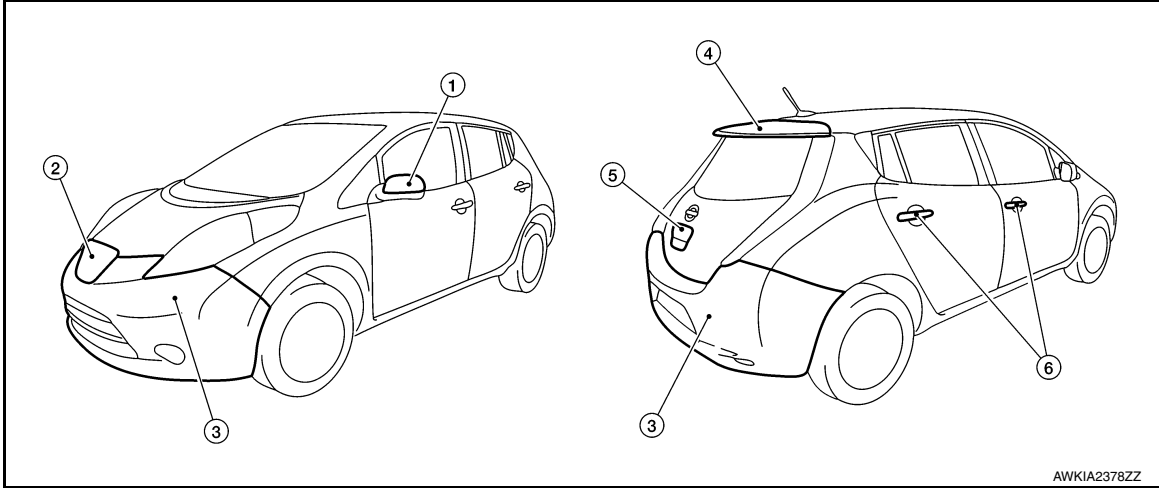
< VEHICLE INFORMATION >

## VEHICLE INFORMATION

### BODY EXTERIOR PAINT COLOR

#### Body Exterior Paint Color

INFOID:000000010640859



Component	Color code	KH3	K23	NAH	QAK	RBE	QAB	KAD
	Description	Black	Silver	Red	White	Blue	White	Gray
	Paint type	S	M	PM	S	3PM	3P	M
	Hard clear coat	t	t	t	t	t	t	t
1. Outside mirror cover	Body color	KH3	K23	NAH	QAK	RBE	QAB	KAD
2. Charge port lid	Body color	KH3	K23	NAH	QAK	RBE	QAB	KAD
3. Bumper fascia	Body color	KH3	K23	NAH	QAK	RBE	QAB	KAD
4. Rear spoiler	Body color	KH3	K23	NAH	QAK	RBE	QAB	KAD
5. Back door handle	Body color	KH3	K23	NAH	QAK	RBE	QAB	KAD
6. Door outside handle	Chromium plate	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P

M = Metallic, S = Solid, 2S = Solid and Clear, 2P = 2-Coat Pearl, 3P = 3-Coat Pearl, PM = Pearl Metallic, t = Clear coat, Cr2P = Chromium plate.

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

BRM

# PRECAUTIONS

< PRECAUTION >

## PRECAUTION

### PRECAUTIONS

#### Precaution for Technicians Using Medical Electric

INFOID:000000010640860

##### OPERATION PROHIBITION

###### **WARNING:**

- Parts with strong magnet is used in this vehicle.
- Technicians using a medical electric device such as pacemaker must never perform operation on the vehicle, as magnetic field can affect the device function by approaching to such parts.

##### NORMAL CHARGE PRECAUTION

###### **WARNING:**

- If a technician uses a medical electric device such as an implantable cardiac pacemaker or an implantable cardioverter defibrillator, the possible effects on the devices must be checked with the device manufacturer before starting the charge operation.
- As radiated electromagnetic wave generated by PDM (Power Delivery Module) at normal charge operation may affect medical electric devices, a technician using a medical electric device such as implantable cardiac pacemaker or an implantable cardioverter defibrillator must not approach motor room [PDM (Power Delivery Module)] at the hood-opened condition during normal charge operation.

##### PRECAUTION AT TELEMATICS SYSTEM OPERATION

###### **WARNING:**

- If a technician uses implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), avoid the device implanted part from approaching within approximately 220 mm (8.66 in) from interior/exterior antenna.
- The electromagnetic wave of TCU might affect the function of the implantable cardiac pacemaker or the implantable cardioverter defibrillator (ICD), when using the service, etc.
- If a technician uses other medical electric devices than implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), the electromagnetic wave of TCU might affect the function of the device. The possible effects on the devices must be checked with the device manufacturer before TCU use.

##### PRECAUTION AT INTELLIGENT KEY SYSTEM OPERATION

###### **WARNING:**

- If a technician uses implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), avoid the device implanted part from approaching within approximately 220 mm (8.66 in) from interior/exterior antenna.
- The electromagnetic wave of Intelligent Key might affect the function of the implantable cardiac pacemaker or the implantable cardioverter defibrillator (ICD), at door operation, at each request switch operation, or at engine starting.
- If a technician uses other medical electric devices than implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), the electromagnetic wave of Intelligent Key might affect the function of the device. The possible effects on the devices must be checked with the device manufacturer before Intelligent Key use.

#### Point to Be Checked Before Starting Maintenance Work

INFOID:000000010640861

The high voltage system may starts automatically. It is required to check that the timer air conditioner and timer charge (during EVSE connection) are not set before starting maintenance work.

###### **NOTE:**

If the timer air conditioner or timer charge (during EVSE connection) is set, the high voltage system starts automatically even when the power switch is in OFF state.

#### Precaution for Removing 12V Battery

INFOID:000000010640862

1. Check that EVSE is not connected.

###### **NOTE:**

If EVSE is connected, the air conditioning system may be automatically activated by the timer A/C function.

# PRECAUTIONS

## < PRECAUTION >

2. Turn the power switch OFF → ON → OFF. Get out of the vehicle. Close all doors (including back door).
3. Check that the charge status indicator lamp does not blink and wait for 5 minutes or more.

### NOTE:

If the battery is removed within 5 minutes after the power switch is turned OFF, plural DTCs may be detected.

4. Remove 12V battery within 1 hour after turning the power switch OFF → ON → OFF.

### NOTE:

- The 12V battery automatic charge control may start automatically even when the power switch is in OFF state.
- Once the power switch is turned ON → OFF, the 12V battery automatic charge control does not start for approximately 1 hour.

### CAUTION:

- **After all doors (including back door) are closed, if a door (including back door) is opened before battery terminals are disconnected, start over from Step 1.**
- **After turning the power switch OFF, if "Remote A/C" is activated by user operation, stop the air conditioner and start over from Step 1.**

## Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000010640863

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 SR 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 SR 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 POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS


### WARNING:

- **When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least three minutes before performing any service.**

## High Voltage Precautions

INFOID:000000010640864

### DANGER:

 Since hybrid vehicles and electric vehicles contain a high voltage battery, there is the risk of electric shock, electric leakage, or similar accidents if the high voltage component and vehicle are handled incorrectly. Be sure to follow the correct work procedures when performing inspection and maintenance.

### WARNING:

- **Be sure to remove the service plug in order to disconnect the high voltage circuits before performing inspection or maintenance of high voltage system harnesses and parts.**
- **The removed service plug must always be carried in a pocket of the responsible worker or placed in the tool box during the procedure to prevent the plug from being connected by mistake.**

# PRECAUTIONS

## < PRECAUTION >

---

- **Be sure to wear insulated protective equipment before beginning work on the high voltage system.**
- **Never allow workers other than the responsible person to touch the vehicle containing high voltage parts. To keep others from touching the high voltage parts, these parts must be covered with an insulating sheet except when using them.**

### **CAUTION:**

**Never bring the vehicle into the READY status with the service plug removed unless otherwise instructed in the Service Manual. A malfunction may occur if this is not observed.**

### HIGH VOLTAGE HARNESS AND EQUIPMENT IDENTIFICATION

All the high voltage harnesses and connectors are orange. The Li-ion battery and other high voltage devices include an orange high voltage label. Never touch these harnesses and high voltage parts.

### HANDLING OF HIGH VOLTAGE HARNESS AND TERMINALS

Immediately insulate disconnected high voltage connectors and terminals with insulating tape.

### REGULATIONS ON WORKERS WITH MEDICAL ELECTRONICS

### **WARNING:**

**The vehicle contains parts that contain powerful magnets. If a person who is wearing a heart pacemaker or other medical device is close to these parts, the medical device may be affected by the magnets. Such persons must not perform work on the vehicle.**

### PROHIBITED ITEMS TO CARRY DURING THE WORK

Hybrid vehicles and electric vehicles contain parts with high voltage and intense magnetic force. Never carry metal products and magnetic recording media (e.g. cash card, prepaid card) to repair/inspect high voltage parts. If this is not observed, the metal products may create a risk of short circuit and the magnetic recording media may lose their magnetic recording.

POSTING A SIGN OF “DANGER! HIGH VOLTAGE AREA. KEEP OUT”



# REPAIRING HIGH STRENGTH STEEL

< PRECAUTION >

## REPAIRING HIGH STRENGTH STEEL

### High Strength Steel (HSS)

INFOID:000000010640865

High strength steel is used for body panels in order to reduce vehicle weight.

Accordingly, precautions in repairing automotive bodies made of high strength steel are described below:

Tensile strength	Major applicable parts
440 - 780 MPa	<ul style="list-style-type: none"> <li>• Rear side member closing plate</li> <li>• Trans control reinforcement (Center front floor component part)</li> <li>• Rear side member front extension (Front floor component part)</li> <li>• Front floor front (Front floor component part)</li> <li>• 2nd crossmember (Front floor component part)</li> <li>• 3rd crossmember (Front floor component part)</li> <li>• Inner sill reinforcement (Inner sill component part)</li> <li>• Side dash</li> <li>• Front suspension spring support (Front strut housing component part)</li> <li>• Front side member front assembly</li> <li>• Front side member assembly</li> <li>• Front side member closing plate assembly</li> <li>• Rear seat crossmember</li> <li>• Rear crossmember center assembly</li> <li>• Rear side member</li> <li>• Rear side member extension reinforcement assembly</li> <li>• Rear side member extension</li> <li>• Inner side roof rail</li> <li>• Upper inner front pillar</li> <li>• Front pillar brace</li> <li>• Lower center pillar brace</li> <li>• Outer sill reinforcement</li> <li>• Inner rear pillar reinforcement</li> <li>• Lower rear panel reinforcement (Upper rear panel component part)</li> <li>• Front roof rail (Lower) (Front roof rail component part)</li> <li>• Roof member reinforcement (Center roof reinforcement component part)</li> </ul>
980 MPa	<ul style="list-style-type: none"> <li>• Front side member center extension (Front floor component part)</li> <li>• Front side member rear extension (Front floor component part)</li> <li>• Inner sill</li> <li>• Inner front sill reinforcement (Upper &amp; Lower) (Inner sill component part)</li> <li>• Lower dash crossmember (Upper RH &amp; LH) (Lower dash component part)</li> <li>• Lower dash crossmember (Lower)</li> <li>• Center pillar seat belt anchor (Inner center pillar assembly component part)</li> <li>• Inner center pillar assembly (Upper side)</li> <li>• Outer side roof rail reinforcement</li> <li>• Center pillar reinforcement (Lower center pillar brace component part)</li> <li>• Front roof rail reinforcement (Front roof rail component part)</li> </ul>

Read the following precautions when repairing HSS:



# REPAIRING HIGH STRENGTH STEEL

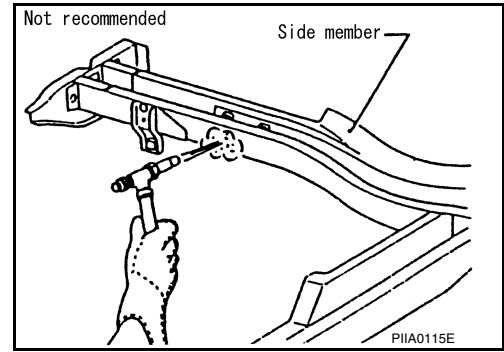
## < PRECAUTION >

### 1. Additional points to consider

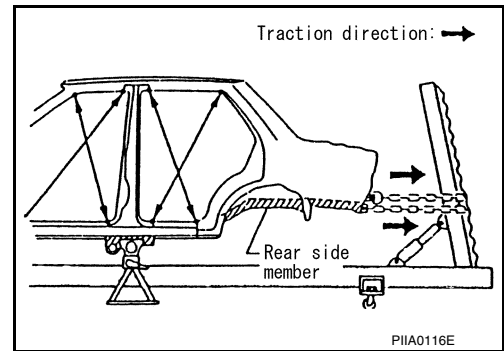
- The repair of reinforcements (such as side members) by heating is not recommended, because it may weaken the component. When heating is unavoidable, never heat HSS parts above 550°C (1,022°F).

Verify heating temperature with a thermometer.

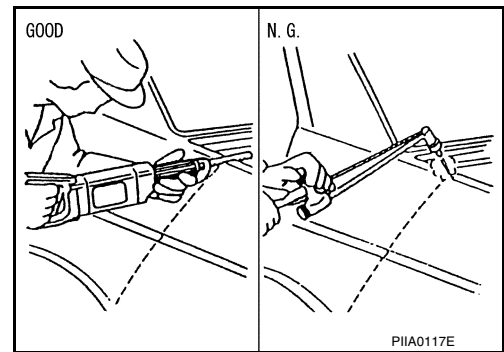
(Crayon-type and other similar type thermometer are appropriate.)



- When straightening body panels, use caution in pulling any HSS panel. Because HSS is very strong, pulling may cause deformation in adjacent sections of the body. In this case, increase the number of measuring points, and carefully pull the HSS panel.

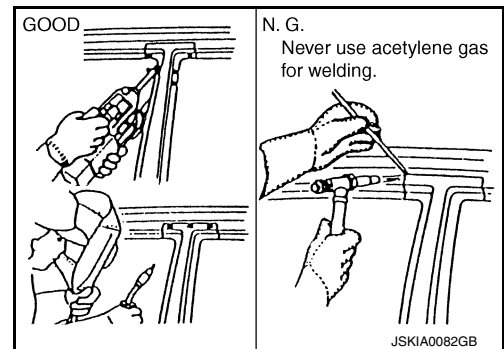


- When cutting HSS panels, avoid gas (torch) cutting if possible. Instead, use a saw to avoid weakening surrounding areas due to heat. If gas (torch) cutting is unavoidable, allow a minimum margin of 50 mm (1.97in).



- When welding HSS panels, use spot welding whenever possible in order to minimize weakening surrounding areas due to heat.

If spot welding is impossible, use MIG. welding. Do not use gas (torch) for welding because it is inferior in welding strength.

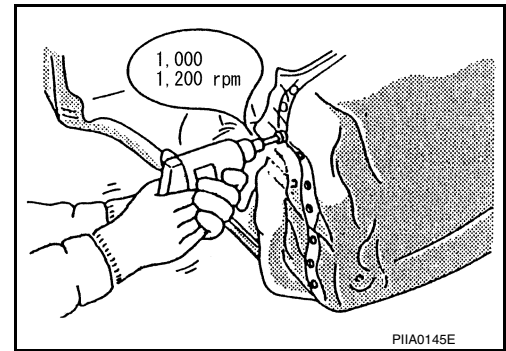


A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
BRM  
L  
M  
N  
O  
P

# REPAIRING HIGH STRENGTH STEEL

## < PRECAUTION >

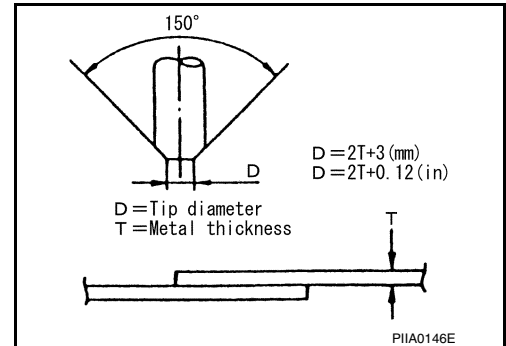
- Spot welding on HSS panels is harder than that of an ordinary steel panel. Therefore, when cutting spot welds on a HSS panel, use a low speed high torque drill (1,000 to 1,200 rpm) to increase drill bit durability and facilitate the operation.



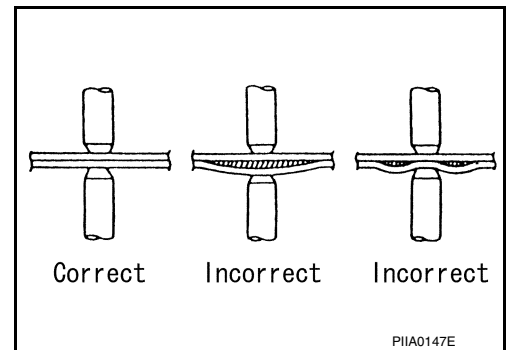
## 2. Precautions in spot welding HSS

This work should be performed under standard working conditions. Always note the following when spot welding HSS:

- The electrode tip diameter must be sized properly according to the metal thickness.



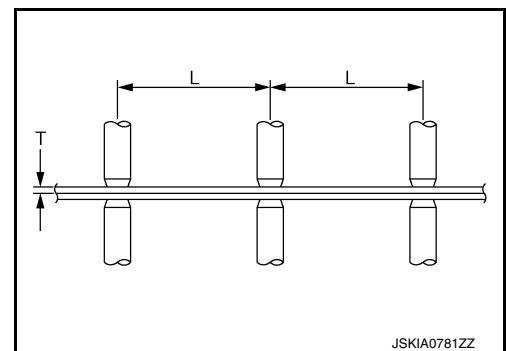
- The panel surfaces must fit flush to each other, leaving no gaps.



- Follow the specifications for the proper welding pitch.

Unit: mm (in)

Thickness (T)	Minimum pitch (L)
0.6 (0.024)	10 (0.39) or more
0.8 (0.031)	12 (0.47) or more
1.0 (0.039)	18 (0.71) or more
1.2 (0.047)	20 (0.79) or more
1.6 (0.063)	27 (1.06) or more
1.8 (0.071)	31 (1.22) or more



## Handling of Ultra High Strength Steel Plate Parts

INFOID:000000010640866

### PROHIBITION OF CUT AND CONNECTION

Never cut and Joint the stiffener front side member (front floor inside frame parts) because its material is high strength steel plate (ultra high strength steel plate).

The front floor assembly must be replaced if this part is damaged.

# PAINTING BOOTH

< PRECAUTION >

## PAINTING BOOTH

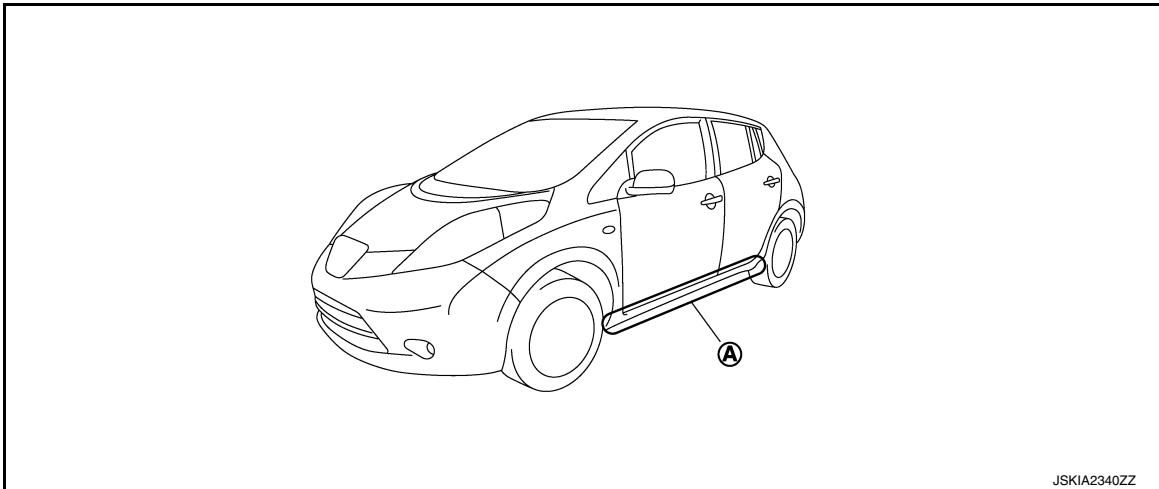
### Criteria for Battery Removal When Drying Painting

INFOID:000000010640867

To use painting booth, maintain outer sill (A) temperature at 60°C (140°F) or less to prevent deterioration in li-ion battery.

**NOTE:**

- Measure the temperature with a noncontact thermometer.
  - If a sill cover (resin) is included, remove the sill cover to measure the temperature.
- If outer sill (A) temperature is more than 60°C (140°F), remove li-ion battery beforehand and place in the painting booth. Refer to [EVB-188, "Inspection"](#).



A. Outer sill temperature measurement part

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

BRM

## PROTECTION OF VEHICLE

< PRECAUTION >

---

### PROTECTION OF VEHICLE

#### Protection of Vehicle

INFOID:000000010640868

The seats, glass, and carpet must be removed or covered with appropriate material (spatter cover), according to the type of work to be done, to prevent contamination and welding spatter. In addition, when cutting the vehicle in an area close to high voltage parts or performing a welding operation, the high voltage parts must be covered with a heat-resistant insulating cover (spatter cover).

# REPAIRING MATERIAL

< PREPARATION >

## PREPARATION

### REPAIRING MATERIAL

#### Foam Repair

INFOID:000000010640869

During factory body assembly, foam insulators are installed in certain body panels and locations around the vehicle. Use the following procedure(s) to replace any factory-installed foam insulators.

#### URETHANE FOAM APPLICATIONS

Use commercially available Urethane foam for sealant (foam material) repair of material used on vehicle.

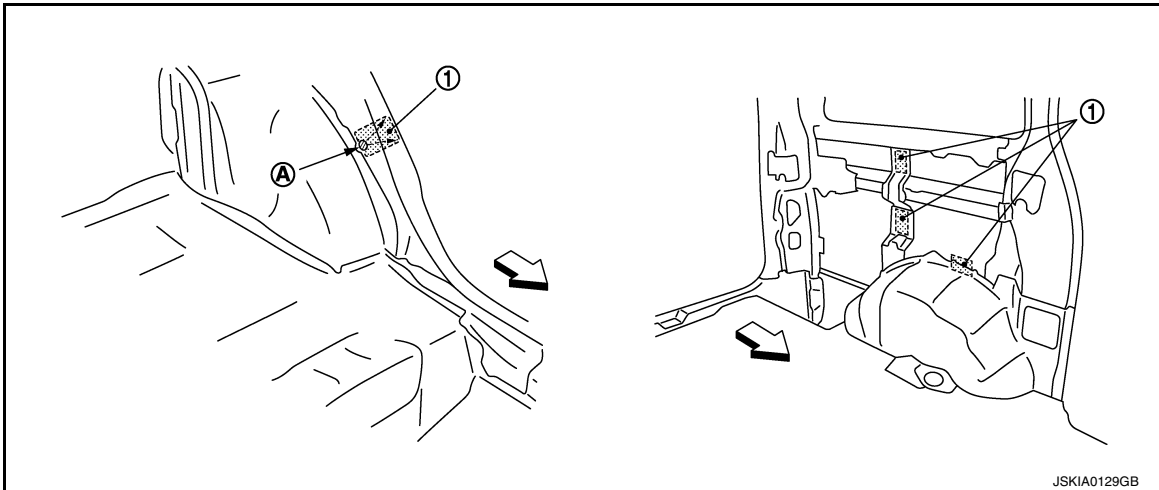
<Urethane foam for foaming agent>

3M™ Automix™ Flexible Foam 08463 or equivalent

Read instructions on product for fill procedures.

Example of foaming agent filling operation procedure

1. Fill procedures after installation of service part.
  - a. Eliminate foam material remaining on vehicle side.
  - b. Clean area after eliminating form insulator and foam material.
  - c. Install service part.
  - d. Insert nozzle into hole near fill area and fill foam material or fill enough to close gap with the service part.



1. Urethane foam

A. Nozzle insert hole

← Front

2. Fill procedures before installation of service part.
  - a. Eliminate foam material remaining on vehicle side.
  - b. Clean area after eliminating foam insulator and foam material.
  - c. Fill foam material on wheelhouse outer side.

1. Urethane foam

A. Fill while avoiding flange area

← Front

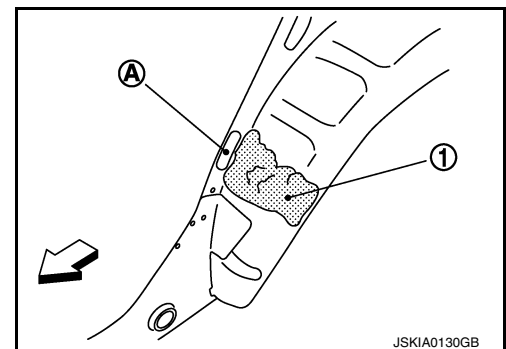
#### NOTE:

Fill enough to close gap with service part while avoiding flange area.

- d. Install service part.

#### NOTE:

Refer to label for information on working times.



JSKIA0130GB

# LOCATION OF PLASTIC PARTS

< PREPARATION >

## LOCATION OF PLASTIC PARTS

### Precautions for Plastics

INFOID:000000010640870

Abbreviation	Material name	Heatresisting temperature °C (°F)	Resistance to gasoline and solvents	Other cautions
PE	Polyethylene	60 (140)	Gasoline and most solvents are harmless if applied for a very short time (wipe out quickly).	Flammable
ABS	Acrylonitrile Butadiene Styrene	80 (176)	Avoid gasoline and solvents.	—
EPM/EPDM	Ethylene Propylene (Diene) copolymer	80 (176)	Gasoline and most solvents are harmless if applied for a very short time (wipe out quickly).	Flammable
PS	Polystyrene	80 (176)	Avoid solvents.	Flammable
PVC	Poly Vinyl Chloride	80 (176)	Gasoline and most solvents are harmless if applied for a very short time (wipe out quickly).	Poisonous gas is emitted when burned.
TPO	Thermoplastic Olefine	80 (176)	↑	Flammable
AAS	Acrylonitrile Acrylic Styrene	85 (185)	Avoid gasoline and solvents.	—
PMMA	Poly Methyl Methacrylate	85 (185)	↑	—
EVAC	Ethylene Vinyl Acetate	90 (194)	↑	—
PP	Polypropylene	90 (194)	Gasoline and most solvents are harmless if applied for a very short time (wipe out quickly).	Flammable, avoid battery acid.
PUR	Polyurethane	90 (194)	Avoid gasoline and solvents.	—
UP	Unsaturated Polyester	90 (194)	↑	Flammable
ASA	Acrylonitrile Styrene Acrylate	100 (212)	↑	Flammable
PPE	Poly Phenylene Ether	110 (230)	↑	—
TPU	Thermoplastic Urethane	110 (230)	↑	—
PBT+PC	Poly Butylene Terephthalate + Polycarbonate	120 (248)	↑	Flammable
PC	Polycarbonate	120 (248)	↑	—
POM	Poly Oxymethylene	120 (248)	↑	Avoid battery acid.
PA	Polyamide	140 (284)	↑	Avoid immersing in water.
PBT	Poly Butylene Terephthalate	140 (284)	↑	—
PAR	Polyarylate	180 (356)	↑	—
PET	Polyethylene terephthalate	180 (356)	↑	—
PEI	Polyetherimide	200 (392)	↑	—

**CAUTION:**

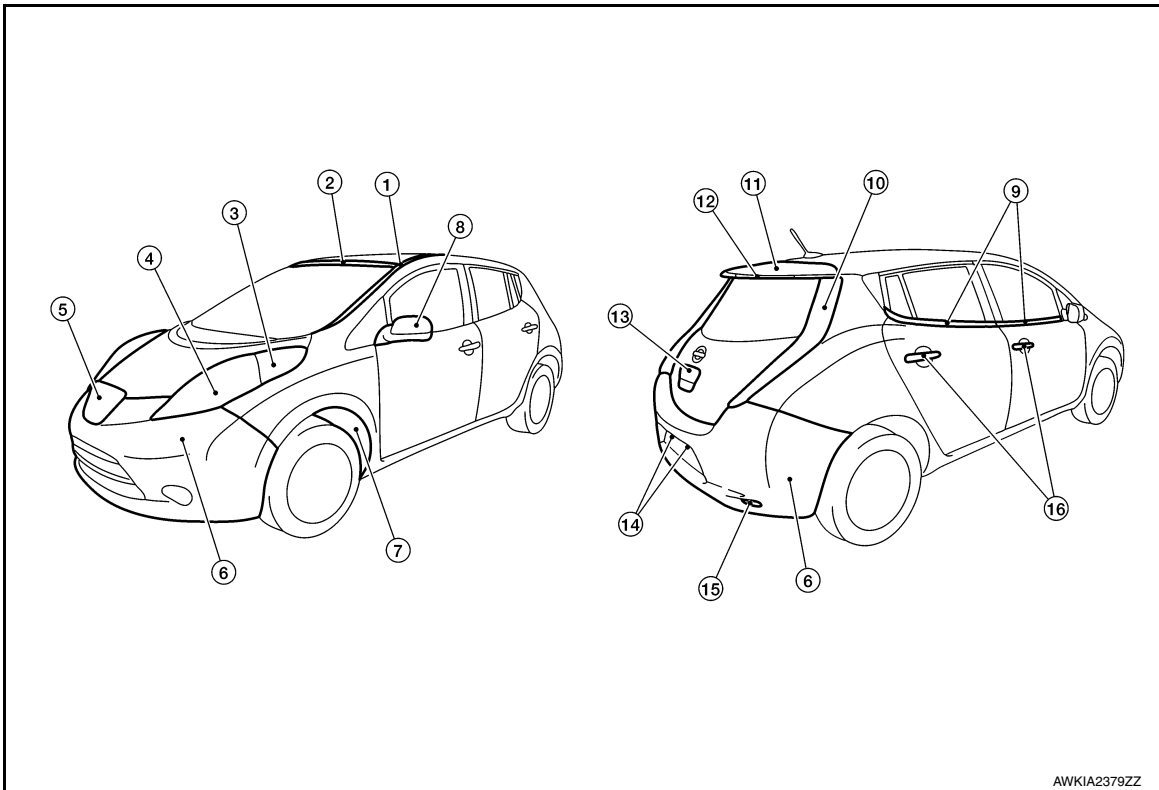
- When repairing and painting a portion of the body adjacent to plastic parts, consider their characteristics (influence of heat and solvent) and remove them if necessary or take suitable measures to protect them.
- Plastic parts should be repaired and painted using methods suiting the materials' characteristics.

# LOCATION OF PLASTIC PARTS

< PREPARATION >

## Location of Plastic Parts

INFOID:0000000110640871



AWKIA2379ZZ

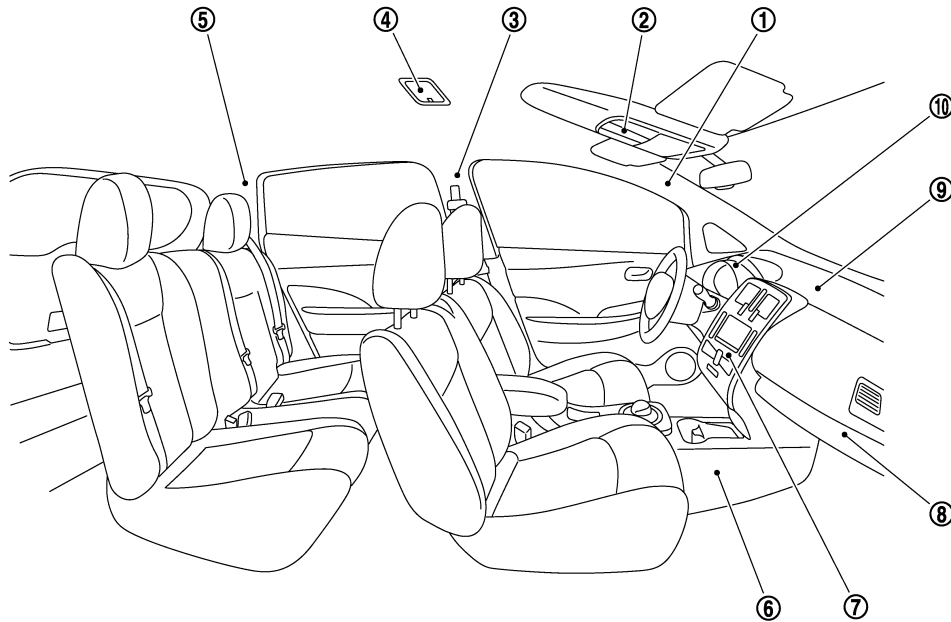
Component		Material	Component		Material	
1	Side roof molding	PVC + Stainless	9	Door outside molding	PVC + Stainless	
	Lower side molding	ASA		10	Rear combination lamp	Lens: PMMA Housing: ASA
2	Upper windshield molding	TPO	11		Rear spoiler	ABS
3	Front side marker lamp	Lens		PMMA	12	High mount stop lamp
		Housing	PP	13		
4	Front combination lamp	Lens	PC		14	License plate lamp
		Housing	PP	15		
5	Charge port lid	PC + PET	16		Door outside handle	Grip body: PC + PET + Glass fiber Grip cover: PC + ABS
6	Bumper fascia	PP + EPM				
7	Front fender protector	PP				
8	Door outside mirror	Case	PP + Glass fiber			
		Base	PBT + PET + Glass fiber			
		Cover	ABS			

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

BRM

# LOCATION OF PLASTIC PARTS

< PREPARATION >



JSKI A2286ZZ

Component		Material	Component		Material
1	Front pillar garnish	PP	5	Rear pillar finisher	PP
2	Map lamp	Lens	6	Center console	Body
		Housing			Console finisher
		Center cover		PP	7
	Sunglass holder	Case	8	Glove box	PP
		Holder	PC + ABS	9	Instrument panel
3	Center pillar garnish	PP		Cluster lid A	PPC
4	Room lamp	Lens	10	Cluster lid finisher	PP
		Housing		PP	Meter cover



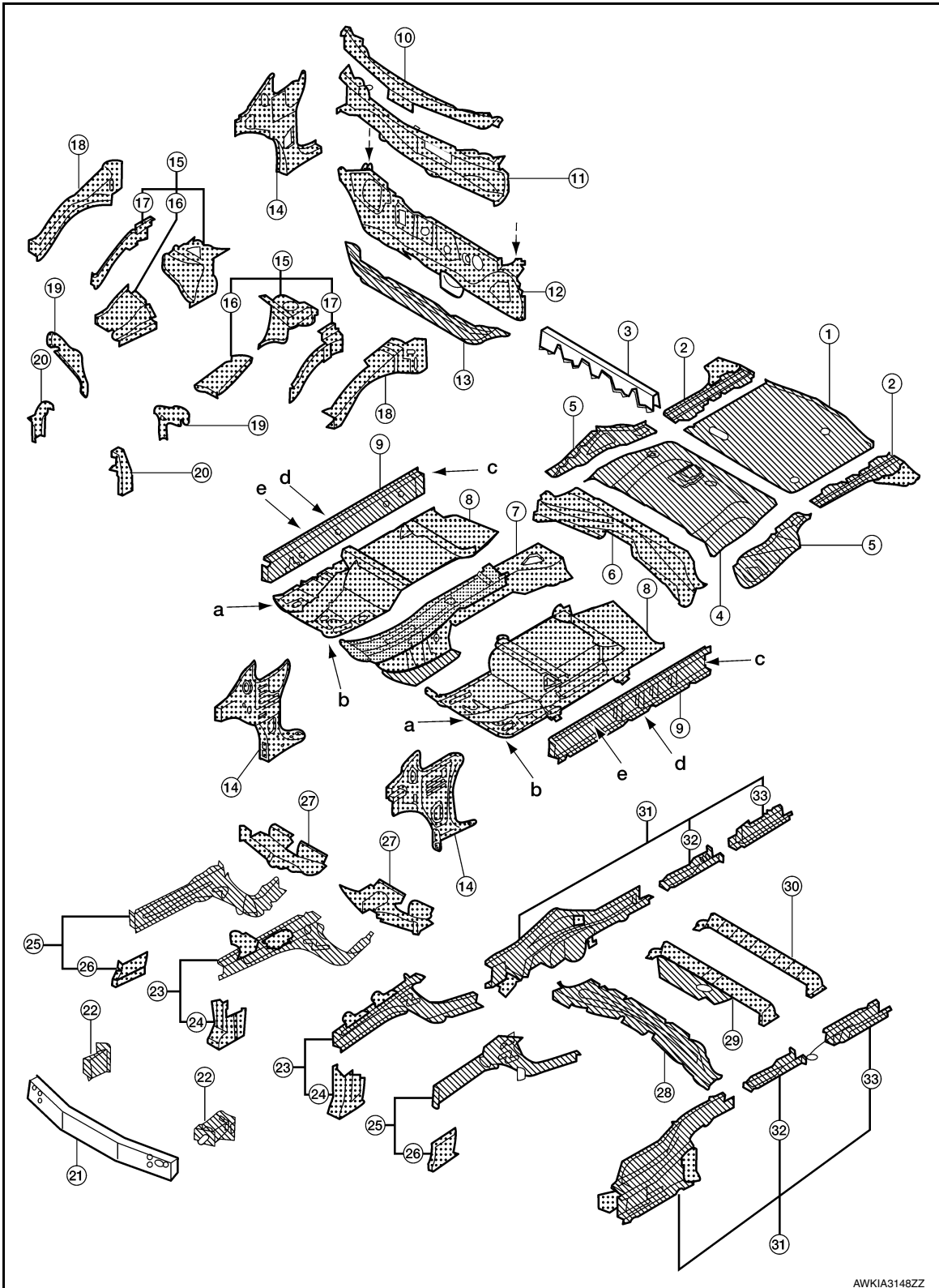
# BODY COMPONENT PARTS

< PREPARATION >

## BODY COMPONENT PARTS

### Underbody Component Parts

INFOID:000000010640872






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

BRM

AWKIA3148ZZ

# BODY COMPONENT PARTS

## < PREPARATION >

-  Both sided anti-corrosive precoated steel sections
-  High strength steel (HSS) sections
-  Both sided anti-corrosive steel and HSS sections
- \* Aluminum portion

No.	Parts name	Tensile strength (MPa)	Both sided anti-corrosive precoated steel sections	Aluminum portion	
1.	Rear floor rear	Under 440	×	—	
2.	Rear floor rear side (LH/RH)	590	×	—	
3.	Upper seat crossmember assembly	Under 440	—	—	
4.	Rear floor front	440	×	—	
5.	Rear side member closing plate (LH/RH)	590	×	—	
6.	Rear floor front extension	Under 440	×	—	
7.	Center front floor	440	×	—	
8.	Front floor (LH/RH)	780	×	—	
9.	Inner sill (LH/RH)	c. T=1.4 mm (0.055 in)	980 <sup>caution</sup>	×	—
		d. T=2.0 mm (0.079 in)	980 <sup>caution</sup>		
		e. T=1.6 mm (0.063 in)	980 <sup>caution</sup>		
10.	Cowl top	Under 440	×	—	
11.	Upper dash	Under 440	×	—	
12.	Lower dash	f. T=1.4 mm (0.055 in)	980 <sup>caution</sup>	×	—
13.	Lower dash crossmember	T=2.0 mm (0.079 in)	980 <sup>caution</sup>	×	—
14.	Side dash (LH/RH)	590	×	—	
15.	Front strut housing (LH/RH)	590	×	—	
16.	Lower front hoodledge (LH/RH)	Under 440	×	—	
17.	Upper hoodledge (LH/RH)	Under 440	×	—	
18.	Hoodledge reinforcement (LH/RH)	Under 440	×	—	
19.	Hoodledge connector (LH/RH)	Under 440	×	—	
20.	Side radiator core support (LH/RH)	Under 440	×	—	
21.	Inner center front bumper reinforcement	—	—	×	
22.	Front side member front assembly (LH/RH)	590	×	—	
23.	Front side member assembly (LH/RH)	780	×	—	
24.	Front suspension front mounting bracket (LH/RH)	590	×	—	
25.	Front side member closing plate assembly (LH/RH)	780	×	—	
26.	Outer add on frame bracket (LH/RH)	Under 440	×	—	
27.	Front suspension rear mounting bracket (LH/RH)	Under 440	×	—	
28.	Rear seat crossmember	440	×	—	
29.	Rear crossmember center assembly	440	×	—	
30.	7th crossmember	Under 440	×	—	
31.	Rear side member (LH/RH)	780	×	—	

# BODY COMPONENT PARTS

## < PREPARATION >

No.	Parts name	Tensile strength (MPa)	Both sided anti-corrosive precoated steel sections	Aluminum portion
32.	Rear side member extension reinforcement assembly (LH/RH)	440	×	—
33.	Rear side member extension (LH/RH)	590	×	—

**NOTE:**

- For the parts without a number described in the figure, it is supplied only with the assembly part that the part is included with.
- Tensile strength column shows the largest strength value of a part in the component part.

**CAUTION:**

**If the high strength steel (ultra high strength steel) of this is broken, replace by assembly for the supply part.**

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

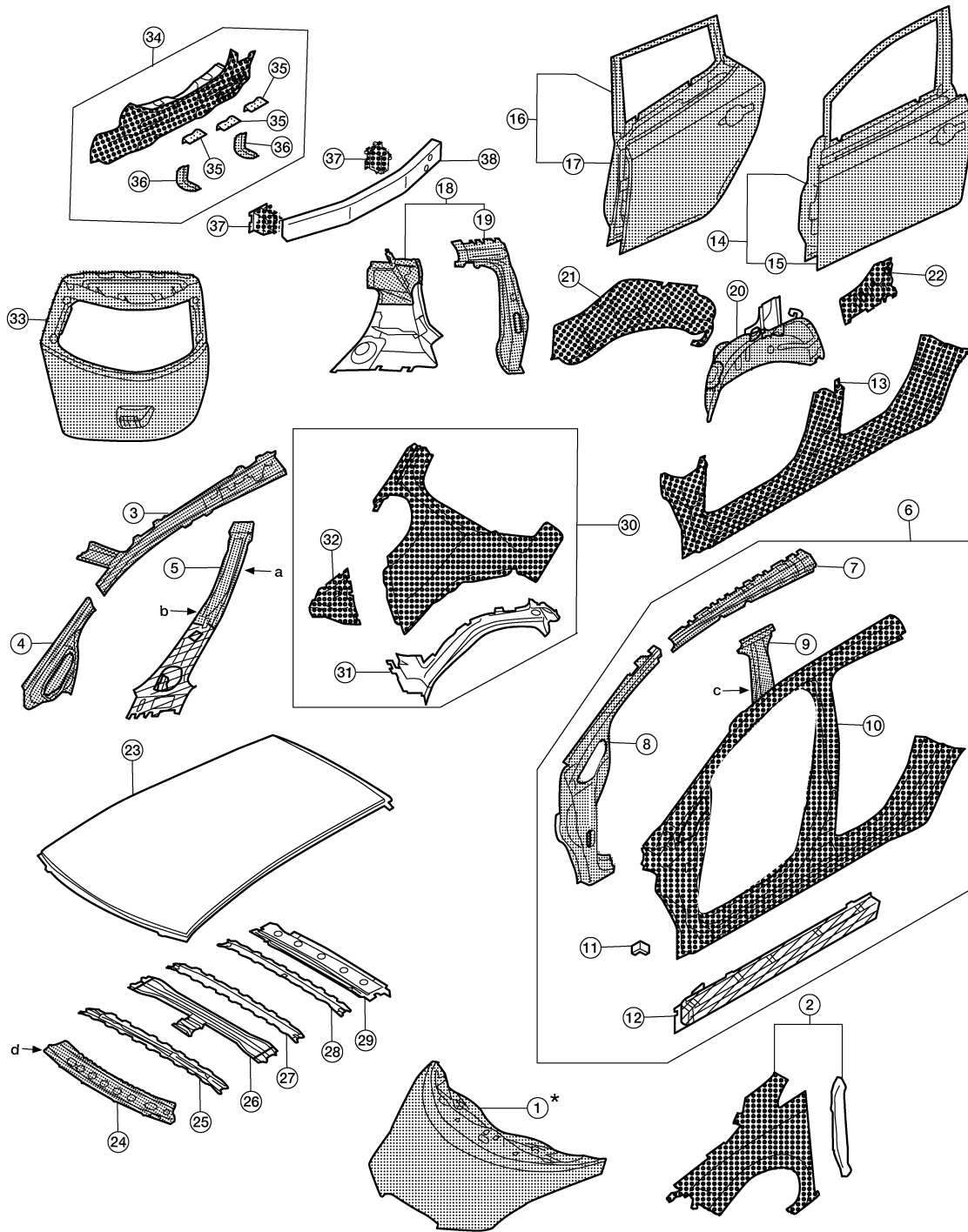
BRM

# BODY COMPONENT PARTS




< PREPARATION >

## Body Component Parts

INFOID:000000010640873



AWKIA3147ZZ

-  Both sided anti-corrosive pre-coated steel sections
-  High strength steel (HSS) sections
-  Both sided anti-corrosive steel and HSS sections

# BODY COMPONENT PARTS

< PREPARATION >

No.	Parts name	Tensile strength (MPa)	Both sided anti-corrosive pre-coated steel sections	Aluminum portion		
1.	Hood	780	×	—	A	
2.	Front fender (LH/RH)	Under 440	×	—	B	
3.	Inner side roof rail (LH/RH)	780	—	—	C	
4.	Upper inner front pillar (LH/RH)	780	—	—		
5.	Inner center pillar assembly (LH/RH)	a. T=1.6 mm (0.063 in)	980 <sup>caution</sup>	—	—	D
		b. T=1.4 mm (0.055 in)	980 <sup>caution</sup>	—	—	
6.	Side body assembly (LH/RH)	Refer to No.7-12			E	
7.	Outer side roof rail reinforcement (LH/RH)	T=1.4 mm (0.055 in)	980 <sup>caution</sup>	—	—	
8.	Front pillar brace (LH/RH)	590	—	—	F	
9.	Lower center pillar brace (LH/RH)	c. T=1.2 mm (0.047 in)	980 <sup>caution</sup>	—	—	
10.	Outer front side body (LH/RH)	Under 440	×	—	G	
11.	Front fender bracket assembly (LH/RH)	Under 440	×	—		
12.	Outer sill reinforcement (LH/RH)	780	×	—	H	
13.	Outer sill (LH/RH)	Under 440	×	—		
14.	Front door (LH/RH)	780	×	—	I	
15.	Outer front door panel (LH/RH)	780	×	—		
16.	Rear door (LH/RH)	780	×	—	J	
17.	Outer rear door panel (LH/RH)	780	×	—		
18.	Inner rear pillar (LH/RH)	440	—	—		
19.	Inner rear pillar reinforcement (LH/RH)	440	—	—		
20.	Inner rear wheelhouse (LH/RH)	590	×	—	BRM	
21.	Outer rear wheelhouse (LH/RH)	Under 440	×	—		
22.	Outer rear wheelhouse extension (LH/RH)	Under 440	×	—	L	
23.	Roof	Under 440	—	—		
24.	Front roof rail	590	—	—		
25.	Roof bow No.1	Under 440	—	—	M	
26.	Center roof reinforcement	590	—	—		
27.	Roof bow No.3	Under 440	—	—		
28.	Roof bow No.4	Under 440	—	—	N	
29.	Rear roof rail	Under 440	—	—		
30.	Rear fender (LH/RH)	Under 440	×	—	O	
31.	Rear fender extension (LH/RH)	Under 440	—	—		
32.	Rear fender corner (LH/RH)	Under 440	×	—		
33.	Back door	780	×	—	P	
34.	Upper rear panel	440	×	—		
35.	Upper rear bumper retainer	Under 440	×	—		
36.	Rear side bumper bracket	Under 440	×	—		
37.	Rear bumper stay (LH/RH)	Under 440	×	—		
38.	Inner center rear bumper reinforcement	—	—	×		

## BODY COMPONENT PARTS

### < PREPARATION >

---

#### NOTE:

- For the parts without a number described in the figure, it is supplied only with the assembly part that the part is included with.
- Tensile strength column shows the largest strength value of a part in the component part.

#### CAUTION:

**If the high strength steel (ultra high strength steel) of this is broken, replace by assembly for the supply part.**

# REPAIR WORK FLOW

< BASIC INSPECTION >

## BASIC INSPECTION

### REPAIR WORK FLOW

#### Repair Judgment Flow

INFOID:000000010640874

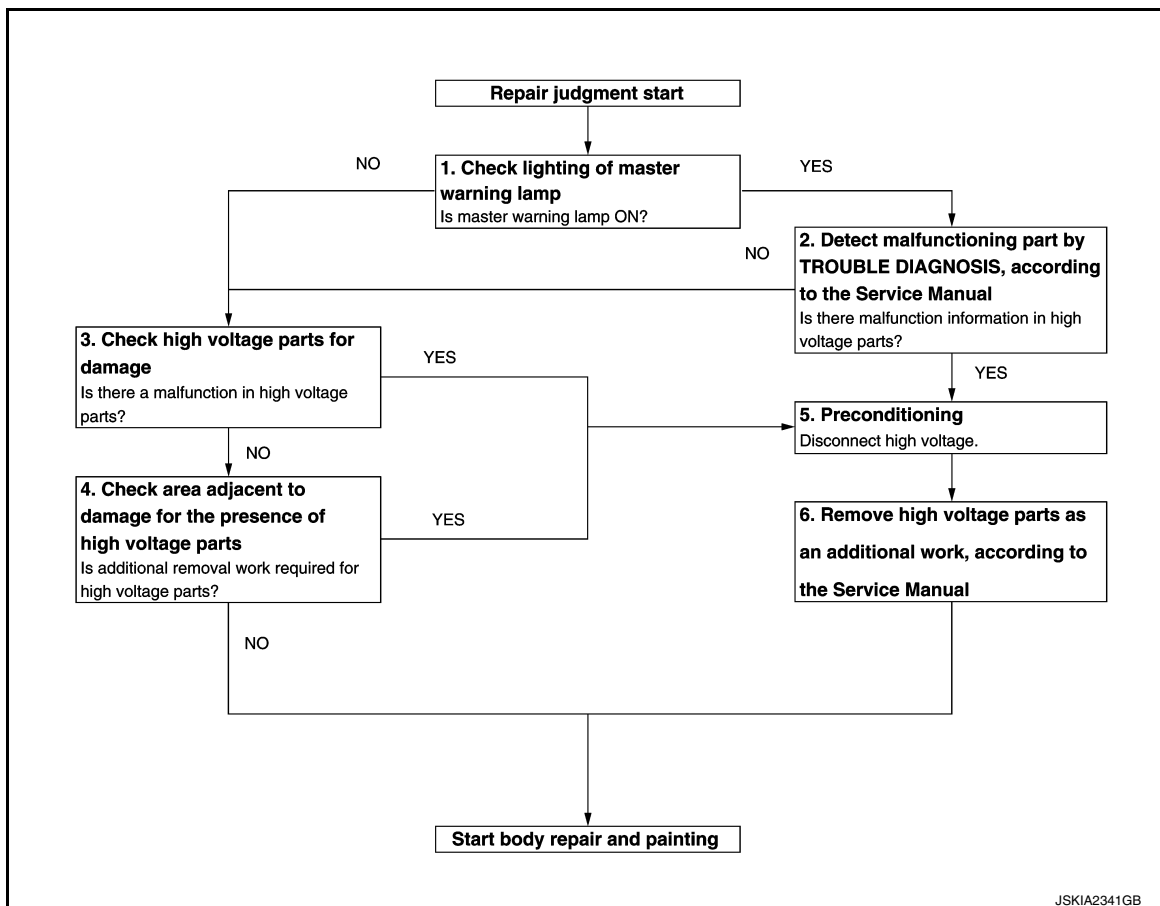
#### WARNING:

- Because hybrid vehicles and electric vehicles contain a high voltage battery, there is the risk of electric shock, electric leakage, or similar accidents if the high voltage component and vehicle are handled incorrectly. Be sure to follow the correct work procedures when performing inspection and maintenance.
- Be sure to remove the service plug in order to disconnect the high voltage circuits before performing inspection or maintenance of high voltage system harnesses and parts.
- To prevent the removed service plug from being connected by mistake during the procedure, always carry it in your pocket or put it in the tool box.
- Be sure to wear insulating protective equipment consisting of glove, shoes, face shield and glasses before beginning work on the high voltage system.
- Clearly identify the persons responsible for high voltage work and ensure that other persons do not touch the vehicle. When not working, cover high voltage parts with an insulating cover sheet or similar item to prevent other persons from contacting them.
- Refer to [GI-34, "High Voltage Precautions"](#).

#### CAUTION:

There is the possibility of a malfunction occurring if the vehicle is changed to READY status while the service plug is removed. Therefore do not change the vehicle to READY status unless instructed to do so in the Service Manual.

#### OVERALL SEQUENCE



#### DETAILED FLOW

##### 1. CHECK LIGHTING OF MASTER WARNING LAMP

Check that the master warning lamp is ON.

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

BRM

# REPAIR WORK FLOW

## < BASIC INSPECTION >

Is master warning lamp ON?

- YES >> GO TO 2.
- NO >> GO TO 3.

## 2. DETECT MALFUNCTIONING PART BY TROUBLE DIAGNOSIS, ACCORDING TO THE SERVICE MANUAL

Connect CONSULT to check malfunction information.

Is there malfunction information in high voltage parts?

- YES >> GO TO 5.
- NO >> GO TO 3.

## 3. CHECK HIGH VOLTAGE PARTS FOR DAMAGE

Visually check high voltage parts for damage.

### **WARNING:**

**When performing high voltage-related work, always wear insulating protective gear.**

Is there a malfunction in high voltage parts?

- YES >> GO TO 5.
- NO >> GO TO 4.

## 4. CHECK AREA ADJACENT TO DAMAGE FOR THE PRESENCE OF HIGH VOLTAGE PARTS

Check high voltage parts requiring additional removal work.

Is additional removal work required for high voltage parts?

- YES >> GO TO 5.
- NO >> Start body repair and painting.

## 5. PRECONDITIONING

### **WARNING:**

**Disconnect high voltage. Refer to [GI-33, "How to Disconnect High Voltage"](#).**

Check voltage in high voltage circuit. (Check that condenser are discharged.)

1. Lift up the vehicle and remove the battery under covers. Refer to [EVB-181, "Exploded View"](#).
2. Disconnect high voltage connector from front side of Li-ion battery. Refer to [EVB-181, "Removal and Installation"](#).
3. Measure voltage between high voltage harness connector terminals.

### **DANGER:**

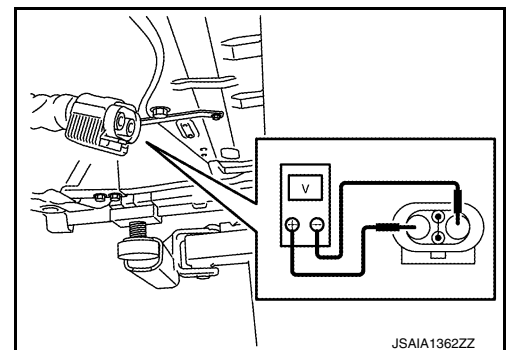


**Touching high voltage components without using the appropriate protective equipment will cause electrocution.**



**Standard**

**: 5 V or less**



### **CAUTION:**

**For voltage measurements, use a tester which can measure to 500V or higher.**

>> GO TO 6.

## 6. REMOVE HIGH VOLTAGE PARTS AS AN ADDITIONAL WORK, ACCORDING TO THE SERVICE MANUAL

Remove high voltage parts as an additional work, according to the Service Manual.

### **WARNING:**

**When performing high voltage-related work, always wear insulating protective gear.**

>> Start body repair and painting.



# CORROSION PROTECTION

< REMOVAL AND INSTALLATION >

## REMOVAL AND INSTALLATION

### CORROSION PROTECTION

#### Description

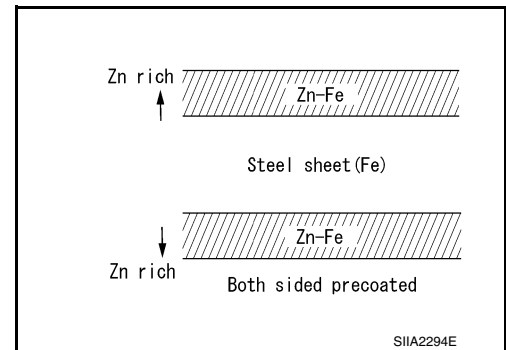
INFOID:000000010640875

To provide improved corrosion prevention, the following anti-corrosive measures have been implemented in NISSAN production plants. When repairing or replacing body panels, it is necessary to use the same anti-corrosive measures.

#### ANTI-CORROSIVE PRECOATED STEEL (GALVANNEALED STEEL)

To improve repairability and corrosion resistance, a new type of anti-corrosive precoated steel sheet has been adopted replacing conventional zinc-coated steel sheet.

Galvannealed steel is electroplated and heated to form Zinc-iron alloy, which provides excellent and long term corrosion resistance with cationic electrodeposition primer.



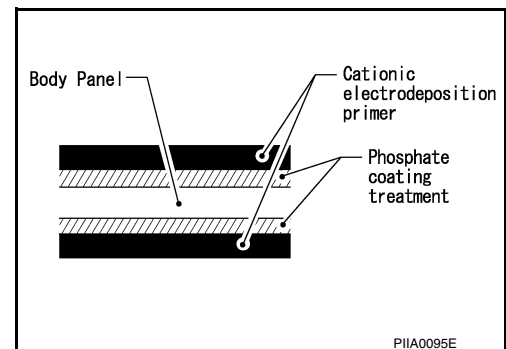
NISSAN Genuine Service Parts are fabricated from galvannealed steel. Therefore, it is recommended that GENUINE NISSAN PARTS or equivalent be used for panel replacement to maintain the anti-corrosive performance built into the vehicle at the factory.

#### PHOSPHATE COATING TREATMENT AND CATIONIC ELECTRODEPOSITION PRIMER

A phosphate coating treatment and a cationic electrodeposition primer, which provide excellent corrosion protection, are employed on all body components.

#### **CAUTION:**

**Confine paint removal during welding operations to an absolute minimum.**



NISSAN Genuine Service Parts are also treated in the same manner. Therefore, it is recommended that GENUINE NISSAN PARTS or an equivalent be used for panel replacement to maintain anti-corrosive performance built into the vehicle at the factory.

#### Undercoating

INFOID:000000010640876

The underside of the floor and wheelhouse are undercoated to prevent rust, vibration, noise and stone chipping. Therefore, when such a panel is replaced or repaired, apply undercoating to that part. Use an undercoating which is rust resistant, soundproof, vibration-proof, shock-resistant, adhesive, and durable.

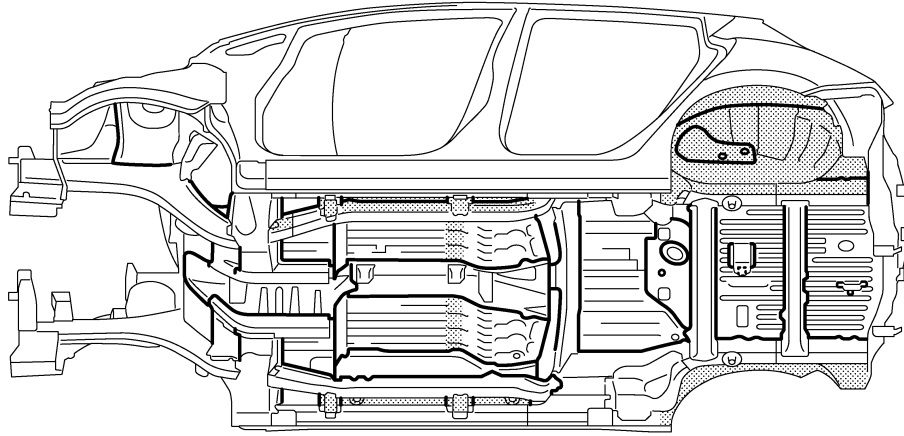
#### PRECAUTIONS IN UNDERCOATING

1. Never apply undercoating to any place unless specified (such as the areas above the muffler and three-way catalyst that are subjected to heat).
2. Never undercoat the exhaust pipe or other parts that become hot.
3. Never undercoat rotating parts.
4. Apply bitumen wax after applying undercoating.
5. After putting seal on the vehicle, put undercoating on it.


# CORROSION PROTECTION

< REMOVAL AND INSTALLATION >

---



JSKIA2446ZZ

 Undercoated areas

 Sealed portions

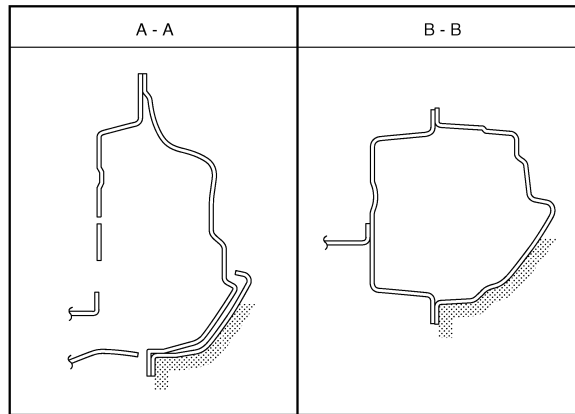
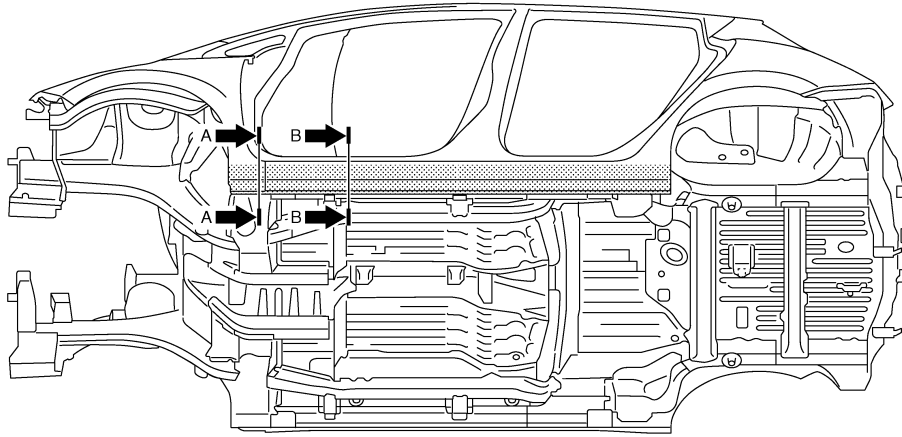
## Stone Guard Coat


INFOID:000000010640877

To prevent damage caused by stones, the lower outer body panel (fender, door, etc.) have an additional layer of Stone Guard Coating over the ED primer coating. When replacing or repairing these panels, apply Stone Guard coating to the same portions as before. Use a coating which is rust preventive, durable, shock-resistant and has a long shelf life.

# CORROSION PROTECTION

## < REMOVAL AND INSTALLATION >



 Stone guard coated portions

### Body Sealing

INFOID:000000010640878

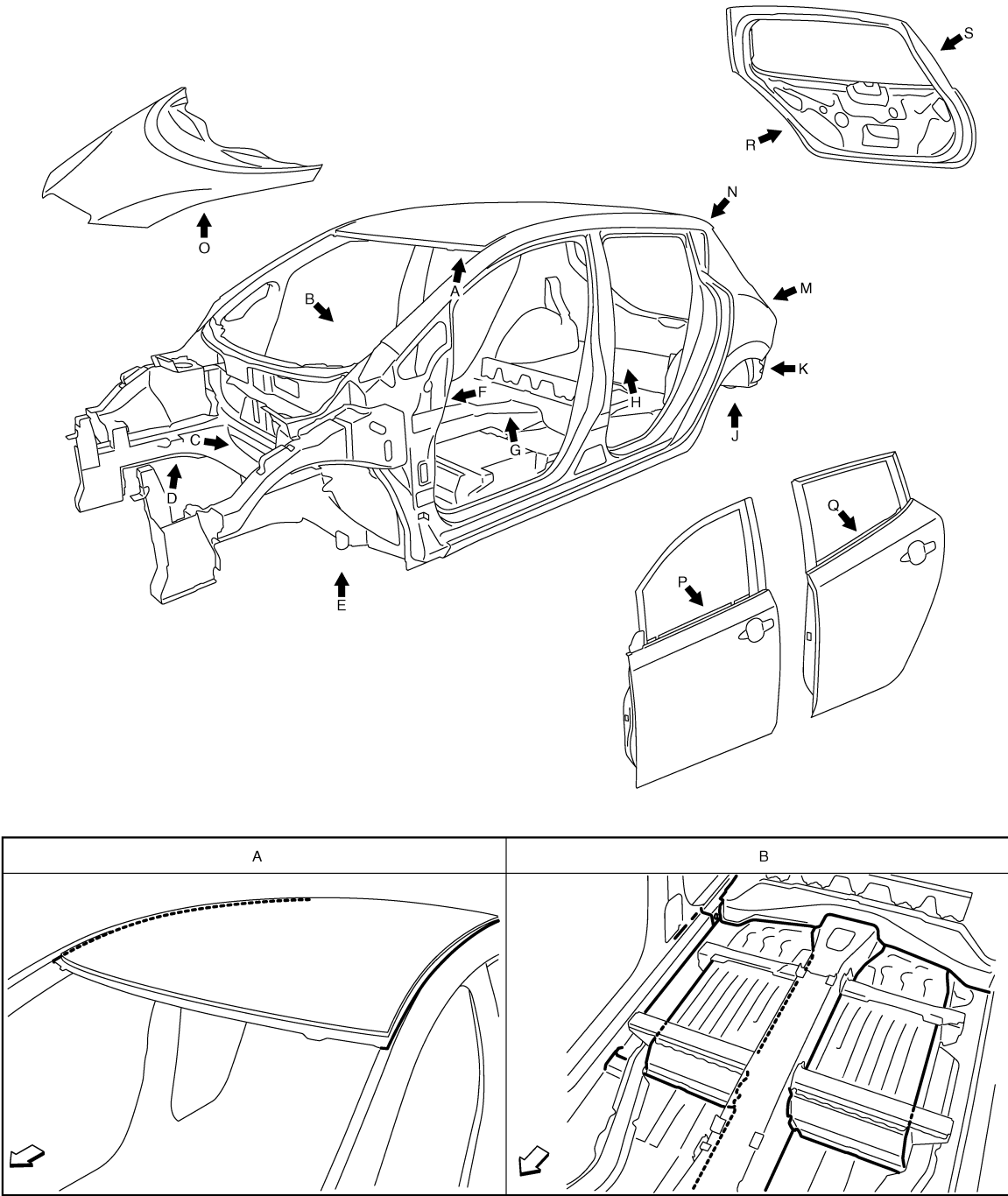
The following figure shows the areas that are sealed at the factory. Sealant that is applied to these areas should be smooth and free from cuts or gaps. Care should be taken not to apply an excess amount of sealant and not to allow other unaffected parts to come into contact with the sealant.

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

BRM

# CORROSION PROTECTION

## < REMOVAL AND INSTALLATION >



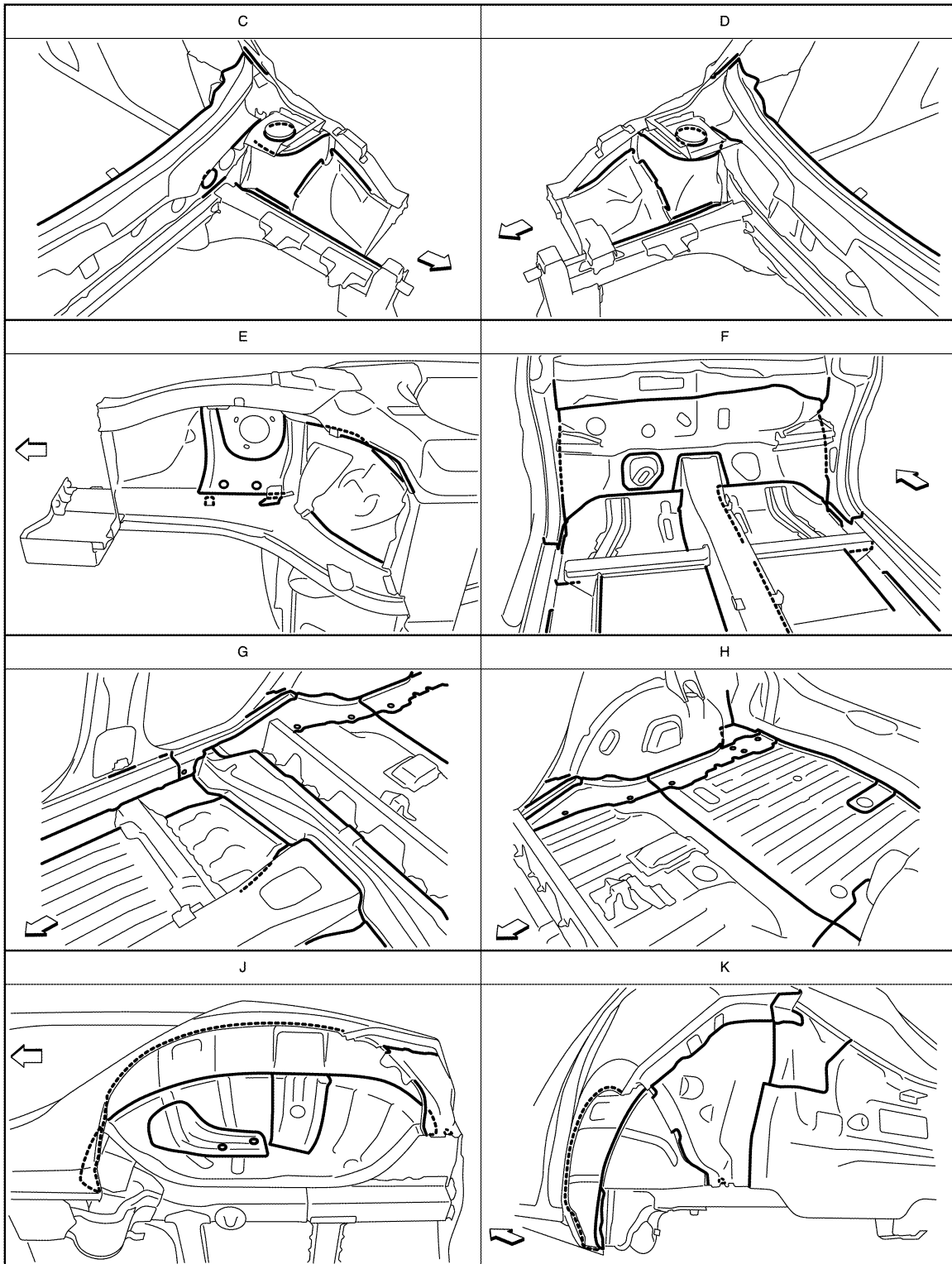
JSKIA2272ZZ

← Front

— Sealed portions

# CORROSION PROTECTION

## < REMOVAL AND INSTALLATION >



JSKIA2569ZZ

← Front

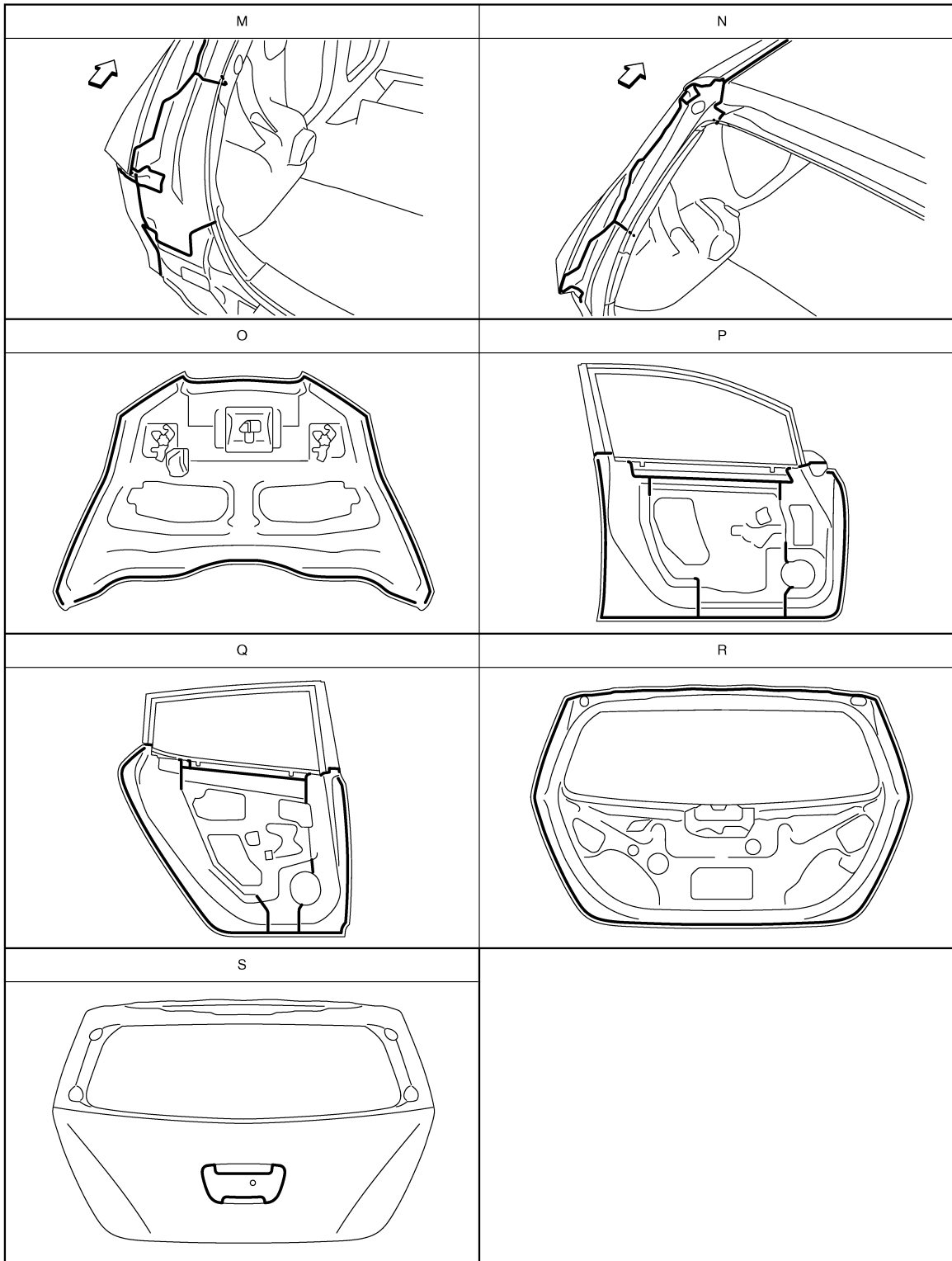
— Sealed portions

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

BRM

# CORROSION PROTECTION

## < REMOVAL AND INSTALLATION >



JSKIA2274ZZ

← Front

■ Sealed portions

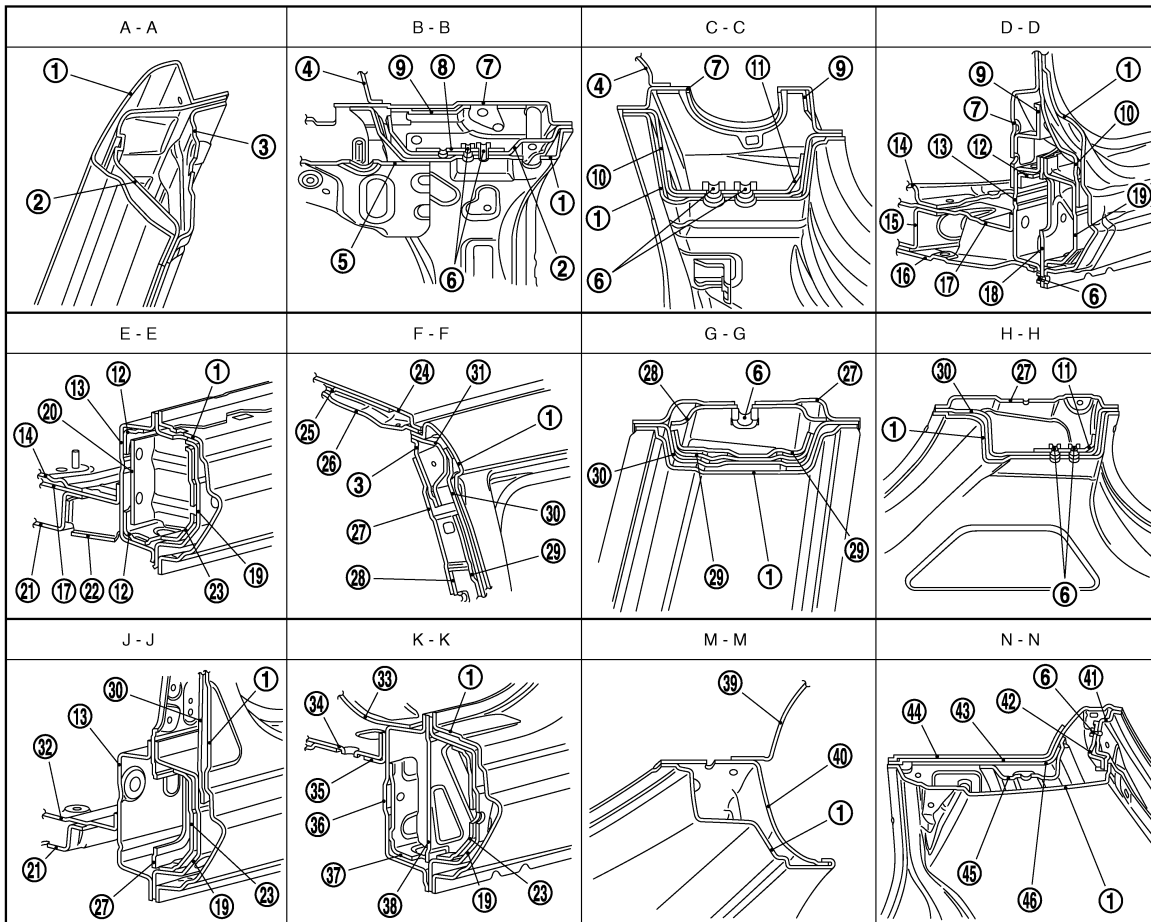
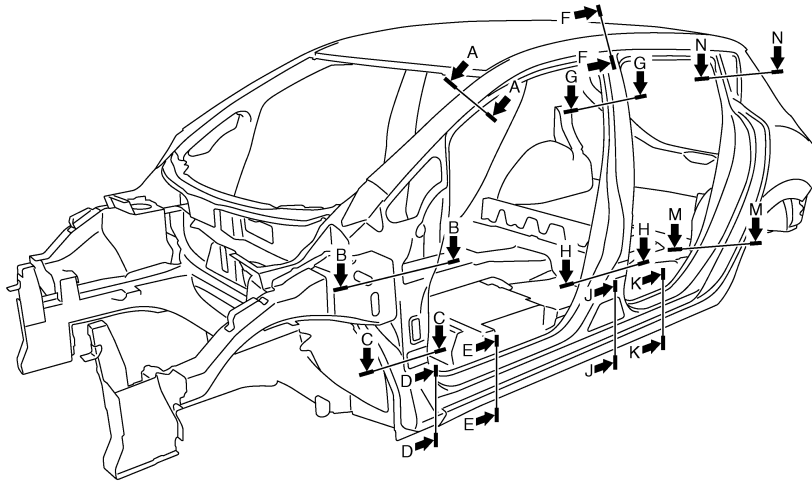
# BODY CONSTRUCTION

< REMOVAL AND INSTALLATION >

## BODY CONSTRUCTION

### Body Construction

INFOID:000000010640879



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

BRM

- |                    |                                     |                                     |
|--------------------|-------------------------------------|-------------------------------------|
| 1. Outer side body | 2. Outer front pillar reinforcement | 3. Inner front side roof rail       |
| 4. Upper dash      | 5. Hoodledge reinforcement          | 6. Weld nut                         |
| 7. Side dash       | 8. Upper hinge plate                | 9. Inner front pillar reinforcement |

JSKIA2275ZZ

# BODY CONSTRUCTION

## < REMOVAL AND INSTALLATION >

- |                                      |                                    |  |
|--------------------------------------|------------------------------------|--|
| 10. Lower dash                       | 11. Lower front pillar hinge brace | 12. Lower hinge plate                  |
| 13. Inner front sill reinforcement   | 14. Inner sill                     | 15. Front side member extension center |
| 16. Front side member closing plate  | 17. Front outrigger                | 18. Front floor front                  |
| 19. Lower front pillar reinforcement | 20. Outer sill reinforcement       | 21. Outer sill brace                   |
| 22. Front side member extension rear | 23. Floor member extension         | 24. Center sill reinforcement          |
| 25. Roof                             | 26. Center roof reinforcement      | 27. Roof member reinforcement          |
| 28. Inner center pillar              | 29. Center pillar seat belt anchor | 30. Center pillar reinforcement        |
| 31. Center pillar hinge brace        | 32. Outer side roof rail           | 33. Front floor side                   |
| 34. Rear side member closing plate   | 35. Rear side member reinforcement | 36. Rear side member                   |
| 37. Inner sill extension             | 38. Inner rear sill reinforcement  | 39. Outer rear wheelhouse extension    |
| 40. Inner rear wheelhouse            | 41. Outer rear wheelhouse          | 42. Rear fender extension              |
| 43. Back door stay bracket           | 44. Inner rear pillar              | 45. Rear roof rail brace               |
| 46. Inner rear pillar reinforcement  | 47. Rear pillar seat belt anchor   |  |

## Rear Fender Hemming Process

INFOID:000000010640880

1. A wheel arch is to be installed and hemmed over the left and right outer wheel houses.
2. In order to hem the wheel arch, it is necessary to repair any damaged or defaced parts around outer wheel house.

### CAUTION:

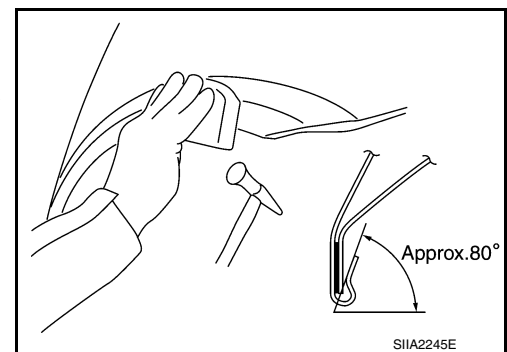
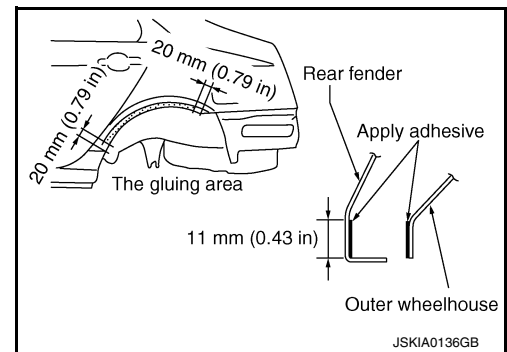
**Ensure that the area that is to be glued around the outer wheelhouse is undamaged or defaced.**

### PROCEDURE OF THE HEMMING PROCESS

- Peel off old bonding material on the surface of the outer wheelhouse and clean thoroughly.
- Peel off a primer coat in the specified area where new adhesive is to be applied on rear fender (the replacing part).
- Apply new adhesive to both specified areas of the outer wheelhouse and rear fender.

**<Adhesive> 3M™ Automix™ Panel Bonding Adhesive 08115 or equivalent**

- Attach rear fender to the body of the car, and weld the required part except the hemming part.
- Bend the welded part starting from the center of the wheel arch gradually with a hammer and a dolly. (Also hem the end of the flange.)
- Hemming with a hammer is conducted to an approximate angle of 80 degrees.

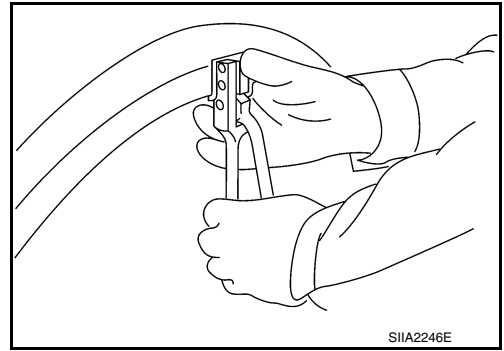




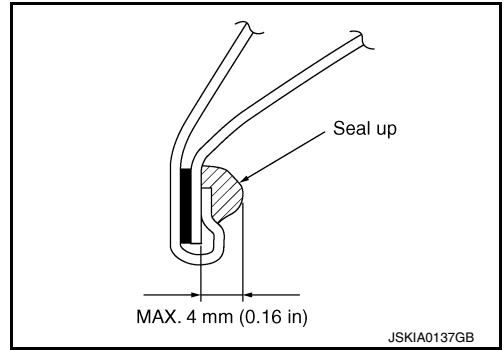
# BODY CONSTRUCTION

## < REMOVAL AND INSTALLATION >

- Starting from the center, hem the wheel arch gradually, using slight back and forth motion with a hemming tool.



- Seal up the area around the hemmed end of the flange.



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

**BRM**

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

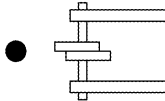
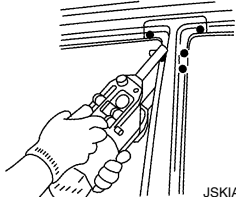
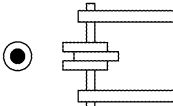
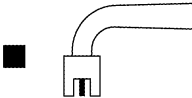



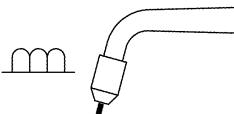
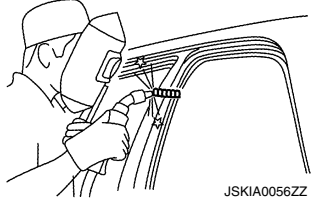
## REPLACEMENT OPERATIONS

### Description

INFOID:000000010640881

- This section is prepared for technicians who have attained a high level of skill and experience in repairing collision-damaged vehicles and also use modern service tools and equipment. Persons unfamiliar with body repair techniques should not attempt to repair collision-damaged vehicles by using this section.
- Technicians are also encouraged to read the Body Repair Manual (Fundamentals) in order to ensure that the original functions and quality of the vehicle are maintained. The Body Repair Manual (Fundamentals) contains additional information, including cautions and warnings, that are not including in this manual. Technicians should refer to both manuals to ensure proper repair.
- Please note that this information is prepared for worldwide usage, and as such, certain procedures might not apply in some regions or countries.

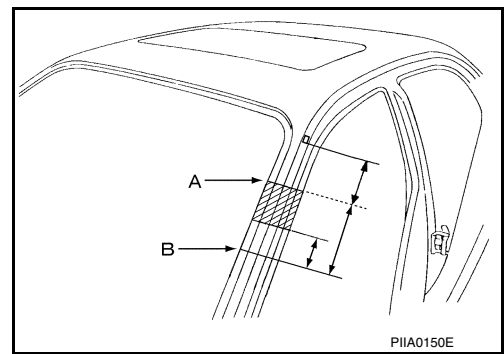
The symbols used in this section for welding operations are shown below.

Symbol marks	Description	
 <p data-bbox="402 842 488 861">JSKIA0049ZZ</p>	2-spot welds	 <p data-bbox="1289 968 1375 987">JSKIA0053ZZ</p>
 <p data-bbox="402 1094 488 1113">JSKIA0050ZZ</p>	3-spot welds	
 <p data-bbox="402 1472 488 1491">JSKIA0051ZZ</p>	MIG plug weld	 <p data-bbox="1289 1346 1375 1365">JSKIA0054ZZ</p> <p data-bbox="1008 1381 1317 1409">For 3 panels plug weld method</p> <div style="display: flex; flex-direction: column; align-items: center;"> <div data-bbox="1143 1444 1300 1476"> <p data-bbox="1143 1451 1166 1476">■ A</p>  </div> <div data-bbox="1143 1535 1300 1566"> <p data-bbox="1143 1541 1166 1566">■ B</p>  </div> </div> <p data-bbox="1289 1598 1375 1617">JSKIA0055ZZ</p>
 <p data-bbox="402 1850 488 1869">JSKIA0052ZZ</p>	MIG seam weld / Point weld	 <p data-bbox="1289 1850 1375 1869">JSKIA0056ZZ</p>

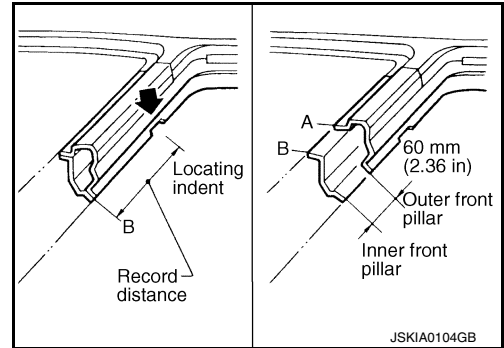
# REPLACEMENT OPERATIONS

## < REMOVAL AND INSTALLATION >

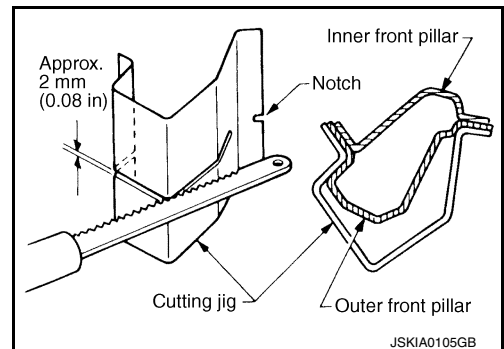
- Front pillar butt joint can be determined anywhere within shaded area (A) as shown in the figure. The best location for the butt joint is within the (B) location due to the construction of the vehicle.



- Determine cutting position and record distance from the locating indent (B) Use this distance when cutting the service part. Cut outer front pillar (A) over 60 mm (2.36 in) above the inner front pillar cut position.

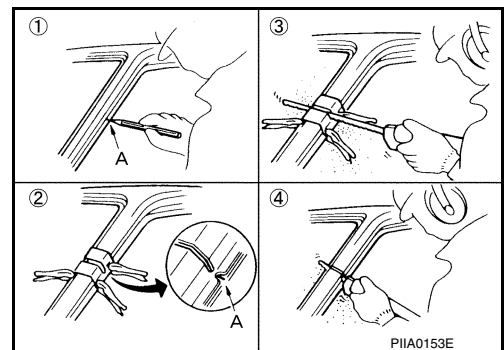


- Prepare a cutting jig to make outer pillar easier to cut. Also, this will permit the service part to be accurately cut at the joint position.



- An example of cutting operation using a cutting jig is as per the following.

1. Mark cutting lines cut position of outer pillar (A) and the inner pillar.
2. Align cutting line with notch on jig. Clamp jig to pillar.
3. Cut outer pillar along groove of jig (at position A).
4. Remove jig and cut remaining portions.
5. Cut inner pillar in same manner.

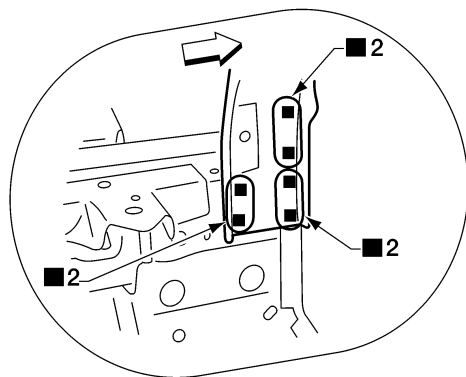
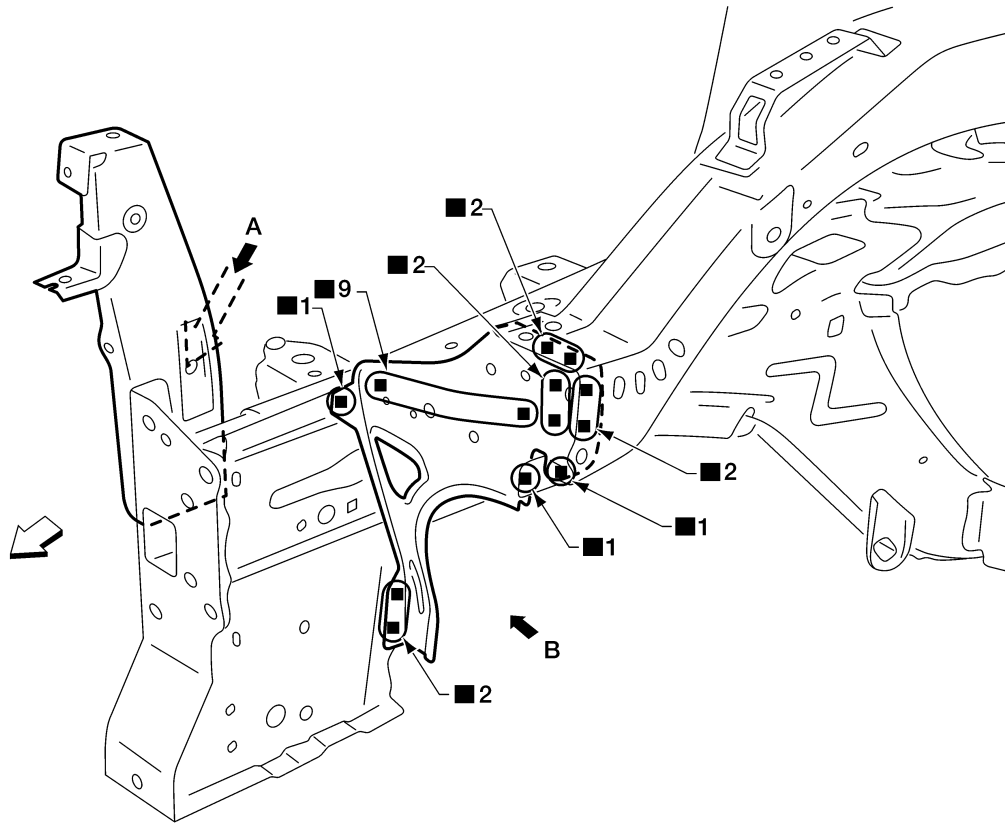


# REPLACEMENT OPERATIONS

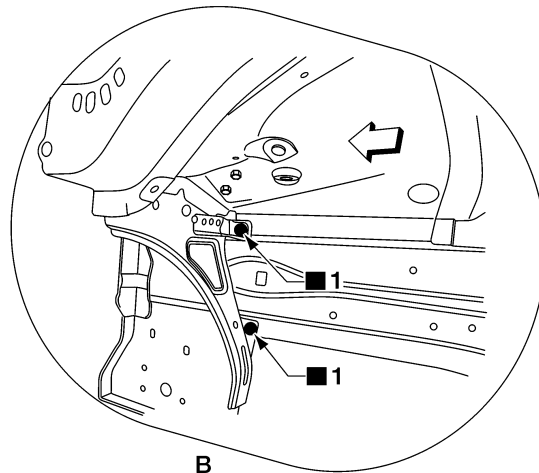
< REMOVAL AND INSTALLATION >

## Radiator Core Support

INFOID:000000010640882



A



B

AWKIA2383ZZ

⇐ Front

Replacement parts

- Side radiator core support (LH)
- Hoodedge connector (LH)

High voltage system parts (Removal required depending on damage)

- Service plug
- Front side Li-ion battery high voltage harness connector
- Charge port

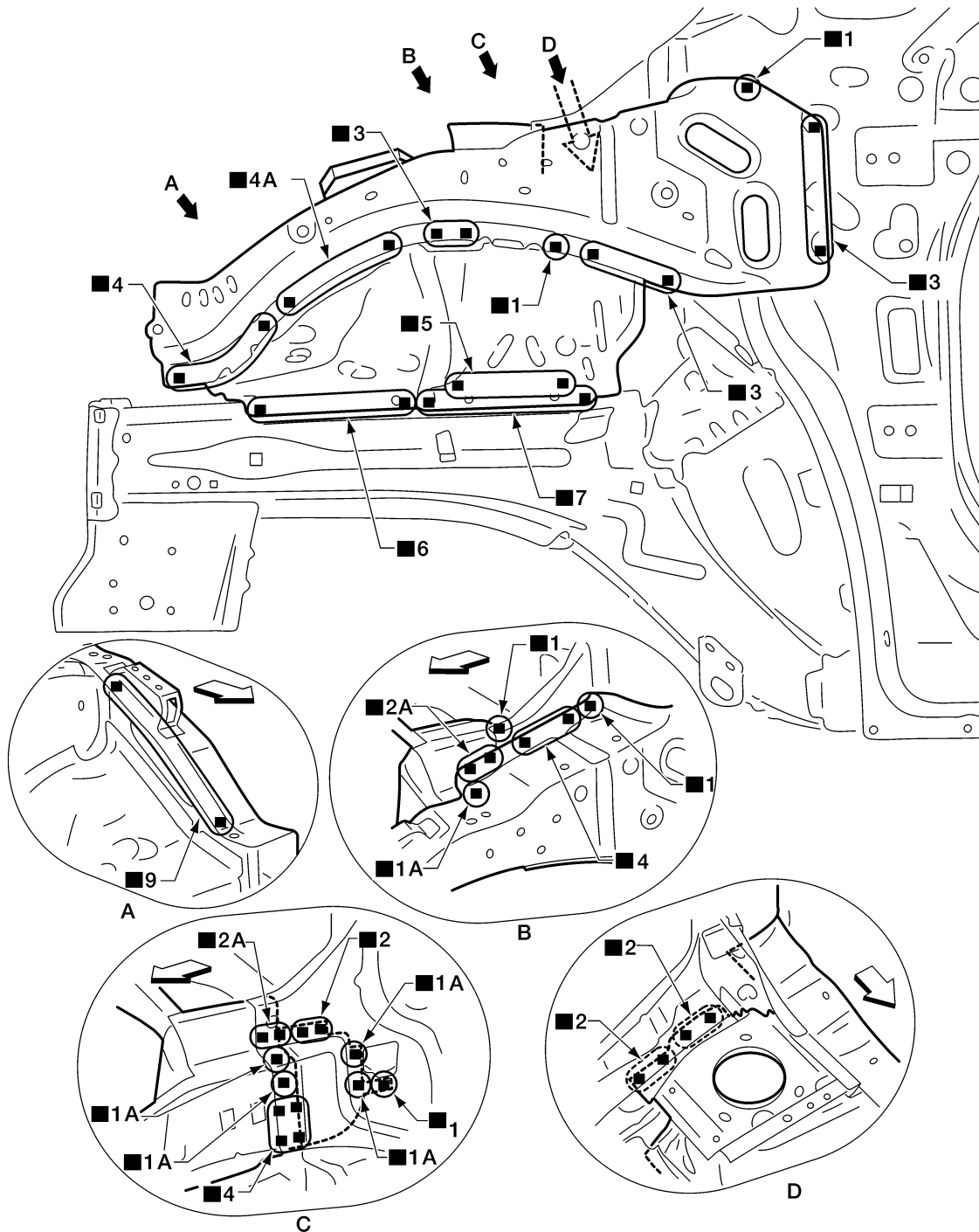
# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

## Hoodledge

INFOID:0000000110640883

Work after radiator core support is removed.



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

BRM

⇐ Front

Replacement parts

- Front strut housing (LH)
- Hoodledge reinforcement (LH)

High voltage system parts (Removal required depending on damage)

- Service plug
- Front side Li-ion battery high voltage harness connector
- Charge port
- PTC elements heater
- Electric compressor
- Traction motor inverter
- Traction motor
- DC/DC-J/B

AWKIA2284ZZ

# REPLACEMENT OPERATIONS

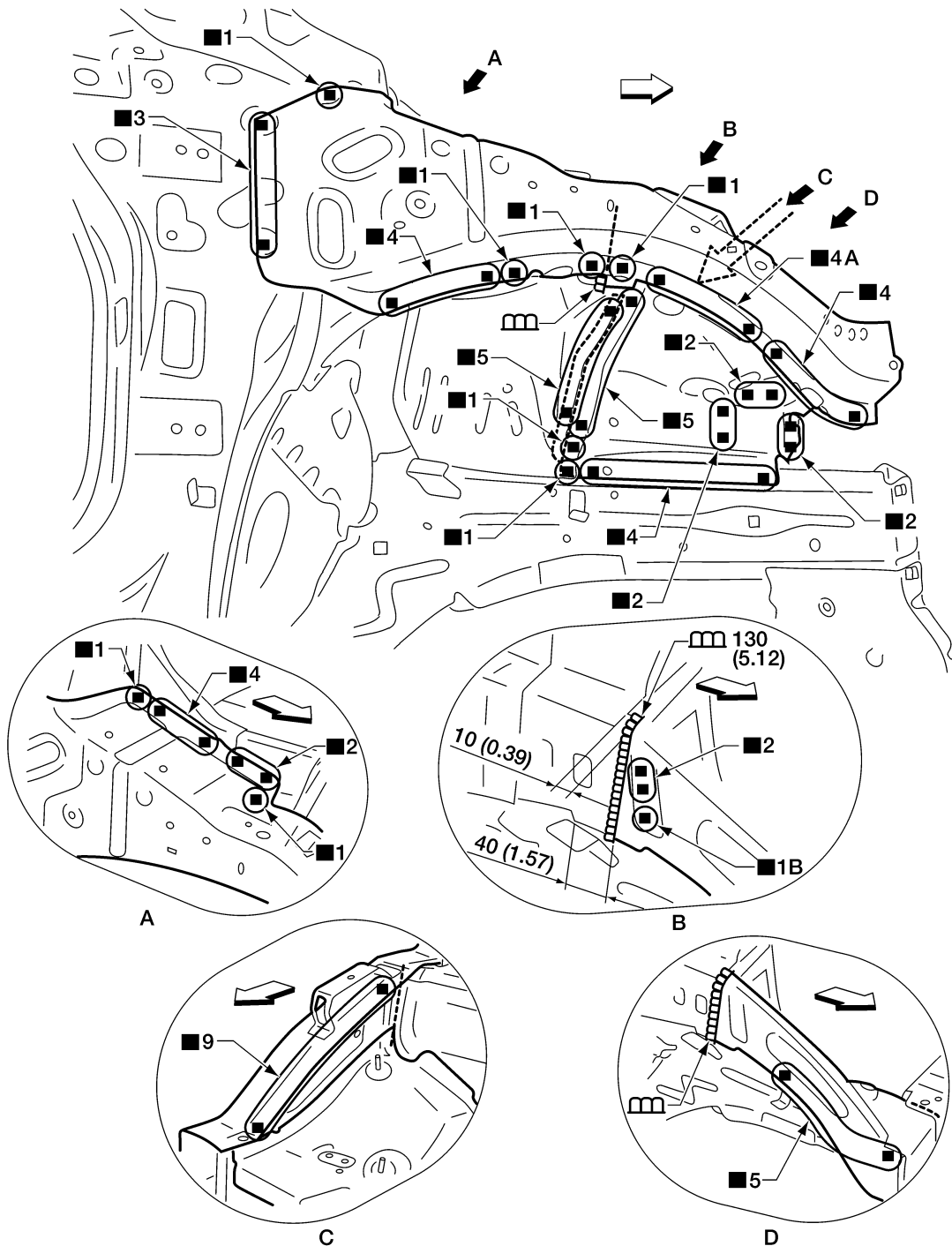
< REMOVAL AND INSTALLATION >

View C: Before installing hoodledge reinforcement

## Hoodledge (Partial Replacement)

INFOID:000000010640884

Work after radiator core support is removed.



AWKIA2287ZZ

Unit:mm (in)

⇐ Front

Replacement parts

- Upper hoodledge (RH)
  - Lower front hoodledge (RH)
  - Hoodledge reinforcement (RH)
  - Service plug
  - Front side Li-ion battery high voltage harness connector
- High voltage system parts (Removal required depending on damage)

# REPLACEMENT OPERATIONS

## < REMOVAL AND INSTALLATION >

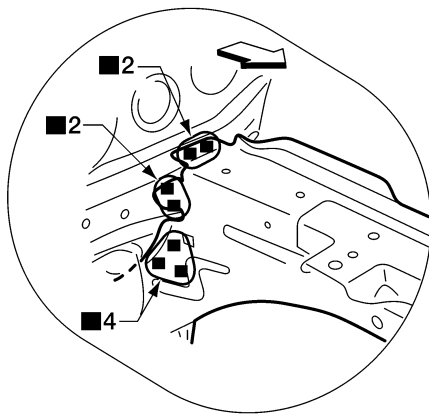
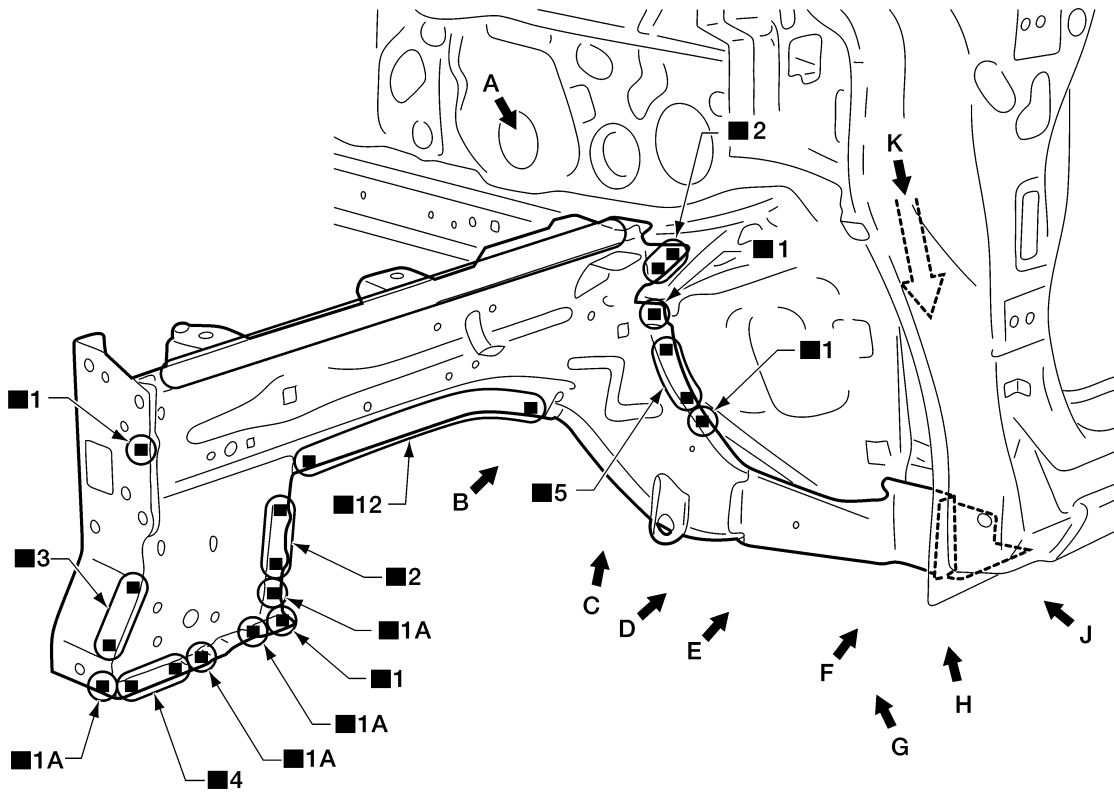
- Charge port
- PTC elements heater
- Traction motor
- Electric compressor
- Traction motor inverter
- DC/DC-J/B

View B and D: Before installing hoodledge reinforcement

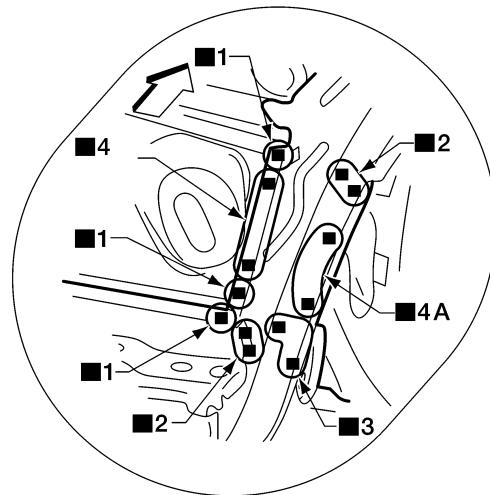
### Front Side Member

INFOID:000000010640885

Work after radiator core support and hoodledge are removed.



A



B

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

**BRM**

AWKIA2387ZZ

↔ Front

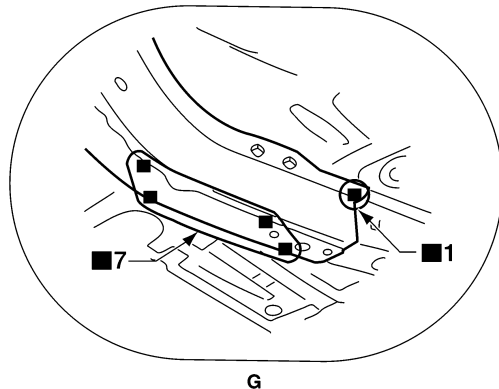
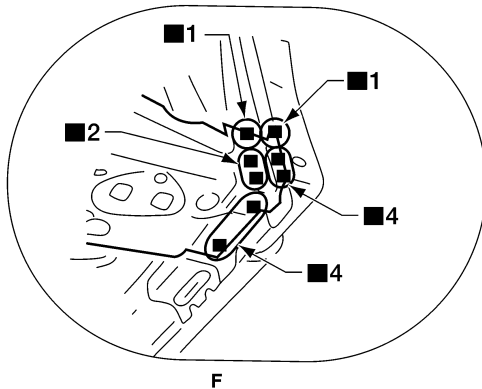
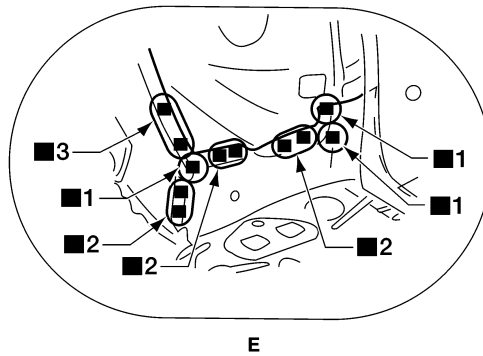
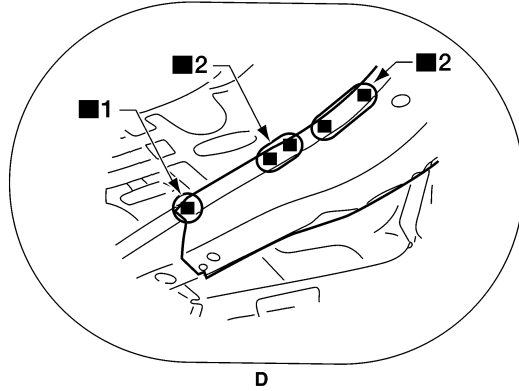
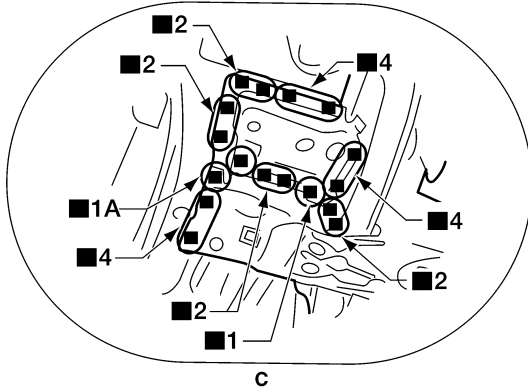
Drill  $\phi$  8 mm (0.31 in) hole for the plug welding hole (ultra high strength steel plate).

Replacement parts

# REPLACEMENT OPERATIONS

## < REMOVAL AND INSTALLATION >

- Front side member assembly (LH)
  - Front side member closing plate assembly (LH)
  - Front suspension mounting bracket (LH Rear)
- High voltage system parts (Removal required depending on damage)
- Service plug
  - Charge port
  - Electric compressor
  - Front side Li-ion battery high voltage harness connector
  - PTC elements heater
  - Traction motor inverter
  - Traction motor
  - DC/DC-J/B



AWKIA2294ZZ

↶ Front

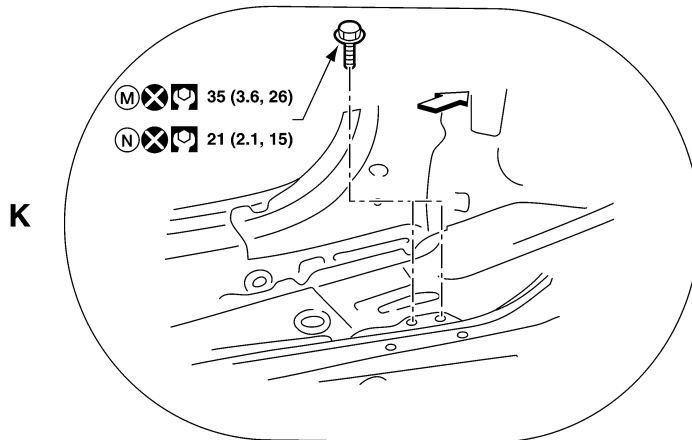
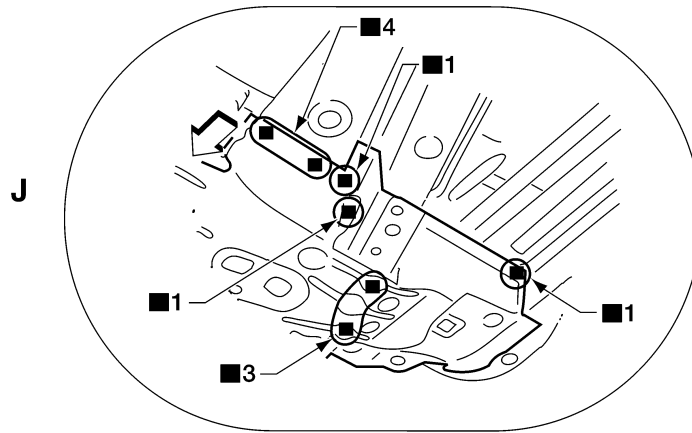
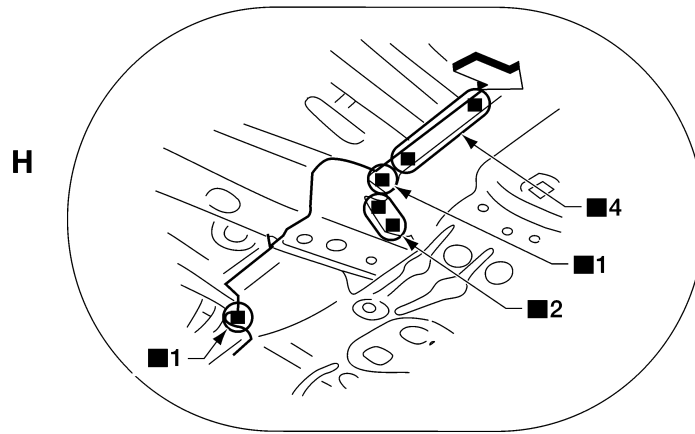
Drill  $\phi$  8 mm (0.31 in) hole for the plug welding hole (ultra high strength steel plate).

View D and G: Before installing front suspension mounting bracket (Rear)



# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >



← Front

N·m (kg·m, ft·lb)

M. Bolt diameter 12 mm (0.47 in) N. Bolt diameter 13 mm (0.51 in)

## Front Side Member (Partial Replacement)

Work after radiator core support is removed.

AWKIA2384ZZ

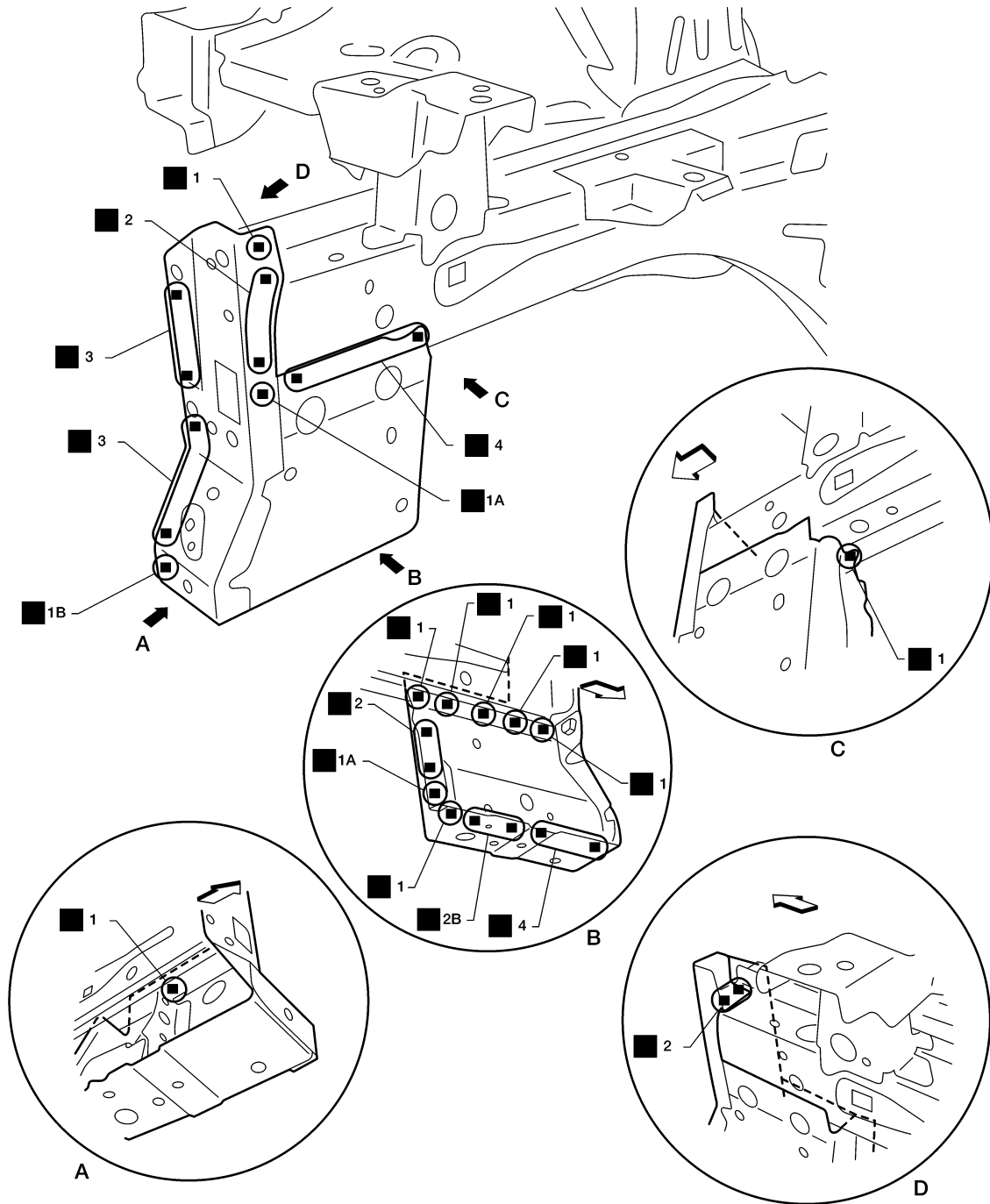
INFOID:000000010640886

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

BRM

# REPLACEMENT OPERATIONS

## < REMOVAL AND INSTALLATION >



AWKIA2388ZZ

← Front

Replacement parts

- Front suspension mounting bracket (RH Front)
- Outer add on frame bracket (RH)

High voltage system parts (Removal required depending on damage)

- Service plug
- Front side Li-ion battery high voltage harness connector
- Charge port

View A: Before installing outer add on frame bracket

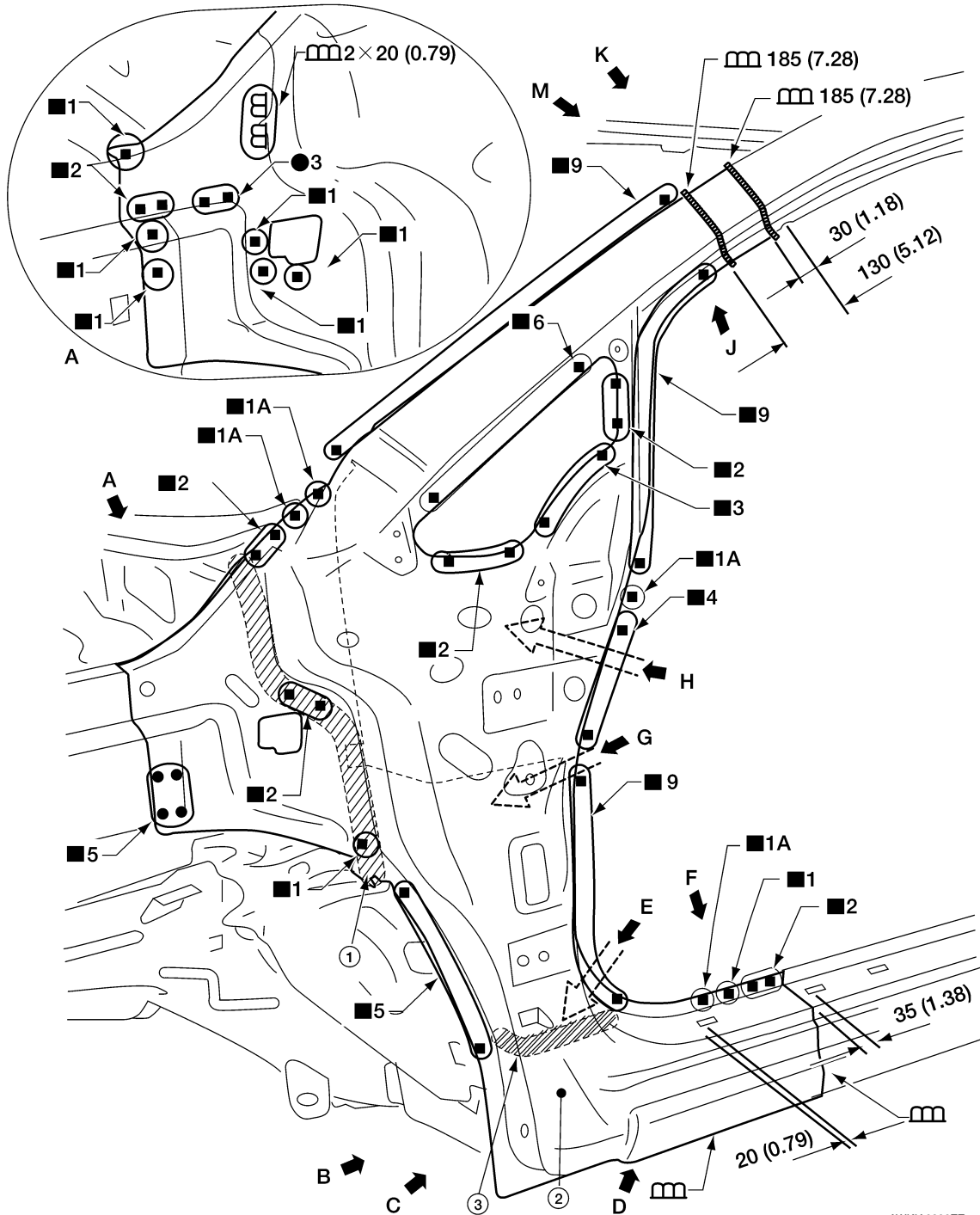
# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

## Front Pillar

INFOID:0000000110640887

Work after hoodledge reinforcement is removed.



AWKIA2392ZZ

Unit: mm (in)

- 1. Body sealing
  - 2. Front pillar brace
  - 3. Urethane foam
- Drill  $\phi$  8 mm (0.31 in) hole for the plug welding hole (ultra high strength steel plate).

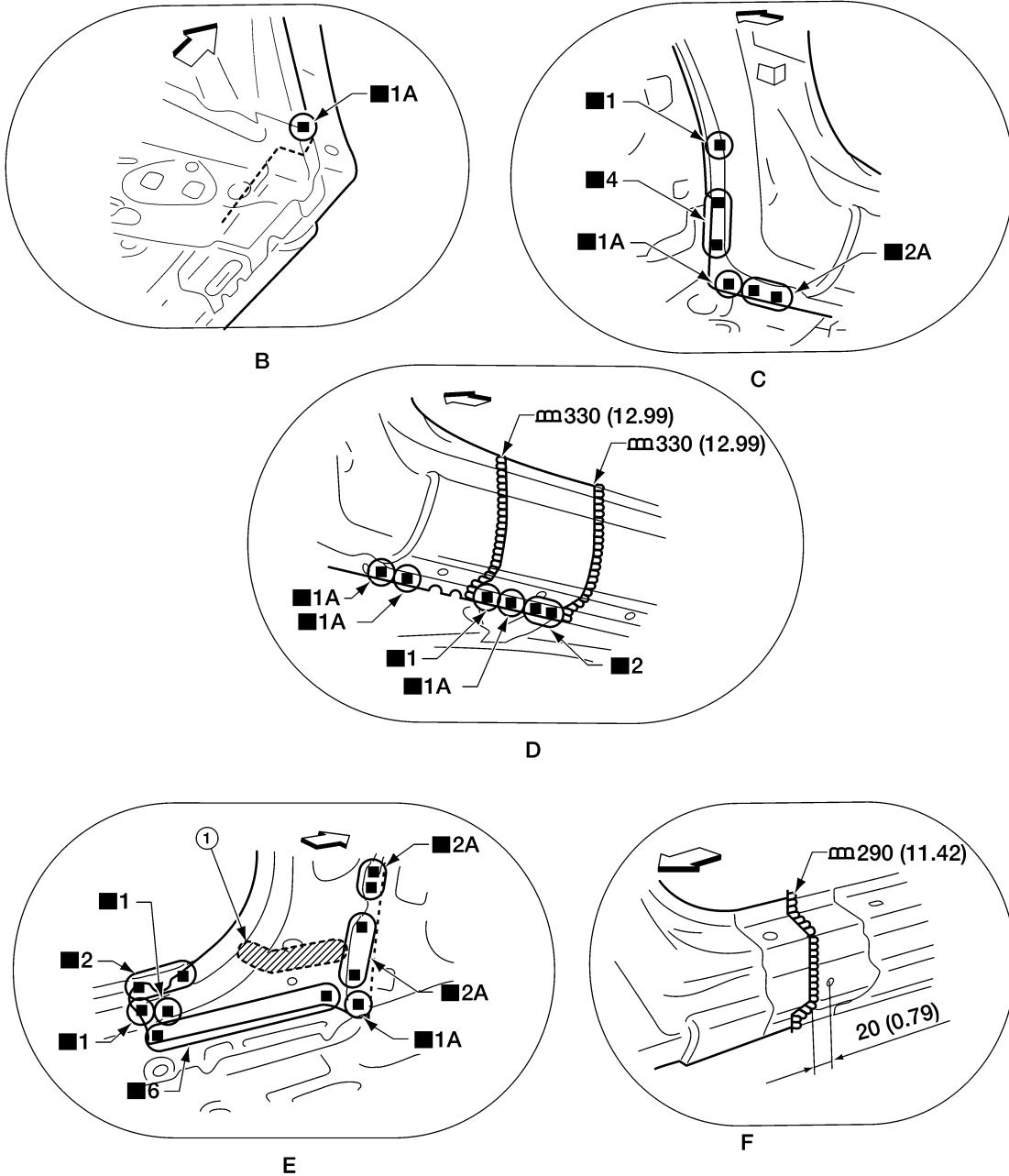
↔ Front

Replacement parts

- Side body assembly (LH)
- Side dash (LH)

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >



AWKIA2393ZZ

Unit: mm (in)

1. Urethane foam

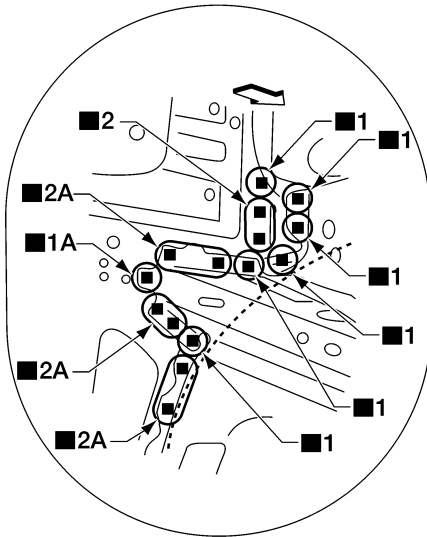
Drill  $\phi 8$  mm (0.31 in) hole for the plug welding hole (ultra high strength steel plate).

← Front

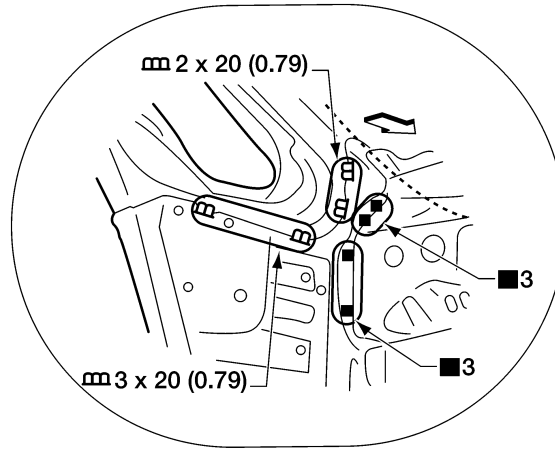
View F: Before installing outer front side body

# REPLACEMENT OPERATIONS

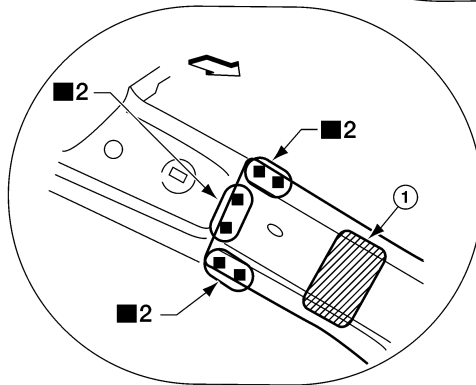
## < REMOVAL AND INSTALLATION >



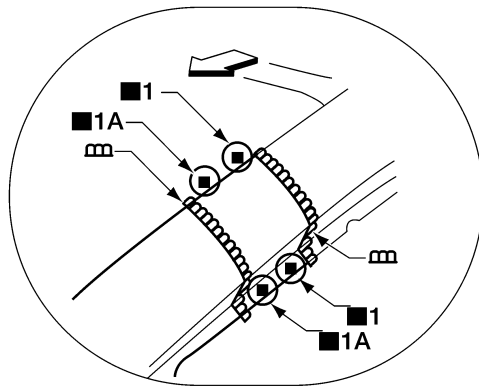
G



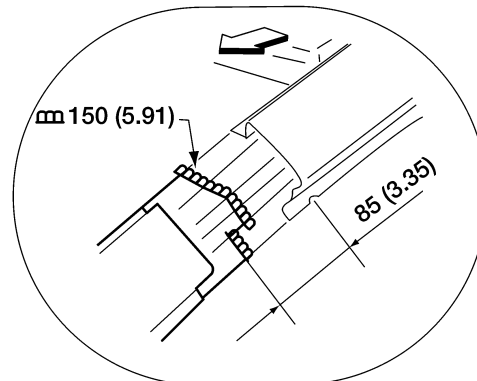
H



J



K



M

1. Urethane foam

Drill  $\phi 8$  mm (0.31 in) hole for the plug welding hole (ultra high strength steel plate).

↔ Front

View G: Before installing side body assembly  
View M: Before installing outer front side body

### Center Pillar

INFOID:000000010640888

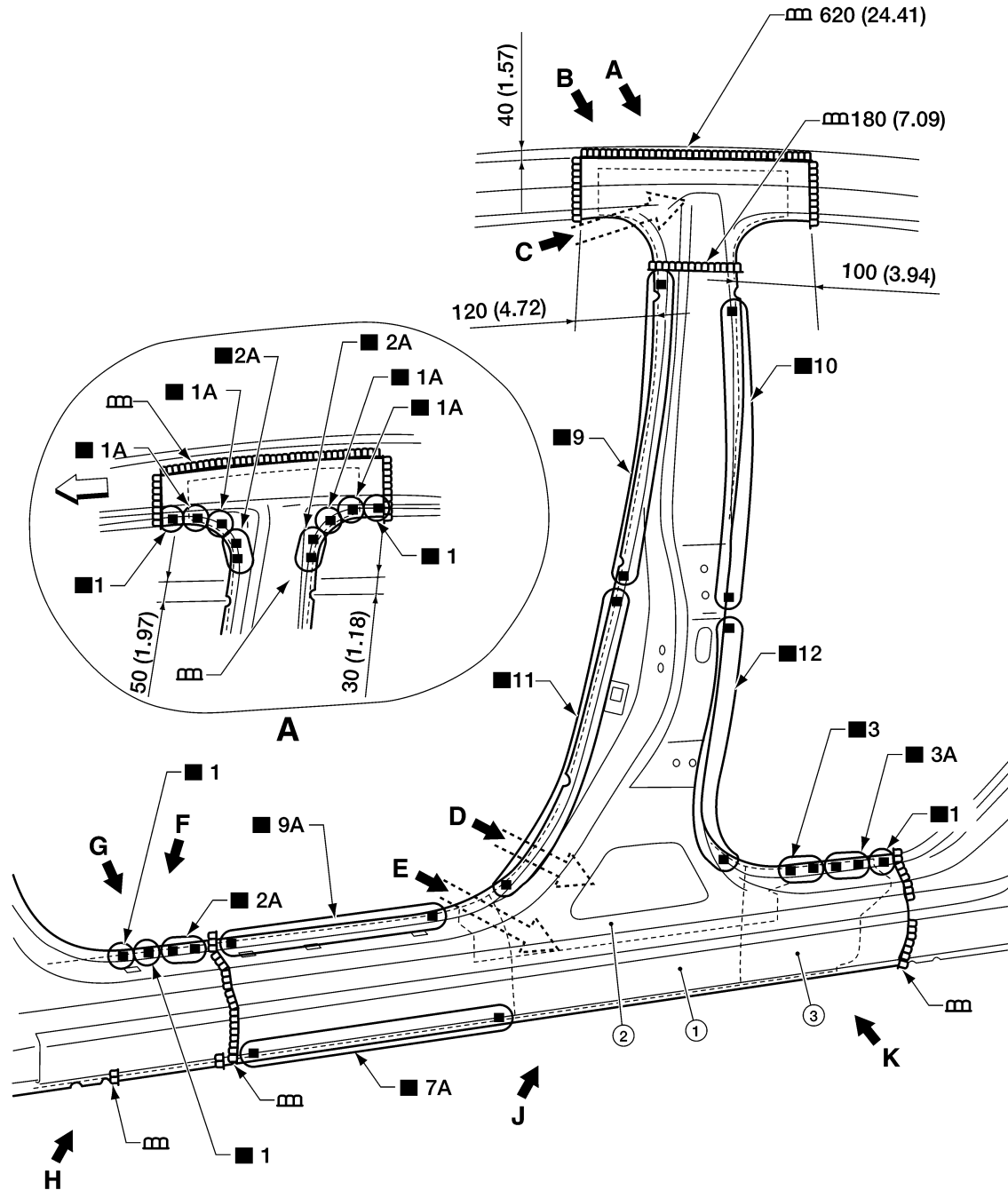
Install the inner center pillar assembly to the side body assembly as shown in the figure for repairing the hidden welding point "View E".

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

BRM

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >



AWKIA2395ZZ

Unit: mm (in)

- 1. Inner center pillar assembly
  - 2. Lower center pillar brace
  - 3. Outer sill reinforcement
- Drill  $\phi 8$  mm (0.31 in) hole for the plug welding hole (ultra high strength steel plate).

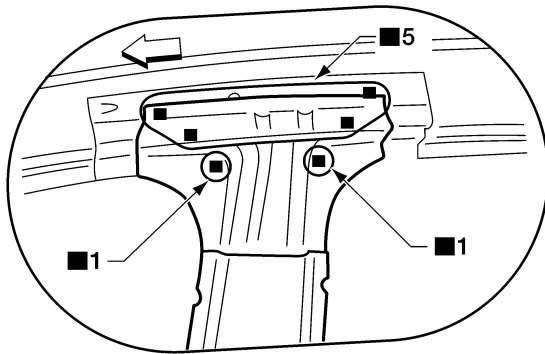
← Front

Replacement parts

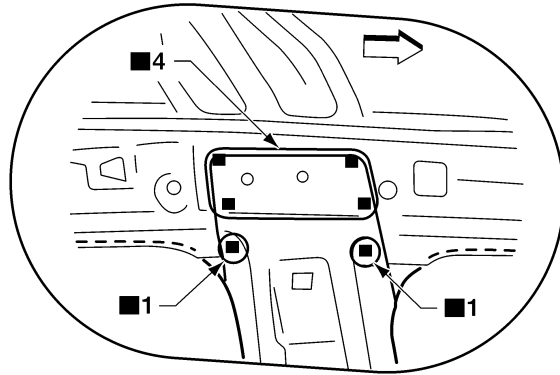
- Side body assembly (LH)
- Inner center pillar assembly (LH)

# REPLACEMENT OPERATIONS

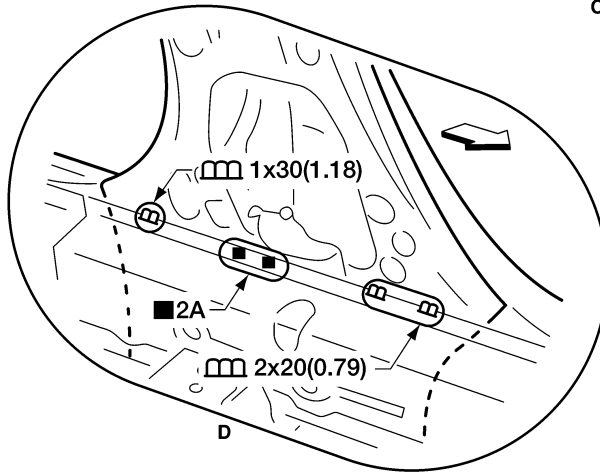
## < REMOVAL AND INSTALLATION >



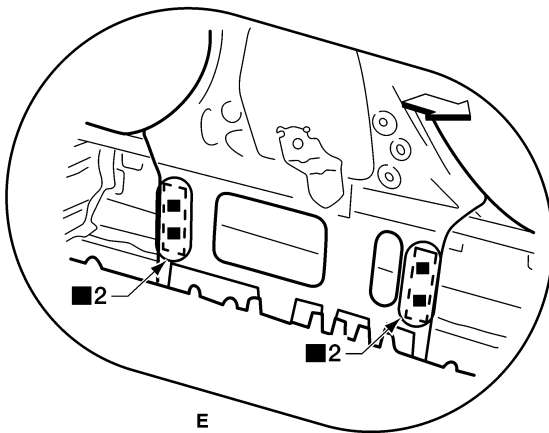
B



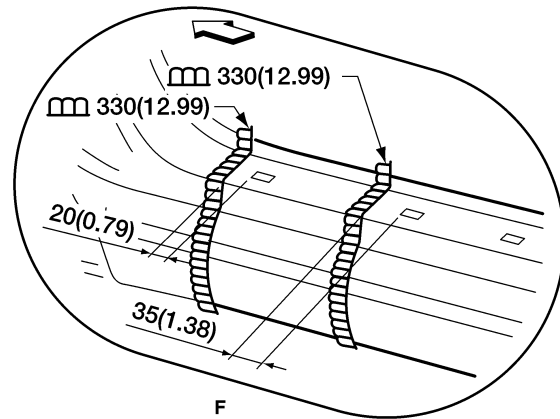
C



D



E



F

AWKIA2334ZZ

Unit mm (in)

⇐ Front

Drill  $\phi 8$  mm (0.31 in) hole for the plug welding hole (ultra high strength steel plate).

View B: Before installing outer front side body

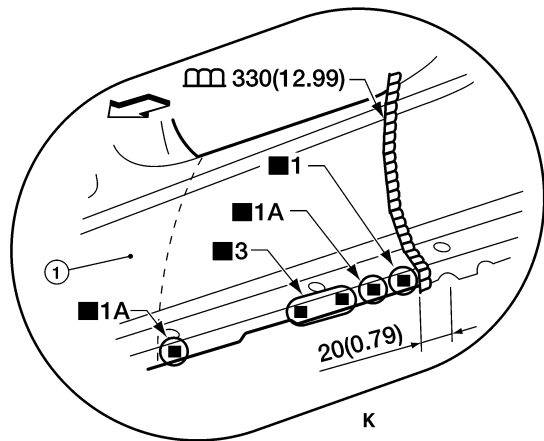
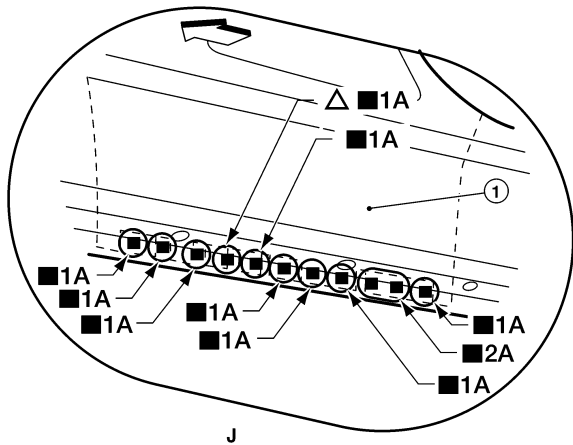
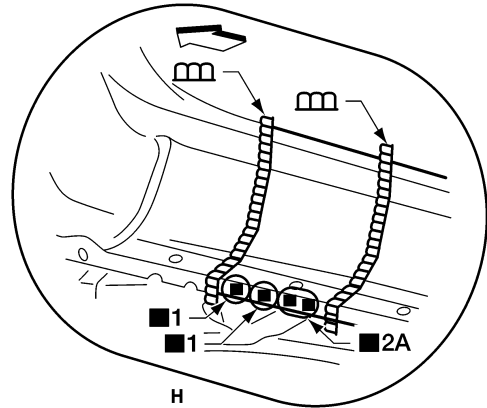
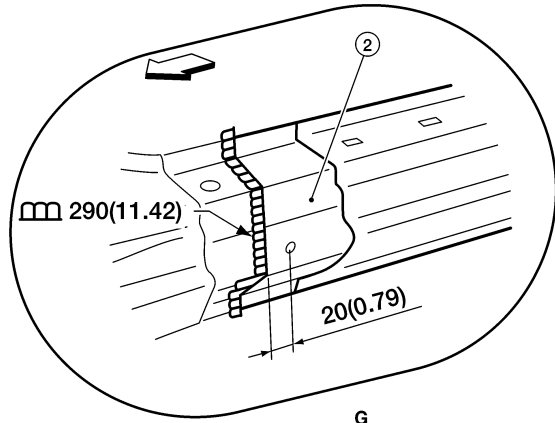
View E: Inner center pillar assembly and side body assembly (replacement parts)

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

BRM

# REPLACEMENT OPERATIONS

## < REMOVAL AND INSTALLATION >



AWKIA2396ZZ

Unit: mm (in)

- 1. Inner center pillar assembly
- 2. Outer sill reinforcement

↔ Front

Drill  $\phi 8$  mm (0.31 in) hole for the plug welding hole (ultra high strength steel plate).

View G: Before installing outer front side body

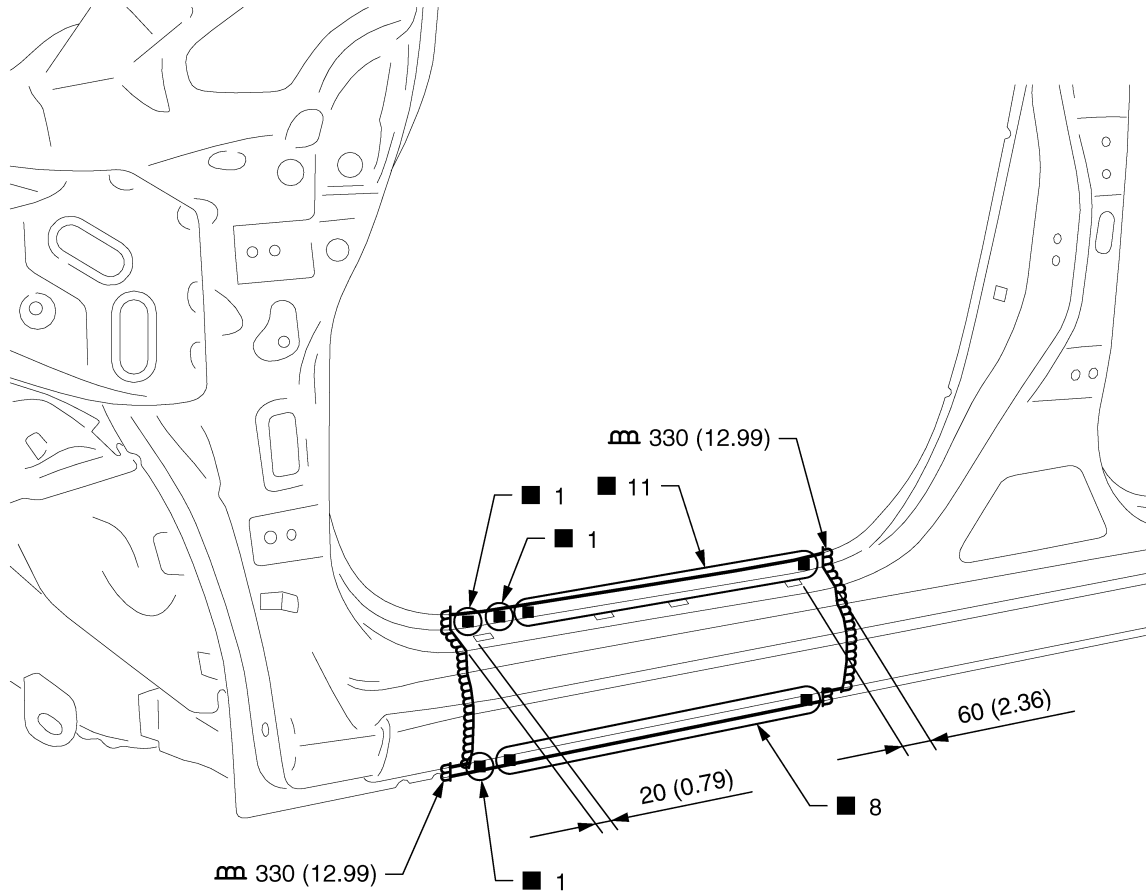


# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

## Outer Sill (Partial Replacement)

INFOID:000000010640889



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

**BRM**

Replacement parts

- Outer sill (LH)

JSKIA2315GB

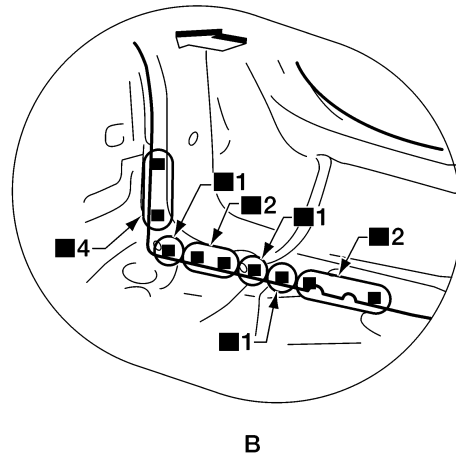
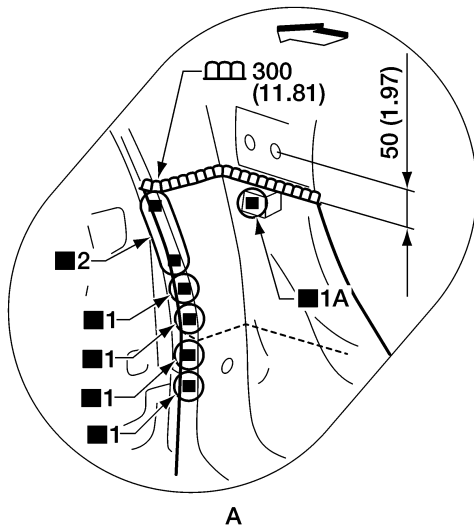
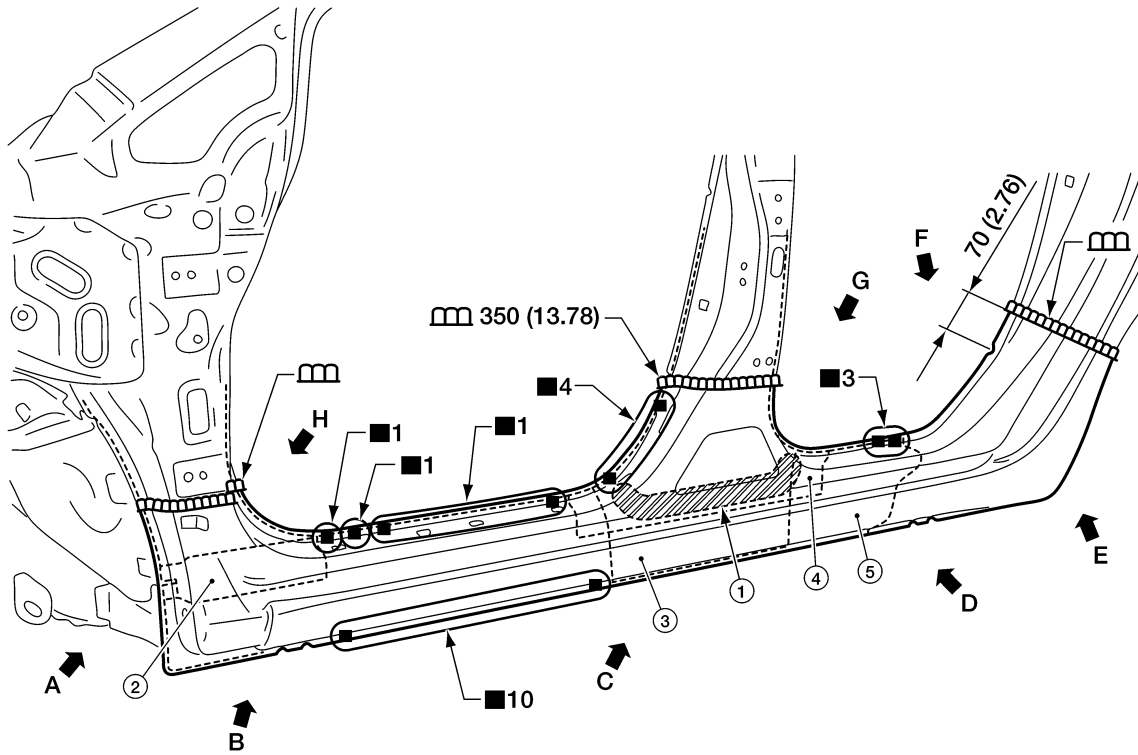
Unit:mm (in)

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

## Outer Sill

INFOID:000000010640890



AWKIA2338ZZ

Unit: mm (in)

- 1. Urethane foam
- 2. Front pillar brace
- 3. Inner center pillar assembly
- 4. Lower center pillar brace
- 5. Outer sill reinforcement

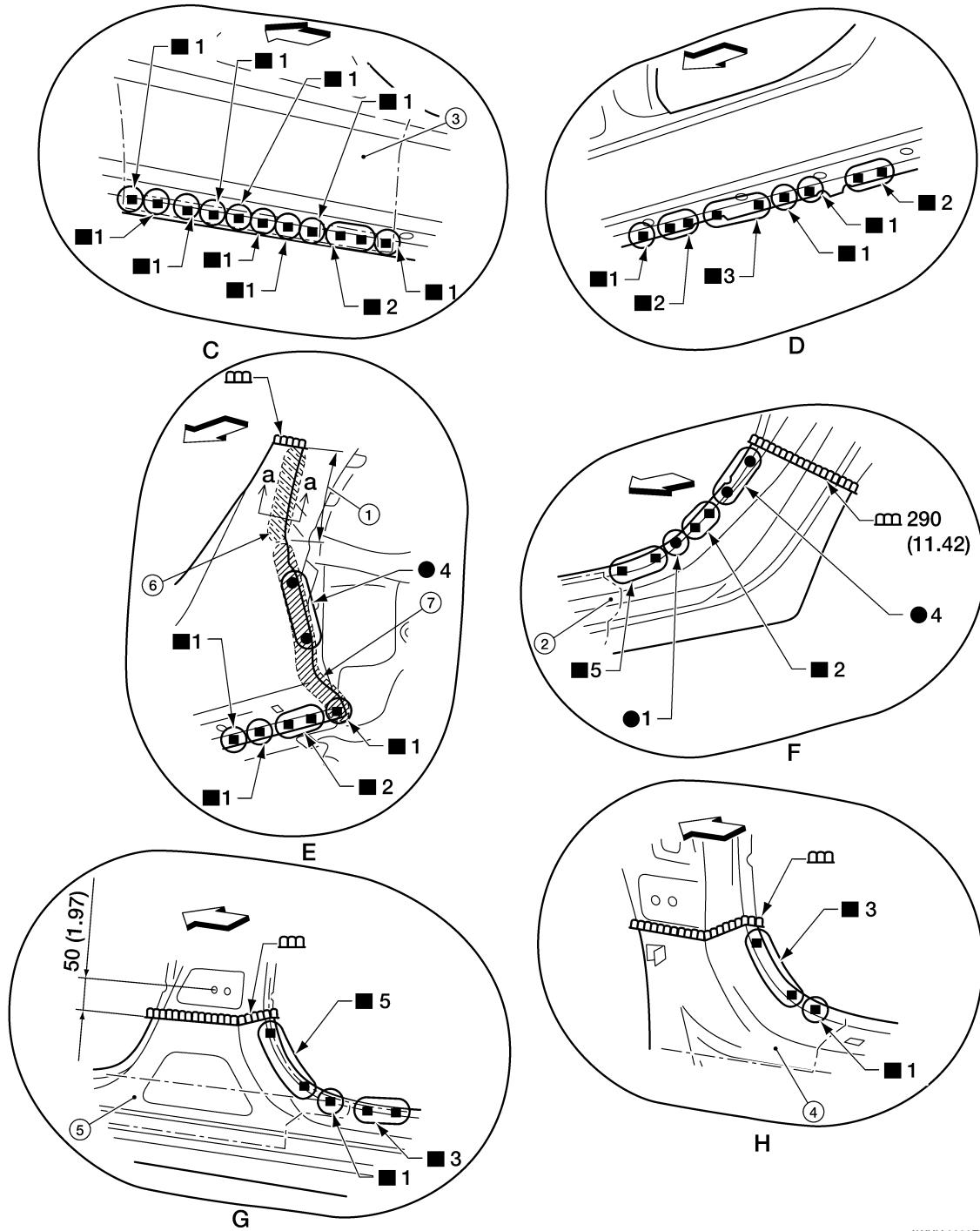
⇐ Front

Replacement parts

- Outer sill (LH)
- Front fender bracket assembly (LH)

# REPLACEMENT OPERATIONS

## < REMOVAL AND INSTALLATION >



- |                       |                              |                                 |
|-----------------------|------------------------------|---------------------------------|
| 1. Hemming portion    | 2. Outer sill reinforcement  | 3. Inner center pillar assembly |
| 4. Front pillar brace | 5. Lower center pillar brace | 6. Adhesive                     |
| 7. Body sealing       |                              |                                 |

↔ Front

POINT

AWKIA2339ZZ

Unit: mm (in)

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

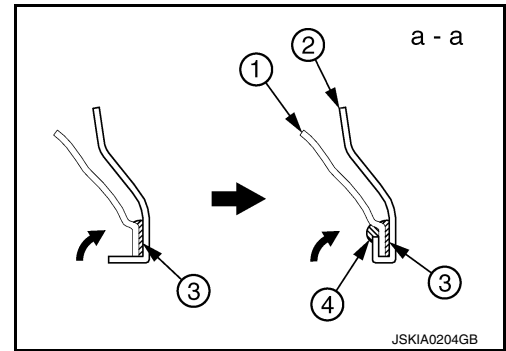
BRM

## REPLACEMENT OPERATIONS

### < REMOVAL AND INSTALLATION >

- Perform the hemming to the flange of wheel arch after applying the adhesive.
- Apply the sealing to the flange end.
- Refer to [BRM-32. "Rear Fender Hemming Process"](#).

1. **Outer rear wheelhouse**
2. **Rear fender**
3. **Adhesive**
4. **Sealant**

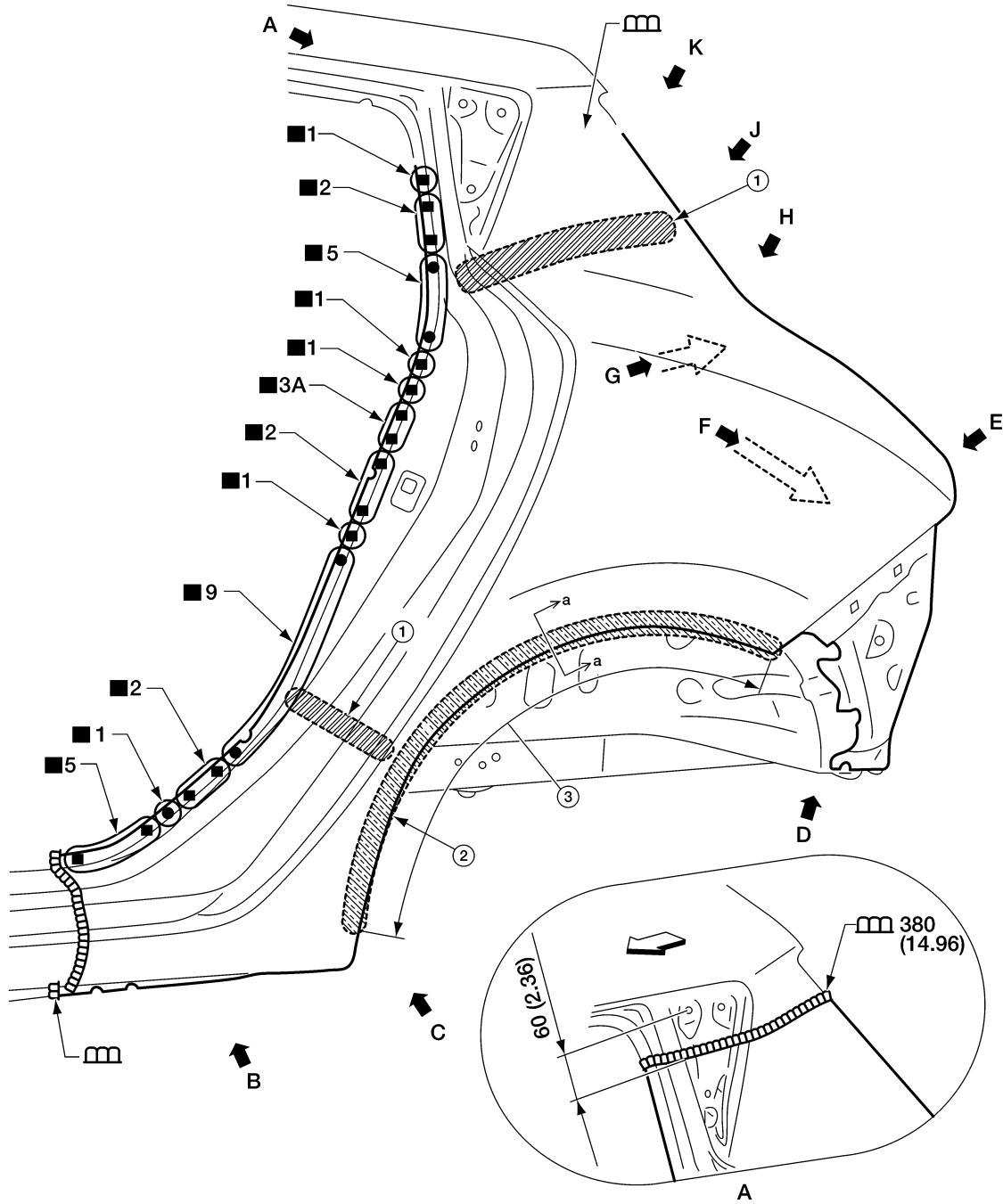


# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

## Rear Fender

INFOID:000000010640891



1. Urethane foam

2. Adhesive

3. Hemming portion

⇐ Front

Replacement parts

● Rear fender (LH)

AWKIA2352ZZ

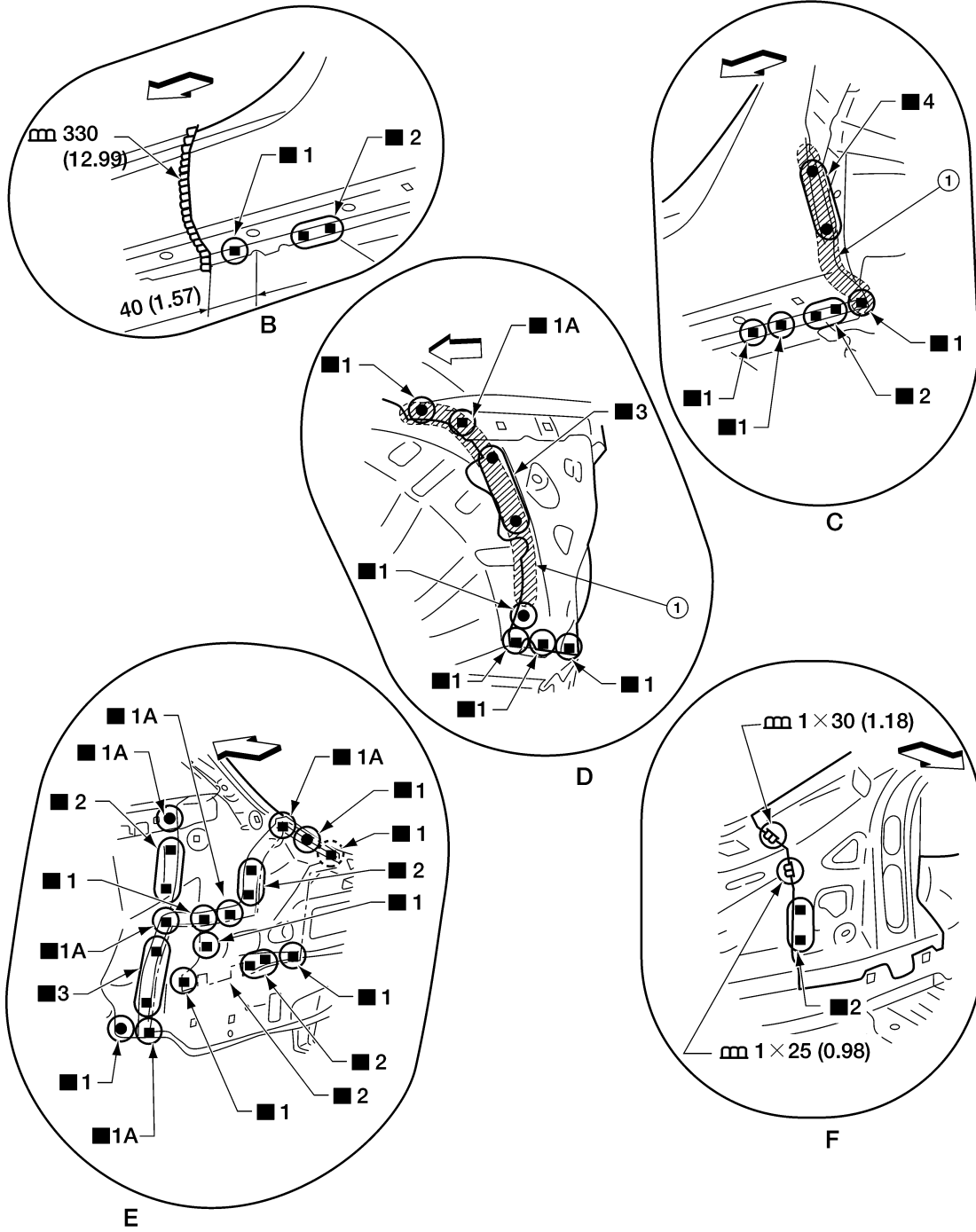
Unit: mm (in)

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

BRM

# REPLACEMENT OPERATIONS

## < REMOVAL AND INSTALLATION >



AWKIA2397ZZ

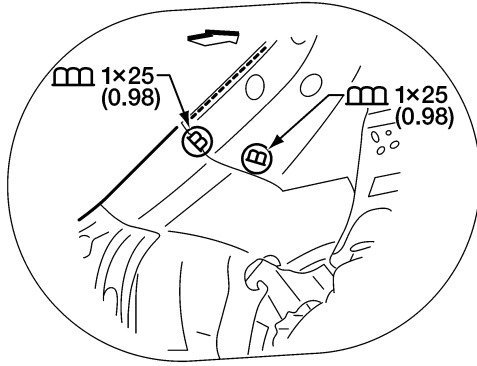
Unit: mm (in)

1. Body sealing

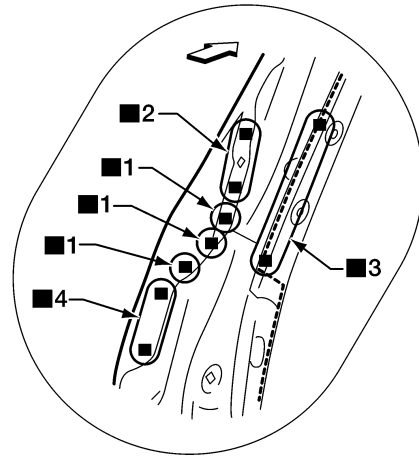
← Front

# REPLACEMENT OPERATIONS

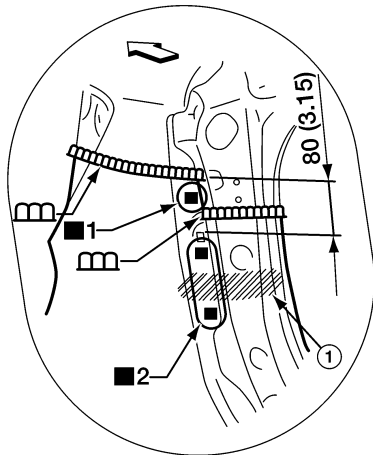
< REMOVAL AND INSTALLATION >



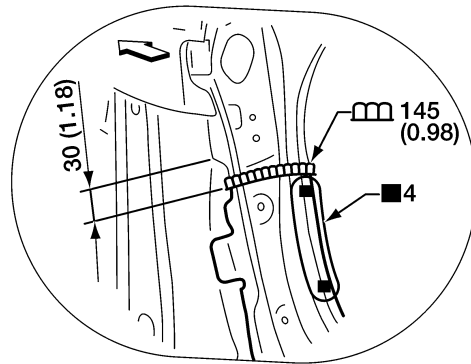
G



H



J



K

- 1. Urethane foam
- ⇐ Front

View K: Before installing rear fender

POINT

AWKIA2398ZZ

Unit: mm (in)

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

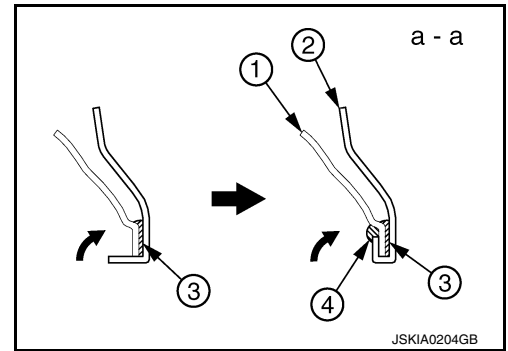
BRM

## REPLACEMENT OPERATIONS

### < REMOVAL AND INSTALLATION >

- Perform the hemming to the flange of wheel arch after applying the adhesive.
- Apply the sealing to the flange end.
- Refer to [BRM-32. "Rear Fender Hemming Process"](#).

1. **Outer rear wheelhouse**
2. **Rear fender**
3. **Adhesive**
4. **Sealant**



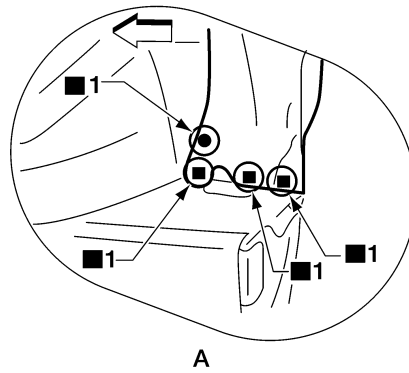
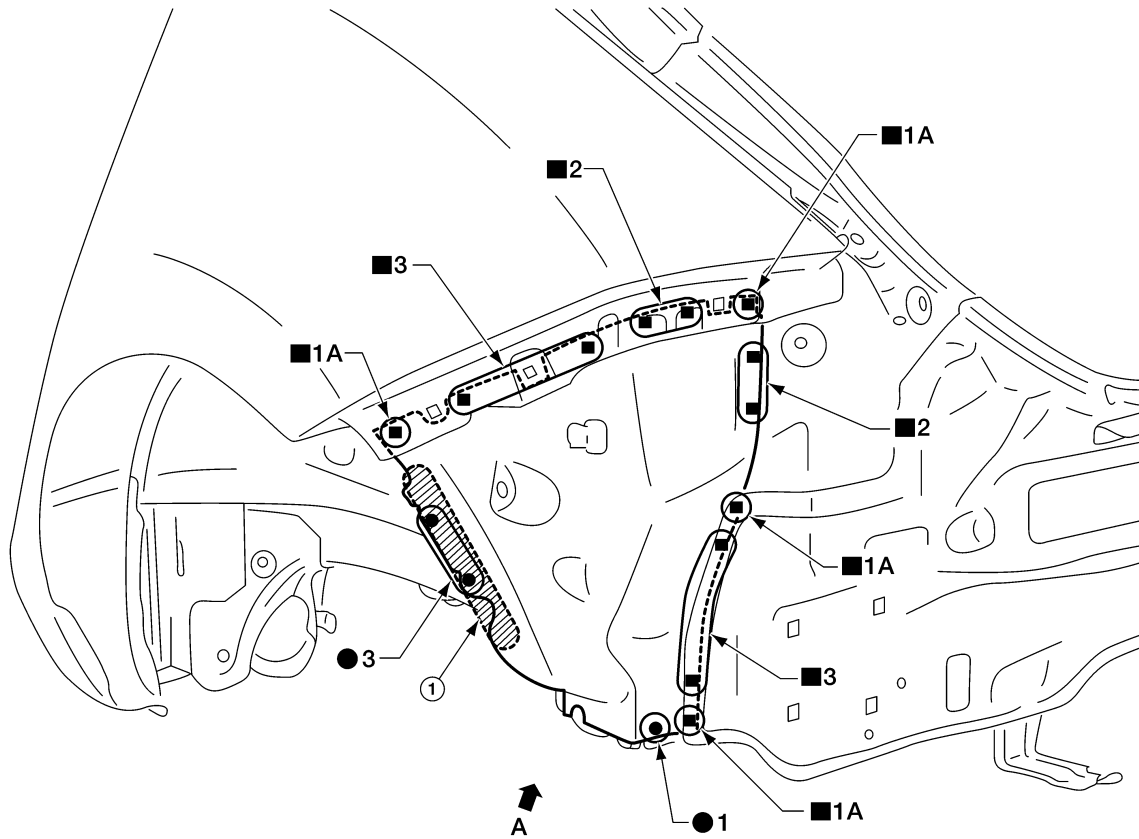


# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

## Rear Fender Extension

INFOID:0000000110640892



1. Body sealing

↔ Front

Replacement parts

● Rear fender corner (LH)

AWKIA2399ZZ

A  
B  
C  
D  
E  
F  
G  
H  
I  
J

BRM

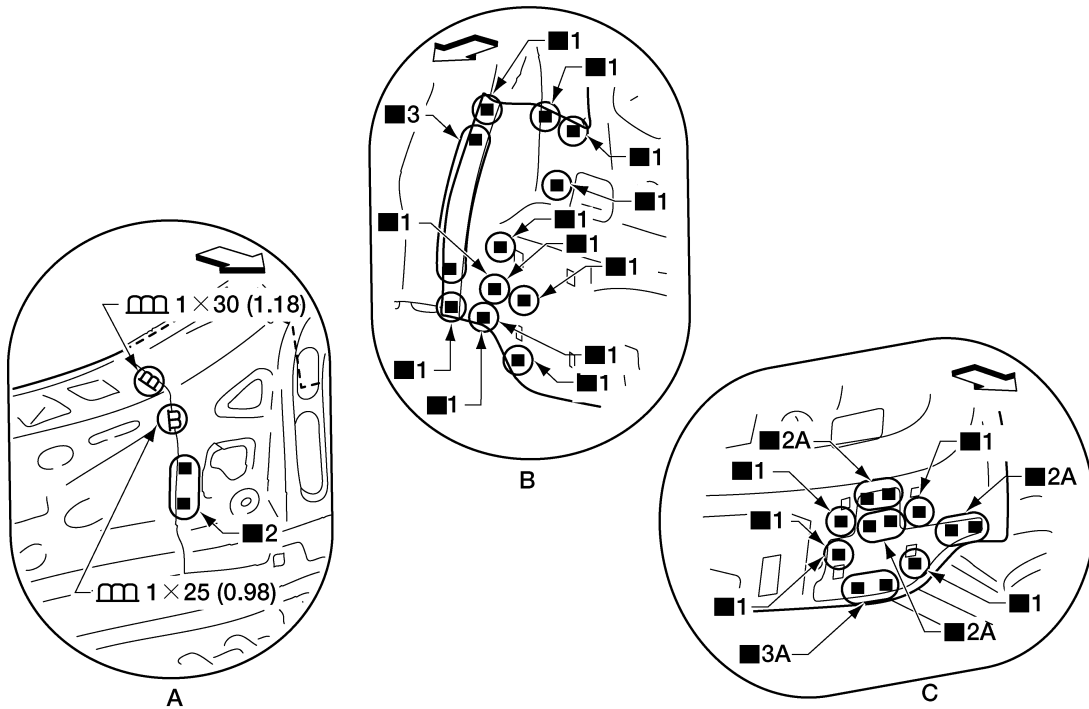
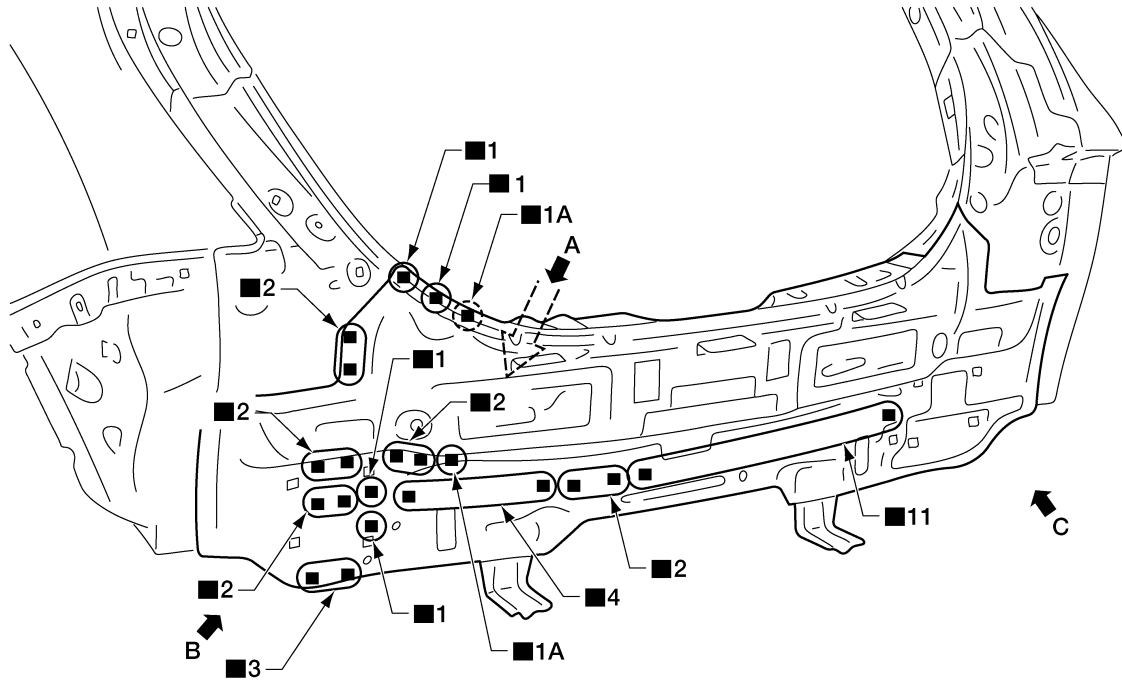
L  
M  
N  
O  
P

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

## Rear Panel

INFOID:000000010640893



AWKIA2354ZZ

Unit: mm (in)

Replacement parts

◁ Front

● Upper rear panel

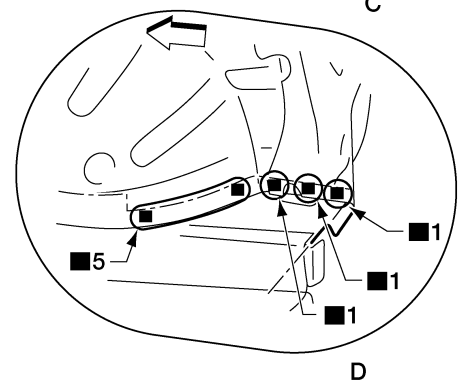
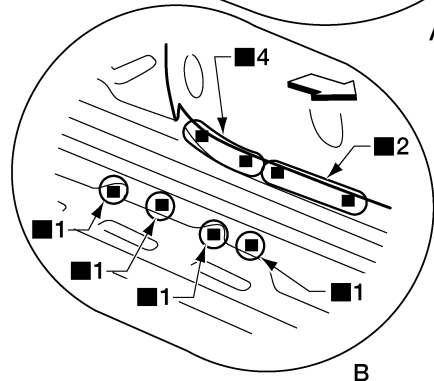
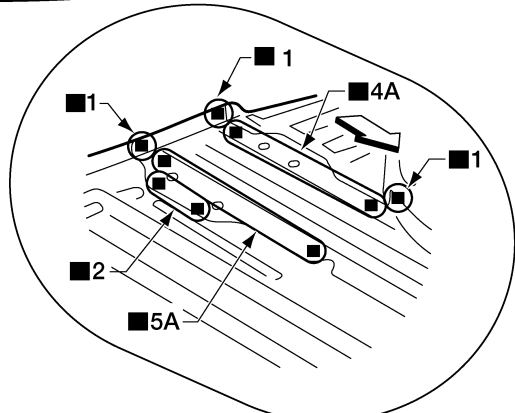
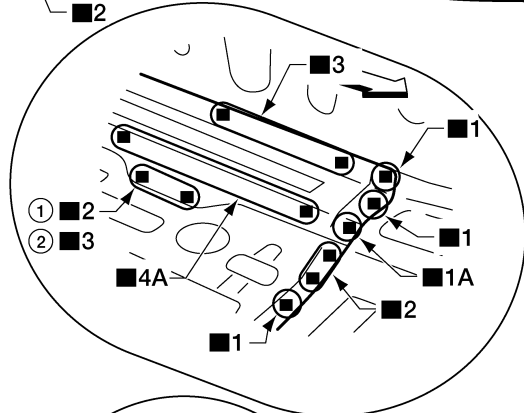
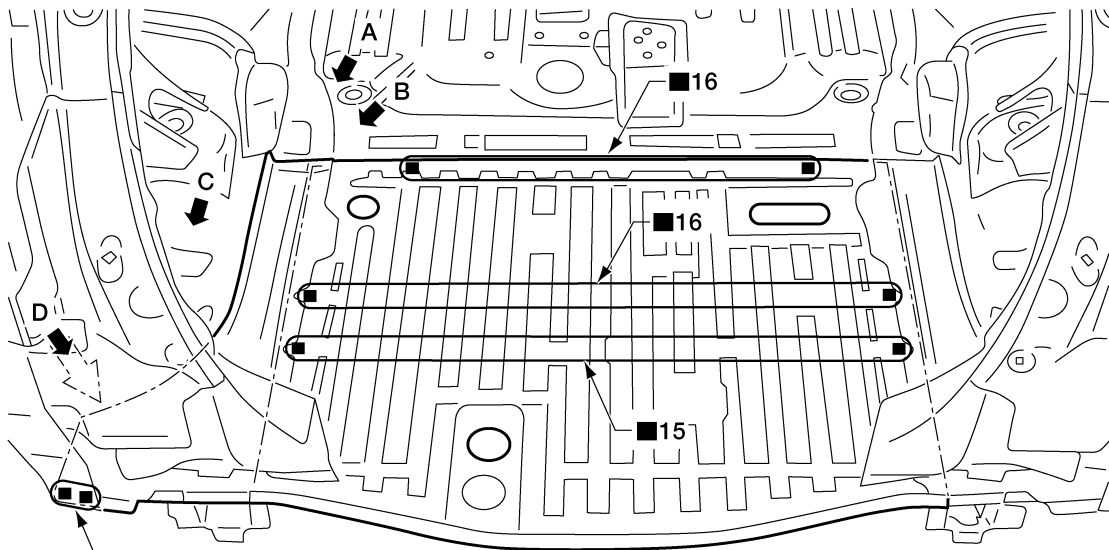
## Rear Floor Rear

INFOID:000000010640894

Work after rear panel is removed.

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >



←Front

- 1. LH side
- 2. RH side

Replacement parts

- Rear floor rear
- Rear floor rear side (LH)

High voltage system parts (Removal required depending on damage)

- Service plug
- Front side Li-ion battery high voltage harness connector
- On board charger

## Rear Side Member Extension

Work after rear panel is removed.

Revision: June 2014

**BRM-59**

2015 Leaf NAM

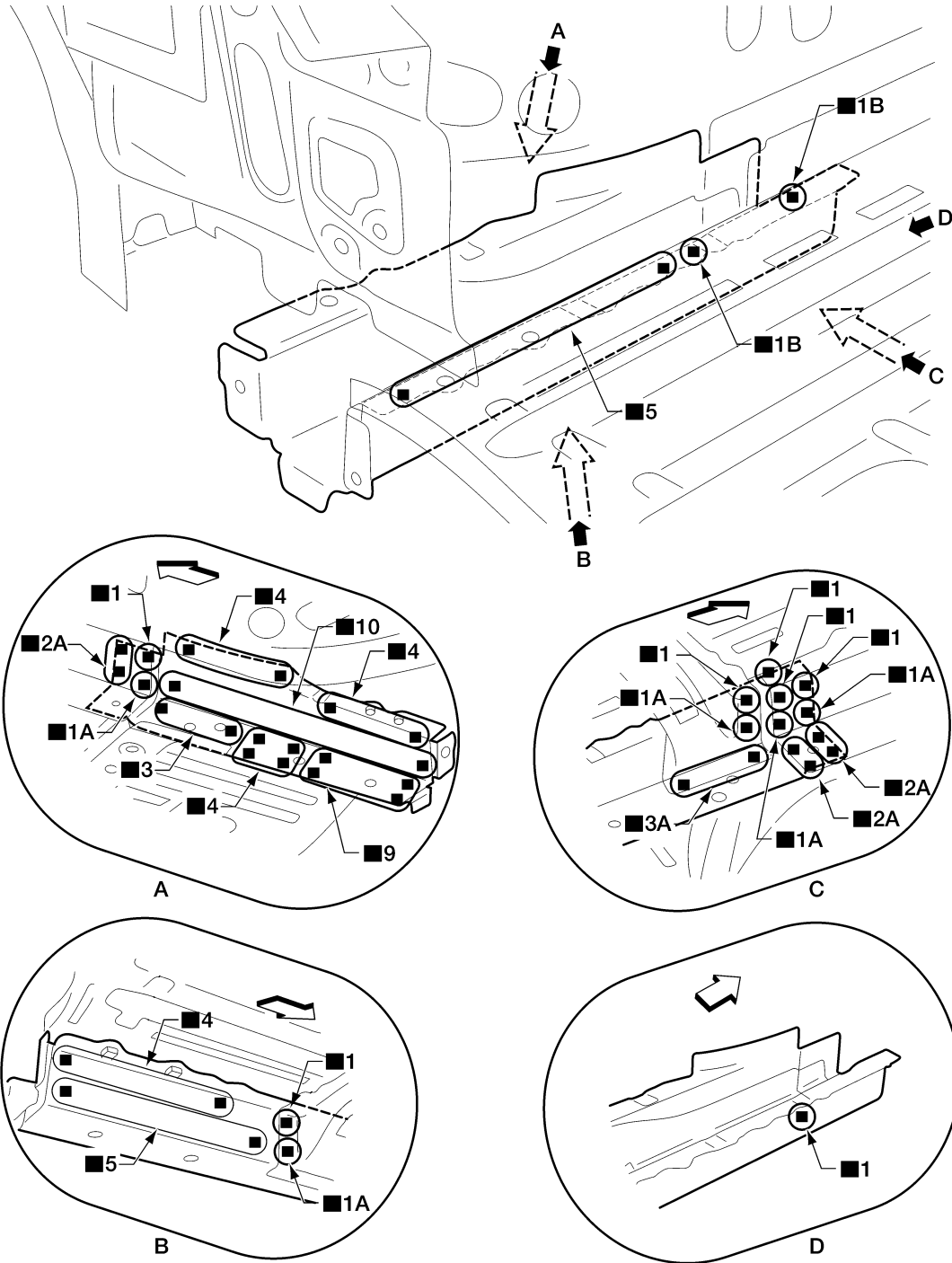
INFOID:000000010640895

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

**BRM**

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >



⇐ Front

Replacement parts

■ Rear side member extension (LH)

● Rear side member extension reinforcement assembly (LH)

View D: Before installing replacement parts (Weld the rear side member extension and rear side member extension reinforcement assembly)

# BODY ALIGNMENT

< SERVICE DATA AND SPECIFICATIONS (SDS)

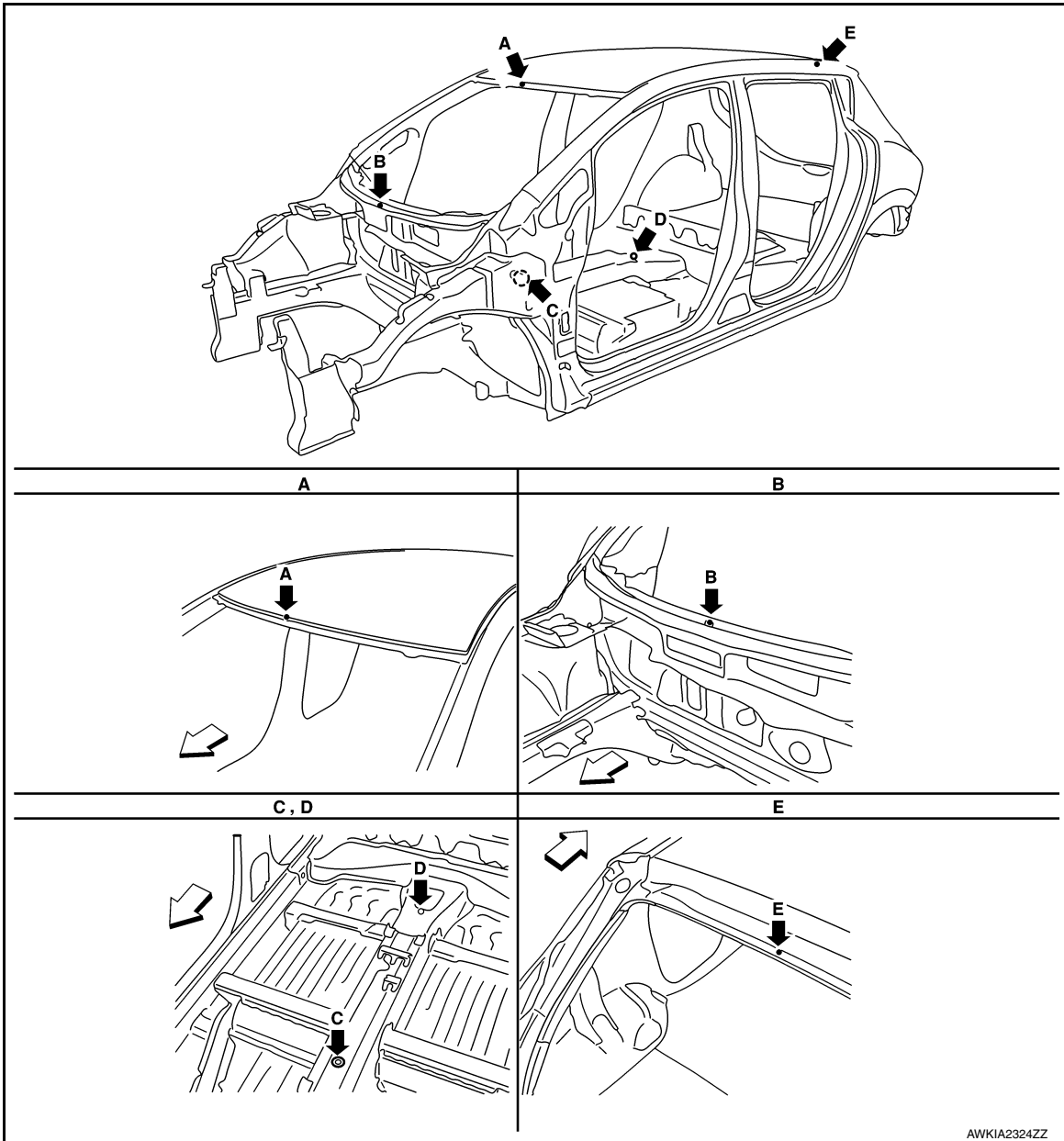
## SERVICE DATA AND SPECIFICATIONS (SDS)

### BODY ALIGNMENT

#### Body Center Marks

INFOID:0000000010640896

A mark is placed on each part of the body to indicate the vehicle center. When repairing the vehicle frame (members, pillars, etc.) damaged by an accident which it enables more accurate and effective repair by using these marks together with body alignment specifications.



AWKIA2324ZZ

Unit: mm (in)

← Front

Portion	Description
A	Front roof embossment
B	Cowl top embossment
C	Trans control reinforcement hole $\phi 31$ (1.22)

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

BRM

# BODY ALIGNMENT

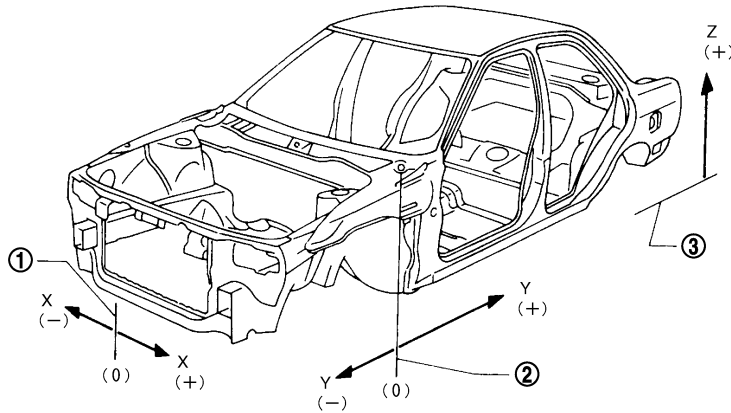
## < SERVICE DATA AND SPECIFICATIONS (SDS)

Portion	Description
D	Center front floor hole $\phi 11$ (0.43)
E	Rear roof embossment

### Description

INFOID:000000010640897

- All dimensions indicated in the figures are actual.
- When using a tracking gauge, adjust both pointers to equal length. Then check the pointers and gauge itself to make sure there is no free play.
- When a measuring tape is used, check to be sure there is no elongation, twisting or bending.
- Measurements should be taken at the center of the mounting holes.
- An asterisk (\*) following the value at the measuring point indicates that the measuring point on the other side is symmetrically the same value.
- The coordinates of the measurement points are the distances measured from the standard line of "X", "Y" and "Z".
- "Z": Imaginary base line [200 mm (7.87 in) below datum line ("0Z" at design plan)]



JSKIA0073GB

1. Vehicle center

2. Front axle center

3. Imaginary base line

### Motor Room

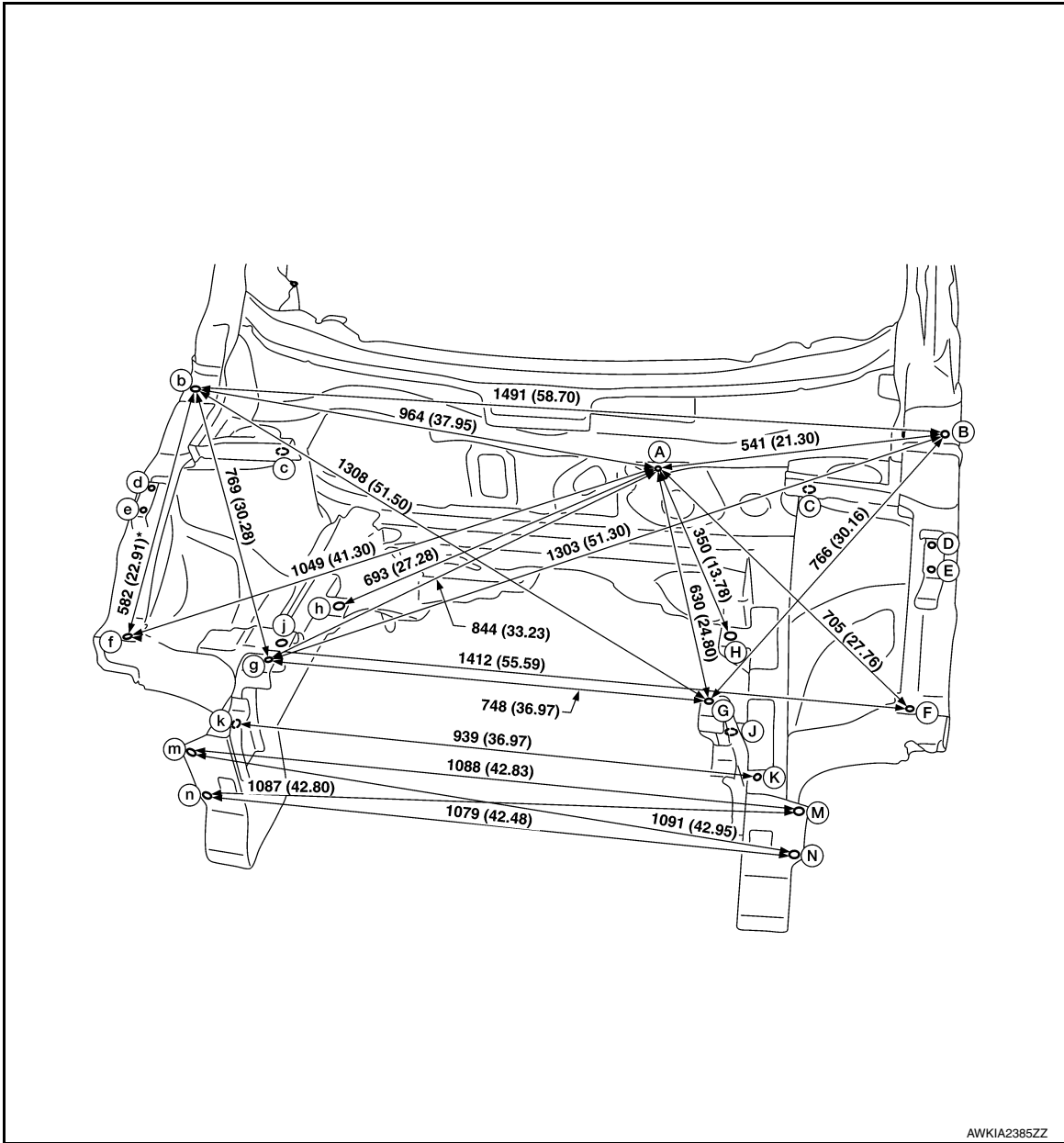
INFOID:000000010640898

### MEASUREMENT

Dimensions marked with "\*" indicate symmetrically identical dimensions on both the right and left hand of the vehicle.

# BODY ALIGNMENT

< SERVICE DATA AND SPECIFICATIONS (SDS)



A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
J  
BRM

«The others»

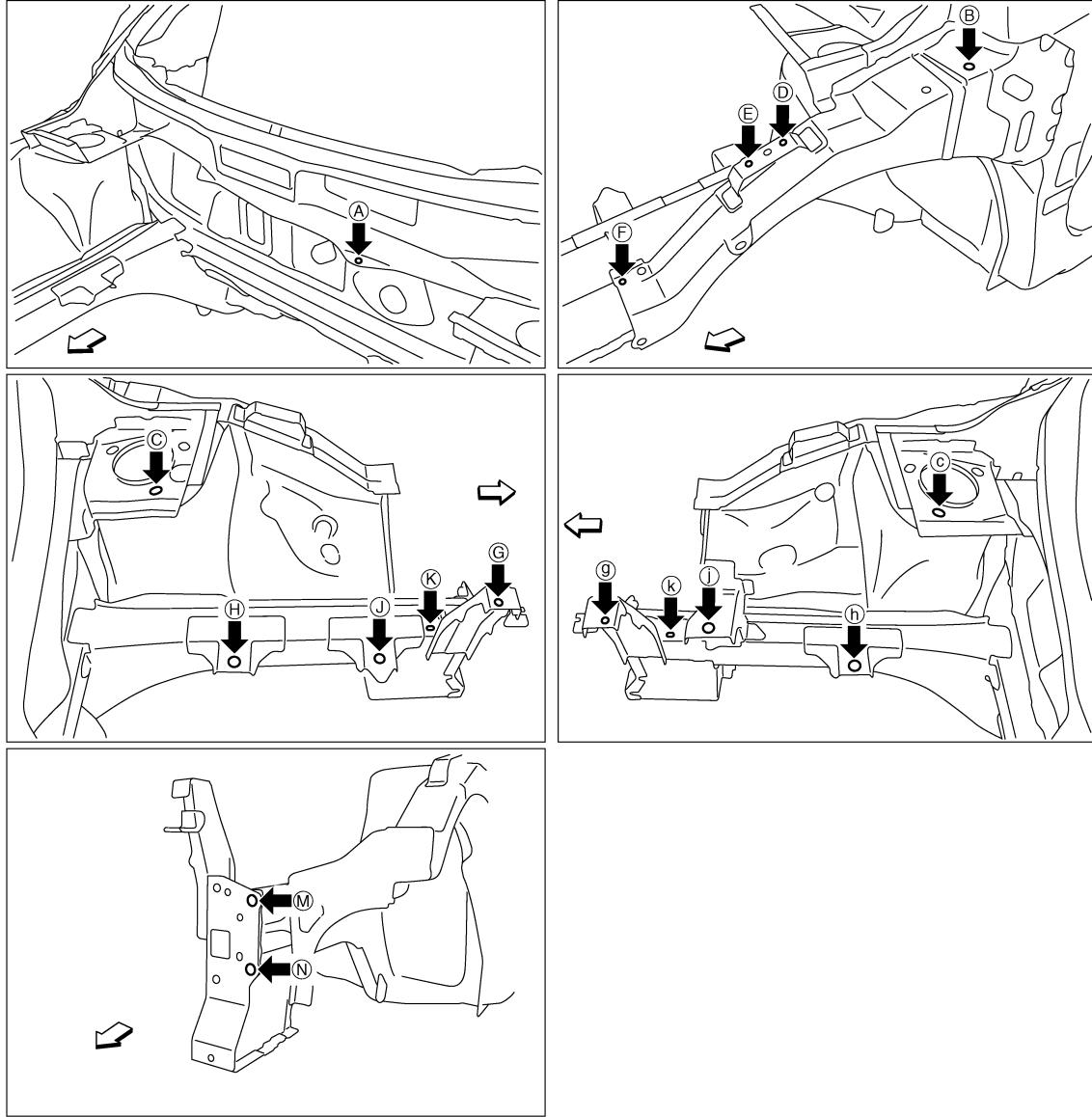
Unit: mm (in)

Portion	Dimension	Portion	Dimension	Portion	Dimension	Portion	Dimension
A - C	319 (12.56)	A - j	790 (31.10)	D - d	1447 (56.97)	H - j	843 (33.19)
A - c	738 (29.06)	A - K	659 (25.94)	E - e	1447 (56.97)	h - J	840 (33.07)
A - D	565 (22.24)	A - k	914 (35.98)	F - G	358 (14.09)	H - k	923 (36.34)
A - d	968 (38.11)	B - C	268 (10.55)*	f - g	363 (14.29)	h - K	937 (36.89)
A - E	588 (23.15)	B - c	1272 (50.08)*	F - g	1086 (42.76)	J - j	822 (32.36)
A - e	982 (38.66)	B - f	1563 (61.54)*	f - G	1092 (42.99)	J - k	878 (34.57)
A - J	550 (21.65)	C - c	1037 (40.83)	H - h	782 (30.79)	j - K	893 (35.16)

## MEASUREMENT POINTS

# BODY ALIGNMENT

## < SERVICE DATA AND SPECIFICATIONS (SDS)



JSKIA2278ZZ

← Front

Unit: mm (in)

Portion	Description	Portion	Description
A	Upper dash hole center $\phi 7$ (0.28)	G, g	Side radiator core support hole center $\phi 9$ (0.35)
B, b	Hood hinge installing hole center $\phi 11$ (0.43)	H, h, J, j	Traction motor inverter member mounting hole center H, h, J: $\phi 18$ (0.71) j: $20 \times 18$ (0.79 $\times$ 0.71)
C, c	Front strut installing hole center $18 \times 13$ (0.71 $\times$ 0.51)	K, k	Front side member hole center $12 \times 7$ (0.47 $\times$ 0.28)
D, d, E, e	Front fender installing hole center $\phi 7$ (0.28)	M, m, N, n	Front bumper stay installing hole center $\phi 15$ (0.59)
F, f	Hoodledge reinforcement hole center $\phi 12$ (0.47)		



# BODY ALIGNMENT

< SERVICE DATA AND SPECIFICATIONS (SDS)

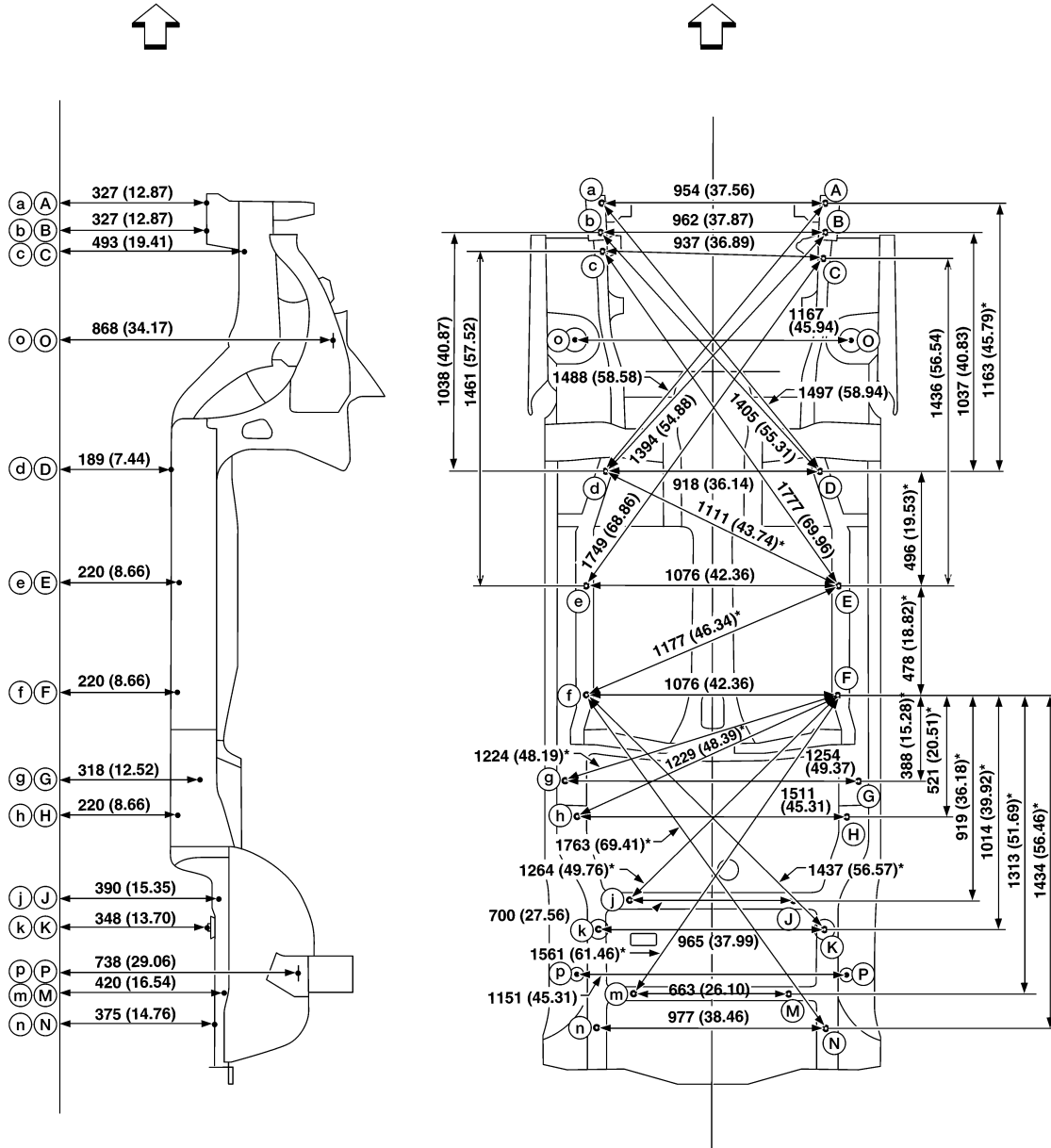
## Underbody

INFOID:000000010640899

### MEASUREMENT

Dimensions marked with "\*" indicate symmetrically identical dimensions on both the right and left hand of the vehicle.

The following figure shows a bottom view and a side view of the vehicle.



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

BRM

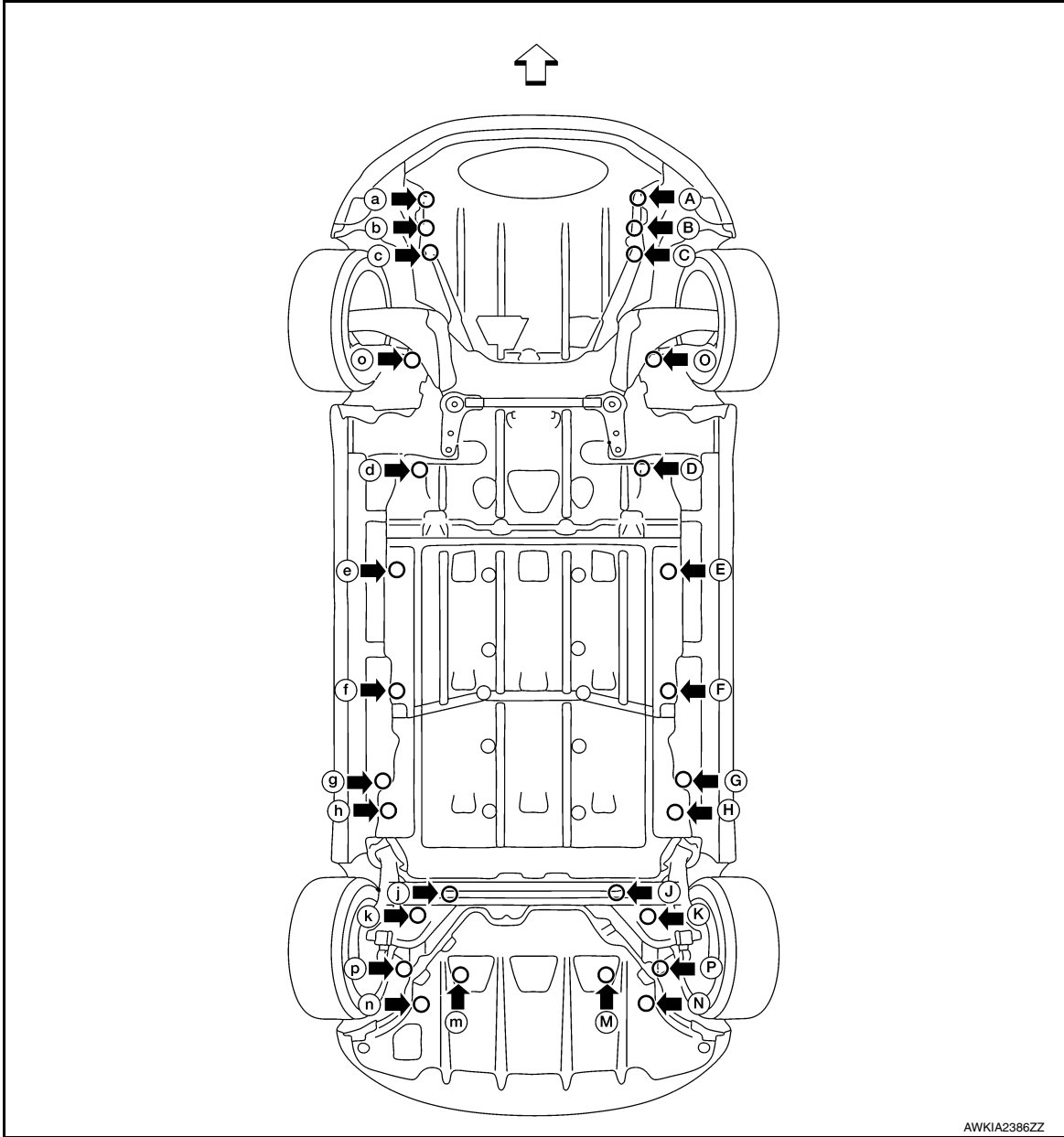
AWKIA2314ZZ  
Unit: mm (in)

↶ Front

# BODY ALIGNMENT

< SERVICE DATA AND SPECIFICATIONS (SDS)

## MEASUREMENT POINTS



AWKIA2386ZZ

↶ Front

Unit: mm (in)

Position	Measurement			Description	Position	Measurement			Description
	X	Y	Z			X	Y	Z	
A	470.0 (18.504)	-582.0 (-22.913)	327.3 (12.886)	Hole $\phi$ 11 (0.43)	G, g	$\pm$ 626.8 ( $\pm$ 24.677)	1904.4 (74.976)	318.0 (12.520)	Hole $\phi$ 16 (0.63)
a	-484.0 (-19.055)	-582.0 (-22.913)	327.3 (12.886)	Hole $\phi$ 11 (0.43)	H, h	$\pm$ 575.4 ( $\pm$ 22.653)	2060.0 (81.102)	220.0 (8.661)	Hole $\phi$ 13 (0.51)
B	472.4 (18.598)	-455.0 (-17.913)	327.3 (12.886)	Hole $\phi$ 20 (0.79)	J, j	$\pm$ 350.0 ( $\pm$ 13.780)	2423.0 (95.394)	390.4 (15.370)	Hole $\phi$ 16 (0.63)
b	-489.7 (-19.279)	-455.0 (-17.913)	327.3 (12.886)	Hole $\phi$ 20 (0.79)	K, k	$\pm$ 482.3 ( $\pm$ 18.988)	2544.2 (100.165)	348.3 (13.713)	Hole $\phi$ 12 (0.47)

# BODY ALIGNMENT

## < SERVICE DATA AND SPECIFICATIONS (SDS)

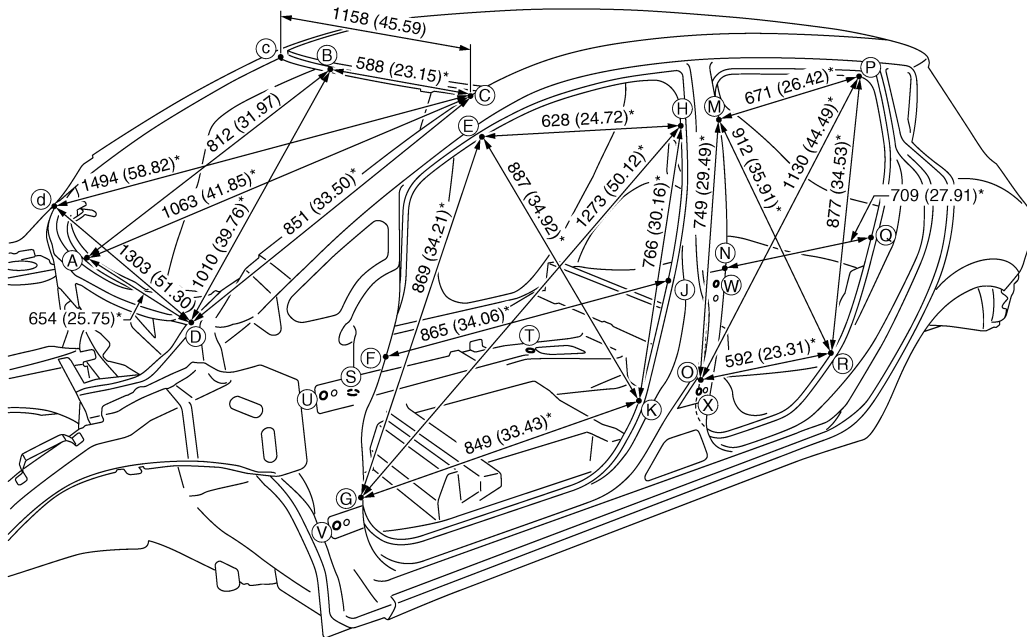
Position	Measurement			Description	Position	Measurement			Description
	X	Y	Z			X	Y	Z	
C	462.4 (18.205)	-346.0 (-13.622)	492.8 (19.402)	Hole $\phi$ 16 (0.63)	M, m	$\pm$ 331.3 ( $\pm$ 13.043)	2821.5 (111.082)	419.8 (16.528)	M: Hole $\phi$ 16 (0.63) m: Hole 18 $\times$ 16 (0.71 $\times$ 0.63)
c	-474.7 (-18.689)	-372.0 (-14.646)	492.8 (19.402)	Hole $\phi$ 16 (0.63)	N, n	$\pm$ 488.5 ( $\pm$ 19.232)	2964.4 (116.708)	375.4 (14.779)	Hole 17 $\times$ 16 (0.67 $\times$ 0.63)
D, d	$\pm$ 458.8 ( $\pm$ 18.063)	572.9 (22.555)	189.2 (7.449)	Hole 18 $\times$ 16 (0.71 $\times$ 0.63)	O, o	$\pm$ 583.6 ( $\pm$ 22.976)	6.6 (0.260)	868.2 (34.181)	Hole $\phi$ 98 (3.86)
E, e	$\pm$ 538.0 ( $\pm$ 21.181)	1062.0 (41.811)	220.0 (8.661)	Hole $\phi$ 15 (0.59)	P, p	$\pm$ 575.4 ( $\pm$ 22.653)	2739.3 (107.846)	737.6 (29.039)	Hole $\phi$ 20 (0.79)
F, f	$\pm$ 538.0 ( $\pm$ 21.181)	1540.0 (60.630)	220.0 (8.661)	Hole $\phi$ 15 (0.59)					

### Passenger Compartment

INFOID:000000010640900

### MEASUREMENT

Dimensions marked with "\*" indicate symmetrically identical dimensions on both the right and left hand of the vehicle.



JSKIA2281GB

«The others»

# BODY ALIGNMENT

## < SERVICE DATA AND SPECIFICATIONS (SDS)

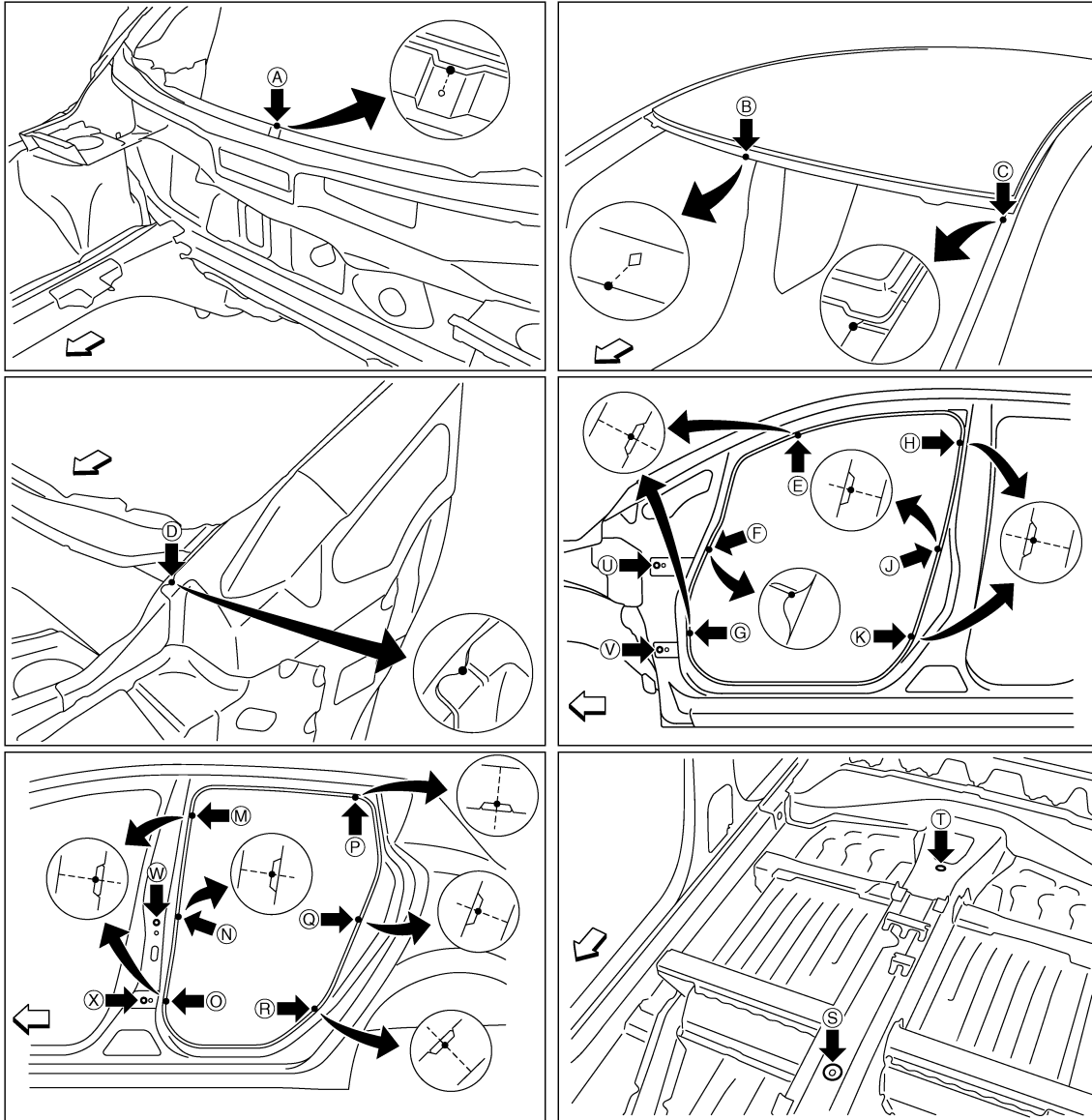
Unit: mm (in)

Portion	Dimension	Portion	Dimension	Portion	Dimension	Portion	Dimension
E - e	1227 (48.31)	K - k	1441 (56.73)	Q - q	1392 (54.80)	T - Q	1169 (46.02)*
E - g	1582 (62.28)*	M - m	1267 (49.88)	R - r	1441 (56.73)	T - R	983 (38.70)*
E - h	1397 (55.00)*	M - o	1545 (60.83)*	S - E	1068 (42.05)*	U - u	1539 (60.59)
E - k	1599 (62.95)*	M - p	1385 (54.53)*	S - F	855 (33.66)*	U - W	1162 (45.75)*
F - f	1420 (55.91)	M - r	1630 (64.17)*	S - G	772 (30.39)*	U - X	1133 (44.61)*
F - j	1663 (65.47)*	N - n	1420 (55.91)	S - H	1297 (51.06)*	V - v	1567 (61.69)
G - g	1425 (56.10)	N - q	1575 (62.01)*	S - J	1068 (42.05)*	V - W	1215 (47.83)*
G - h	1852 (72.91)*	O - o	1441 (56.73)	S - K	925 (36.42)*	V - X	1105 (43.50)*
G - k	1666 (65.59)*	O - p	1717 (67.60)*	T - M	1070 (42.13)*	W - w	1559 (61.38)
H - h	1270 (50.00)	O - r	1558 (61.34)*	T - N	847 (33.35)*	X - x	1590 (62.60)
H - k	1555 (61.22)*	P - p	1160 (45.67)	T - O	732 (28.82)*		
J - j	1420 (55.91)	P - r	1562 (61.50)*	T - P	1378 (54.25)*		

### MEASUREMENT POINTS

# BODY ALIGNMENT

< SERVICE DATA AND SPECIFICATIONS (SDS)



↶ Front

JSKIA2282ZZ

Unit: mm (in)

Portion	Description	Portion	Description
A	Cowl top flange end of center positioning mark	P, p, Q, q, R, r	Rear fender indent
B	Roof flange end of center positioning mark	S	Trans control reinforcement hole center of center positioning mark $\phi 31$ (1.22)
C, c, F, f	Outer side body joggle	T	Center front floor hole center of center positioning mark $\phi 11$ (0.43)
D, d, E, e, G, g	Outer side body indent	U, u, V, v, W, w, X, x	Door hinge installing hole center U, u, V, v, X, x: $\phi 12$ (0.47) W, w: $\phi 9$ (0.35)
H, h, J, j, K, k, M, m, N, n, O, o	Center pillar indent		

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

BRM

# BODY ALIGNMENT

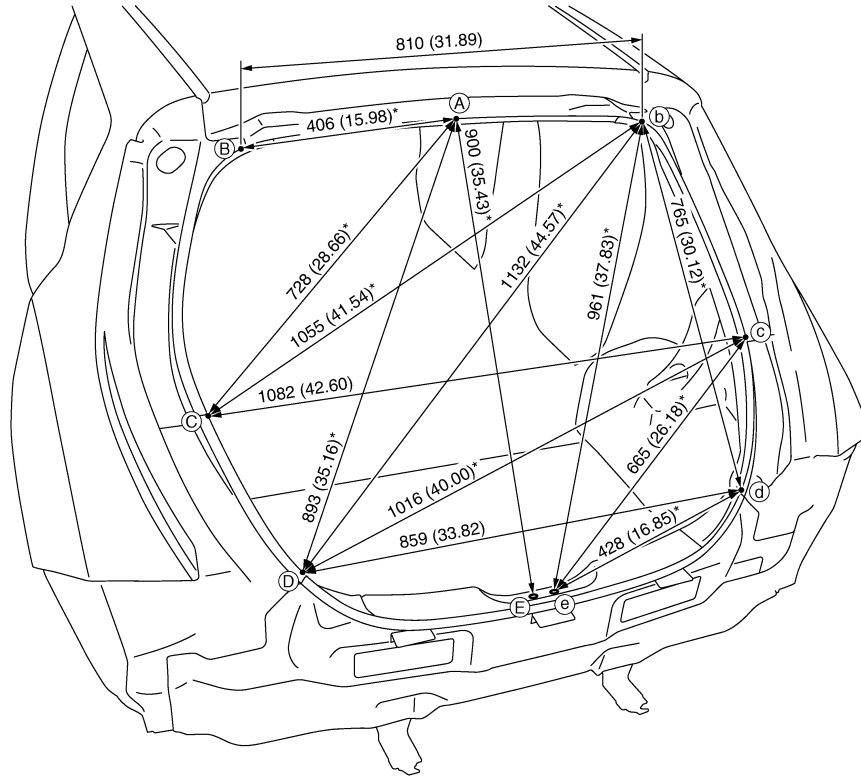
< SERVICE DATA AND SPECIFICATIONS (SDS)

## Rear Body

INFOID:000000010640901

### MEASUREMENT

Dimensions marked with "\*" indicate symmetrically identical dimensions on both the right and left hand of the vehicle.



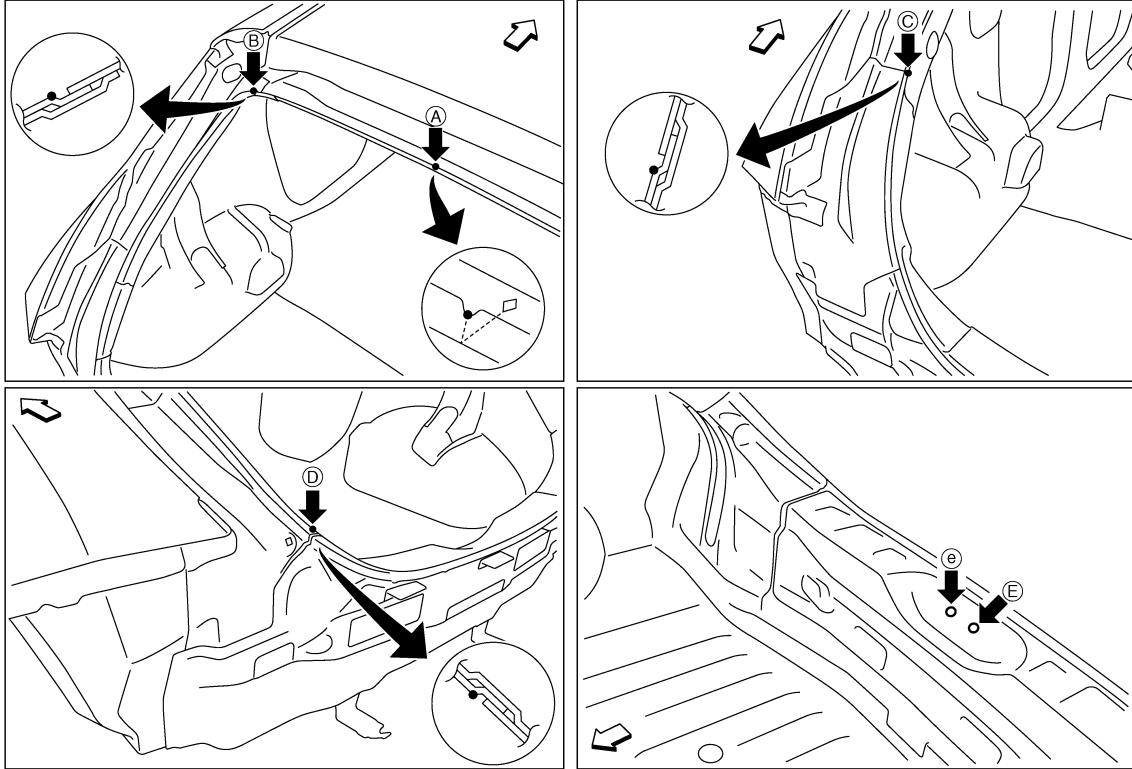
JSKIA2283GB

Unit: mm (in)

### MEASUREMENT POINTS

# BODY ALIGNMENT

< SERVICE DATA AND SPECIFICATIONS (SDS)



JSKIA2284ZZ

↶ Front

Unit: mm (in)

Portion	Description	Portion	Description
A	Roof indent of center positioning mark	C, c, D, d	Rear combination lamp base joggle
B, b	Rear fender extension joggle	E, e	Back door striker installing hole center $\phi 15$ (0.59)

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

BRM