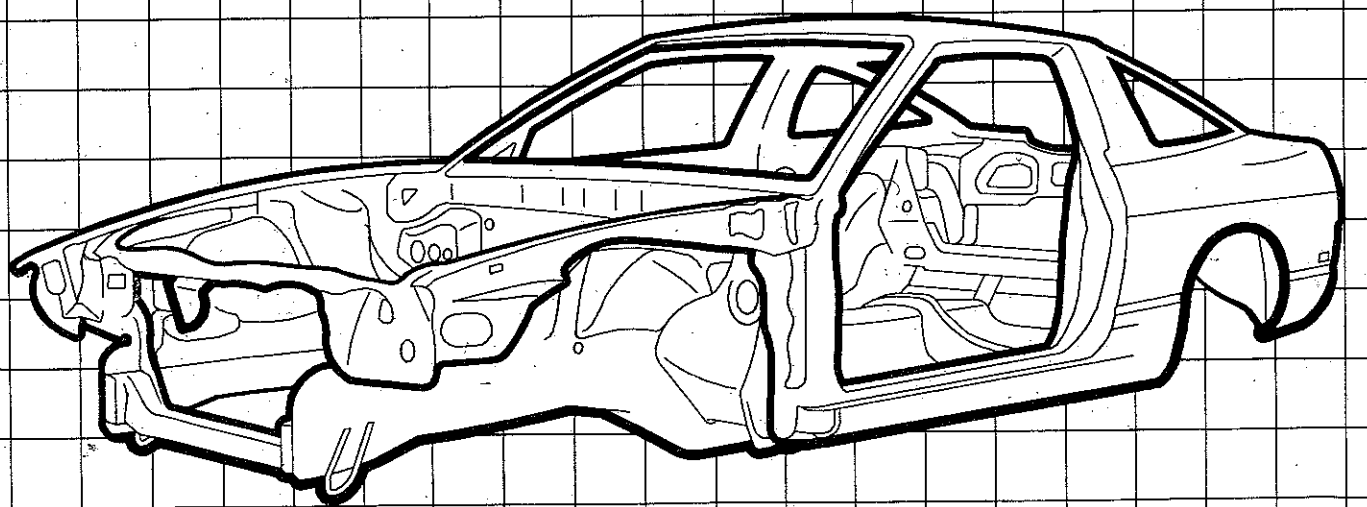
NISSAN

MODEL S13 SERIES

BODY REPAIR MANUAL



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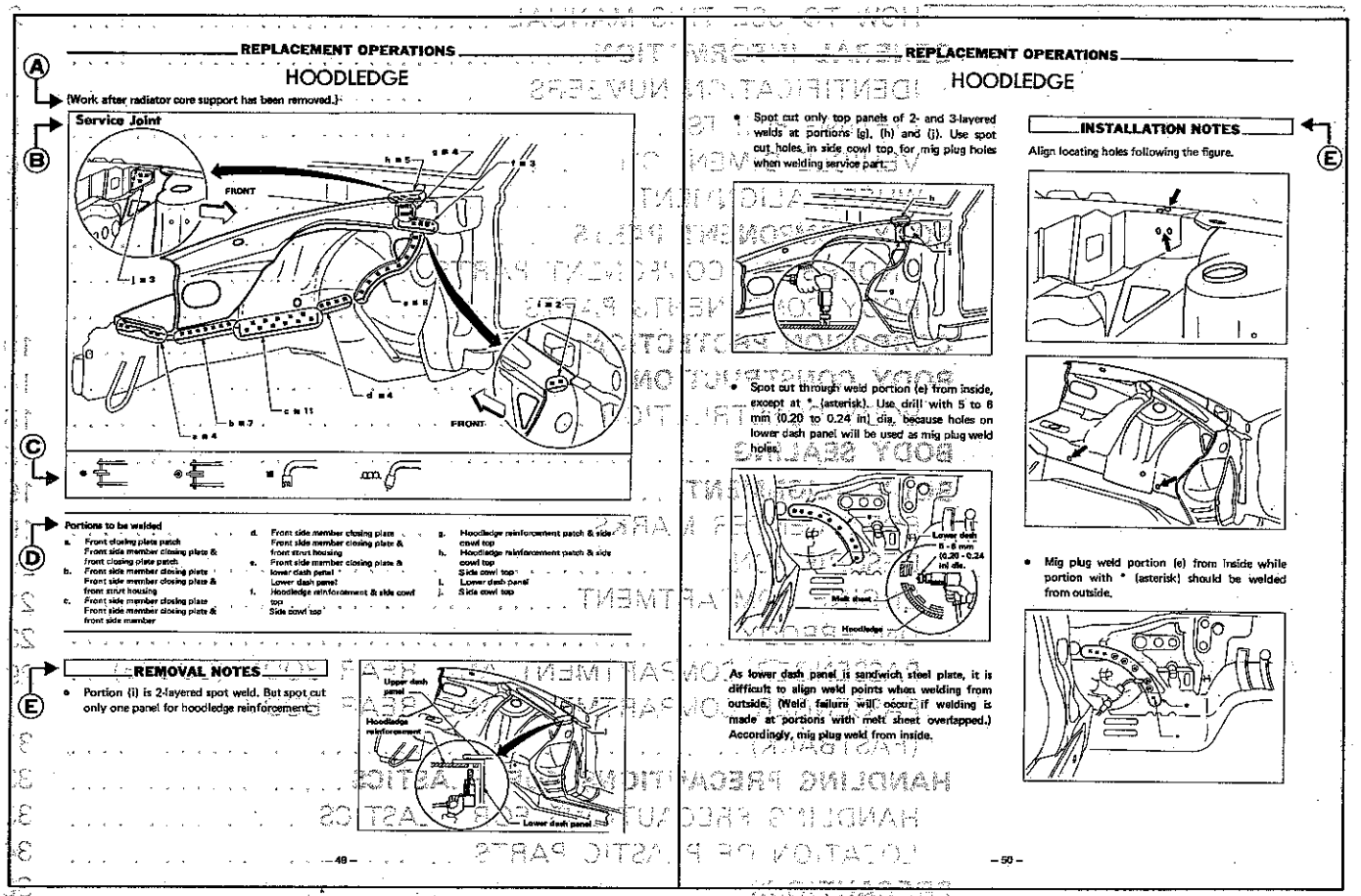
HOW TO USE THIS MANUAL



Ⓐ **(Work after RADIATOR CORE SUPPORT has been removed):**
The replacement operation of the hoodledge panel is shown here, beginning from the condition where the radiator core support has already been removed. If the radiator core support and the hoodledge reinforcement are installed on the vehicle to be serviced, refer to "RADIATOR CORE SUPPORT" in REPLACEMENT OPERATIONS.

Ⓑ **SERVICE JOINT:**
Welding methods and No. of welding points for performing body repair work are described (replacement of body parts).
To maintain the integrity of the vehicle body, work should be done, observing the instructions described here (particularly No. of welding points).
[Example]

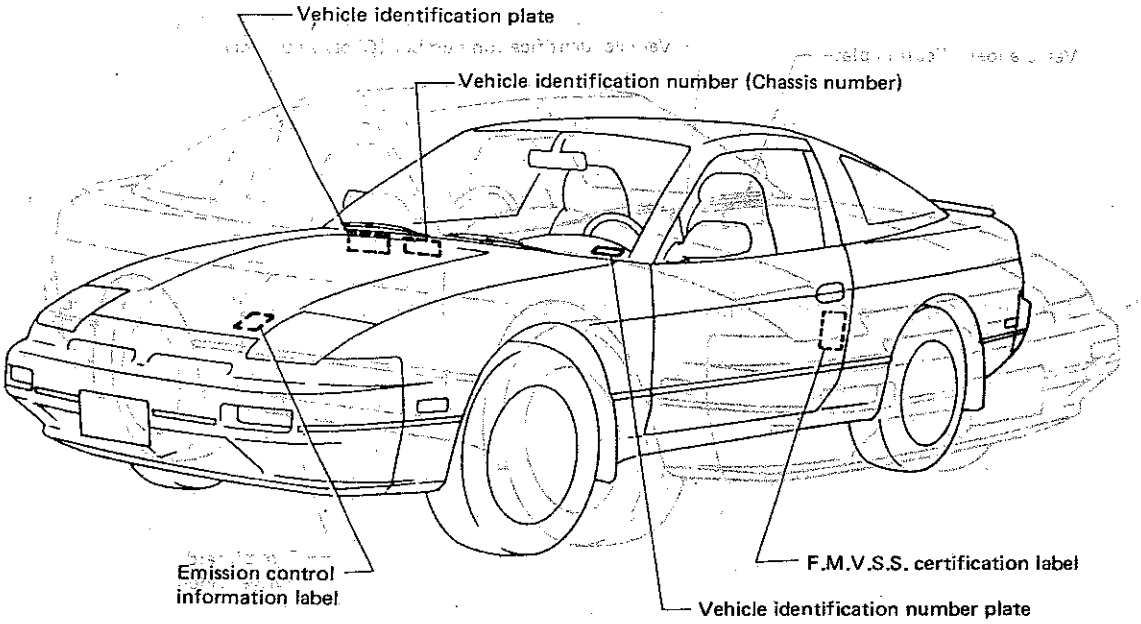
a ■ 27
Portion — No. of welding points
MIG plug weld (See symbol mark on page 43.)

Ⓒ Symbols are used in illustrations to clearly identify welding methods. (See symbol mark on page 43.)

Ⓓ **PORTIONS TO BE WELDED:**
Portions to be welded are listed, including descriptions of those areas to which the portion under the subtitle (ex. Hoodledge panel) will be welded.

Ⓔ **REMOVAL/INSTALLATION NOTES**
Main service points and special notes for body repair work are described.

IDENTIFICATION NUMBERS (For U.S.A. & Canada)



SGI547

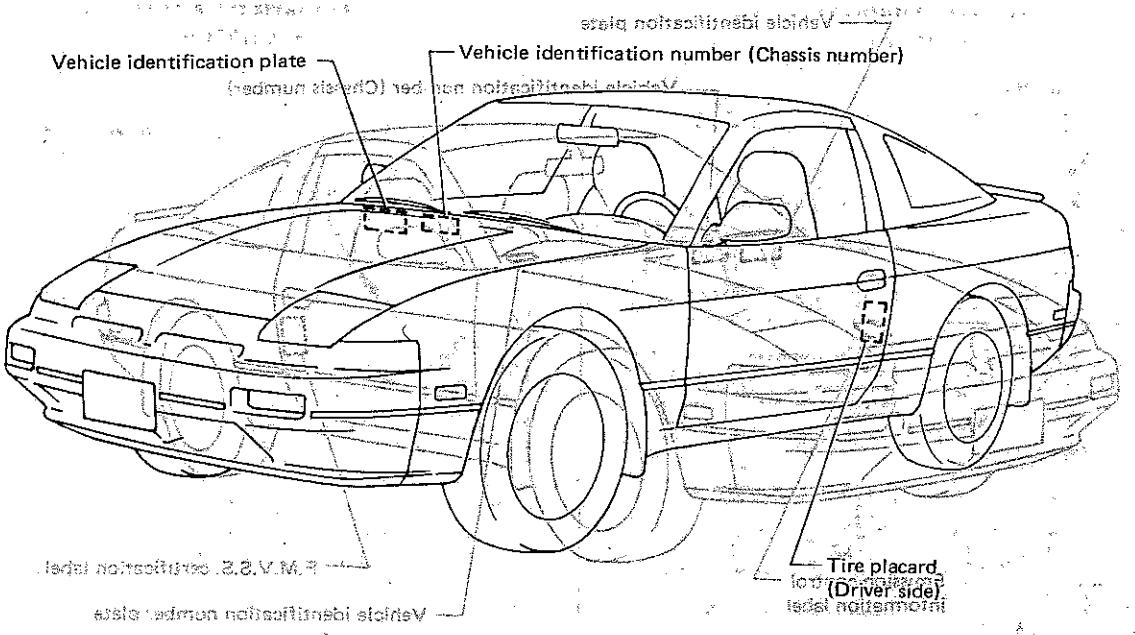
VEHICLE IDENTIFICATION NUMBER ARRANGEMENT

(For Europe)

JN1 H S 3 6 P X R K W 000051

- Manufacturer
  - JN1: Nissan passenger vehicle
- Engine type
  - H: KA24E
- Vehicle line
  - S: NISSAN 240SX
- Model change (0 to 9)
- Body type
  - 4: Coupe
  - 6: Fastback
- Restraint system
  - S: Standard
  - P: Automatic
- Check digit (0 to 9 or X)
  - The code for the check digit is determined by mathematical computation.
- Model year
  - K: 1989 year model
- Manufacture plant
  - W: Kyushu
- Vehicle serial number

IDENTIFICATION NUMBERS (Except for U.S.A. & Canada)



SGI554

VEHICLE IDENTIFICATION NUMBER ARRANGEMENT

(For Europe)

JN1 0 R X S13 U 0 H 000030

- JN1 : Nissan
- O : Stopgap (no meaning)
- R : Fast Back
- U : For Europe
- Model
- Vehicle serial number
- O : Stopgap (no meaning)

(Except for Europe)

R □ S13 — 000001

- R : Fast Back
- □ : CA18DET engine
- Model
- Vehicle serial number

□ : means no indication.

LIFTING POINTS

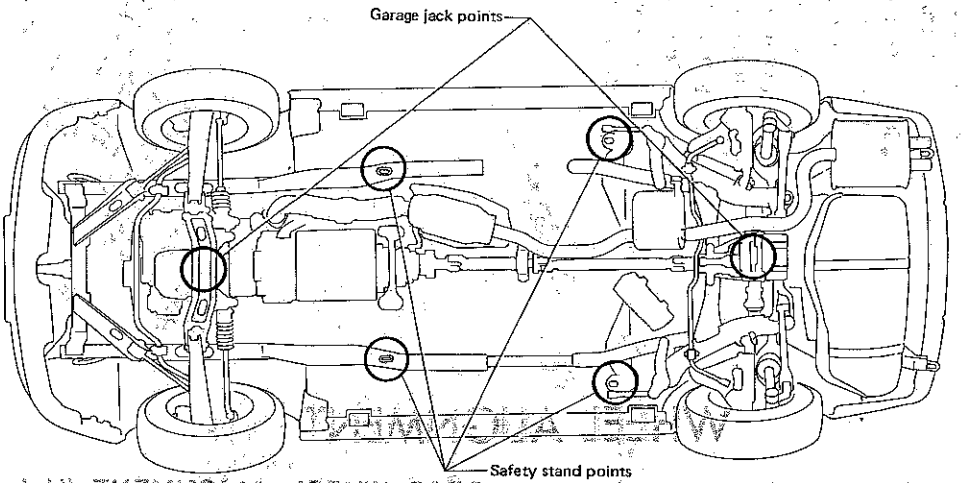
GARAGE JACK AND SAFETY STAND

WARNING:

- Never get under the vehicle while it is supported only by the jack. Always use safety stands to support the frame when you have to get under the vehicle.
- Place wheel chocks at the front wheels when the rear wheels are raised and place wheel chocks at the rear wheels when the front wheels are raised.

CAUTION:

Place a wooden or rubber block between safety stand and vehicle body when the supporting body is flat.



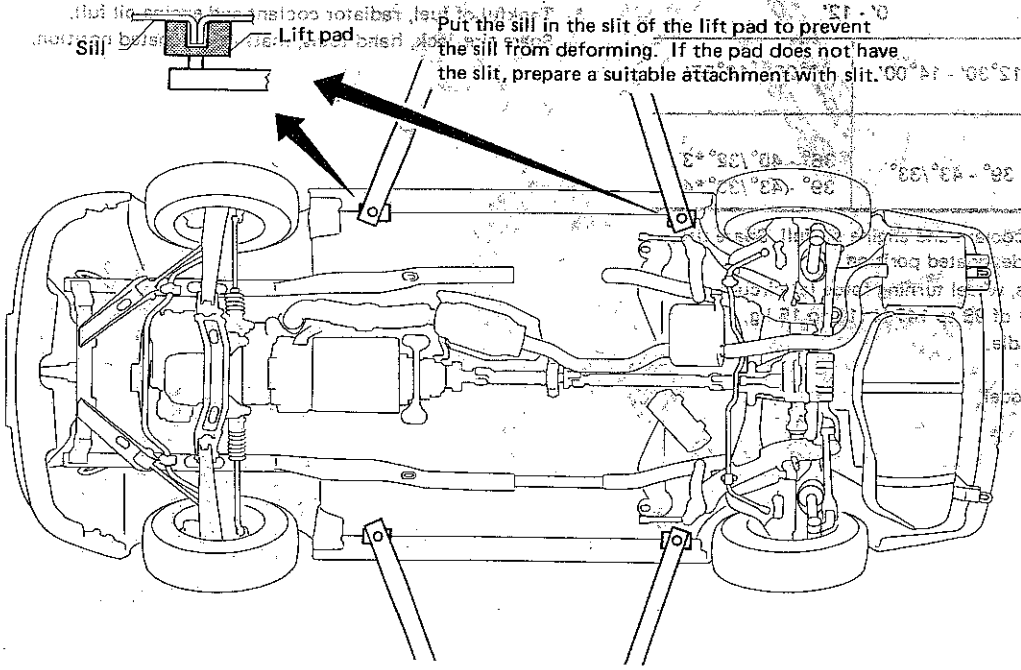
SGI588

2-POLE LIFT

WARNING:

When lifting the vehicle, open the lift arms as wide as possible and ensure that the front and rear of the vehicle are well balanced.

When setting the lift arm, do not allow the arm to contact the brake tubes and fuel lines.

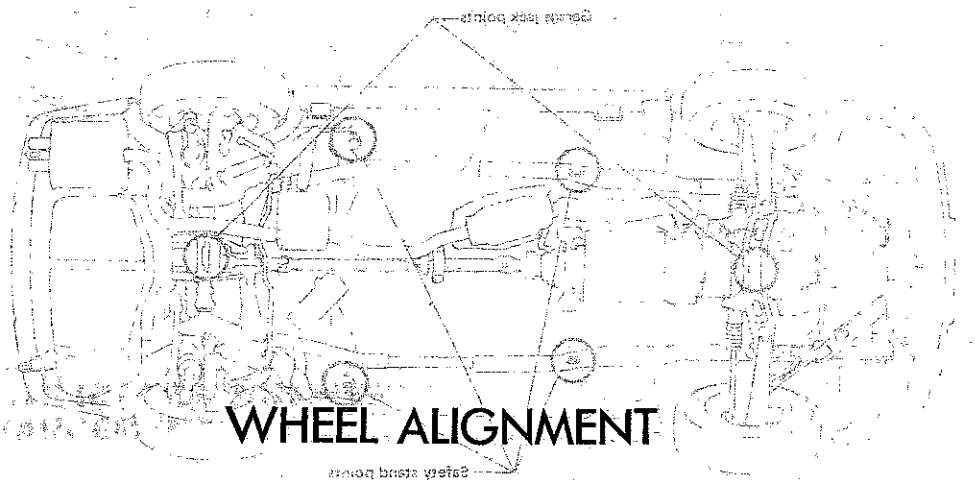


SGI553

VEHICLE DIMENSIONS

Unit: mm (in)

	Europe	Except Europe
Overall length	4,535 (178.5)	4,520 (178.0)
Overall width	1,690 (66.5)	1,690 (66.5)
Overall height	1,290 (50.8)	1,290 (50.8)
Front tread	1,465 (57.7)	1,465 (57.7)
Rear tread	1,465 (57.7)	1,460 (57.5)
Wheelbase	2,475 (97.4)	2,475 (97.4)



WHEEL ALIGNMENT

FRONT WHEEL ALIGNMENT (Undaden*1)

		For U.S.A. & Canada	Exept for U.S.A. & Canada
Camber	degree	−1°30′ to 0°	−1°25′ to 5′
Caster	degree	6°00′ - 7°30′	5°55′ - 7°25′
Toe-in (Total)	mm (in)	0 - 2 (0 - 0.08)	
	degree	0′ - 12′	
Kingpin inclination	degree	12°30′ - 14°00′	12°25′ - 13°55′
Front wheel turning angle Full turn*2 inside/outside	degree	39° - 43°/33°	36° - 40°/32°*3 39° - 43°/33°*4

*1: Tankful of fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools, mats in designated position.
*2: On power steering models, wheel turning force (at circumference of steering wheel) of 98 to 147 N (10 to 15 kg, 22 to 33 lb) with engine idle.
*3: Europe L.H.D. model
*4: Except Europe L.H.D. model

REAR WHEEL ALIGNMENT (Unladen*)

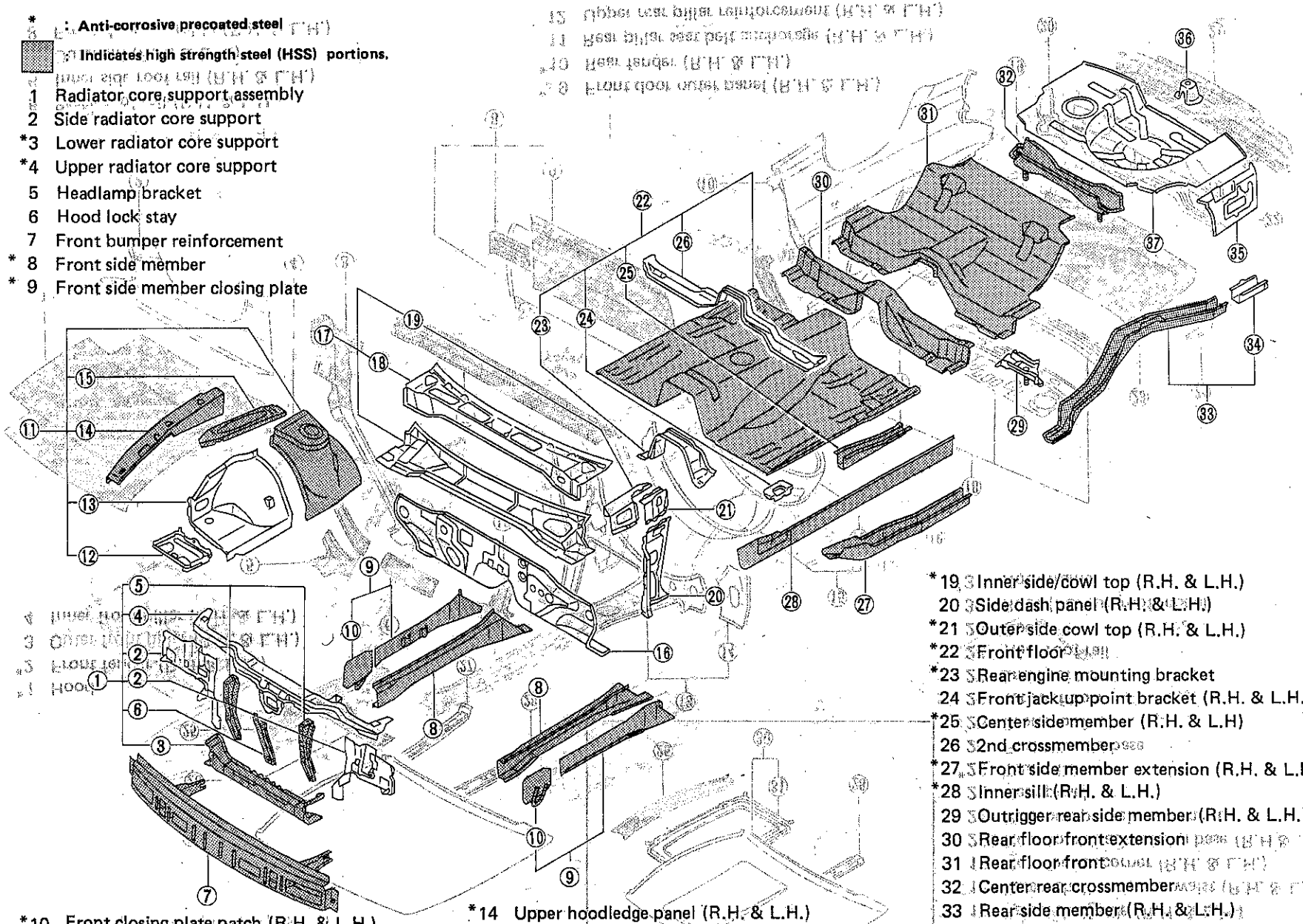
		For U.S.A. & Canada	Except for U.S.A. & Canada
Camber	degree	−1°36′ to −0°36′	−1°40′ to 0°40′
Toe-in	mm (in)	0 - 5 (0 - 0.20)	
	(Total) degree	0′ - 28′	

* Tankful of fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools, mats in designated position.

UNDERBODY COMPONENT PARTS

* : Anti-corrosive precoated steel

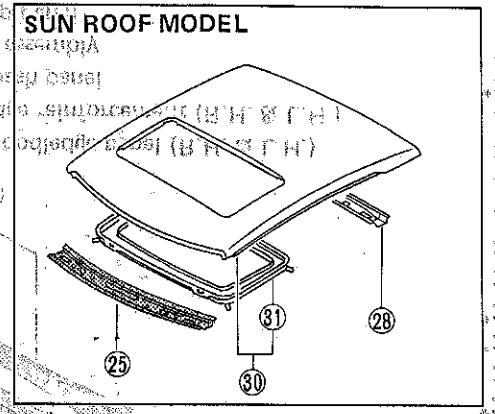
: Indicates high strength steel (HSS) portions.

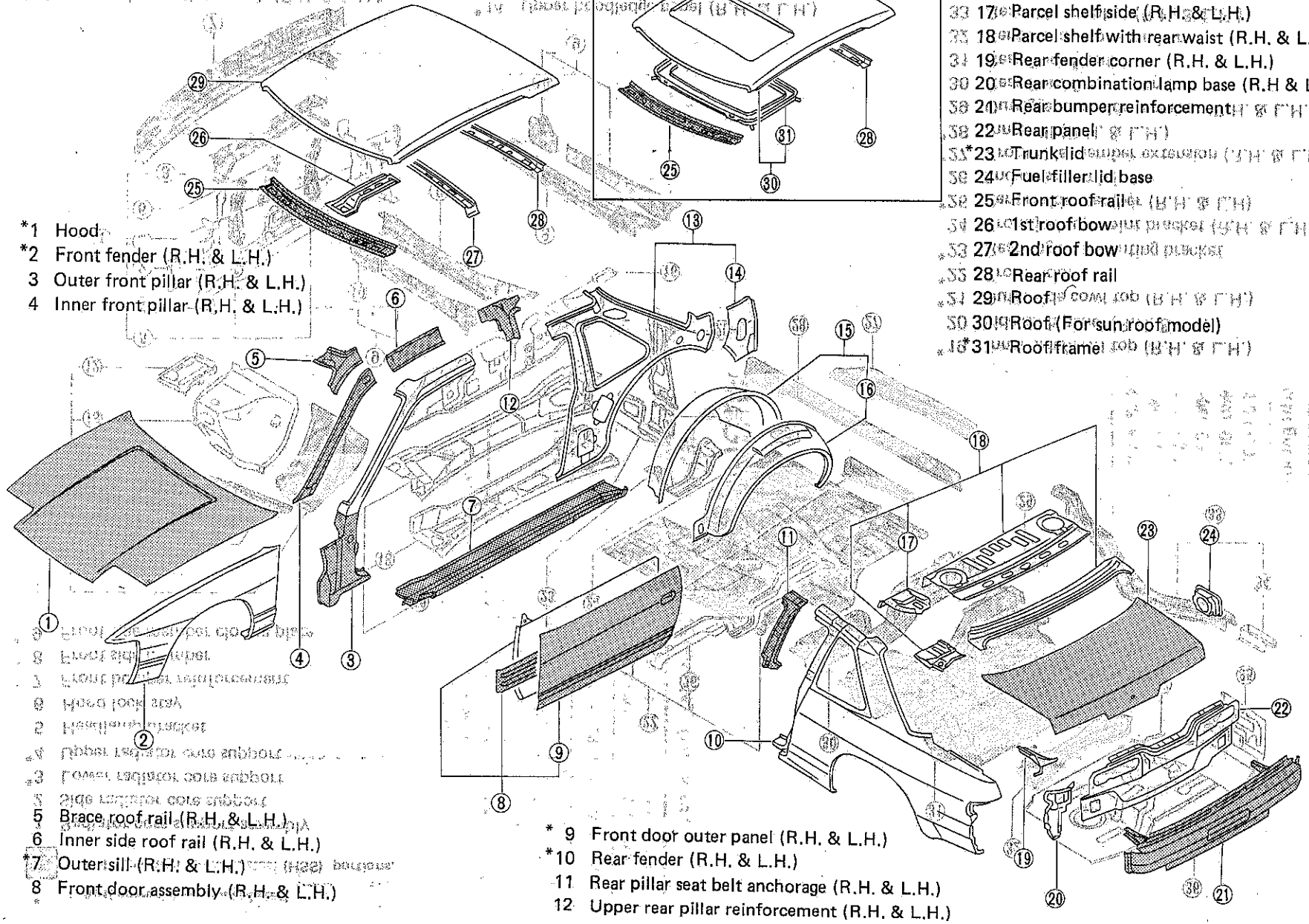


1 Radiator core support assembly
2 Side radiator core support
*3 Lower radiator core support
*4 Upper radiator core support
5 Headlamp bracket
6 Hood lock stay
7 Front bumper reinforcement
* 8 Front side member
* 9 Front side member closing plate
*10 Front closing plate patch (R.H. & L.H.)
*11 Hoodledge (R.H. & L.H.)
12 Battery mounting
*13 Lower front hoodledge (R.H. & L.H.)
*14 Upper hoodledge panel (R.H. & L.H.)
*15 Hoodledge reinforcement (R.H. & L.H.)
16 Lower dash panel
17 Air box assembly
*18 Cowl top panel
*19 Inner side/cowl top (R.H. & L.H.)
20 Side dash panel (R.H. & L.H.)
*21 Outer side cowl top (R.H. & L.H.)
*22 Front floor
*23 Rear engine mounting bracket
24 Front jack up point bracket (R.H. & L.H.)
*25 Center side member (R.H. & L.H)
26 2nd crossmember
*27 Front side member extension (R.H. & L.H.)
*28 Inner sill (R.H. & L.H.)
29 Outrigger rear side member (R.H. & L.H.)
30 Rear floor front extension
31 Rear floor front
32 Center rear crossmember
33 Rear side member (R.H. & L.H.)
34 Rear side member extension (R.H. & L.H.)
*35 Rear floor side (R.H. & L.H.)
36 Spare tire clamp bracket
37 Rear floor rear

* : Anti-corrosive precoated steel

▨ : Indicates high strength steel (HSS) portions.





*1 Hood
*2 Front fender (R.H. & L.H.)
3 Outer front pillar (R.H. & L.H.)
4 Inner front pillar (R.H. & L.H.)
5 Brace roof rail (R.H. & L.H.)
6 Inner side roof rail (R.H. & L.H.)
*7 Outer sill (R.H. & L.H.)
8 Front door assembly (R.H. & L.H.)
* 9 Front door outer panel (R.H. & L.H.)
*10 Rear fender (R.H. & L.H.)
11 Rear pillar seat belt anchorage (R.H. & L.H.)
12 Upper rear pillar reinforcement (R.H. & L.H.)
*13 Inner rear pillar (R.H. & L.H.)
14 Lower inner rear pillar (R.H. & L.H.)
15 Rear wheelhouse (R.H. & L.H.)
*16 Outer rear wheelhouse (R.H. & L.H.)
17 Parcel shelf side (R.H. & L.H.)
18 Parcel shelf with rear waist (R.H. & L.H.)
19 Rear fender corner (R.H. & L.H.)
20 Rear combination lamp base (R.H & L.H.)
21 Rear bumper reinforcement
22 Rear panel
*23 Trunk lid
24 Fuel filler lid base
25 Front roof rail (R.H. & L.H.)
26 1st roof bow
27 2nd roof bow
28 Rear roof rail
29 Roof
30 Roof (For sun roof model)
*31 Roof frame

BODY COMPONENT PARTS

FAST BACK

* : Anti-corrosive precoated steel

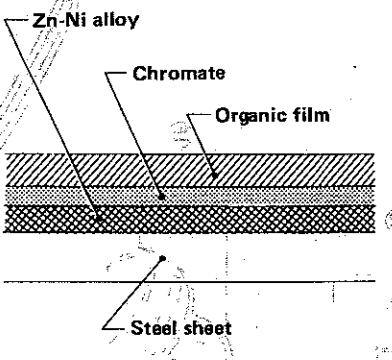
▒ : Indicates high strength steel (HSS) portions.

*1 Hood
*2 Front fender (R.H. & L.H.)
3 Outer front pillar (R.H. & L.H.)
4 Inner front pillar (R.H. & L.H.)
5 Roof rail brace (R.H. & L.H.)
6 Inner side roof rail (R.H. & L.H.)
*7 Outer sill (R.H. & L.H.)
8 Front door assembly (R.H. & L.H.)
* 9 Front door outer panel (R.H. & L.H.)
*10 Rear fender (R.H. & L.H.)
11 Upper rear pillar reinforcement (R.H. & L.H.)
12 Rear roof rail brace (R.H. & L.H.)
13 Inner rear pillar (R.H. & L.H.)
14 Rear pillar seat belt anchorage (R.H. & L.H.)
15 Inner rear pillar reinforcement (R.H. & L.H.)
16 Rear wheelhouse (R.H. & L.H.)
*17 Outer rear wheel house (R.H. & L.H.)
18 Fuel filler lid base
19 Rear fender corner (R.H. & L.H.)
20 Rear combination lamp base (R.H. & L.H.)
21 Rear bumper reinforcement
22 Rear panel
*23 Back door
24 Front roof rail
25 1st roof bow
26 2nd roof bow
27 Rear roof rail
28 Roof
29 Roof (For sun roof model)
30 Roof frame

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

ANTI-CORROSIVE PRECOATED STEEL (DURASTEEL)

To improve repairability and corrosion resistance, a new of anti-corrosive precoated steel is used. Called Durasteel, this replaces the conventional zinc-coated steel sheets. Durasteel is electroplated, zinc-nickel alloy under organic film, which provides excellent welding and corrosion resistance.



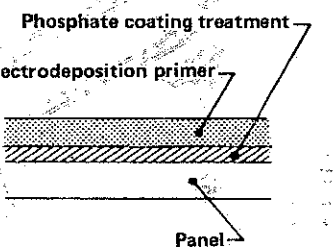
Nissan Genuine Service Parts are fabricated from durasteel sheets, therefore, it is recommended that GENUINE NISSAN PARTS be used for panel replacement to maintain the anti-corrosive performance built into the vehicle at the factory.

PHOSPHATE COATING TREATMENT AND CATIONIC ELECTRODEPOSITION PRIMER

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

CAUTION:

Confine paint removal in the welding operation to the absolute minimum.

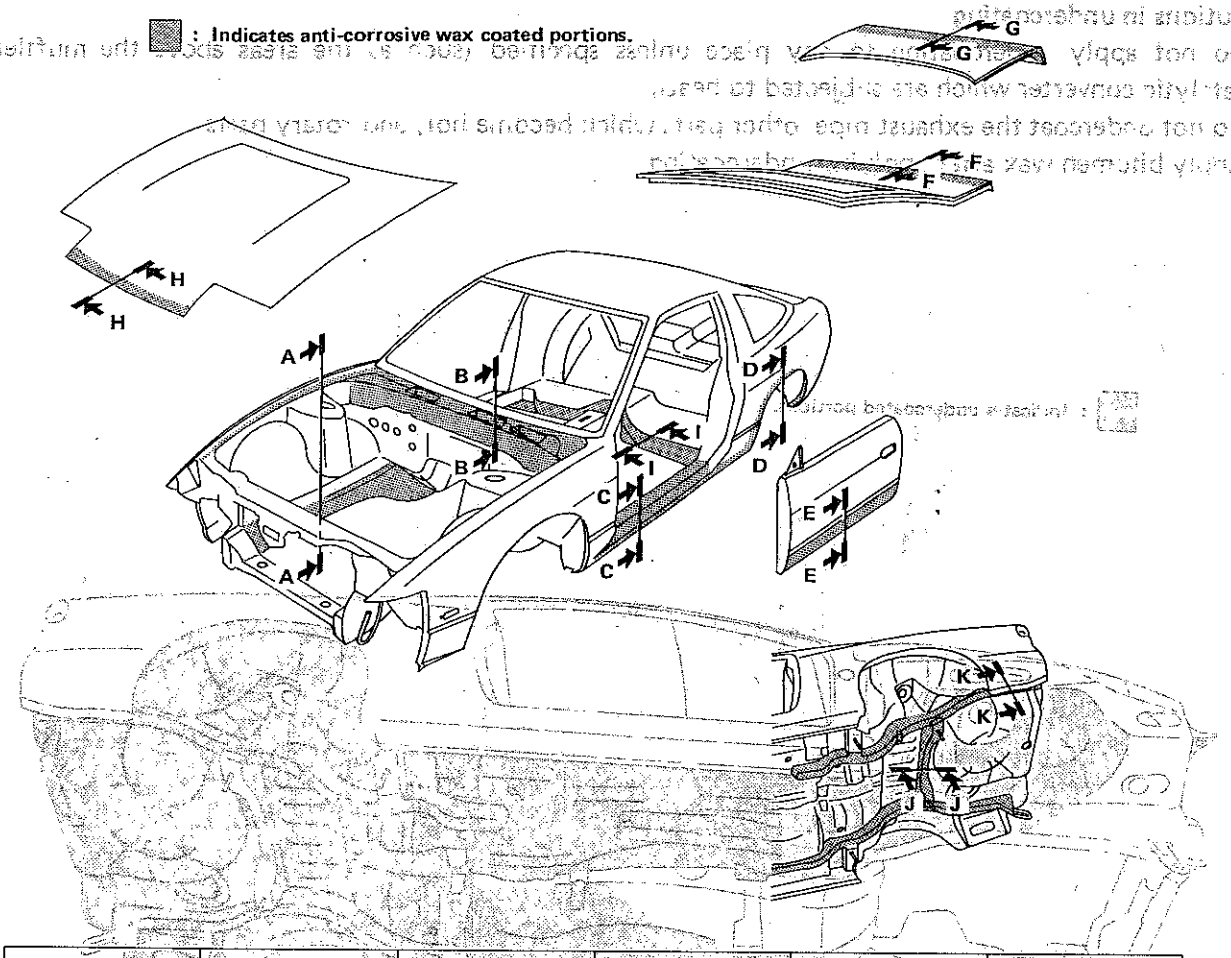


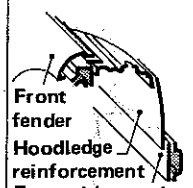
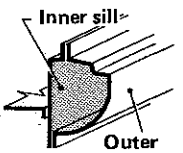
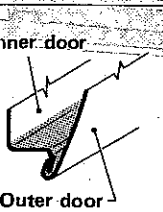
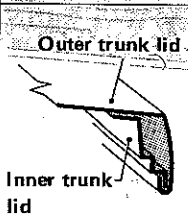
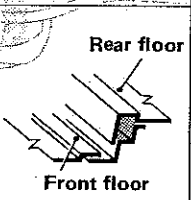
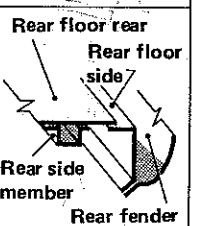
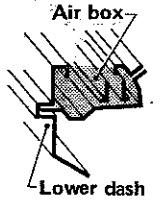
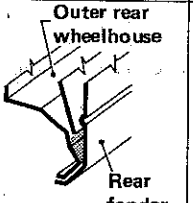
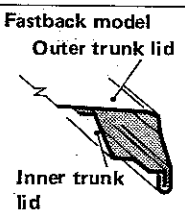
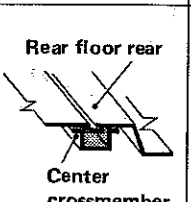
Nissan Genuine Service Parts also are treated in the same manner. Therefore, it is recommended that GENUINE NISSAN PARTS be used for panel replacement to maintain anti-corrosive performance built into the vehicle at the factory.

ANTI-CORROSIVE WAX

In order 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 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.



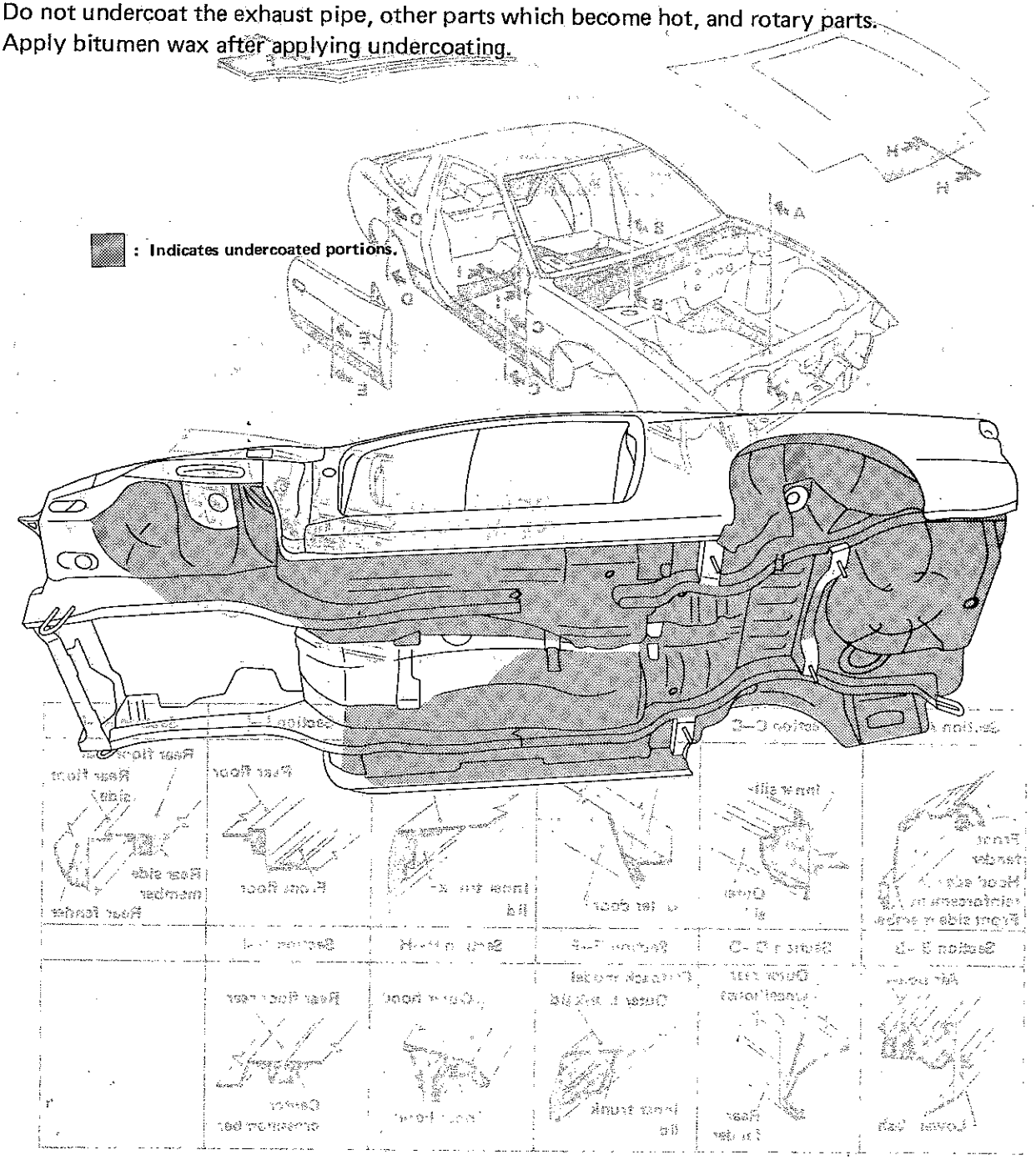
Section A—A	Section C—C	Section E—E	Section G—G	Section I—I	Section K—K
 Front fender, Hoodledge reinforcement, Front side member	 Inner sill, Outer sill	 Inner door, Outer door	 Outer trunk lid, Inner trunk lid	 Rear floor, Front floor	 Rear floor rear, Rear floor side, Rear side member, Rear fender
Section B—B	**Section D—D**	**Section F—F**	**Section H—H**	**Section J—J**	
 Air box, Lower dash	 Outer rear wheelhouse, Rear fender	 Fastback model, Outer trunk lid, Inner trunk lid	 Outer hood, Inner hood	 Rear floor rear, Center crossmember	

UNDERCOATING

The undersides 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

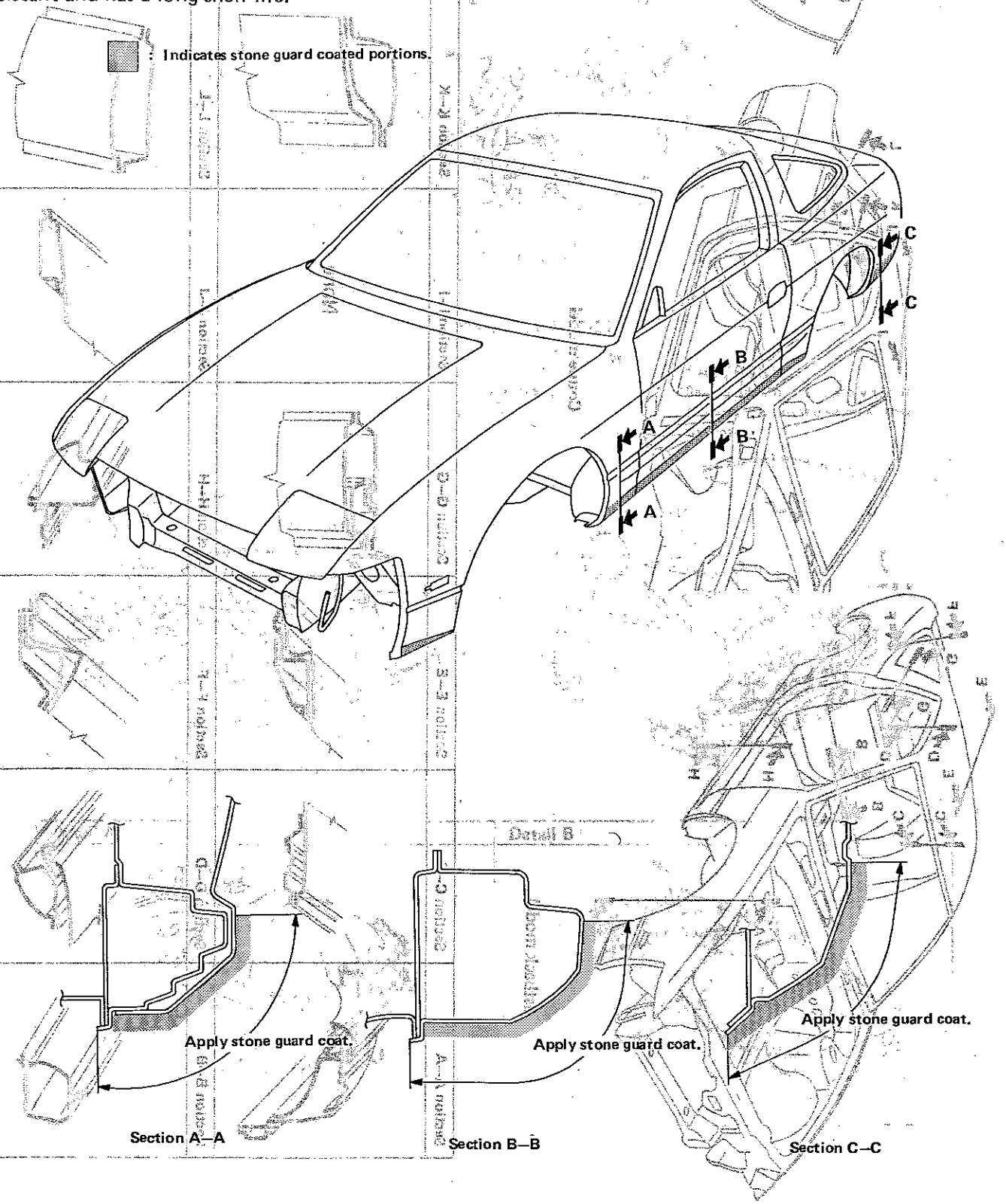
1. Do not apply undercoating to any place unless specified (such as the areas above the muffler and catalytic converter which are subjected to heat).
2. Do not undercoat the exhaust pipe, other parts which become hot, and rotary parts.
3. Apply bitumen wax after applying undercoating.

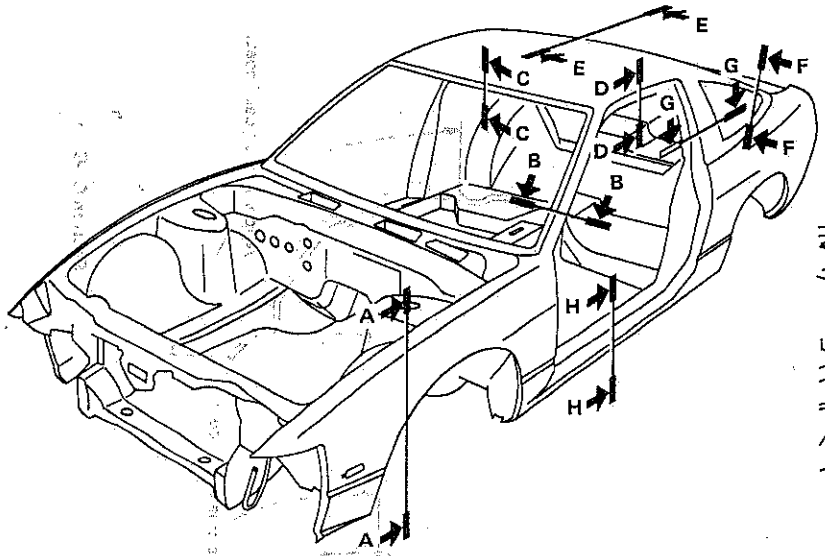


: Indicates undercoated portions.

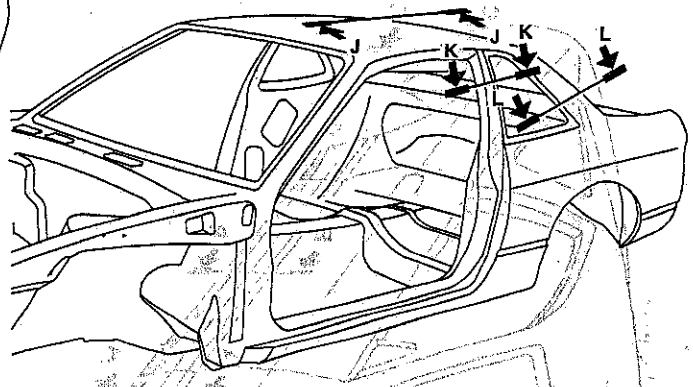
STONE GUARD COAT

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

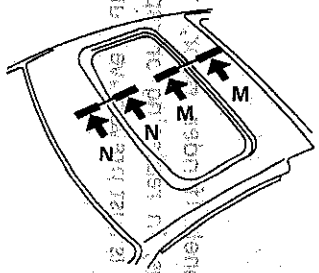




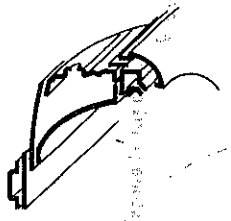
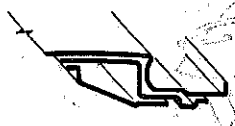
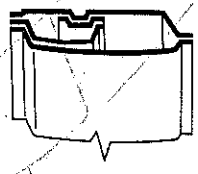
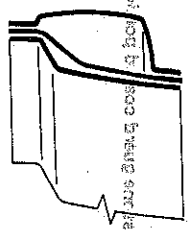
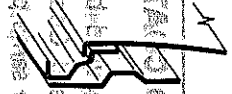
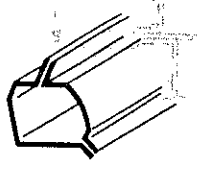
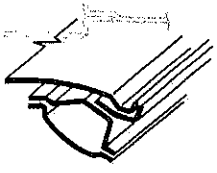
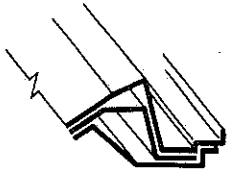
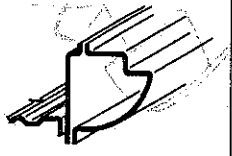
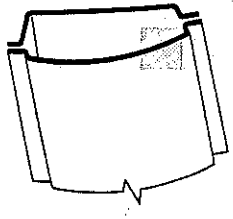
Fastback model



Coupe model

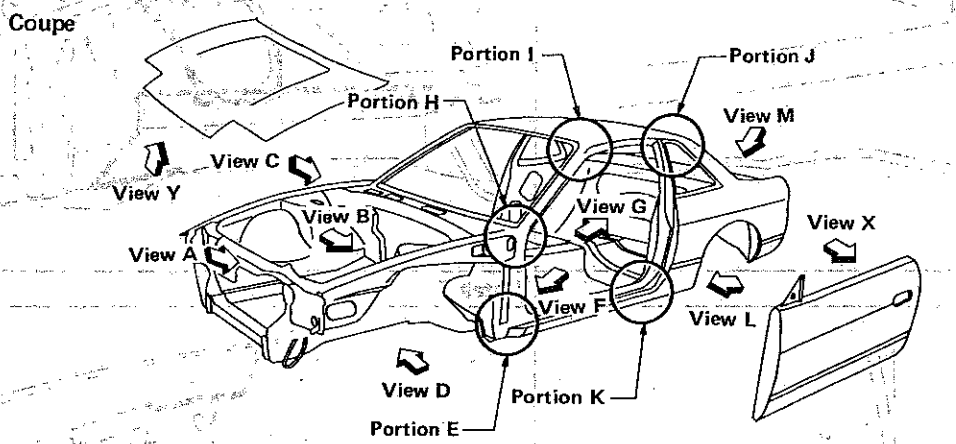


Sun roof model

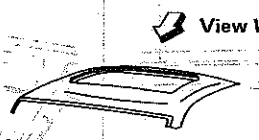
Section A–A	Section C–C	Section E–E	Section G–G	Section I–I	Section K–K	Section M–M
				None		
Section B–B	**Section D–D**	**Section F–F**	**Section H–H**	**Section J–J**	**Section L–L**	**Section N–N**
						

DESCRIPTION

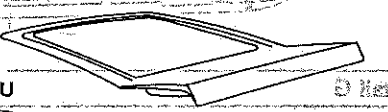
The following figure shows the areas which are sealed at the factory. Sealant which has been applied to these areas should be smooth and free from cuts or gaps.
Care should be taken not to apply an excess amount of sealant and not to allow other unaffected parts to come into contact with the sealant.

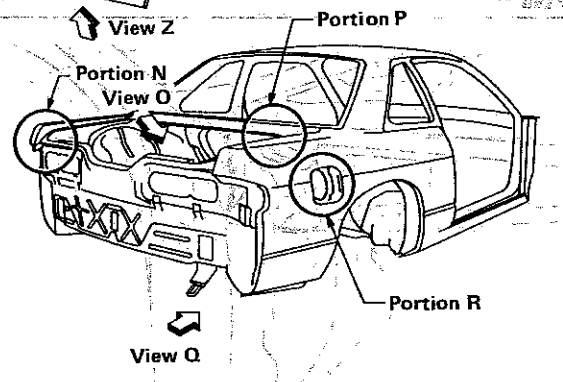


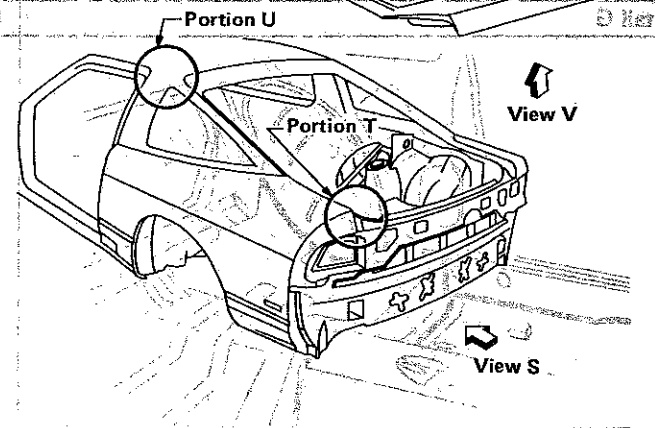
SUN ROOF MODEL



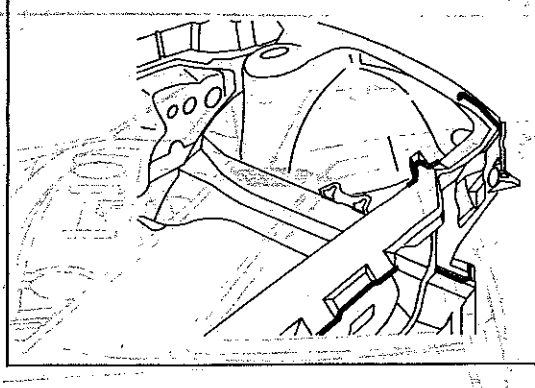
FASTBACK
Sealing portions not shown in the illustrations are the same as those for coupe.



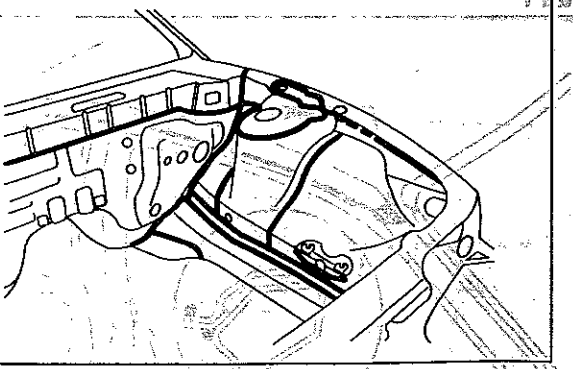




Detail A

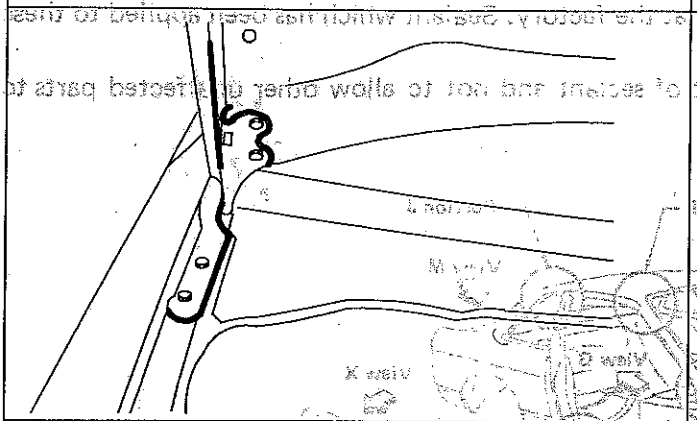


Detail B

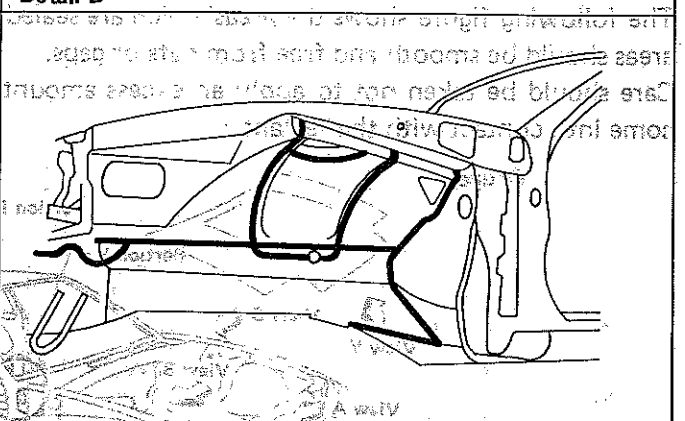


DESCRIPTION

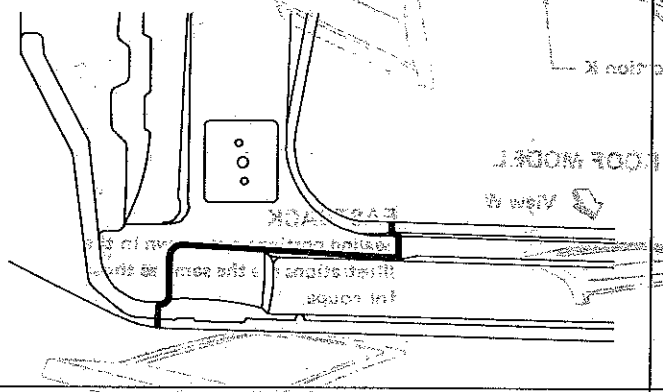
Detail C



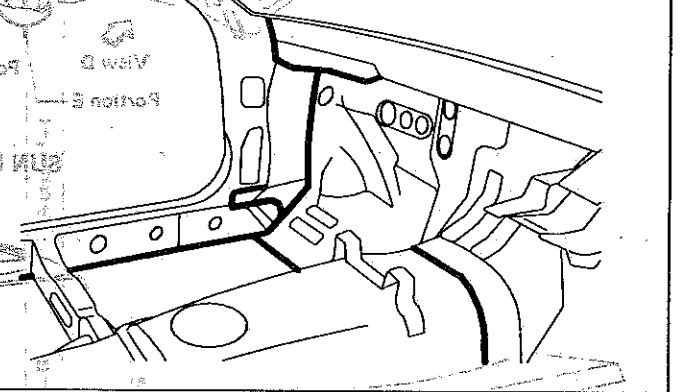
Detail D



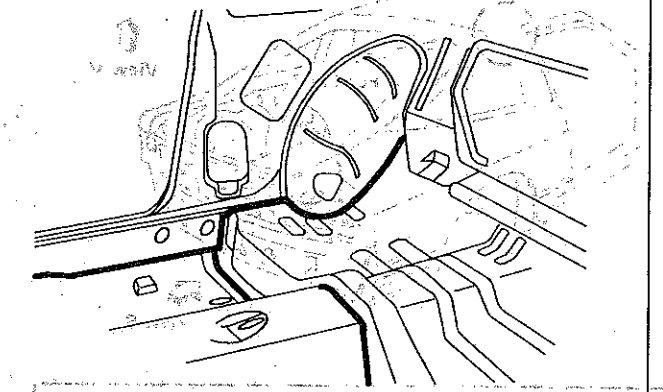
Detail E



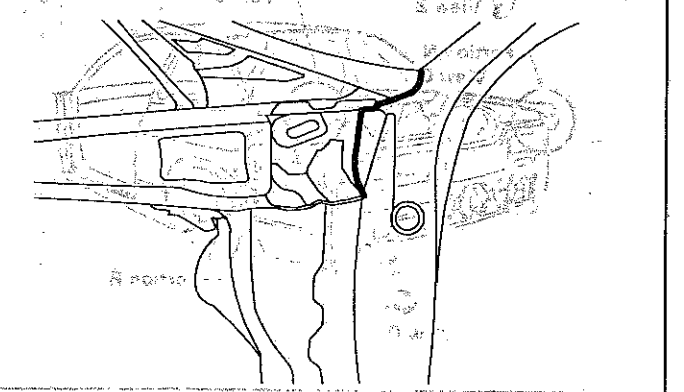
Detail F



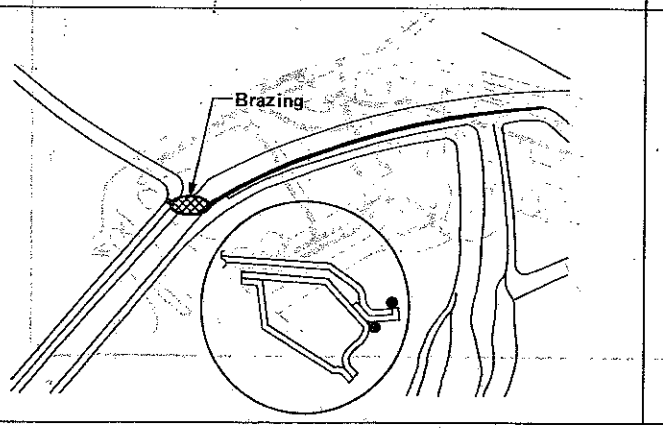
Detail G



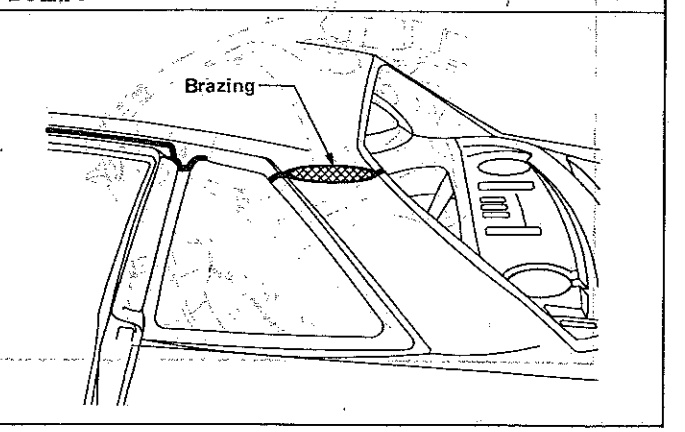
Detail H



Detail I

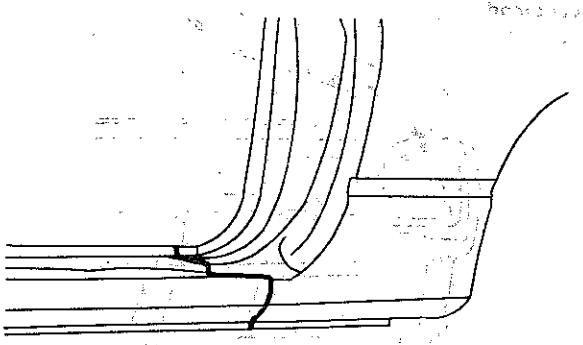


Detail J

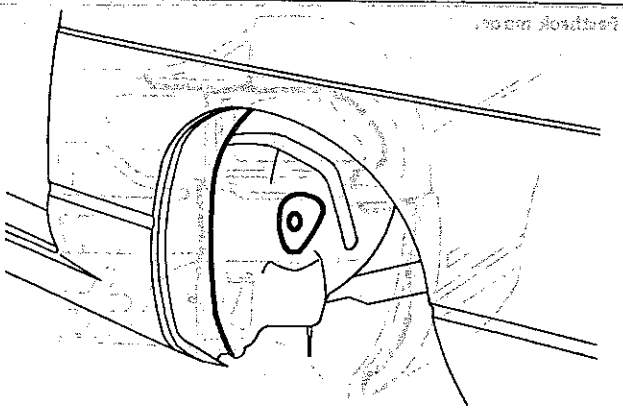


DESCRIPTION

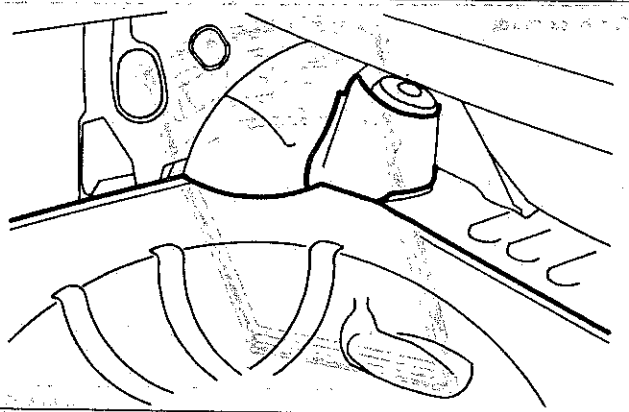
Detail K



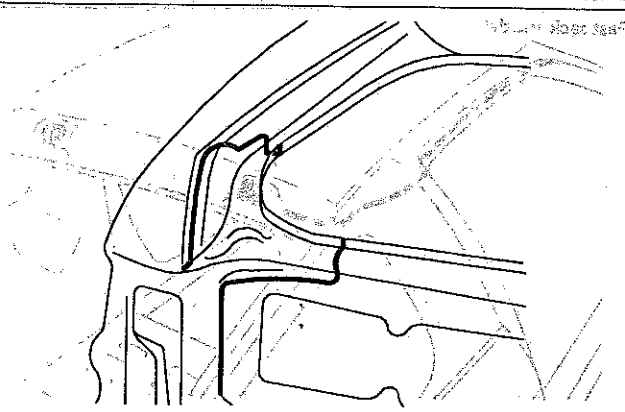
Detail L



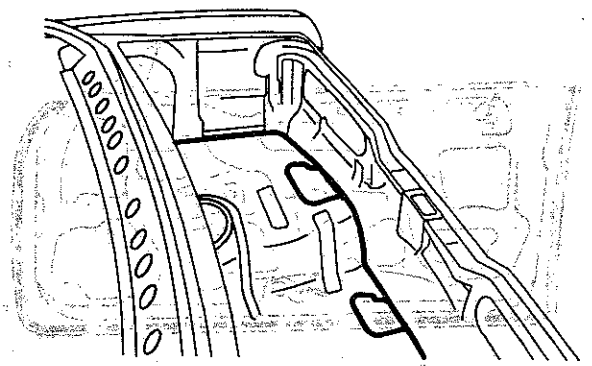
Detail M



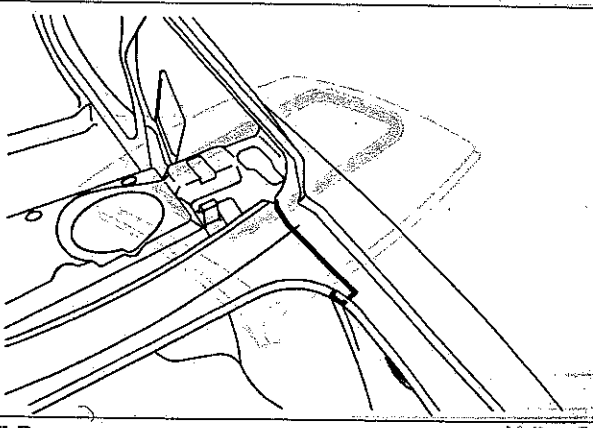
Detail N



Detail O

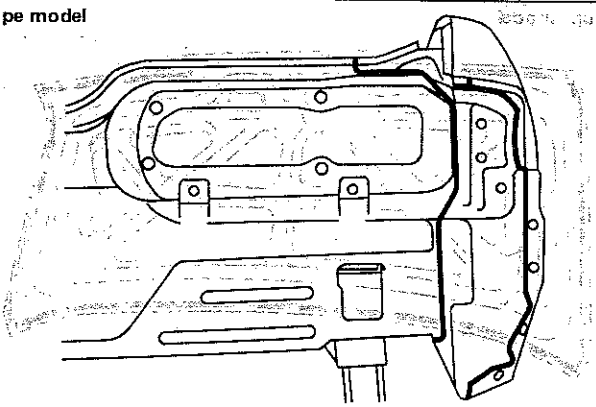


Detail P

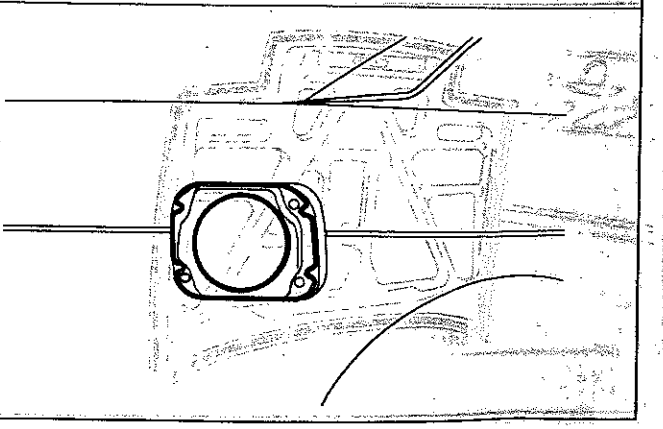


Detail Q

Coupe model



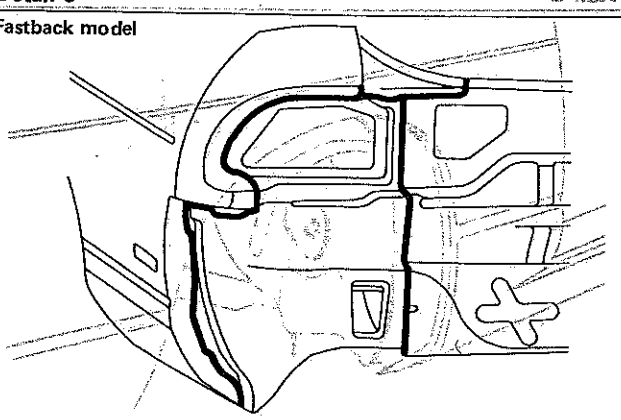
Detail R



DESCRIPTION

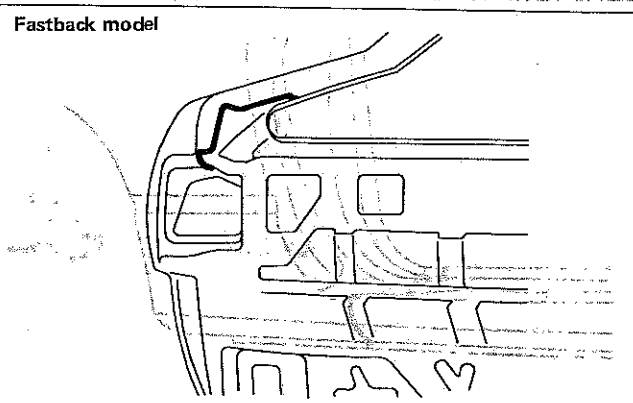
Detail S

Fastback model



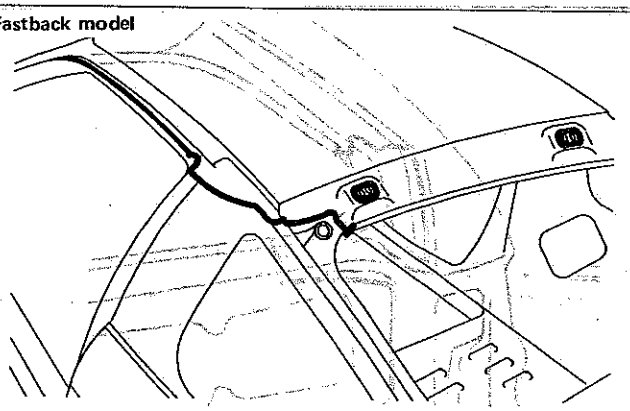
Detail T

Fastback model



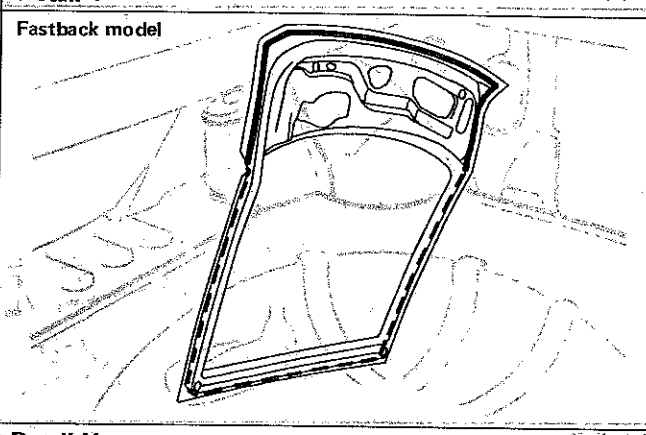
Detail U

Fastback model

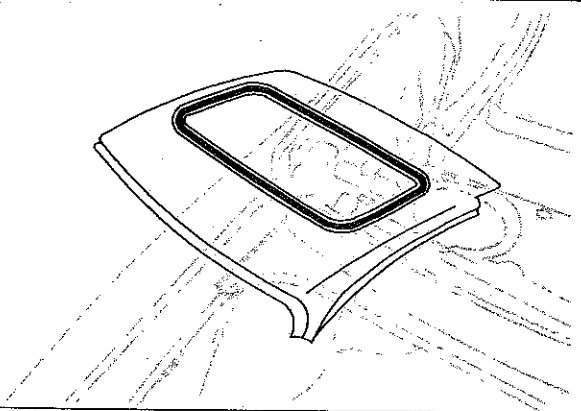


Detail V

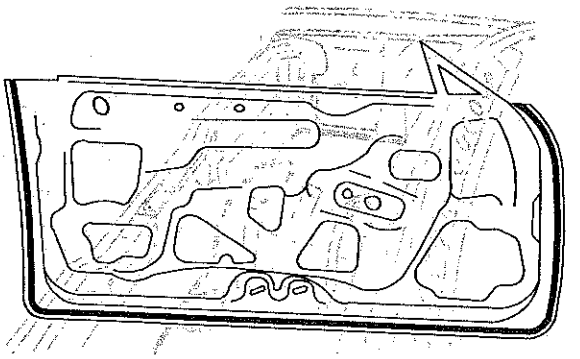
Fastback model



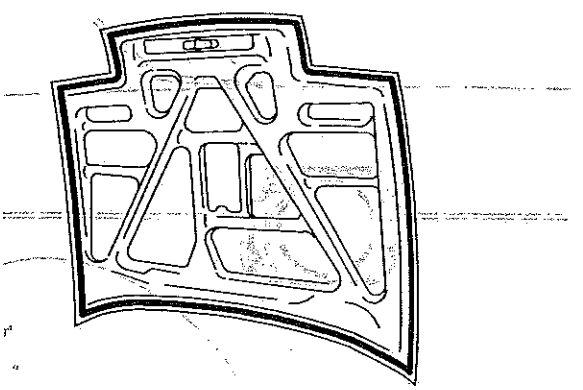
Detail W



Detail X

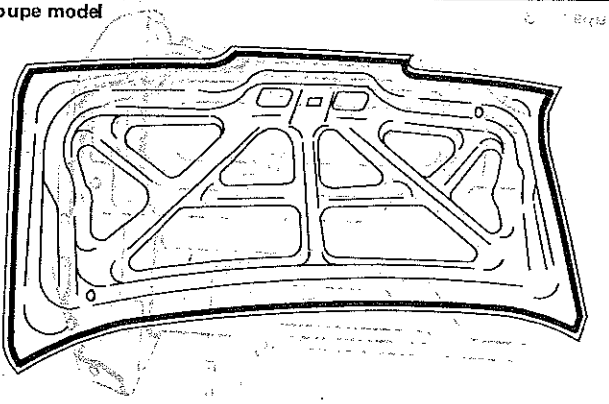


Detail Y



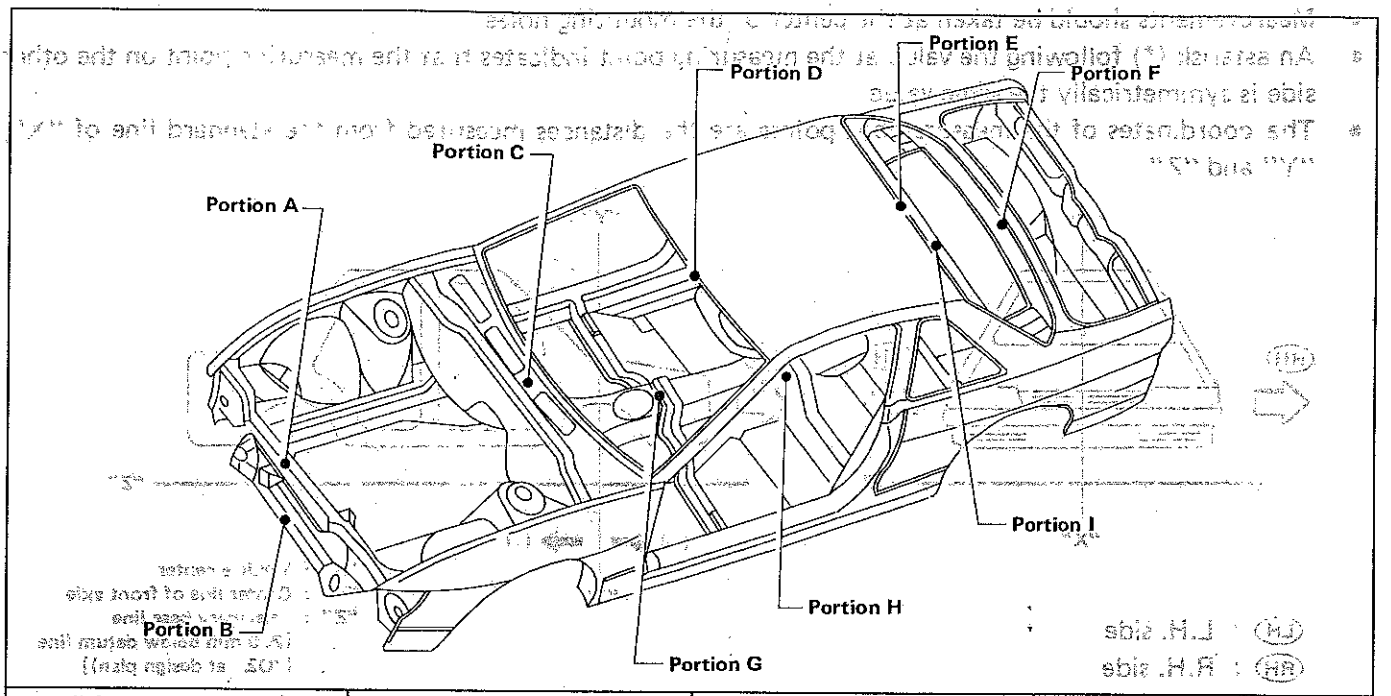
Detail Z

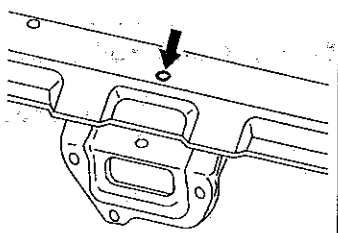
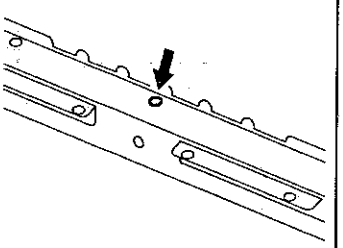
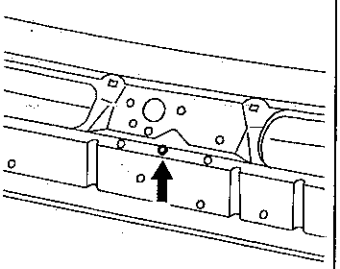
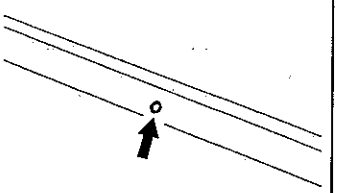
Coupe model

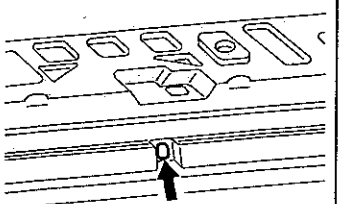
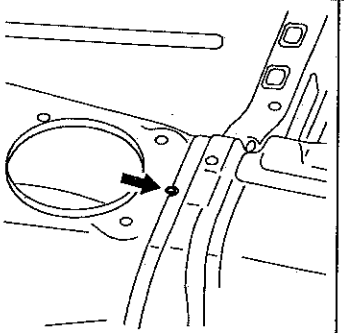
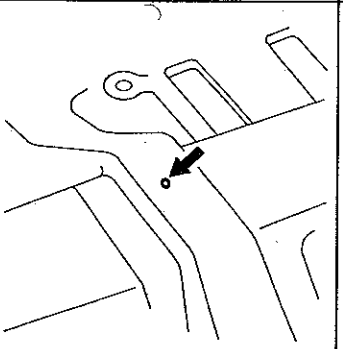
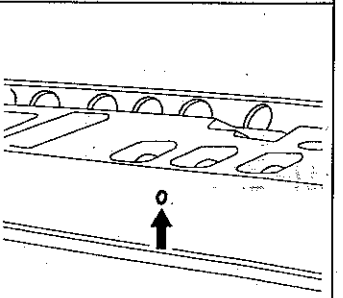


BODY CENTER MARKS

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

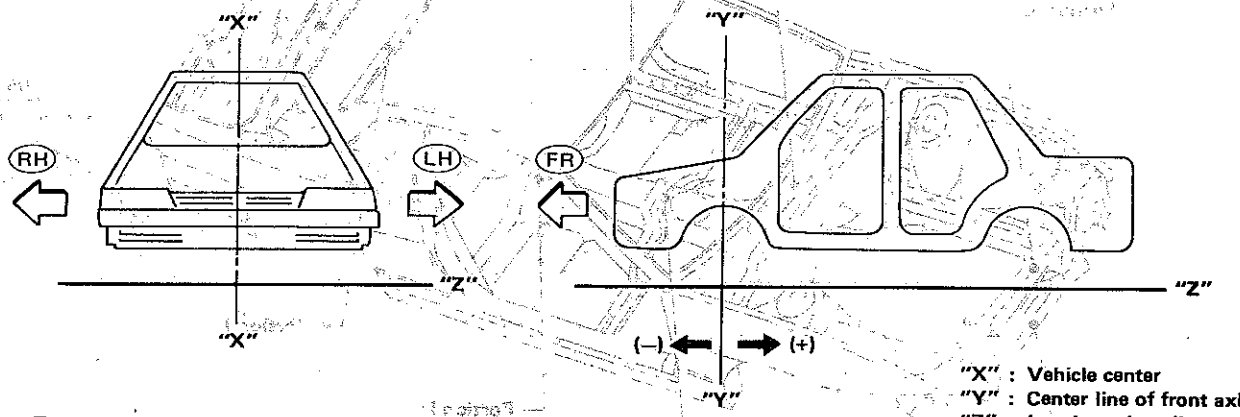


Detail A	Detail B	Detail C	Detail D, E
			
• Upper radiator core support	• Lower radiator core support	• Cowl top	• Front and rear roof

Detail F	Detail G	Detail H	Detail I
			
• Rear waist panel	• 2nd crossmember	• Rear floor front extension	• Parcel shelf

DESCRIPTION

- All dimensions indicated in figures are actual ones.
- When a tram tracking gauge is used, adjust both pointers to equal length and 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".

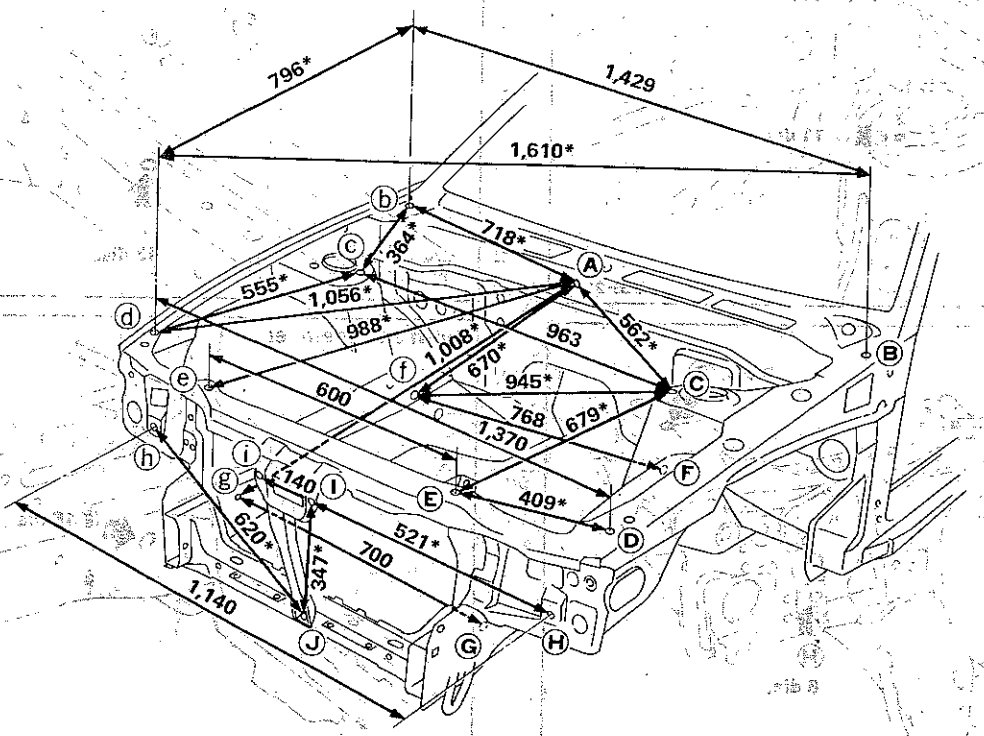


"X" : Vehicle center
"Y" : Center line of front axle
"Z" : Imaginary base line [200 mm below datum line ("OZ" at design plan)]

(LH) : L.H. side
(RH) : R.H. side

ENGINE COMPARTMENT

MEASUREMENT

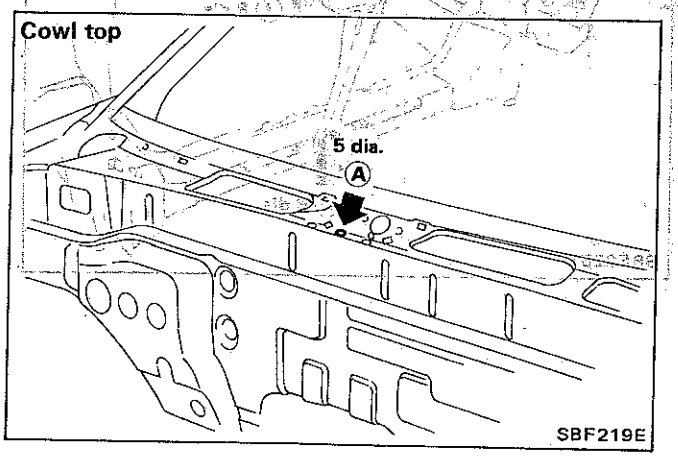


Unit: mm

SBF193E

MEASUREMENT POINTS

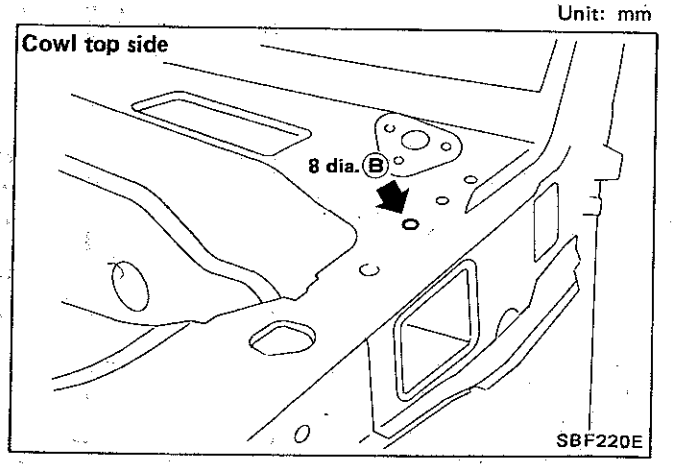
Cowl top



SBF219E

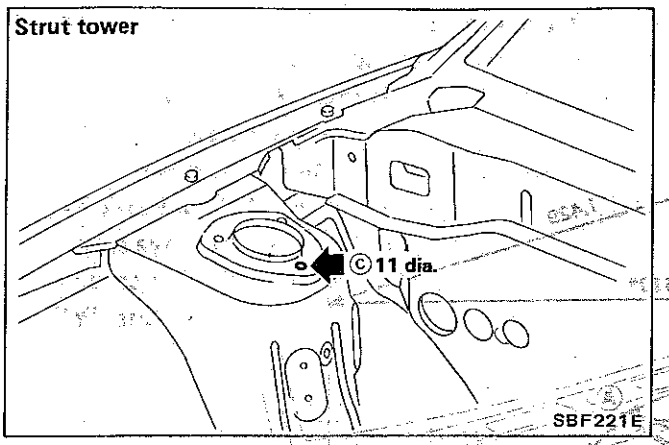
Unit: mm

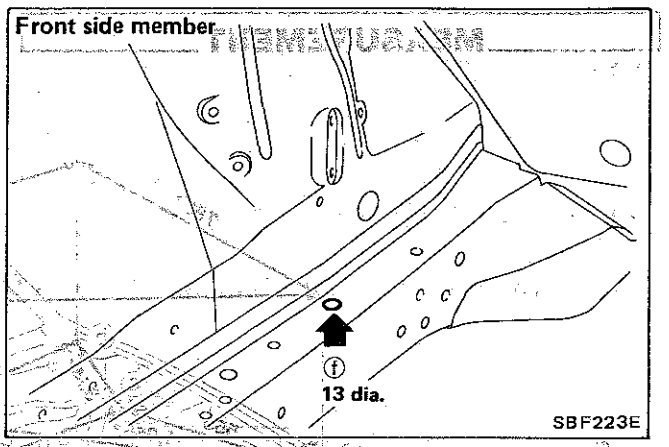
Cowl top side

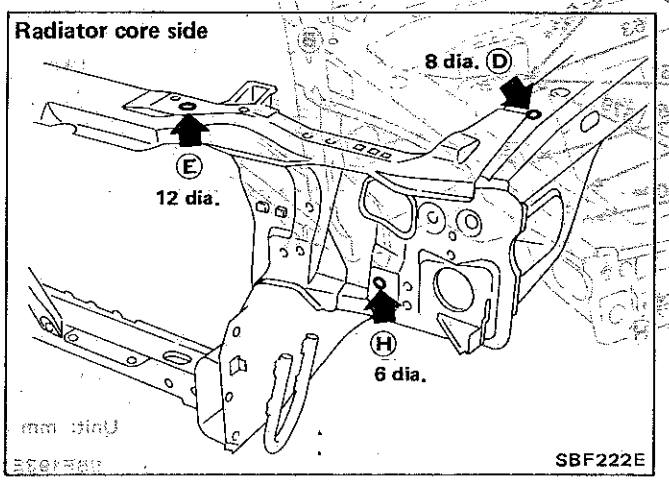


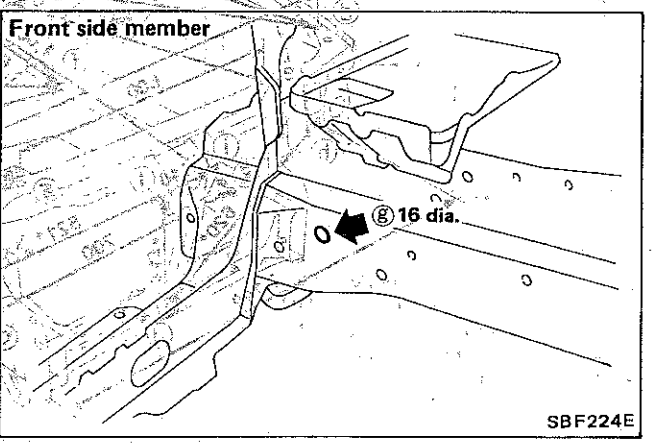
SBF220E

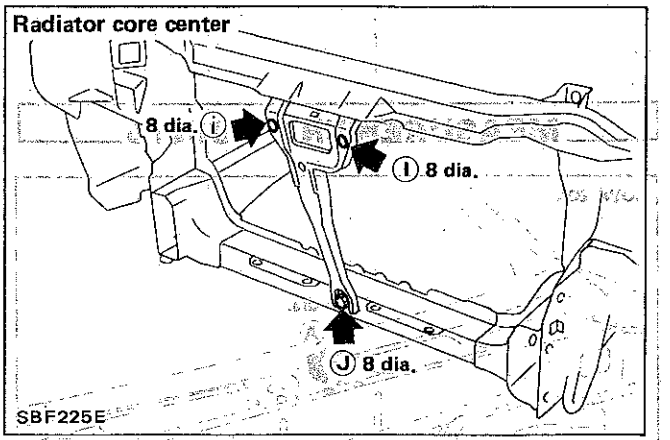
ENGINE COMPARTMENT







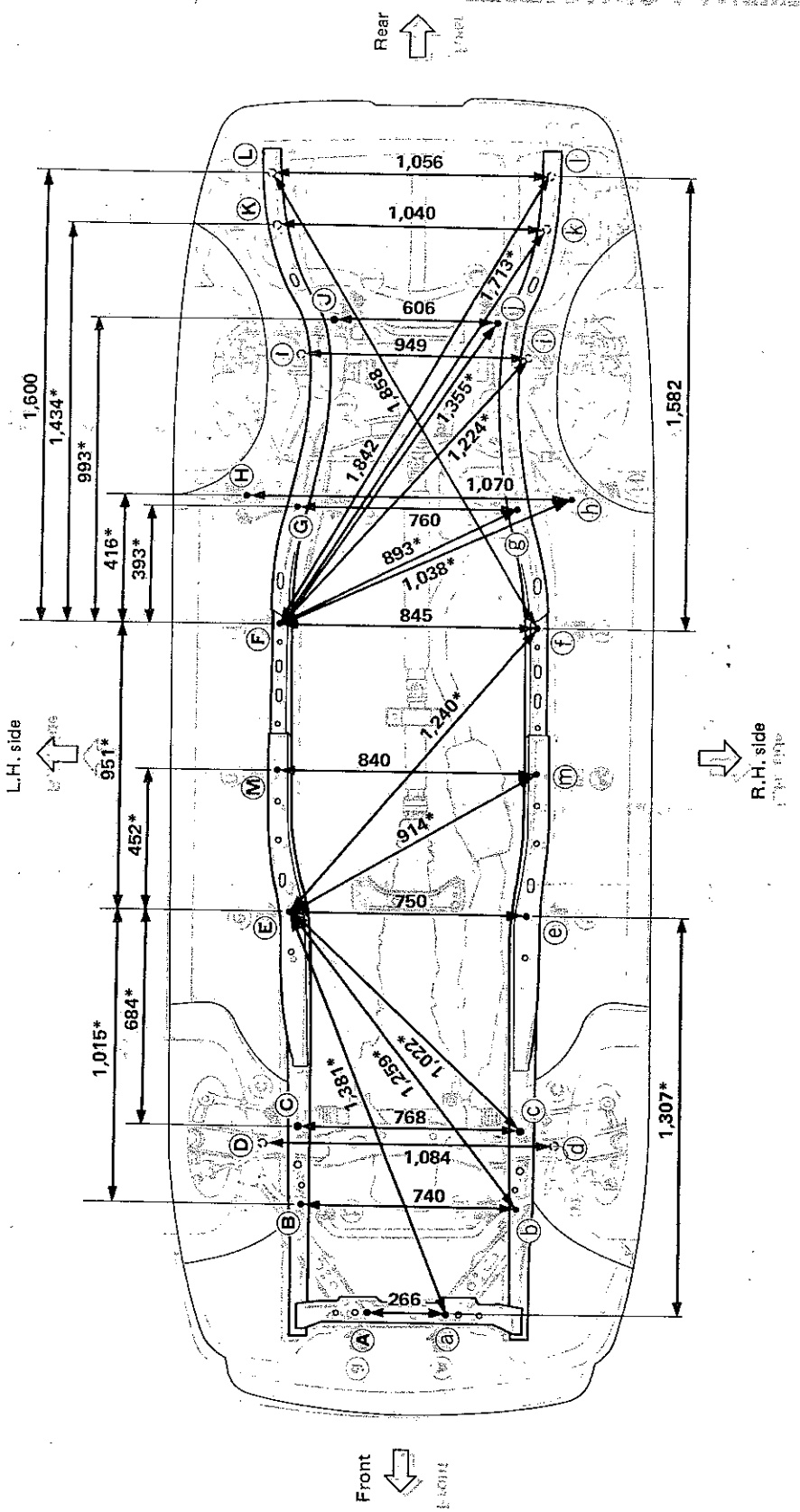




UNDERBODY (For U.S.A. & Canada)

MEASUREMENT

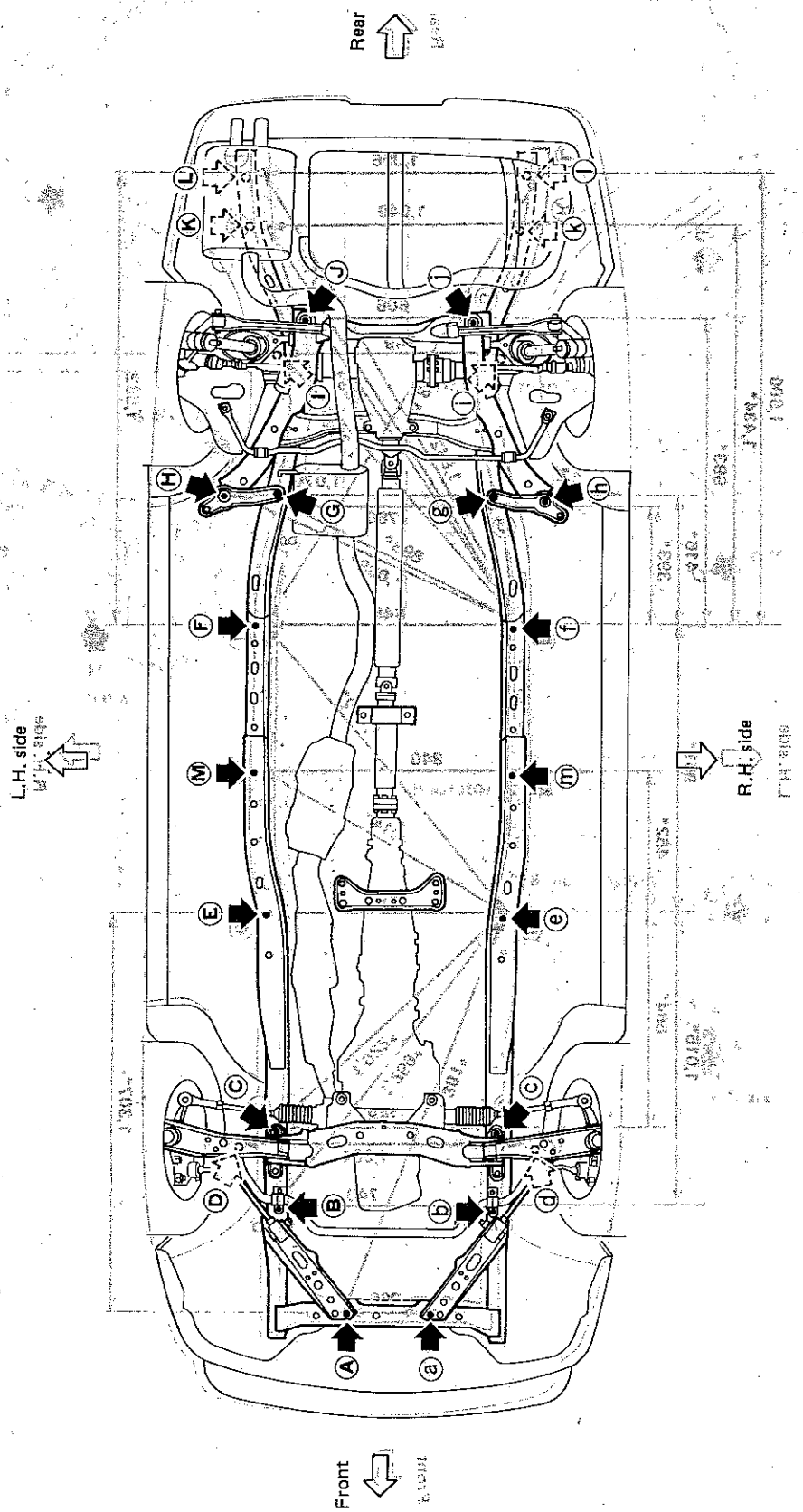
Unit: mm



SBF194E

UNDERBODY (For U.S.A. & Canada)

MEASUREMENT POINTS



SBF195E

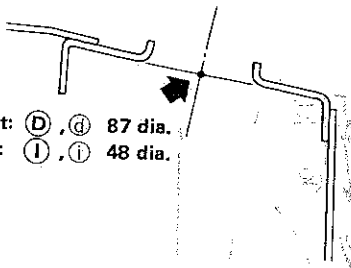
UNDERBODY (For U.S.A. & Canada)

Unit: mm

Front and rear strut tower centers

Coordinates:
Ⓓ, ⓓ
X: 542.2
Y: 63.5
Z: 725.7
Ⓘ, ⓘ
X: 474.5
Y: 2,500
Z: 658.9

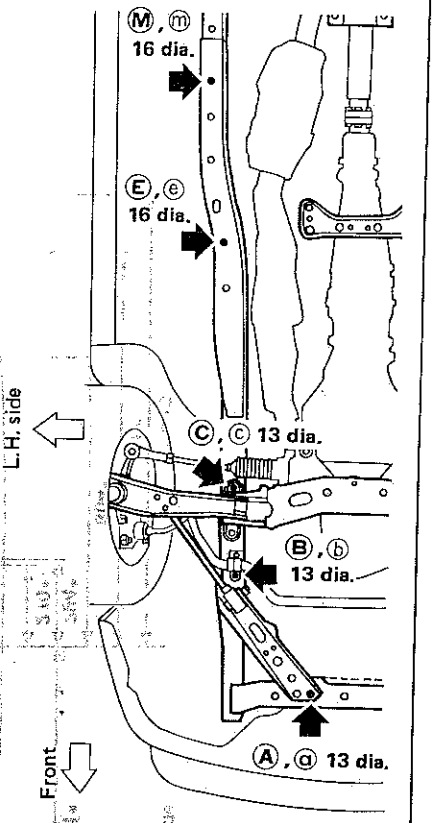
Front: Ⓓ, ⓓ 87 dia.
Rear: Ⓘ, ⓘ 48 dia.



SBF119C

Front side member and front extension

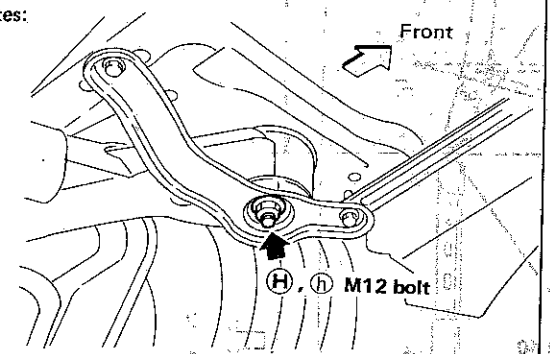
Coordinates:
Ⓐ, ⓐ
X: 132.9
Y: −582
Z: 189
Ⓑ, ⓑ
X: 370
Y: −304
Z: 255
Ⓒ, ⓒ
X: 384.2
Y: 32
Z: 255
Ⓔ, ⓔ
X: 375
Y: 700
Z: 106.2
Ⓜ, ⓜ
X: 420
Y: 1,150
Z: 106.2



SBF271E

Rear suspension member front mounting bolt threaded end

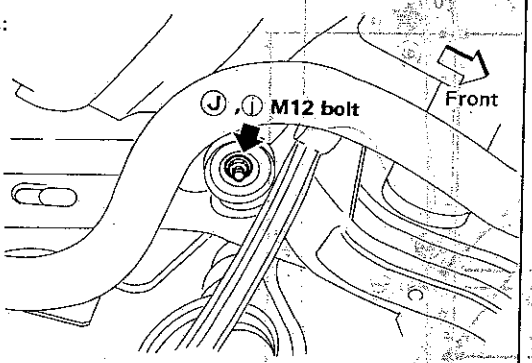
Coordinates:
Ⓗ, ⓗ
X: 535
Y: 2,050
Z: 116.3



SBF226E

Rear suspension member rear mounting bolt threaded end

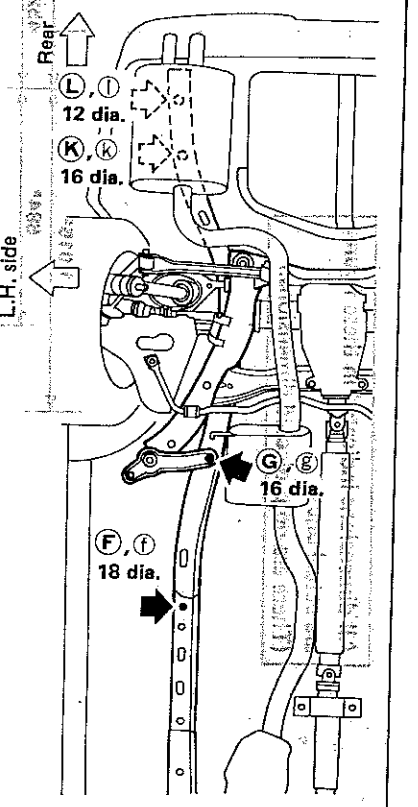
Coordinates:
Ⓙ, ⓙ
X: 303
Y: 2,635
Z: 65.8



SBF227E

Center side member, rear side member and rear extension

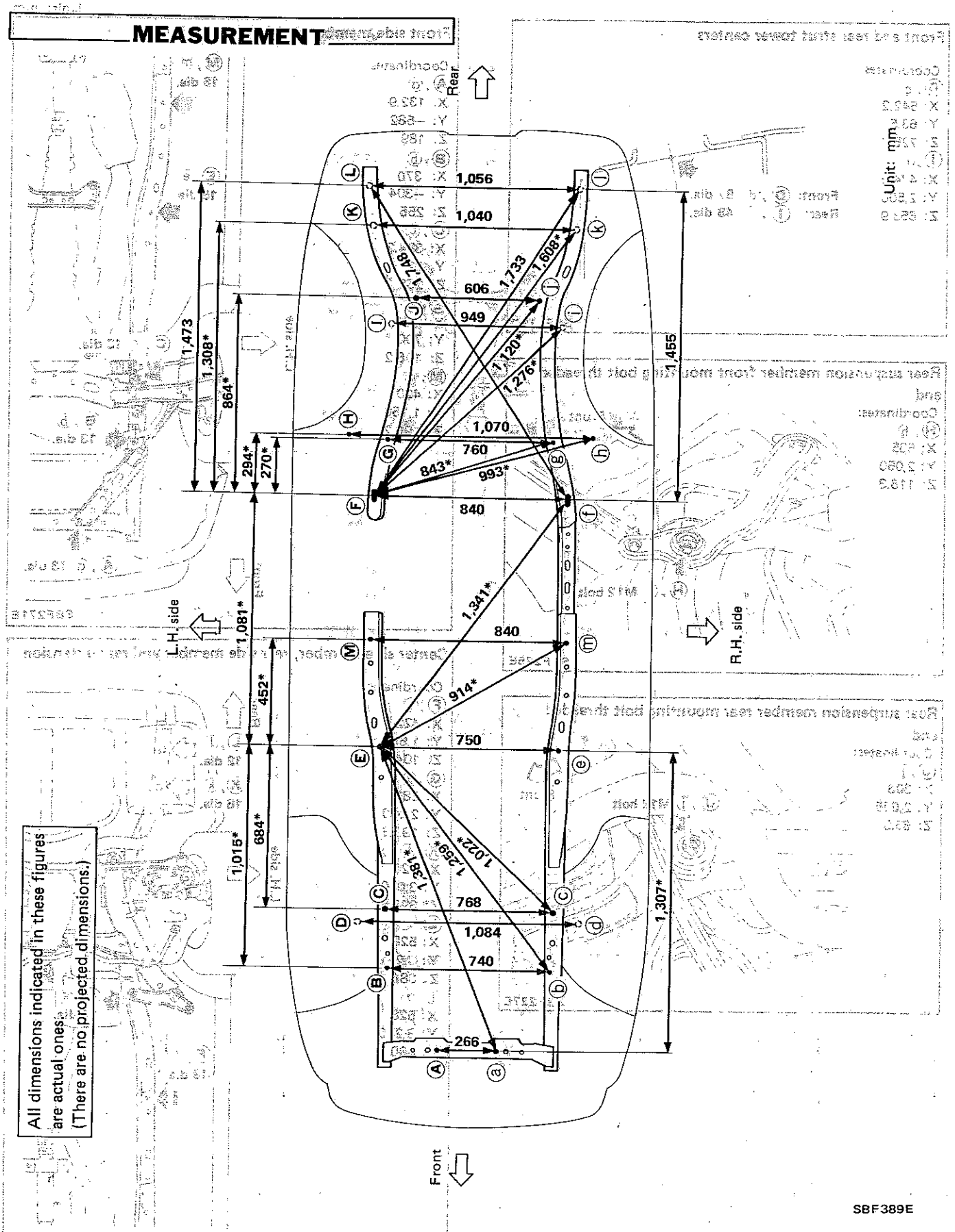
Coordinates:
Ⓕ, ⓕ
X: 422.5
Y: 1,650
Z: 104
Ⓖ, ⓖ
X: 380
Y: 2,030
Z: 195.8
Ⓚ, ⓚ
X: 520
Y: 3,050
Z: 398.8
Ⓛ
X: 528
Y: 3,221
Z: 386
ⓛ
X: 528
Y: 3,200
Z: 400



SBF272E

UNDERBODY (Except for U.S.A. & Canada)

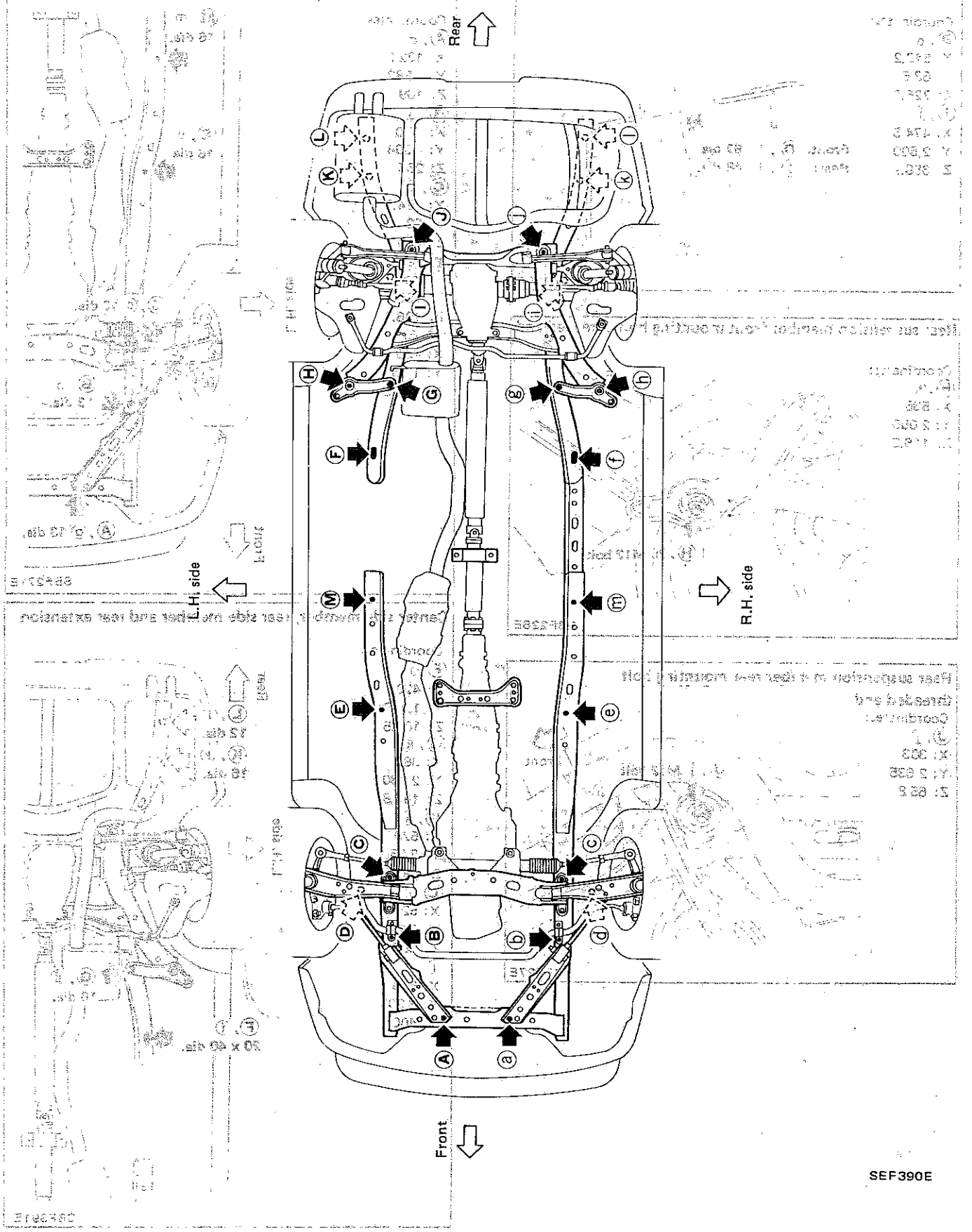
MEASUREMENT



SBF389E

UNDERBODY (Except for U.S.A. & Canada)

MEASUREMENT

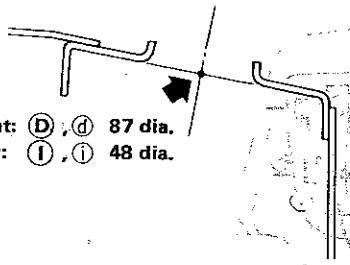


UNDERBODY (Except for U.S.A. & Canada)

Unit: mm

Front and rear strut tower centers

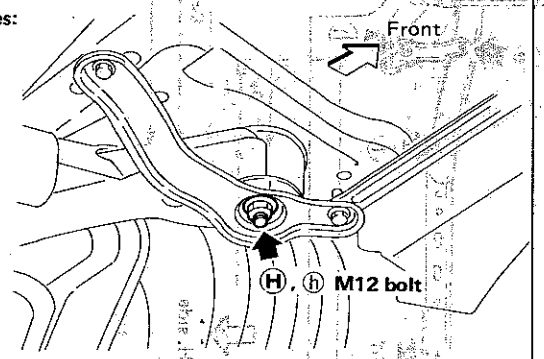
Coordinates:
Ⓓ, ⓓ
X: 542.2
Y: 63.5
Z: 725.7
Ⓘ, ⓘ
X: 474.5
Y: 2,500
Z: 658.9



SBF119C

Rear suspension member front mounting bolt threaded end

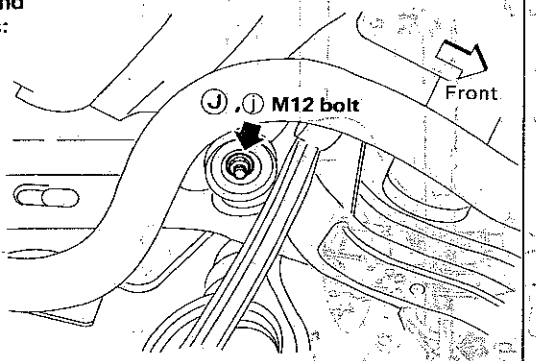
Coordinates:
Ⓗ, ⓗ
X: 535
Y: 2,050
Z: 116.3



SBF226E

Rear suspension member rear mounting bolt threaded end

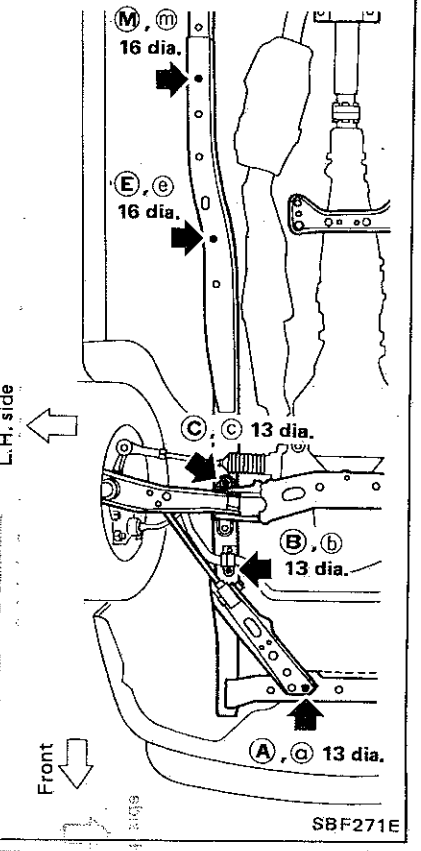
Coordinates:
Ⓙ, ⓙ
X: 303
Y: 2,635
Z: 65.8



SBF227E

Front side member and front extension

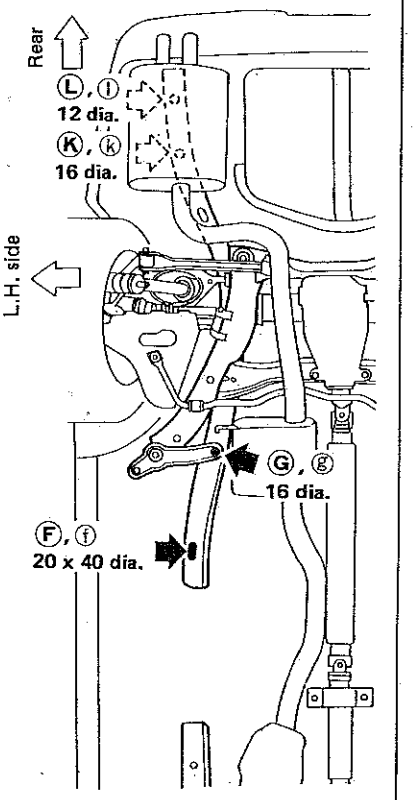
Coordinates:
Ⓐ, ⓐ
X: 132.9
Y: −582
Z: 189
Ⓑ, ⓑ
X: 370
Y: −304
Z: 255
Ⓒ, ⓒ
X: 384.2
Y: 32
Z: 255
Ⓔ, ⓔ
X: 375
Y: 700
Z: 106.2
Ⓜ, ⓜ
X: 420
Y: 1,150
Z: 106.2



SBF271E

Center side member, rear side member and rear extension

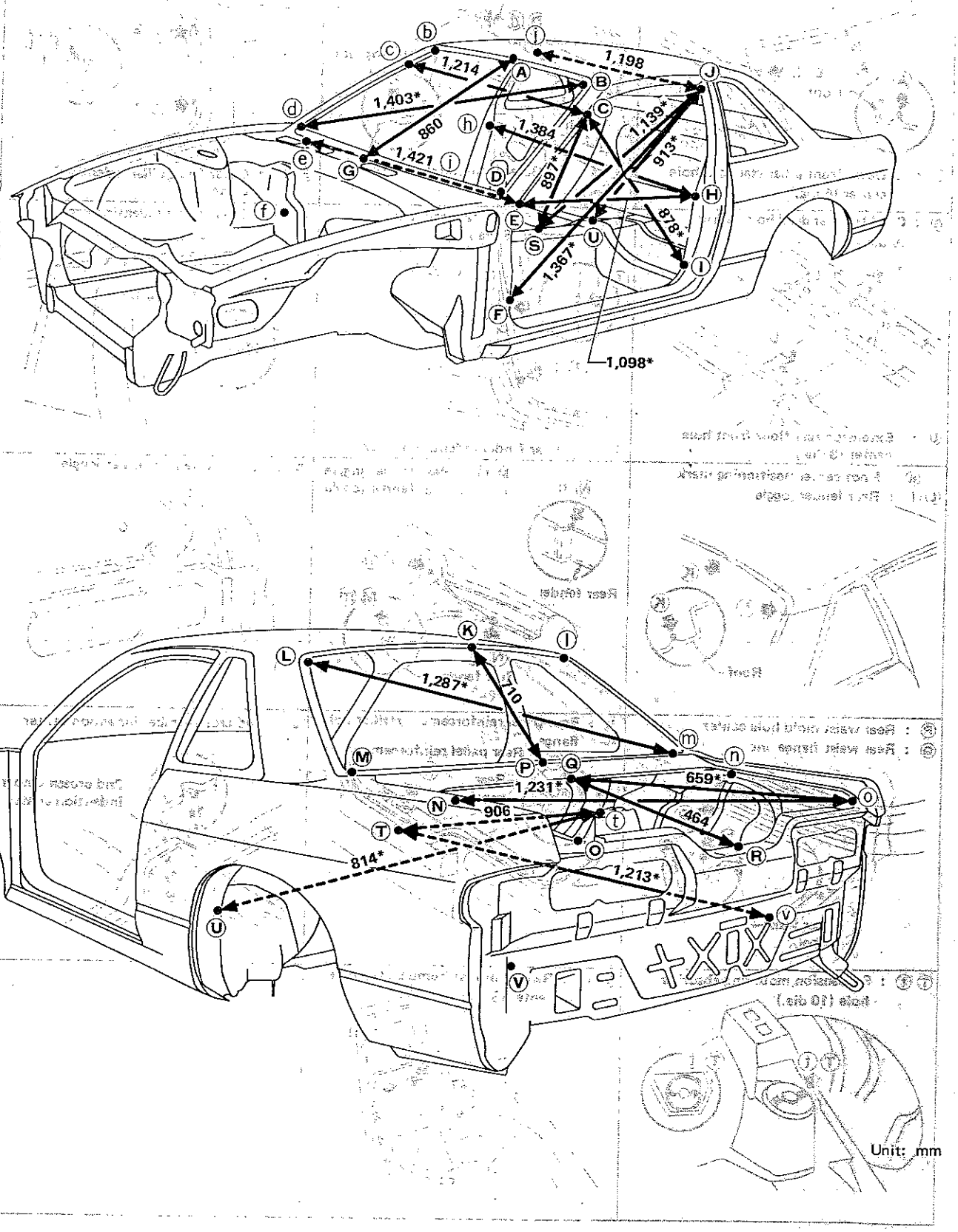
Coordinates:
Ⓕ, ⓕ
X: 420
Y: 1,780
Z: 101.5
Ⓖ, ⓖ
X: 380
Y: 2,030
Z: 195.8
Ⓚ, ⓚ
X: 520
Y: 3,050
Z: 398.8
Ⓛ
X: 528
Y: 3,221
Z: 386
Ⓘ
X: 528
Y: 3,200
Z: 400



SBF391E

PASSENGER COMPARTMENT AND REAR BODY COUPE

MEASUREMENT



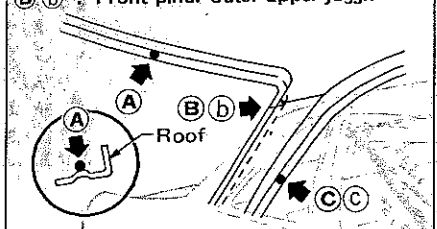
Unit: mm

PASSENGER COMPARTMENT AND REAR BODY COUPE

MEASUREMENT POINTS

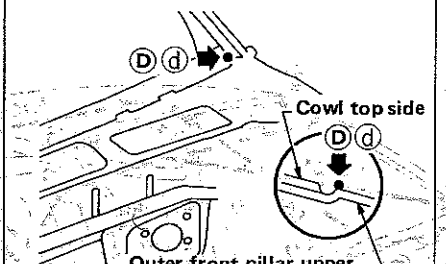
Unit: mm

Ⓐ : Roof center positioning mark
Ⓑ ⓑ : Front pillar outer upper joggle

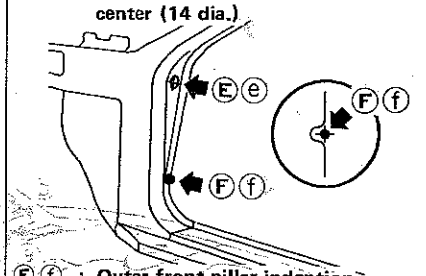


Ⓒ Ⓒ : Outer front pillar standard hole center (6 dia.)

Ⓓ ⓓ : Front pillar outer upper joggle

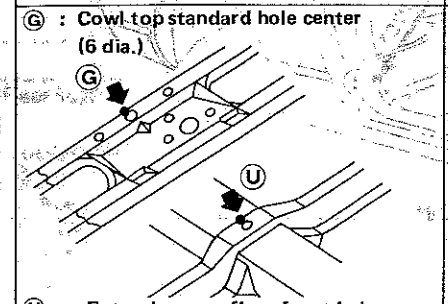


Ⓔ ⓔ : Outer front pillar standard hole center (14 dia.)



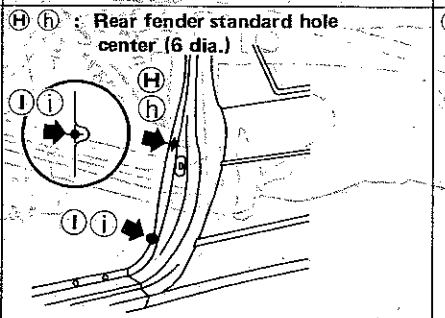
Ⓕ ⓕ : Outer front pillar indention center

Ⓖ : Cowl top standard hole center (6 dia.)



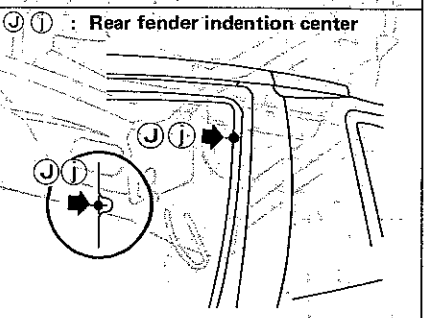
Ⓤ : Extension-rear floor front hole center (8 dia.)

Ⓗ ⓗ : Rear fender standard hole center (6 dia.)

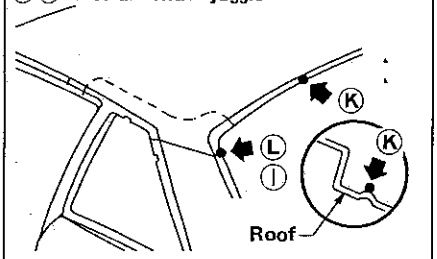


Ⓘ ⓘ : Rear fender indention center

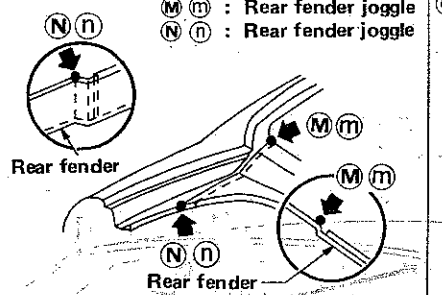
Ⓙ ⓙ : Rear fender indention center



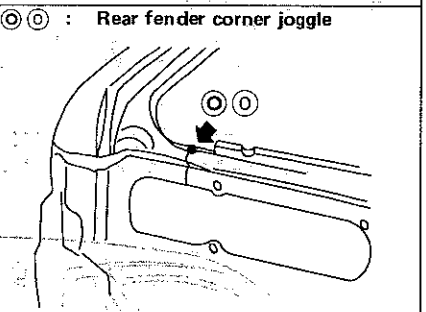
Ⓚ : Roof center positioning mark
Ⓛ ⓛ : Rear fender joggle



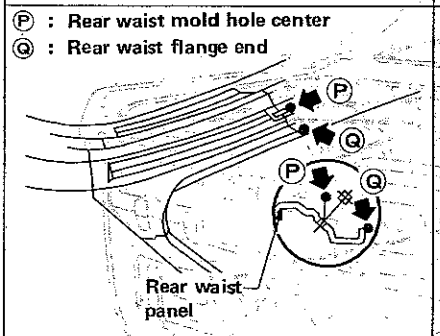
Ⓜ ⓜ : Rear fender joggle
Ⓝ ⓝ : Rear fender joggle



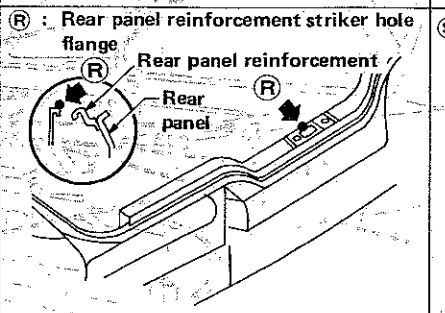
Ⓞ ⓞ : Rear fender corner joggle



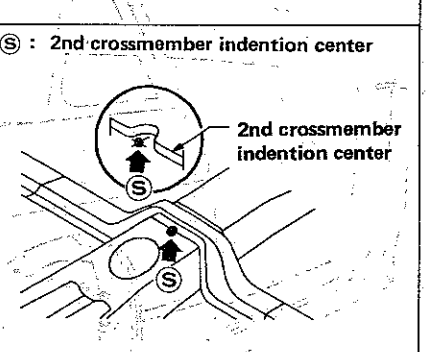
Ⓟ : Rear waist mold hole center
Ⓠ : Rear waist flange end



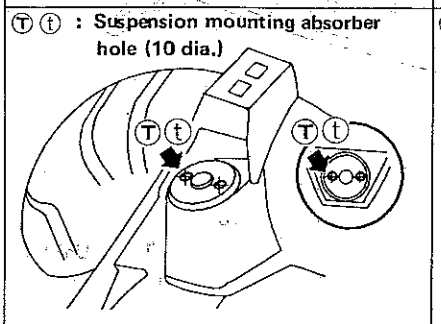
Ⓡ : Rear panel reinforcement striker hole flange



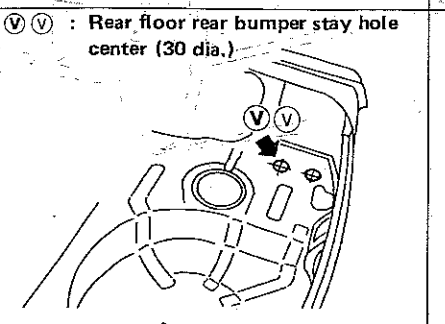
Ⓢ : 2nd crossmember indention center



Ⓣ ⓣ : Suspension mounting absorber hole (10 dia.)



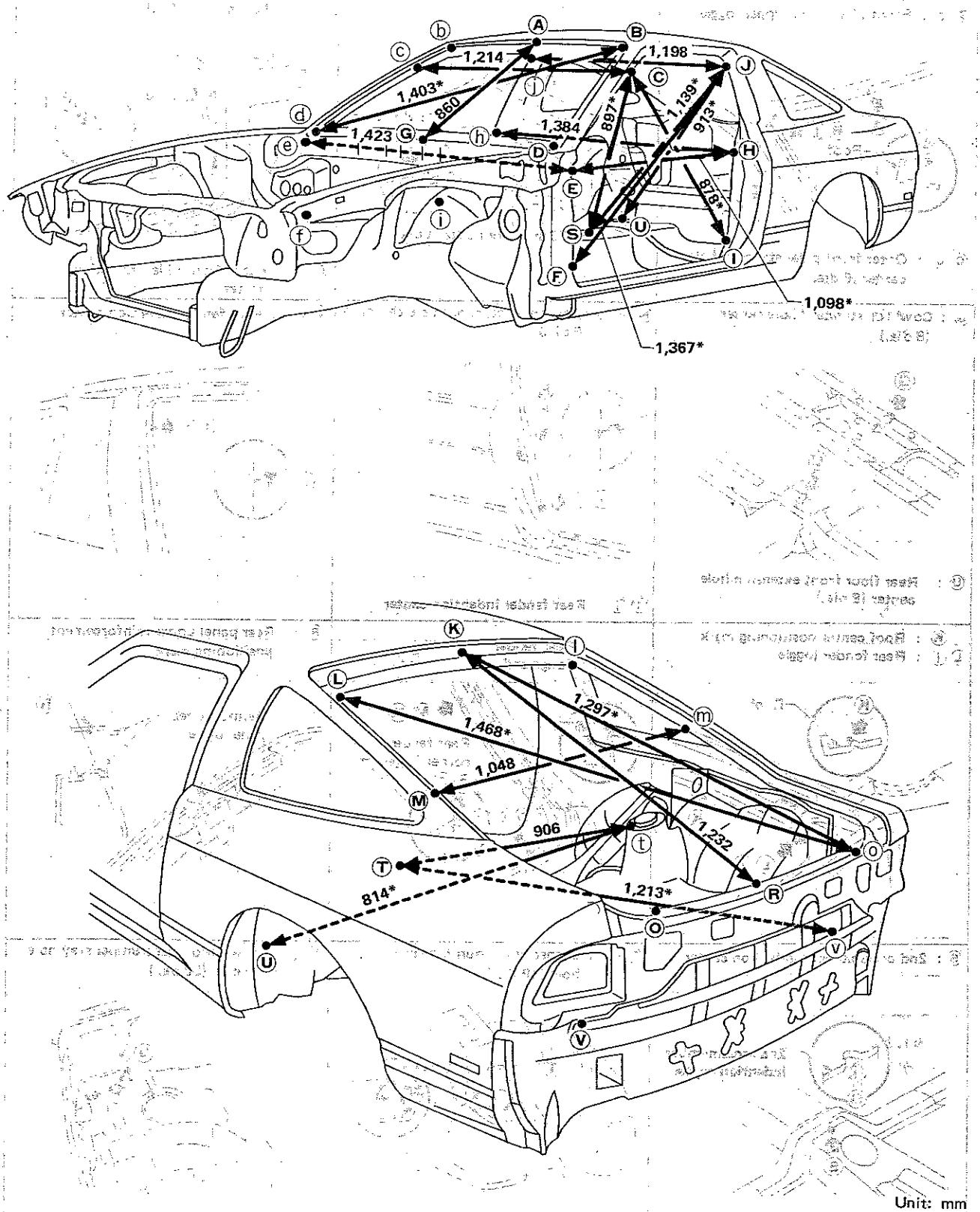
Ⓥ Ⓥ : Rear floor rear bumper stay hole center (30 dia.)



PASSENGER COMPARTMENT AND REAR BODY

FAST BACK

MEASUREMENT



Unit: mm

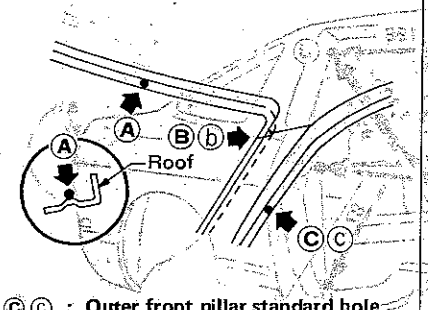
PASSENGER COMPARTMENT AND REAR BODY

FAST BACK

MEASUREMENT POINTS

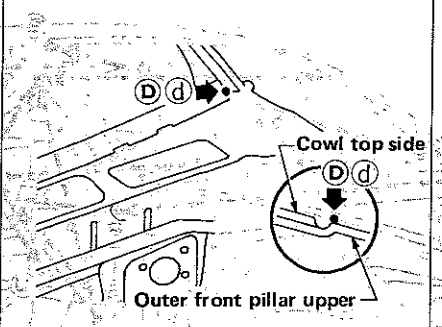
Unit: mm

Ⓐ : Roof center positioning mark
Ⓑ ⓑ : Front pillar outer upper joggle

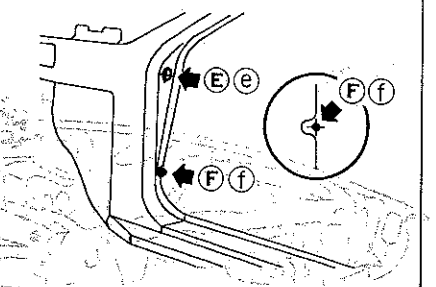


Ⓒ ⓒ : Outer front pillar standard hole center (6 dia.)

Ⓓ ⓓ : Front pillar outer upper joggle

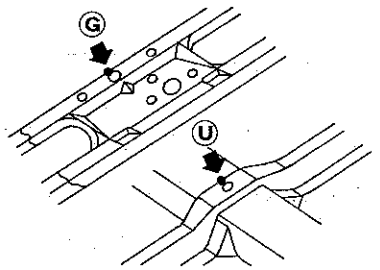


Ⓔ ⓔ : Outer front pillar standard hole center (14 dia.)



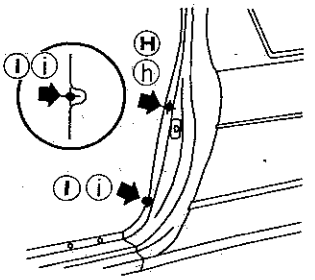
Ⓕ ⓕ : Outer front pillar indention center

Ⓖ : Cowl top standard hole center (6 dia.)



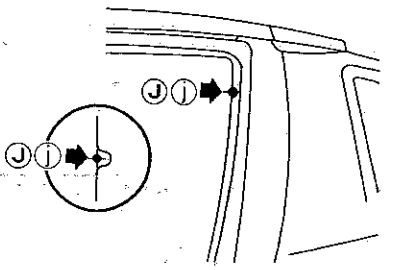
Ⓤ : Rear floor front extension hole center (8 dia.)

Ⓗ ⓗ : Rear fender standard hole center (6 dia.)

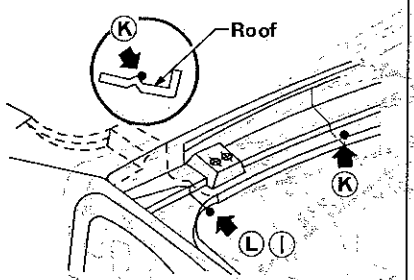


Ⓘ ⓘ : Rear fender indention center

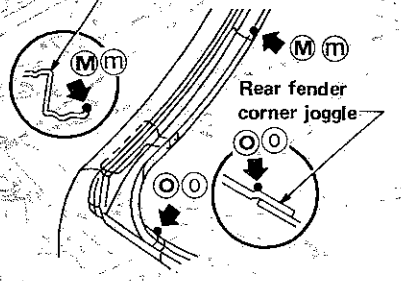
Ⓙ ⓙ : Rear fender indention center



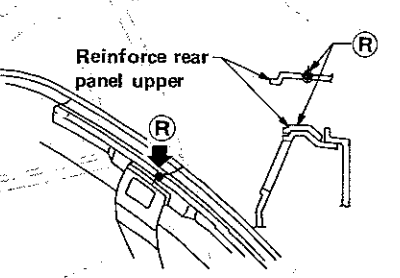
Ⓚ : Roof center positioning mark
Ⓛ ⓛ : Rear fender joggle



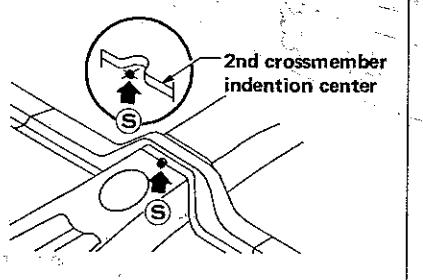
Rear fender flange end



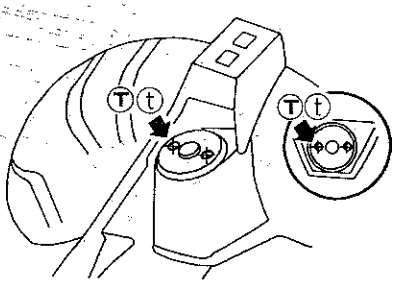
Ⓡ : Rear panel upper reinforcement positioning mark



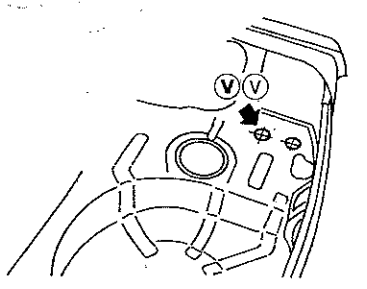
Ⓢ : 2nd crossmember indention center



Ⓣ ⓣ : Suspension mounting absorber hole (10 dia.)



Ⓥ ⓥ : Rear floor rear bumper stay hole center (30 dia.)



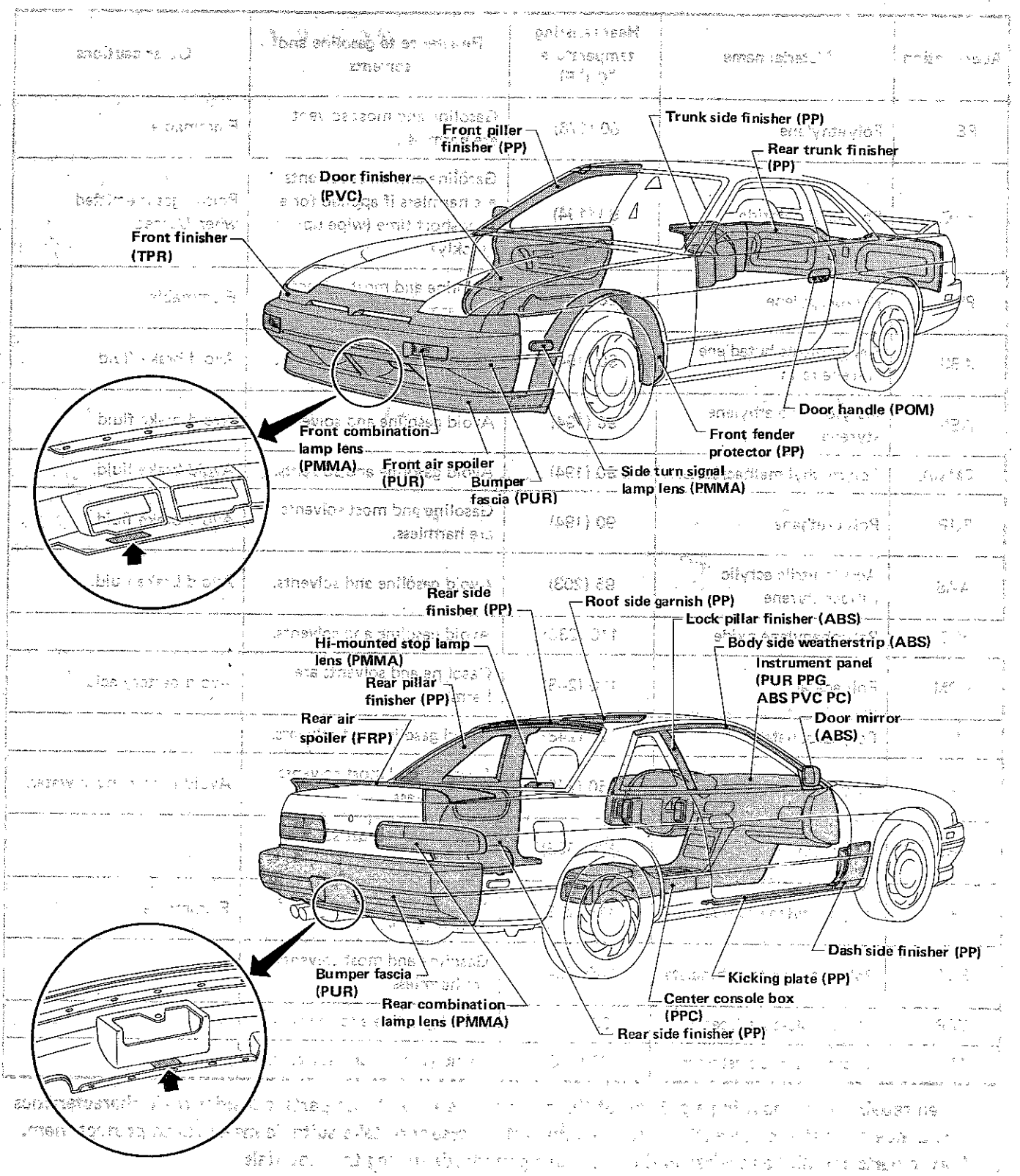
HANDLING PRECAUTIONS FOR PLASTICS

Abbreviation	Material name	Heat resisting temperature °C (°F)	Resistance to gasoline and solvents	Other cautions
PE	Polyethylene	80 (176)	Gasoline and most solvents are harmless.	Flammable
PVC	Polyvinyl chloride	90 (194)	Gasoline and most solvents are harmless if applied for a very short time (wipe up quickly).	Poison gas is emitted when burned.
PP	Polypropylene	90 (194)	Gasoline and most solvents are harmless.	Flammable
ABS	Acrylonitrile butadiene styrene resin	90 (194)	Avoid gasoline and solvents.	Avoid brake fluid.
AES	Acrylonitrile ethylene styrene	90 (194)	Avoid gasoline and solvents.	Avoid brake fluid.
PMMA	Polymethyl methacrylate	90 (194)	Avoid gasoline and solvents.	Avoid brake fluid.
PUR	Polyurethane	90 (194)	Gasoline and most solvents are harmless.	Avoid brake fluid.
AAS	Acrylonitrile acrylic rubber styrene	95 (203)	Avoid gasoline and solvents.	Avoid brake fluid.
PPO	Polyphenylene oxide	110 (230)	Avoid gasoline and solvents.	
POM	Polyacetal	120 (248)	Gasoline and solvents are harmless.	Avoid battery acid.
PC	Polycarbonate	120 (248)	Avoid gasoline and solvents.	
PA	Polyamide (Nylon)	150 (302)	Gasoline and most solvents are harmless.	Avoid immersing in water.
FRP	Fiber reinforced plastics	170 (338)	Gasoline and most solvents are harmless.	
PPC	Polypropylene composite	115 (239)	Gasoline and most solvents are harmless.	Flammable
PBT	Polybutylene terephthalate	140 (284)	Gasoline and most solvents are harmless.	
TPR	Thermoplastic rubber	80 (176)	Avoid gasoline and solvents.	
TPE	Thermoplastic elastomer	80 (176)	Avoid gasoline and solvents.	

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.**

LOCATION OF PLASTIC PARTS

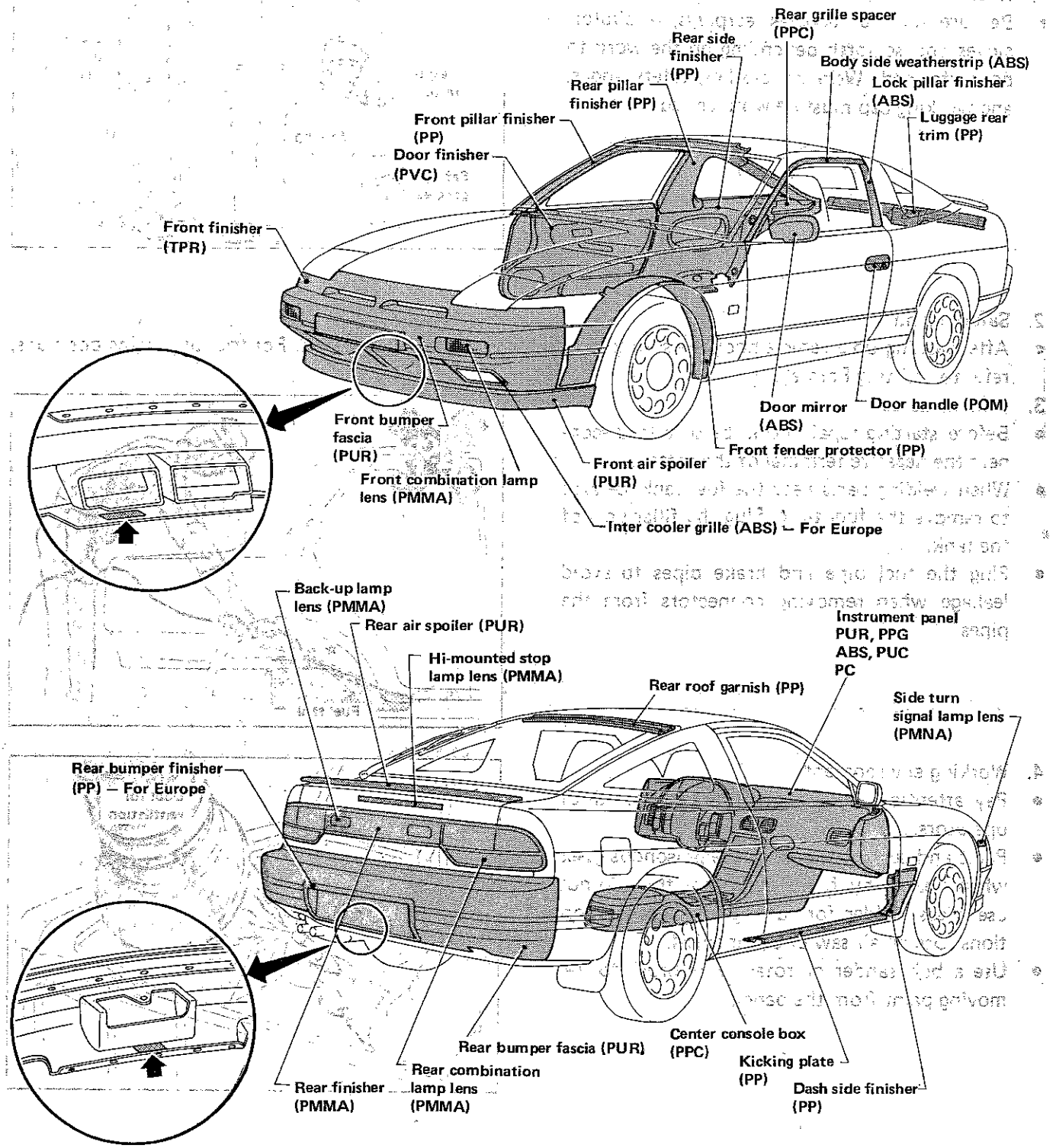
COUPE



NOTE: Arrows " ▲ " (in enlarged portions) indicate the location of symbols used to identify plastic material used.

LOCATION OF PLASTIC PARTS

FAST BACK



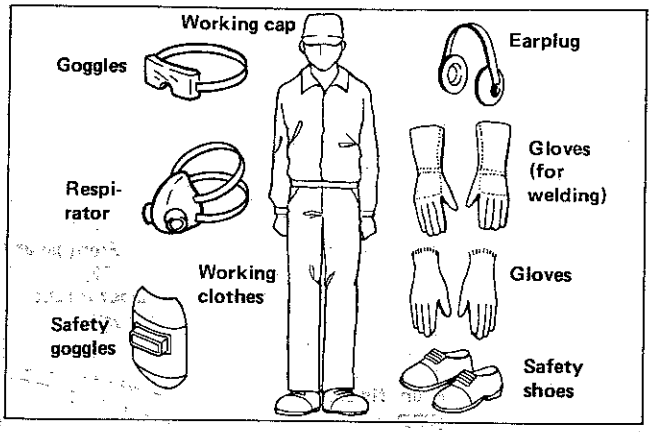
NOTE: Arrows " ⬆ " (in enlarged portions) indicate the location of symbols used to identify plastic material used.

PRECAUTIONS IN OPERATION

WELDING PRECAUTIONS

1. Wear protectors

- Be sure to wear goggles, earplugs, respirator, gloves and so forth depending on the work to be performed. Working clothes, safety shoes, and working cap must be worn as usual.

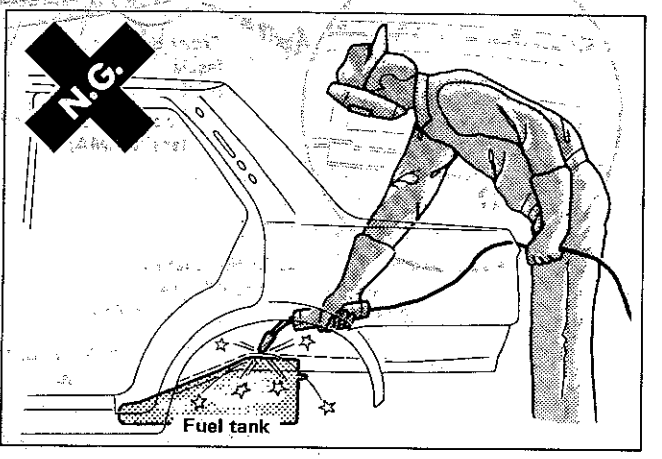


2. Safety stand

- After jacking up a vehicle body, be sure to support it with the safety stand. For the supporting positions, refer to "Lifting Points".

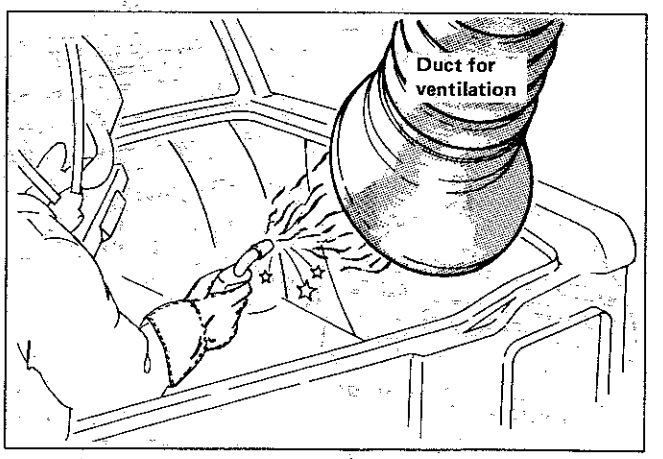
3. Inflammables

- Before starting repair work, be sure to disconnect the negative terminal of the battery.
- When welding parts near the fuel tank, be sure to remove the fuel tank. Plug the filler port of the tank.
- Plug the fuel pipe and brake pipes to avoid leakage when removing connectors from the pipes.



4. Working environment

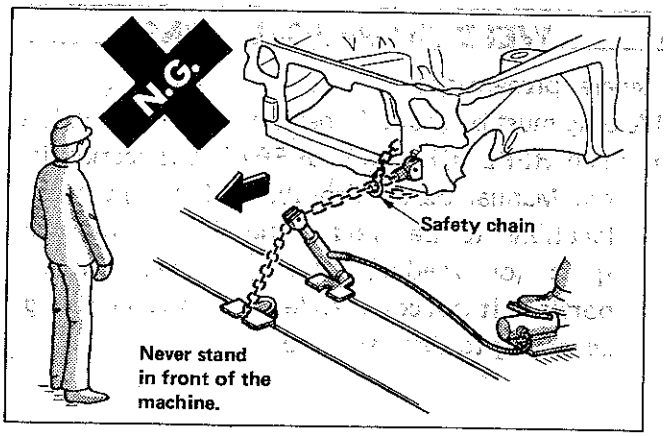
- Pay attention to ventilation and the health of operators.
- Paint and sealant may generate poisonous gases when heated by fire. To prevent this, do not use a gas welder for cutting off damaged portions. Use an air saw or an air chisel.
- Use a belt sander or rotary wire brush for removing paint from the panel.



PRECAUTIONS IN OPERATION

5. Vehicle body straightener

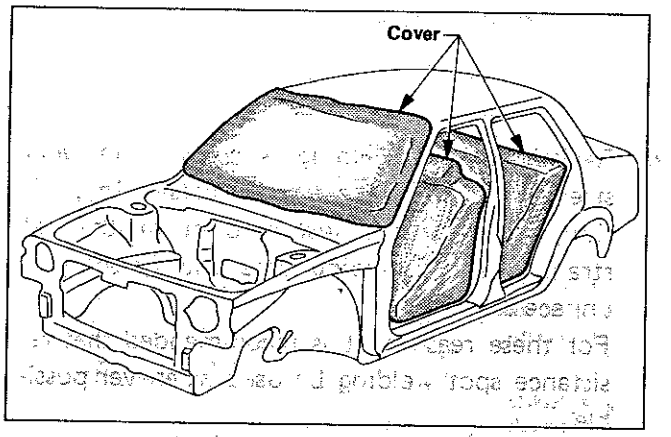
- Be sure to use correctly according to the instruction manual prepared by the manufacturer of the straightener. When straightening a damaged portion, never stand in front of the machine in the direction that the body is to be straightened. Equip with a safety chain in case of emergency.



PROTECTION OF BODY AND EXTERNALLY ATTACHED PARTS

1. Protection of body

- Remove or cover interior components (seats, instruments, carpet).
- When welding, cover glasses, seats, instruments and carpet with a heat-resistant material. (This protection is necessary especially when CO_2 arc welding.)



2. Protection of exterior parts

- When removing external parts (moldings and finishers) attached to the body, apply cloth or protection tape to the body to prevent scratching.
- If the painted surface is scratched, be sure to repair that portion: even a small flaw in the painted surface may cause corrosion.

PRECAUTIONS IN REPLACING OPERATION

Use of genuine parts

- In order to maintain the original functions and high quality of the vehicle, it is recommended that you use genuine Nissan parts.

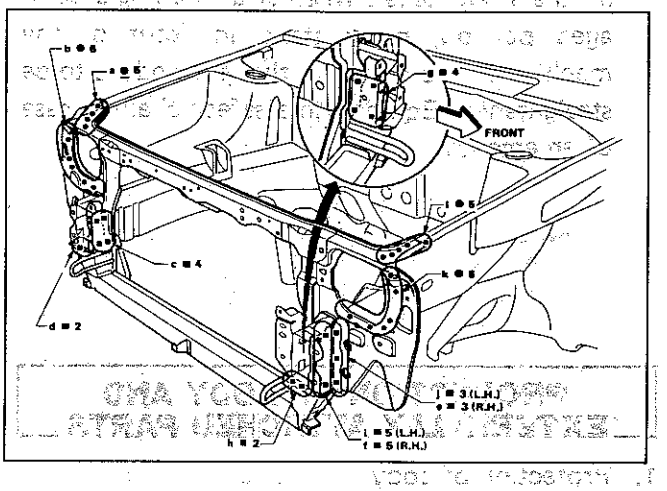
PRECAUTIONS IN OPERATION

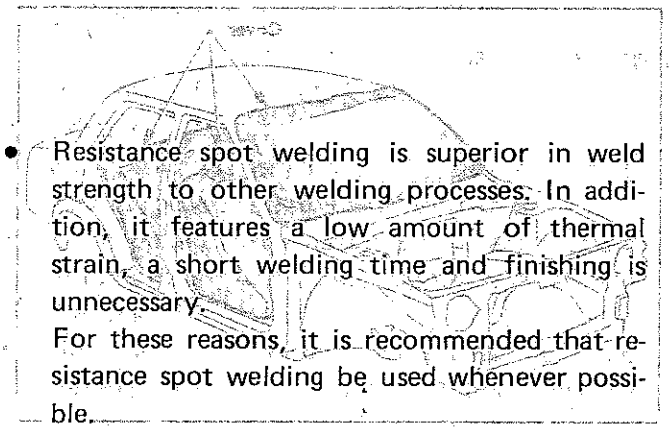
WELDING PRECAUTIONS

General precautions

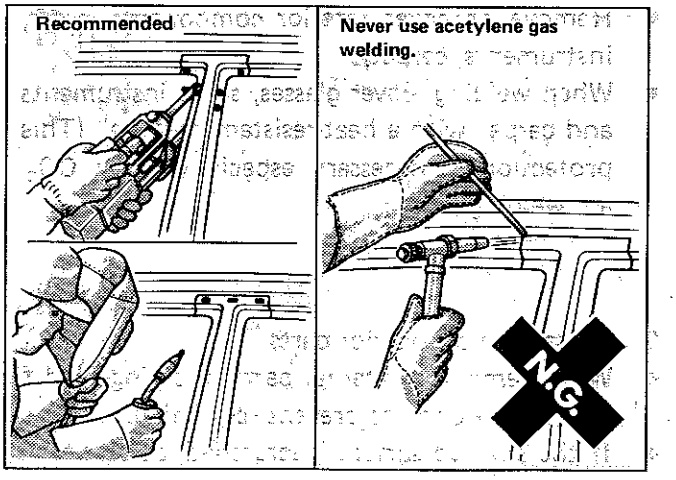
Welding must be properly performed so that vehicle body will retain sufficient strength and durability.

- The REPLACEMENT OPERATION section in the Manual deals with the welding methods, locations to be welded, number of welding spots (or welding pitches) for each body portion. It is recommended to perform welding according to the instructions.





- Resistance spot welding is superior in weld strength to other welding processes. In addition, it features a low amount of thermal strain, a short welding time and finishing is unnecessary.
  For these reasons, it is recommended that resistance spot welding be used whenever possible.
  Further, use of mig welding is recommended for locations where resistance spot welding cannot be utilized.



CAUTION:

Gas welding (oxyacetylene gas welding) must not be used because it causes a decline in strength of areas surrounding the welded parts.

There are a variety of resistance spot welders on the market. Be sure to use a welder with a sufficient capacity to secure weld strength. Also, inspect welded parts to confirm weld strength.

PRECAUTIONS IN OPERATION

Spot welding

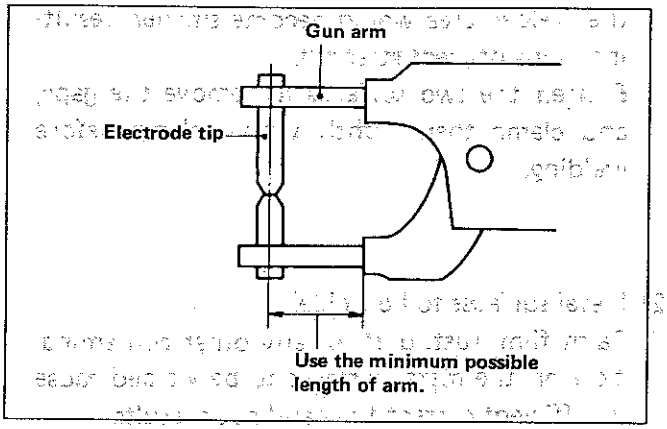
1. Spot welder

To obtain sufficient strength at the spot welded portions, perform the following checks and adjustment on the spot welding machine before starting operation.

(1) Adjustment of arm

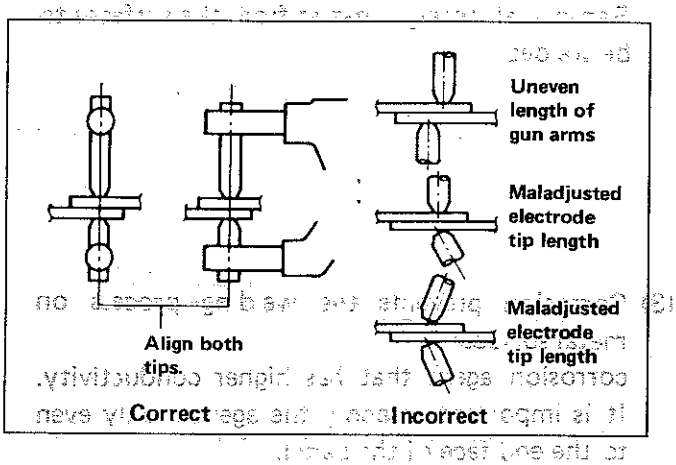
a. Keep the gun arm as short as possible to obtain the maximum pressure for welding.

b. Securely tighten the gun arm and tips so that they will not become loose during operation.



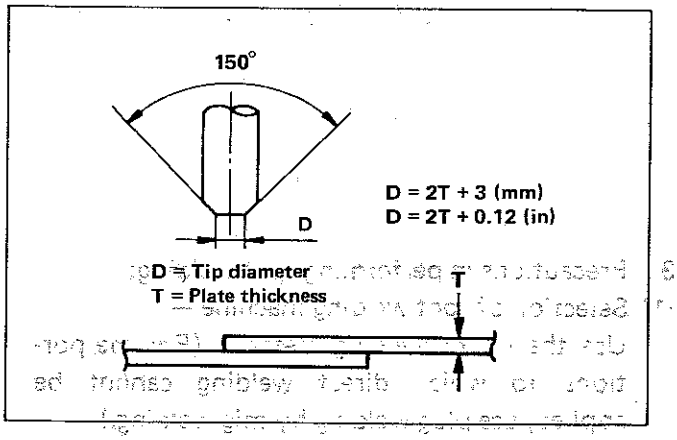
(2) Alignment of electrode tips

Align the upper and lower electrode tips on the same axis. Poor alignment of the tips causes insufficient pressure, resulting in insufficient current density and insufficient strength at the weld.



(3) Diameter of electrode tip

The tip diameter must be properly controlled to obtain the desired welding strength. Before starting operation, make sure that the tip diameter (D) is kept the proper size, and file it cleanly to remove burnt or foreign matter from the surface of the tip.



Unit: mm (in)

Thickness (T)	Diameter (D)	Thickness (T)	Diameter (D)
0.6 (0.024)	4.2 (0.165)	1.0 (0.039)	5.0 (0.197)
0.7 (0.028)	4.4 (0.173)	1.2 (0.047)	5.4 (0.213)
0.8 (0.031)	4.6 (0.181)	1.4 (0.055)	5.8 (0.228)
0.9 (0.035)	4.8 (0.189)	1.6 (0.063)	6.2 (0.244)

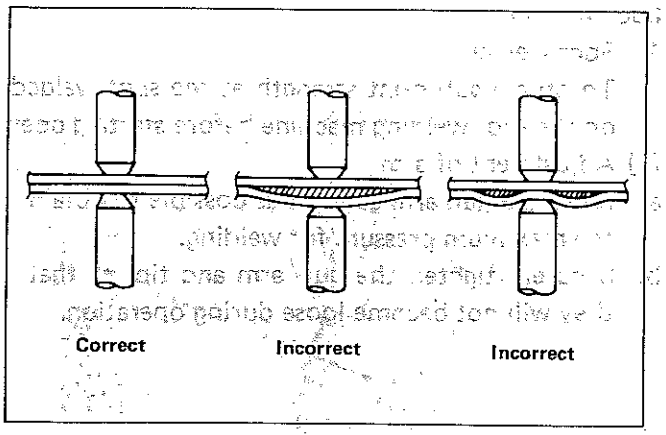
2. Condition of the panel

Presence of a gap, paint film, rust, or dust on the surface of the panel causes poor current flow and reduction is spot area and these lead to unsuccessful welding.

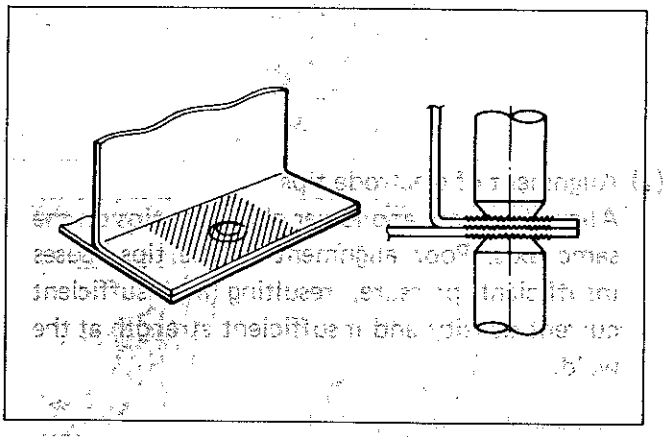
Before beginning, it is necessary to thoroughly check the condition of the panel, and make any necessary corrections.

PRECAUTIONS IN OPERATION

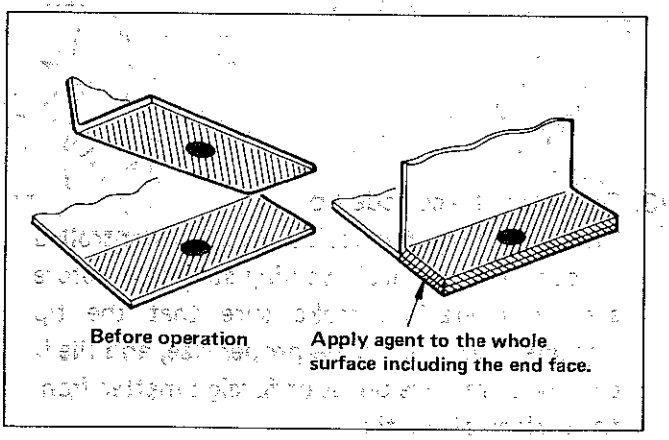
(1) Clearance between welding surfaces:
Any clearance between the surfaces to be welded causes poor current flow. Even if welding can be made without removing such gap, the welded area would become smaller, resulting in insufficient strength.
Flatten the two surfaces to remove the gaps, and clamp them tightly with a clamp before welding.



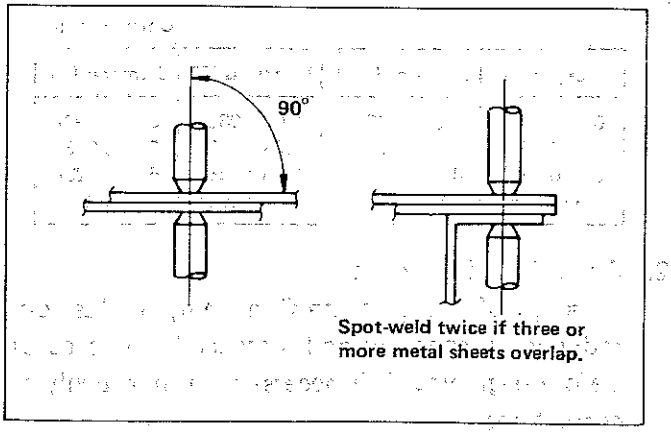
(2) Metal surfaces to be welded:
Paint film, rust, dust, or any other contamination on the metal surfaces to be welded cause insufficient current flow and poor results.
Remove all foreign matter from the surfaces to be welded.



(3) Corrosion prevents the welding process on metal surface:
corrosion agent that has higher conductivity. It is important to apply the agent evenly even to the end face of the panel.



3. Precautions in performing spot welding:
(1) Selection of spot welding machine —
Use the direct welding method. (For the portions to which direct welding cannot be applied, use plug welding by mig welding.)
(2) Application of electrode tips —
Apply electrodes at right angle to the panel. If the electrodes are not applied at right angle, the current density will be low resulting in insufficient welding strength.
(3) Lap welding of more than three metal sheets —
For portions where three or more metal sheets are overlapping, spot welding should be done twice.



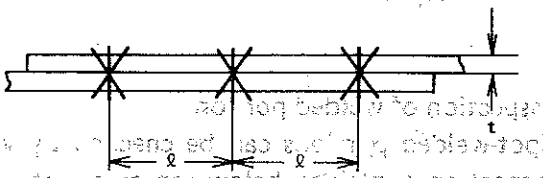
PRECAUTIONS IN OPERATION

(4) No. of points of spot-welding:
Generally, the capacity of spot welding machines available in repair shop is smaller than that of welding machines at the factory. Accordingly, the number of points of spot-welding should be increased by 20 to 30% in a service shop compared to spot-welding in the factory.

(5) Minimum welding pitch:
The minimum welding pitch varies with the thickness of plates to be welded. In general, the values given in the following table must be observed. Note that excessively small pitch allows the current to flow through surrounding portions, and this results in insufficient welding strength of the metal.

Unit: mm (in)

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

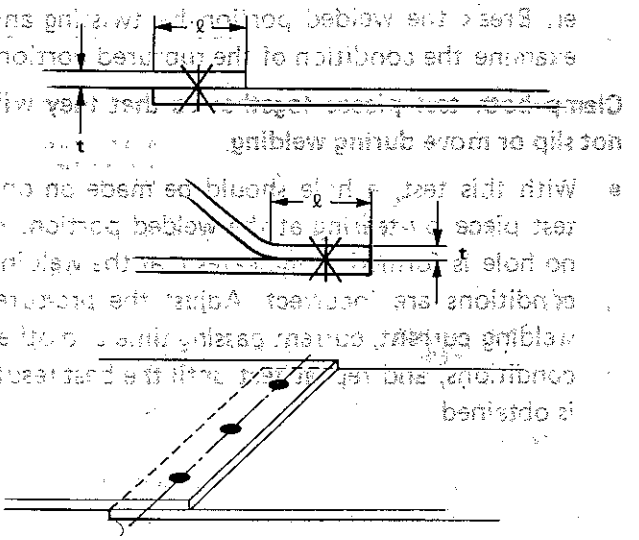


(6) Minimum lap of panels:
Observe the following values for the lap distance of panels. If the lap distance is too small, it results in insufficient strength and also in a strained panel.

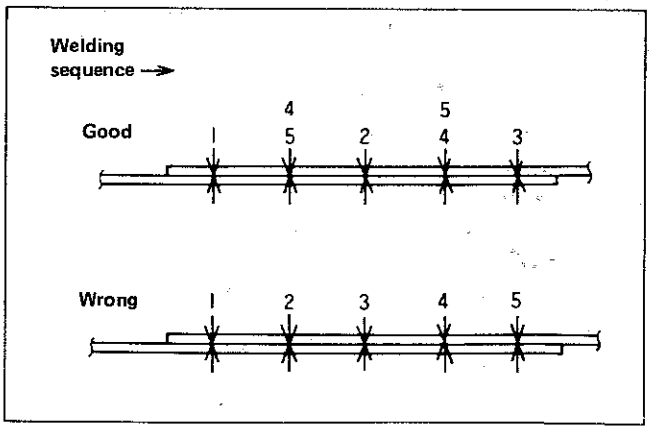
Unit: mm (in)

Thickness (t)	Minimum pitch (ℓ)
0.6 (0.024)	11 (0.43)
0.8 (0.031)	11 (0.43)
1.0 (0.039)	12 (0.47)
1.2 (0.047)	14 (0.55)
1.6 (0.063)	16 (0.63)
1.8 (0.071)	17 (0.67)

Be sure to spot weld at the center of the overlapped portion.



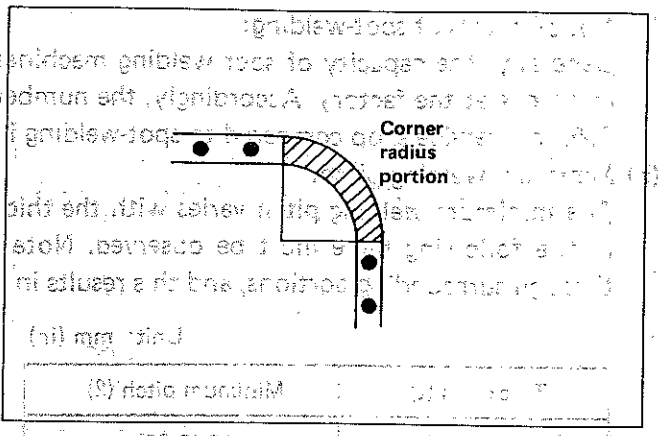
(7) Spotting sequence:
Do not spot continuously in only one direction. This method provides weak welding due to the shunt effect of the current. If the welding tips become hot and change their color, stop welding and allow the tips to cool.



PRECAUTIONS IN OPERATION

(8) Welding corners:

Do not weld the corner radius portion. Welding this portion results in stress concentration, which leads to cracks.



Examples

- Upper corner of front and center pillars
- Front upper portion of rear fender
- Corner portion of front and rear windows

4. Inspection of welded portion

Spot-welded portions can be checked by visual inspection and destructive inspection. The destructive inspection explained below can be adopted easily at the time of welding. Before and after welding, be sure to perform this destructive inspection to check the strength of the welded portions.

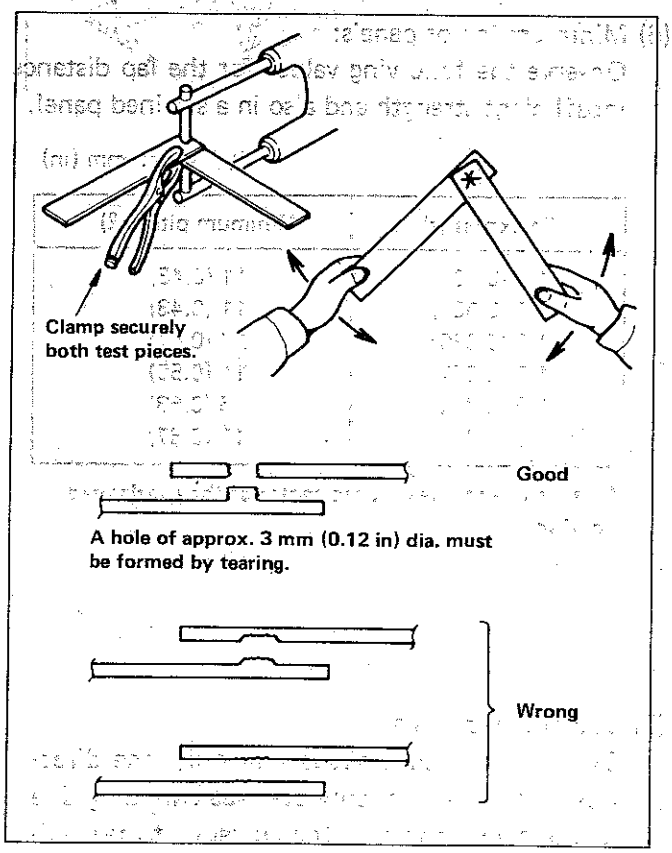
The welding spots should be spaced equally and arranged at the center of the flange to be welded.

(1) Check by using test piece (Confirmation before operation)

- Prepare test pieces having the same thickness as the panel to be welded and weld them together. Break the welded portion by twisting and examine the condition of the ruptured portion.

Clamp both test pieces together so that they will not slip or move during welding.

- With this test, a hole should be made on one test piece by tearing at the welded portion. If no hole is formed, it indicates that the welding conditions are incorrect. Adjust the pressure, welding current, current passing time and other conditions, and repeat test until the best result is obtained.

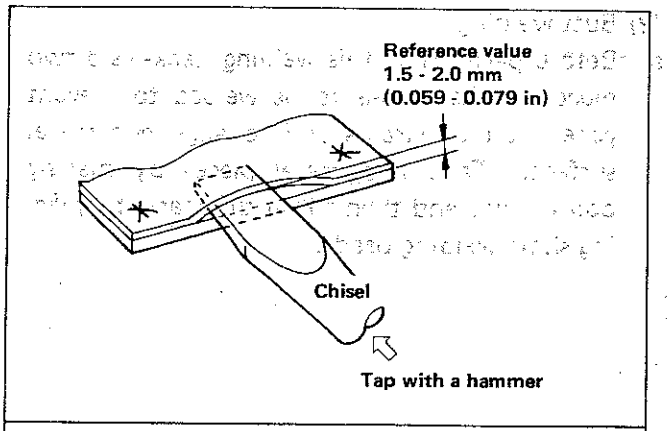


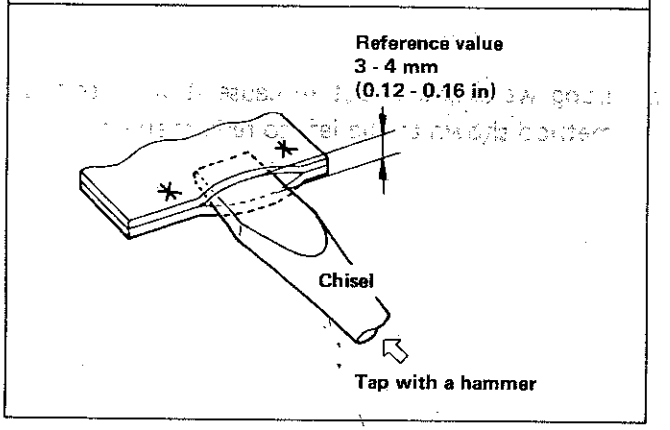
PRECAUTIONS IN OPERATION

(2) Check by using chisel and hammer (Confirmation after welding)

- Insert the tip of a chisel between the welded plates, and tap the end of the chisel until the clearance of 3 to 4 mm (0.12 to 0.16 in) [when the plate thickness is 0.8 to 1.0 mm (0.031 to 0.039 in)] is formed between the plates. If the welded portions remain normal, it indicates that the welding has been done properly.

This clearance varies with the location of the welded spots, length of the flange, plate thickness, welding pitch, and other factors. Note that the value shown above is only a reference value.





- If the thickness of the plates is not equal, the clearance between the plates must be limited to 1.5 to 2.0 mm (0.059 to 0.079 in). Note that further opening of the plates can become a destructive test.
- Be sure to repair the deformed portion of the panel after inspection.

Mig welding

1. Condition of panel to be welded
   Paint film, rust, or oils attached to the surface of the panel reduces the welding conditions, causing blowholes and spatter. Thoroughly remove any foreign matter from the surface to be welded by using a belt sander or wire brush.

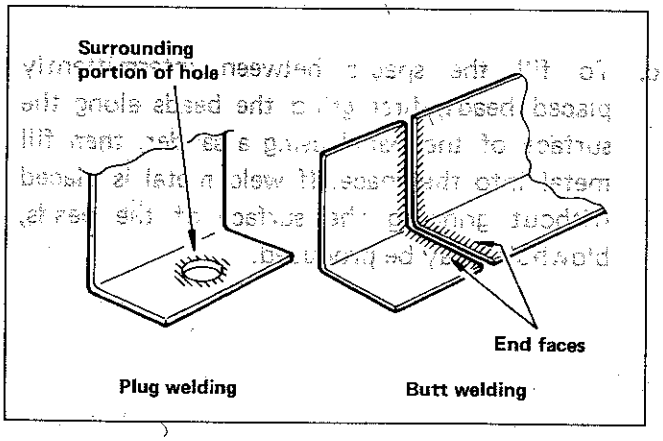
2. Precautions in welding

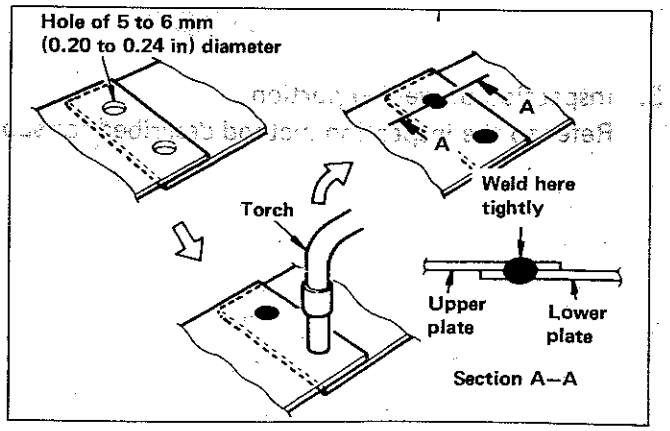
(1) Plug welding

a. Open a hole of 5 to 6 mm (0.20 to 0.24 in) diameter on one of the two metal plates to be welded and keep the upper plate and lower plate in tight contact.

b. Apply the torch at right angle to the plate and fill metal into the hole at a stretch. Note that intermittent welding leads to the generation of oxide film on the surface and this causes blowholes. If this occurs remove the oxide film with a wire brush.

c. Make sure that the upper and lower plates are welded together tightly.



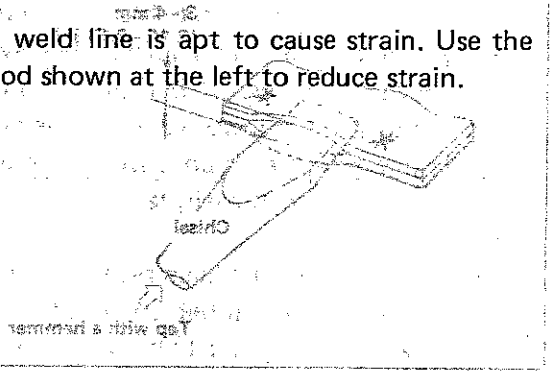


PRECAUTIONS IN OPERATION

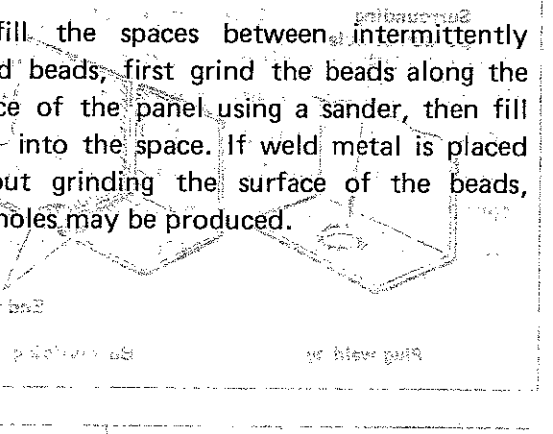
(2) Butt welding

a. Before performing this welding, tack-weld two pieces of the metals to be welded to prevent generation of strains and to align two metal surfaces. Tack two metal pieces by placing point welds and then fill in the spaces by placing short welding beads.

b. Long weld line is apt to cause strain. Use the method shown at the left to reduce strain.

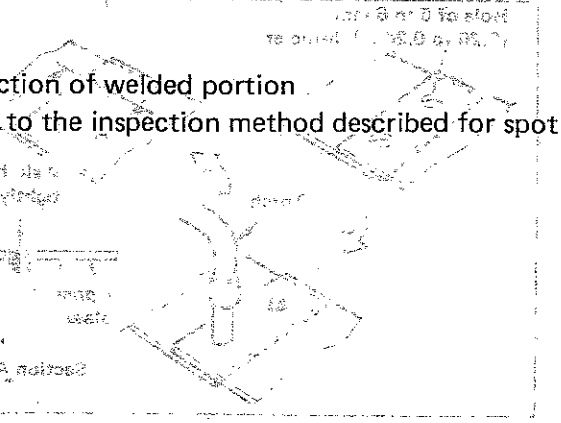


c. To fill the spaces between intermittently placed beads, first grind the beads along the surface of the panel using a sander, then fill metal into the space. If weld metal is placed without grinding the surface of the beads, blowholes may be produced.



3. Inspection of welded portion

Refer to the inspection method described for spot welding.

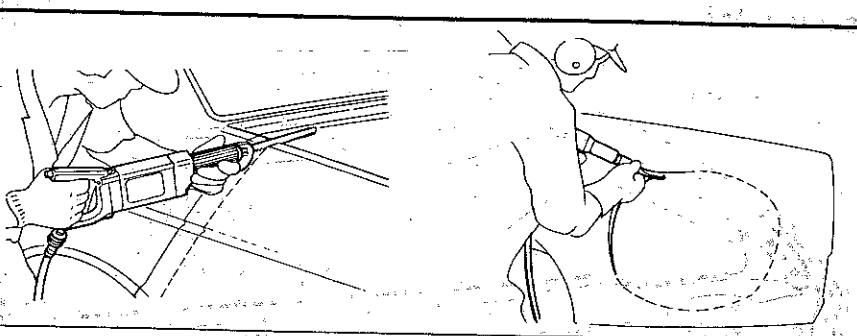


DESCRIPTION

SYMBOLS FOR CUTTING AND WELDING/BRAZING OPERATIONS

The identification of the cutting and the welding/brazing symbols used throughout this guide is given in the following pages.

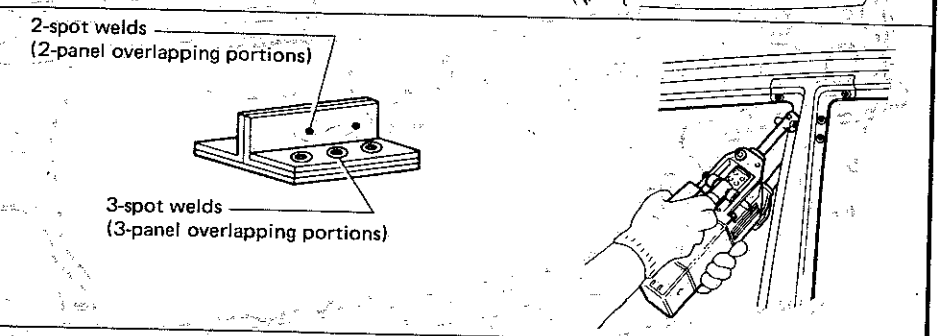
Saw cut or
air chisel cut



Spot weld

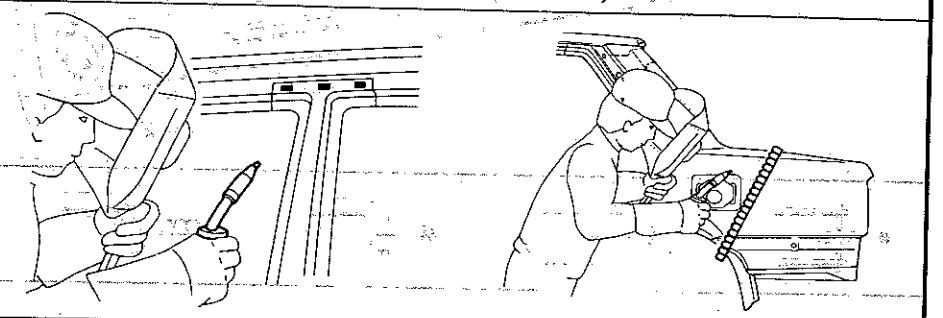
2-spot welds

3-spot welds

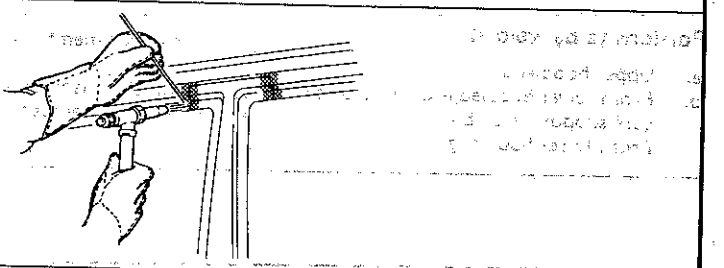


MIG (metal inert gas) plug weld

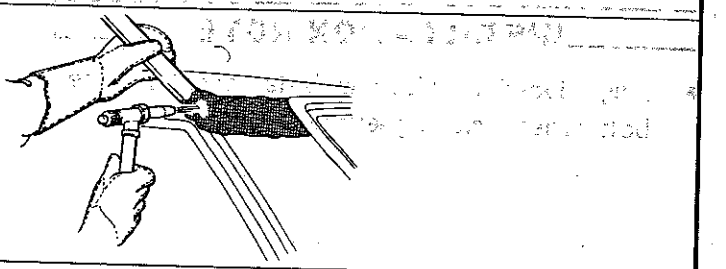
Mig seam weld/
Point weld



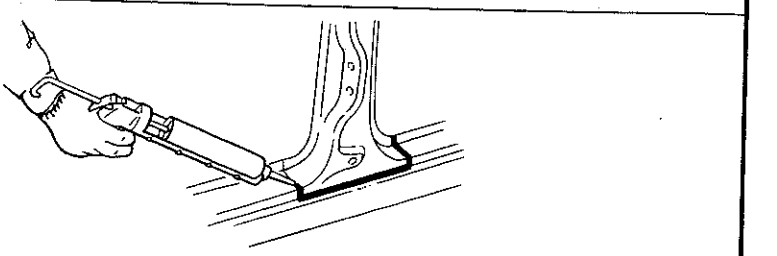
Brazing



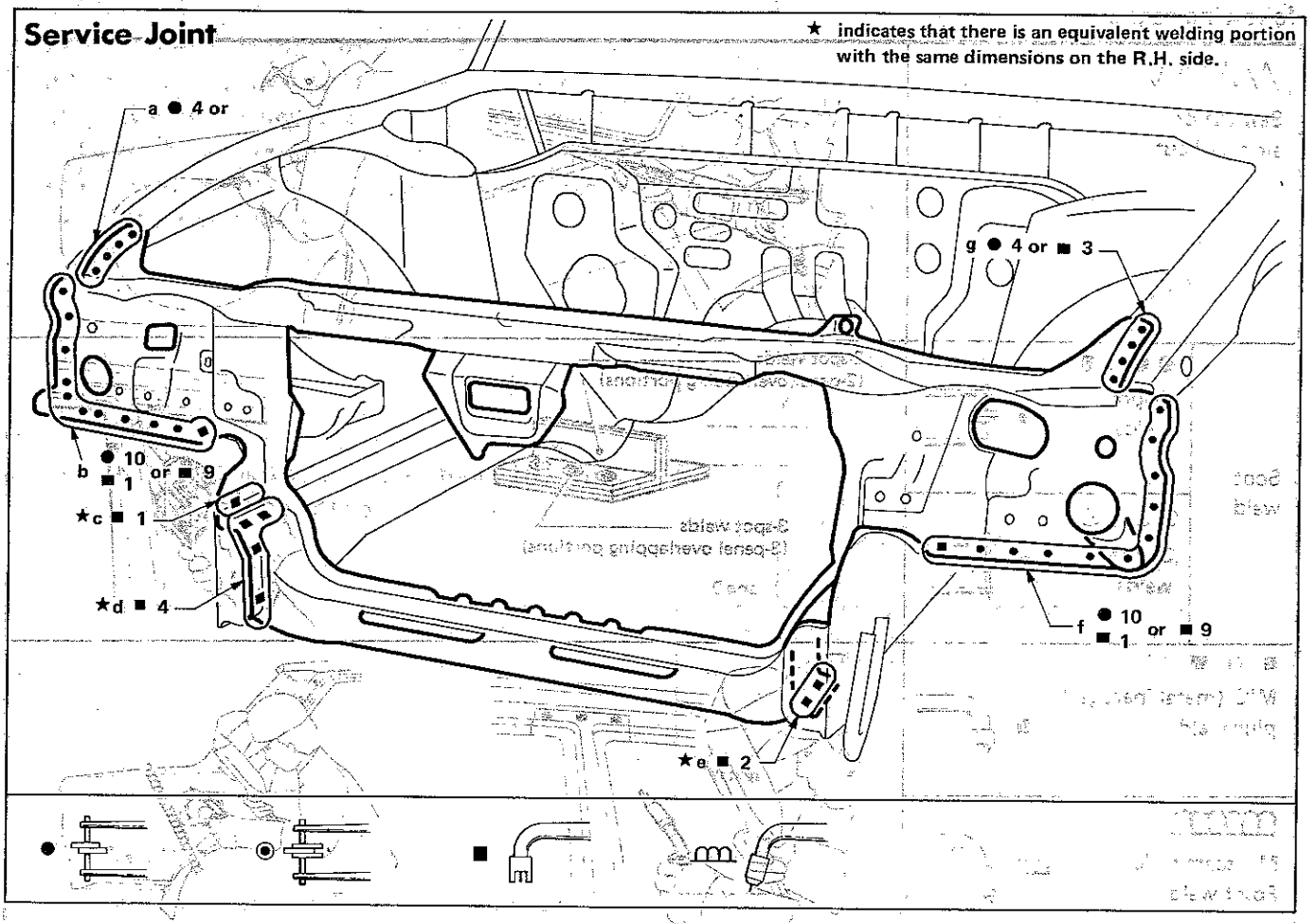
Soldering



Sealing



RADIATOR CORE SUPPORT

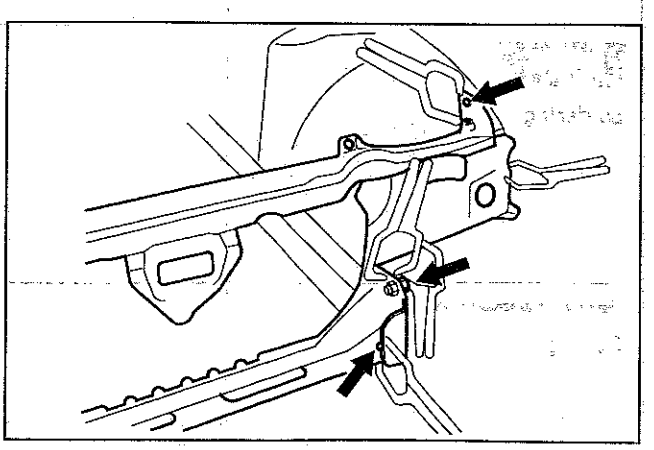


Portions to be welded

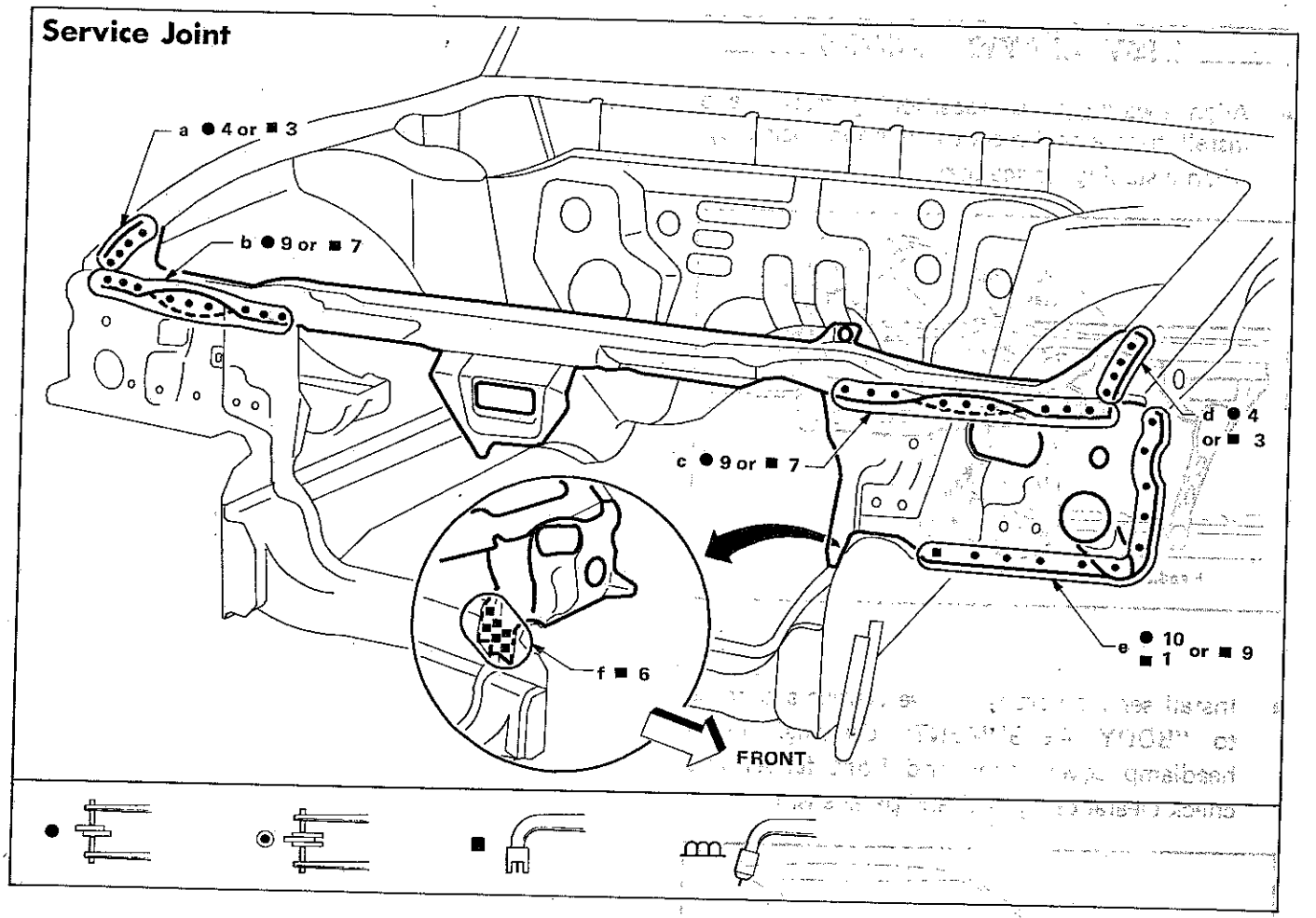
a. Upper hoodledge
b. Front lower hoodledge & side radiator core support assembly Front lower hoodledge
c. Front side member & front closing plate patch
d. Front side member
e. Front side member
f. Front lower hoodledge & side radiator core support assembly Front lower hoodledge
g. Upper hoodledge

INSTALLATION NOTE

- Align locating holes and install front bumper bolt, when installing service part.



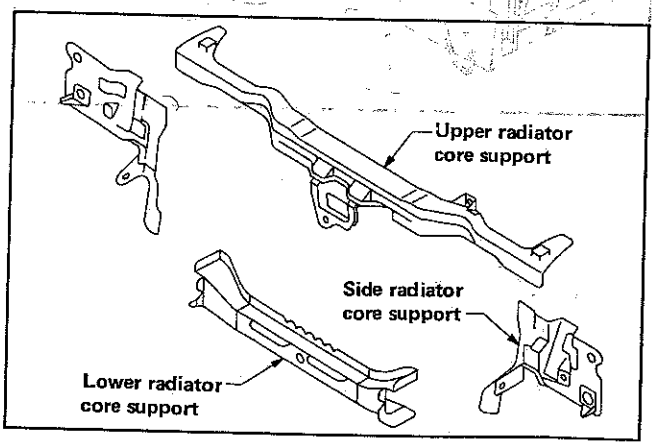
RADIATOR CORE SUPPORT (Partial Replacement)



Portions to be welded

a. Upper hoodledge
b. Side radiator core support
c. Side radiator core support
d. Upper hoodledge
e. Front lower hoodledge
Side radiator core support assembly
f. Lower radiator core support
Lower radiator core support assembly

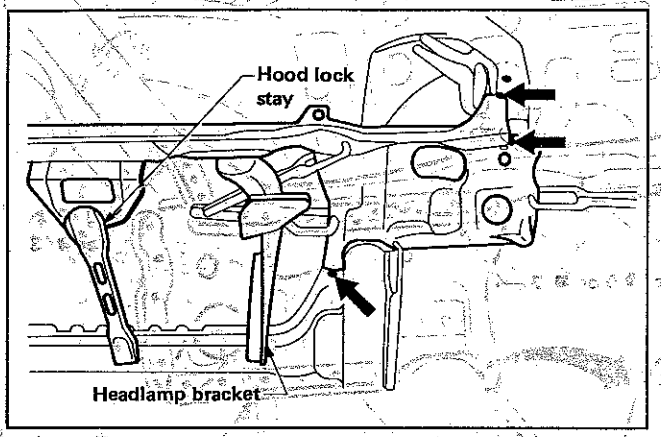
Service parts for radiator core support are available in 4 parts in addition to an assembly.
Thus, only the damaged part need be replaced. The procedure, whereby side radiator core support and upper radiator core support are replaced simultaneously, is described in the page that follows.



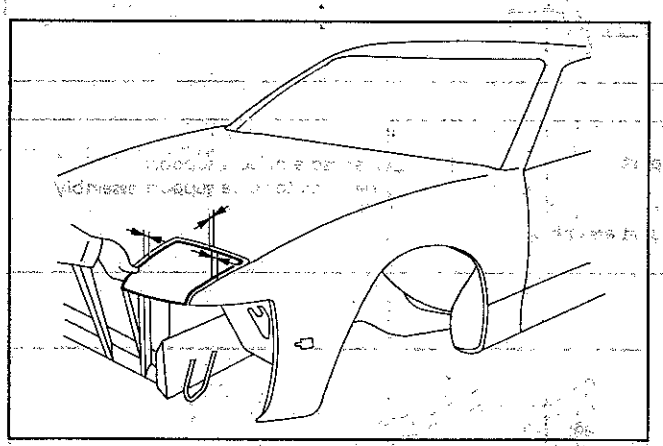
RADIATOR CORE SUPPORT (Partial Replacement)

INSTALLATION NOTES

- Align locating holes (positioning marks) and install headlamp bracket and hood lock stay, when installing service part.

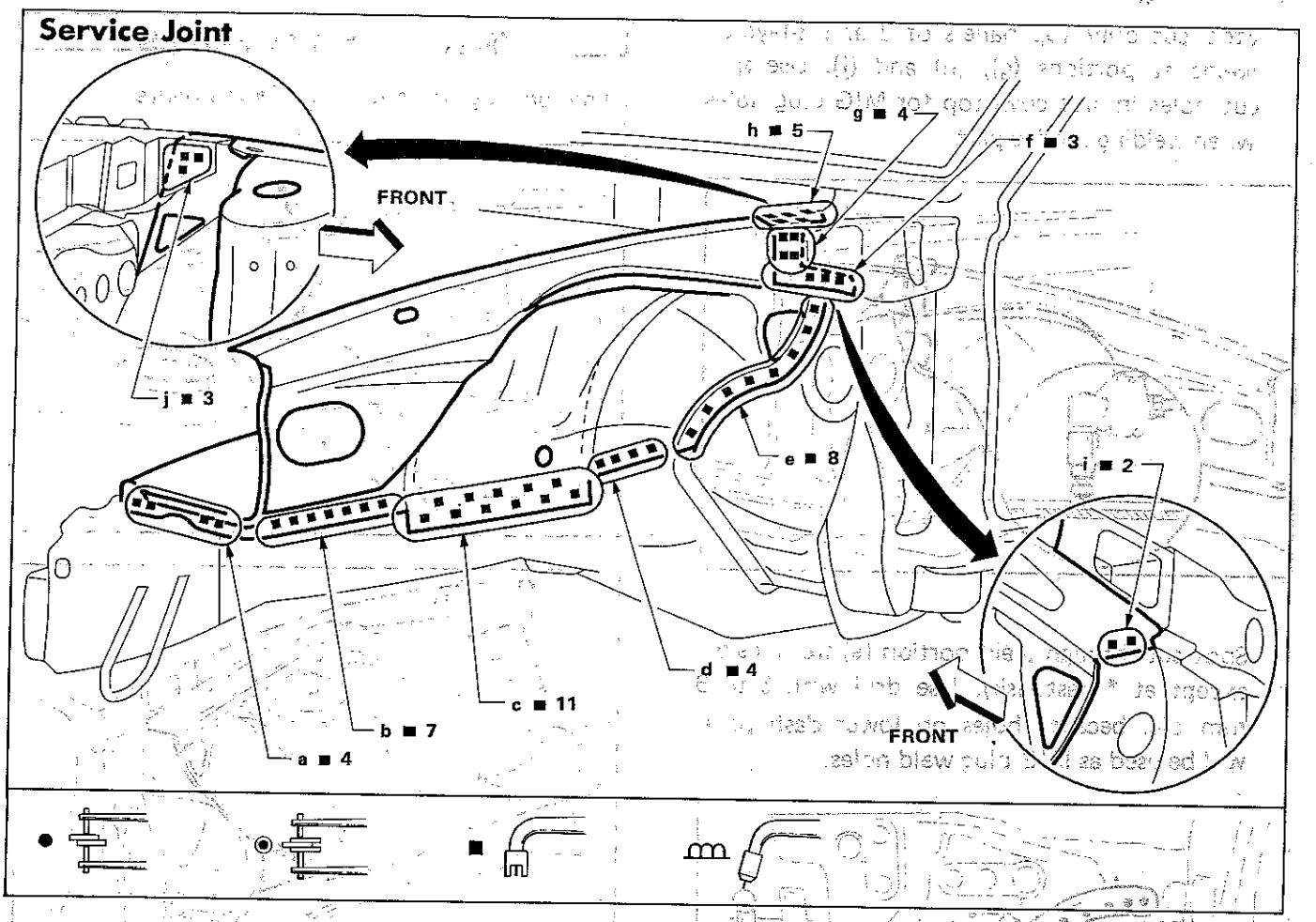


- Install service part with vise clamps according to "BODY ALIGNMENT" drawing. Install headlamp cover, hood and front fender and check clearances, grades and parallelism.



HOODLEDGE

(Work after radiator core support has been removed.)

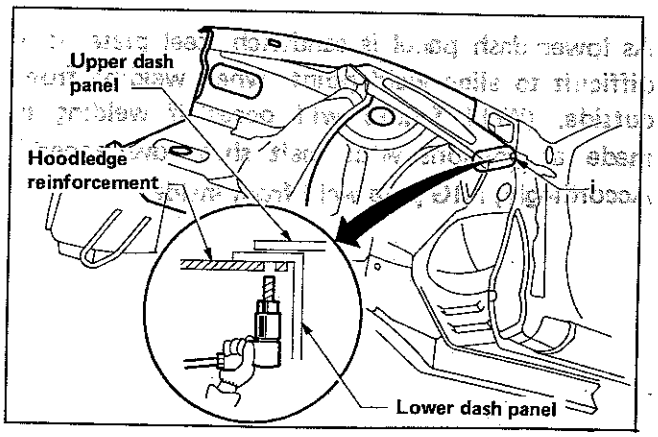


Portions to be welded

a. Front closing plate patch
Front side member closing plate & front closing plate patch
b. Front side member closing plate
Front side member closing plate & front strut housing
c. Front side member closing plate
Front side member closing plate & front side member
d. Front side member closing plate
Front side member closing plate & front strut housing
e. Front side member closing plate & lower dash panel
Lower dash panel
f. Hoodledge reinforcement & side cowl top
Side cowl top
g. Hoodledge reinforcement patch & side cowl top
h. Hoodledge reinforcement patch & side cowl top
Side cowl top
i. Lower dash panel
j. Side cowl top

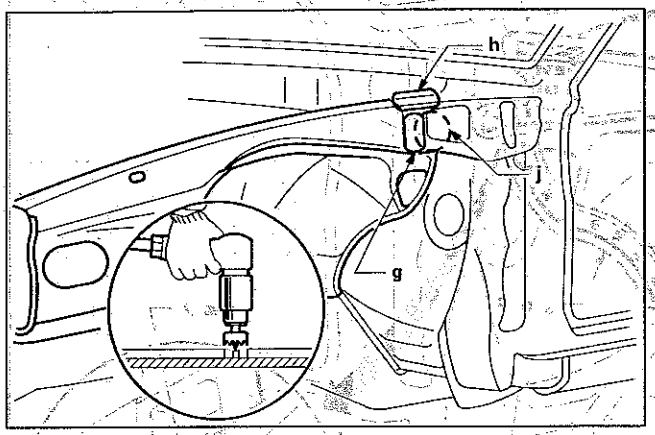
REMOVAL NOTES

- Portion (i) is 2-layered spot weld. But spot cut only one panel for hoodledge reinforcement.

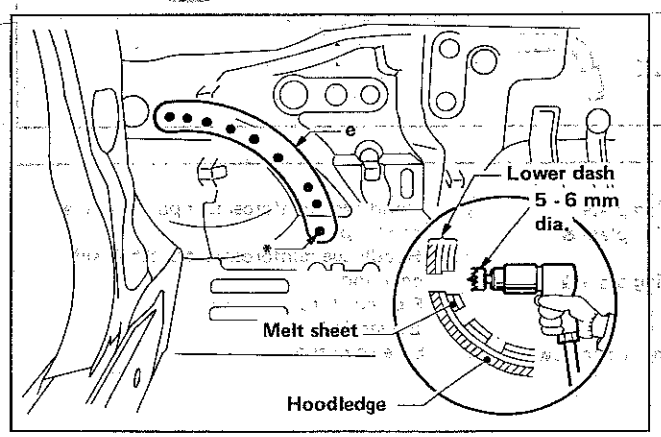


HOODLEDGE

- Stop cut only top panels of 2 and 3-layered welds at portions (g), (h) and (j). Use spot cut holes in side cowl top for MIG plug holes when welding service part.



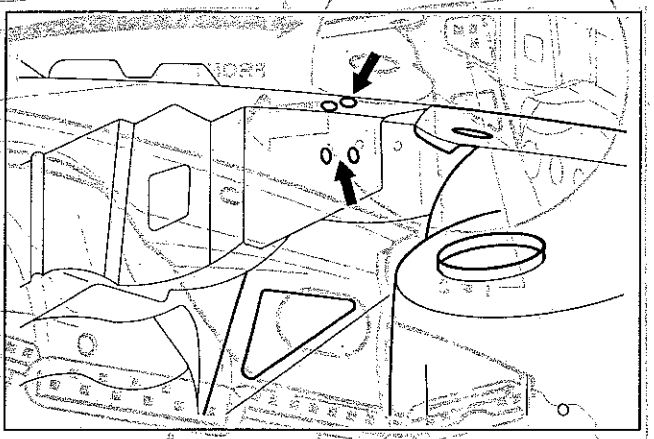
- Spot cut through weld portion (e) from inside, except at * (asterisk). Use drill with 5 to 6 mm dia. because holes on lower dash panel will be used as MIG plug weld holes.

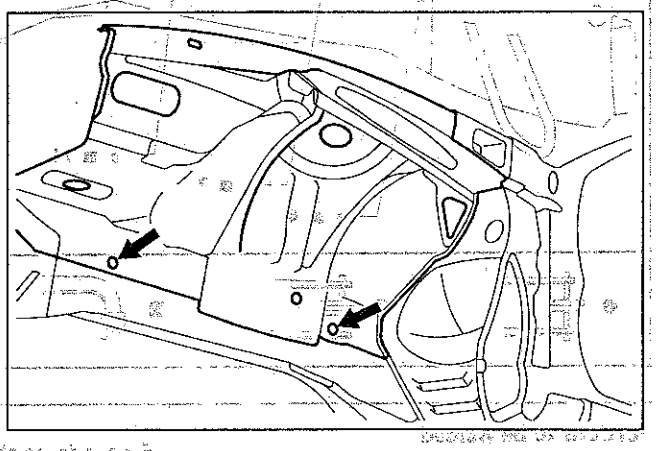


As lower dash panel is sandwich steel plate, it is difficult to align weld points when welding from outside. (Weld failure will occur if welding is made at portions with melt sheet overlapped.) Accordingly, MIG plug weld from inside.

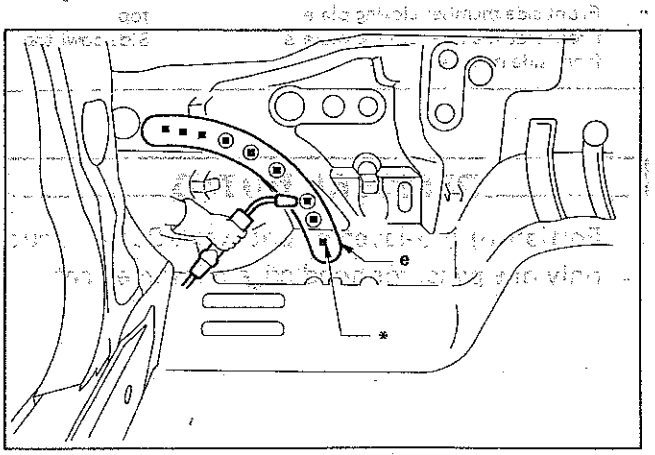
INSTALLATION NOTES

Align locating holes as shown in the figure.



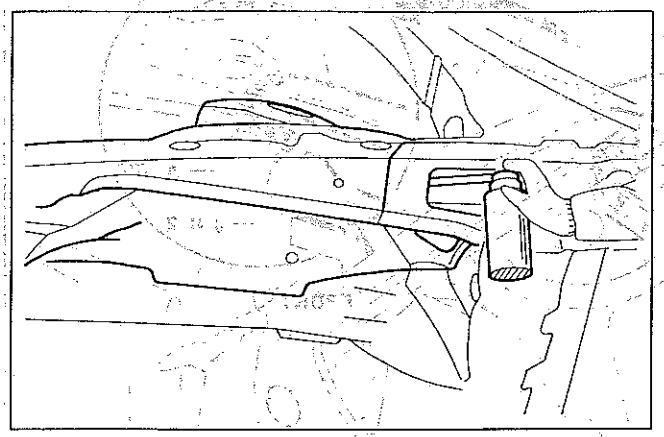


- MIG plug weld portion (e) from inside while portion with * (asterisk) should be welded from outside.



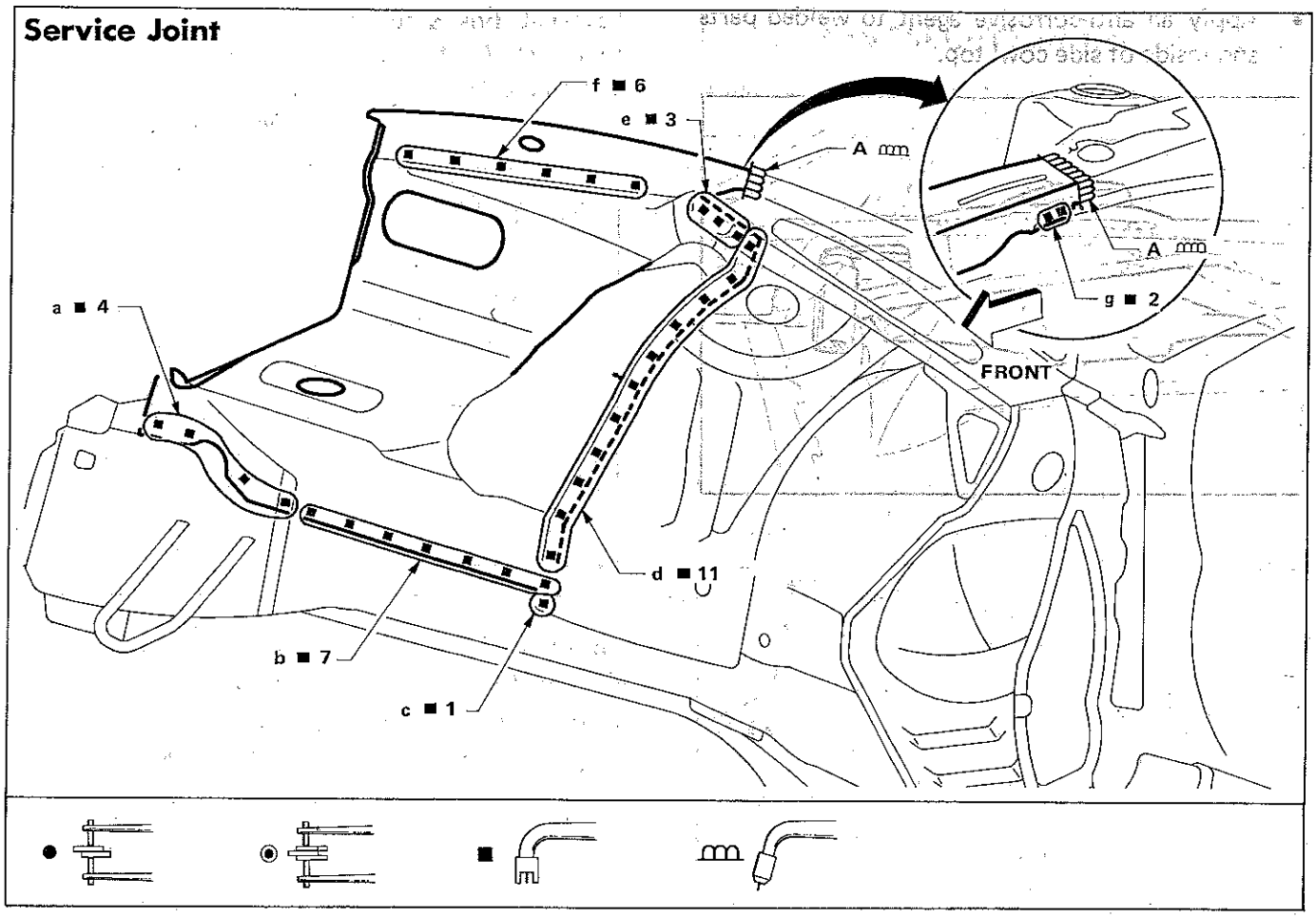
HOODLEDGE

- Apply an anti-corrosive agent to welded parts and inside of side cowl top.



HOODLEDGE (Partial Replacement)

(Work after radiator core support has been removed.)

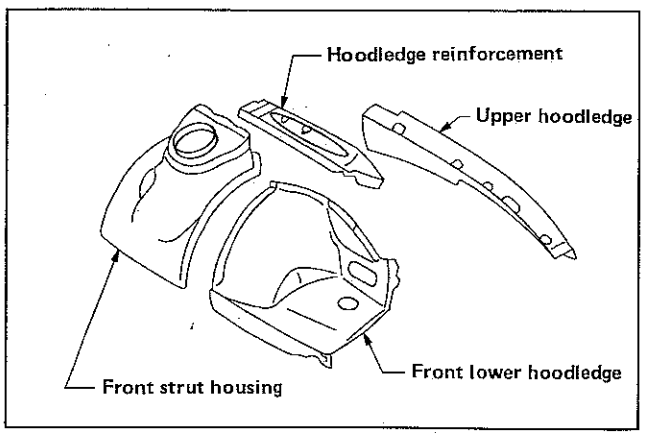


Portions to be welded

a. Front closing plate patch
Front closing plate patch & front side member closing plate
b. Front side member closing plate
Front side member closing plate & front strut housing
c. Front side member closing plate & front side member (Not welded to front lower hoodledge)
d. Front strut housing
e. Hoodledge reinforcement
f. Upper hoodledge
g. Hoodledge reinforcement

A. Upper hoodledge

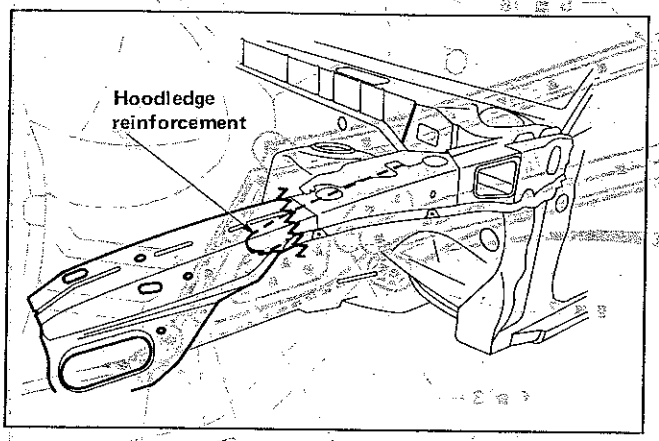
Service parts for hoodledge are available in 4-individual service parts in addition to an assembly. Thus, the damaged part alone can be replaced.
The procedure, whereby partial replacement of upper hoodledge and front lower hoodledge are replaced simultaneously, is described below.



HOODLEDGE (Partial Replacement)

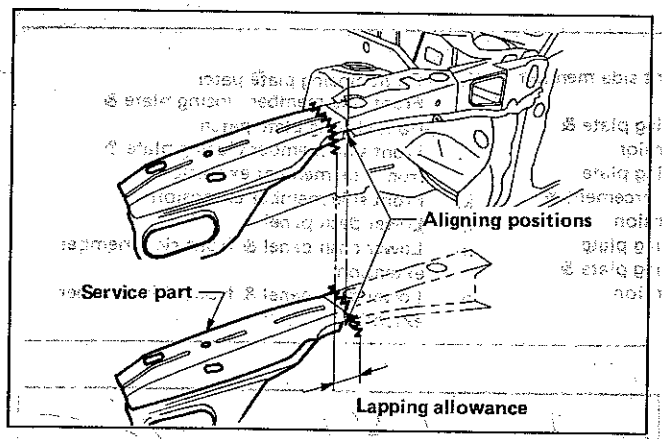
REMOVAL NOTES

- Cut off upper hoodledge as shown in figure, then remove with front lower hoodledge.
- When cutting upper hoodledge, be careful not to damage hoodledge reinforcement.

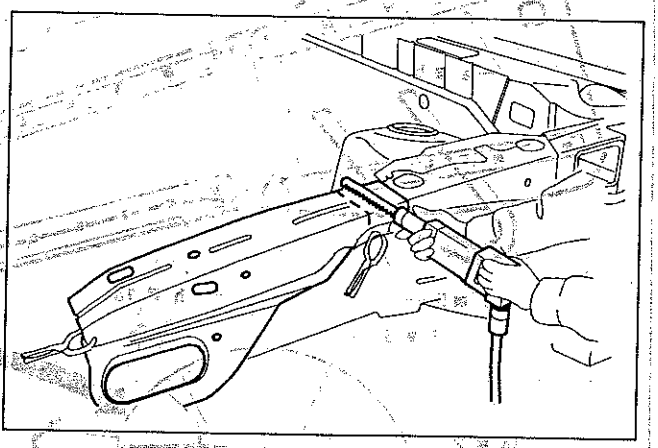


INSTALLATION NOTES

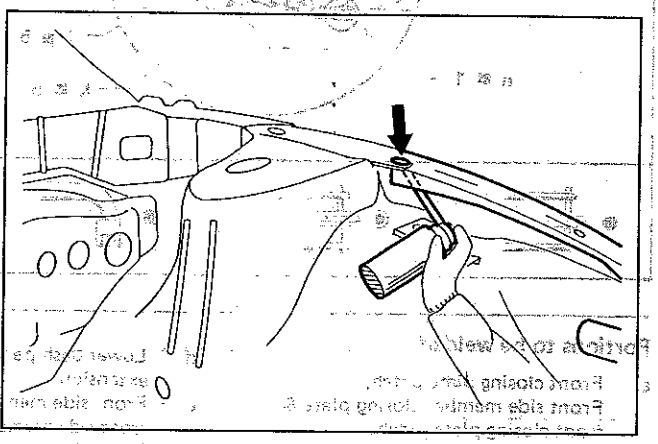
- Cut off service part, leaving its projected area in same position as that of vehicle body for positioning.



- Put service part in place, align its positive area with that of vehicle body, and perform overlap cutting.

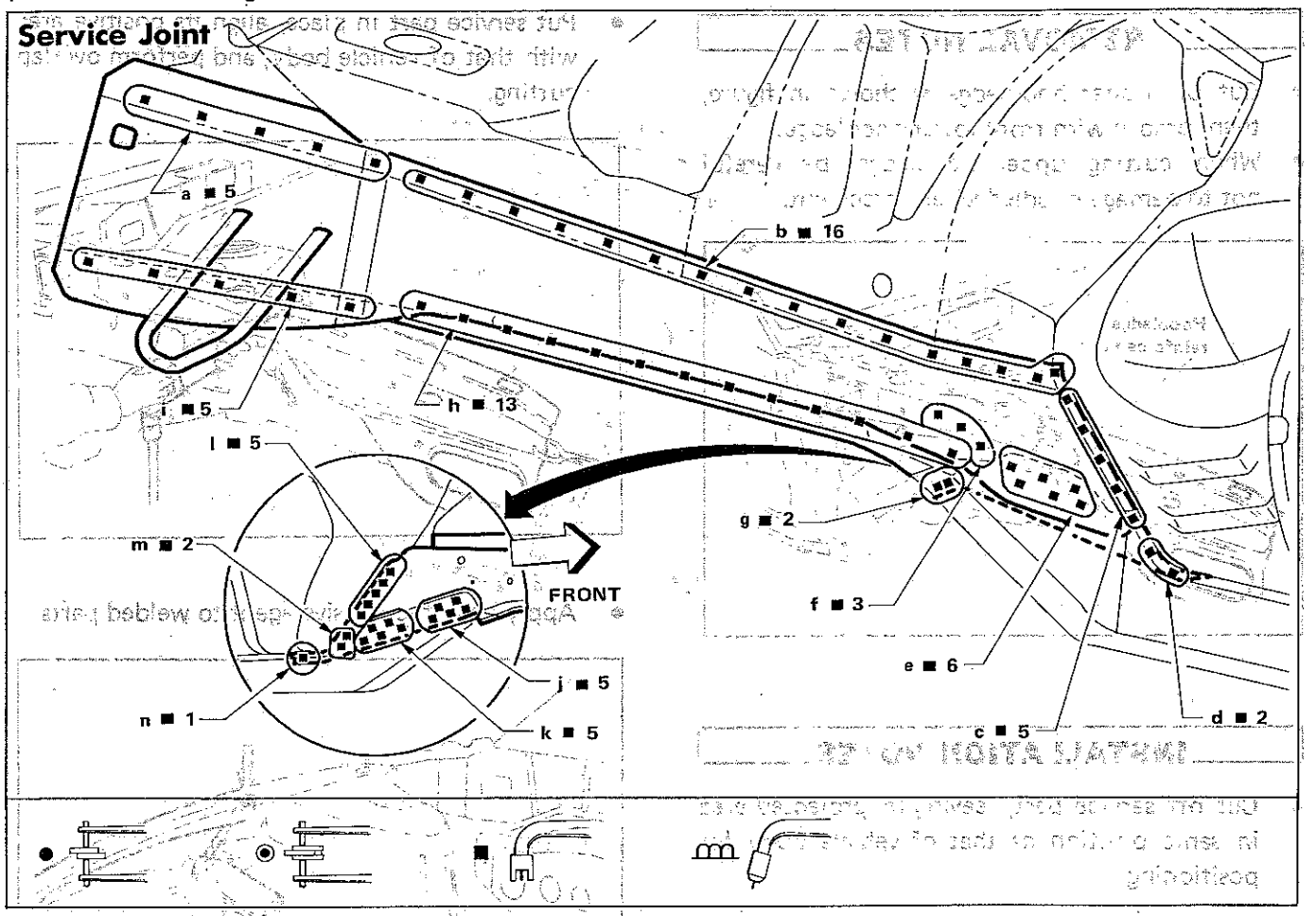


- Apply an anti-corrosive agent to welded parts.



FRONT SIDE MEMBER

(Work after hoodledge has been removed.)

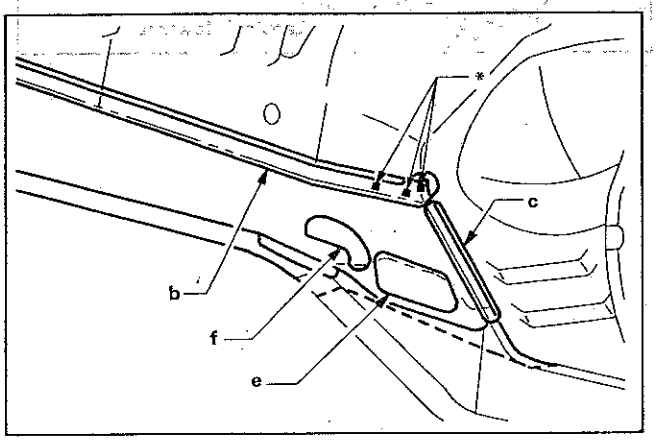


Portions to be welded

a. Front closing plate patch
Front side member closing plate & front closing plate patch
b. Front side member closing plate
Lower dash panel
c. Lower dash panel
Lower dash panel & front side member extension
d. Lower dash panel & front side member extension
e. Front side member closing plate & front side member extension
f. Front side member closing plate
g. Front side member reinforcement & front side member extension
h. Front side member closing plate
Front side member closing plate & front side member extension
i. Front closing plate patch
Front side member closing plate & front closing plate patch
j. Front side member closing plate & front side member extension
k. Front side member extension
l. Lower dash panel
m. Lower dash panel & front side member extension
n. Lower dash panel & front side member extension

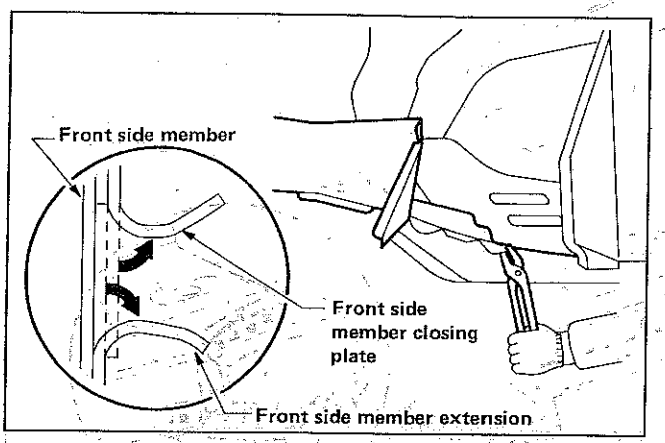
REMOVAL NOTES

- Spot cut through weld portions (c), (e), (f) and * (asterisk) in (b).

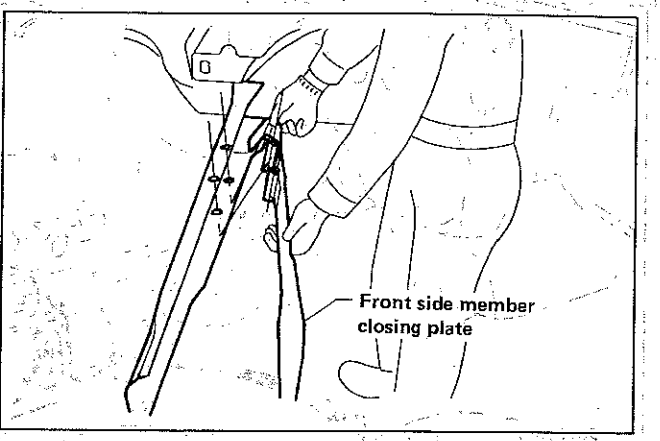


FRONT SIDE MEMBER

- Bend panels as shown in figure to facilitate removal.

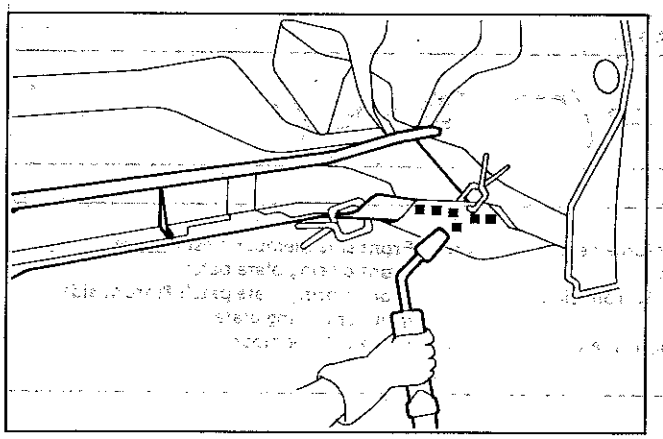


- Align front suspension member hole, when installing front side member closing plate.

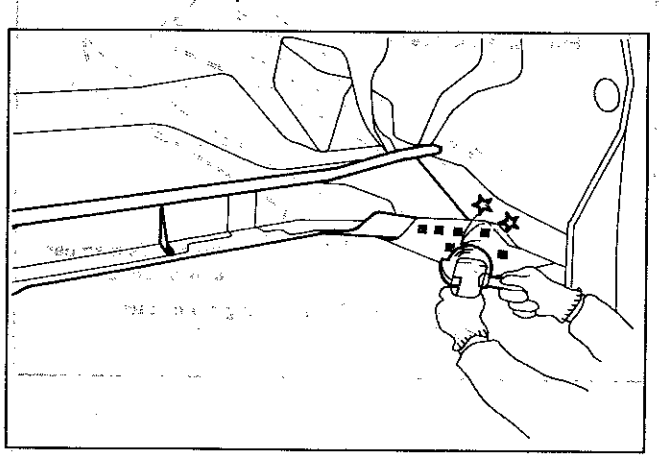


INSTALLATION NOTES

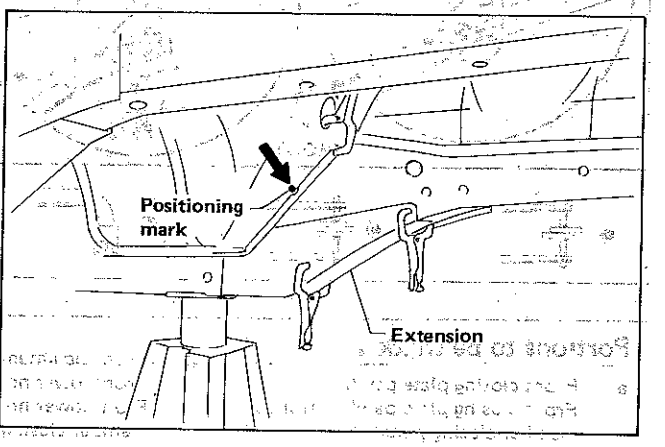
- Install front side member, correct bent front side member extension, then weld front side member and front side member extension.



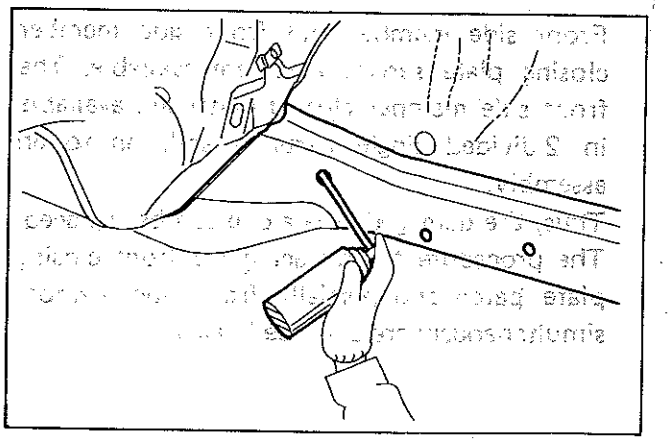
- Grind welded portions.



- Align service part with lower dash panel positioning mark when installing.

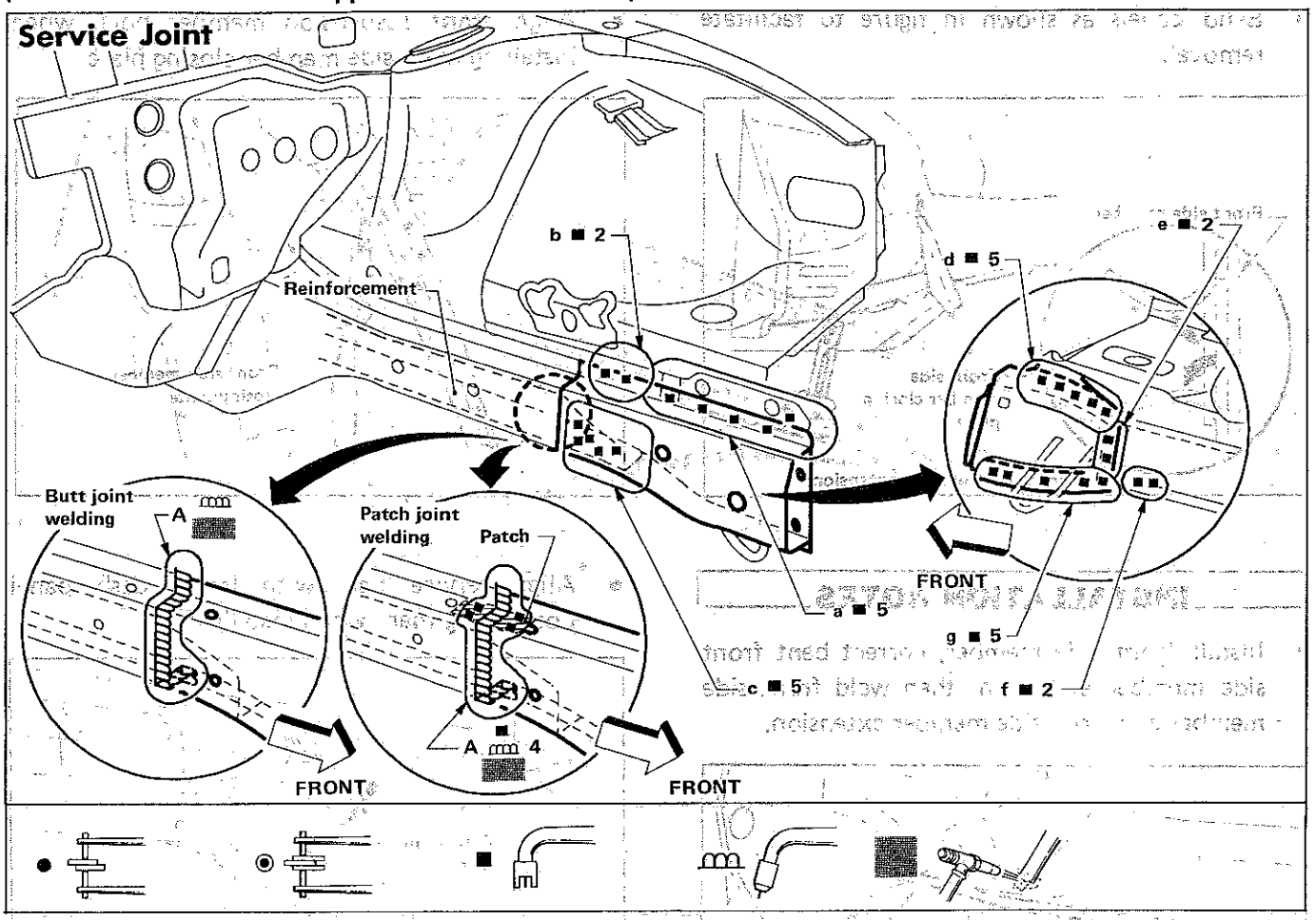


- Apply anti-corrosive agent to inside of front side member.



FRONT SIDE MEMBER (Partial Replacement)

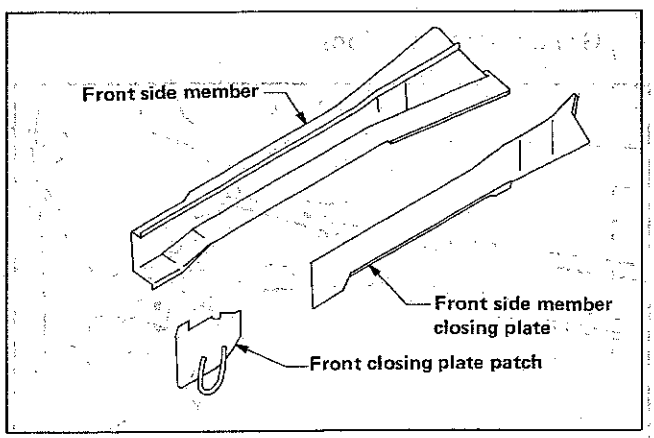
(Work after radiator core support has been removed.)



Portions to be welded

a. Front closing plate patch
Front closing plate patch & front side member closing plate
b. Front side member closing plate
c. Front side member reinforcement
d. Front lower hoodledge
Front lower hoodledge & front side member closing plate
e. Front side member closing plate
f. Front side member closing plate
g. Front closing plate patch
Front closing plate patch & front side member closing plate
A. Front side member

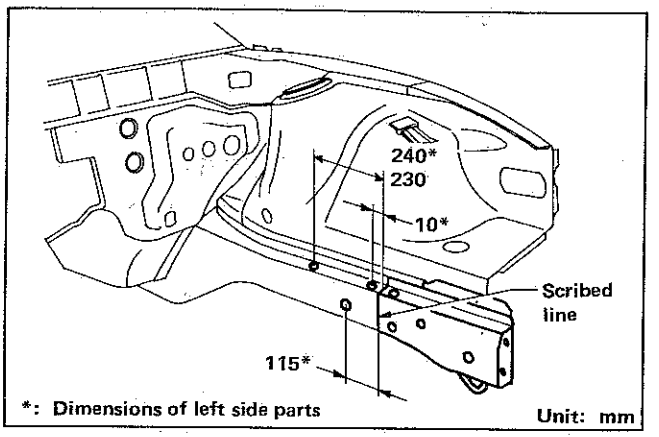
- Front side member and front side member closing plate service parts are available. The front side member closing plates are available in 2-divided single parts in addition to an assembly.
  Thus, the damaged area alone can be replaced. The procedure for replacing the front closing plate patch and partially front side member simultaneously are described below.



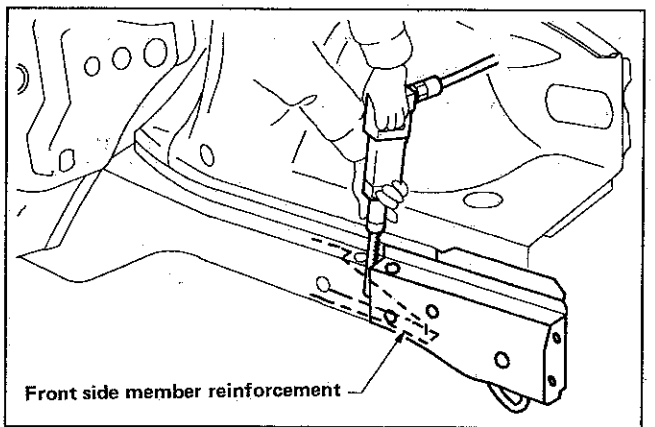
FRONT SIDE MEMBER (Partial Replacement)
-Butt Joint Welding-

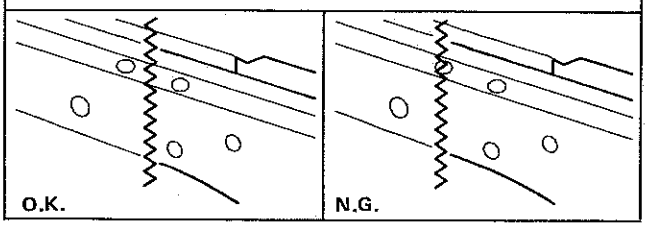
REMOVAL NOTES

- Scribe a straight line on the front side member along the hole centers as shown in figure.



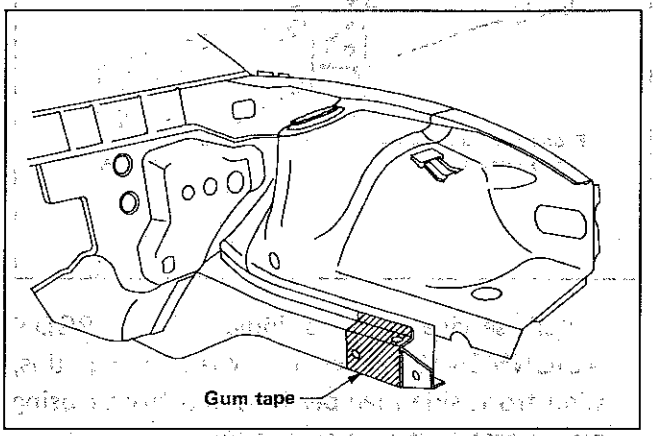
- Cut off front side member along scribe line. Be careful not to damage front side member reinforcement and do not cut on the hole.



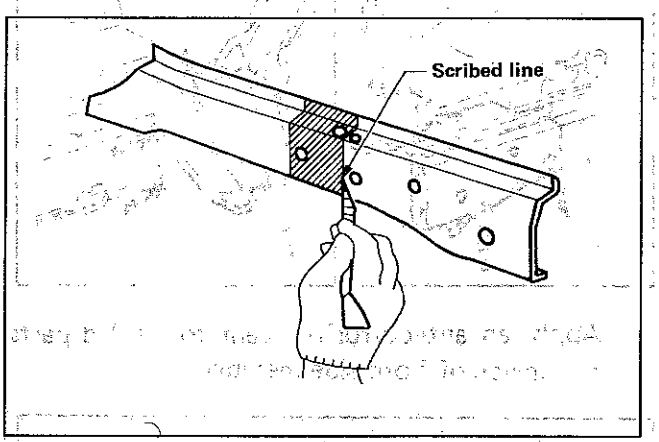


INSTALLATION NOTES

- Put gum tape on the front side member. Cut off gum tape along front side member edge and make holes in the gum tape at front side member holes.

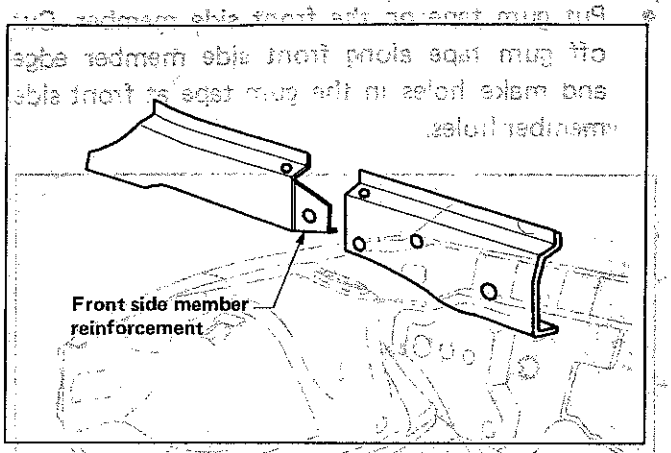


- Remove gum tape and fix it to service part, aligning the front side member flange end and holes.
- Scribe a line at the end of the gum tape.

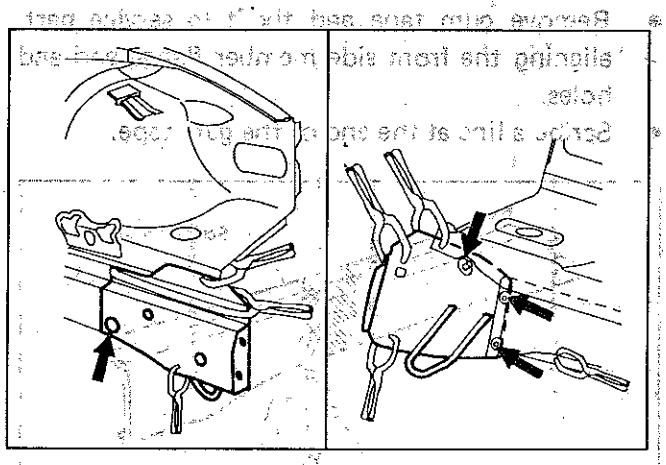


FRONT SIDE MEMBER (Partial Replacement)
-Butt Joint Welding-

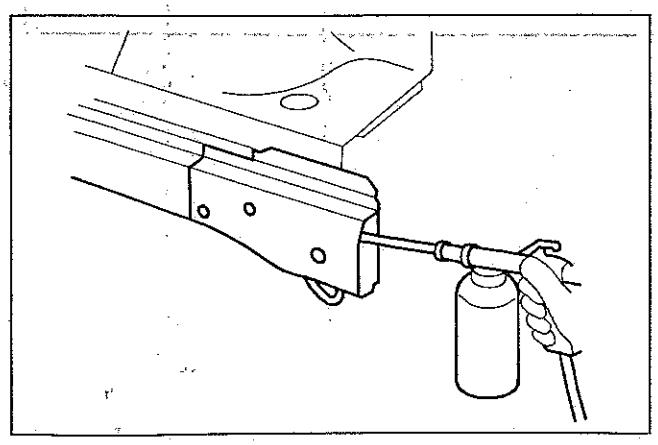
- Cut off service part along line except at the front side member reinforcement.



- Install service part as indicated in "BODY ALIGNMENT" drawing. When doing this, align front side member hole and front closing plate patch bolt as shown in figure.



- Apply an anti-corrosive agent to welded parts and inside of front side member.



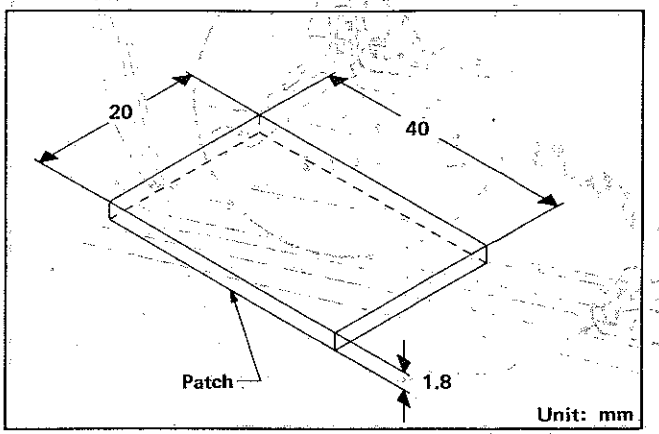
FRONT SIDE MEMBER (Partial Replacement)
-Patch Joint Welding-

REMOVAL NOTE

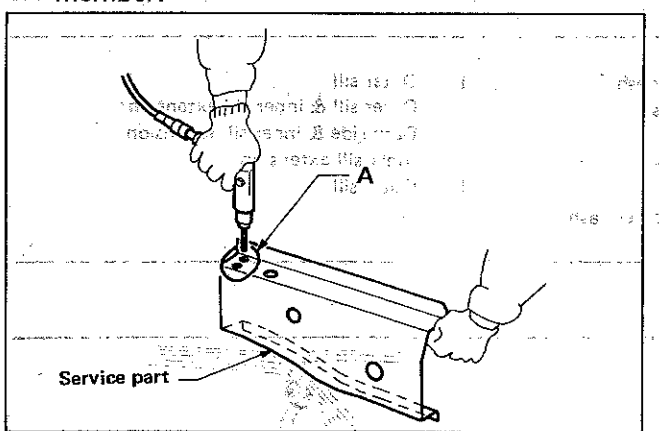
- When removing panel, use procedures outlined in section titled "BUTT-JOINT WELDING".

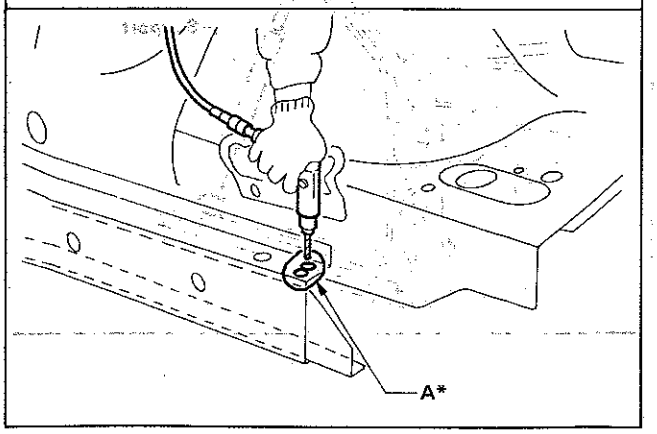
INSTALLATION NOTES

- For patch-joint welding, proceed as follows:
- Prepare a patch panel [20 mm (W) x 40 mm (L) x 1.8 mm (T)] as shown in figure below. Use service part leftovers to make a patch panel to improve work efficiency.

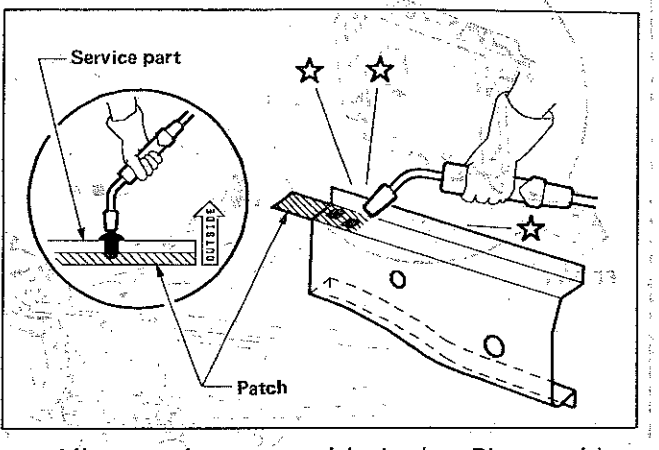


- Drill 6 mm dia. plug weld holes on portion (A) of service part and portion (A*) of side member.

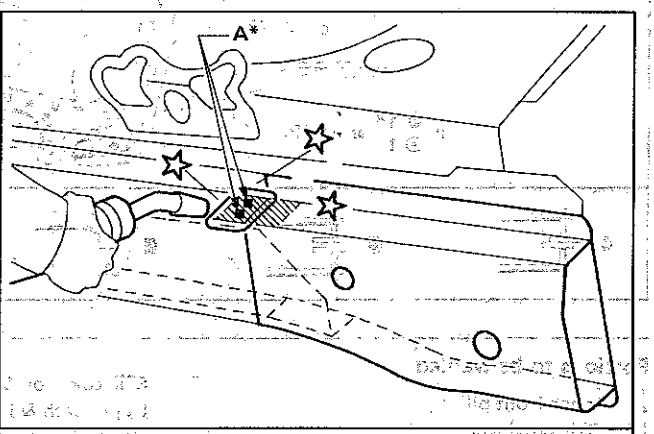


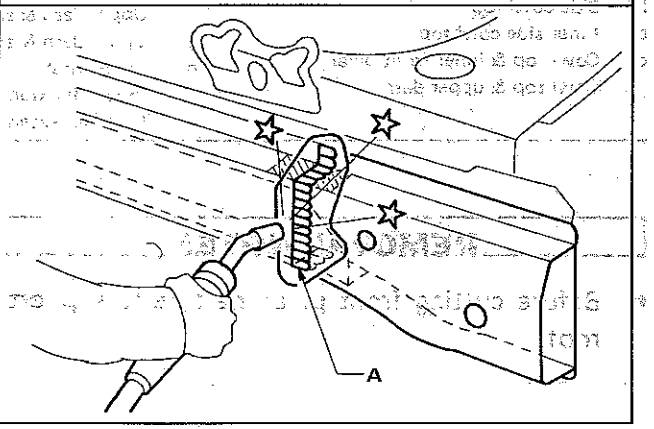


- Fit patch panel to service part and plug weld.



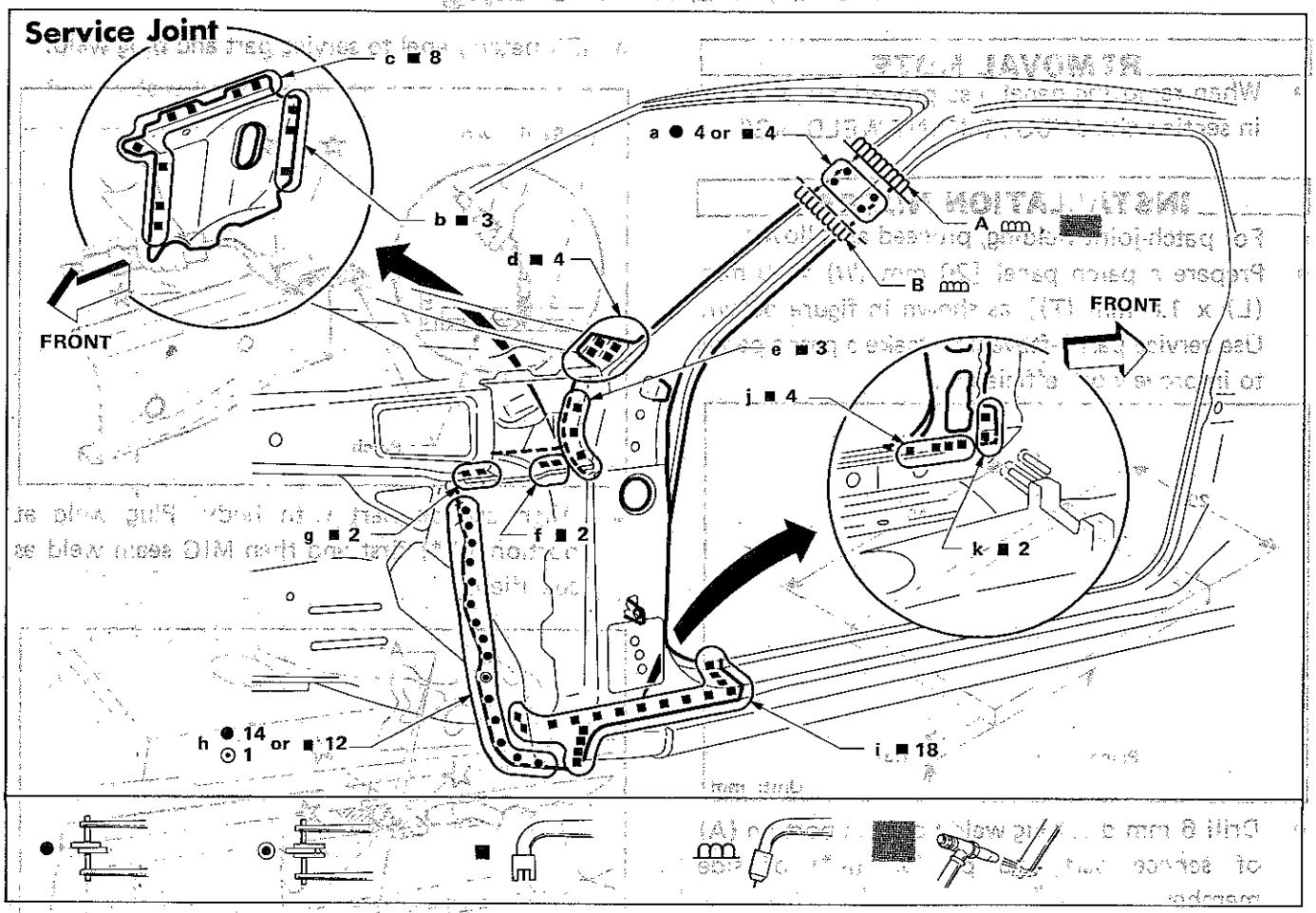
- Align service part with body. Plug weld at portion (A*) first and then MIG seam weld as specified.





- Perform subsequent operations using procedures outlined in section titled "BUTT-JOINT WELDING".

FRONT PILLAR

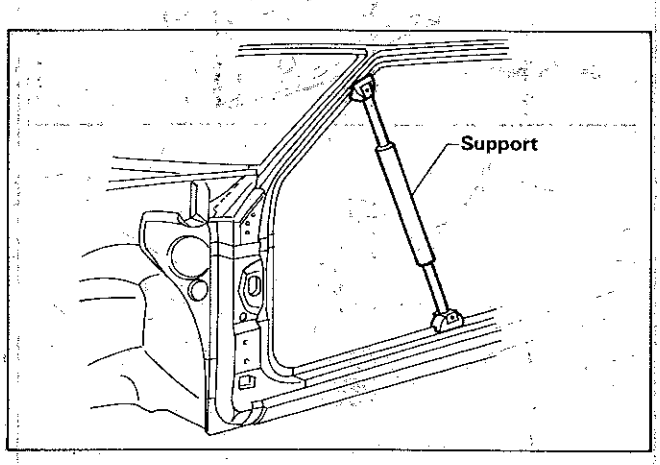


Portions to be welded

a. Inner front pillar
b. Side cowl top
c. Inner side cowl top
d. Cowl top & inner front pillar
Cowl top & upper dash
e. Side cowl top & upper dash
Upper dash & lower dash
f. Upper dash & side dash
g. Upper dash & side dash
h. Lower dash
Inner sill extension & lower dash
Inner sill extension
i. Outer sill
Outer sill & inner sill extension
j. Dash side & inner sill extension
Inner sill extension
k. Outer sill

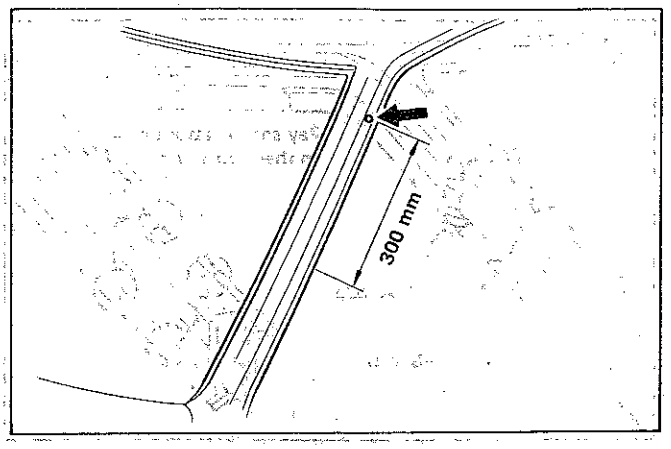
REMOVAL NOTES

- Before cutting front pillar, be sure to support roof.

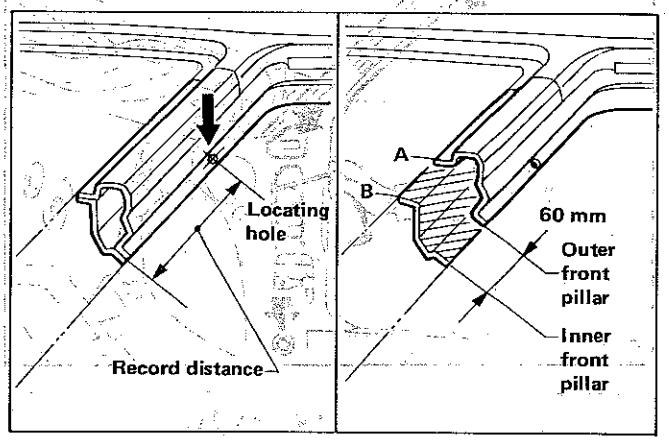


FRONT PILLAR

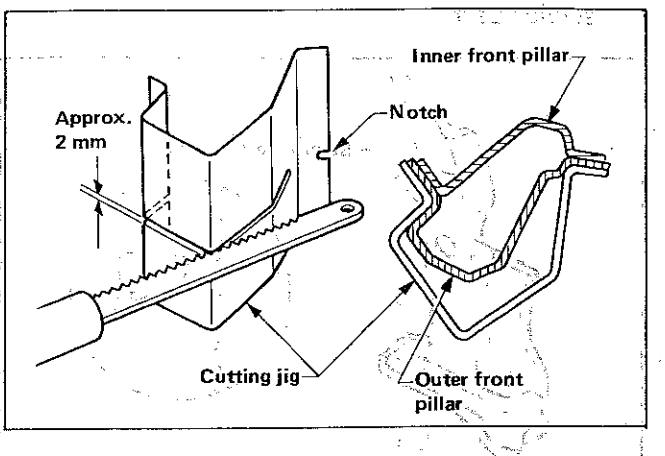
- Butting position is 300 mm away from locating hole.
  It is better to butt at this position due to its construction.



- Determine cutting position and record distance from locating hole. Use this distance in cutting service part. Cut outer front pillar at 60 mm above cut position of inner front pillar.

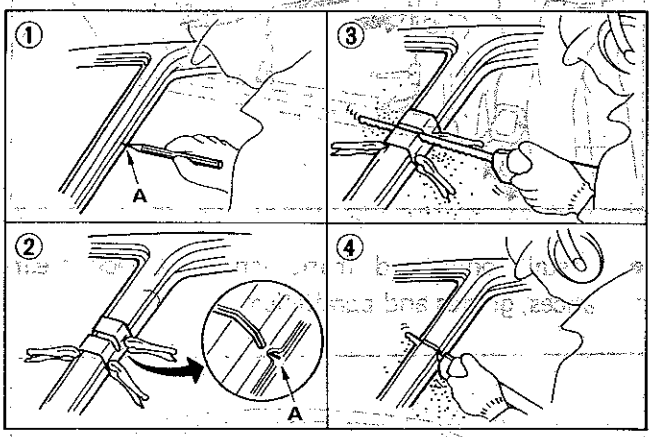


- Using a cutting jig makes it easier to cut. Also, it will permit service part to be accurately cut at joint position.



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

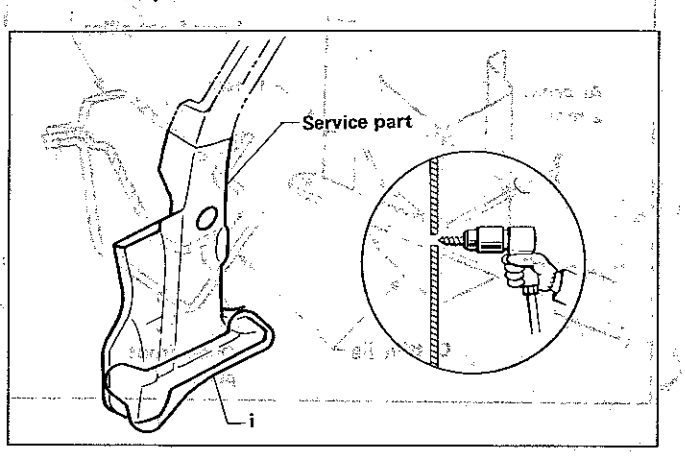
① Mark cutting lines.
  A: Cut position of outer pillar
  B: Cut position of inner pillar
② Align cutting line with mark on jig and clamp jig.
③ Cut off along groove of jig.
④ Remove jig and cut remaining portions.
⑤ Cut off position B in same manner.



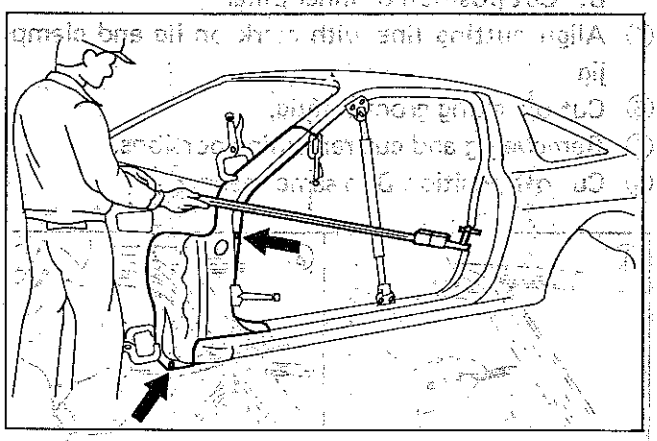
FRONT PILLAR

INSTALLATION NOTES

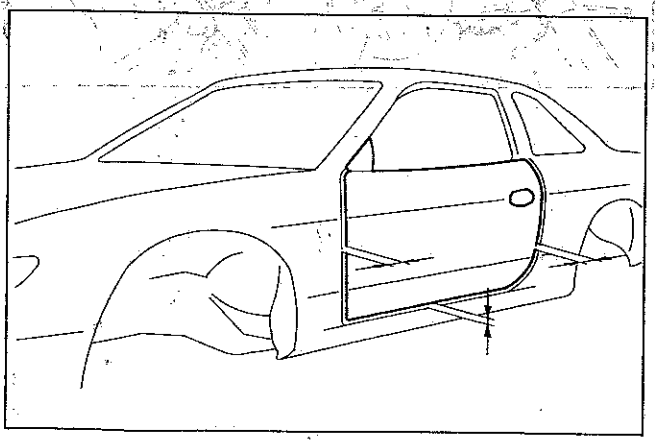
- Drill MIG plug weld hole at portion (i) of service part.



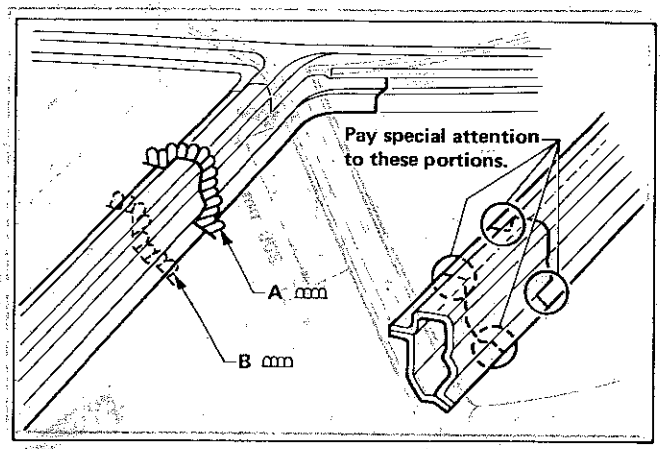
- Install service part as indicated in "BODY ALIGNMENT" drawing. When doing this, align front fender attaching hole and locating hole of side dash.



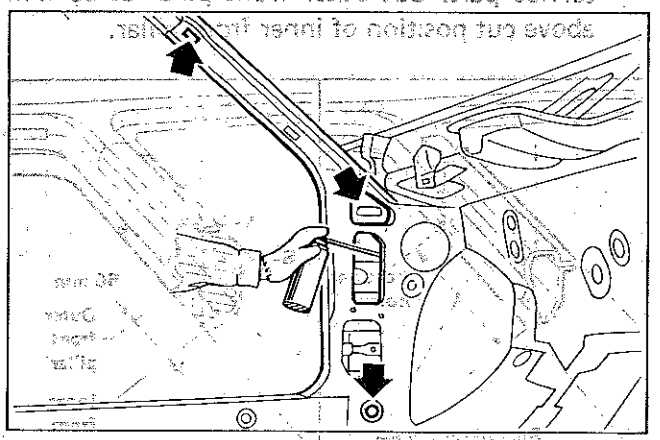
- Install door and front fender. Check clearances, grades and parallelism.



- Weld parts to be butt welded as far as flange end portion. Finish welded part with a sander. If smooth finish is not obtained, finish by soldering.

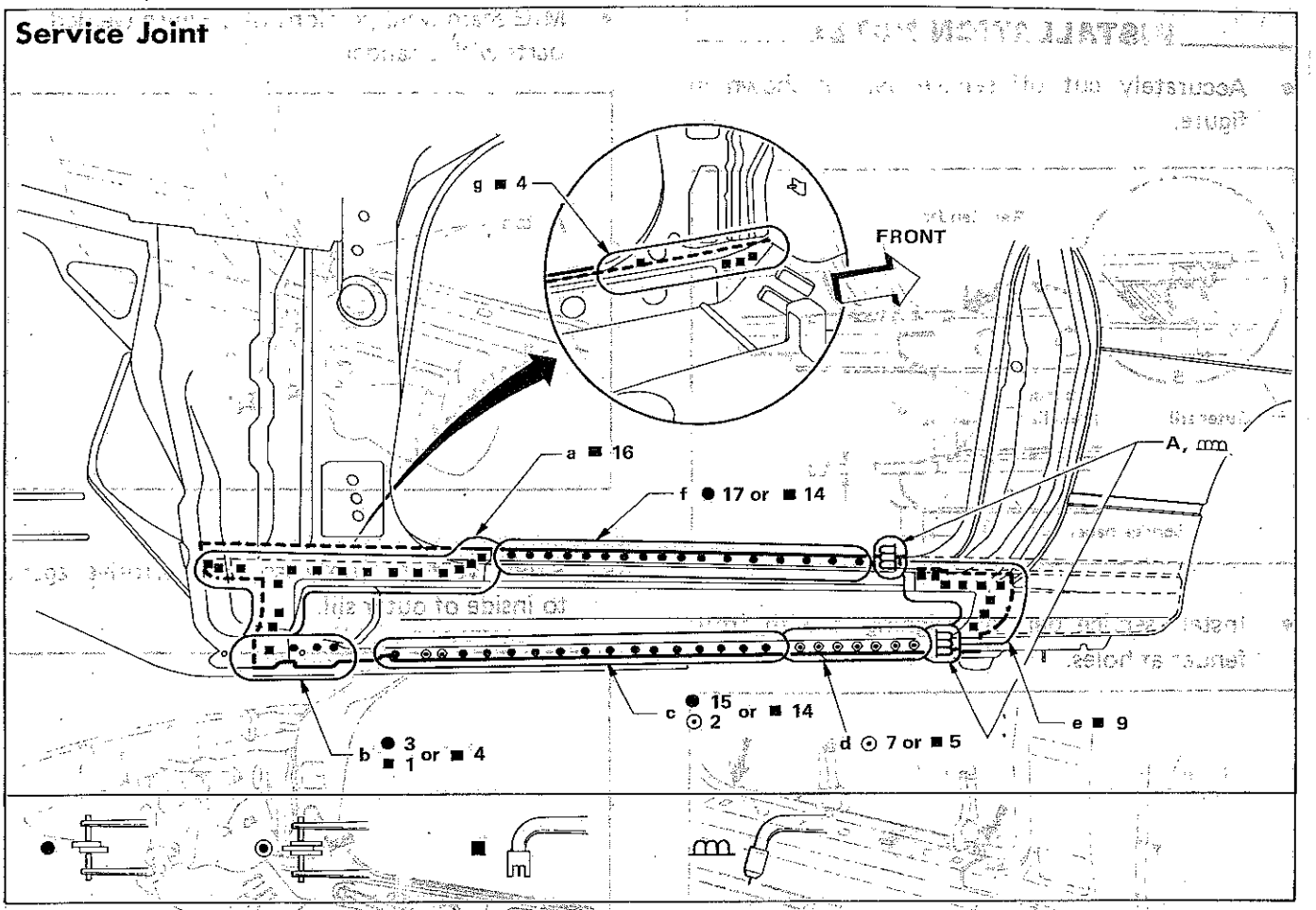


- Apply an anti-corrosive agent to welded parts and inside of front pillar.



OUTER SILL

Service Joint



Portions to be welded

a. Front pillar
Front pillar & inner sill extension

b. Inner sill extension
Front pillar & inner sill extension

c. Inner sill
Inner sill extension
Inner sill & inner sill extension

d. Inner sill & front floor

e. Rear fender

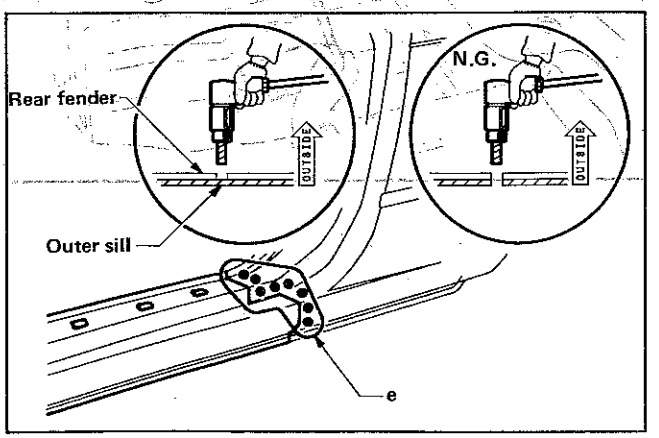
f. Inner sill

g. Inner sill extension

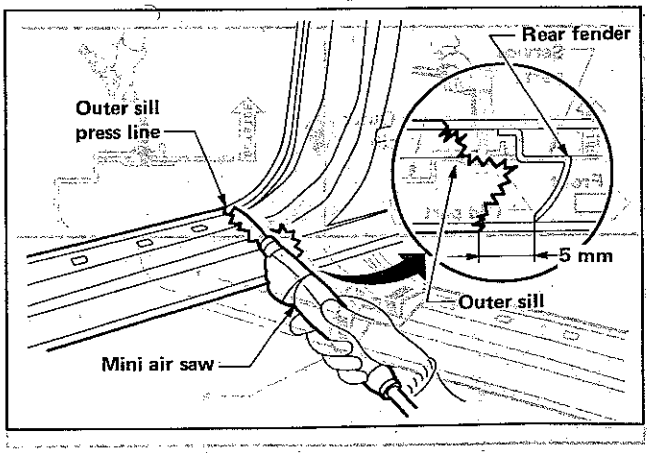
A. Outer sill

REMOVAL NOTES

- Spot cut weld portion only (e) from outside. Do not drill out mating panel.



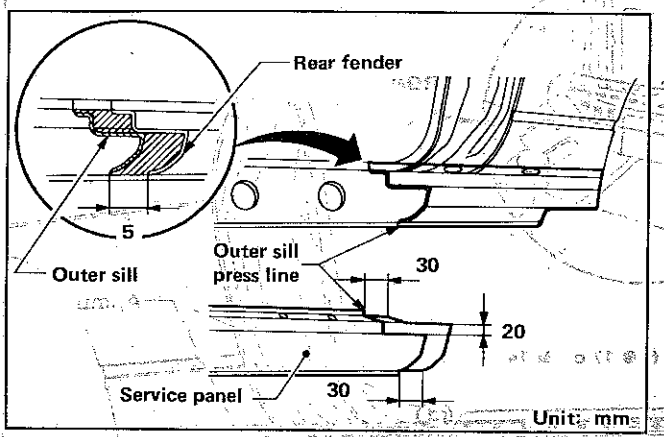
- Spot cut outer sill along press line as shown in figure.



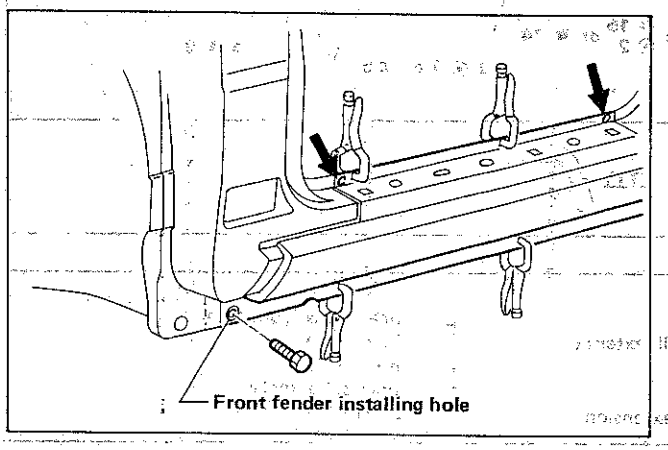
OUTER SILL

INSTALLATION NOTES

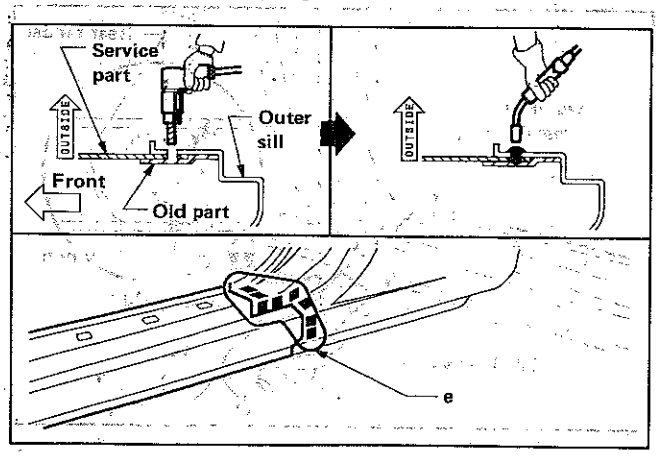
- Accurately cut off service part as shown in figure.



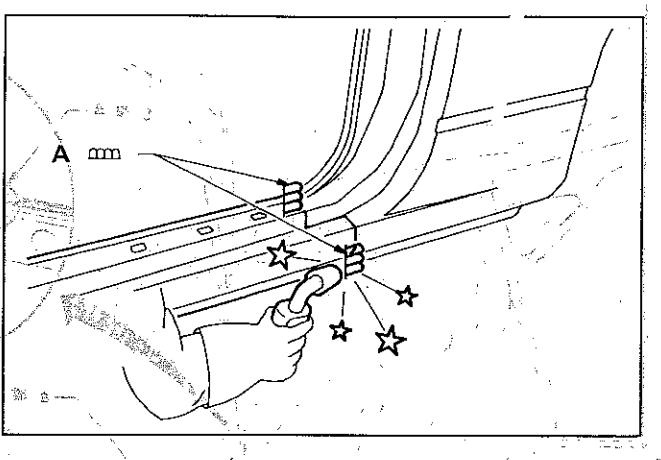
- Install service part by aligning it with front fender at holes.



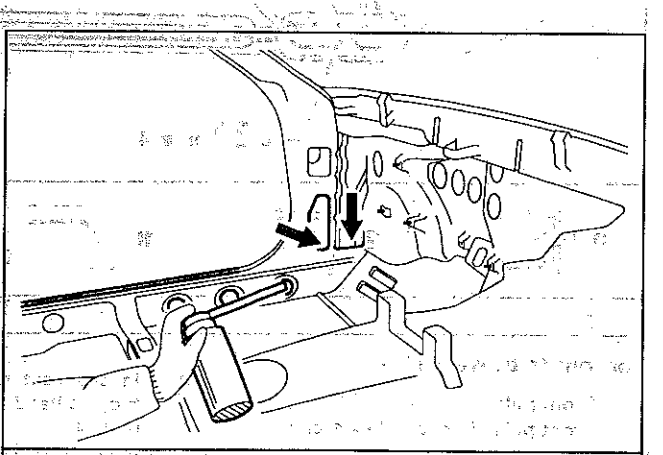
- Drill MIG plug weld holes, with a flat drill, in portions (e) using spot cut holes in mating panel, and MIG plug weld them.

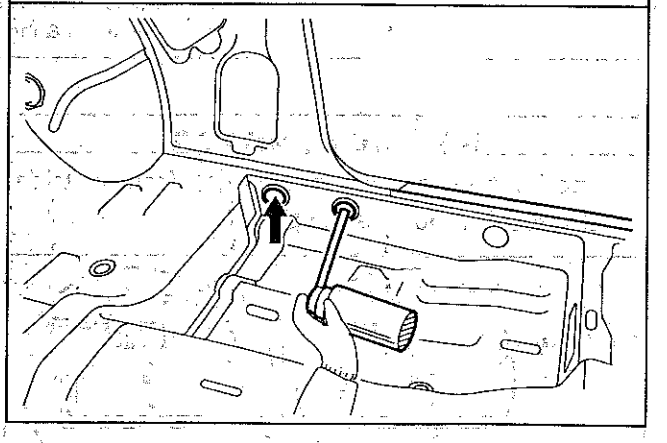


- MIG seam weld portions (A). Finish welded parts with a sander.



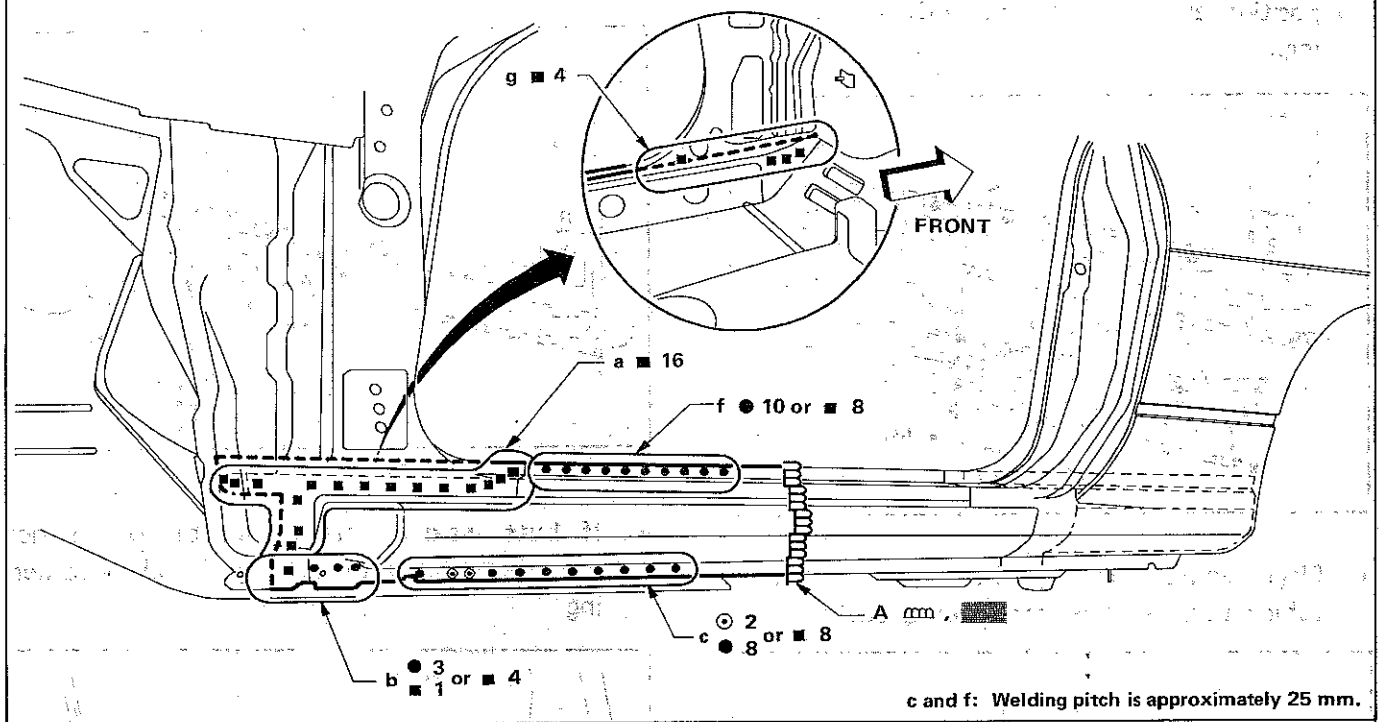
- After welding, apply an anti-corrosive agent to inside of outer sill.

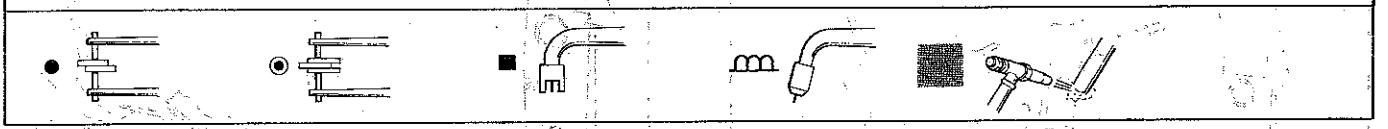




OUTER SILL (Partial Replacement)

Service Joint



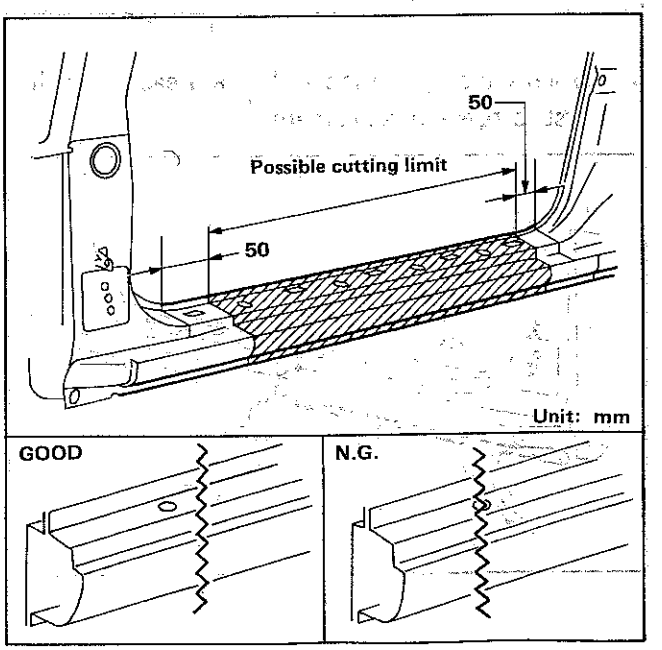


Portions to be welded

a. Front pillar
   Front pillar & inner sill extension
b. Inner sill extension
   Front pillar & inner sill extension
c. Inner sill
   Inner sill extension
   Inner sill & inner sill extension
f. Inner sill
g. Inner sill extension
A. Outer sill

REMOVAL NOTE

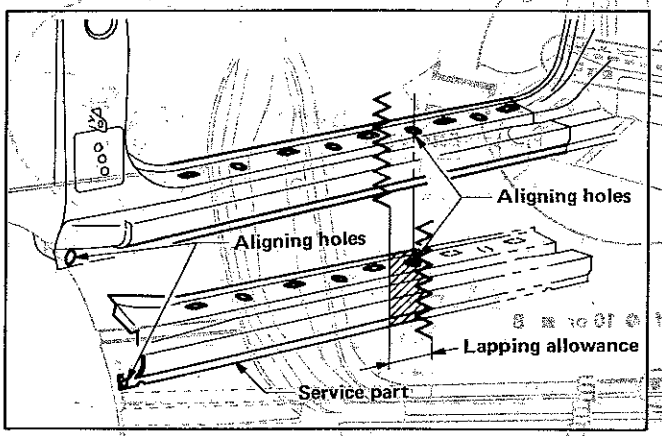
- Determine butting position, avoiding outer sill brace and holes.



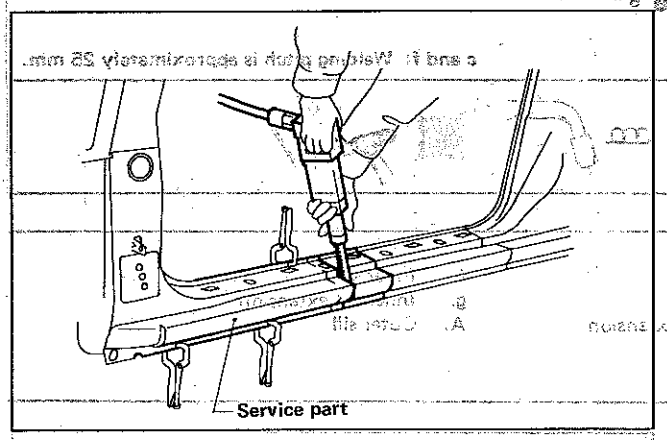
OUTER SILL (Partial Replacement)

INSTALLATION NOTES

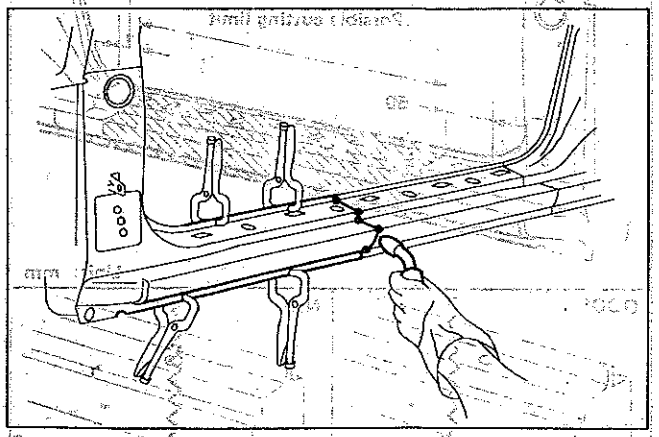
- Cut off service part, leaving its hole in same position as that of vehicle body for positioning.



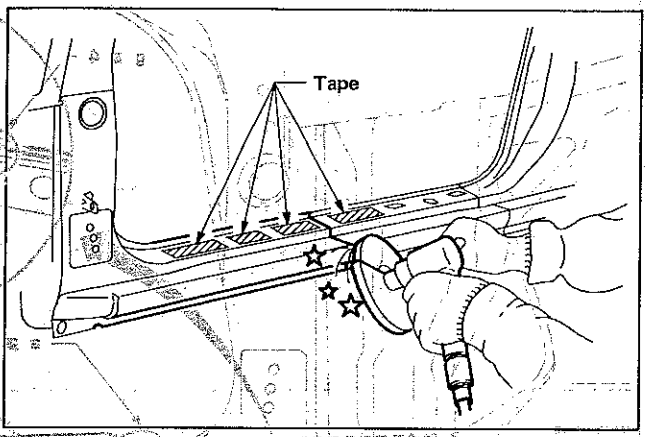
- Place service part, align its hole with that of vehicle body, and perform overlap cutting.



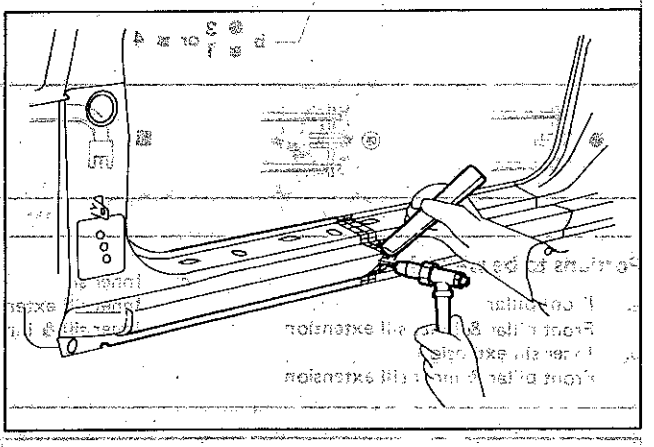
- When welding, temporarily weld each press line first to prevent movement.



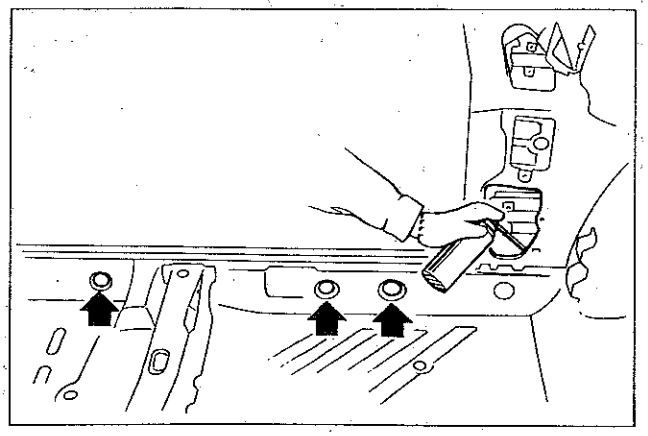
- When dressing butt weld part, cover up holes in upper part of outer sill with tape to prevent chips from entering.



- If butt welded part at portion (A) is not smooth enough after sanding, finish by soldering.

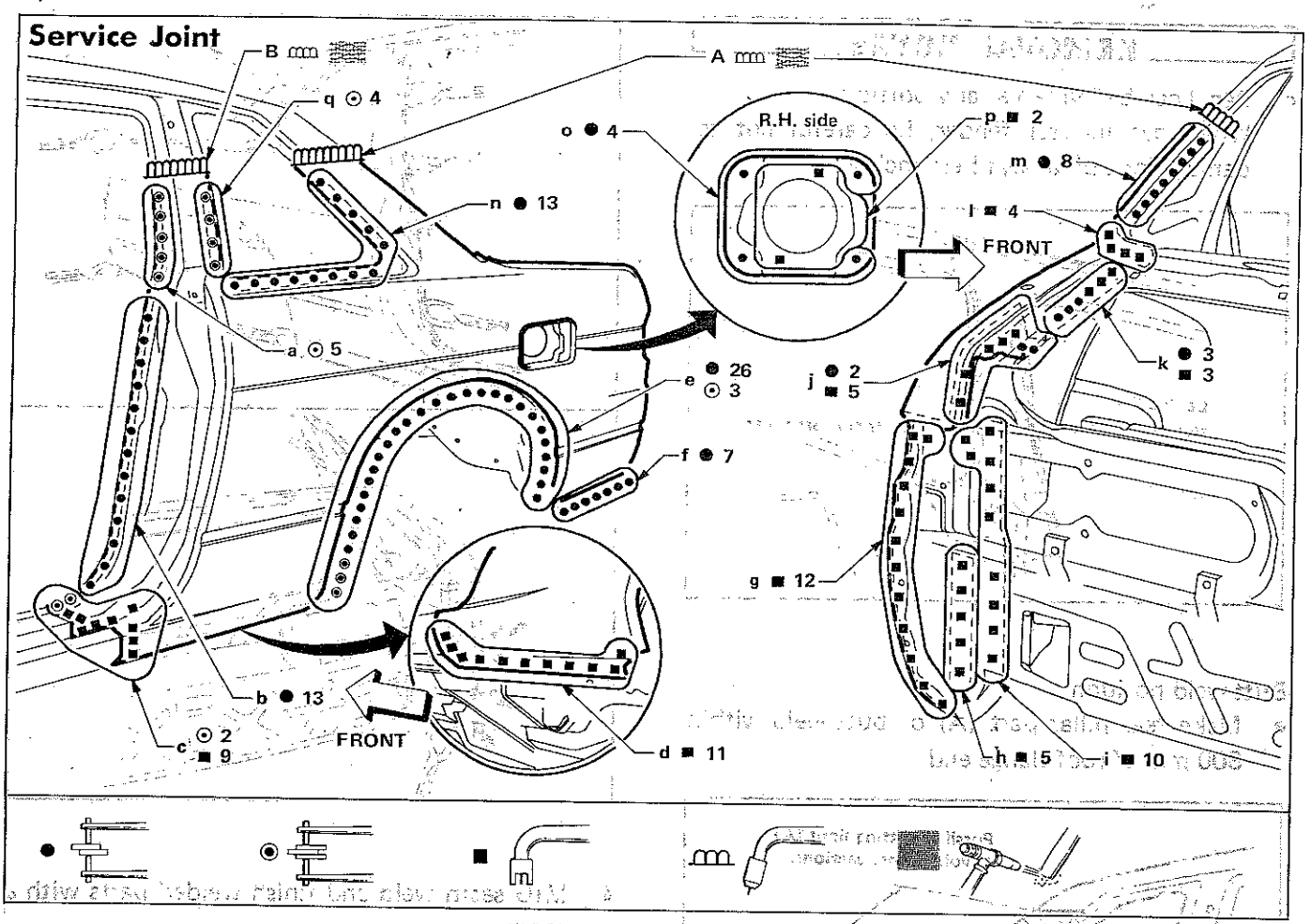


- Be sure to treat inside of outer sill with an anti-corrosive agent.



REAR FENDER

COUPE



Portions to be welded

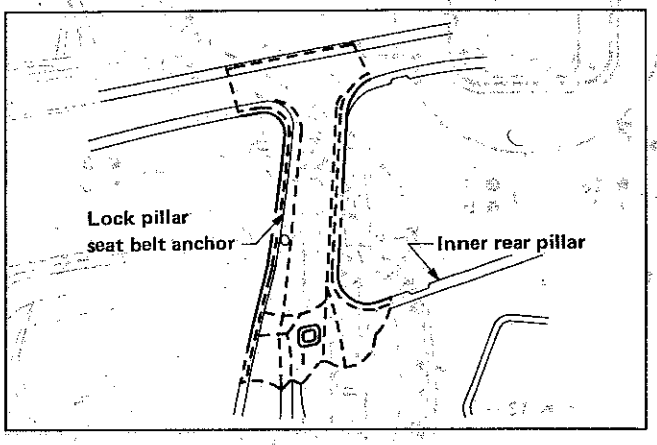
A. Rear fender
B. Rear fender
a. Inner rear pillar & lock pillar seat belt anchor
b. Inner rear pillar
c. Outer sill
Outer sill & inner sill
d. Outer sill
Outer sill & outer rear wheelhouse
e. Outer rear wheelhouse
Outer sill & outer rear wheelhouse
f. Rear floor side
g. Rear combination lamp base
Rear combination lamp base & rear fender corner
h. Rear floor side
i. Rear panel
Rear fender corner
Rear panel & rear fender corner
J. Rear fender corner
K. Inner rear pillar
Inner rear pillar & parcel shelf with rear waist
L. Inner rear pillar & parcel shelf with rear waist
M. Inner rear pillar
N. Inner rear pillar
O. Fuel filler lid base
P. Outer rear wheelhouse
(Not welded to rear fender)
q. Inner rear pillar & lock pillar seat belt anchor

REAR FENDER

COUPE

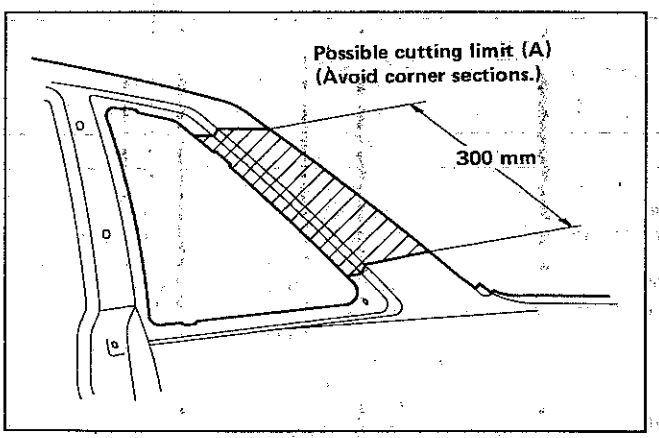
REMOVAL NOTES

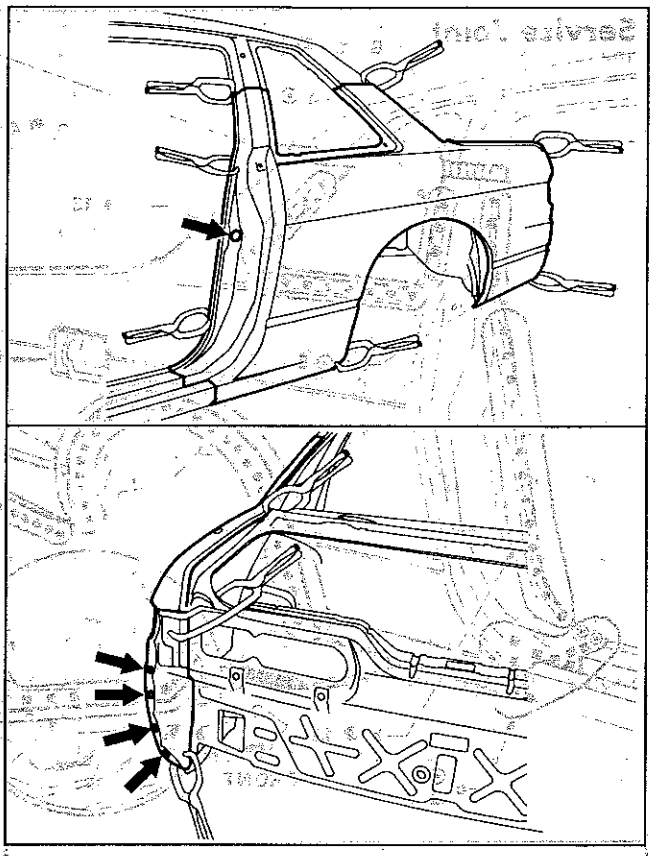
- Panel can be jointed at any portion.
  When cutting rear fender, be careful not to damage lock pillar seat belt anchor.



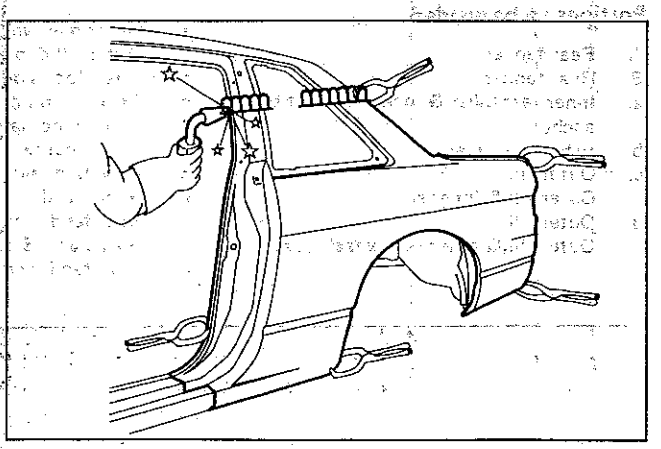
Butt weld position

- Make rear pillar part (A) of butt weld within 300 mm of roof flange end.





- MIG seam weld and finish welded parts with a sander.



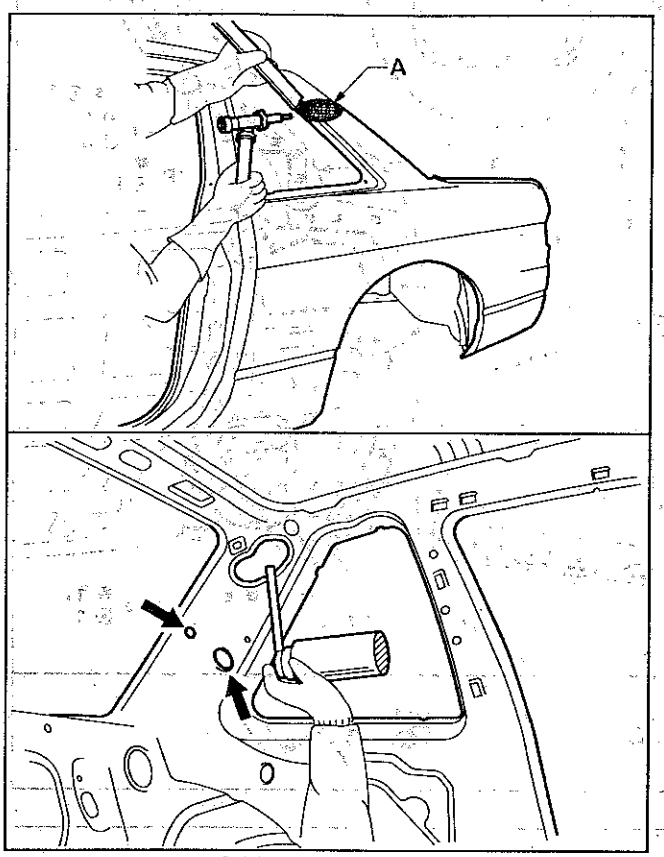
INSTALLATION NOTES

- When installing service part, set rear panel and rear combination lamp base in place simultaneously, and check various dimensions of part locations according to "BODY ALIGNMENT" drawing. Install door and trunk lid, and check clearances, grades and parallelism.

REAR FENDER

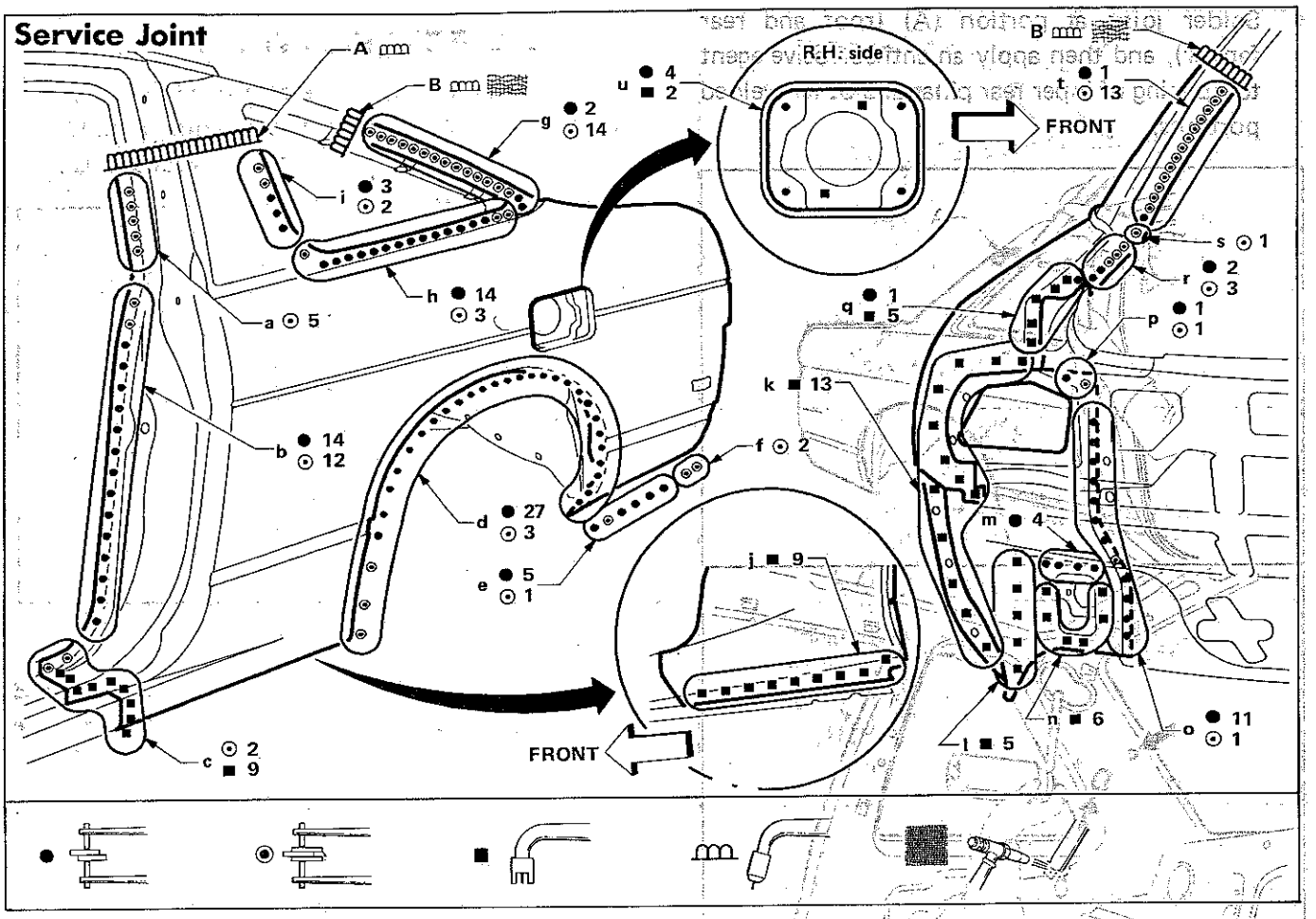
COUPE

- Solder joint at portion (A) (roof and rear fender), and then apply an anti-corrosive agent to opening of inner rear pillar and other welded portions.



REAR FENDER

FAST BACK



Portions to be welded

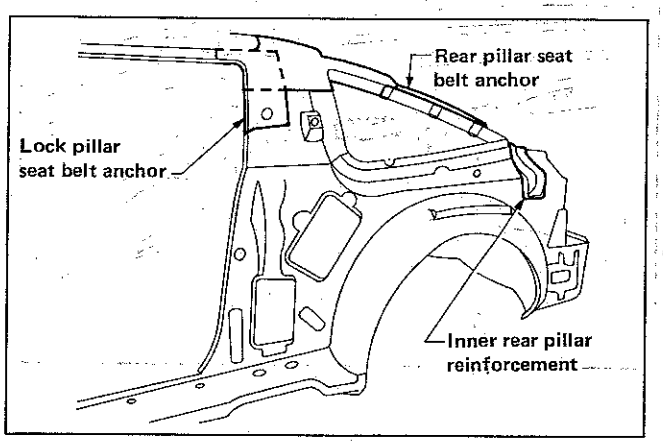
A. Rear fender
B. Rear fender
a. Upper inner pillar & lock pillar seat belt anchor
b. Upper & lower inner pillar
Lower inner pillar
c. Outer sill
Outer sill & inner sill
d. Outer sill & outer rear wheelhouse
Outer rear wheelhouse
e. Outer rear wheelhouse
Outer rear wheelhouse & trunk floor side
Trunk floor side
f. Trunk floor side & rear combination lamp base
g. Upper inner pillar
Upper inner pillar & rear pillar seat belt anchor
h. Lower inner pillar
Upper & lower inner pillar
i. Upper inner pillar
Upper inner pillar & rear roof rail brace
j. Outer sill
Outer sill & outer rear wheelhouse
k. Rear combination lamp base
Rear fender corner & rear combination lamp base
l. Trunk floor side
m. Rear floor rear
n. Rear side member
O. Rear panel
Rear panel & rear floor rear
p. Rear fender corner
Rear fender corner & rear panel
q. Rear fender corner
r. Lower inner pillar
Lower inner pillar & inner rear pillar reinforcement
s. Upper & lower inner pillar
t. Upper inner pillar & inner rear pillar reinforcement
Upper inner pillar
u. Fuel filler lid base
Outer rear wheelhouse

REAR FENDER

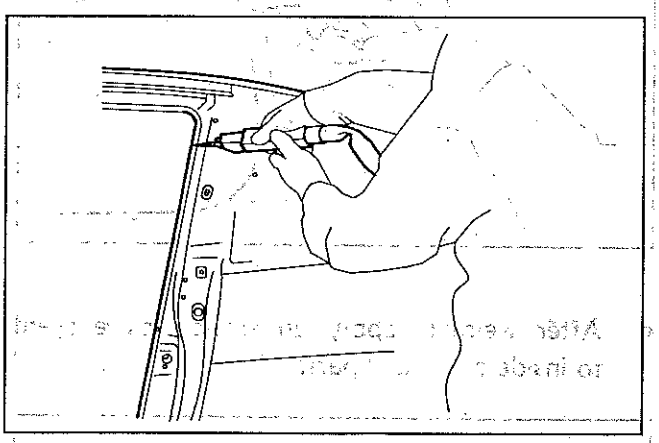
FAST BACK

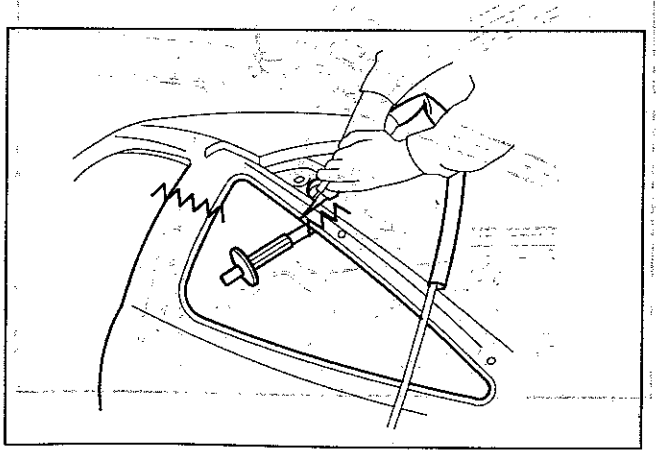
REMOVAL NOTES

- The inside body construction is shown in the figure.

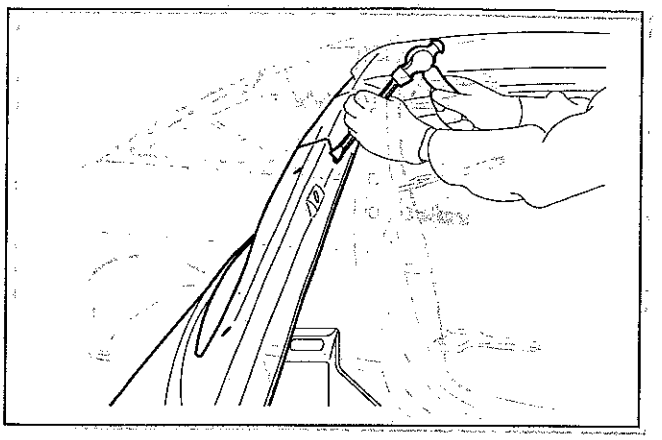


- Cut off rear fender portions (A) and (B) as shown in figure.
  Be careful not to damage lock pillar seat belt anchor and rear pillar seat belt anchor.



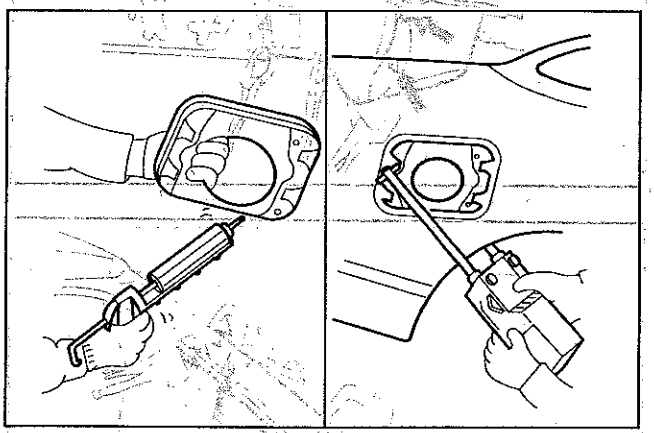


- When cutting portion (B), use a chisel so as not to damage mating parts.

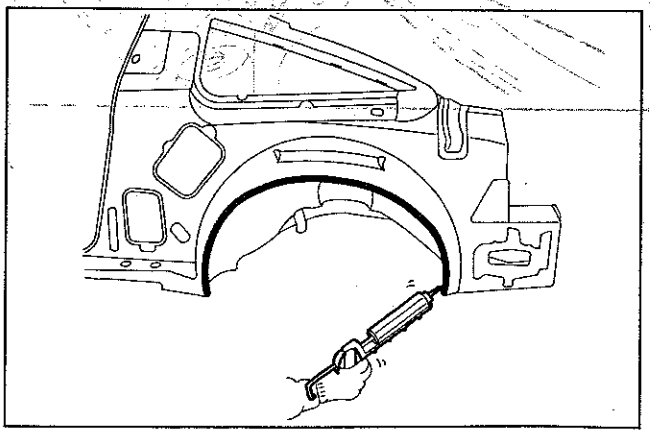


INSTALLATION NOTES

- Before installing rear fender, apply sealant to fuel filler lid base, and spot weld to rear fender.

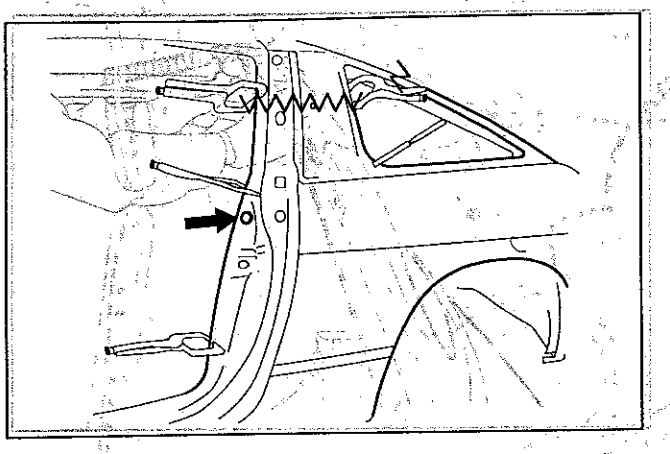


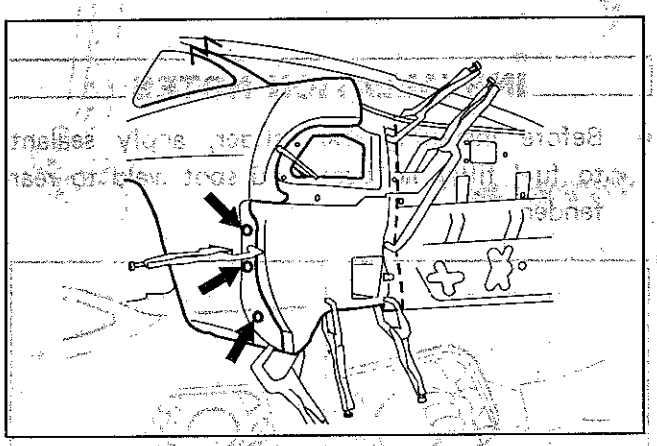
- Apply sealant to wheel arch.

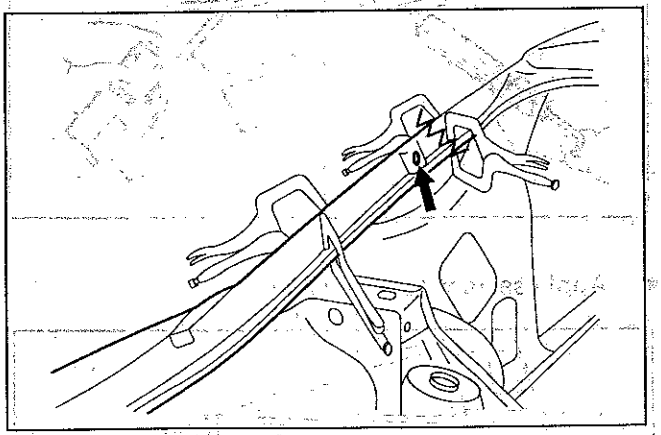


REAR FENDER

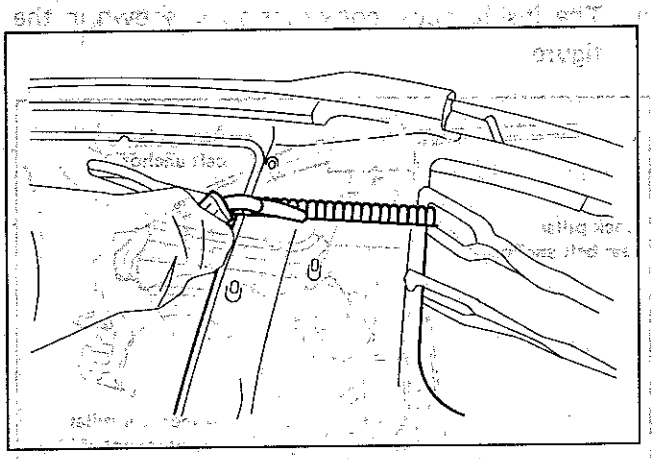
- When installing service part, be sure to align locating holes.



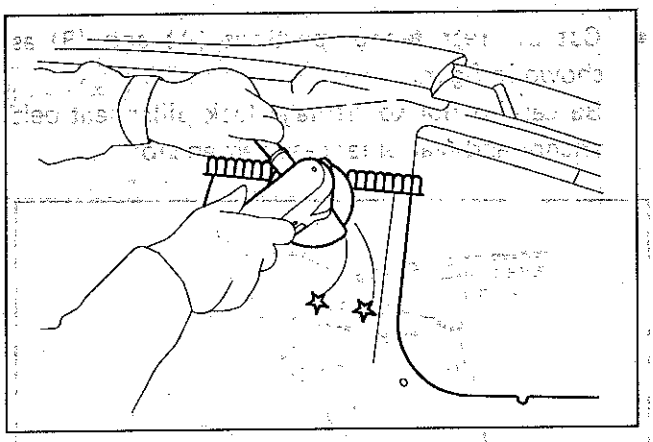




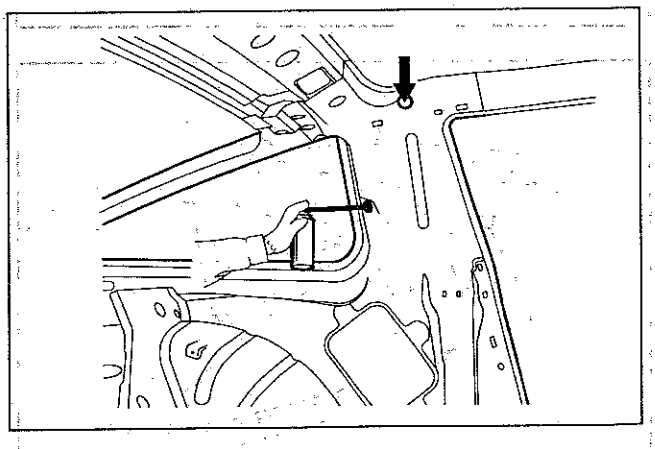
- Weld part to be butt welded up to flange end portion.



- Dress welded part with a sander.



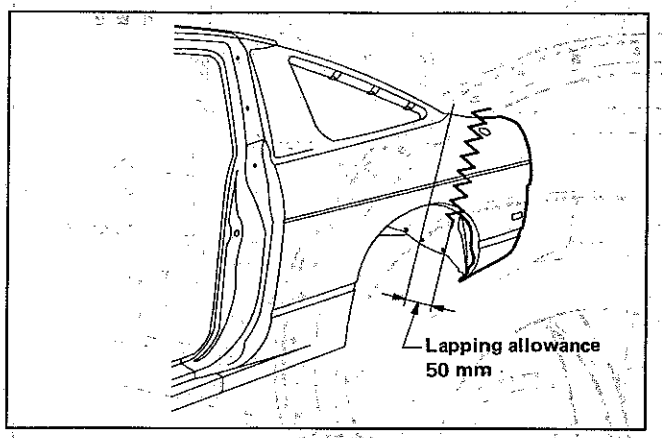
- After welding, apply an anti-corrosive agent to inside of welded part.



REAR FENDER (Partial Replacement)

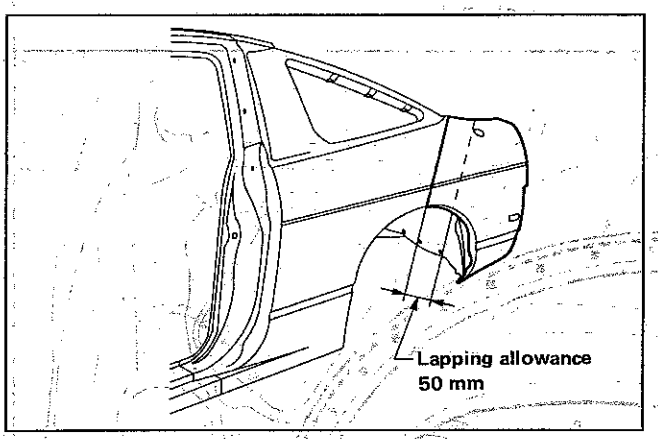
REMOVAL NOTE

- Cut off damaged portion with lap allowance of about 50 mm.

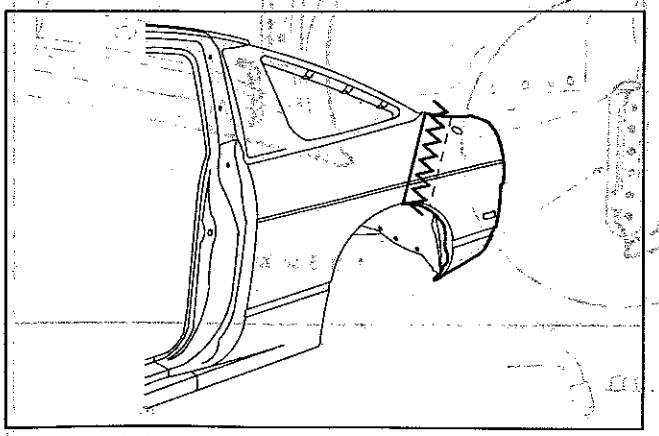


INSTALLATION NOTES

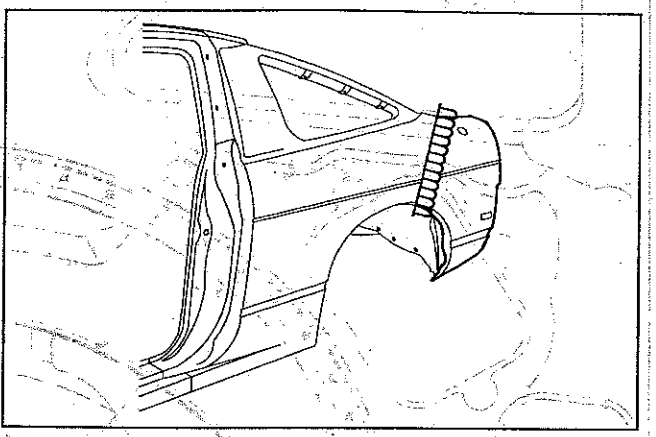
- Cut off service part leaving 50 mm lap allowance with mating part.



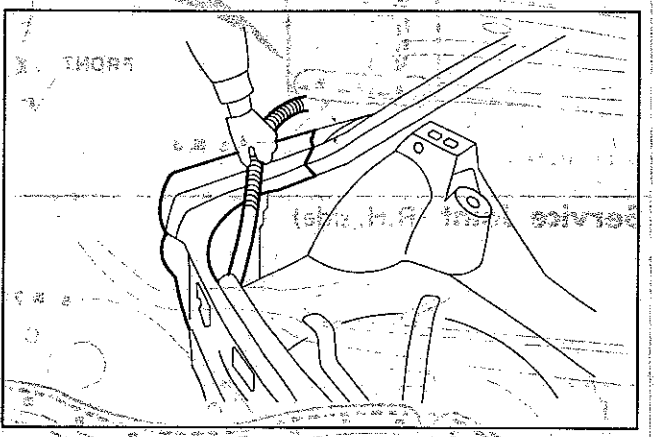
- Install service part in place with vise clamps, and cut off in middle of lapped part.



- MIG seam weld butt ends.



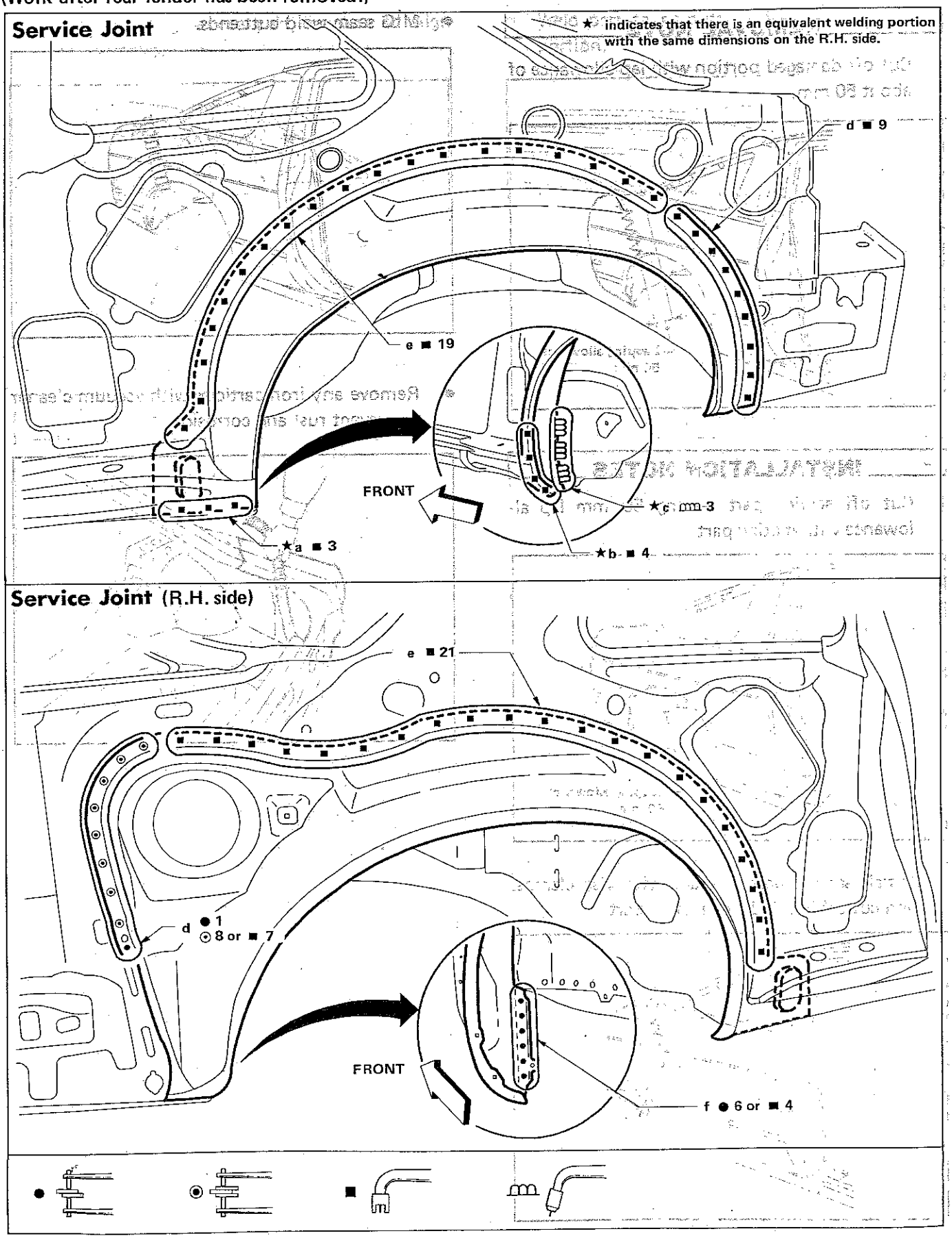
- Remove any iron particles with vacuum cleaner to prevent rust and corrosion.



OUTER REAR WHEELHOUSE

COUPE
FAST BACK

(Work after rear fender has been removed.)



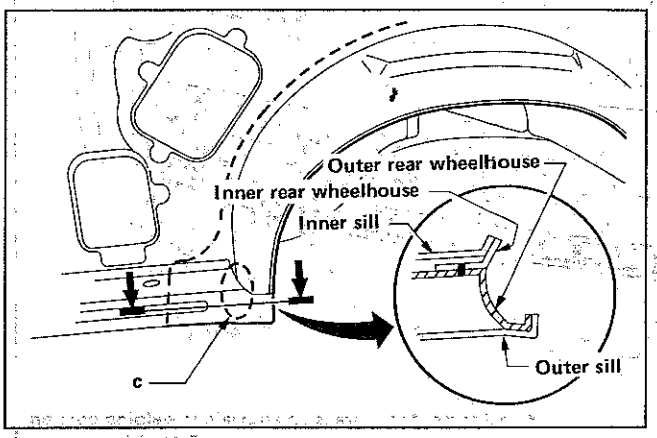
OUTER REAR WHEELHOUSE

Portions to be welded

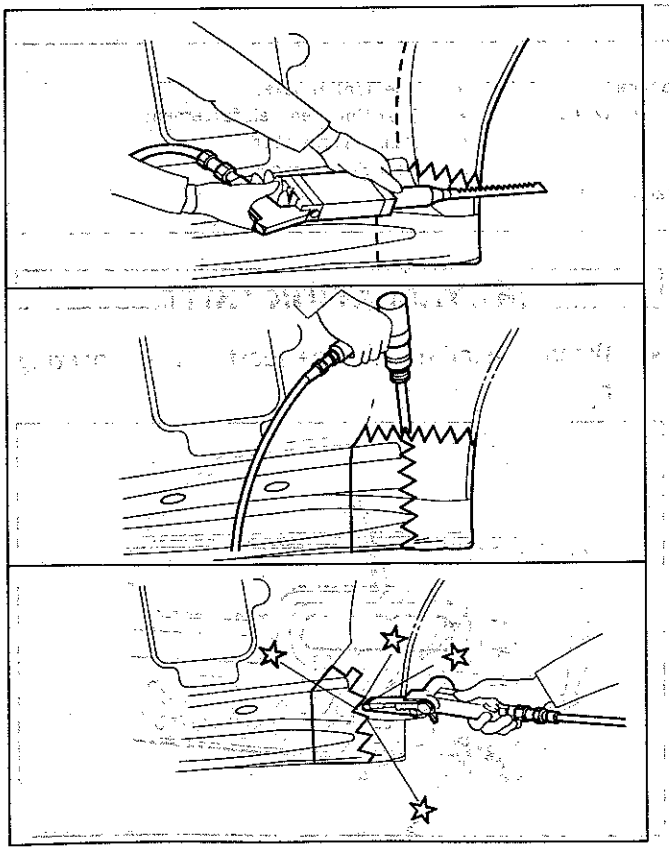
a. Outer sill & inner sill
b. Outer sill
c. Inner rear wheelhouse
d. Inner rear wheelhouse
Inner rear wheelhouse & inner rear pillar
e. Inner rear pillar & inner rear wheel house
Inner rear wheelhouse
f. Trunk floor side

REMOVAL NOTES

Welds at portion (c) are not accessible as they are shielded in body sill. So take following steps to cut it.

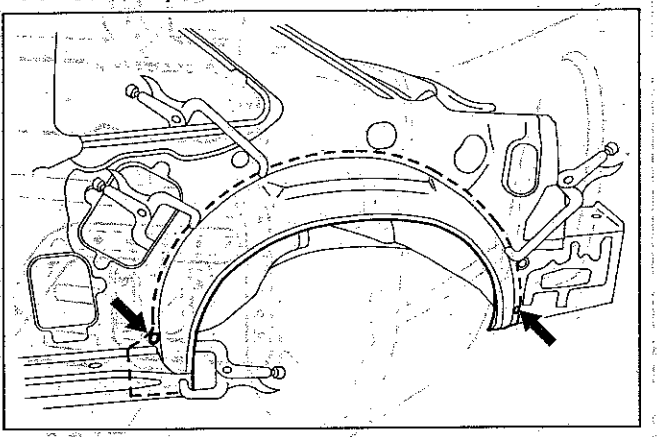


1. Cut off outer rear wheelhouse as shown in figure. Be careful not to damage outer sill.
2. Cut welds with a belt sander.

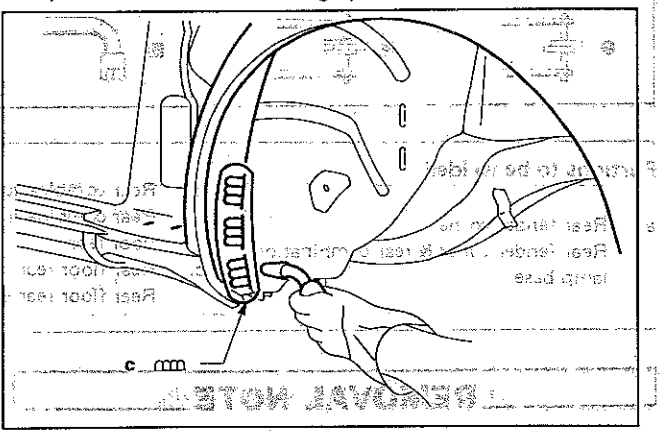


INSTALLATION NOTES

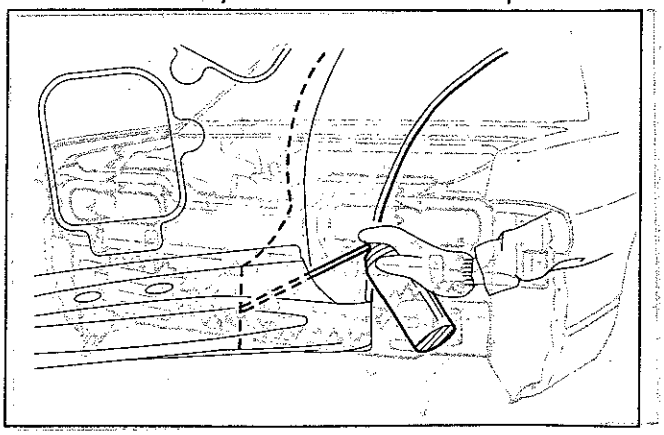
- Install service part with locating holes aligned accurately.



- At portion (c), MIG point weld (3 points) joint between inner and outer rear wheelhouse panels instead of using spot welds.

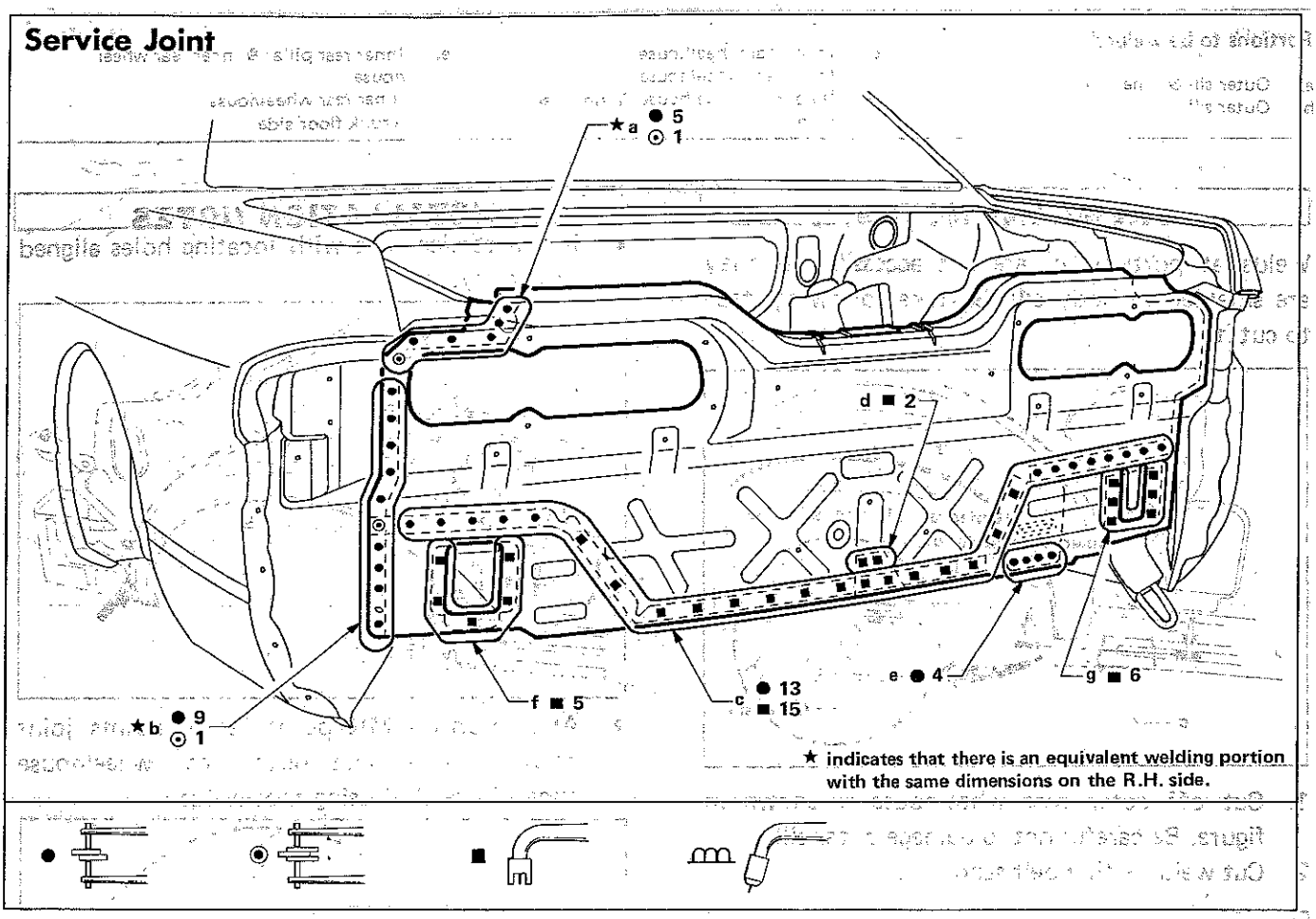


- After welding, apply an anti-corrosive agent to inside of body sill and other welded parts.



REAR PANEL

COUPE



Portions to be welded

a. Rear fender corner
Rear fender coner & rear combination lamp base

b. Rear combination lamp base
Rear combination lamp base & rear floor rear

c. Rear floor rear
Rear floor rear & fuel tank bracket

d. Fuel tank bracket

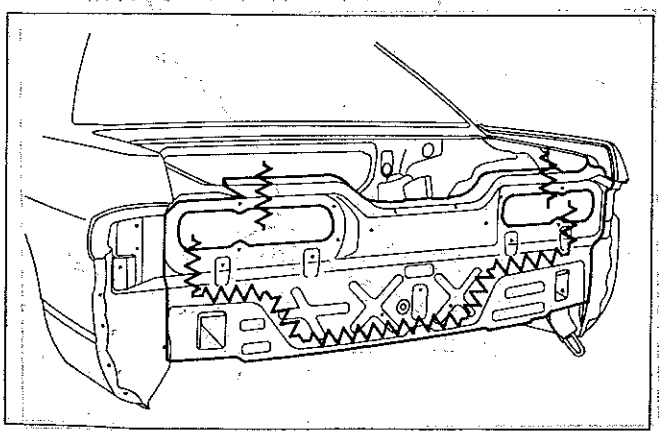
e. Rear floor rear reinforcement

f. Rear side member

g. Rear side member

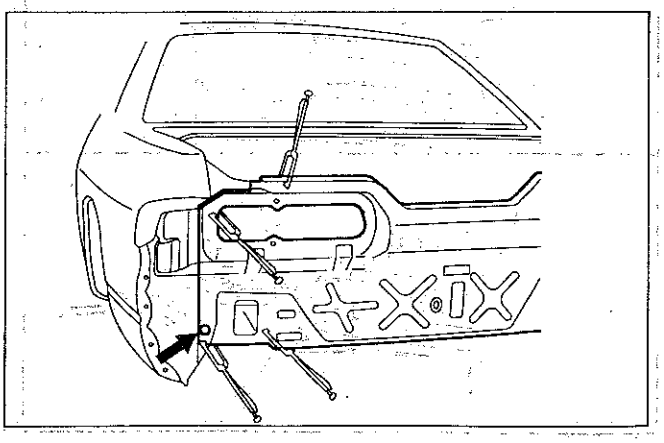
REMOVAL NOTE

- Cut off damaged portion so that welded part can be easily spot cut later.



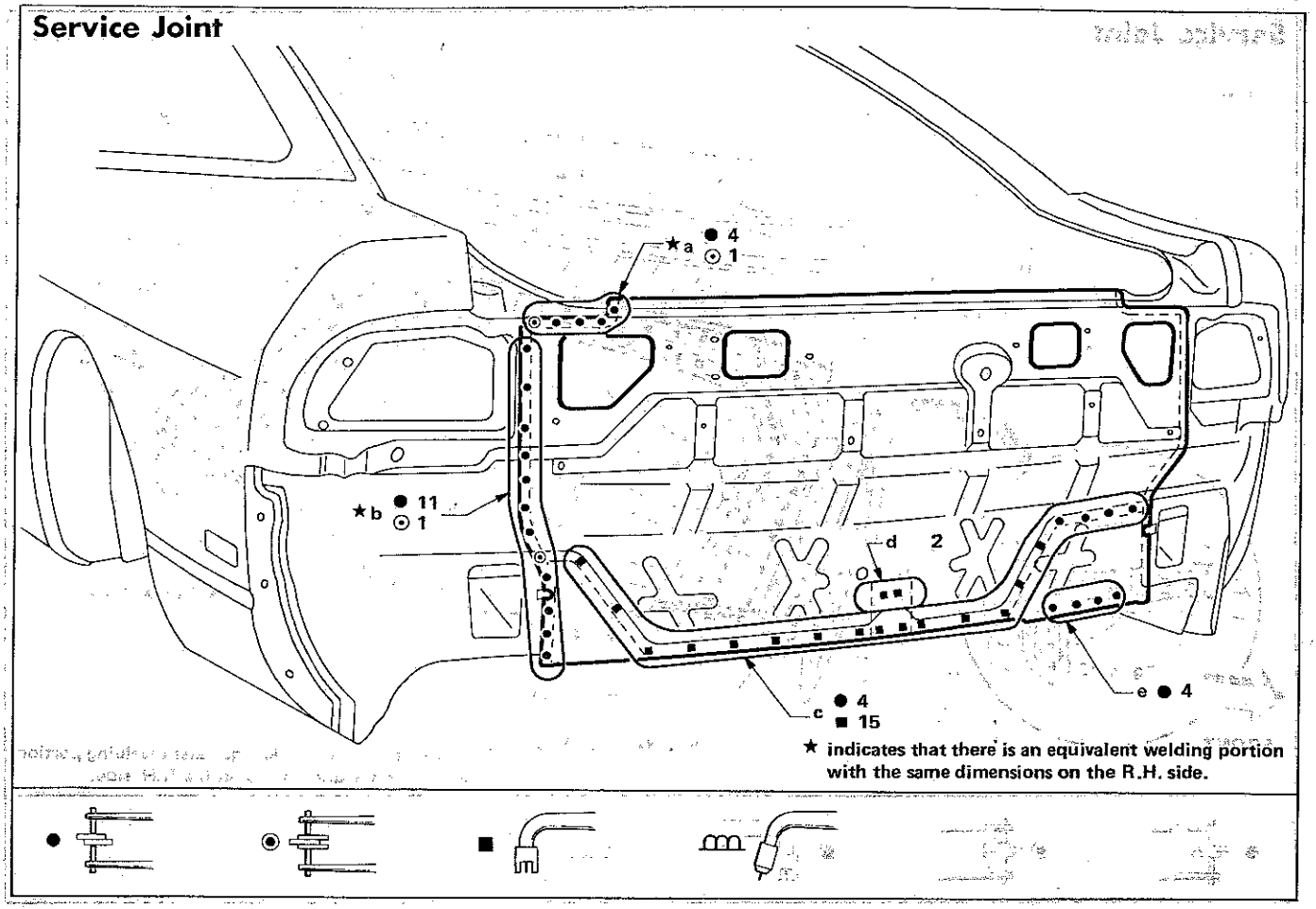
INSTALLATION NOTE

- When installing service part, align locating holes.



REAR PANEL

FAST-BACK

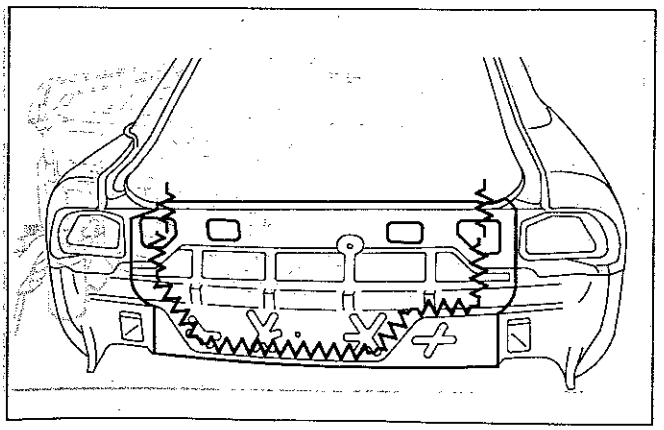


Portions to be welded

a. Rear fender corner
   Rear fender coner & rear combination lamp base
b. Rear combination lamp base
   Rear combination lamp base & rear floor rear
c. Rear floor rear
   Rear floor rear & fuel tank bracket
d. Fuel tank bracket
e. Rear floor rear reinforcement

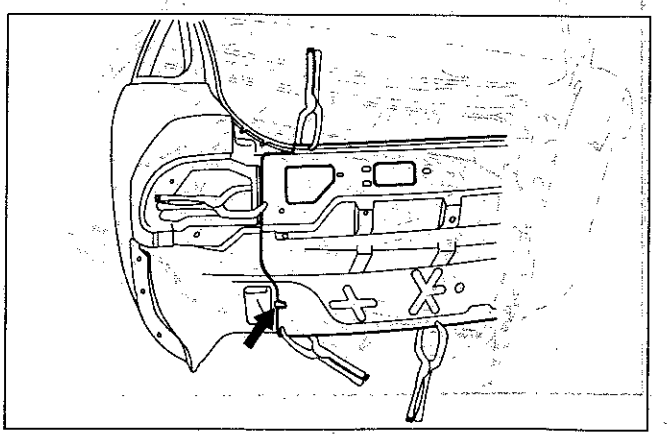
REMOVAL NOTE

- Cut off damaged portion so that welded part can be easily spot cut later.



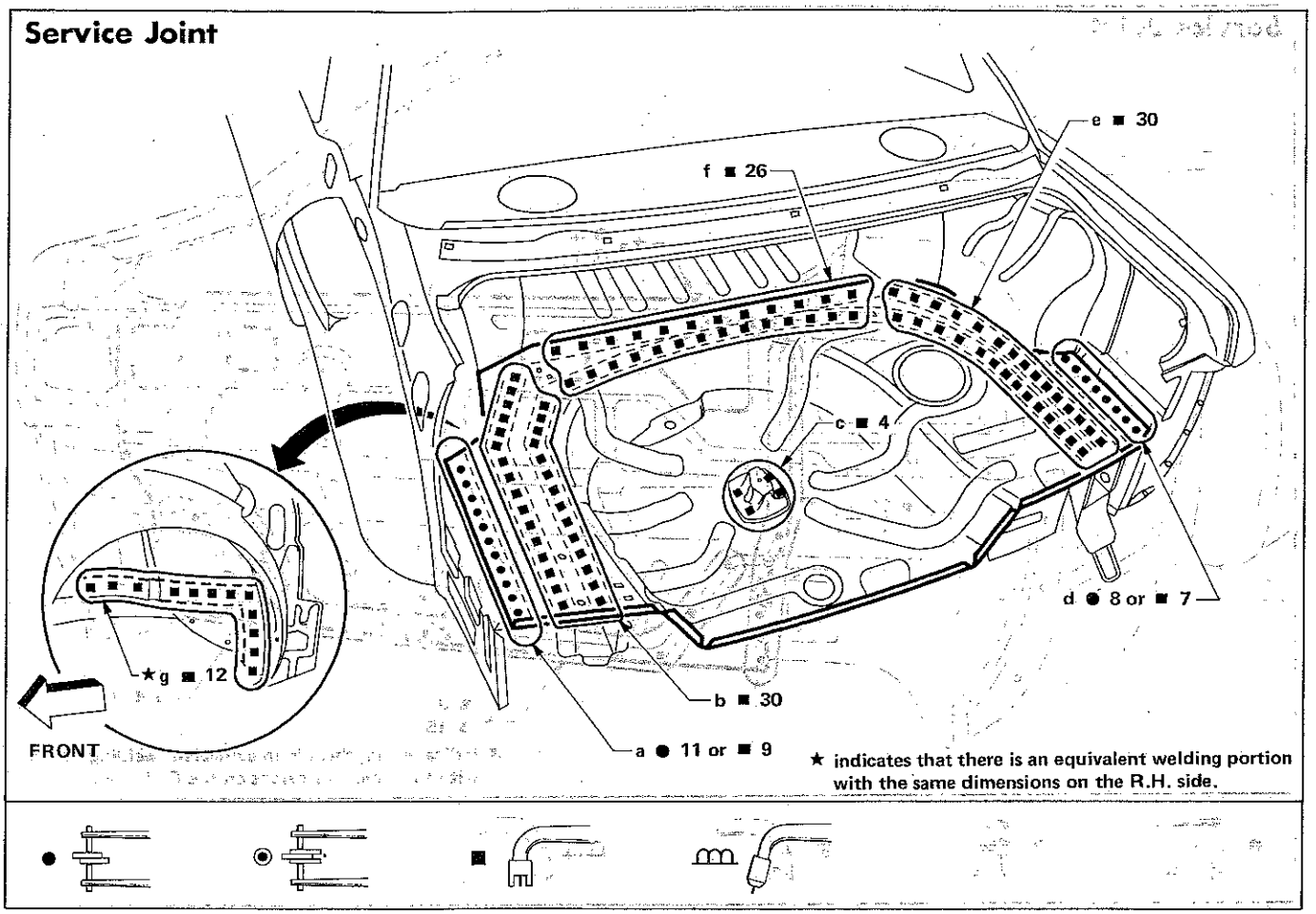
INSTALLATION NOTE

- When installing service part, align locating holes.



REAR FLOOR REAR

(Work after rear panel has been removed.)

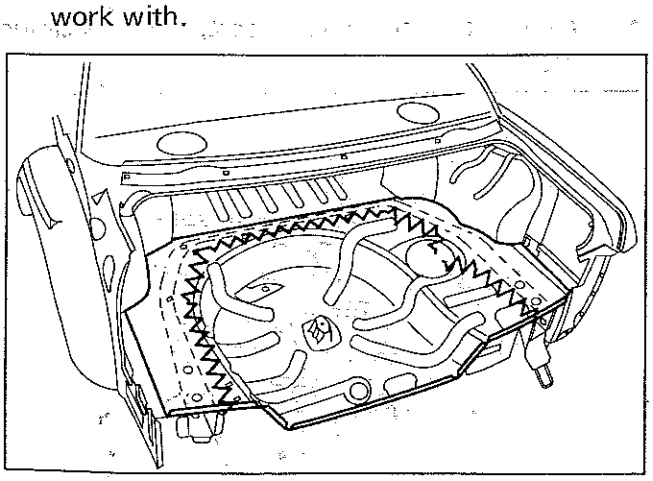


Portions to be welded

a. Rear floor side
b. Rear side member
c. Spare tire clamp bracket
d. Rear floor side
e. Rear side member
f. Rear crossmember center
g. Inner rear wheelhouse
Rear floor side

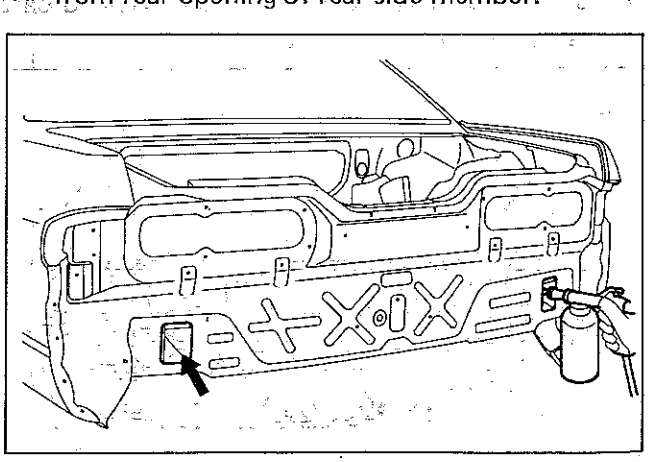
REMOVAL NOTE

- Cut off damaged portion so that it is easy to work with.



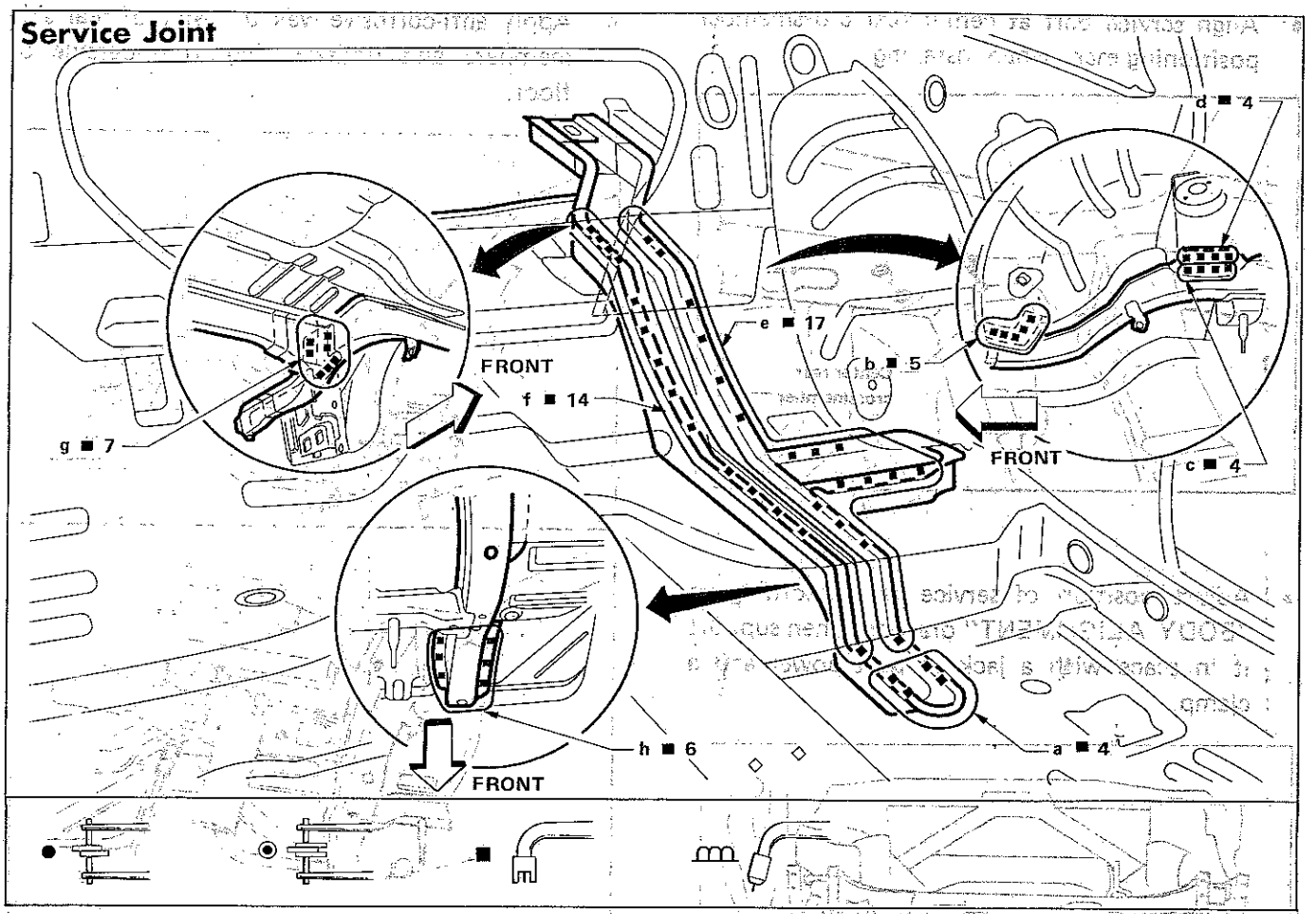
INSTALLATION NOTE

- After welding, spray in an anti-corrosive agent from rear opening of rear side member.



REAR SIDE MEMBER

(Work after rear panel and rear floor rear have been removed.)

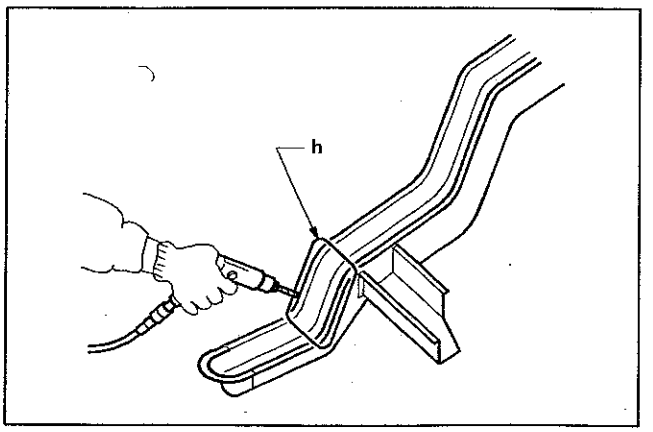


Portions to be welded

a. Front floor
b. Inner rear wheelhouse
c. Inner rear wheelhouse
d. Inner rear wheel house & rear floor front
e. Rear floor front
f. Rear floor front
g. Center rear crossmember
h. Rear floor extension

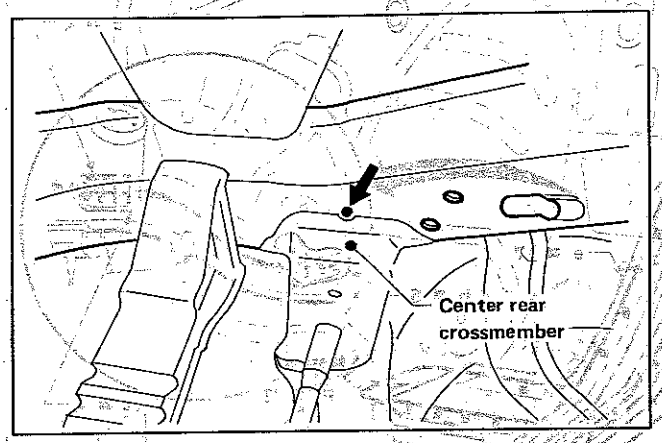
INSTALLATION NOTES

- Drill MIG plug weld holes in service part portion (h).

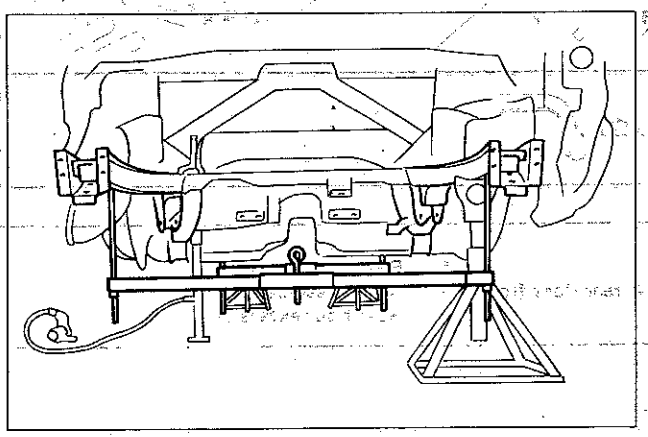


REAR SIDE MEMBER

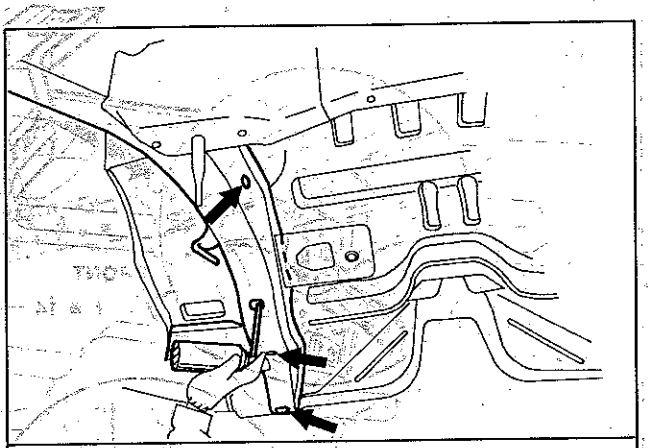
- Align service part at center rear crossmember positioning mark when installing.

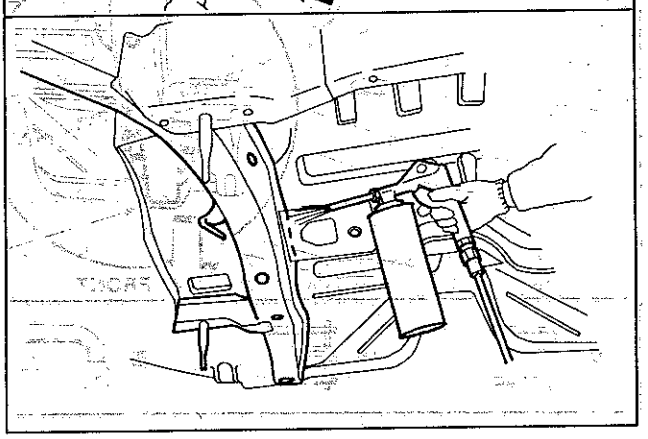


- Adjust position of service part according to "BODY ALIGNMENT" drawing. Then support it in place with a jack or port power and a clamp.

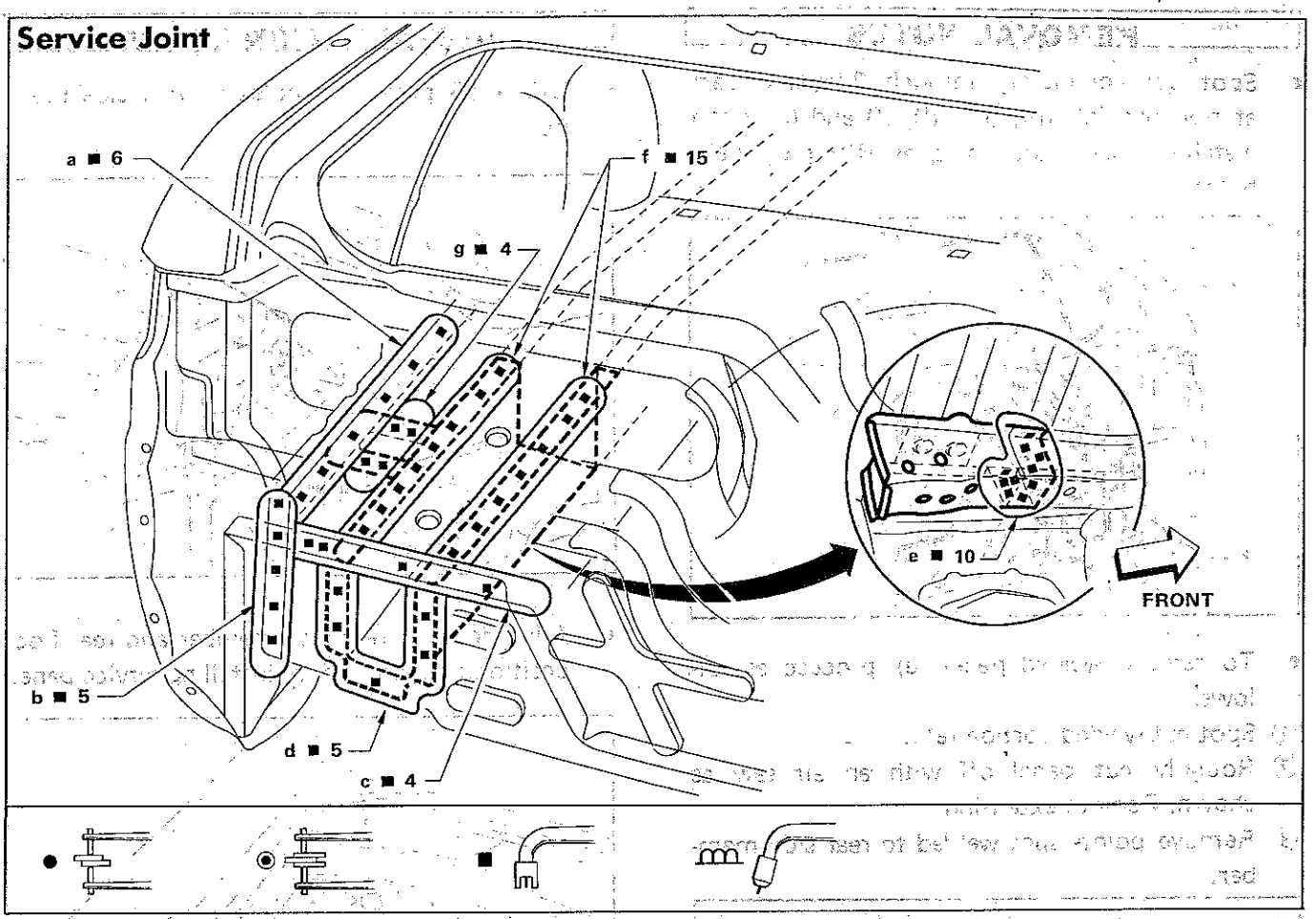


- Apply anti-corrosive wax to inside of rear side members and undercoating to underside of floor.





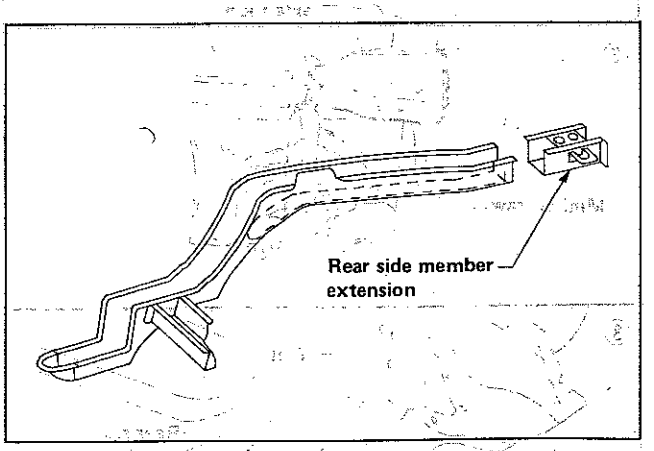
REAR SIDE MEMBER EXTENSION



Portions to be welded

a. Rear floor side
b. Rear combination base
Rear combination base & rear floor rear
c. Rear floor rear
d. Rear side member
e. Rear side member
f. Rear floor rear
g. Rear floor rear

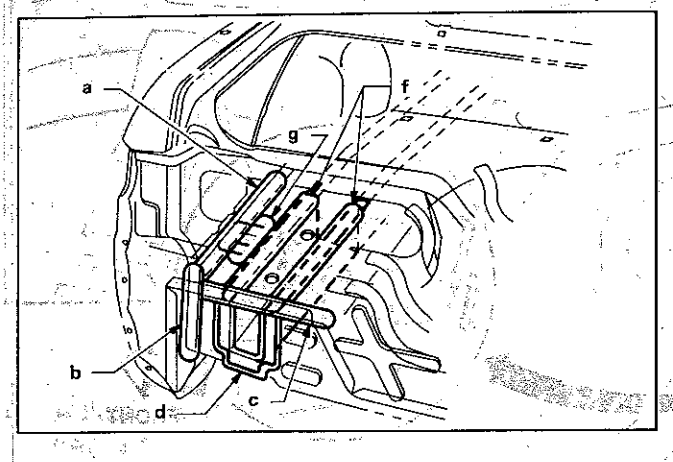
- Rear side member service parts are available as an assembly and two single parts. This section gives replacement procedures for rear side member extension.



REAR SIDE MEMBER EXTENSION

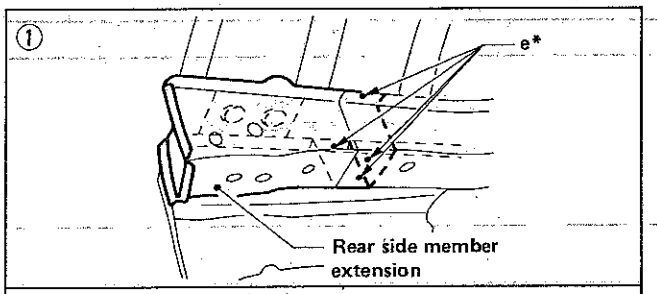
REMOVAL NOTES

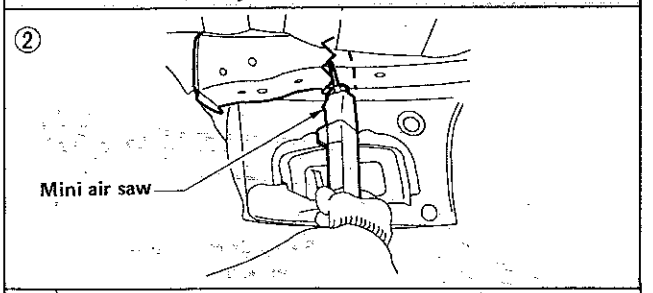
- Spot cut completely through 2-layered part at portions (a), (b), (c), (d), (f) and (g) when installing, use those holes, as MIG plug weld holes.

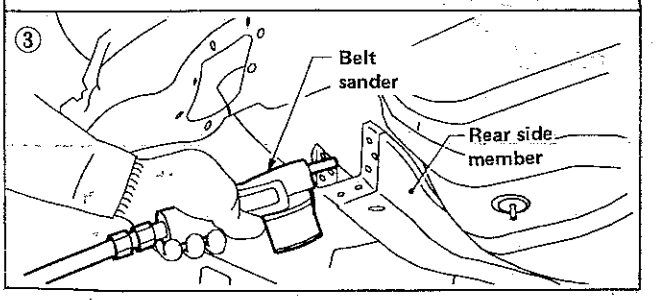


- To remove welded panel (e), proceed as follows:

① Spot cut welded portion (e*).
② Roughly cut panel off with an air saw as shown. Remove extension.
③ Remove points spot welded to rear side member.

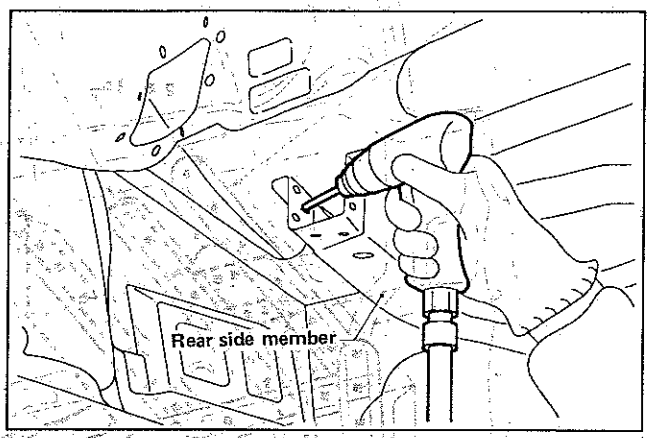




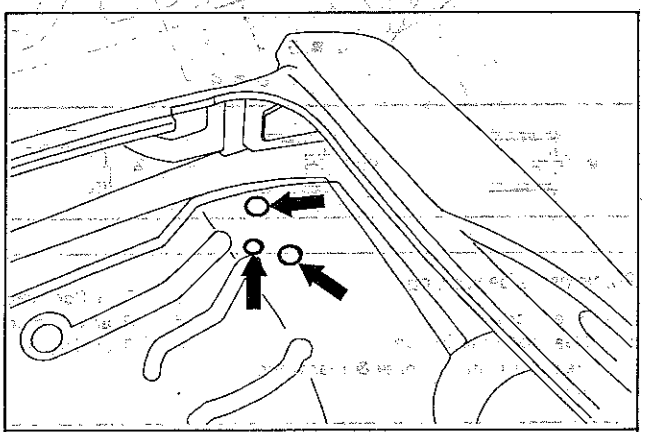


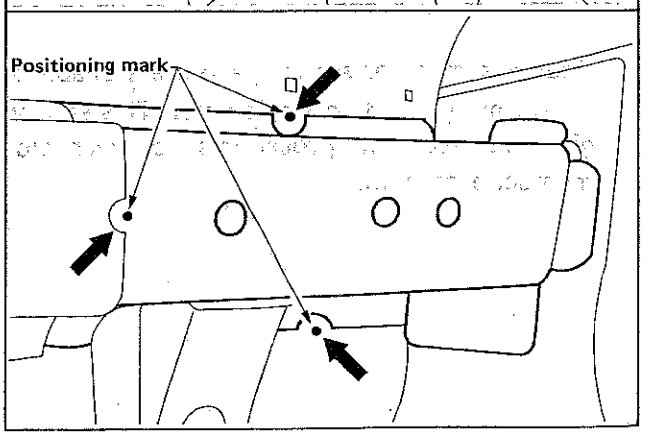
INSTALLATION NOTES

- Drill MIG plug weld holes on rear side member.



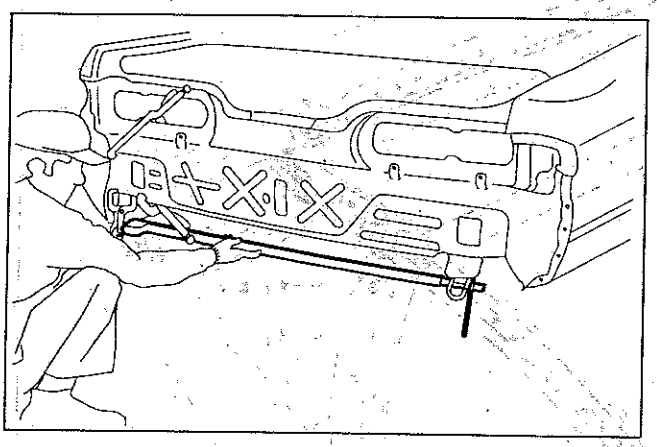
- Align holes to rear side member and rear floor positioning mark before installing service panel.



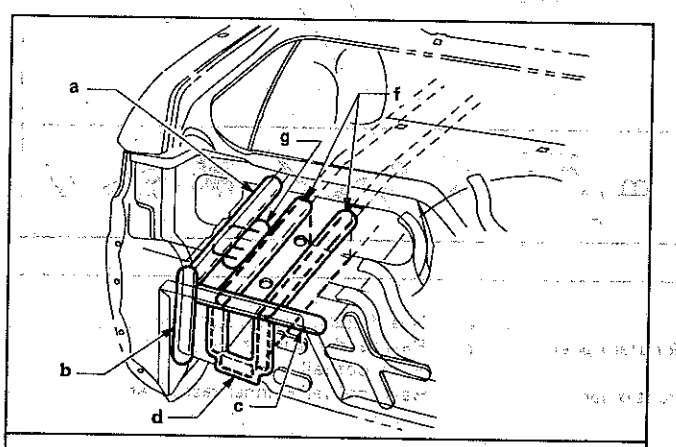


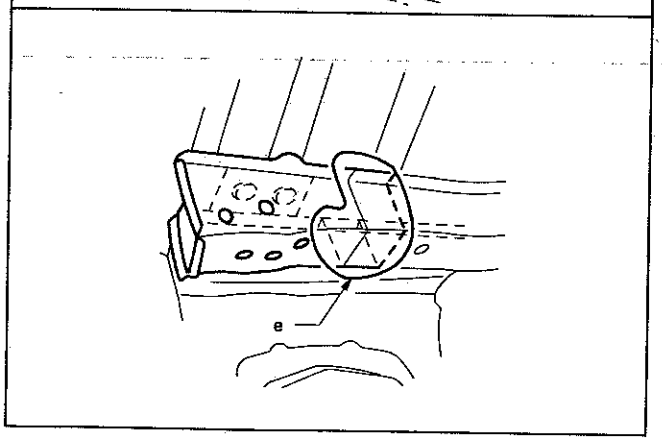
REAR SIDE MEMBER EXTENSION

- Measure dimensions and properly position service part according to BODY ALIGNMENT" drawing.

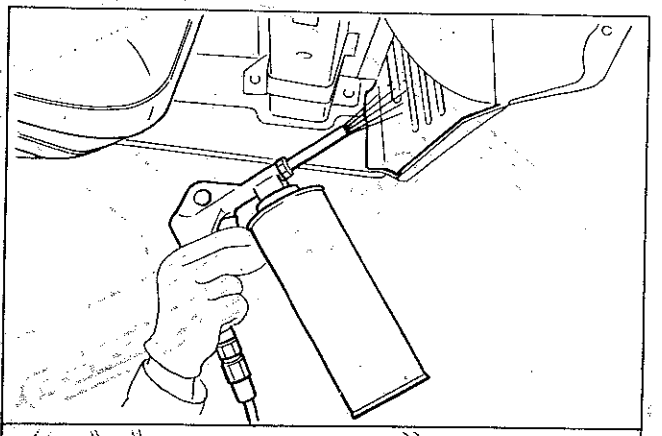


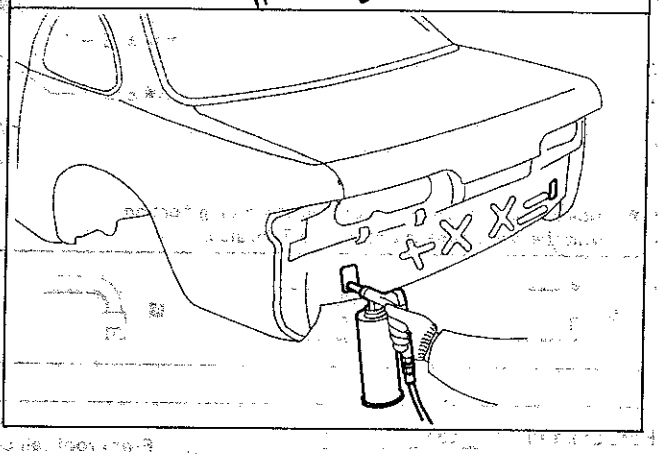
- MIG plug weld points (a), (b), (c), (d), (e), (f) and (g).





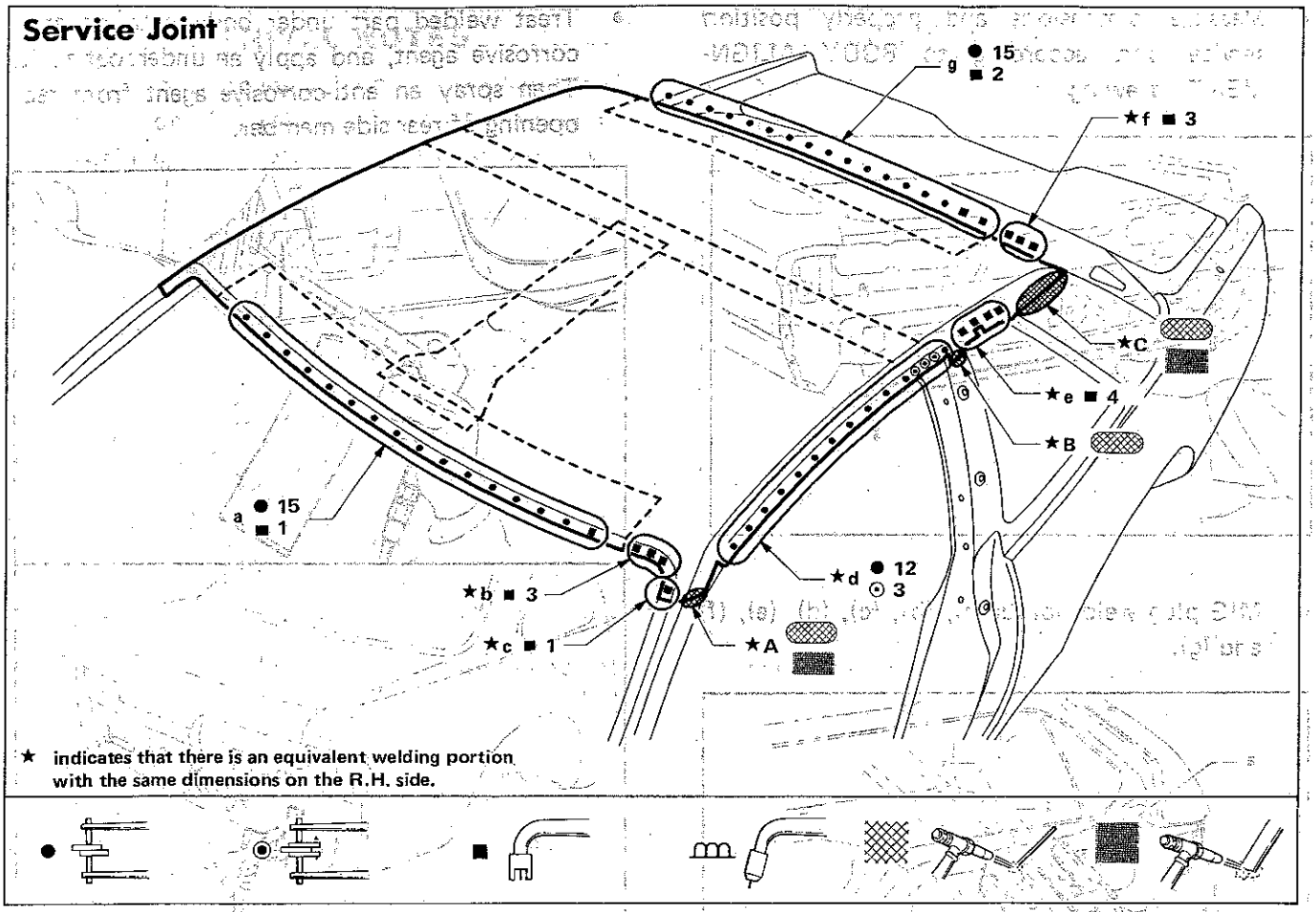
- Treat welded part under body with an anti-corrosive agent, and apply an undercoat to it. Then spray an anti-corrosive agent from rear opening of rear side member.





ROOF PANEL

COUPE

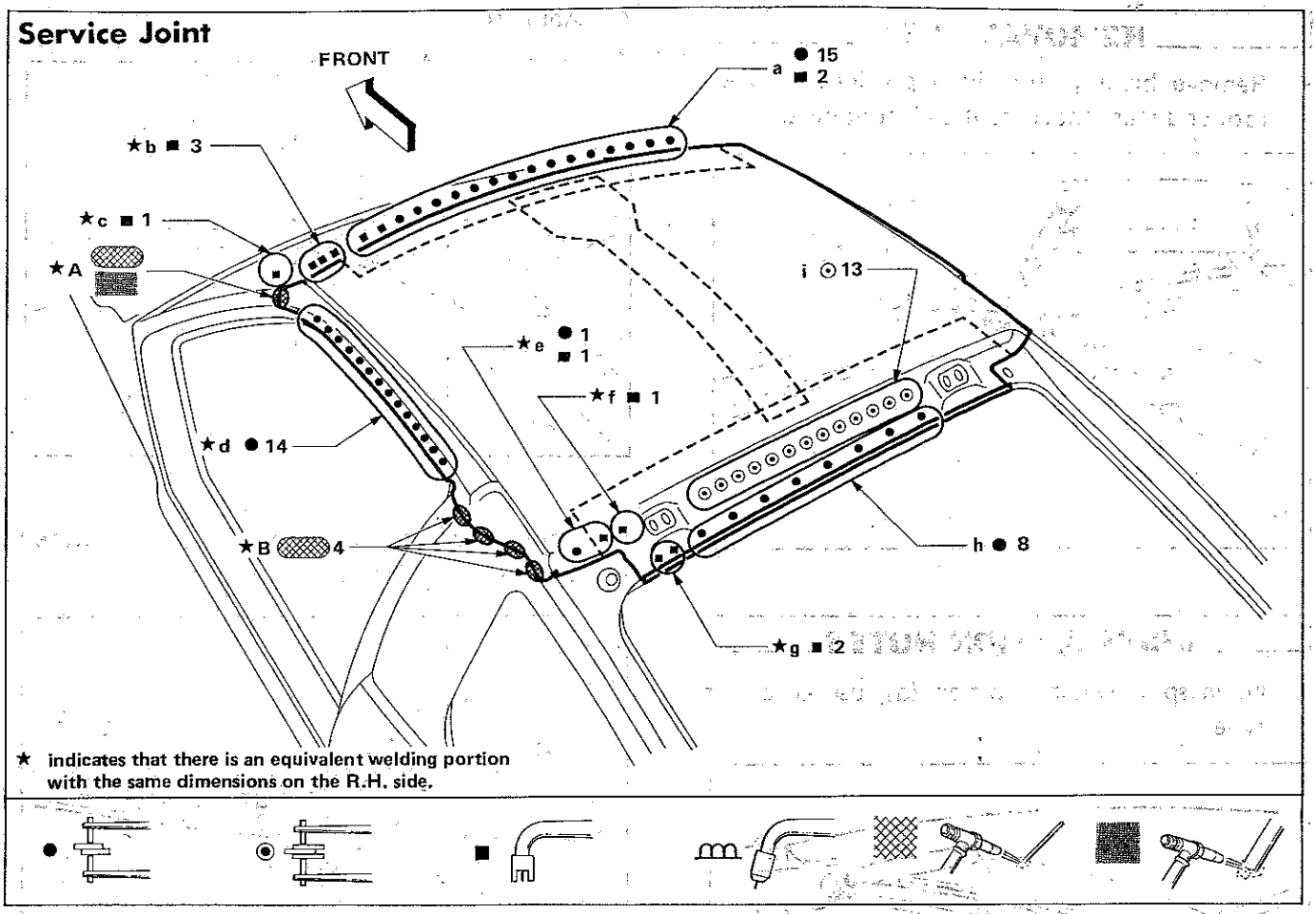


Portions to be welded

A. Front pillar
B. Rear fender
C. Rear fender
a. Front roof rail
Front roof rail & front roof rail brace
b. Front roof rail brace
Front roof rail brace & outer upper front pillar
c. Outer upper & inner front pillar
d. Roof drip
Roof drip & roof bow
e. Rear fender & inner rear pillar
f. Rear fender & inner rear pillar
g. Rear roof rail
Rear roof rail & inner rear pillar

ROOF PANEL

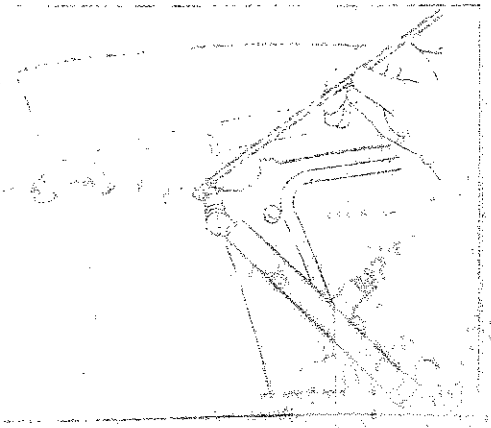
Service Joint



★ indicates that there is an equivalent welding portion with the same dimensions on the R.H. side.

Portions to be welded

A. Front pillar
B. Rear fender
a. Front roof rail
Front roof rail & front roof rail brace
b. Front roof rail brace
Front roof rail brace & outer upper front pillar
c. Outer upper & inner front pillar
d. Roof drip
e. Rear fender
Rear fender & upper rear roof rail
f. Upper & lower rear roof rail
g. Roof rail brace & rear fender
Roof rail brace & lower rear roof rail
h. Lower rear roof rail
i. Upper & lower rear roof rail

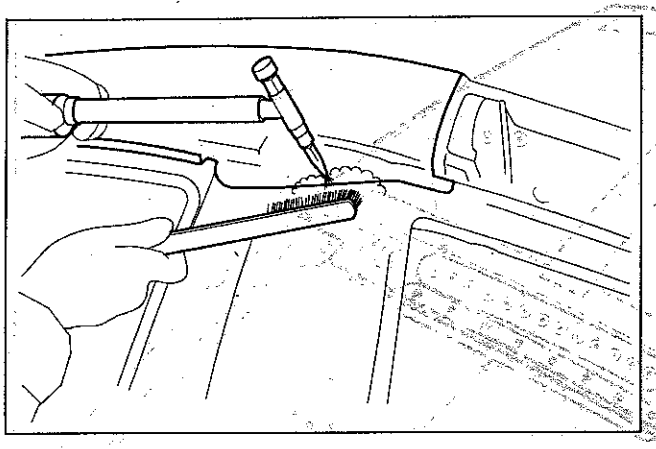


ROOF PANEL

COUPE
FAST BACK

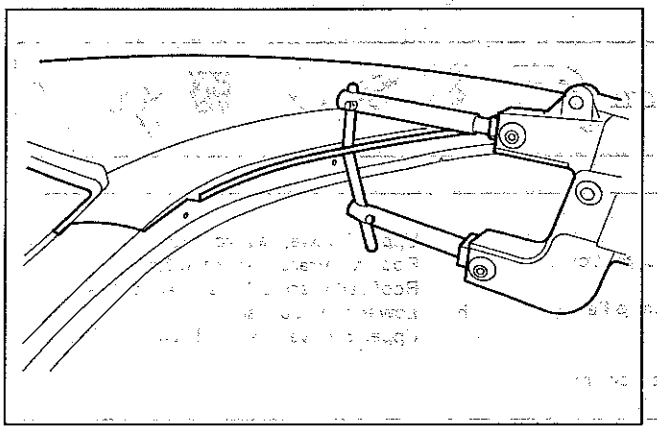
REMOVAL NOTE

- Remove brazing from joint portions between roof and rear fender, roof and front pillar.

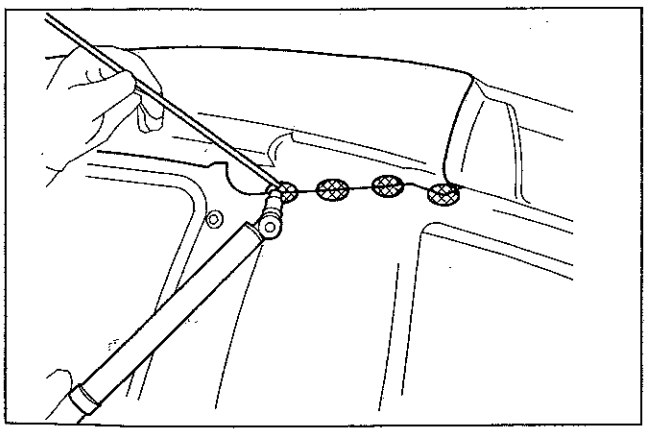


INSTALLATION NOTES

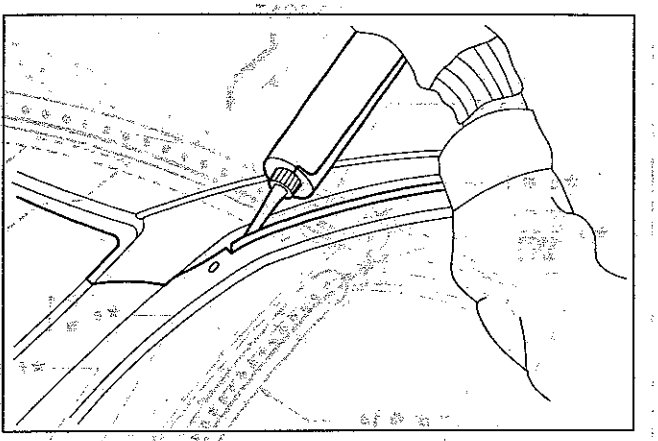
- When spot welding portion (d), use an offset type.



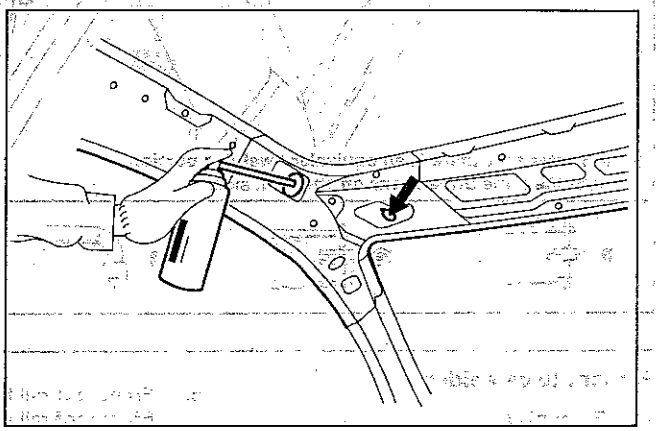
- Brazed portions (A), (B) and dress it with a sander.

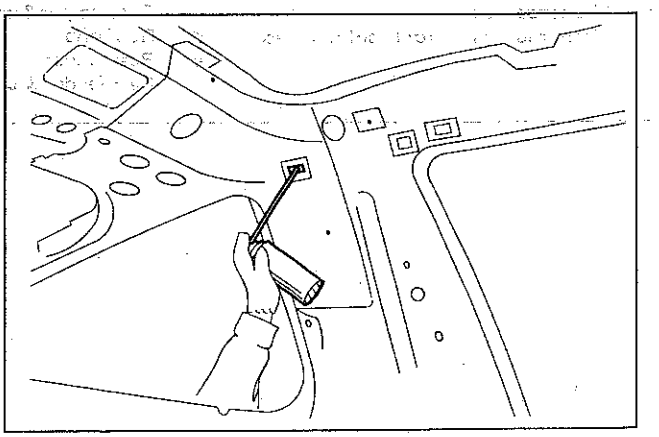


- Apply sealer.



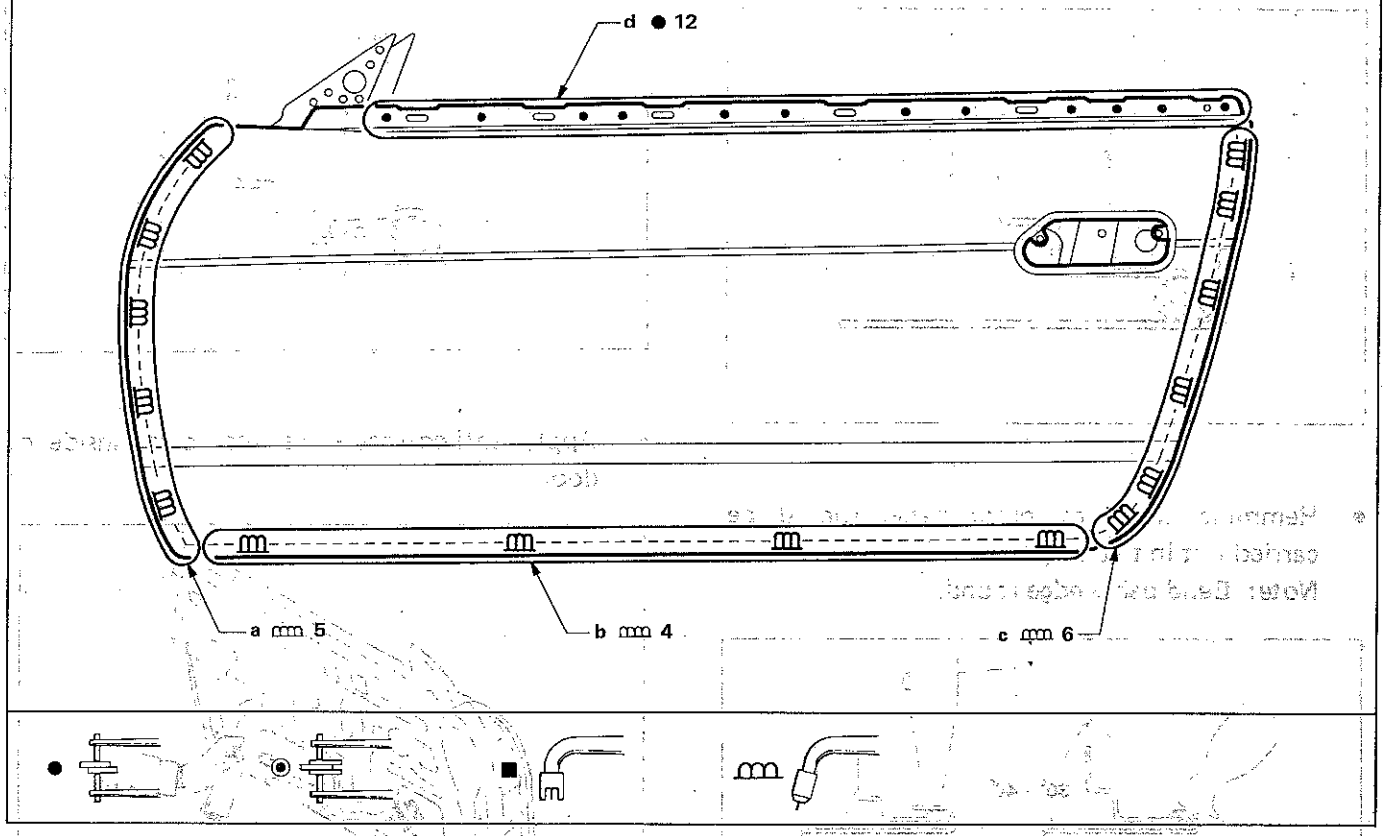
- Apply anti-corrosive agent to inside of brazed portions & MIG plug welded portions.





OUTER DOOR PANEL

Service Joint

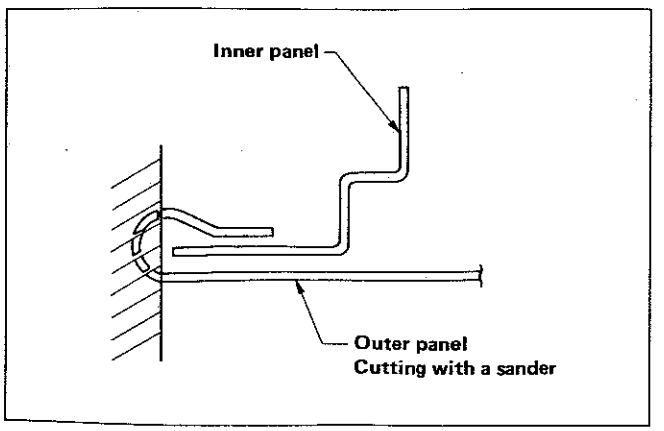


Portions to be welded

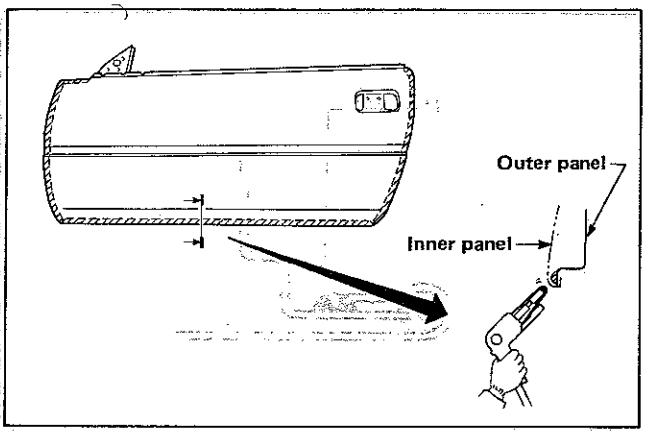
a. Inner panel
b. Inner panel
c. Inner panel
d. Door waist reinforcement

REMOVAL NOTES

- Cut door outer panel hem with a sander.



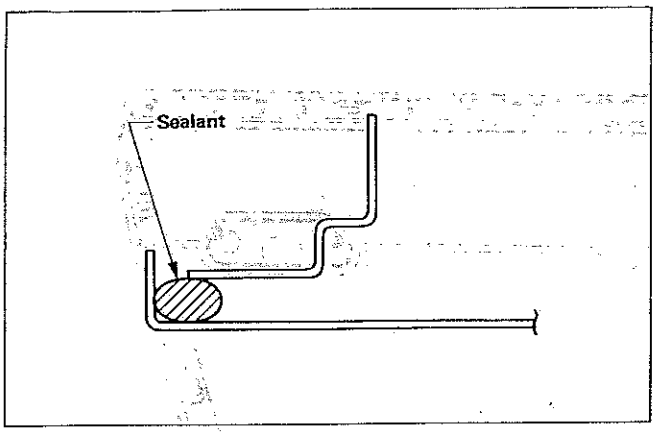
- After removing outer panel, dress rusty part with a sander and treat with anti-corrosive agent.



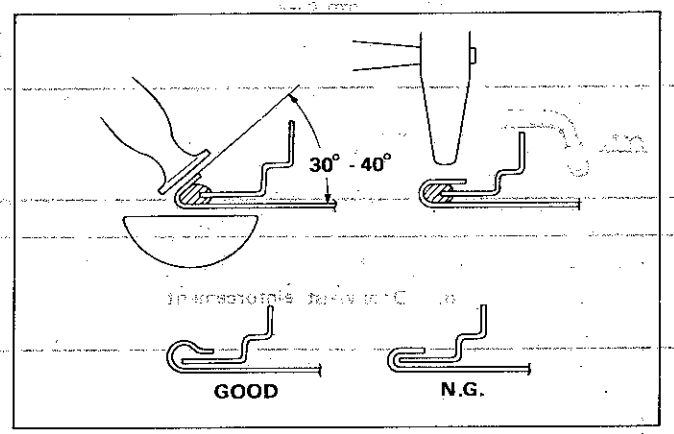
OUTER DOOR PANEL

INSTALLATION NOTES

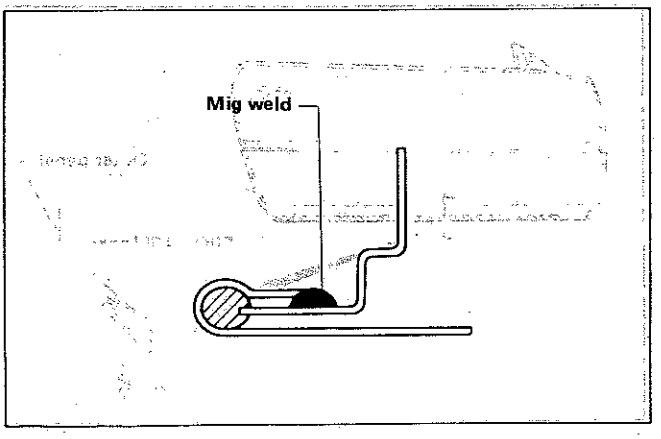
- Apply sealant to outer panel hem.



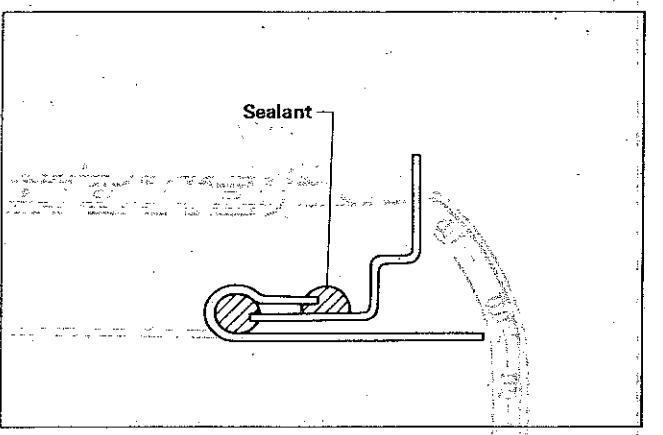
- Hemming work of outer panel should be carried out in two steps.
  Note: Bend panel edge round.



- MIG weld edge after hemming outer panel.



- Apply sealant to whole panel edge.



- Apply anti-corrosive wax to lower inside of door.