FOREWORD

This Body Repair Manual contains information, instructions and procedures for repairing the body structure of the TERRANO II (R20) model. In order to achieve reliable repair work and ensure customer satisfaction, the technician should study this manual and familiarize himself with appropriate sections before starting repair and rebuilding work.

It is especially important that the PRECAUTIONS section be read, understood and followed completely. This Body Repair Manual is prepared for use by technicians who are assumed to have a high level of skill and experience in repairing collision-damaged vehicles and also use modern servicing tools and equipment. It is not recommended that persons unfamiliar with body repair techniques attempt to repair collision-damaged vehicles by using the manual.

Technicians are also required to read the TERRANO II (R20) Service Manual and Body Repair Manual (Fundamentals) in order to ensure that the original functions and quality of the vehicle can be maintained.

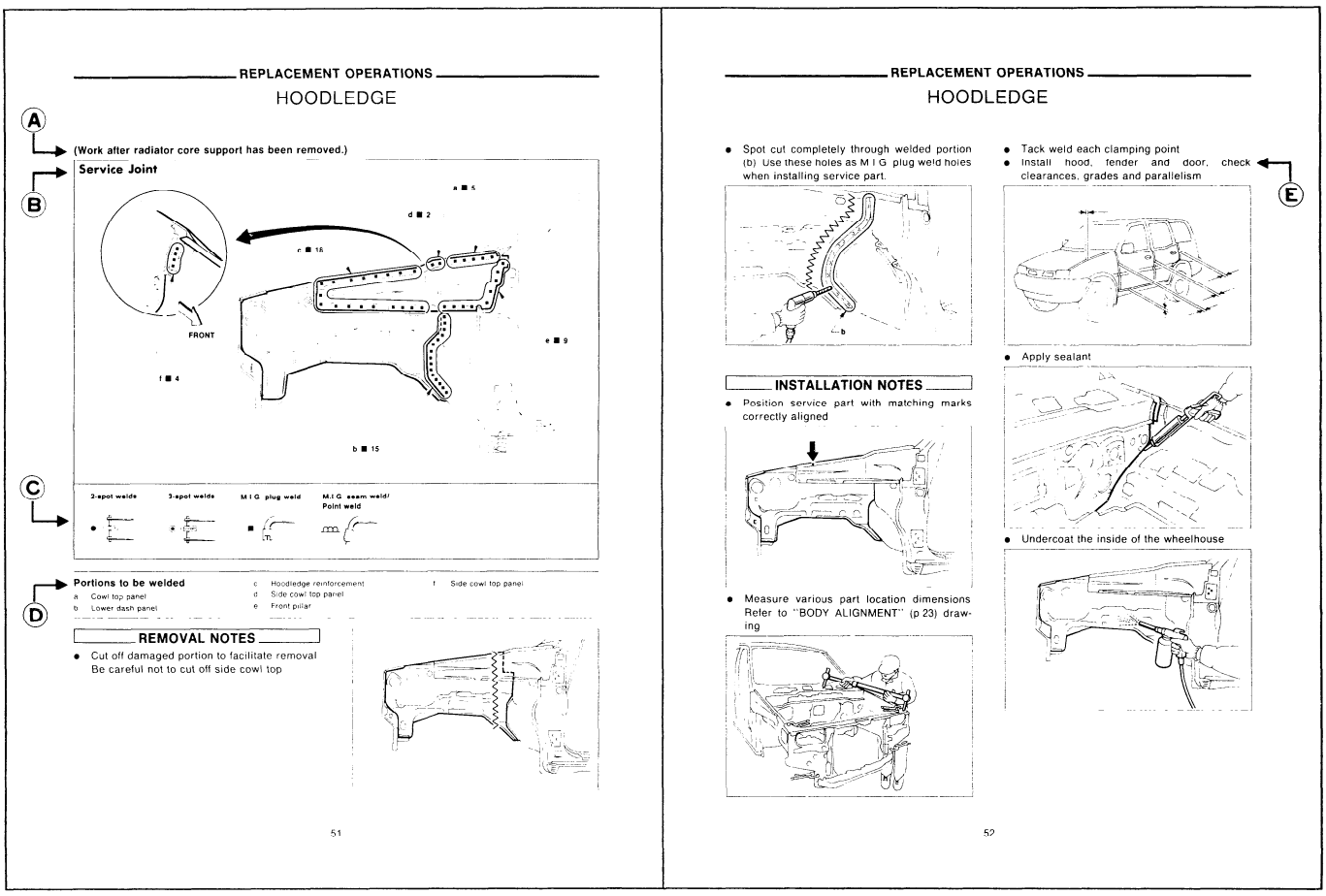
Please note that these manuals are prepared for worldwide usage, so certain procedures might not apply in some regions or countries.

All information in this manual is based on the latest product information at the time of publication. The right is reserved to make changes in specifications and methods at any time without notice.

NISSAN EUROPE N.V.

CONTENTS

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 ■ 5

Portion — a

■ — MIG plug weld (See symbol mark on page 47.)

5 — No. of welding points

Ⓒ Symbols are used in illustrations to clearly identify welding methods. (See symbol mark on page 47.)

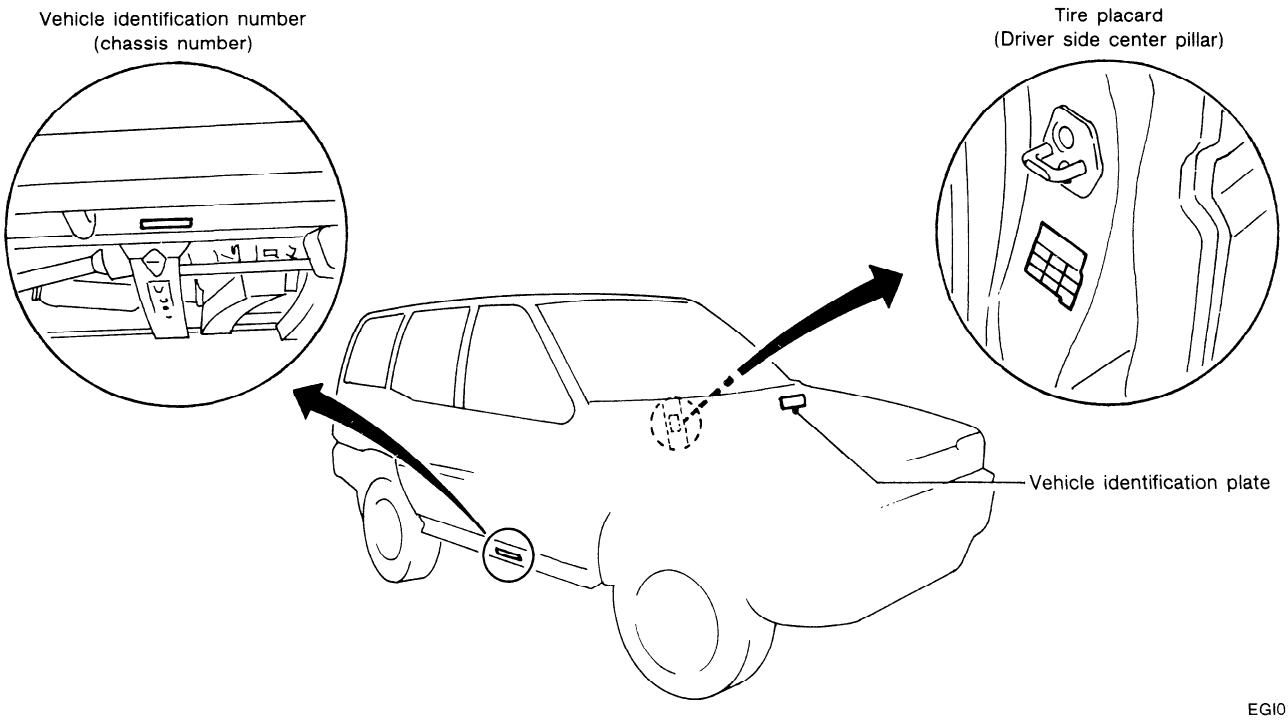
Ⓓ PORTIONS TO BE WELDED:

Portions to be welded are listed, including descriptions of those areas to which the portion under the subtitle (e.g. Hoodledge panel) will be welded.

Ⓔ REMOVAL/INSTALLATION NOTES

Main service points and special notes for body repair work are described.

IDENTIFICATION NUMBERS



VEHICLE IDENTIFICATION NUMBER ARRANGEMENT

VSK K B N R20 U O XXXXXX

Manufacturer code

Body

K : Hardtop

T : Wagon

Engine

B : KA24E

V : TD27T

Axle

N : 4-wheel drive, short wheelbase

U : 4-wheel drive, long wheelbase

Model

U : for Europe

X : Make EBRO

Stopgap (no meaning)

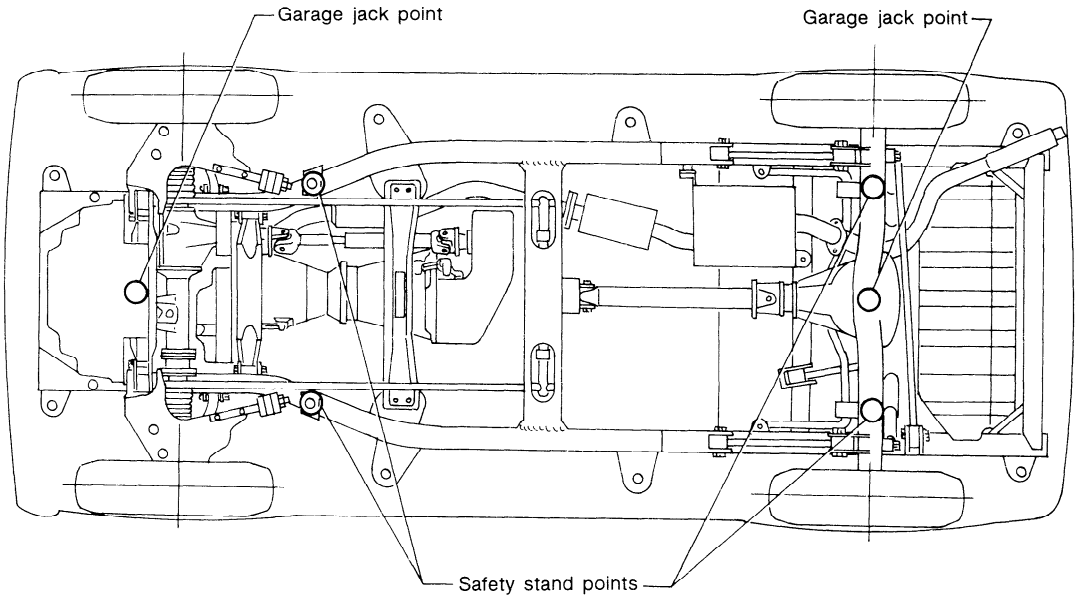
Vehicle serial number

LIFTING POINTS

GARAGE JACK AND SAFETY STAND

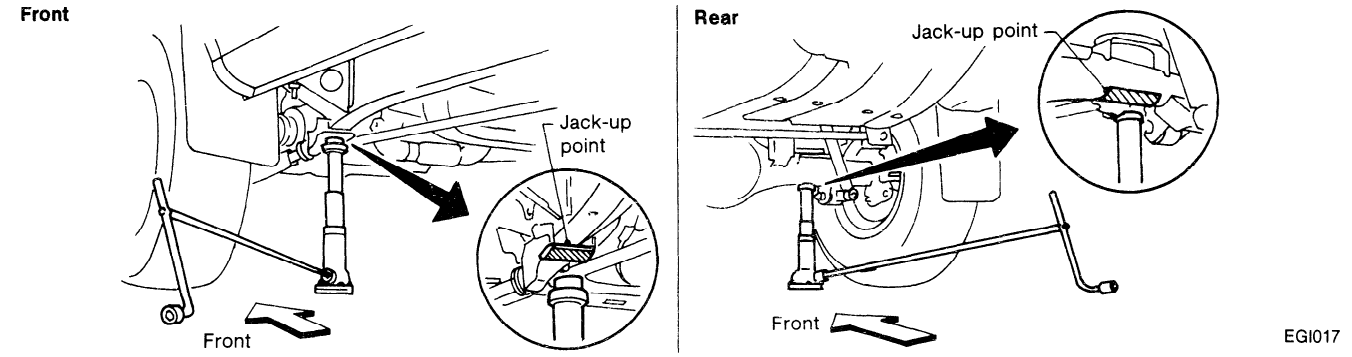
WARNING:

- **Never get under the vehicle while it is supported only by the jack. Always use safety stands when you have to get under the vehicle.**
- **Place wheel chocks at both front and back of the wheels on the ground, and apply handbrake where appropriate.**
- **Do not start the engine while the vehicle is supported only by the jack.**



EGI016

SCREW JACK



EGI017

4-POLE LIFT

WARNING:

Do not use a 2-pole lift.

Due to weight balance of the vehicle and shape of underbody, lift arms can not be attached in a safe way. Therefore it is recommended to use a 4-pole lift only.

VEHICLE DIMENSIONS

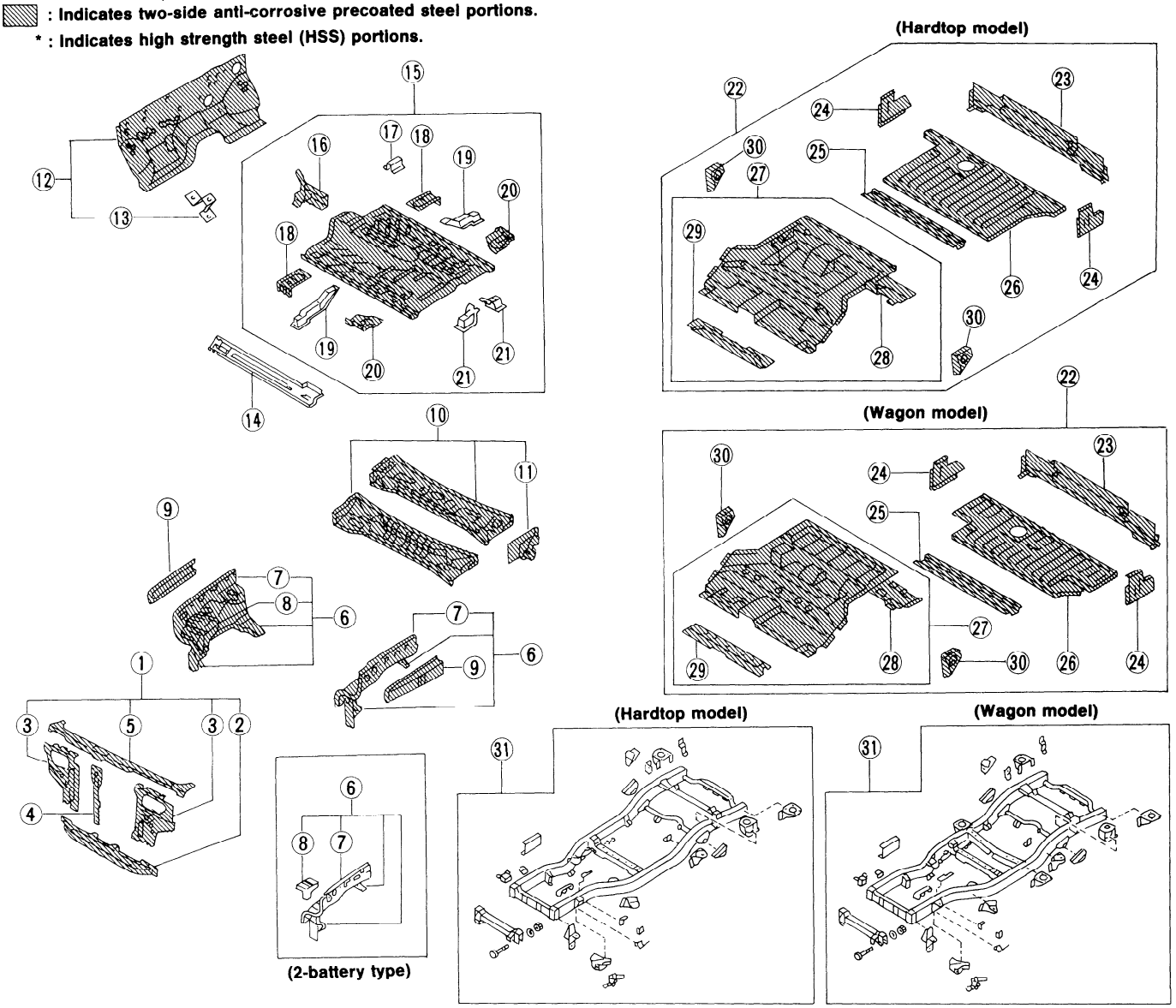
Unit: mm (in)

	Hardtop	Wagon
Overall length	4,105 (161.6)	4,585 (180.5)
Overall width (*)	1,735 (68.3)	1,735 (68.3)
Overall height	1,805 (71.1)	1,810 (71.3)
Front tread	1,455 (57.3)	1,455 (57.3)
Rear tread	1,430 (56.3)	1,430 (56.3)
Wheelbase	2,450 (96.5)	2,650 (104.3)
Ground clearance	215 (8.5)	210 (8.3)
Front overhang	740 (29.1)	740 (29.1)
Rear overhang	915 (36.0)	1,195 (47.0)

(*): Without mirrors

UNDERBODY COMPONENT PARTS

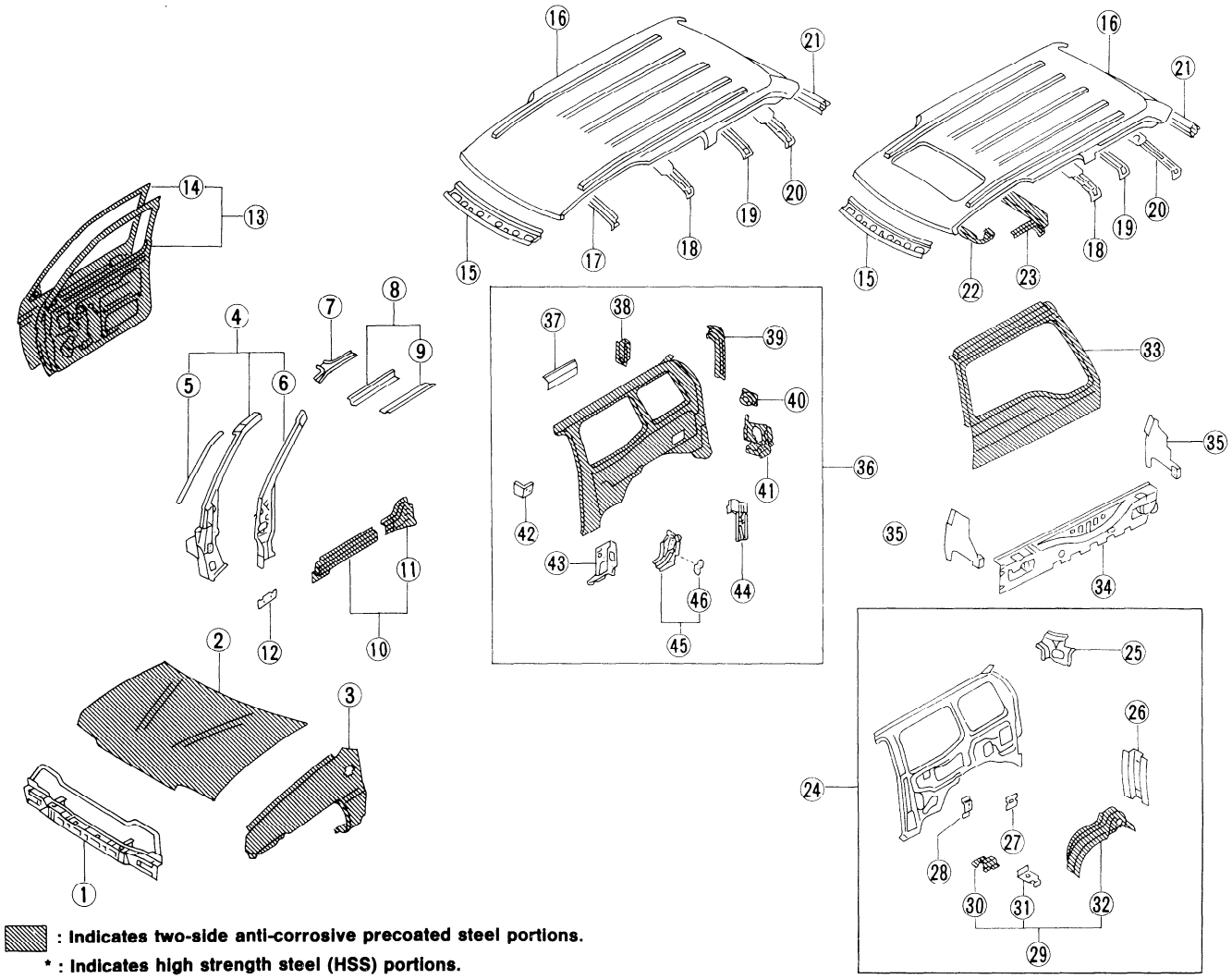
: Indicates two-side anti-corrosive precoated steel portions.
* : Indicates high strength steel (HSS) portions.



1 Radiator core support assembly
2 Lower radiator core support
3 Side radiator core support
4 Hood lock stay
5 Upper radiator core support
6 Hoodledge assembly
7 Hoodledge
8 Battery support bracket (R.H.)
*9 Hoodledge reinforcement
10 Air box assembly
11 Side cowl top (R.H. & L.H.)
12 Lower dash assembly
13 Accelerator pedal stopper
14 Inner sill (R.H. & L.H.)
15 Front floor assembly
16 Parking brake reinforcement
17 Console bracket
18 2nd body mounting bracket
19 2nd crossmember
20 3rd body mounting bracket
21 Front seat mounting bracket
22 Rear floor assembly
23 Rear end crossmember
24 Rear floor side
25 Rear crossmember
26 Rear floor rear
27 Rear floor front assembly
28 Rear crossmember reinforcement
29 Rear seat crossmember
30 4th body mounting bracket
*31 Frame assembly

BODY COMPONENT PARTS

HARDTOP



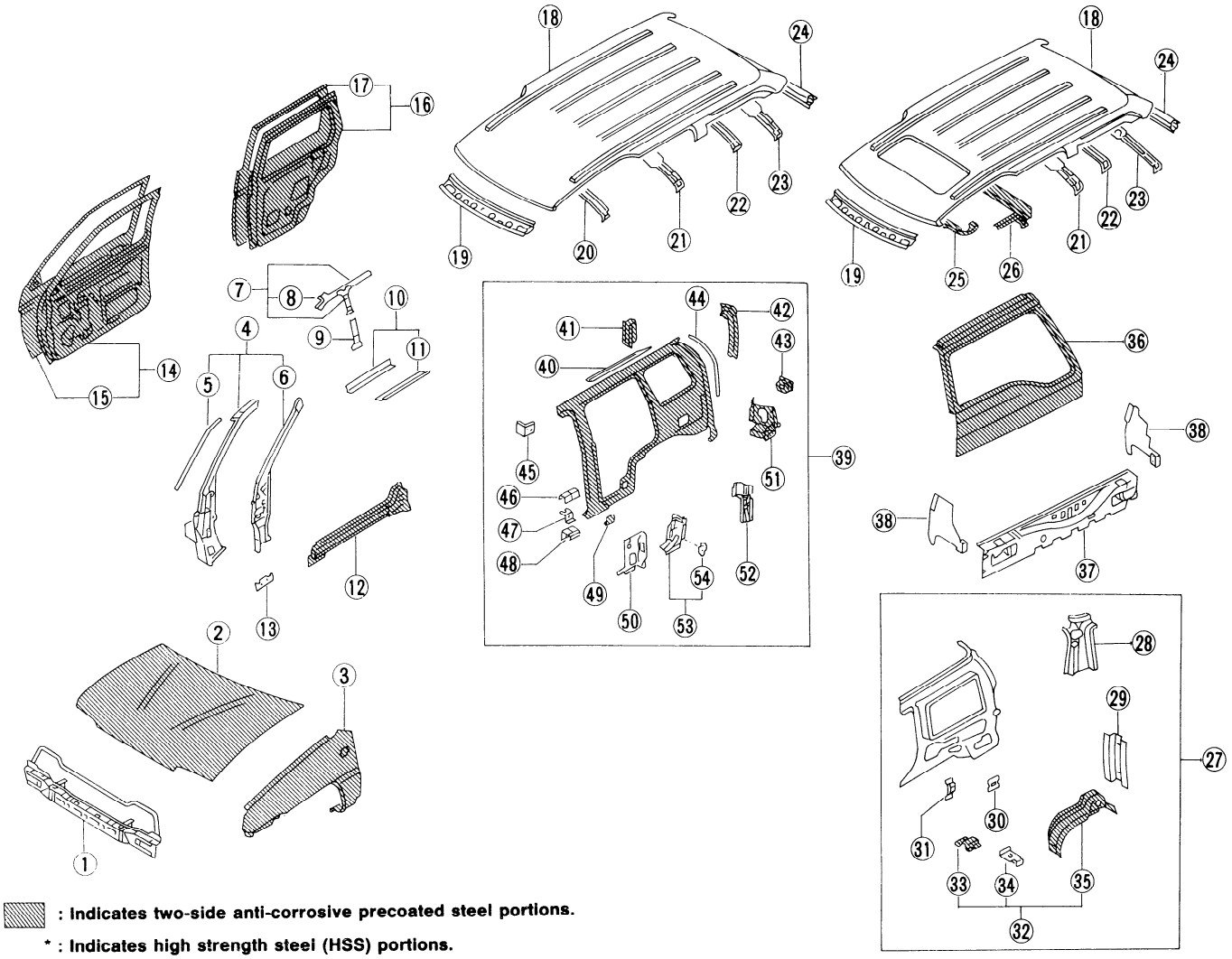
: **Indicates two-side anti-corrosive precoated steel portions.**

* : **Indicates high strength steel (HSS) portions.**

*1 Front bumper reinforcement
2 Hood
3 Front fender (R.H. & L.H.)
4 Front pillar assembly (R.H. & L.H.)
5 Front pillar drip (R.H. & L.H.)
*6 Inner front pillar (R.H. & L.H.)
7 Inner side roof rail (R.H. & L.H.)
8 Outer side roof rail assembly (R.H. & L.H.)
9 Center roof drip channel (R.H. & L.H.)
10 Outer sill assembly (R.H. & L.H.)
11 Outer sill extension (R.H. & L.H.)
12 Lower front pillar reinforcement (R.H. & L.H.)
13 Front door assembly (R.H. & L.H.)
14 Outer front door panel (R.H. & L.H.)
15 Front roof rail
16 Roof
17 No. 1 roof bow
18 No. 2 roof bow
19 No. 3 roof bow
20 No. 4 roof bow
21 Rear roof rail
22 Front roof reinforcement
23 Rear roof reinforcement
24 Inner rear pillar assembly (R.H. & L.H.)
25 Rear roof brace (R.H. & L.H.)
*26 Seat belt anchor reinforcement (R.H. & L.H.)
27 Tapping plate (R.H. & L.H.)
28 Side window handle retainer (R.H. & L.H.)
29 Rear wheelhouse assembly (R.H. & L.H.)
30 Filler neck protector bracket (R.H.)
31 Jack mounting bracket (L.H.)
32 Outer rear wheelhouse (R.H. & L.H.)
33 Back door
*34 Rear bumper reinforcement
*35 Rear bumper brace
36 Rear fender assembly (R.H. & L.H.)
*37 Rear pillar seat belt anchor assembly (R.H. & L.H.)
38 Rear fender cover (R.H. & L.H.)
39 Rear fender extension (R.H. & L.H.)
40 Fuel filler base
41 Rear combination lamp base (R.H. & L.H.)
42 Striker retainer (R.H. & L.H.)
43 Lower inner rear pillar (R.H.)
44 Tail pillar (L.H.)
45 Outer back pillar
46 Striker retainer (R.H.)

BODY COMPONENT PARTS

WAGON



: **Indicates two-side anti-corrosive precoated steel portions.**

* : **Indicates high strength steel (HSS) portions.**

*1 Front bumper reinforcement
2 Hood
3 Front fender (R.H. & L.H.)
4 Front pillar assembly (R.H. & L.H.)
5 Front pillar drip (R.H. & L.H.)
*6 Inner front pillar (R.H. & L.H.)
7 Inner side roof rail assembly (R.H. & L.H.)
8 Inner side roof rail (R.H. & L.H.)
9 Inner center pillar assembly (R.H. & L.H.)
10 Outer side roof rail assembly (R.H. & L.H.)
11 Center roof drip channel (R.H. & L.H.)
12 Outer sill assembly (R.H. & L.H.)
13 Lower front pillar reinforcement (R.H. & L.H.)
14 Front door assembly (R.H. & L.H.)
15 Outer front door panel (R.H. & L.H.)
16 Rear door assembly (R.H. & L.H.)
17 Outer rear door panel (R.H. & L.H.)
18 Roof
19 Front roof rail
20 No. 1 roof bow
21 No. 2 roof bow
22 No. 3 roof bow
23 No. 4 roof bow
24 Rear roof rail
25 Front roof reinforcement
26 Rear roof reinforcement
27 Inner rear pillar assembly (R.H. & L.H.)
28 Rear roof rail brace (R.H. & L.H.)
*29 Seat belt anchor reinforcement (R.H. & L.H.)
30 Tapping plate (R.H. & L.H.)
*31 Side window handle retainer (R.H. & L.H.)
32 Rear wheelhouse assembly (R.H. & L.H.)
33 Filler neck protector bracket (R.H.)
34 Jack mounting bracket (L.H.)
35 Outer rear wheelhouse (R.H. & L.H.)
36 Back door
*37 Rear bumper reinforcement
*38 Rear bumper brace
39 Rear fender assembly (R.H. & L.H.)
40 Roof side drip (R.H. & L.H.)
41 Rear fender cover (R.H. & L.H.)
42 Rear fender extension (R.H. & L.H.)
43 Fuel filler base
44 Rear fender drip (R.H. & L.H.)
45 Striker retainer (R.H. & L.H.)
*46 Upper hinge brace (R.H. & L.H.)
*47 Center check link brace (R.H. & L.H.)
*48 Lower hinge brace (R.H. & L.H.)
49 Rear fender patch (R.H. & L.H.)
50 Lower inner rear pillar (R.H.)
51 Rear combination lamp base (R.H. & L.H.)
52 Tail pillar (L.H.)
53 Outer back pillar
54 Striker retainer (R.H.)

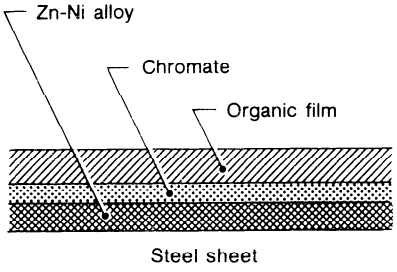
DESCRIPTION

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.

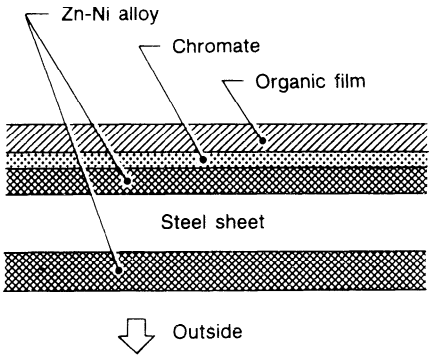
ANTI-CORROSIVE PRECOATED STEEL (DURASTEEL)

In order to improve repairability and corrosion resistance, a new type of anti-corrosive precoated steel sheet has been adopted, taking the place of conventional zinc-coated steel sheets.
This durasteel is electroplated, zinc-nickel alloy under organic film, which provides excellent corrosion resistance.

Durasteel is classified as either one-side precoated steel or two-side precoated steel. The two-side precoated steel provides excellent corrosion resistance.



One-side precoated



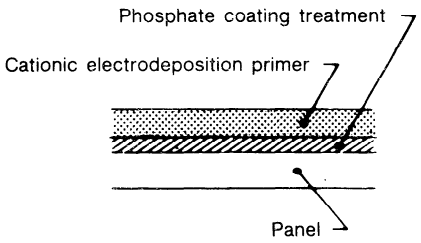
Two-side precoated

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

PHOSPHATE COATING TREATMENT AND CATIONIC ELECTRODEPOSITION PRIMER

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

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

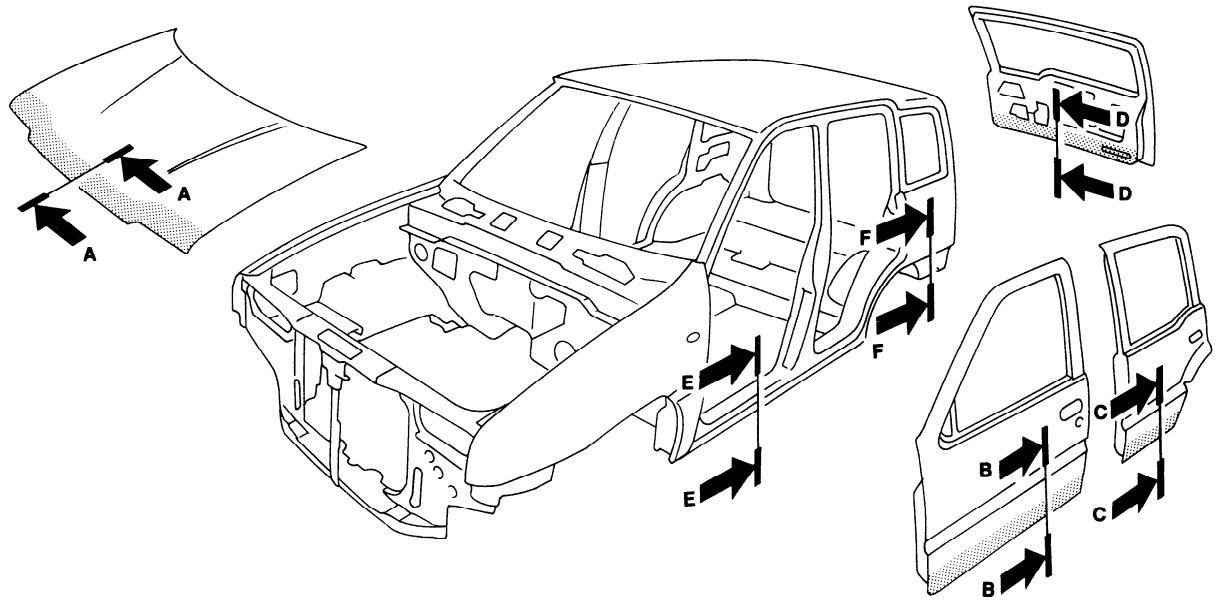


Nissan Genuine Service Parts also are treated in the same manner. Therefore, it is recommended that GENUINE NISSAN PARTS or equivalent be used for panel replacement to maintain anti-corrosive performance built into the vehicle at the factory.

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.**



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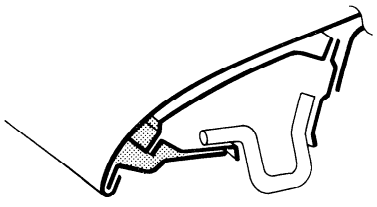	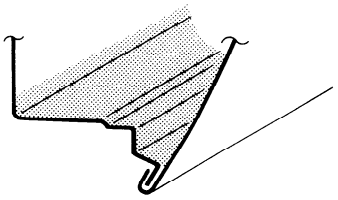	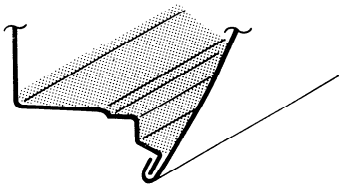
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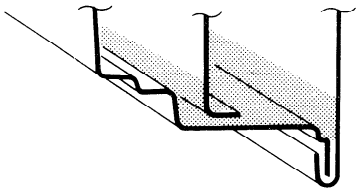
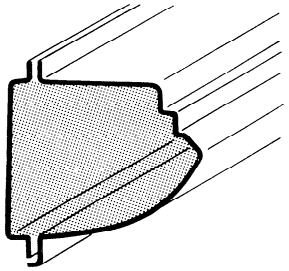
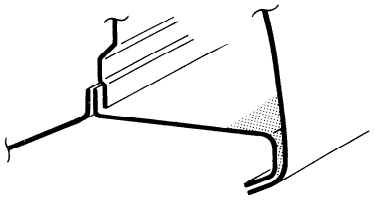
		

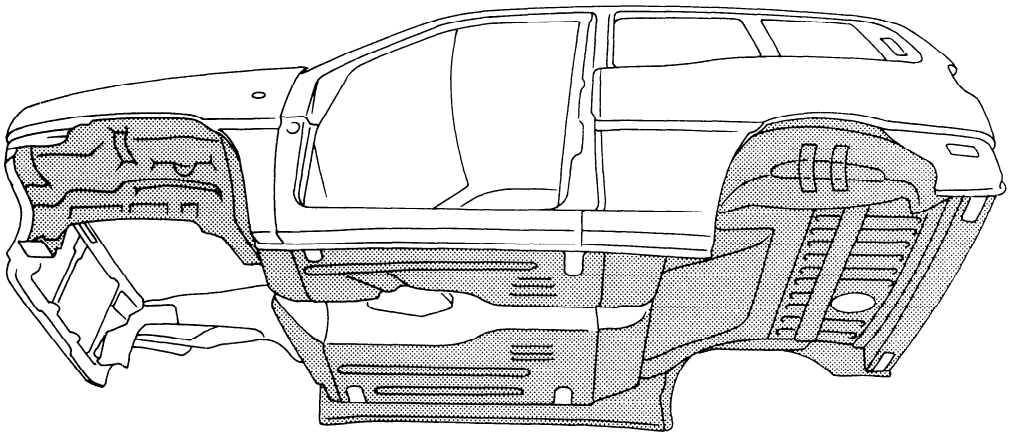
UNDERCOATING

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 with the following properties: rust preventive, soundproof, vibration-proof, shock-resistant, adhesive, and durable.

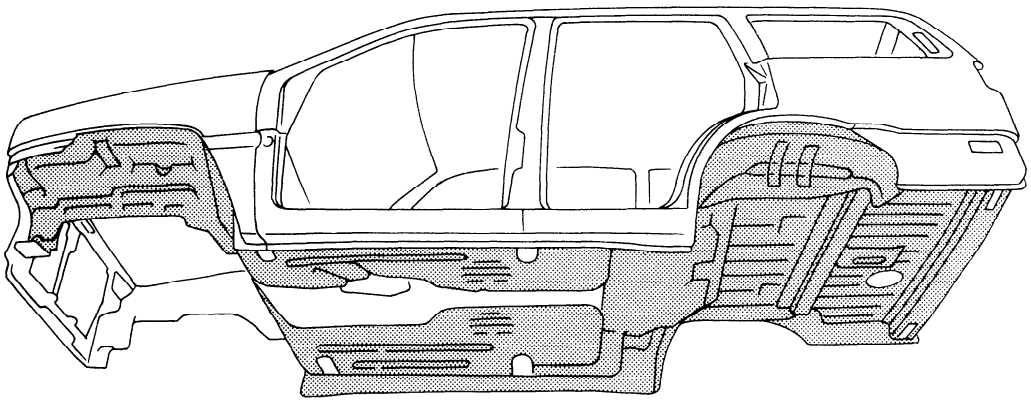
Precautions in undercoating

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.**



(Hardtop)

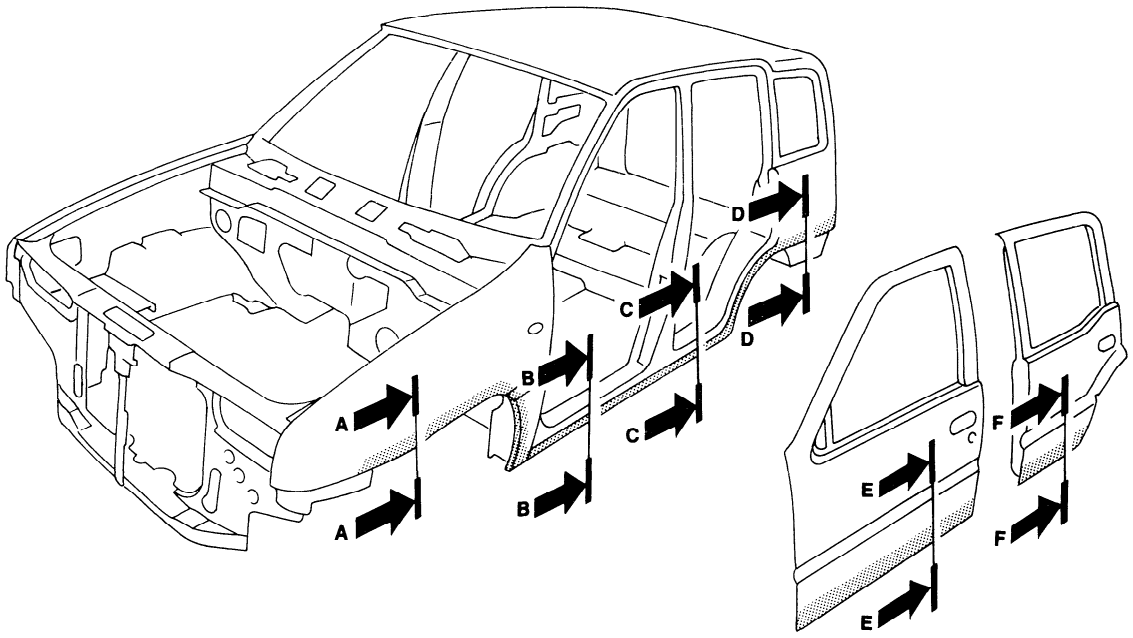


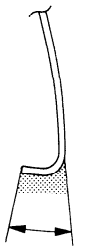
(Wagon)

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, when 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.

: **Indicates stone guard coated portions.**





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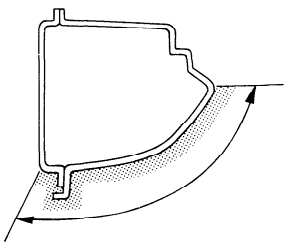

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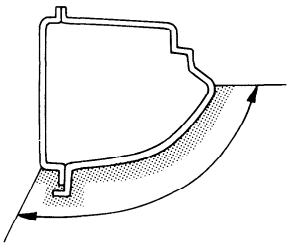

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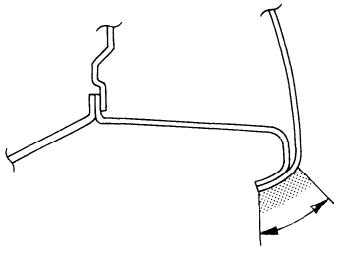

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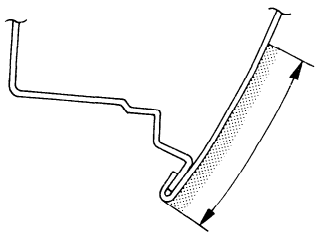

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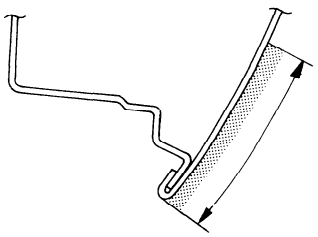
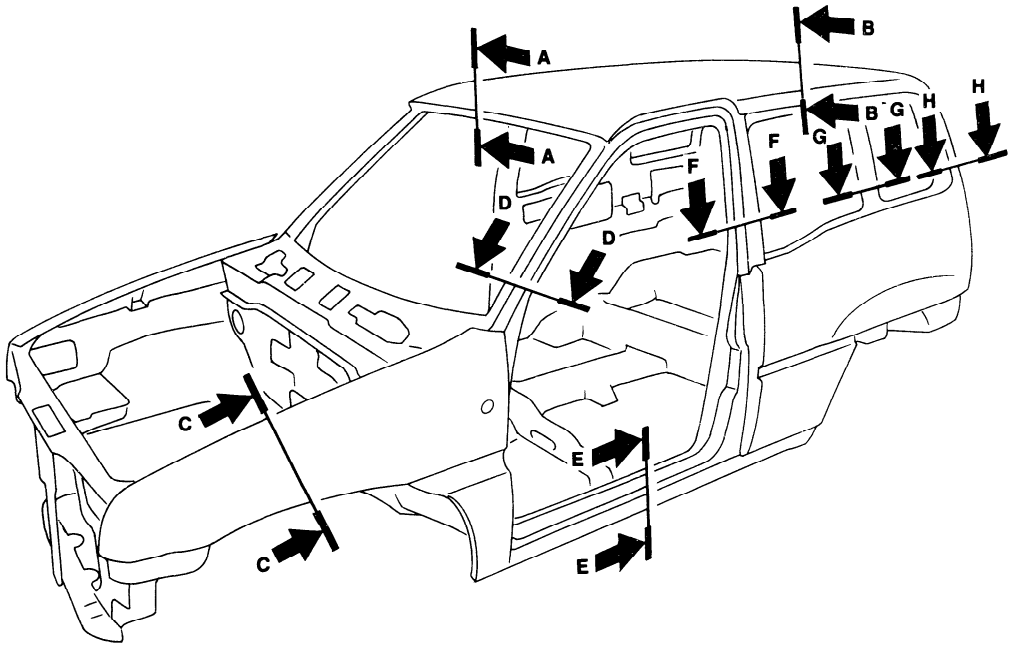


Section F—F

BODY CONSTRUCTION

HARDTOP



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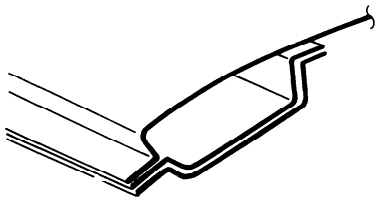	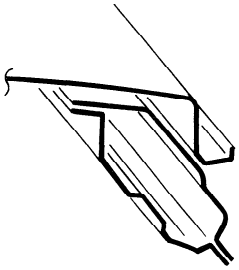	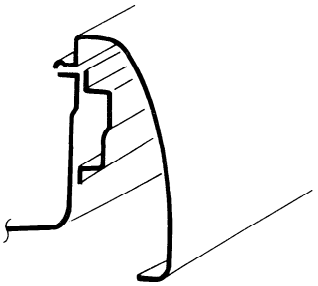
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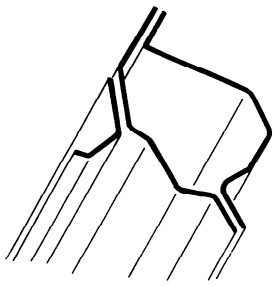	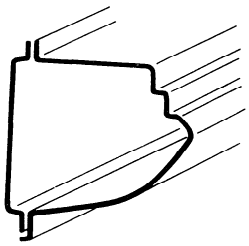	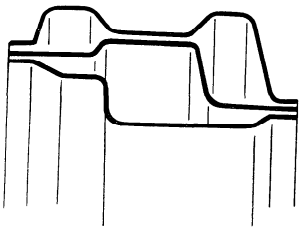
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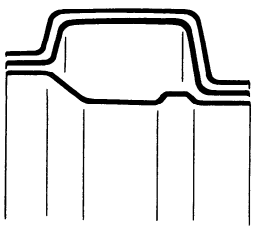
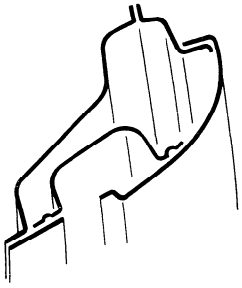
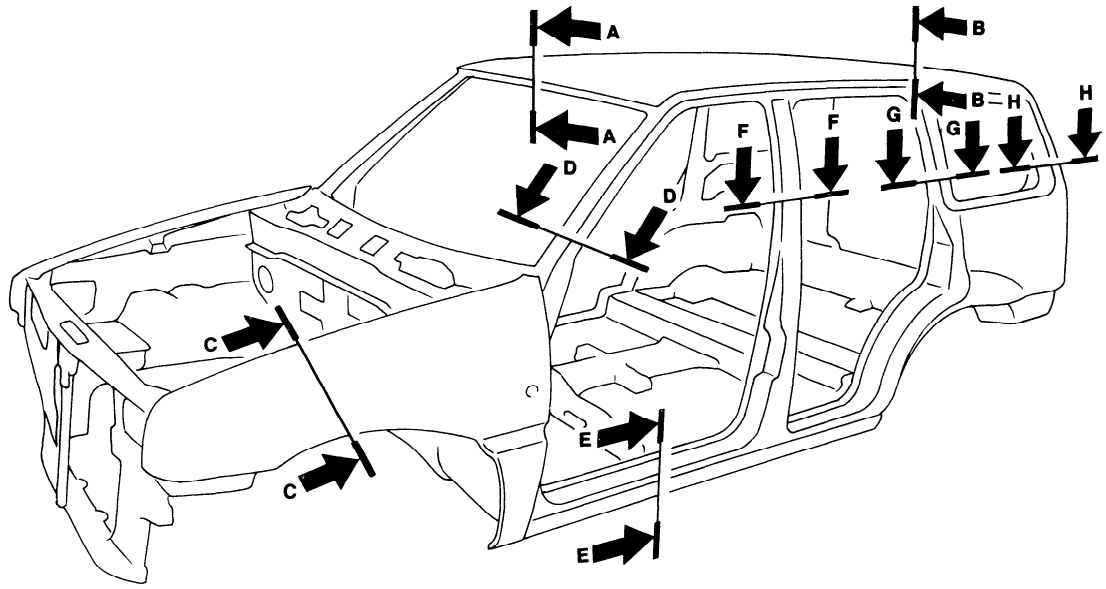
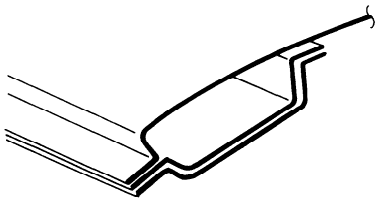
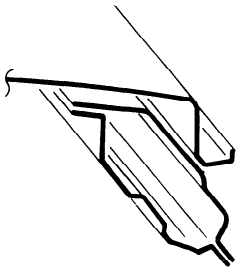
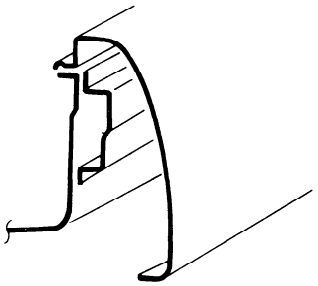
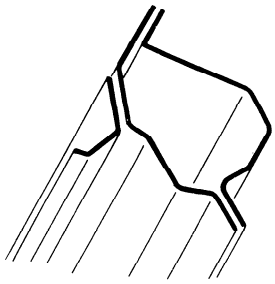
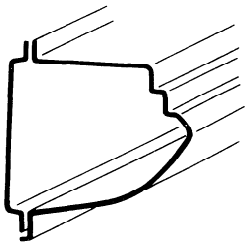
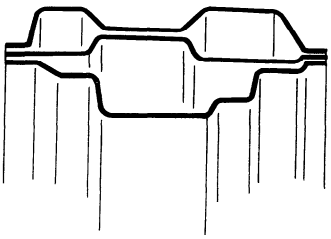
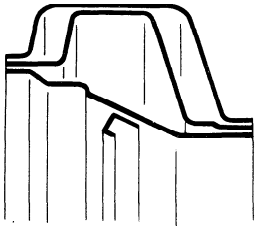
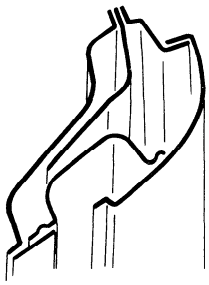
		

BODY CONSTRUCTION

WAGON

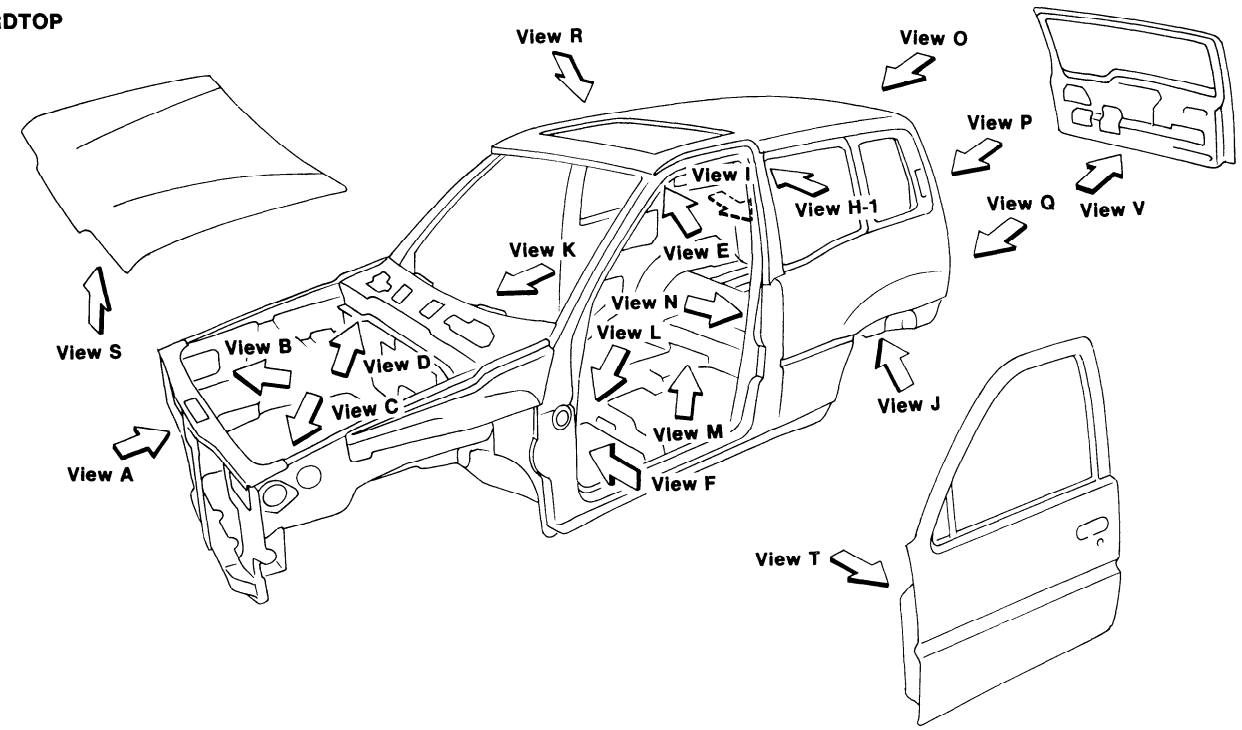


Section A—A	Section B—B	Section C—C
		
Section D—D	**Section E—E**	**Section F—F**
		
Section G—G	**Section H—H**	
		

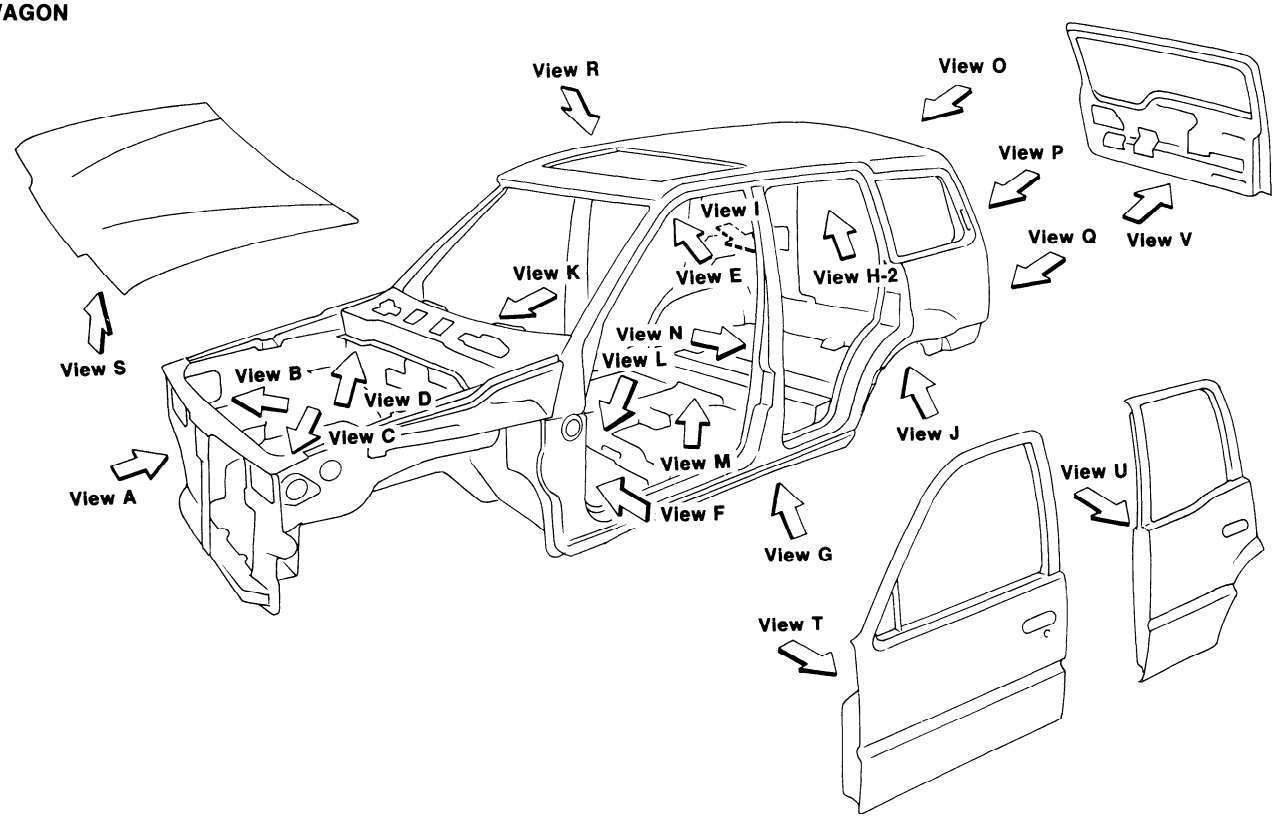
DESCRIPTION

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.

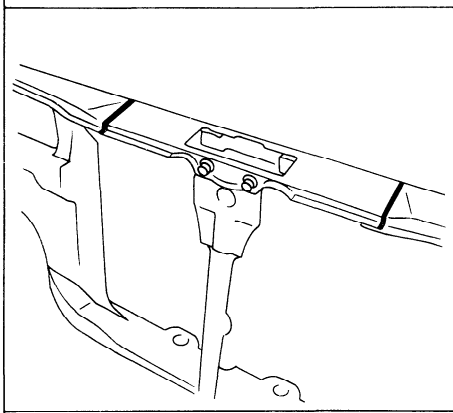
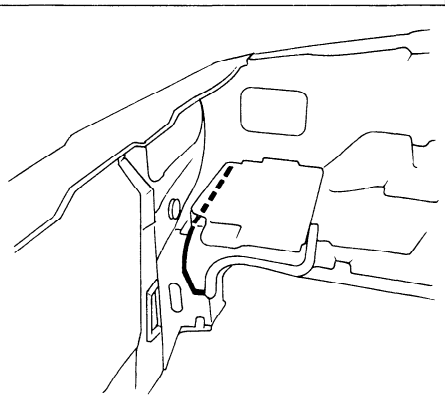
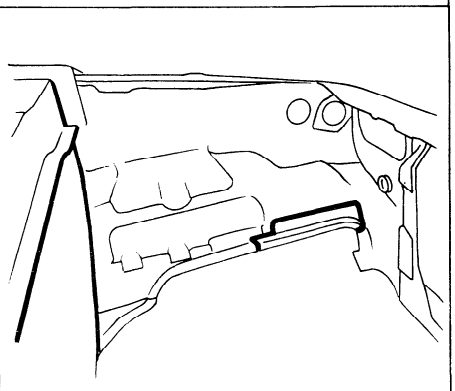
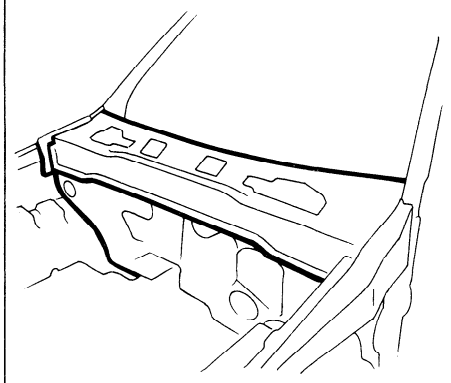
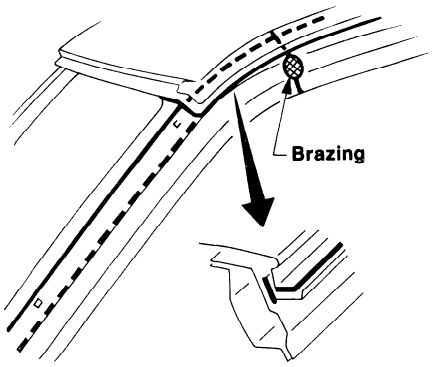
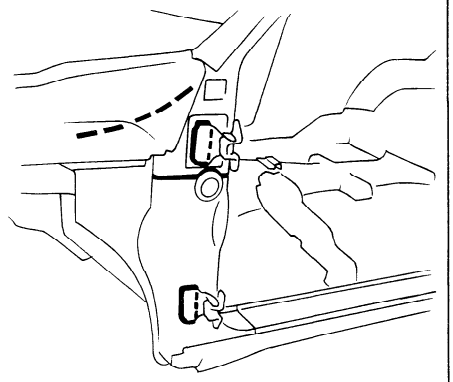
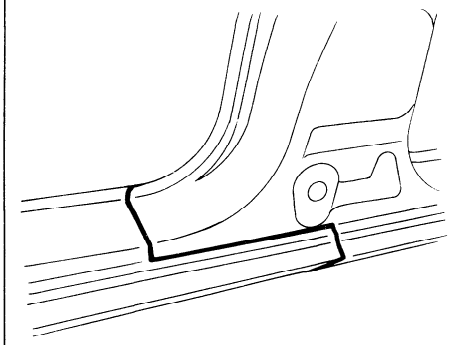
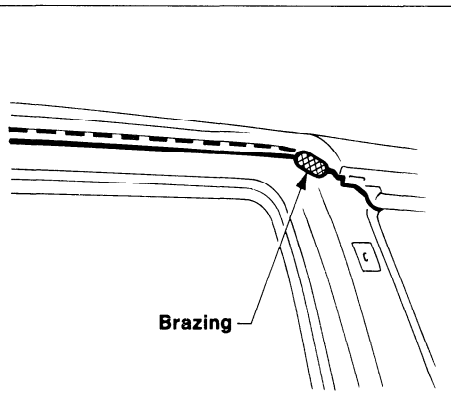
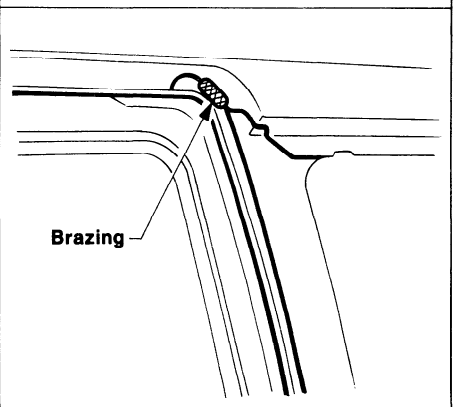
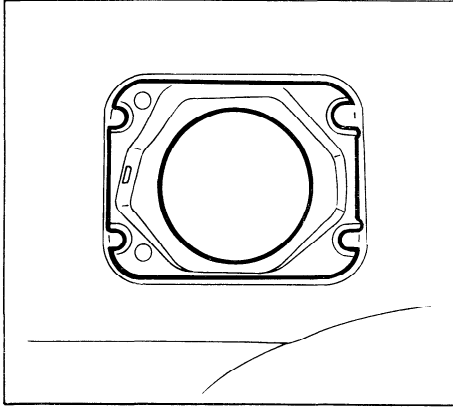
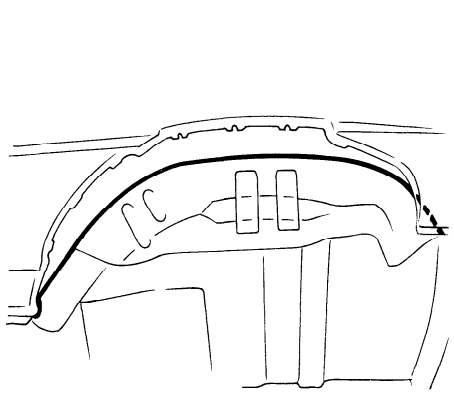
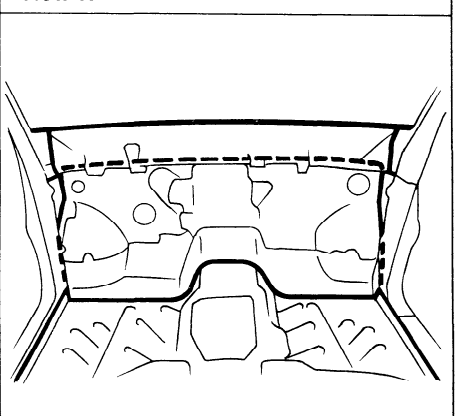
HARDTOP



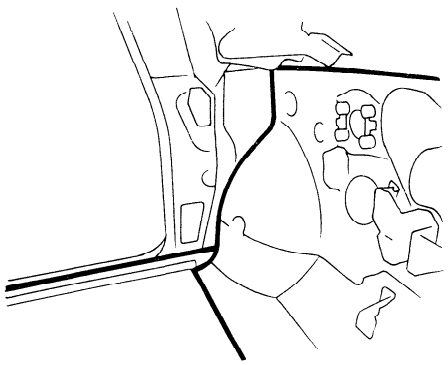
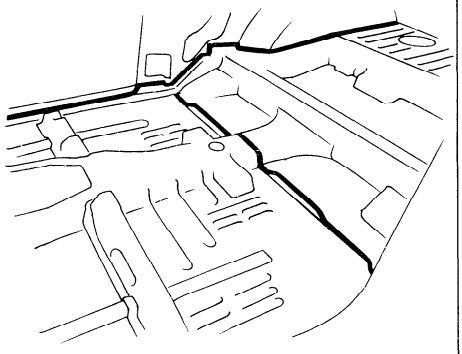
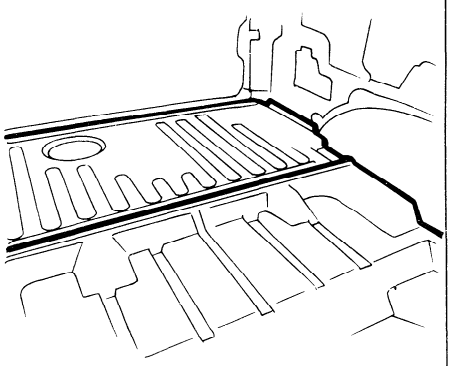
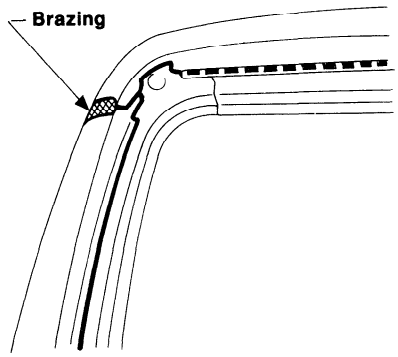
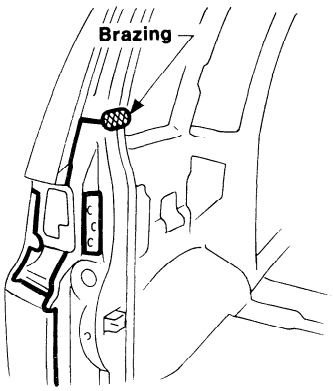
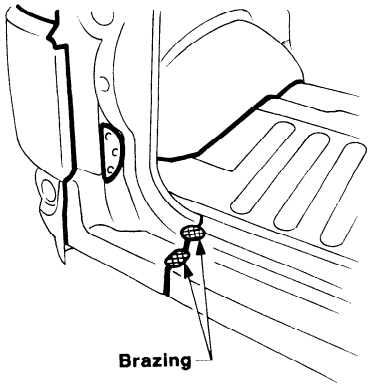
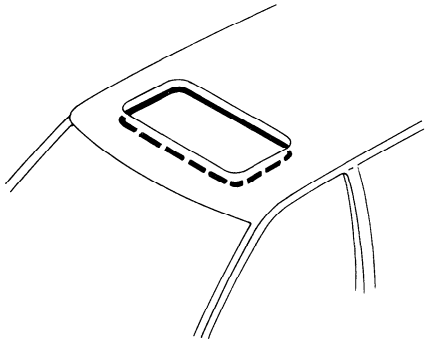
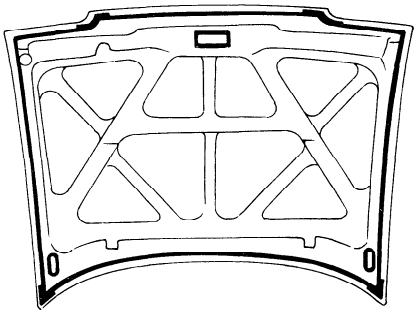
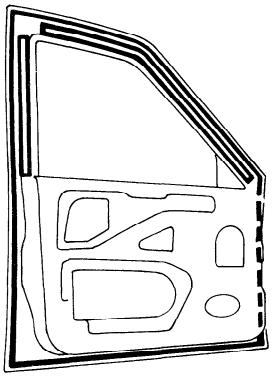
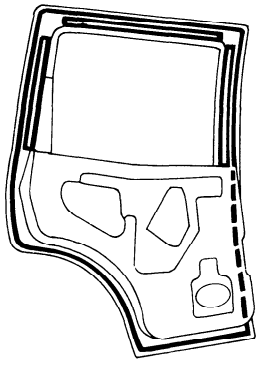
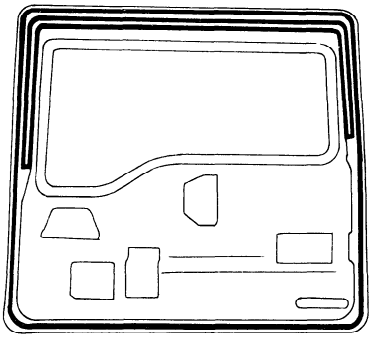
WAGON



DESCRIPTION

View A	View B	View C
		
View D	**View E**	**View F**
		
View G	**View H-1** **HARDTOP**	**View H-2** **WAGON**
		
View I	**View J**	**View K**
		

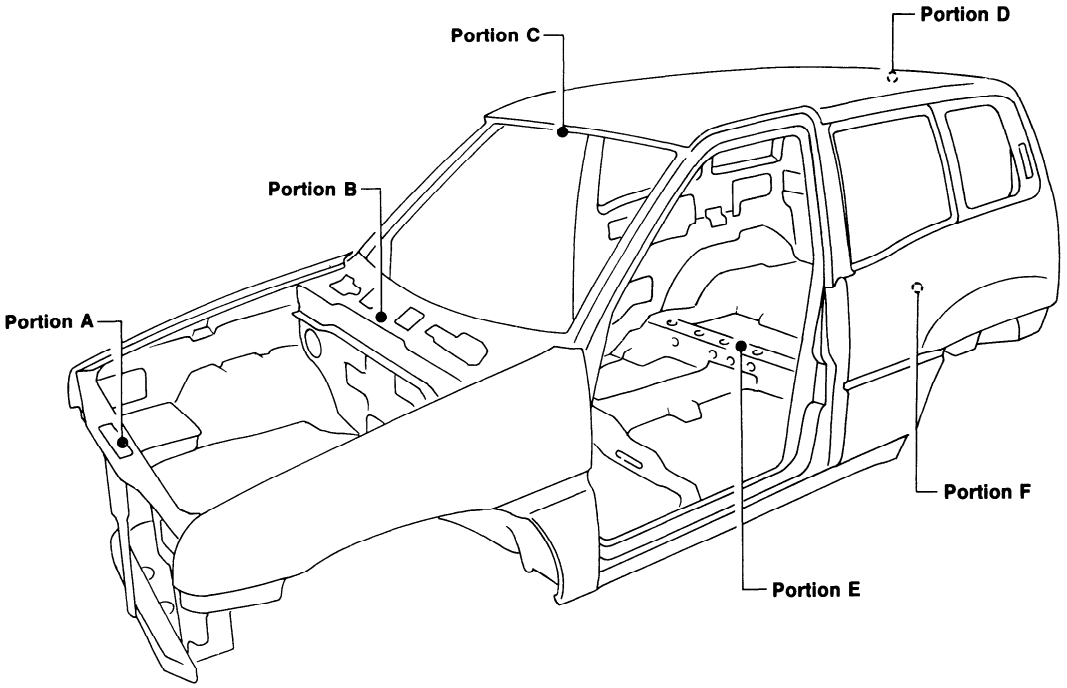
DESCRIPTION

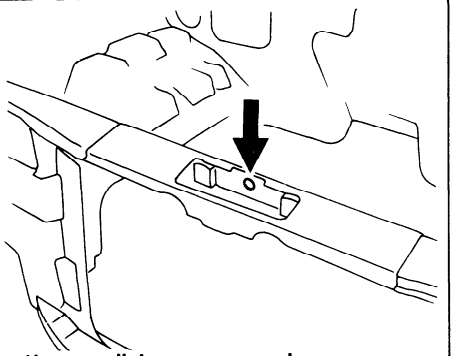
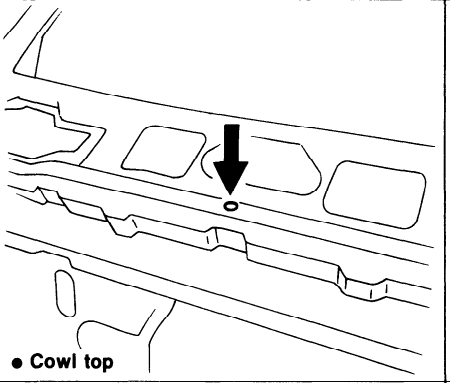
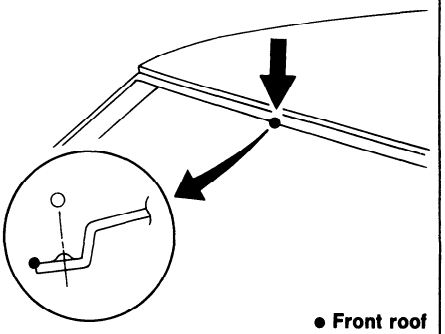
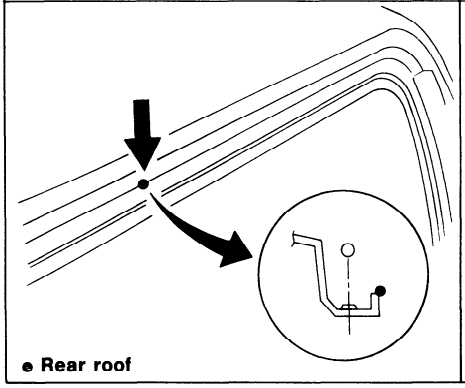
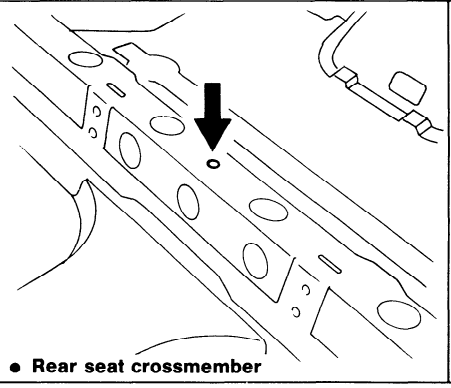
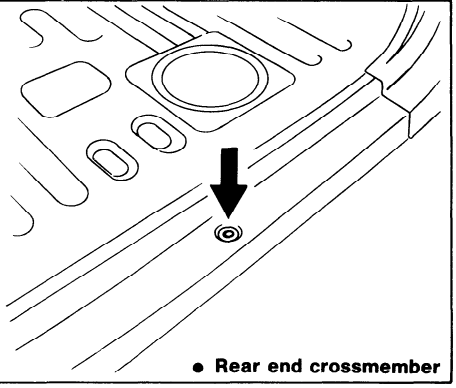
View L	View M	View N
		
View O	**View P**	**View Q**
		
View R	**View S**	**View T**
		
View U	**View V**	
		

BODY CENTER MARKS

HARDTOP

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.

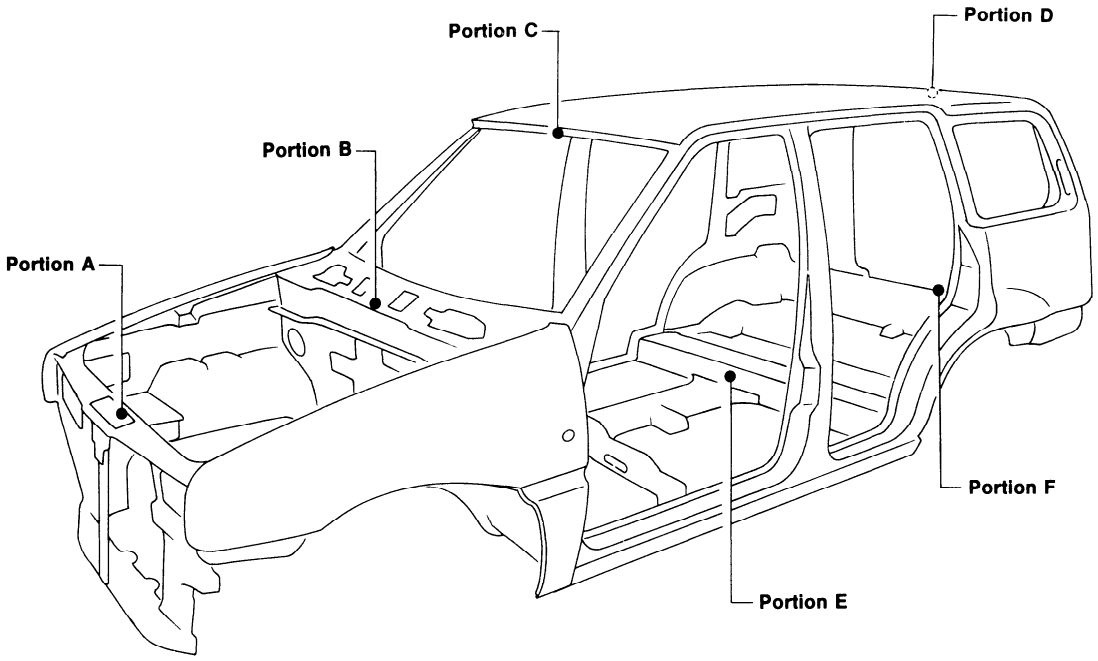


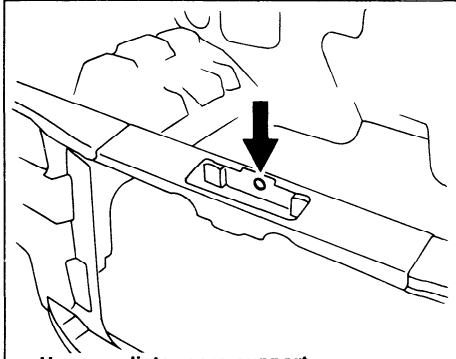
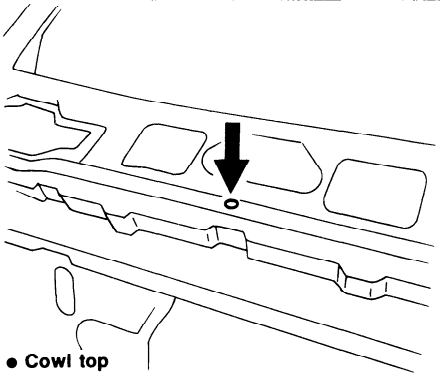
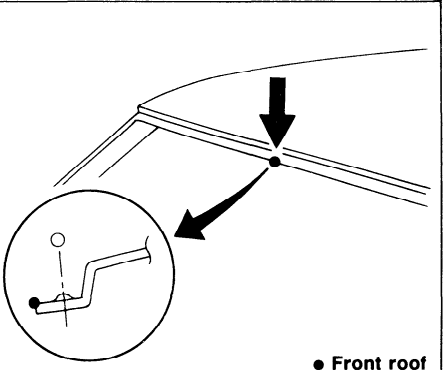
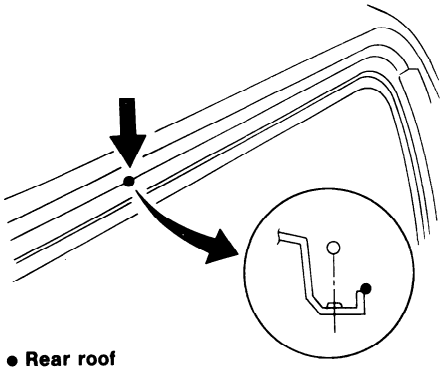
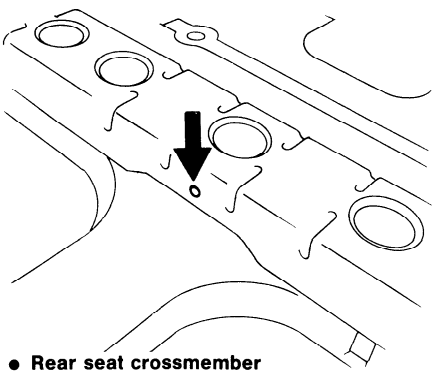
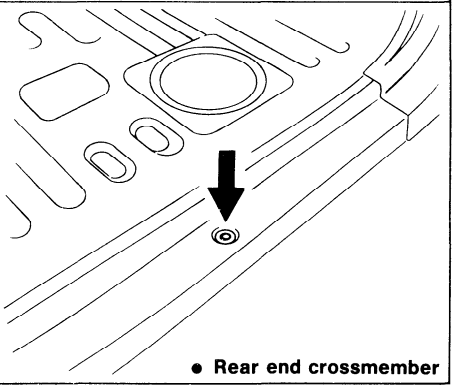
Portion A	Portion B	Portion C
		
• Upper radiator core support	• Cowl top	• Front roof
Portion D	**Portion E**	**Portion F**
		
• Rear roof	• Rear seat crossmember	• Rear end crossmember

BODY CENTER MARKS

WAGON

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.

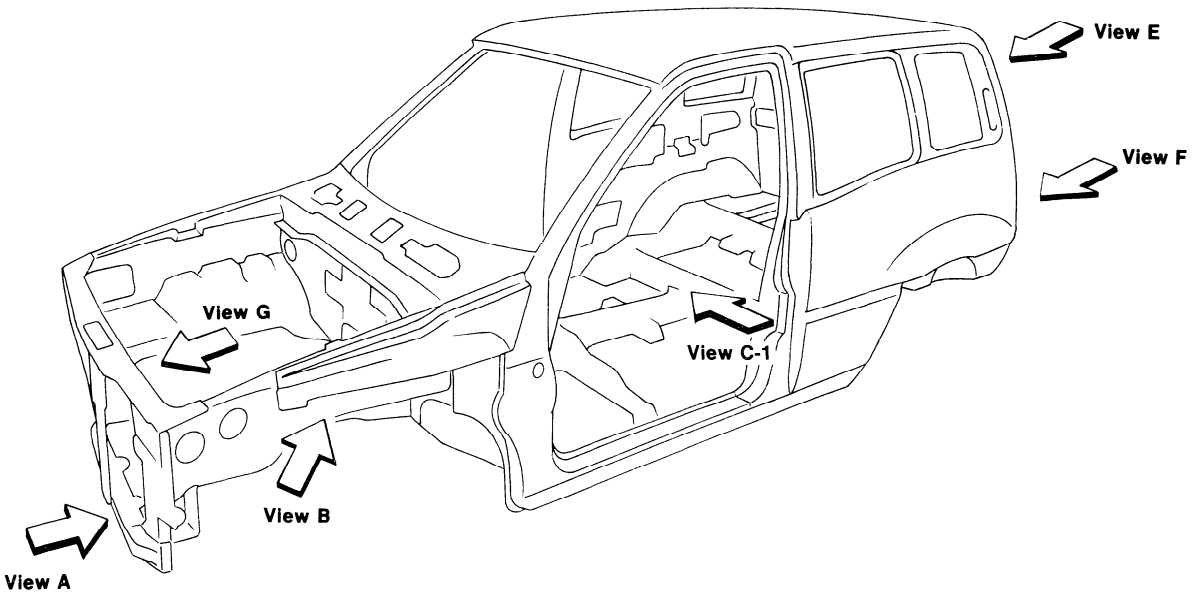


Portion A	Portion B	Portion C
		
• Upper radiator core support	• Cowl top	• Front roof
Portion D	**Portion E**	**Portion F**
		
• Rear roof	• Rear seat crossmember	• Rear end crossmember

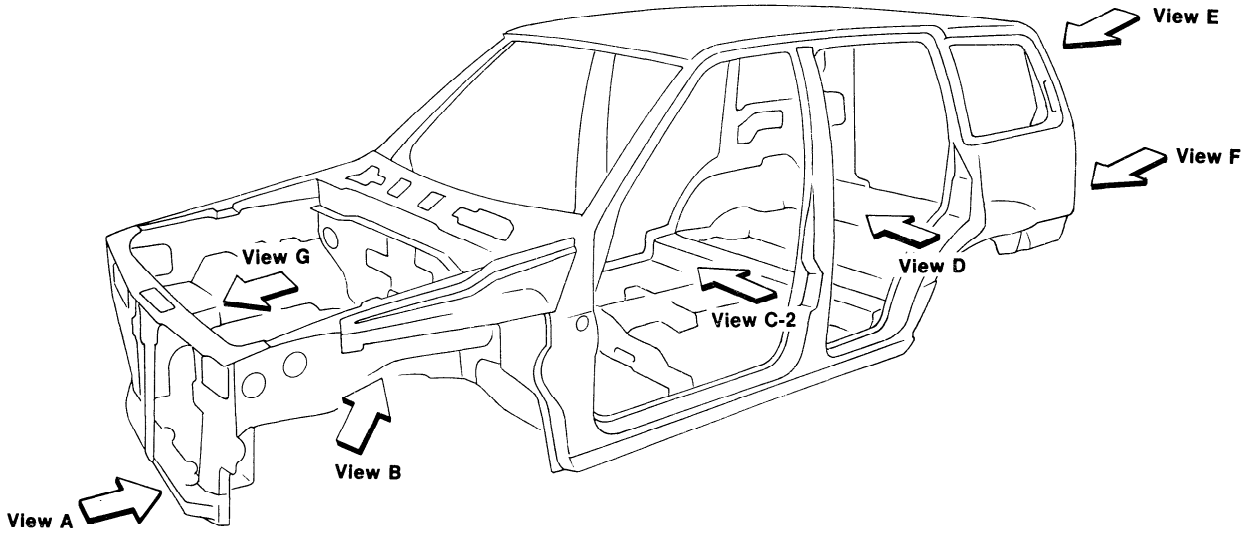
PANEL PARTS MATCHING MARKS

A mark has been placed on each part of the body to indicate the panel parts matching positions. 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.

HARDTOP

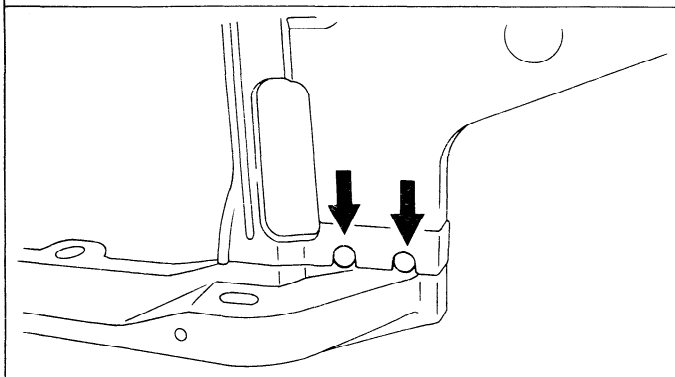


WAGON

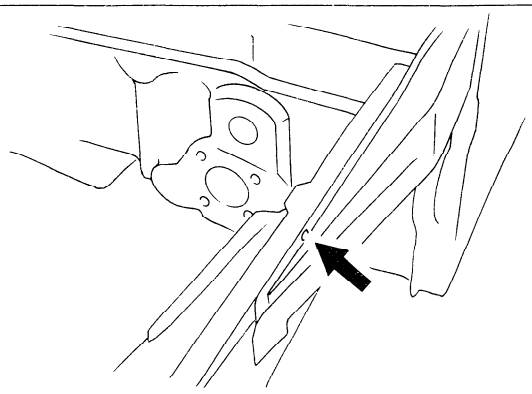


PANEL PARTS MATCHING MARKS

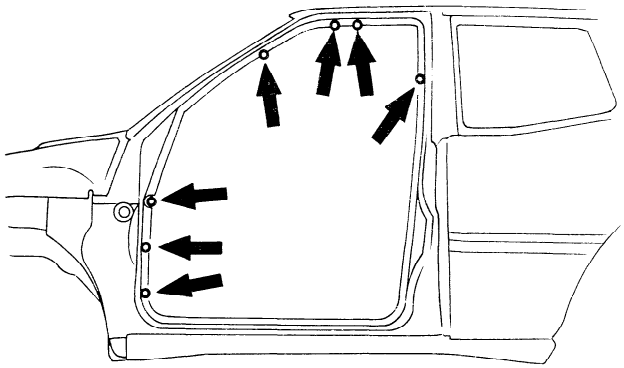
View A



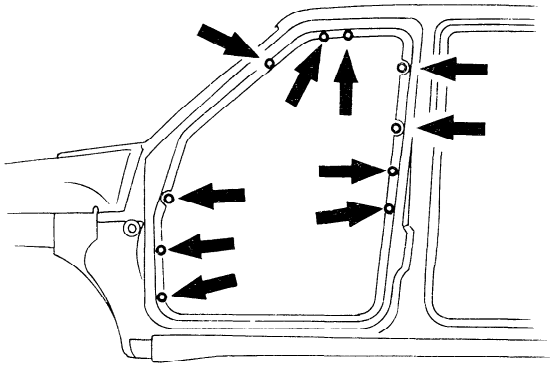
View B



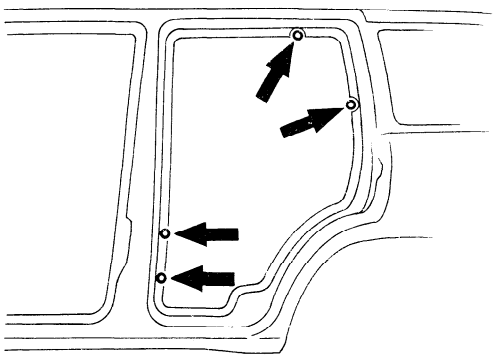
View C-1 HARDTOP



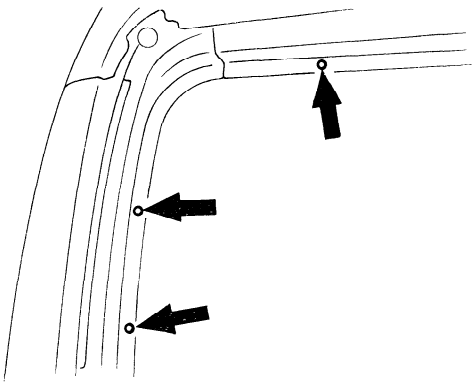
View C-2 WAGON



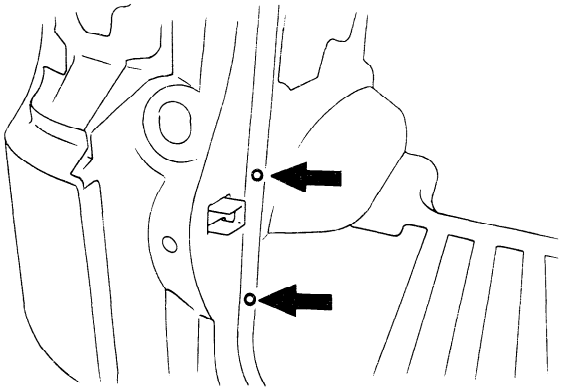
View D WAGON



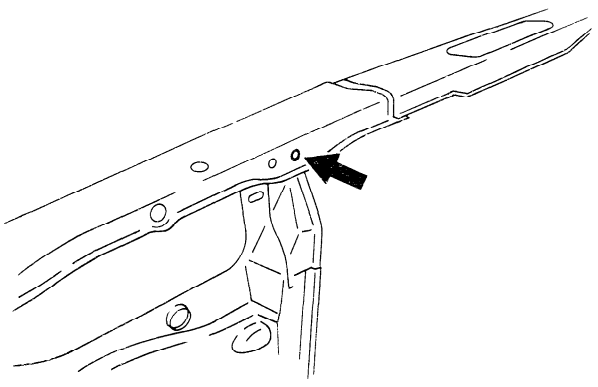
View E



View F

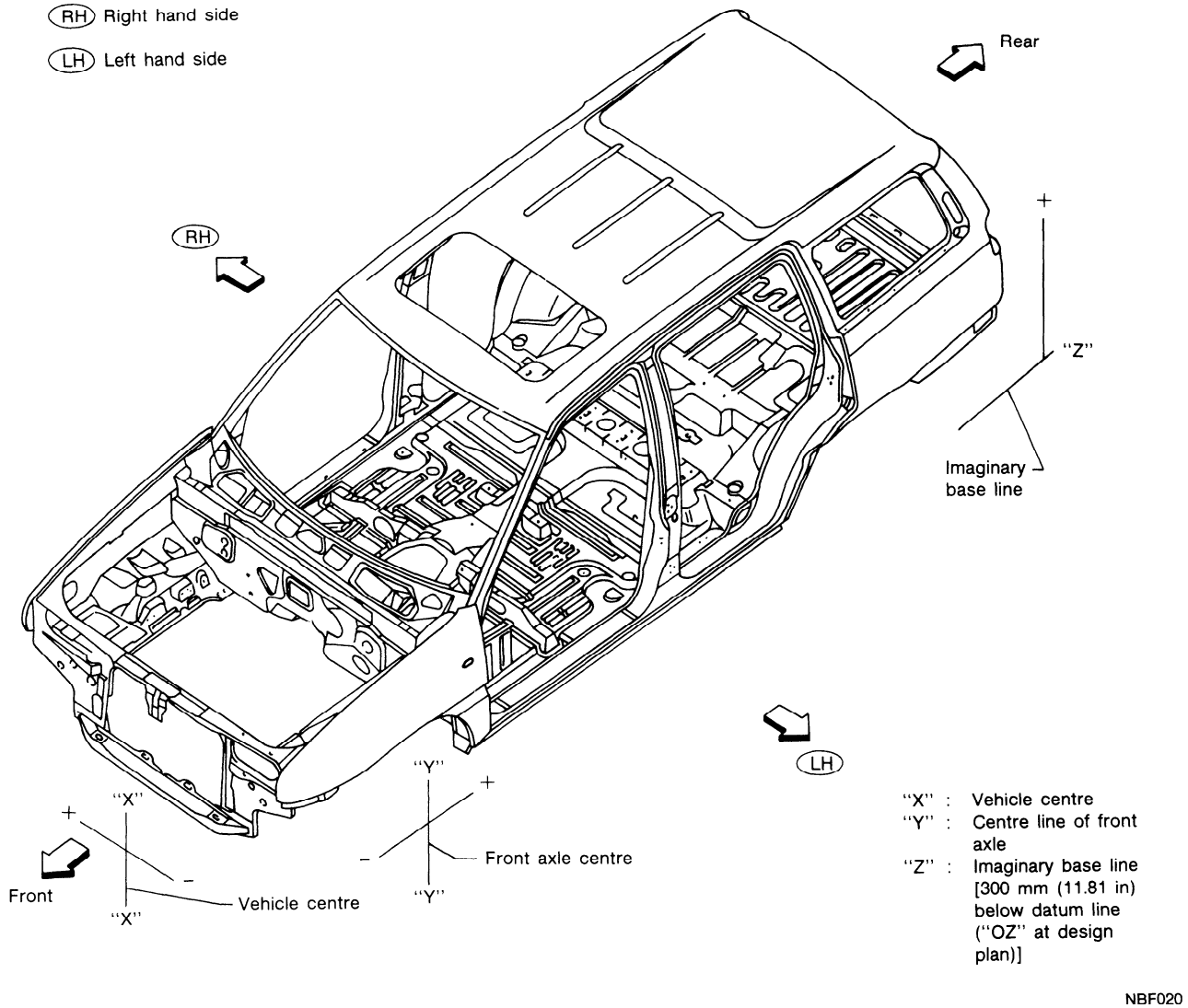


View G



DESCRIPTION

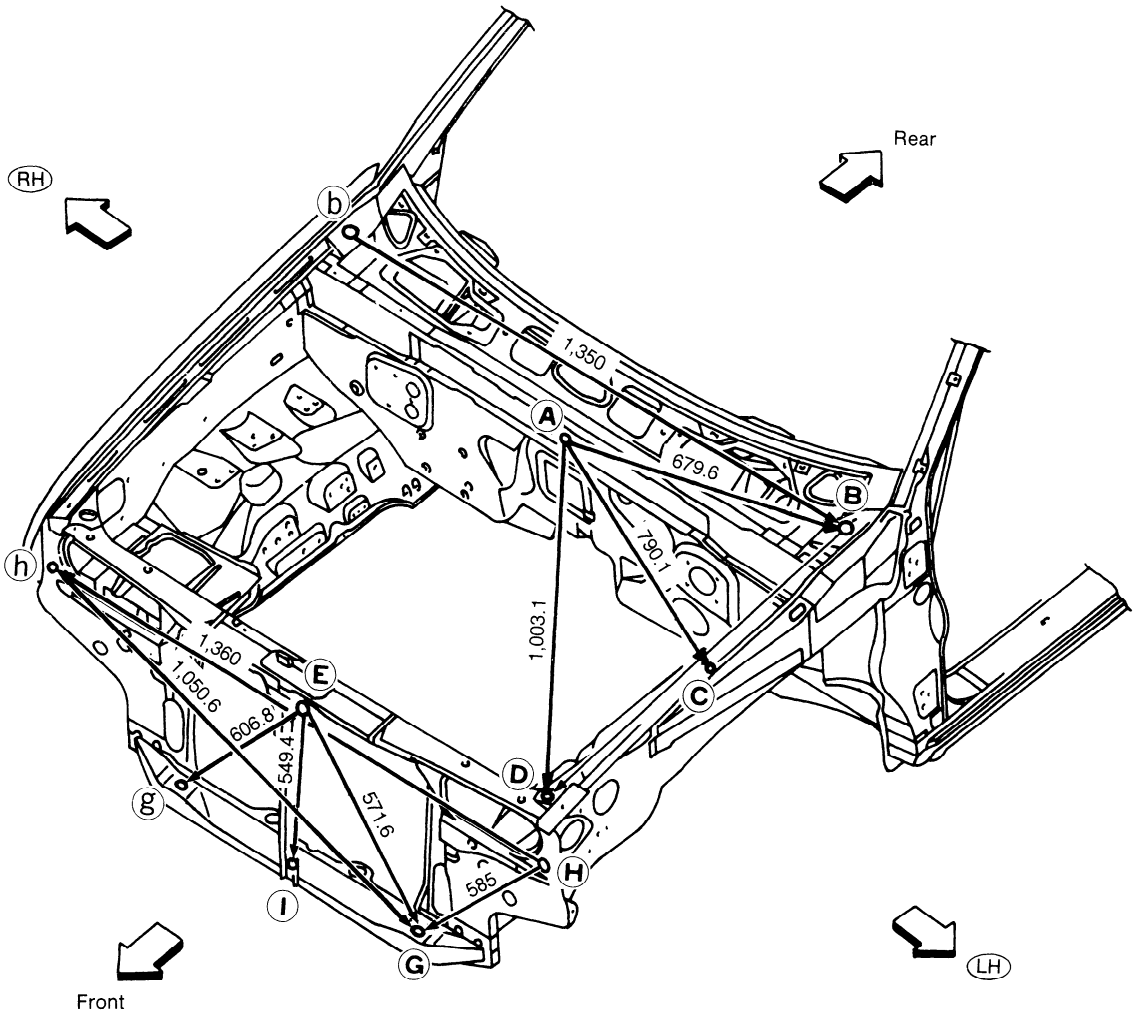
- All dimensions indicated in figures are actual ones.
- When a tram tracking gauge is used, adjust both pointers to equal length and check the pointers and gauge itself to make sure there is no free play.
- When a measuring tape is used, check to be sure there is no elongation, twisting or bending.
- Measurements should be taken at the center of the mounting holes.
- All measurements and mounting hole diameters are expressed in millimeters (mm).
- 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".



NBF020

ENGINE COMPARTMENT

MEASUREMENT



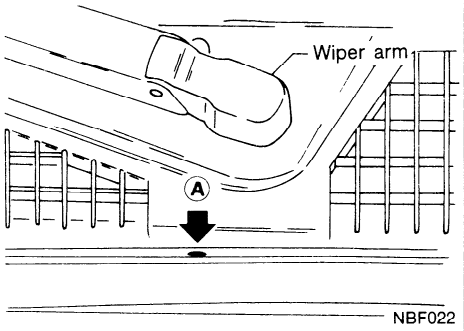
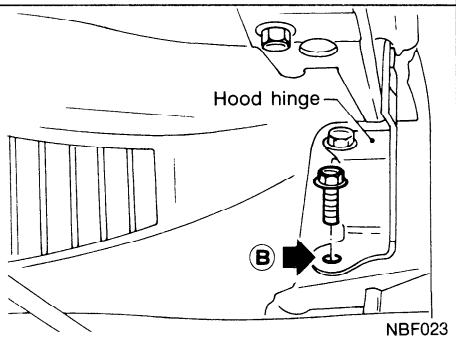
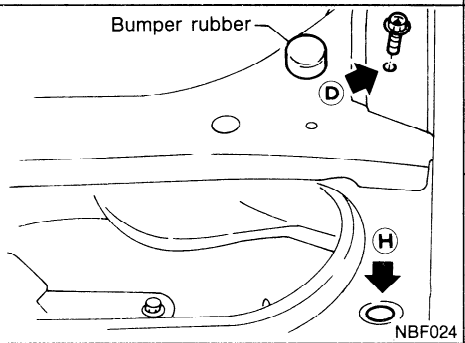
Figures marked with a * show symmetrically identical dimensions on both right and left hand sides of the vehicle.

Unit: mm

NBF021

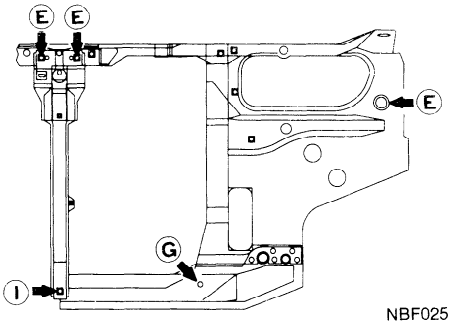
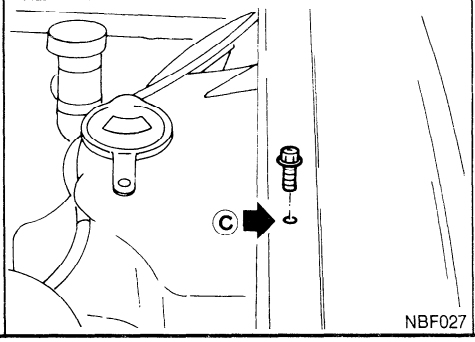
ENGINE COMPARTMENT

MEASUREMENT POINTS

Points	Hole dia. mm	Detailed points		Coordinates mm		
				"X" ①	"Y"	"Z"
Ⓐ	8		Cowl top hole at vehicle center	0.0	250.0	1,006.9
Ⓑ ⓑ	11		Cowl top side hole	698.5	–110.1	924.7
Ⓓ ⓓ	8		Upper radiator core support location hole	691.0	–459.5	848.0
Ⓗ ⓗ	16		Side radiator core support location hole	680.0	–551.7	700.0

① : Coordinate indicated is (LH). (RH) coordinate is - (LH) coordinate.
E.g. if (LH) coordinate is: 698.5, (RH) coordinate is: –698.5.

ENGINE COMPARTMENT

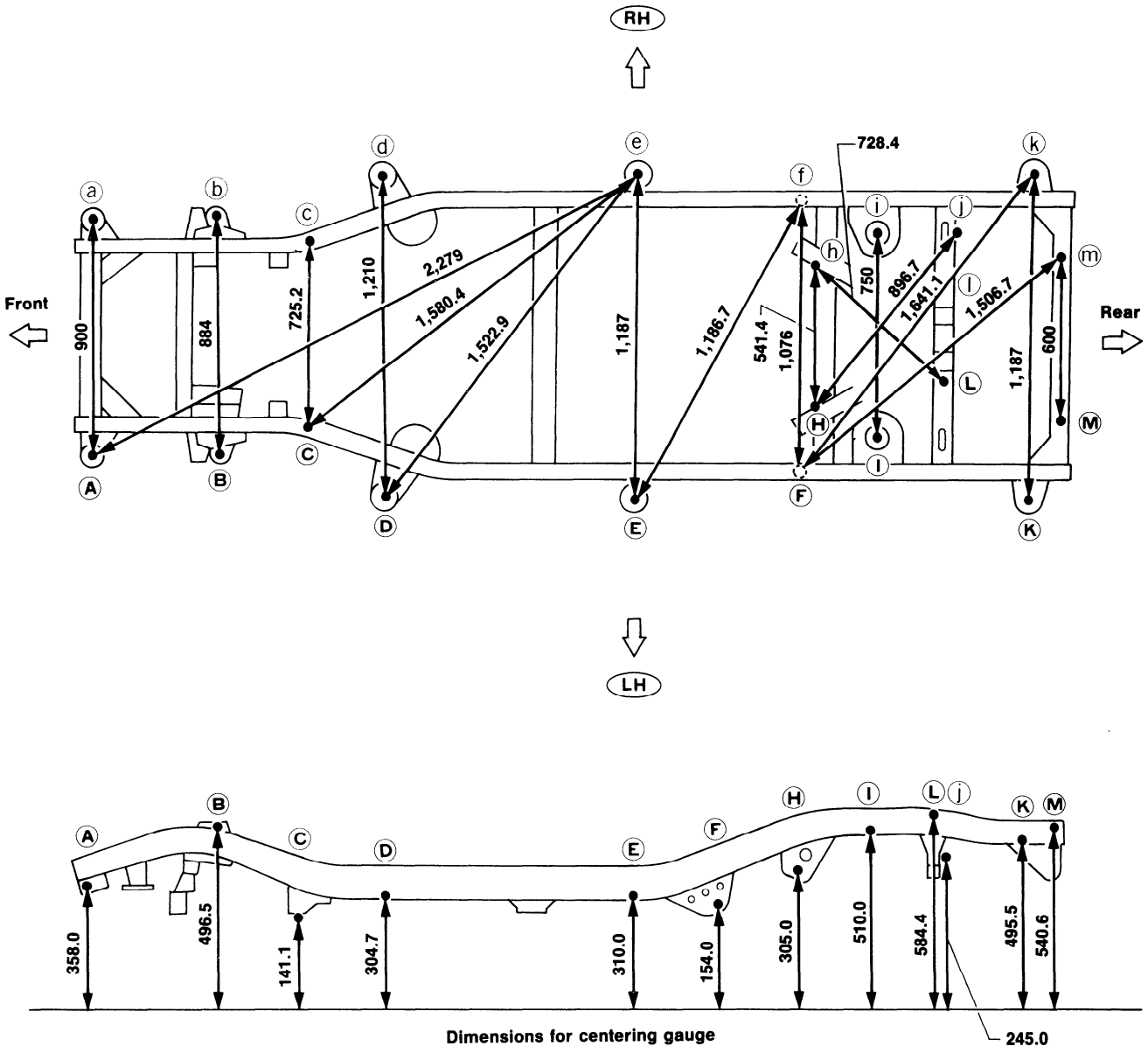
Points	Hole dia. mm	Detailed points		Coordinates mm		
				"X" ①	"Y"	"Z"
Ⓔ	9	 NBF025	Hood lock stay mounting hole on upper radiator core support	37.0	–589.0	794.0
Ⓘ			Lower radiator core support mounting hole	0.0	–581.1	245.9
Ⓖ ⓖ	12		Lower radiator core support location hole	280.0	–608.9	277.0
Ⓒ ⓒ	7.2	 NBF027	Front fender mounting hole on hoodledge	698.5	–110.1	924.7

① : Coordinate indicated is (LH). (RH) coordinate is - (LH) coordinate.
E.g. if (LH) coordinate is: 698.5, (RH) coordinate is: –698.5.

UNDERBODY

MEASUREMENT

Hardtop model

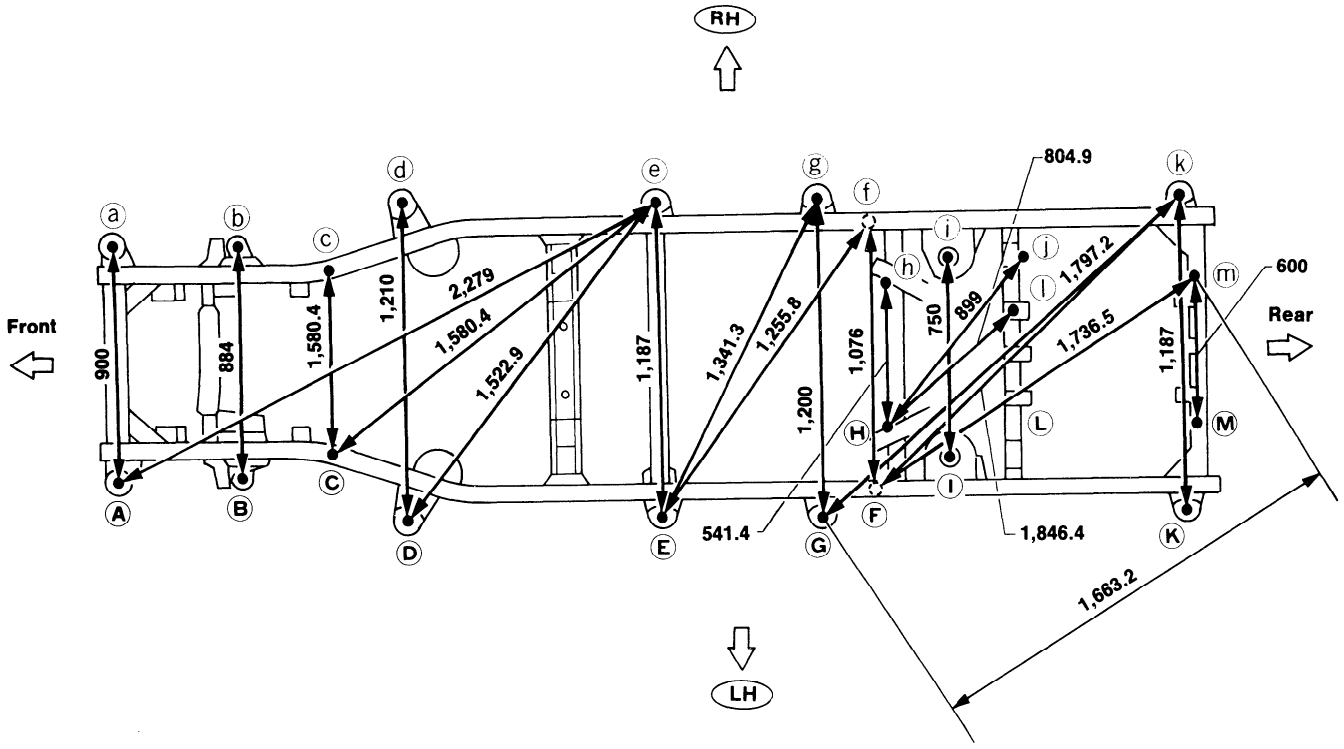


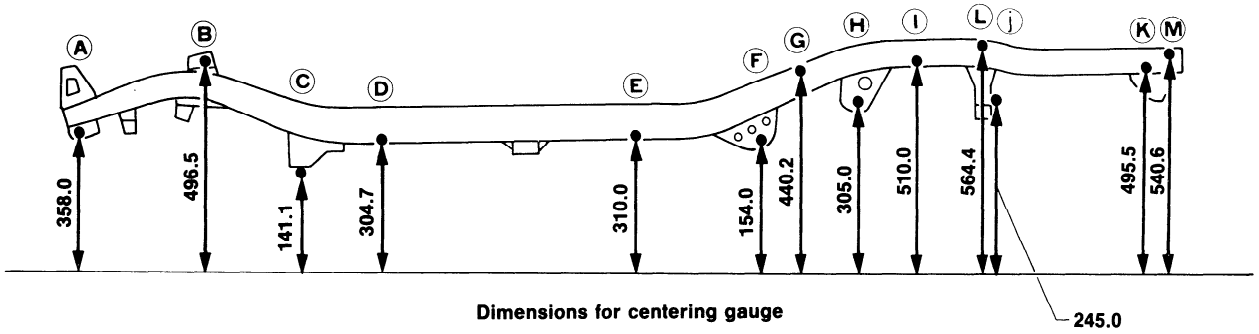
Dimensions for centering gauge

Unit: mm

UNDERBODY

Wagon model





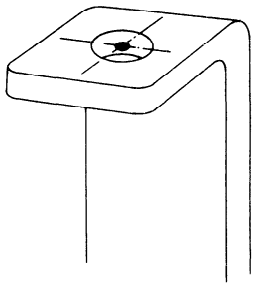
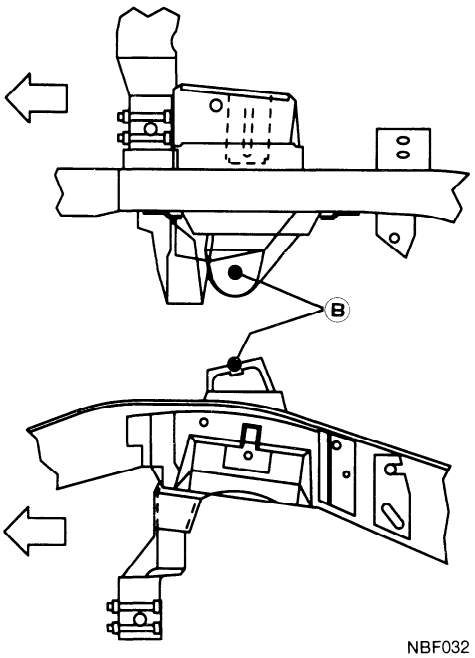
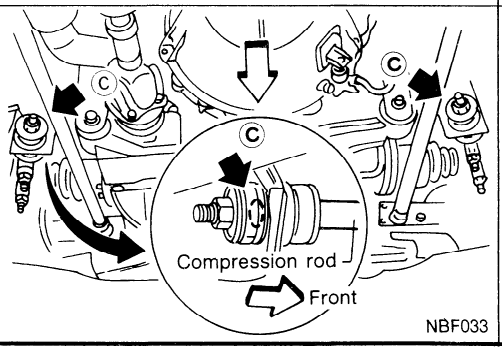
Dimensions for centering gauge

Unit: mm

UNDERBODY

MEASUREMENT POINTS

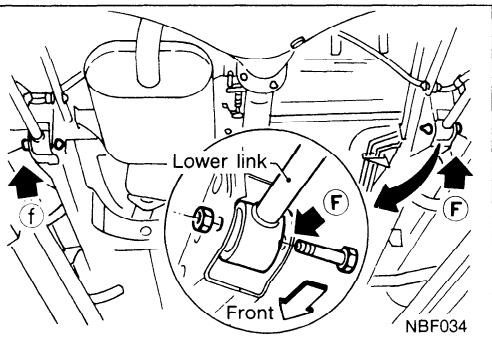
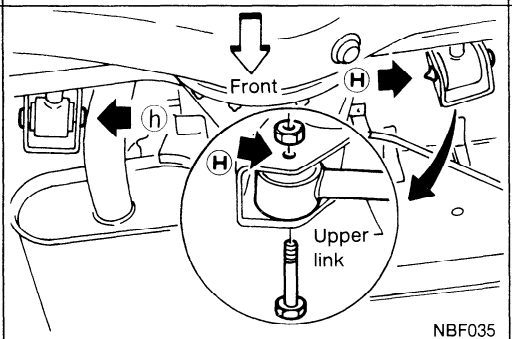
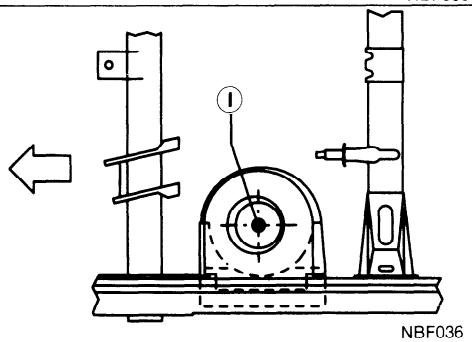
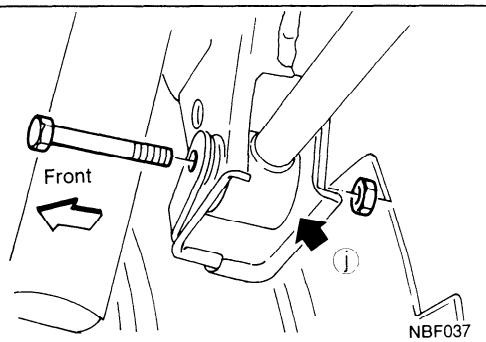
Ⓦ : Wagon models
Ⓗ : Hardtop models

Points	Detailed points		Coordinates mm		
			"X" ①	"Y"	"Z"
Ⓐ ⓐ	 SBF274B	Body mounting bracket hole	450.0	–488.5	358.0
Ⓓ ⓓ			605.0	597.5	304.7
Ⓔ ⓔ			593.5	1,537.0	310.0
Ⓖ ⓖ			Ⓦ : 600.0	Ⓦ : 2,135.0	Ⓦ : 440.2
Ⓚ ⓚ			593.5	Ⓦ : 3,477.5 Ⓗ : 2,997.5	495.5
Ⓑ ⓑ	 NBF032	Front shock absorber bracket mounting hole	442.0	–16.0	496.5
Ⓒ ⓒ	 NBF033	Compression rod mounting hole	362.6	290.0	141.1

① : Coordinate indicated is (LH). (RH) coordinate is - (LH) coordinate.
E.g. if (LH) coordinate is: 698.5, (RH) coordinate is: –698.5.

UNDERBODY

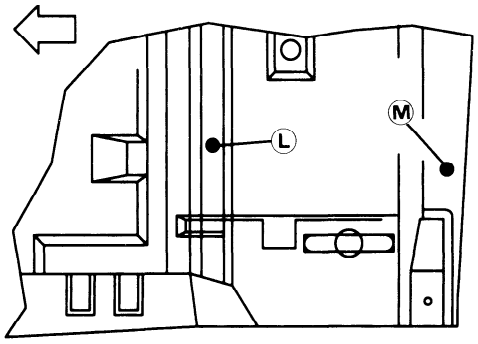
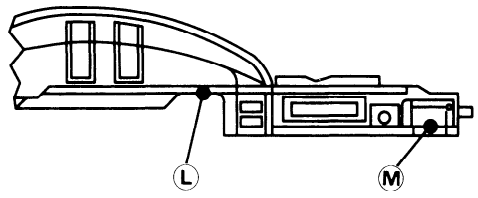
[W] : Wagon models
[H] : Hardtop models

Points	Detailed points		Coordinates mm		
			"X" ①	"Y"	"Z"
Ⓕ ⓕ		Lower link mounting bracket hole	538.0	[W] : 2,059.0 [H] : 1,859.0	154.0
Ⓗ ⓗ		Upper link mounting bracket hole	270.7	[W] : 2,382.3 [H] : 2,182.3	305.0
Ⓘ ⓘ		Rear spring mounting bracket hole	375.0	[W] : 2,610.0 [H] : 2,410.0	510.0
Ⓙ		Rear panhard rod mounting bracket hole	(RH) only –495.8	[W] : 2,843.7 [H] : 2,643.7	245.0

① : Coordinate indicated is (LH). (RH) coordinate is -(LH) coordinate.
E.g. if (LH) coordinate is: 698.5, (RH) coordinate is: –698.5.

UNDERBODY

[H] : Wagon models
[W] : Hardtop models

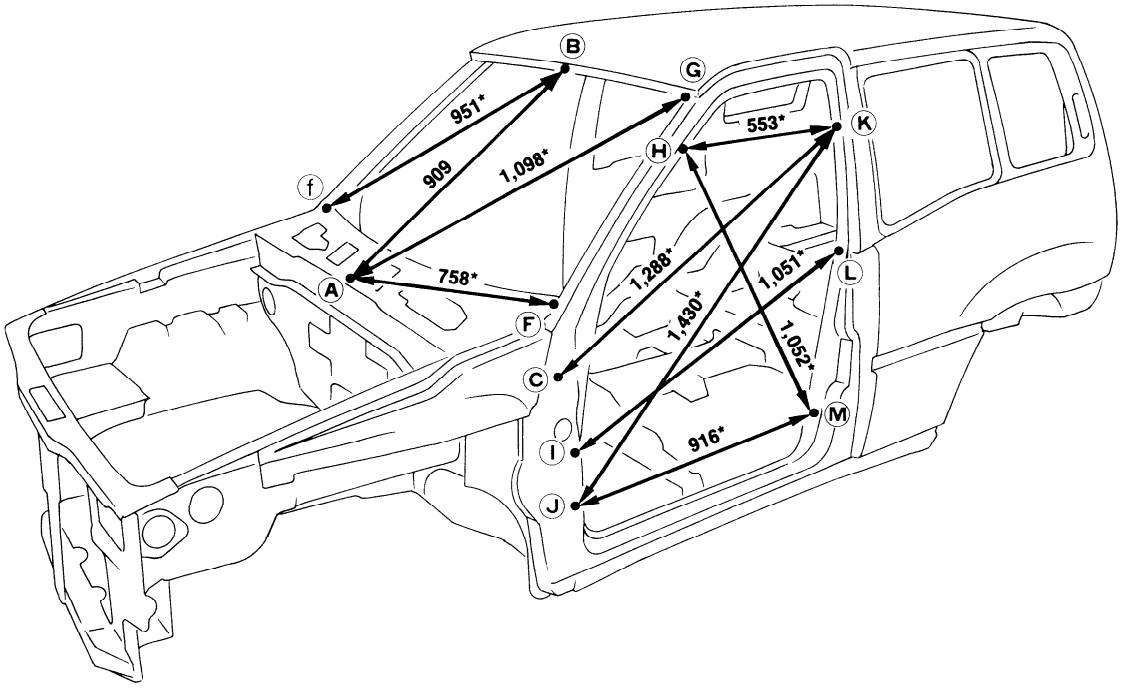
Points	Detailed points		Coordinates mm		
			"X" ①	"Y"	"Z"
Ⓛ Ⓘ		5th crossmember location hole	225.0	[W] : 2,961.0 [H] : 2,637.0	[W] : 564.4 [H] : 584.4
Ⓜ ⓜ	 NBF038	6th crossmember location hole	300.0	[W] : 3,530.0 [H] : 3,050.0	540.6

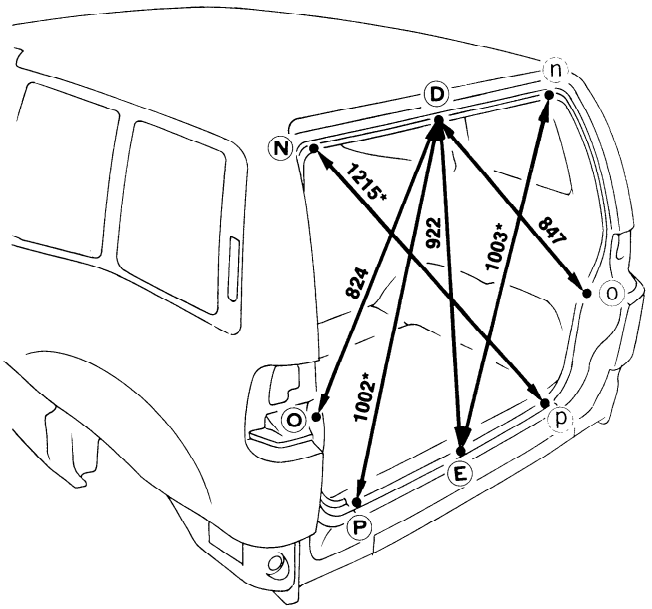
① : Coordinate indicated is (LH). (RH) coordinate is - (LH) coordinate.
E.g. if (LH) coordinate is: 698.5, (RH) coordinate is: –698.5.

PASSENGER COMPARTMENT AND REAR BODY

HARDTOP

MEASUREMENT





Straight line dimensions other than shown

Measurement Points	Dimension
Ⓕ - ⓕ	1,396
Ⓖ - ⓖ	1,104
Ⓗ - ⓗ	1,240
Ⓘ - ⓘ	1,380
Ⓙ - ⓙ	1,377
Ⓚ - ⓚ	1,204
Ⓛ - ⓛ	1,397
Ⓜ - ⓜ	1,375
Ⓝ - ⓝ	804
Ⓞ - ⓞ	1,055
Ⓟ - ⓟ	790

Unit: mm

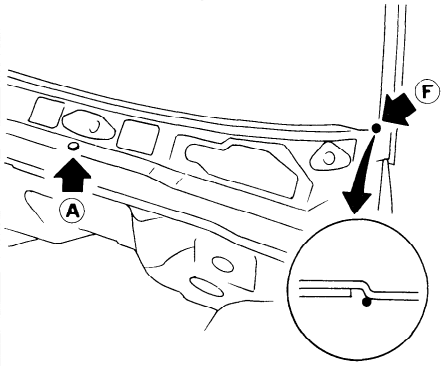
- **Figures marked with a "*"show symmetrically identical dimensions on both right and left hand sides of the vehicle.**

PASSENGER COMPARTMENT AND REAR BODY

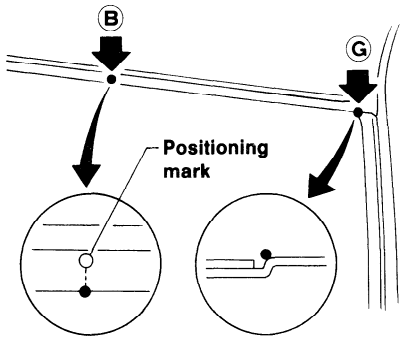
HARDTOP

MEASUREMENT POINTS

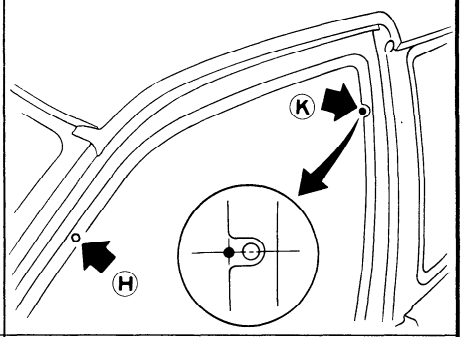
Ⓐ : Cowl top hole center (5 dia.)
Ⓕ ⓕ: Outer front pillar joggle flange end



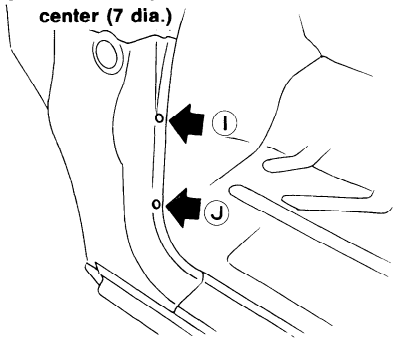
Ⓑ : Front roof flange end
Ⓖ ⓖ: Outer front pillar joggle flange end



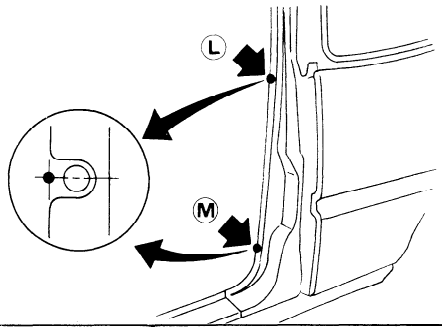
Ⓗ ⓗ: Outer front pillar standard hole center (6 dia.)
Ⓚ ⓚ: Rear fender indention



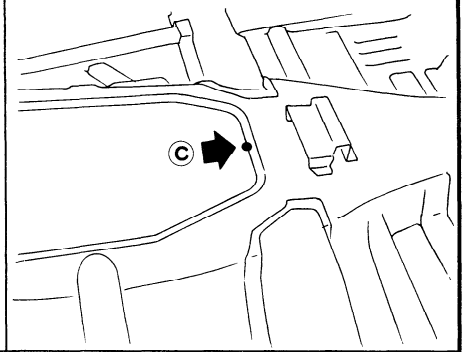
Ⓘ ⓘ: Outer front pillar standard hole center (6 dia.)
Ⓙ ⓙ: Outer front pillar standard hole center (7 dia.)



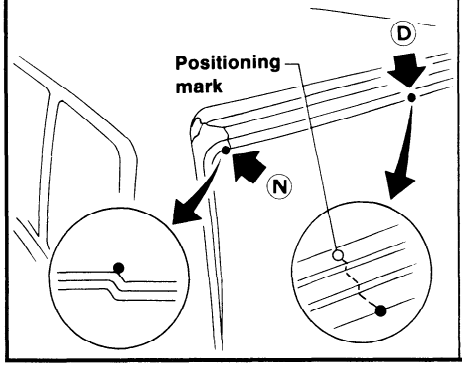
Ⓛ ⓛ: Rear fender indention
Ⓜ ⓜ: Rear fender indention



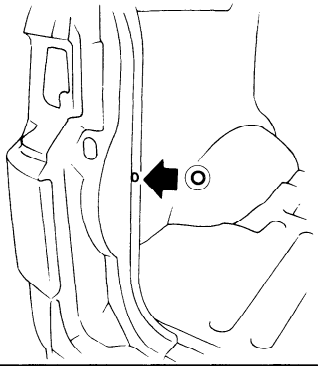
Ⓒ : Front floor flange end



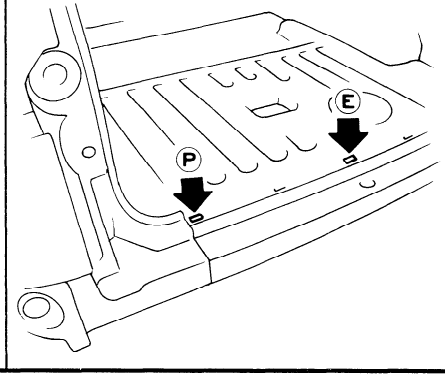
Ⓓ : Rear roof flange end
Ⓝ ⓝ: Rear roof joggle flange end



Ⓞ ⓞ: Outer back pillar hole center (6 dia.)



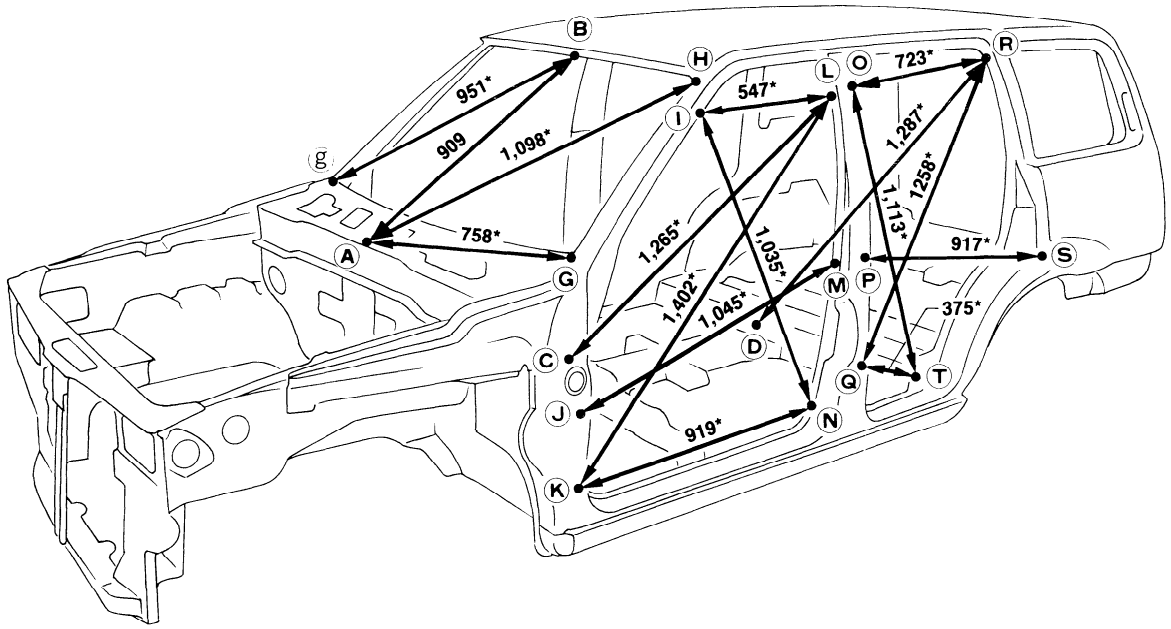
Ⓔ : Rear end crossmember hole center
Ⓟ ⓟ: Rear end crossmember hole center

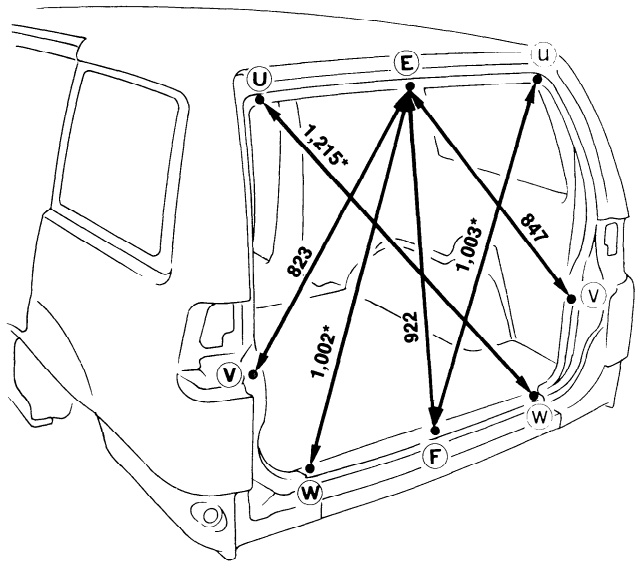


PASSENGER COMPARTMENT AND REAR BODY

WAGON

MEASUREMENT





- **Figures marked with a "*" show symmetrically identical dimensions on both right and left hand sides of the vehicle.**

Straight line dimensions other than shown

Measurement Points	Dimension
Ⓖ - ⓖ	1,396
Ⓗ - ⓗ	1,104
Ⓘ - ⓘ	1,240
Ⓙ - ⓙ	1,380
Ⓚ - ⓚ	1,377
Ⓛ - ⓛ	1,232
Ⓜ - ⓜ	1,396
Ⓝ - ⓝ	1,376
Ⓞ - ⓞ	1,205
Ⓟ - ⓟ	1,390
Ⓠ - ⓠ	1,379
Ⓡ - ⓡ	1,178
Ⓢ - ⓢ	1,630
Ⓣ - ⓣ	1,372
Ⓤ - ⓤ	804
Ⓥ - ⓥ	1,055
Ⓦ - ⓦ	790

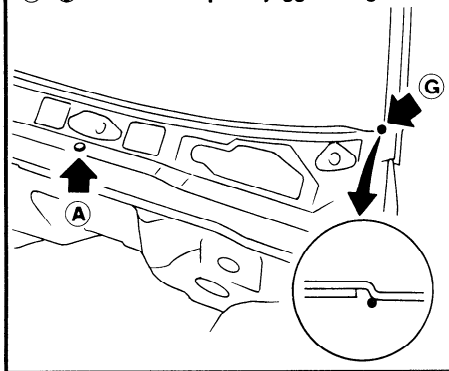
Unit: mm

PASSENGER COMPARTMENT AND REAR BODY

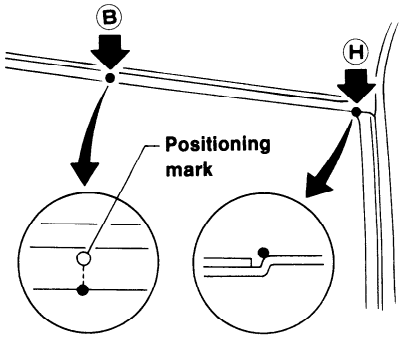
WAGON

MEASUREMENT POINTS

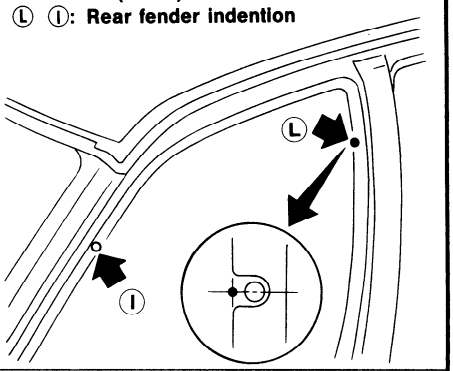
Ⓐ : Cowl top hole center (5 dia.)
Ⓖ ⓖ: Outer front pillar joggle flange end



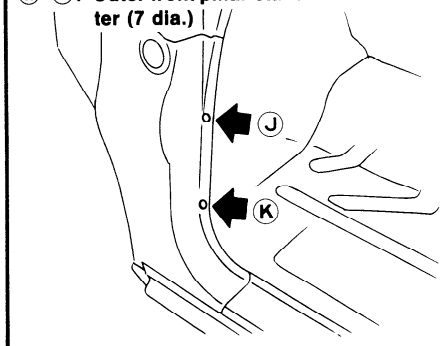
Ⓑ : Front roof flange end
Ⓗ ⓗ: Outer front pillar joggle flange end



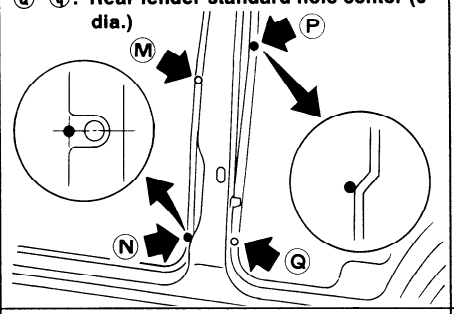
Ⓘ ⓘ: Outer front pillar standard hole center (6 dia.)
Ⓛ ⓛ: Rear fender indention



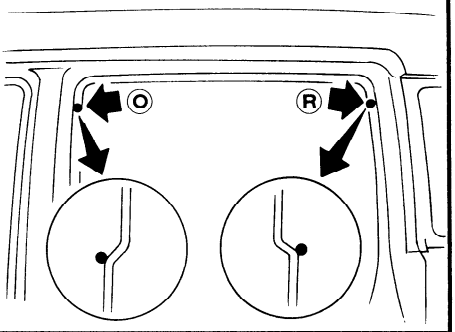
Ⓙ ⓙ: Outer front pillar standard hole center (6 dia.)
Ⓚ ⓚ: Outer front pillar standard hole center (7 dia.)



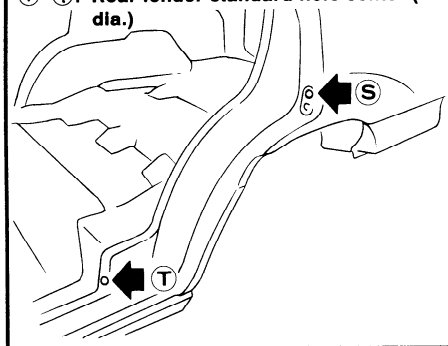
Ⓜ ⓜ: Rear fender standard hole center (6 dia.)
Ⓝ ⓝ: Rear fender indention
Ⓟ ⓟ: Rear fender joggle flange end
Ⓠ ⓠ: Rear fender standard hole center (6 dia.)



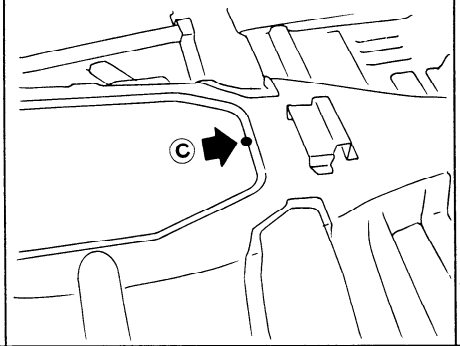
Ⓞ ⓞ: Rear fender joggle flange end
Ⓡ ⓡ: Rear fender joggle flange end



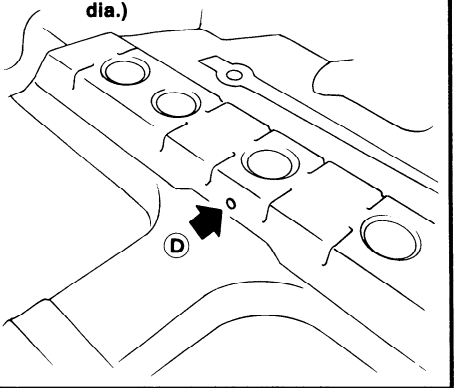
Ⓢ ⓢ: Rear door switch mounting hole center (6 dia.)
Ⓣ ⓣ: Rear fender standard hole center (6 dia.)



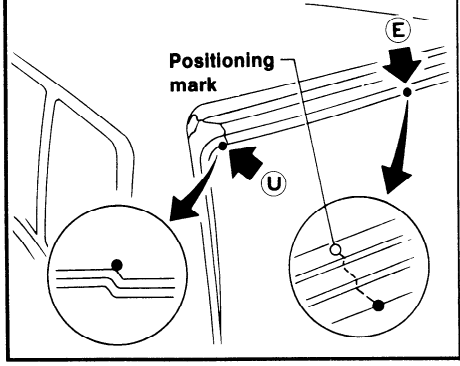
Ⓒ : Front floor flange end



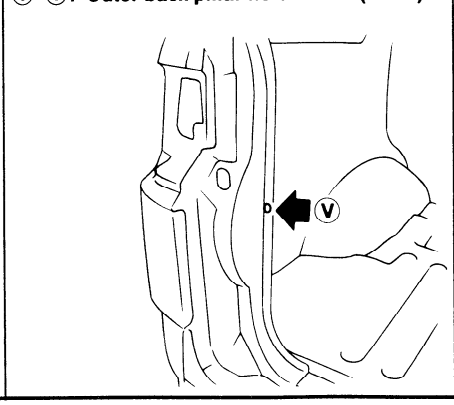
Ⓓ : Rear floor standard hole center (6 dia.)



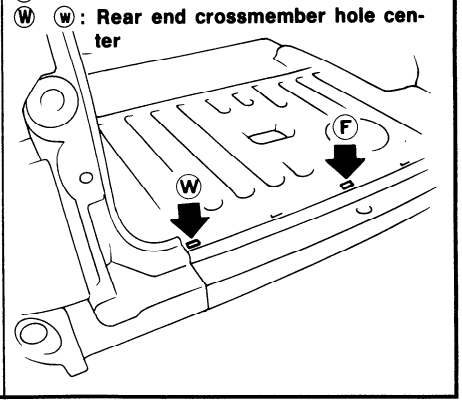
Ⓔ : Rear roof flange end
Ⓤ ⓤ: Rear roof joggle flange end



Ⓥ ⓥ: Outer back pillar hole center (6 dia.)



Ⓕ : Rear end crossmember hole center
Ⓦ ⓦ: Rear end crossmember hole center



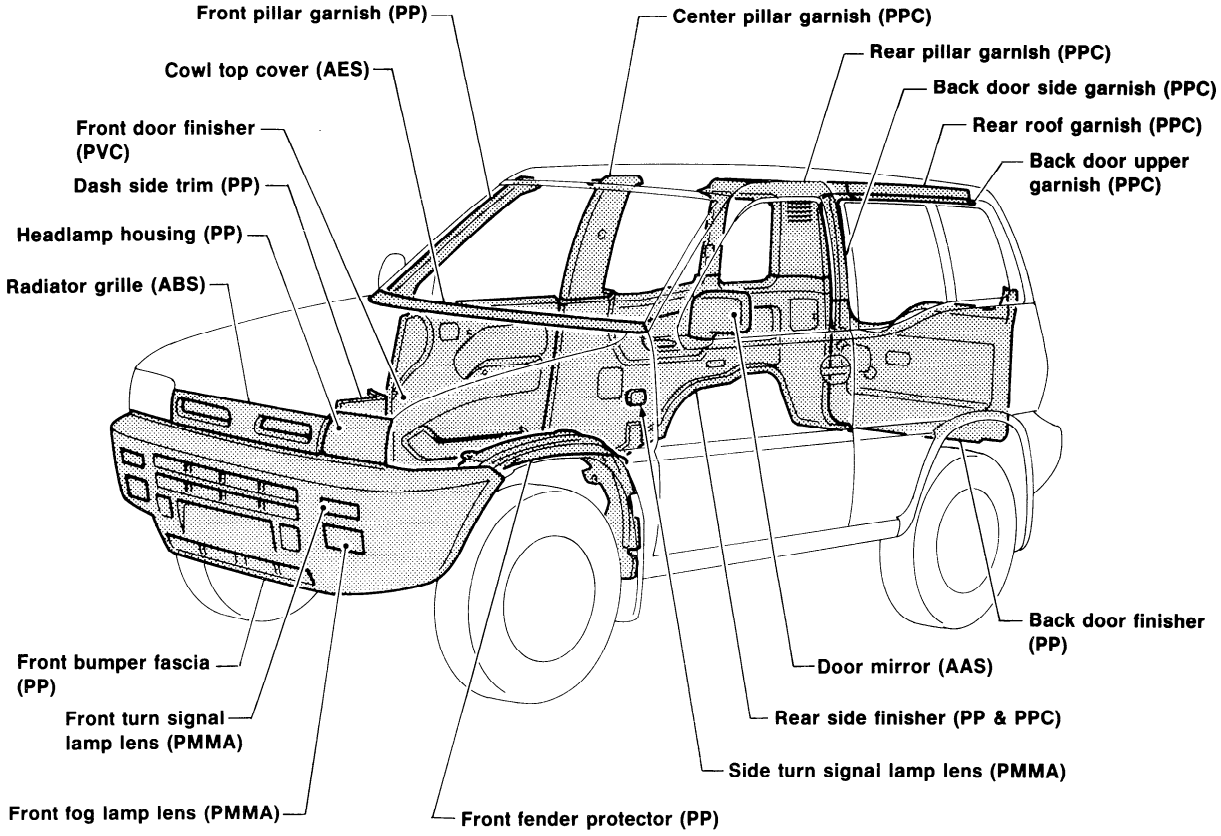
HANDLING PRECAUTIONS FOR PLASTICS

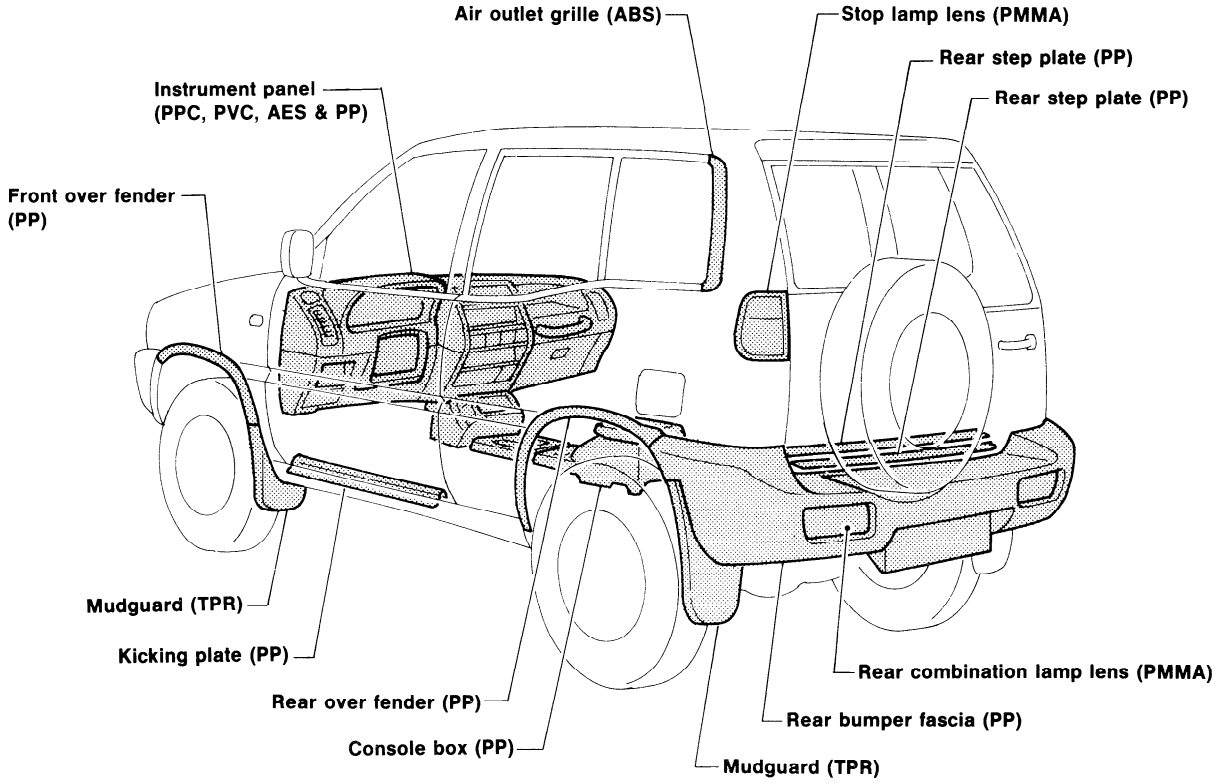
Classification	Abbreviation	Material name	Heat resisting temperature °C (°F)	Resistance to gasoline and solvents	Other cautions
Thermoplasticity	PE	Polyethylene	80 (176)	Gasoline and most solvents are harmless.	Flammable
	PVC	Polyvinyl chloride	80 (176)	Gasoline and most solvents are harmless if applied for a very short time (wipe up quickly).	Poison gas is emitted when burned.
	PP	Polypropylene	90 (194)	Same as above.	Flammable Avoid battery acid.
	ABS	Acrylonitrile butadiene styrene resin	80 (176)	Avoid gasoline and solvents.	
	AES	Acrylonitrile ethylene styrene	80 (176)	Avoid gasoline and solvents.	
	PMMA	Polymethyl methacrylate	85 (185)	Avoid gasoline and solvents.	
	AAS	Acrylonitrile acrylic rubber styrene	85 (185)	Avoid gasoline and solvents.	
	AS	Styrene-Acrylonitrile	85 (185)	Avoid gasoline and solvents.	
	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)	140 (284)	Gasoline and most solvents are harmless.	Avoid immersing in water and battery acid.
	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.	
	TPUR	Thermoplastic polyurethane	80 (176)	Avoid gasoline and solvents.	
Thermo-setting	PUR	Polyurethane	90 (194)	Gasoline and most solvents are harmless.	Avoid battery acid.
	FRP	Fiber reinforced plastics	170 (338)	Same as above.	Avoid battery acid.

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

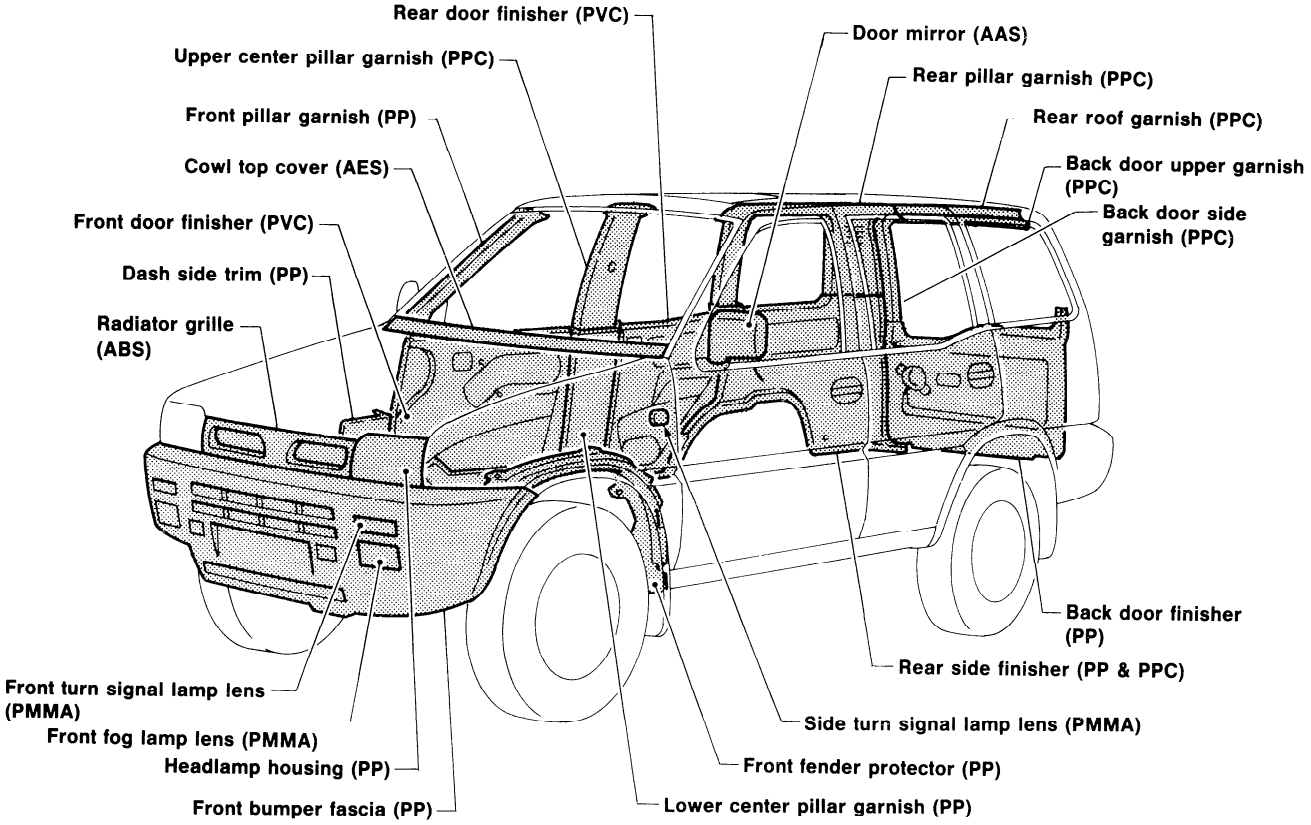
HARDTOP

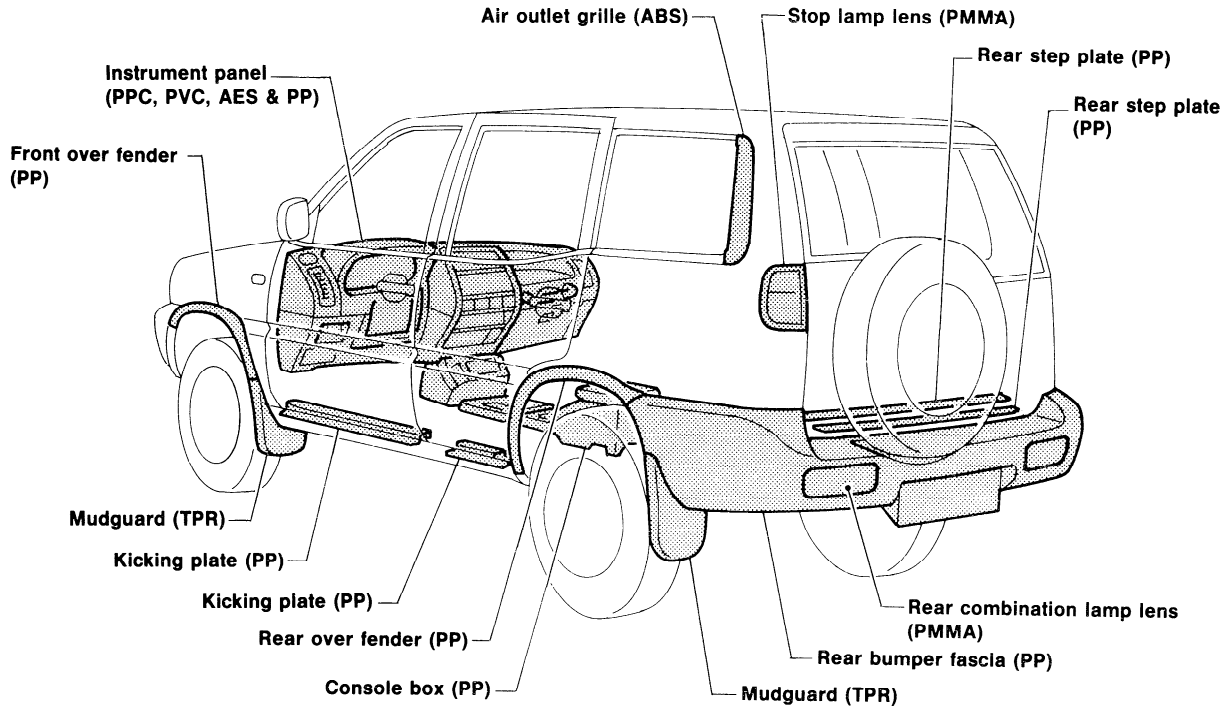




LOCATION OF PLASTIC PARTS

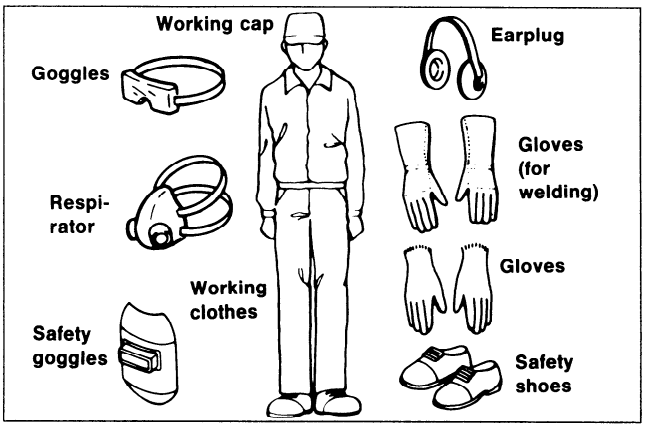
WAGON





PRECAUTIONS IN OPERATION

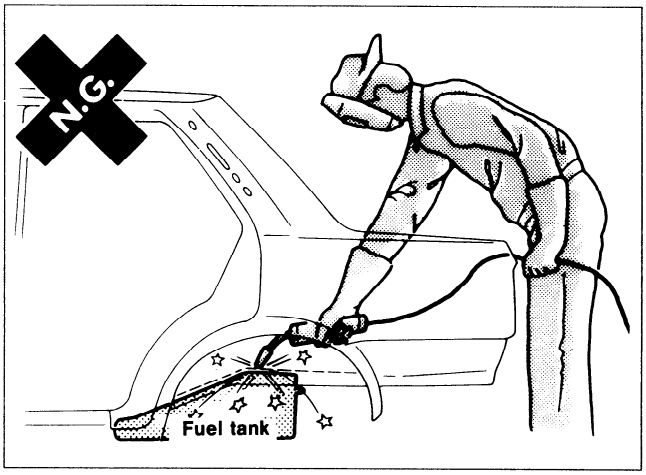
WELDING PRECAUTIONS



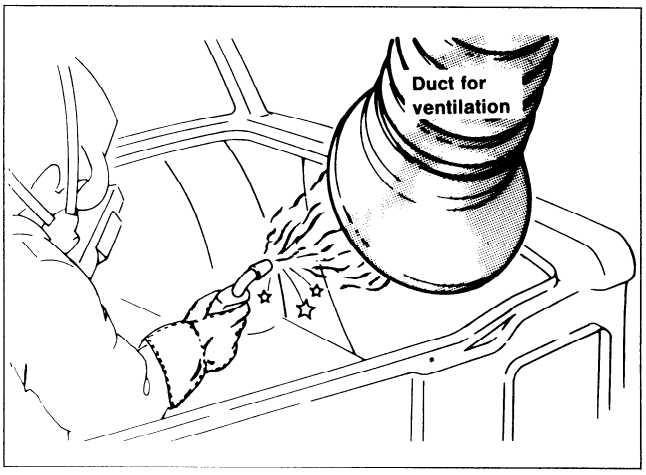
1. Wear protectors
- Be sure to wear goggles, earplugs, respirator, gloves and so forth depending on the work to be performed. Working clothes, safety shoes, and working cap must be worn as usual.

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.

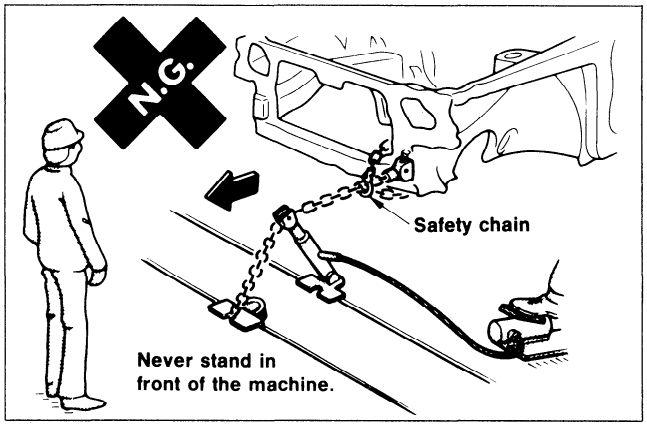


4. Working environment
- Pay attention to ventilation and operators safety.
- Paint and sealant may generate poisonous gases when heated by fire. To prevent this, do not use a gas welder for cutting off damaged portions. Use an air saw or an air chisel.
- Use a belt sander or rotary wire brush for removing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



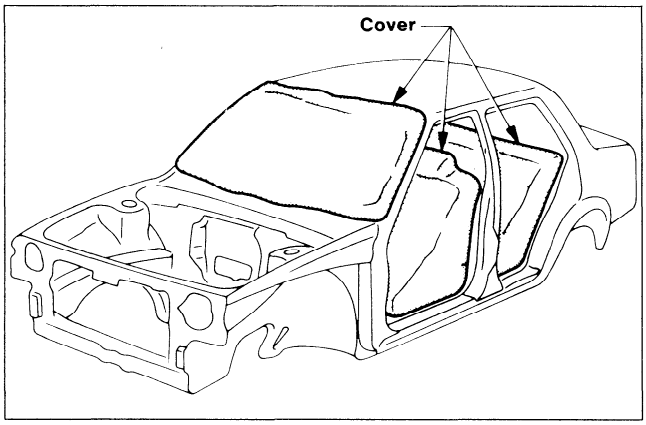
PRECAUTIONS IN OPERATION

5. Vehicle body straightener
- Be sure to use correctly according to the instruction manual prepared by the straightener manufacturer. 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 M.I.G. 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 or equivalent.

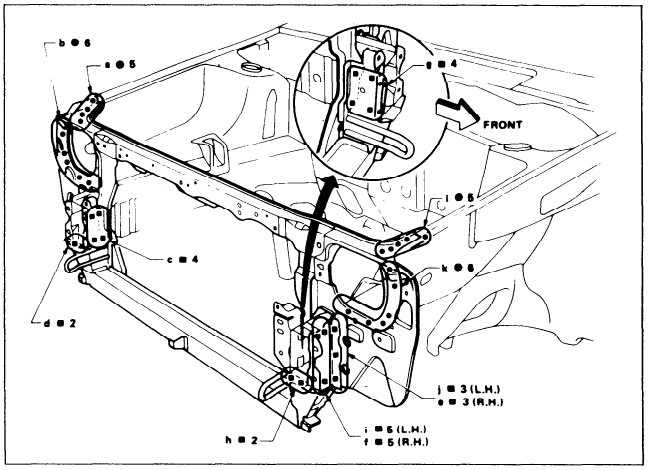
PRECAUTIONS IN OPERATION

WELDING PRECAUTIONS

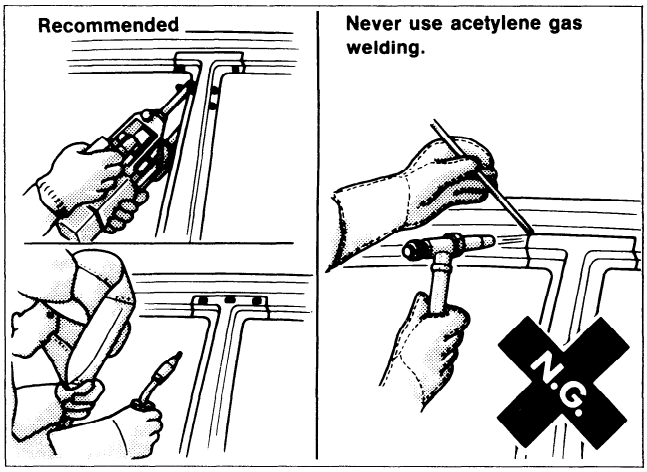
General precautions

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 faster and more efficient than other welding processes. In addition, it features a low amount of thermal strain, less rust formation and finishing is unnecessary.
  For these reasons, it is recommended that resistance spot welding be used whenever possible.
  Further, use of M.I.G. welding is recommended for locations where resistance spot welding cannot be utilized and for structural parts (members, pillars, etc.).



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

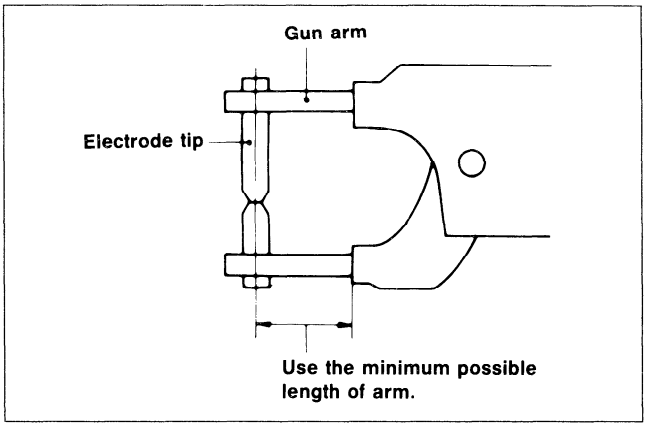
Spot welding

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

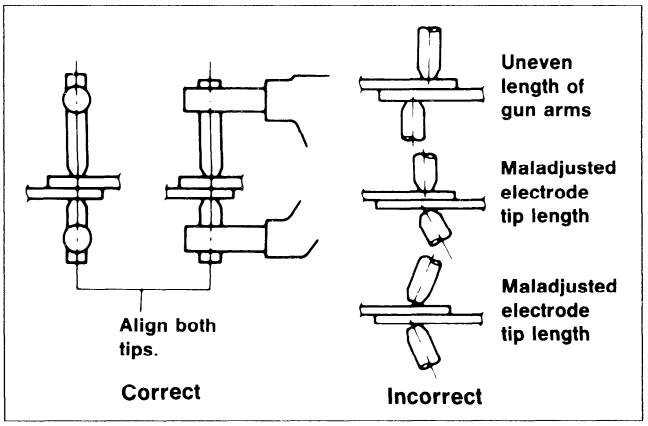
a. Keep the gun arm as short as possible to obtain the maximum pressure for welding.

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 poor strength at the weld.

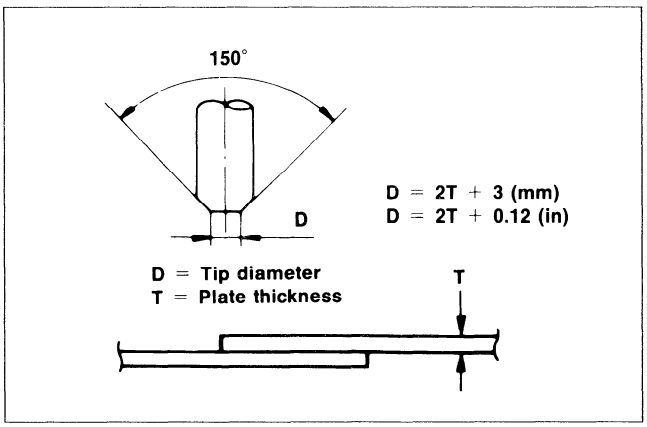


(3) Diameter of electrode tip

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 tip surface.

Unit: mm (in)

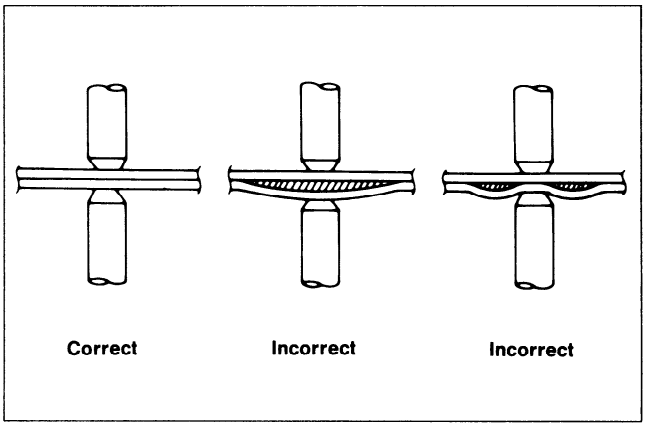
Thickness (T)	Diameter (D)	Thickness (T)	Diameter (D)
0.6 (0.024)	4.2 (0.165)	1.0 (0.039)	5.0 (0.197)
0.7 (0.028)	4.4 (0.173)	1.2 (0.047)	5.4 (0.213)
0.8 (0.031)	4.6 (0.181)	1.4 (0.055)	5.8 (0.228)
0.9 (0.035)	4.8 (0.189)	1.6 (0.063)	6.2 (0.244)



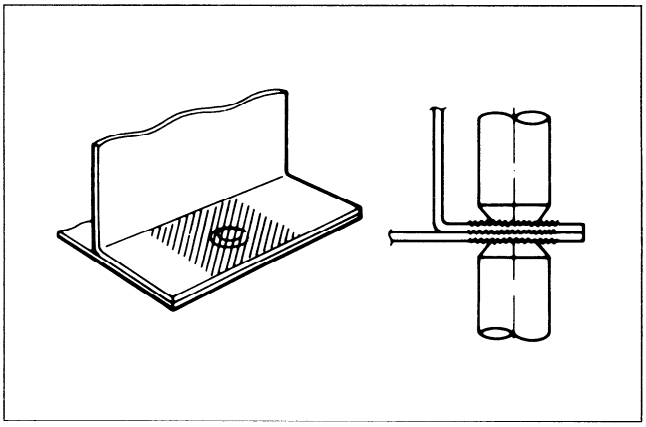
2. Condition of the panel
   Gaps, paint film, rust, or dust on the panel surface causes poor current flow and reduced spot area resulting in inferior welding.
   Before beginning, it is necessary to thoroughly check the panel condition, and make any necessary corrections.

PRECAUTIONS IN OPERATION

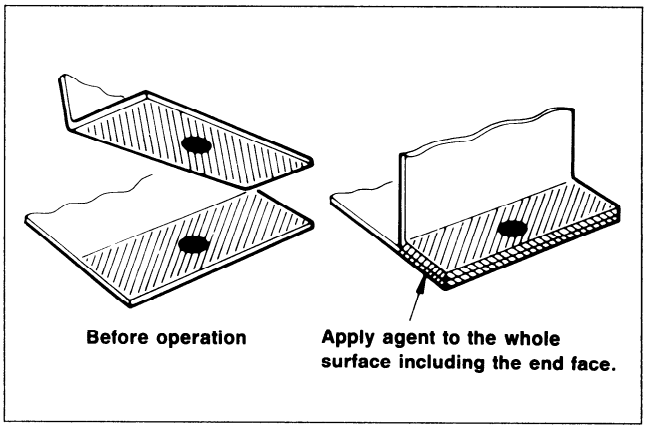
(1) Gaps between welding surfaces
Gaps between the surfaces to be welded cause poor current flow. Even if welding could be done without removing such gaps, the welded area would be smaller, resulting in poor strength.
Flatten the two surfaces to remove the gaps, and clamp them tightly with a clamp before welding.



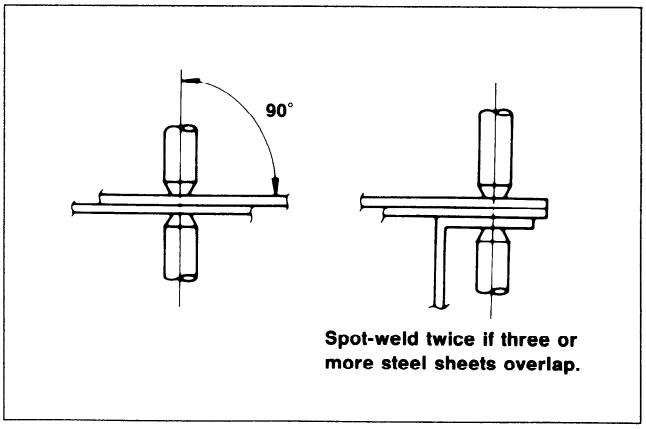
(2) Panel surfaces to be welded
Paint film, rust, dust, or any other contamination on the metal surfaces to be welded causes insufficient current flow and poor results.
Remove all foreign matter from the surfaces to be welded by 0sanding or wiping clean.



(3) To prevent corrosion in the welding process
Anti-corrosive agent has high conductivity. It is important to evenly apply the agent to the end face of the panel.



3. Precautions in performing spot welding:
(1) Selection of spot welding machine
Use the direct welding method whenever possible. (When direct welding cannot be applied, use M.I.G. plug welding.)
(2) Application of electrode tips
Apply electrodes at right angle to the panel. If they are not applied properly, the current density will be low resulting in poor welding strength.
(3) Lap welding of more than two steel sheets —
Where three or more steel sheets overlap, spot welding should be done twice.



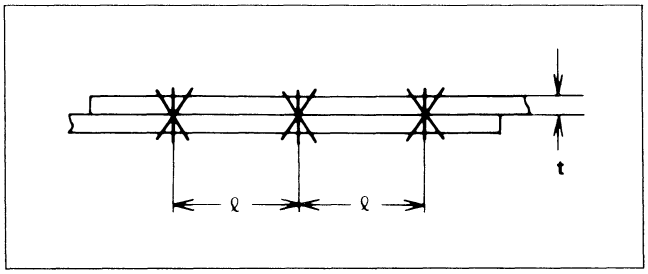
PRECAUTIONS IN OPERATION

(4) No. of spot-welding points
Generally, the capacity of repair shop spot welding machines is smaller than that of factory welding machines. Accordingly, the number of spot-welding points should be increased by 20 - 30%.

(5) Minimum welding pitch
The minimum welding pitch varies with the thickness of panels to be welded. In general, observe the values in the following table. Note that excessively small pitch allows the current to flow through surrounding portions, resulting in poor welding strength.

Unit: mm (in)

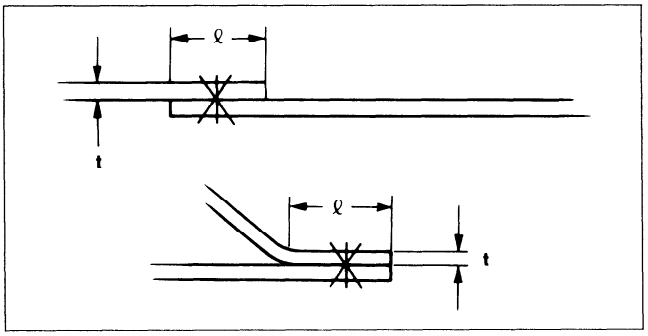
Thickness (t)	Minimum pitch (ℓ)
0.6 (0.024)	10 (0.39)
0.8 (0.031)	12 (0.47)
1.0 (0.039)	18 (0.71)
1.2 (0.047)	20 (0.79)
1.6 (0.063)	27 (1.06)
1.8 (0.071)	31 (1.22)

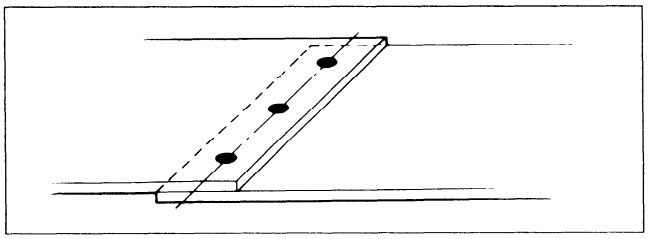


(6) Minimum lap of panels
Observe the following values for the lap distance of panels. Too short a lap distance results in reduced strength and also in a strained panel.

Unit: mm (in)

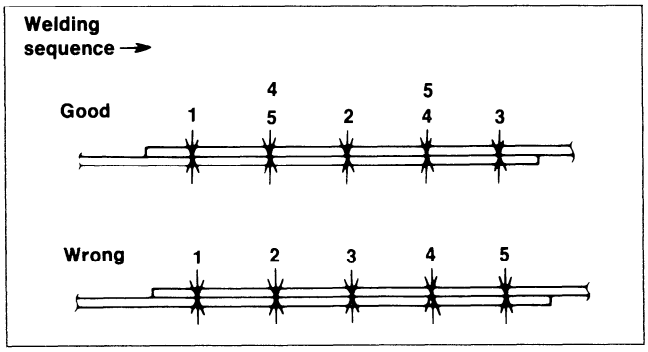
Thickness (t)	Minimum pitch (ℓ)
0.6 (0.024)	11 (0.43)
0.8 (0.031)	11 (0.43)
1.0 (0.039)	12 (0.47)
1.2 (0.047)	14 (0.55)
1.6 (0.063)	16 (0.63)
1.8 (0.071)	17 (0.67)





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

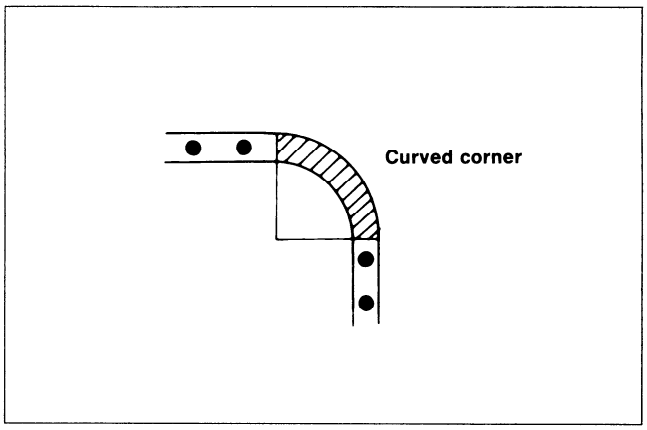
(7) Spotting sequence:
Do not spot continuously in only one direction. This results in weak welding due to the shunt effect of the current. If the welding tips become red-hot, stop welding and cool the tips.



PRECAUTIONS IN OPERATION

(8) Welding corners
Do not weld the curved corner. 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

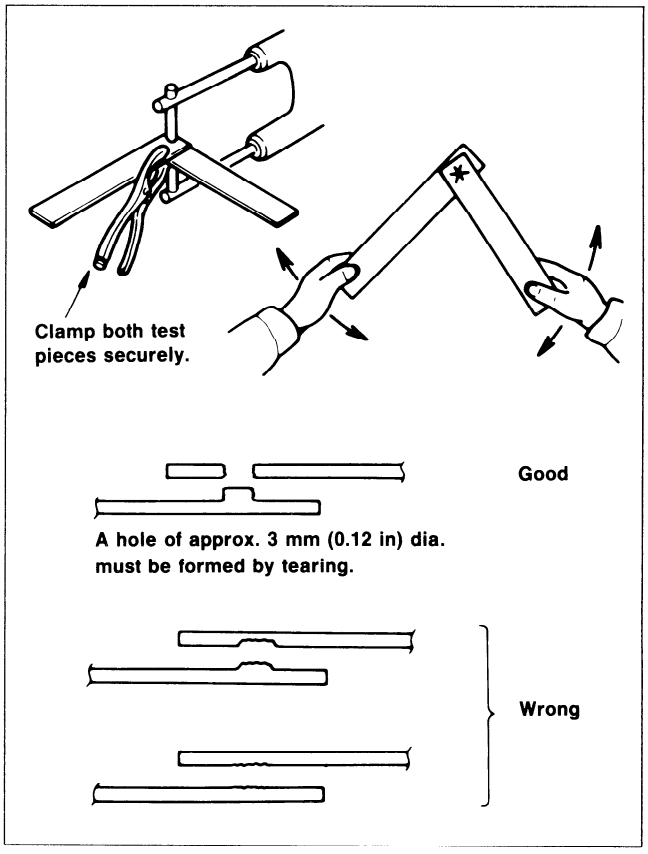


4. Inspection of welded portion
Spot-welded portions can be checked by visual inspection and destructive inspection. The destructive inspections are explained below can be easily adopted when welding. Before and after welding, be sure to perform these inspections to check the strength of the welded portions.
The welding spots should be equally spaced and arranged at the center of the flange to be welded.

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

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

- Weld together test pieces with the same thickness as the panel to be welded. Break the weld by twisting and examine the break.
- 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.



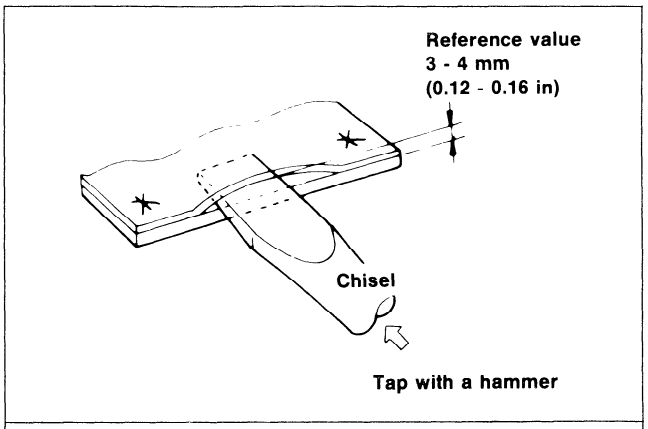
PRECAUTIONS IN OPERATION

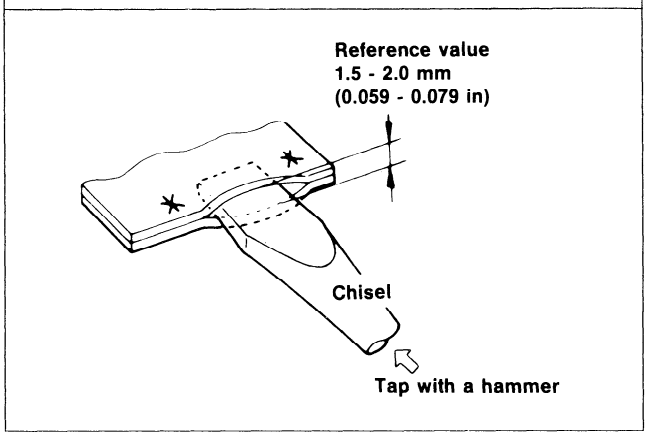
(2) Check by using chisel and hammer (Confirmation after welding)

- Insert a chisel tip between the welded panels, and tap the end until a clearance of 3 - 4 mm (0.12 - 0.16 in) [when the plate thickness is 0.8 - 1.0 mm (0.031 - 0.039 in)] is formed between the panels. If the welded portions do not separate, it indicates that the welding has been done properly.

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

- If the thickness of the panels is different, the clearance must be limited to 1.5 - 2.0 mm (0.059 - 0.079 in). Further opening of the panels can become a destructive test.
- Be sure to repair the deformed portion of the panel after inspection.





M.I.G. welding

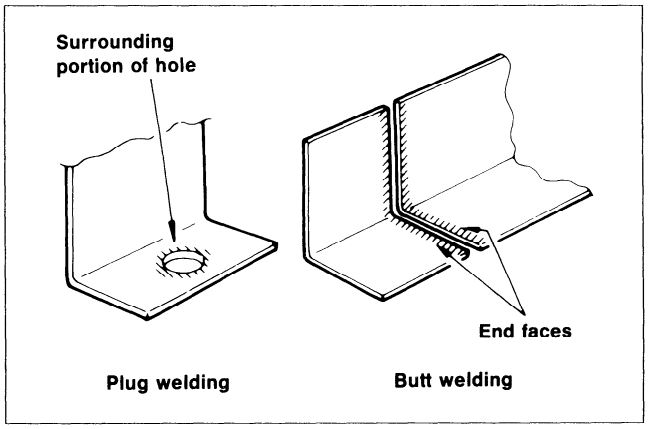
1. Condition of panel to be welded
   Paint film, rust, or oils attached to the panel surface degrades welding conditions, causing blowholes and spatter. Thoroughly remove any foreign matter from the surface to be welded by using a belt sander or wire brush.
2. Precautions in welding

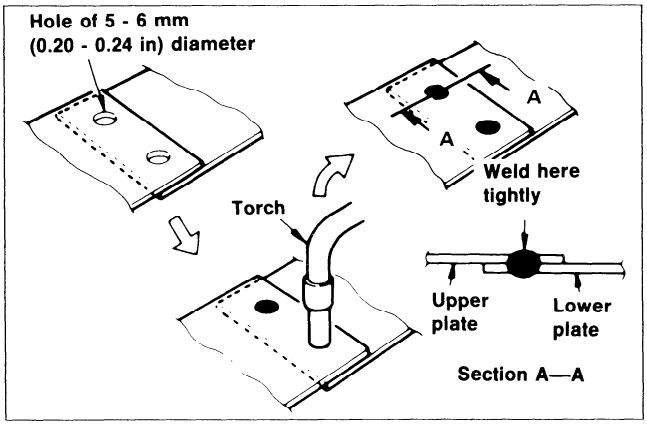
(1) Plug welding

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

b. Apply the torch at right angle to the panel and fill metal into the hole at a stretch. 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 belt sander or a wire brush.

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

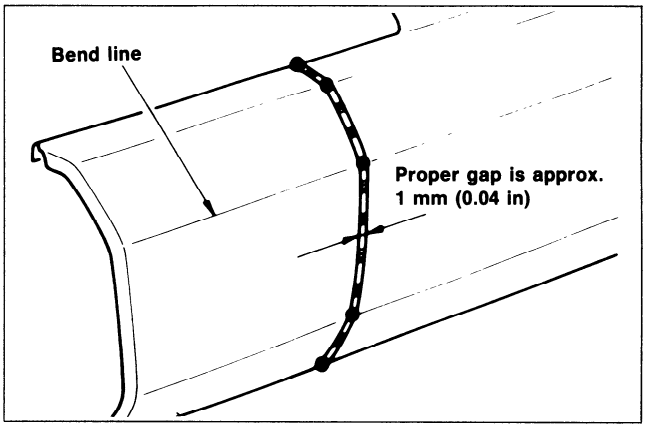




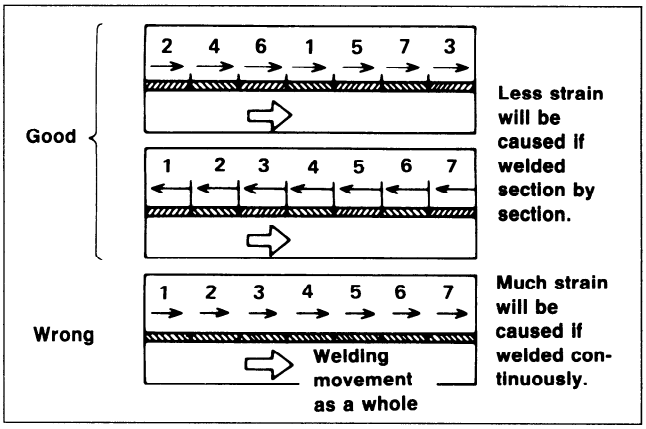
PRECAUTIONS IN OPERATION

(2) Butt welding

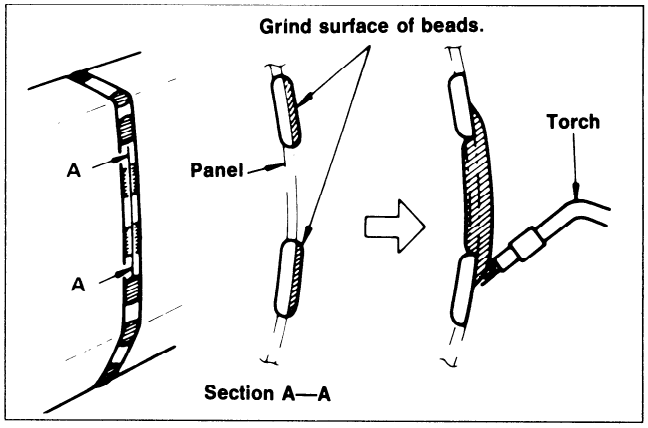
a. Before performing this welding, tack-weld the two panels to be welded to prevent generation of strains and to align their surfaces. Tack two panels by placing point welds and then fill in the spaces by placing short welding beads.



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

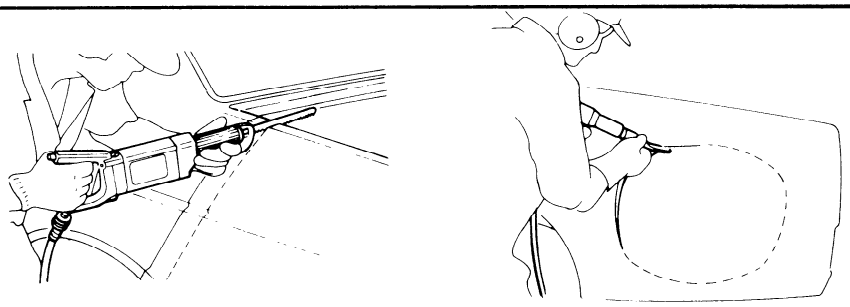
Refer to the inspection method described for spot welding.

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.

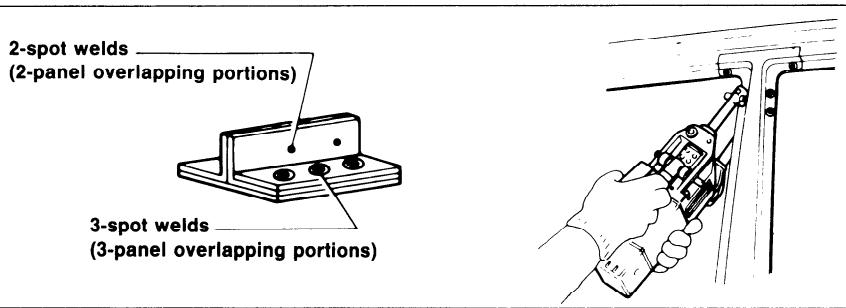
Saw cut or air chisel cut



Spot weld

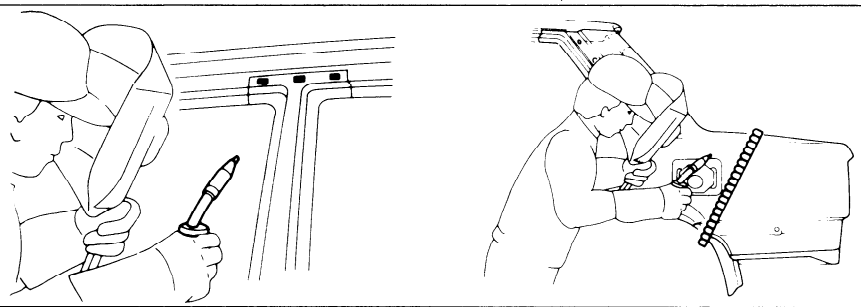
2-spot welds

3-spot welds

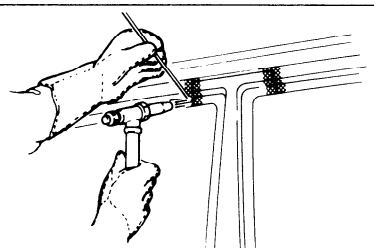


M.I.G. plug weld

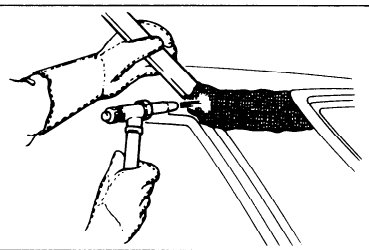
M.I.G. seam weld/ Point weld



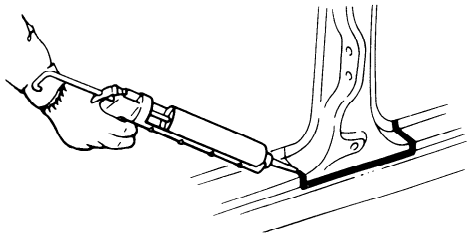
Brazing



Soldering



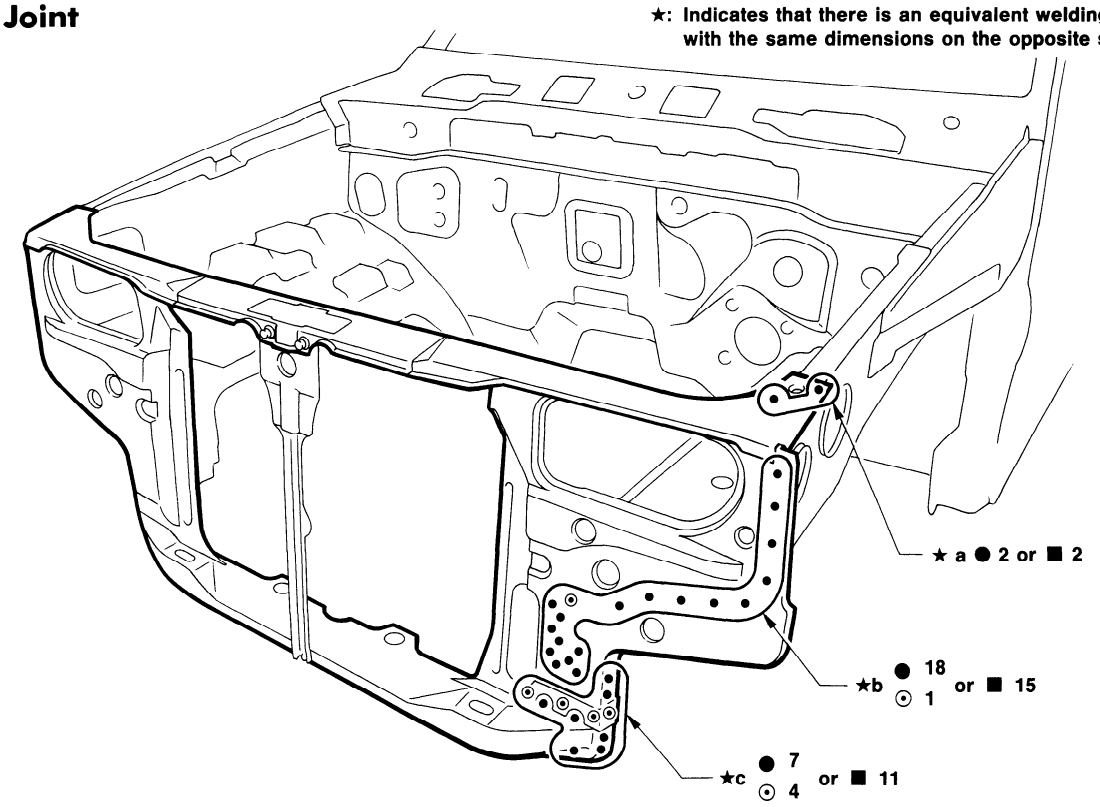
Sealing

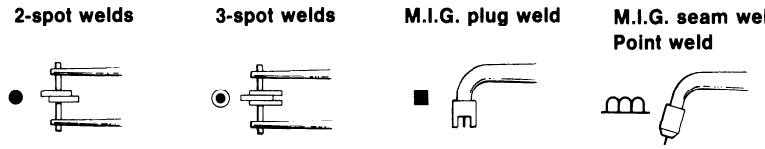


RADIATOR CORE SUPPORT

Service Joint

★: Indicates that there is an equivalent welding portion with the same dimensions on the opposite side.



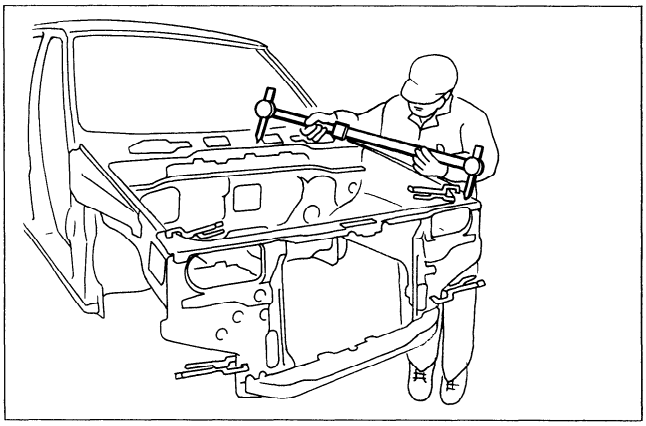


Portions to be welded

a. Hoodledge assembly
b. Hoodledge assembly
c. Hoodledge assembly

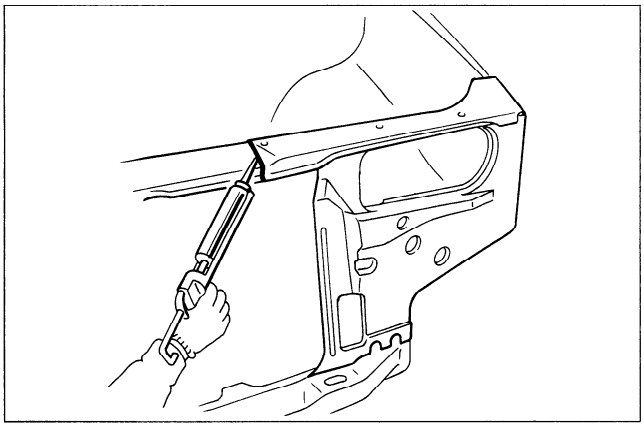
INSTALLATION NOTES

- Measure various dimensions of part locations. Refer to "BODY ALIGNMENT" (p.23) drawing.



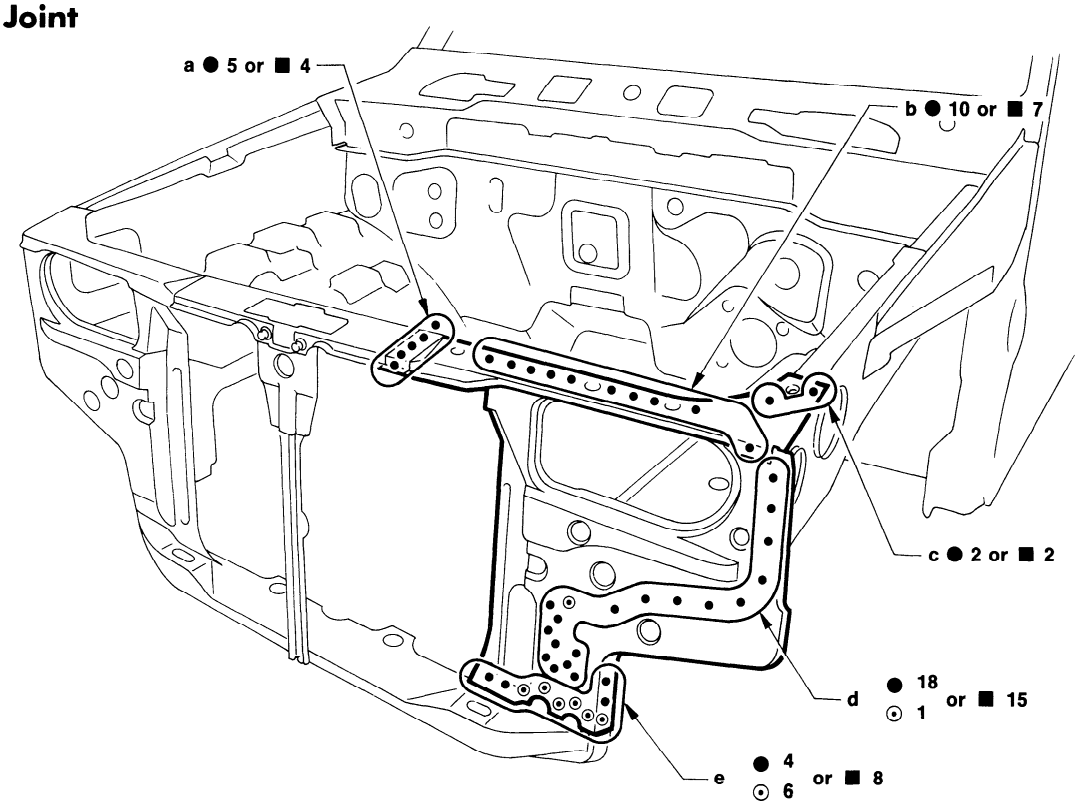
RADIATOR CORE SUPPORT

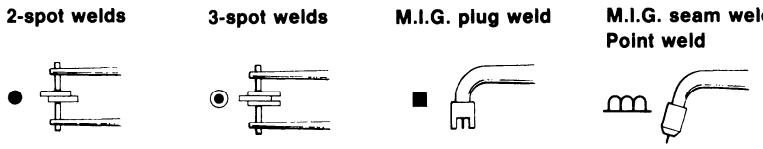
- Apply sealant.



RADIATOR CORE SUPPORT (Partial Replacement)

Service Joint

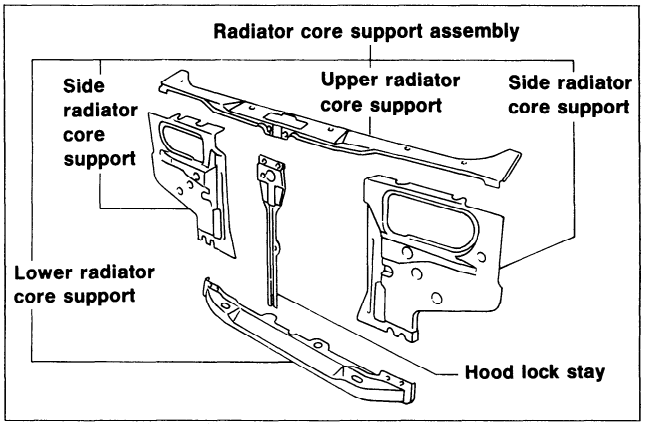




Portions to be welded

a. Upper radiator core support
b. Side radiator core support
c. Hoodledge
d. Hoodledge
e. Hoodledge

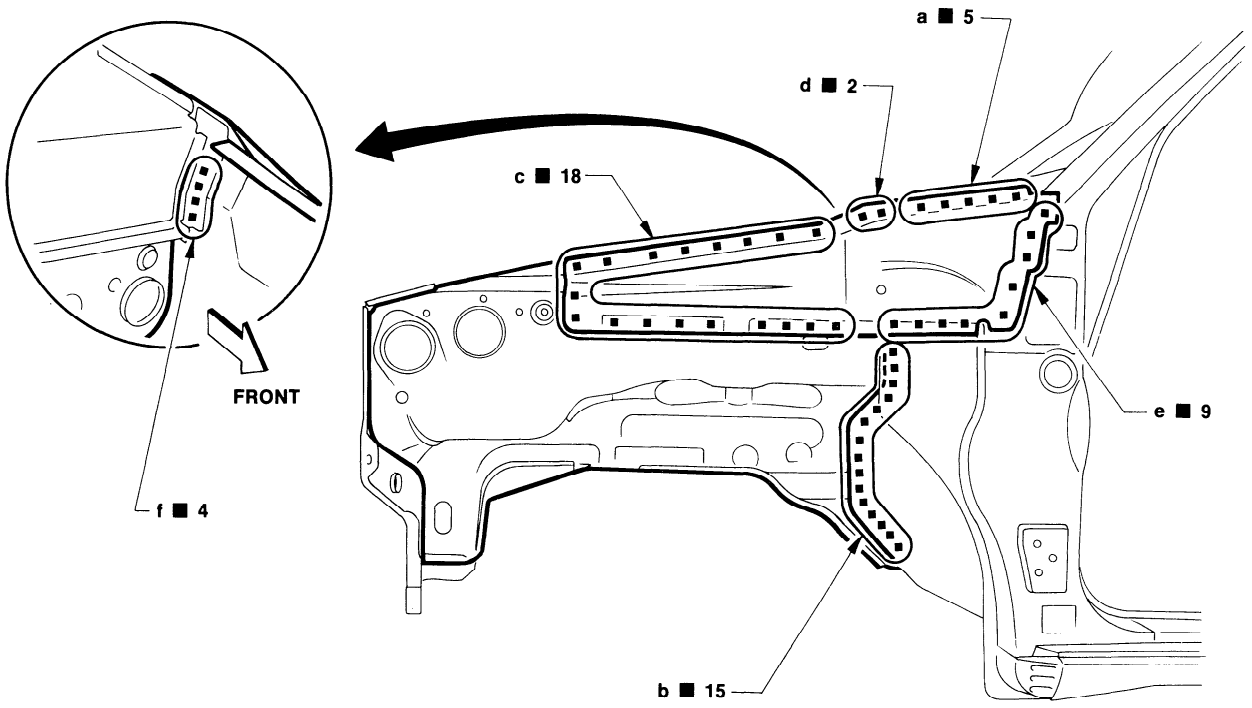
Five (5) individual service parts are available for the radiator core support. In addition to this, it is available as an assembly.
Thus, only the damaged part needs to be replaced. Perform the operations using procedures outlined in the section titled "RADIATOR CORE SUPPORT".



HOODLEDGE

(Work after radiator core support has been removed.)

Service Joint



2-spot welds ●

3-spot welds ◉

M.I.G. plug weld ■

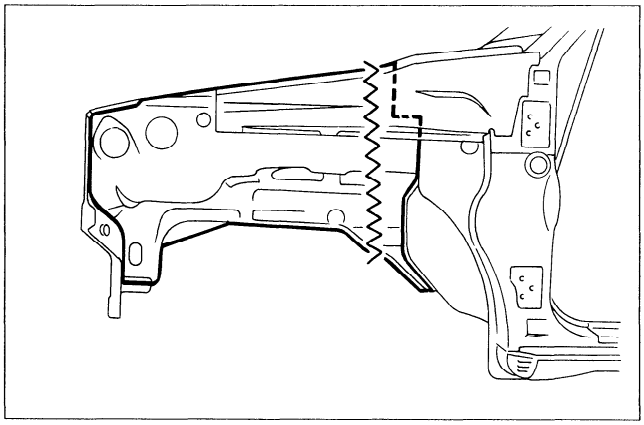
M.I.G. seam weld/ Point weld

Portions to be welded

a. Cowl top panel
b. Lower dash panel
c. Hoodledge reinforcement
d. Side cowl top panel
e. Front pillar
f. Side cowl top panel

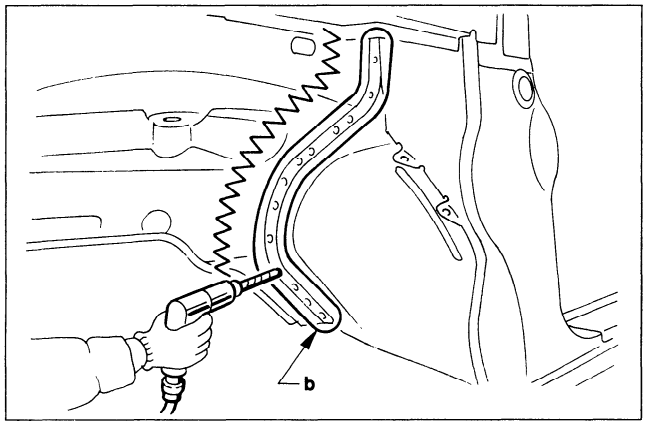
REMOVAL NOTES

- Cut off damaged portion to facilitate removal. Be careful not to cut off side cowl top.



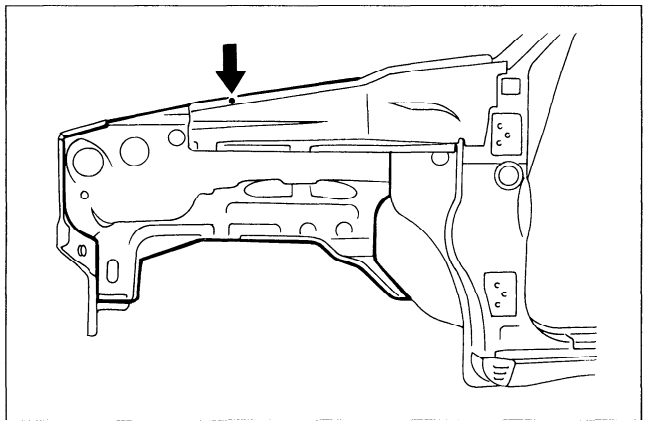
HOODLEDGE

- Spot cut completely through welded portion (b). Use these holes as M.I.G. plug weld holes when installing service part.

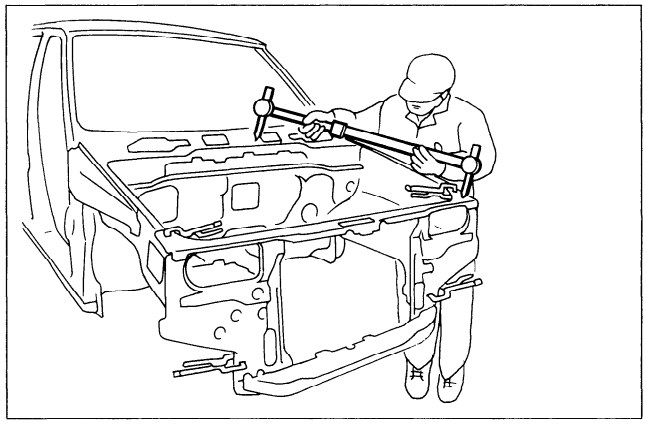


INSTALLATION NOTES

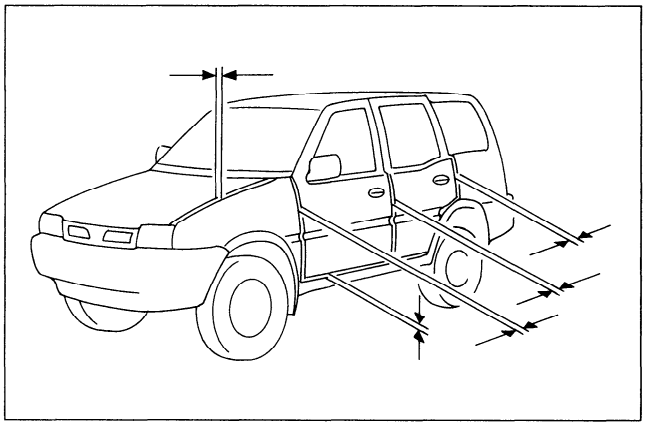
- Position service part with matching marks correctly aligned.



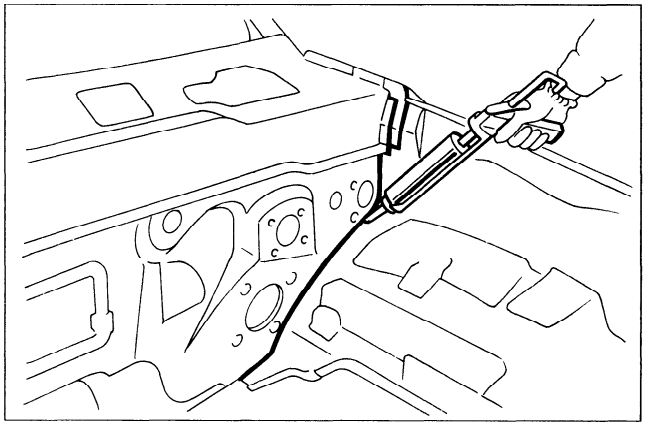
- Measure various part location dimensions. Refer to "BODY ALIGNMENT" (p.23) drawing.



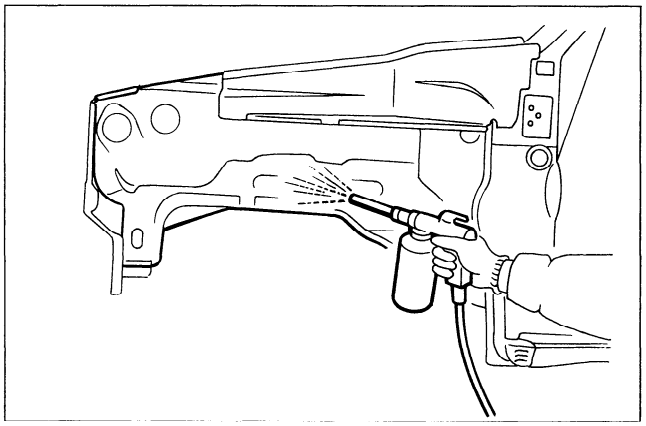
- Tack weld each clamping point.
- Install hood, fender and door, check clearances, grades and parallelism.



- Apply sealant.

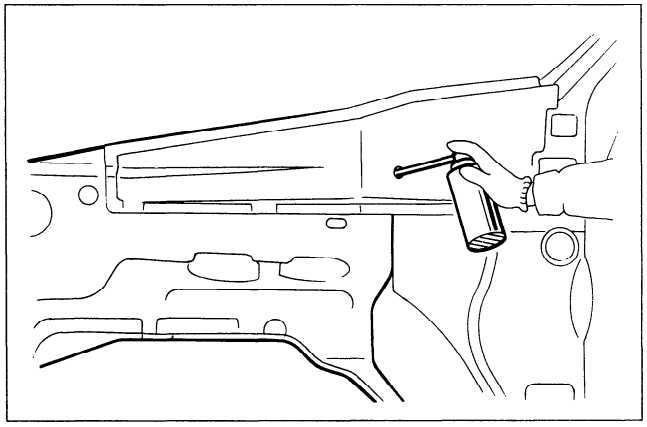


- Undercoat the inside of the wheelhouse.



HOODLEDGE

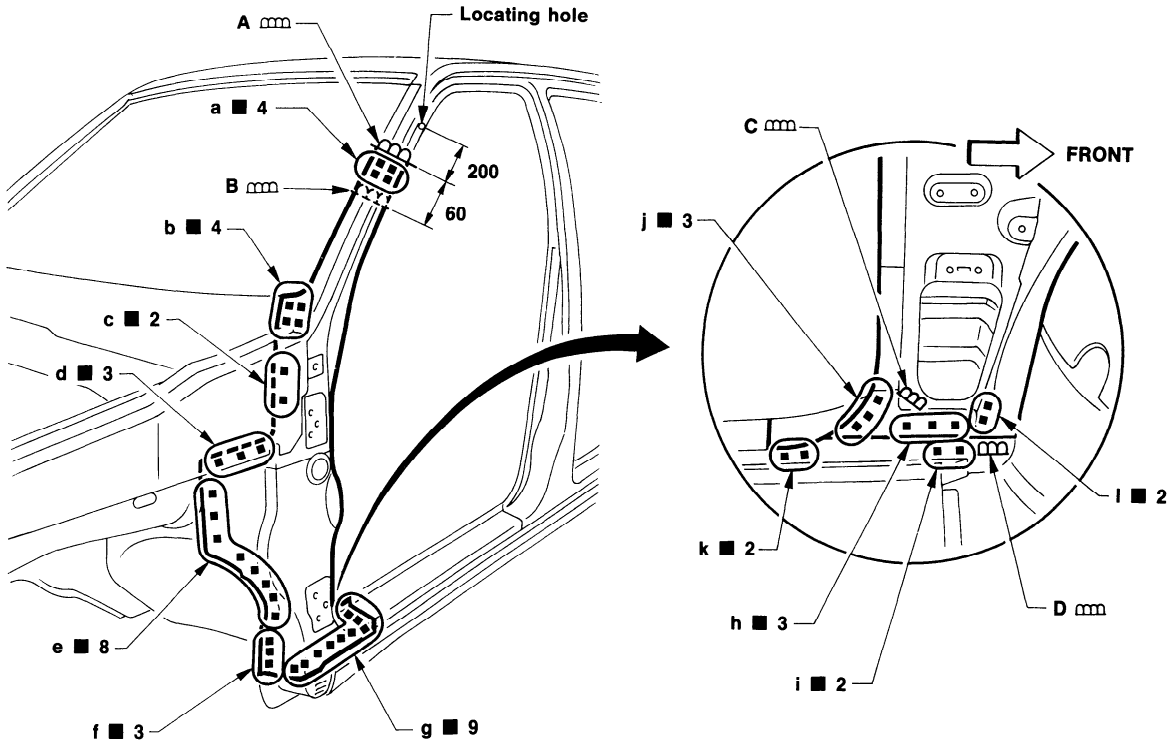
- Apply an anti-corrosive wax to welded parts.



FRONT PILLAR

(Work after hoodledge reinforcement has been removed.)

Service Joint



Unit: mm

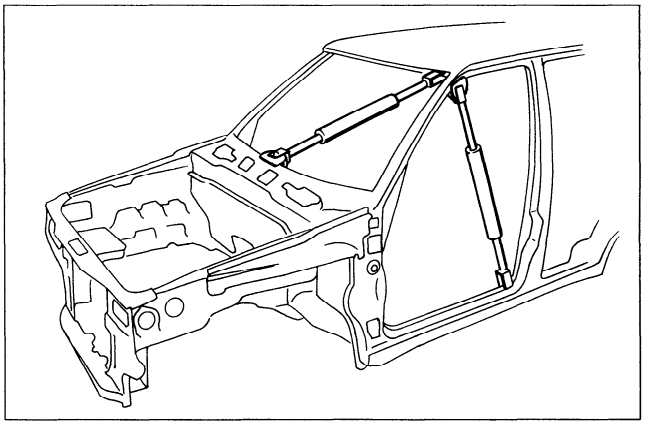
2-spot welds	3-spot welds	M.I.G. plug weld	M.I.G. seam weld/ Point weld
●	◉	■	

Portions to be welded

A. Outer front pillar
B. Inner front pillar
C. Lower front pillar reinforcement
D. Lower front pillar reinforcement & inner sill
a. Inner front pillar
b. Cowl top
   Cowl top & upper dash
c. Upper dash
d. Side cowl top
e. Lower dash
f. Inner sill & inner sill reinforcement
g. Outer sill
h. Lower front pillar reinforcement
i. Lower front pillar reinforcement & inner sill
j. Lower front pillar reinforcement
k. Lower front pillar reinforcement, inner sill & outer sill
l. Outer sill & sill closing plate

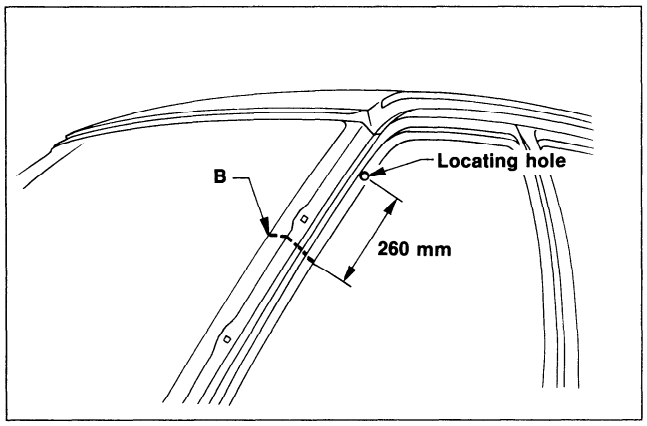
REMOVAL NOTES

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

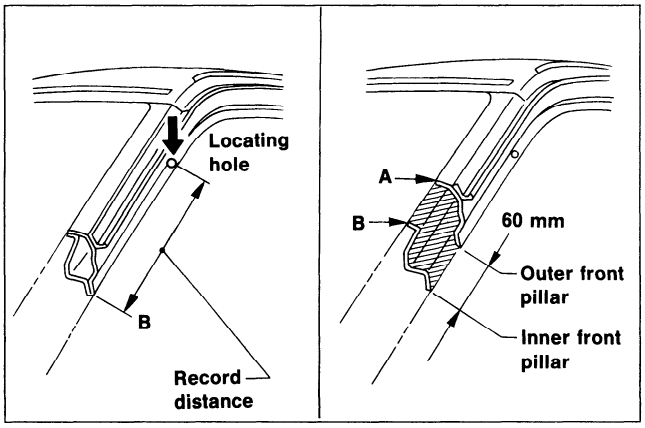


FRONT PILLAR

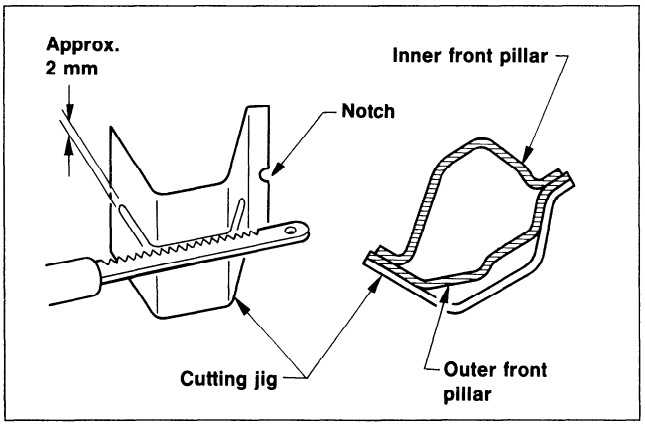
- Butting position is 260 mm away from locating hole.
  It is better to butt at this position due to its construction.



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

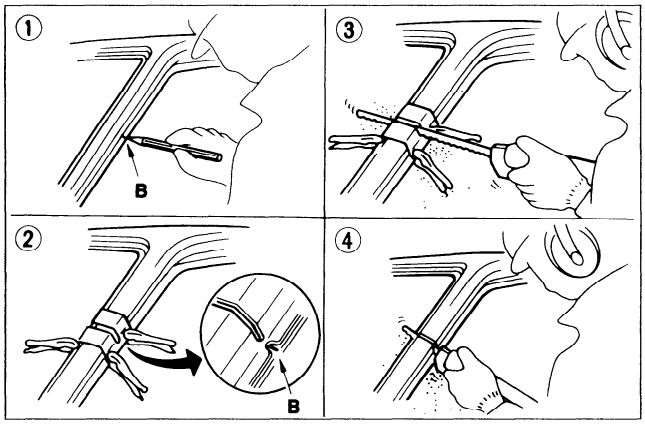


- Using a cutting jig makes it easier to cut. Also, it will permit a service part to be accurately cut at joint position.

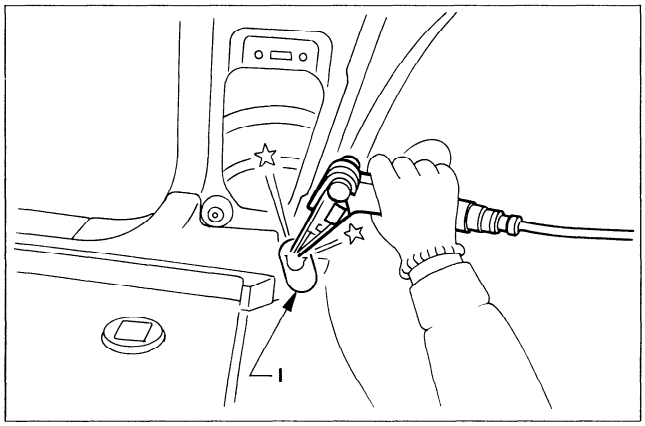


- An example of cutting operation using a cutting jig is as follows:

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

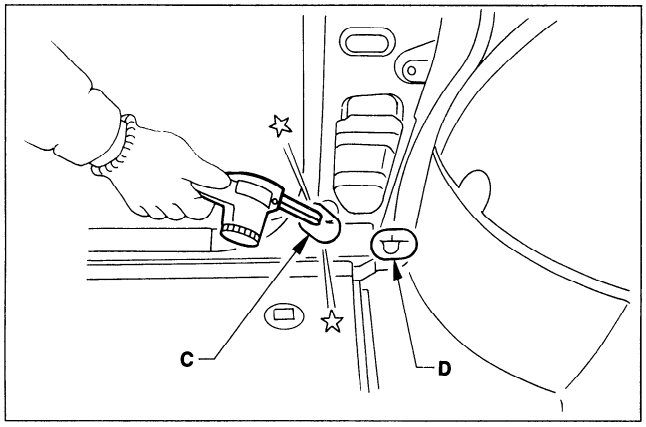


- Spot cut welded portion (I) with a mini belt sander.

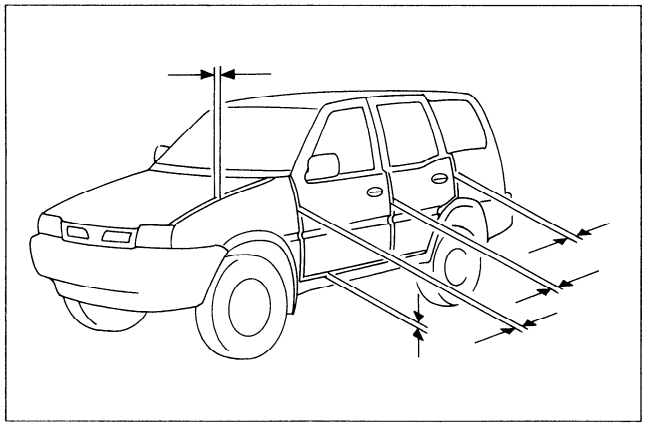


FRONT PILLAR

- Grind the surfaces of M.I.G. seam welded portions (C), (D) with a mini belt-sander.
  Be careful not to grind lower front pillar reinforcement.

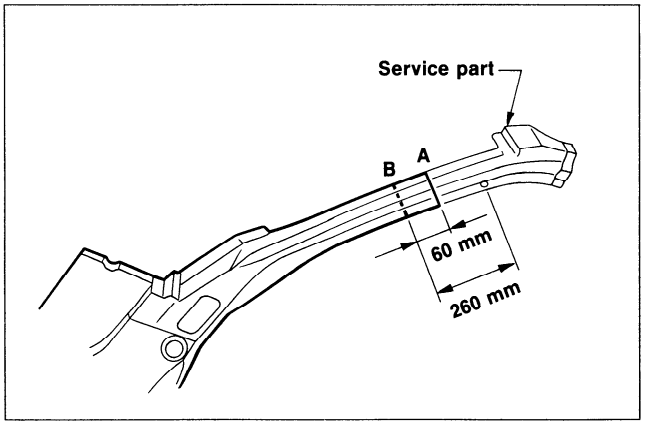


- Tack weld each clamping point and butting point.
- Install front fender and front door.
  Check clearances, grades and parallelism.

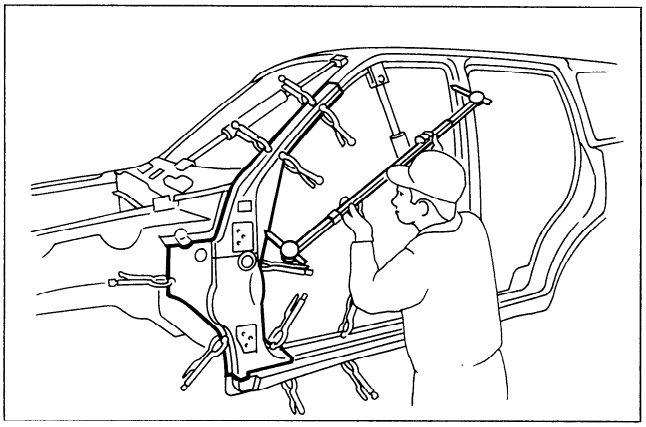


INSTALLATION NOTES

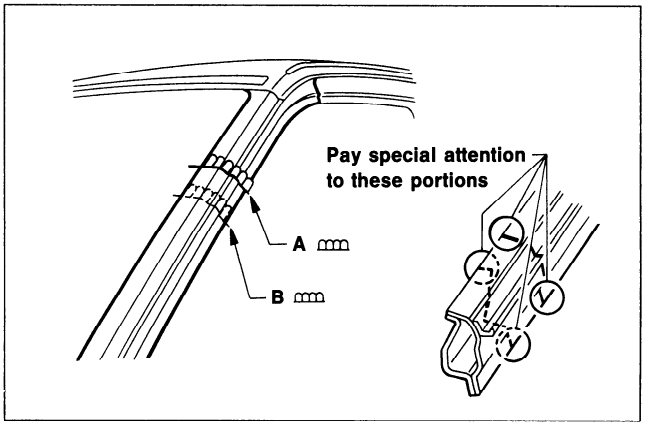
- Align service part with mating part, cut off at position (A) from outside, and at position (B) from inside.



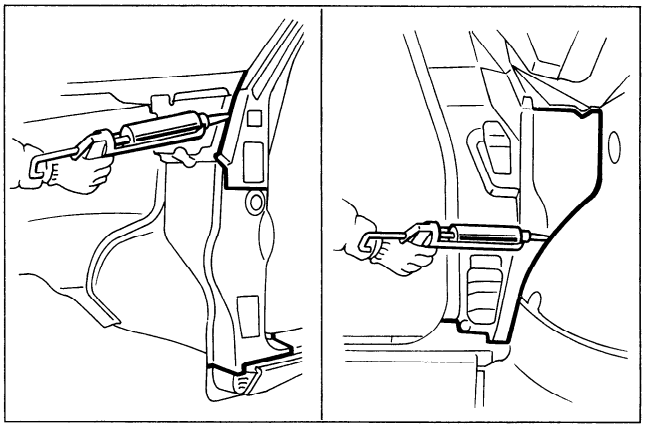
- Position service parts and measure various part location dimensions. Refer to "BODY ALIGNMENT" (pp.31 and 33) drawing.



- Weld parts to be butt welded as far as flange end portion.

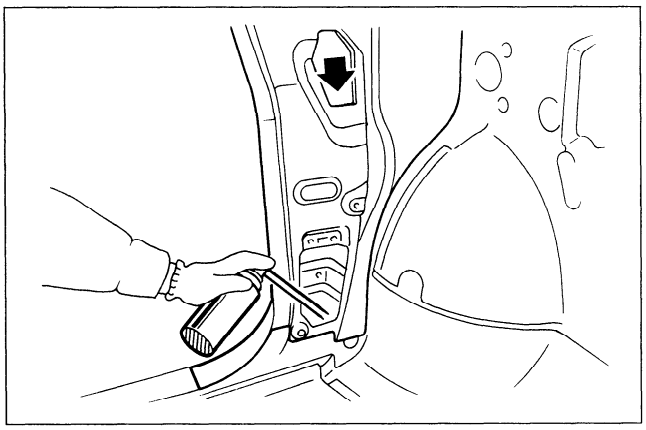


- Apply sealant.



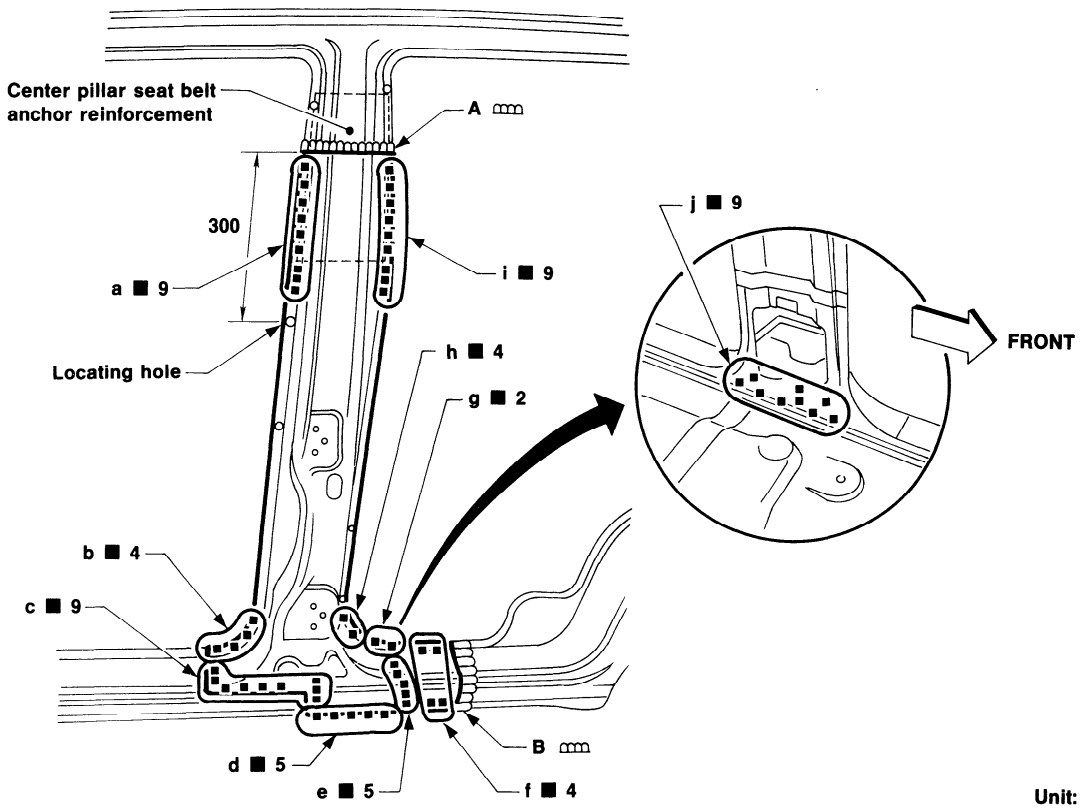
FRONT PILLAR

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



CENTER PILLAR (Wagon models)

Service Joint



Unit: mm

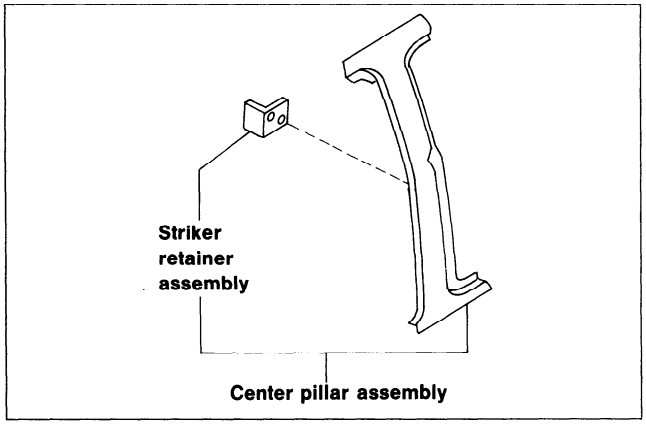
2-spot welds	3-spot welds	M.I.G. plug weld	M.I.G. seam weld/ Point weld
●	◉	■	㎜

Portions to be welded

A. Outer center pillar
B. Outer sill
a. Inner side roof rail brace & center pillar seat belt anchor reinforcement
b. Inner sill
c. Outer sill
d. Outer sill & inner sill
e. Outer sill
f. Inner sill
g. Outer sill & inner sill
h. Inner sill
i. Inner side roof rail brace & center pillar seat belt anchor reinforcement
j. Inner sill
Inner sill & outer sill

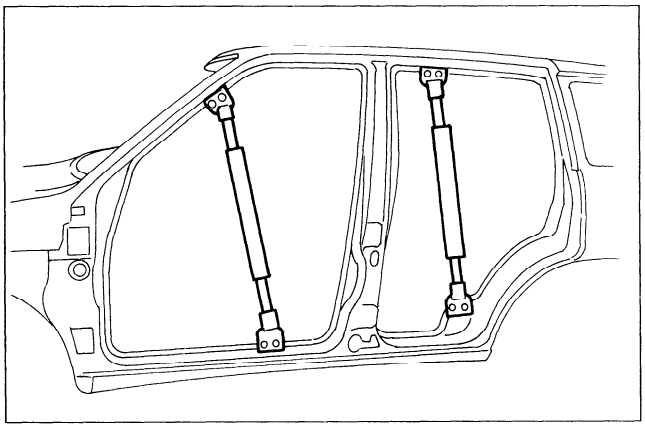
CENTER PILLAR (Wagon models)

This vehicle's outer side panel is made of one piece of sheet metal.
This section gives replacement procedures for center pillar assembly.

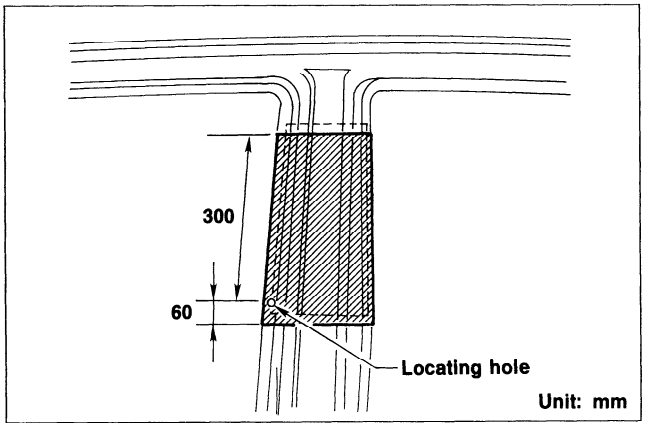


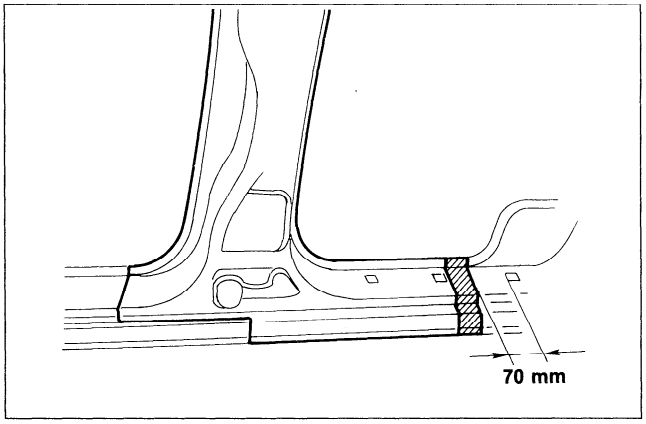
REMOVAL NOTES

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

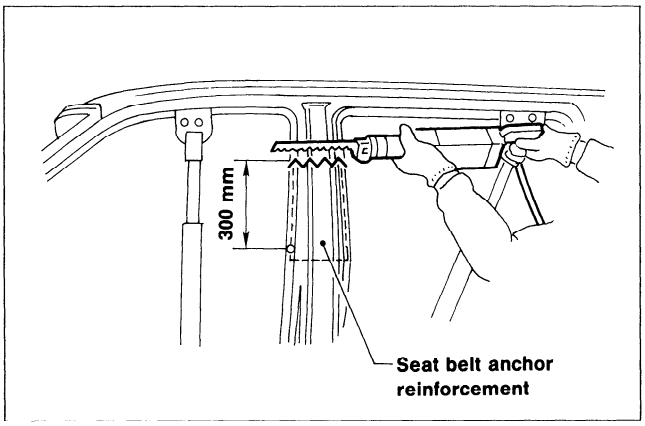


- Butt welding position can be determined anywhere within shaded area as shown in the figure. Owing to the construction, it is better to butt weld in this area.

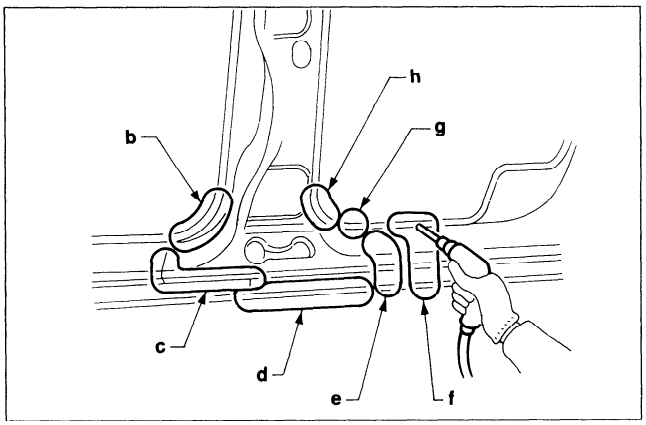




- Cut off center pillar. Be careful not to damage seat belt anchor reinforcement.

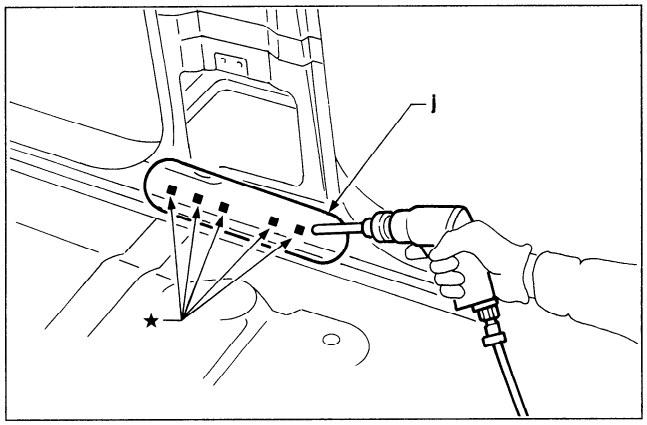


- Spot cut only center pillar at portions (b), (c), (d), (e), (f), (g) and (h). Do not cut fully through it.



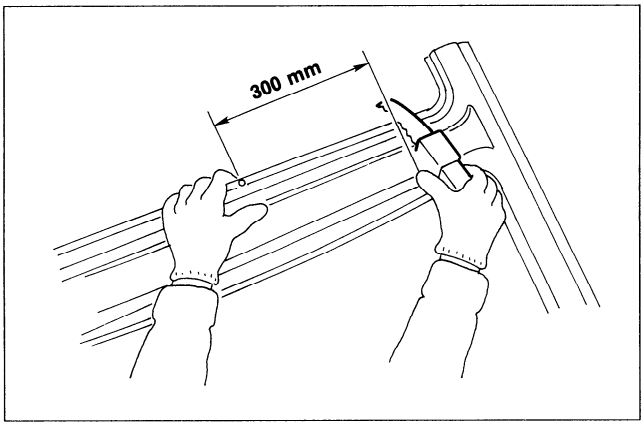
CENTER PILLAR (Wagon models)

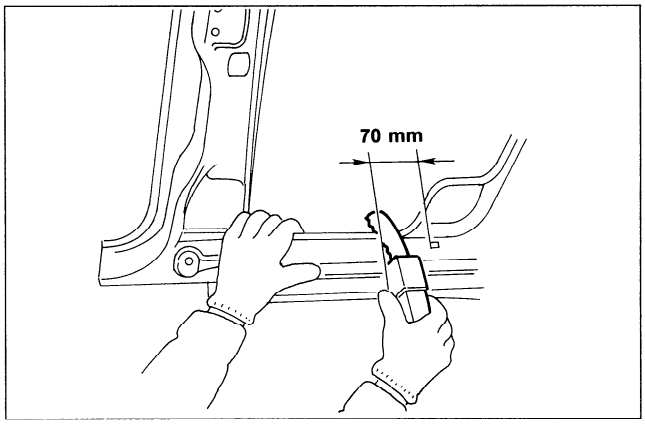
- Spot cut welded portion (j) from inside, as shown in the figure.
- Do not cut through, welded portion (j★). Spot cut only two panels.



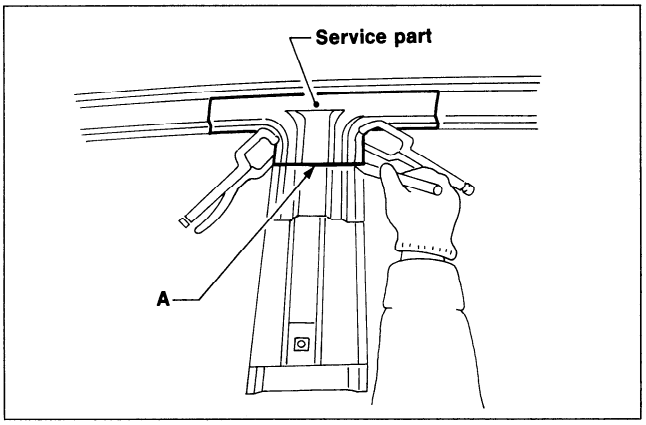
INSTALLATION NOTES

- Cut off center pillar service part to use as a jig.
  Be careful not to damage center pillar seat belt anchor reinforcement.

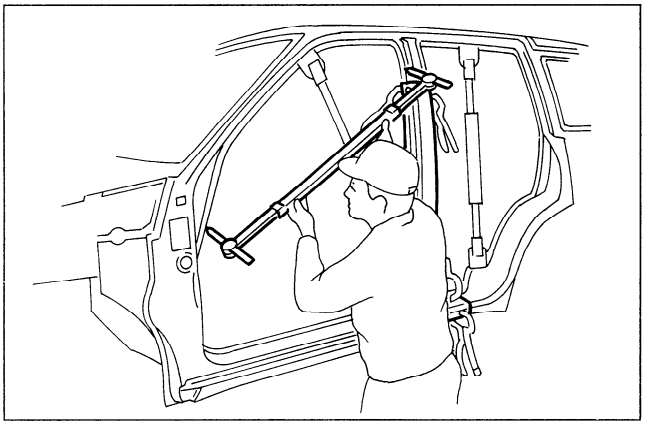




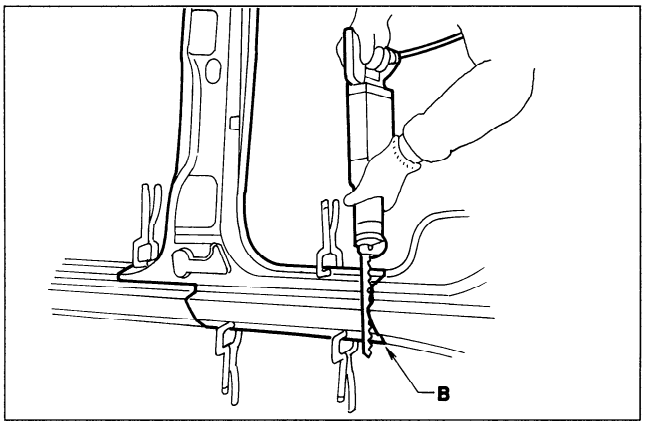
- Align service part odds and ends with mating part.
- Scribe a line (A) at the end of service part.
- Cut off remaining part along the scribe line.



- Position service part and measure various dimensions of part locations. Refer to "BODY ALIGNMENT" (pp.31 and 33) drawing.

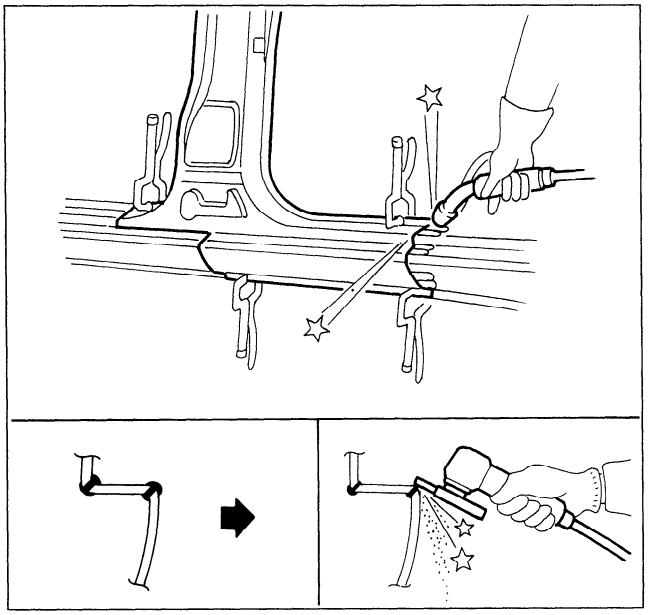


- Cut off middle of lapped parts (B).

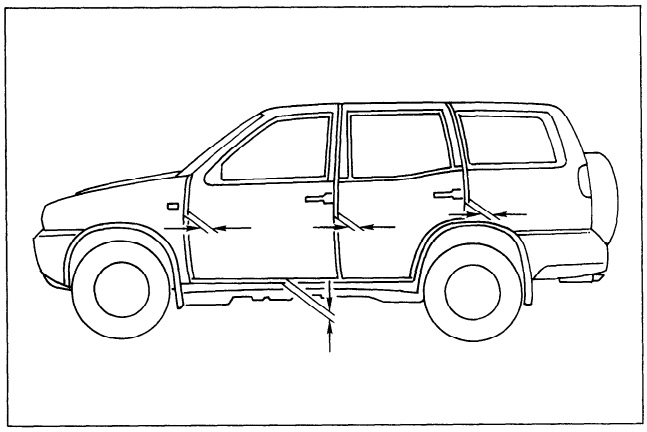


CENTER PILLAR (Wagon models)

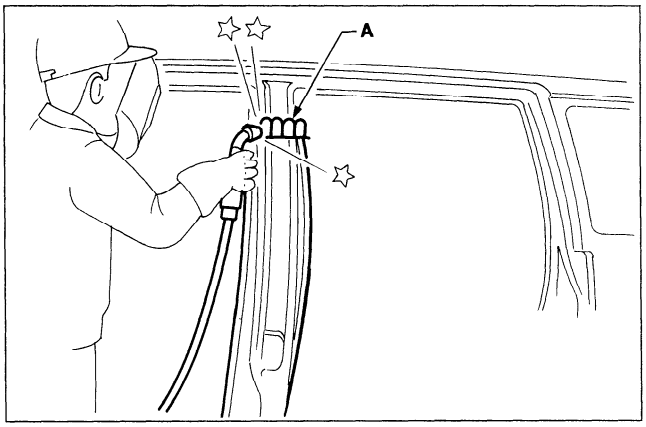
- When welding, temporarily weld each press line first to prevent movement.
  Before seam welding, be sure to grind surface of tack welded portions.

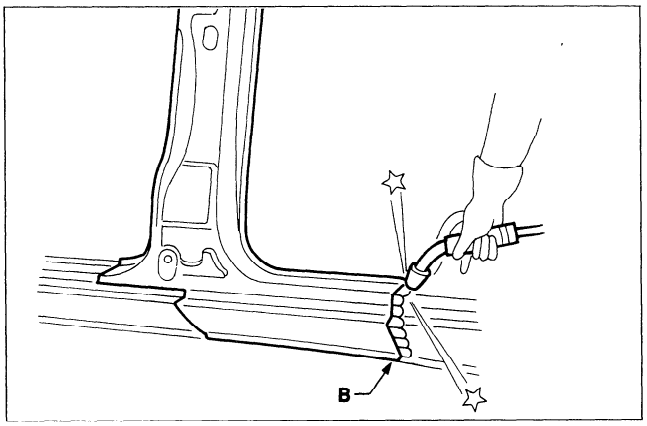


- Tack weld each clamping point and butting point.
- Install front door and rear door and check clearances, grades and parallelism.

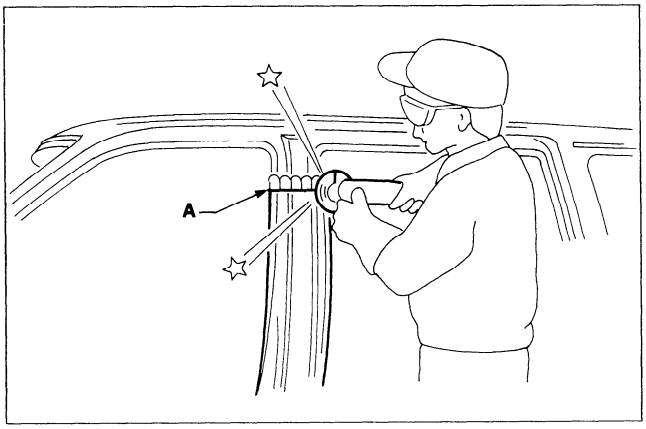


- M.I.G. seam weld butt ends.



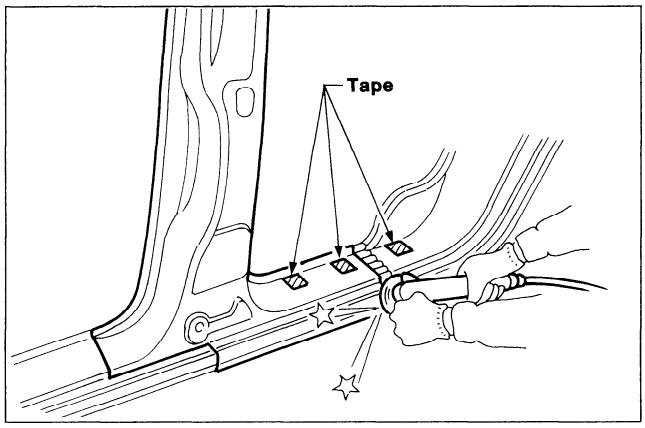


- Finish welded part with an air grinder.

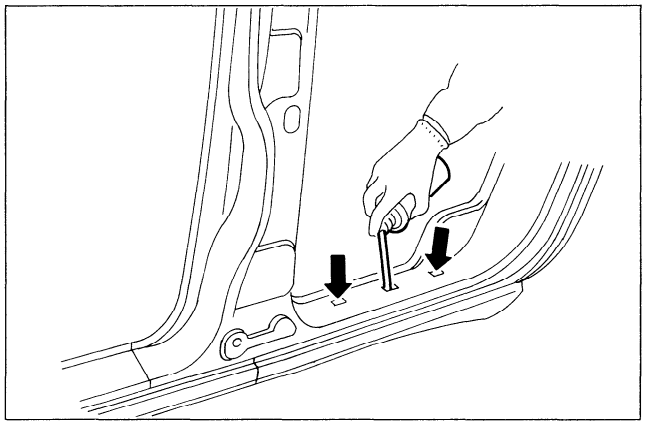


CENTER PILLAR (Wagon models)

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

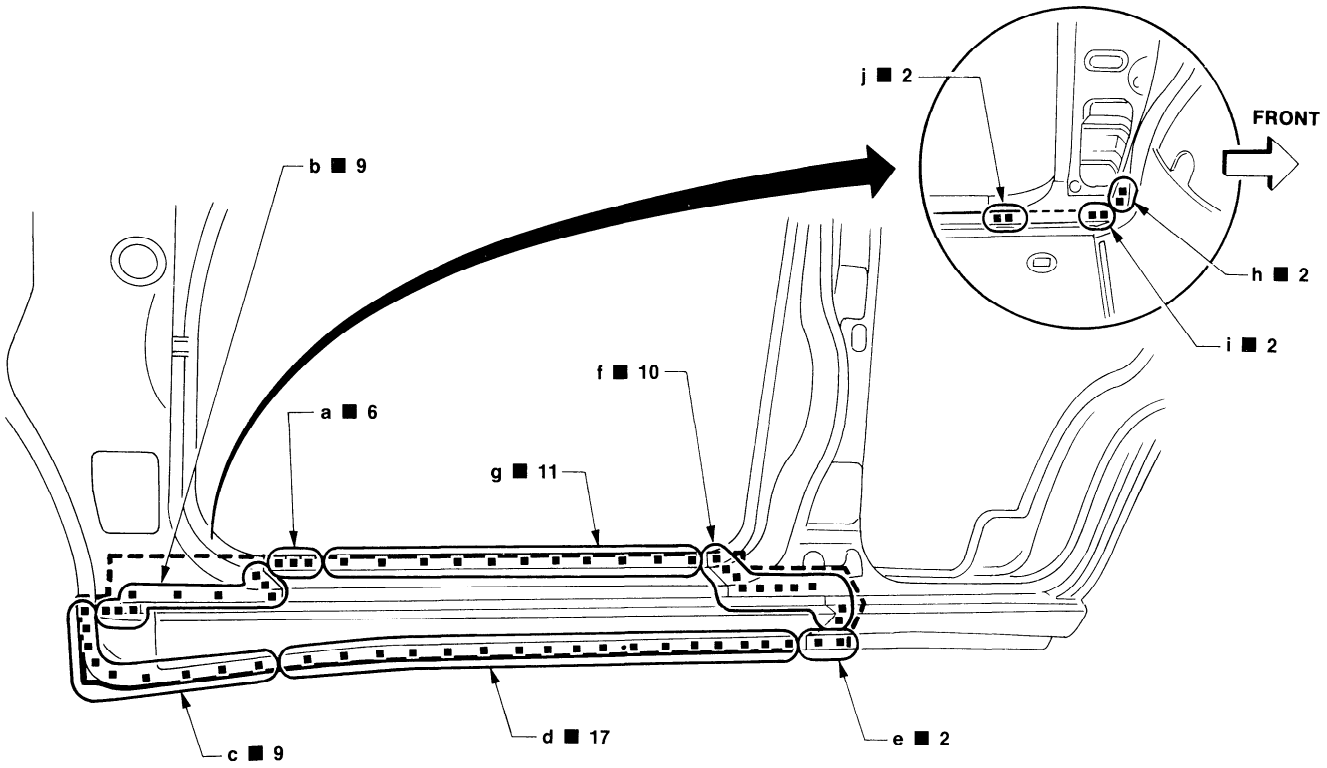


- Apply an anti-corrosive wax to inside of outer sill.



OUTER SILL

Service Joint

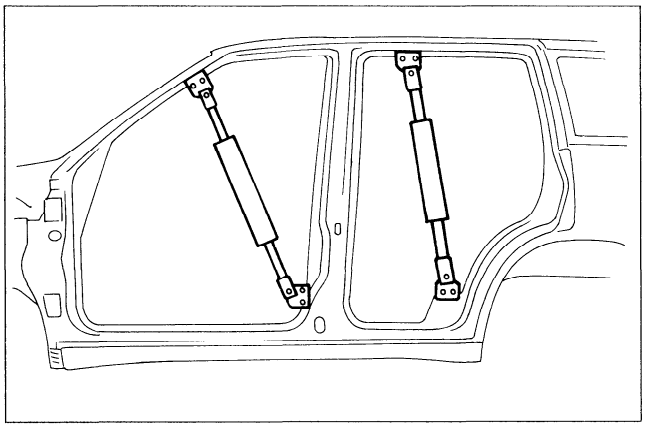


Portions to be welded

a. Inner sill & lower front pillar reinforcement
b. Front pillar
c. Inner sill & lower front pillar reinforcement
d. Inner sill
e. Inner sill & center pillar
f. Center pillar
Center pillar & inner sill
g. Inner sill
h. Front pillar
i. Inner sill & lower front pillar reinforcement
j. Inner sill, lower front pillar reinforcement & front pillar

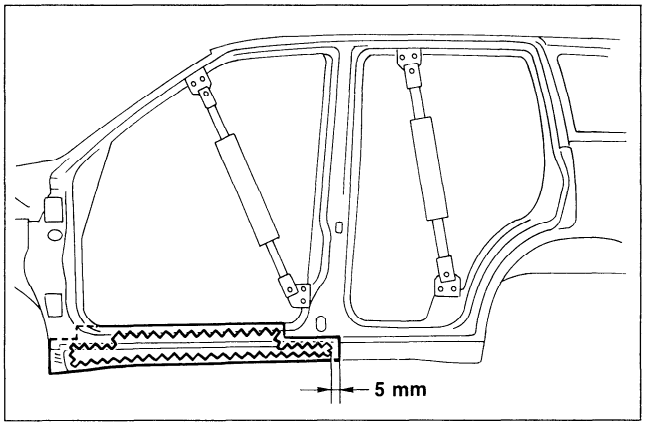
REMOVAL NOTES

- Before cutting outer sill, be sure to support roof.

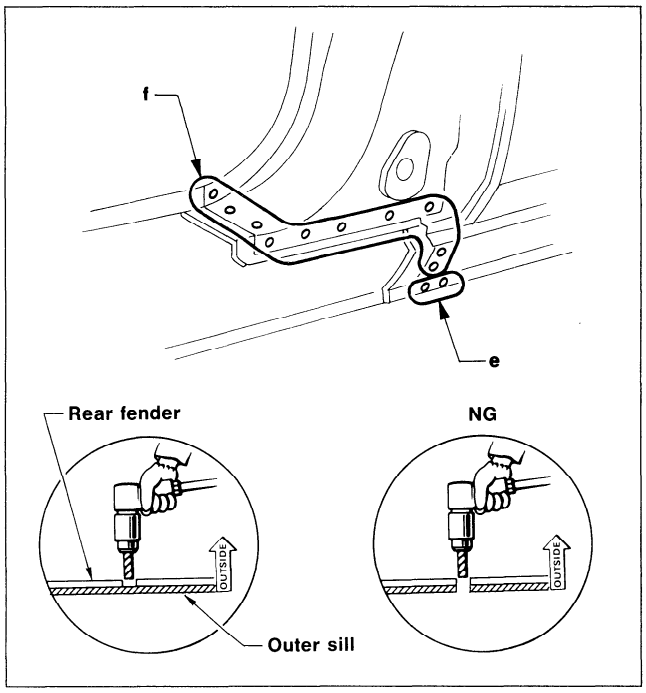


OUTER SILL

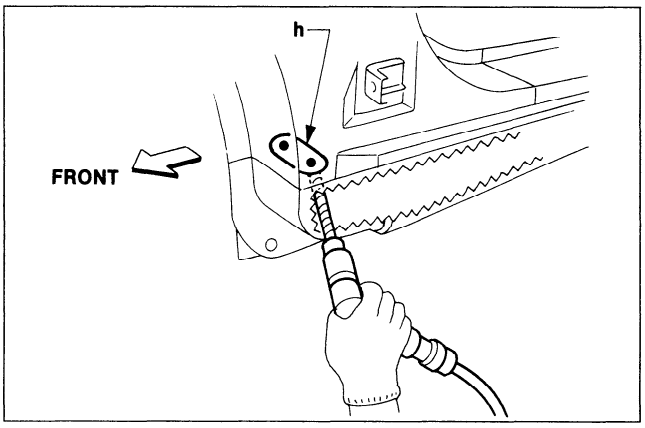
- Cut off damaged portion leaving old outer sill about 5 mm away from lapped portion of center pillar so that it is easy to work with.



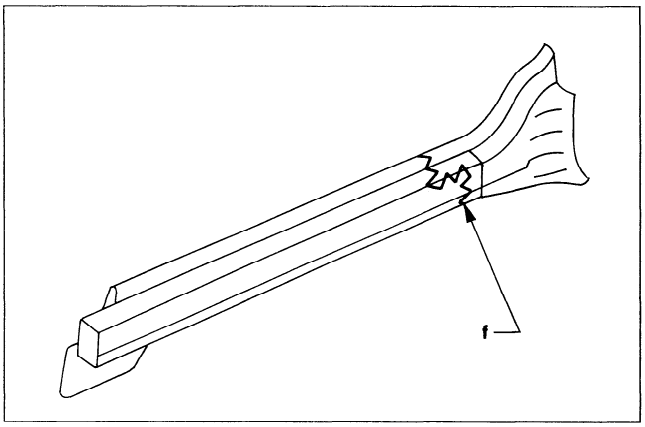
- Spot cut welded portions (e) and (f) from outside. Do not drill through remaining outer sill.



- Spot cut welded portion (h) from outside as shown in the figure.

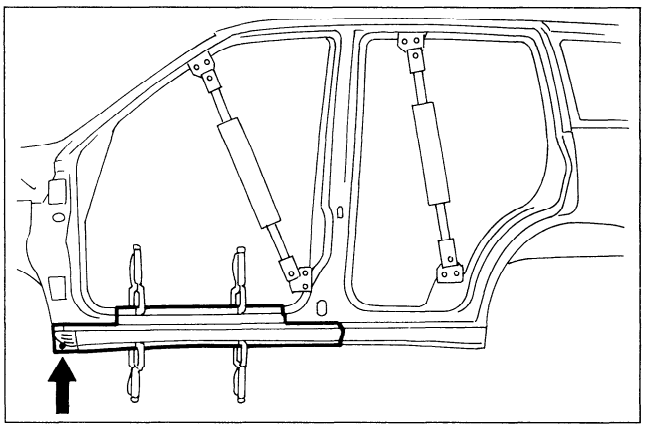


- Cut off outer sill service parts.



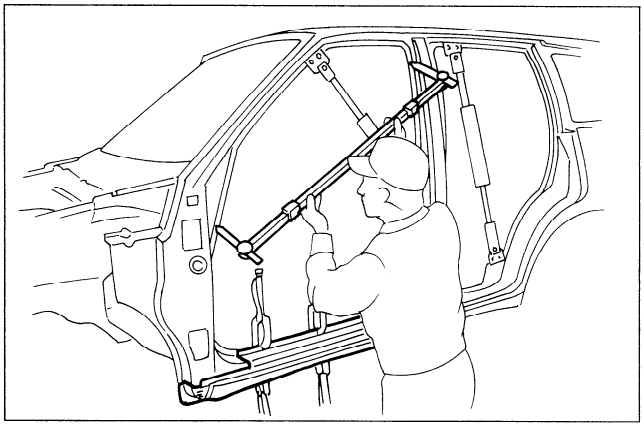
INSTALLATION NOTES

- Align lower end of service part with mating parts.

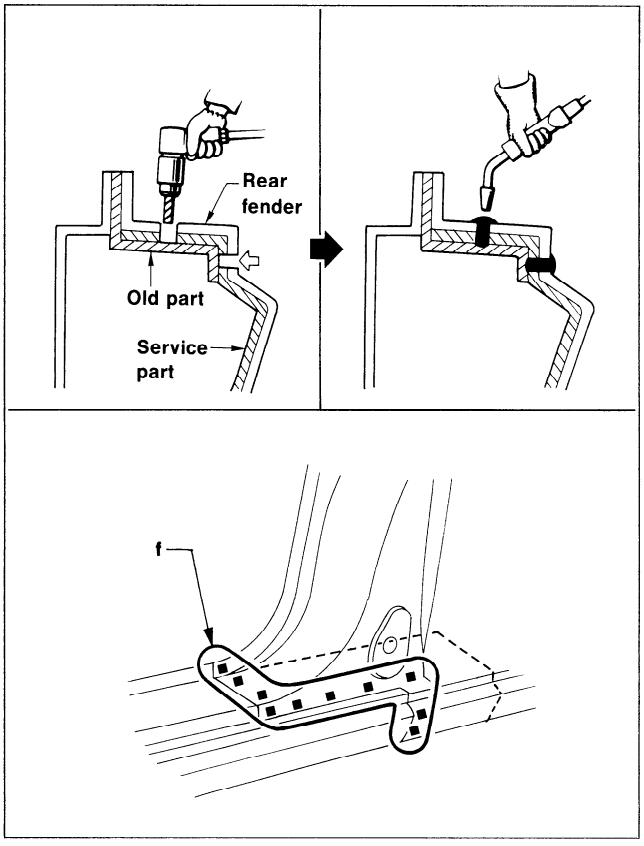


OUTER SILL

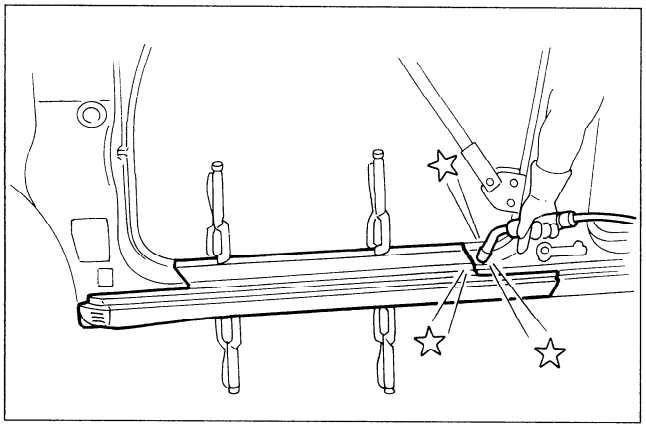
- Position service part with vise clamps and measure various dimensions of part locations. Refer to "BODY ALIGNMENT" (pp.31 and 33) drawing.



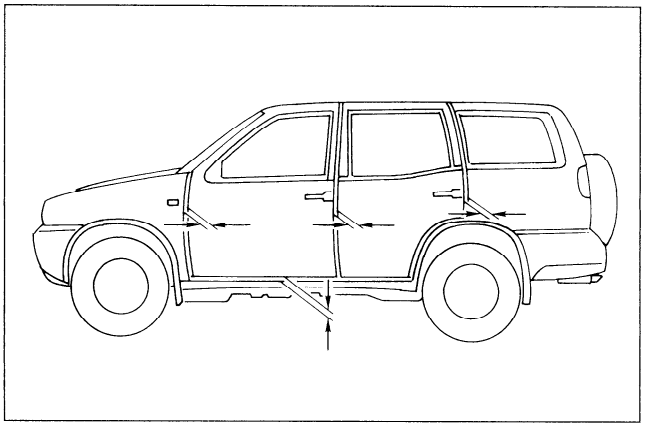
- Drill M.I.G. plug weld holes, with a flat drill, in portion (f) using spot cut holes in mating panel, and M.I.G. plug weld them.



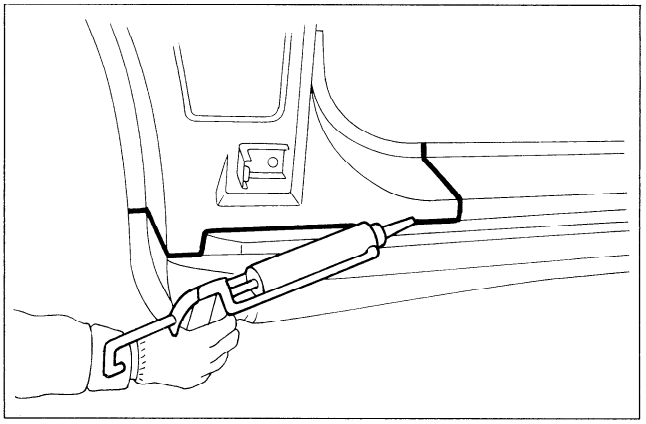
- When welding, temporarily weld each press line first to prevent movement.



- Tack weld each clamping point and butting point, then install front and rear doors. Check clearances, grades and parallelism.

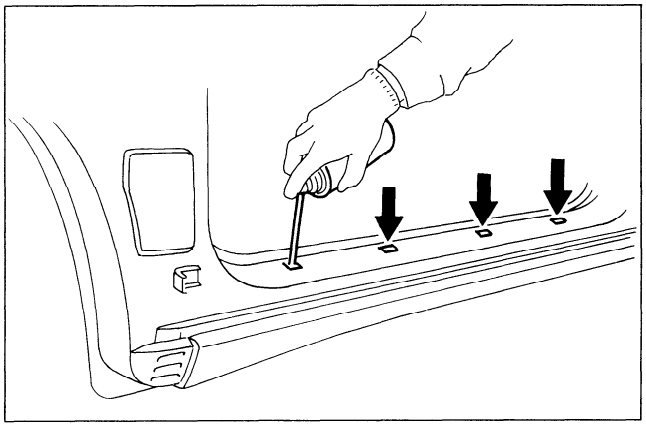


- Apply sealant.



OUTER SILL

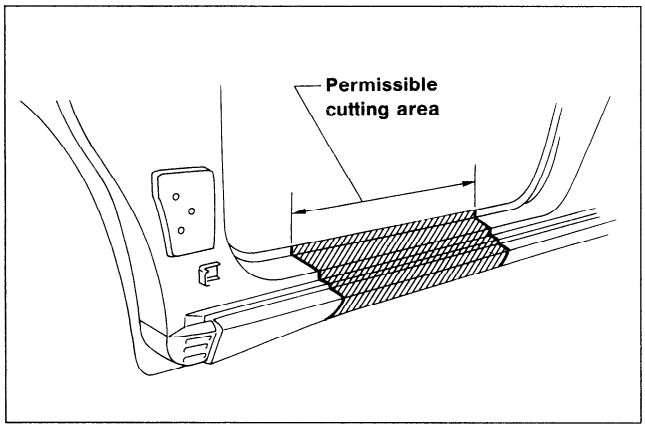
- After painting, apply an anti-corrosive wax to inside of outer sill.



OUTER SILL (Partial Replacement)

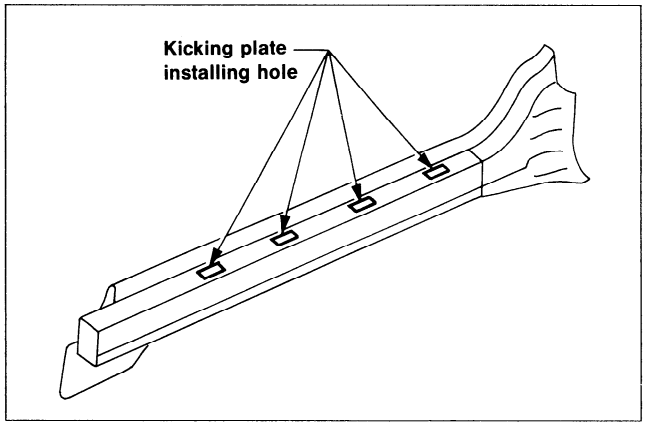
REMOVAL NOTE

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

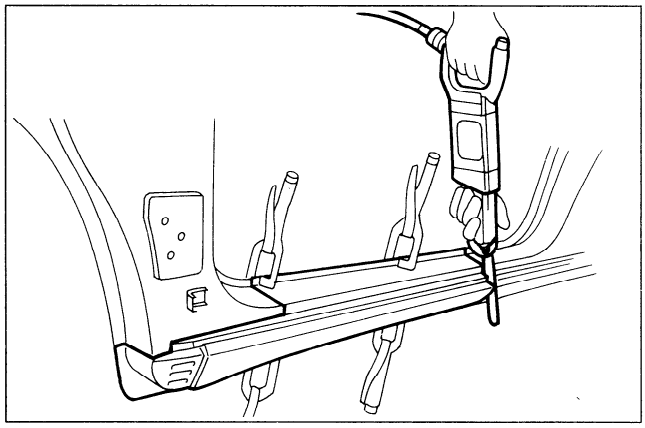


INSTALLATION NOTES

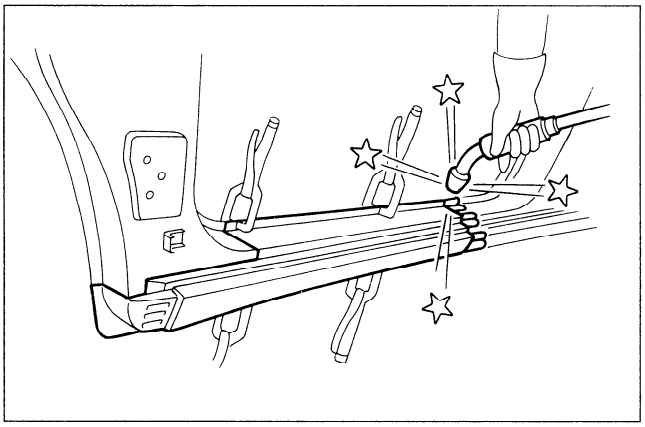
- Cut off service part, so that its hole is in the same position as that in vehicle body for positioning.



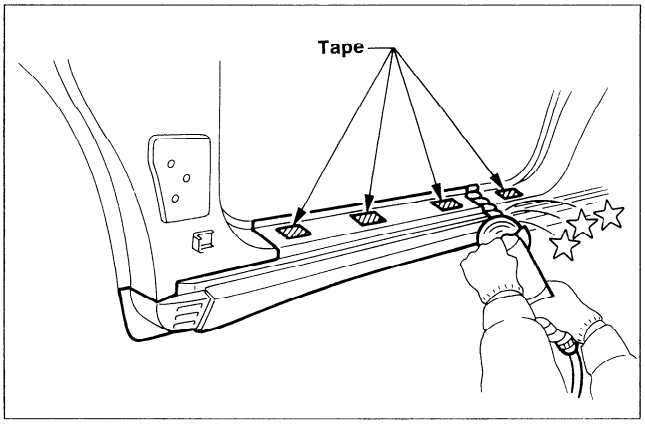
- Position service part, align its hole with that of vehicle body, and perform overlap cutting.



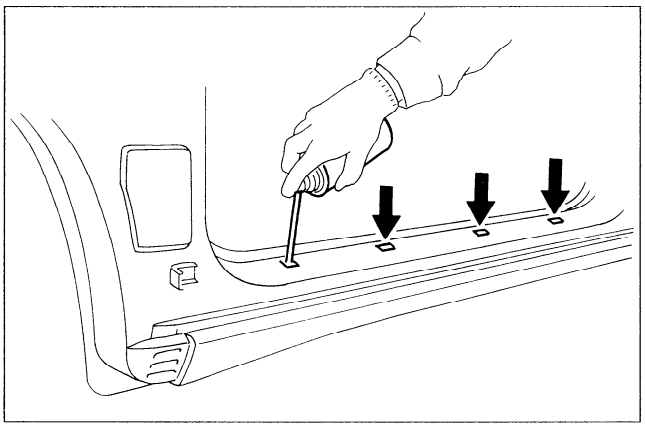
- When welding, temporarily weld each press line first to prevent movement.



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



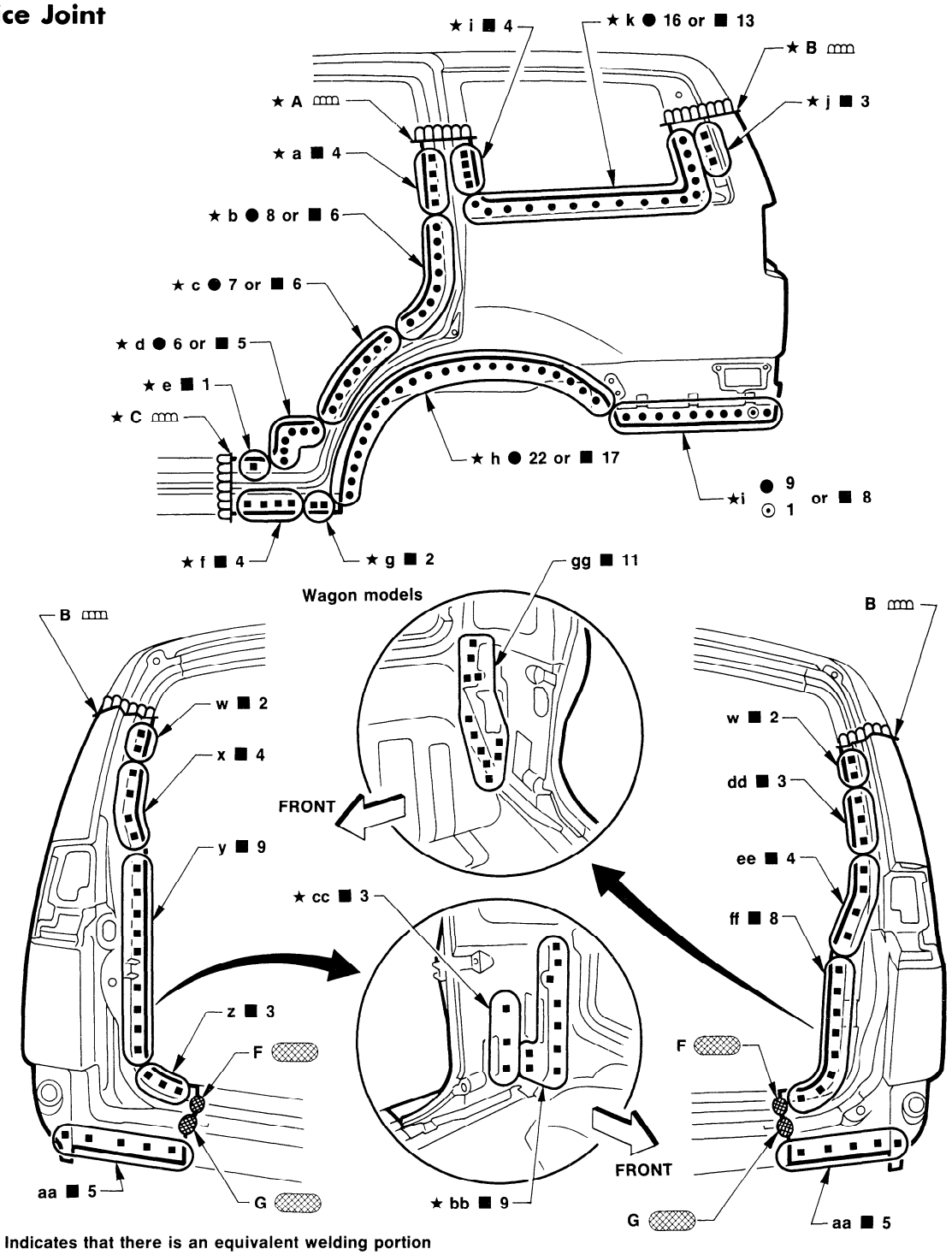
- Be sure to treat inside of outer sill with an anti-corrosive wax.



REAR FENDER

Wagon models L.H. & R.H.

Service Joint



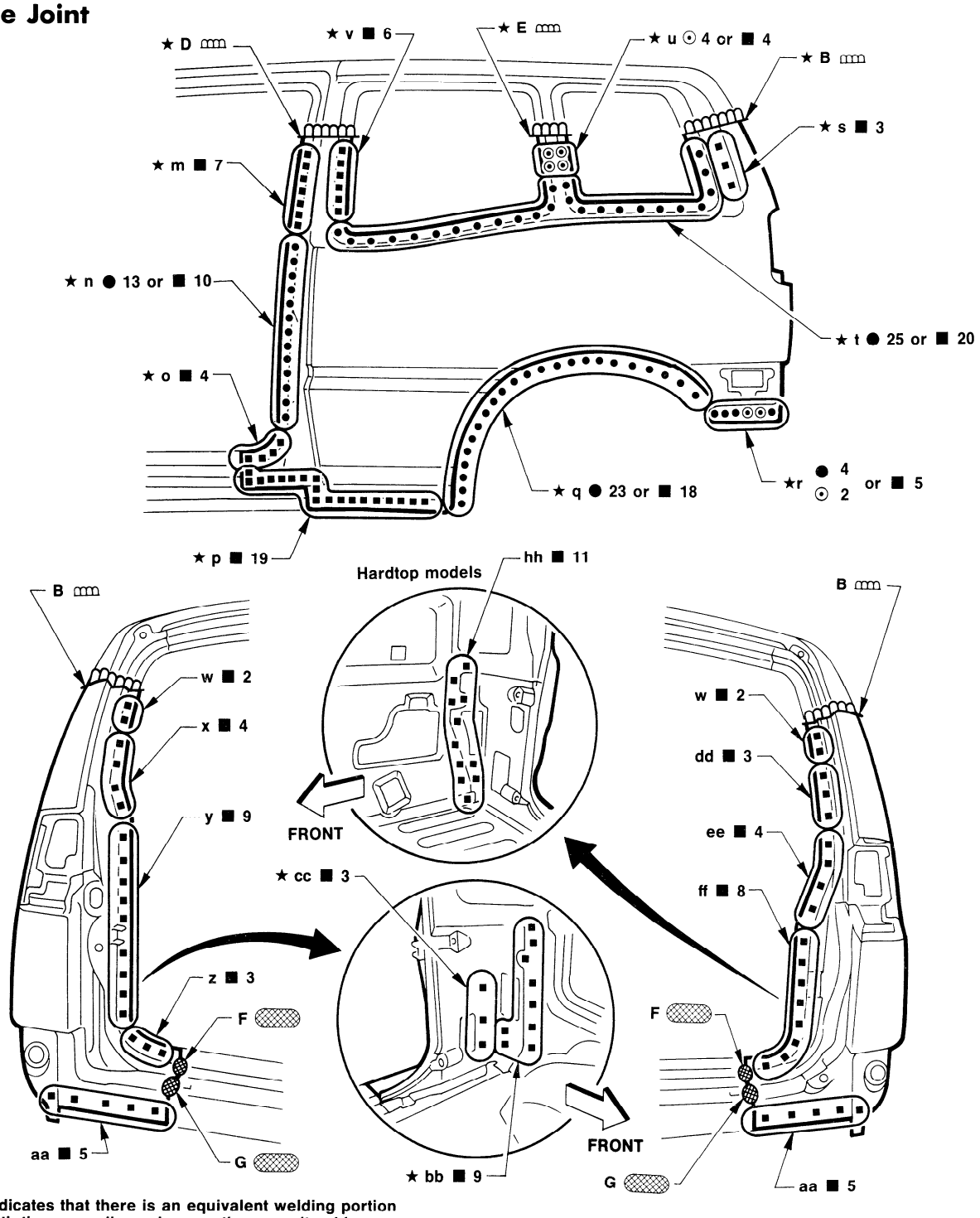
★ Indicates that there is an equivalent welding portion with the same dimensions on the opposite side.

2-spot welds	3-spot welds	M.I.G. plug weld	M.I.G. seam weld/ Point weld	Brazing
●	⊙	■		

REAR FENDER

Hardtop models L.H. & R.H.

Service Joint



★ Indicates that there is an equivalent welding portion with the same dimensions on the opposite side.

2-spot welds	3-spot welds	M.I.G. plug weld	M.I.G. seam weld/ Point weld	Brazing
●	◉	■		

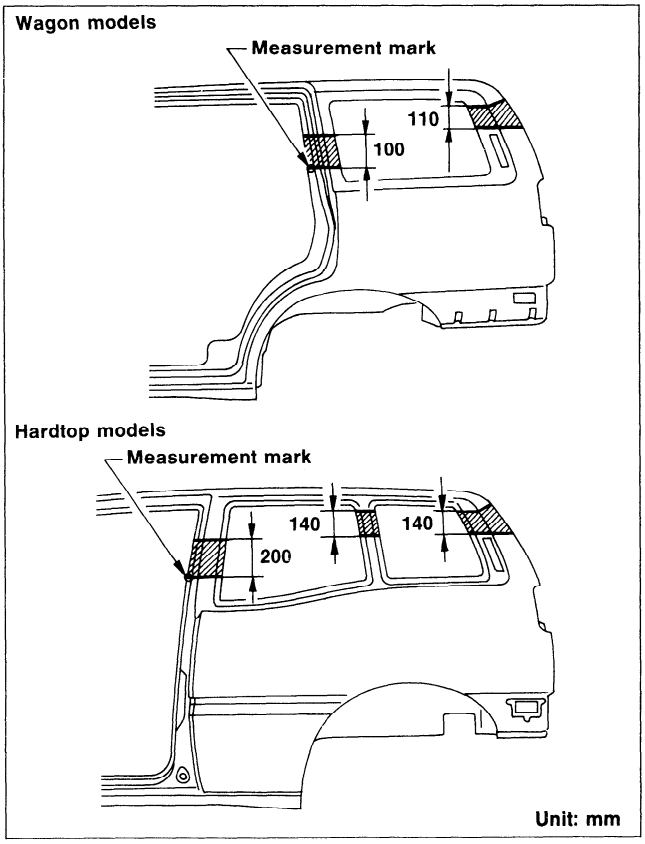
REAR FENDER

Portions to be welded

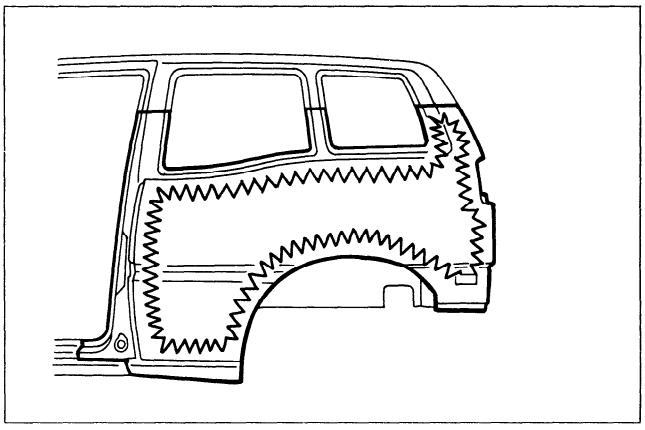
A. Rear fender
B. Rear fender
C. Rear fender
D. Rear fender
E. Rear fender
F. Rear end crossmember
G. Rear end crossmember
a. Inner rear pillar assembly & seat belt anchor reinforcement
b. Inner rear pillar assembly
c. Outer rear wheelhouse
Outer rear wheelhouse & inner sill
d. Rear fender patch & inner sill
e. Inner sill
f. Inner sill
Inner sill & outer rear wheelhouse
g. Outer rear wheelhouse
h. Outer rear wheelhouse
i. Rear floor side
Rear floor side & rear end crossmember
j. Rear fender cover
k. Inner rear pillar assembly
l. Inner rear pillar assembly & seat belt anchor reinforcement
m. Inner rear pillar assembly & seat belt anchor reinforcement
n. Inner rear pillar assembly
o. Inner sill & inner rear pillar assembly
Inner sill & outer sill
p. Outer sill
Outer sill & inner sill
q. Outer rear wheelhouse
r. Rear floor side
Rear floor side & rear end crossmember
s. Rear fender cover
t. Inner rear pillar assembly
u. Inner rear pillar assembly & side window handle retainer
v. Inner rear pillar assembly & seat belt anchor reinforcement
w. Rear roof rail brace & inner rear pillar assembly
x. Inner rear pillar assembly
y. Inner rear pillar assembly
z. Lower inner rear pillar
aa. Rear end crossmember
Rear end crossmember & lower inner rear pillar
bb. Inner rear pillar assembly & lower inner rear pillar
cc. Lower inner rear pillar
dd. Inner rear pillar assembly
ee. Inner rear pillar assembly
ff. Inner rear pillar assembly , lower inner rear pillar
Lower inner rear pillar
gg. Inner rear pillar assembly & lower inner rear pillar
hh. Inner rear pillar assembly & lower inner rear pillar

REMOVAL NOTES

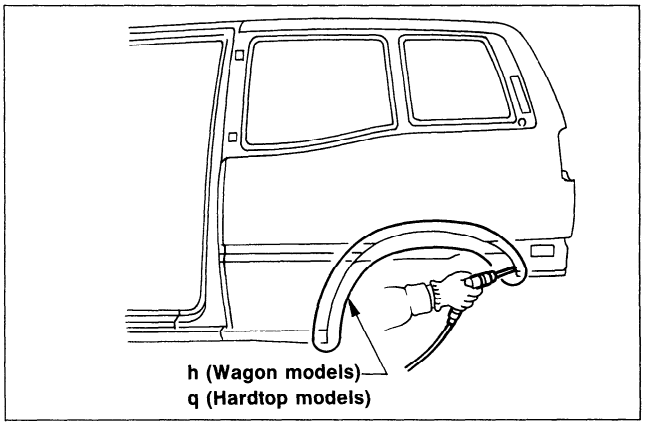
- Cut off line can be determined anywhere within shaded area as shown in the figure.



- Cut off damaged portion as shown in the figure to facilitate removal.



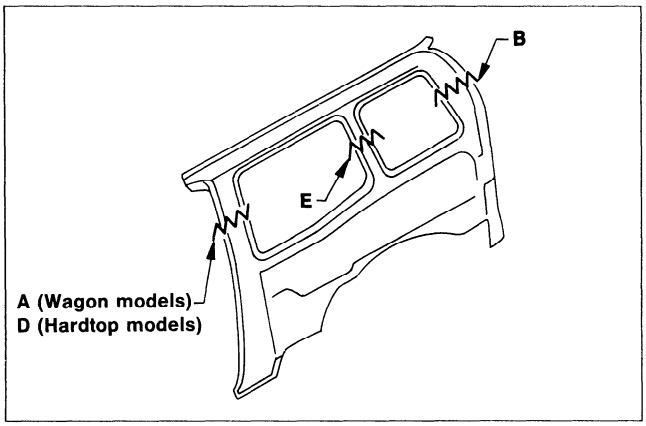
- Spot cut welded portion (h) or (q) from outside. Do not drill through mating part.



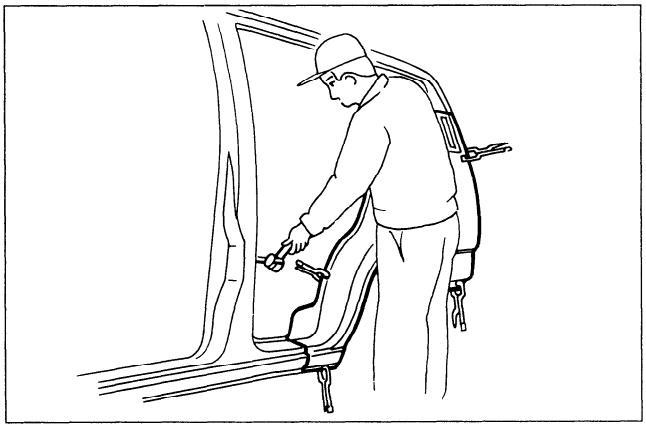
REAR FENDER

INSTALLATION NOTES

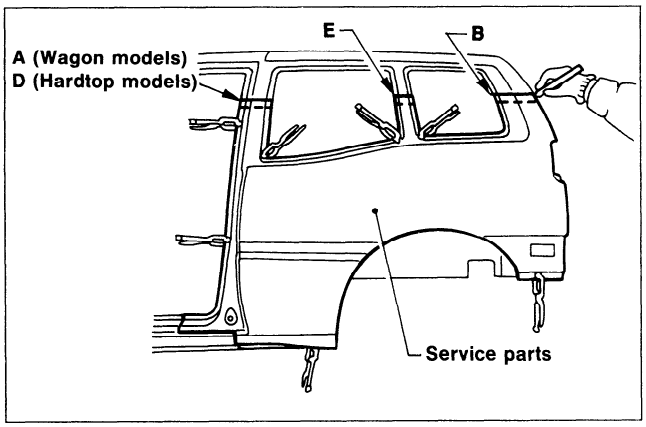
- Cut off service part along previously scribed lines as shown in the figure.



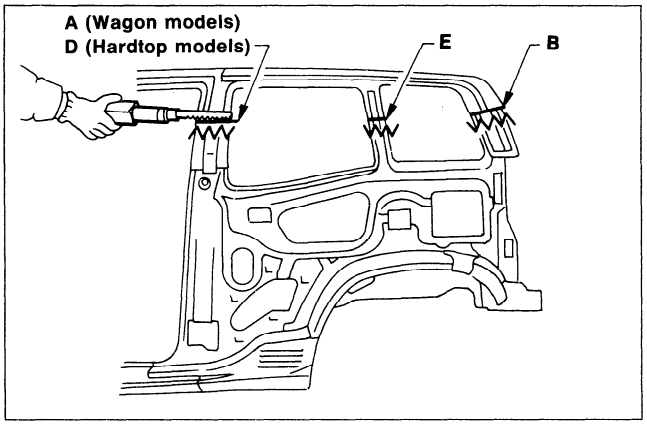
- Position service part and measure various dimensions of part locations.
  Refer to "BODY ALIGNMENT" (pp.31 and 33) drawing.



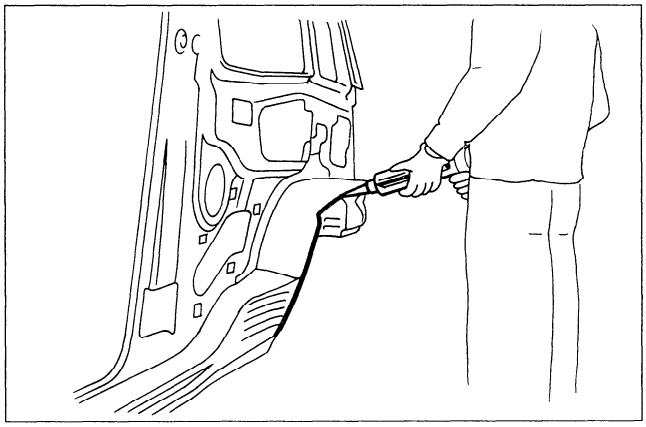
- Scribe lines (A), (B), (D) & (E) at the cut portion of service part.



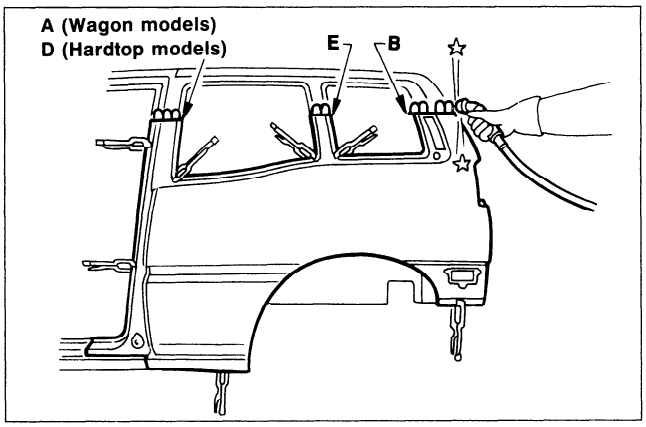
- Cut off rear fender along the scribe lines (A), (B), (D) & (E).



- Before installing rear fender, apply sealant to wheel arch.

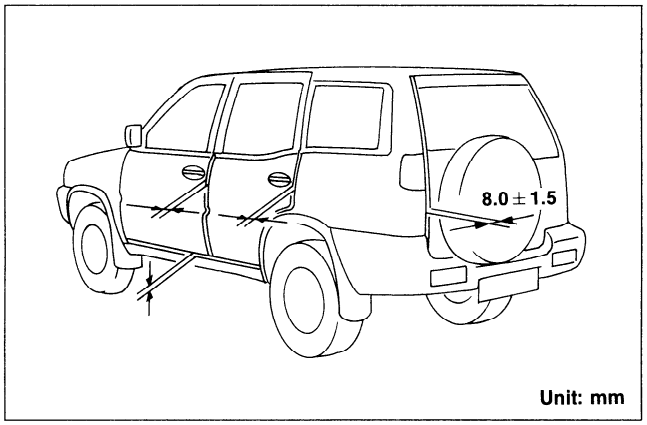


- Align service part with mating part.
- When welding, temporarily weld each press line first to prevent movement.

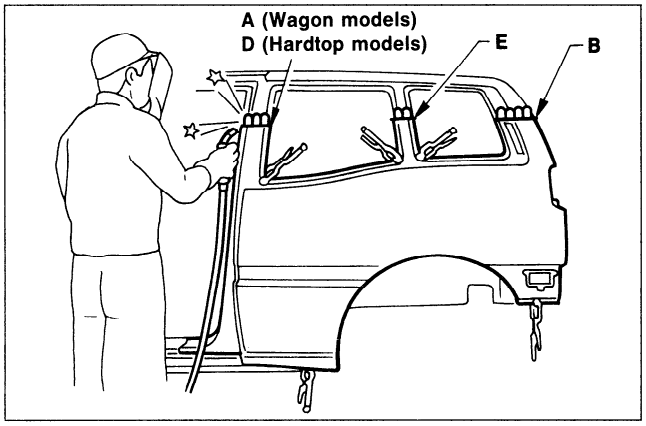


REAR FENDER

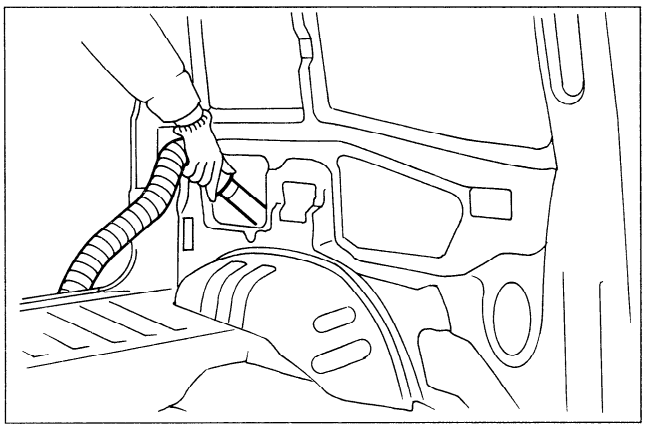
- After tack welding each clamping point and butting point, install rear door and back door. Check clearances, grades and parallelism.



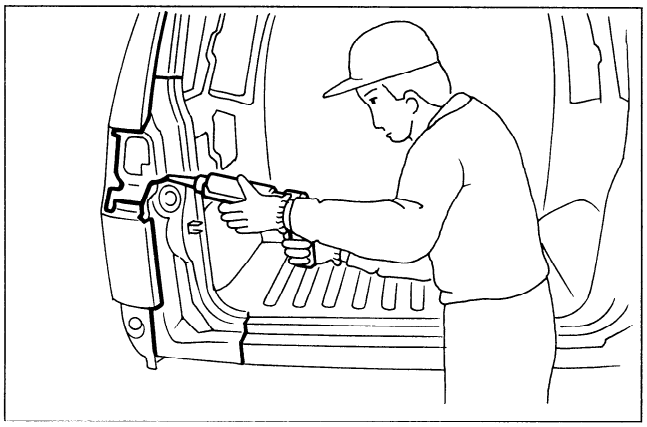
- Weld parts to be butt welded as far as flange end portion.
  Finish welded parts with an air grinder.



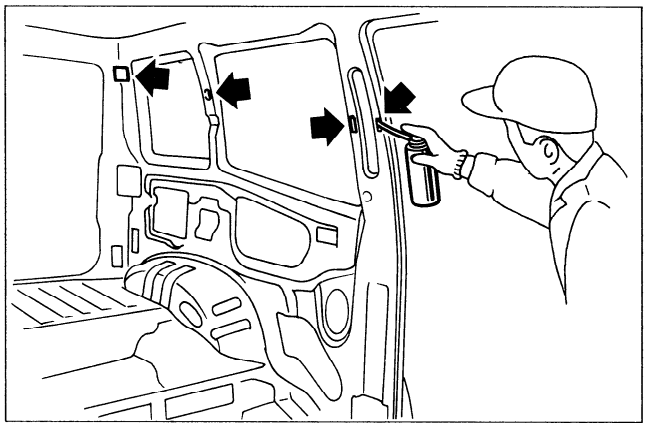
- Remove any debris with a vacuum cleaner to prevent rust and corrosion.



- Apply sealant.



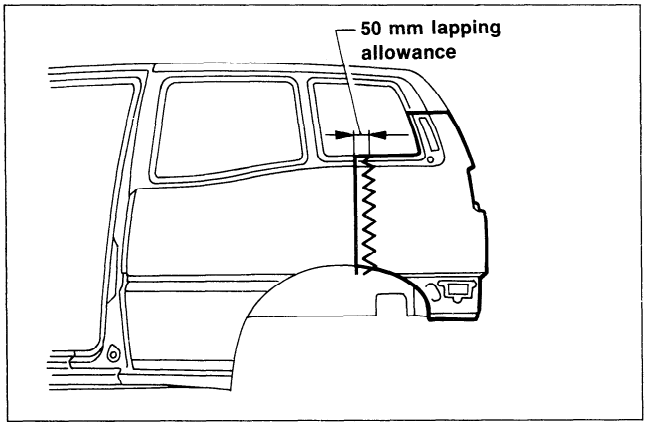
- After painting, apply an anti-corrosive wax to welded portions.



REAR FENDER (Partial Replacement)

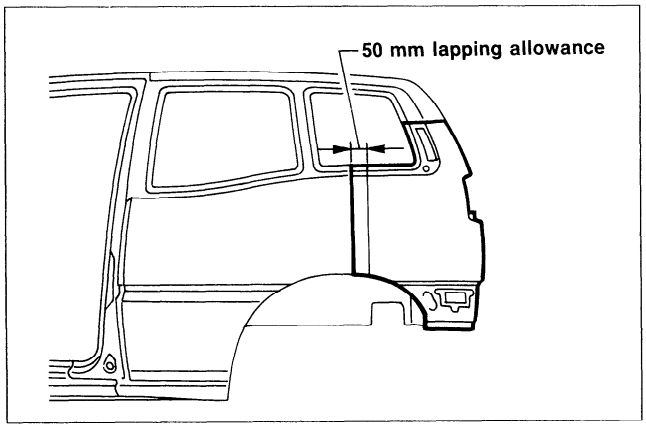
REMOVAL NOTE

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

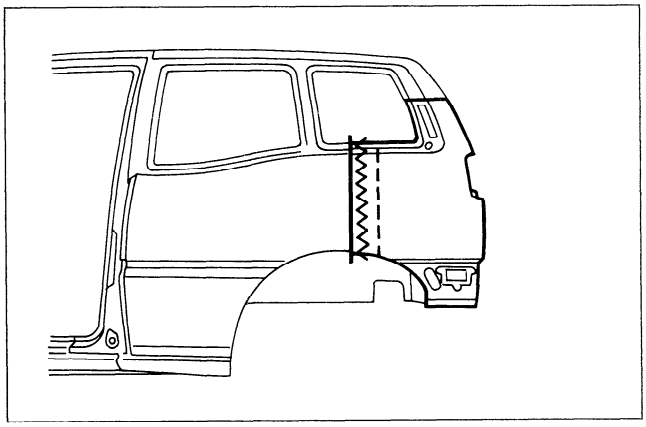


INSTALLATION NOTES

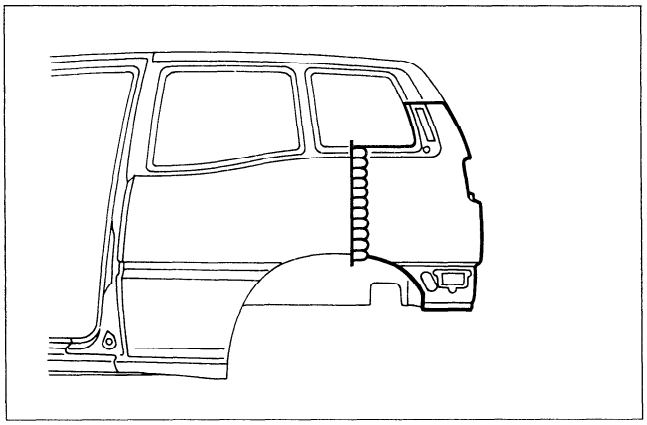
- Cut off service part leaving 50 mm lap allowance with mating part.



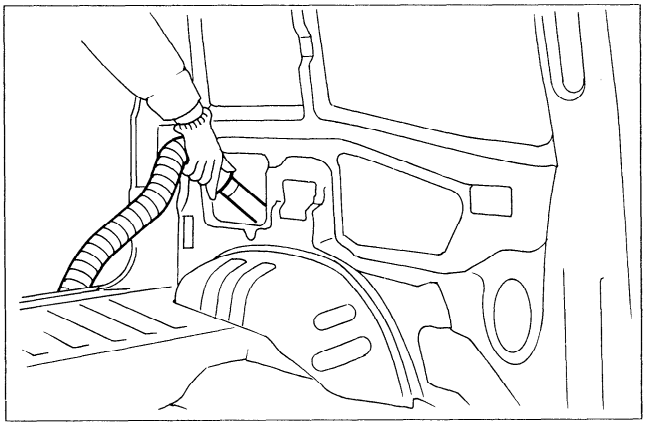
- Position service part with vise clamps, and cut off in middle of lapped part.



- M.I.G. seam weld butt ends.



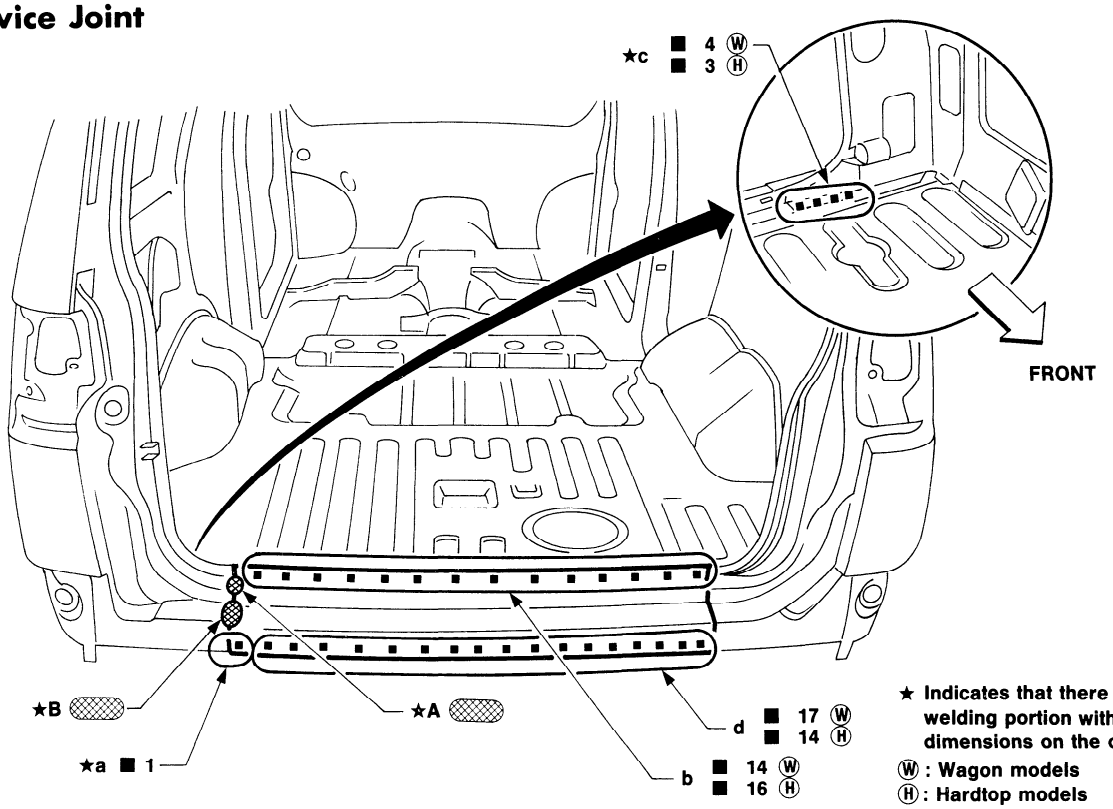
- Remove any debris with a vacuum cleaner to prevent rust and corrosion.



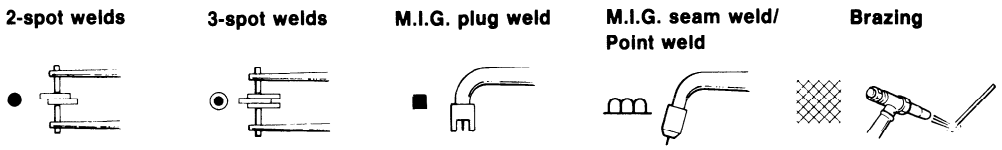
- Perform subsequent operations using procedures outlined in section titled "REAR FENDER".

REAR END CROSSMEMBER

Service Joint



★ Indicates that there is an equivalent welding portion with the same dimensions on the opposite side.
Ⓦ : Wagon models
Ⓗ : Hardtop models

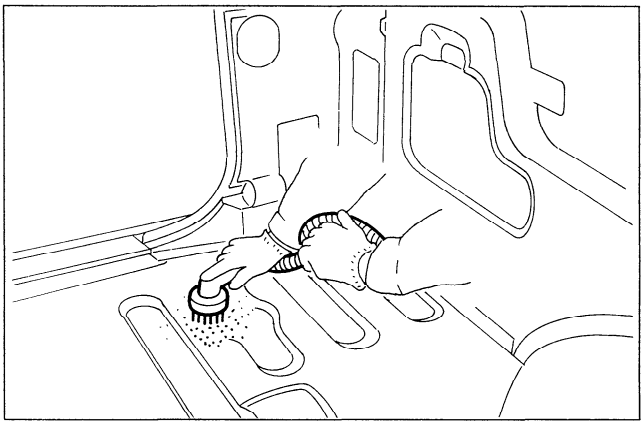


Portions to be welded

A. Rear fender assembly
B. Rear fender assembly
a. Rear fender assembly
Rear fender assembly & lower inner rear pillar
b. Inner rear end crossmember
c. Rear floor rear & inner rear pillar
d. Inner rear end crossmember

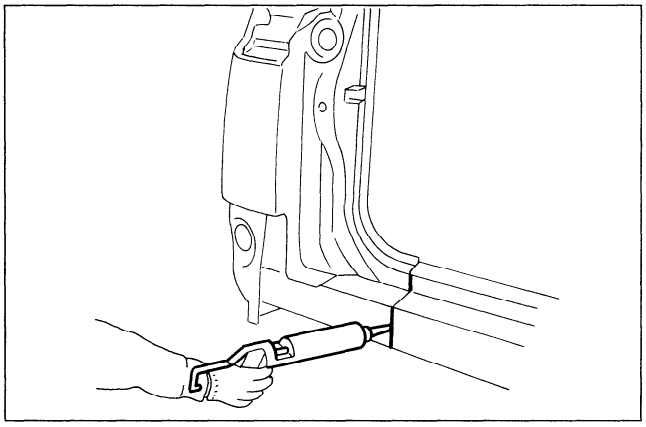
INSTALLATION NOTES

- Remove any debris with a vacuum cleaner to prevent rust and corrosion.

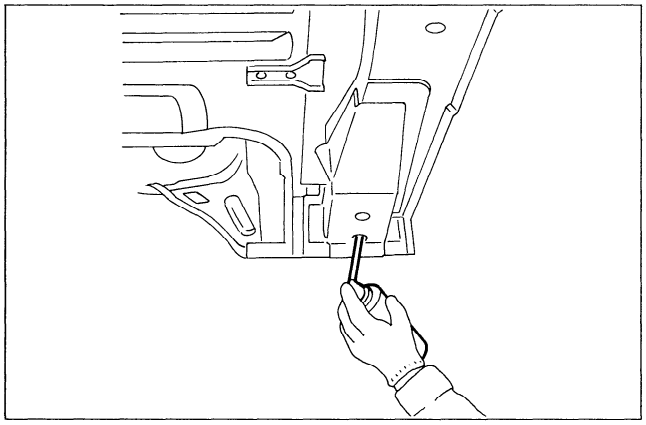


REAR END CROSSMEMBER

- Apply sealant to service part joint.

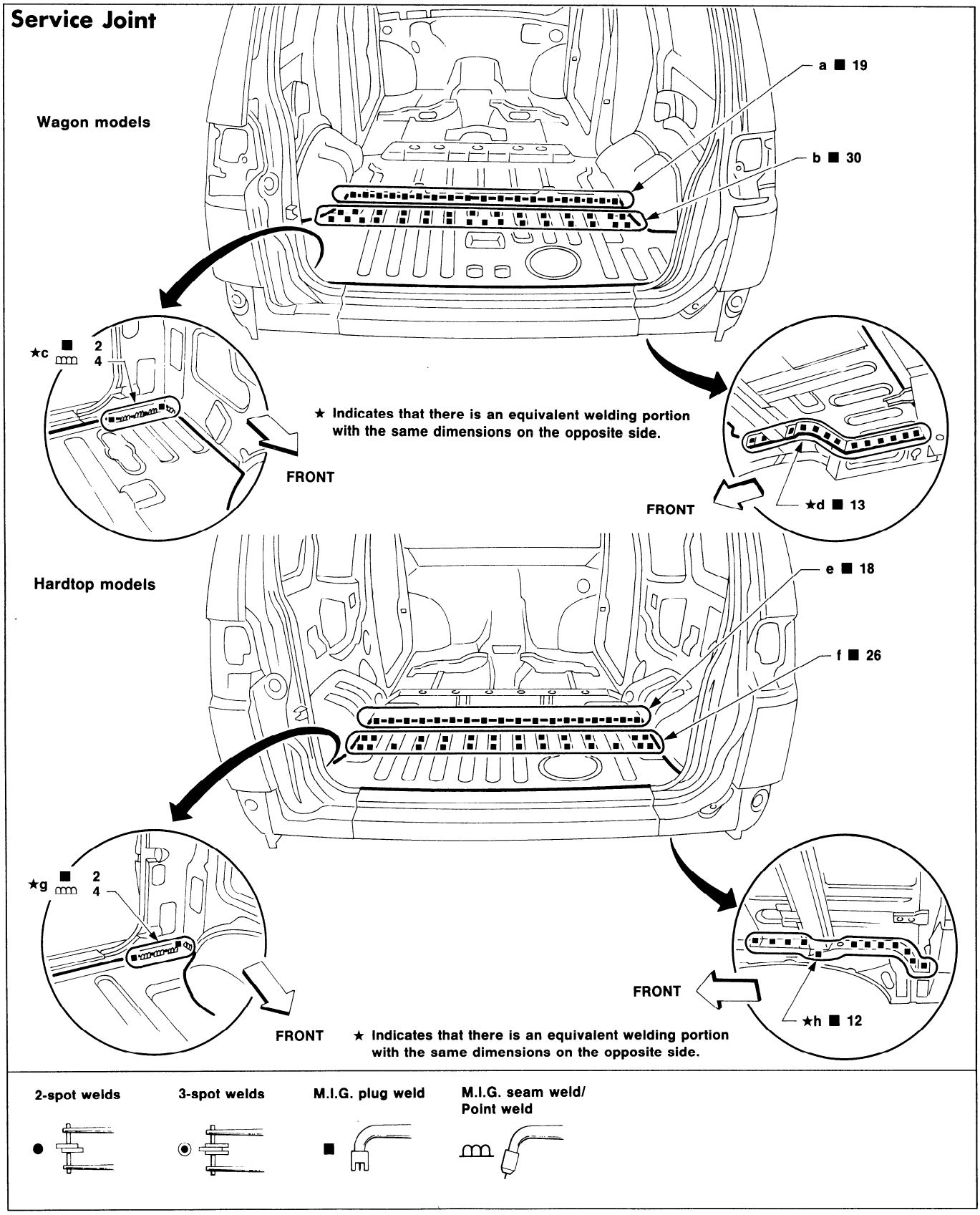


- After painting, apply an anti-corrosive wax to welded parts.



REAR FLOOR REAR

(Work after rear end crossmember has been removed.)



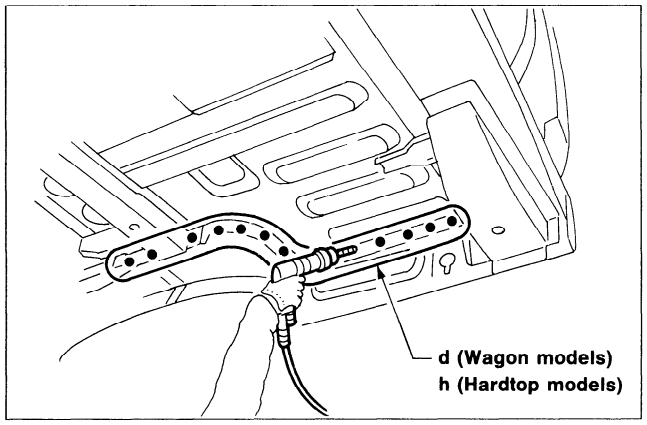
REAR FLOOR REAR

Portions to be welded

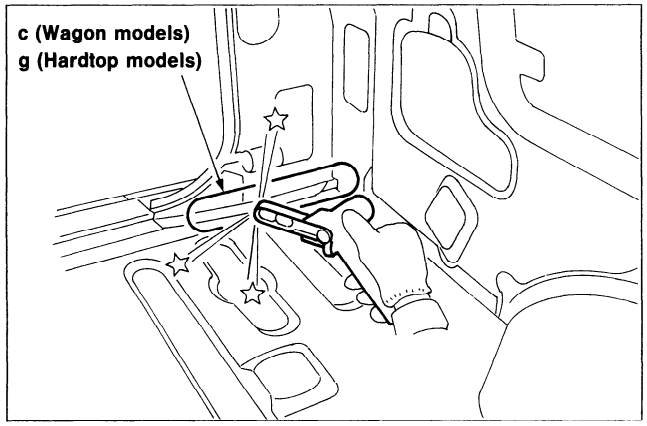
a. Rear floor front assembly
b. Rear crossmember
c. Inner rear pillar
d. Outer rear wheelhouse
Rear floor side
e. Rear floor front assembly
f. Rear crossmember
g. Inner rear pillar
h. Outer rear wheelhouse
Rear floor side

REMOVAL NOTES

- Spot cut welded portions (d) or (h) from outside as shown in the figure.

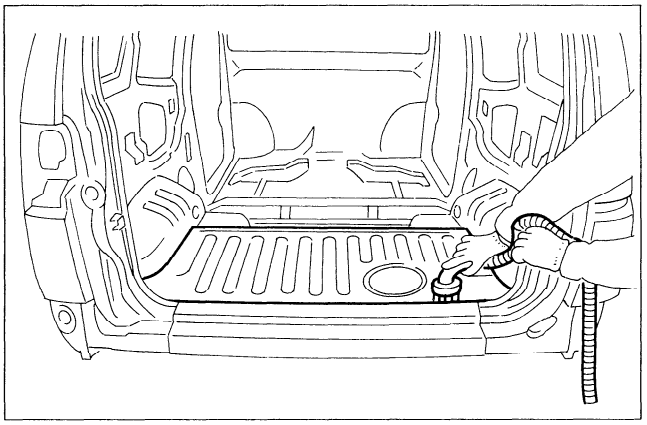


- Cut welds with a mini belt sander at portions (c) or (g).

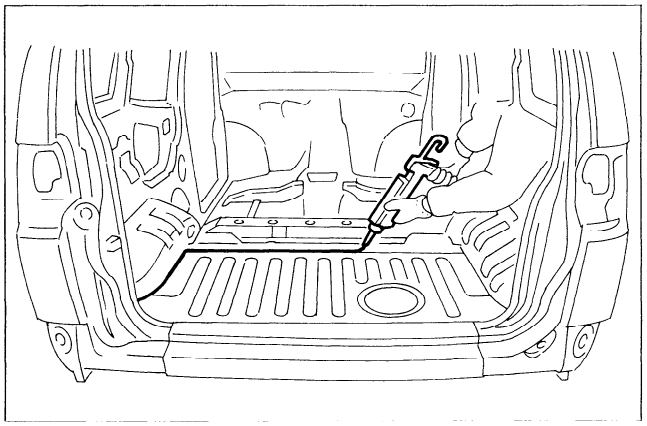


INSTALLATION NOTES

- After dressing, remove any debris with a vacuum cleaner to prevent rust and corrosion.

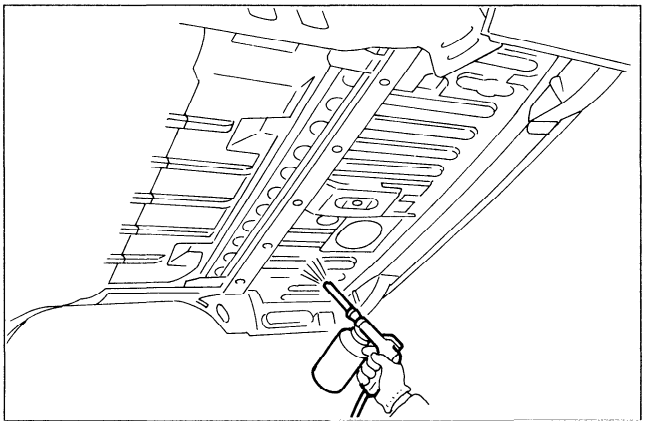


- Apply sealant.

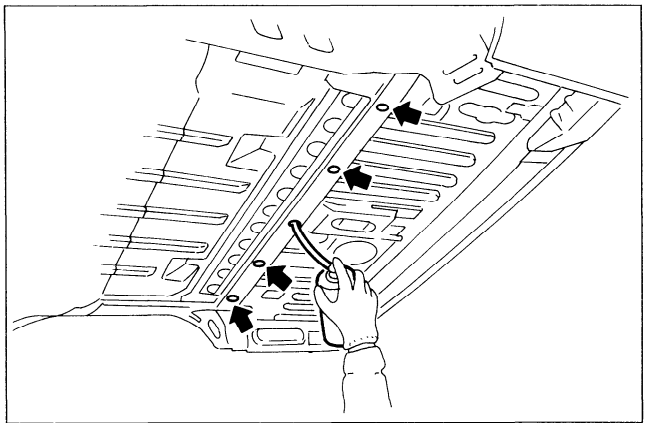


REAR FLOOR REAR

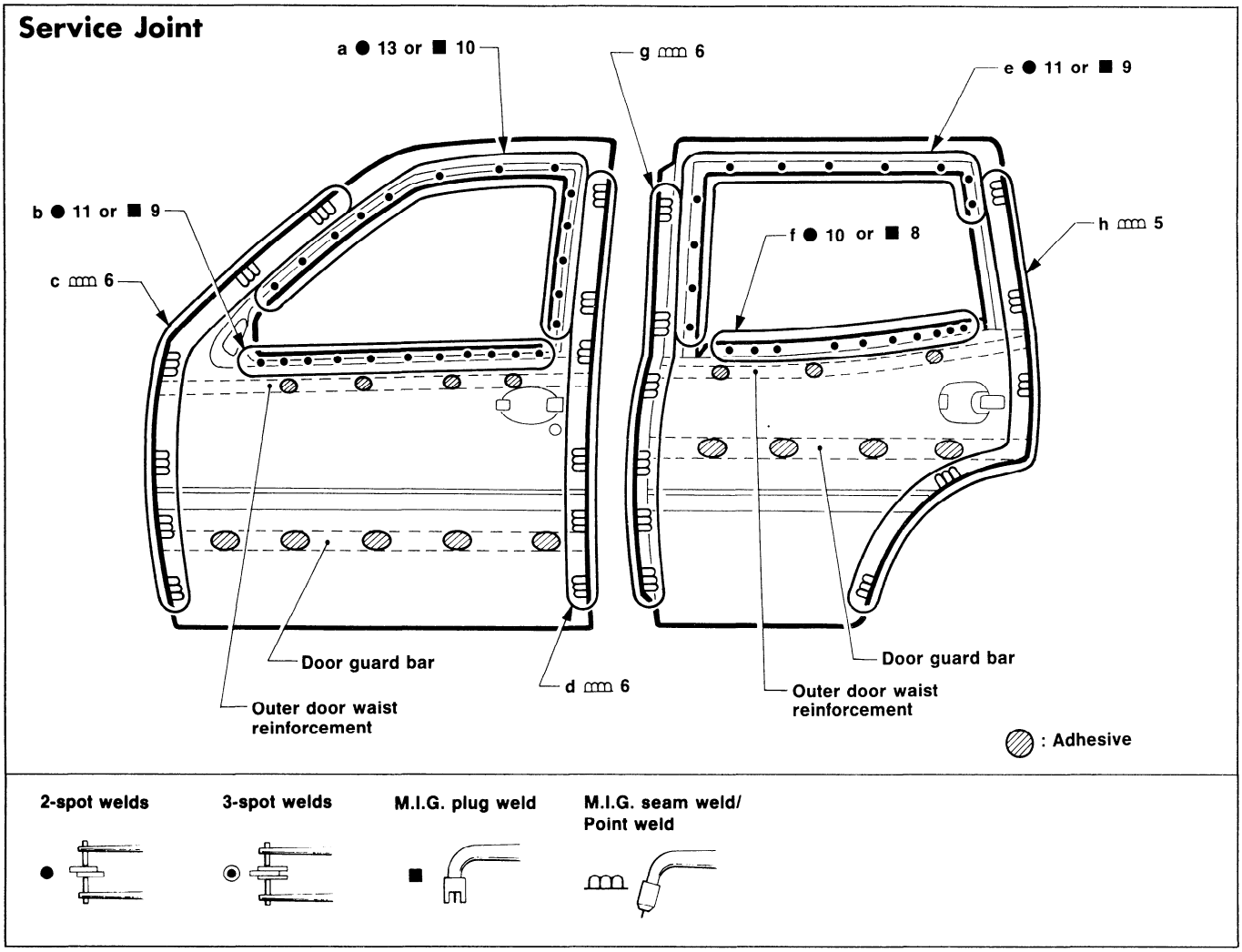
- Under coat the underside of rear floor.



- After painting, apply an anti-corrosive wax to welded portions.



OUTER DOOR PANEL

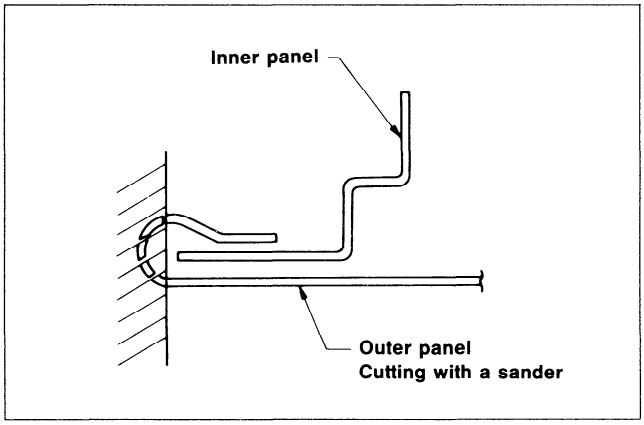


Portions to be welded

a. Front door channel assembly
b. Outer front door waist reinforcement
c. Inner door panel
d. Inner door panel
e. Rear door channel assembly
f. Outer rear door waist reinforcement
g. Inner door panel
h. Inner door panel

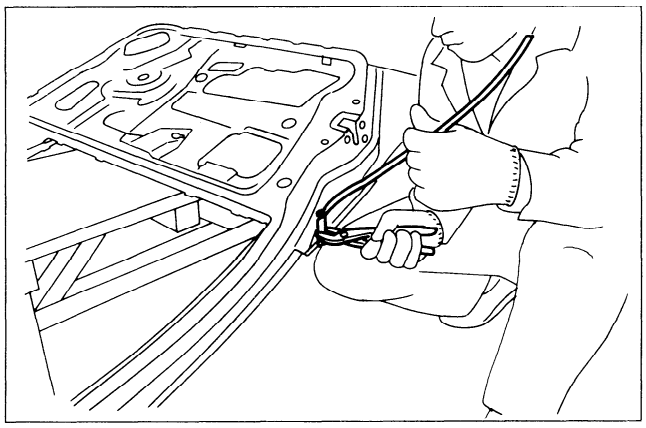
REMOVAL NOTES

- Cut door panel hem with a sander.

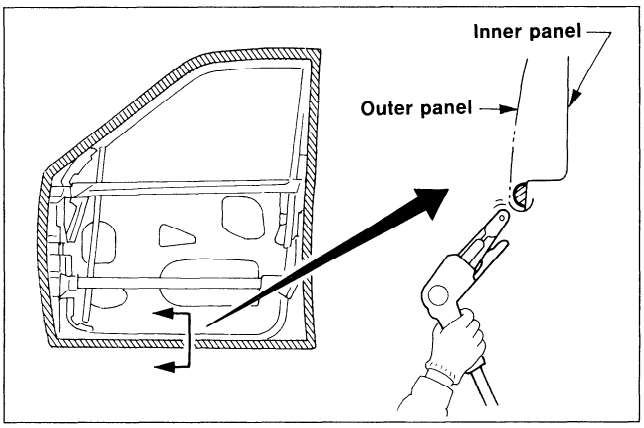


OUTER DOOR PANEL

- Remove outer door panel odds and ends with pliers or chisel.

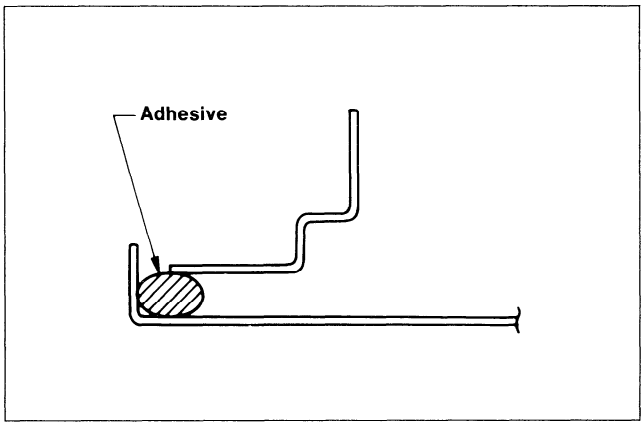


- After removing outer panel, dress rusty part with a sander and treat with an anti-corrosive agent.



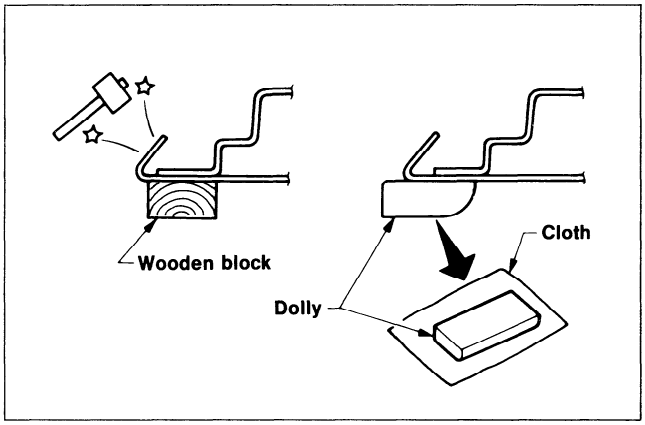
INSTALLATION NOTES

- Apply adhesive to outer panel hem.

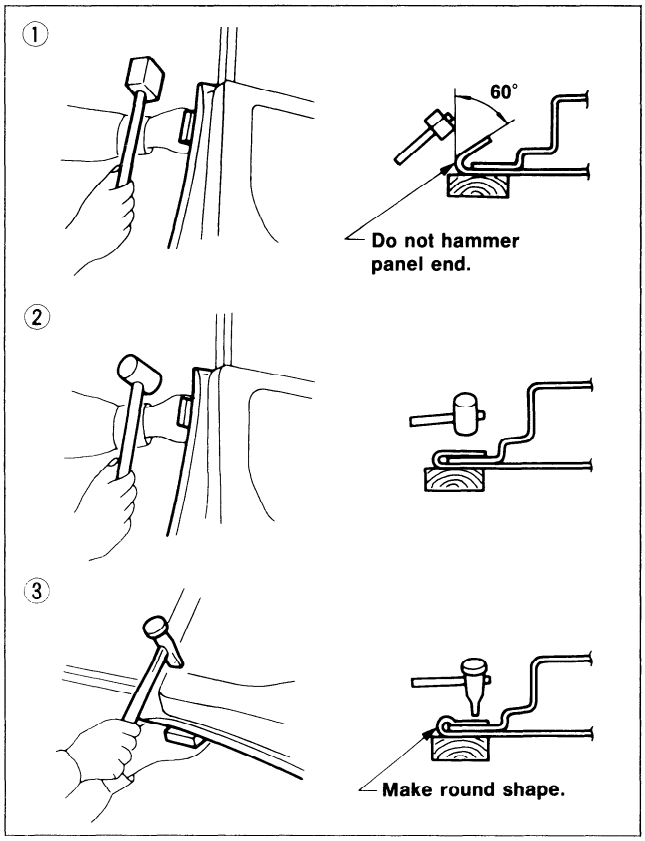


- Hemming work of outer door panel should be done, referring to the following tips.

(1) Use wooden block as a dolly to avoid distorting outer panel. If it is not available, use dolly covered with cloth or other soft material.

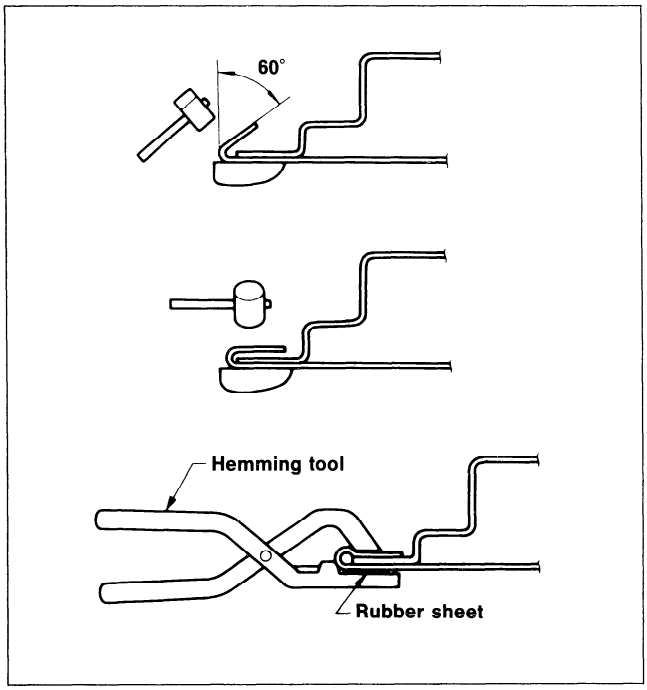


(2) Hemming work should be done in three steps as shown in the figure.

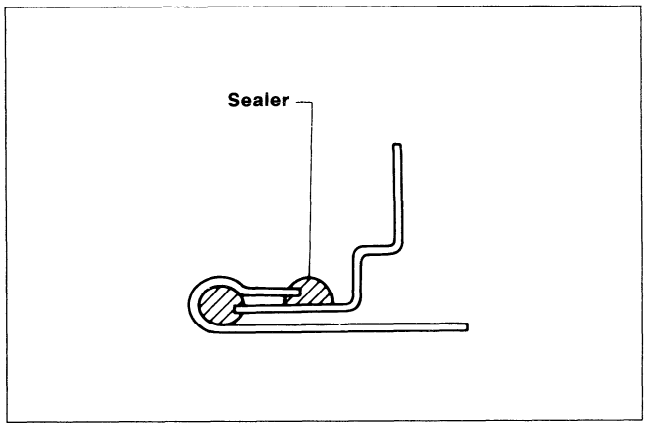


OUTER DOOR PANEL

(3) When using hemming tool, temporarily bend panel with hammer in advance and then use hemming tool.
Be sure to protect outer panel with rubber sheet.



- Apply sealant to whole panel edge.



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