

SECTION **BRM**  
BODY REPAIR

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# BODY EXTERIOR PAINT COLOR

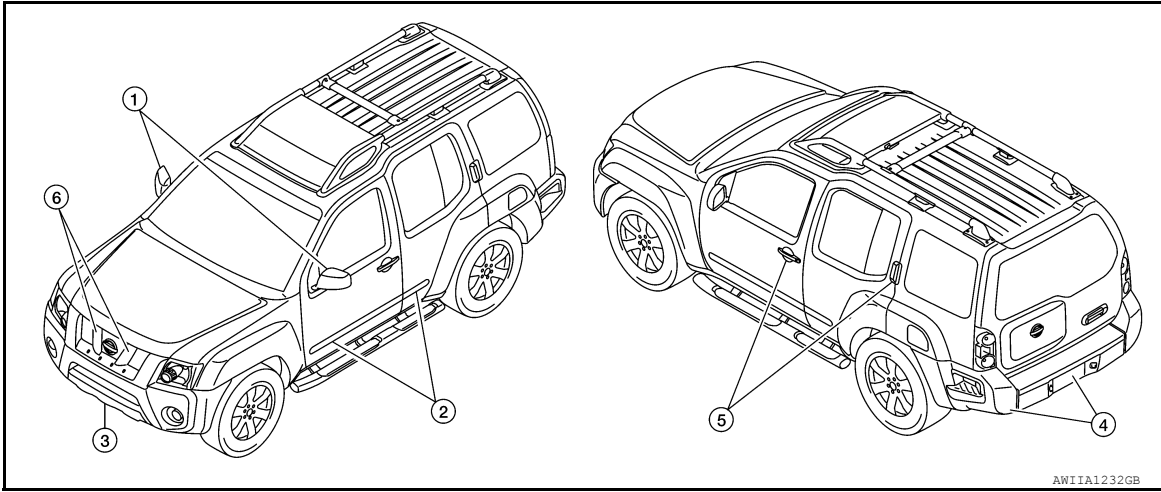
< FEATURES OF NEW MODEL >

## FEATURES OF NEW MODEL

### BODY EXTERIOR PAINT COLOR

#### Body Exterior Paint Color

INFOID:000000006253951



Component			Color code	K12	K26	KH3	NAC	QM1	EAF	JAH
			Description	Silver	Grey	Black	Red	White	Orange	Green
			Paint type	2M	2P	2S	2P	2S	2PM	2PM
			Clear coat	t	t	t	t	t	t	t
1	Outside mirror	X, S, SV, Pro-4X	Black	—	—	—	—	—	—	—
2	Side Guard Molding	X, S, SV, Pro-4X	Black	—	—	—	—	—	—	—
3	Front bumper finisher	Side	Black	—	—	—	—	—	—	—
		Center	Sandblast Aluminum	LX04	LX04	LX04	LX04	LX04	LX04	LX04
4	Rear Bumper	Side	Black	—	—	—	—	—	—	—
		Center	Sandblast Aluminum	LX04	LX04	LX04	LX04	LX04	LX04	LX04
5	Outside handles	X, S, SV, Pro-4X	Black	—	—	—	—	—	—	—
6	Radiator grille	Emblem	Chromium plate	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P
		Center	Black	KH3	KH3	KH3	KH3	KH3	KH3	KH3
		Frame	Sandblast Aluminum	LX04	LX04	LX04	LX04	LX04	LX04	LX04

2M: Metallic with clear; 2S: 2-Coat Solid with clear, 2P: Pearl or Mica with clear; 2PM: Pearl - mica and metallic with clear, t: Primerless carbamate clear

# PRECAUTIONS

< PRECAUTION >

## 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. 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 3 minutes before performing any service.

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# HANDLING PRECAUTIONS

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## HANDLING PRECAUTIONS

### Handling Precaution for Plastics

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#### HANDLING PRECAUTIONS FOR PLASTICS

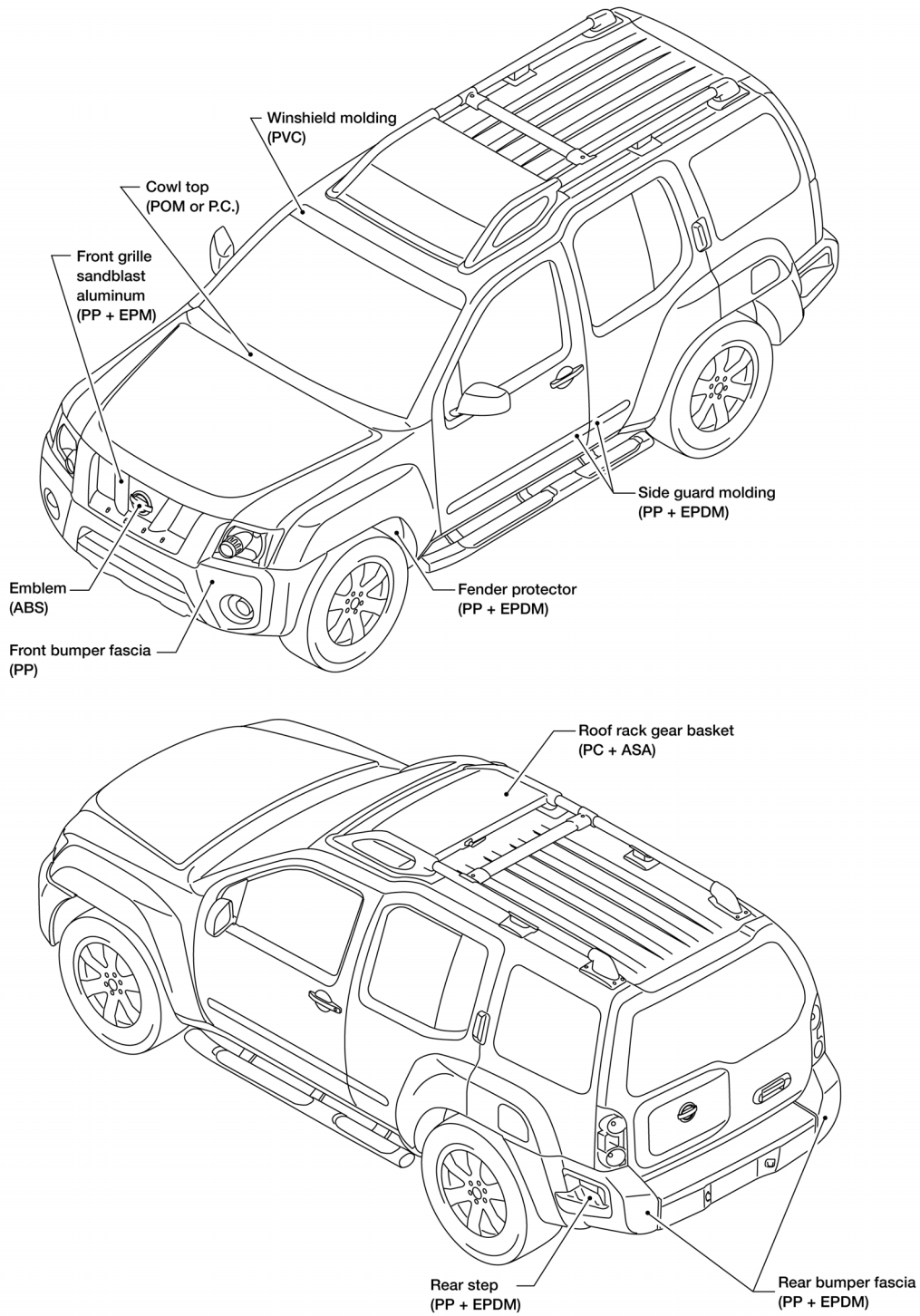
Abbre- viation	Material name	Heatresisting temperature °C (°F)	Resistance to gasoline and solvents	Other cautions
PE	Polyethylene	60 (140)	Gasoline and most solvents are harmless if applied for a very short time (wipe up quickly).	Flammable
PVC	Polyvinyl Chloride	80 (176)	Same as above.	Poison gas is emitted when burned.
EPM/ EPDM	Ethylene Propylene (Diene) rubber	80 (176)	Same as above.	Flammable
TPO/ TPR	Thermoplastic Olefine/ Thermoplastic Rubber	80 (176)	Same as above.	Flammable
PP	Polypropylene	90 (194)	Same as above.	Flammable, avoid battery acid.
UP	Polyester thermoset	90 (194)	Same as above.	Flammable
PS	Polystyrene	80 (176)	Avoid solvents.	Flammable
ABS	Acrylonitrile Butadiene Styrene resin	80 (176)	Avoid gasoline and solvents.	
AES	Acrylonitrile Ethylene Styrene	80 (176)	Same as above.	
PMMA	Polymethyl Methacrylate	85 (185)	Same as above.	
AAS	Acrylonitrile Acrylic Styrene	85 (185)	Same as above.	
AS	Acrylonitrile Styrene	85 (185)	Same as above.	
EVA	Polyvinyl Ethyl Acetate	90 (194)	Same as above.	
ASA	Acrylonitrile Styrene Acrylate	100 (222)	Same as above.	Flammable
PPO/ PPE	Polyphenylene Oxide/ Polyphenylene Ether	110 (230)	Same as above.	
PC	Polycarbonate	120 (248)	Same as above.	
PAR	Polyacrylate	180 (356)	Same as above.	
L- LDPE	Lenear Low Density PE	45 (100)	Gasoline and most solvents are harmless.	Flammable
PUR	Polyurethane	90 (194)	Same as above.	
TPU	Thermoplastic Urethane	110 (230)	Same as above.	
PPC	Polypropylene Composite	115 (239)	Same as above.	Flammable
POM	Polyacetal	120 (248)	Same as above.	Avoid battery acid.
PBT+P C	Polybutylene Terephthalate+Polycarbonate	120 (248)	Same as above.	Flammable
PA	Polyamide (Nylon)	140 (284)	Same as above.	Avoid immersing in water.
PBT	Polybutylene Terephthalate	140 (284)	Same as above.	
FRP	Fiber Reinforced Plastics	170 (338)	Same as above.	Avoid battery acid.
PET	Polyethylene Terephthalate	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.

# HANDLING PRECAUTIONS

< PRECAUTION >

## LOCATION OF PLASTIC PARTS

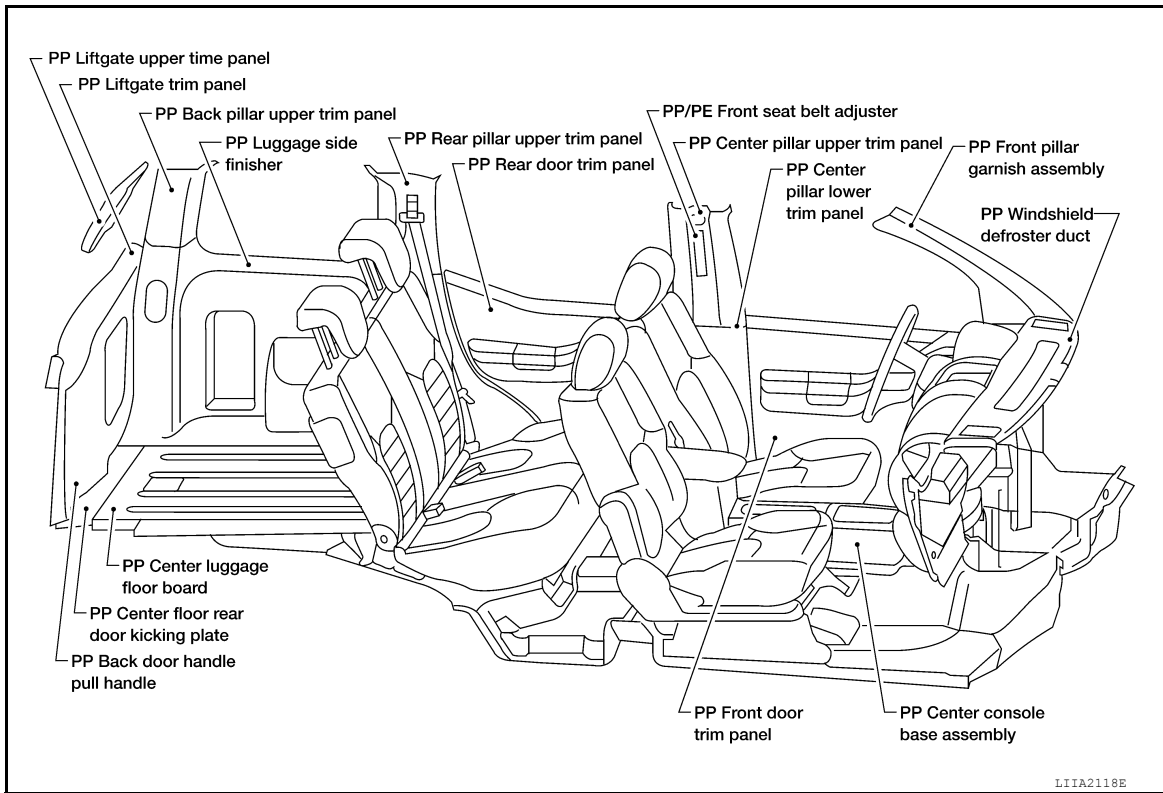


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# HANDLING PRECAUTIONS

< PRECAUTION >



# BODY COMPONENT PARTS

< REMOVAL AND INSTALLATION >

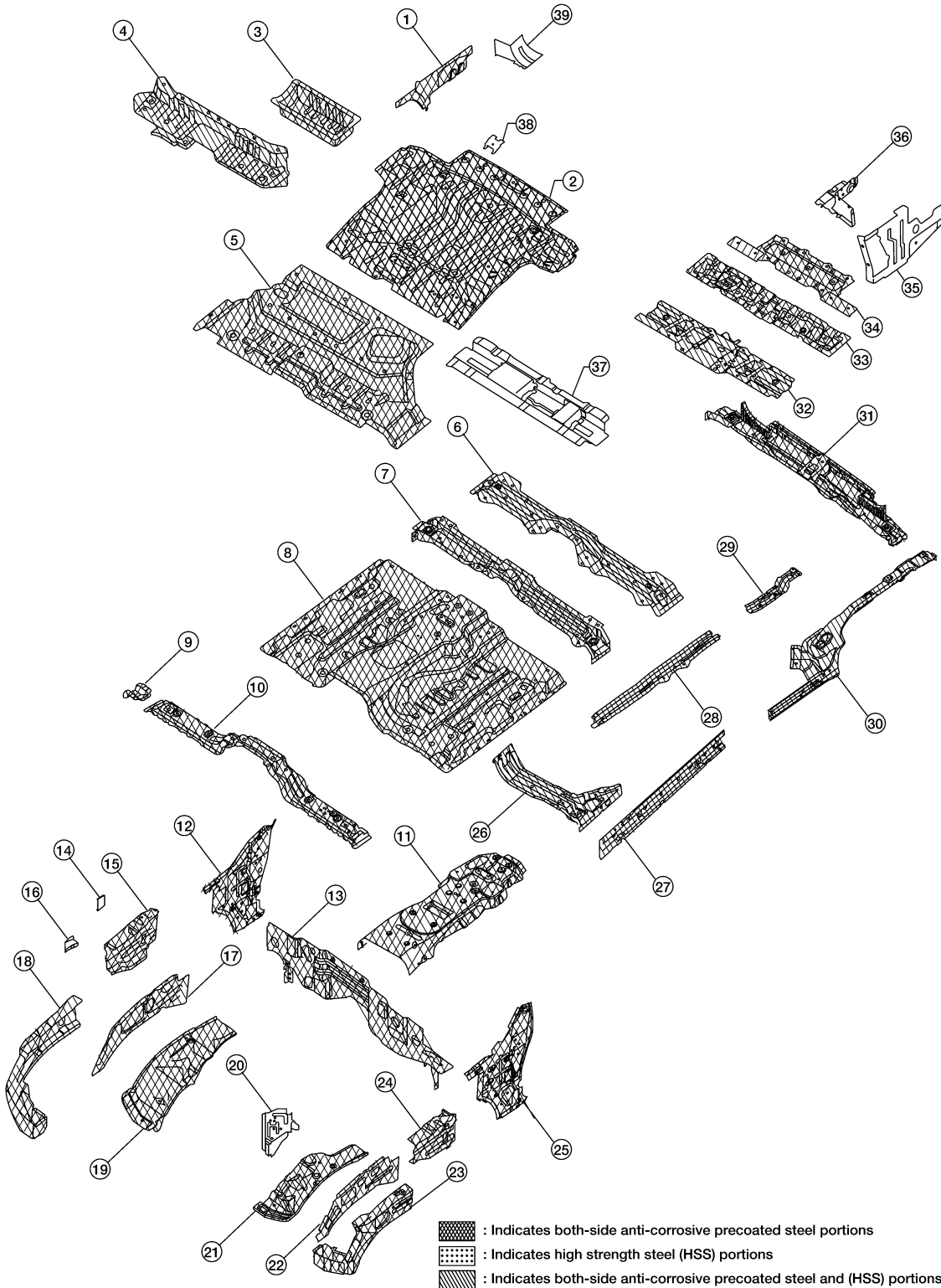
## REMOVAL AND INSTALLATION

### BODY COMPONENT PARTS

#### Body Component Parts

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#### UNDERBODY COMPONENT PARTS



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## BODY COMPONENT PARTS

### < REMOVAL AND INSTALLATION >

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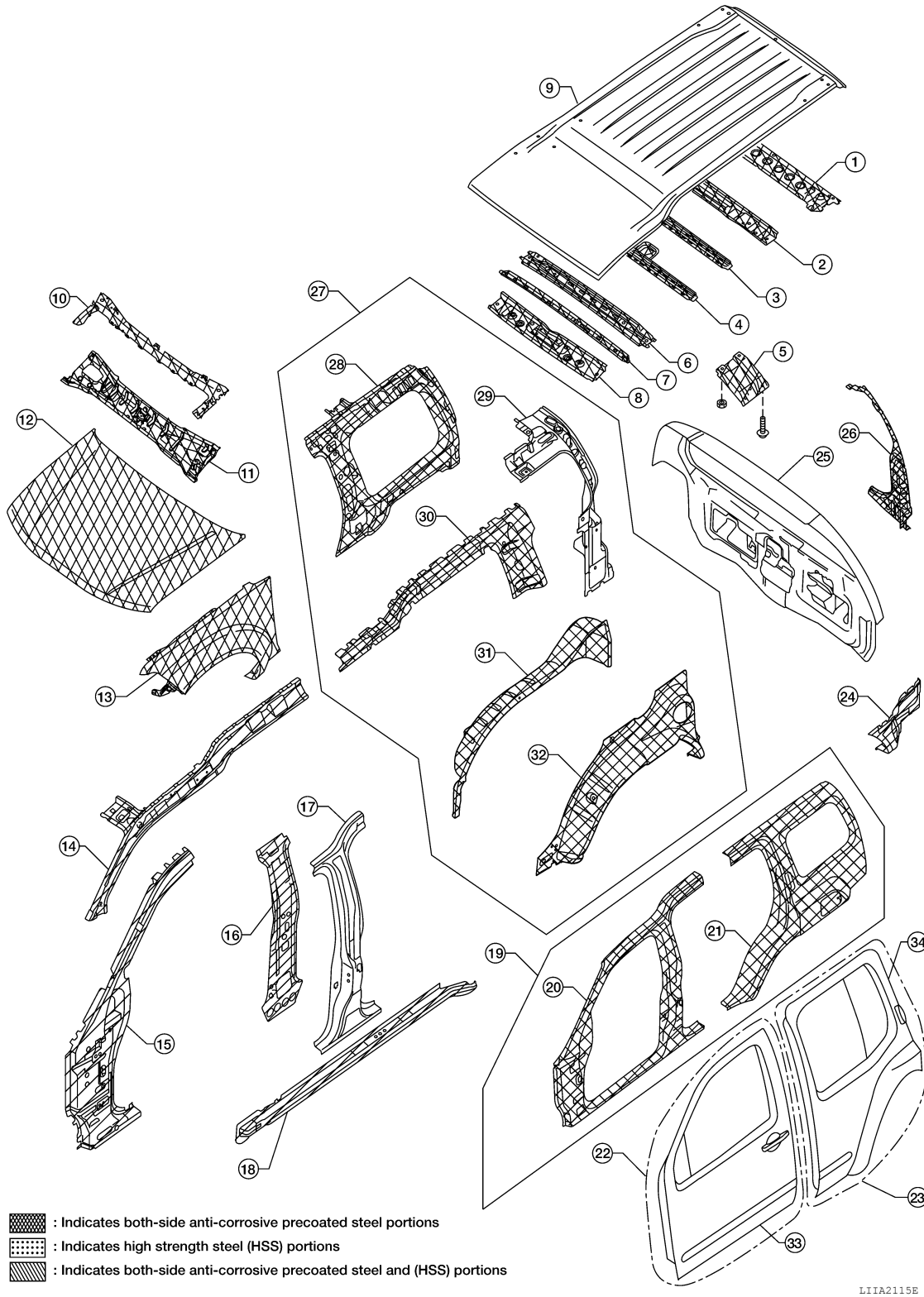
1. Rear floor side RH
2. Rear floor rear
3. Storage bin
4. Second seat mounting crossmember
5. Rear floor front
6. Center pillar crossmember assembly
7. Front seat mounting rear crossmember
8. Front floor
9. Front seat mounting crossmember
10. Second crossmember extension
11. Front floor reinforcement
12. Side dash RH
13. Lower dash
14. Washer tank bracket
15. Hoodledge reinforcement rear RH
16. Hoodledge plate
17. Hoodledge RH
18. Hoodledge reinforcement assembly RH
19. Rear lower hoodledge RH
20. Battery tray
21. Rear lower hoodledge LH
22. Hoodledge LH
23. Hoodledge reinforcement assembly LH
24. Hoodledge reinforcement rear LH
25. Side dash LH
26. Second crossmember assembly (RH & LH)
27. Inner sill (RH & LH)
28. Front side member assembly (RH & LH)
29. Center floor member assembly
30. Rear side member rear (RH & LH)
31. Rear crossmember
32. Second seat mounting crossmember
33. Third seat mounting bracket assembly
34. Rope hook bracket
35. Rear floor side LH
36. Rear floor side upper extension assembly LH
37. Third seat mounting rear crossmember assembly
38. Trim mounting bracket
39. Rear floor side upper extension assembly RH



# BODY COMPONENT PARTS

< REMOVAL AND INSTALLATION >

## BODY COMPONENT PARTS



1. Rear roof rail
2. Roof 5th bow
3. Roof 4th bow
4. Roof 3rd bow

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## BODY COMPONENT PARTS

### < REMOVAL AND INSTALLATION >

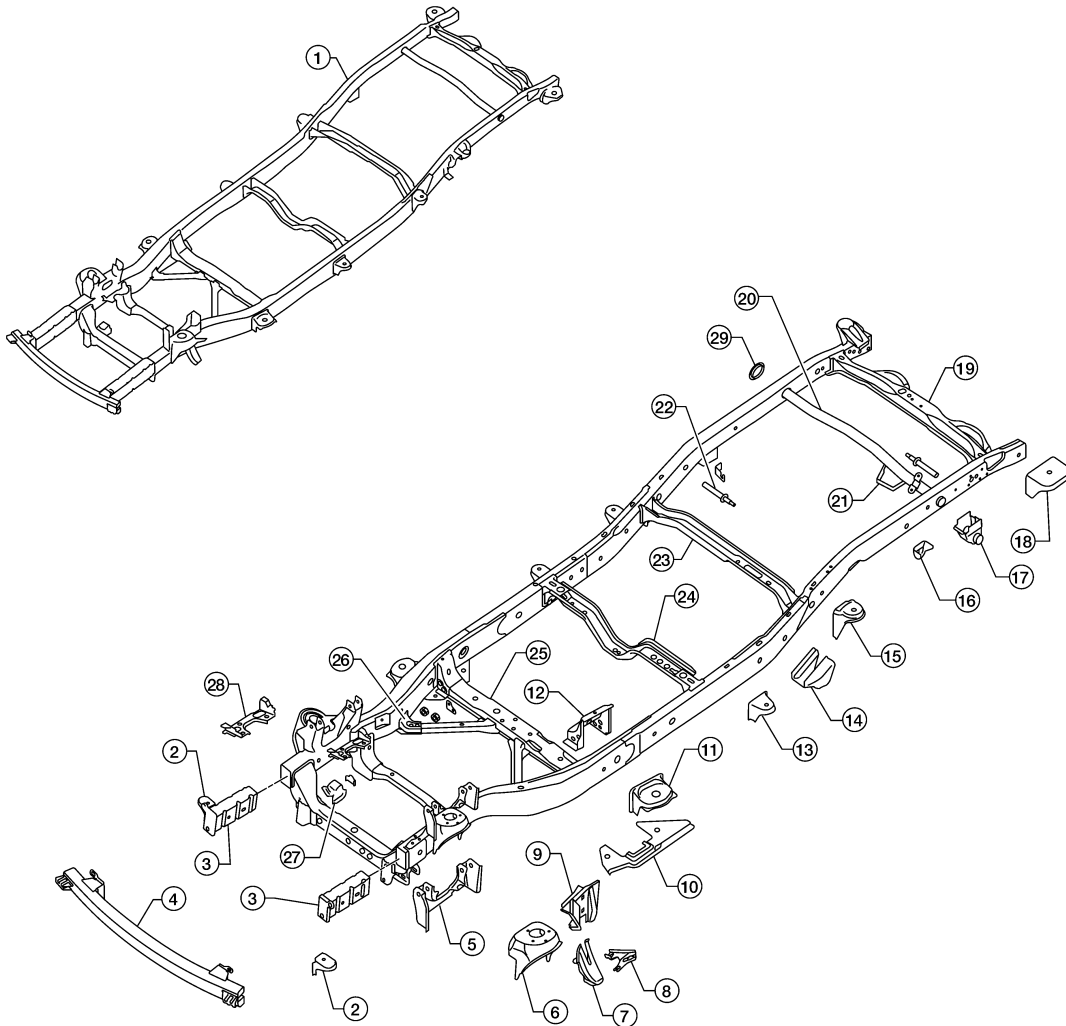
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5. Roof bow second bracket
6. Roof 2nd bow
7. Roof 1st bow
8. Front roof rail
9. Roof
10. Upper dash crossmember assembly
11. Upper dash assembly
12. Hood assembly
13. Front fender (RH & LH)
14. Front inner pillar upper (RH & LH)
15. Front pillar hinge brace (RH & LH)
16. Center inner pillar (RH & LH)
17. Center pillar hinge brace
18. Outer sill reinforcement (RH & LH)
19. Body side outer assembly
20. Front body side outer (RH & LH)
21. Rear body side outer (RH & LH)
22. Front door assembly (RH & LH)
23. Rear door assembly (RH & LH)
24. Rear fender extension (RH & LH)
25. Back door assembly
26. Main back pillar (RH & LH)
27. Body side inner reinforcement assembly (RH & LH)
28. Rear inner side panel (RH & LH)
29. Back pillar reinforcement (RH & LH)
30. Outer roof side rail reinforcement (RH & LH)
31. Rear wheel housing inner (RH & LH)
32. Rear wheel housing outer (RH & LH)
33. Outer front door panel (RH & LH)
34. Outer rear door panel (RH & LH)

# BODY COMPONENT PARTS

< REMOVAL AND INSTALLATION >

## FRAME COMPONENT PARTS



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1. Frame assembly
2. 1st cab mounting bracket (RH & LH)
3. Front side member extension assembly (RH & LH)
4. 1st crossmember assembly
5. Front upper link mounting bracket (RH & LH)

## BODY COMPONENT PARTS

### < REMOVAL AND INSTALLATION >

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6. Front shock absorber mounting bracket (RH & LH)
7. Bound bumper bracket (RH & LH)
8. Front brake hose bracket (RH & LH)
9. Panhard rod bracket reinforcement
10. 4th crossmember gusset (RH & LH)
11. 2nd cab mounting bracket (RH & LH)
12. 4th crossmember gusset (RH & LH)
13. 3rd cab mounting bracket (RH & LH)
14. Rear suspension mounting bracket (RH & LH)
15. 4th cab mounting bracket (RH & LH)
16. Rear bound bumper bracket (RH & LH)
17. Rear suspension rear mounting bracket (RH & LH)
18. Cab mounting bracket assembly (RH & LH)
19. 9th crossmember assembly
20. Rear torsion crossmember
21. Rear brake hose bracket
22. Rear shock pin (RH & LH)
23. 6th crossmember assembly
24. 5th crossmember assembly
25. 4th crossmember assembly
26. Crossmember support (RH & LH)
27. Front differential mounting bracket (RH & LH)
28. Engine mount (RH & LH)
29. Rear torsion crossmember collar (RH & LH)

# CORROSION PROTECTION

< REMOVAL AND INSTALLATION >

## CORROSION PROTECTION

### Corrosion Protection

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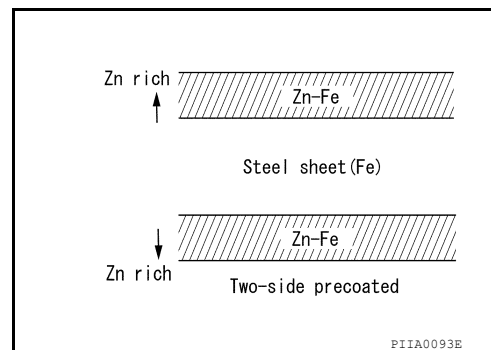
#### DESCRIPTION

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 reparability 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 electrode position primer.



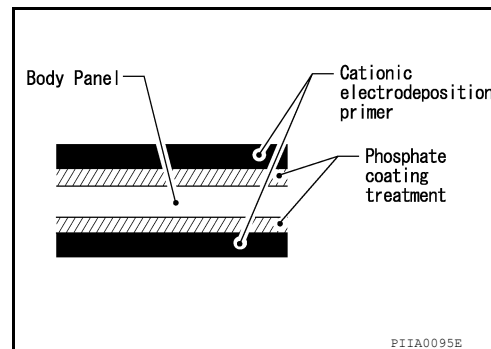
Nissan Genuine Service Parts are fabricated from galvannealed steel. Therefore, it is recommended that GENUINE NISSAN PARTS or equivalent be used for panel replacement to maintain the anti-corrosive performance built into the vehicle at the factory.

#### 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.

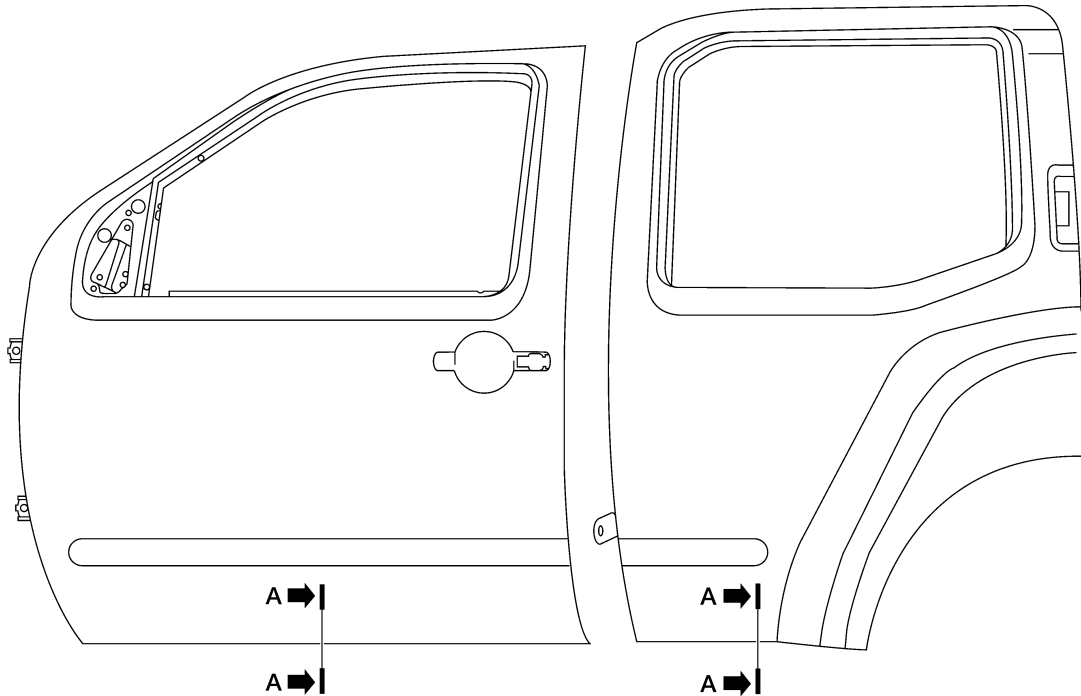
#### ANTI-CORROSIVE WAX



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

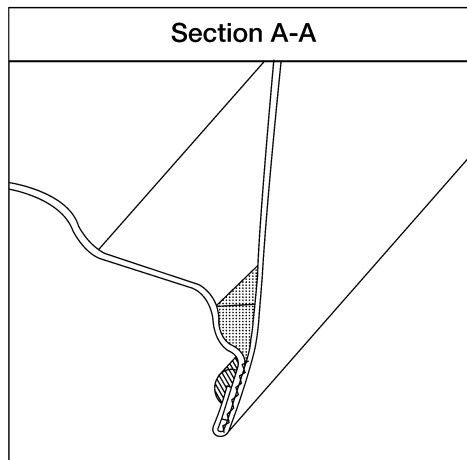
# CORROSION PROTECTION

## < REMOVAL AND INSTALLATION >

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



 : Indicates outside body sealant  
 : Indicates anti-corrosive wax coated portions



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## UNDERCOATING

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

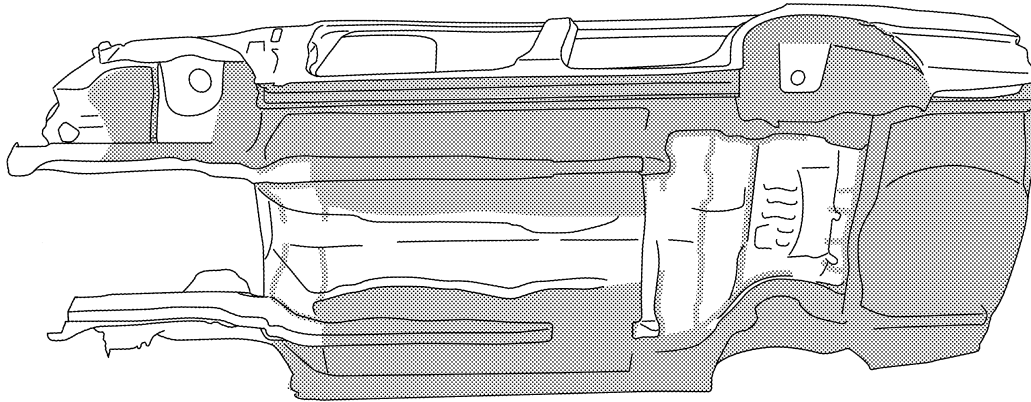
1. Do not apply undercoating to any place unless specified (such as the areas above the muffler and three way catalyst which are subjected to heat).
2. Do not undercoat the exhaust pipe or other parts which become hot.
3. Do not undercoat rotating parts.

# CORROSION PROTECTION

## < REMOVAL AND INSTALLATION >

4. Apply bitumen wax after applying undercoating.

 : Indicates undercoated portions.



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Body Sealing

DESCRIPTION

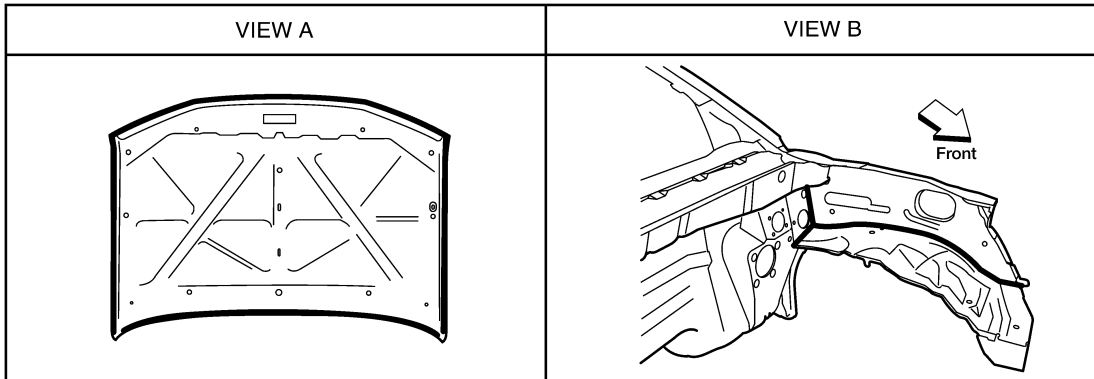
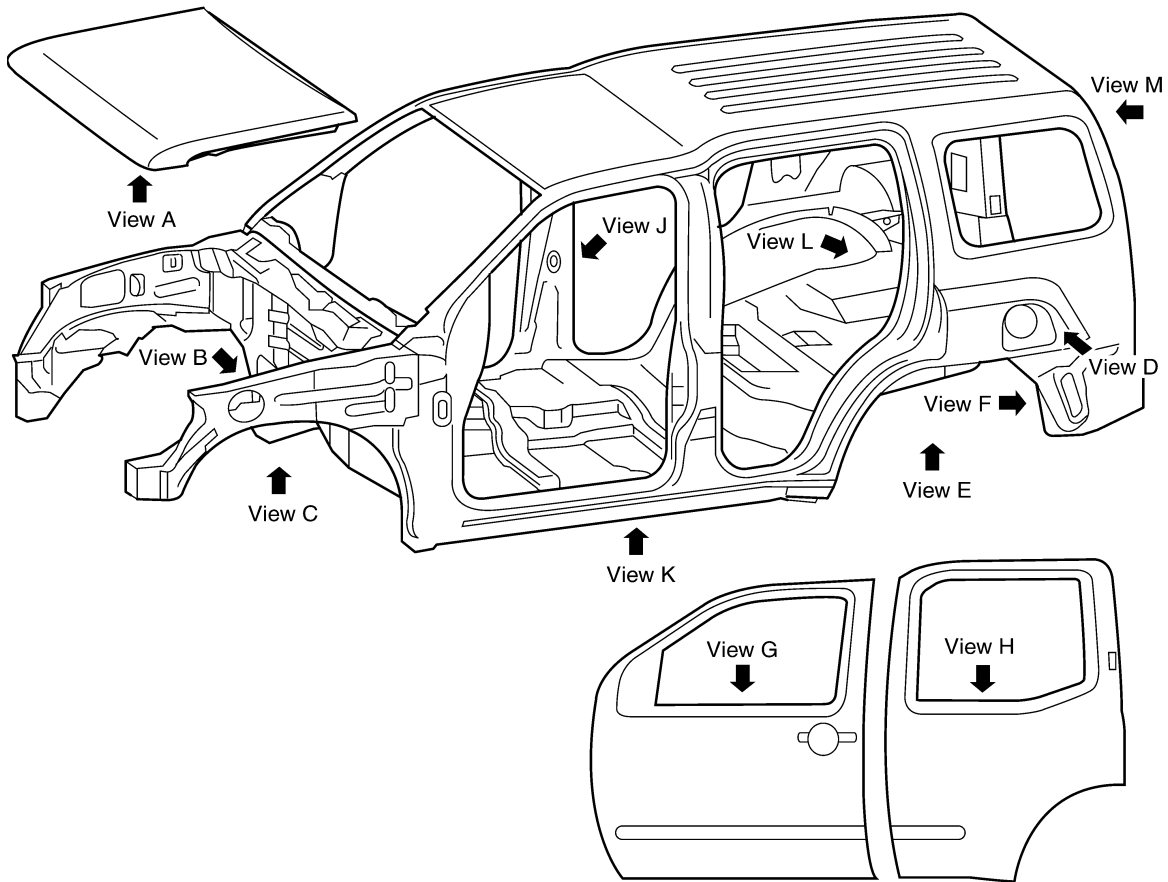
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# CORROSION PROTECTION

## < REMOVAL AND INSTALLATION >

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.

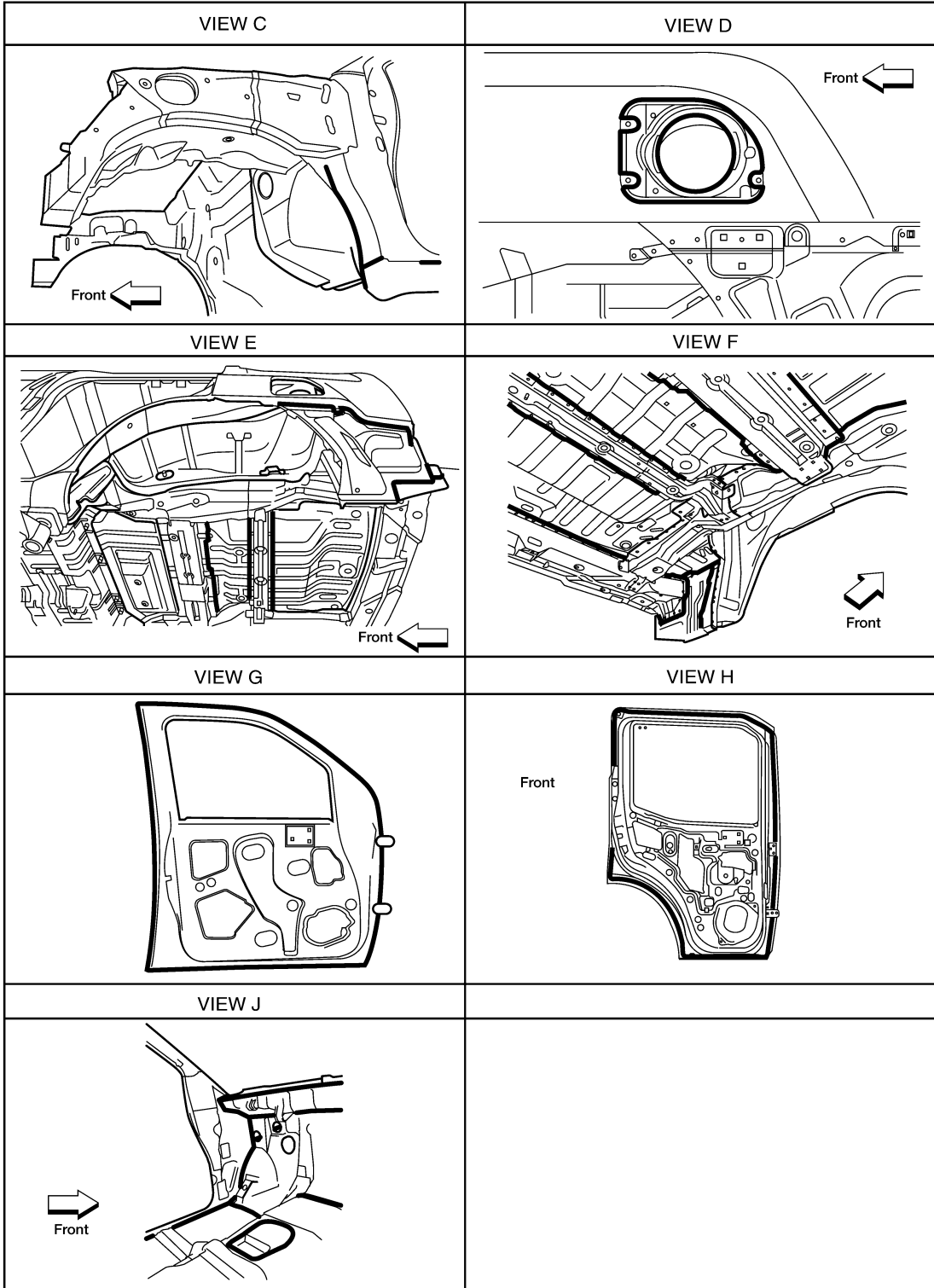


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# CORROSION PROTECTION

## < REMOVAL AND INSTALLATION >

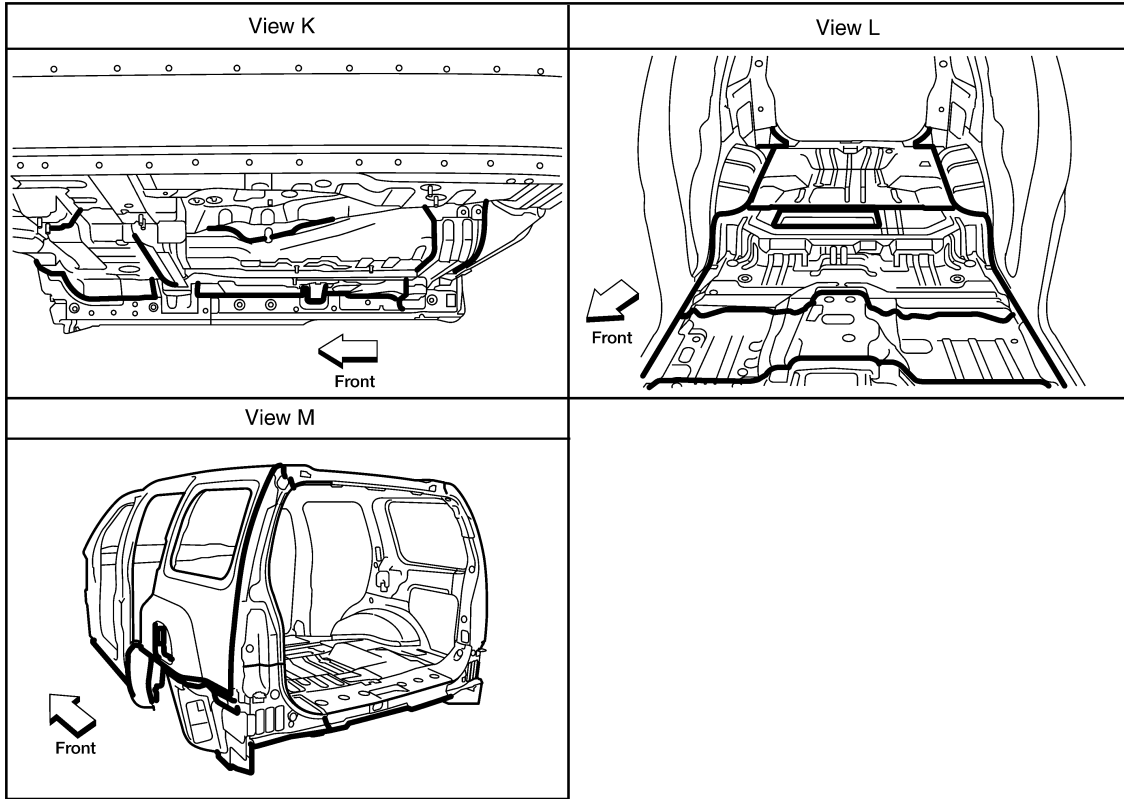


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# CORROSION PROTECTION

## < REMOVAL AND INSTALLATION >



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# BODY CONSTRUCTION

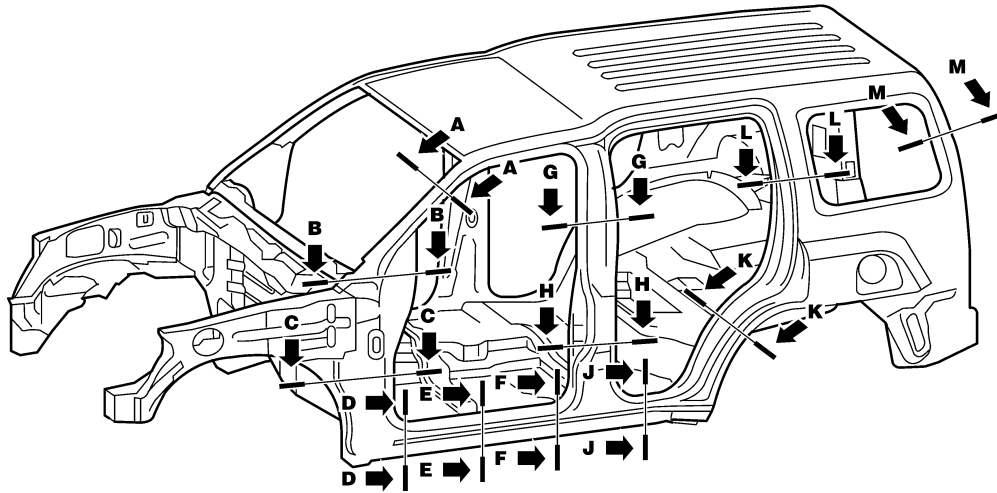
< REMOVAL AND INSTALLATION >

## BODY CONSTRUCTION

Body Construction

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BODY CONSTRUCTION



Section A-A	Section B-B	Section C-C	Section D-D

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# BODY ALIGNMENT

< REMOVAL AND INSTALLATION >

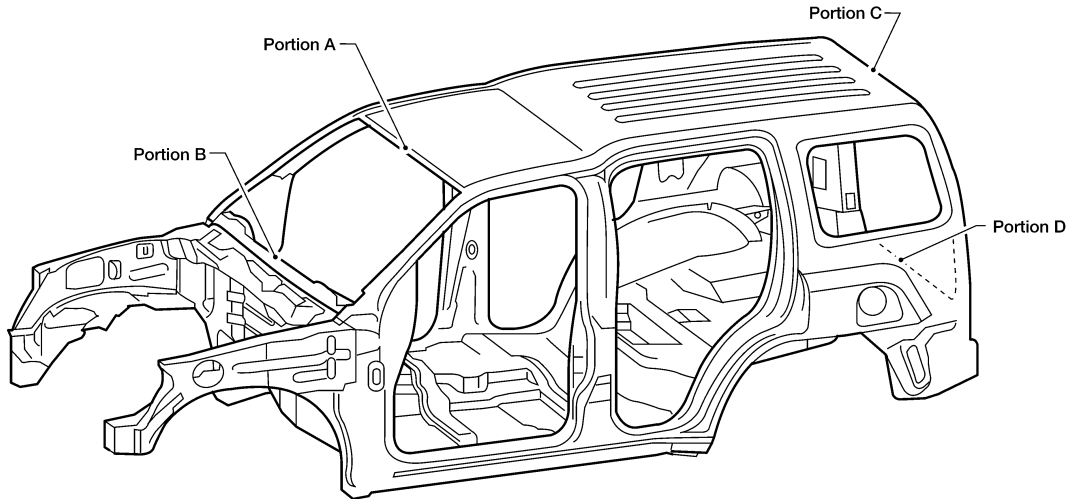
## BODY ALIGNMENT

### Body Alignment

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#### BODY CENTER MARKS

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.



Portion A	Portion B	Portion C
<p>Embossment</p>	<p>Flange end</p>	<p>Notch</p>
<p>Flange end</p>		

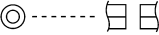
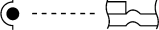
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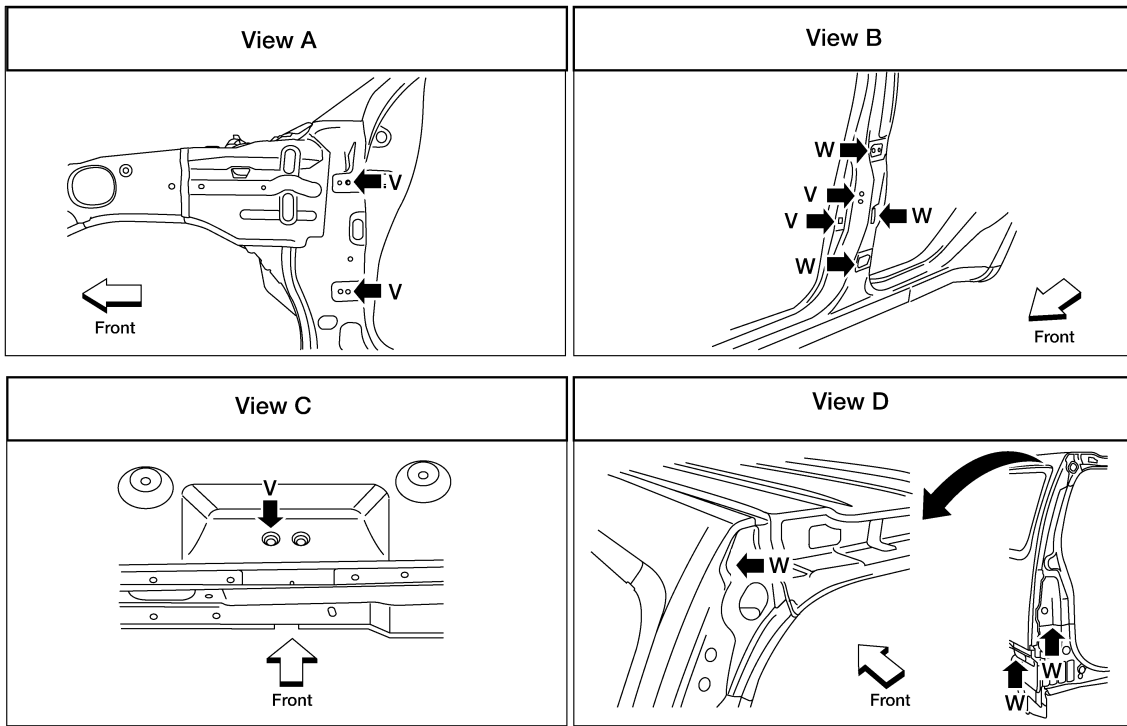
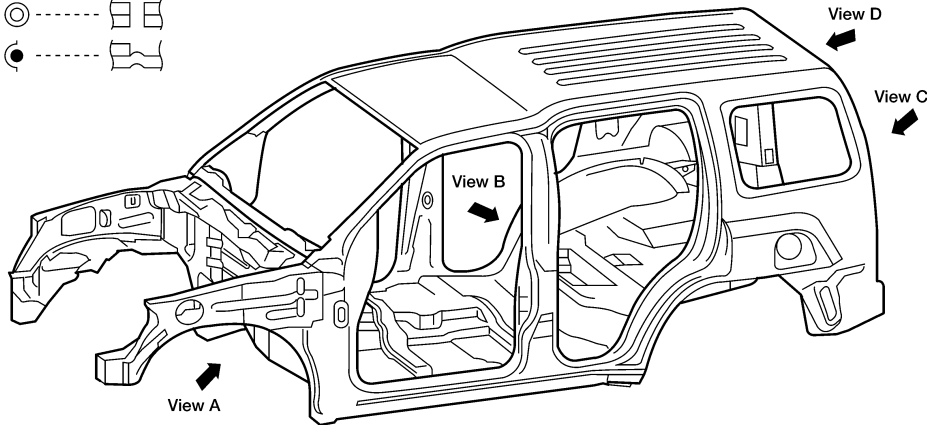
#### PANEL PARTS MATCHING MARKS

# BODY ALIGNMENT

## < REMOVAL AND INSTALLATION >

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

Type V:  Type W: 



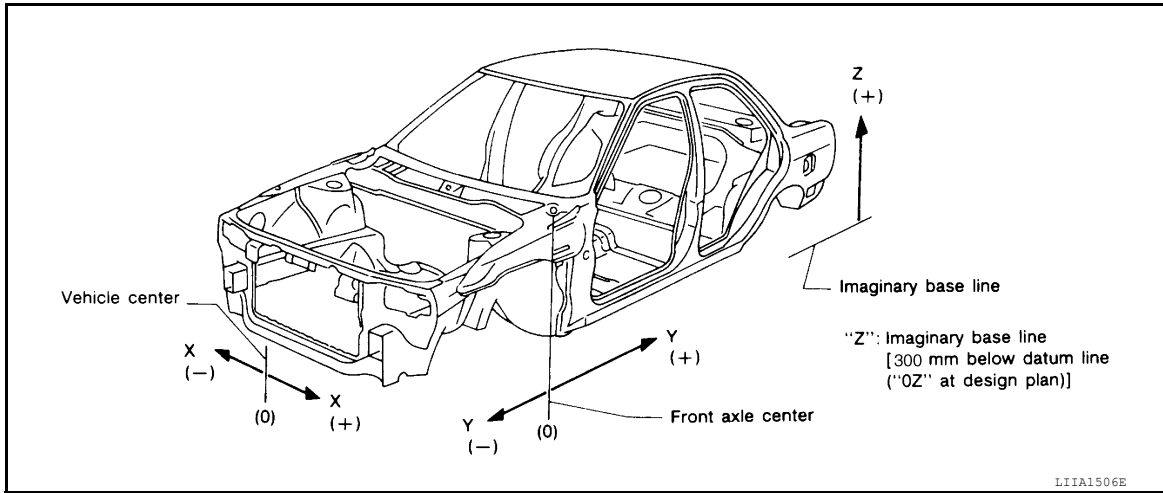
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## DESCRIPTION

- 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".

# BODY ALIGNMENT

< REMOVAL AND INSTALLATION >



Engine Compartment

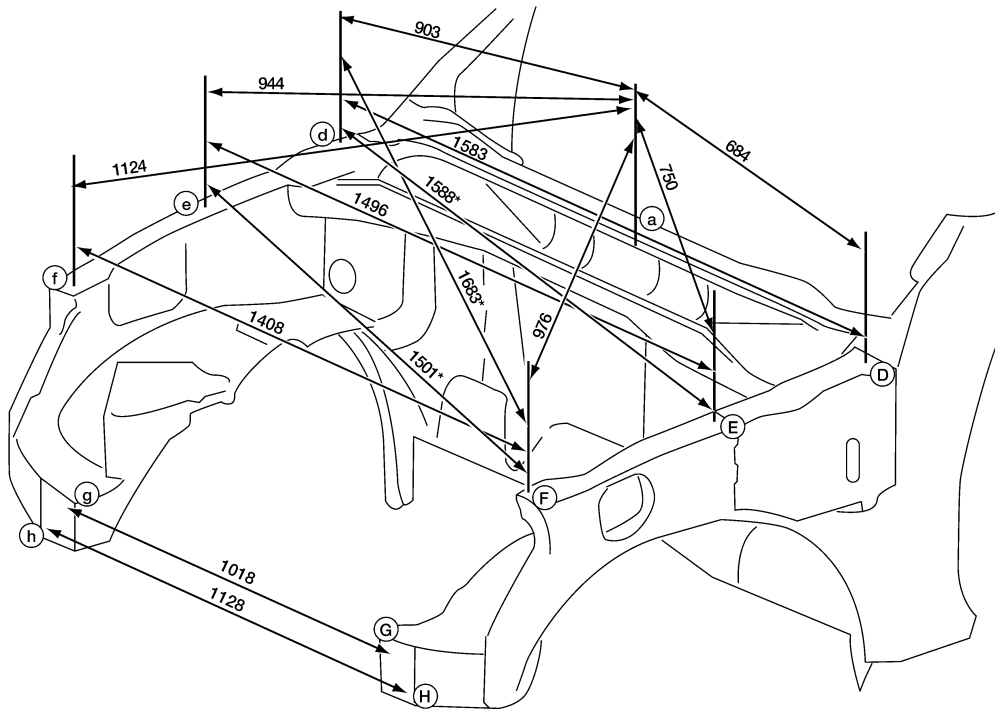
# BODY ALIGNMENT

< REMOVAL AND INSTALLATION >

## MEASUREMENT

All dimensions indicated in this figure are actual.

Figures marked with an (\*) indicate symmetrically identical dimensions on both right and left hand sides of the vehicle.



Unit: mm

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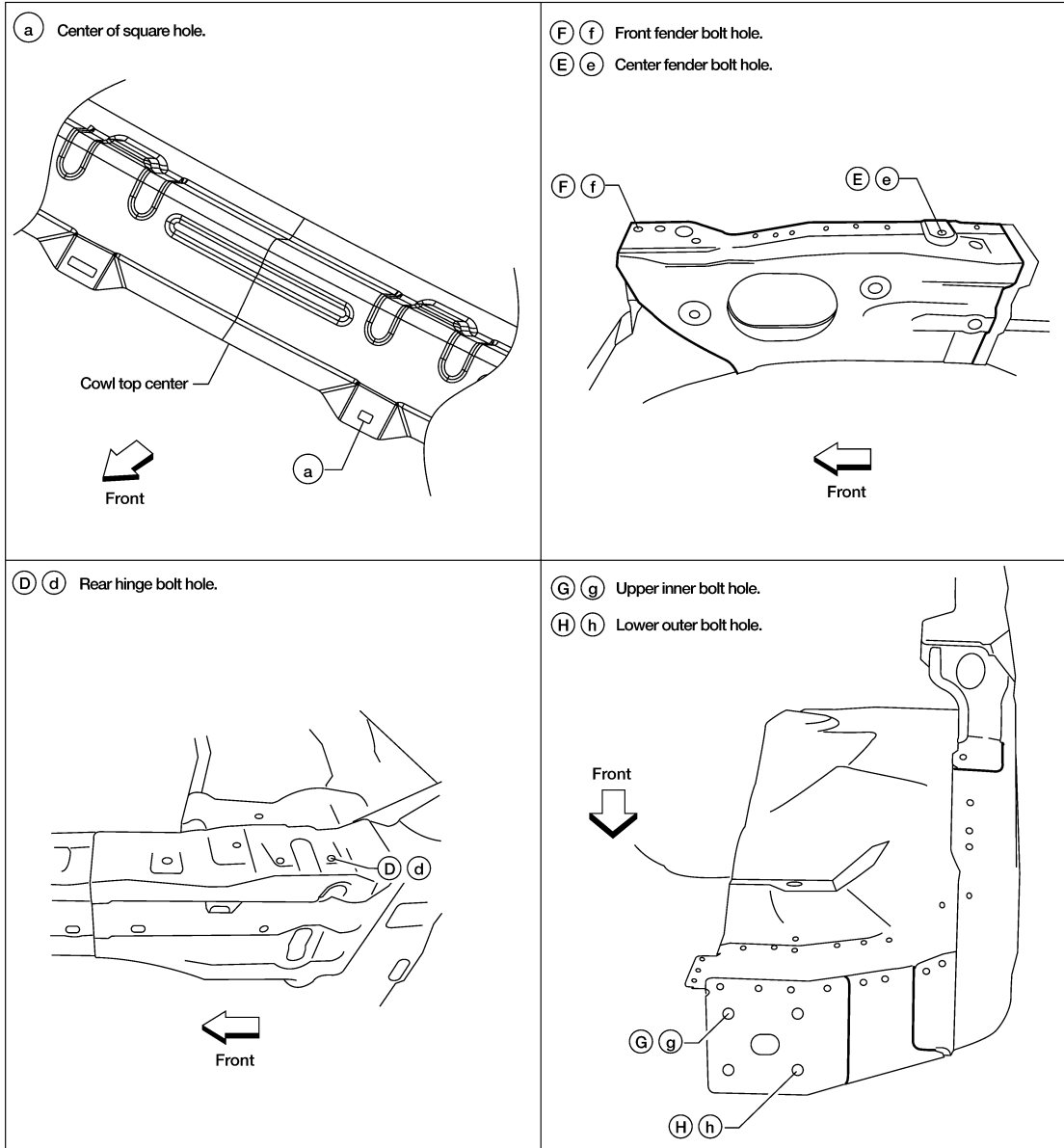
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# BODY ALIGNMENT

< REMOVAL AND INSTALLATION >

## MEASUREMENT POINTS



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Underbody



# BODY ALIGNMENT

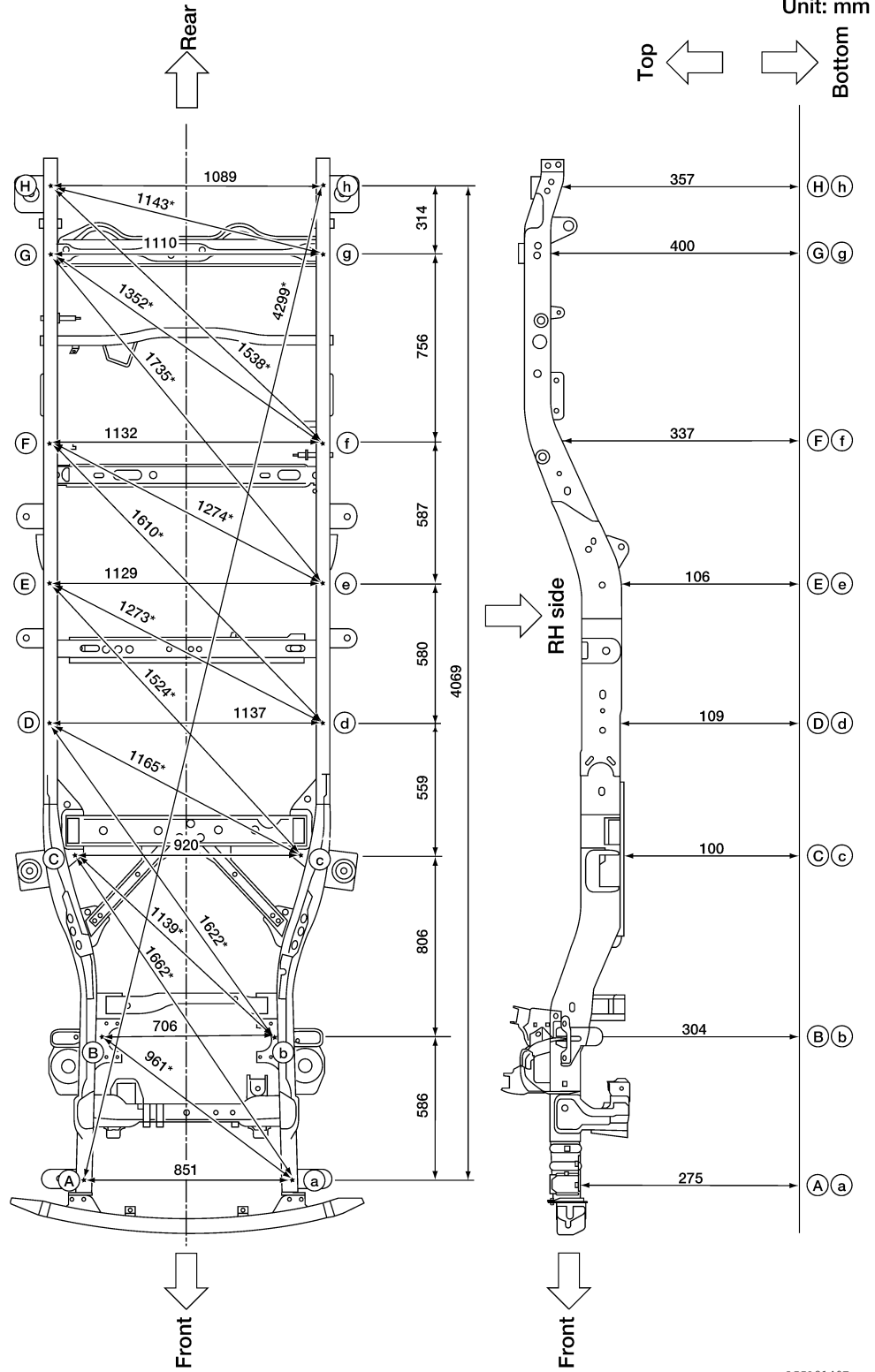
< REMOVAL AND INSTALLATION >

## MEASUREMENT

Figures marked with a (\*) indicate symmetrically identical dimensions on both right and left hand sides of the vehicle.

As viewed from underside.

All dimensions indicated in this figure are actual.



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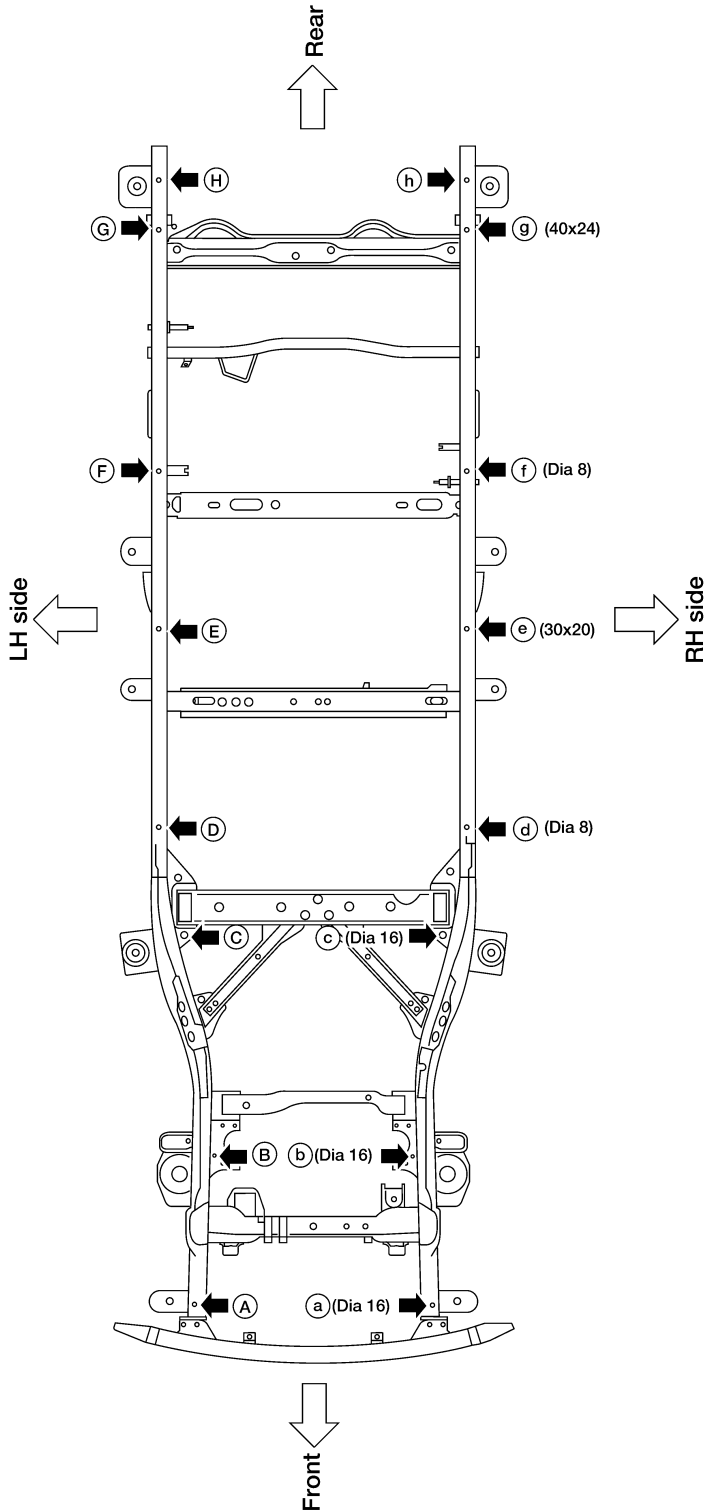
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# BODY ALIGNMENT

< REMOVAL AND INSTALLATION >

## MEASUREMENT POINTS



Coordinates:

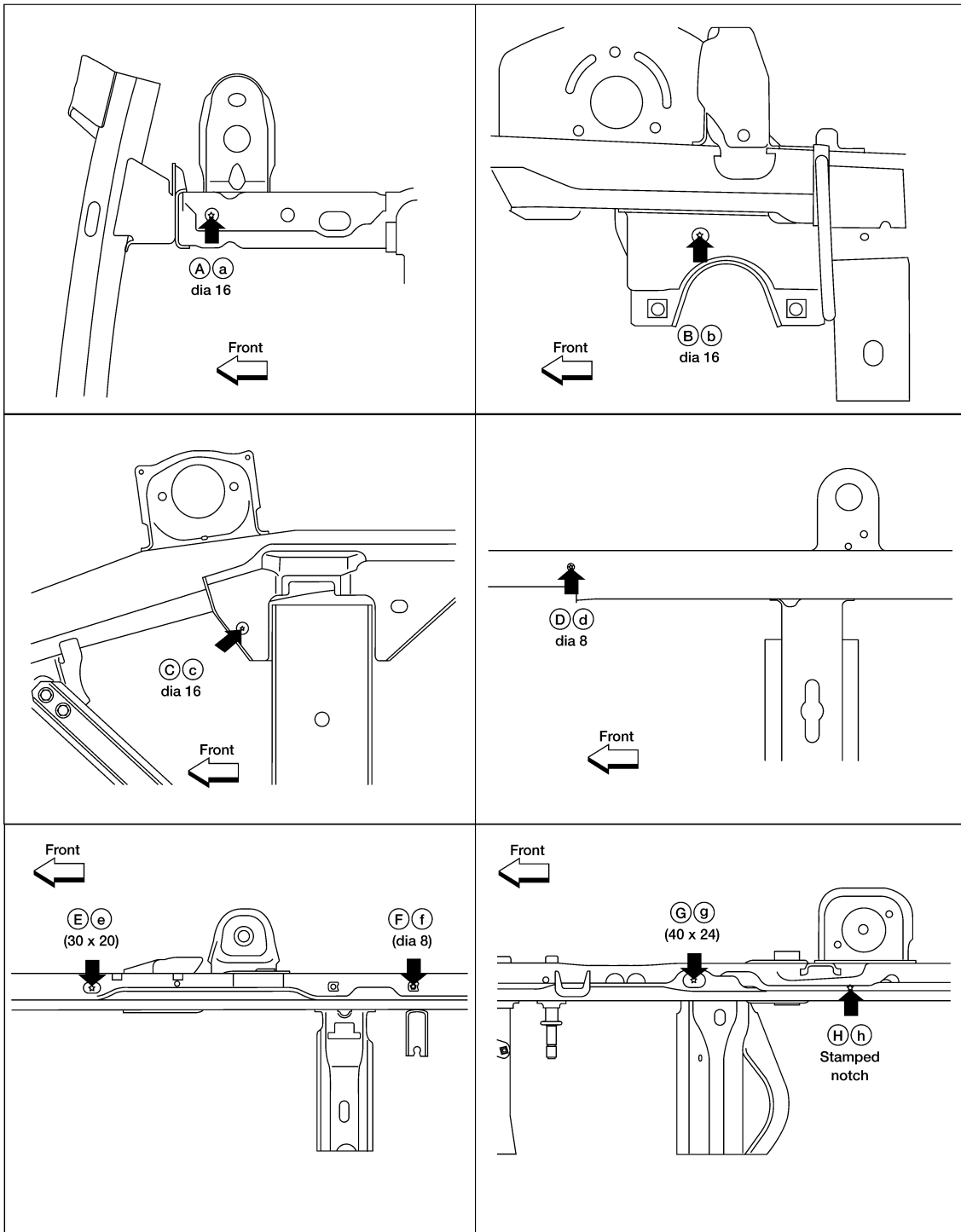
- (A), (a)  
X : ± 425  
Y : -528  
Z : 275
- (B), (b)  
X : ± 353  
Y : 35  
Z : 304
- (C), (c)  
X : ± 460  
Y : 807  
Z : 100
- (D), (d)  
X : ± 568  
Y : 1356  
Z : 109
- (E), (e)  
X : ± 564  
Y : 1936  
Z : 106
- (F), (f)  
X : ± 566  
Y : 2475  
Z : 337
- (G), (g)  
X : ± 544  
Y : 3228  
Z : 400
- (H), (h)  
X : ± 544  
Y : 3539  
Z : 357

Unit: mm

LIIA2150E

# BODY ALIGNMENT

< REMOVAL AND INSTALLATION >



Coordinates:	A/a	B/b	C/c	D/d	E/e	F/f	G/g	H/h
X :	± 425	± 353	± 460	± 568	± 564	± 566	± 544	± 544
Y :	-528	35	807	1356	1936	2475	3228	3539
Z :	275	304	100	109	106	337	400	357

Unit: mm

LIIA2151E

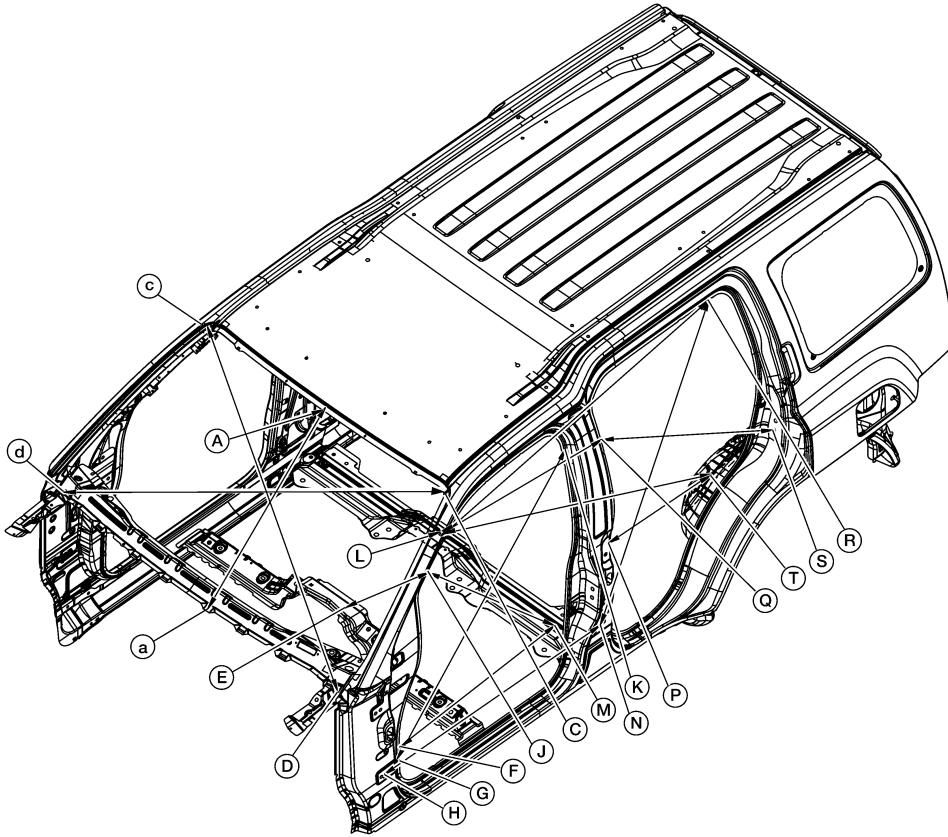
Passenger Compartment

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# BODY ALIGNMENT

< REMOVAL AND INSTALLATION >

MEASUREMENT



MEASURING POINT	DIM (mm)
A-a	840.0
C-d	1488.2
D-c	1528.2
E-J	1009.0
E-j	1101.0
E-K	1160.7
E-k	1238.5
F-M, f-m	844.2
G-K, g-k	1258.9
H-N, h-n	1095.2
J-M, j-m	954.7
L-Q, l-q	1115.0
L-R, l-r	1450.9
L-T, l-t	955.2
N-R, n-r	1265.3
P-S, p-s	847.8
Q-S, q-s	878.5

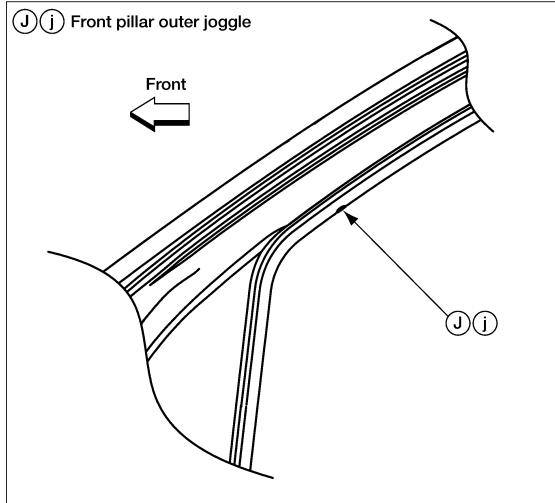
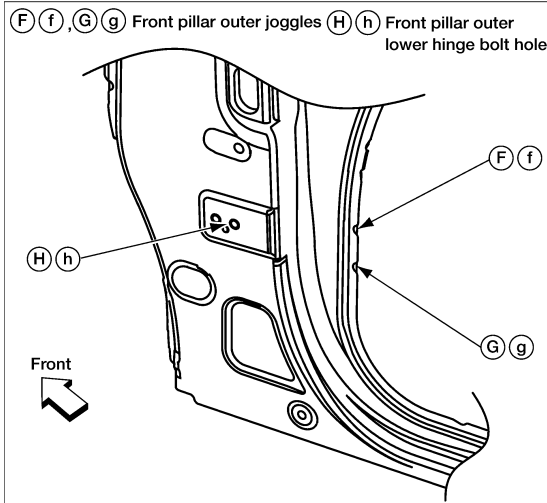
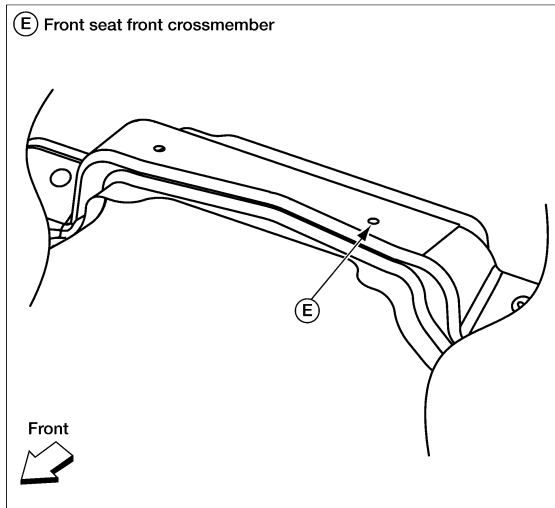
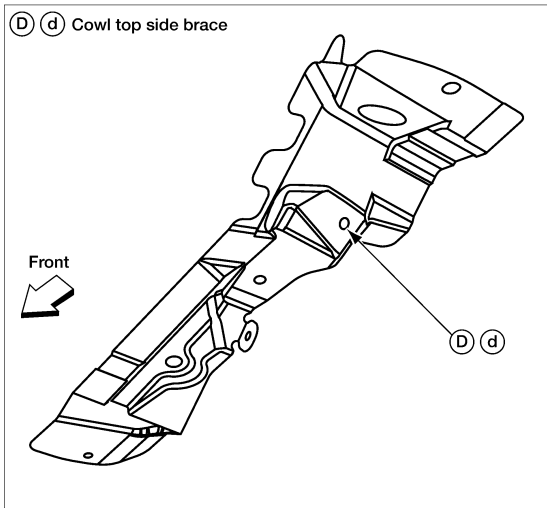
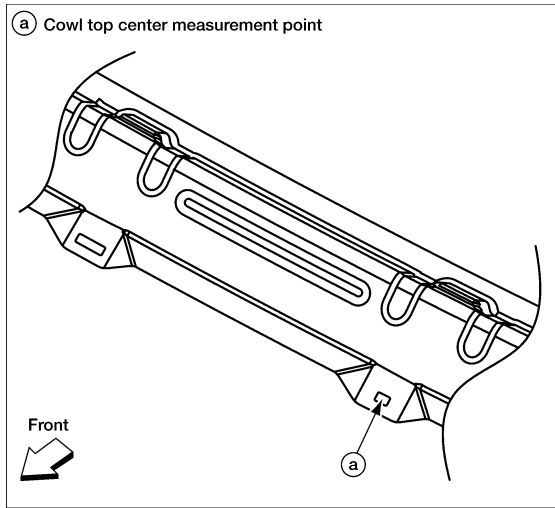
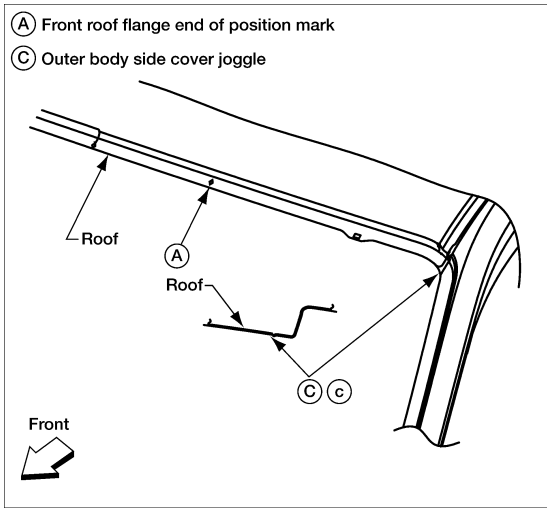
Unit: mm

L1IA2070E

# BODY ALIGNMENT

< REMOVAL AND INSTALLATION >

## MEASUREMENT POINTS



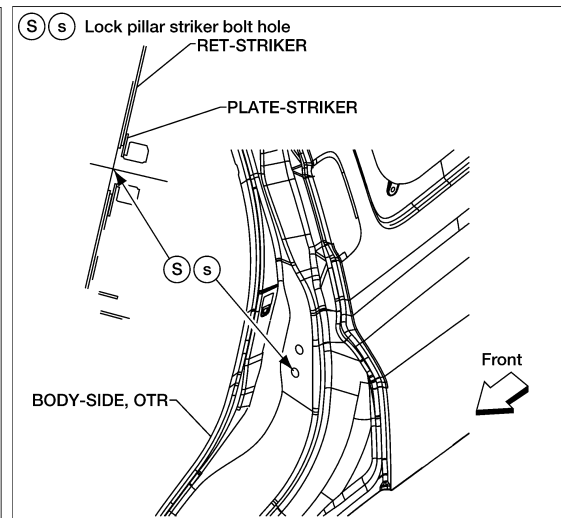
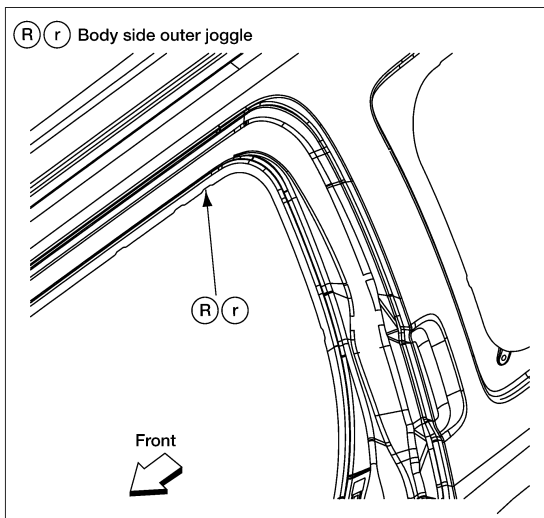
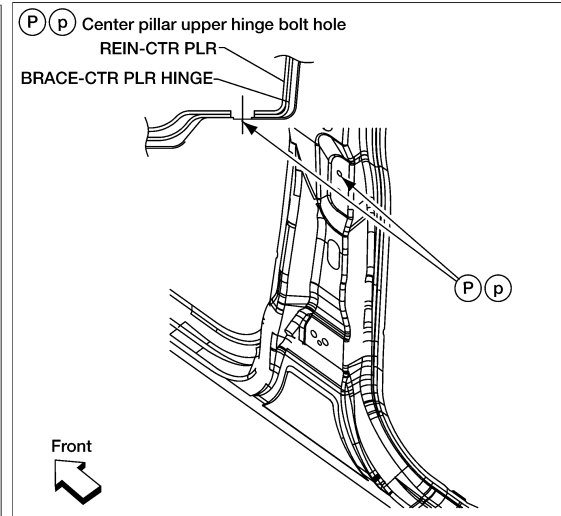
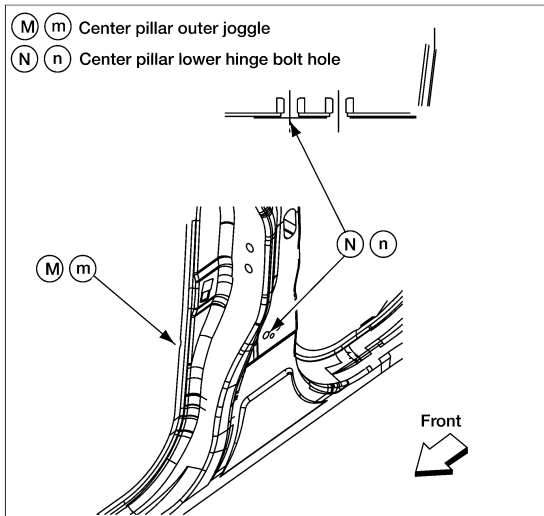
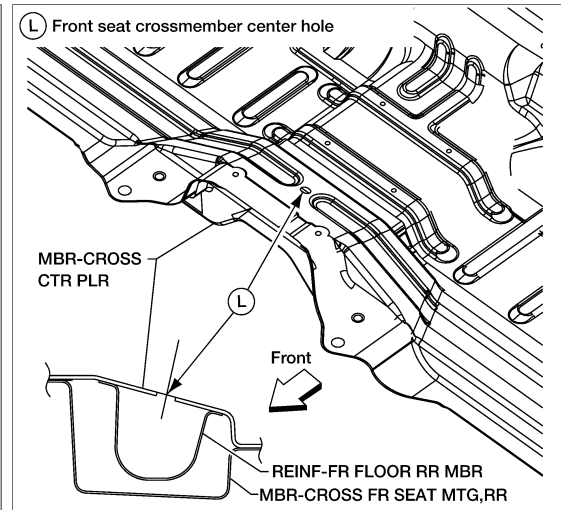
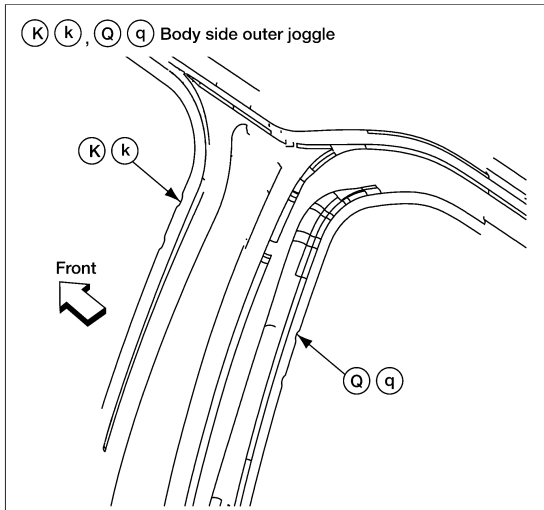
L11A2072E

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# BODY ALIGNMENT

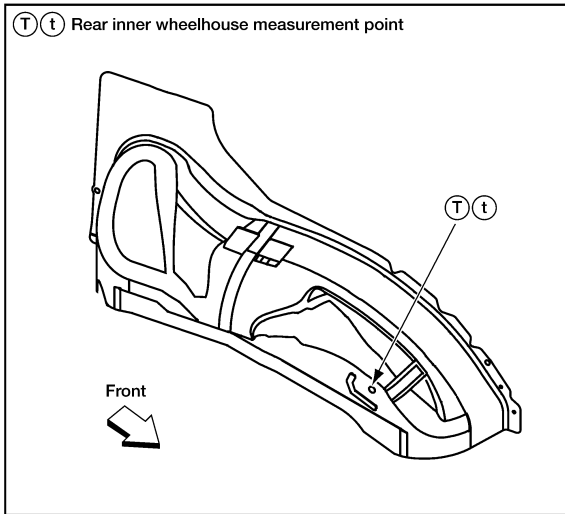
## < REMOVAL AND INSTALLATION >



L11A2073E

# BODY ALIGNMENT

## < REMOVAL AND INSTALLATION >



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Rear Body

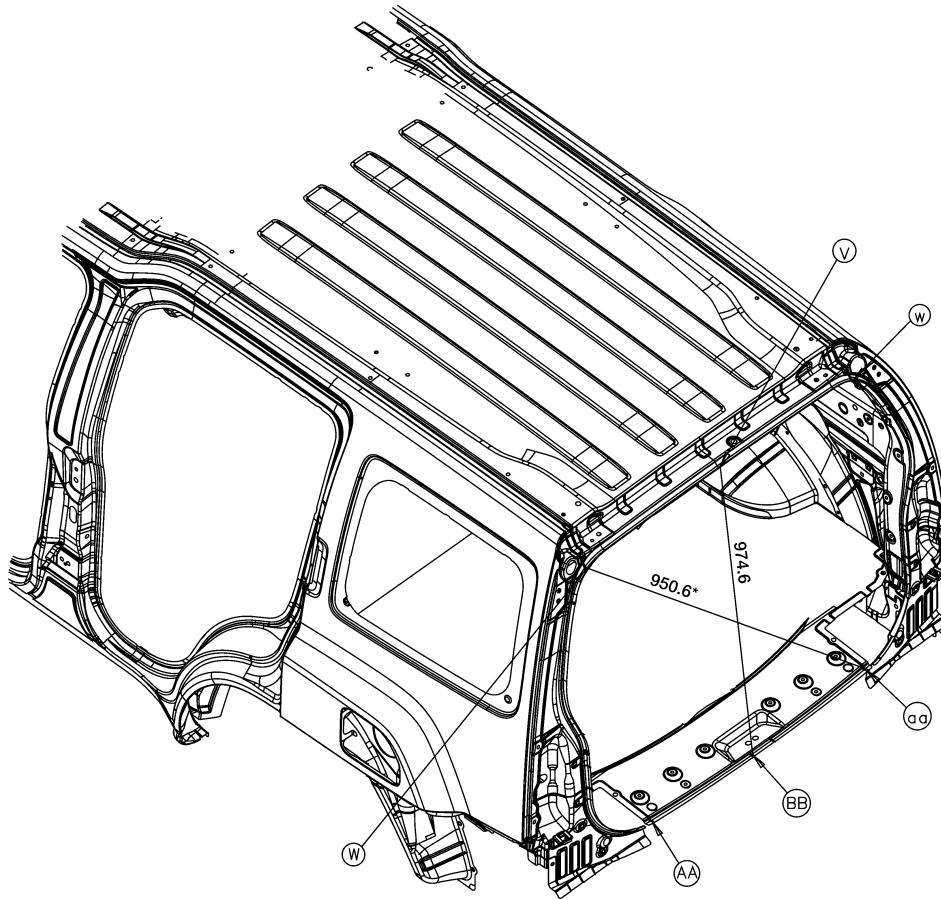
LIIA2074E

# BODY ALIGNMENT

< REMOVAL AND INSTALLATION >

MEASUREMENT

Figures marked with a (\*) indicate symmetrically identical dimensions on both right and left sides of vehicle.



Unit: mm

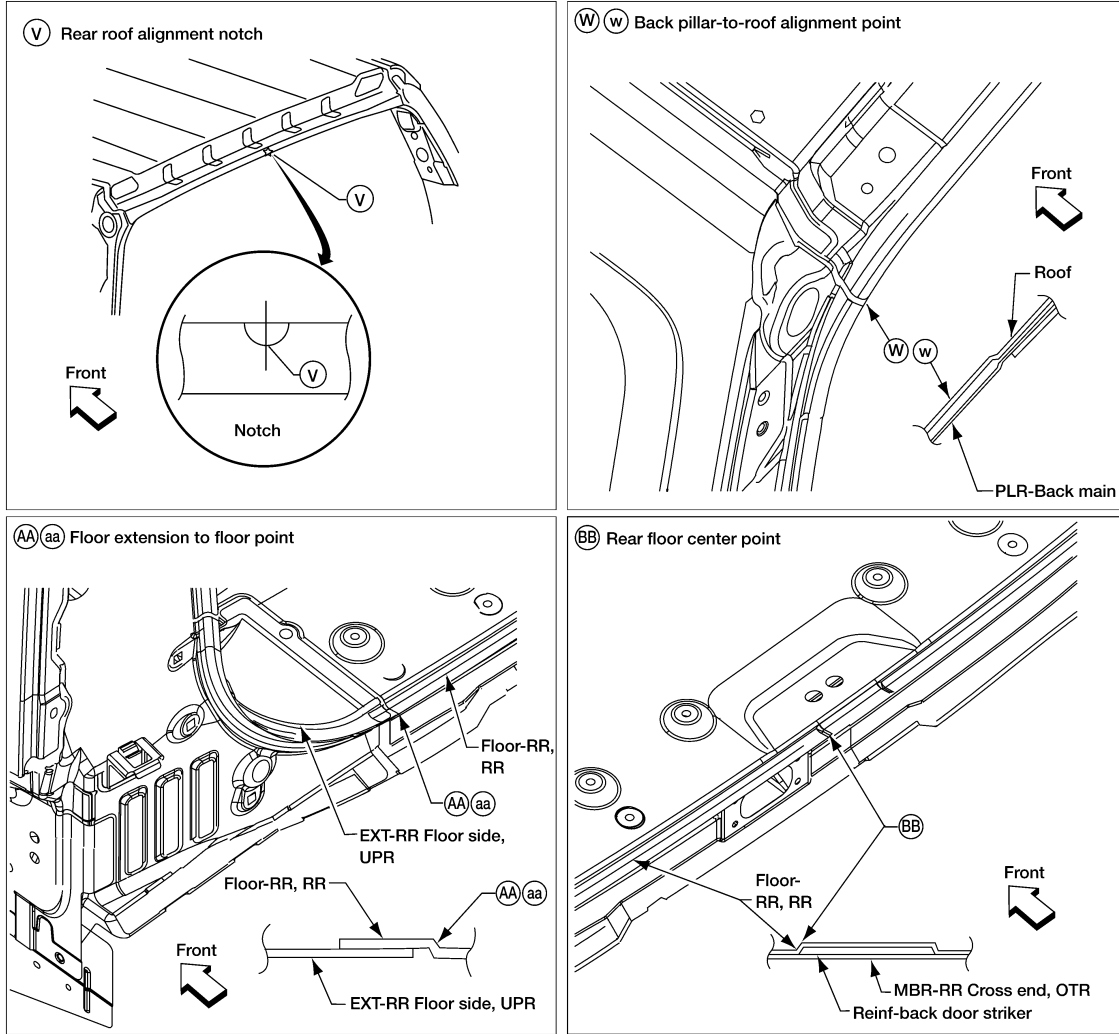
LIIA2075E



# BODY ALIGNMENT

< REMOVAL AND INSTALLATION >

## MEASUREMENT POINTS



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INFOID:000000006253959

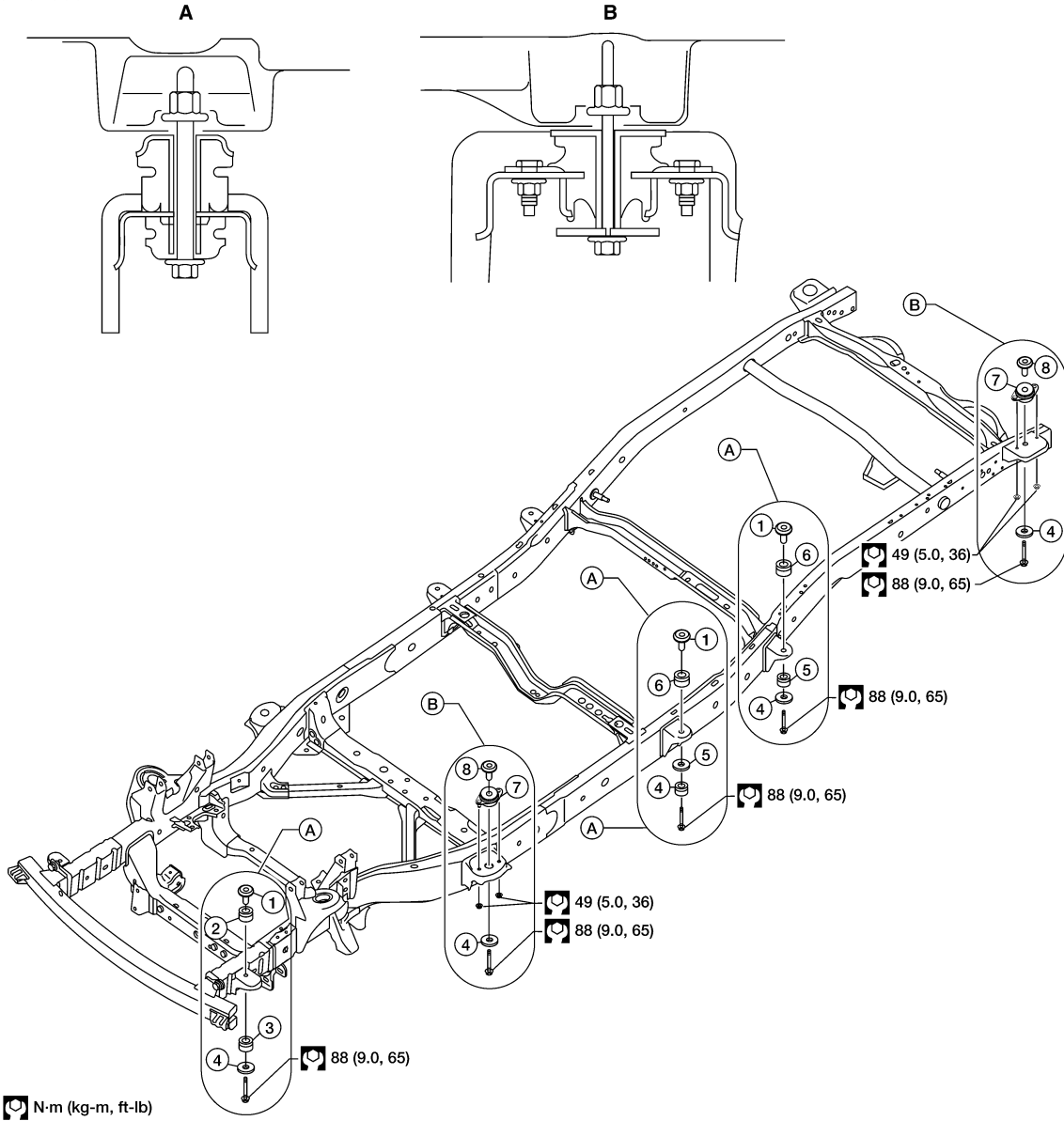
## Body Mounting

- When removing, be sure to replace bolts and nuts (sealant applied bolts or self-lock nuts are used for all mounting).
- Unless otherwise noted, the bushings and insulators have paint marks that are to be installed facing outward.

# BODY ALIGNMENT

< REMOVAL AND INSTALLATION >

SEC. 930



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- |                         |                                     |                                     |
|-------------------------|-------------------------------------|-------------------------------------|
| 1. Gold washer          | 2. Upper bushing                    | 3. Lower bushing                    |
| 4. Black washer         | 5. Lower bushing without paint mark | 6. Upper bushing without paint mark |
| 7. Body mount insulator | 8. Body washer                      |                                     |

# REPAIRING HIGH STRENGTH STEEL

< REMOVAL AND INSTALLATION >

## REPAIRING HIGH STRENGTH STEEL

### Precaution in Repairing High Strength Steel

INFOID:000000006253960

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:

High strength steel (hss) used in nissan vehicles

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>• Upper inner front pillar</li> <li>• Front pillar hinge brace</li> <li>• Outer front pillar reinforcement</li> <li>• Other reinforcements</li> </ul>
785-981 N/mm <sup>2</sup> (80-100kg/mm <sup>2</sup> 114-142klb/sq in)	SP150	<ul style="list-style-type: none"> <li>• Outer sill reinforcement</li> <li>• Main back pillar</li> </ul>

SP130 is the most commonly used HSS.

SP150 HSS is used only on parts that require much more strength.

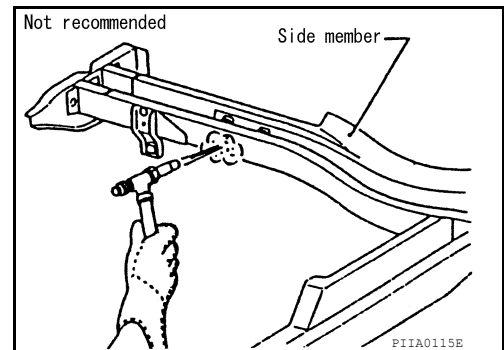
Read the following precautions when repairing HSS:

1. Additional points to consider

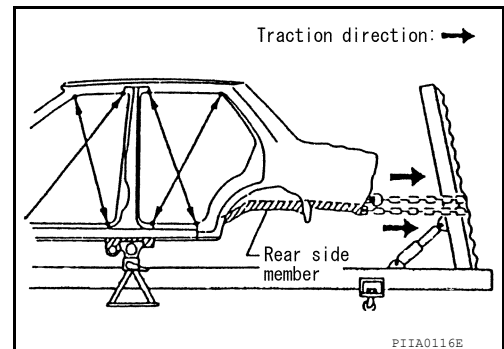
- The repair of reinforcements (such as side members) by heating is not recommended since it may weaken the component. When heating is unavoidable, do not heat HSS parts above 550°C (1,022°F).

Verify heating temperature with a thermometer.

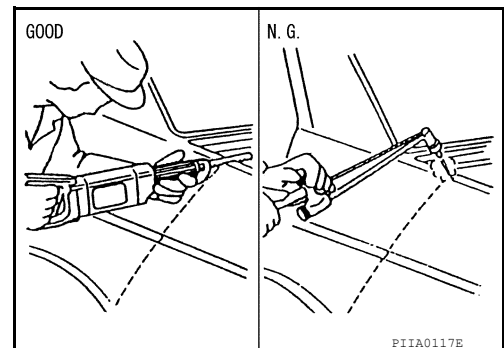
(Crayon-type and other similar type thermometer are appropriate.)



- 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).

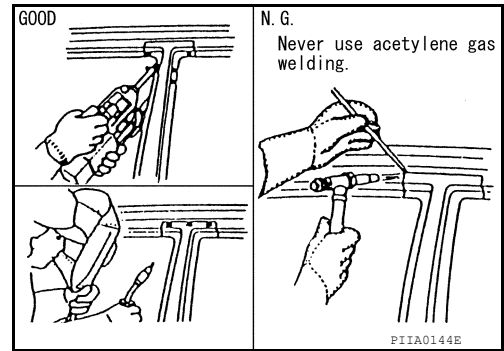


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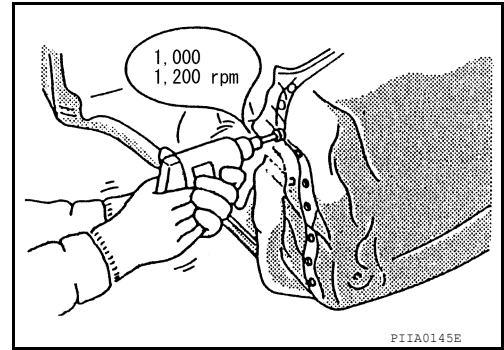
# REPAIRING HIGH STRENGTH STEEL

## < REMOVAL AND INSTALLATION >

- 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.



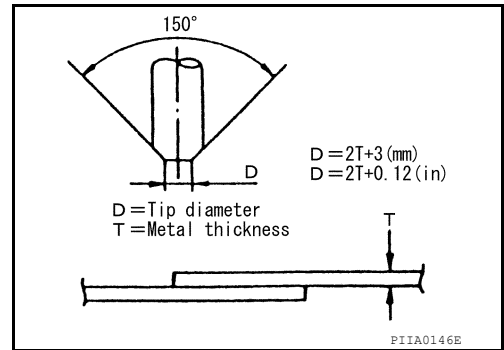
- The spot weld on HSS panels is harder than that of an ordinary steel panel. Therefore, when cutting spot welds on a HSS panel, use a low speed high torque drill (1,000 to 1,200 rpm) to increase drill bit durability and facilitate the operation.
- SP150 HSS panels with a tensile strength of 785 to 981 N/mm<sup>2</sup> (80 to 100 kg/mm<sup>2</sup>, 114 to 142 klb/sq in), used as reinforcement in the door guard beams, is too strong to repair. When these HSS parts are damaged, the outer panels also sustain substantial damage; therefore, the assembly parts must be replaced.



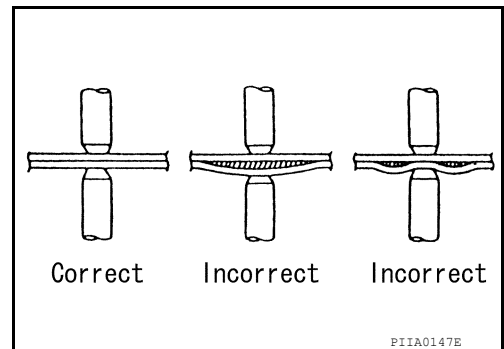
### 2. Precautions in spot welding HSS

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.



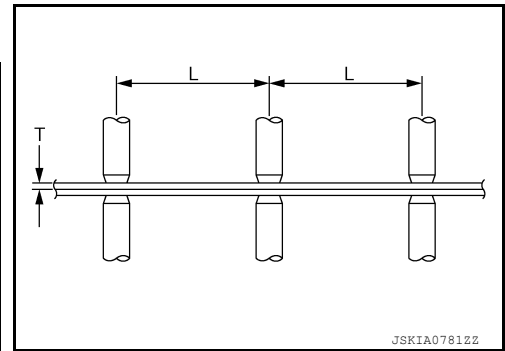
# REPAIRING HIGH STRENGTH STEEL

## < REMOVAL AND INSTALLATION >

- 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



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# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

---

## REPLACEMENT OPERATIONS

### Replacement Operation

INFOID:000000006253961

#### DESCRIPTION

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.


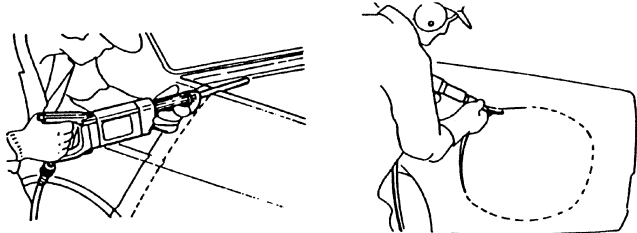


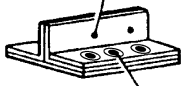
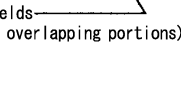
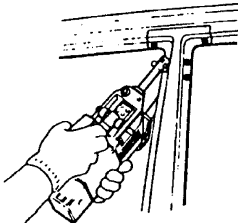

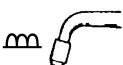
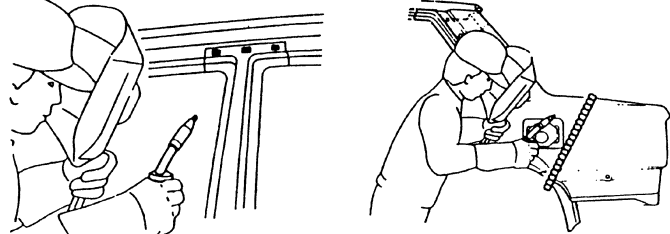

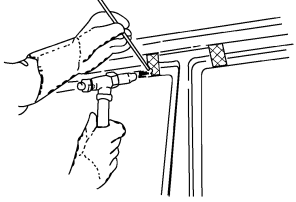

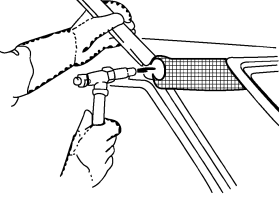
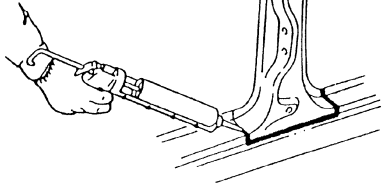
Technicians are also encouraged to read Body Repair Manual (Fundamentals) in order to ensure that the original functions and quality of the vehicle can be maintained. The Body Repair Manual (Fundamentals) contains additional information, including cautions and warnings, that are not including in this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

Please note that this information is prepared for worldwide usage, and as such, certain procedures may not apply in some regions or countries.

# 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>		

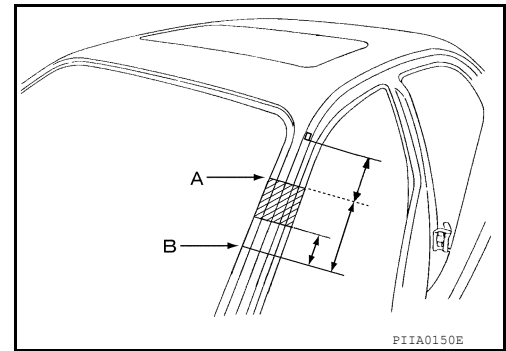
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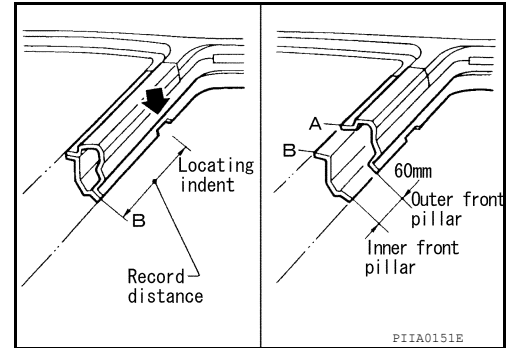
# REPLACEMENT OPERATIONS

## < REMOVAL AND INSTALLATION >

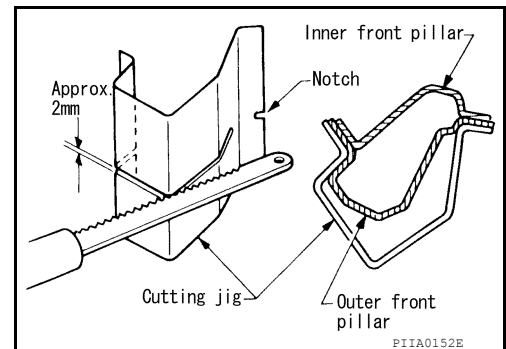
- Front pillar butt joint can be determined anywhere within shaded area as shown in the figure. The best location for the butt joint is at position A due to the construction of the vehicle. Refer to the front pillar section.



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

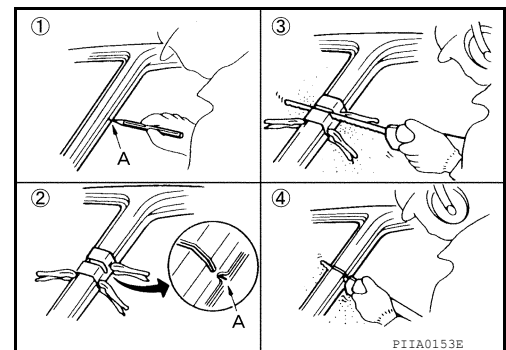


- Prepare a cutting jig to make outer pillar easier to cut. Also, this will permit service part to be accurately cut at joint position.



- 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 B in same manner.



HOODLEDGE

LH

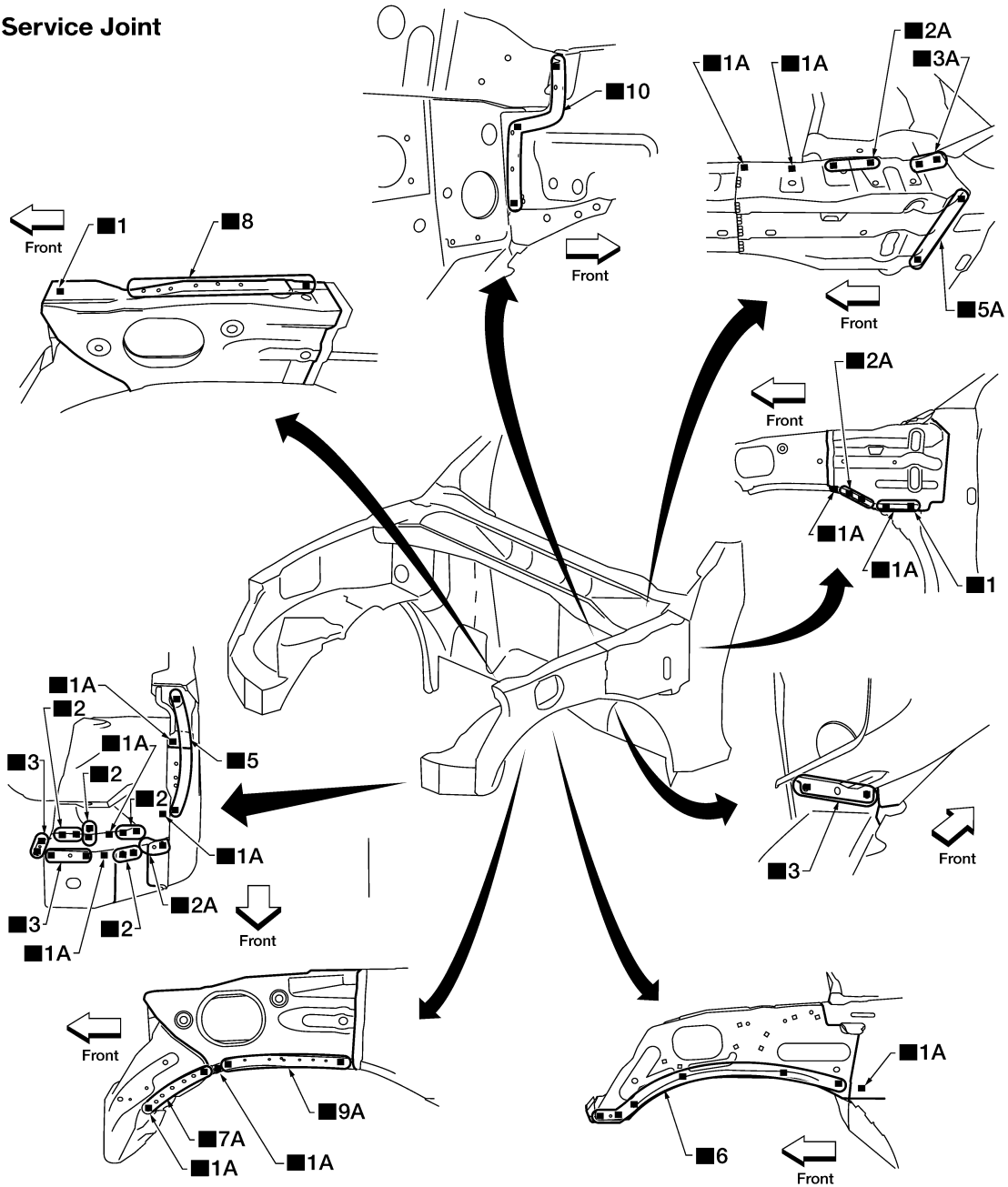


# REPLACEMENT OPERATIONS

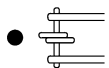
## < REMOVAL AND INSTALLATION >

- Work after radiator core support has been removed.

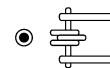
### Service Joint



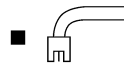
2-spot welds



3-spot welds



MIG Plug weld



( For 3 panels plug weld method )



MIG seam weld/  
Point weld



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RH

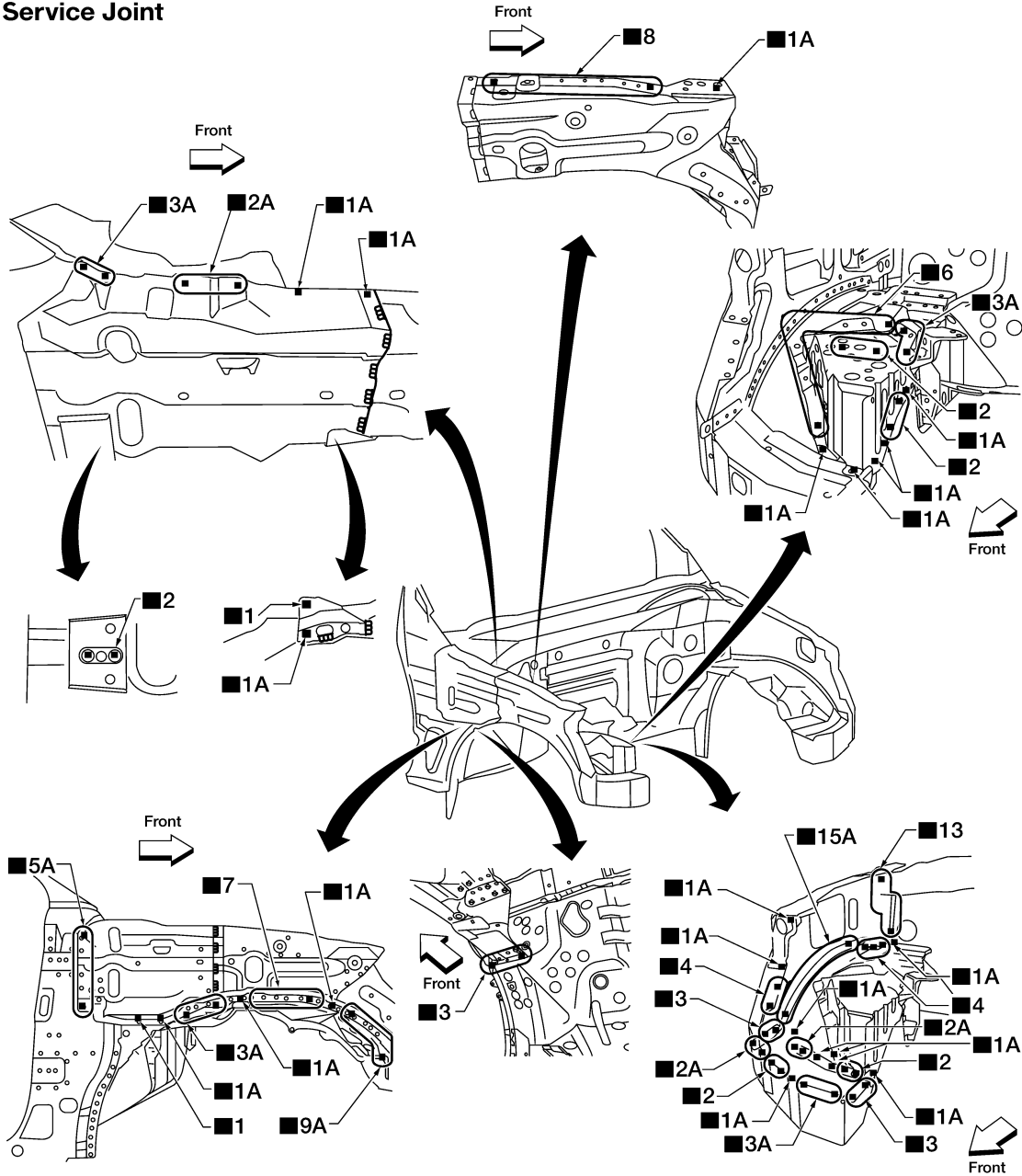
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# REPLACEMENT OPERATIONS

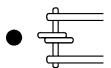
## < REMOVAL AND INSTALLATION >

- Work after radiator core support has been removed.

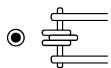
### Service Joint



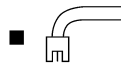
2-spot welds



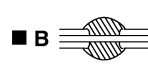
3-spot welds



MIG Plug weld



( For 3 panels plug weld method )



MIG seam weld/  
Point weld



L1IA2120E

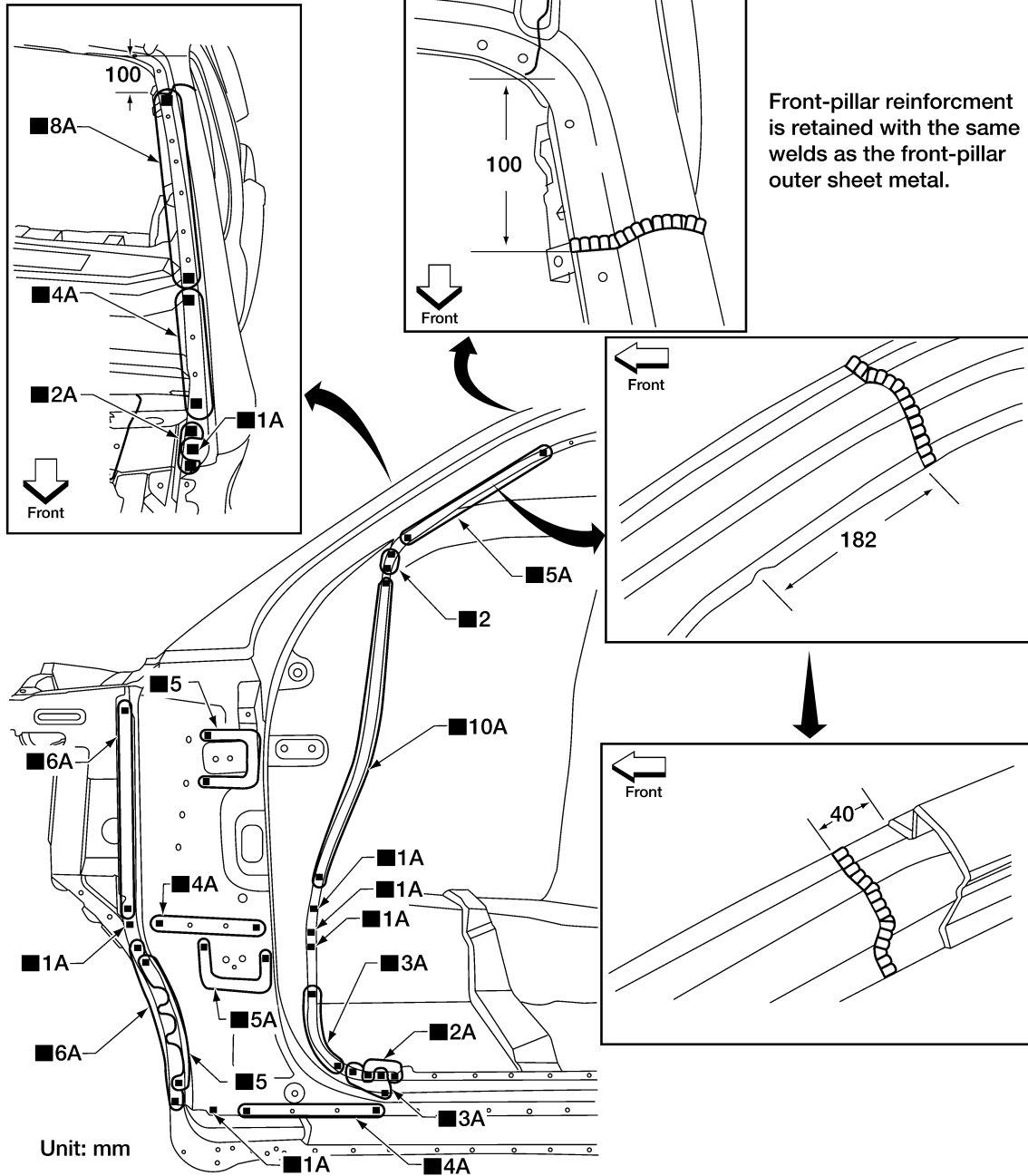
### FRONT PILLAR

# REPLACEMENT OPERATIONS

## < REMOVAL AND INSTALLATION >

- Work after rear hoodledge reinforcement has been removed.

### Service Joint



Front-pillar reinforcement is retained with the same welds as the front-pillar outer sheet metal.

2-spot welds

3-spot welds

MIG Plug weld

For 3 panels plug weld method

MIG seam weld/  
Point weld



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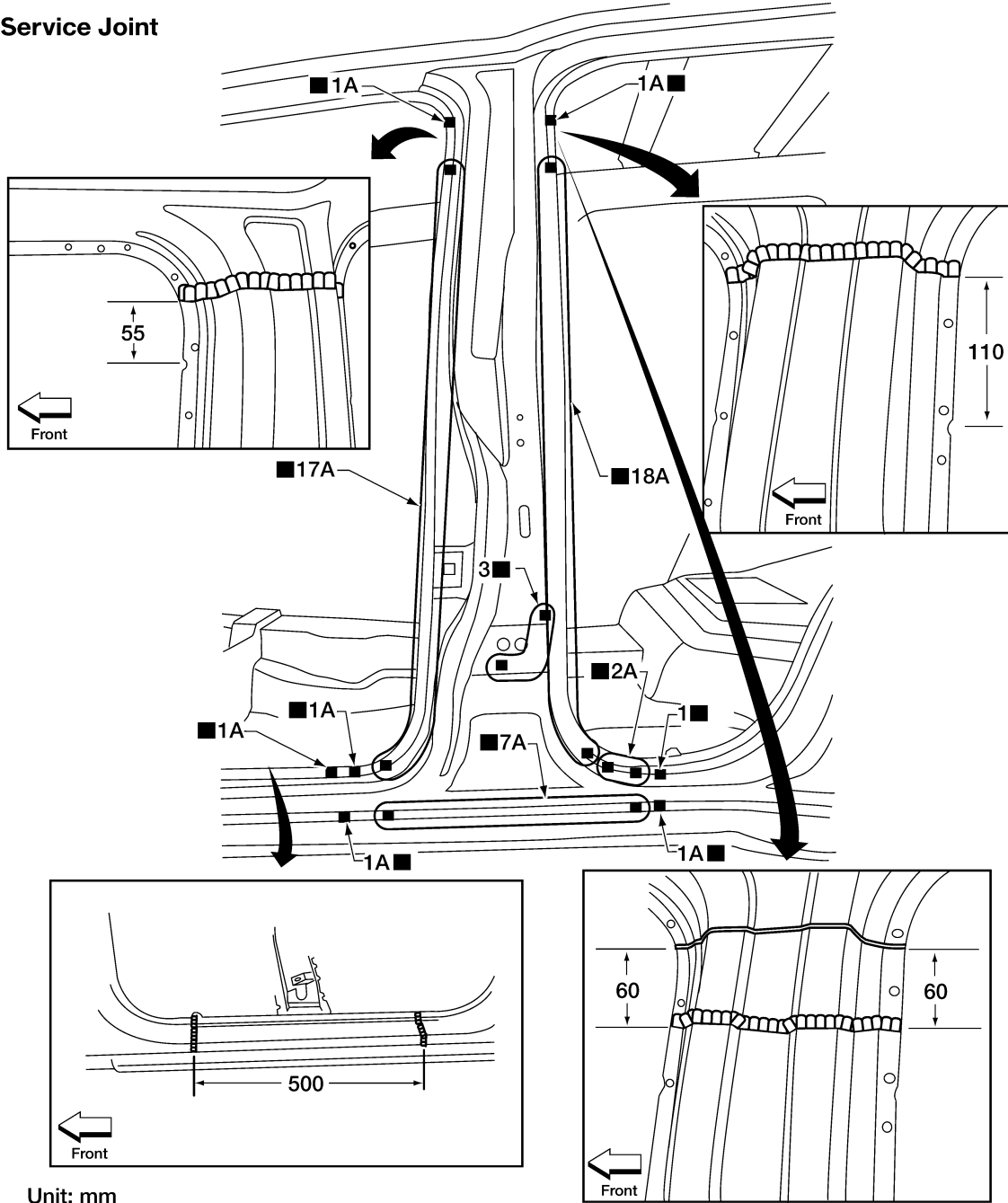
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# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

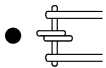
## CENTER PILLAR

### Service Joint

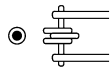


Unit: mm

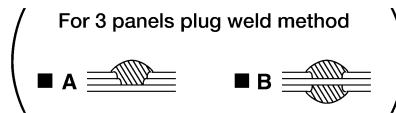
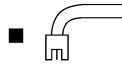
2-spot welds



3-spot welds



MIG Plug weld



MIG seam weld/  
Point weld

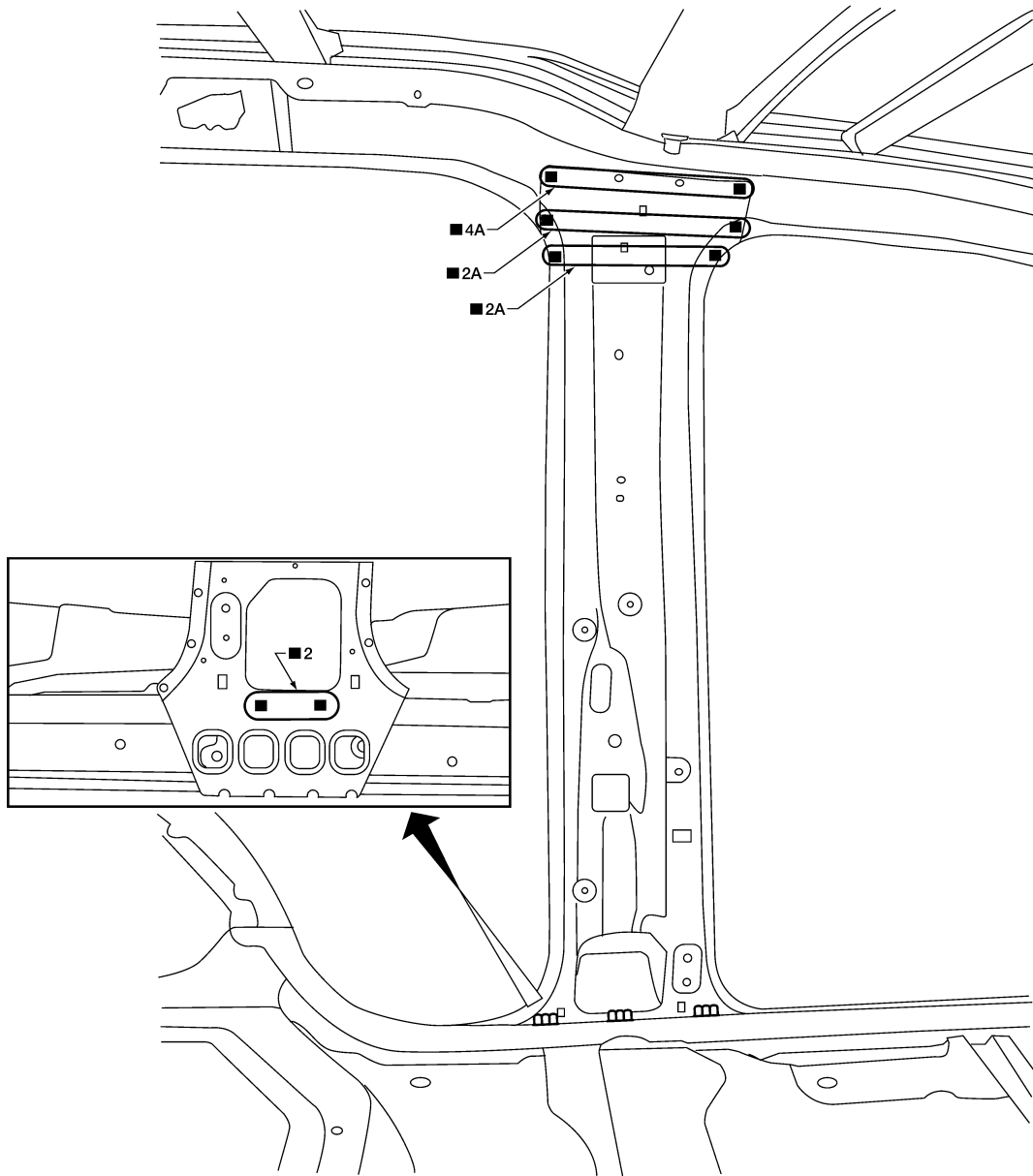


W1IA0864E

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

## Service Joint



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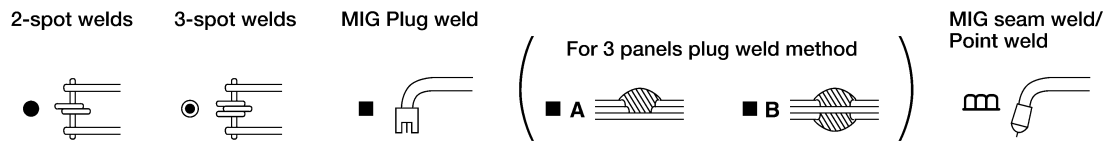
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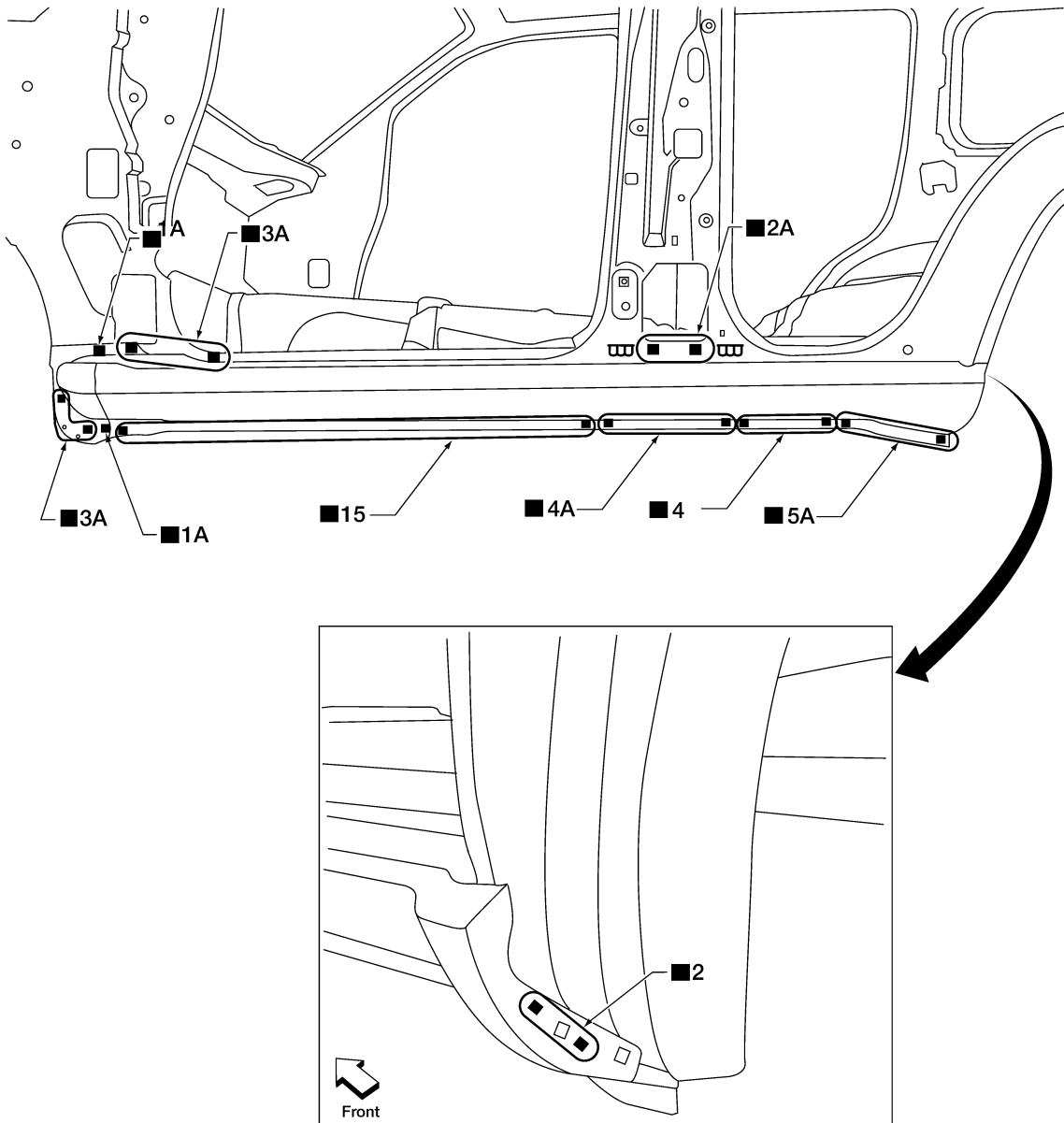
LIIA2123E

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

## OUTER SILL

### Service Joint



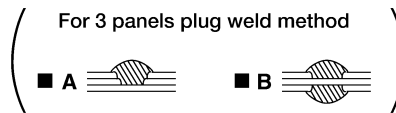
2-spot welds



3-spot welds



MIG Plug weld



MIG seam weld/  
Point weld



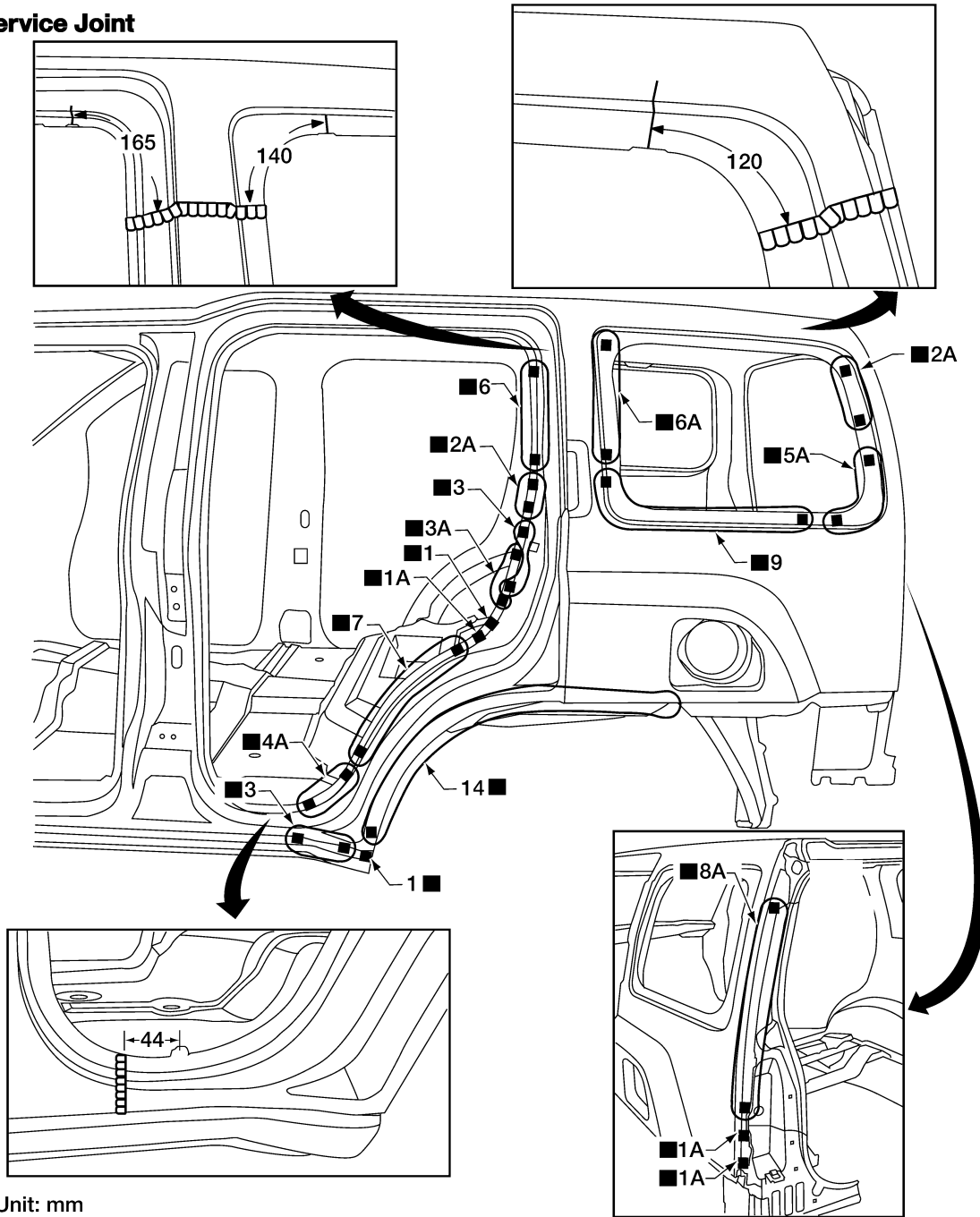
W1IA0865E

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

## REAR FENDER

### Service Joint



Unit: mm

2-spot welds

3-spot welds

MIG Plug weld

For 3 panels plug weld method

MIG seam weld/  
Point weld



W1IA0866E

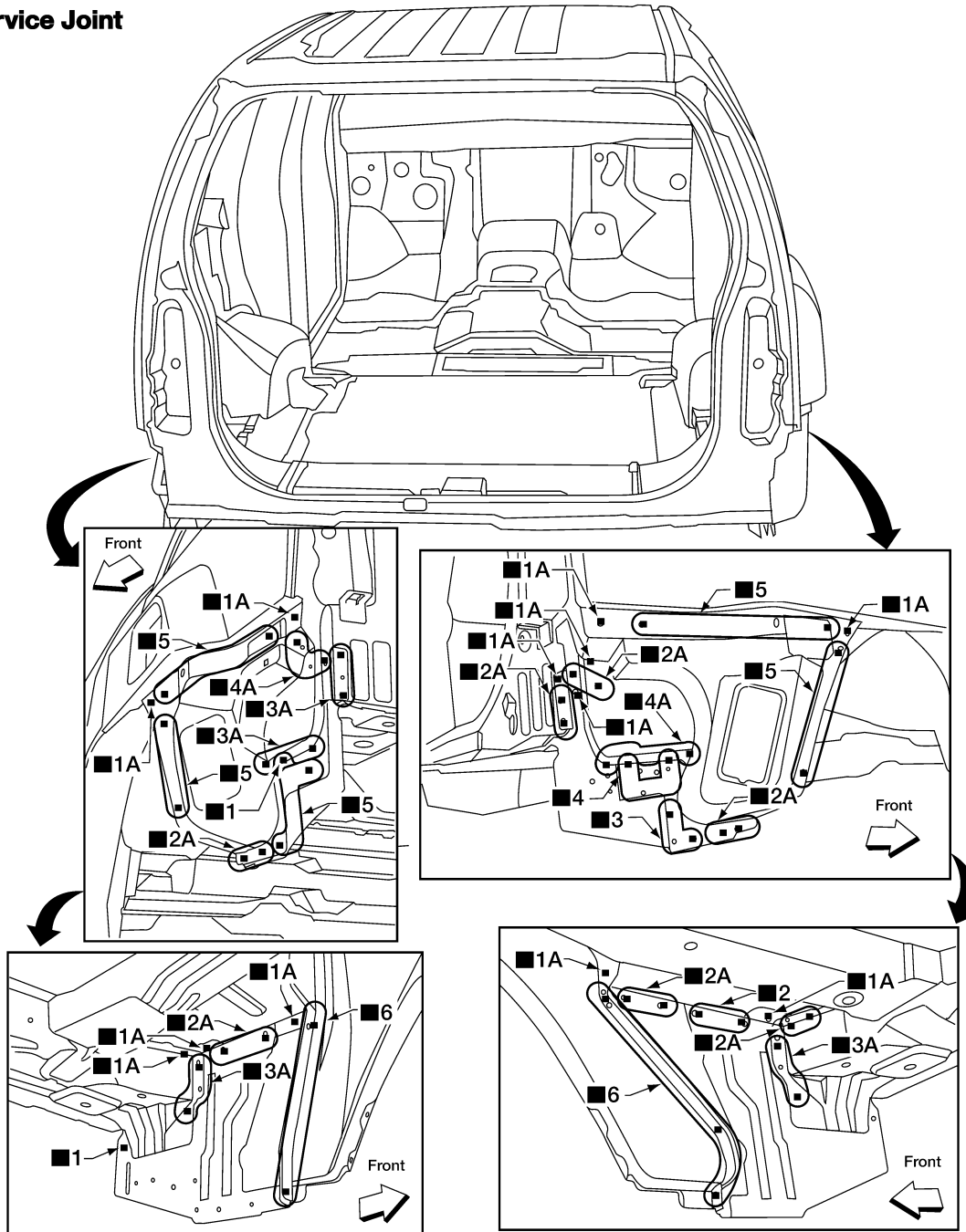
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# REPLACEMENT OPERATIONS

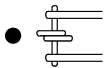
< REMOVAL AND INSTALLATION >

## REAR FENDER EXTENSION

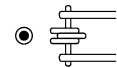
### Service Joint



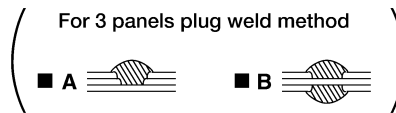
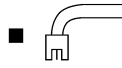
2-spot welds



3-spot welds



MIG Plug weld



MIG seam weld/  
Point weld



LIIA2127E

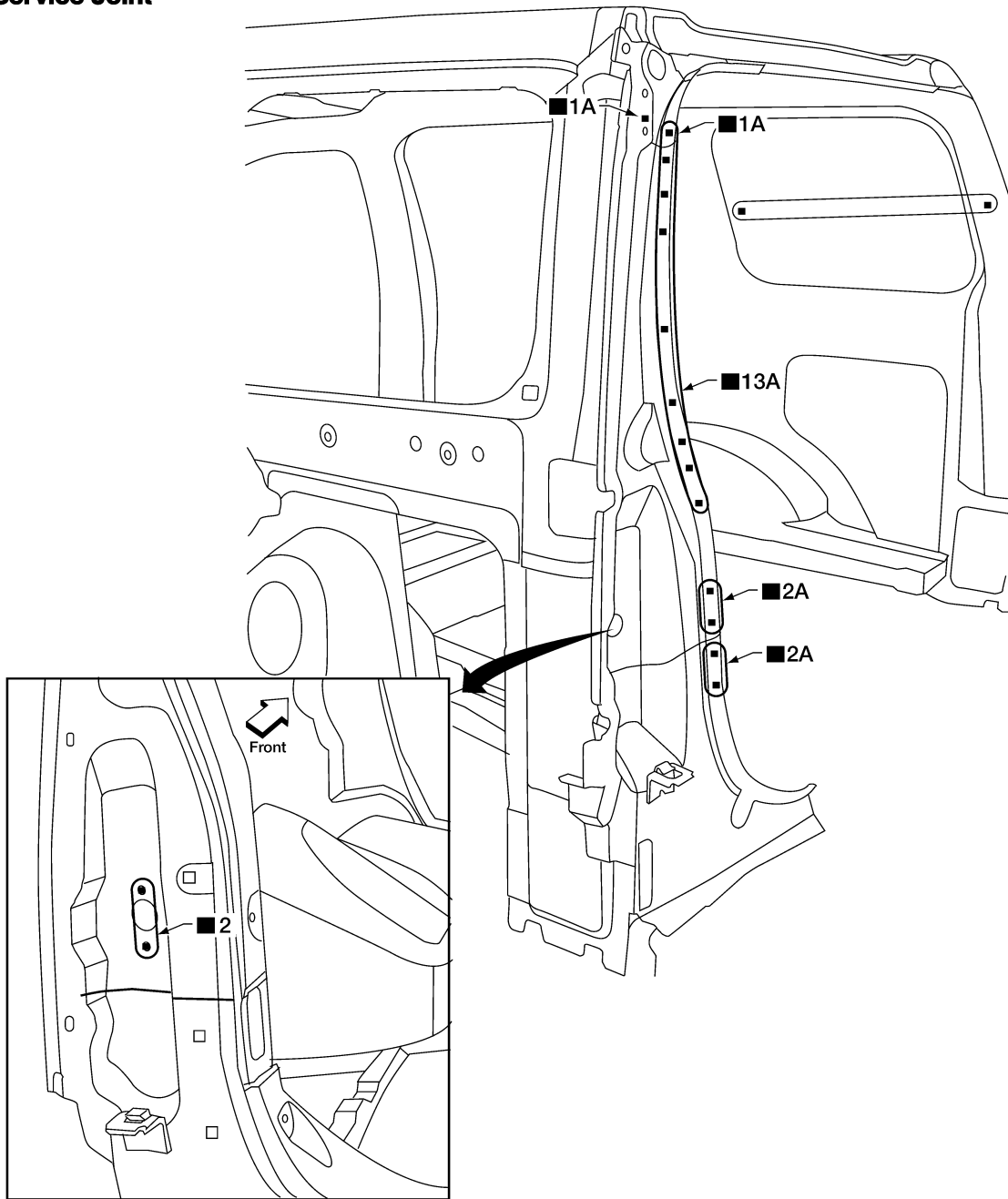


# REPLACEMENT OPERATIONS

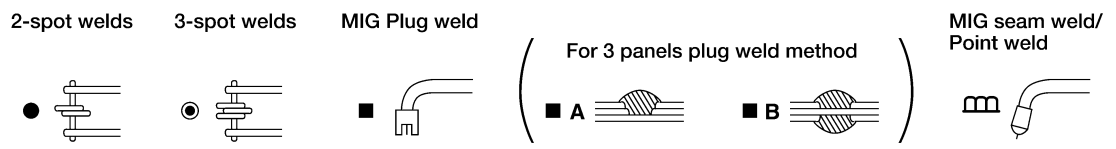
< REMOVAL AND INSTALLATION >

## MAIN BACK PILLAR

### Service Joint



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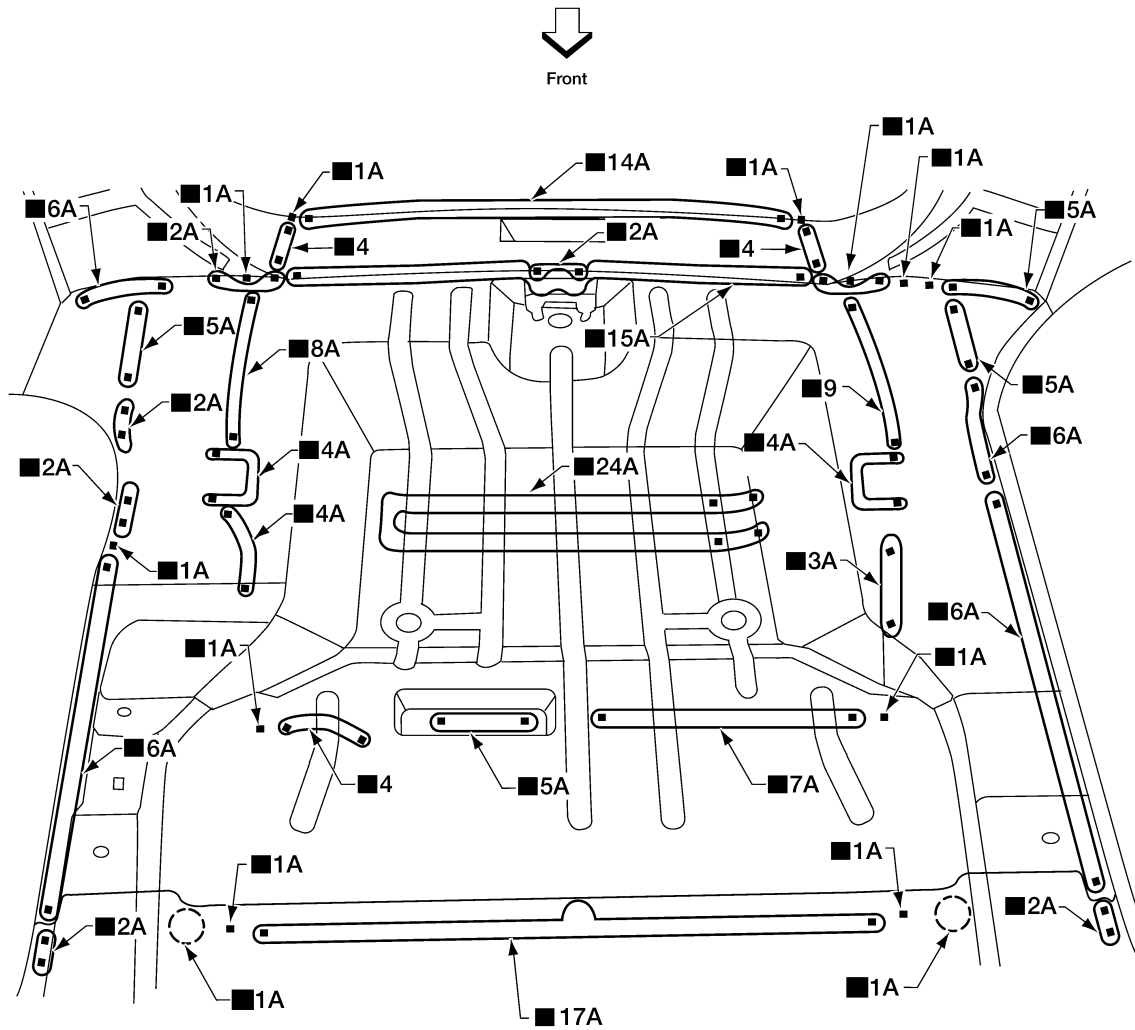
W1IA0867E

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

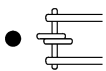
## REAR FLOOR REAR

### Service Joint

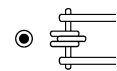


 3 panel plug weld below front floor

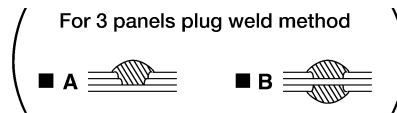
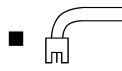
2-spot welds



3-spot welds



MIG Plug weld



MIG seam weld/  
Point weld



L1IA2128E

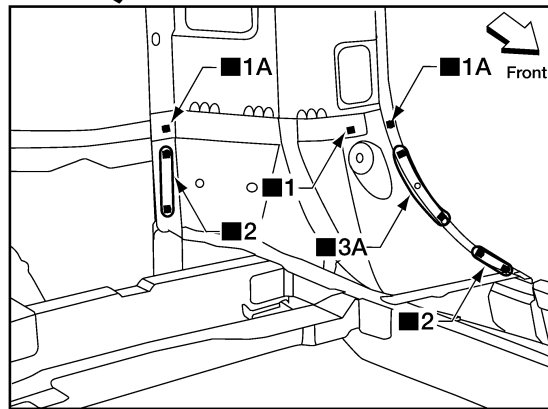
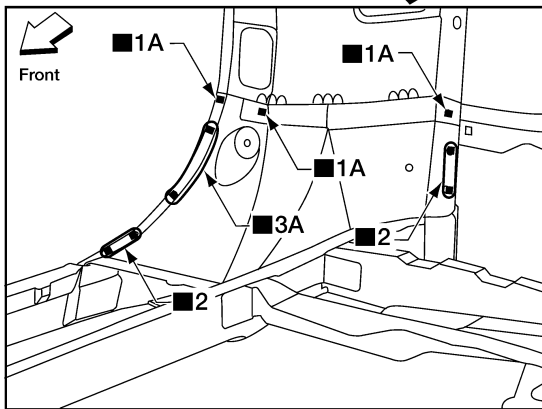
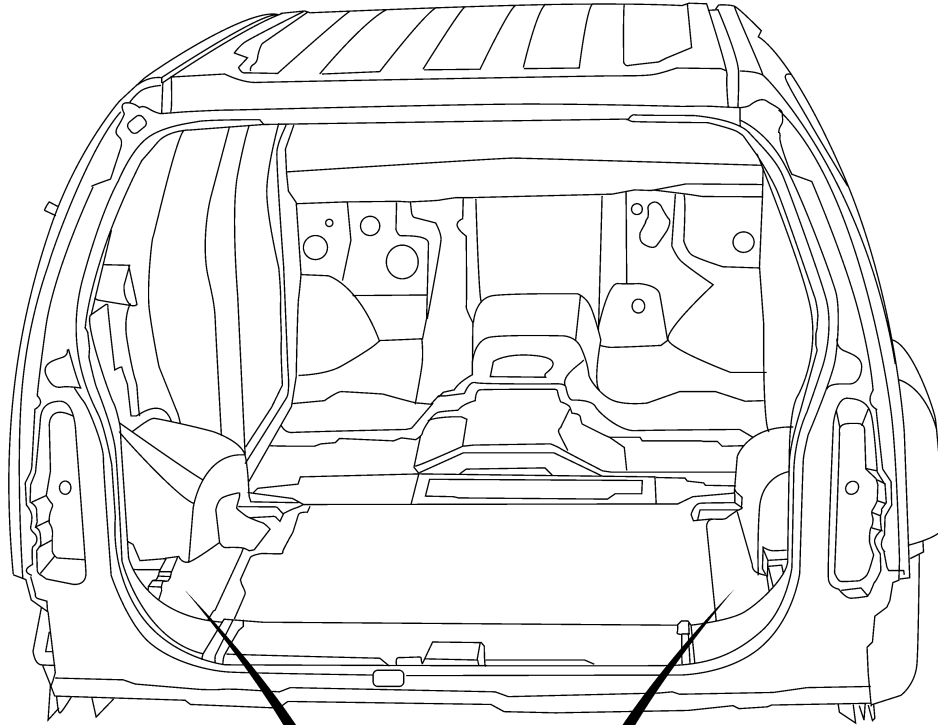
## REAR CROSSMEMBER

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

Rear Floor Upper Extensions

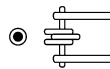
## Service Joint



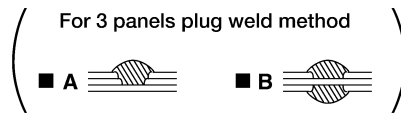
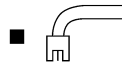
2-spot welds



3-spot welds



MIG Plug weld



MIG seam weld/  
Point weld



W1IA0868E

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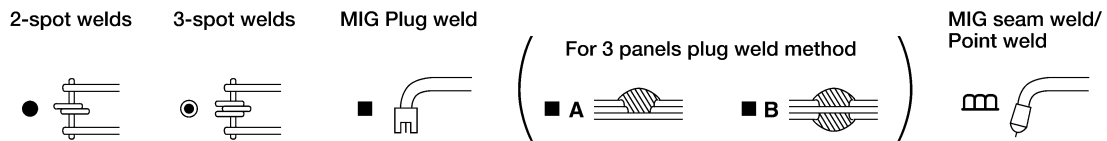
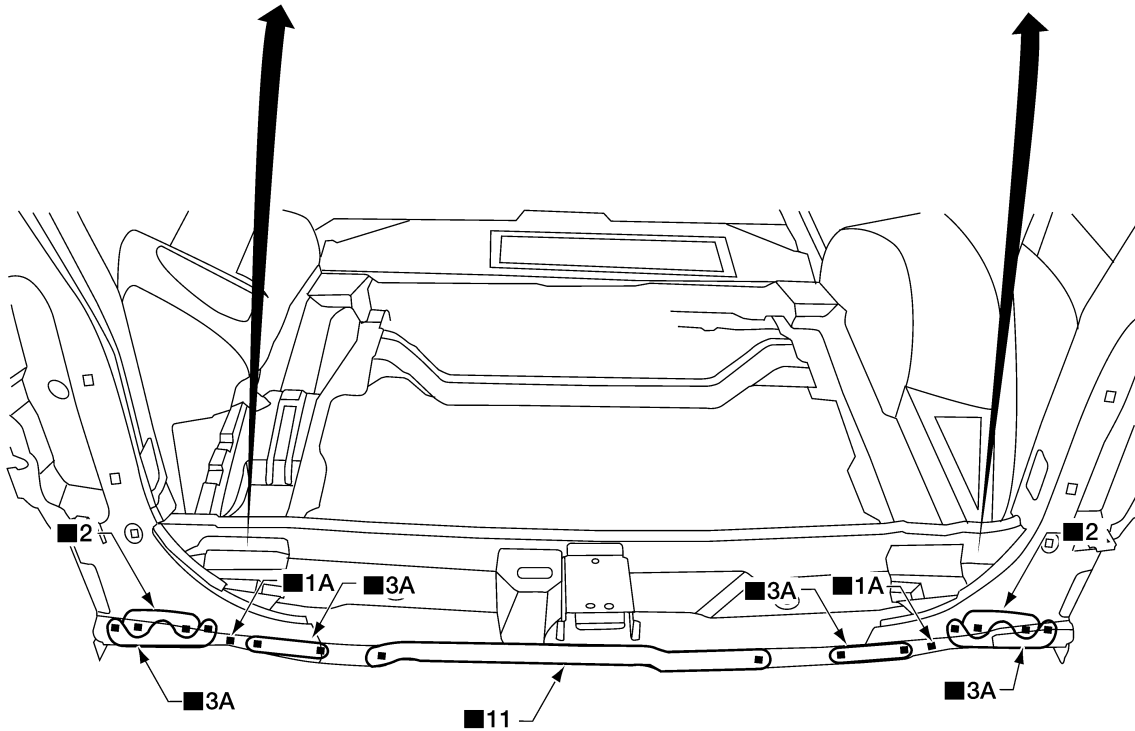
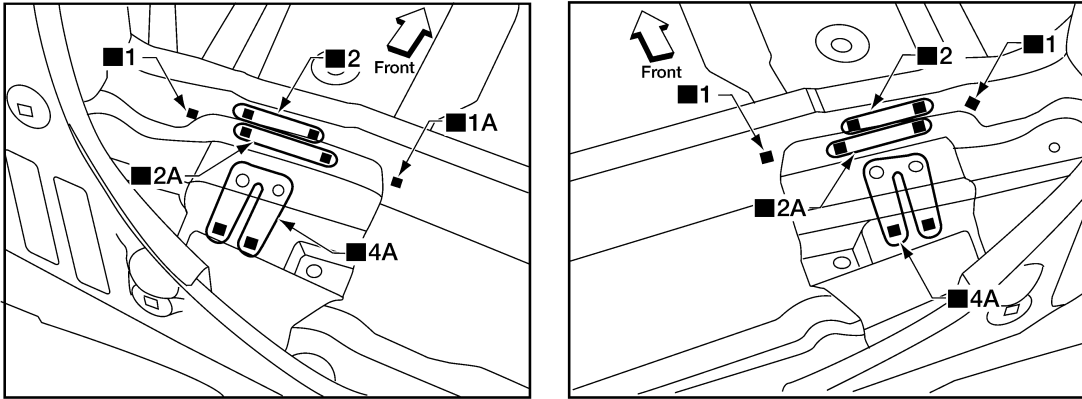
BRM

# REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

Crossmember

## Service Joint



W1IA0869E

## CRUSH HORN

### CAUTION:

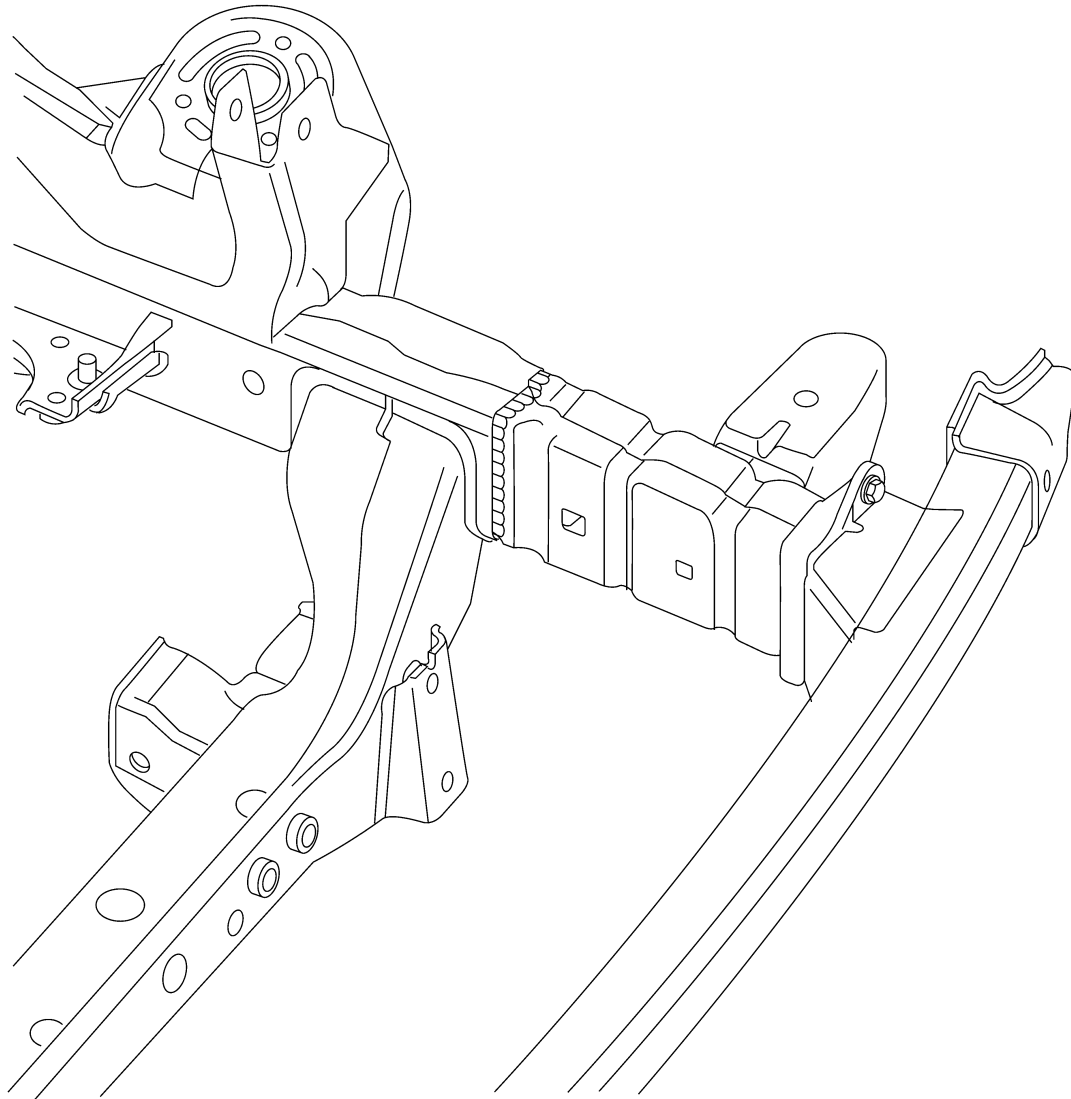
When replacing a damaged crush horn on N50 model, do not choose partial replacement method, such as cutting and butt-joint welding the crush horn.

# REPLACEMENT OPERATIONS

## < REMOVAL AND INSTALLATION >

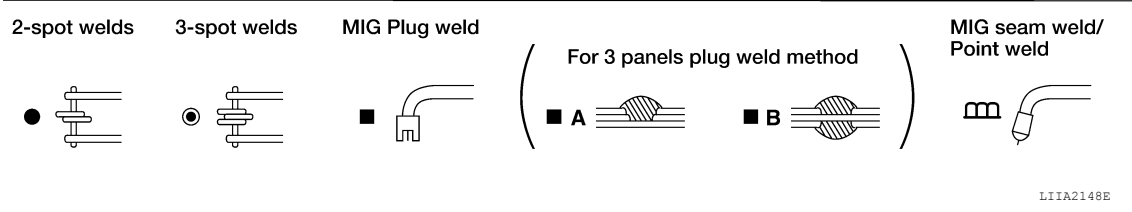
Be sure to replace the entire crush horn when the crush horn has damage at the back of the body mounting bracket.

### Service Joint



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### Foam Repair

INFOID:000000006253962

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

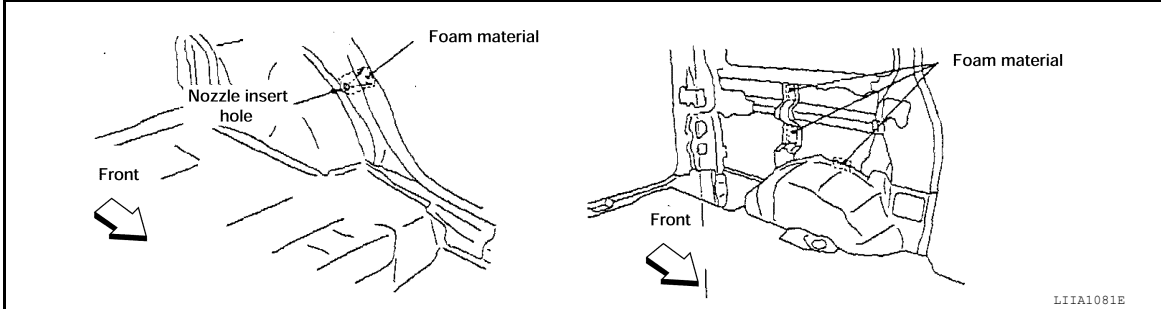
# REPLACEMENT OPERATIONS

## < REMOVAL AND INSTALLATION >

Use commercially available spray foam for sealant (foam material) repair of material used on vehicle. Read instructions on product for fill procedures.

### FILL PROCEDURES

1. Fill procedures after installation of service part.
  - Remove foam material remaining on vehicle side.
  - Clean area in which foam was removed.
  - Install service part.
  - Insert nozzle into hole near fill area and fill foam material or fill in enough to close gap with the service part.



2. Fill procedures before installation of service part.
  - Remove foam material remaining on vehicle side.
  - Clean area in which foam was removed.
  - Fill foam material on wheelhouse outer side.

#### NOTE:

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

- Install service part.

#### NOTE:

Refer to label for information on working times.

