

SECTION **BRM**
BODY REPAIR

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BODY EXTERIOR PAINT COLOR

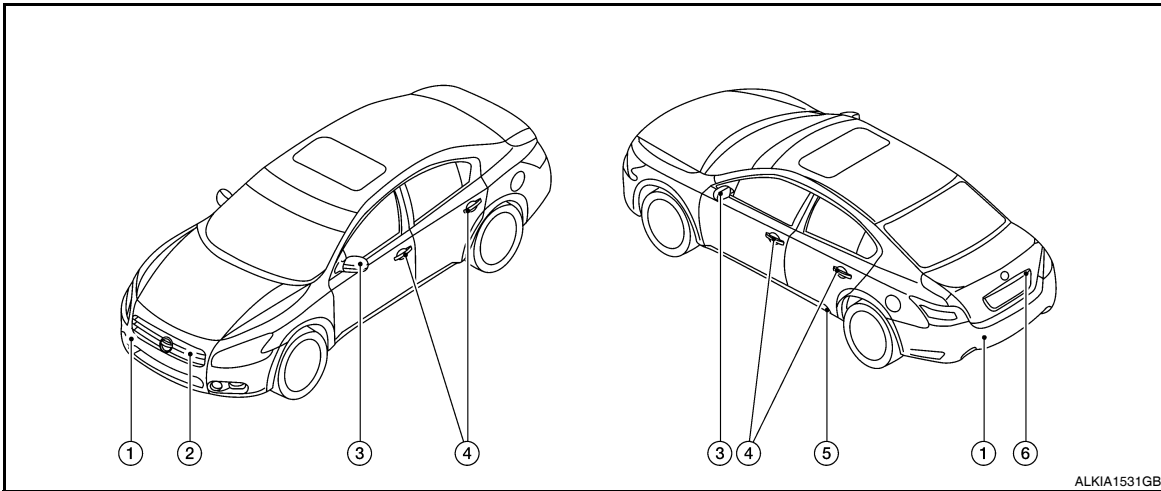
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FEATURES OF NEW MODEL

BODY EXTERIOR PAINT COLOR

Body Exterior Paint Color

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Component			Color code	NAD	RAB	RAP	KH3	DAD	K12	K50	QX3	GAD
			Description	Red	Blue	Bluish Silver	Black	Greyish Green/ Gold	Silver	Dark Gray	White	Reddish Black
			Paint type	PM	PM	PM	2S	PM	M	M	3P	PM
			Hard clear coat	×	×	×	×	×	×	×	×	×
1	Bumper fascia		Body color	NAD	RAB	RAP	KH3	DAD	K12	K50	QX3	GAD
2	Front grille		Chrome	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P
3	Door outside mirror	Base	Black	KH3	KH3	KH3	KH3	KH3	KH3	KH3	KH3	KH3
		Housing	Body color	NAD	RAB	RAP	KH3	DAD	K12	K50	QX3	GAD
4	Door outside handle		Chrome	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P
5	Center mud guard		Body color	NAD	RAB	RAP	KH3	DAD	K12	K50	QX3	GAD
6	License lamp finisher		Chrome	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P	Cr2P

M= Metallic, S= Solid, 2S= Solid and Clear, 2P= 2-coat Pearl, 3P= 3-coat pearl, PM= Pearl metallic. Black is solvent based, all others are water based.

PRECAUTIONS

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PRECAUTION

PRECAUTIONS

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

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

Precautions Necessary for Steering Wheel Rotation after Battery Disconnect (Early Production, With Electronic Steering Column Lock)

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NOTE:

- Before removing and installing any control units, first turn the push-button ignition switch to the LOCK position, then disconnect both battery cables.
- After finishing work, confirm that all control unit connectors are connected properly, then re-connect both battery cables.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If a DTC is detected, perform trouble diagnosis according to self-diagnosis results.

This vehicle is equipped with a push-button ignition switch and a steering lock unit.

If the battery is disconnected or discharged, the steering wheel will lock and cannot be turned.

If turning the steering wheel is required with the battery disconnected or discharged, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both battery cables.

NOTE:

Supply power using jumper cables if battery is discharged.

2. Carry the Intelligent Key or insert it to the key slot and turn the push-button ignition switch to ACC position. (At this time, the steering lock will be released.)
3. Disconnect both battery cables. The steering lock will remain released with both battery cables disconnected and the steering wheel can be turned.
4. Perform the necessary repair operation.

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5. When the repair work is completed, re-connect both battery cables. With the brake pedal released, turn the push-button ignition switch from ACC position to ON position, then to LOCK position. (The steering wheel will lock when the push-button ignition switch is turned to LOCK position.)
6. Perform self-diagnosis check of all control units using CONSULT-III.

HANDLING PRECAUTIONS FOR PLASTICS

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HANDLING PRECAUTIONS FOR PLASTICS

Precautions For Plastics

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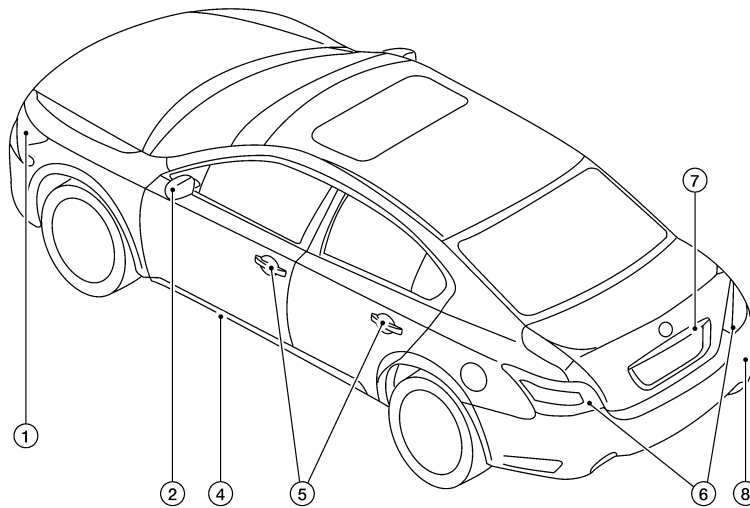
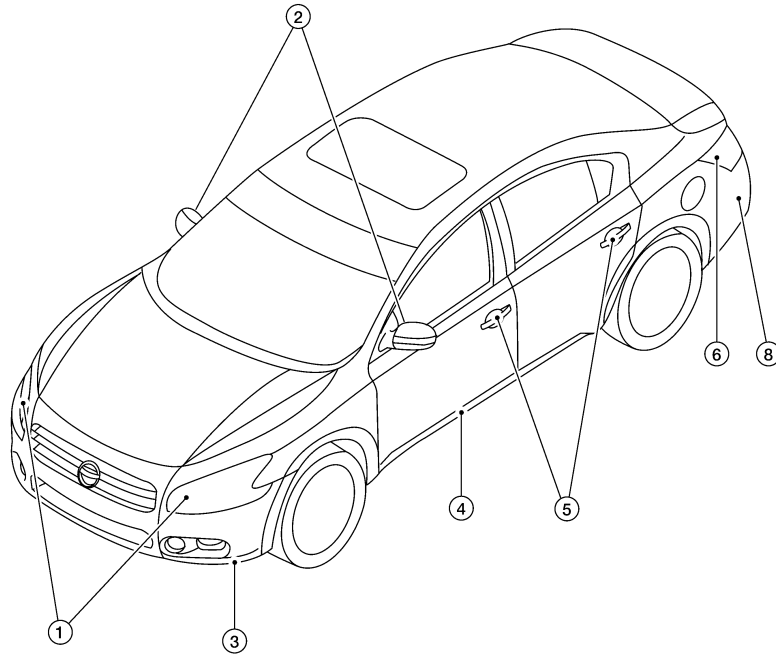
Abbreviation	Material name	Heatresisting temperature °C(°F)	Resistance to gasoline and solvents	Other cautions
PE	Polyethylene	60(140)	Gasoline and most solvents are harmless if applied for a very short time (wipe up quickly).	Flammable
PVC	Poly Vinyl Chloride	80(176)	Same as above.	Poison gas is emitted when burned.
EPM/EPDM	Ethylene Propylene (Diene) copolymer	80(176)	Same as above.	Flammable
TPO/TPR	Thermoplastic Olefine/ Thermoplastic rubber	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.	—
PPC	Polypropylene Composite	115 (239)	Same as above	Flammable
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 (Nylon)	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.

HANDLING PRECAUTIONS FOR PLASTICS

< PRECAUTION >

LOCATION OF PLASTIC PARTS



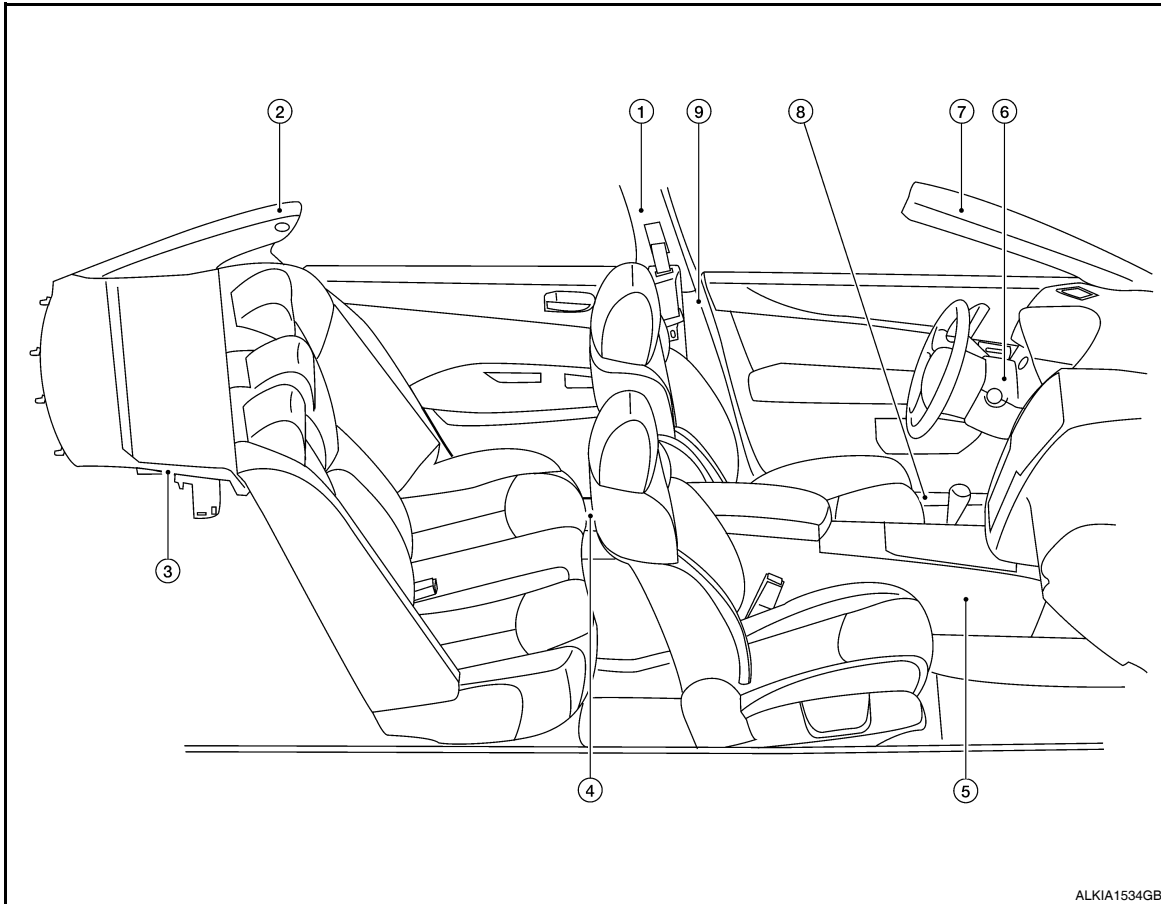
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Item	Component	Abbreviation	Material
1.	Front combination lamp	Lens	PC Polycarbonate
		Housing	PP Polypropylene
2.	Door mirror	Base	PA Polyamide (Nylon)
		Housing	ABS Acrylonitrile Butadiene Styrene
3.	Front fascia	PP	Polypropylene

HANDLING PRECAUTIONS FOR PLASTICS

< PRECAUTION >

Item	Component	Abbreviation	Material	
4.	Mudguard	TPO	Thermoplastic Olefine	
5.	Outside door handle	Grip	PC	Polycarbonate
		Escutcheon	PA	Polyamide (Nylon)
6.	Rear combination lamp	Lens	PMMA	Poly Methyl Methacrylate
		Housing	ABS	Acrylonitrile Butadiene Styrene
7.	Trunk lid finisher	ABS + PC	Acrylonitrile Butadiene Styrene + Polycarbonate	
8.	Rear fascia	PP	Polypropylene	



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Item	Component	Abbreviation	Material	
1.	Center pillar upper garnish	core	PP	Polypropylene
		skin	PET	Polyester
2.	Rear pillar garnish	core	PP	Polypropylene
		skin	PET	Polyester
3.	Rear parcel shelf finisher	core	PP	Polypropylene
		skin	PET	Polyester
4.	Rear inner kicking plate	PP	Polypropylene	
5.	Center console	body	ABS + PC	Acrylonitrile Butadiene Styrene + Polycarbonate
		cup holder	ABS + PC	Acrylonitrile Butadiene Styrene + Polycarbonate
		storage bin	ABS + PC	Acrylonitrile Butadiene Styrene + Polycarbonate

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HANDLING PRECAUTIONS FOR PLASTICS

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Item	Component	Abbreviation	Material
6.	Steering column covers	PP	Polypropylene
7.	Front pillar upper garnish	core	Polypropylene
		skin	Polyester
8.	Front inner kicking plate	PP	Polypropylene
9.	Center pillar lower garnish	PP	Polypropylene

BODY COMPONENT PARTS

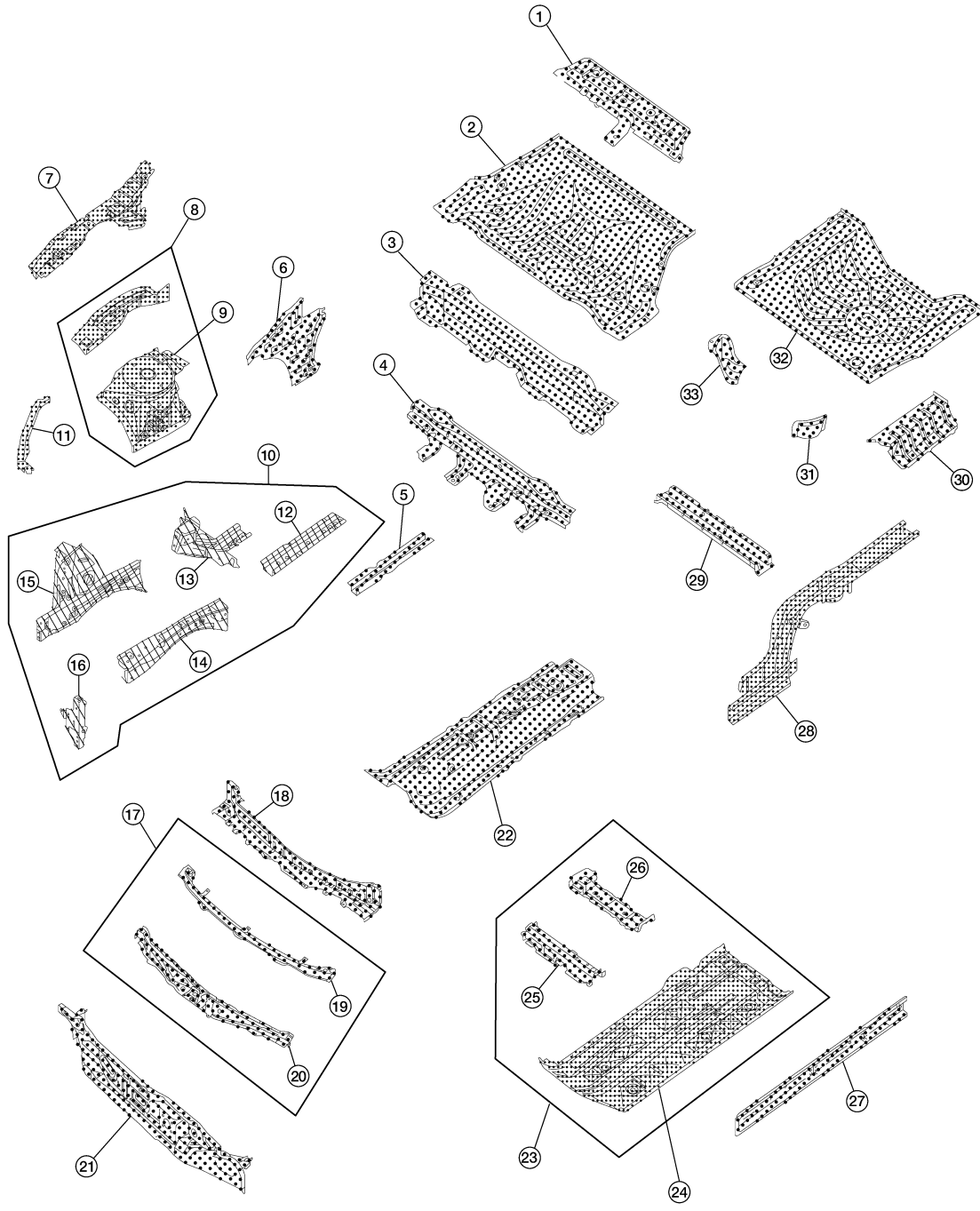
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ON-VEHICLE REPAIR

BODY COMPONENT PARTS

Underbody Component Parts

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BODY COMPONENT PARTS

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|---|---|--|
| 1. Rear seat lower crossmember | 2. Rear floor front | 3. Rear floor front extension |
| 4. Rear seat crossmember | 5. Front side member rear extension (RH & LH) | 6. Dash side (RH & LH) |
| 7. Hoodledge reinforcement (RH & LH) | 8. Hoodledge lower assembly (RH & LH) | 9. Front suspension spring support (RH & LH) |
| 10. Front side member assembly (RH & LH) | 11. Upper radiator core support (RH & LH) | 12. Front side member center extension (RH & LH) |
| 13. Front side member extension (RH & LH) | 14. Front side member (RH & LH) | 15. Closing plate assembly (RH & LH) |
| 16. Radiator core side support (RH & LH) | 17. Cowl top center assembly | 18. Dash upper |
| 19. Cowl top center | 20. Dash lower | 21. Front floor center assembly |
| 22. Front floor assembly (RH & LH) | 23. Front floor assembly (RH & LH) | 24. Front floor (RH & LH) |
| 25. 2nd crossmember assembly (RH & LH) | 26. 3rd crossmember assembly (RH & LH) | 27. Sill inner assembly (RH &, LH) |
| 28. Rear side member assembly (RH & LH) | 29. Rear center crossmember | 30. Rear floor rear (RH & LH) |
| 31. Rear floor LH reinforcement | 32. Rear floor rear | 33. Rear floor RH reinforcement |

 : Both sided anti-corrosive precoated steel portions

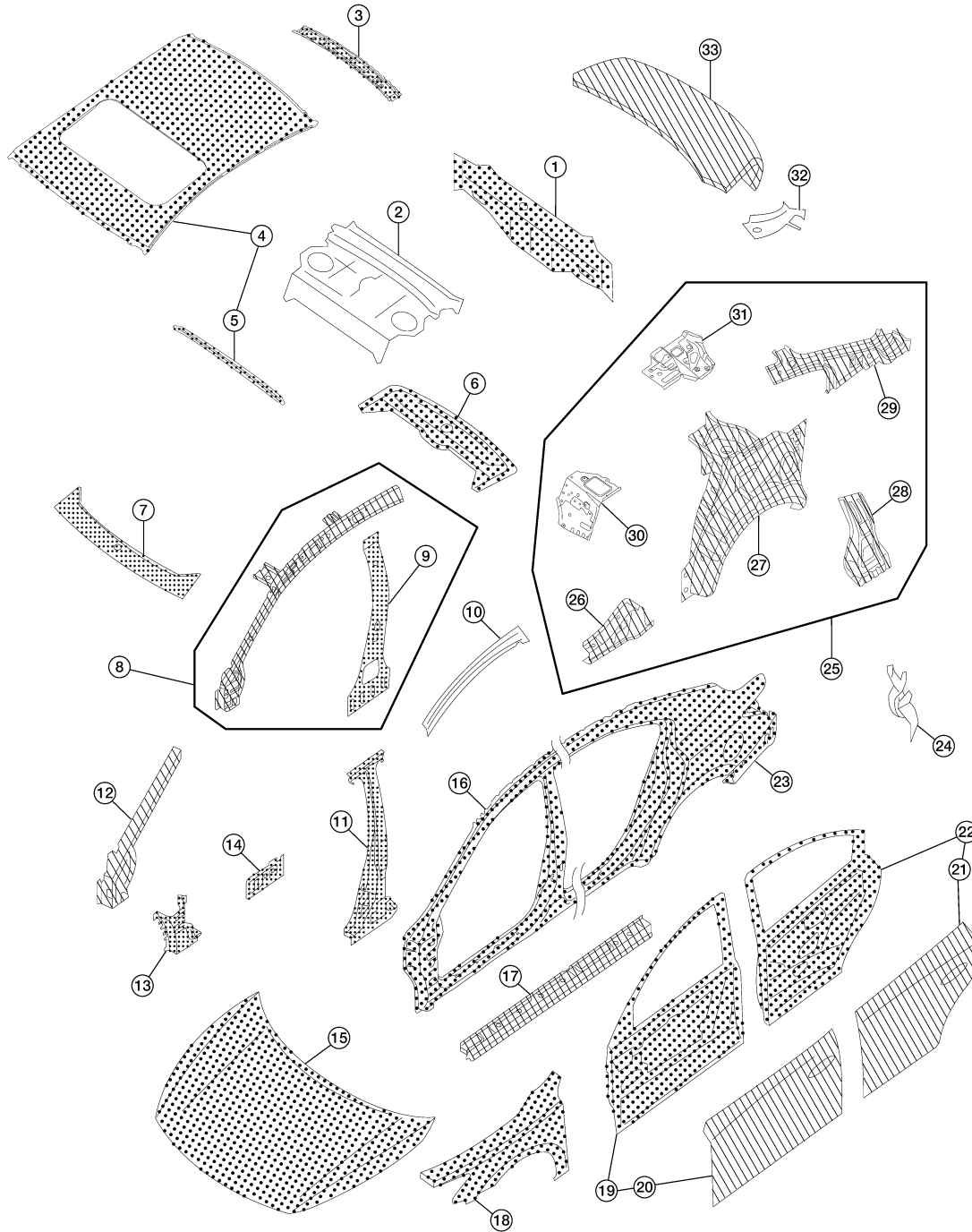
 : High strength steel (HSS) portions

 : Both sided anti-corrosive steel and HSS portions

BODY COMPONENT PARTS

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Body Component Parts

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| 1. Rear panel assembly | 2. Parcel shelf assembly | 3. Rear roof rail assembly (single panel sunroof) |
| 4. Roof panel, single panel sunroof | 5. Rear roof bow | 6. Rear roof rail (dual panel sunroof) |
| 7. Front roof rail dual panel sunroof shown) | 8. Body side inner reinforcement (RH & LH)) | 9. Center pillar inner reinforcement (RH & LH) |


BODY COMPONENT PARTS

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| 10. Roof side rail (RH & LH) | 11. Center pillar reinforcement (RH & LH) | 12. Front pillar upper hinge brace (RH & LH) |
| 13. Front pillar lower hinge brace (RH & LH) | 14. Front pillar lower reinforcement (RH & LH) | 15. Hood assembly |
| 16. Front body side outer (RH & LH) | 17. Outer sill reinforcement (RH & LH) | 18. Front fender assembly (RH & LH) |
| 19. front door assembly (RH & LH) | 20. Front door outer (RH & LH) | 21. Rear door outer (RH & LH) |
| 22. Rear door assembly (RH & LH) | 23. Rear body side outer (RH & LH) | 24. Tail lamp housing base (RH & LH) |
| 25. Rear body side inner assembly (RH & LH) | 26. Sill outer reinforcement rear (RH & LH) | 27. Rear wheel housing assembly (RH & LH) |
| 28. Rear pillar inner reinforcement (RH & LH) | 29. Rear pillar inner (RH & LH) | 30. Rear seatback side support (RH & LH) |
| 31. Parcel shelf side (RH & LH) | 32. Rear fender extension (RH & LH) | 33. Trunk lid assembly |

 : Both sided anti-corrosive precoated steel portions

 : High strength steel (HSS) portions

 : Both sided anti-corrosive steel and HSS portions

CORROSION PROTECTION

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CORROSION PROTECTION

Description

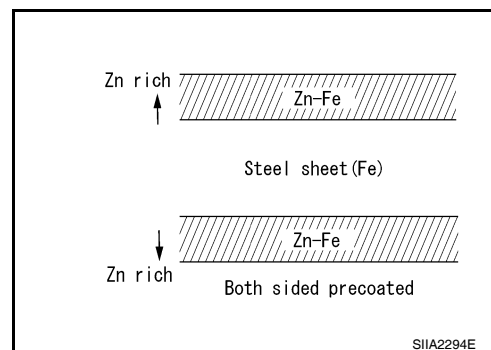
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To provide improved corrosion prevention, the following anti-corrosive measures have been implemented in NISSAN production plants. When repairing or replacing body panels, it is necessary to use the same anti-corrosive measures.

Anti-Corrosive Precoated Steel (Galvannealed Steel)

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

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



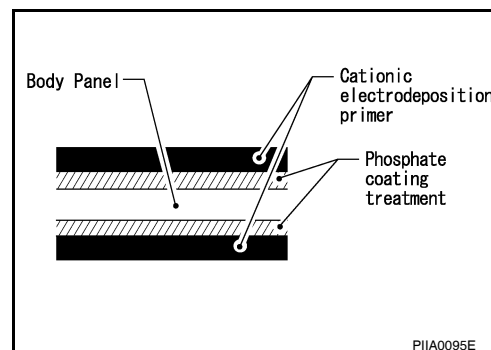
Nissan Genuine Service Parts are fabricated from galvannealed steel. Therefore, it is recommended that GENUINE NISSAN PARTS or equivalent be used for panel replacement to maintain the anti-corrosive performance built into the vehicle at the factory.

Phosphate Coating Treatment and Cationic Electrodeposition Primer

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

CAUTION:

Confine paint removal during welding operations to an absolute minimum.



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

Anti-Corrosive Wax

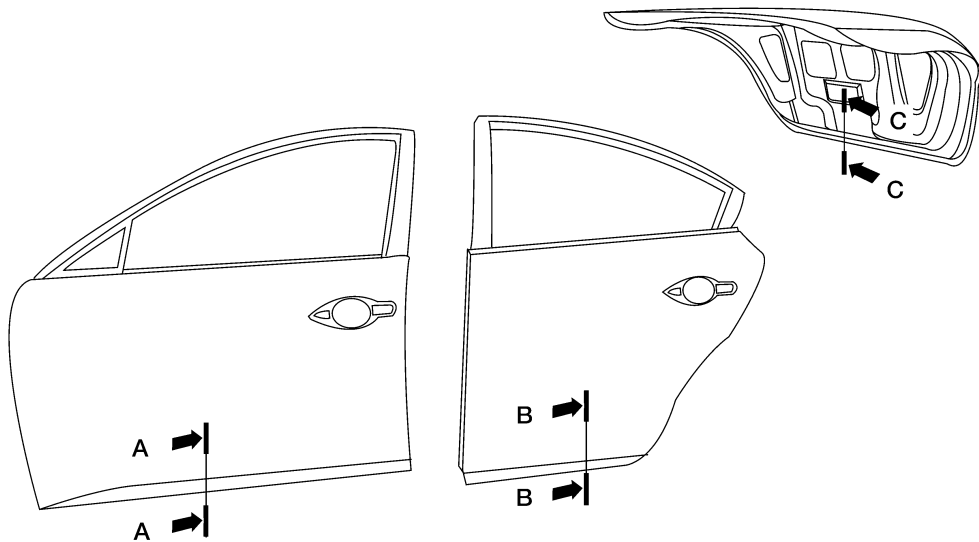
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To improve corrosion resistance, anti-corrosive wax is applied inside the body sill and inside other closed sections. Accordingly, when replacing these parts, be sure to apply anti-corrosive wax to the appropriate areas of

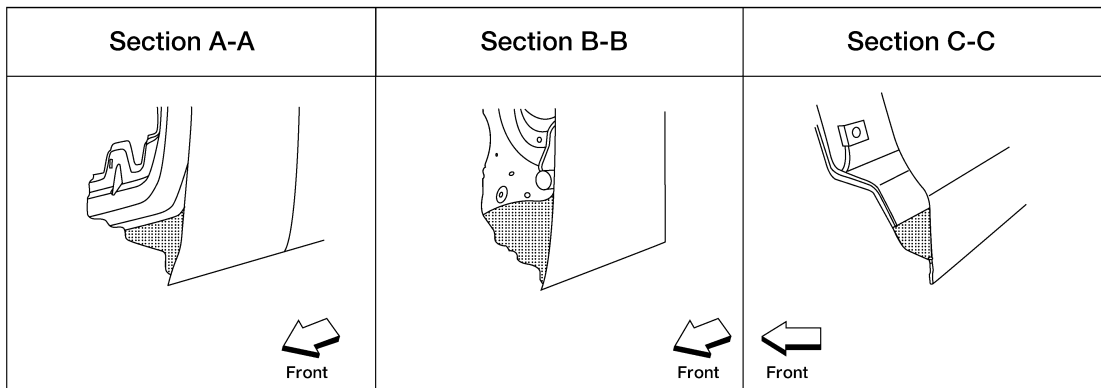
CORROSION PROTECTION

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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



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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.

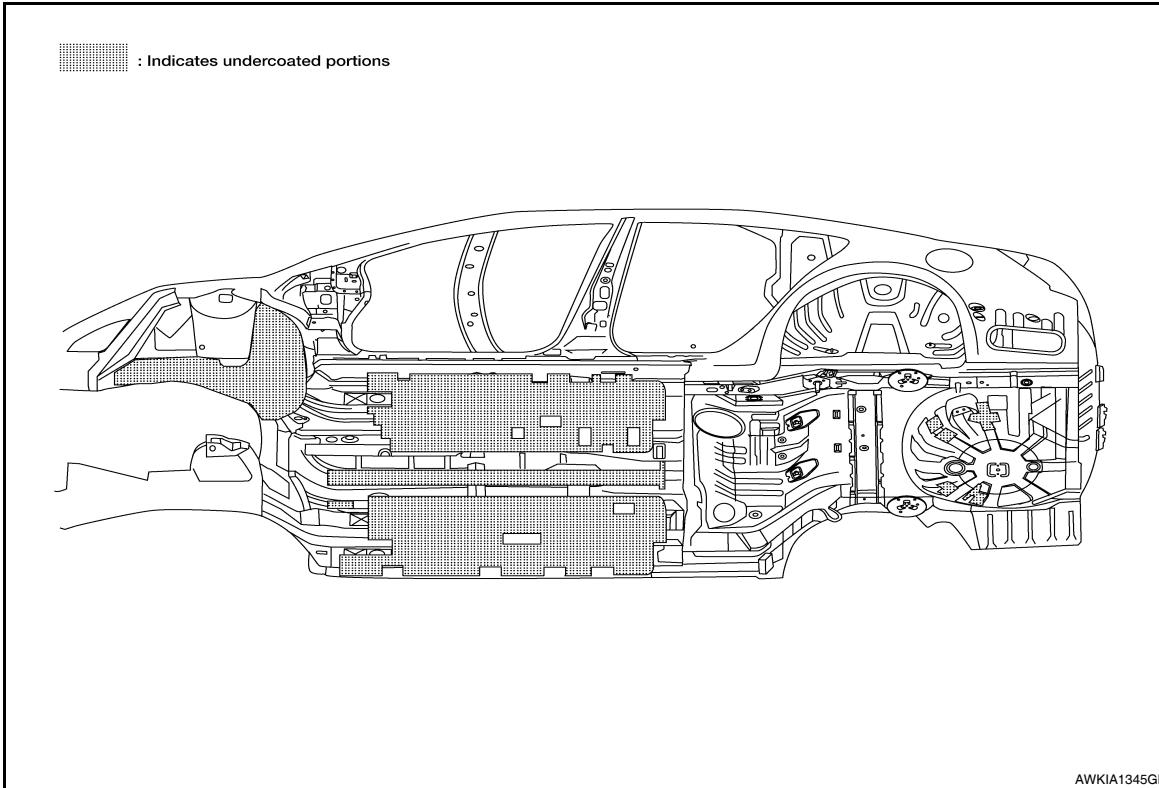
Precautions in Undercoating

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.
4. Apply bitumen wax after applying undercoating.

CORROSION PROTECTION

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



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BODY SEALING

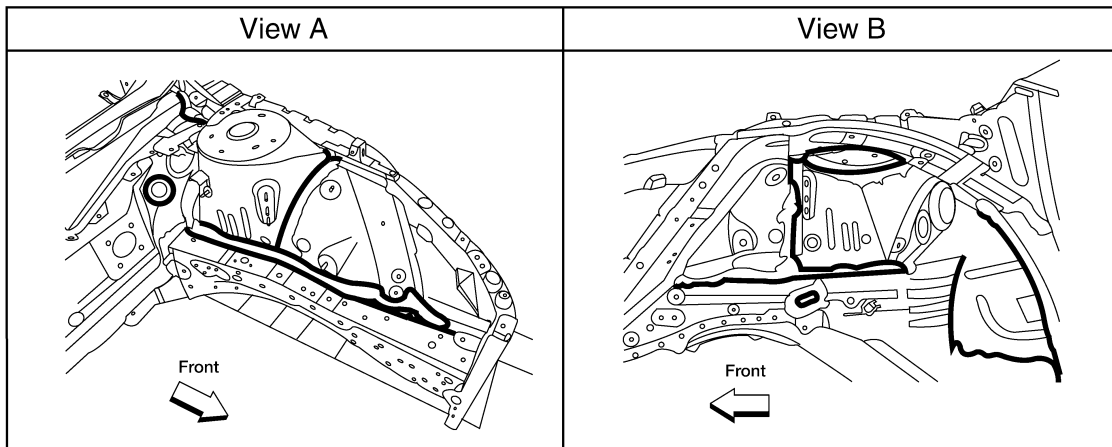
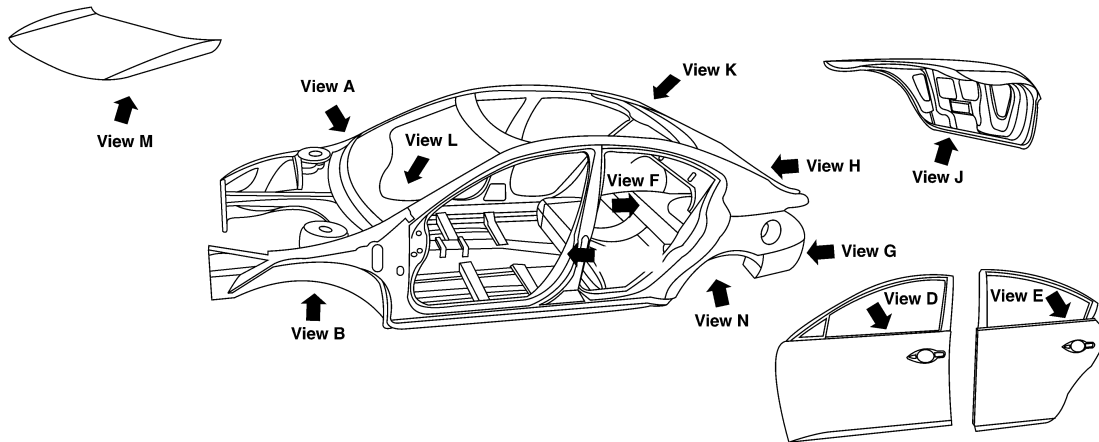
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BODY SEALING

Description

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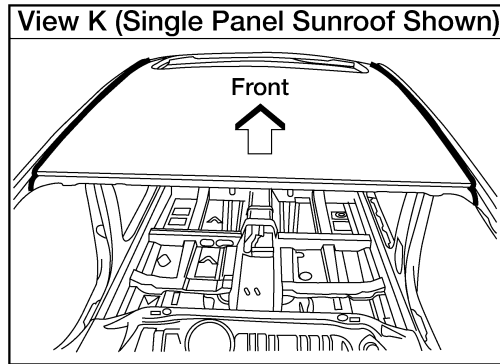
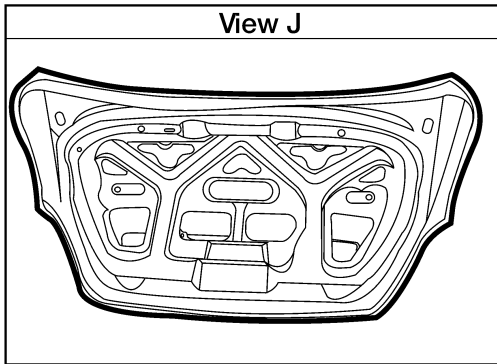
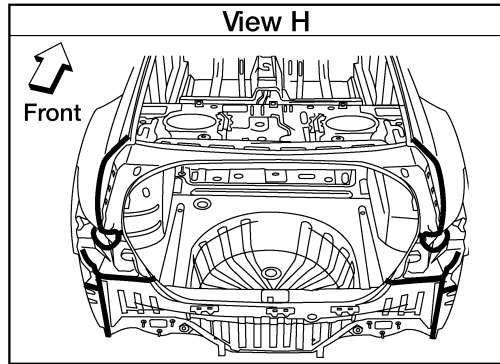
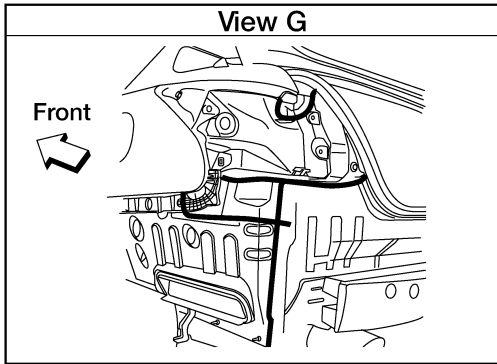
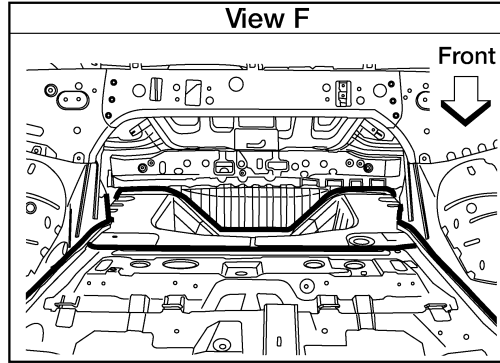
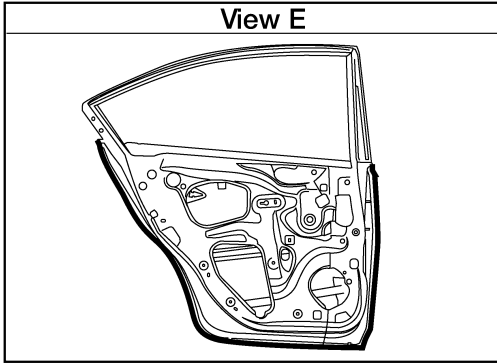
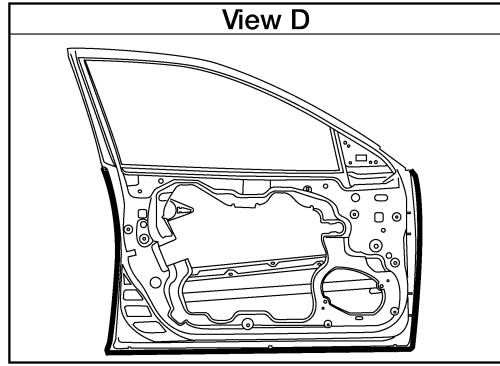
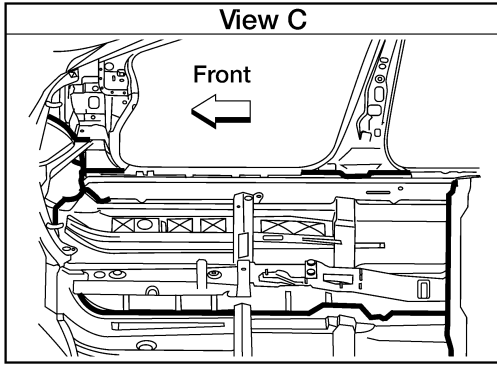
The following figure shows the areas which are sealed at the factory. Sealant which has been applied to these areas should be smooth and free from cuts or gaps. Care should be taken not to apply an excess amount of sealant and not to allow other unaffected parts to come into contact with the sealant.



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BODY SEALING

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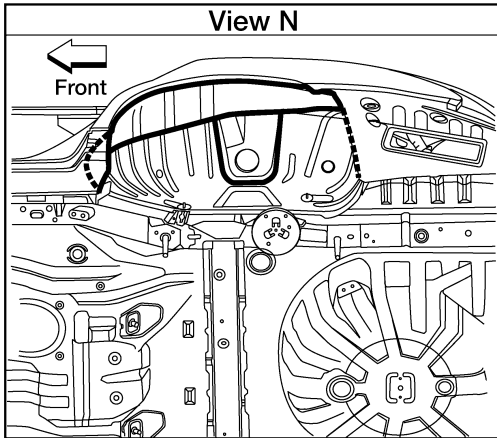
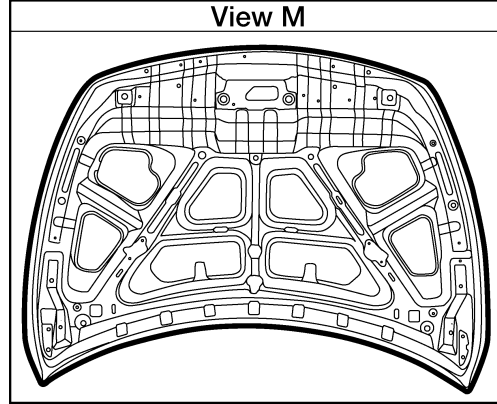
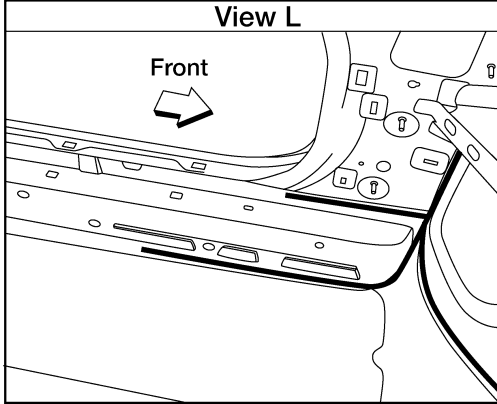
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BODY SEALING

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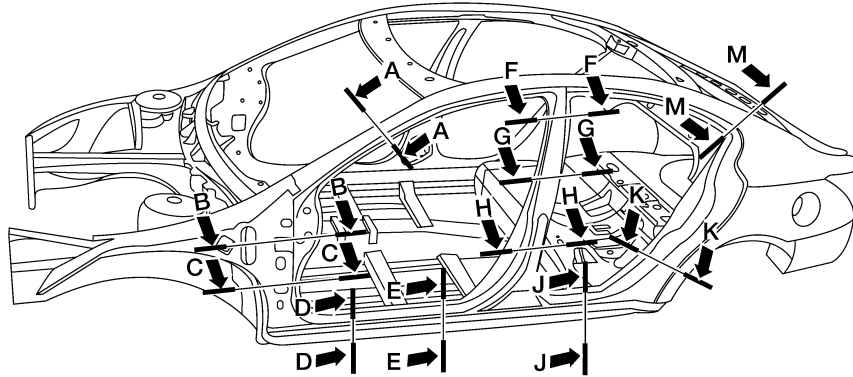
BODY CONSTRUCTION

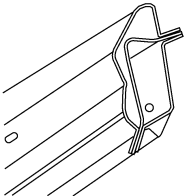
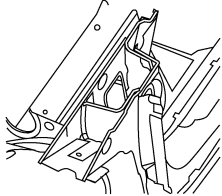
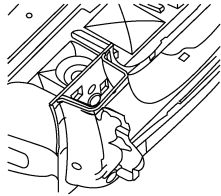
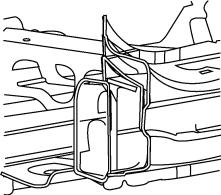
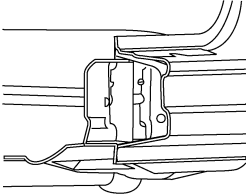
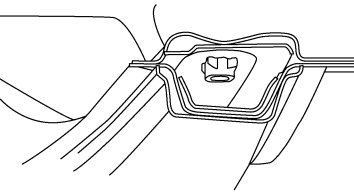
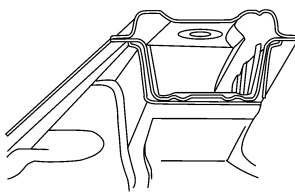
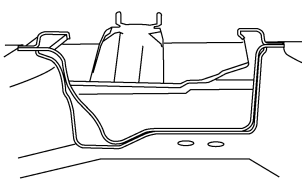
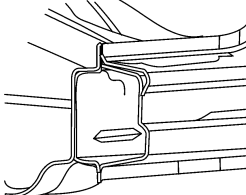
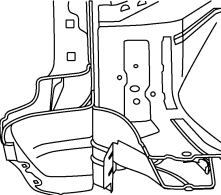
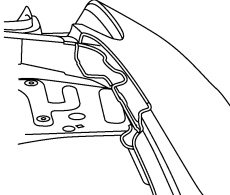
< ON-VEHICLE REPAIR >

BODY CONSTRUCTION

Body Construction

INFOID:000000005461949



Section A-A	Section B-B	Section C-C
		
Section D-D	Section E-E	Section F-F
		
Section G-G	Section H-H	Section J-J
		
Section K-K	Section M-M	
		

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BODY ALIGNMENT

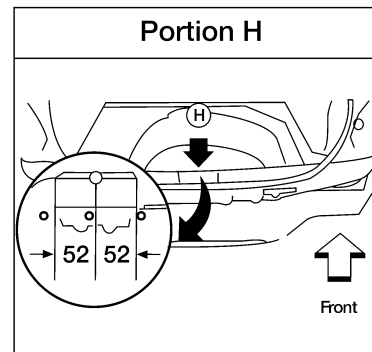
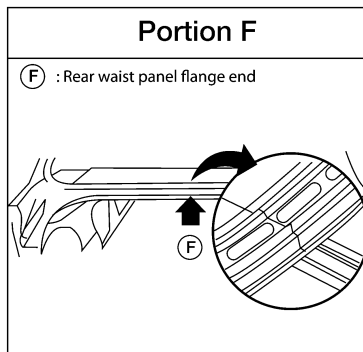
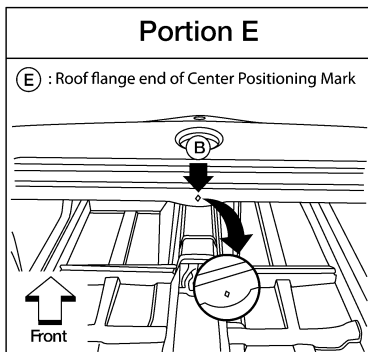
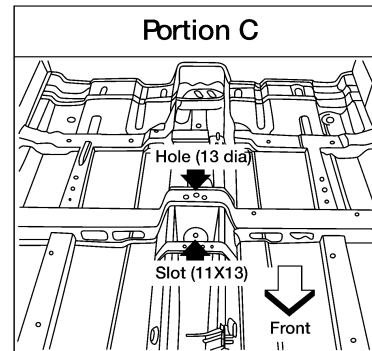
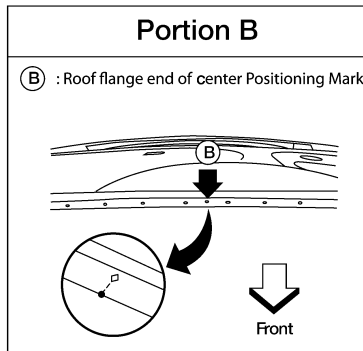
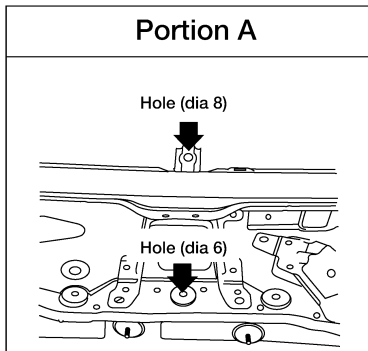
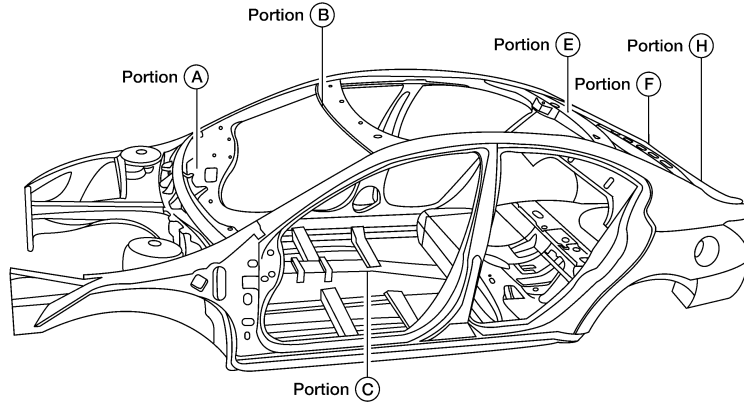
< ON-VEHICLE REPAIR >

BODY ALIGNMENT

Body Center Marks

INFOID:000000005461950

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.



Unit : mm

AWKIA1350GB

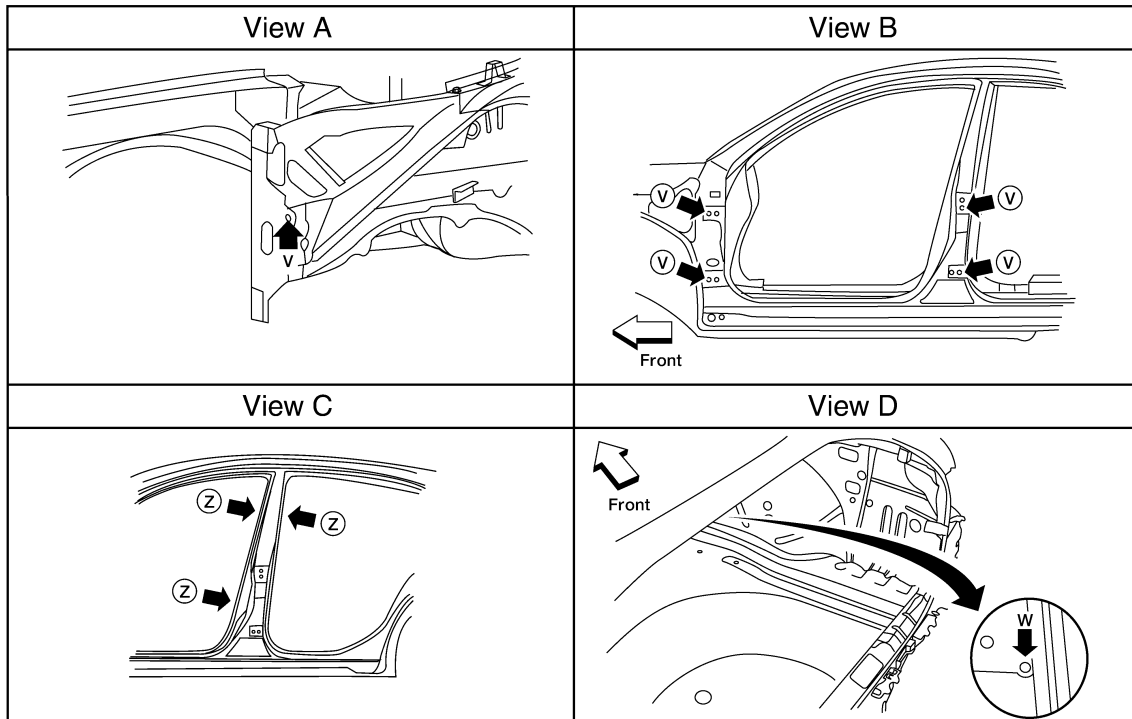
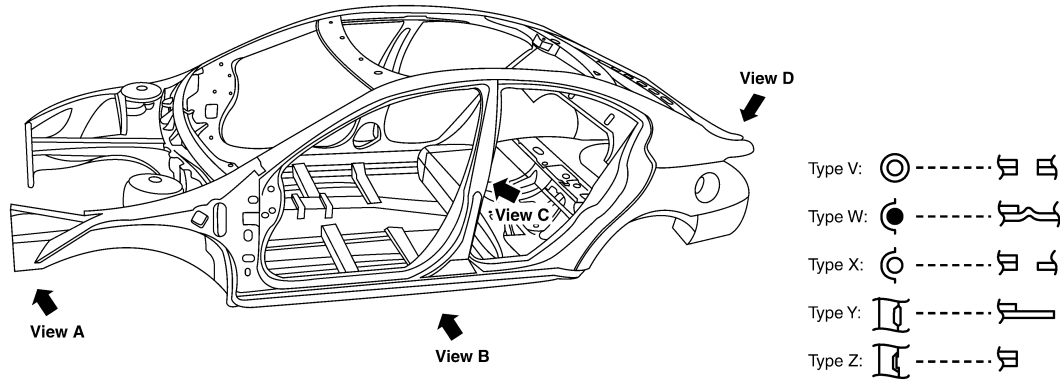
BODY ALIGNMENT

< ON-VEHICLE REPAIR >

Panel Parts Matching Marks

INFOID:000000005461951

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.



AWKIA1351GB

Description

INFOID:000000005461952

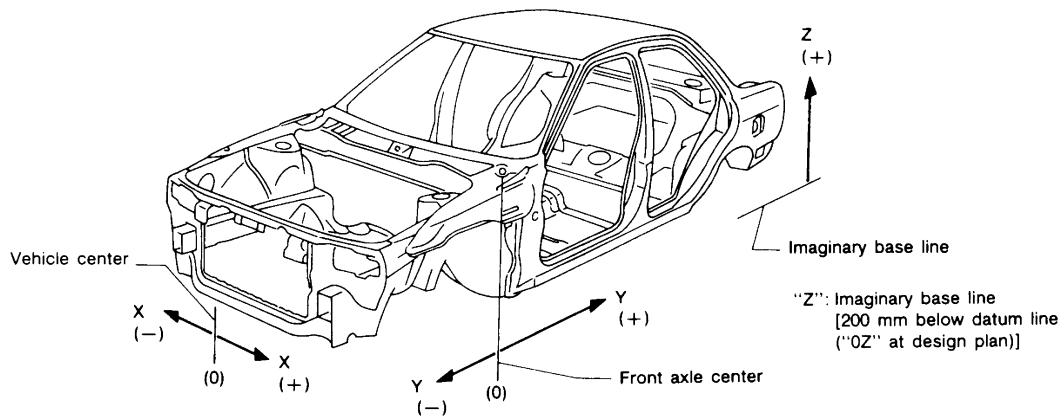
- All dimensions indicated in the figures are actual.
- When using a tracking gauge, adjust both pointers to equal length. Then check the pointers and gauge itself to make sure there is no free play.
- When a measuring tape is used, check to be sure there is no elongation, twisting or bending.
- Measurements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

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BODY ALIGNMENT

< ON-VEHICLE REPAIR >



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BODY ALIGNMENT

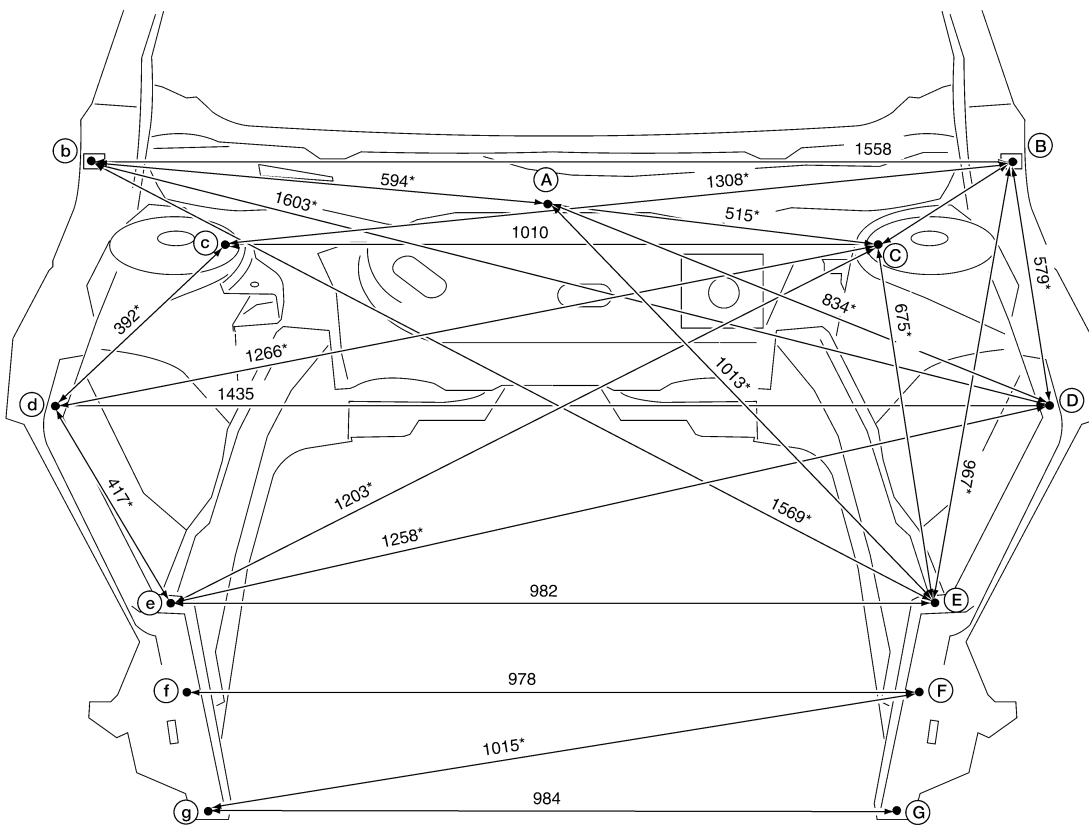
< ON-VEHICLE REPAIR >

Engine Compartment

INFOID:000000005461953

Measurement

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



Unit : mm

AWKIA1352GB

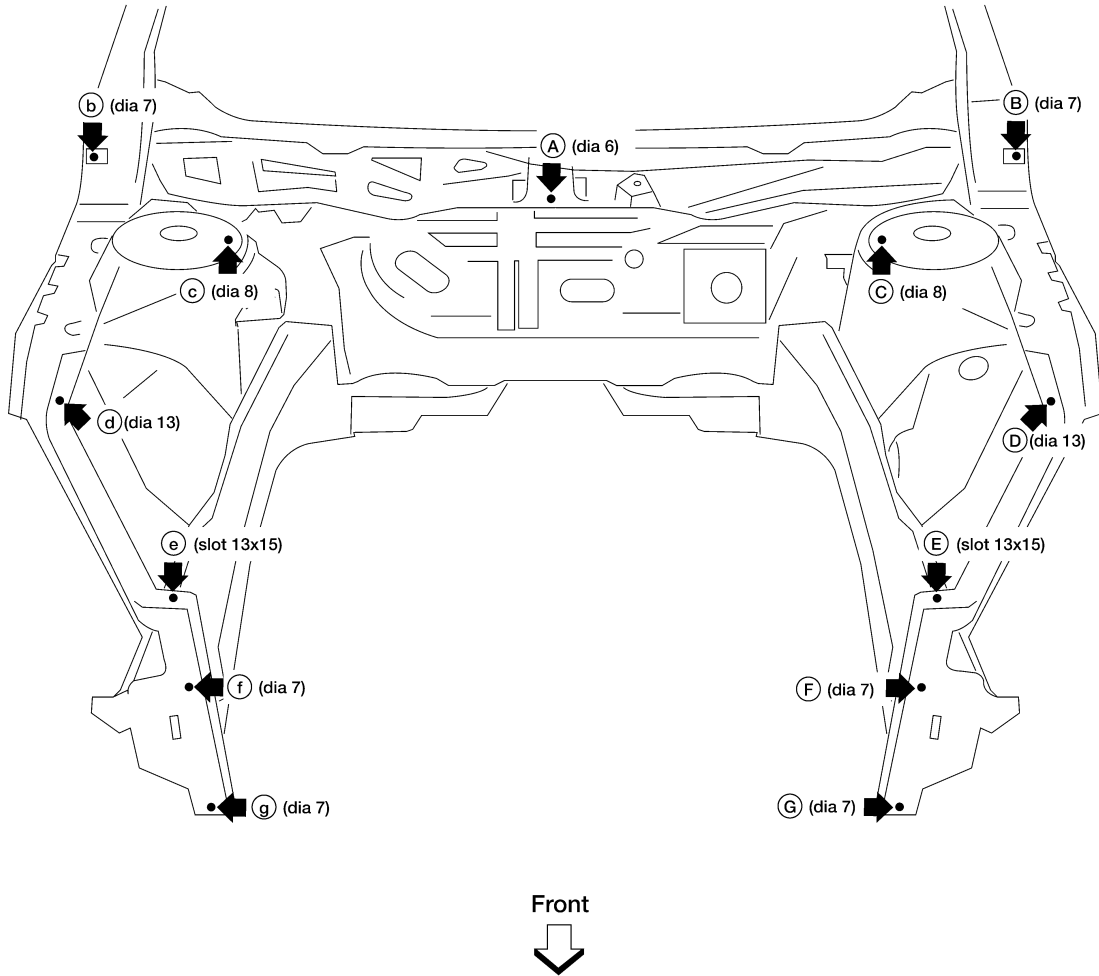
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BODY ALIGNMENT

< ON-VEHICLE REPAIR >

Measurement Points



Unit : mm

AWKIA1353GB

BODY ALIGNMENT

< ON-VEHICLE REPAIR >

Underbody

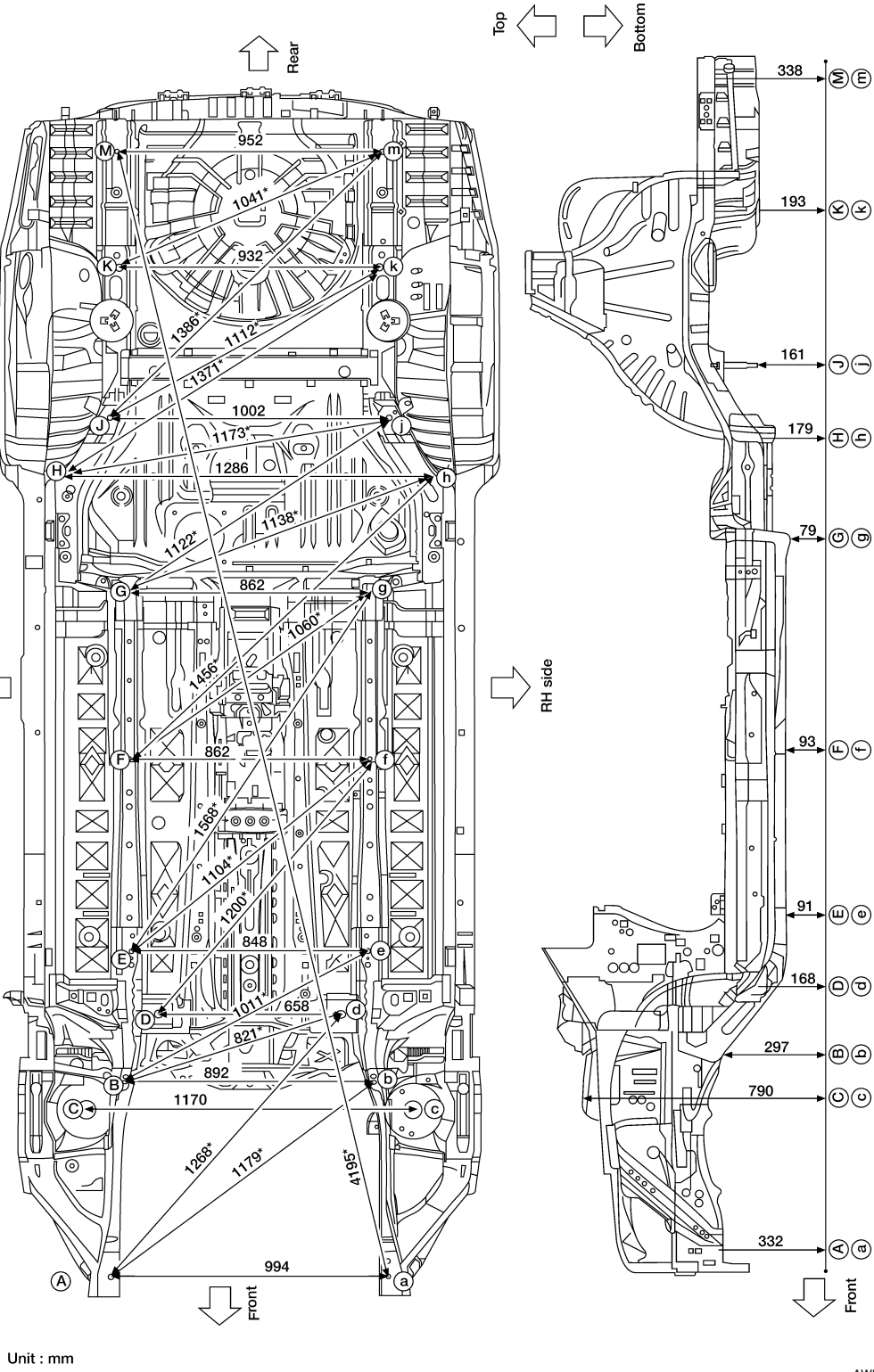
INFOID:000000005461954

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.



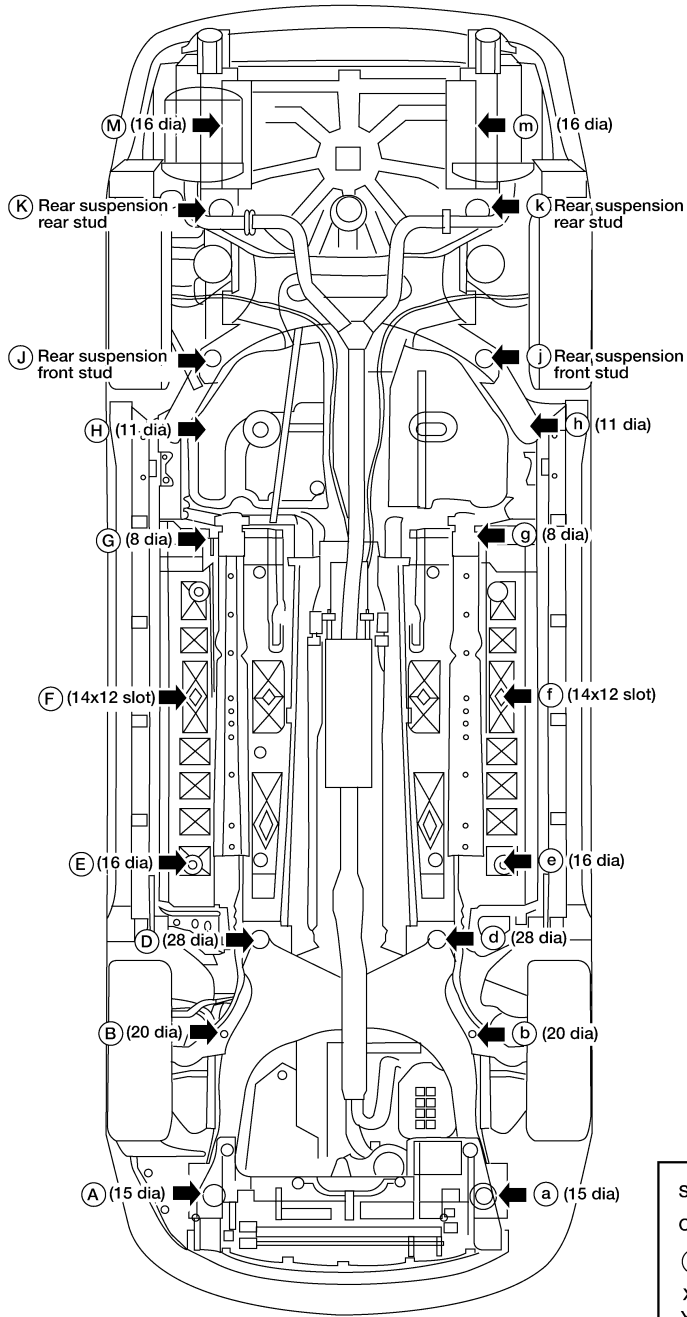
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BODY ALIGNMENT

< ON-VEHICLE REPAIR >

Measurement Points



(A) (a)
X : ± 497
Y : -556
Z : 332

(B) (b)
X : ± 446
Y : 151
Z : 297

(D) (d)
X : ± 327
Y : 395
Z : 168

(E) (e)
X : ± 424
Y : 624
Z : 91

(F) (f)
X : ± 431
Y : 1322
Z : 93

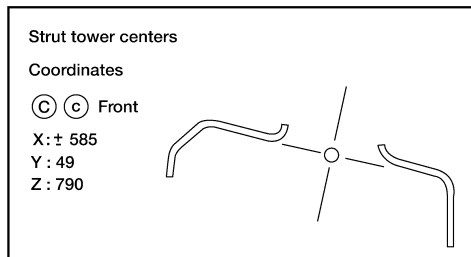
(G) (g)
X : ± 431
Y : 1938
Z : 79

(H) (h)
X : ± 643
Y : 2301
Z : 179

(J) (j)
X : ± 501
Y : 2558
Z : 161

(K) (k)
X : ± 466
Y : 3107
Z : 193

(M) (m)
X : ± 476
Y : 3525
Z : 338



Unit : mm

AWKIA1355GB

BODY ALIGNMENT

< ON-VEHICLE REPAIR >

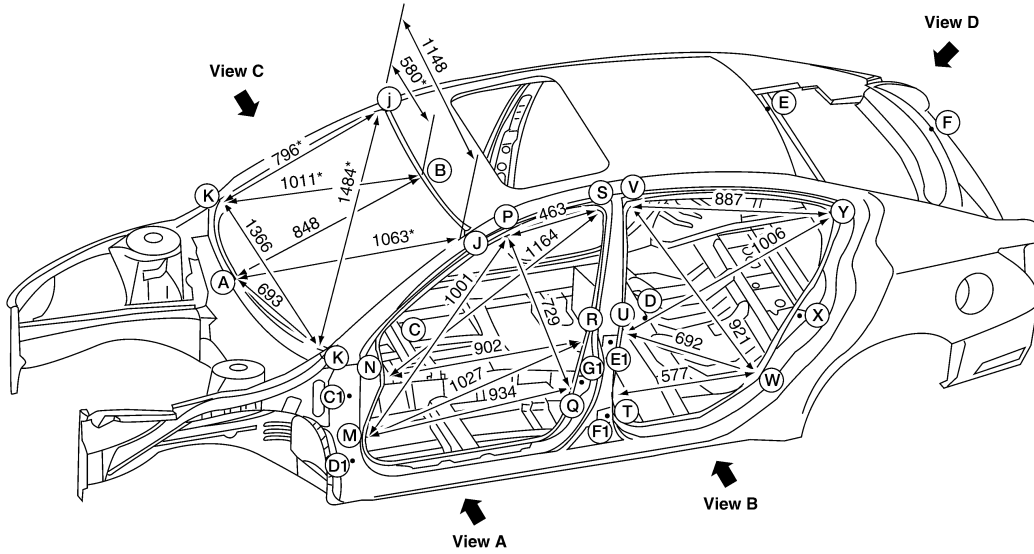
Passenger Compartment

INFOID:000000005461955

Measurement

Unit : mm

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



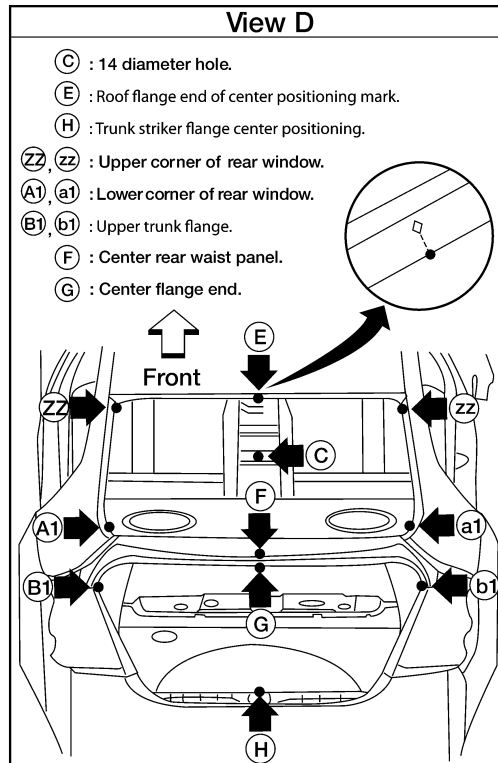
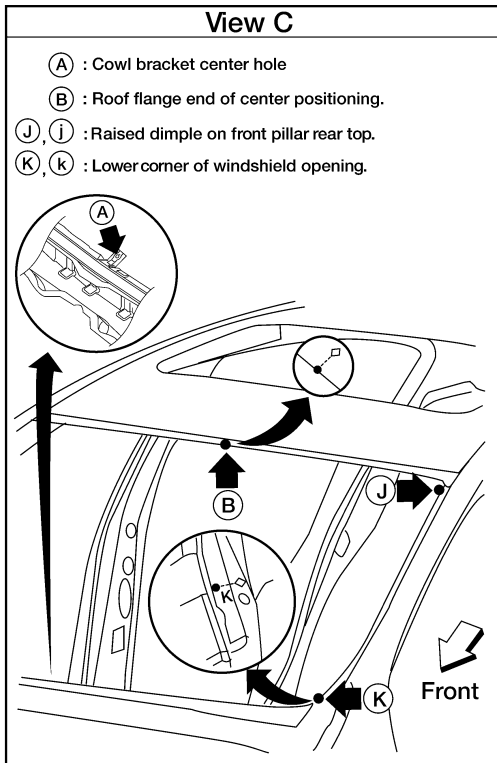
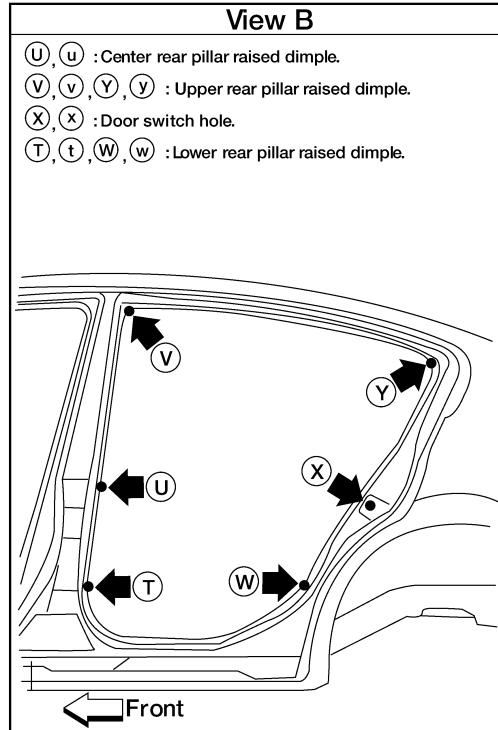
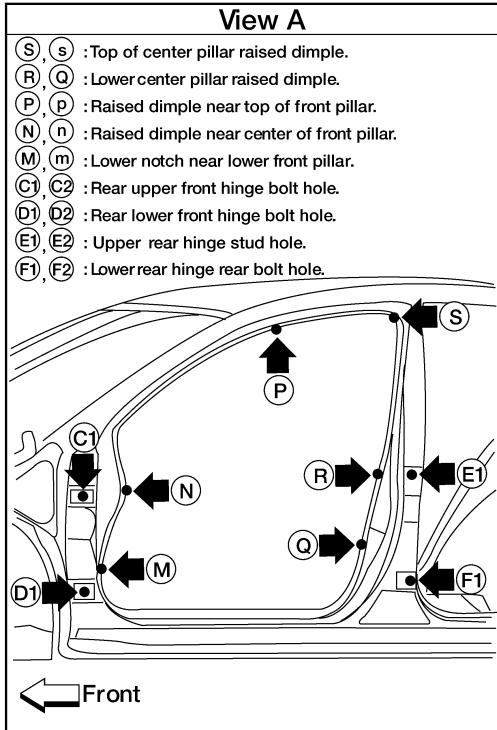
Point	Dimension	Point	Dimension	Point	Dimension	Point	Dimension
(A) - (C)	999	(D) - (T)	742	(Gt) - (X)	875	(S) - (Q)	730
(A) - (D)	1842	(D) - (t)	742	(M) - (m)	1465	(S) - (s)	1501
(A) - (F)	2394	(D) - (u)	817	(M) - (P)	1001	(T) - (t)	1481
(B) - (C)	971	(D) - (U)	817	(M) - (q)	1079	(T) - (V)	801
(C) - (E)	1806	(D) - (v)	1039	(M) - (r)	1148*	(T) - (y)	1157*
(C) - (m)	931*	(D) - (V)	1135	(M) - (s)	1501*	(T) - (Y)	1157
(C) - (n)	1083*	(D) - (w)	701	(M) - (S)	1501	(U) - (u)	1476
(C) - (p)	878*	(D) - (W)	873	(N) - (n)	1449	(V) - (t)	801
(C) - (q)	975*	(D) - (y)	1110	(N) - (P)	2601	(V) - (v)	1155
(C) - (r)	902*	(D) - (Y)	1110	(N) - (r)	902*	(V) - (w)	1601*
(C) - (s)	1240*	(D1) - (E1)	906	(P) - (p)	1208	(W) - (t)	577*
(C1) - (E1)	3626	(D1) - (F1)	1234	(Q) - (n)	897*	(W) - (u)	1602*
(C1) - (F1)	1194	(D1) - (G1)	1079	(Q) - (p)	729*	(W) - (w)	1484
(C1) - (G1)	1075	(D1) - (X)	1953	(Q) - (q)	1478	(W) - (y)	736
(C1) - (X)	2487	(E1) - (X)	766	(Q) - (s)	730*	(W) - (Y)	736
(D) - (E)	1104	(F1) - (X)	812	(R) - (r)	1477	(Y) - (y)	1287

AWKIA1356GB

BODY ALIGNMENT

< ON-VEHICLE REPAIR >

Measurement Points



AWKIA1357GB

BODY ALIGNMENT

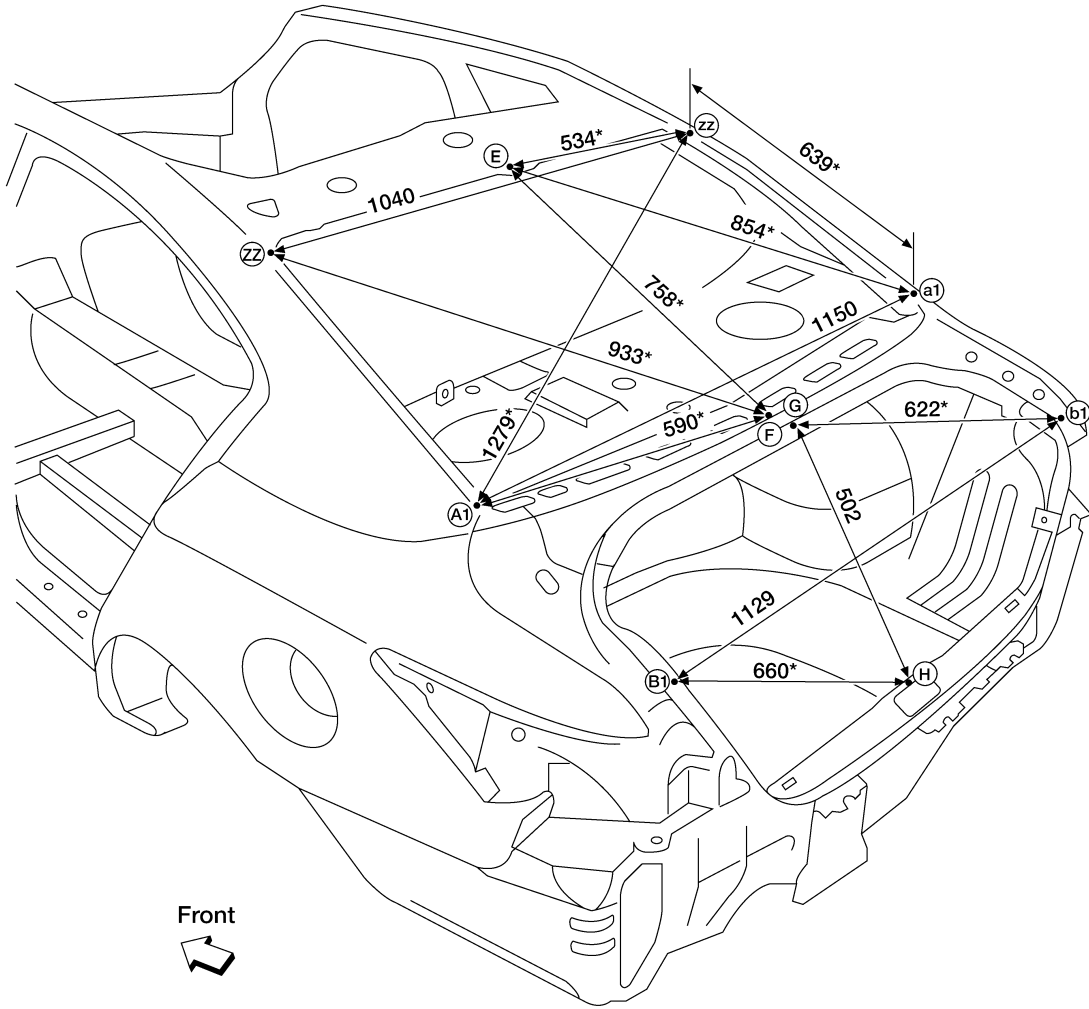
< ON-VEHICLE REPAIR >

Rear Body

INFOID:000000005461956

Measurements

Service Joint

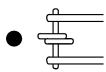


Front
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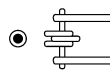
BRM

Unit : mm

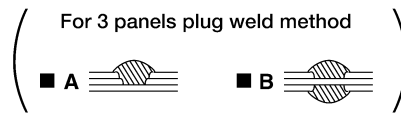
2-spot welds



3-spot welds



MIG Plug weld



MIG seam weld/
Point weld



AWKIA1358GB

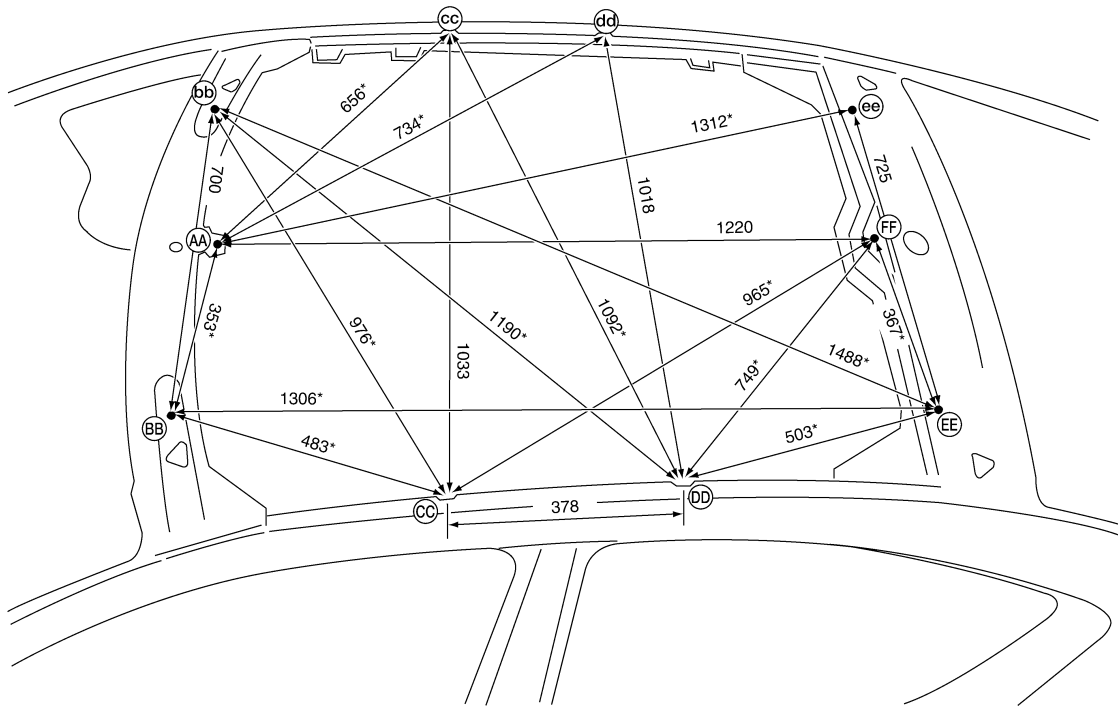
BODY ALIGNMENT

< ON-VEHICLE REPAIR >

Roof

INFOID:000000005461957

MEASUREMENTS (DUAL PANEL SUNROOF)



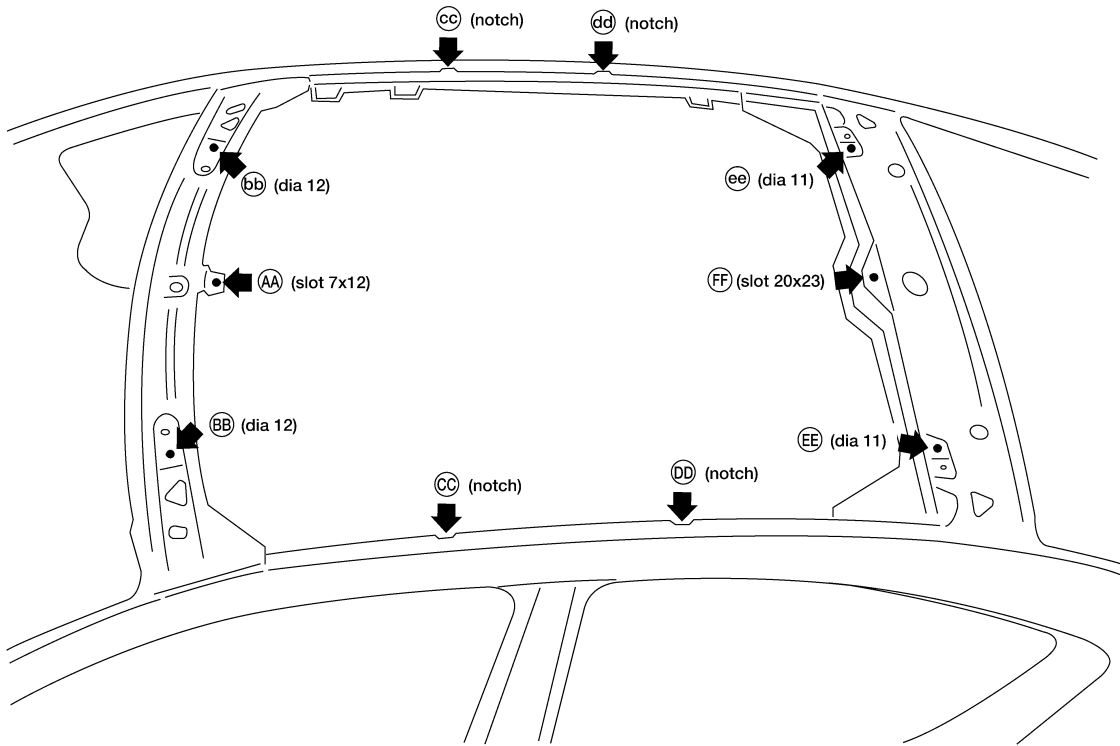
Unit : mm

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BODY ALIGNMENT

< ON-VEHICLE REPAIR >

MEASUREMENT POINTS (DUAL PANEL SUNROOF)



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PRECAUTIONS IN REPAIRING HIGH STRENGTH STEEL

< ON-VEHICLE REPAIR >

PRECAUTIONS IN REPAIRING HIGH STRENGTH STEEL

High Strength Steel (HSS)

INFOID:000000005461958

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

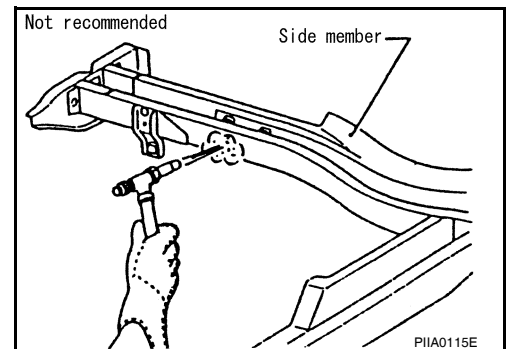
Accordingly, precautions in repairing automotive bodies made of high strength steel are described below:

Tensile strength	Major applicable parts
370 - 590 MPa	<ul style="list-style-type: none"> • Lower front and rear hoodledge • Upper hoodledge • Side dash • Roof bow No. 2 and No.4 • 3rd crossmember (Front floor component part) • Inner sill • Rear side member assembly • Rear seat crossmember • Center rear crossmember assembly • Inner side roof rail • Inner center pillar • Inner center front bumper reinforcement • Front bumper stay • Rear side bumper bracket • Other reinforcements
780 - 1350 MPa	<ul style="list-style-type: none"> • Front side member assembly • Front side member closing plate assembly • Front side member extension • Front side member center extension • Outer roof rail reinforcement (Side body assembly component part) • 2nd crossmember (Front floor component part)

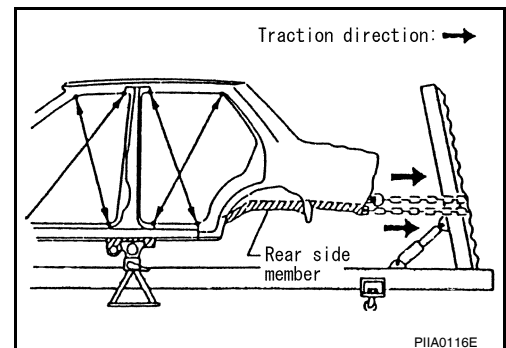
Read the following precautions when repairing HSS:

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.)



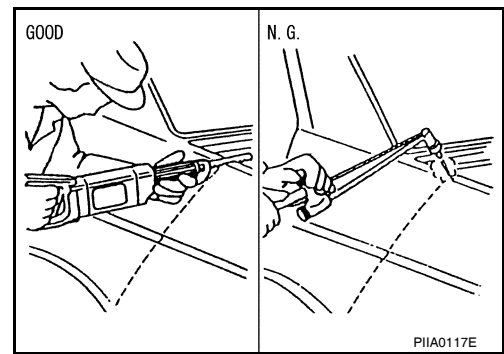
- When straightening body panels, use caution in pulling any HSS panel. Because HSS is very strong, pulling may cause deformation in adjacent portions of the body. In this case, increase the number of measuring points, and carefully pull the HSS panel.



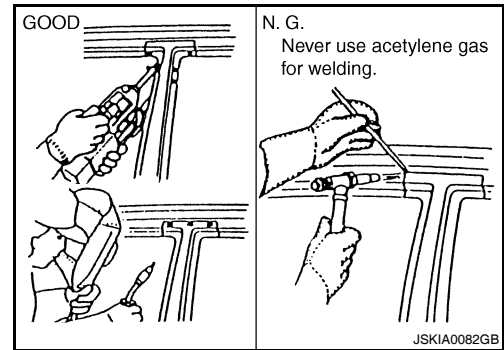
PRECAUTIONS IN REPAIRING HIGH STRENGTH STEEL

< ON-VEHICLE REPAIR >

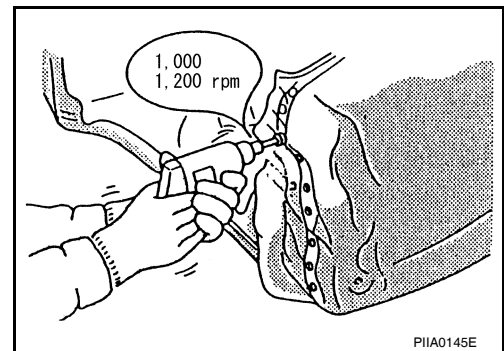
- When cutting HSS panels, avoid gas (torch) cutting if possible. Instead, use a saw to avoid weakening surrounding areas due to heat. If gas (torch) cutting is unavoidable, allow a minimum margin of 50 mm (1.97 in).



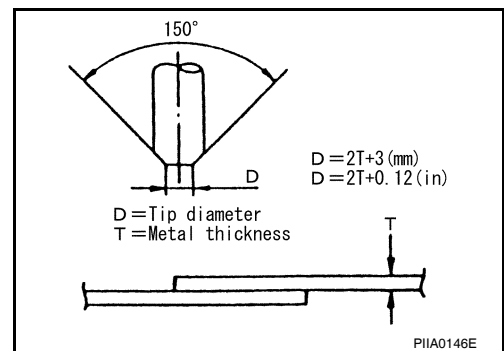
- When welding HSS panels, use spot welding whenever possible in order to minimize weakening surrounding areas due to heat. If spot welding is impossible, use MIG. welding. Do not use gas (torch) for welding because it is inferior in welding strength.



- 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.



- 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.

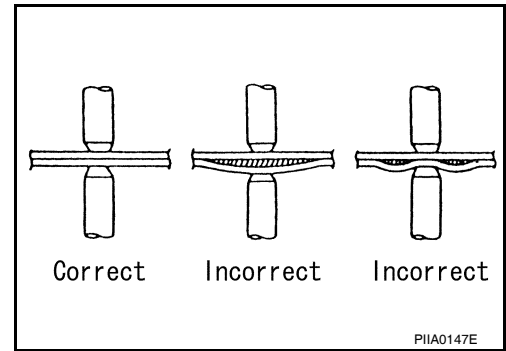


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PRECAUTIONS IN REPAIRING HIGH STRENGTH STEEL

< ON-VEHICLE REPAIR >

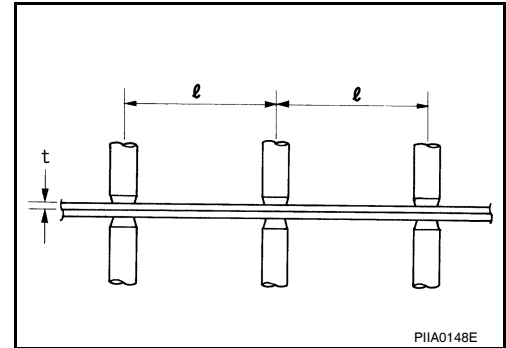
- The panel surfaces must fit flush to each other, leaving no gaps.



- Follow the specifications for the proper welding pitch.

Unit: mm (in)

Thickness (t)	Minimum pitch (l)
0.6 (0.024)	10 (0.39) or 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



REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >

REPLACEMENT OPERATIONS

Description

INFOID:000000005461959

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 might not apply in some regions or countries.


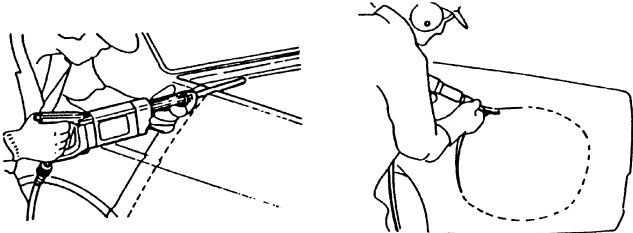

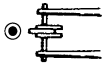


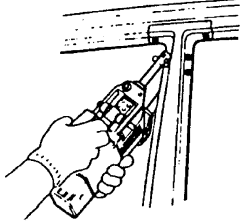

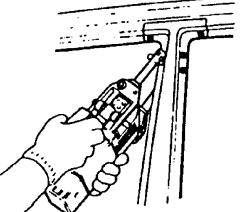




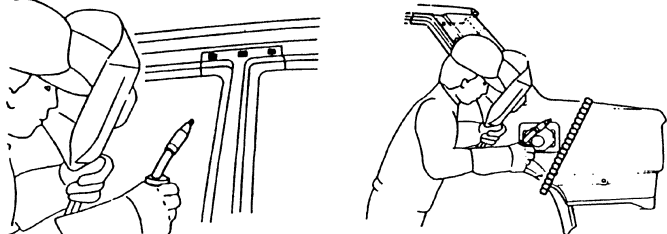

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REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >

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

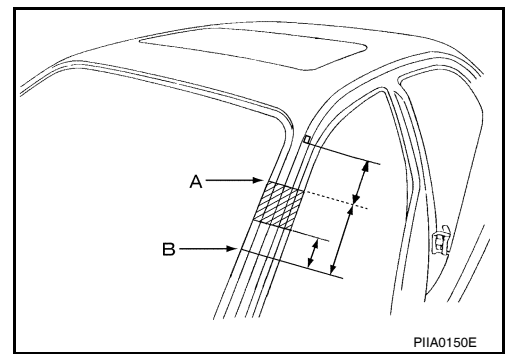
 <p>Saw cut or air chisel cut</p>		
<p>Spot weld</p> <p>●●●● 2-spot welds</p>  <p>●●●● 3-spot welds</p> 	<p>2-spot welds (2-panel overlapping portions)</p>  <p>3-spot welds (3-panel overlapping portions)</p> 	
<p>■ ■ ■ ■ MIG plug weld</p>  <p>⌒ ⌒ ⌒ ⌒ MIG seam weld/ Point weld</p> 		
<p>▨ ▨ ▨ ▨ Brazing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

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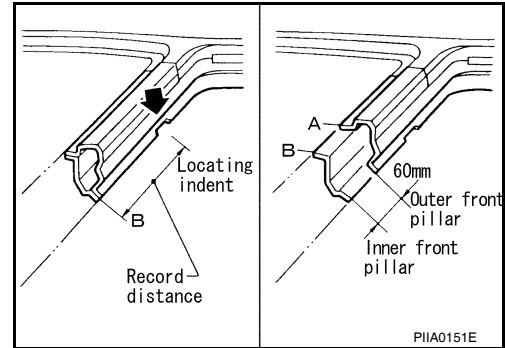
REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >

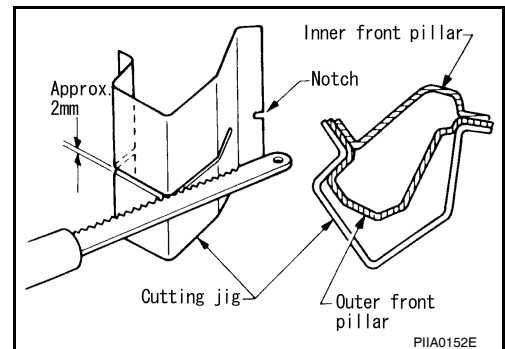
- Front pillar butt joint can be determined anywhere within shaded area as shown in the figure. The best location for the butt joint is at position A due to the construction of the vehicle. Refer to the front pillar section.



- 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.

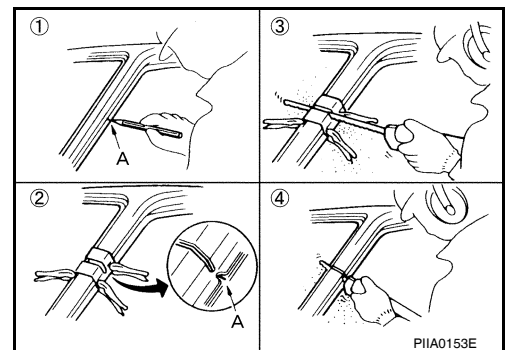


- Prepare a cutting jig to make outer pillar easier to cut. Also, this will permit service part to be accurately cut at joint position.



- 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.



FOAM REPAIR

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

Fill Procedures

1. Fill procedures after installation service part.
 - Remove foam material remaining on vehicle side.

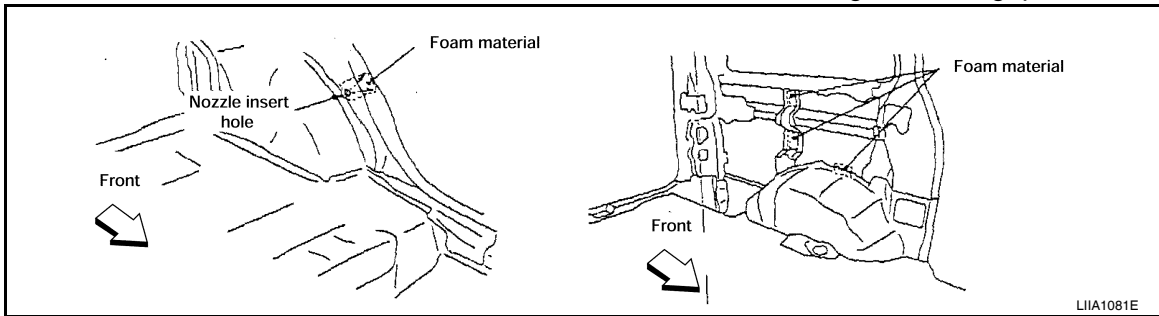
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REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >

- 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 service part.



2. Fill procedures before installation service part

- Remove foam material remaining on vehicle side.
- Clean area in which foam material on wheelhouse outer side was removed.

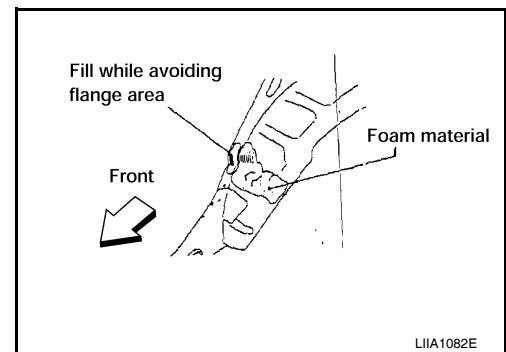
NOTE:

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

- Install service part.

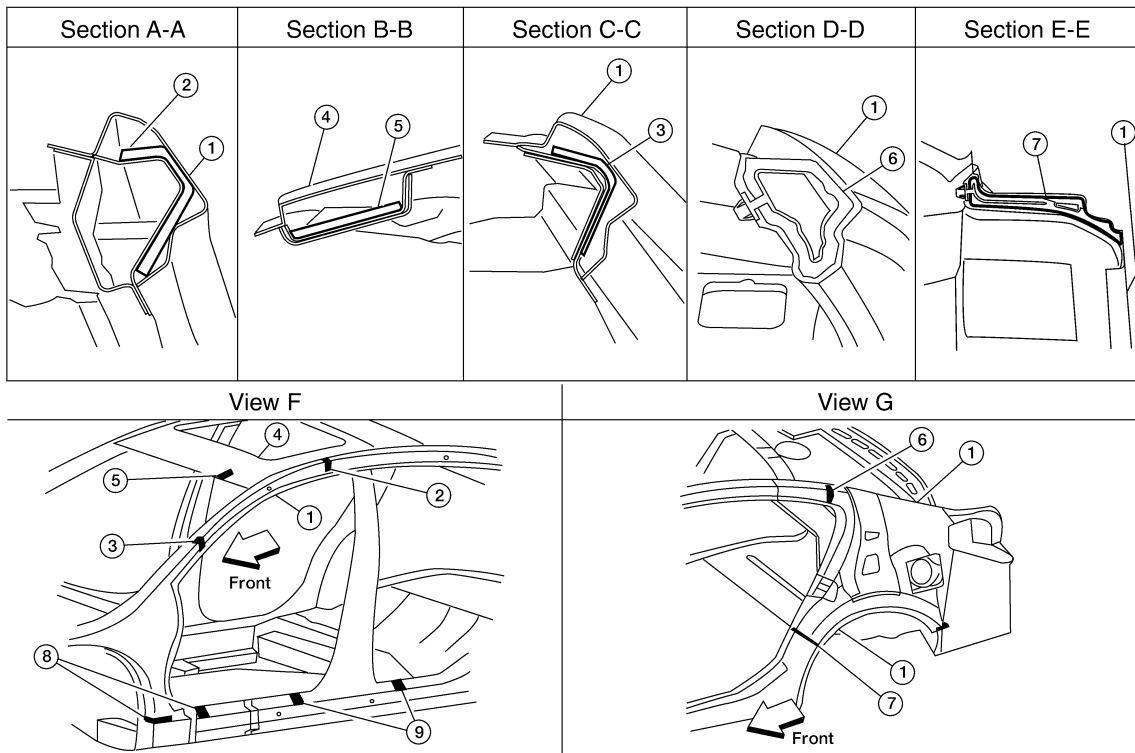
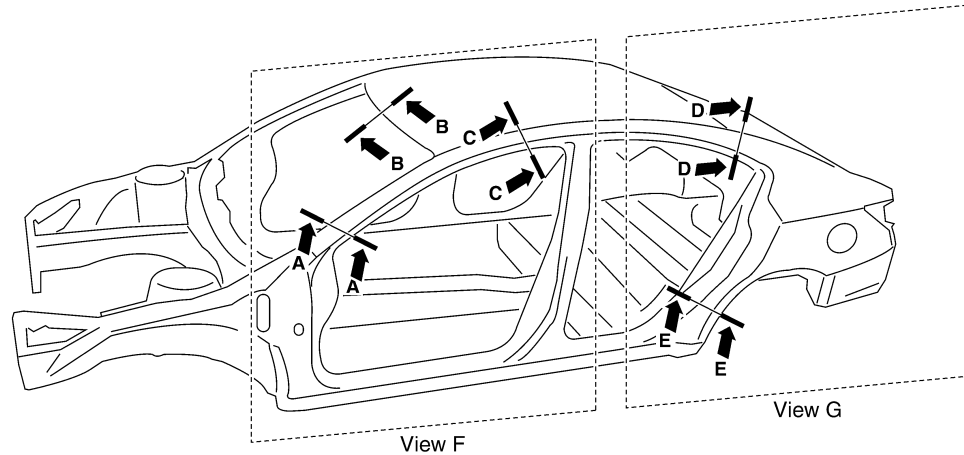
NOTE:

Refer to label for information on working times.



REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >



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- | | | |
|--|---|--|
| 1. Body side outer | 2. Body side insulation (foam) upper front pillar | 3. Body side insulation (foam) front pillar |
| 4. Roof panel assembly | 5. Roof panel insulation (foam) front roof rail (standard roof) | 6. Body side insulation (foam) rear pillar |
| 7. Body side insulation (foam) lower rear pillar | 8. Body side insulation strip front pillar lower reinforcement | 9. Body side insulation strip, center pillar reinforcement |

Note:

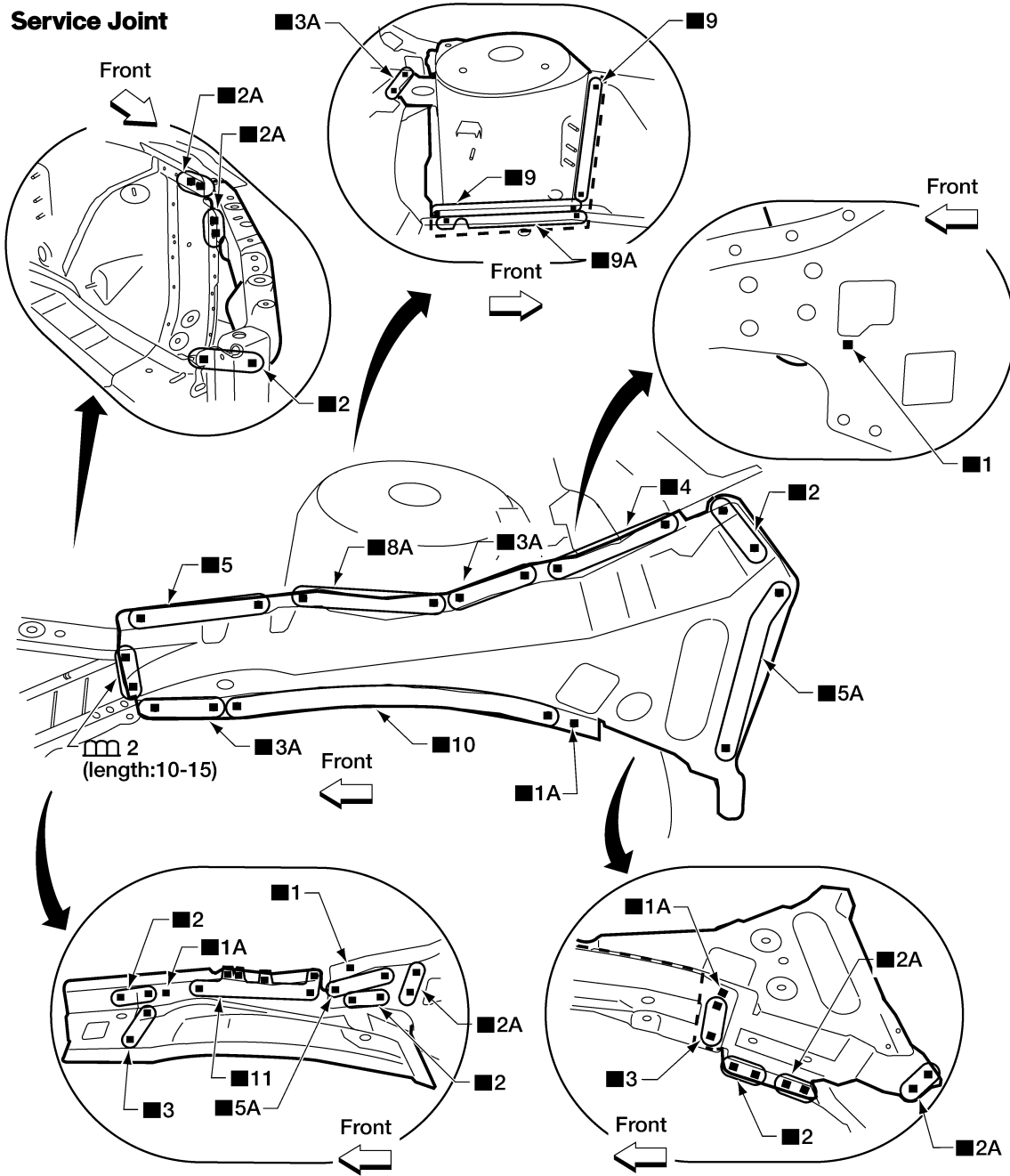
Views F & G are shown with the body side outer removed.

REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >

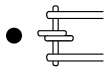
Hoodledge

INFOID:000000005461960

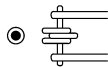


Unit : mm

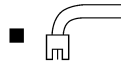
2-spot welds



3-spot welds



MIG Plug weld



(For 3 panels plug weld method



MIG seam weld/
Point weld



AWKIA1363GB

Replacement parts

- Front suspension spring support
- Hoodledge reinforcement
- Hoodledge lower assembly
- Upper radiator core support

REPLACEMENT OPERATIONS

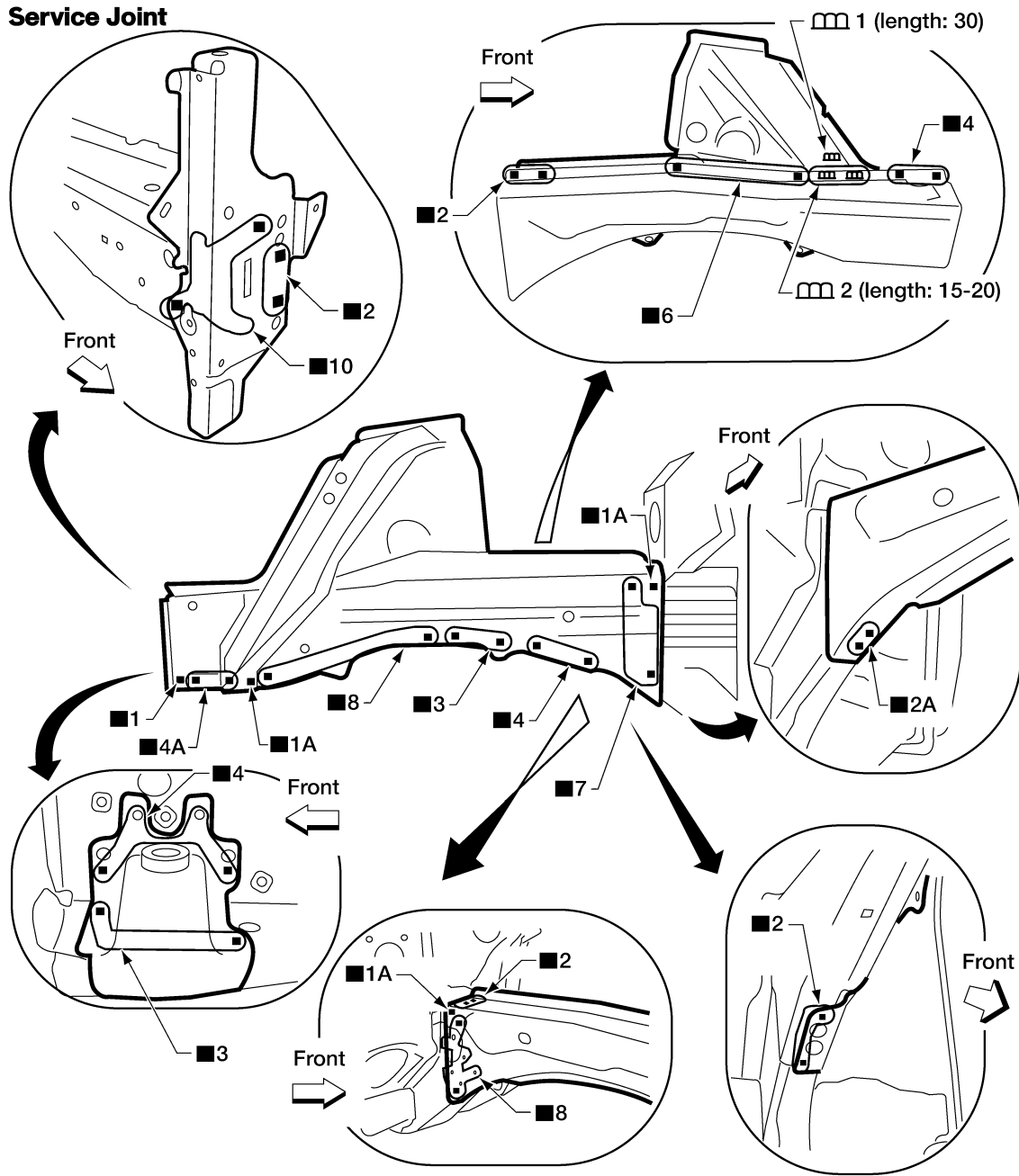
< ON-VEHICLE REPAIR >

Front Side Member (Partial Replacement)

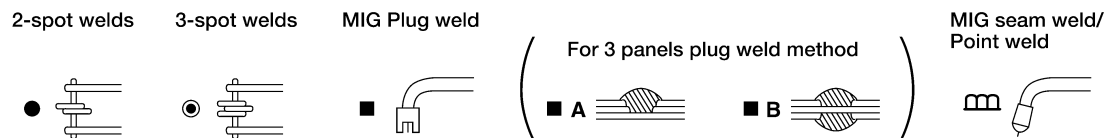
INFOID:000000005461961

Work after the hoodedge has been removed.

Service Joint



Unit : mm



AWKIA1364GB

Replacement parts

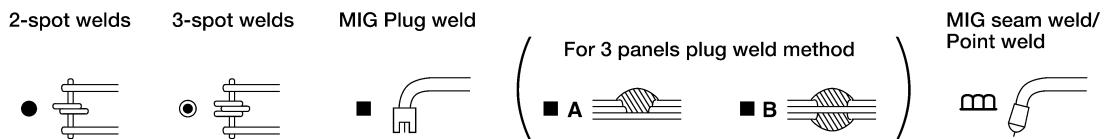
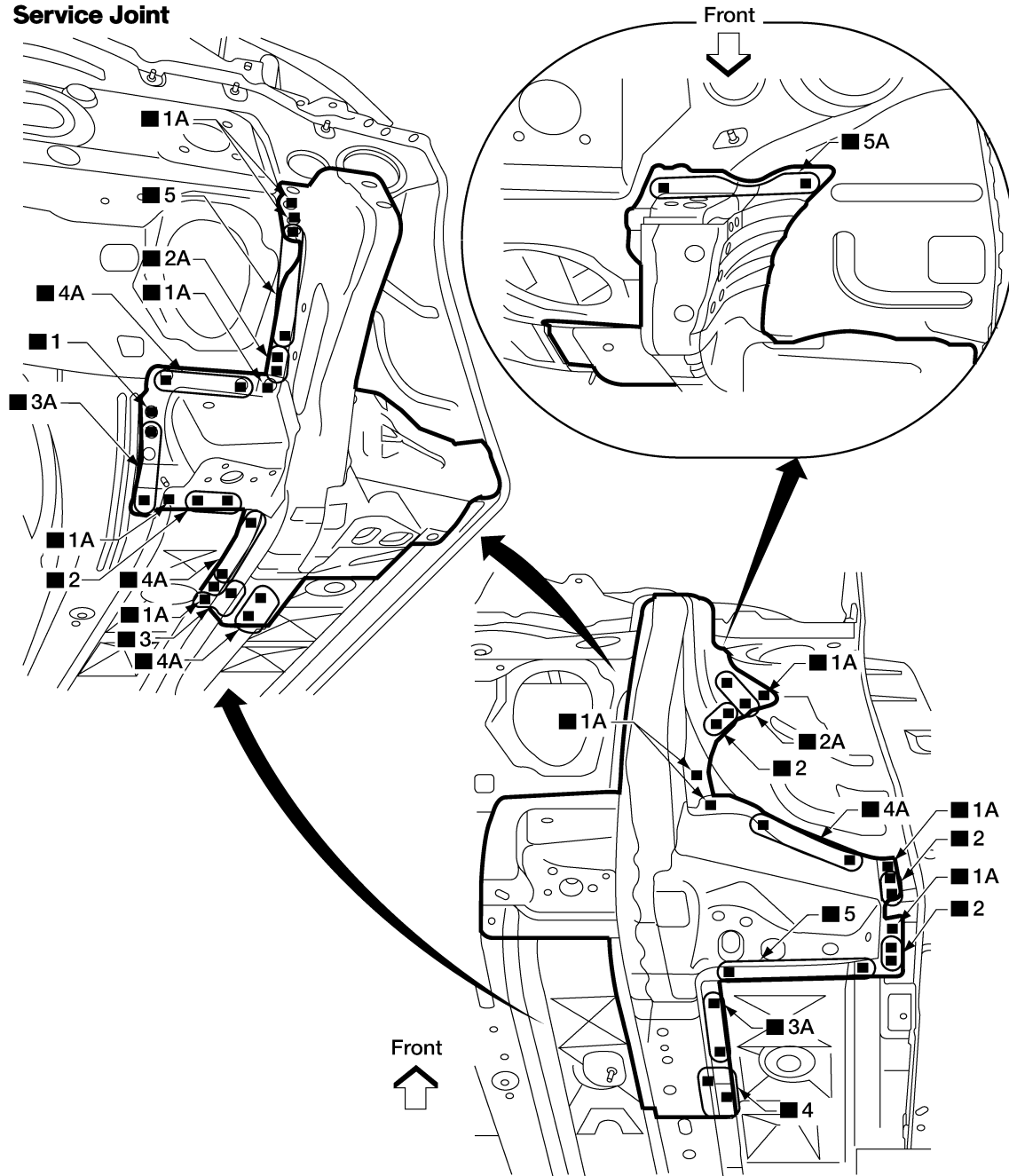
- Front side member
 - Front suspension member weld nut plate
 - Closing plate assembly
 - Radiator core side support
- Work after front side member and closing plate assembly have been removed.

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REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >

Service Joint



AWKIA1365GB

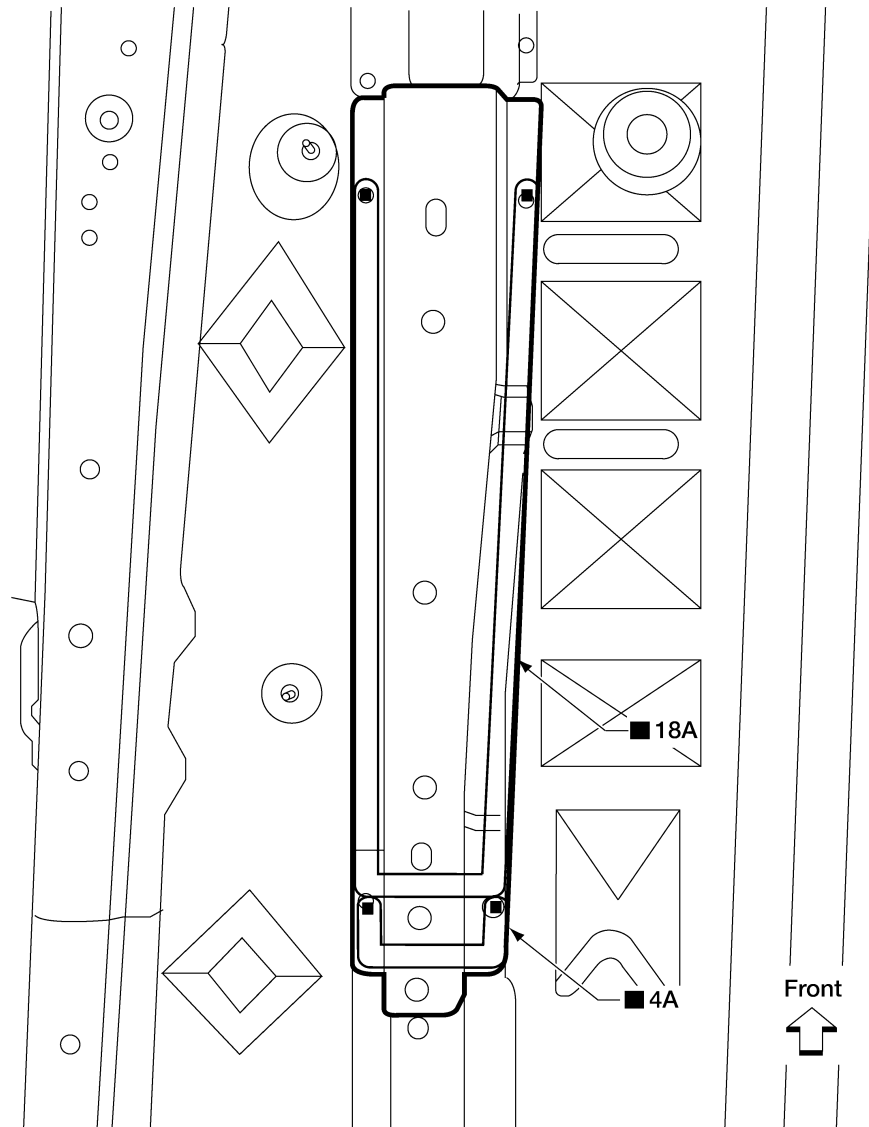
Replacement parts

- Front side member extension
- Shown with front side member extension removed.

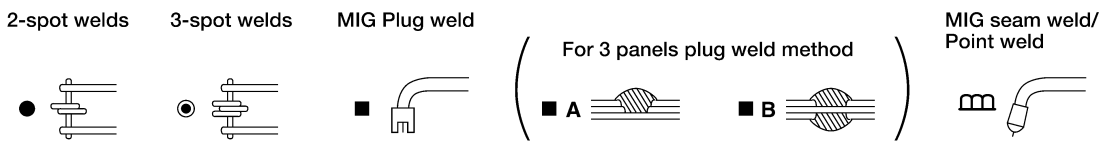
REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >

Service Joint



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Replacement parts

- Front side member center extension

Front Side Member Assembly

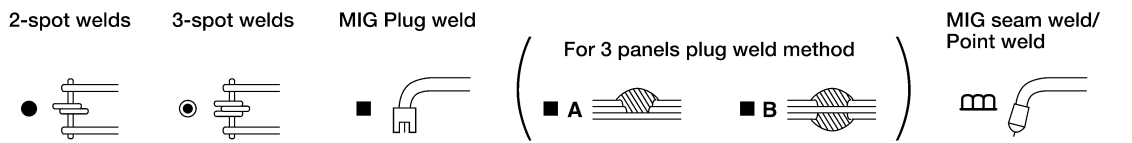
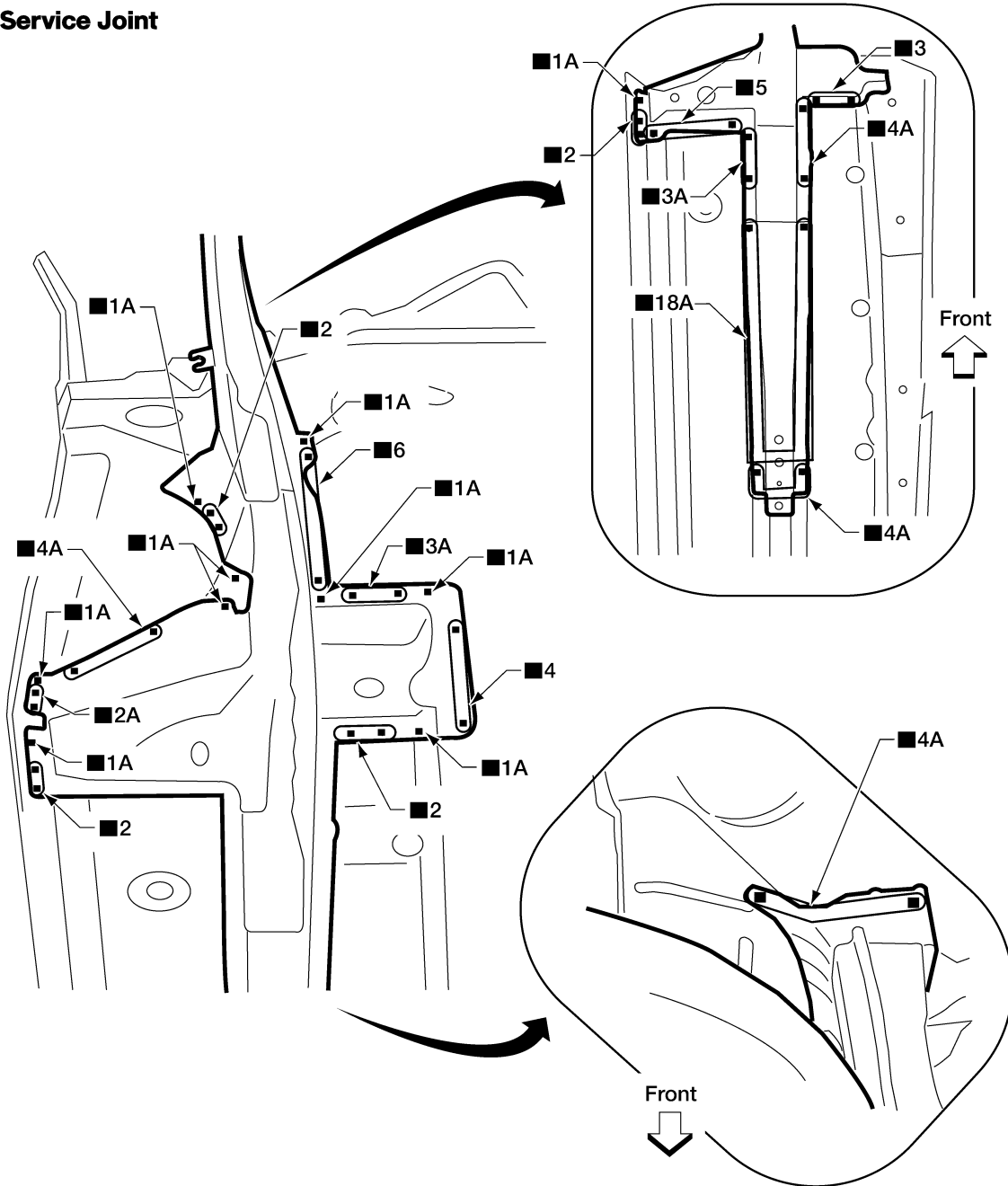
INFOID:000000005461962

- Work after hoodledge has been removed.

REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >

Service Joint



AWKIA1367GB

Replacement parts

- Front side member assembly

Front Pillar

INFOID:000000005461963

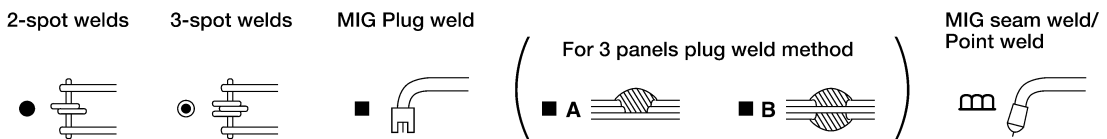
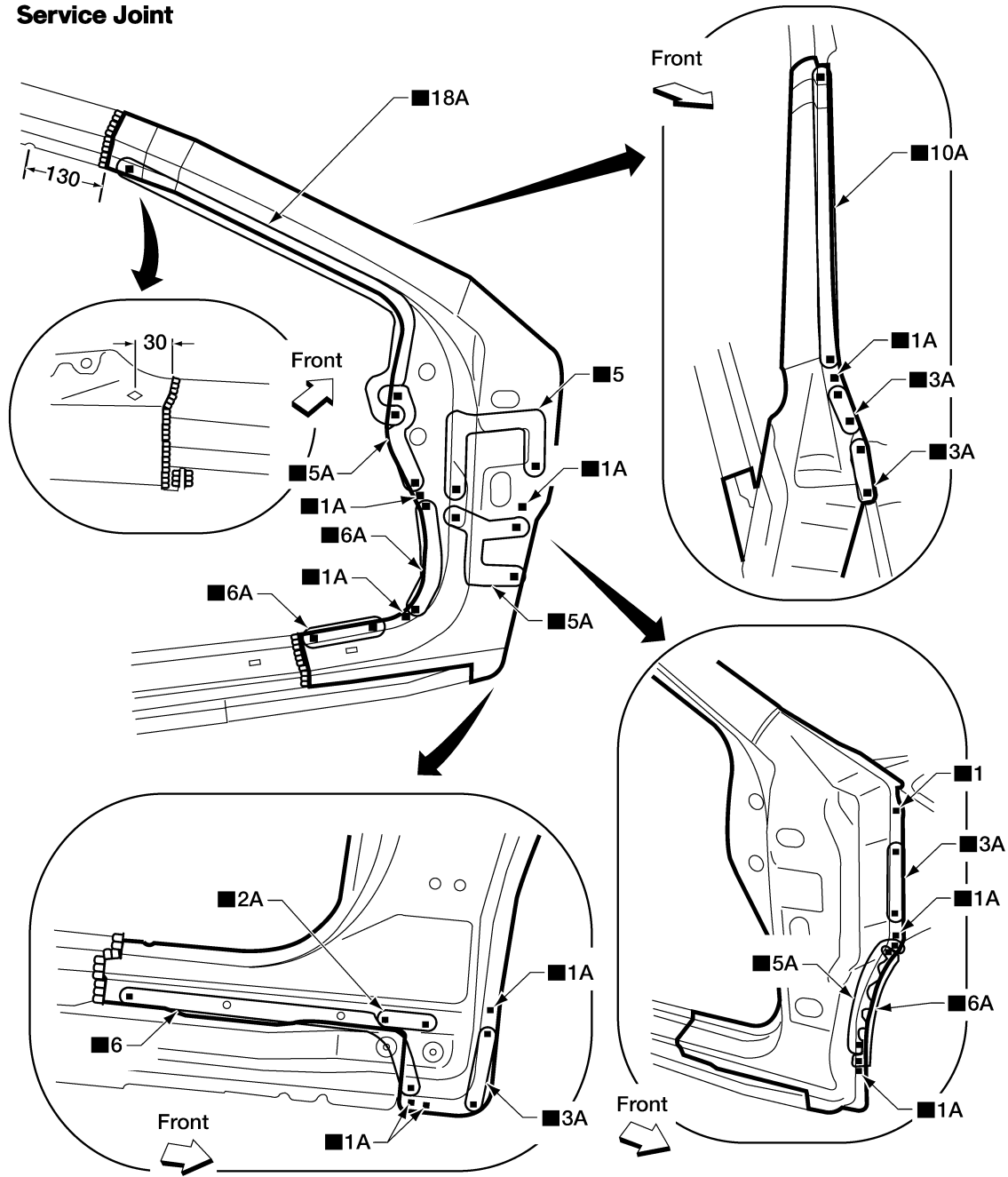
OUTER

- Work after the upper hoodledge has been removed.

REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >

Service Joint



AWKIA1368GB

Replacement parts

- Front pillar section of front body side outer

REINFORCEMENT

- Work after front pillar section of the front body side outer has been removed.

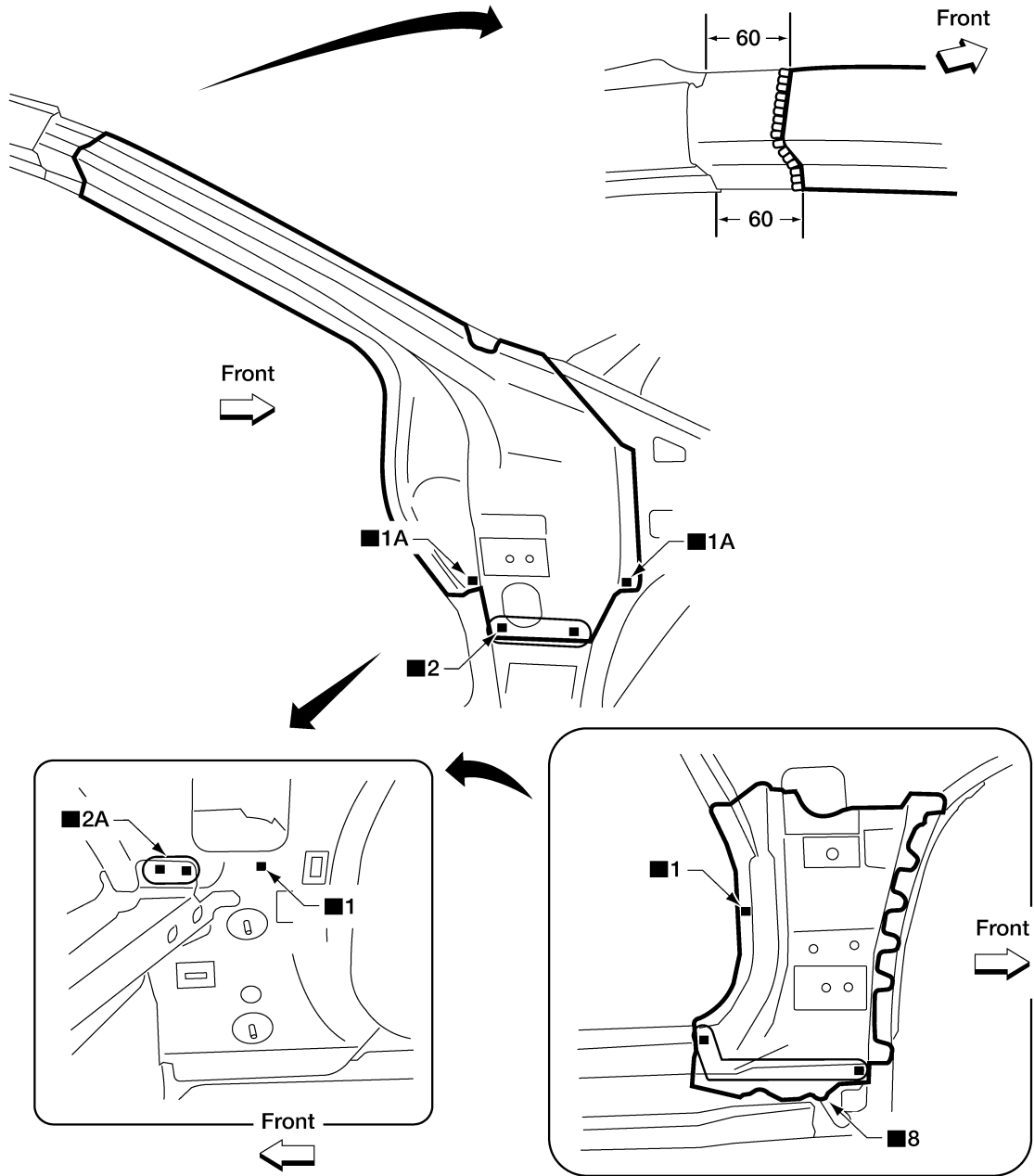
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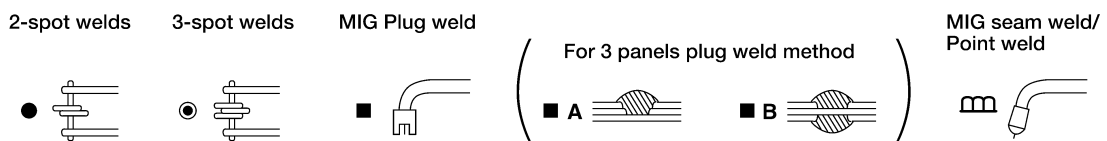
REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >

Service Joint



Unit : mm



AWKIA1369GB

Replacement parts

- Front pillar upper hinge brace
- Front pillar lower hinge brace

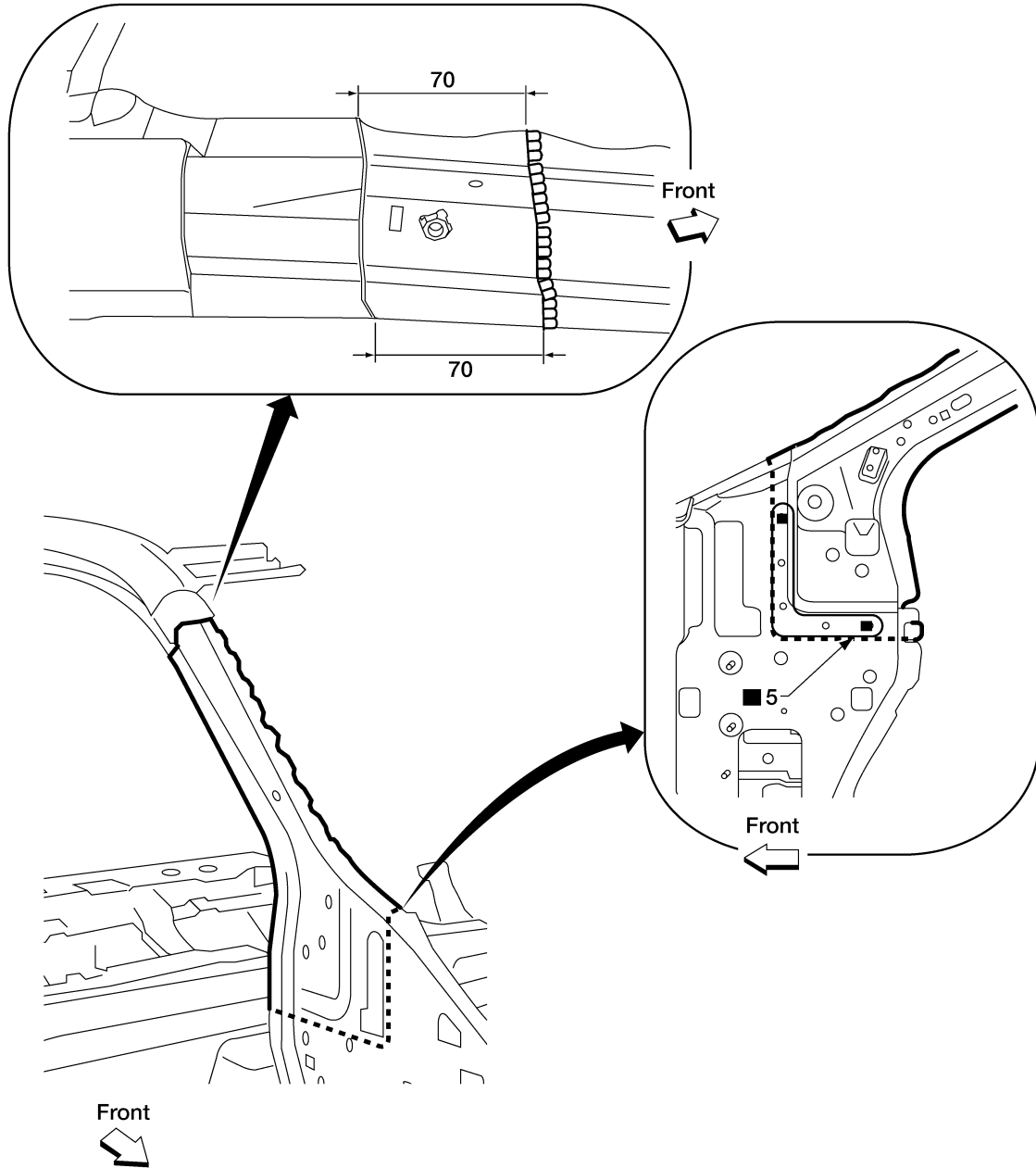
INNER

- Work after front pillar upper hinge brace has been removed.

REPLACEMENT OPERATIONS

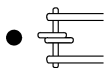
< ON-VEHICLE REPAIR >

Service Joint

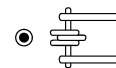


Unit : mm

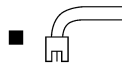
2-spot welds



3-spot welds



MIG Plug weld



For 3 panels plug weld method



MIG seam weld/
Point weld



AWKIA1370GB

Replacement parts

- Front pillar inner reinforcement (partial)

Dash Side

INFOID:000000005461964

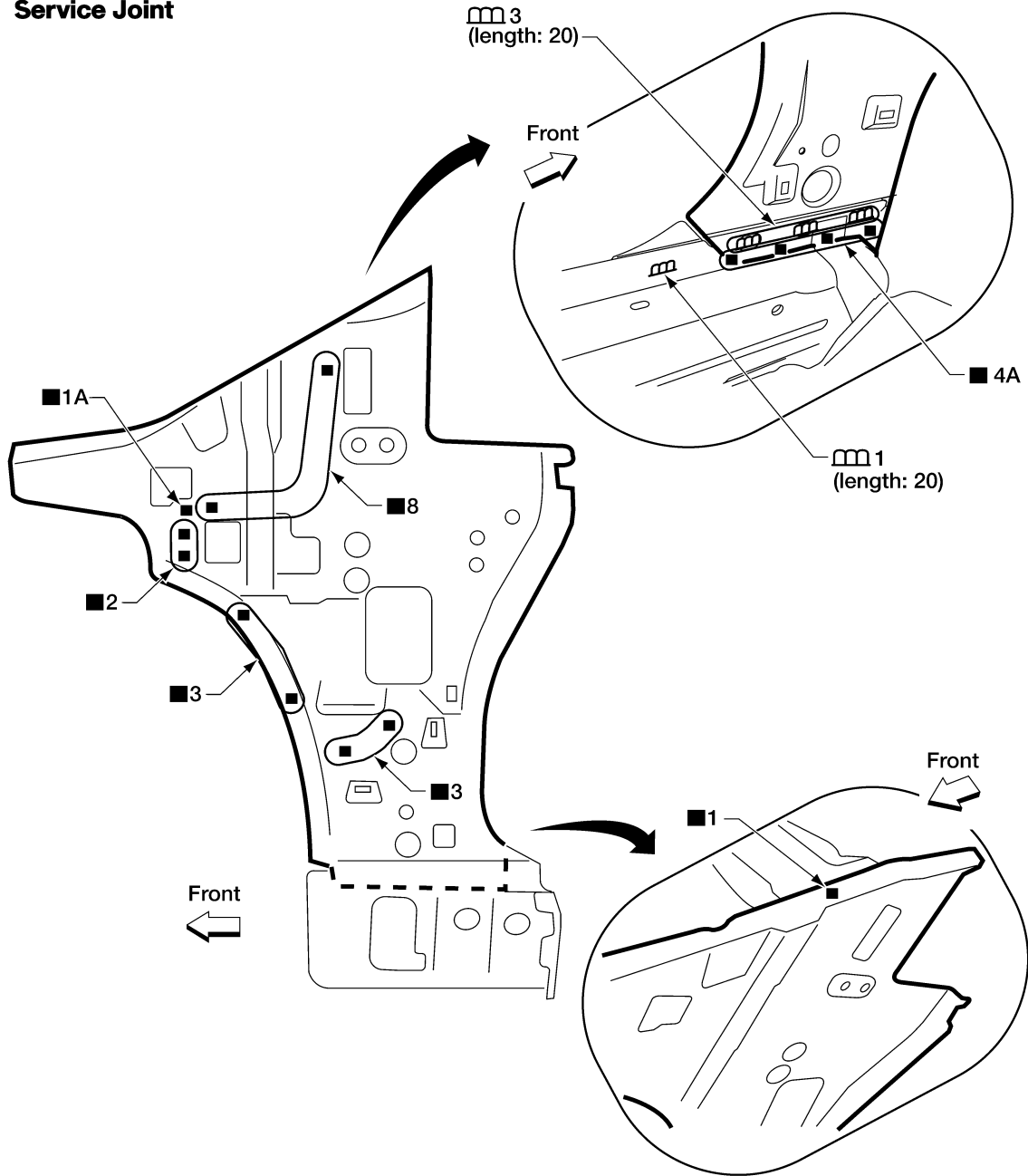
Work after the front pillar portion of body side inner reinforcement and the front pillar lower hinge brace have been removed.

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REPLACEMENT OPERATIONS

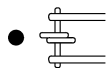
< ON-VEHICLE REPAIR >

Service Joint

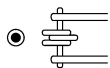


Unit : mm

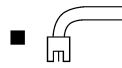
2-spot welds



3-spot welds



MIG Plug weld



(For 3 panels plug weld method



MIG seam weld/
Point weld



AWKIA1371GB

Replacement parts

- Dash side

Center Pillar

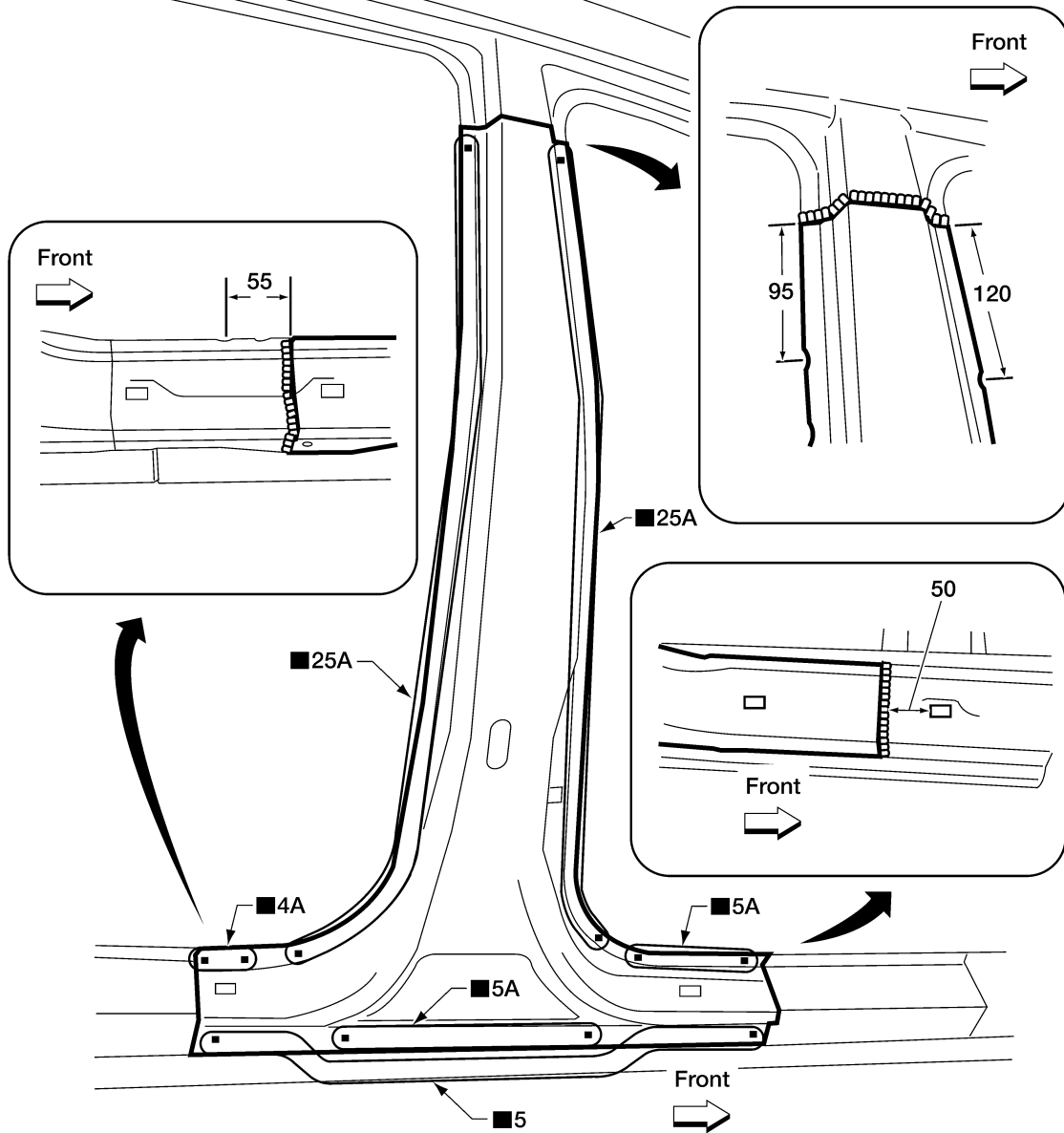
INFOID:000000005461965

OUTER

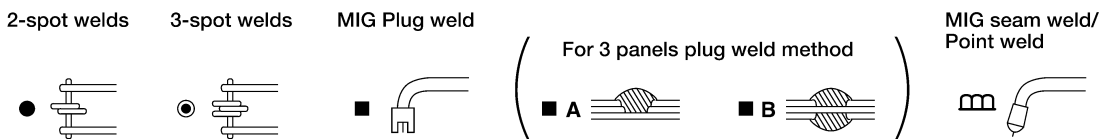
REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >

Service Joint



Unit : mm



AWKIA1372GB

Replacement parts

- Center pillar portion of front body side outer

REINFORCEMENT

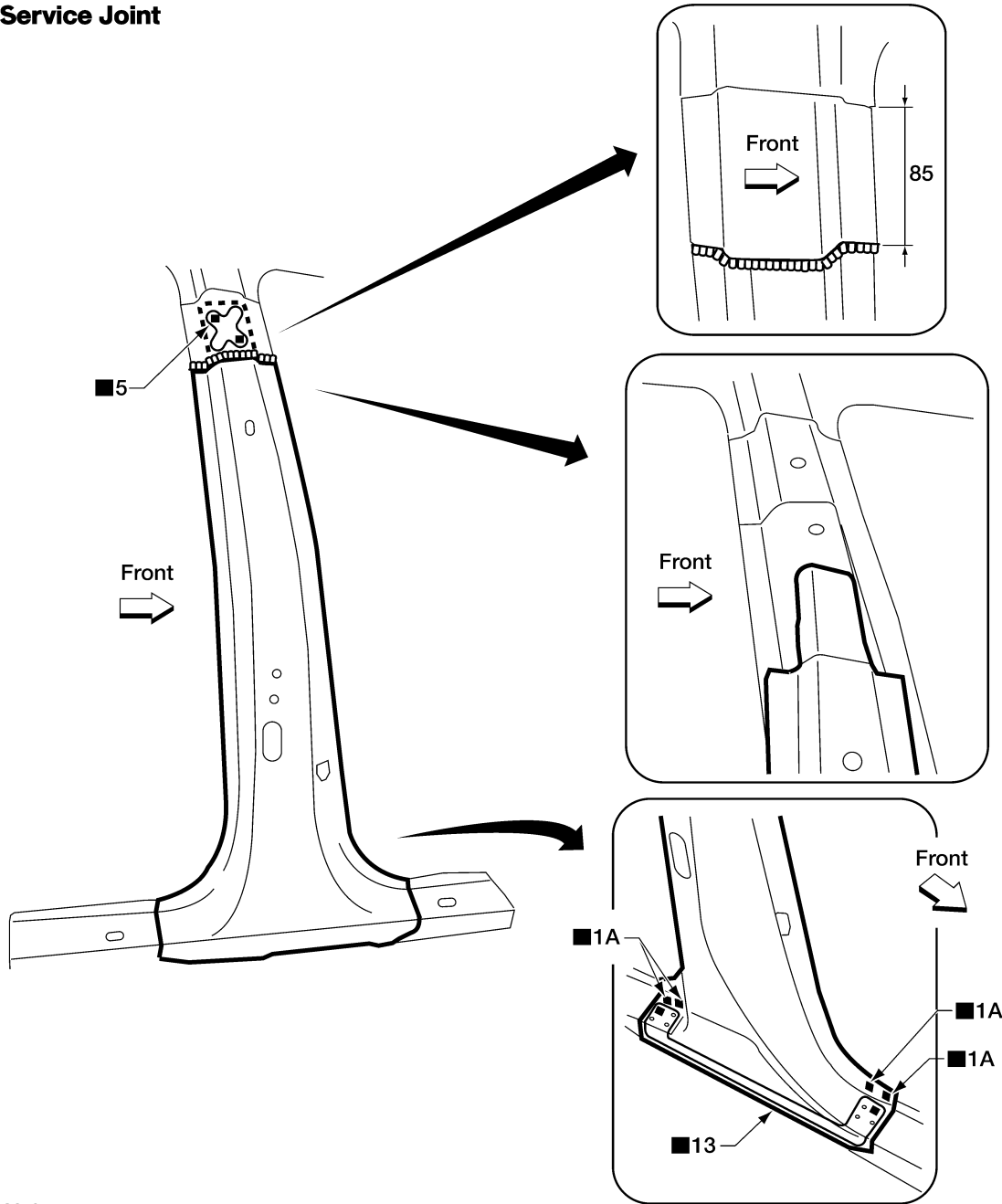
Work after center pillar portion of front body side outer has been removed.

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REPLACEMENT OPERATIONS

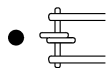
< ON-VEHICLE REPAIR >

Service Joint



Unit : mm

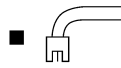
2-spot welds



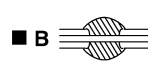
3-spot welds



MIG Plug weld



(For 3 panels plug weld method)



MIG seam weld/
Point weld



AWKIA1373GB

Replacement parts

- Center pillar reinforcement

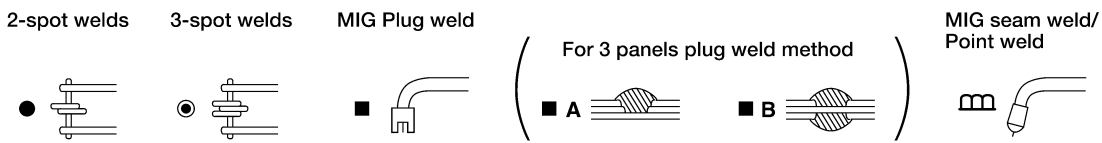
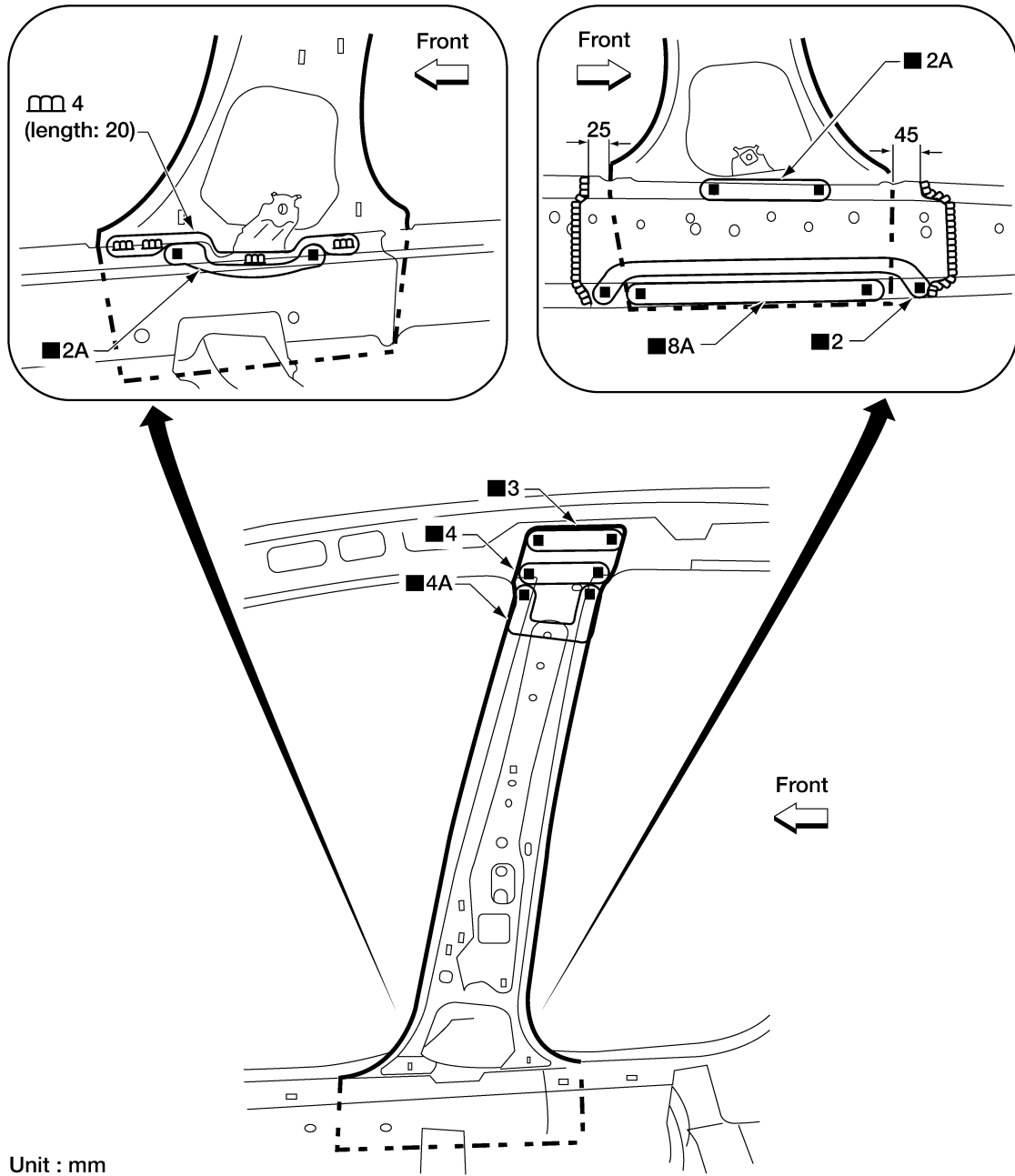
INNER

Work after center pillar reinforcement has been removed.

REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >

Service Joint



AWKIA1374GB

Replacement parts

- Center pillar inner reinforcement

Front Body Side Outer

INFOID:000000005461966

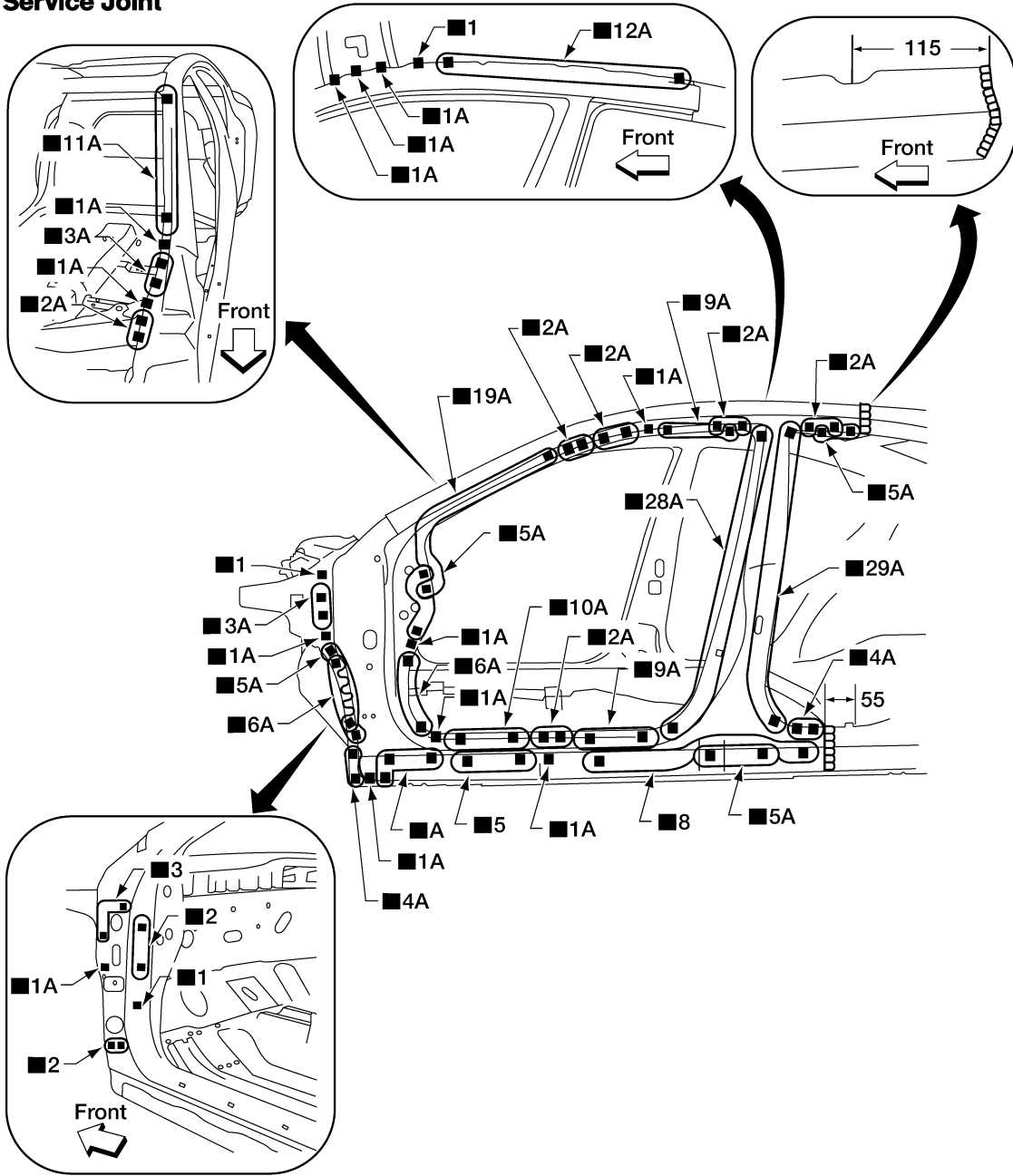
- Work after hoodledge reinforcement and front roof rail have been removed.

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REPLACEMENT OPERATIONS

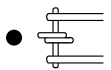
< ON-VEHICLE REPAIR >

Service Joint

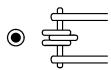


Unit : mm

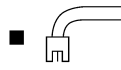
2-spot welds



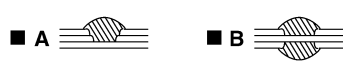
3-spot welds



MIG Plug weld



(For 3 panels plug weld method



MIG seam weld/
Point weld



AWKIA1375GB

Replacement parts

- Front body side outer

Rear Body Side Outer

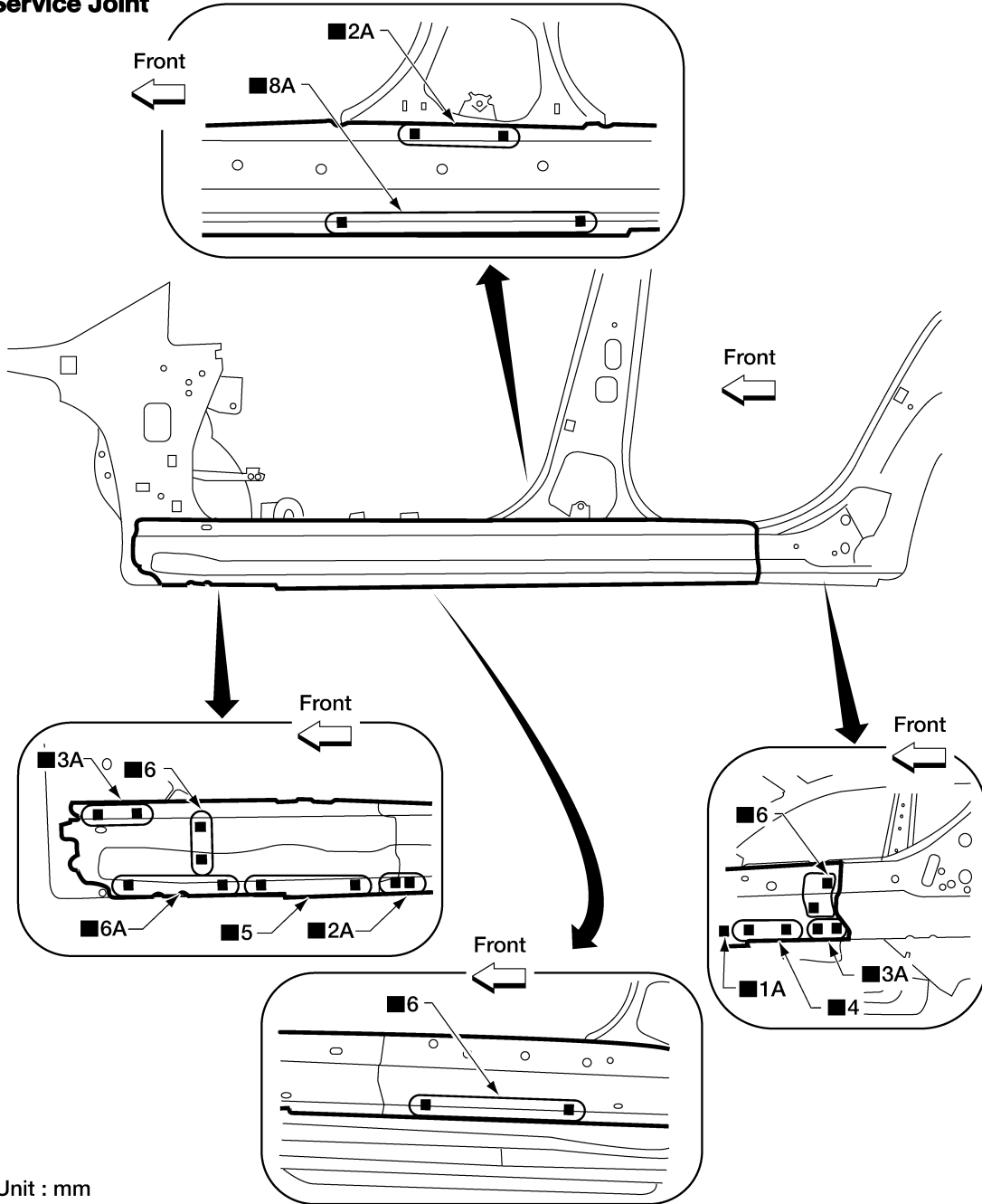
INFOID:000000005461967

- Work after the tail lamp housing base and rear roof rail have been removed.

REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >

Service Joint



Unit : mm

2-spot welds

3-spot welds

MIG Plug weld

(For 3 panels plug weld method

MIG seam weld/
Point weld



AWKIA1377GB

Replacement parts

- Outer sill reinforcement

Rear Fender

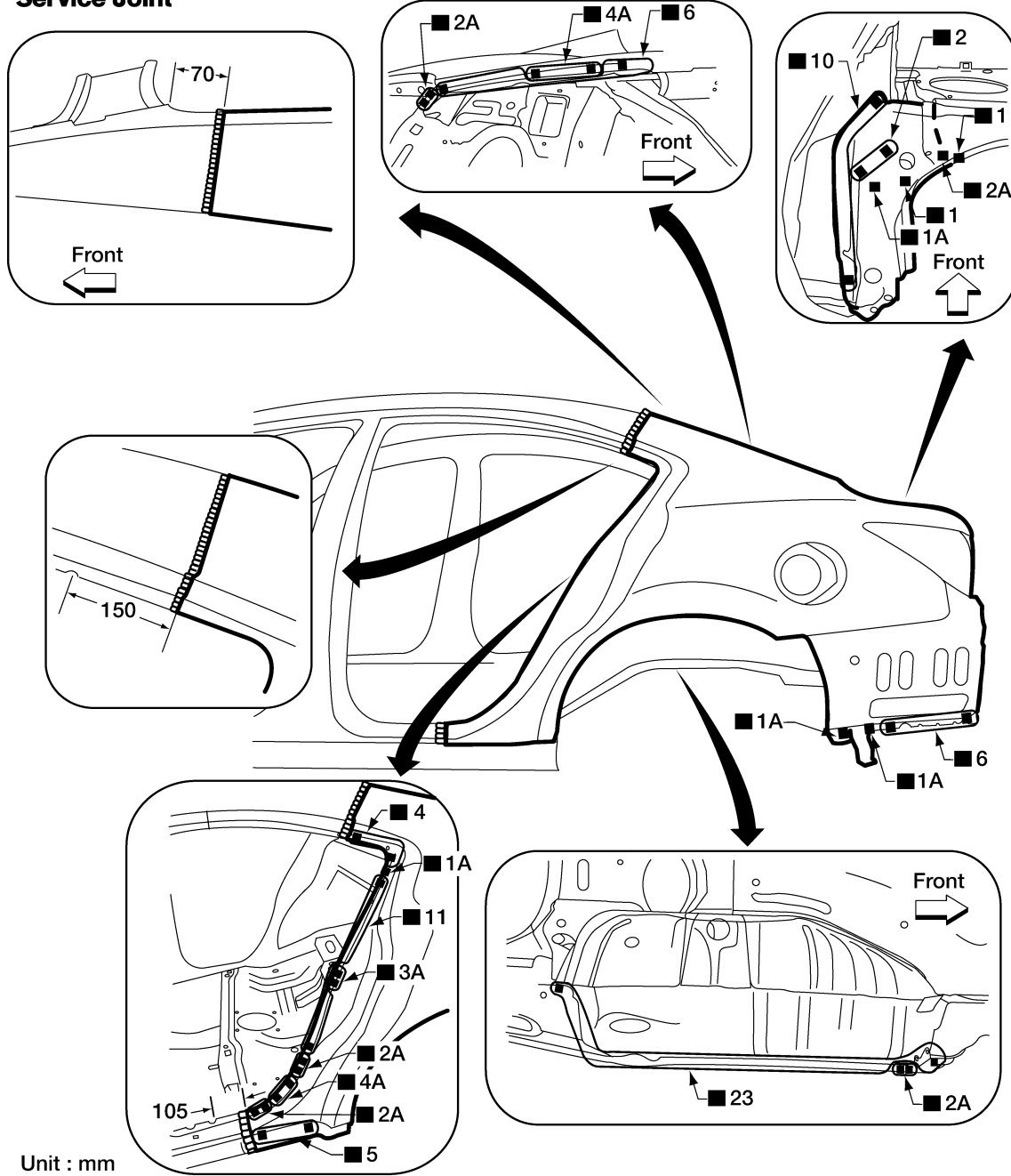
INFOID:000000005461969

- Work with tail lamp housing base removed.

REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >

Service Joint



Unit : mm

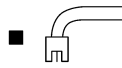
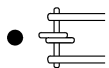
2-spot welds

3-spot welds

MIG Plug weld

(For 3 panels plug weld method)

MIG seam weld/
Point weld



AWKIA1378GB

Replacement parts

- Rear fender

Tail Lamp Housing Base

INFOID:000000005461970

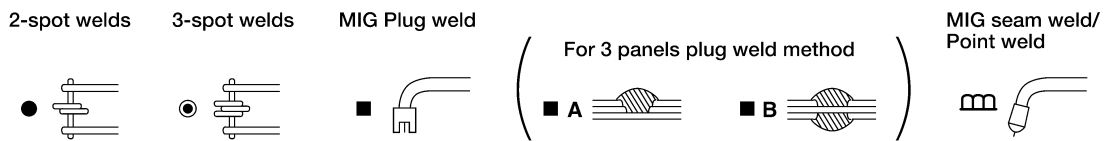
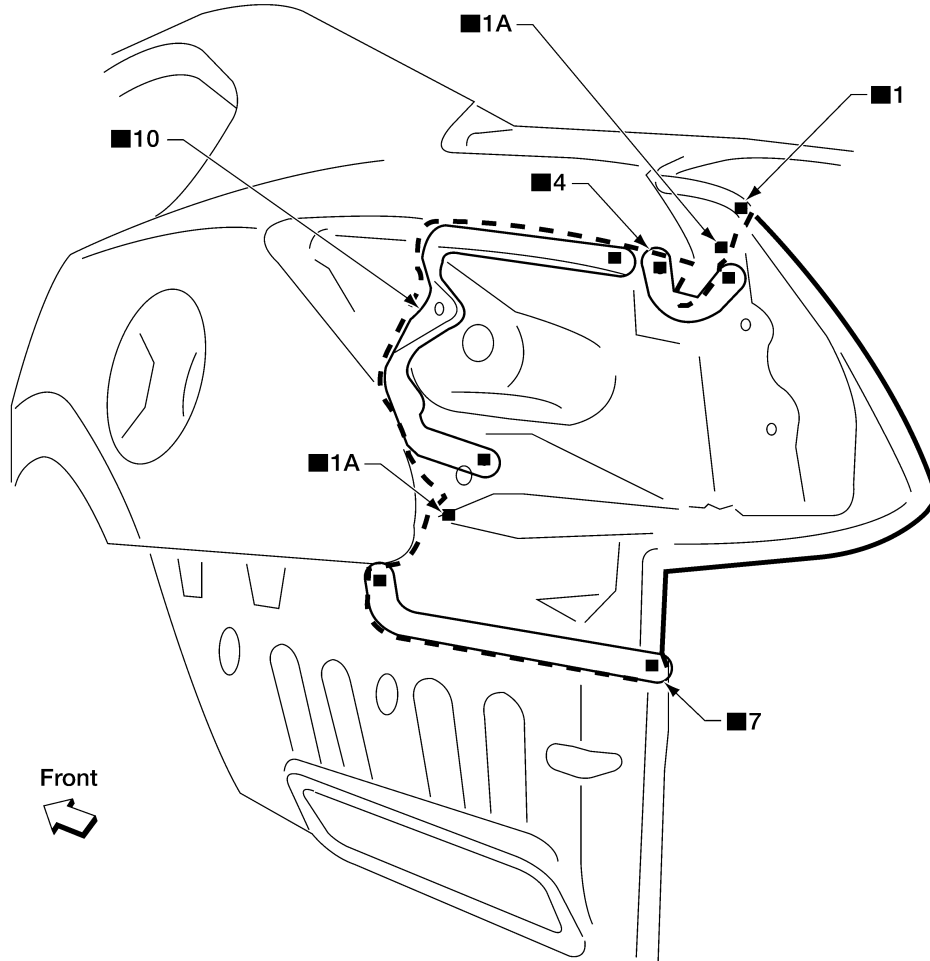
- Work after rear panel assembly has been removed.

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REPLACEMENT OPERATIONS

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Service Joint



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Replacement parts

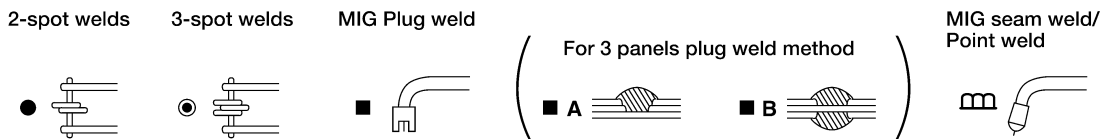
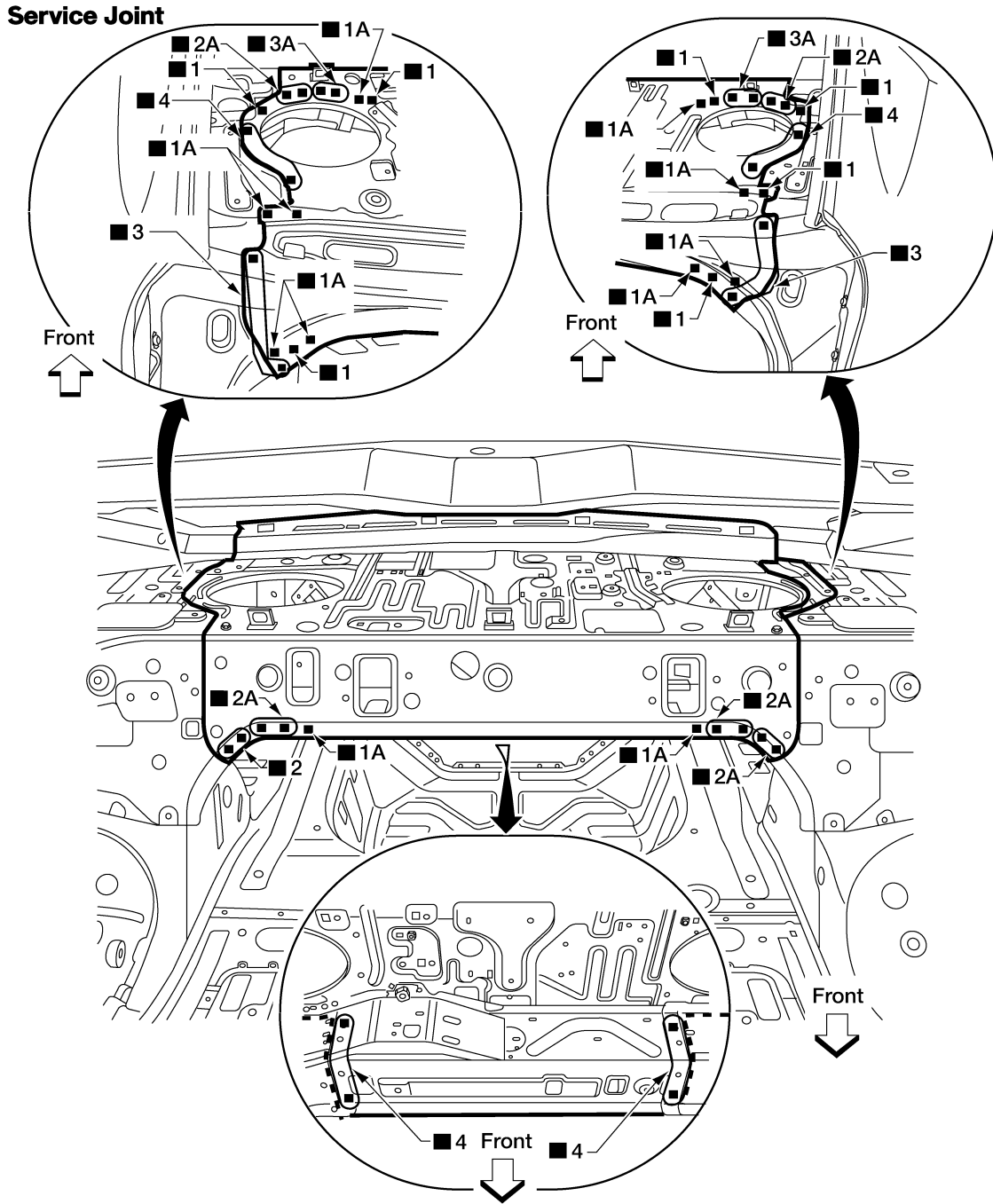
- Tail lamp housing base

REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >

Parcel Shelf

INFOID:000000005461971



AWKIA1380GB

Replacement part

- Parcel shelf assembly

Rear Wheel Housing

INFOID:000000005461972

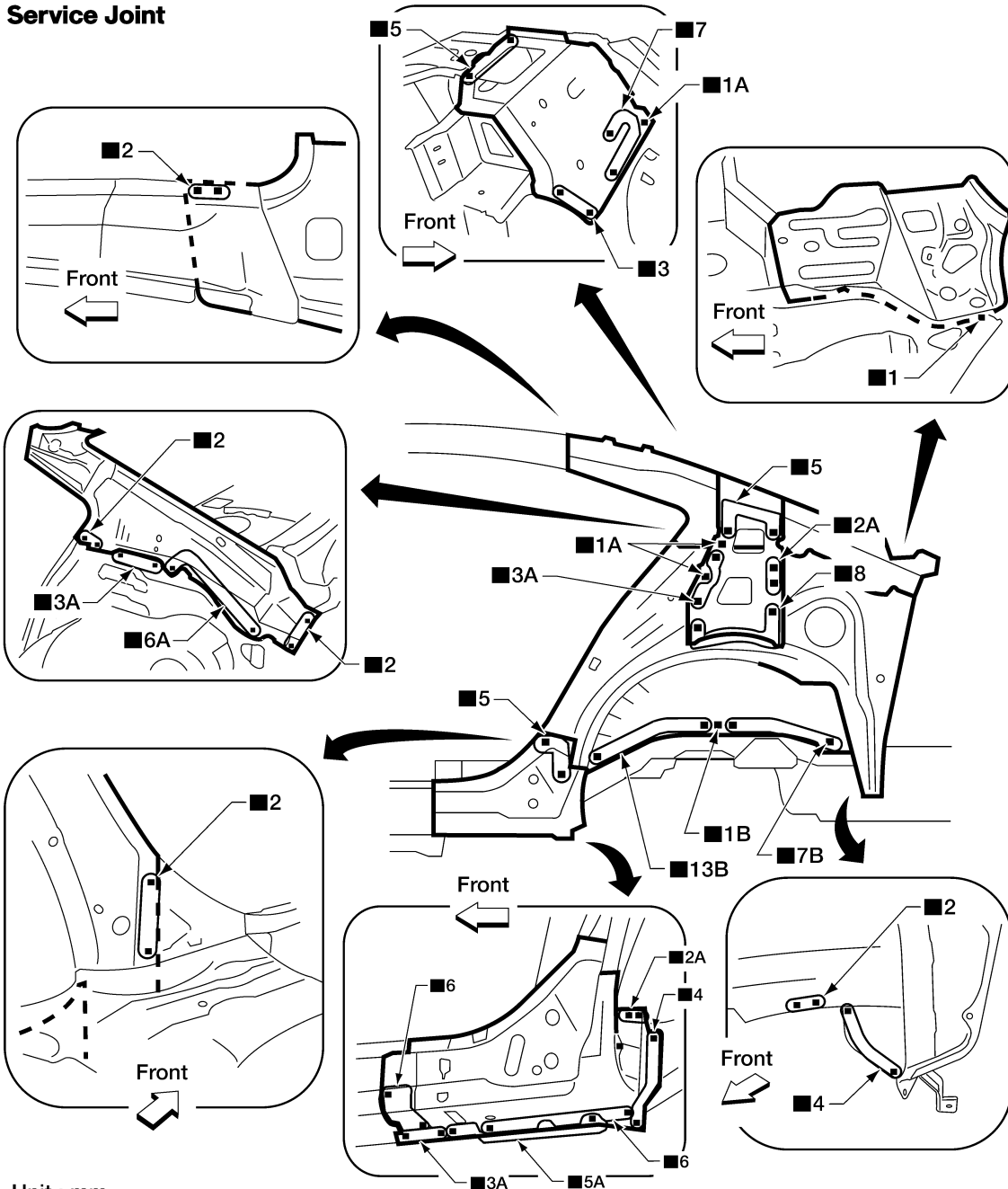
- Work after the rear body side outer and the parcel shelf have been removed.

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REPLACEMENT OPERATIONS

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Service Joint



Unit : mm

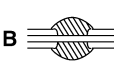
2-spot welds

3-spot welds

MIG Plug weld

For 3 panels plug weld method

MIG seam weld/
Point weld



AWKIA1381GB

Replacement parts

- Rear wheel housing assembly
- Rear seatback side support
- Rear pillar inner reinforcement
- Sill outer reinforcement rear
- Parcel shelf side
- Rear pillar inner

Rear Body Side Inner Assembly

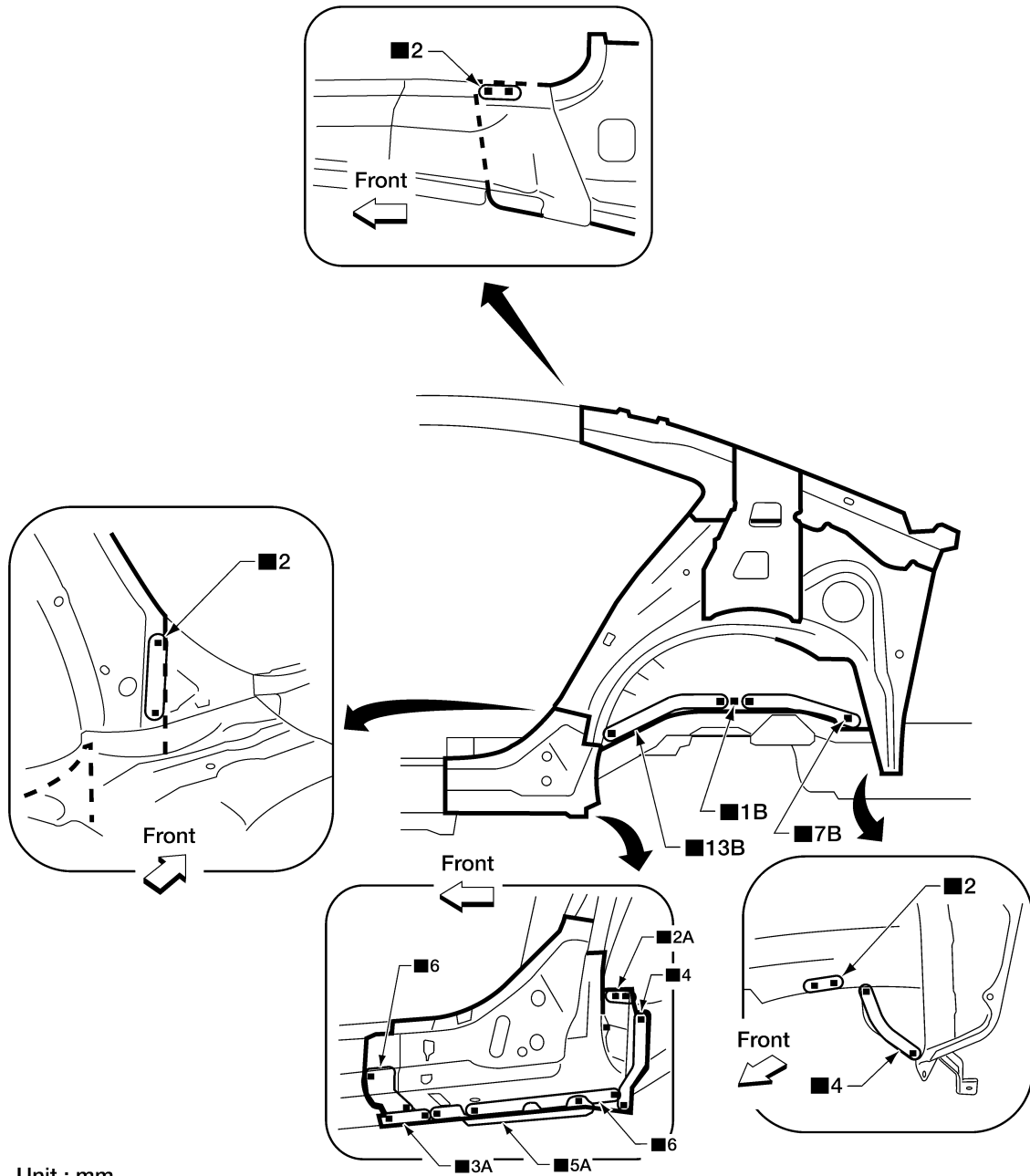
INFOID:000000005461973

- Work after rear body side outer and parcel shelf have been removed.

REPLACEMENT OPERATIONS

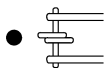
< ON-VEHICLE REPAIR >

Service Joint

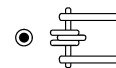


Unit : mm

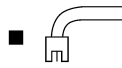
2-spot welds



3-spot welds



MIG Plug weld



For 3 panels plug weld method



MIG seam weld/
Point weld



AWKIA1382GB

Replacement parts

- Rear body side inner assembly

Rear Floor Rear

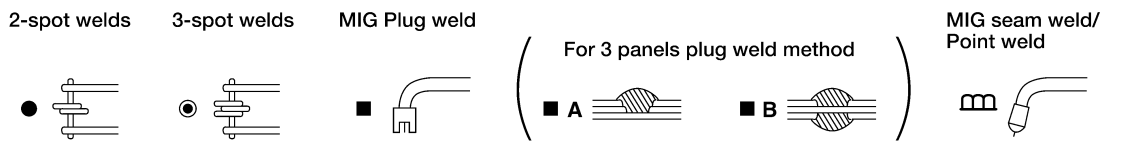
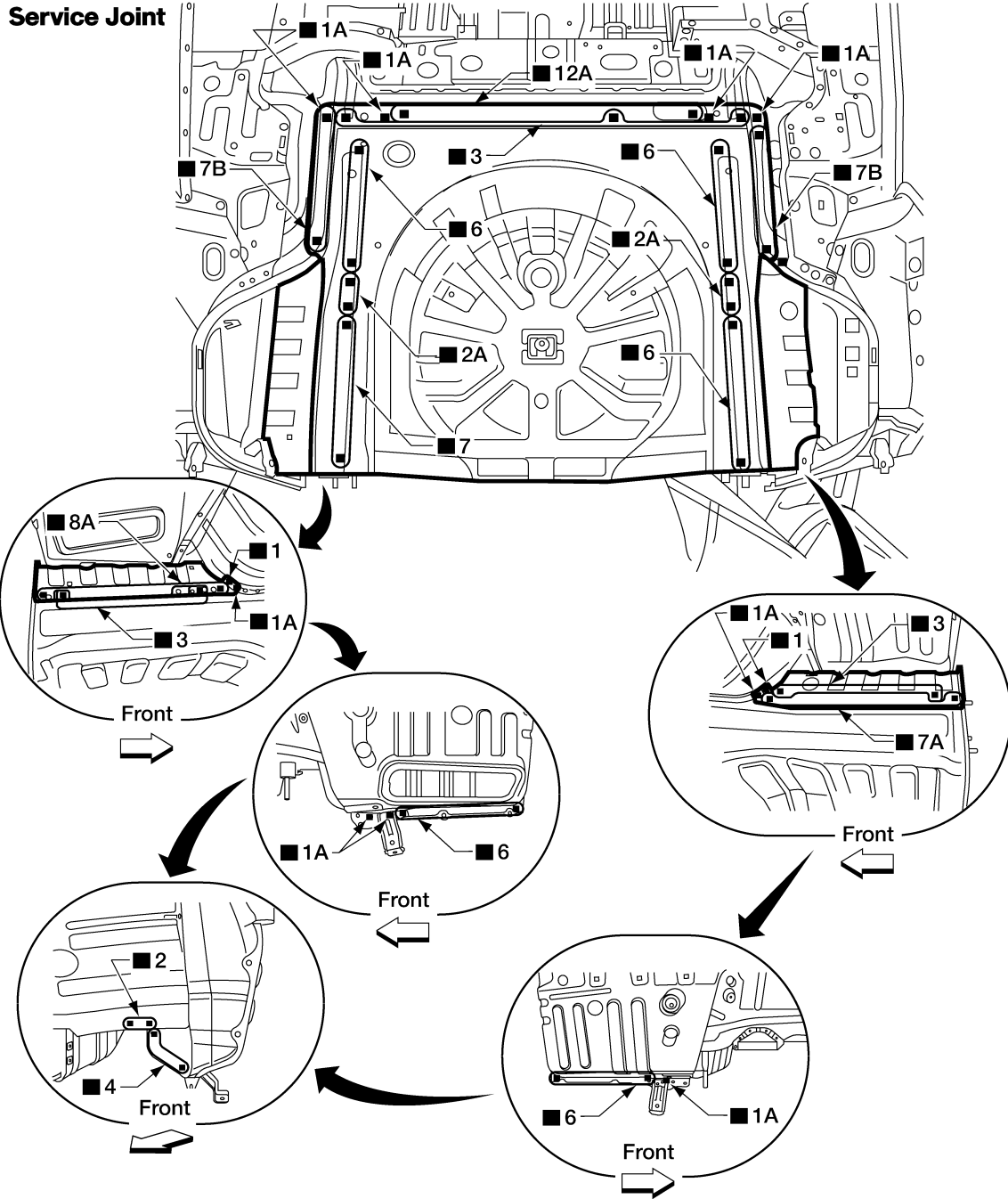
INFOID:000000005461974

- Work after rear panel assembly has been removed.

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REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >



AWKIA1383GB

Replacement parts

- Rear floor rear
- Rear floor rear (RH)
- Rear floor rear (LH)

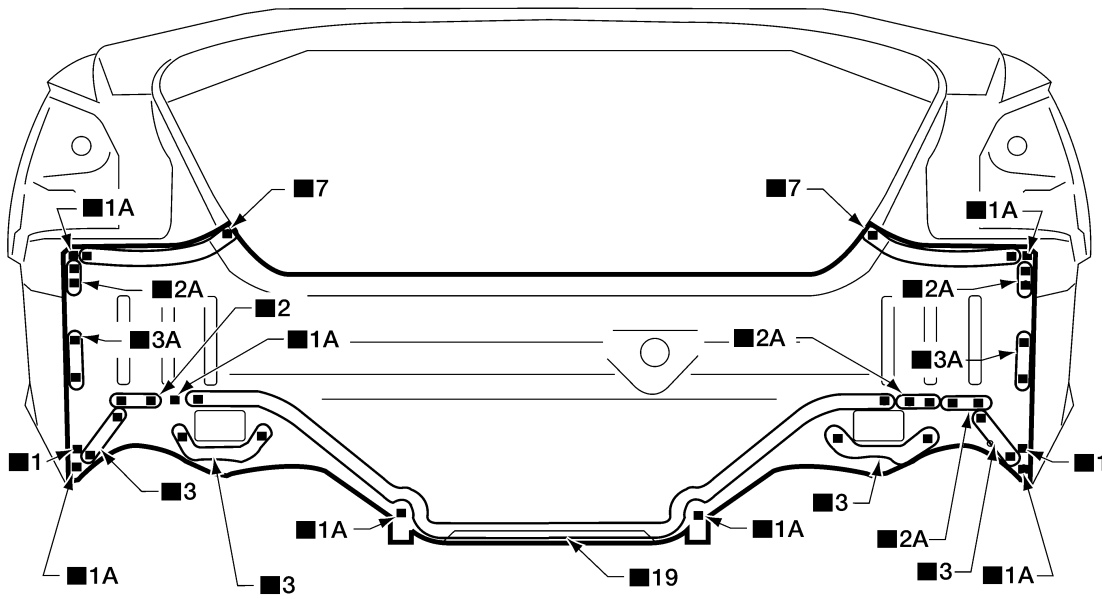
REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >

Rear Panel Assembly

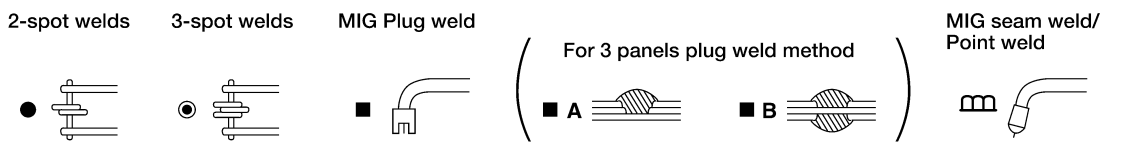
INFOID:000000005461975

Service Joint



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AWKIA1384GB

Replacement parts

- Rear panel assembly

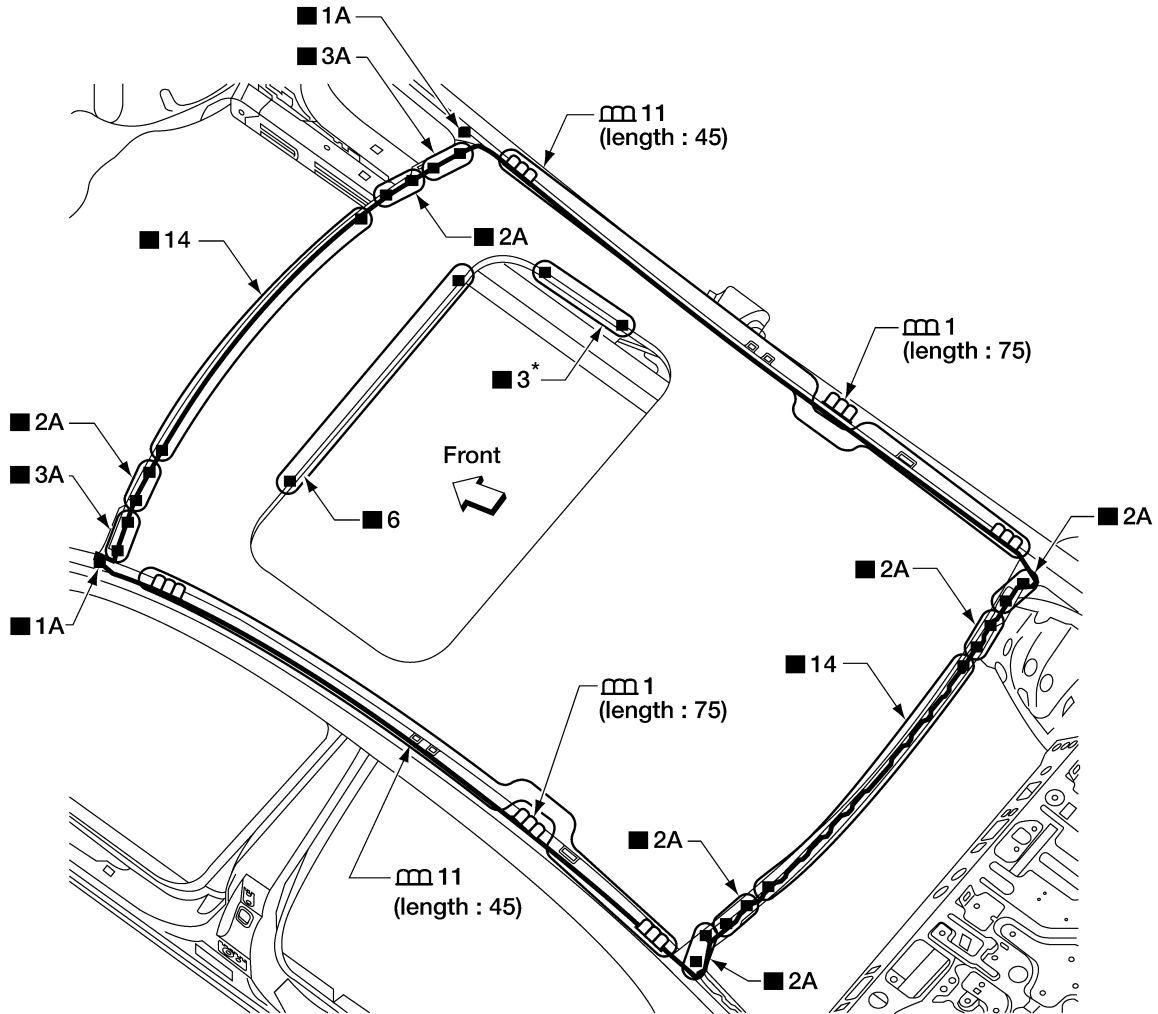
REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >

Roof

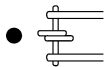
INFOID:00000005461976

Service Joint

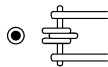


Unit : mm

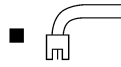
2-spot welds



3-spot welds



MIG Plug weld



(For 3 panels plug weld method)



MIG seam weld/
Point weld



AWKIA1385GB

Replacement parts

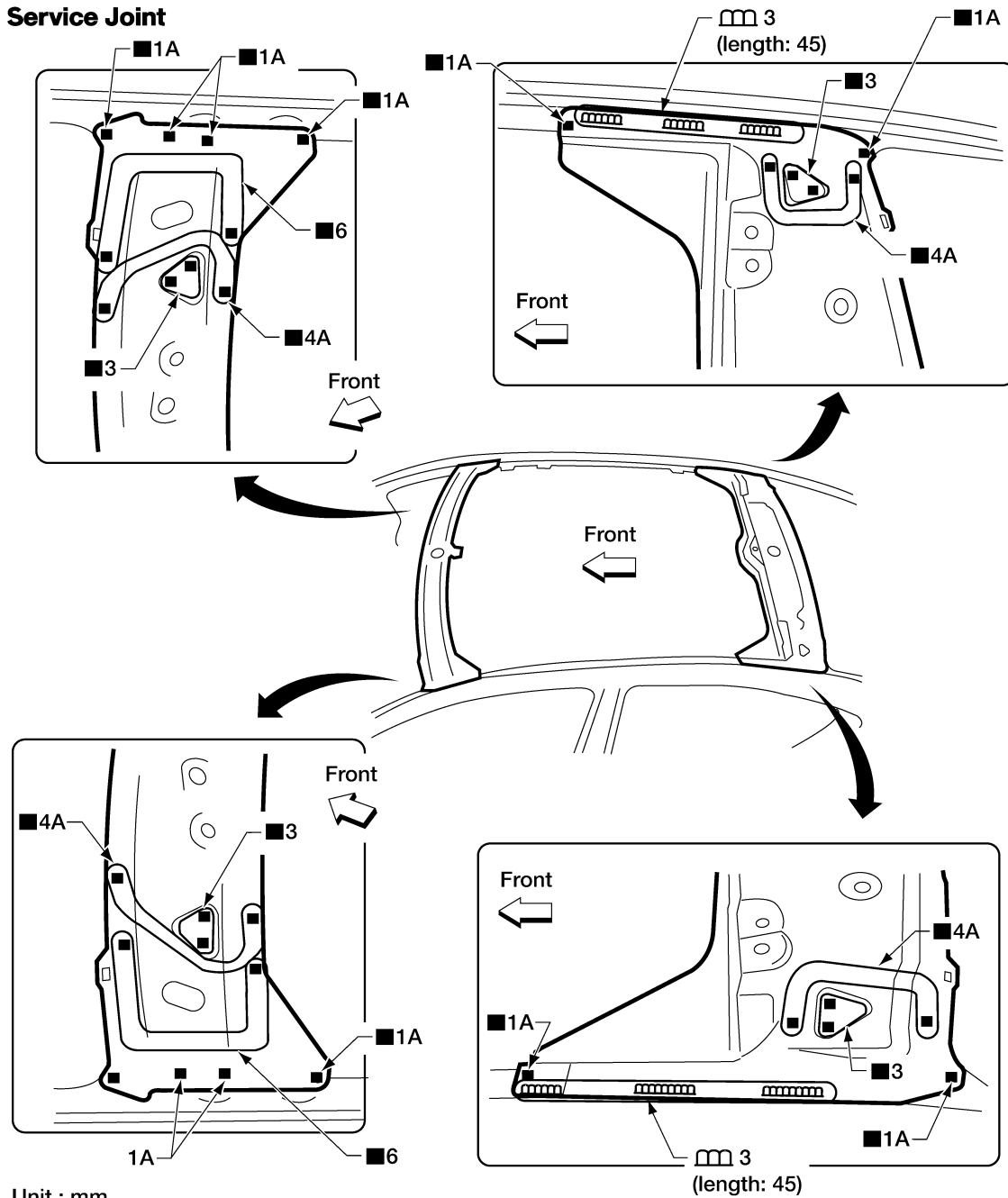
- Roof panel, single panel sunroof

REPLACEMENT OPERATIONS

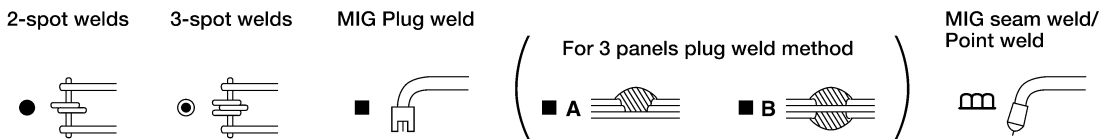
< ON-VEHICLE REPAIR >

Roof Rails, Dual Panel Sunroof

INFOID:000000005461977



Unit : mm



AWKIA1386GB

Replacement parts

- Front roof rail
- Rear roof rail

Roof Rails, Single Panel Sunroof

INFOID:000000005461978

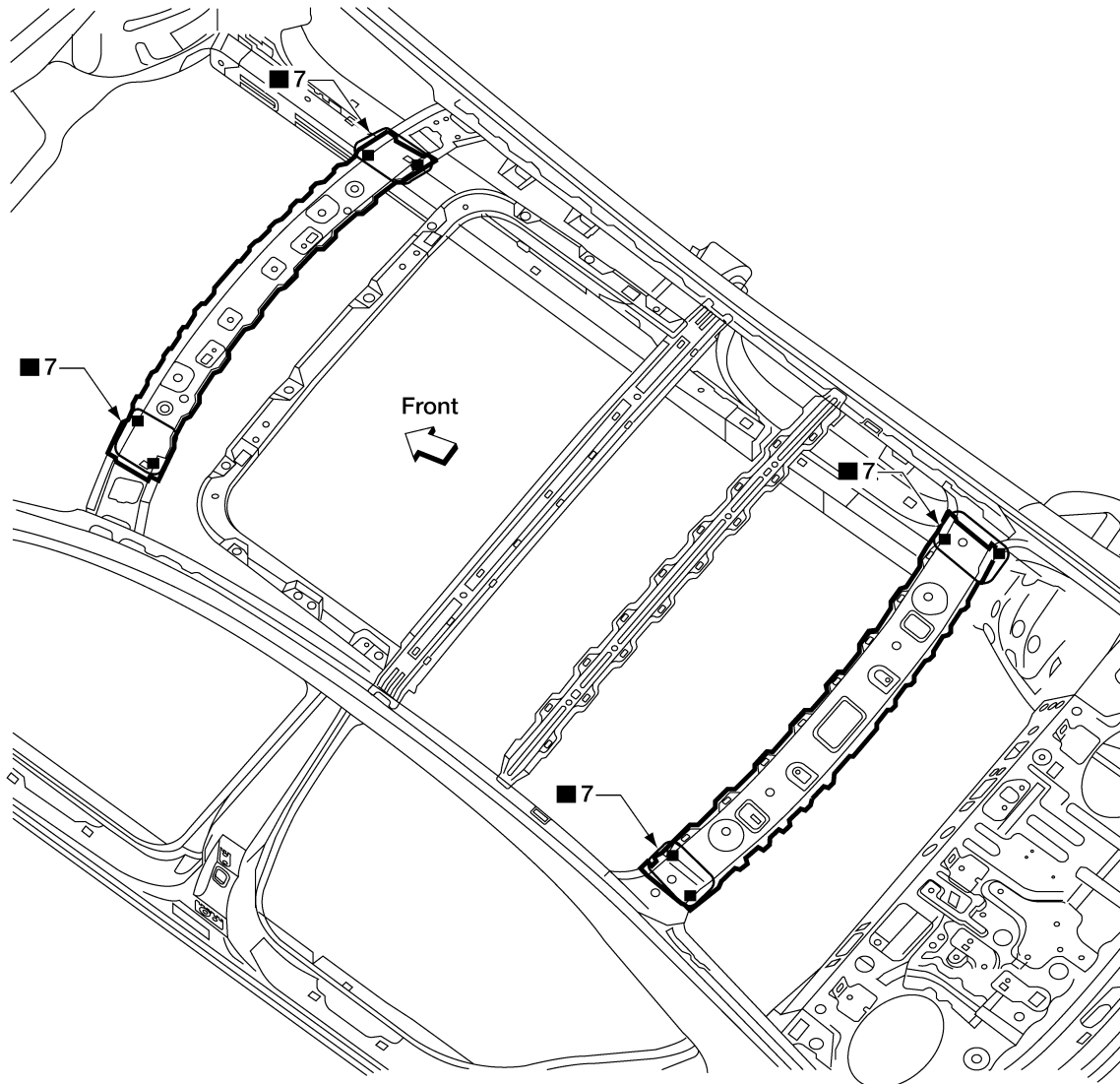
- Work after the roof has been removed.

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REPLACEMENT OPERATIONS

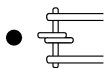
< ON-VEHICLE REPAIR >

Service Joint



Unit : mm

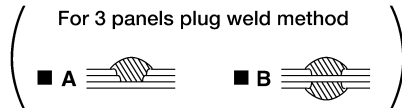
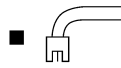
2-spot welds



3-spot welds



MIG Plug weld



MIG seam weld/
Point weld



AWKIA1387GB

Replacement parts

- Front roof rail (sunroof)
- Rear roof rail (sunroof)

Roof Side Rail

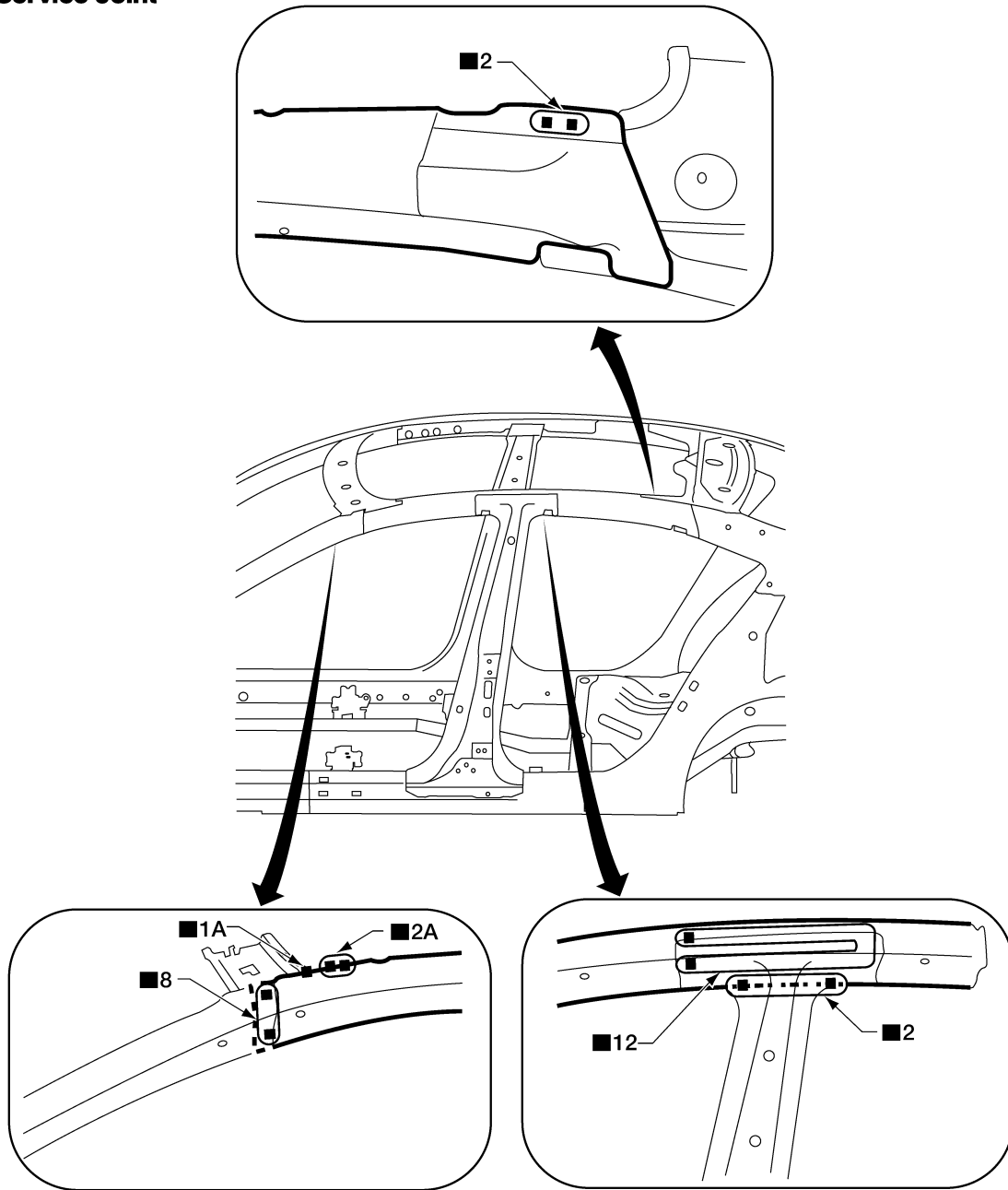
INFOID:000000005461979

- Work after the front and rear body side outer have been removed.

REPLACEMENT OPERATIONS

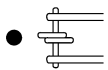
< ON-VEHICLE REPAIR >

Service Joint

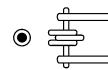


Unit : mm

2-spot welds



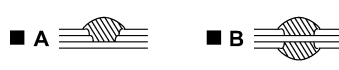
3-spot welds



MIG Plug weld



For 3 panels plug weld method



MIG seam weld/
Point weld



AWKIA1388GB

Replacement parts

- Roof side rail

Body Side Inner

INFOID:000000005461980

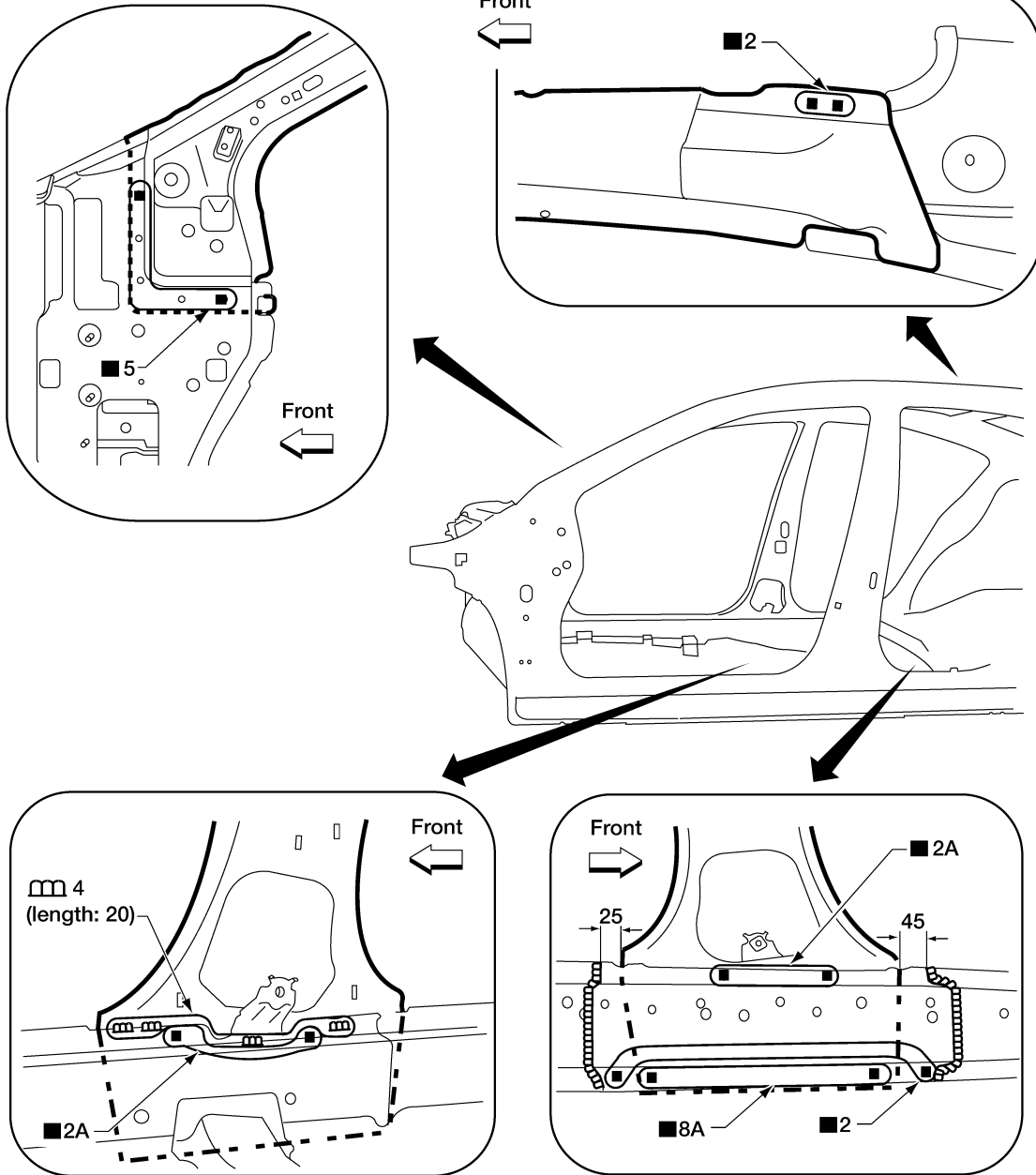
- Work after the roof side rail and the center pillar reinforcement have been removed.

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REPLACEMENT OPERATIONS

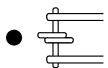
< ON-VEHICLE REPAIR >

Service Joint

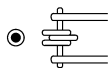


Unit : mm

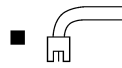
2-spot welds



3-spot welds



MIG Plug weld



For 3 panels plug weld method



MIG seam weld/
Point weld



AWKIA1389GB

Replacement parts

- Body side inner

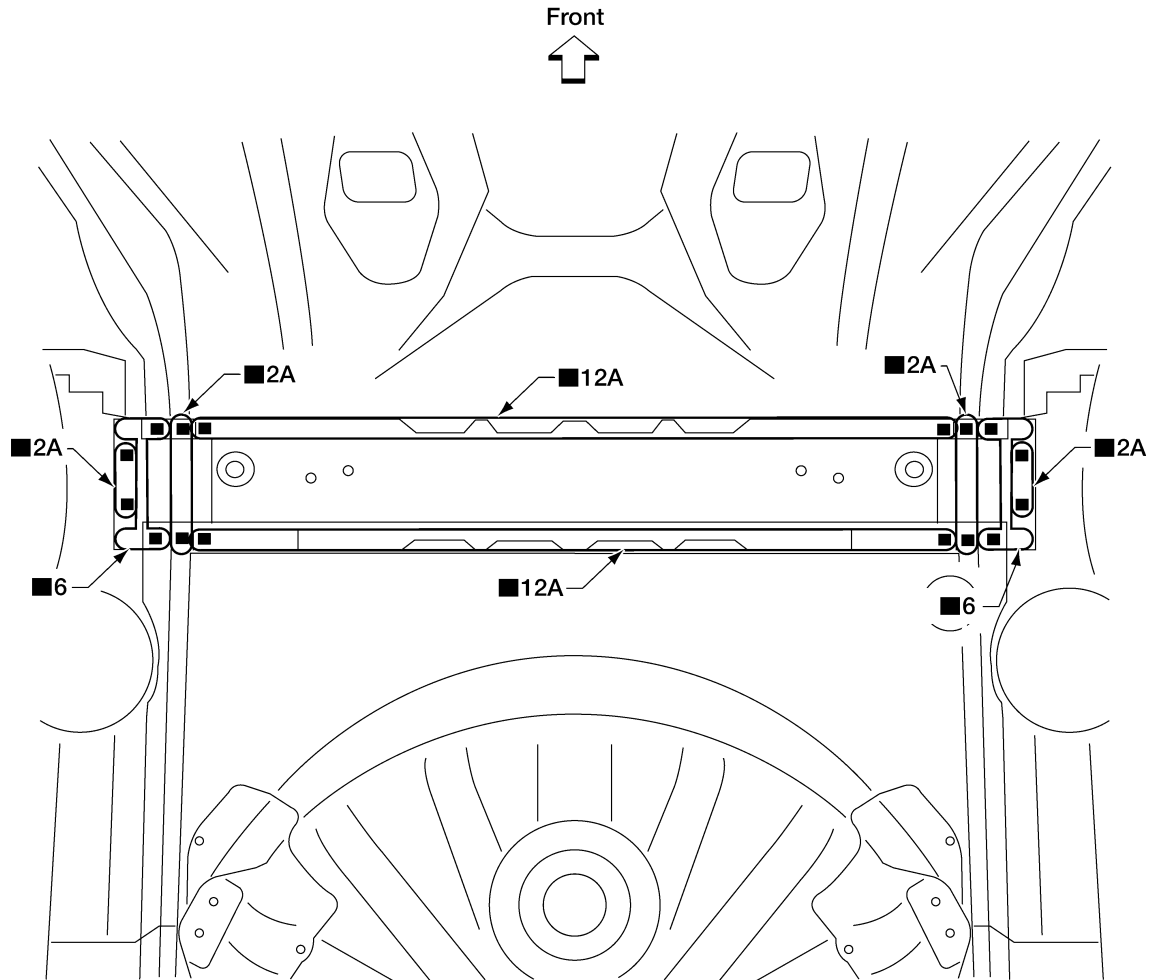
REPLACEMENT OPERATIONS

< ON-VEHICLE REPAIR >

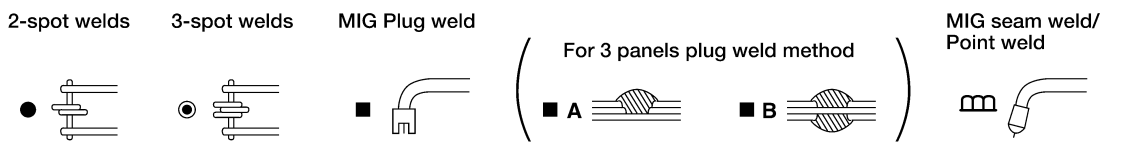
Rear Center Crossmember

INFOID:000000005461981

Service Joint



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AWKIA1390GB

Replacement parts

- Rear center crossmember

Rear Side Member

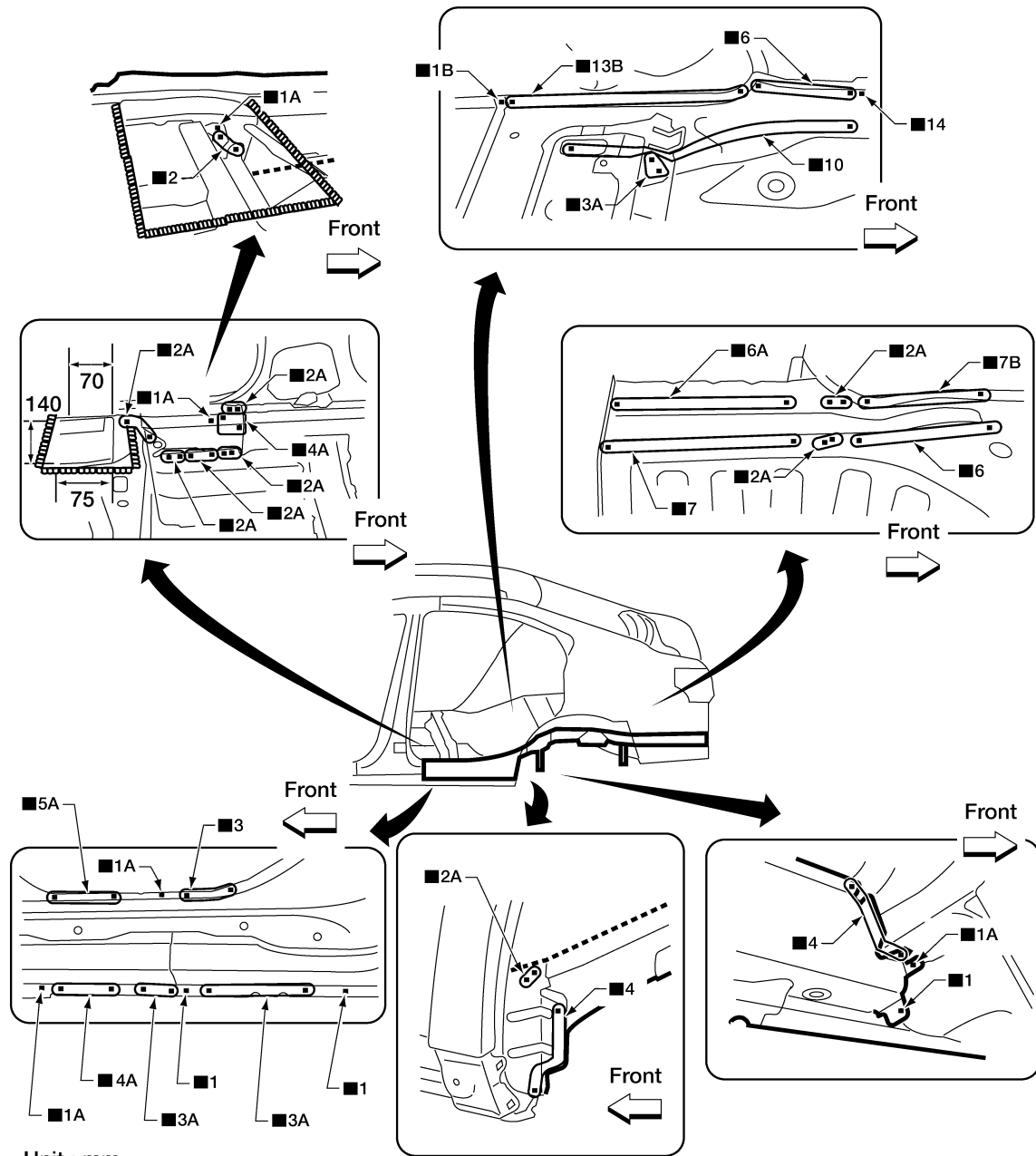
INFOID:000000005461982

- Work after rear panel assembly and rear center crossmember have been removed.

REPLACEMENT OPERATIONS

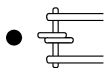
< ON-VEHICLE REPAIR >

Service Joint

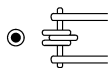


Unit : mm

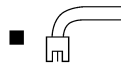
2-spot welds



3-spot welds



MIG Plug weld



(For 3 panels plug weld method



MIG seam weld/
Point weld



AWKIA1391GB

Replacement parts

- Rear side member assembly