

SECTION **BRM**  
BODY REPAIR

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# BODY EXTERIOR PAINT COLOR

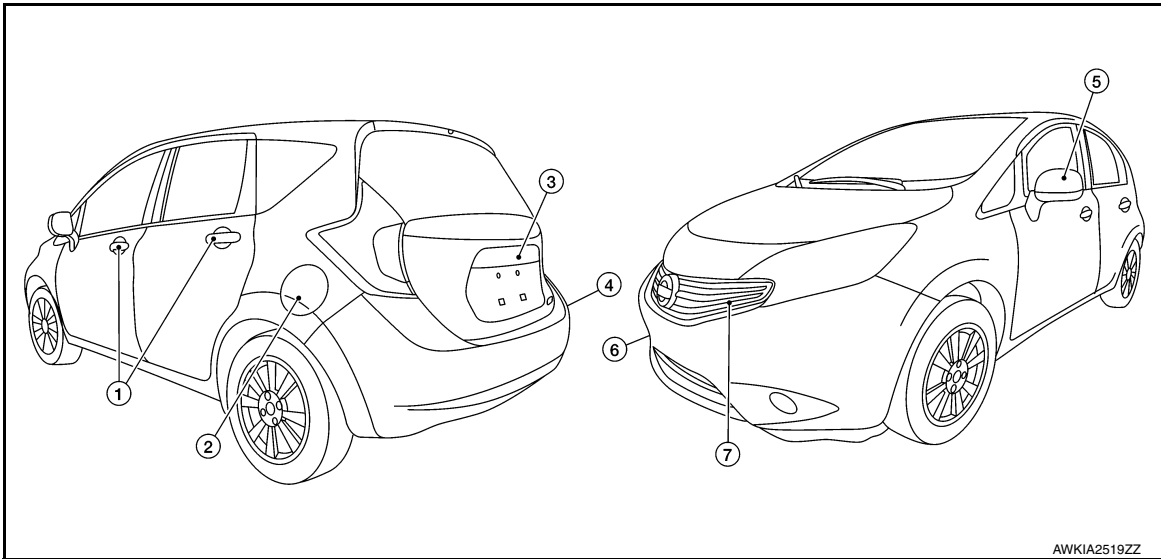
< VEHICLE INFORMATION >

## VEHICLE INFORMATION

### BODY EXTERIOR PAINT COLOR

#### Body Exterior Paint Color

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Component	Color code	B17	FAK	QAC	KH3	K23	K36	NAC	RBE	
	Description	Blue	Green	White	Black	Silver	Gray	Red	Blue	
	Paint type	M	M	3P	2S	M	M	M	M	
	Hard clear coat	t	t	t	t	t	t	t	t	
1	Door outside handles	Body color	B17	FAK	QAC	KH3	K23	K36	NAC	RBE
2	Fuel filler lid	Body color	B17	FAK	QAC	KH3	K23	K36	NAC	RBE
3	Back door outer finisher	Body color	B17	FAK	QAC	KH3	K23	K36	NAC	RBE
4	Rear bumper fascia	Body color	B17	FAK	QAC	KH3	K23	K36	NAC	RBE
5	Door mirror	Body color	B17	FAK	QAC	KH3	K23	K36	NAC	RBE
		Black	KH3	KH3	KH3	KH3	KH3	KH3	KH3	KH3
6	Front bumper fascia	Body color	B17	FAK	QAC	KH3	K23	K36	NAC	RBE
7	Front grille	Black	KH3	KH3	KH3	KH3	KH3	KH3	KH3	KH3

M = Metallic, 2S = Solid and Clear, 3P = 3-Stage pearl, t = Primerless Diamond Clear coat.

# PRECAUTIONS

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## PRECAUTION

### PRECAUTIONS

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

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

#### Precaution for Heating Metal

INFOID:000000009764358

- Normal Steel (coated and non-coated)  
390 MPa - 590MPa
- High Tensile (coated and non-coated) above  
590 MPa
- Maximum temperature for heating both steel types is: 550 degrees Celsius

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# HANDLING PRECAUTIONS FOR PLASTICS

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## HANDLING PRECAUTIONS FOR PLASTICS

### Precautions For Plastics

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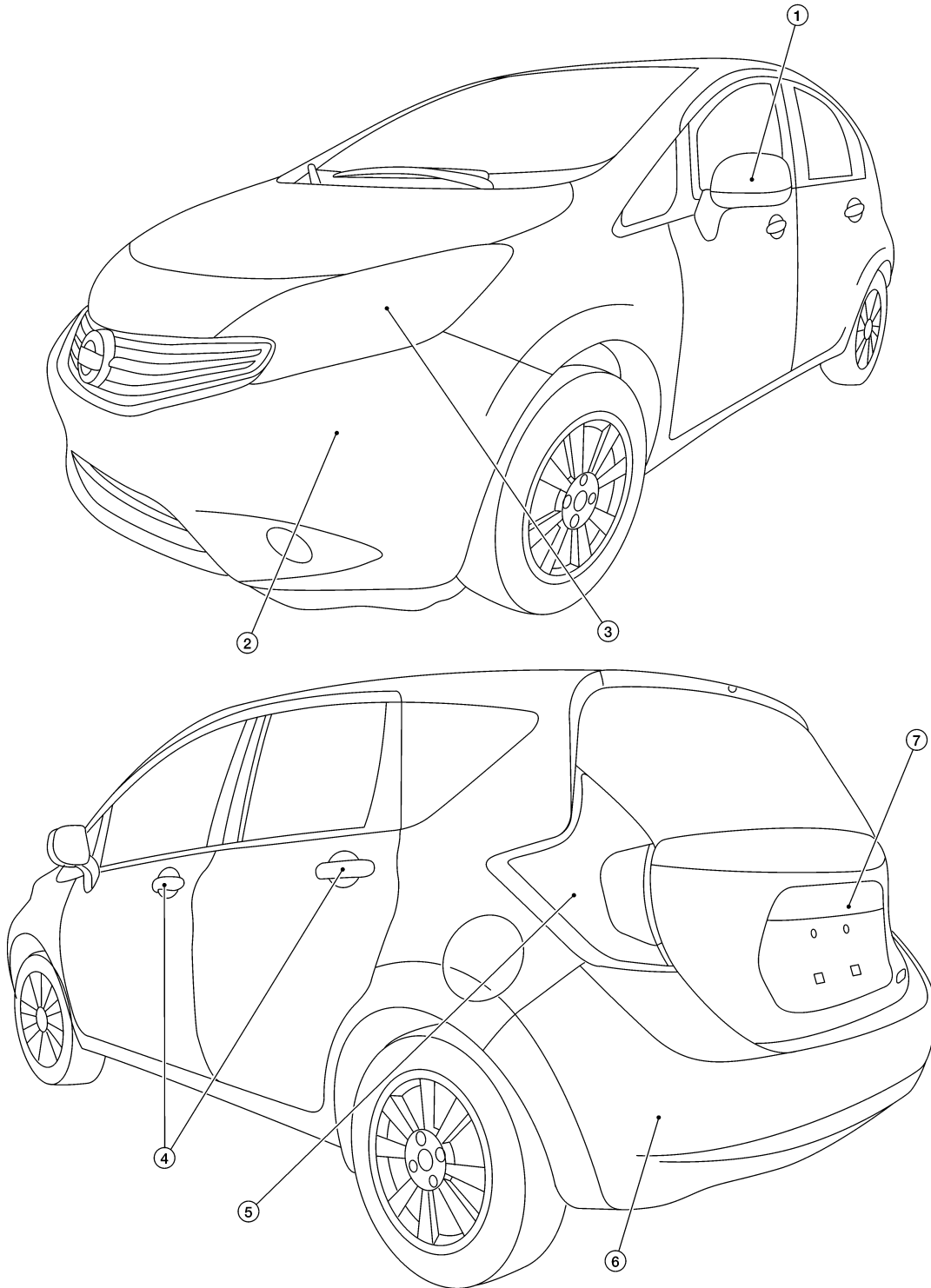
Abbreviation	Material name	Heatresisting temperature °C (°F)	Resistance to gasoline and solvents	Other cautions
PE	Polyethylene	60 (140)	Gasoline and most solvents are harmless if applied for a very short time (wipe up quickly).	Flammable
PVC	Poly Vinyl Chloride	80 (176)	Same as above.	Poison gas is emitted when burned.
EPM/EPDM	Ethylene Propylene (Diene) copolymer	80 (176)	Same as above.	Flammable
PP	Polypropylene	90 (194)	Same as above.	Flammable, avoid battery acid.
UP	Unsaturated Polyester	90 (194)	Same as above.	Flammable
PS	Polystyrene	80 (176)	Avoid solvents.	Flammable
ABS	Acrylonitrile Butadiene Styrene	80 (176)	Avoid gasoline and solvents.	
PMMA	Poly Methyl Methacrylate	85 (185)	Same as above.	
EVAC	Ethylene Vinyl Acetate	90 (194)	Same as above.	
ASA	Acrylonitrile Styrene Acrylate	100 (222)	Same as above.	Flammable
PPE	Poly Phenylene Ether	110 (230)	Same as above.	
PC	Polycarbonate	120 (248)	Same as above.	
PAR	Polyarylate	180 (356)	Same as above.	
PUR	Polyurethane	90 (194)	Same as above.	
POM	Poly Oxymethylene	120 (248)	Same as above.	Avoid battery acid.
PBT+PC	Poly Butylene Terephthalate + Polycarbonate	120 (248)	Same as above.	Flammable
PA	Polyamide	140 (284)	Same as above.	Avoid immersing in water.
PBT	Poly Butylene Terephthalate	140 (284)	Same as above.	
PET	Polyester	180 (356)	Same as above.	
PEI	Polyetherimide	200 (392)	Same as above.	

1. 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.
2. Plastic parts should be repaired and painted using methods suiting the materials' characteristics.

### LOCATION OF PLASTIC PARTS

# HANDLING PRECAUTIONS FOR PLASTICS

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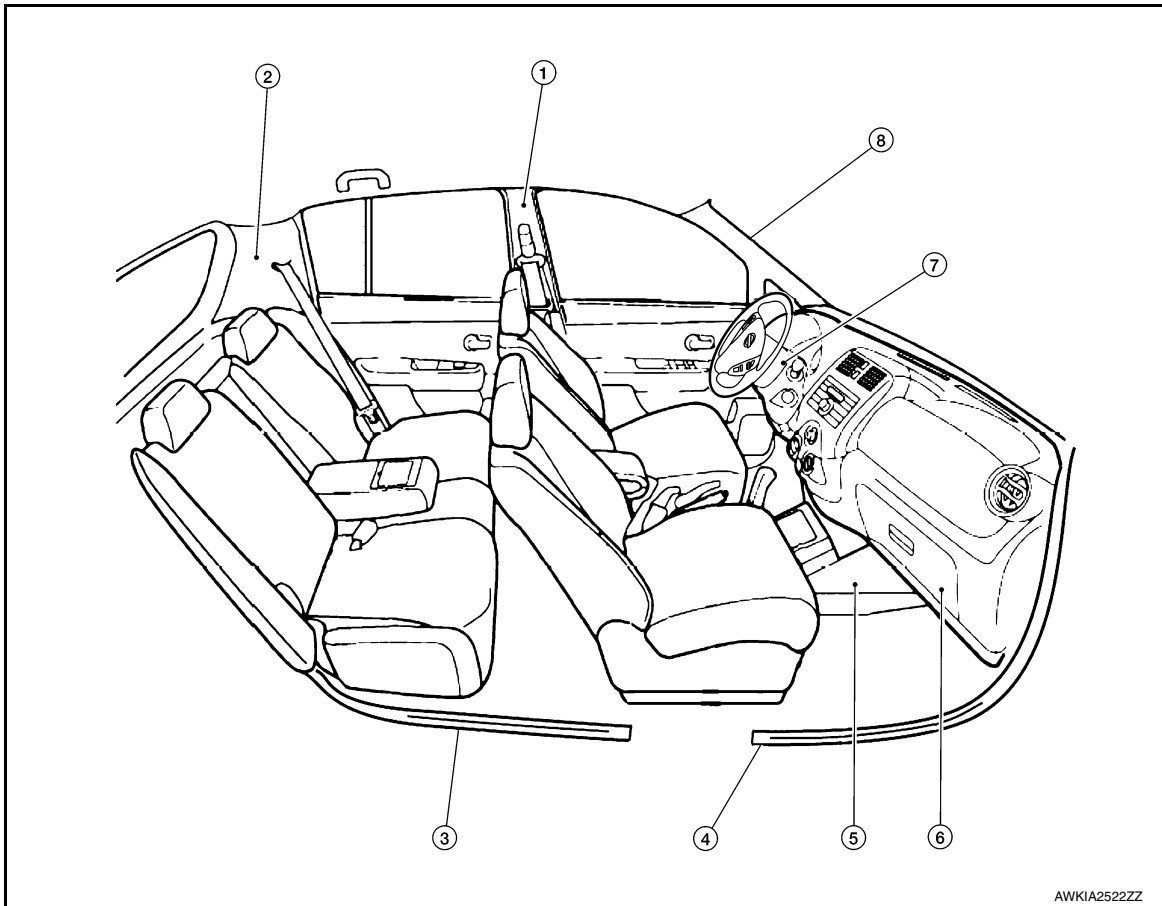
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Item	Component	Abbreviation	Material
1.	Door Mirror	Base	PP Polycarbonate
		Skull cap	ABS Acronitrile Butadiene Acrylate
2.	Front bumper fascia	PP + EPM	Polypropylene + Ethylene Propylene (Diene) co-polymer

## HANDLING PRECAUTIONS FOR PLASTICS

### < PRECAUTION >

Item	Component	Abbreviation	Material
3.	Front combination lamp	Lens	PC Polycarbonate
		Housing	PP Polypropylene
4.	Door outside handle	Grip	PC + PET Polycarbonate + Polyester
		Escutcheon	PC + PET Polycarbonate + Polyester
5.	Rear combination lamp	Lens	PMMA Poly Methyl Methacrylate
		Housing	PC + ABS Polycarbonate + Acrylonitrile Butadiene Styrene
6.	Rear bumper fascia	PP + EPM	Polypropylene + Ethylene Propylene (Diene) co-polymer
7.	Back door finisher	ABS	Acronitrile Butadiene Acrylate



Item	Component	Abbreviation	Material
1.	Center pillar upper finisher	PP	Polypropylene
2.	Luggage side upper finisher	PP	Polycarbonate
3.	Rear kicking plate	PP	Polypropylene
4.	Front kicking plate	PP	Polypropylene
5.	Center console lower	PP	Polypropylene
6.	Glove box assembly	PP	Polypropylene
7.	Steering column covers	PP	Polypropylene
8.	Front pillar finisher	PP	Polypropylene

# PRECAUTIONS IN REPAIRING HIGH STRENGTH STEEL

< PRECAUTION >

## PRECAUTIONS IN REPAIRING HIGH STRENGTH STEEL

### High Strength Steel (HSS)

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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:

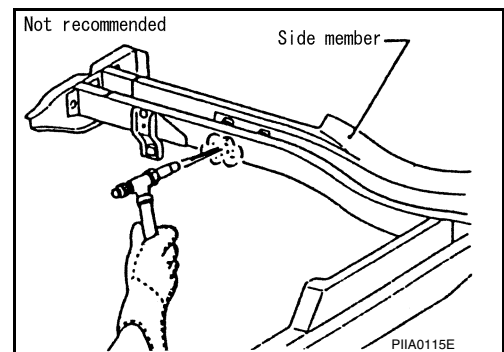
Tensile strength	Nissan/Infiniti designation	Major applicable parts
373 N/mm <sup>2</sup> (38kg/mm <sup>2</sup> ,54klb/sq in)	SP130	<ul style="list-style-type: none"> <li>• Front side member assembly</li> <li>• Hoodledge assembly</li> <li>• Upper dash</li> <li>• Front pillar reinforcement assembly</li> <li>• Rear side member assembly</li> <li>• Other reinforcements</li> </ul>

SP130 is the most commonly used HSS.

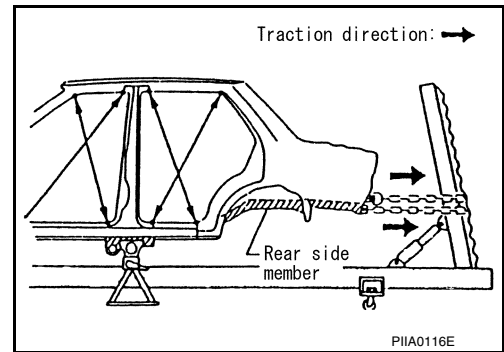
Read the following precautions when repairing HSS:

1. Additional points to consider

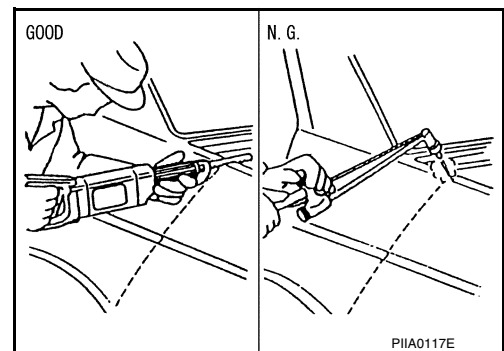
- The repair of reinforcements (such as side members) by heating is not recommended since it may weaken the component. When heating is unavoidable, do not heat HSS parts above 550°C (1,022°F). Verify heating temperature with a thermometer. (Crayon-type and other similar type thermometer are appropriate.)



- When straightening body panels, use caution in pulling any HSS panel. Because HSS is very strong, pulling may cause deformation in adjacent portions 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).

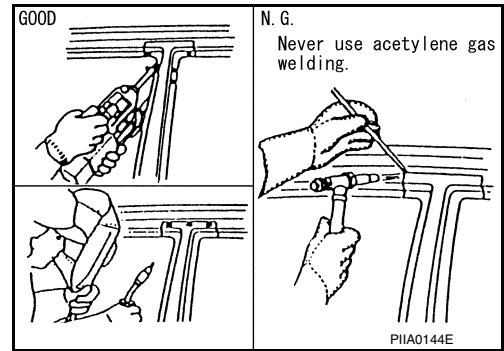


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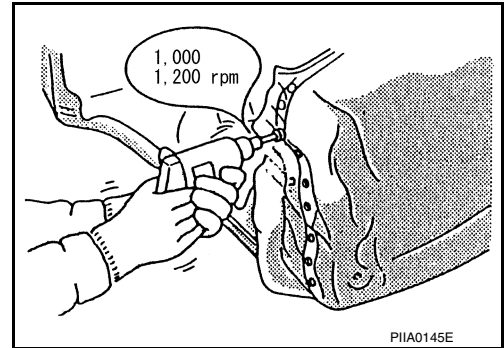
# PRECAUTIONS IN REPAIRING HIGH STRENGTH STEEL

## < PRECAUTION >

- 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 M.I.G. welding. Do not use gas (torch) welding because it is inferior in welding strength.



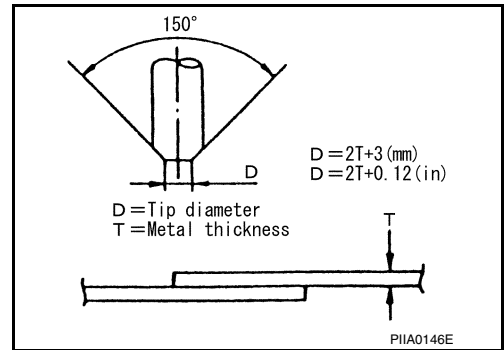
- The spot weld on HSS panels is harder than that of an ordinary steel panel. Therefore, when cutting spot welds on a HSS panel, use a low speed high torque drill (1,000 to 1,200 rpm) to increase drill bit durability and facilitate the operation.



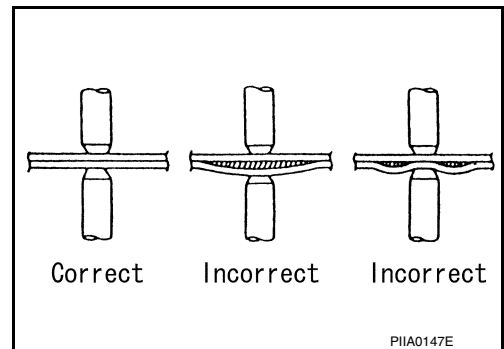
## 2. Precautions in spot welding HSS

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.





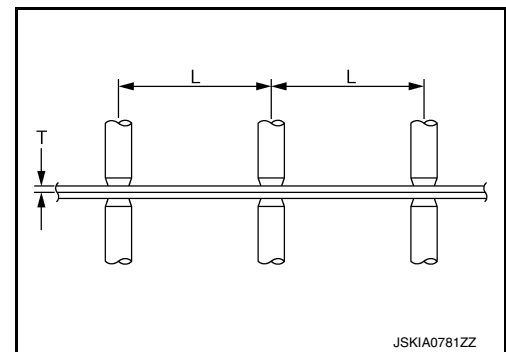
# PRECAUTIONS IN REPAIRING HIGH STRENGTH STEEL

## < PRECAUTION >

- Follow the specifications for the proper welding pitch.

Unit: mm (in)

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



## Handling of Ultra High Strength Steel Plate Parts

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### PROHIBITION OF CUT AND CONNECTION

Do not cut and join the lower lock pillar reinforcement (center pillar reinforcement inside frame parts) because its material is high strength steel plate (ultra high strength steel plate). The center pillar reinforcement must be replaced if this part is damaged.

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# REPAIRING MATERIAL

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## PREPARATION

### REPAIRING MATERIAL

#### Foam Repair

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During factory 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.

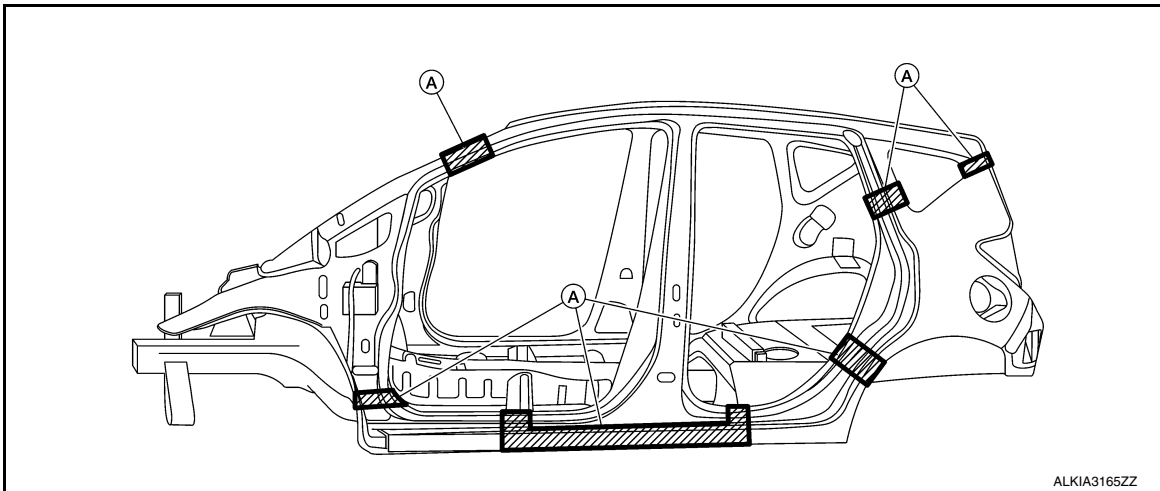
**NOTE:**

Refer to the label on the urethane foam container for information on working times.

#### FILL PROCEDURES

Example of foaming agent filling operation procedure:

1. Fill procedures after installation of service part.
  - a. Insert nozzle into hole near fill area and fill foam material (A) or fill enough to close gap with the service part.
  - b. Clean area after eliminating form insulator and foam material.



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A. Urethane foam

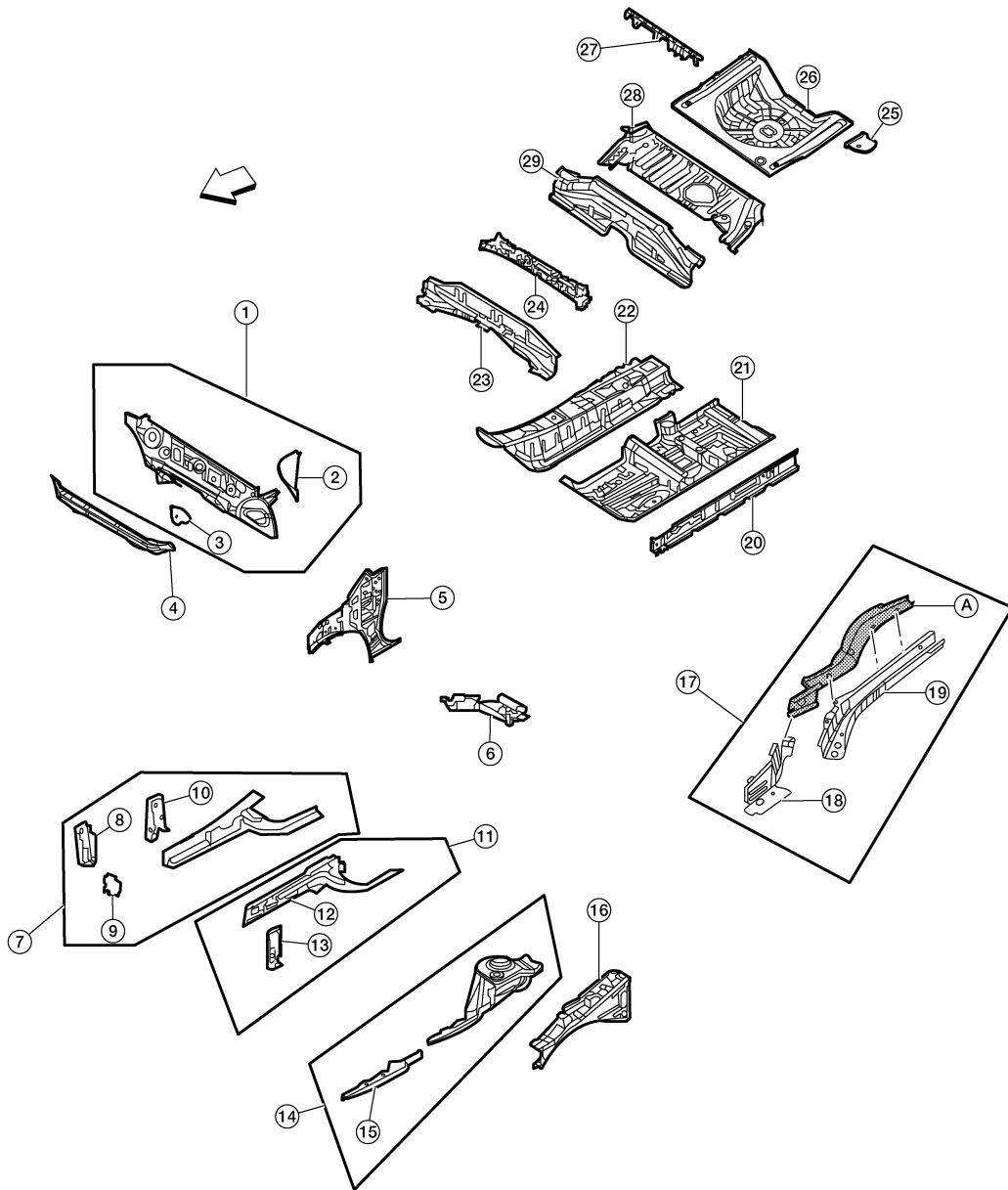
# BODY COMPONENT PARTS

< PREPARATION >

## BODY COMPONENT PARTS


### Underbody Component Parts

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 High strength steel (HSS) portions

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## BODY COMPONENT PARTS

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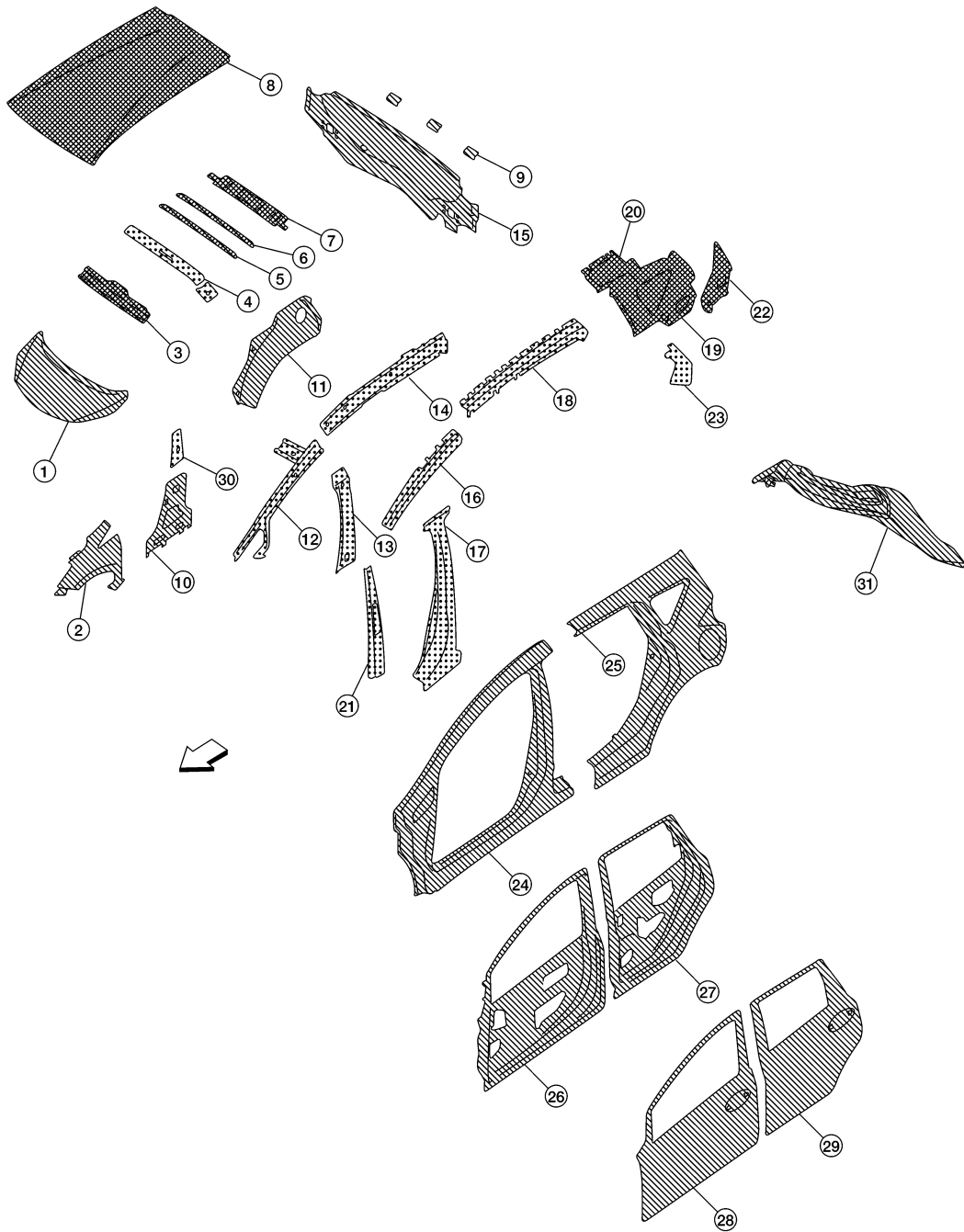
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|---|--|---|
| 1. Lower dash                             | 2. Lower dash reinforcement (LH/RH)                    | 3. Lower dash close out panel                 |
| 4. Member dash cross member (LH/RH)       | 5. Dash side (LH/RH)                                   | 6. Front suspension bracket (LH/RH)           |
| 7. Front side member assembly (LH/RH)     | 8. Lower radiator core inner side support (LH/RH)      | 9. Front member extension (LH/RH)             |
| 10. Upper radiator core support (LH/RH)   | 11. Front side member close out plate assembly (LH/RH) | 12. Front side member close out plate (LH/RH) |
| 13. Radiator core support outer (LH/RH)   | 14. Strut housing assembly (LH/RH)                     | 15. Strut housing extension (LH/RH)           |
| 16. Hood ledge (LH/RH)                    | 17. Rear side member assembly (LH/RH)                  | 18. Rear side member front (LH/RH)            |
| 19. Rear side member extension (LH/RH)    | 20. Inner sill (LH/RH)                                 | 21. Front floor side (LH/RH)                  |
| 22. Front floor center                    | 23. Rear seat back lower reinforcement                 | 24. Rear seat back upper reinforcement        |
| 25. Rear floor rear side (LH/RH)          | 26. Rear floor rear                                    | 27. Rear floor cross member                   |
| 28. Rear floor front                      | 29. Rear floor front extension                         |   |
| A. Rear side member reinforcement (LH/RH) | ↔ Front  |   |




# BODY COMPONENT PARTS

< PREPARATION >

## Body Component Parts

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-  Both sided anti-corrosive precoated steel portions
-  High strength steel (HSS) portions
-  Both sided anti-corrosive steel and HSS portions

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## BODY COMPONENT PARTS

### < PREPARATION >

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| 1. Hood assembly (294 MPa)                             | 2. Front fender (RH/LH) (270 MPa)               | 3. Front roof rail assembly (270 MPa)                    |
| 4. Roof center reinforcement (590 MPa)                 | 5. Roof bow 3rd (270 MPa)                       | 6. Roof bow 4th (270 MPa)                                |
| 7. Rear roof rail assembly (270 MPa)                   | 8. Roof (270 MPa)                               | 9. Rear bumper upper retainer (270 MPa)                  |
| 10. Center pillar lower (270 MPa)                      | 11. Outer rear wheel house (LH/RH) (270 MPa)    | 12. Front inner upper pillar (440 MPa)                   |
| 13. Center pillar inner upper (LH/RH) (440 MPa)        | 14. Roof rail inner side (LH/RH) (440 MPa)      | 15. Rear panel upper (270 MPa)                           |
| 16. Front pillar outer reinforcement (LH/RH) (440 MPa) | 17. Center pillar hinge brace (LH/RH) (440 MPa) | 18. Roof side rail outer reinforcement (LH/RH) (440 MPa) |
| 19. Rear inner pillar (LH/RH) (270 MPa)                | 20. Rear pillar reinforcement (LH/RH) (270 MPa) | 21. Center pillar reinforcement (LH/RH) (440 MPa)        |
| 22. Rear pillar reinforcement (LH/RH) (270 MPa)        | 23. Rear seat belt anchor (LH/RH) (440 MPa)     | 24. Body side outer front (LH/RH) (270 MPa)              |
| 25. Body side outer rear (LH/RH) (270 MPa)             | 26. Front door inner (LH/RH) (270 MPa)          | 27. Rear door inner (LH/RH) (270 MPa)                    |
| 28. Front door outer (LH/RH) (270 MPa)                 | 29. Rear door outer panel (LH/RH) (270 MPa)     | 30. Center pillar inner reinforcement (LH/RH) (440 MPa)  |
| 31. Rear lid assembly (270 MPa)                        |   |  |
- ↩ Front

# CORROSION PROTECTION

< REMOVAL AND INSTALLATION >

## REMOVAL AND INSTALLATION

### CORROSION PROTECTION

#### Description

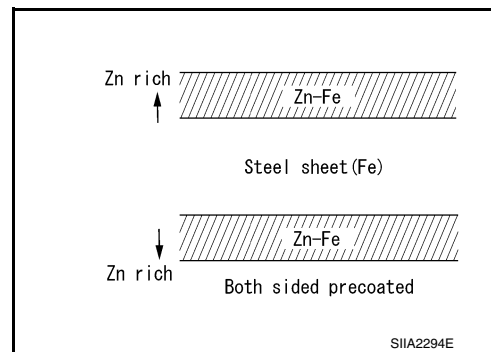
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To provide improved corrosion prevention, the following anti-corrosive measures have been implemented in NISSAN production plants. When repairing or replacing body panels, it is necessary to use the same anti-corrosive measures.

#### 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.



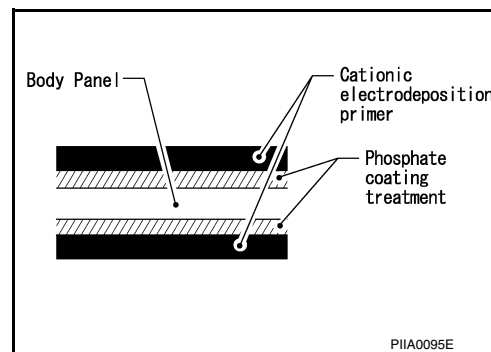
Nissan Genuine Service Parts are fabricated from galvannealed steel. Therefore, it is recommended that GENUINE NISSAN PARTS or equivalent be used for panel replacement to maintain the anti-corrosive performance built into the vehicle at the factory.

#### 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 equivalent be used for panel replacement to maintain anti-corrosive performance built into the vehicle at the factory.

#### Anti-Corrosive Wax

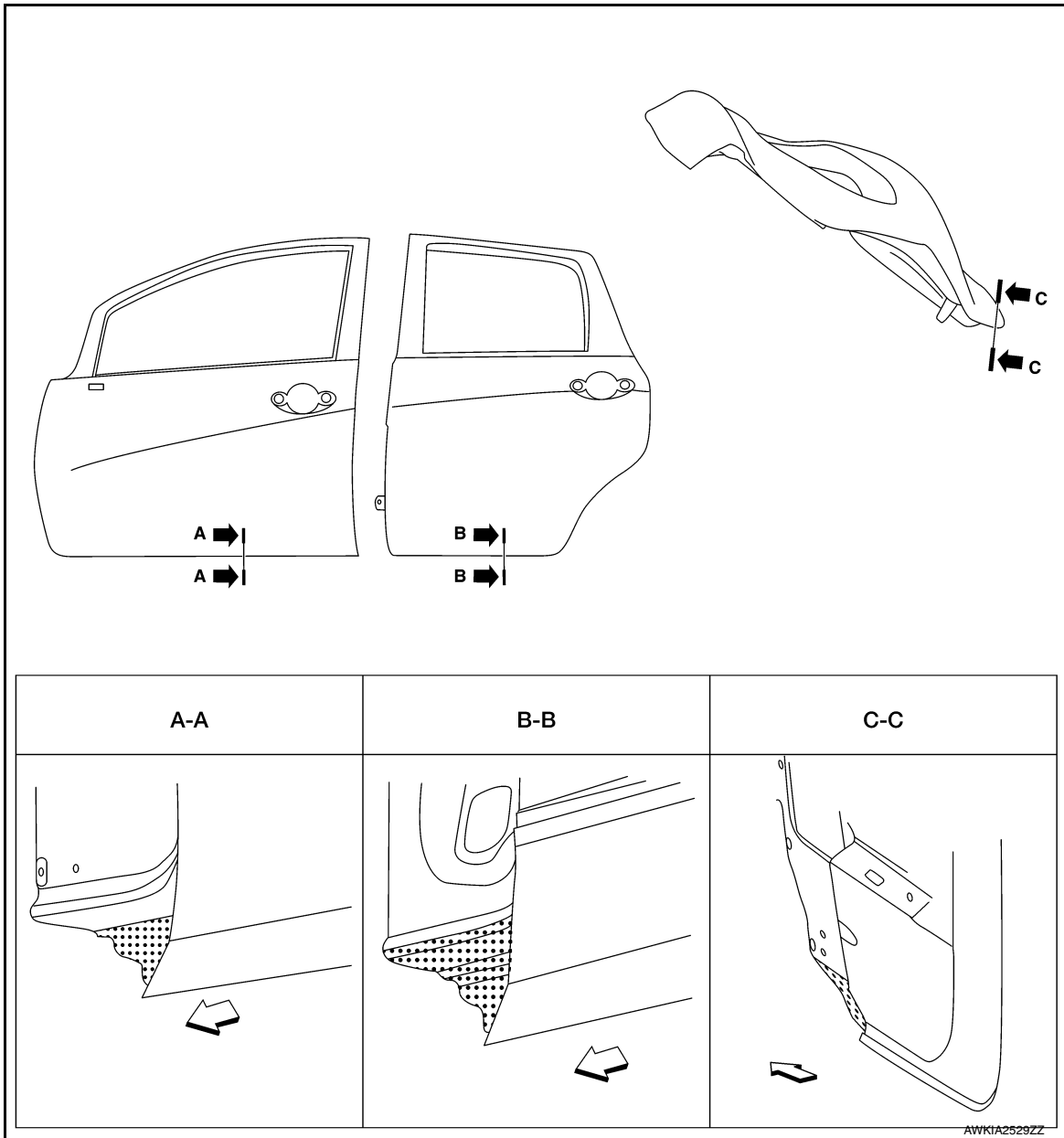
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To improve corrosion resistance, anti-corrosive wax is applied inside the body sill and inside other closed sections. Accordingly, when replacing these parts, be sure to apply anti-corrosive wax to the appropriate areas of

# CORROSION PROTECTION

## < REMOVAL AND INSTALLATION >

the new parts. Select an excellent anti-corrosive wax which will penetrate after application and has a long shelf life.



 Indicates anti-corrosive wax coated portions

 Front

## Undercoating

INFOID:000000009345080

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 preventive, soundproof, vibration-proof, shock-resistant, adhesive, and durable.

### Precautions in Undercoating

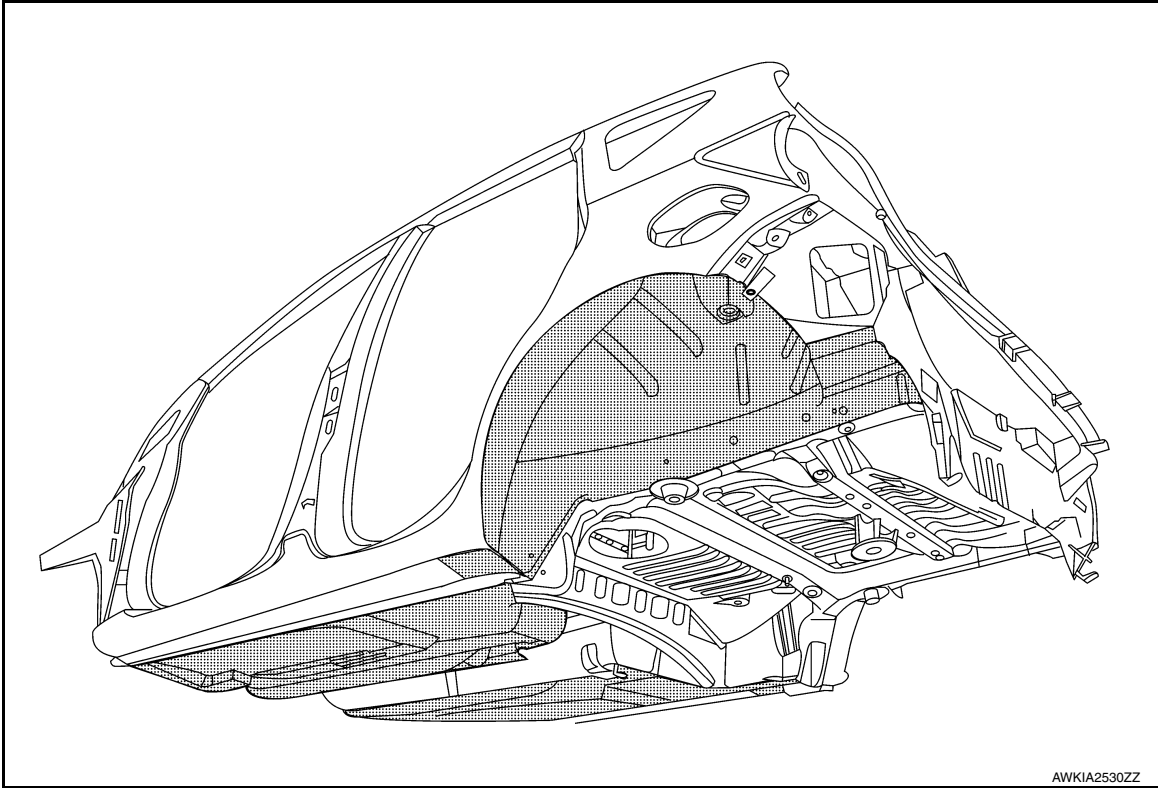
1. Do not apply undercoating to any place unless specified (such as the areas above the muffler and three way catalyst which are subjected to heat).
2. Do not undercoat the exhaust pipe or other parts which become hot.
3. Do not undercoat rotating parts.
4. Apply bitumen wax after applying undercoating.




# CORROSION PROTECTION

## < REMOVAL AND INSTALLATION >

5. After putting seal on the vehicle, put undercoating on it.



 Indicates anti-corrosive wax coated portions

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# BODY SEALING

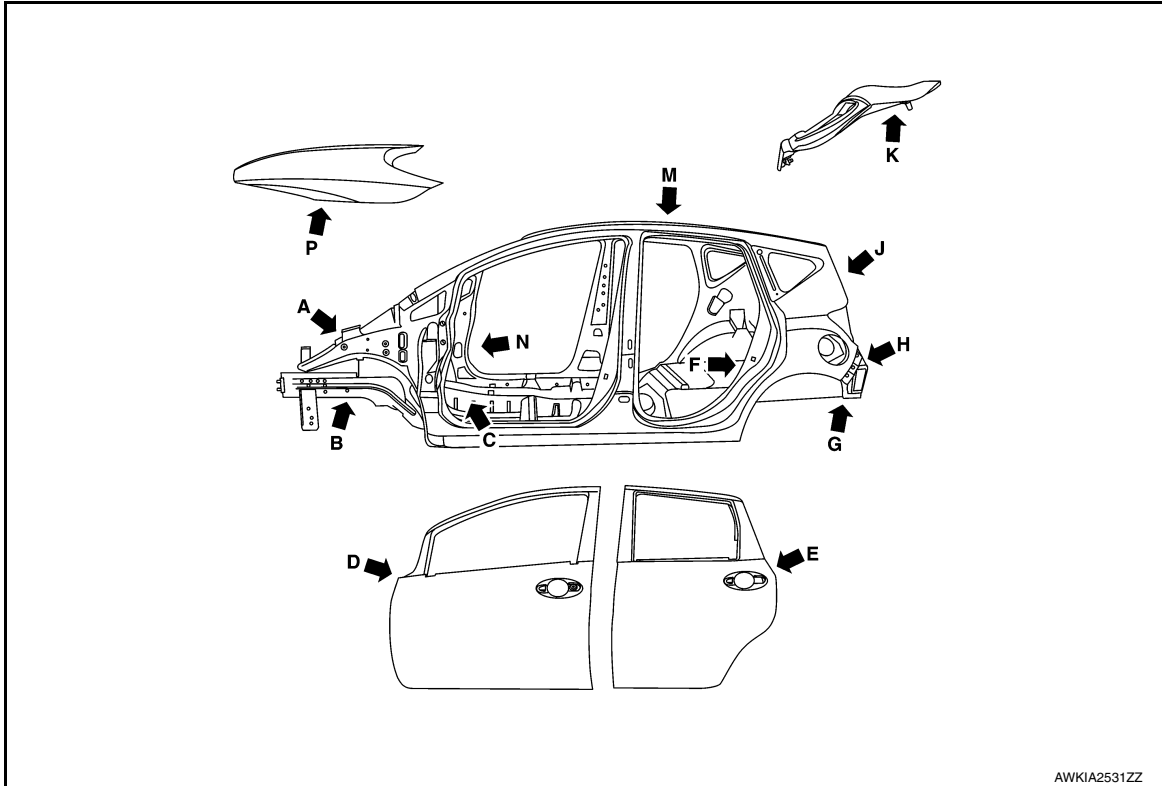
< REMOVAL AND INSTALLATION >

## BODY SEALING

### Description

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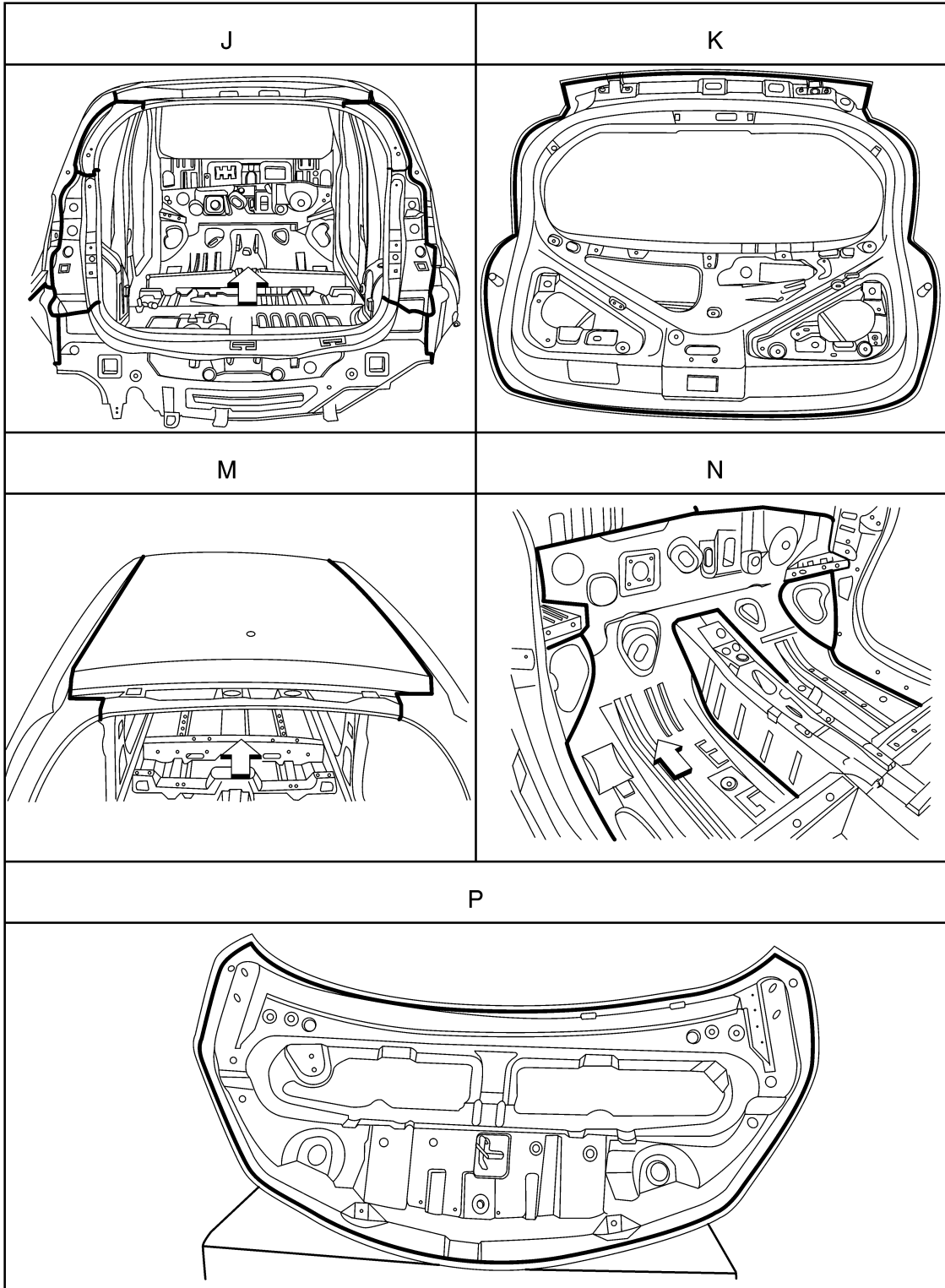
The following figure shows the areas which are sealed at the factory. Sealant which has been applied to these areas should be smooth and free from cuts or gaps. Care should be taken not to apply an excess amount of sealant and not to allow other unaffected parts to come into contact with the sealant.





# BODY SEALING

< REMOVAL AND INSTALLATION >



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# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

## REPLACEMENT OPERATIONS

### Description

INFOID:000000009345082

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 Body Repair Manual (Fundamentals) in order to ensure that the original functions and quality of the vehicle can be maintained. The Body Repair Manual (Fundamentals) contains additional information, including cautions and warning, that are not including in this manual. Technicians should refer to both manuals to ensure proper repairs.

Please note that these information are prepared for worldwide usage, and as such, certain procedures might not apply in some regions or countries.


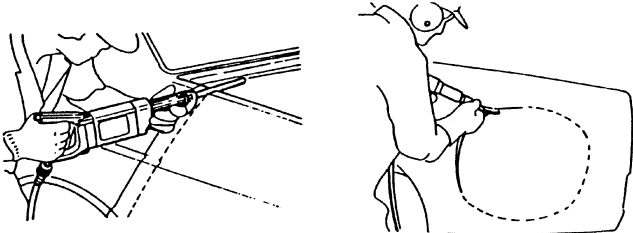
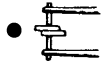


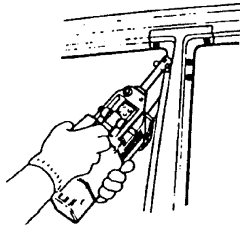
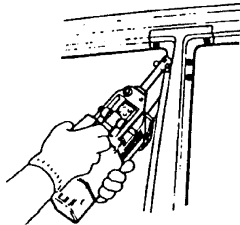

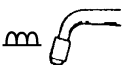



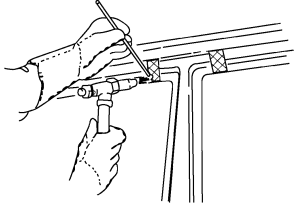
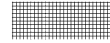

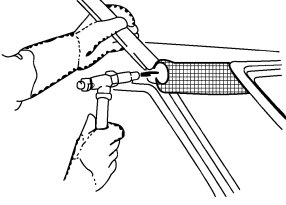
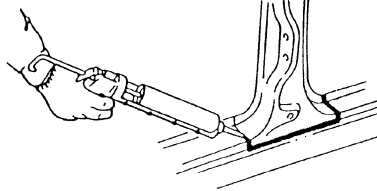
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**BRM**

# REPLACEMENT OPERATIONS

## < REMOVAL AND INSTALLATION >

The symbols used in this section for cutting and welding / brazing operations are shown below.

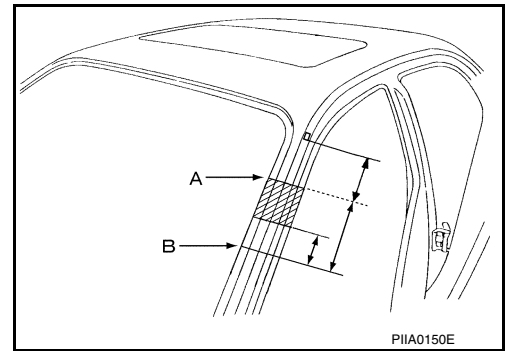
 <p>Saw cut or air chisel cut</p>		
<p>Spot weld</p> <p>●●●● 2-spot welds</p>  <p>●●●● 3-spot welds</p> 	<p>2-spot welds (2-panel overlapping portions)</p>  <p>3-spot welds (3-panel overlapping portions)</p> 	
<p>■ ■ ■ ■ MIG plug weld</p>  <p>~~~~~ MIG seam weld/ Point weld</p> 		
<p>▨ ▨ ▨ ▨ Brazing</p>  		
<p>▨ ▨ ▨ ▨ Soldering</p>  		
<p>————— Sealing</p>		

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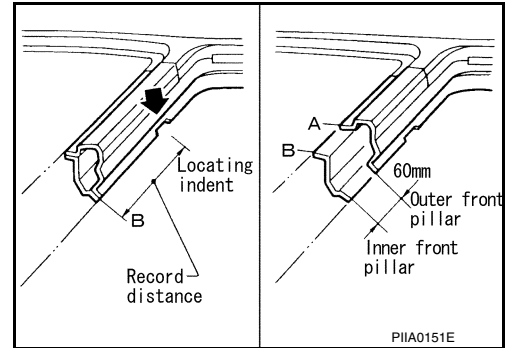
# REPLACEMENT OPERATIONS

## < REMOVAL AND INSTALLATION >

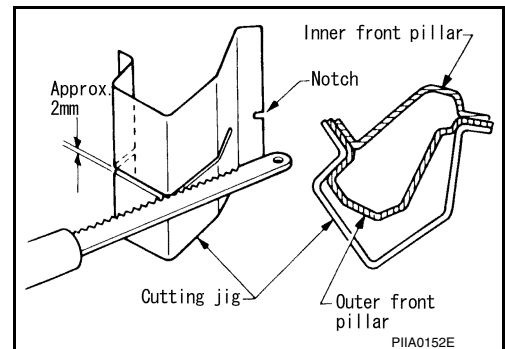
- Front pillar butt joint can be determined anywhere within shaded area (A) as shown in the figure. The best location for the butt joint is at position (B) due to the construction of the vehicle. Refer to the front pillar section.



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

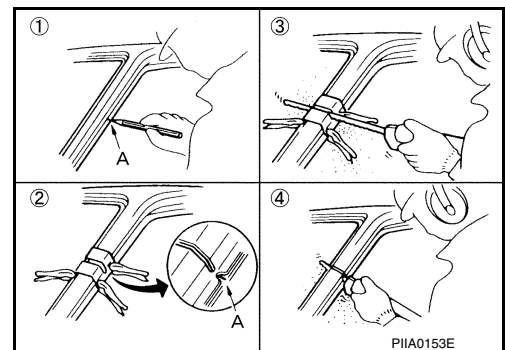


- Prepare a cutting jig to make outer pillar easier to cut. Also, this will permit service part to be accurately cut at joint position.



- An example of cutting operation using a cutting jig is as follows.

1. Mark cutting lines.  
A: Cut position of outer pillar  
B: Cut position of 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 at position in same manner.



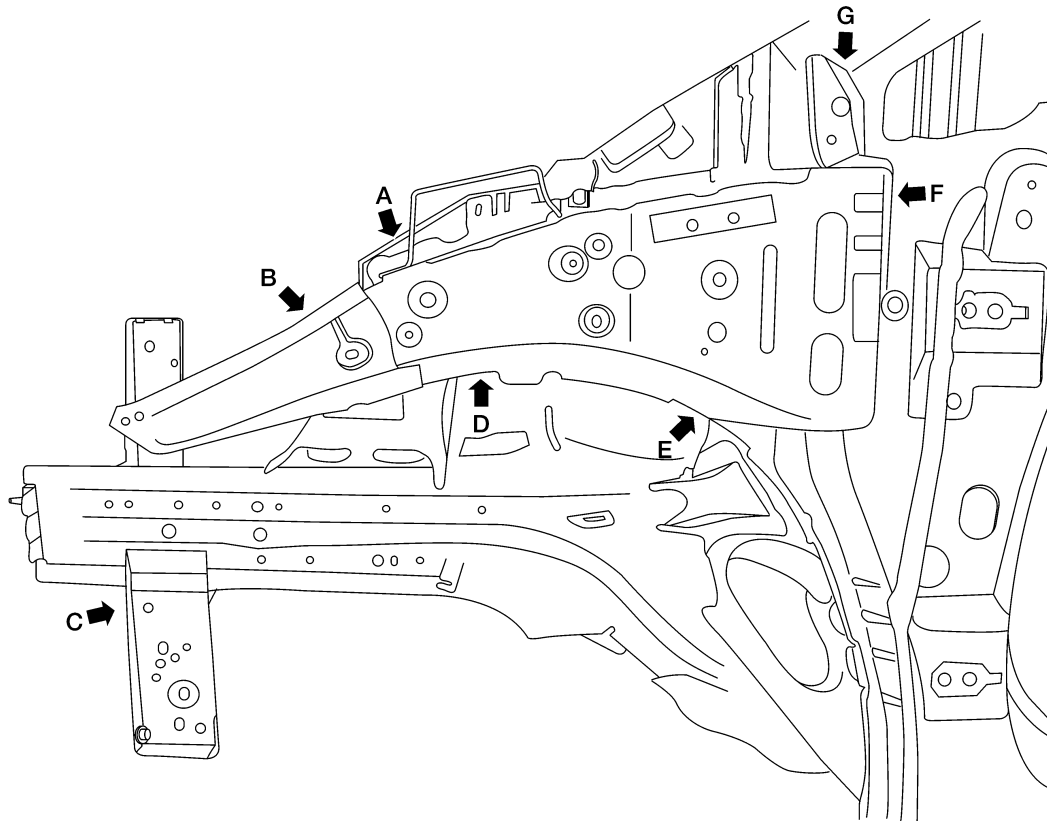
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# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

## Hoodledge

INFOID:00000009345083



AWKIA2534ZZ

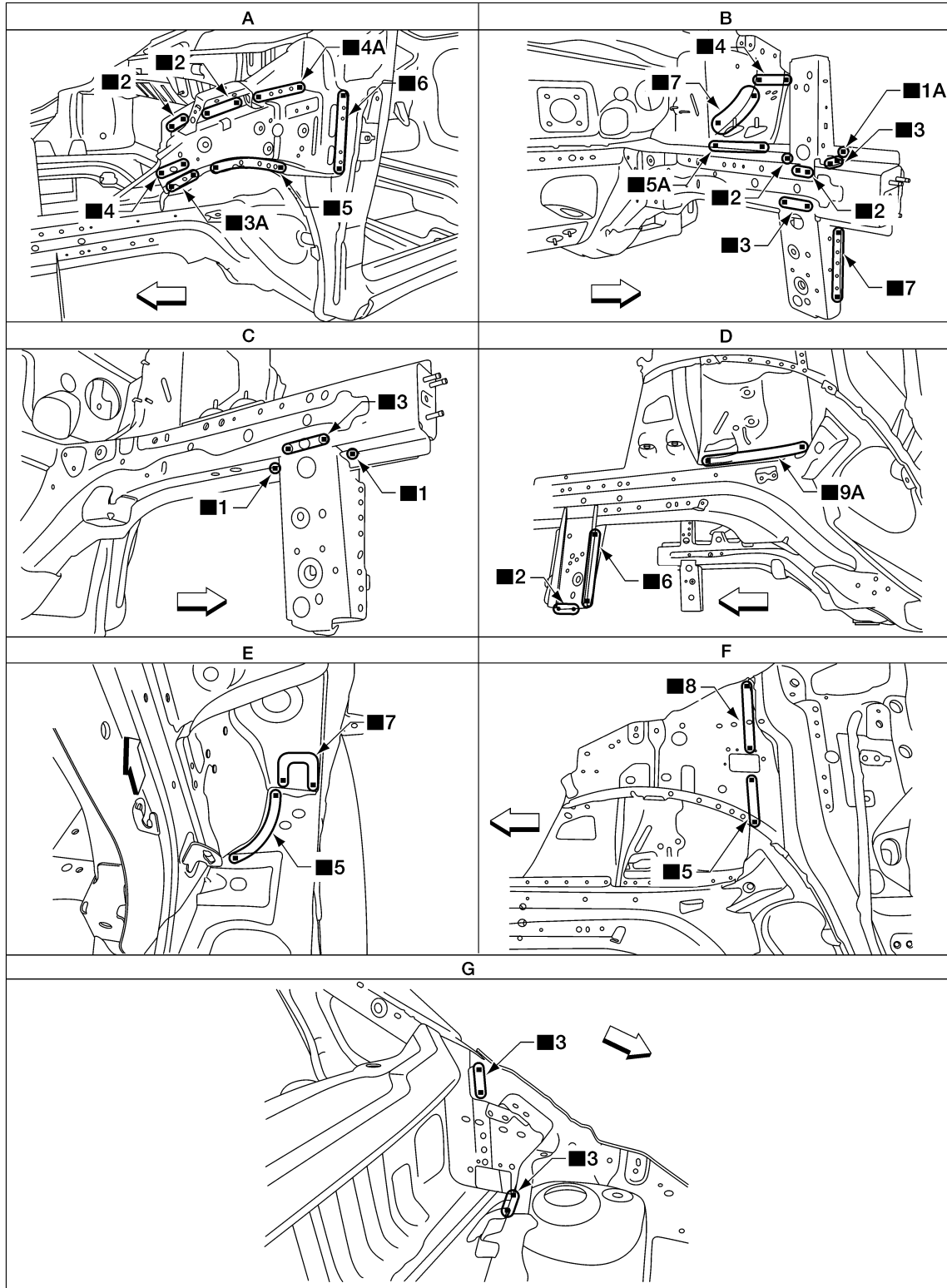
### Replacement parts

- |                            |                          |                                 |
|----------------------------|--------------------------|---------------------------------|
| A. Front strut housing     | B. Upper front hoodledge | C. Radiator core support lower  |
| D. Hoodledge reinforcement | E. Hoodledge connector   | F. Hoodledge reinforcement rear |
| G. Dash side extension     |                          | ⇐ Front                         |



# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >



AWKIA2552ZZ

← Front

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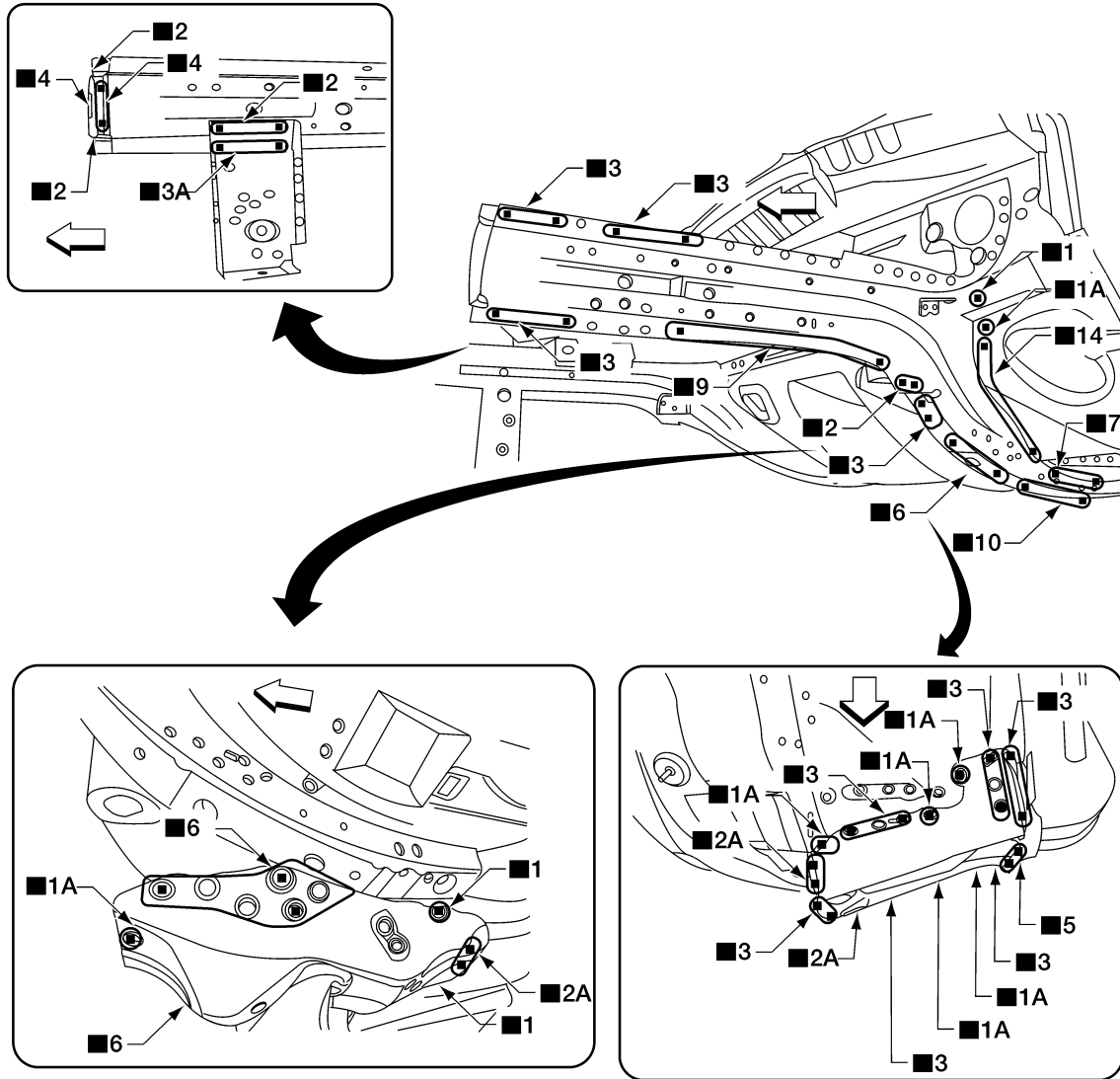
BRM

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

## Front Side Member

INFOID:00000009345084



AWK1A2548ZZ

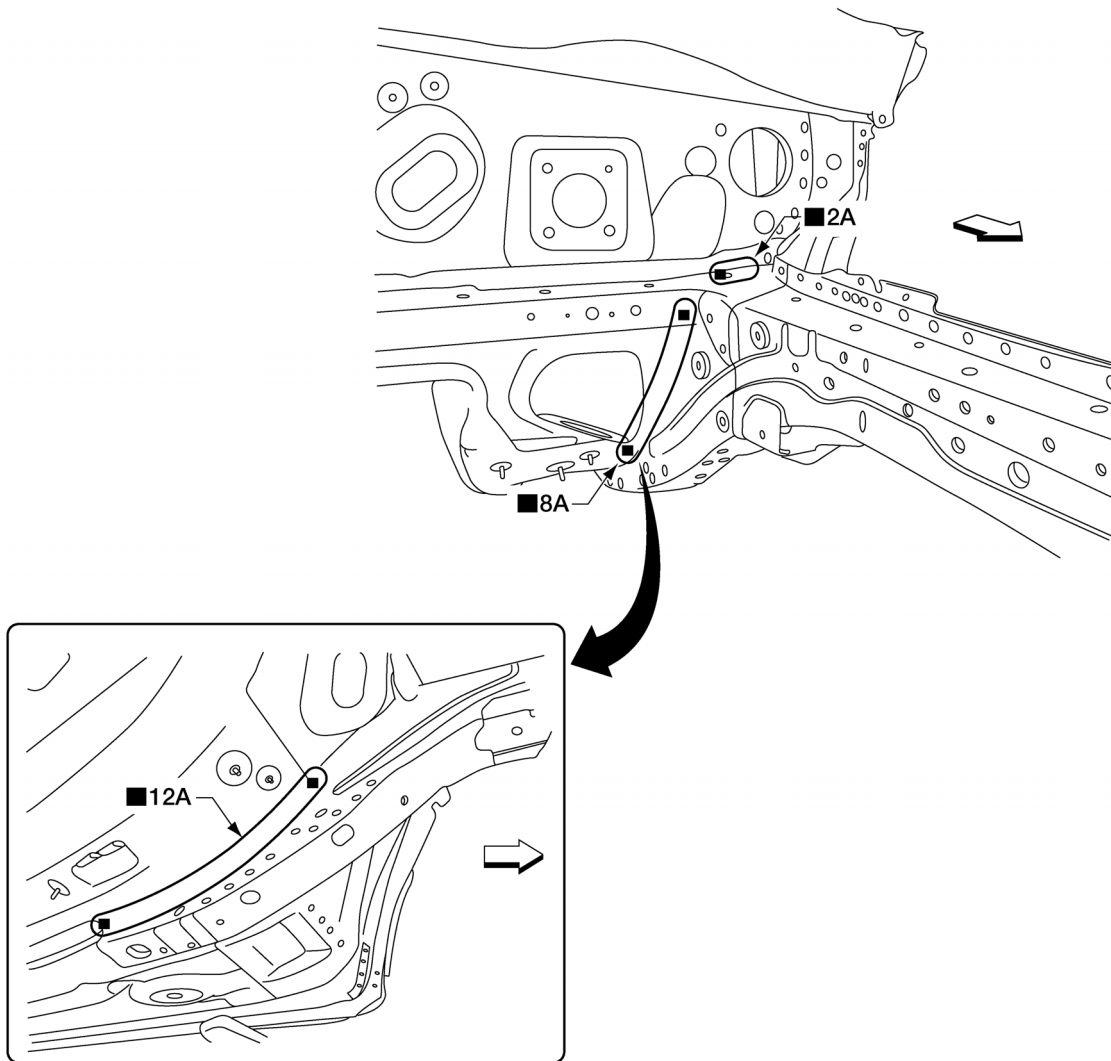
Replacement parts

● Front side member outside

⇐ Front

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >



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AWKIA2538ZZ

Replacement parts

- Front side member inner

↔ Front

## Front Pillar

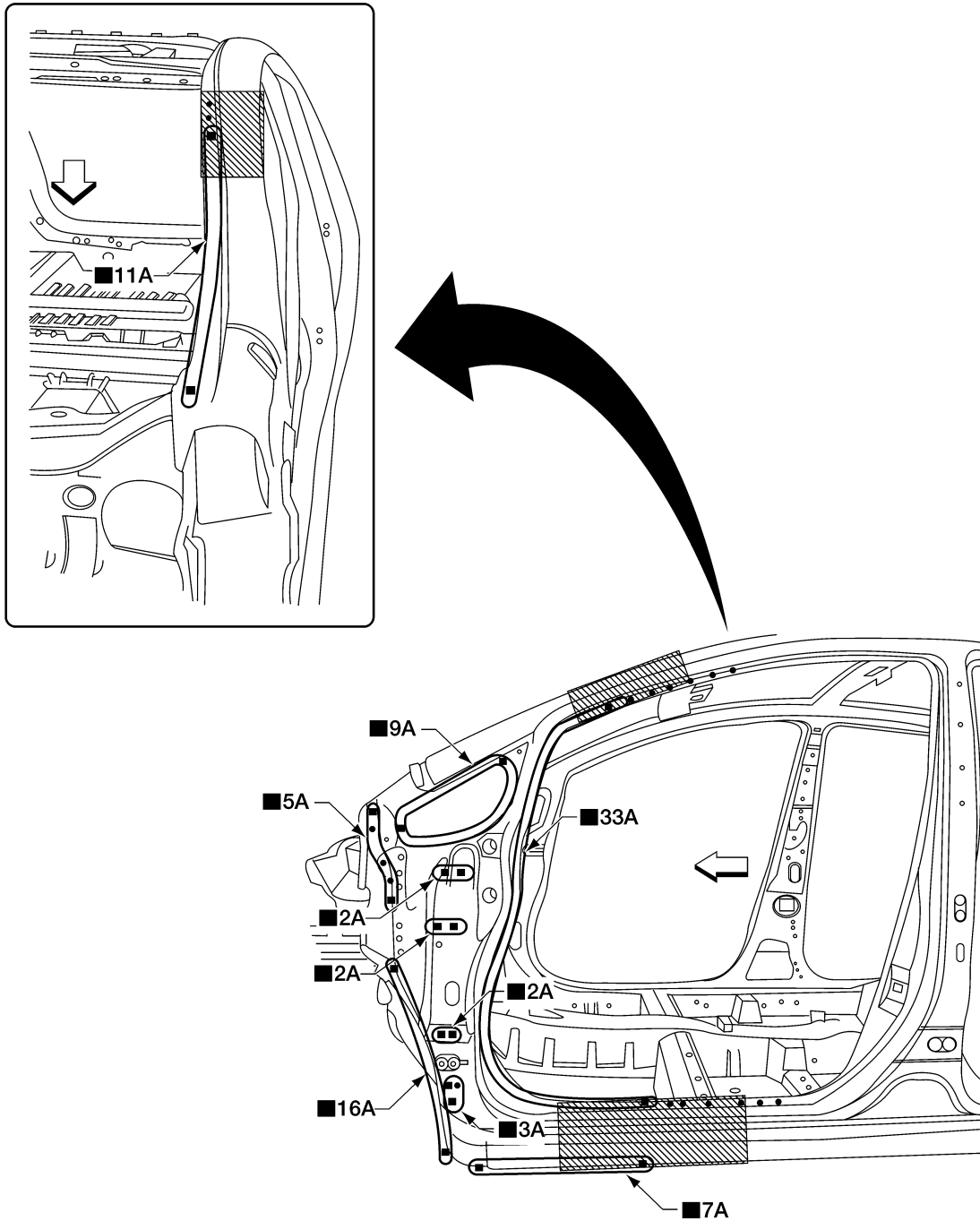
INFOID:000000009345085

### OUTER

Work after hoodledge and hoodledge reinforcement rear has been removed.

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >



AWKIA2539ZZ

Replacement parts

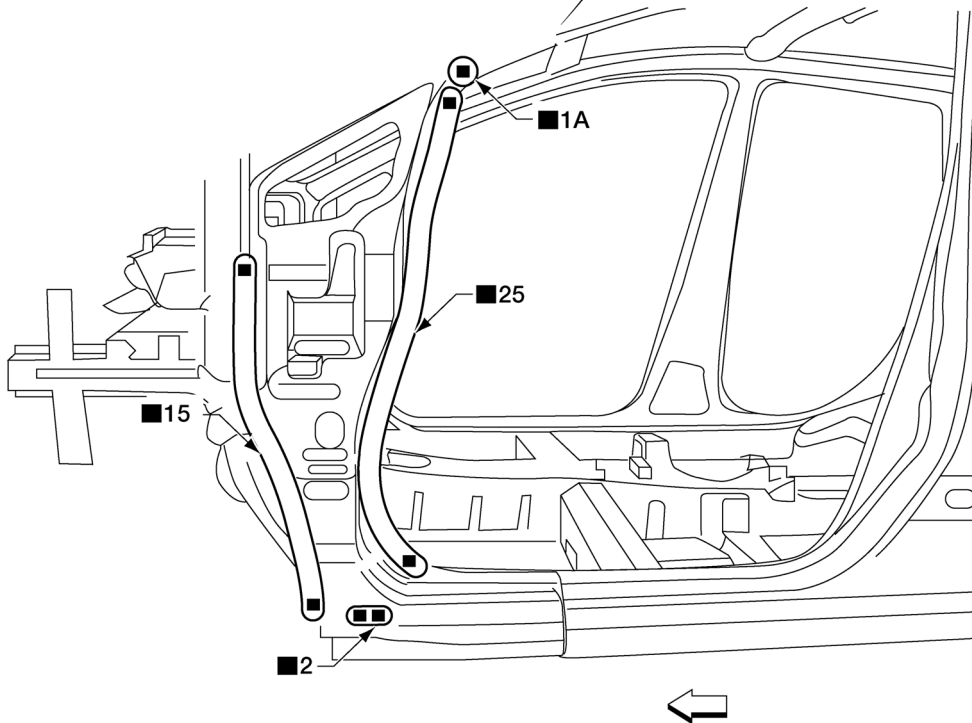
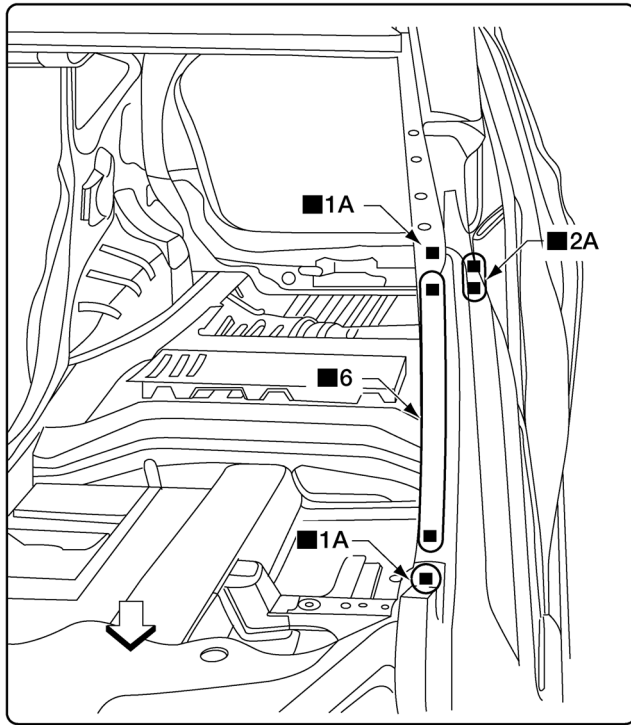
- Front pillar section of body side outer
- ▨ Recommended sectioning location
- ← Front

## REINFORCEMENT

Work after front pillar outer has been removed.

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >



Replacement parts

- Front pillar reinforcement

← Front

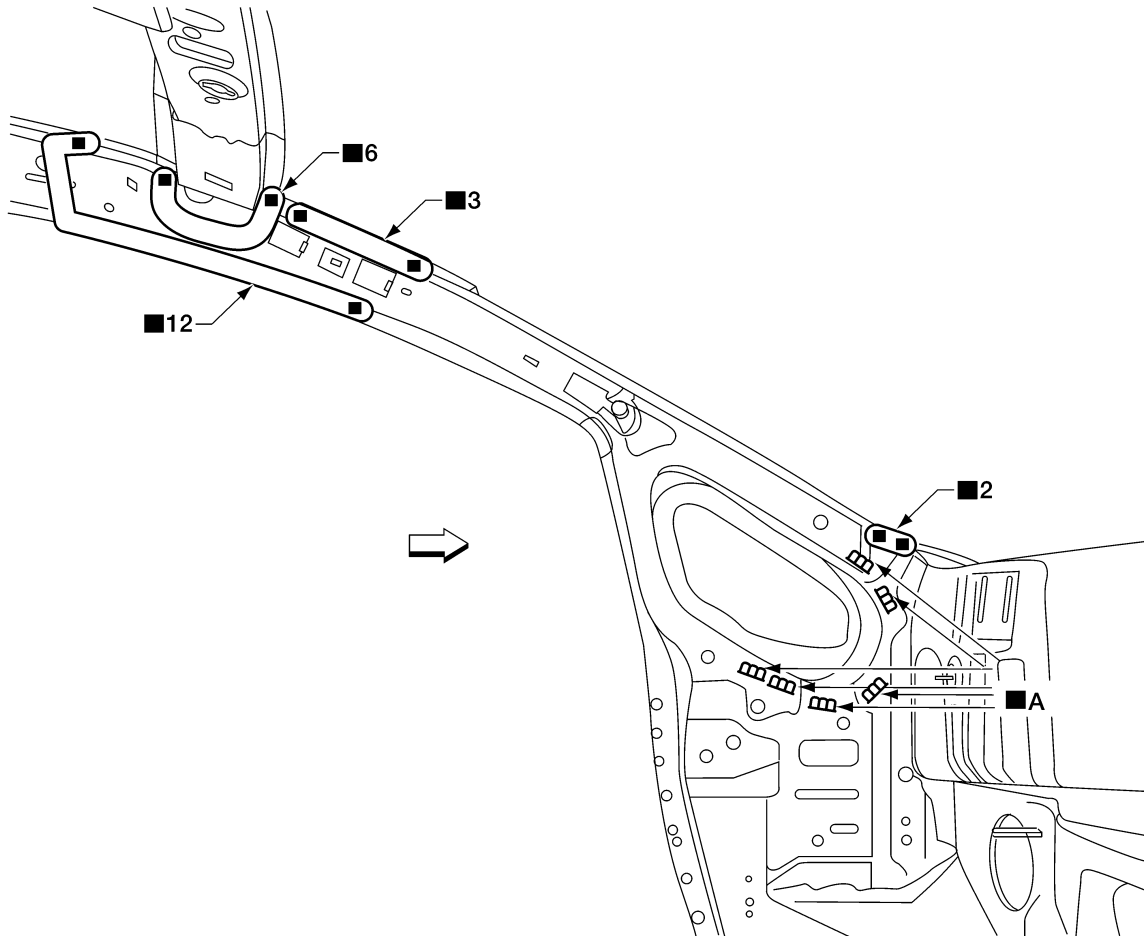
INNER

Work after front pillar reinforcement has been removed.

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# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >



ALKIA3156ZZ

Replacement parts

- Front pillar inner reinforcement
- A. Mig welds

← Front

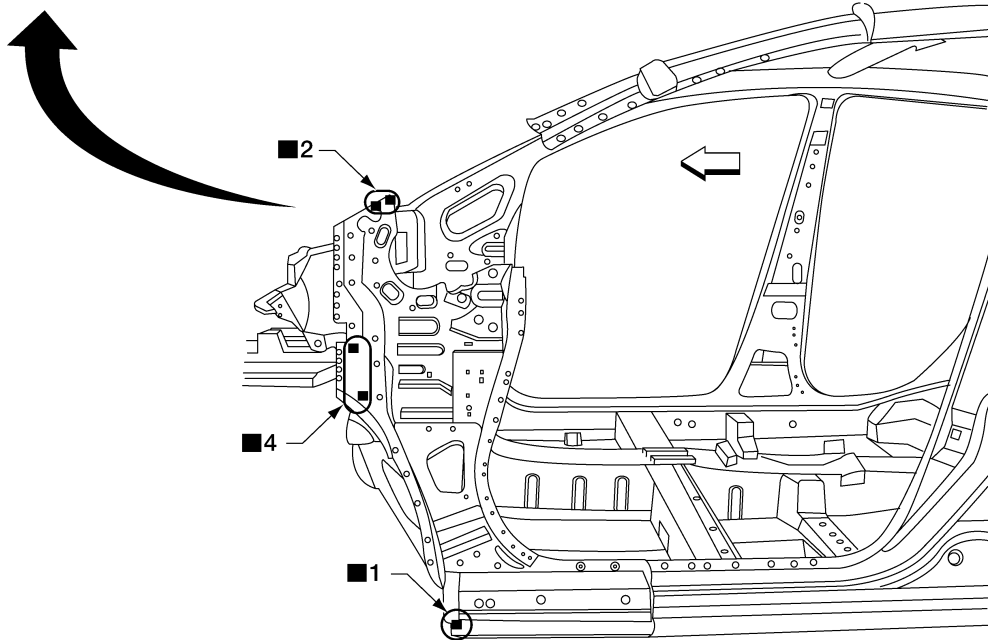
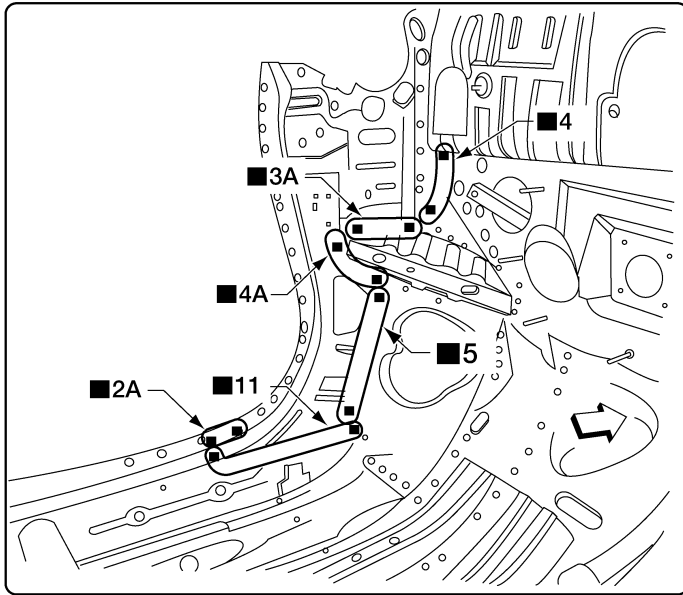
## Dash Side

INFOID:000000009345086

Work with front pillar reinforcement removed.

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >



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**BRM**

Replacement parts

● Dash side

⇐ Front

Center Pillar

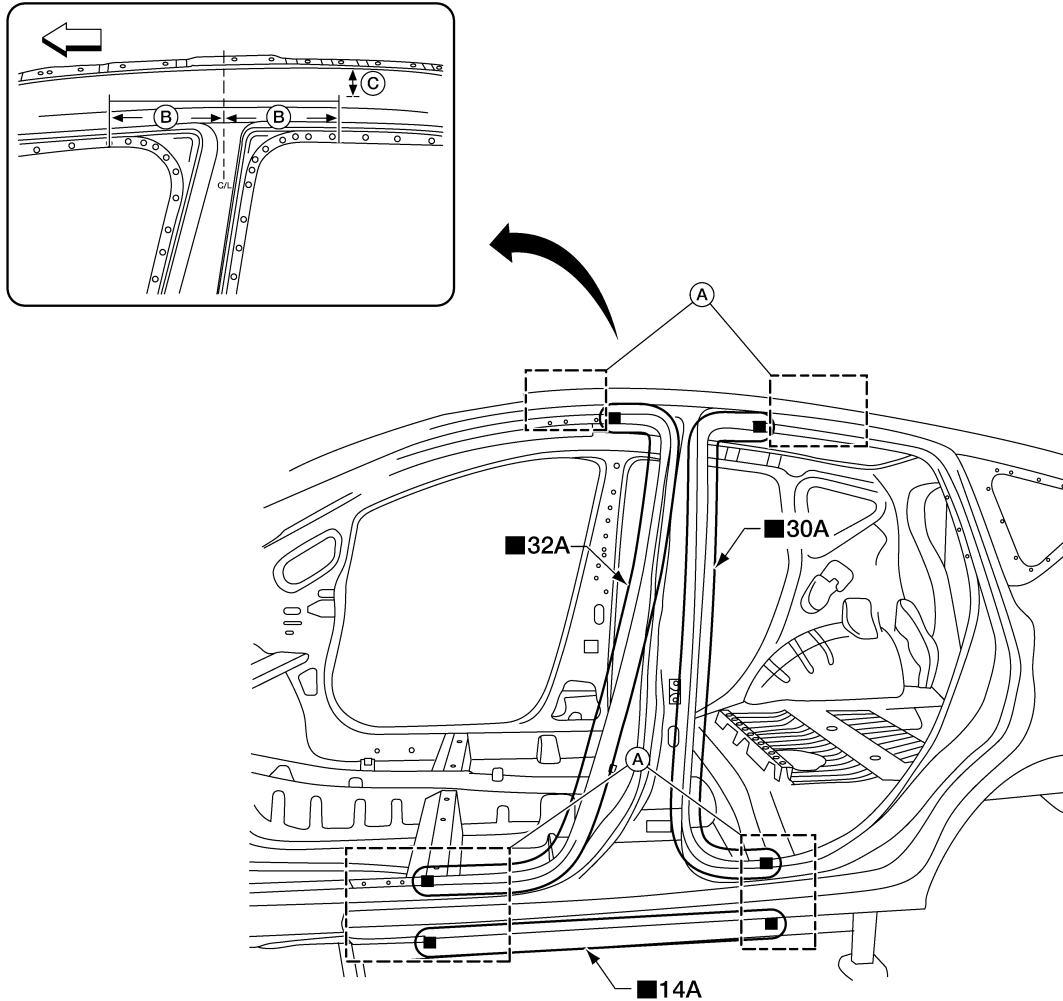
OUTER

AWKIA2541ZZ

INFOID:000000009345087

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >



AWKIA2542ZZ

Unit: mm (in)

## Replacement parts

- Center pillar portion of body

A. Side outer recommended sectioning area.    B. 120.0 (4.72)    C. 50.0 (1.97)

⇐ Front

## Installation

Match welds locations from removed part onto new panel and weld into place.

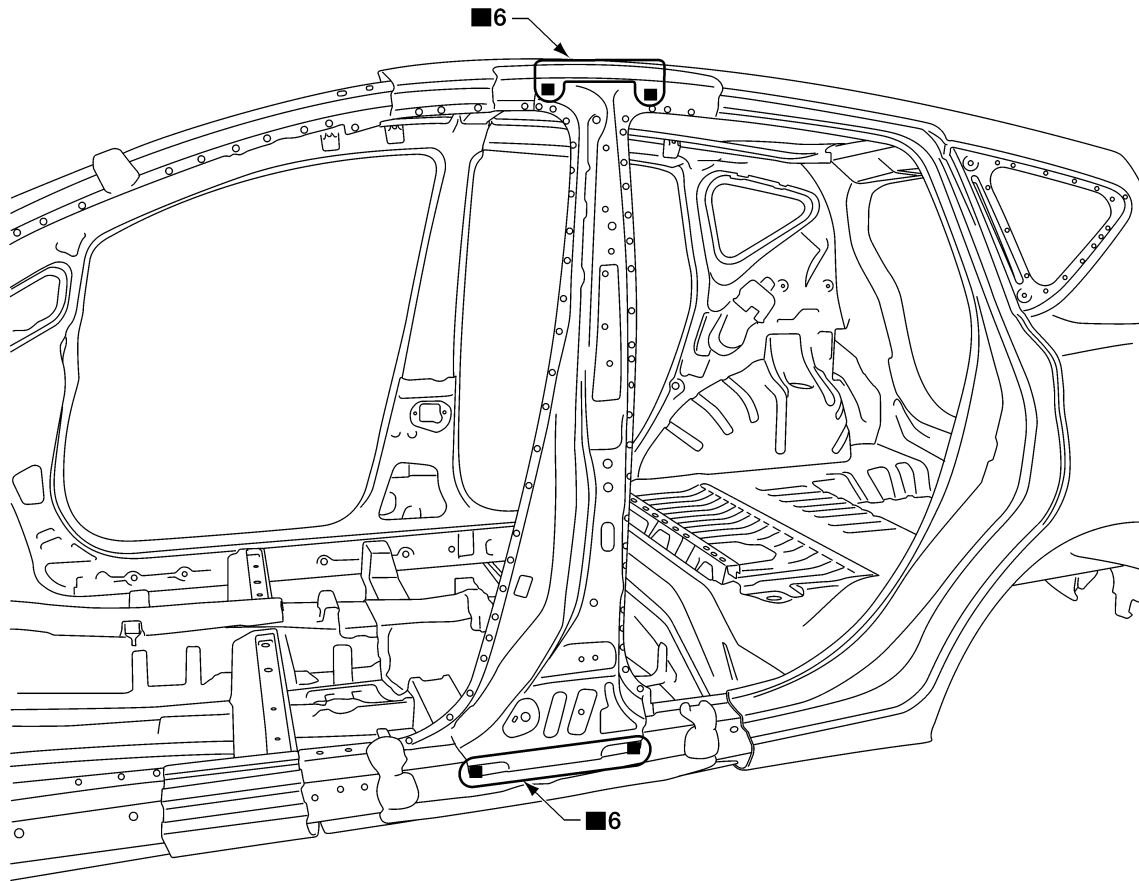


# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

## REINFORCEMENT

Work after center pillar outer has been removed.



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**BRM**

Replacement parts

- Center pillar reinforcement

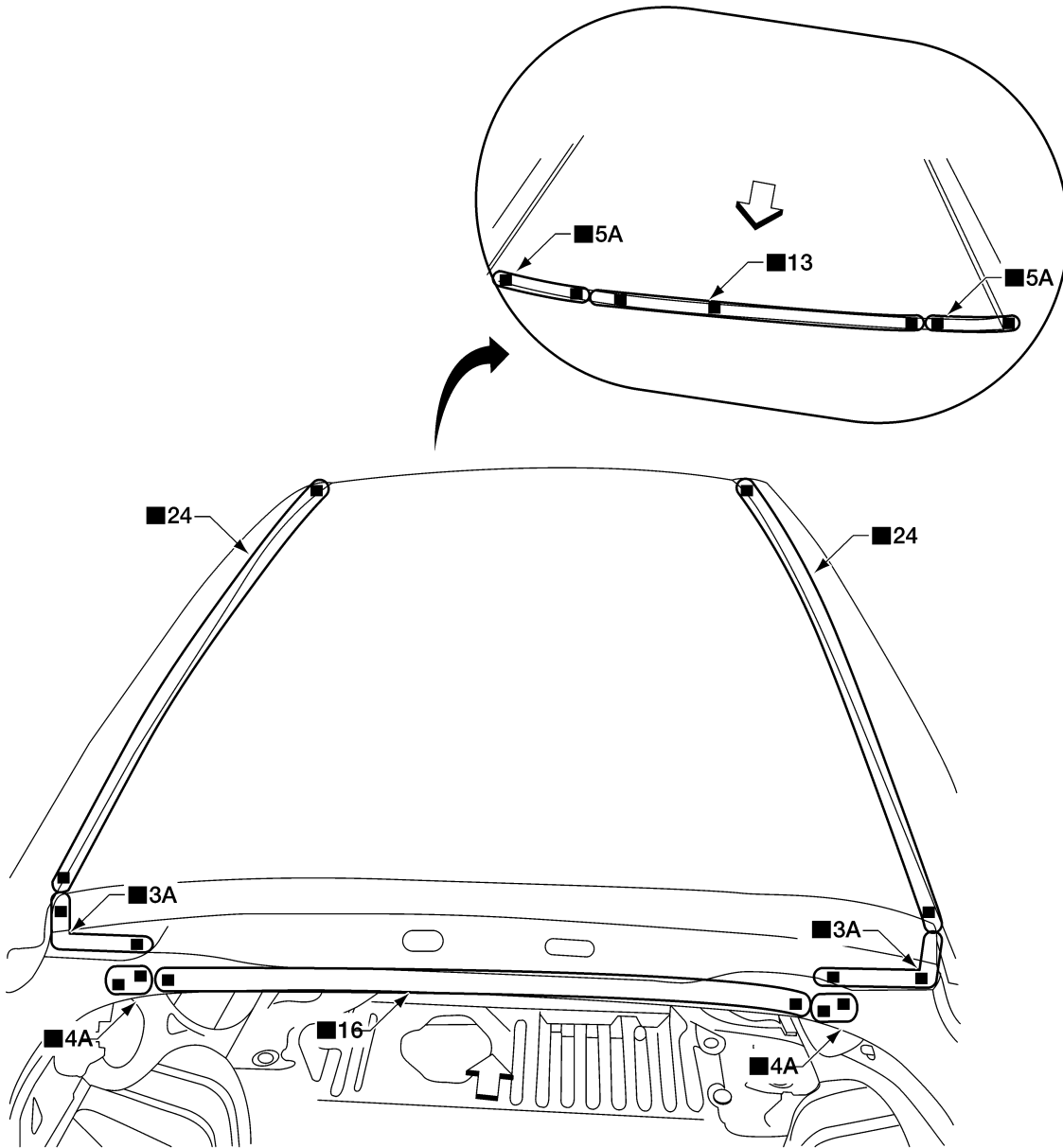
AWKIA2549ZZ

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

Roof

INFOID:00000009345088



Replacement parts

- Roof panel

↔ Front

ALKIA3148ZZ

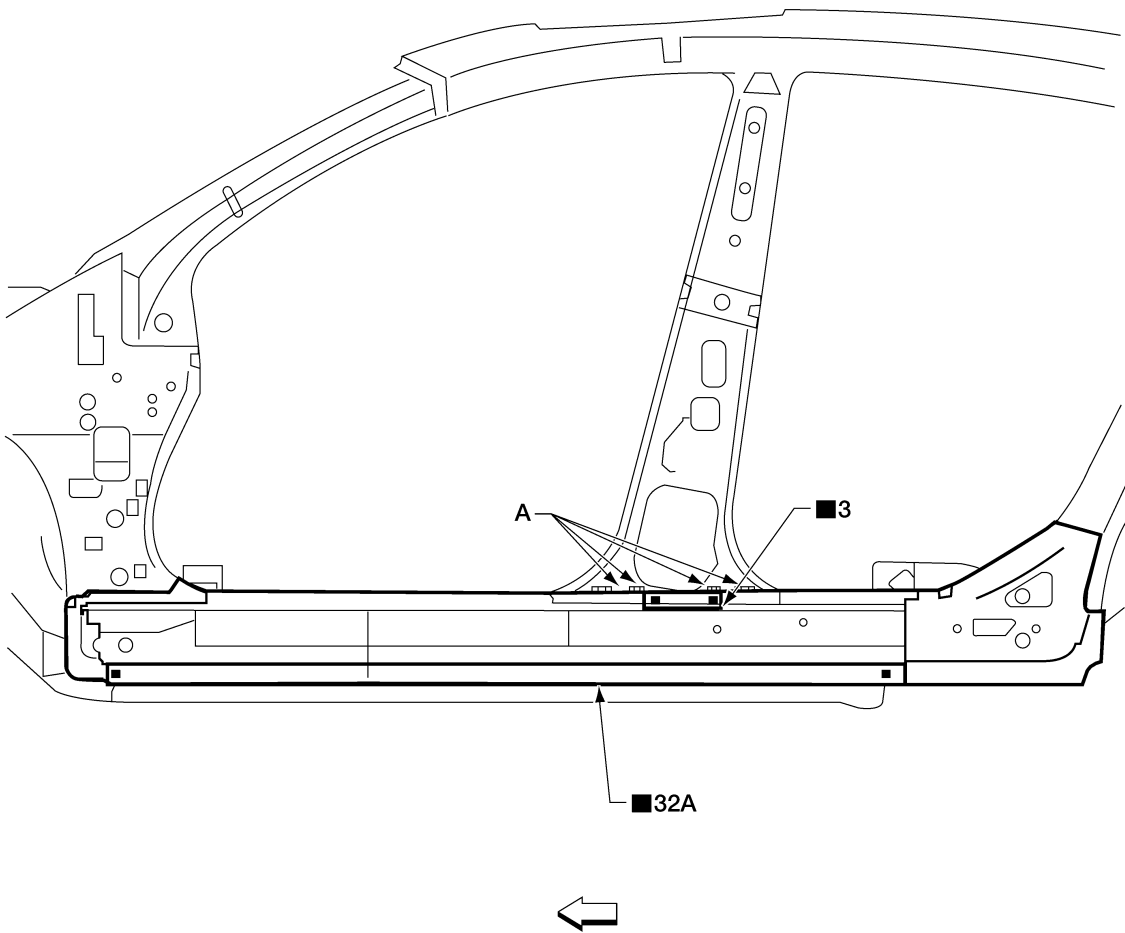
# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

## Outer Sill

INFOID:00000009345089

Work after the front pillar reinforcement, center pillar reinforcement and rear fender have been removed.



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### Replacement parts

- Outer sill reinforcement

A. Mig stitch weld

⇐ Front

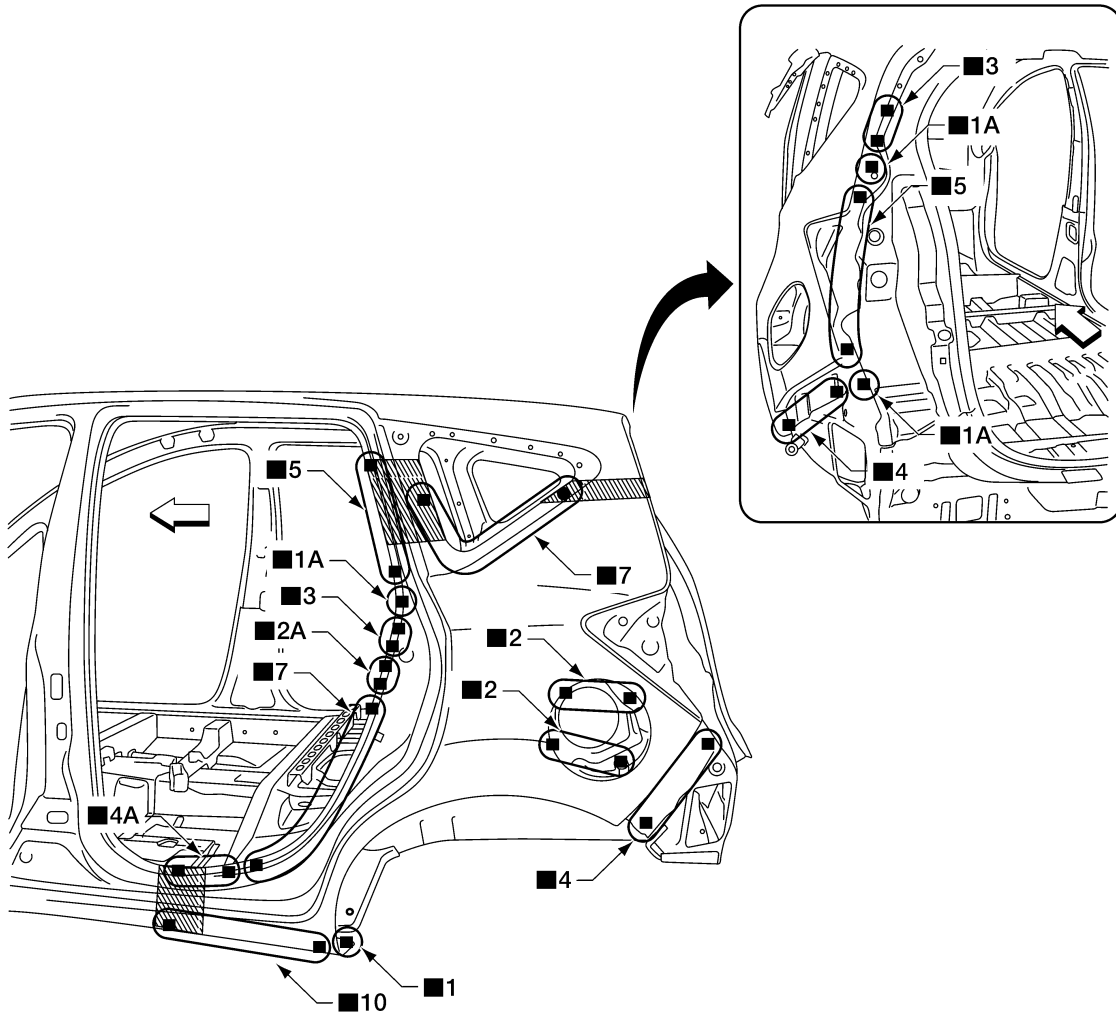
AWKIA2543ZZ

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

## Rear Fender

INFOID:00000009345090



Replacement parts

● Rear Fender

▨ Recommended sectioning location

⇐ Front

AWKIA2544ZZ

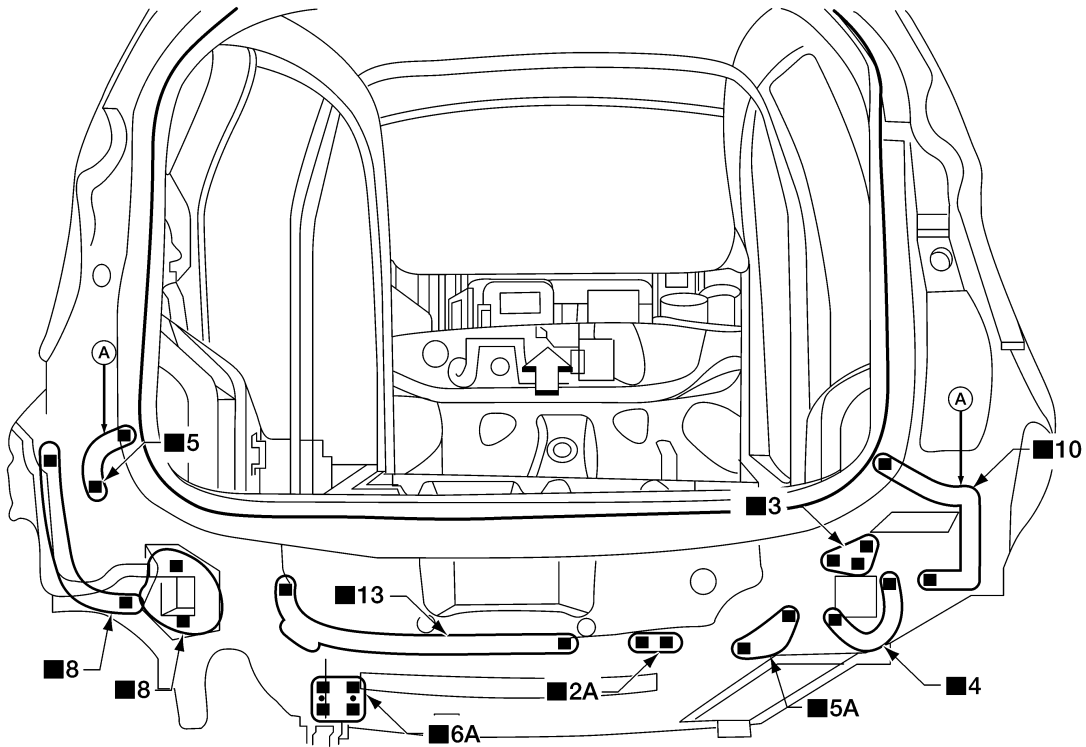
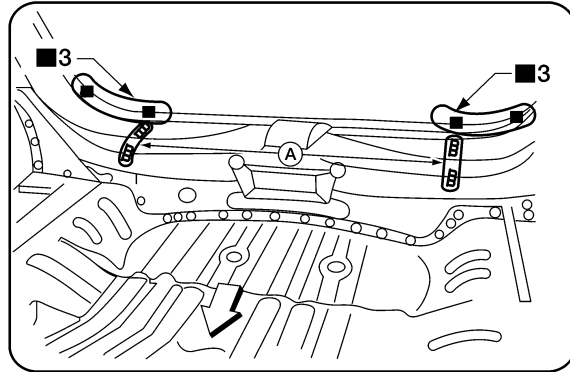
# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

## Rear Panel

INFOID:00000009345091

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Replacement parts

- Rear panel

A. Mig welds

← Front

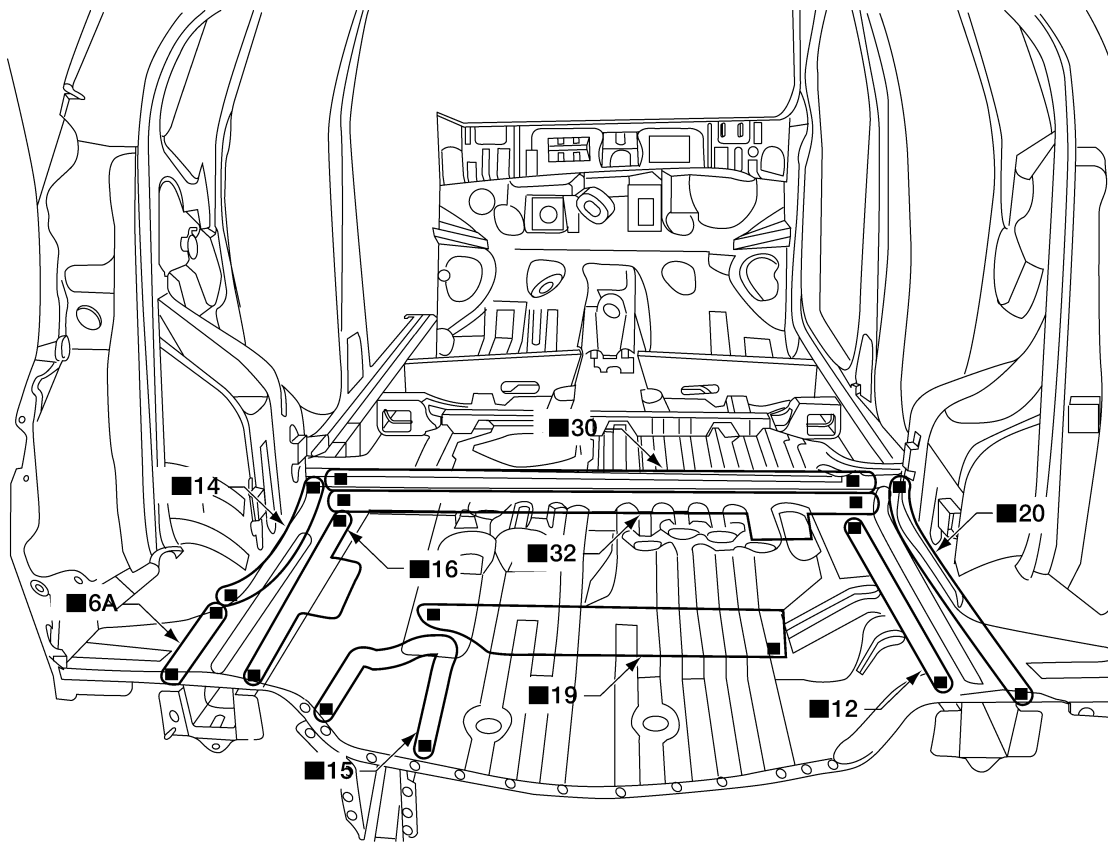
# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

## Rear Floor Rear

INFOID:00000009345092

Work after rear panel assembly has been removed.



AWKIA2545ZZ

Replacement parts

- Rear floor rear

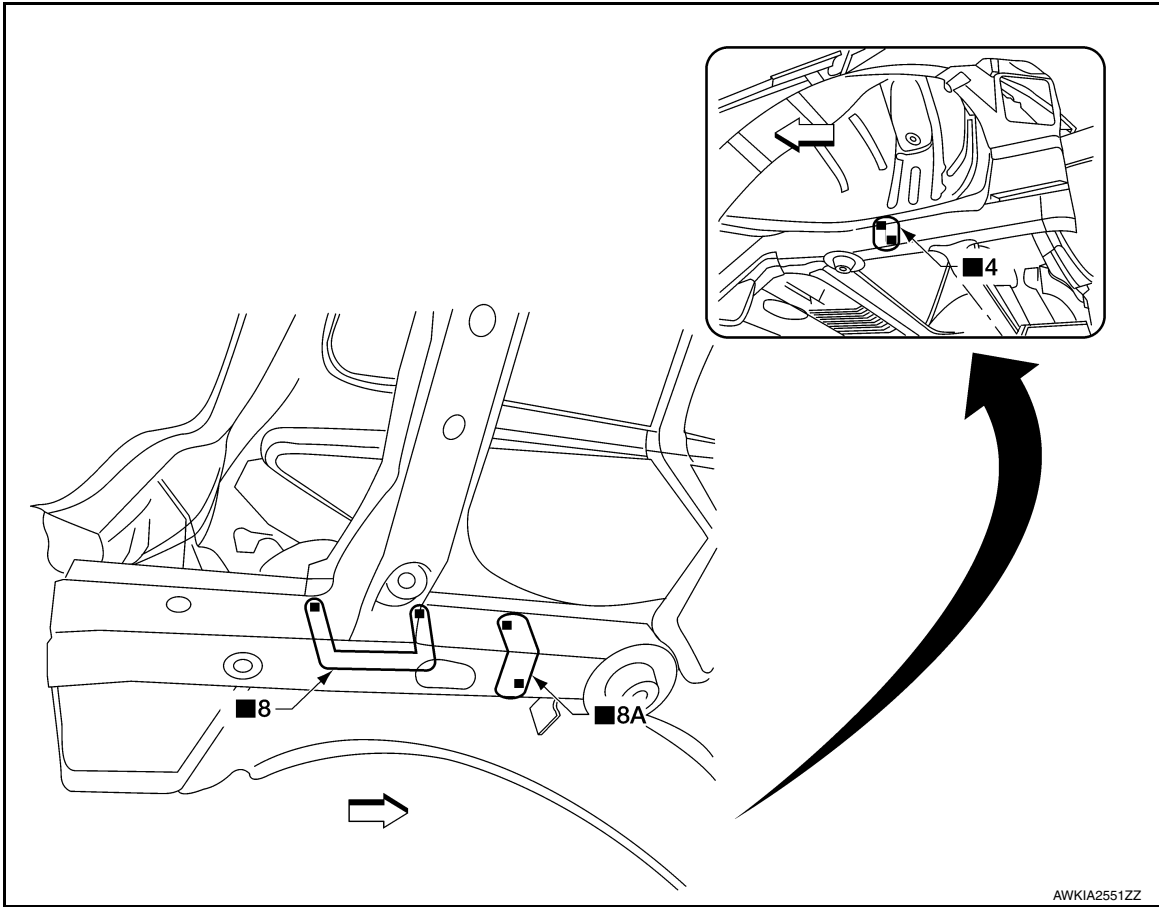
# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

## Rear Side Member Extension

INFOID:00000009345093

Work after rear panel assembly and rear floor rear have been removed.



Replacement parts

- Rear side member extension      ⇐ Front

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# BODY ALIGNMENT

< SERVICE DATA AND SPECIFICATIONS (SDS)

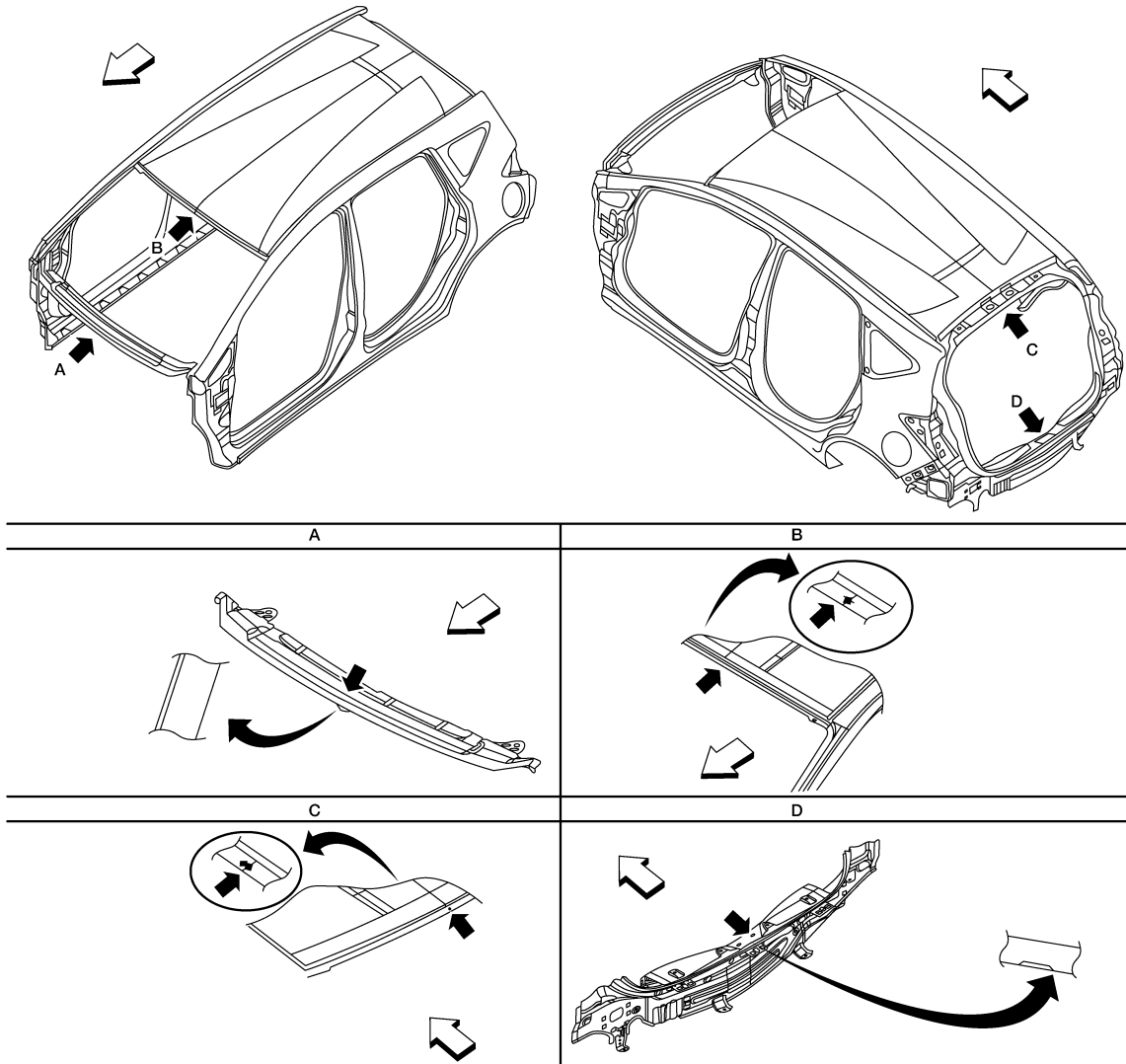
## SERVICE DATA AND SPECIFICATIONS (SDS)

### BODY ALIGNMENT

#### Body Center Marks

INFOID:000000009345094

A mark has been placed on each part of the body to indicate the vehicle center. When repairing parts damaged by an accident which might affect the vehicle frame (members, pillars, etc.), more accurate and effective repair will be possible by using these marks together with body alignment specifications.



AWKIA2546ZZ

↔ Front

Point	Portion	Mark
A	Cowl top extension	Hole
B	Front roof position mark for alignment	Raised dimple
C	Rear roof position mark for alignment	Raised dimple
D	Rear panel upper	Cut out



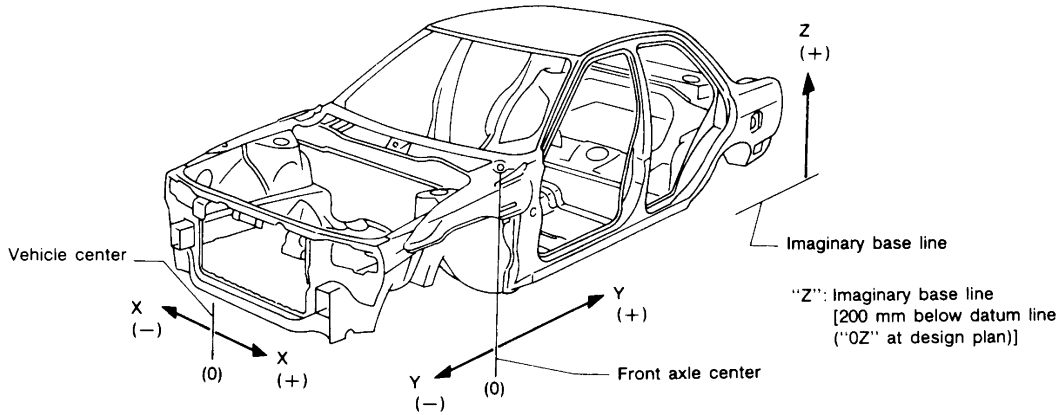
# BODY ALIGNMENT

## < SERVICE DATA AND SPECIFICATIONS (SDS)

### Description

INFOID:000000009345095

- 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".



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### Engine Compartment

INFOID:000000009345096

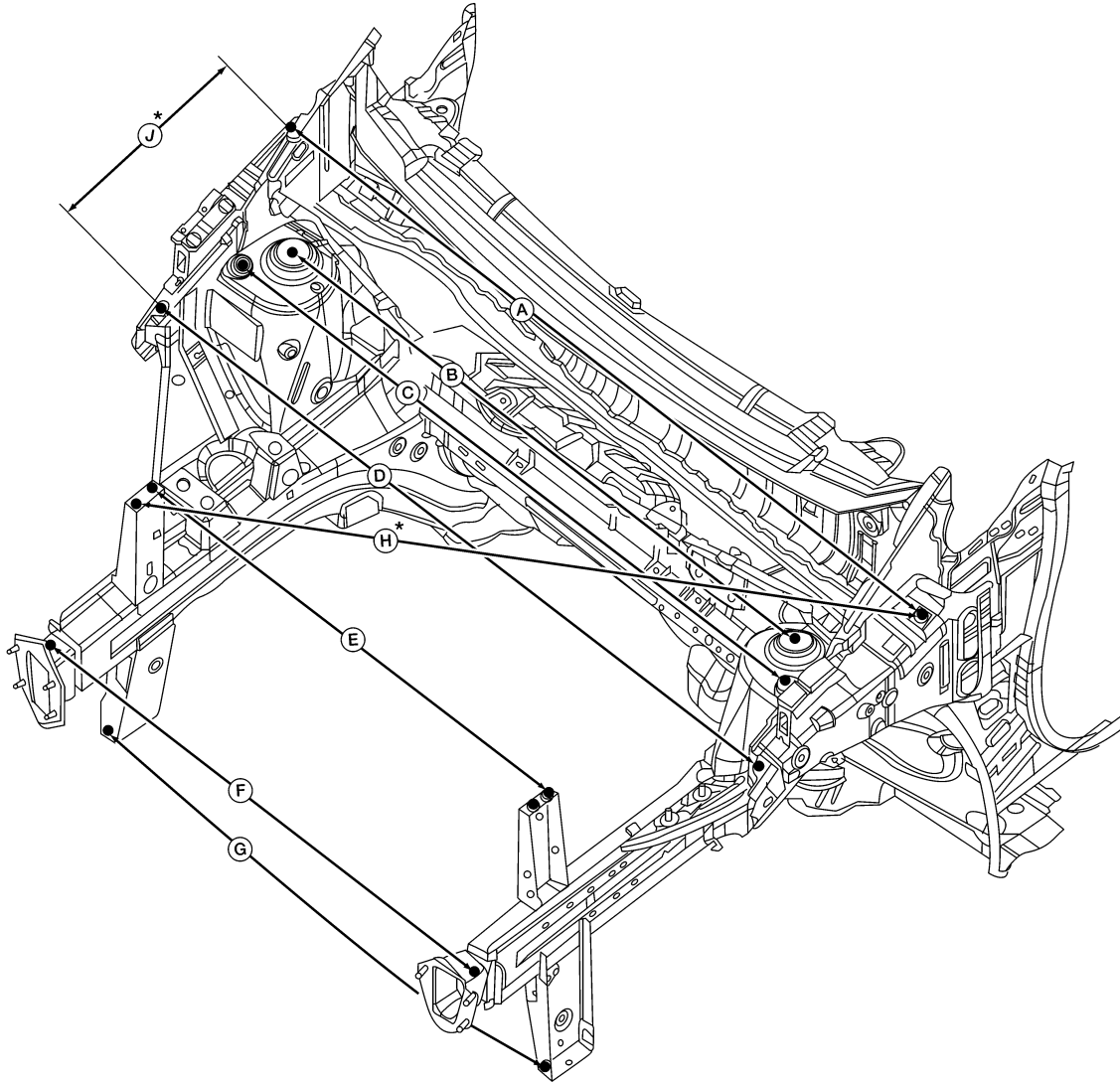
### MEASUREMENTS

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# BODY ALIGNMENT

< SERVICE DATA AND SPECIFICATIONS (SDS)



ALKIA3123ZZ

Unit: mm (in)

Position	Description	Measurement
A.	Center of rear hood hinge hole to center of rear hood hinge hole 12 (0.47)	1407.0 (55.39)
B.	Center shock hole to the center of the shock hole 52 (2.05)	1132.0 (44.57)
C.	Center of front shock tower hole to the center of the front shock tower hole 12 (0.47)	1228.0 (48.35)
D.	Hole for hood locator to the hole for hood locator 12 (0.47)	1346.0 (53.99)
E.	Rear hole for radiator support to rear hole for radiator support 7 (0.28)	893.0 (35.16)

# BODY ALIGNMENT

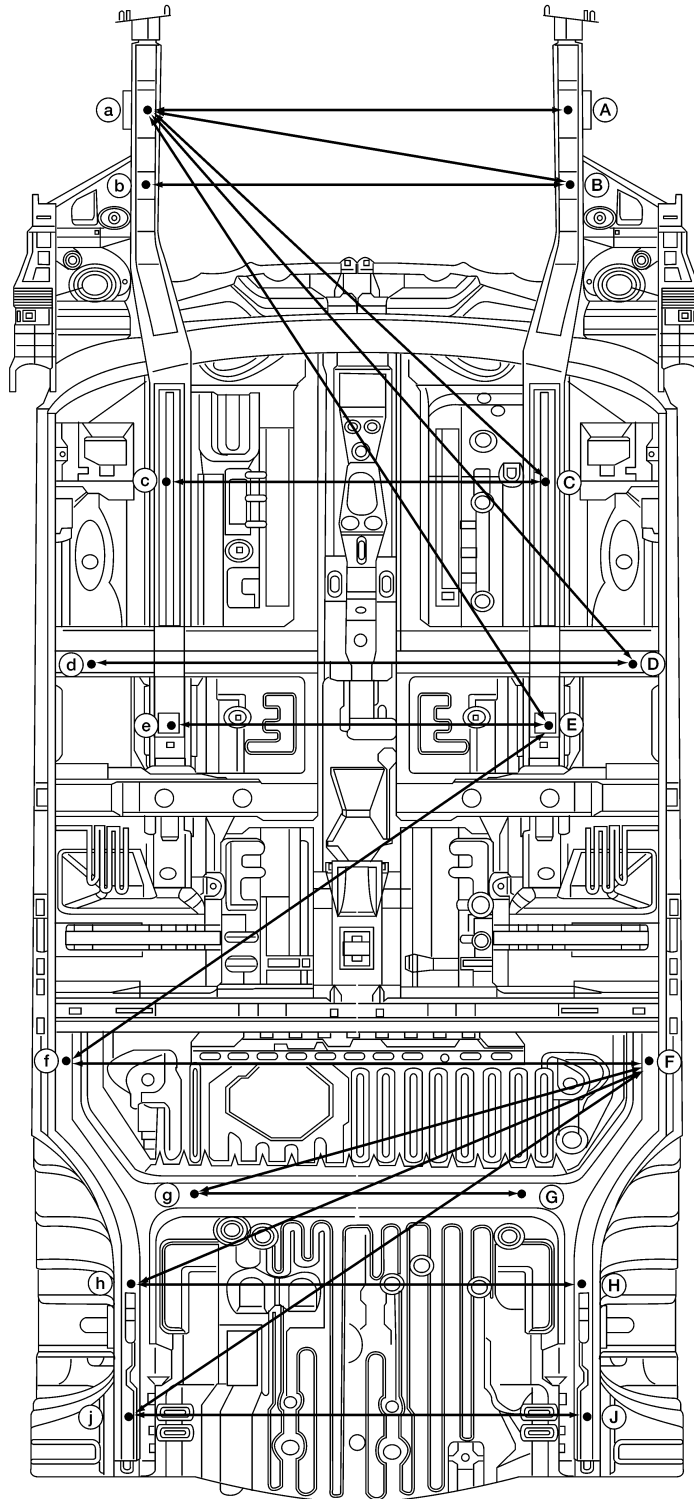
## < SERVICE DATA AND SPECIFICATIONS (SDS)

F.	Upper hole for front bumper reinforcement to upper hole front bumper reinforcement 8.2 (0.32)	948.0 (37.32)
G.	Lower hole front radiator support to lower hole front lower radiator support 11 (0.43)	987.0 (38.86)
H.	Rear hinge hole 12 (0.47) to front hole upper radiator support 12 (0.47)	1312.0 (51.65)
J.	Rear hinge hole 12 (0.47) to hood locator hole 7 (0.28)	345.0 (13.58)

## Underbody

INFOID:000000009345097

## MEASUREMENT



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ALKIA3128ZZ

# BODY ALIGNMENT

## < SERVICE DATA AND SPECIFICATIONS (SDS)

Unit:mm (in)

↔ Front

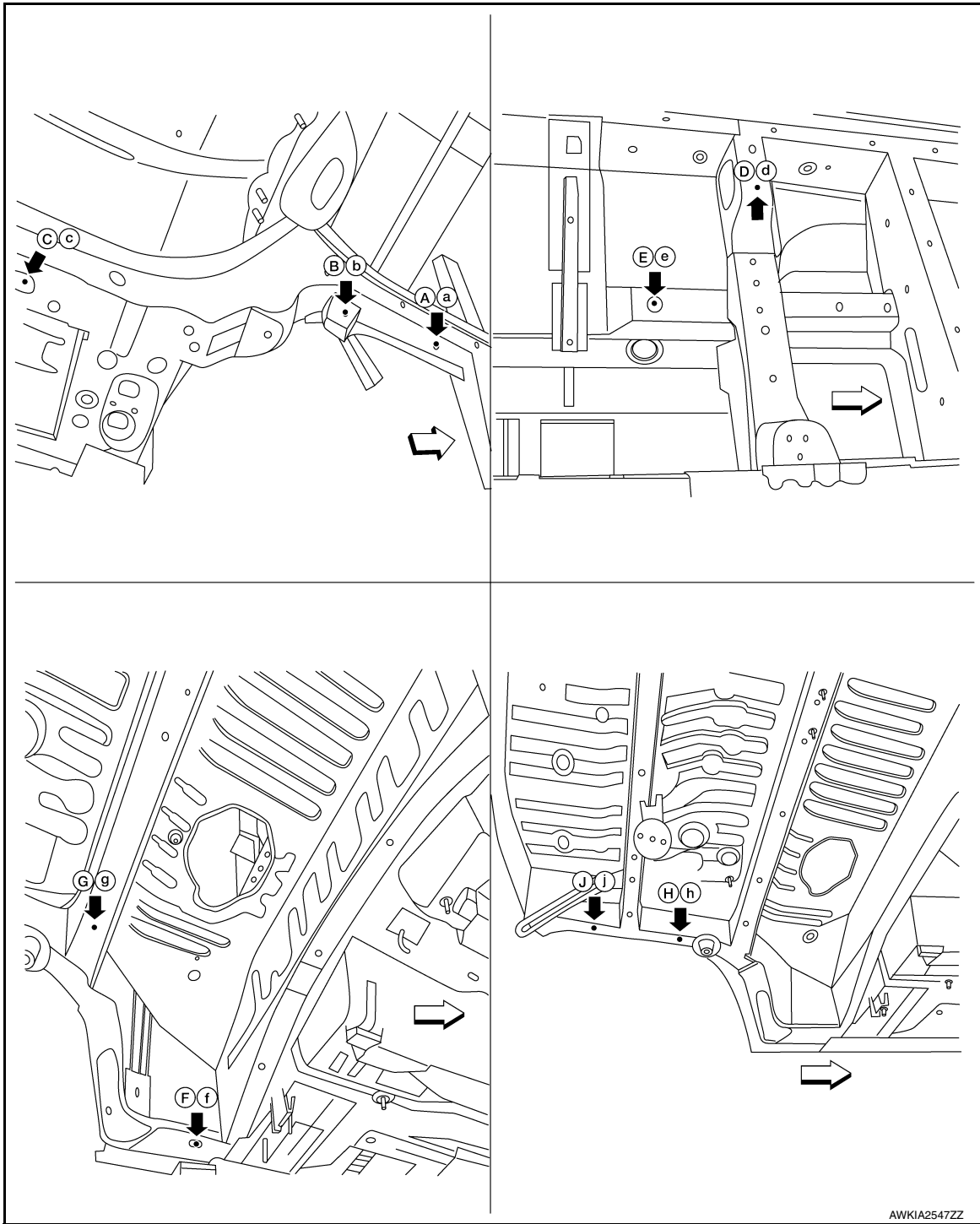
← LH side

Points	Measurement	Points	Measurement
A-a	904.0 (35.59)	B-b	820.0 (32.28)
C-c	797.0 (31.38).	D-d	1134.0 (44.65)
E-e	797.0 (31.38)	F-f	1220.0 (48.03)
G-g	746.0 (29.37)	H-h	951.0 (37.44)
J-j	952.0 (37.48)	A-b*	1835.5 (72.26)
A-c*	1192.2 (46.94)	A-d*	1619.6 (63.76)
A-e*	1665.0 (65.55)	E-f*	1362.1 (53.63)
F-g*	1038.5 (40.89)	F-h*	1214.5 (47.81)
F-j*	1379.2 (54.30)		

# BODY ALIGNMENT

< SERVICE DATA AND SPECIFICATIONS (SDS)

## MEASUREMENT POINTS



← Front

Unit: mm (in)

Points	Coordinates			Remarks
	X	Y	Z	
A, a	± 299.0 (±11.77)	±±452.0 (17.80)	293.6 (11.56)	Hole 16.0 (0.63)
B, b	1305.0 (51.38)	± 410.0 (16.14)	63.0 (2.48)	Hole 14.0X12.0 (0.55X0.47)
C, c	507.0 (19.96)	± 398.5 (15.69)	73.5 (2.89)	Hole 14.0X12.0 (0.55X0.47)
D, d	950.0 (37.40)	± 567.0 (22.32)	136.0 (5.35)	Hole 12.0 (0.47)
E, e	1107.0 (43.58)	± 398.5 (15.69)	25.0 (0.98)	Hole 12.0 (0.47)

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# BODY ALIGNMENT

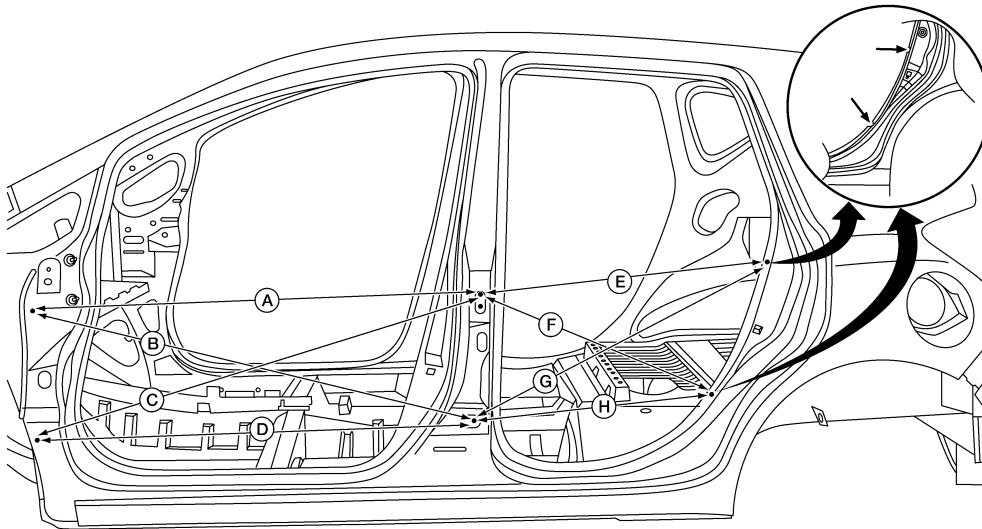
## < SERVICE DATA AND SPECIFICATIONS (SDS)

Points	Coordinates			Remarks
	X	Y	Z	
F, f	2022.5 (79.63)	± 610.0 (24.02)	32.8 (1.29)	Hole 16.0 (0.63)
G, g	2305.0 (90.75)	± 373.0 (14.69)	213.0 (8.39)	Hole 16.0 (0.63)
H, h	2535.0 (99.80)	± 475.5 (18.72)	217.5 (8.56)	Hole 18.0x16.0 (0.71x0.63)
J, j	2850.0 (112.20)	± 476.0 (18.74)	227.5 (8.96)	Hole 18.0x16.0 (0.71x0.63)

## Passenger Compartment

INFOID:000000009345098

## MEASUREMENTS



ALKIA3130ZZ

Unit: mm (in)

Position	Description	Measurement
A.	Front door upper hinge forward bolt hole to rear door upper hinge upper bolt hole.	1166.4 (45.92)
B.	Front door upper hinge forward bolt hole to rear door lower hinge rear bolt hole.	1189.9 (46.85)
C.	Front door lower hinge forward bolt hole to rear door upper hinge upper bolt hole.	1219.7 (48.02)
D.	Front door lower hinge forward bolt hole to rear door lower hinge rear bolt hole.	1142.0 (44.96)
E.	Rear door upper hinge upper bolt hole to rear door body side upper notch.	755.7 (29.75)
F.	Rear door upper hinge upper bolt to rear door body side lower notch.	681.5 (26.83)
G.	Rear door lower hinge rear hole to rear door upper body side notch.	844.3 (33.24)
H.	Rear door rear hinge hole to rear door lower body side notch.	620.5 (24.43)

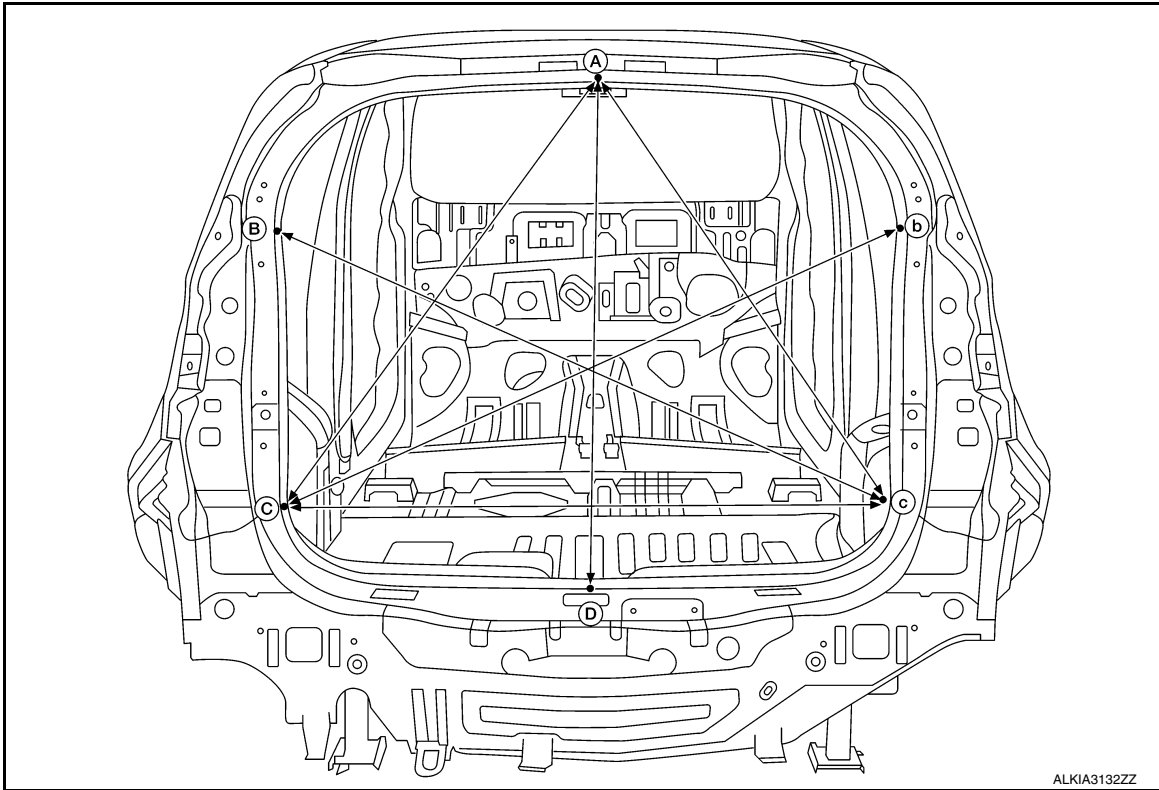
The vehicle is symmetrically identical dimensions on both LH and RH sides of the vehicle.

# BODY ALIGNMENT

< SERVICE DATA AND SPECIFICATIONS (SDS)

## Rear End Panel

INFOID:00000009345099



ALKIA3132ZZ

Unit: mm (in)

Point	Measurement	Point	Measurement
A - D	853.7 (33.61)	A - C*	871.0 (34.29)
C* - b*	1121.7 (44.16)	C - c	1055.0 (41.5)

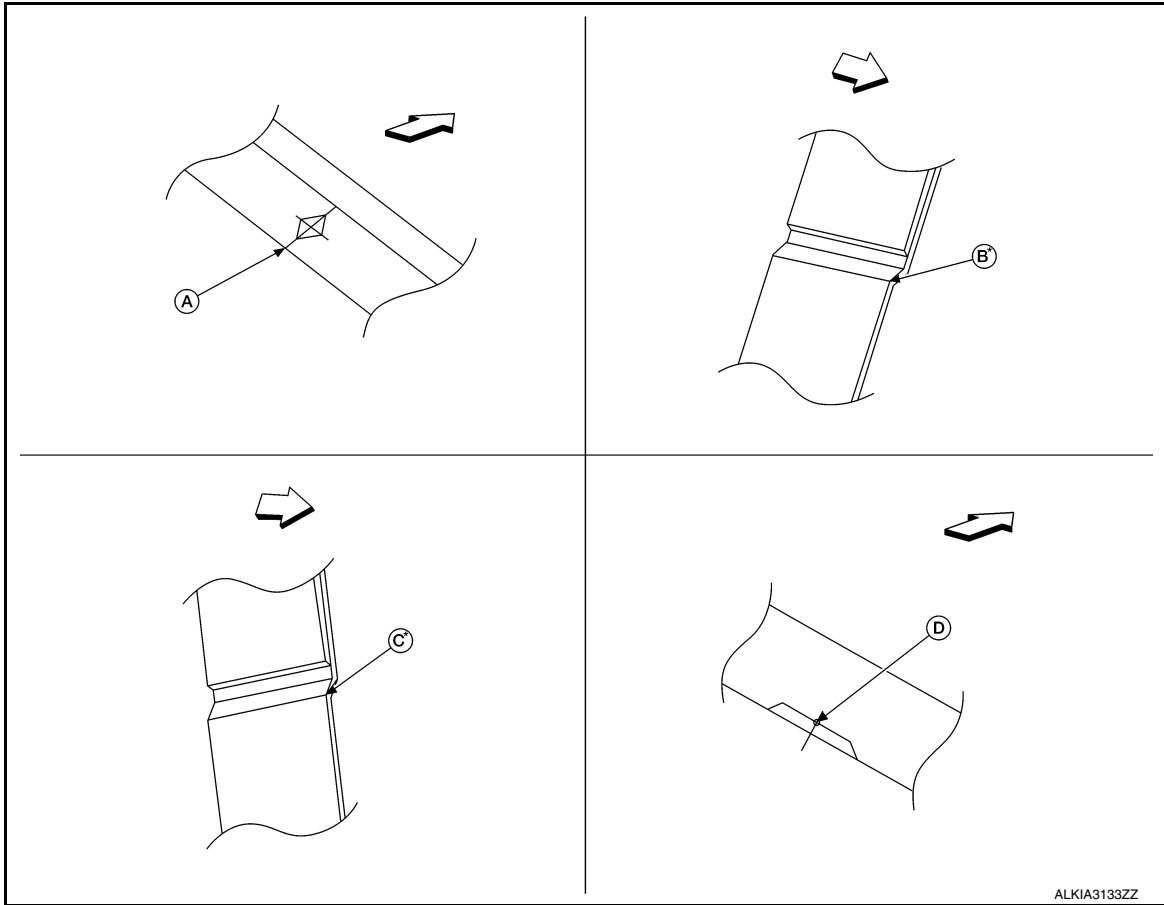
\* The vehicle is symmetrically identical dimensions on both RH and LH sides of the vehicle.

## MEASUREMENT POINTS

BRM

# BODY ALIGNMENT

< SERVICE DATA AND SPECIFICATIONS (SDS)



ALKIA313ZZ

⇐ Front

Point	Description	Point	Description
A.	Roof flange end of center positioning mark	B.	Back pillar main joggle
C.	Upper rear panel joggle	D.	Edge of rear panel between back door striker installing holes