

SECTION **BRM**
 BODY REPAIR

CONTENTS

VEHICLE INFORMATION	2	Description	16	F
BODY EXTERIOR PAINT COLOR	2	Anti-Corrosive Wax	16	
Body Exterior Paint Color	2	Undercoating	17	
PRECAUTION	3	BODY SEALING	19	G
PRECAUTIONS	3	Description	19	
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	3	REPLACEMENT OPERATIONS	22	H
Precaution for Heating Metal	3	Description	22	
HANDLING PRECAUTIONS FOR PLASTICS	4	Hoodledge	25	
Precautions For Plastics	4	Front Side Member	27	I
PRECAUTIONS IN REPAIRING HIGH STRENGTH STEEL	8	Front Pillar	28	
High Strength Steel (HSS)	8	Dash Side	31	
Handling of Ultra High Strength Steel Plate Parts...	10	Center Pillar	32	J
PREPARATION	11	Roof	35	
REPAIRING MATERIAL	11	Outer Sill	36	
Foam Repair	11	Rear Fender	37	
BODY COMPONENT PARTS	12	Rear Panel	38	
Underbody Component Parts	12	Rear Floor Rear	39	
Body Component Parts	14	Rear Side Member Extension	40	
REMOVAL AND INSTALLATION	16	SERVICE DATA AND SPECIFICATIONS (SDS)	41	L
CORROSION PROTECTION	16	BODY ALIGNMENT	41	M
		Body Center Marks	41	
		Description	42	
		Engine Compartment	42	N
		Underbody	44	
		Passenger Compartment	47	
		Rear End Panel	48	O

BRM

BODY EXTERIOR PAINT COLOR

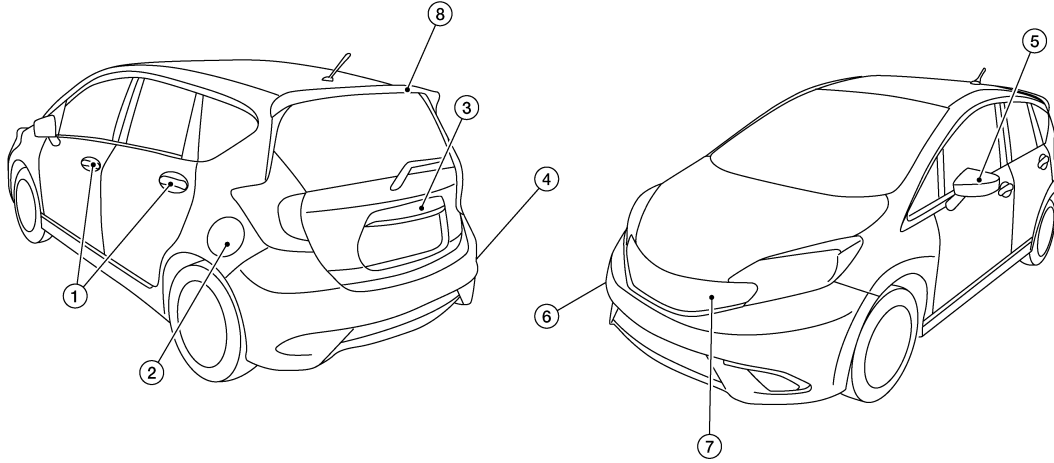
< VEHICLE INFORMATION >

VEHICLE INFORMATION

BODY EXTERIOR PAINT COLOR

Body Exterior Paint Color

INFOID:000000012430789



ALKIA4106ZZ

Component	Color code	B17	FAK	QAC	KH3	K23	KAD	NAH	QM1	
	Description	Blue	Green	White Pearl	Black	Silver	Gray	Red	White	
	Paint type	M	M	3P	2S	M	M	M	S	
	Hard clear coat	t	t	t	t	t	t	t	t	
1	Door outside handles	Body color	B17	FAK	QAC	KH3	K23	KAD	NAH	QM1
2	Fuel filler lid	Body color	B17	FAK	QAC	KH3	K23	KAD	NAH	QM1
3	Back door outer finisher	Body color	B17	FAK	QAC	KH3	K23	KAD	NAH	QM1
4	Rear bumper fascia	Body color	B17	FAK	QAC	KH3	K23	KAD	NAH	QM1
5	Door mirror	Body color	B17	FAK	QAC	KH3	K23	KAD	NAH	QM1
6	Front bumper fascia	Body color	B17	FAK	QAC	KH3	K23	KAD	NAH	QM1
7	Front grille	Black	(—)	(—)	(—)	(—)	(—)	(—)	(—)	(—)
8	Rear spoiler	Body color	B17	FAK	QAC	KH3	K23	KAD	NAH	QM1

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

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000012562862

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:000000012430791

- 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

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

BRM

HANDLING PRECAUTIONS FOR PLASTICS

< PRECAUTION >

HANDLING PRECAUTIONS FOR PLASTICS

Precautions For Plastics

INFOID:000000012430792

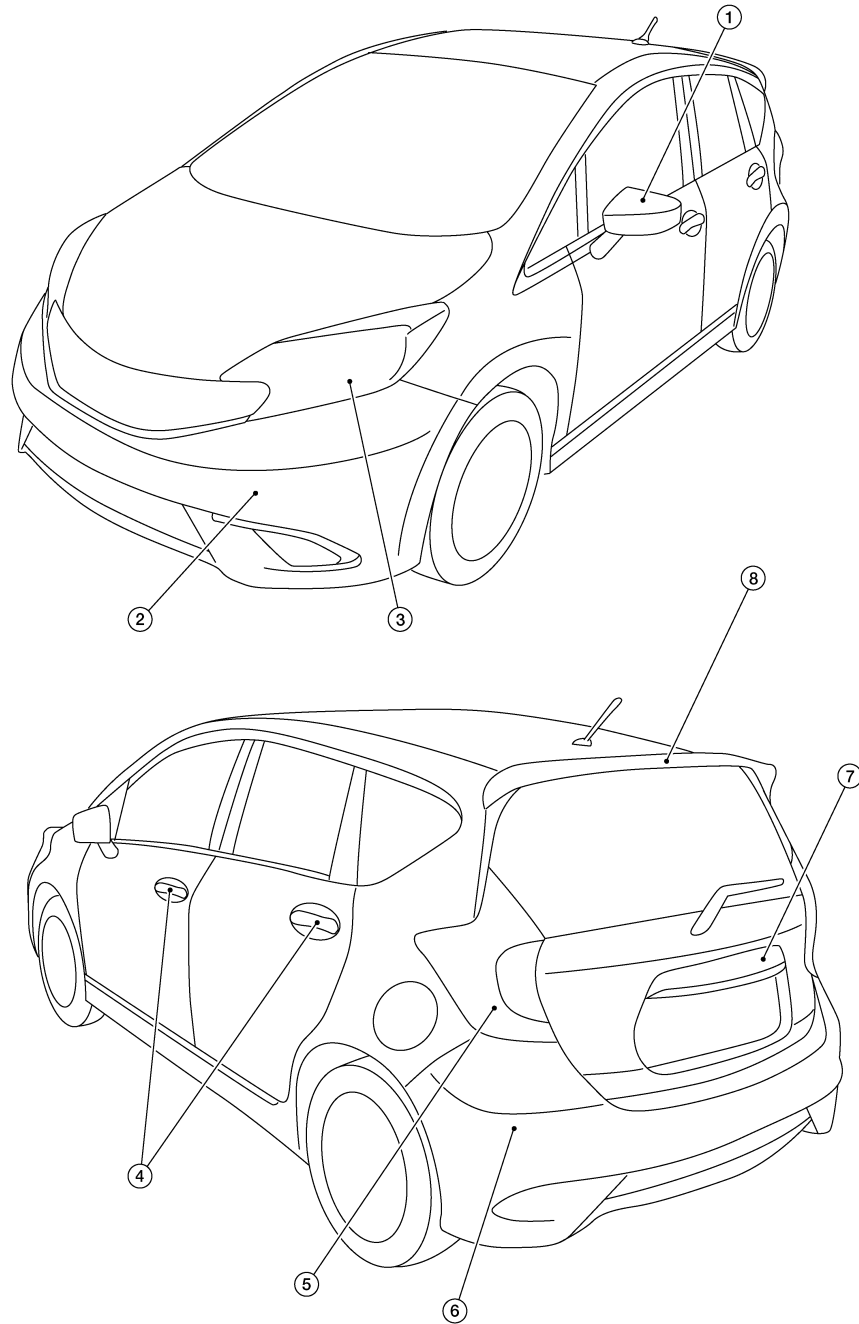
Abbreviation	Material name	Heatresisting temperature °C (°F)	Resistance to gasoline and solvents	Other cautions
PE	Polyethylene	60 (140)	Gasoline and most solvents are harmless if applied for a very short time (wipe up quickly).	Flammable
PVC	Poly Vinyl Chloride	80 (176)	Same as above.	Poison gas is 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

< PRECAUTION >



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

BRM

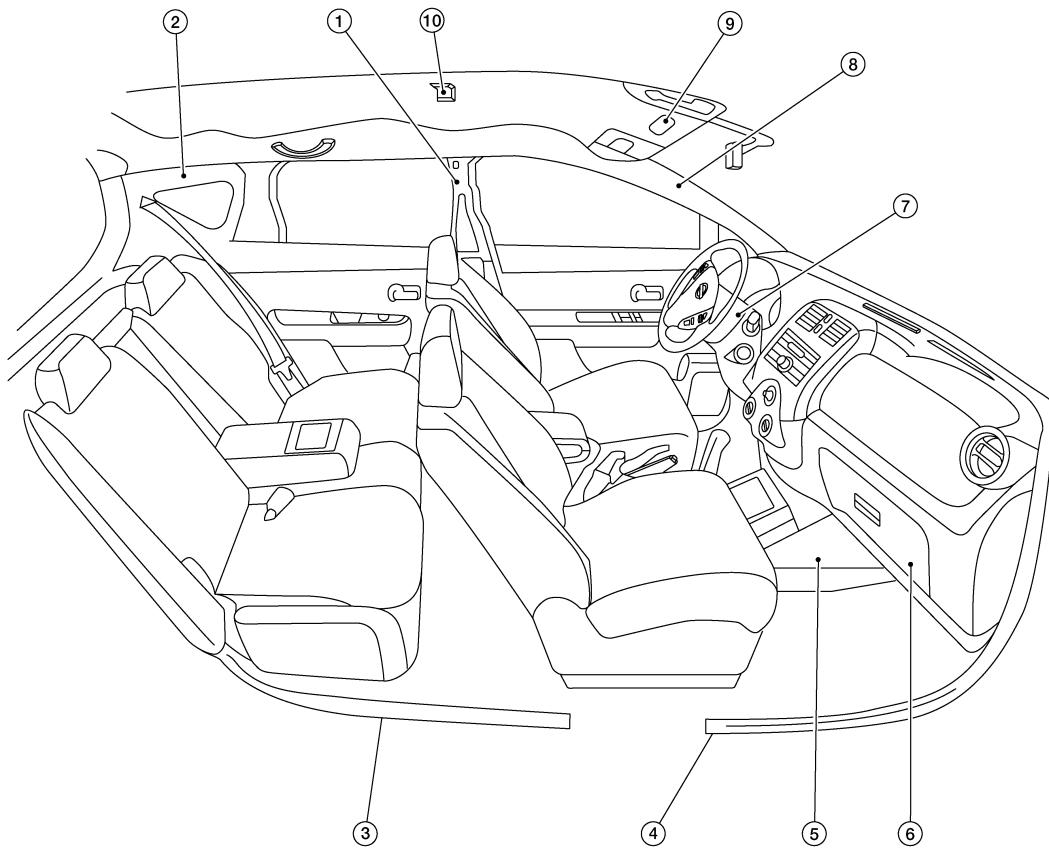
AWKIA3685ZZ

Item	Component	Abbreviation	Material
1.	Door Mirror	Base	PP Polypropylene
		Base cover	ASA Acrylonitrile Styrene Acrylate
		Housing	ABS Acrylonitrile Butadiene Styrene
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
8.	Rear spoiler	ABS	Acronitrile Butadiene Acrylate



AWKIA3211ZZ

Item	Component	Abbreviation	Material
1.	Center pillar upper finisher	PP	Polypropylene
2.	Luggage side upper finisher	PP	Polypropylene
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

HANDLING PRECAUTIONS FOR PLASTICS

< PRECAUTION >

Item	Component	Abbreviation	Material
9.	Map lamp	Lens	PC Polycarbonate
		Housing	PP Polypropylene
		Switch	PC Polycarbonate
10.	Interior room lamp	Lens	PC Polycarbonate
		Housing	PP Polypropylene
		Button	PC+ABS Polycarbonate + Acrylonitrile Butadiene Styrene

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

BRM

PRECAUTIONS IN REPAIRING HIGH STRENGTH STEEL

< PRECAUTION >

PRECAUTIONS IN REPAIRING HIGH STRENGTH STEEL

High Strength Steel (HSS)

INFOID:000000012430793

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:

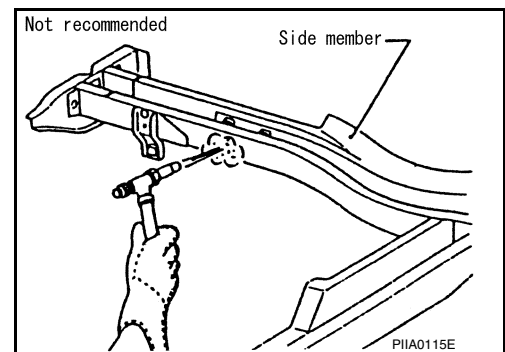
Tensile strength	Nissan/Infiniti designation	Major applicable parts
373 N/mm ² (38kg/mm ² ,54klb/sq in)	SP130	<ul style="list-style-type: none"> • Front side member assembly • Hoodledge assembly • Upper dash • Front pillar reinforcement assembly • Rear side member assembly • Other reinforcements

SP130 is the most commonly used HSS.

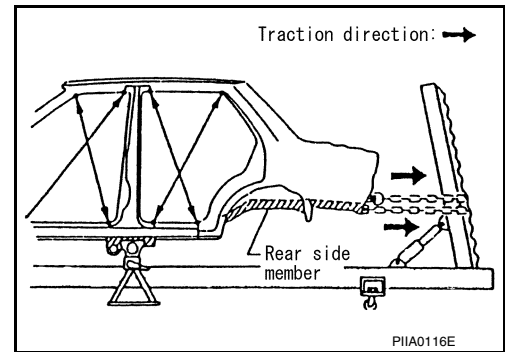
Read the following precautions when repairing HSS:

1. Additional points to consider

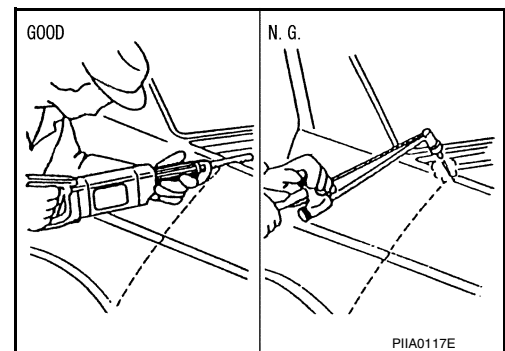
- The repair of reinforcements (such as side members) by heating is not recommended since it may weaken the component. When heating is unavoidable, do not heat HSS parts above 550°C (1,022°F). Verify heating temperature with a thermometer. (Crayon-type and other similar type thermometer are appropriate.)



- 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.



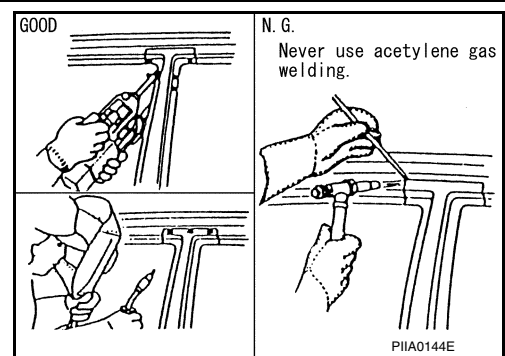
- When cutting HSS panels, avoid gas (torch) cutting if possible. Instead, use a saw to avoid weakening surrounding areas due to heat. If gas (torch) cutting is unavoidable, allow a minimum margin of 50 mm (1.97in).



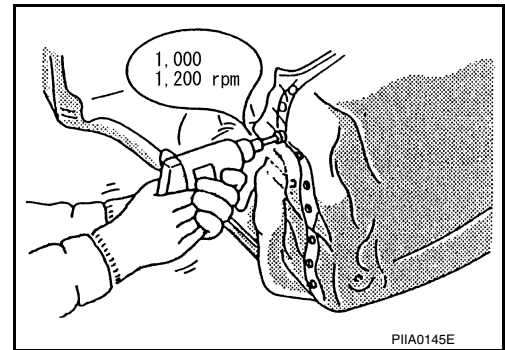
PRECAUTIONS IN REPAIRING HIGH STRENGTH STEEL

< 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.



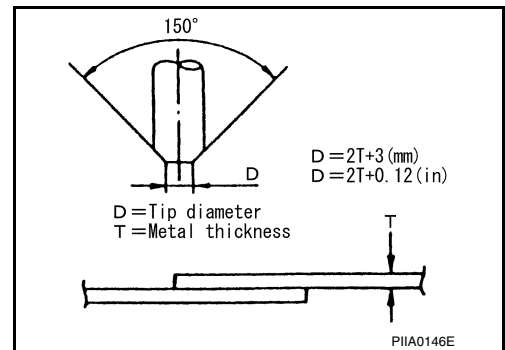
- The spot weld on HSS panels is harder than that of an ordinary steel panel. Therefore, when cutting spot welds on a HSS panel, use a low speed high torque drill (1,000 to 1,200 rpm) to increase drill bit durability and facilitate the operation.



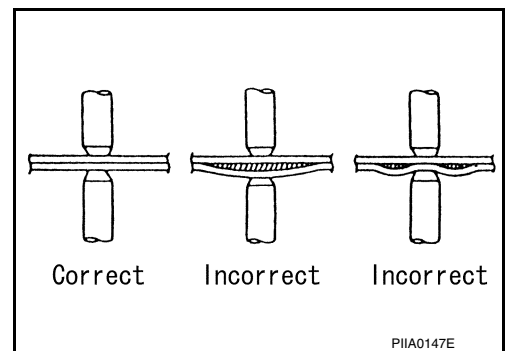
2. Precautions in spot welding HSS

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.



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

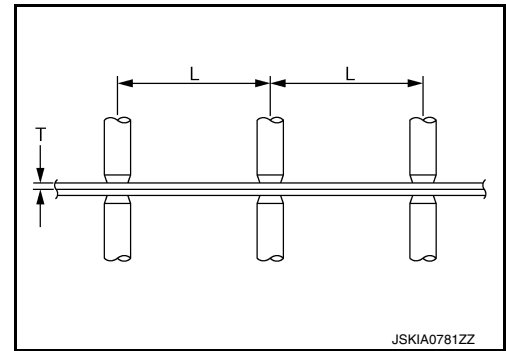
PRECAUTIONS IN REPAIRING HIGH STRENGTH STEEL

< 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

INFOID:000000012430794

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.

REPAIRING MATERIAL

< PREPARATION >

PREPARATION

REPAIRING MATERIAL

Foam Repair

INFOID:0000000012430795

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.

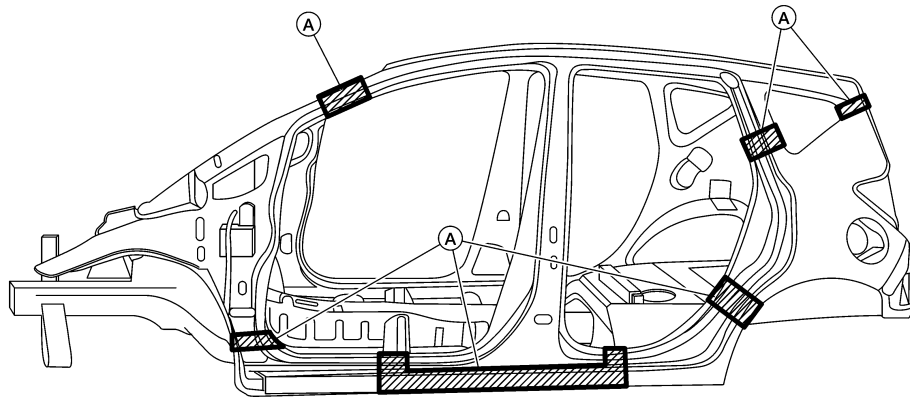
NOTE:

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.



ALKIA3165ZZ

A. Urethane foam

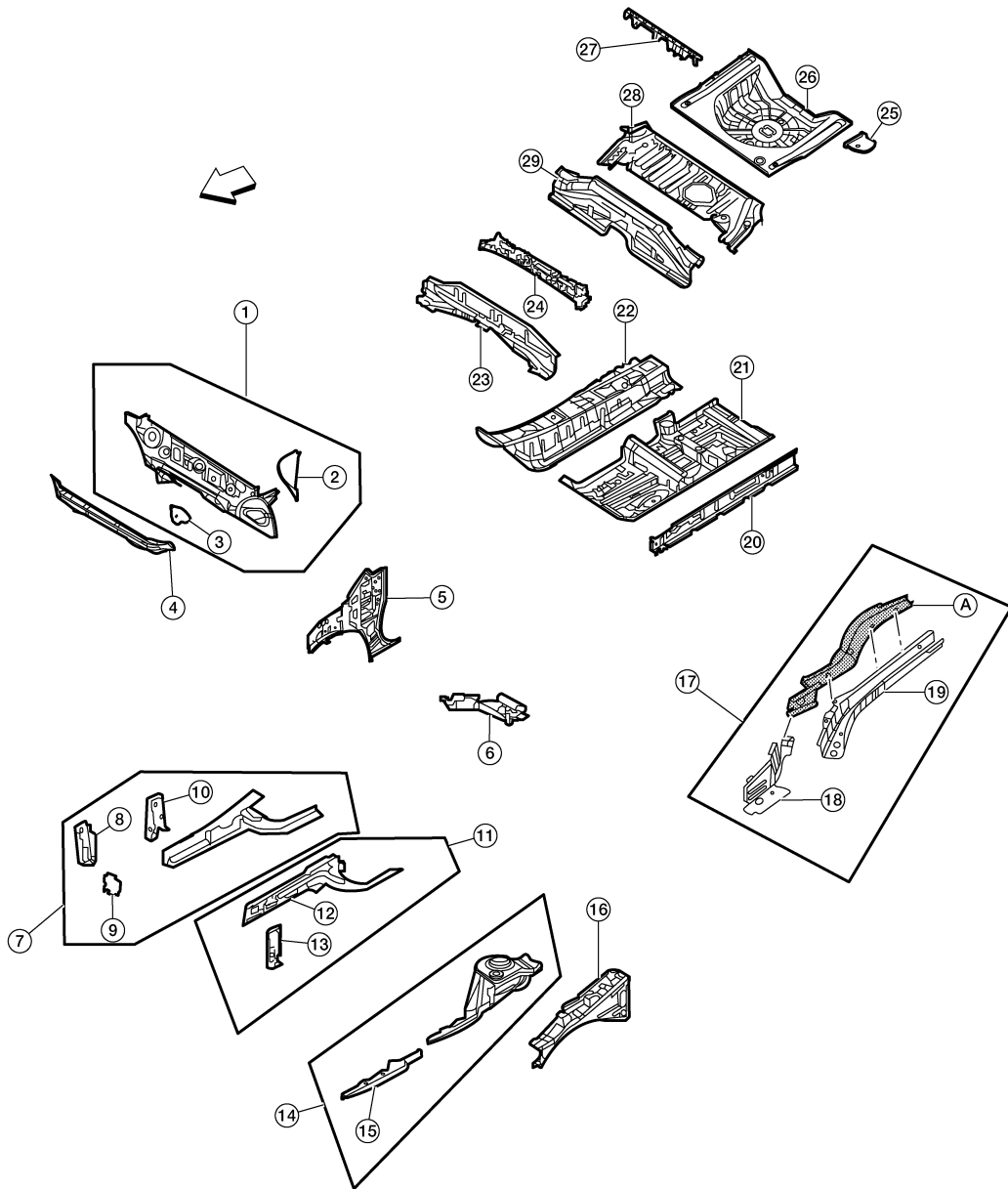
BODY COMPONENT PARTS


< PREPARATION >

BODY COMPONENT PARTS

Underbody Component Parts

INFOID:000000012430796



 High strength steel (HSS) portions

AWKIA2649ZZ

BODY COMPONENT PARTS

< PREPARATION >

1. Lower dash	2. Lower dash reinforcement (LH/RH)	3. Lower dash close out panel	A
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)	B
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)	C
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	D
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		E

BRM

L

M

N

O

P



BODY COMPONENT PARTS

< PREPARATION >

Body Component Parts

INFOID:000000012430797



-  Both sided anti-corrosive pre-coated steel portions
-  Both sided anti-corrosive steel and HSS portions

AWKIA3655ZZ

BODY COMPONENT PARTS

< PREPARATION >

1. Hood assembly (Under 440 MPa)	2. Front fender (LH/RH) (Under 440 MPa)	3. Front roof rail assembly (Under 440 MPa)	A
4. Roof center reinforcement (590 MPa)	5. Roof bow 3rd (Under 440 MPa)	6. Roof bow 4th (Under 440 MPa)	B
7. Rear roof rail assembly (Under 440 MPa)	8. Roof (Under 440 MPa)	9. Rear bumper upper retainer (Under 440 MPa)	B
10. Center pillar lower (Under 440 MPa)	11. Outer rear wheel house (LH/RH) (Under 440 MPa)	12. Front inner upper pillar (440 MPa)	C
13. Center pillar inner upper (LH/RH) (440 MPa)	14. Roof rail inner side (LH/RH) (440 MPa)	15. Rear panel upper (Under 440 MPa)	C
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)	D
19. Rear inner pillar (LH/RH) (Under 440 MPa)	20. Rear pillar reinforcement (LH/RH) (Under 440 MPa)	21. Center pillar reinforcement (LH/RH) (440 MPa)	D
22. Rear pillar reinforcement (LH/RH) (Under 440 MPa)	23. Rear seat belt anchor (LH/RH) (440 MPa)	24. Body side outer front (LH/RH) (Under 440 MPa)	E
25. Body side outer rear (LH/RH) (Under 440 MPa)	26. Body side outer sill (LH/RH) (Under 440 MPa)	27. Front door inner (LH/RH) (Under 440 MPa)	F
28. Rear door inner (LH/RH) (Under 440 MPa)	29. Front door outer (LH/RH) (Under 440 MPa)	30. Rear door outer (LH/RH) (Under 440 MPa)	F
31. Center pillar inner reinforcement (LH/RH) (440 MPa)	32. Rear lid assembly (Under 440 MPa)	⇐ Front	G

BRM

L

M

N

O

P

CORROSION PROTECTION

< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION

CORROSION PROTECTION

Description

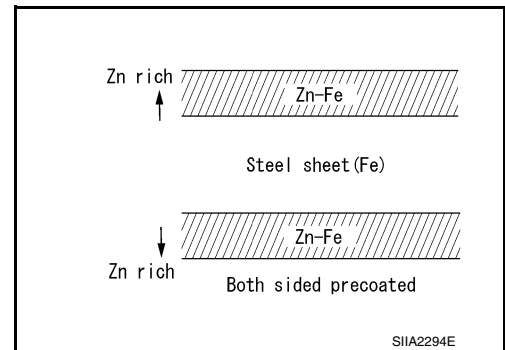
INFOID:000000012430798

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.



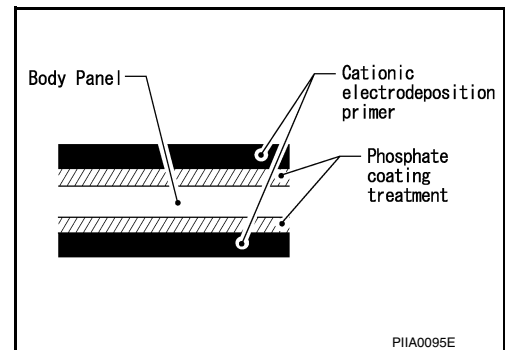
Nissan Genuine Service Parts are fabricated from galvannealed steel. Therefore, it is recommended that GENUINE NISSAN PARTS or equivalent be used for panel replacement to maintain the anti-corrosive performance built into the vehicle at the factory.

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

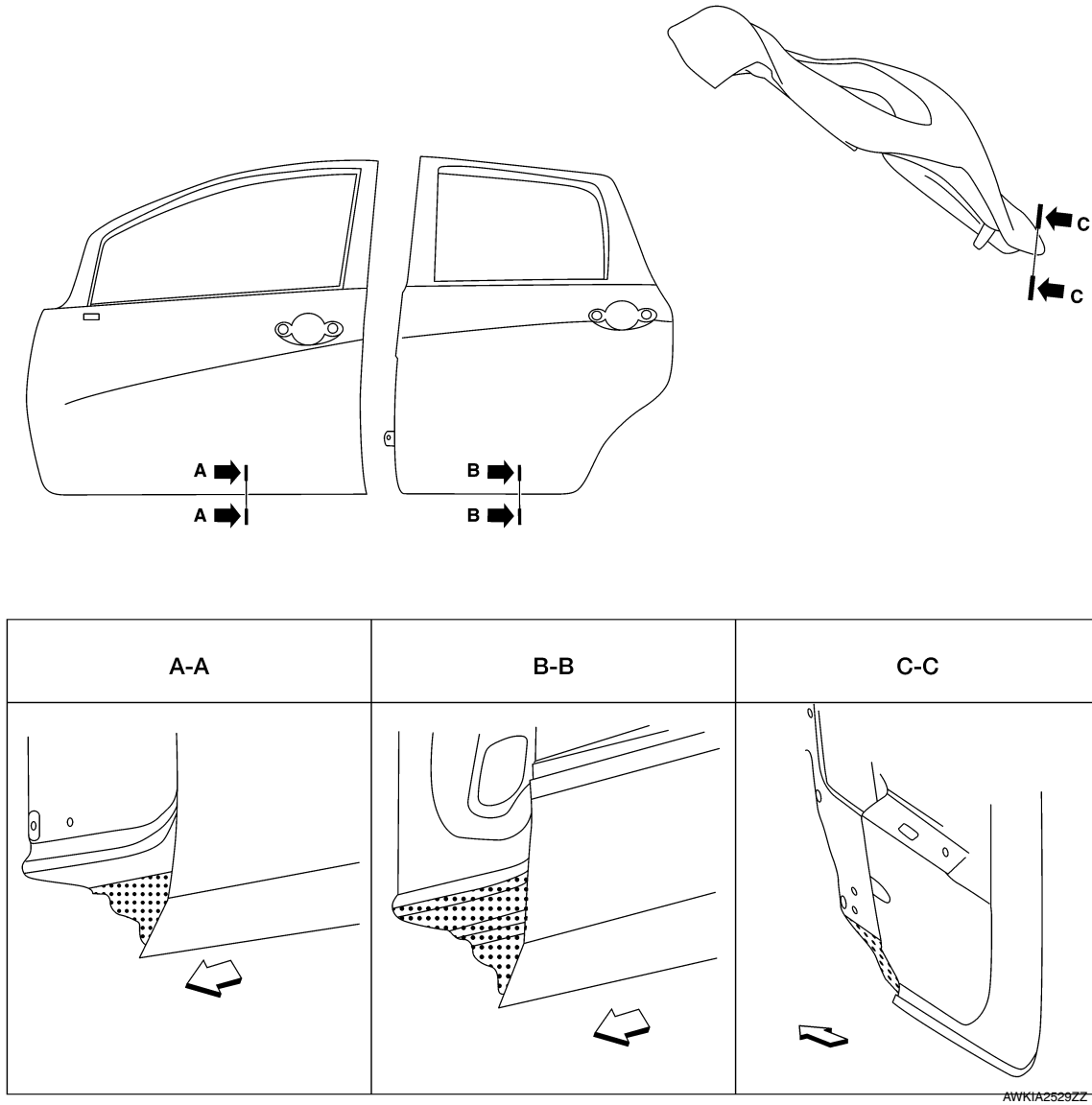
INFOID:000000012430799


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:000000012430800

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.

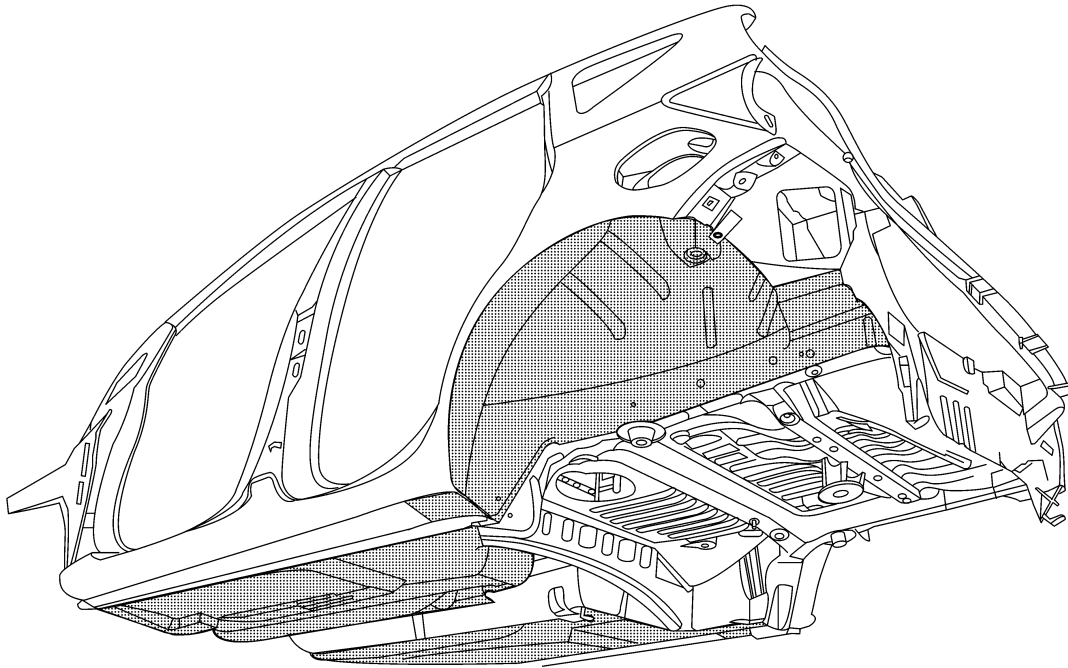
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P

BRM


CORROSION PROTECTION

< REMOVAL AND INSTALLATION >

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



AWKIA2530ZZ

 Indicates anti-corrosive wax coated portions

BODY SEALING

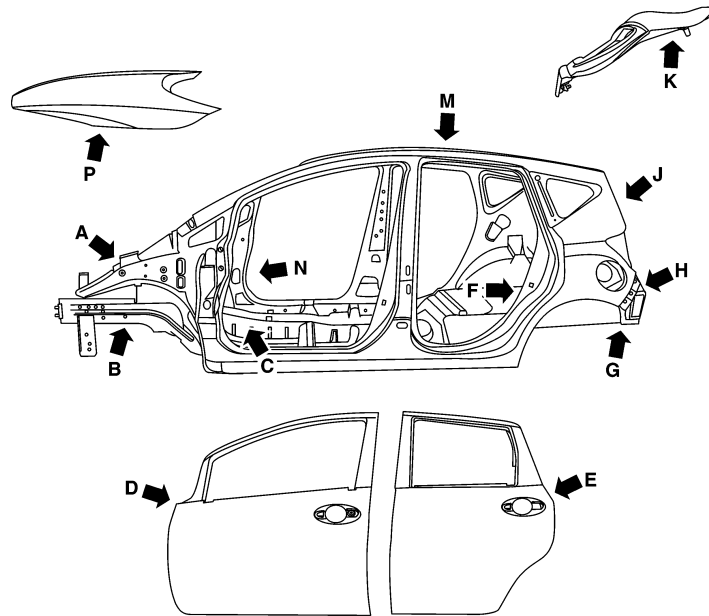
< REMOVAL AND INSTALLATION >

BODY SEALING

Description

INFOID:000000012430801

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.



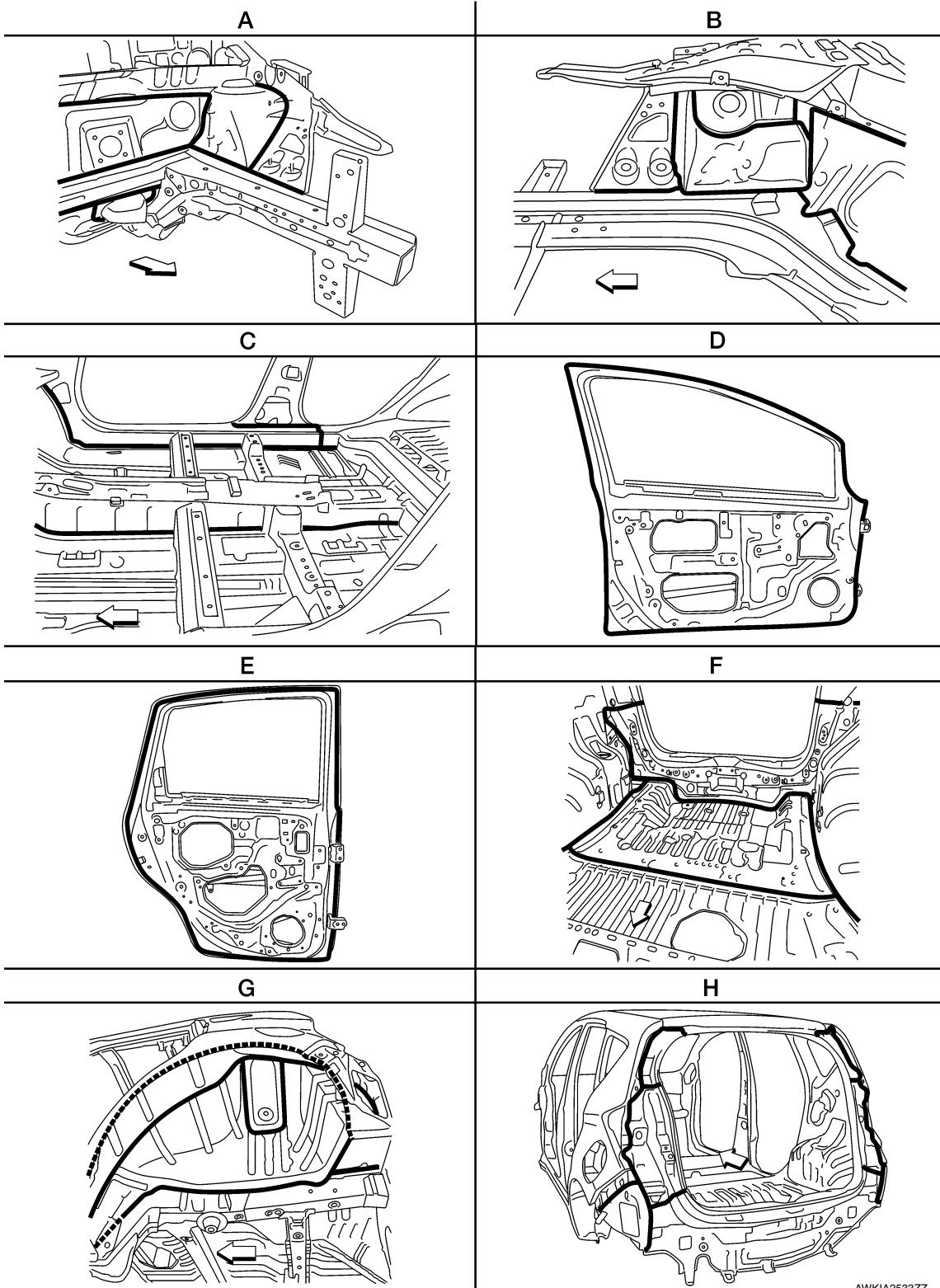
AWKIA2531ZZ

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

BRM

BODY SEALING

< REMOVAL AND INSTALLATION >

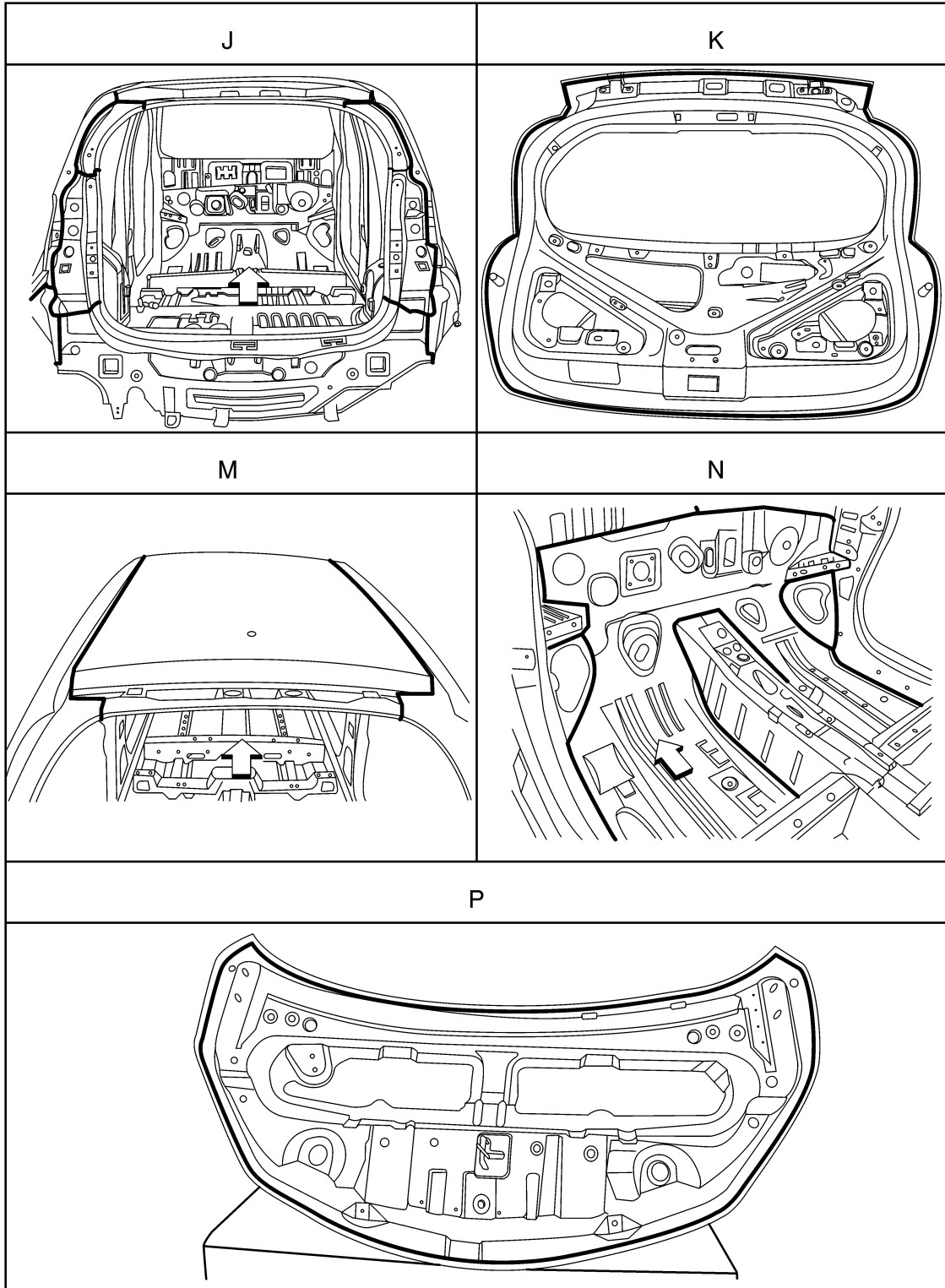


AWKIA2533ZZ

← Front

BODY SEALING

< REMOVAL AND INSTALLATION >



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

BRM

← Front

ALKIA3142ZZ

REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

REPLACEMENT OPERATIONS

Description

INFOID:000000012430802

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.


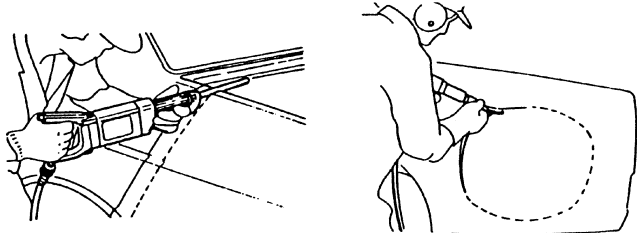


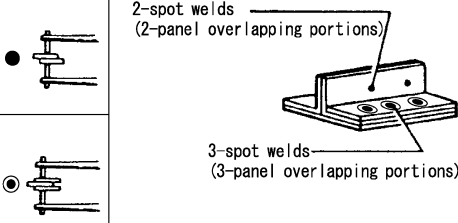
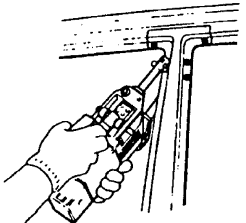


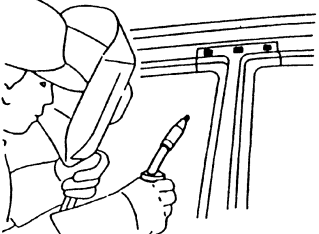
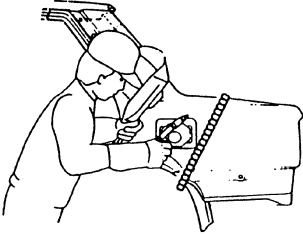

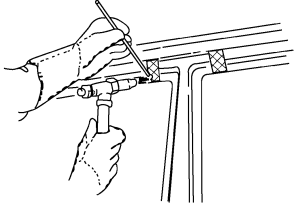
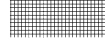
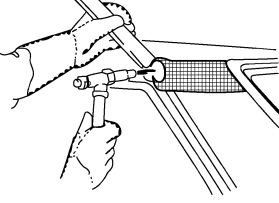

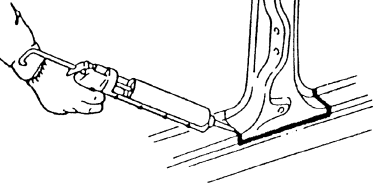
Technicians are also encouraged to read Body Repair Manual (Fundamentals) in order to ensure that the original functions and quality of the vehicle can be maintained. The Body Repair Manual (Fundamentals) contains additional information, including cautions and warning, that are not including in this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

REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

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

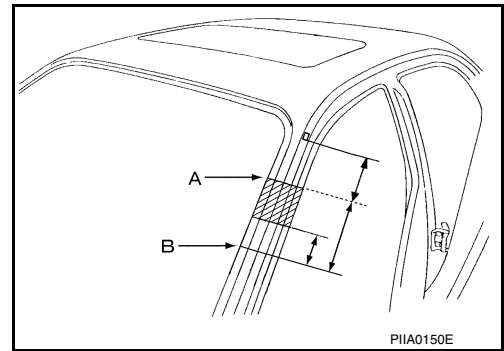
 Saw cut or air chisel cut		
Spot weld  2-spot welds  3-spot welds	 2-spot welds (2-panel overlapping portions) 3-spot welds (3-panel overlapping portions)	
MIG plug weld  MIG seam weld/ Point weld 		
Brazing 		
Soldering 		
Sealing 		

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

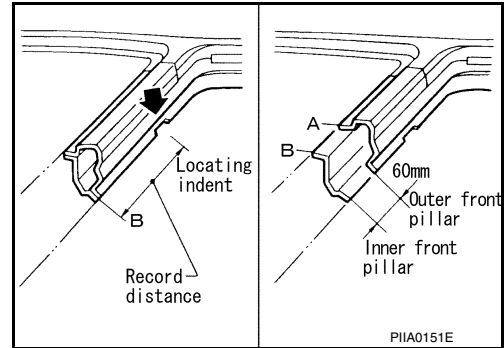
REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

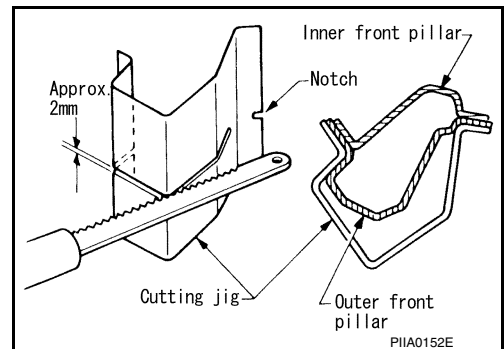
- Front pillar butt joint can be determined anywhere within shaded area (A) as shown in the figure. The best location for the butt joint is at position (B) due to the construction of the vehicle. Refer to the front pillar section.



- 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).

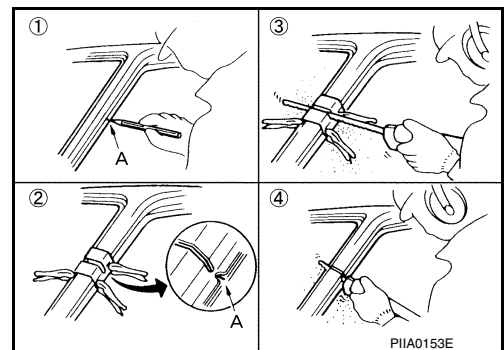


- Prepare a cutting jig to make outer pillar easier to cut. Also, this will permit service part to be accurately cut at joint position.



- 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.

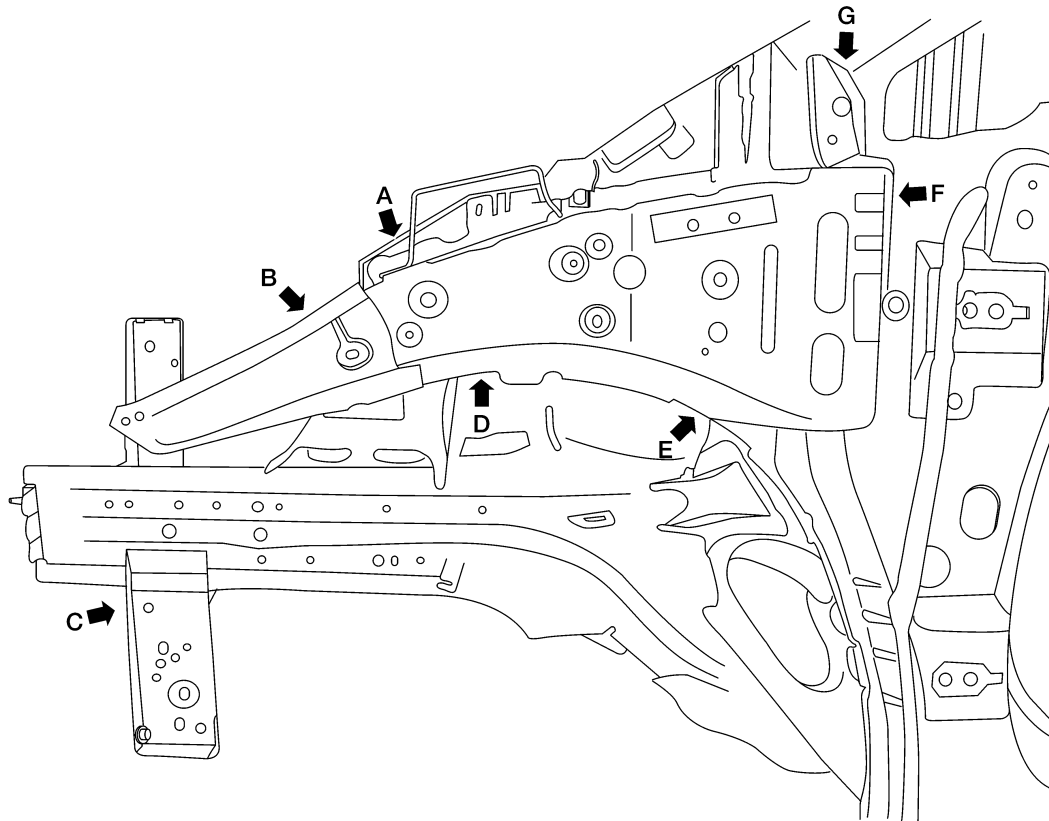


REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

Hoodledge

INFOID:000000012430803



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 |

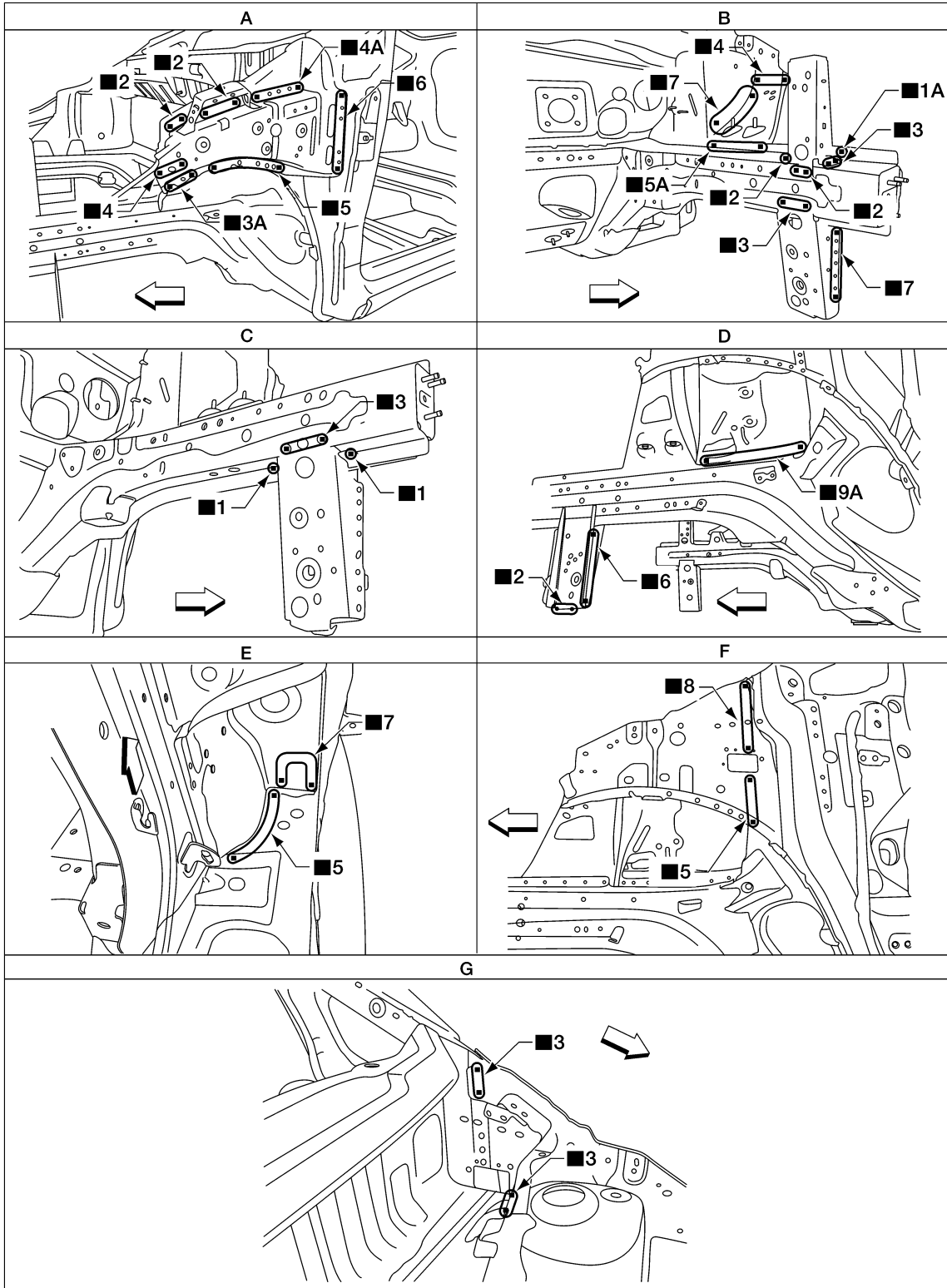
A
B
C
D
E
F
G
H
I
J

BRM

L
M
N
O
P

REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >



AWKIA255ZZ

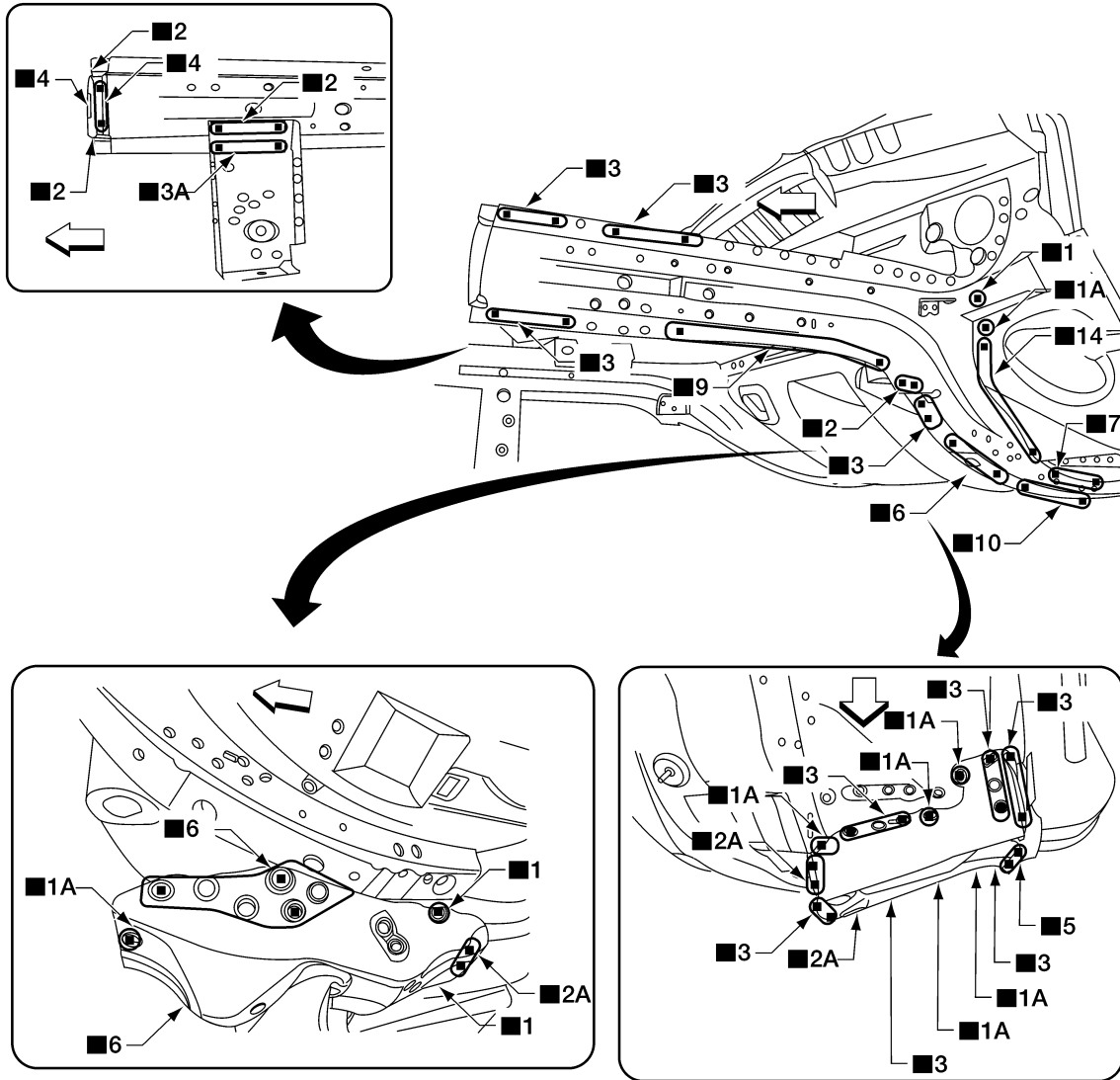
← Front

REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

Front Side Member

INFOID:000000012430804



AWKIA2548ZZ

Replacement parts

- Front side member outside

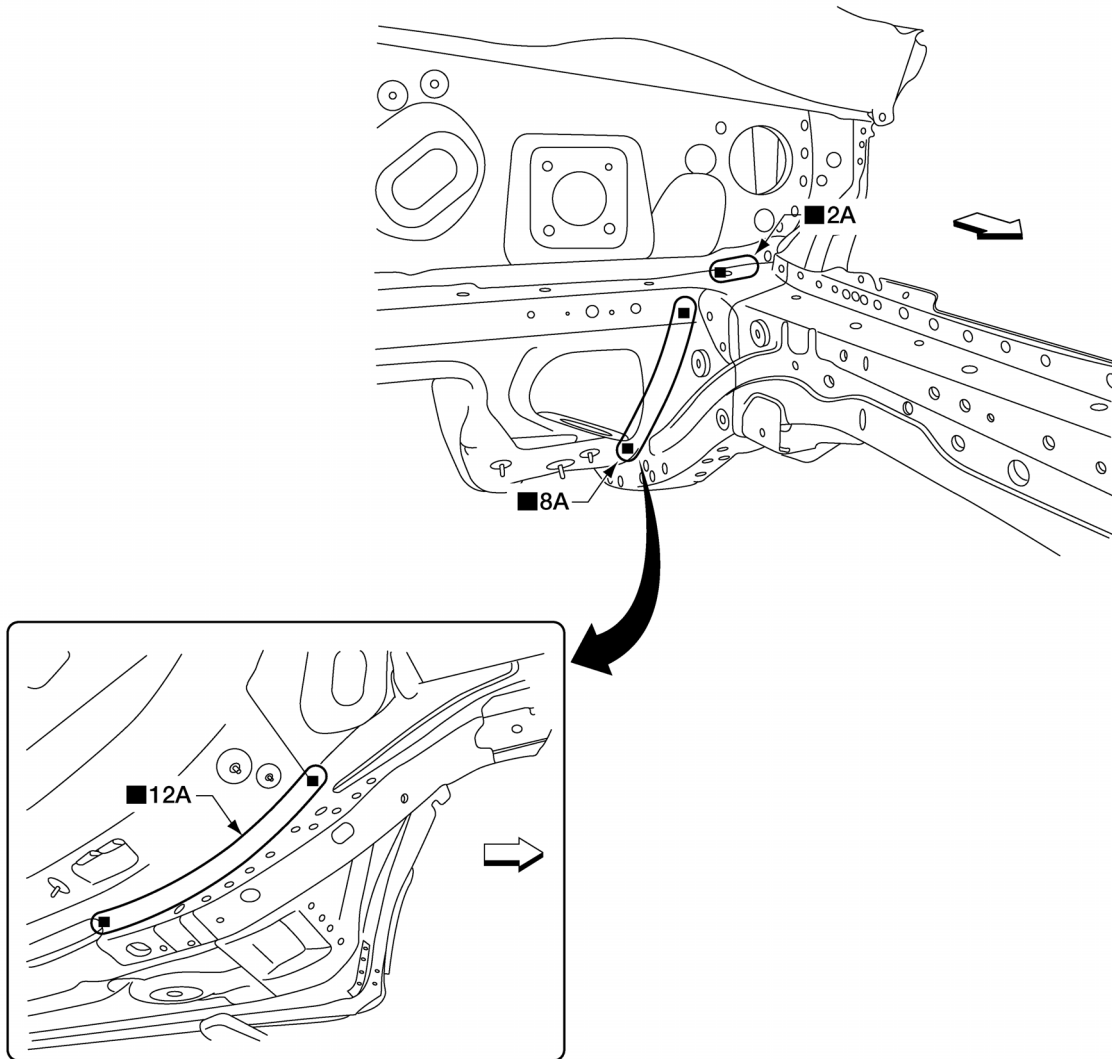
← Front

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

BRM

REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >



AWKIA2538ZZ

Replacement parts

- Front side member inner

↔ Front

Front Pillar

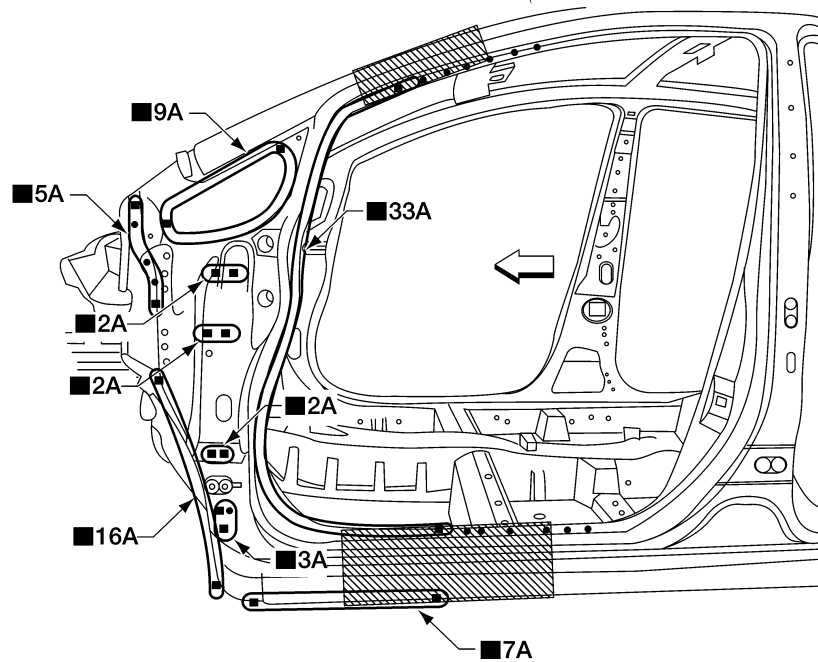
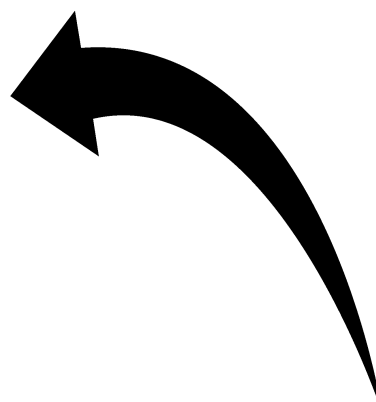
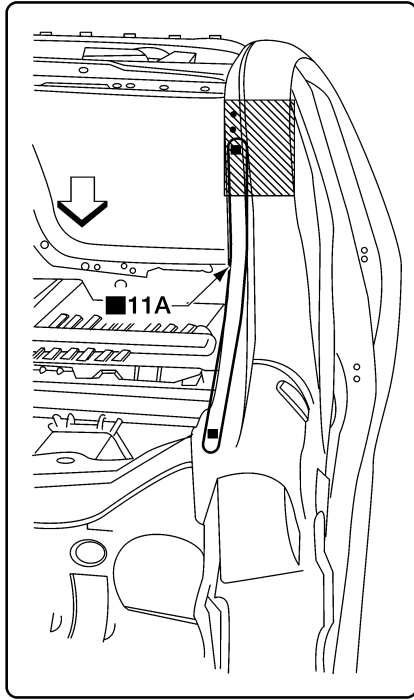
INFOID:000000012430805

OUTER

Work after hoodledge and hoodledge reinforcement rear has been removed.

REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >



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

Replacement parts

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

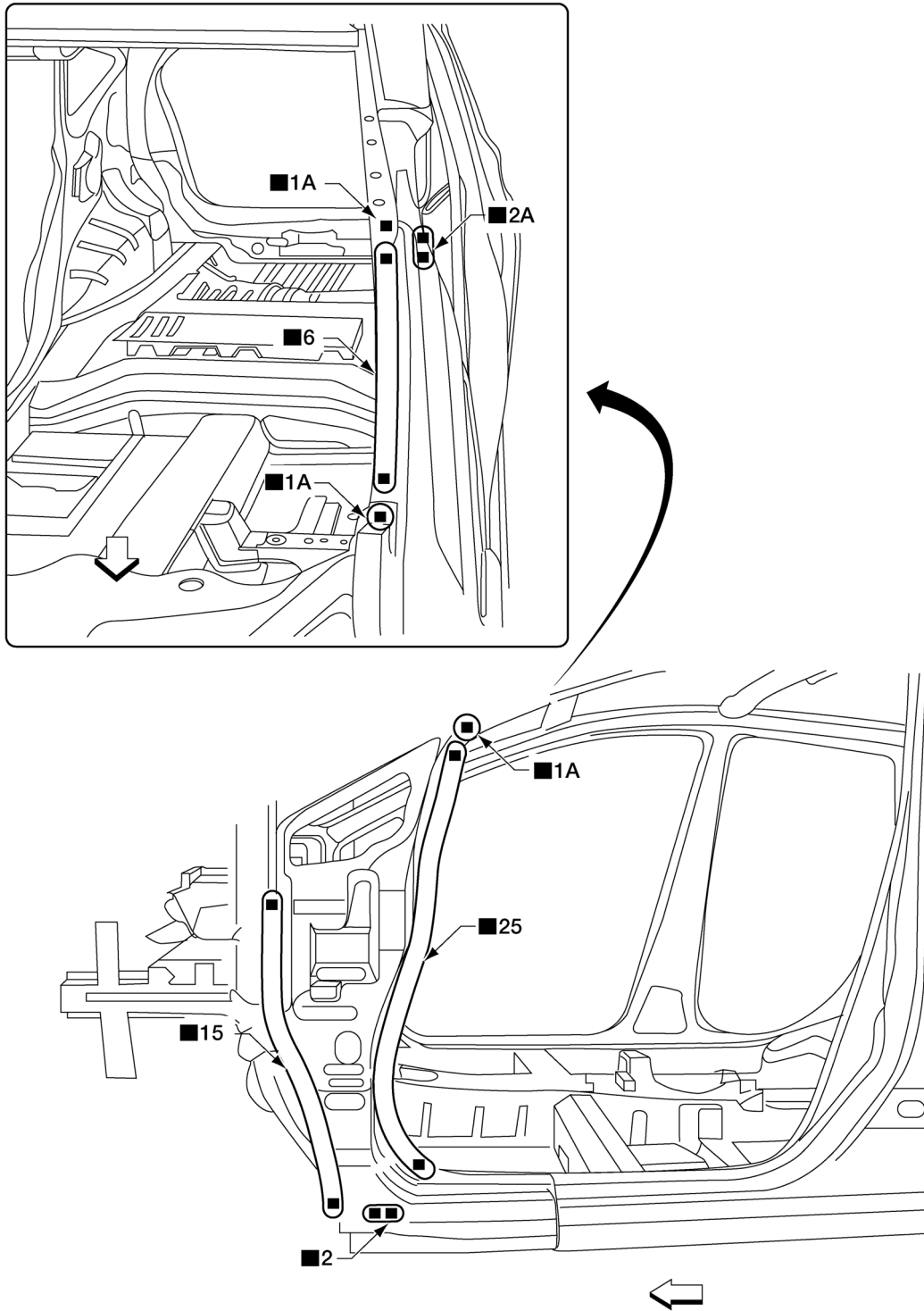
REINFORCEMENT

Work after front pillar outer has been removed.

AWKIA2539ZZ

REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >



AWKIA2540ZZ

Replacement parts

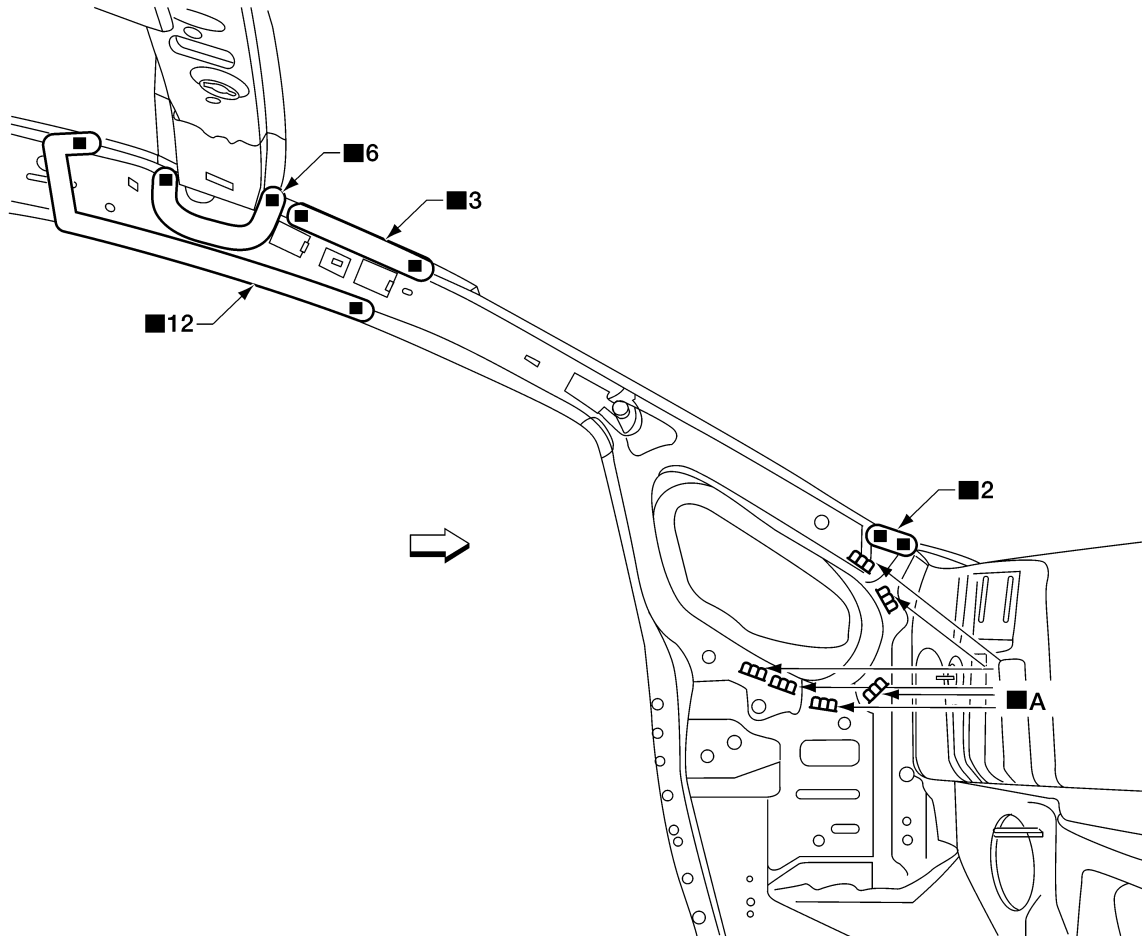
- Front pillar reinforcement
- ⇐ Front

INNER

Work after front pillar reinforcement has been removed.

REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >



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

BRM

ALKIA3156ZZ

Replacement parts

- Front pillar inner reinforcement
- A. Mig welds

← Front

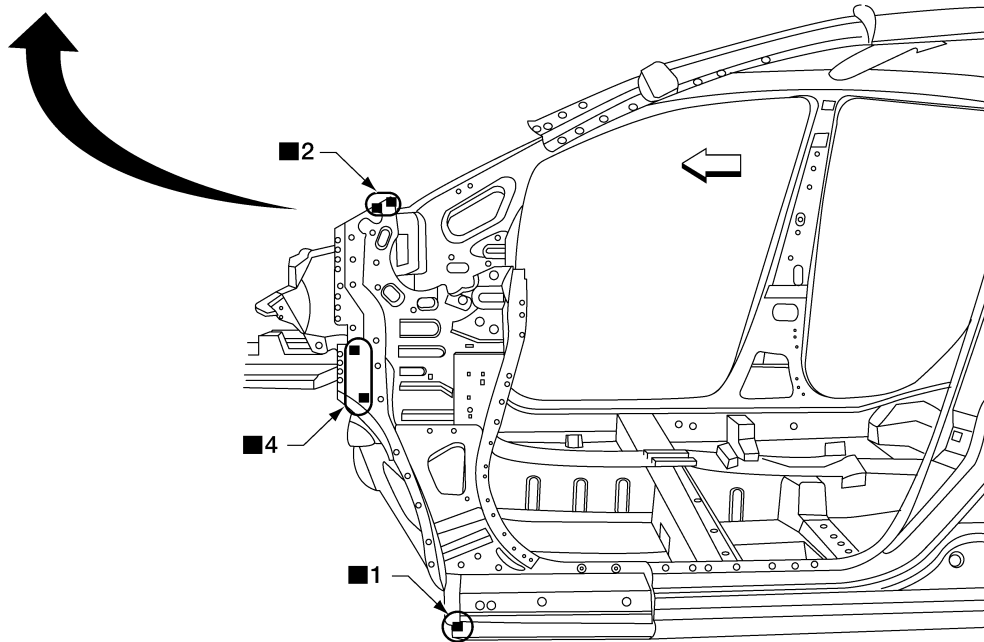
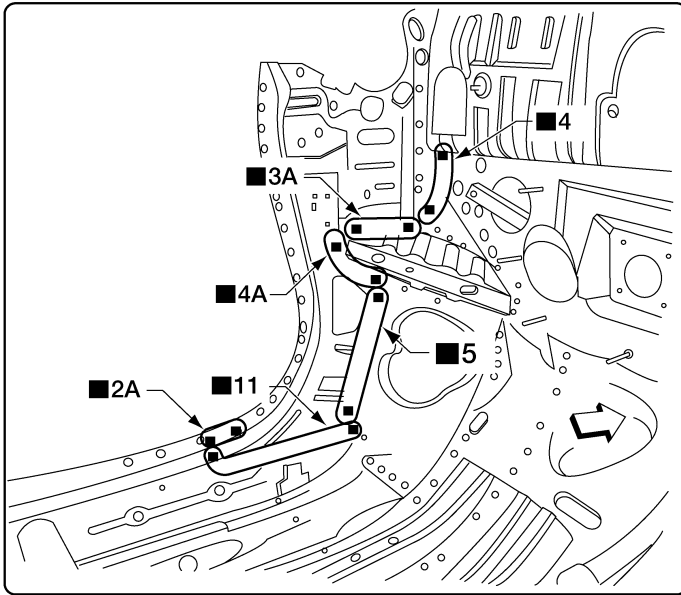
Dash Side

INFOID:000000012430806

Work with front pillar reinforcement removed.

REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >



Replacement parts

● Dash side

← Front

Center Pillar

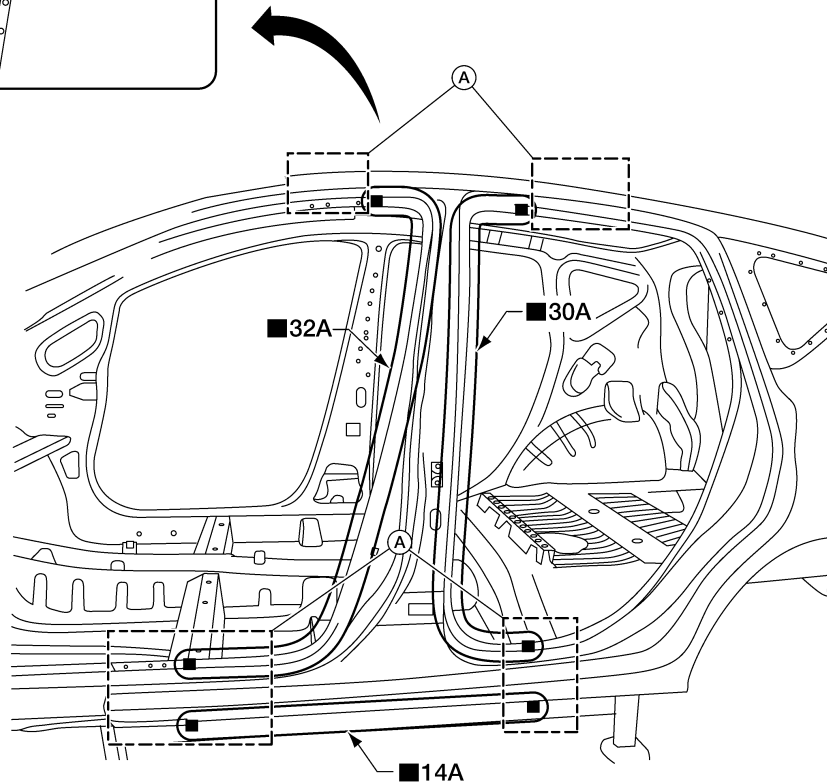
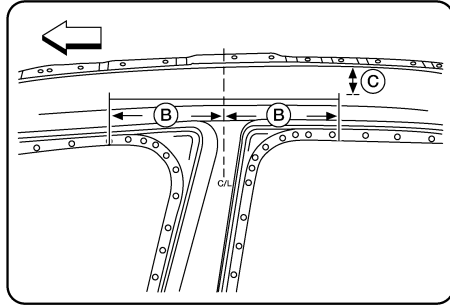
OUTER

AWKIA2541ZZ

INFOID:000000012430807

REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >



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

BRM

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

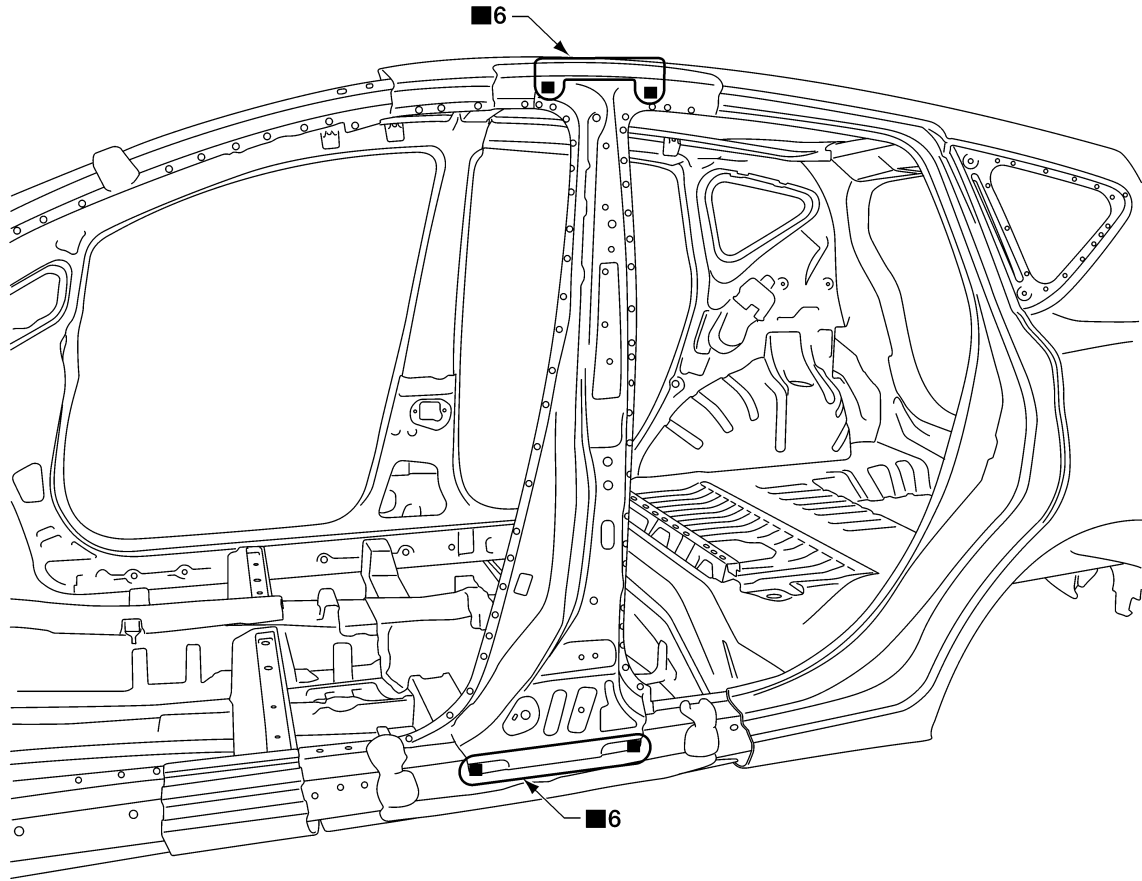
Match welds locations from removed part onto new panel and weld into place.

REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

REINFORCEMENT

Work after center pillar outer has been removed.



AWKIA2549ZZ

Replacement parts

- Center pillar reinforcement

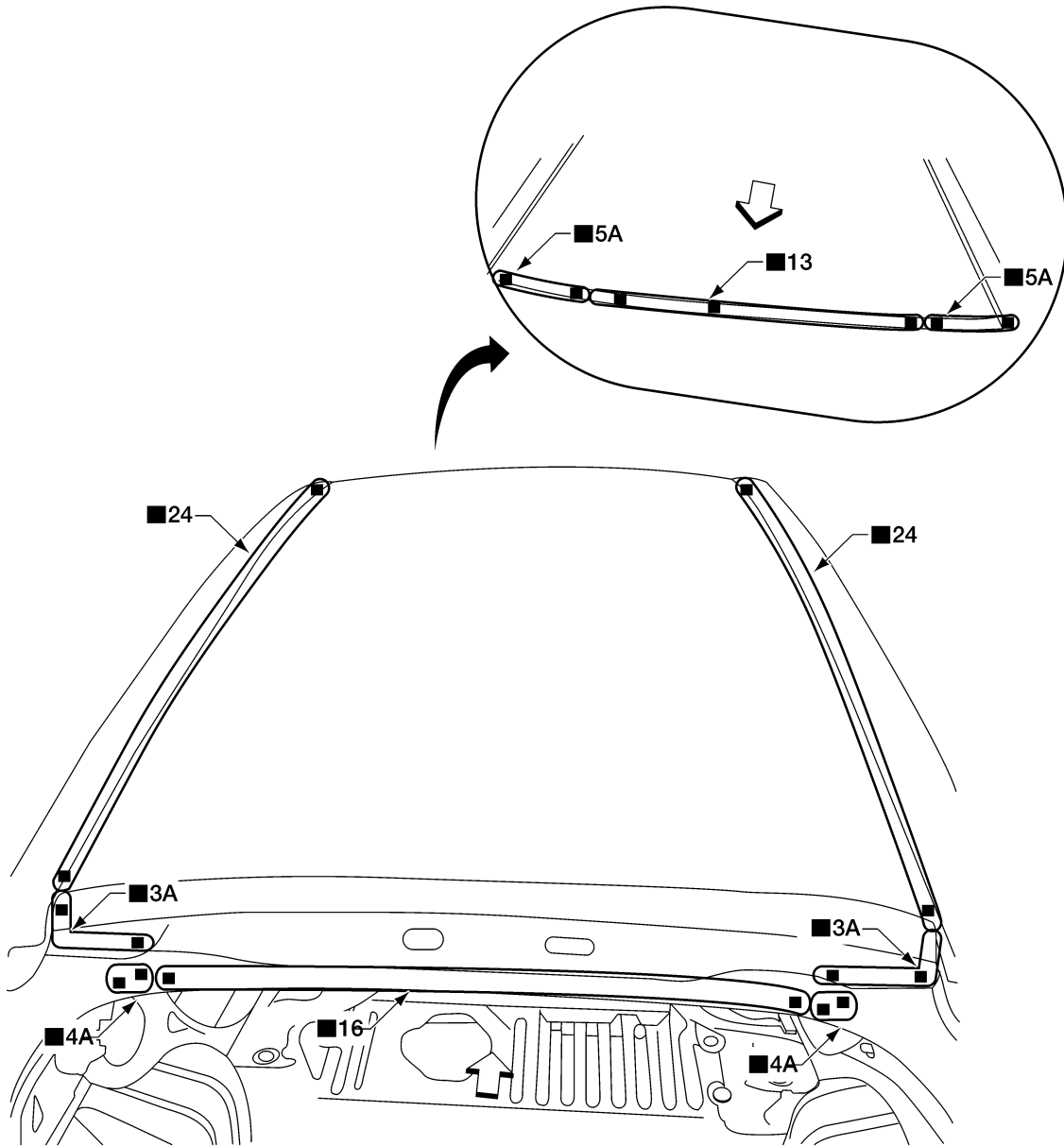
REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

Roof

INFOID:000000012430808

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



Replacement parts

- Roof panel

⇐ Front

ALKIA3148ZZ

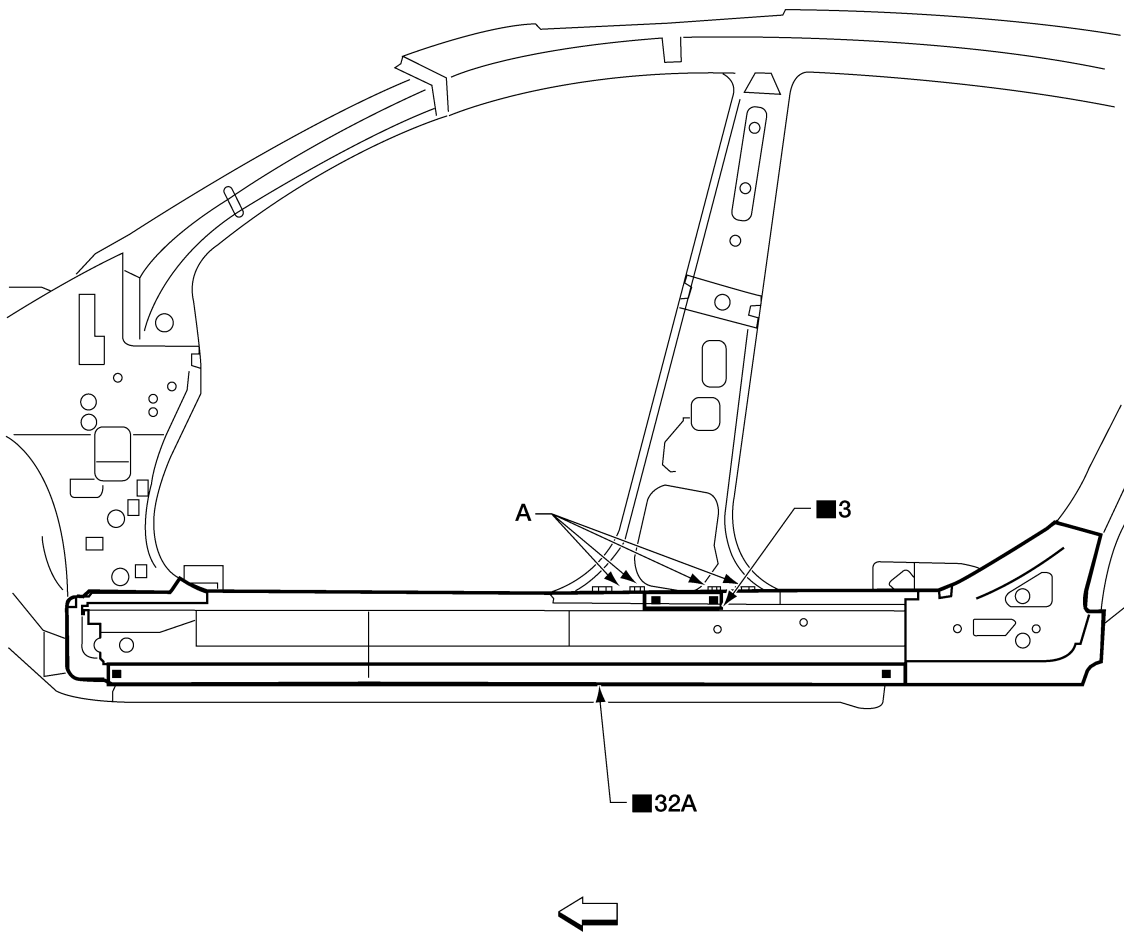
REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

Outer Sill

INFOID:000000012430809

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



AWKIA2543ZZ

Replacement parts

- Outer sill reinforcement

A. Mig stitch weld

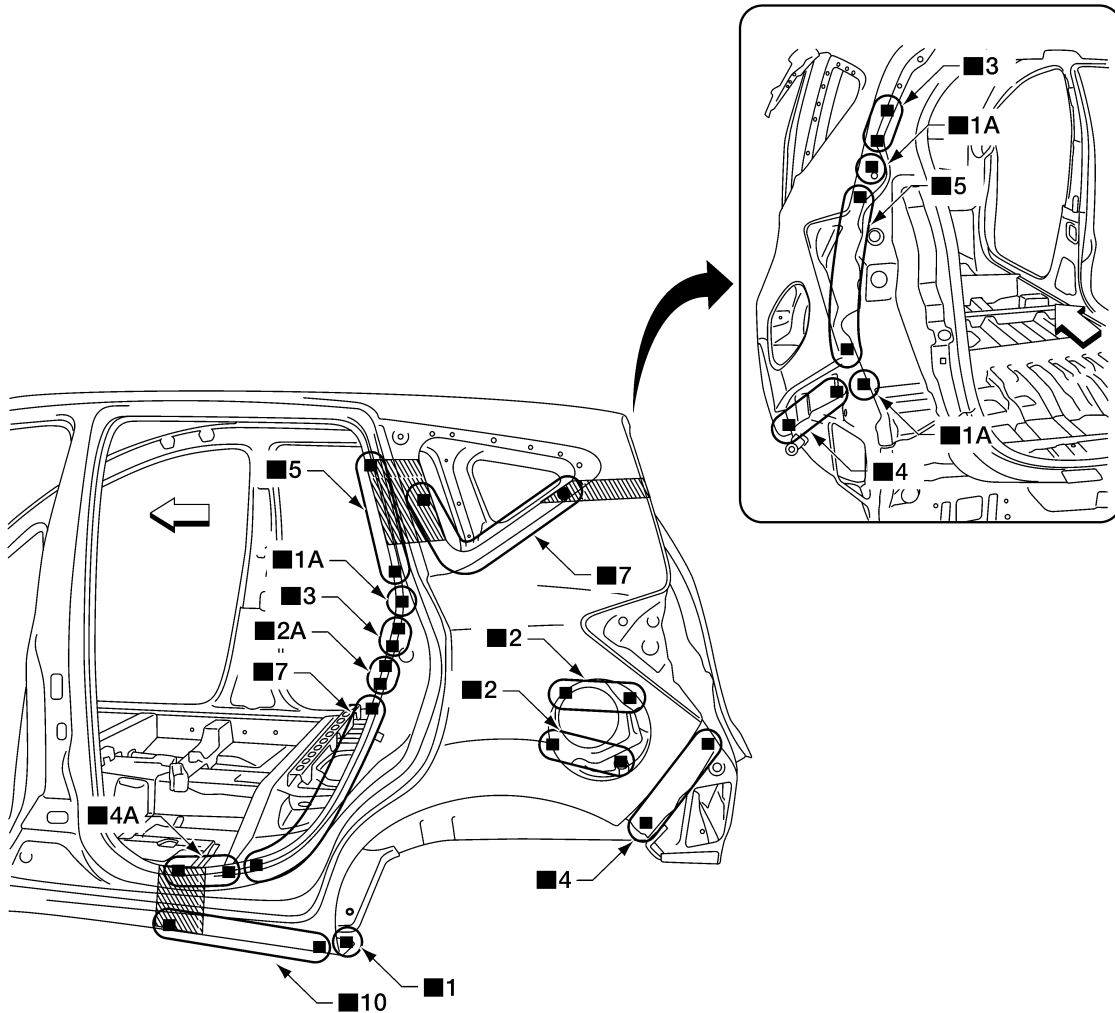
← Front

REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

Rear Fender

INFOID:000000012430810



Replacement parts

● Rear Fender

▨ Recommended sectioning location

← Front

AWKIA2544ZZ

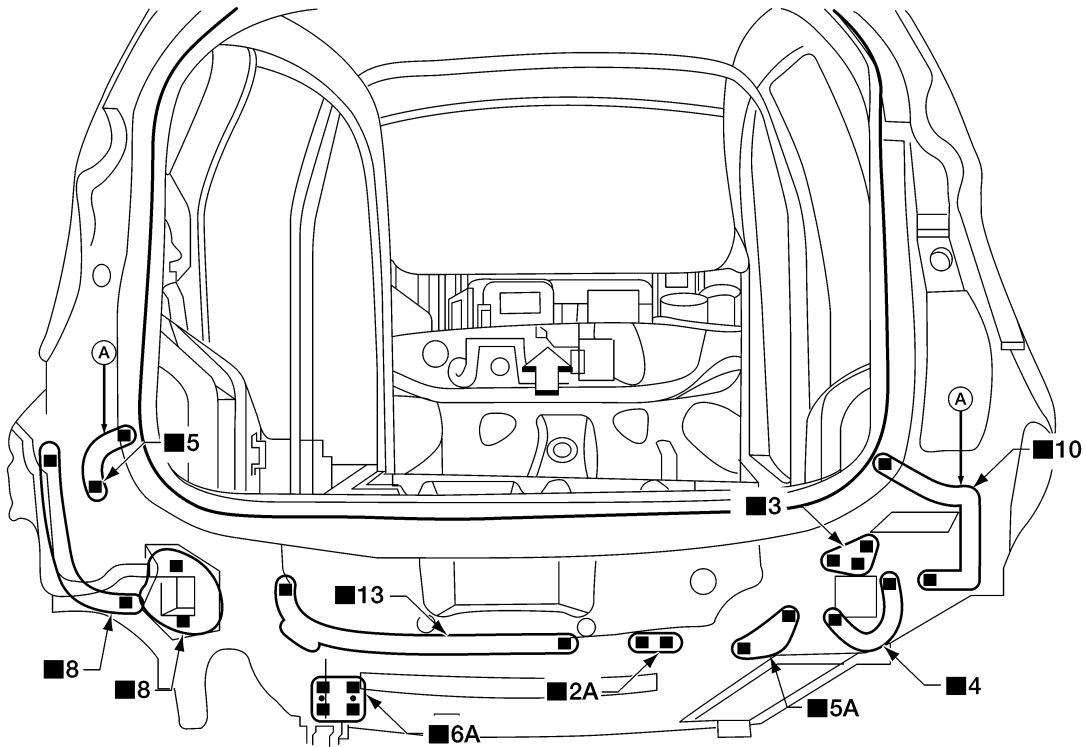
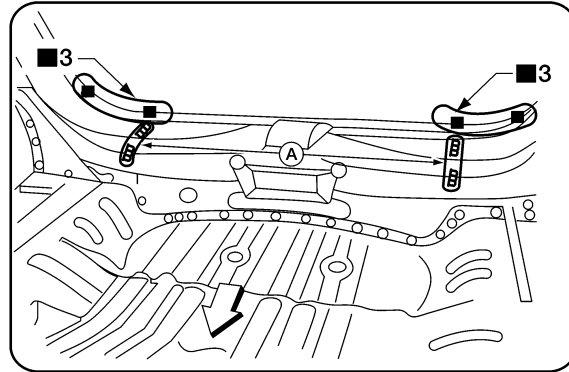
A
B
C
D
E
F
G
H
I
J
BRM
L
M
N
O
P

REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

Rear Panel

INFOID:000000012430811



AWKIA2550ZZ

Replacement parts

- Rear panel

A. Mig welds

← Front

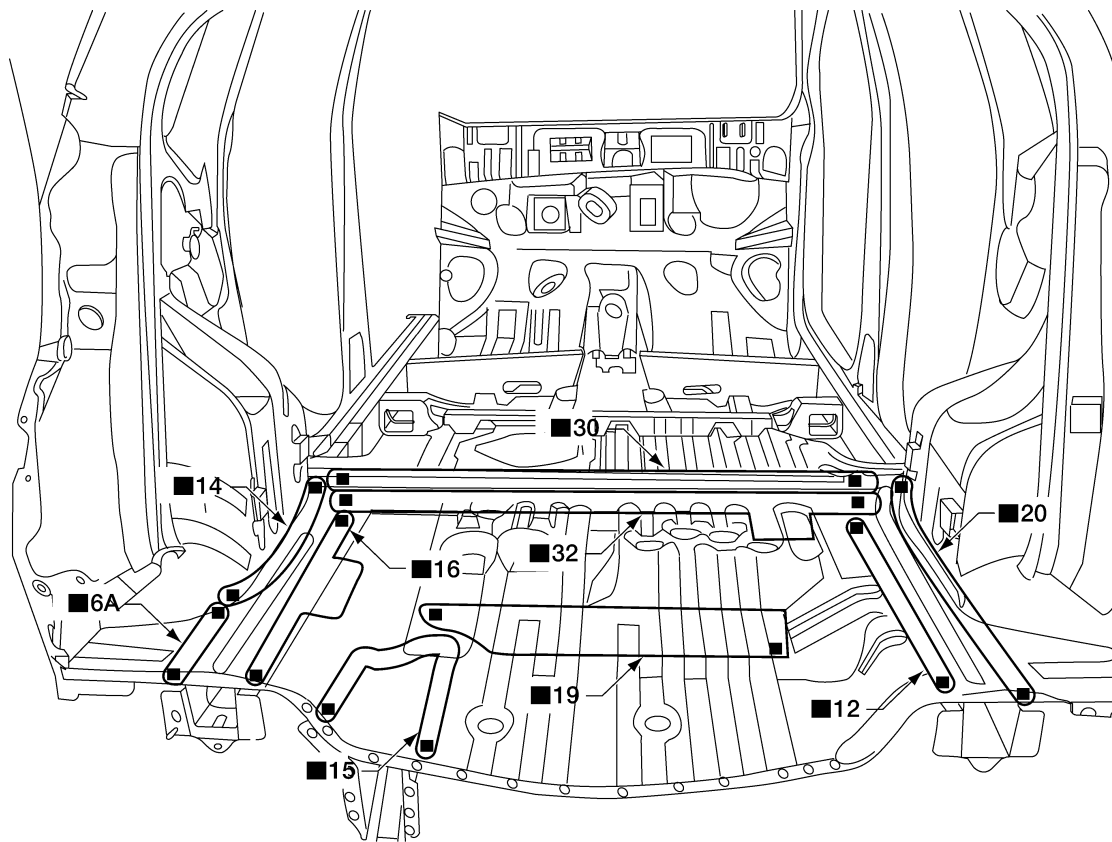
REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

Rear Floor Rear

INFOID:000000012430812

Work after rear panel assembly has been removed.



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

BRM

Replacement parts

- Rear floor rear

AWKIA2545ZZ

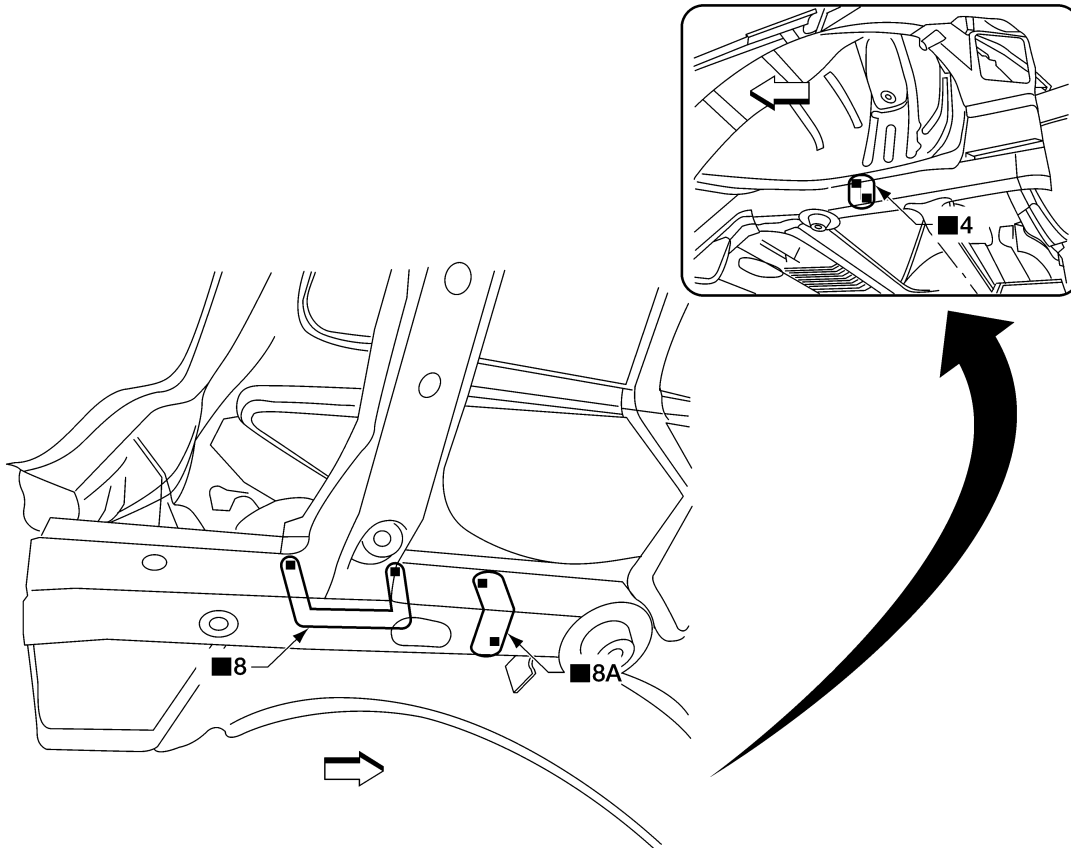
REPLACEMENT OPERATIONS

< REMOVAL AND INSTALLATION >

Rear Side Member Extension

INFOID:000000012430813

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



AWKIA2551ZZ

Replacement parts

- Rear side member extension

⇐ Front

BODY ALIGNMENT

< SERVICE DATA AND SPECIFICATIONS (SDS)

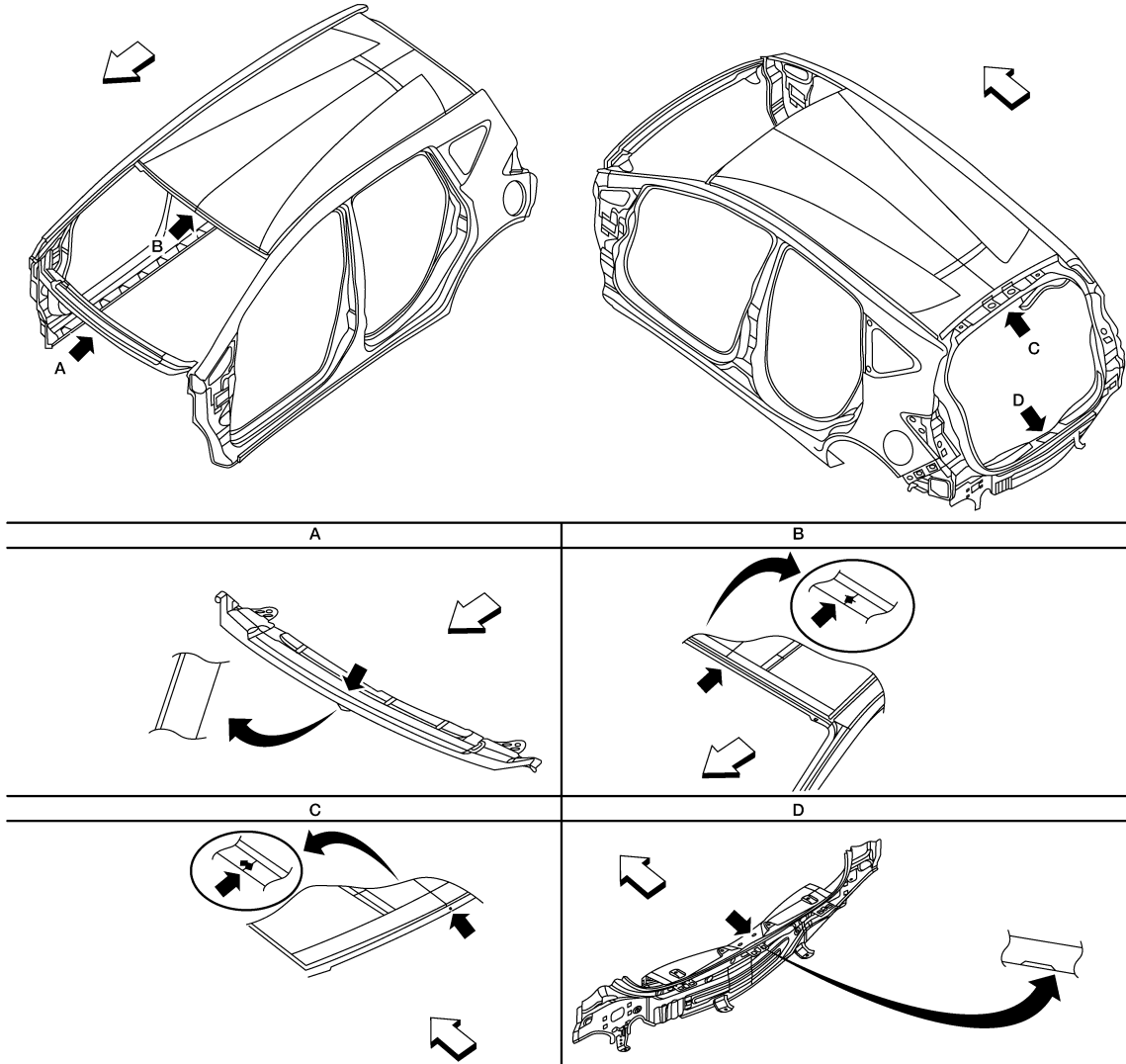
SERVICE DATA AND SPECIFICATIONS (SDS)

BODY ALIGNMENT

Body Center Marks

INFOID:000000012430814

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

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

BRM

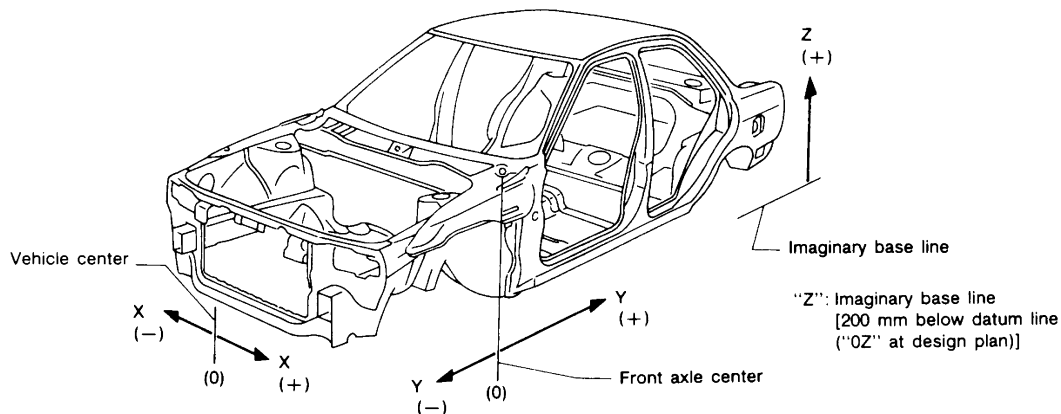
BODY ALIGNMENT

< SERVICE DATA AND SPECIFICATIONS (SDS)

Description

INFOID:000000012430815

- 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".



PIIA0104E

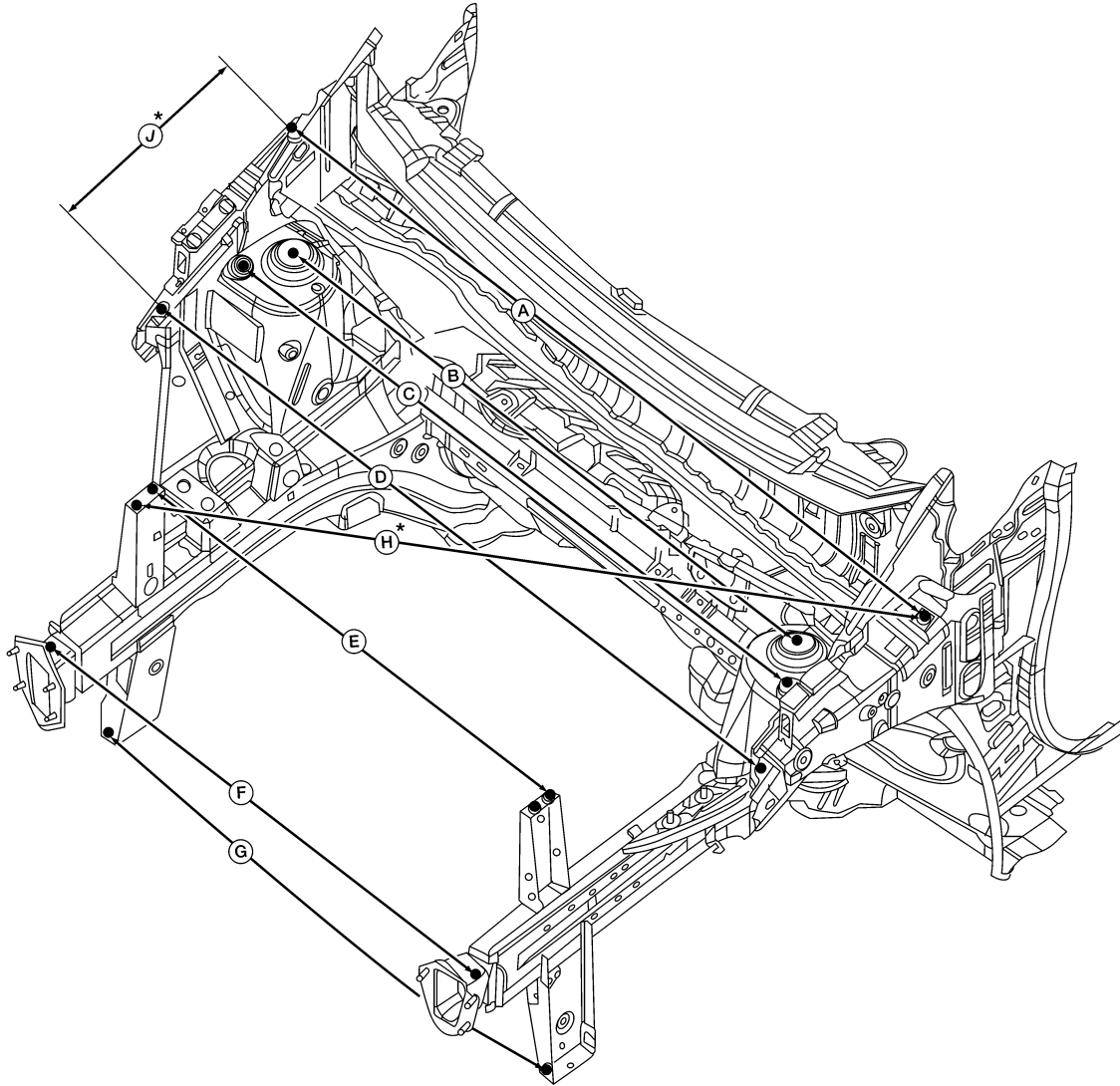
Engine Compartment

INFOID:000000012430816

MEASUREMENTS

BODY ALIGNMENT

< SERVICE DATA AND SPECIFICATIONS (SDS)



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

BRM

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

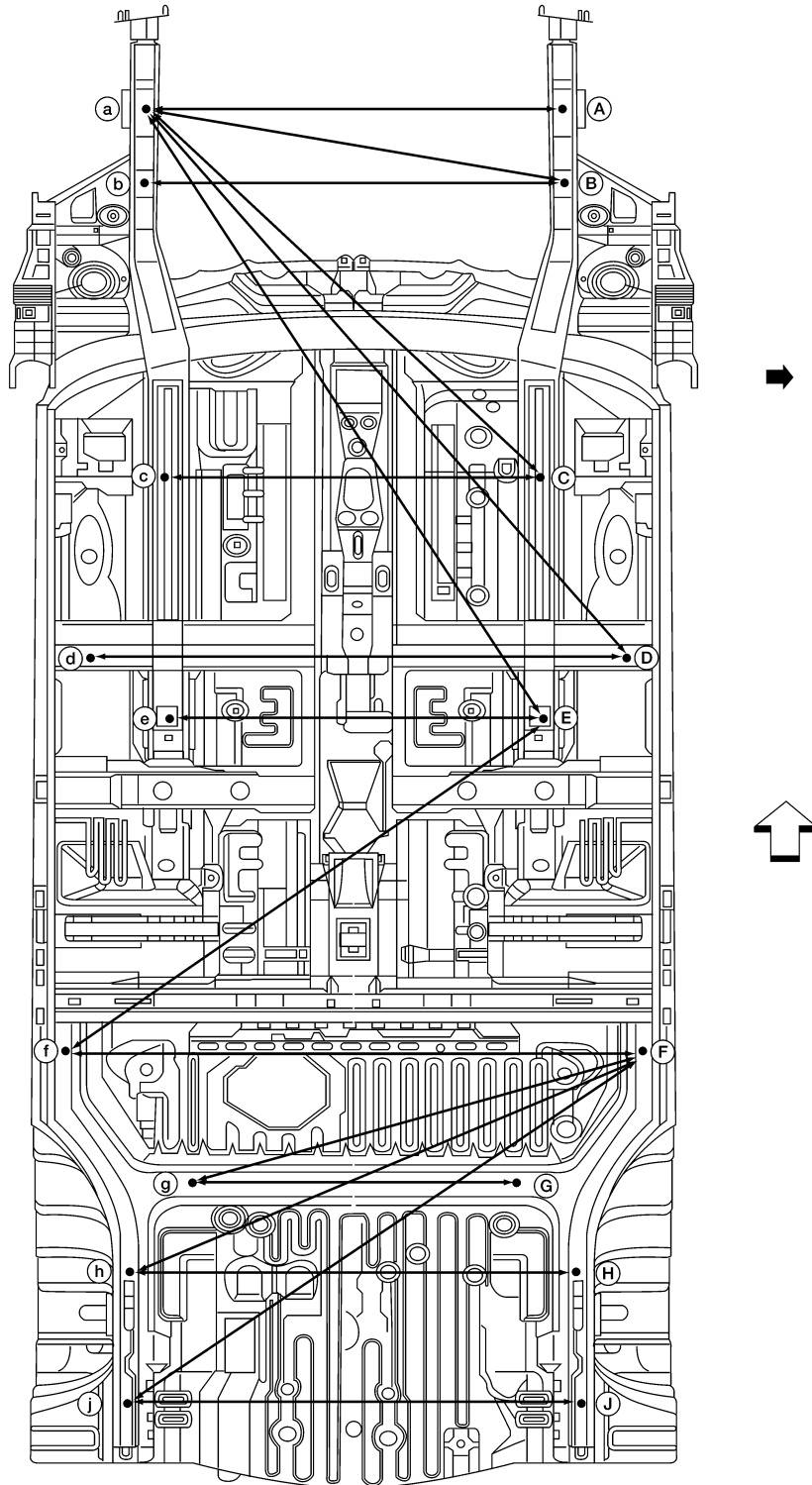
< SERVICE DATA AND SPECIFICATIONS (SDS)

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:000000012430817

MEASUREMENT



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)		

A

B

C

D

E

F

G

H

I

J

BRM

L

M

N

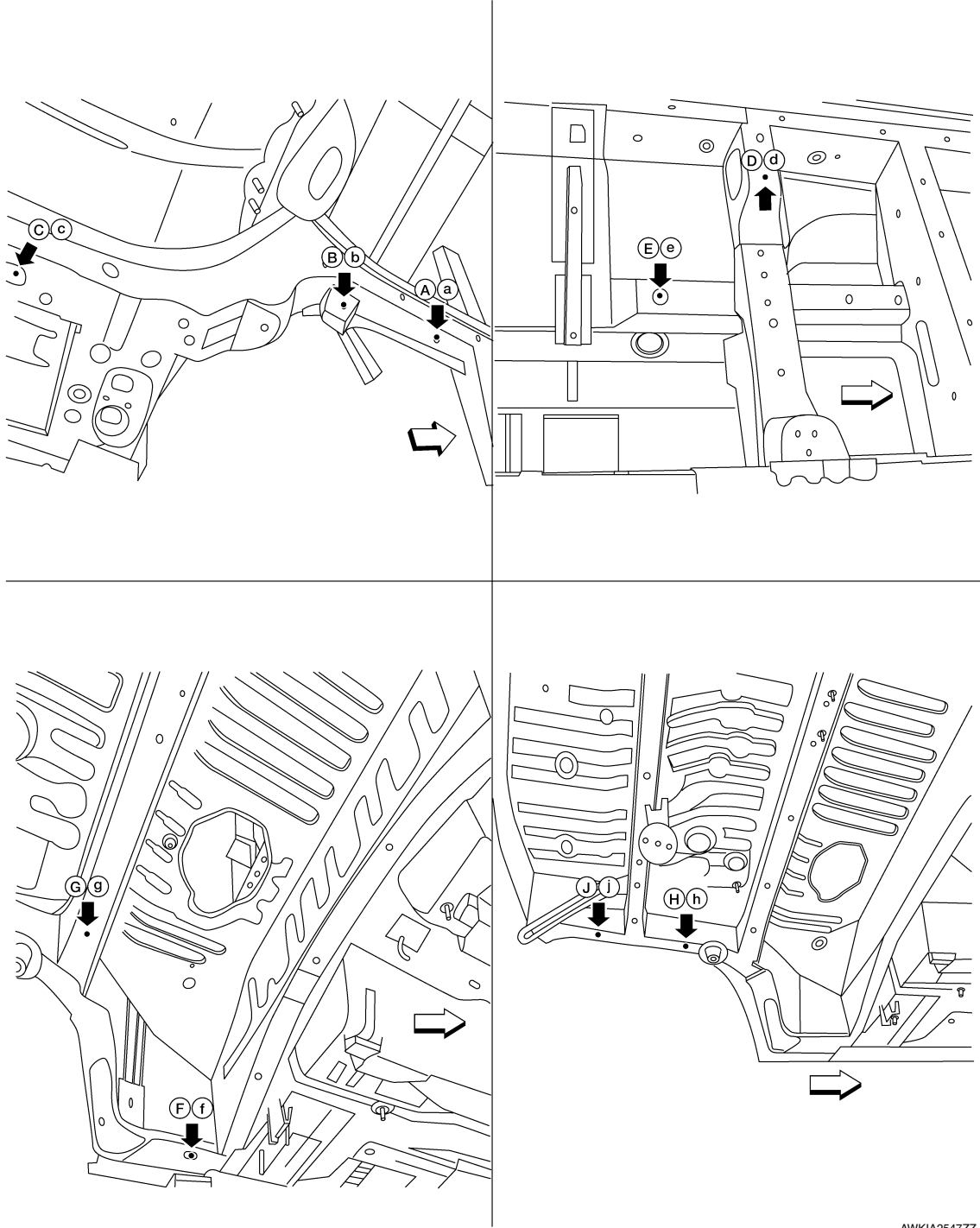
O

P

BODY ALIGNMENT

< SERVICE DATA AND SPECIFICATIONS (SDS)

MEASUREMENT POINTS



AWKIA2547ZZ

← 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)

BODY ALIGNMENT

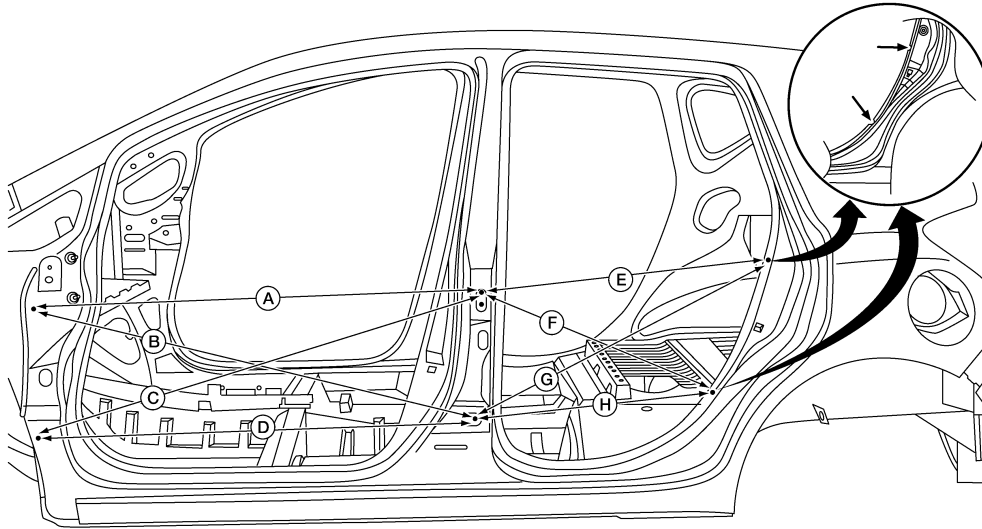
< SERVICE DATA AND SPECIFICATIONS (SDS)

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:000000012430818

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)

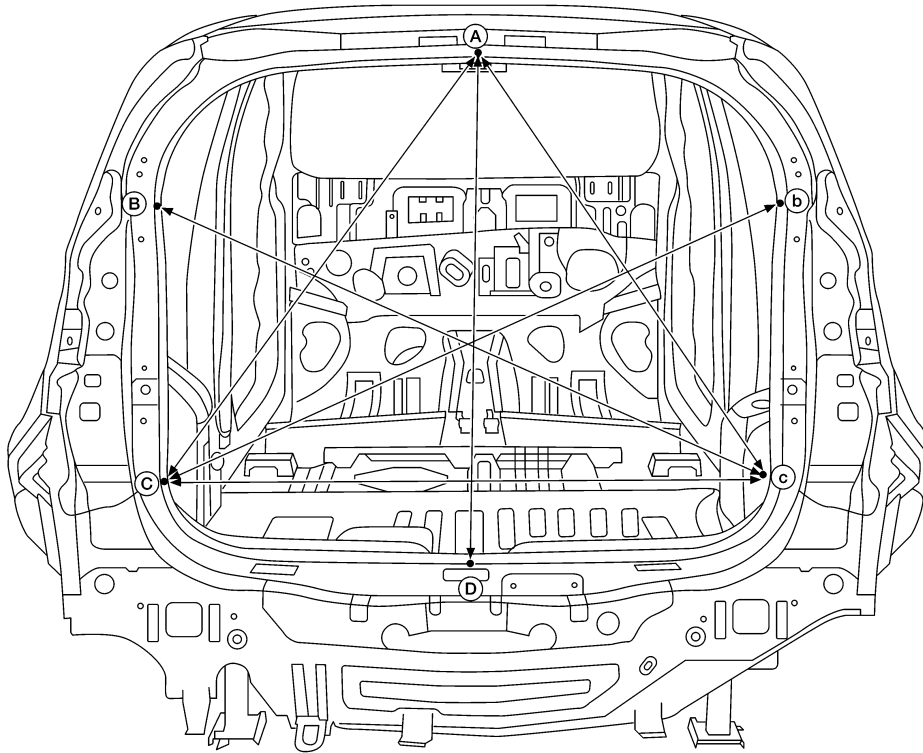
The vehicle is symmetrically identical dimensions on both LH and RH sides of the vehicle.

BODY ALIGNMENT

< SERVICE DATA AND SPECIFICATIONS (SDS)

Rear End Panel

INFOID:000000012430819



ALKIA3132ZZ

Unit: mm (in)

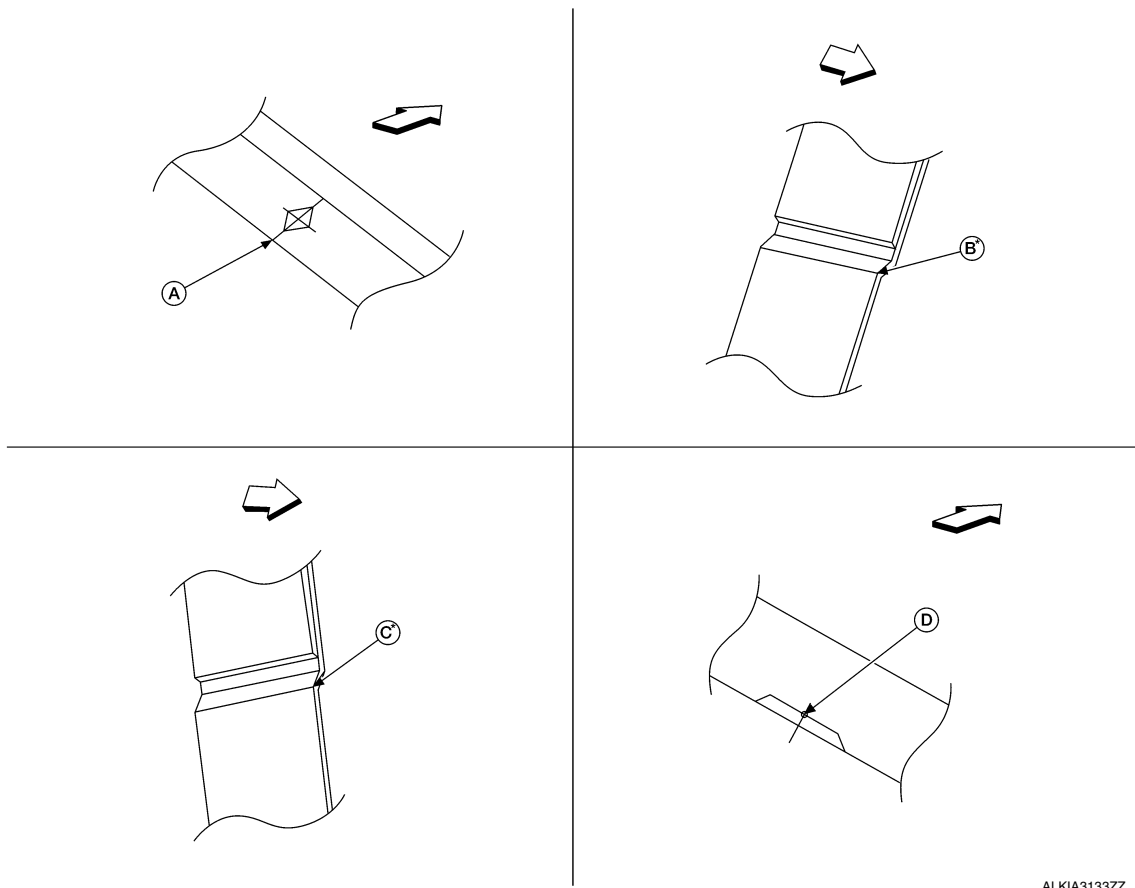
Point	Measurement	Point	Measurement
A - D	853.7 (33.61)	A - C*	871.0 (34.29)
C* - b*	1121.7 (44.16)	C - c	1055.0 (41.5)

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

MEASUREMENT POINTS

BODY ALIGNMENT

< SERVICE DATA AND SPECIFICATIONS (SDS)



ALKIA3133ZZ

← 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

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

BRM