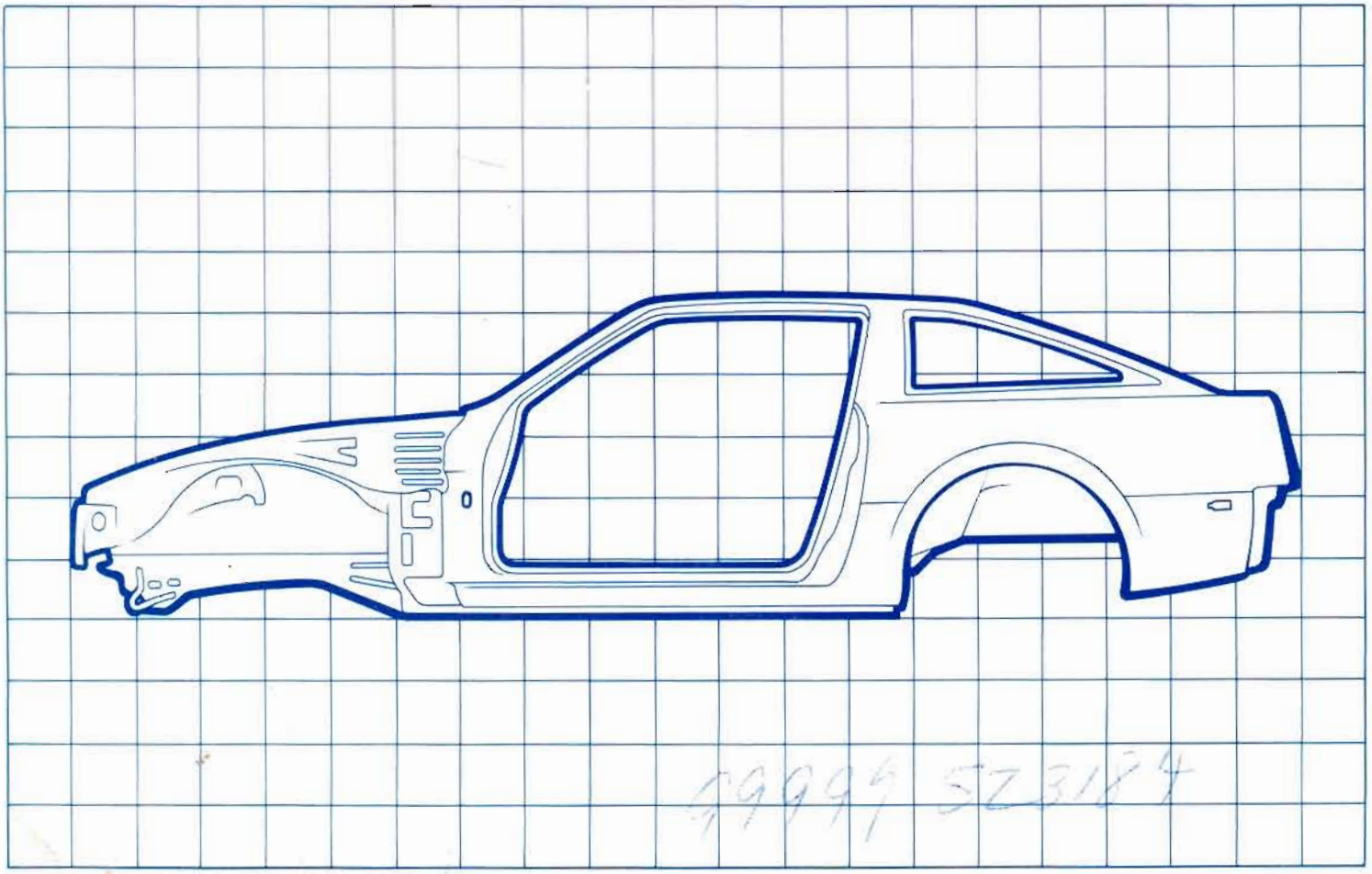
MODEL Z31 SERIES

NISSAN 300ZX

BODY REPAIR MANUAL



FOREWORD

This Body Repair Manual contains information, instructions and procedures for repairing the body structure of the Model Z31 (300ZX). 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 section entitled PRECAUTIONS 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 Z31 (300ZX) 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, and as such, 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 MOTOR CO., LTD.

NISSAN MOTOR CORPORATION in U.S.A.

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Dear Customer:

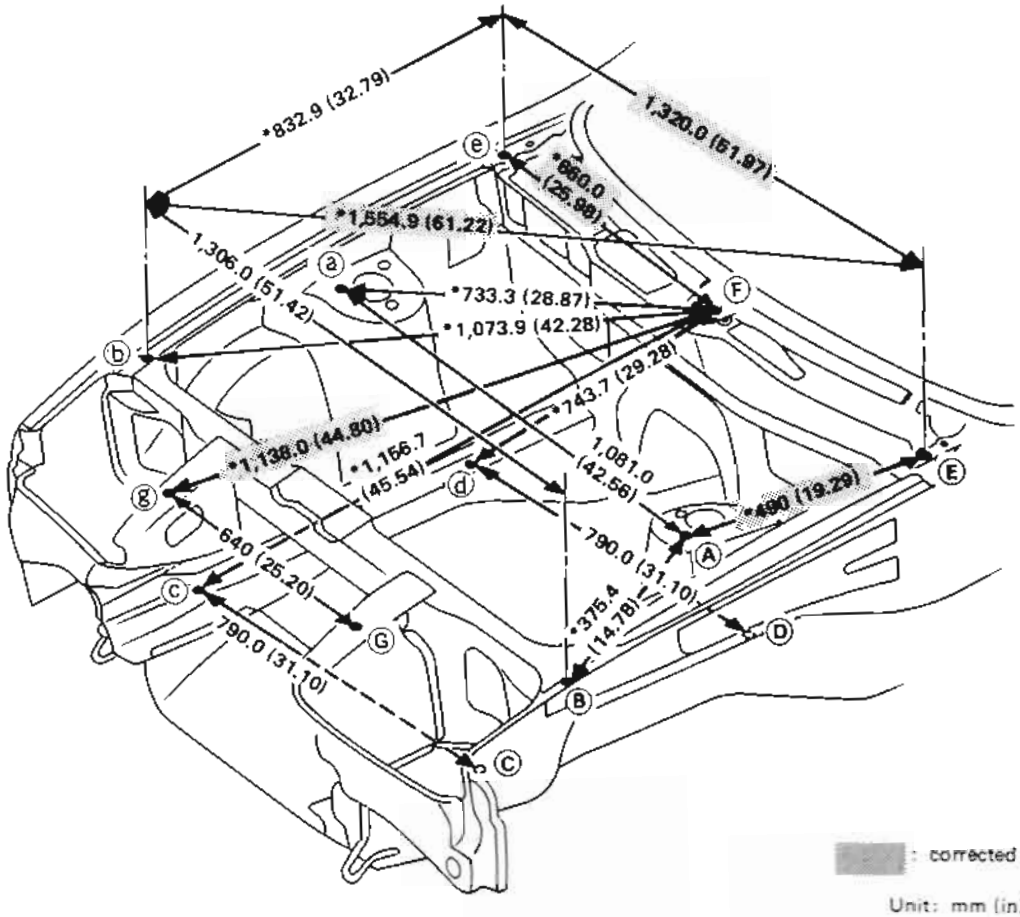
Attached to this letter are amended pages for the NISSAN 300ZX Body Repair Manual. These amendments pertain to the body alignment measurements found on pages 15, 16 and 18. The corrected measurements have been highlighted in each of the pages.

To update the manual, dampen the back of each amendment page and paste it onto the appropriate page of the manual.

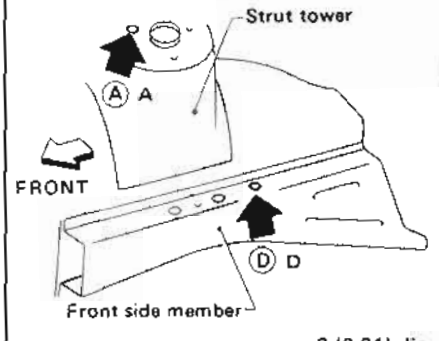
NISSAN appreciates your interest in our product and regrets any inconvenience caused to you.

NISSAN MOTOR CORPORATION IN U.S.A.
Service Technical Publications Department

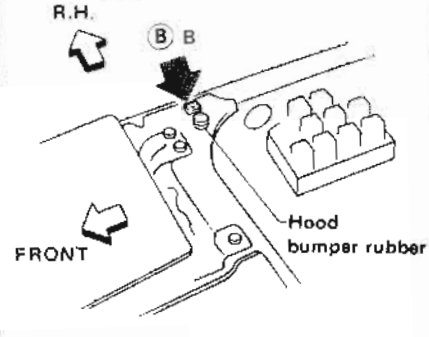
ENGINE COMPARTMENT



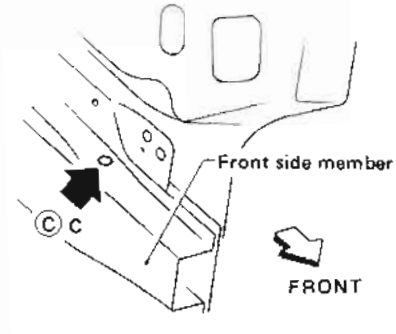
An asterisk (*) following the value at the measuring point indicates that the measuring point on the other side is symmetrically the same value.



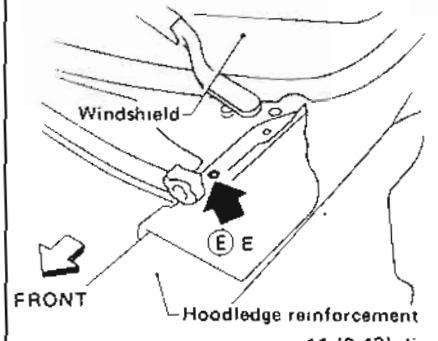
8 (0.31) dia.



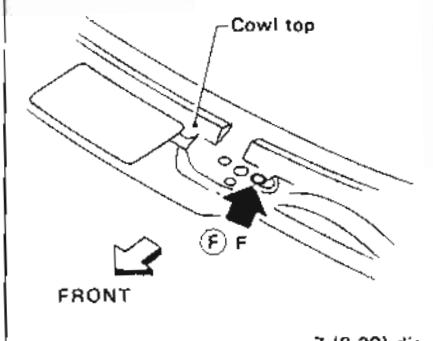
5.4 (0.213) dia.



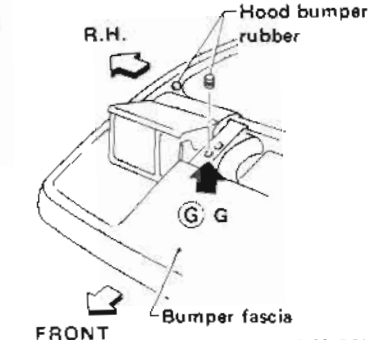
9 (0.35) dia.



11 (0.43) dia.

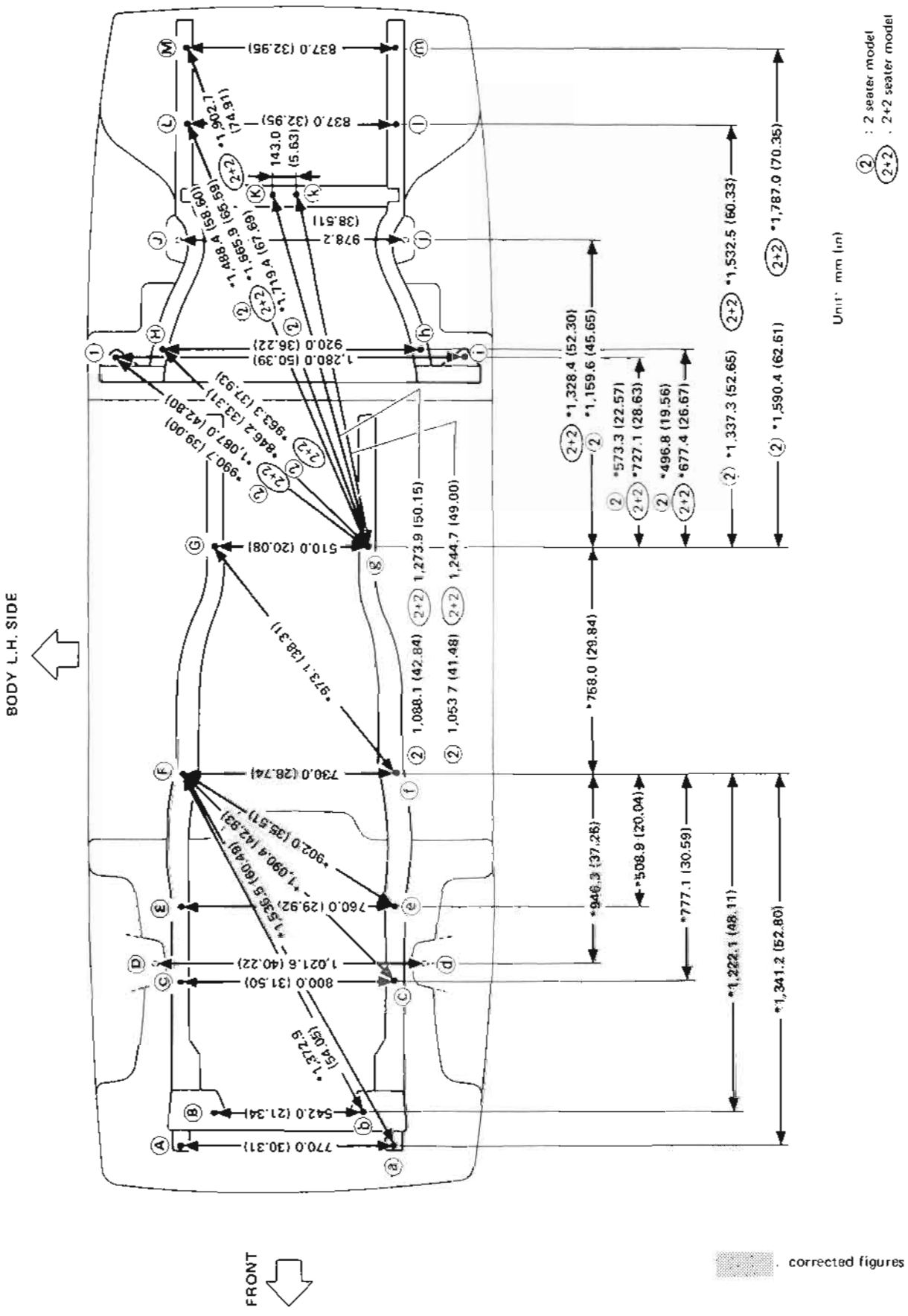


7 (0.28) dia.

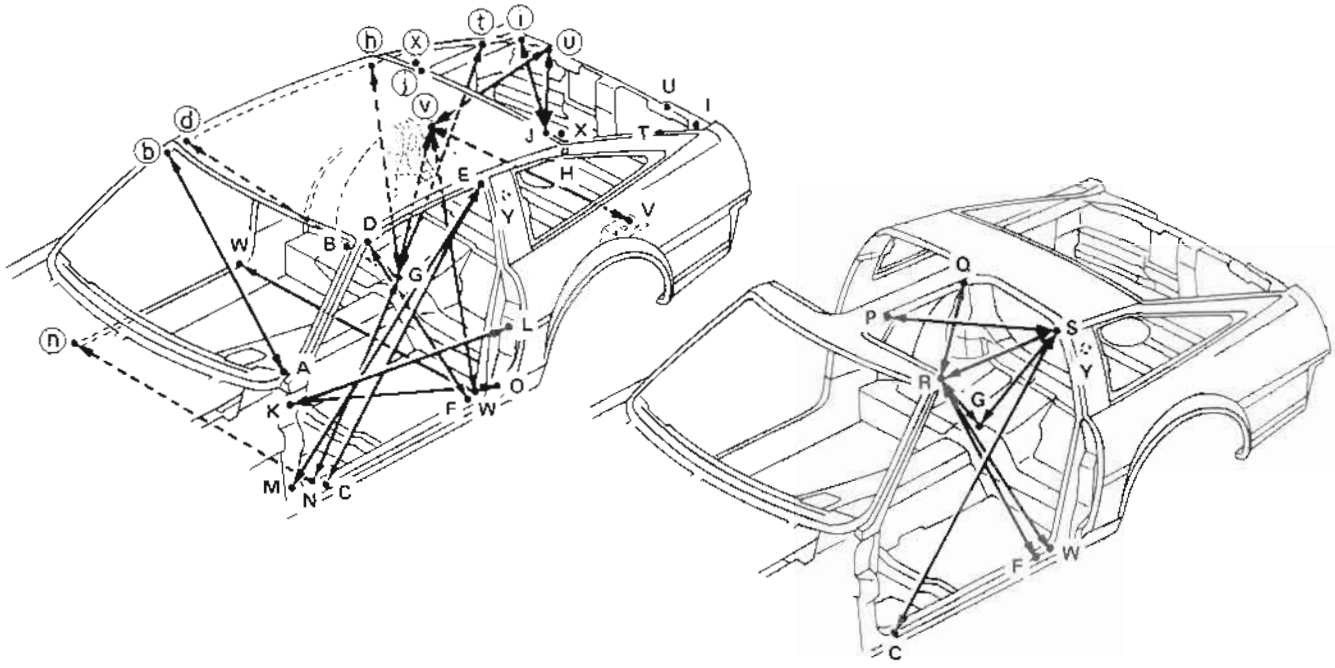


16 (0.63) dia.

UNDERBODY


BODY L.H. SIDE
FRONT
Unit: mm (in)
② : 2 seater model
(2+2) : 2+2 seater model
837.0 (32.95)
837.0 (32.95)
143.0 (5.63)
978.2
920.0 (36.22)
1,280.0 (50.39)
510.0 (20.08)
730.0 (28.74)
760.0 (29.92)
1,021.6 (40.22)
800.0 (31.50)
542.0 (21.34)
770.0 (30.31)
*1,328.4 (52.30)
*1,159.6 (45.65)
*573.3 (22.57)
*727.1 (28.63)
*496.8 (19.56)
*677.4 (26.67)
*1,337.3 (52.65)
*1,590.4 (62.61)
*1,532.5 (60.33)
*1,787.0 (70.35)
1,088.1 (42.84)
1,053.7 (41.48)
1,273.9 (50.15)
1,244.7 (49.00)
*768.0 (29.84)
*946.3 (37.26)
*508.9 (20.04)
*777.1 (30.59)
*1,222.1 (48.11)
*1,341.2 (52.80)
corrected figures

ROOM SPACE AND REAR BODY



2 seater standard roof model

Measuring points	Measurement	
	mm	in
A – ⓑ, B – ⓐ	1,385.1	54.53
C – E	1,380.1	54.33
D – F	875.5	34.47
K – L	1,179.7	46.44
G – ⓓ, G – D	961.0	37.83
G – ⓗ, G – H	910.1	35.83
J – ⓘ, I – ⓙ	1,352.1	53.23
M – E	1,489.4	58.64
N – G	1,235.1	48.63
N – ⓝ	1,413.6	55.65
O – K	1,156.5	45.53
ⓣ – G	1,391.9	54.80
ⓤ – J	1,283.8	50.54
ⓤ – ⓥ	722.8	28.46
V – ⓥ	1,010.2	39.77
ⓥ – W	1,540.9	60.67
ⓥ – G	915.8	36.06
W – ⓦ	1,410.0	55.51

2 + 2 seater standard roof model

Measuring points	Measurement	
	mm	in
A – ⓑ, B – ⓐ	1,385.1	54.53
C – E	1,442.8	56.80
D – F	889.8	35.03
K – L	1,269.0	49.96
G – ⓓ, G – D	1,035.2	40.76
G – ⓗ, G – H	966.9	38.07
J – ⓘ, I – ⓙ	1,263.3	49.74
M – E	1,555.9	61.26
N – G	1,388.6	54.67
N – ⓝ	1,413.6	55.65
O – K	1,245.4	49.03
ⓣ – G	1,392.5	54.82
ⓤ – J	1,183.1	46.58
ⓤ – ⓥ	724.5	28.52
V – ⓥ	1,010.2	39.77
ⓥ – W	1,605.0	63.19
ⓥ – G	915.8	36.06
W – ⓦ	1,410.0	55.51

T-bar roof model

Measuring points	Measurement	
	mm	in
P – S	662.6	26.09
Q – R	654.4	25.76
R – F	921.0	36.26
R – S	563.1	22.17
C – S	1,394.7	54.91
G – R	1,000.5	39.39
G – S	921.8	36.29
P – W	904.3	35.60

T-bar roof model

Measuring points	Measurement	
	mm	in
P – S	714.4	28.13
Q – R	708.4	27.89
R – S	637.6	25.10
C – S	1,461.8	57.55
R – F	945.9	37.24
G – S	912.6	35.93
G – R	1,093.6	43.06
R – W	930.6	36.64

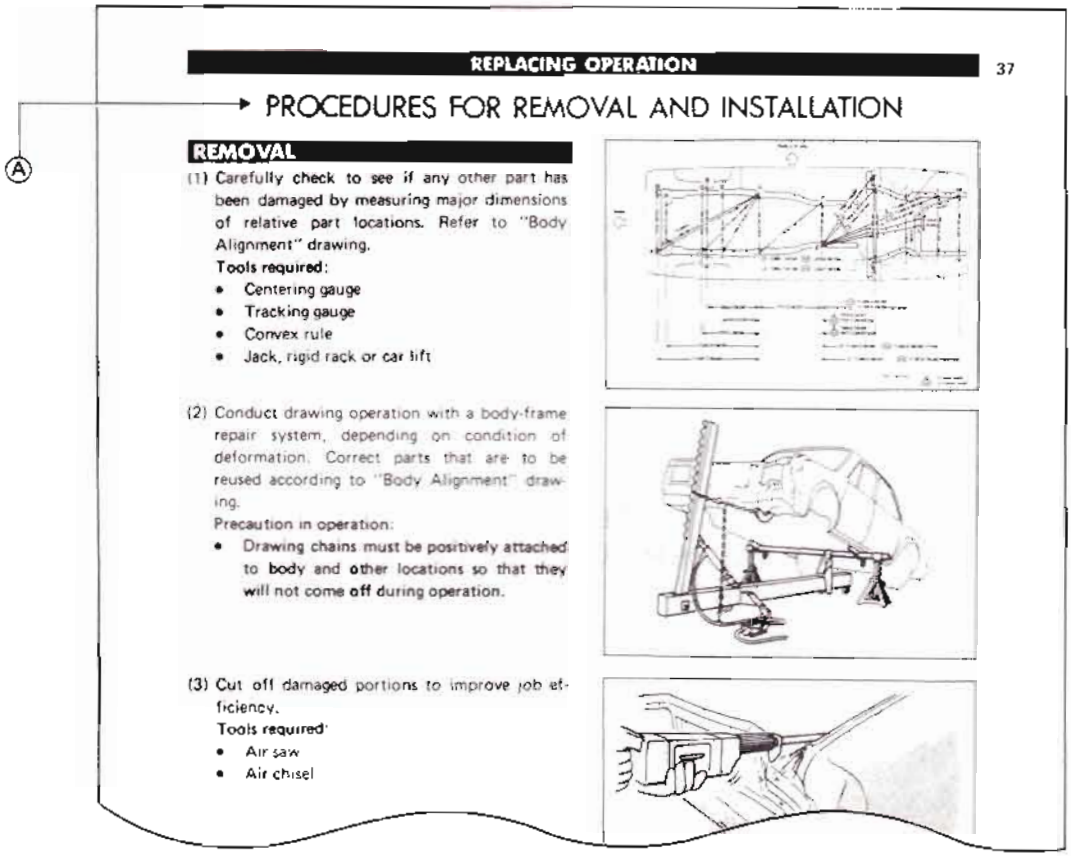
Figures given in the measurement tables should be used as reference.

: corrected figures

CONTENTS

HOW TO USE THIS MANUAL

In the "REPLACING OPERATION" section, service points and notes for performing proper body repair work for the damaged vehicles are described. Please read this very carefully in order to gain full understanding of the purpose, and then proceed with the body repair work.



REPLACING OPERATION 37

→ PROCEDURES FOR REMOVAL AND INSTALLATION

Ⓐ

REMOVAL

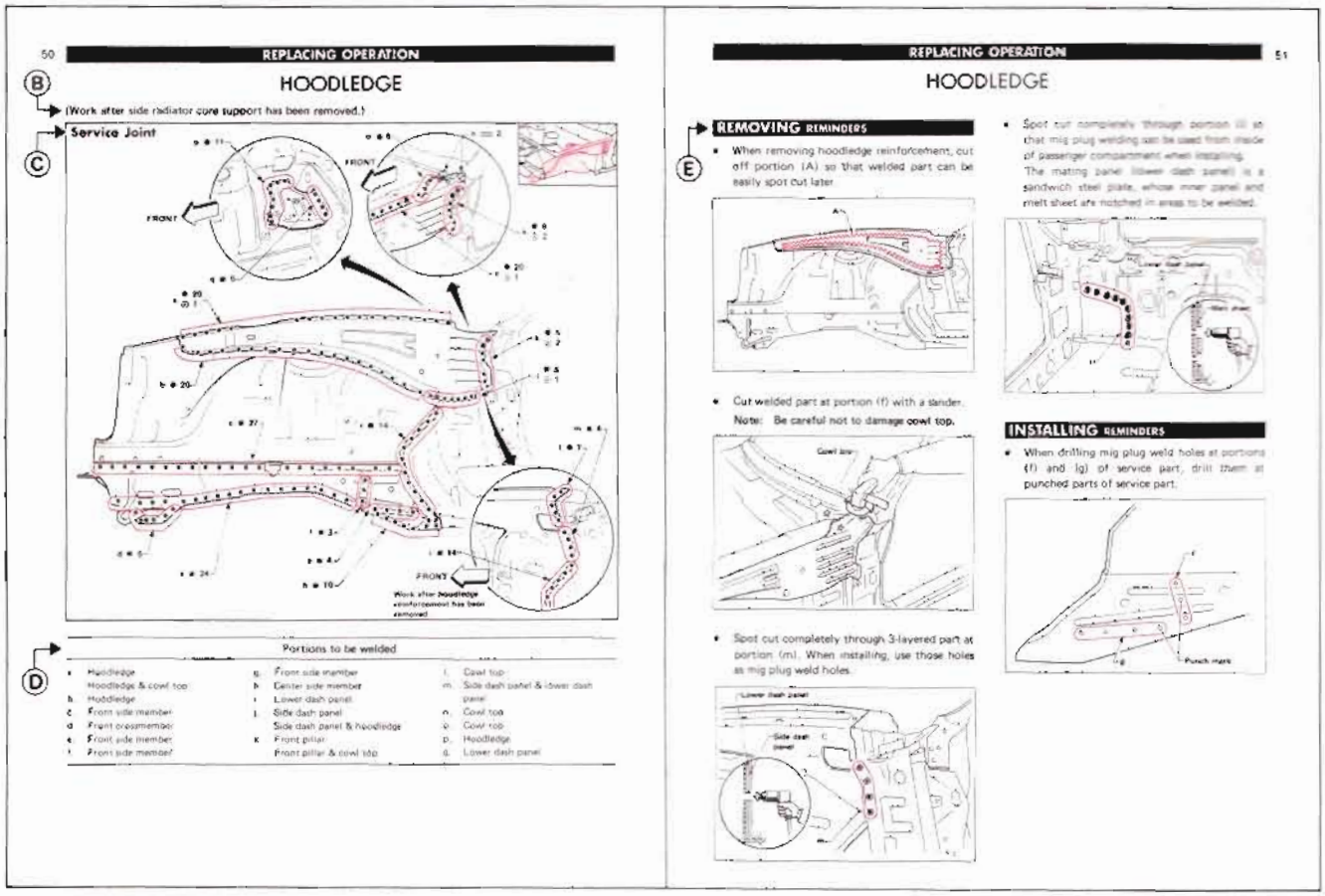
(1) Carefully check to see if any other part has been damaged by measuring major dimensions of relative part locations. Refer to "Body Alignment" drawing.
Tools required:
- Centering gauge
- Tracking gauge
- Convex rule
- Jack, rigid rack or car lift

(2) Conduct drawing operation with a body-frame repair system, depending on condition of deformation. Correct parts that are to be reused according to "Body Alignment" drawing.
Precaution in operation:
- Drawing chains must be positively attached to body and other locations so that they will not come off during operation.

(3) Cut off damaged portions to improve job efficiency.
Tools required:
- Air saw
- Air chisel

Ⓐ PROCEDURES FOR REMOVAL AND INSTALLATION:
In this section, service procedures and points for body repair work are explained in order. Service points and procedures that are almost the same for most replacing work are described.

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 have already been removed. If the radiator core support and the hoodledge reinforcement are installed on the car to be serviced, refer to "REPLACING RADIATOR CORE SUPPORT".

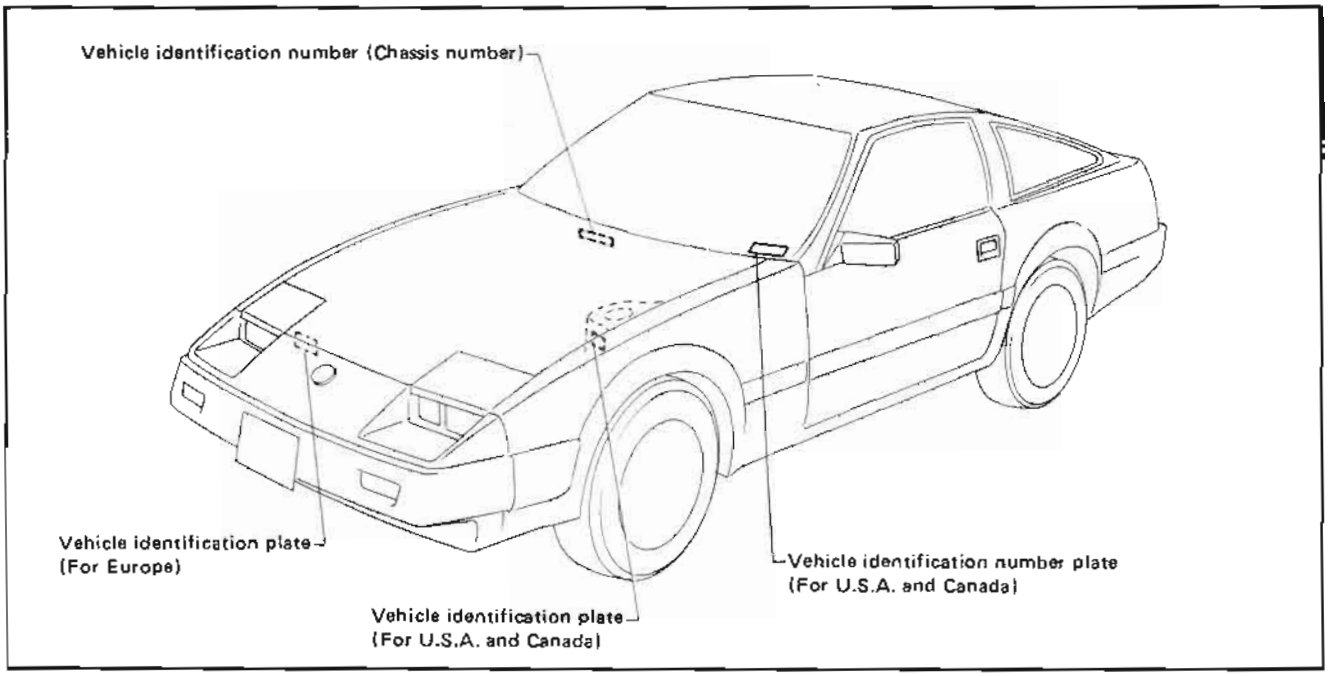
Ⓒ SERVICE JOINT:
Welding methods and No. of welding points are described when performing body repair work (replacement of body parts).
To maintain the function of the car body, work should be done, observing what is described here (particularly No. of welding points).
[Example]

e ■ 24
Portion — e
■ — Mig plug weld (See symbol mark on page 36.)
24 — No. of welding points

Ⓓ PORTIONS TO BE WELDED:
This section describes those portions to which the portion under the subtitle (ex. Hoodledge panel) will be welded. Portions to be welded are listed.

Ⓔ REMOVING/INSTALLING REMINDERS
Main service points and reminders when performing body repair work are described.

IDENTIFICATION NUMBERS



1 Vehicle Identification Plate

The vehicle identification plate is located in the engine compartment.

2 Vehicle Identification Number (Chassis Number)

The vehicle identification number is stamped on the cowl top panel in the engine compartment.

For U.S.A. and Canada

K H L G Z31 J A T U

- □ : Standard roof
- K : T-bar roof
- H : VG30E engine
- L : L.H. drive
- □ : 2 seater
- G : 2+2 seater
- N : Canada model
- U : U.S.A. model except California
- V : California model
- □ : Non-turbocharger
- T : Turbocharger
- □ : Manual transmission
- A : Automatic transmission
- □ : SF model
- J : GL model
- X : GL-L model

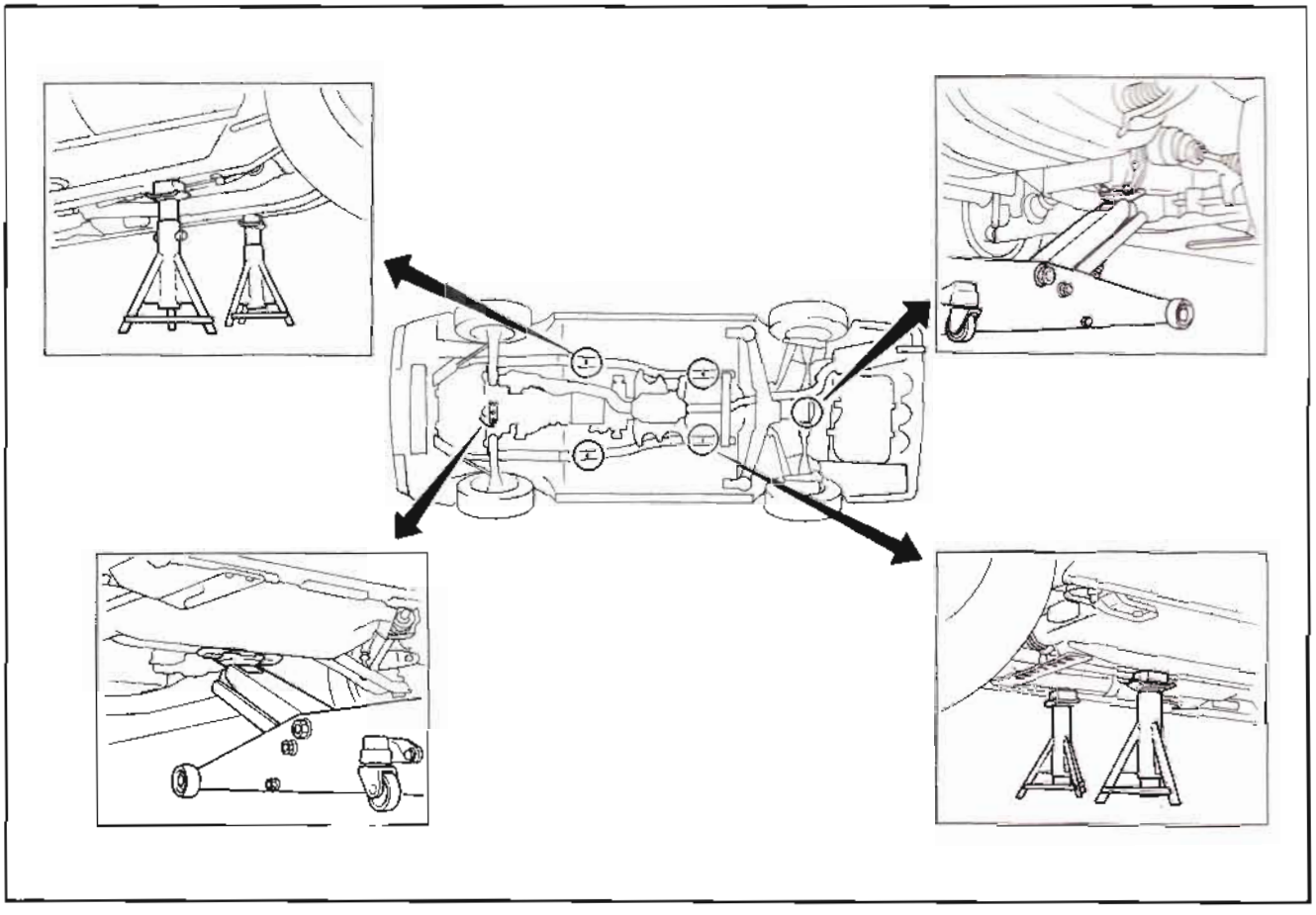
□ : means no indication.

For Europe

JN1 O HG Z31 U O XXXXXX

- JN1 : Nissan
- O : Stopgap (no meaning)
- HG : VG30E engine, 2 + 2 seater
- Vehicle serial number
- O : Stopgap (no meaning)
- U : For Europe
- Model

LIFTING POINTS



1 Pantograph Jack

Warning: a. Never get under the car while it is supported only by the jack. Always use safety stands to support frame when you have to get under the car.
b. Place wheel chocks at both front and back of the wheel diagonally opposite the jack position.

Apply the pantograph jack furnished with the car to the position indicated in the figure in a safe manner.

2 Garage Jack and Safety Stand

Warning: a. When carrying out operations with the garage jack, be sure to support the car with safety stands.
b. When jacking up the rear (front) of the car, place the chocks at the front (rear) of the front (rear) wheels to hold them.

Caution: Always place a wood block between safety stand and car body when supporting body with safety stand.

Apply the garage jack and safety stand to the position indicated in the figure in a safe manner.

VEHICLE DIMENSION

Item \ Model			2 seater	2 + 2 seater
Overall length		mm (in)	4,335 (170.7)	4,535 (178.5)
Overall width		mm (in)	1,690 (66.5), 1,725 (67.9)*	
Overall height		mm (in)	1,295 (51.0)	1,310 (51.6)
Wheelbase		mm (in)	2,320 (91.3)	2,520 (99.2)
Tread	Front	mm (in)	1,415 (55.7)	
	Rear	mm (in)	1,435 (56.5)	
Min. ground clearance		mm (in)	150 (5.9)	
Overhang	Front	mm (in)	945 (37.2)	
	Rear	mm (in)	1,070 (42.1)	

*: Model with side molding

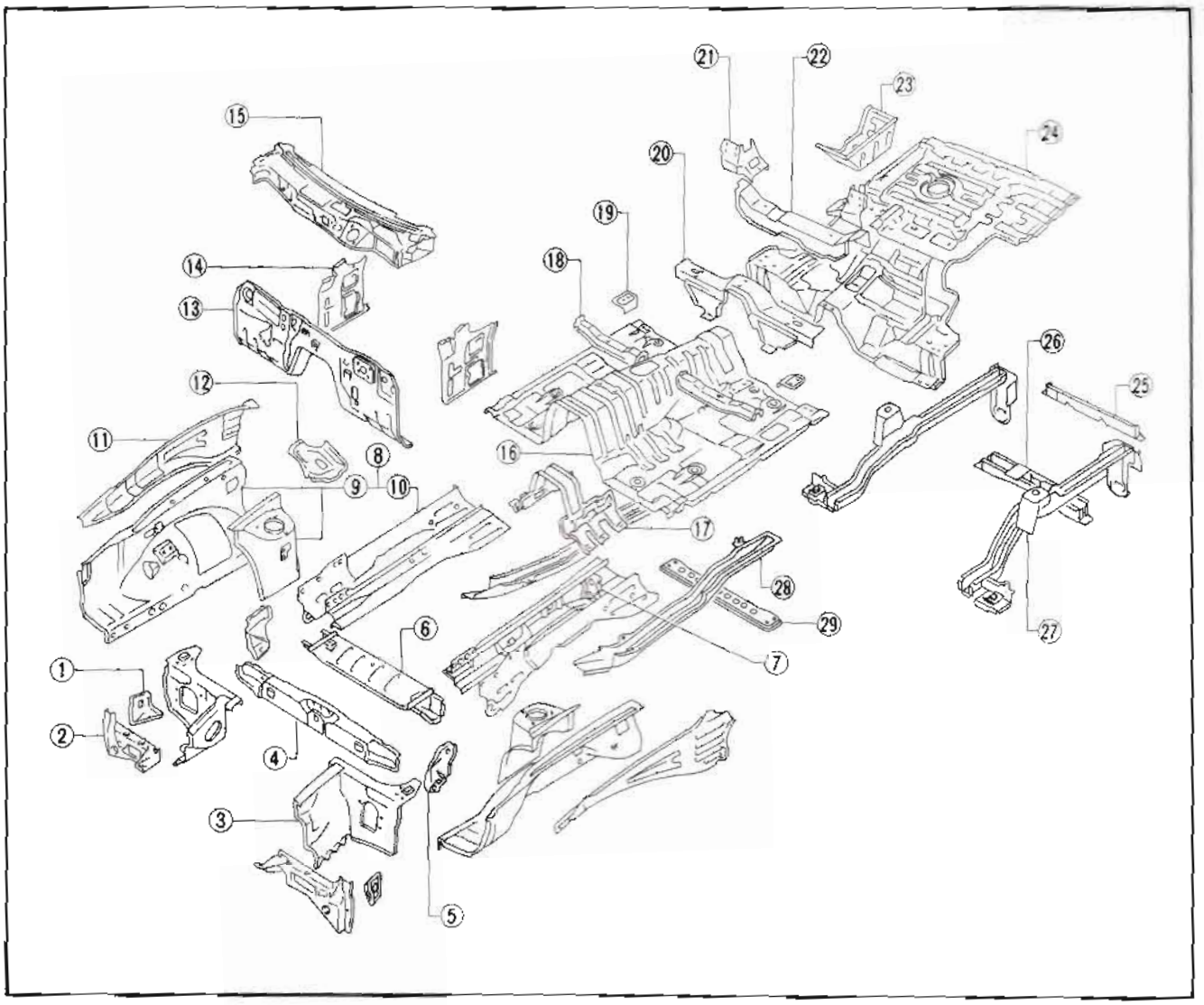
WHEEL ALIGNMENT

1 Front Axle and Front Suspension

Camber			degree	–35′ to 55′
Caster			degree	5°50′ - 7°20′
Toe-in			mm (in)	1 - 3 (0.04 - 0.12)
			degree	6′ - 16′ (on both sides)
Wheel turning angle	Toe-out-turns (Inside/Outside)		degree	22°30′/20°
	Full turn	Inside	degree	35° - 39°
		Outside	degree	27° - 31°

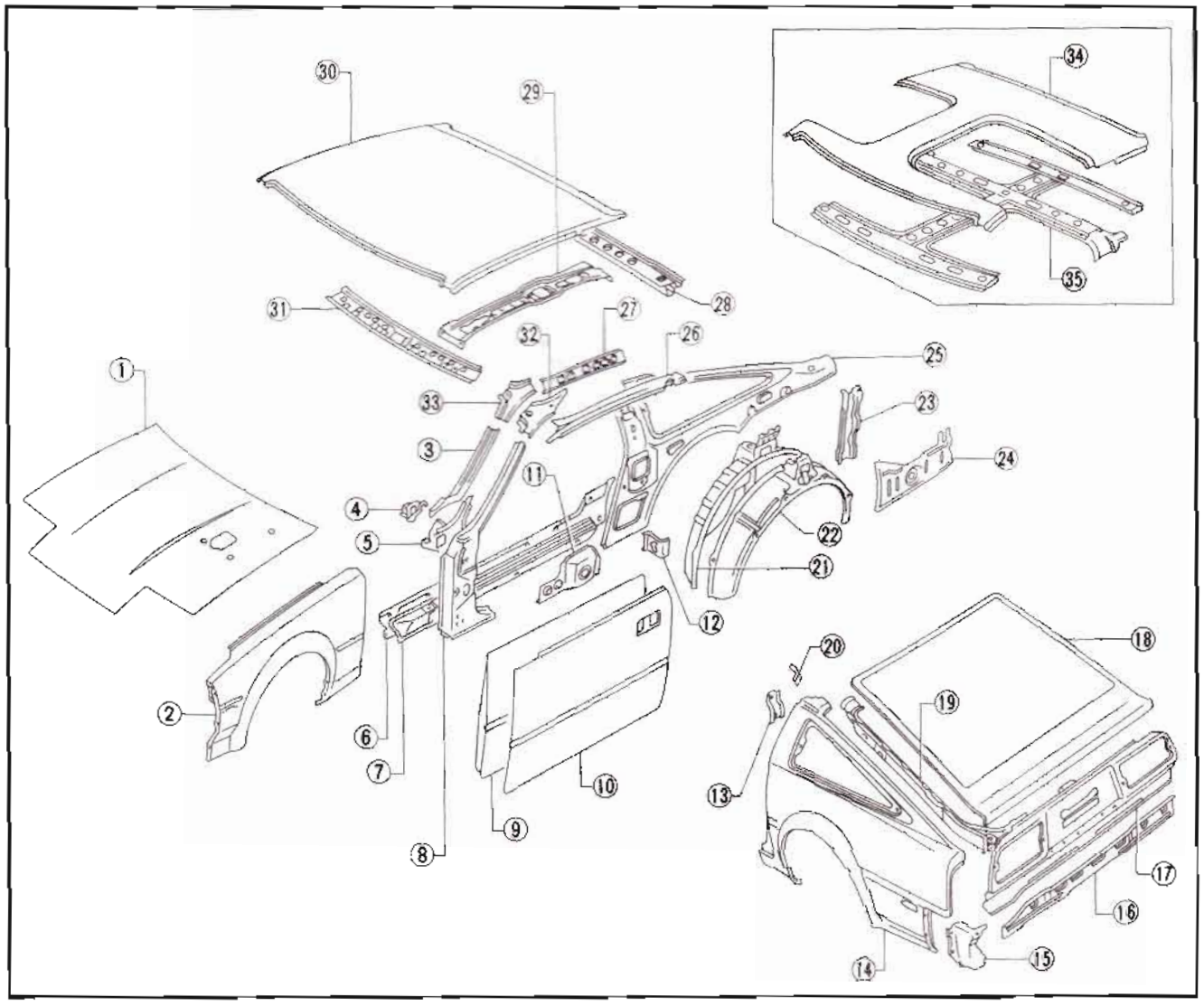
* Tankful of fuel, radiator coolant and engine oil full.
Spare tire, jack, hand tools, mats in designed position.

UNDERBODY COMPONENT PARTS



1 Radiator core support baffle plate
2 Front hoodledge gusset
3 Side radiator core support
4 Upper radiator core support
5 Headlamp bracket
6 Front crossmember
7 Front side member
8 Hoodledge assembly
9 Hoodledge panel
10 Side member plate
11 Hoodledge reinforcement
12 Battery support bracket
13 Lower dash panel
14 Side dash panel
15 Cowl top
16 Front floor
17 Body mounting reinforcement
18 Front seat mounting member
19 Front seat mounting bracket
20 Rear outer crossmember
21 Rear member reinforcement
22 Rear suspension crossmember
23 Wheelhouse panel
24 Rear floor
25 Rear crossmember
26 Differential mounting crossmember
27 Rear side member
28 Center side member
29 Rear inner crossmember

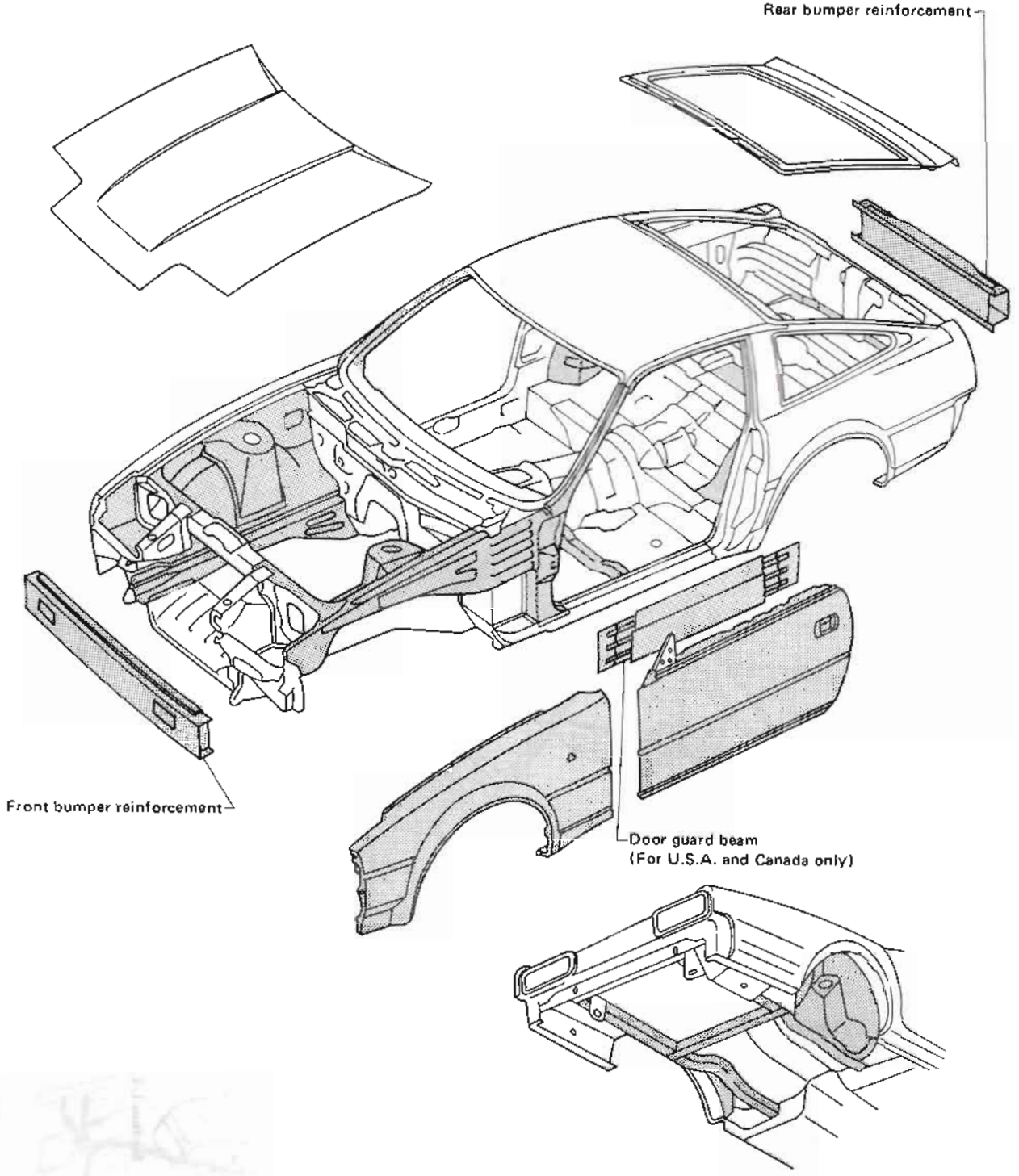
BODY COMPONENT PARTS



1 Hood
2 Front fender
3 Inner windshield pillar
4 Inner body bracket
5 Inner front pillar
6 Inner sill
7 Outer sill
8 Outer front pillar
9 Front door assembly
10 Front door outer panel
11 Outer sill reinforcement
12 Rear fender patch
13 Inside waist panel
14 Rear fender
15 Rear fender end
16 Rear lower panel
17 Rear upper panel
18 Back door
19 Rear fender extension
20 Rear fender connector
21 Rear inner wheelhouse
22 Rear outer wheelhouse
23 Tail corner brace reinforcement
24 Inside rear panel
25 Side panel assembly
26 Outer side roof rail
27 Inner side roof rail
28 Rear roof rail
29 Roof bow
30 Roof panel
31 Front roof rail
32 Outer windshield pillar
33 Inside upper panel
34 Roof (T-bar)
35 Roof rail assembly (T-bar)

HIGH STRENGTH STEEL

: Indicates high strength steel portions.

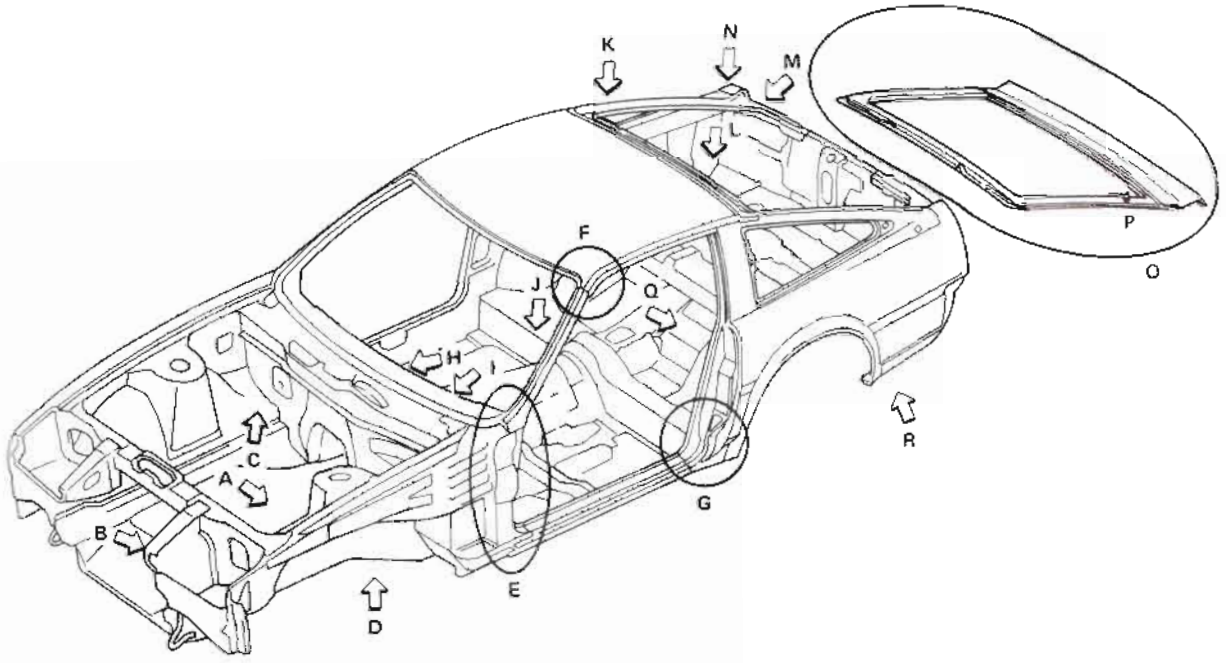


Note: Front and rear bumper reinforcements and door guard beam use ultrahigh strength steel.

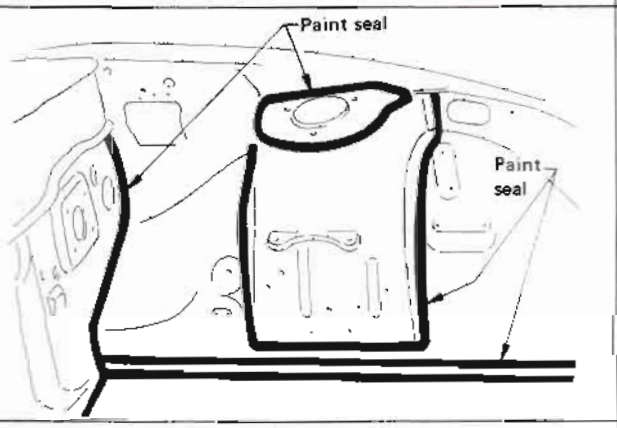
BODY CONSTRUCTION

DESCRIPTION

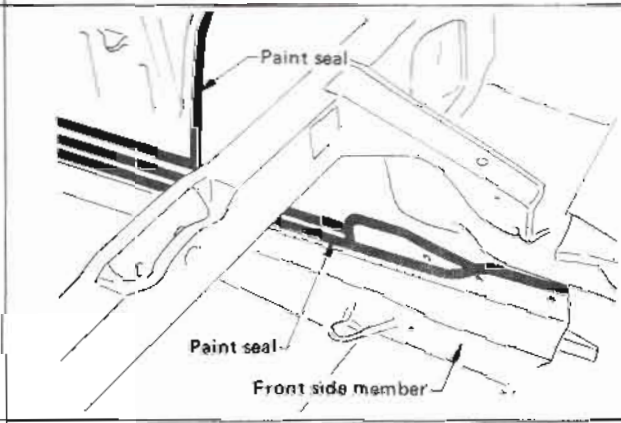
The following figure shows the areas which are sealed at a factory. Sealing which has been applied to these areas should be smooth and free from cuts or gaps.
Care should be taken not to apply an excess amount of sealing and not to allow other unaffected parts to come into contact with the sealing.



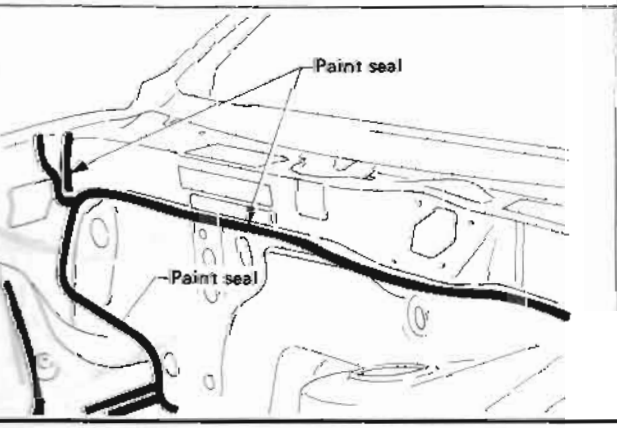
Detail A



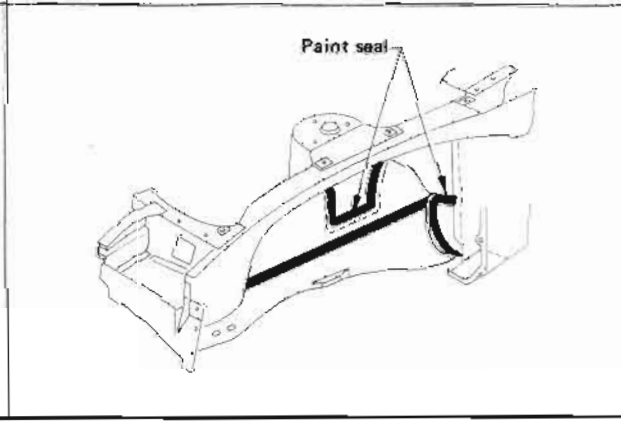
Detail B



Detail C

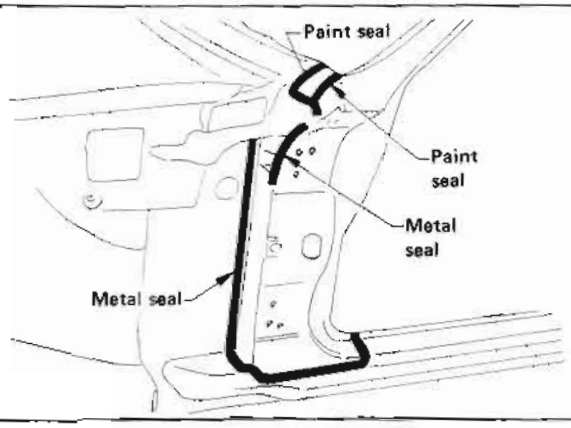


Detail D

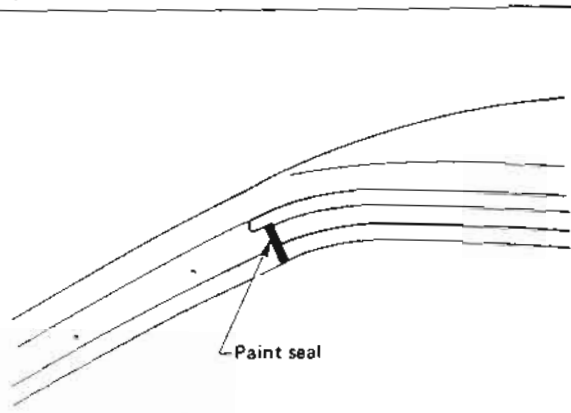


DESCRIPTION

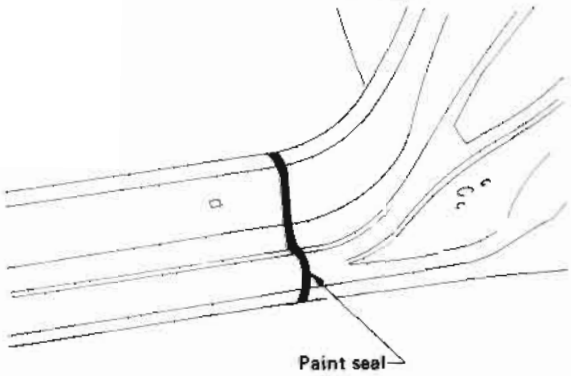
Detail E



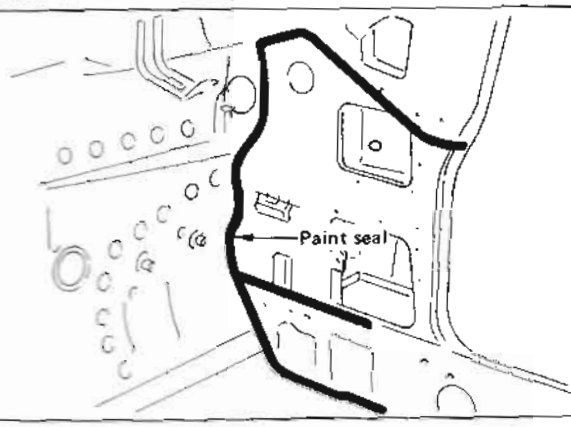
Detail F



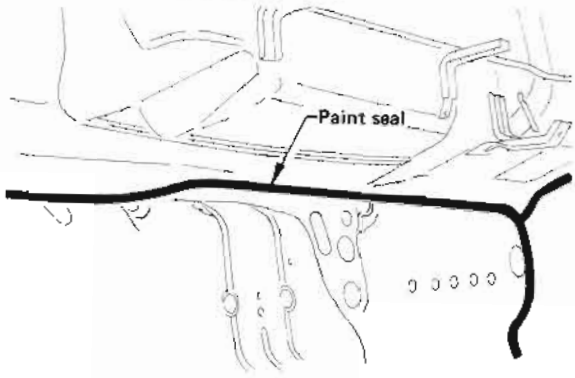
Detail G



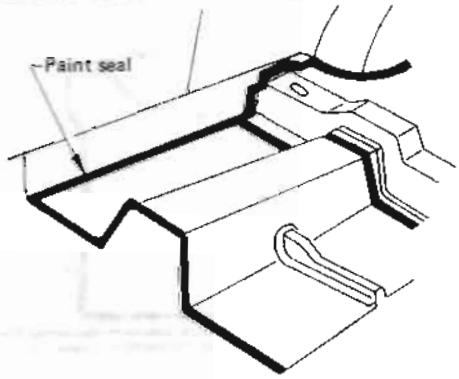
Detail H



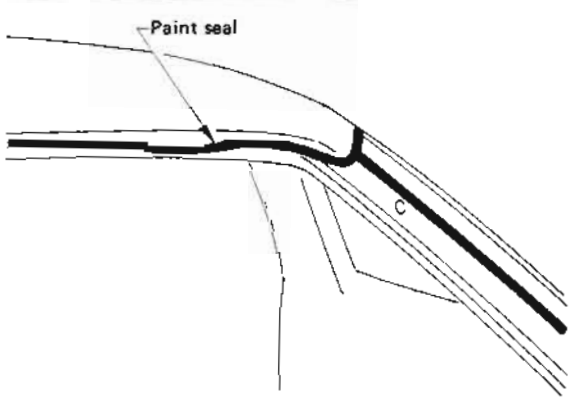
Detail I



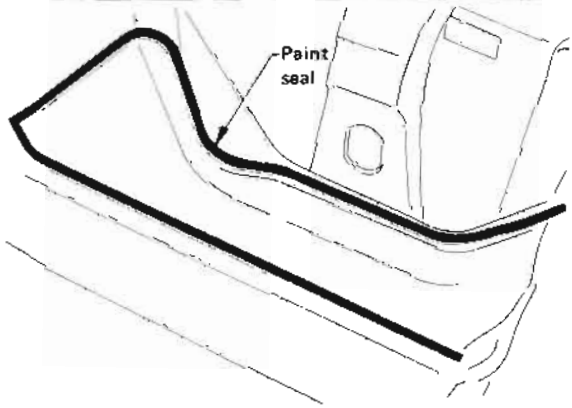
Detail J



Detail K

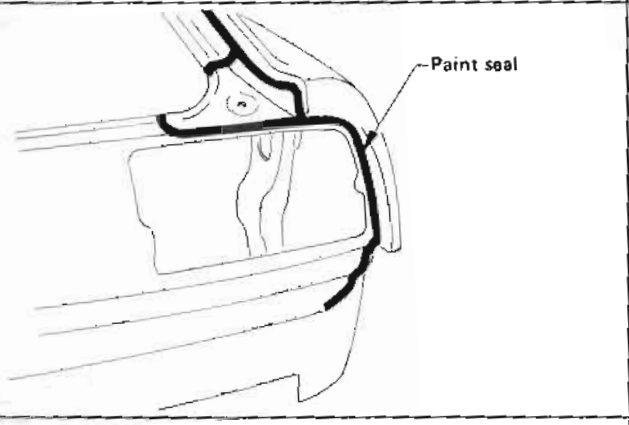


Detail L

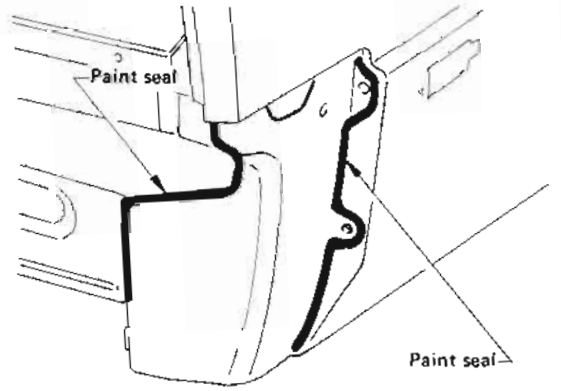


DESCRIPTION

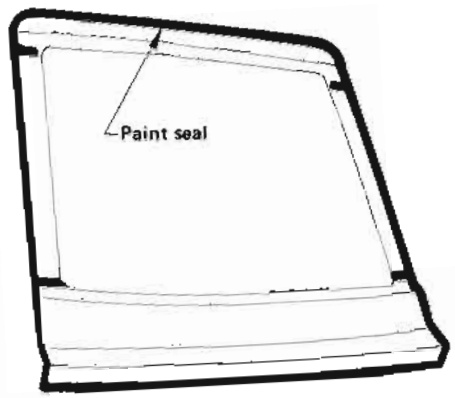
Detail M



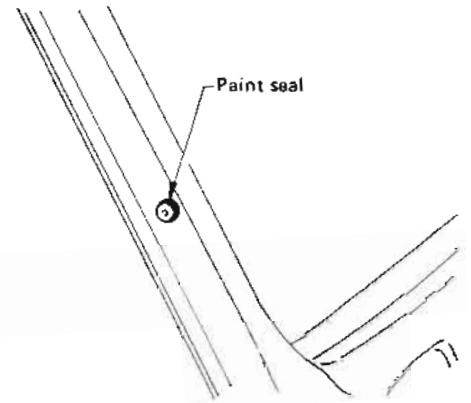
Detail N



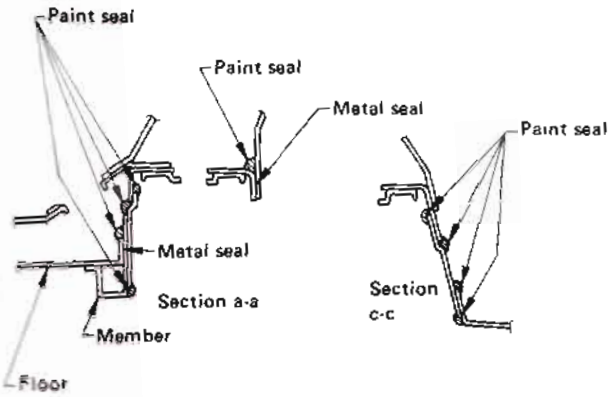
Detail O

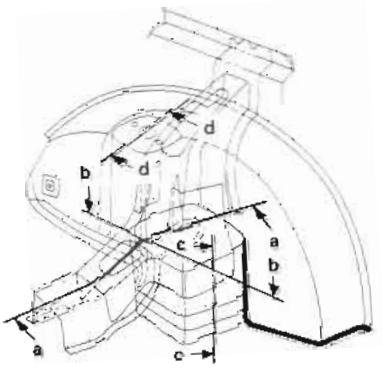


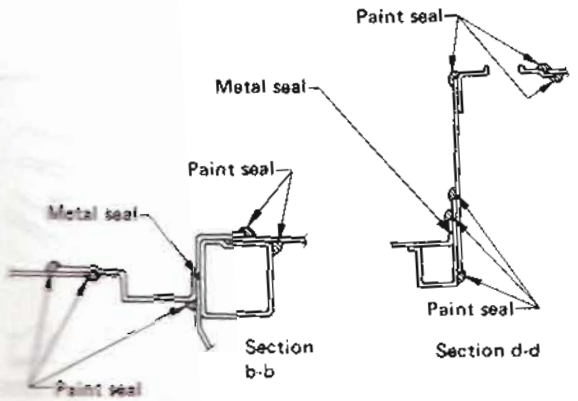
Detail P



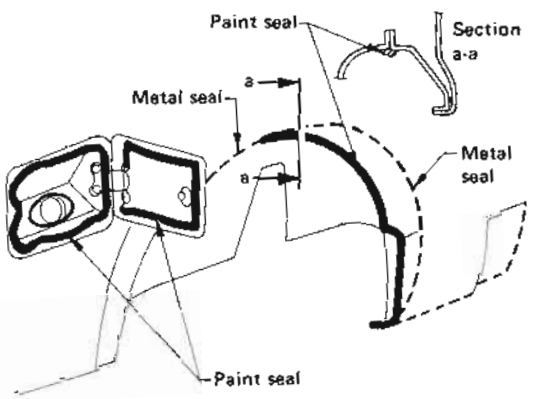
Detail Q







Detail R



DESCRIPTION

1 Dimension Lines

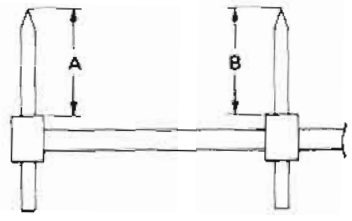
All dimensions indicated in the drawings/illustrations are the standard design values. These values, along with their dimension lines, are colored for easy identification.

Note: An asterisk (*) at the measuring point indicates that the measuring point on the other side is symmetrically the same value.

2 Measurement Operations

When car body measurements are taken in accordance with the red dimension line, careful consideration should be given to the following points.

1. Measurement method
   - When a tram tracking gauge is used, adjust pointers (A) and (B) to equal lengths as shown in the figure to the right. Check the pointers and gauge itself to make sure there is no free play.

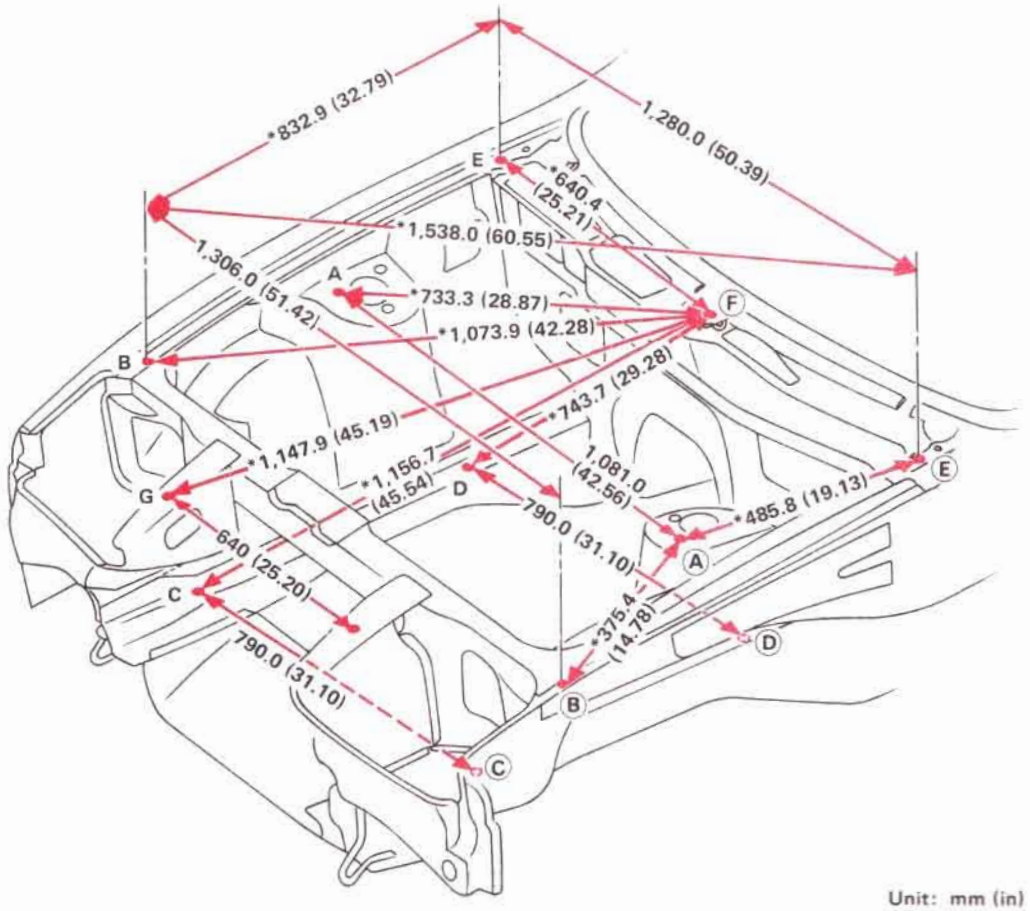


   - When a measuring tape is used, check to be sure there is no elongation, twisting or bending.

Note: If a part or parts of the car body interferes with measurement when using the measuring tape, you cannot measure the distance or length accurately.

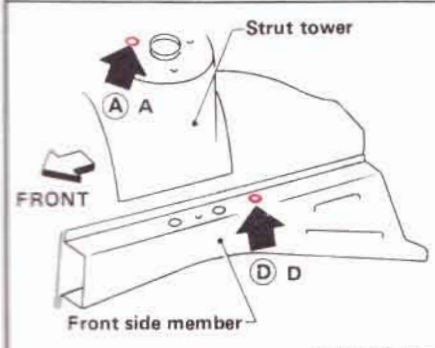
2. Measurement point
   Measurements should be taken at the center of mounting holes.

ENGINE COMPARTMENT

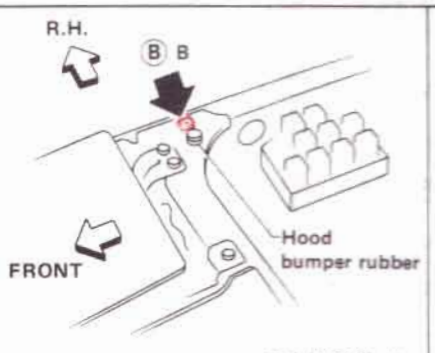


Unit: mm (in)

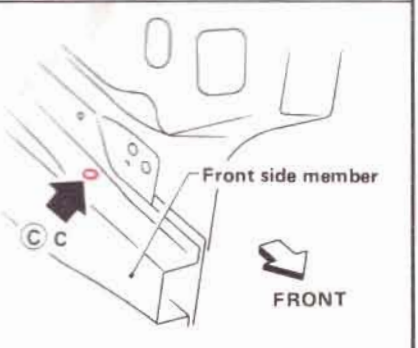
An asterisk (*) following the value at the measuring point indicates that the measuring point on the other side is symmetrically the same value.



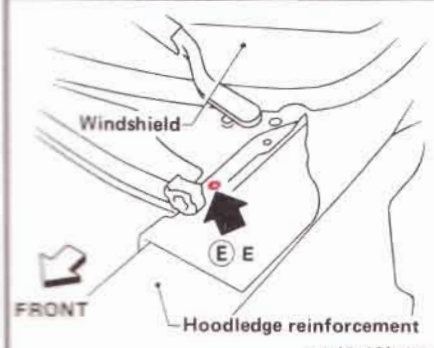
8 (0.31) dia.



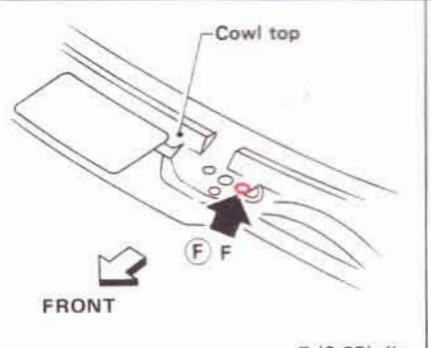
5.4 (0.213) dia.



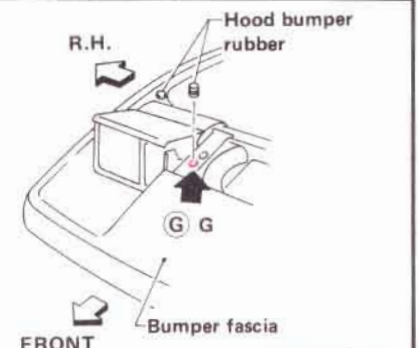
9 (0.35) dia.



11 (0.43) dia.

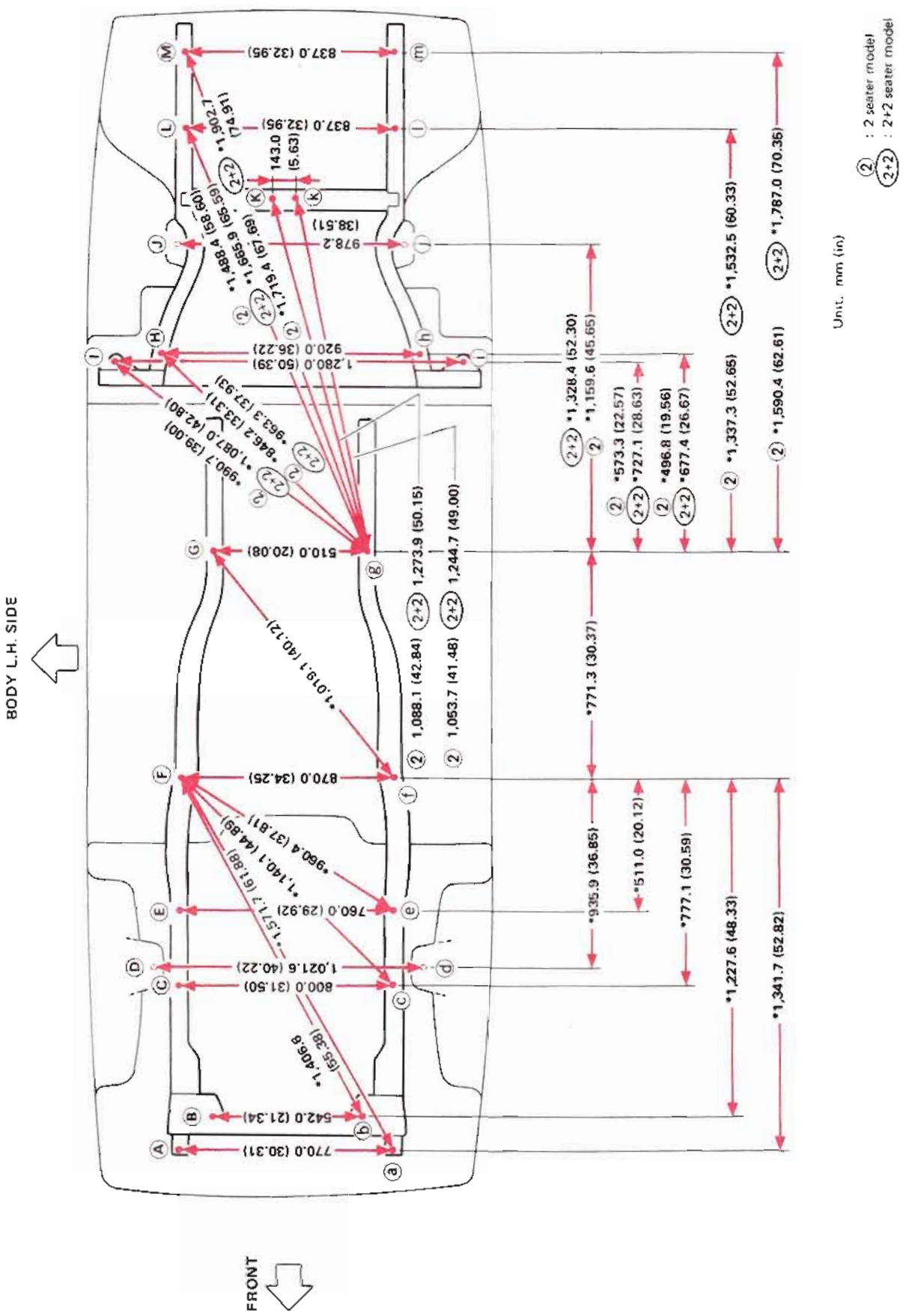


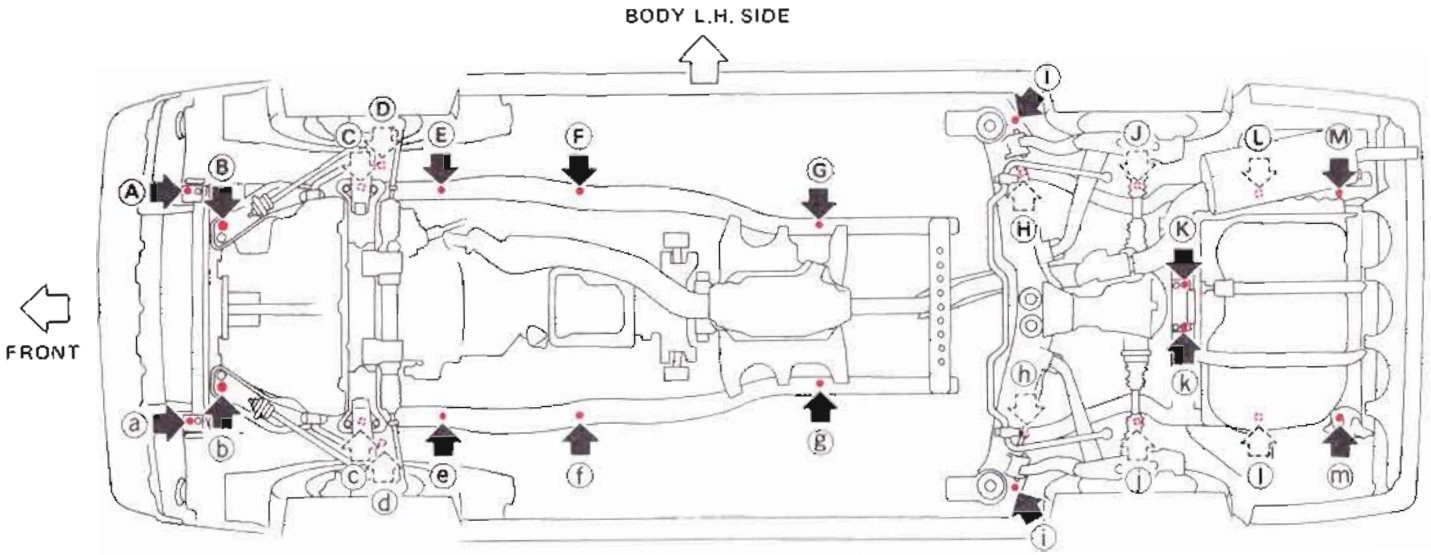
7 (0.28) dia.



16 (0.63) dia.

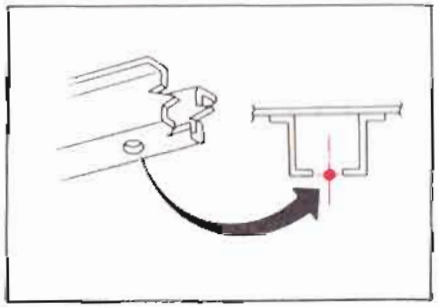
UNDERBODY

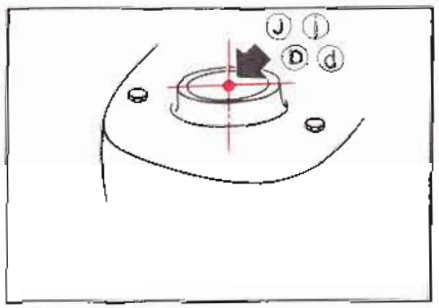

BODY L.H. SIDE
FRONT
Unit: mm (in)
2 : 2 seater model
2+2 : 2+2 seater model
837.0 (32.95)
837.0 (32.95)
143.0 (5.63)
978.2
1,280.0 (50.39)
920.0 (36.22)
510.0 (20.08)
870.0 (34.25)
760.0 (29.92)
1,021.6 (40.22)
800.0 (31.50)
542.0 (21.34)
770.0 (30.31)
1,088.1 (42.84)
1,053.7 (41.48)
1,273.9 (50.15)
1,244.7 (49.00)
*771.3 (30.37)
*1,328.4 (52.30)
*1,159.6 (45.65)
*573.3 (22.57)
*727.1 (28.63)
*496.8 (19.56)
*677.4 (26.67)
*1,337.3 (52.66)
*1,532.5 (60.33)
*1,590.4 (62.61)
*1,787.0 (70.36)
*935.9 (36.85)
*511.0 (20.12)
*777.1 (30.59)
*1,227.6 (48.33)
*1,341.7 (52.82)



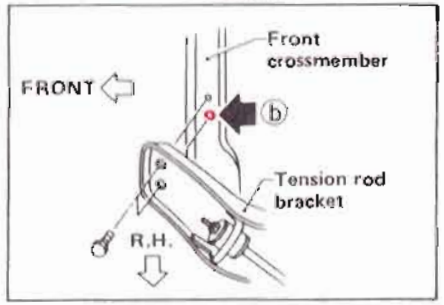
Measuring points	Measurement (dia.)	
	mm	in
Ⓐ, ⓐ	13	0.51
Ⓔ, ⓔ	15	0.59
Ⓕ, ⓕ	18	0.71
Ⓖ, ⓖ	13	0.51
Ⓛ, ⓛ	13	0.51
Ⓜ, ⓜ	15	0.59
Ⓑ, ⓑ	13	0.51
Ⓒ, ⓒ	16	0.63
Ⓓ, ⓓ	82.3	3.240
Ⓙ, ⓙ	54	2.13
Ⓗ, ⓗ	15	0.59
Ⓘ, ⓘ	13	0.51
Ⓚ, ⓚ	15	0.59

At underside of member (Ⓐ ⓐ, Ⓔ ⓔ, Ⓕ ⓕ, Ⓖ ⓖ, Ⓛ ⓛ, Ⓜ ⓜ)

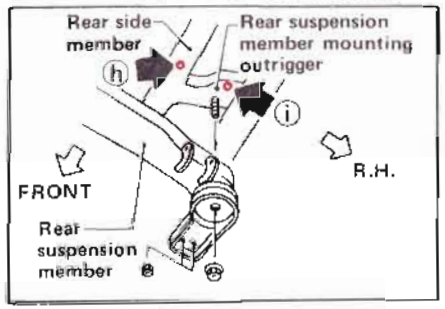




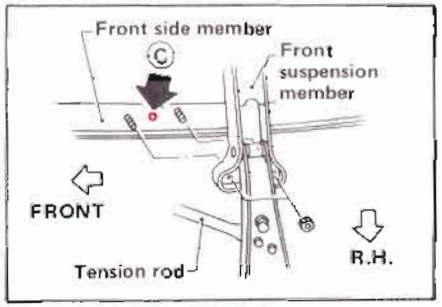
Hole for mounting tension rod bracket on underside of front crossmember



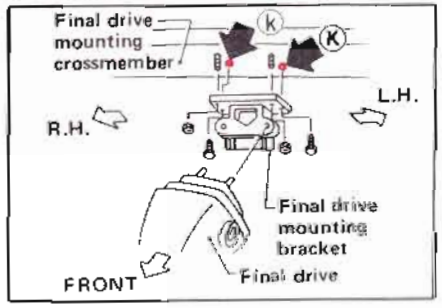
Hole for locating on underside of member



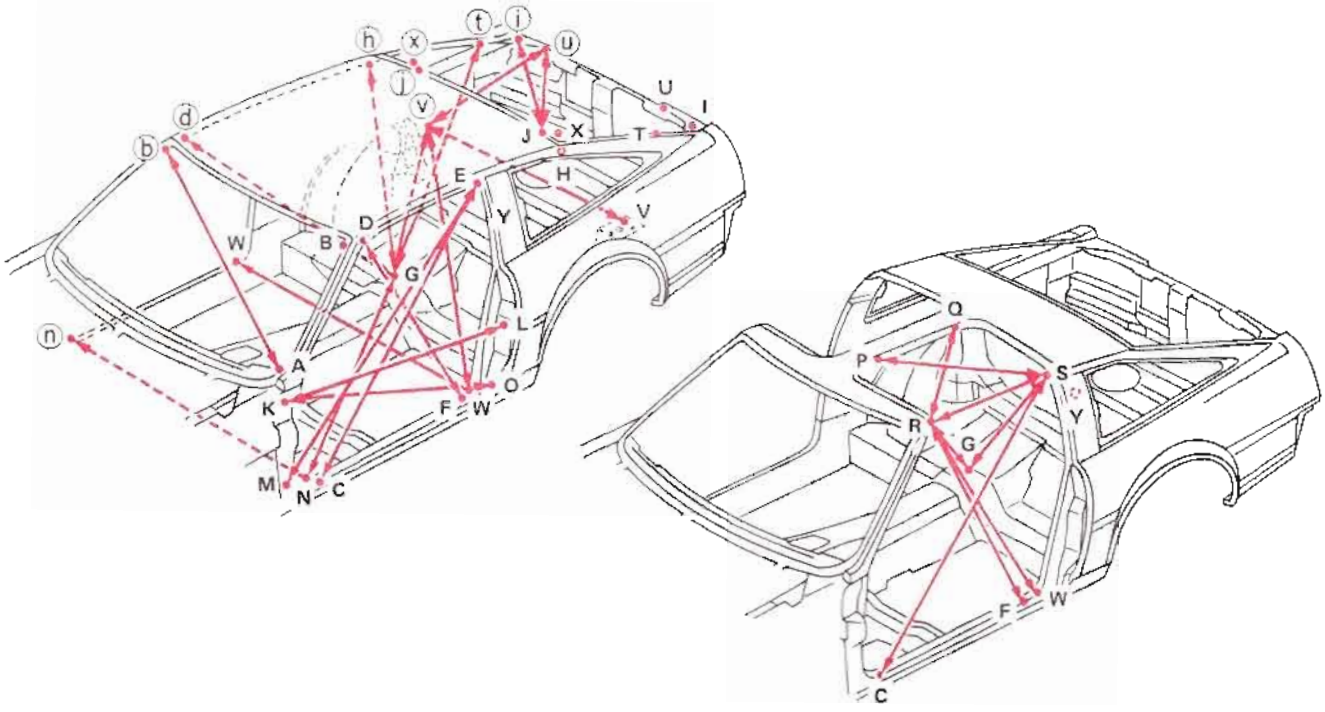
Hole for locating on front suspension member mounting portions (Underside of front side member)



Hole for mounting final drive on underside of final drive mounting crossmember



ROOM SPACE AND REAR BODY



2 seater standard roof model

Measuring points	Measurement	
	mm	in
A – ⓑ, B – ⓐ	1,383.1	54.45
C – E	1,380.1	54.33
D – F	875.5	34.47
K – L	1,179.7	46.44
G – ⓓ, G – D	961.0	37.83
G – ⓗ, G – H	910.1	35.83
J – ⓘ, I – ⓙ	1,352.1	53.23
M – E	1,489.4	58.64
N – G	1,235.1	48.63
N – ⓝ	1,413.6	55.65
O – K	1,156.5	45.53
ⓣ – G	1,391.9	54.80
ⓤ – J	1,283.8	50.54
ⓤ – ⓥ	722.8	28.46
V – ⓥ	1,010.2	39.77
ⓥ – W	1,540.9	60.67
ⓥ – G	915.8	36.06
W – ⓦ	1,410.0	55.51

2 + 2 seater standard roof model

Measuring points	Measurement	
	mm	in
A – ⓑ, B – ⓐ	1,385.1	54.53
C – E	1,442.8	56.80
D – F	889.8	35.03
K – L	1,269.0	49.96
G – ⓓ, G – D	1,035.2	40.76
G – ⓗ, G – H	966.9	38.07
J – ⓘ, I – ⓙ	1,263.3	49.74
M – E	1,555.9	61.26
N – G	1,388.6	54.67
N – ⓝ	1,413.6	55.65
O – K	1,245.4	49.03
ⓣ – G	1,392.5	54.82
ⓤ – J	1,183.1	46.58
ⓤ – ⓥ	724.5	28.52
V – ⓥ	1,010.2	39.77
ⓥ – W	1,605.0	63.19
ⓥ – G	915.8	36.06
W – ⓦ	1,410.0	55.51

T-bar roof model

Measuring points	Measurement	
	mm	in
P – S	662.6	26.09
Q – R	654.4	25.76
R – F	921.0	36.26
R – S	1,394.7	54.91
C – S	1,000.5	39.39
G – R	921.8	36.29
G – S	563.1	22.17
P – W	904.3	35.60

T-bar roof model

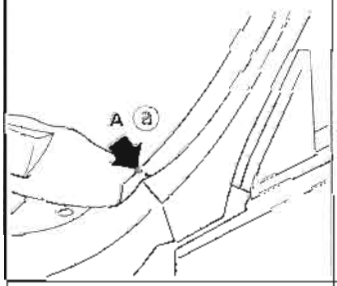
Measuring points	Measurement	
	mm	in
P – S	714.4	28.13
Q – R	708.4	27.89
R – S	637.6	25.10
C – S	1,461.8	57.55
R – F	945.9	37.24
G – S	912.6	35.93
G – R	1,093.6	43.06
R – W	930.6	36.64

Figures given in the measurement tables should be used as reference.

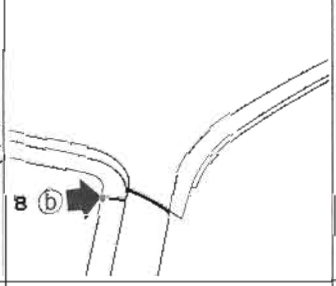
ROOM SPACE AND REAR BODY

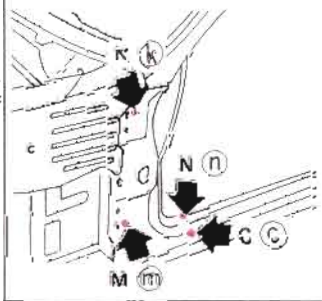
Unit: mm (in)

A (a): Outer upper front pillar flange end



B (b): Roof flange end





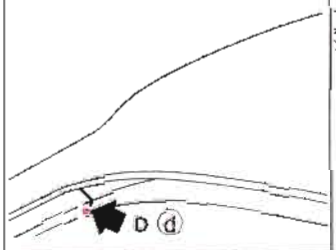
K (k): Door hinge installing hole center [15 (0.59) dia.]

N (n): Outer lower front pillar flange end

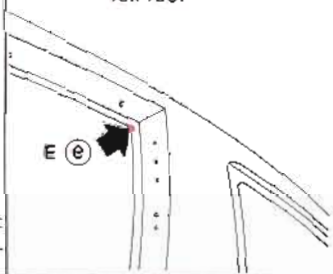
C (c): Outer lower front pillar flange end

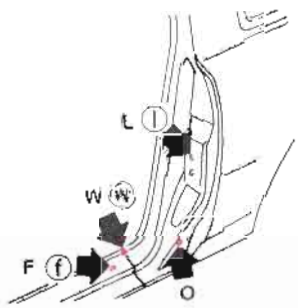
M (m): Outer lower front pillar hinge installing hole center [15 (0.59) dia.]

D (d): Outer main front pillar flange end



E (e): Intersection of rear fender and side outer rail roof





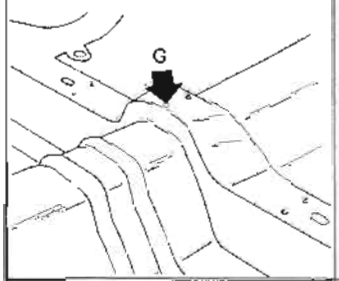
L (l): Door lock installing hole center [17 (0.67) dia.]

W (w): Rear fender flange end

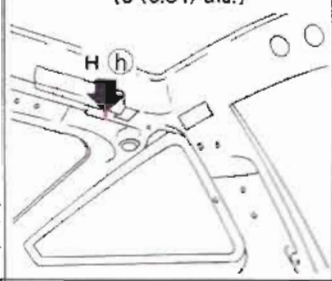
F (f): Outer sill kicking plate installing hole center 16 x 8 (0.63 x 0.31) slot

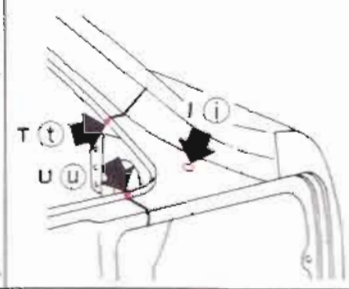
O: Rear fender door switch installing hole center [14 (0.55) dia.]

G: Carpet installing hole [8 (0.31) dia.]



H (h): Side tail brace locating hole center [8 (0.31) dia.]



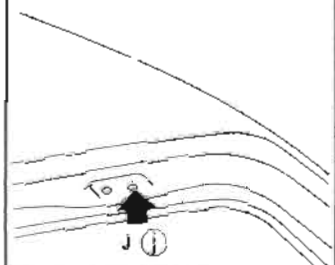


T (t): Rear fender gusset flange end

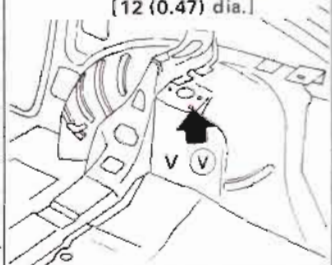
I (i): Back door rubber bumper installing hole center [12 (0.47) dia.]

U (u): Rear fender gusset flange end

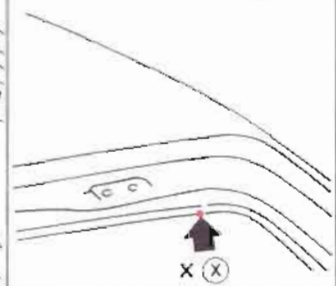
J (j): Back door hinge installing hole center [12 (0.47) dia.]



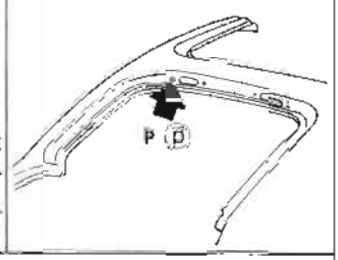
V (v): Shock absorber mounting bracket installing hole center [12 (0.47) dia.]



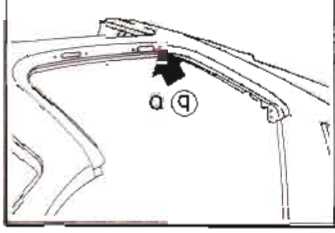
X (x): Side fender rear extension flange end



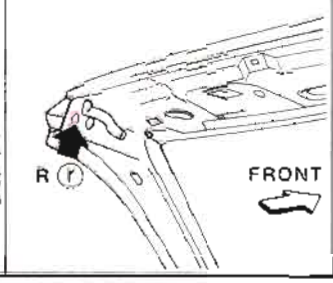
P (p): Center hook installing hole center

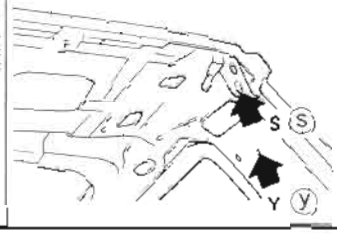


Q (q): Center hook installing hole center



R (r): Female lock installing slot center 5 x 20 (0.20 x 0.79) slot





S (s): Female lock installing slot center

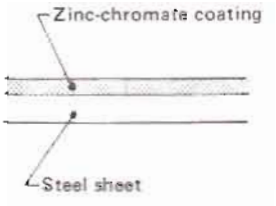
Y (y): Side panel clip relief hole center [13 (0.51) dia.]

(2 seater)
Side panel upper trim belt support installing hole center

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 practice anti-corrosive measures.

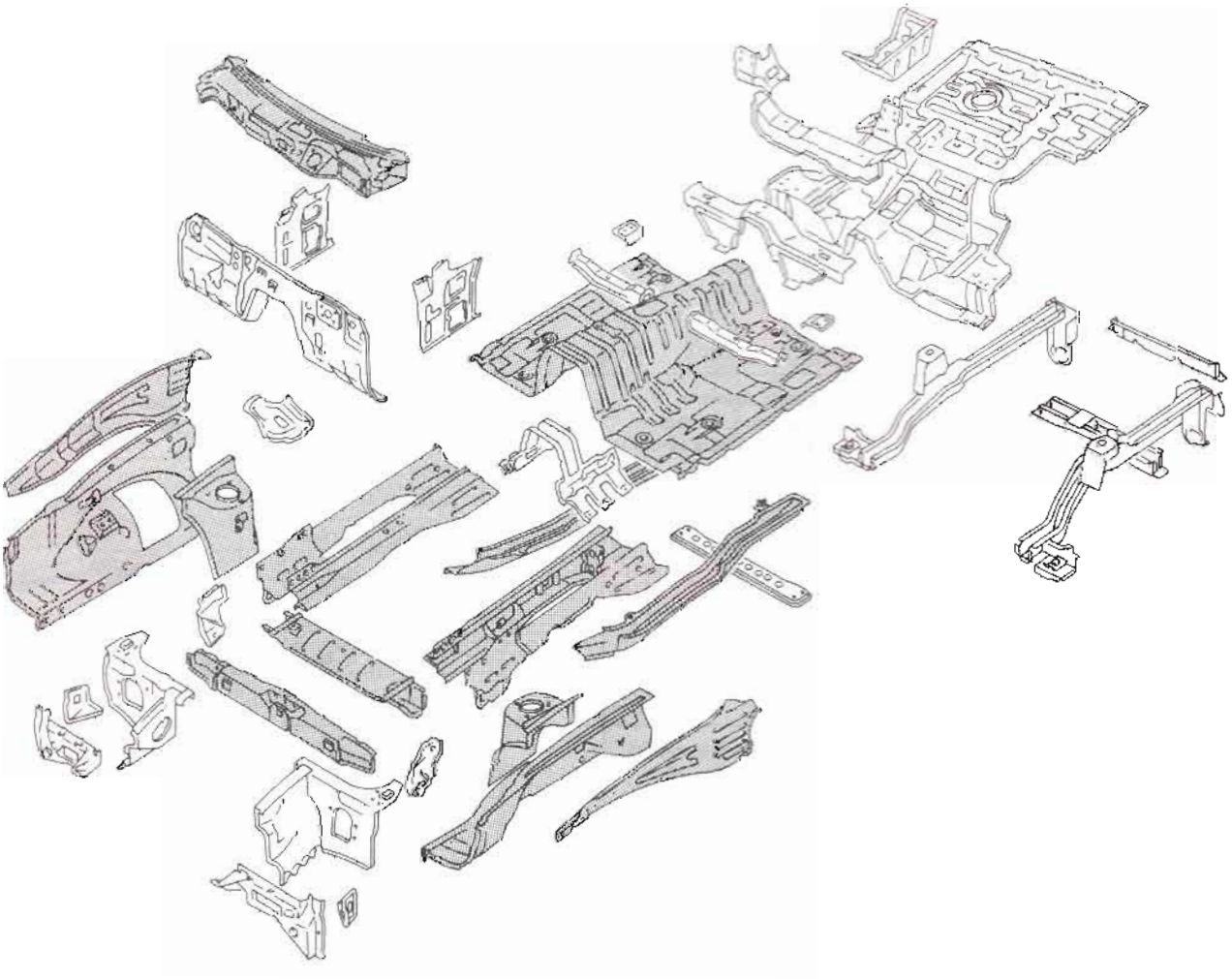
ANTI-CORROSIVE PRECOATED STEEL

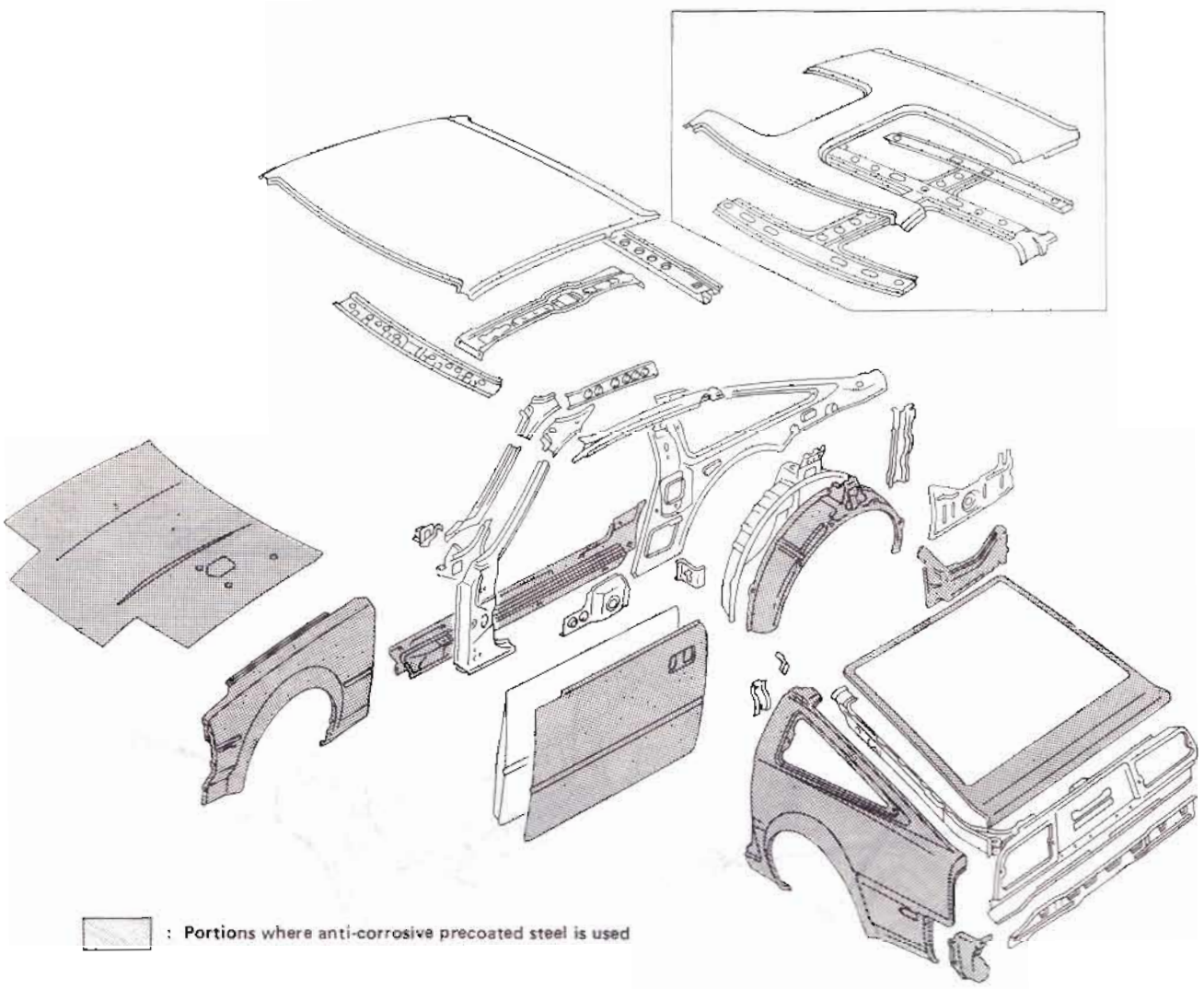
Some of the body components use steel sheets which are treated with a zinc-chromate coating.



Note: Nissan Genuine Service Parts also use such steel sheets, as well as assembled vehicles, therefore, it is recommended that GENUINE NISSAN PARTS be used for panel replacement to maintain anti-corrosive performance.

: Portions where anti-corrosive precoated steel is used

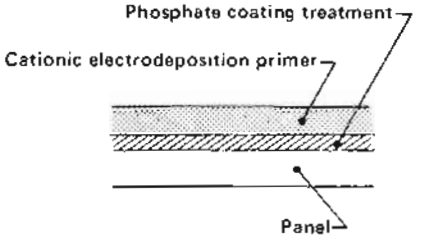




PHOSPHATE COATING TREATMENT AND CATIONIC ELECTRODEPOSITION PRIMER

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

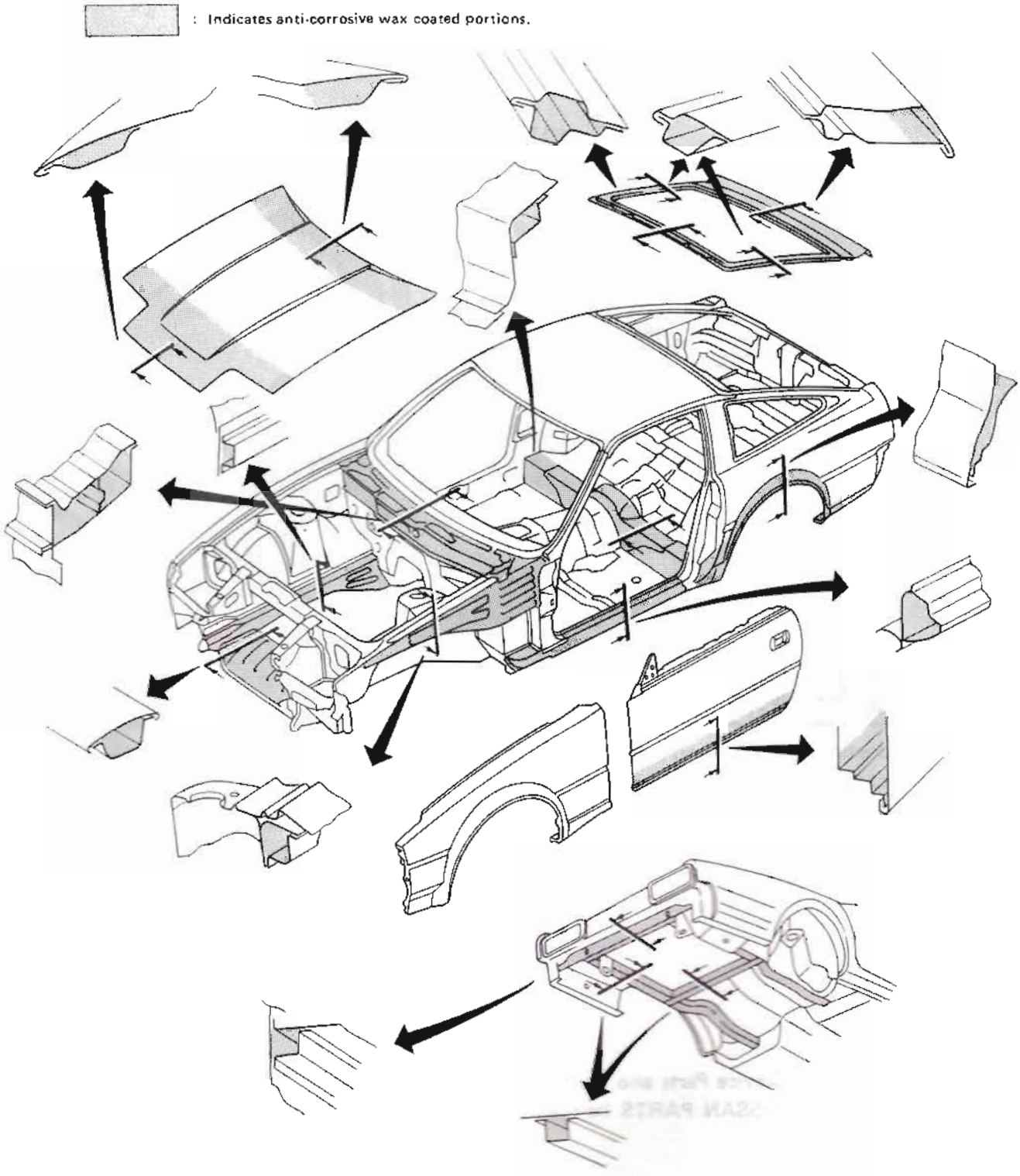
Caution: Confine paint removal in the welding operation to the absolute minimum.



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

ANTI-CORROSIVE WAX

In order to improve corrosion resistance, anti-corrosive wax is applied inside the side member, body sill, and so on. Accordingly, when replacing these parts, be sure to apply anti-corrosive wax to the pertinent portions of the new parts. Select an excellent anti-corrosive wax which will penetrate after application and deteriorate less during storage.

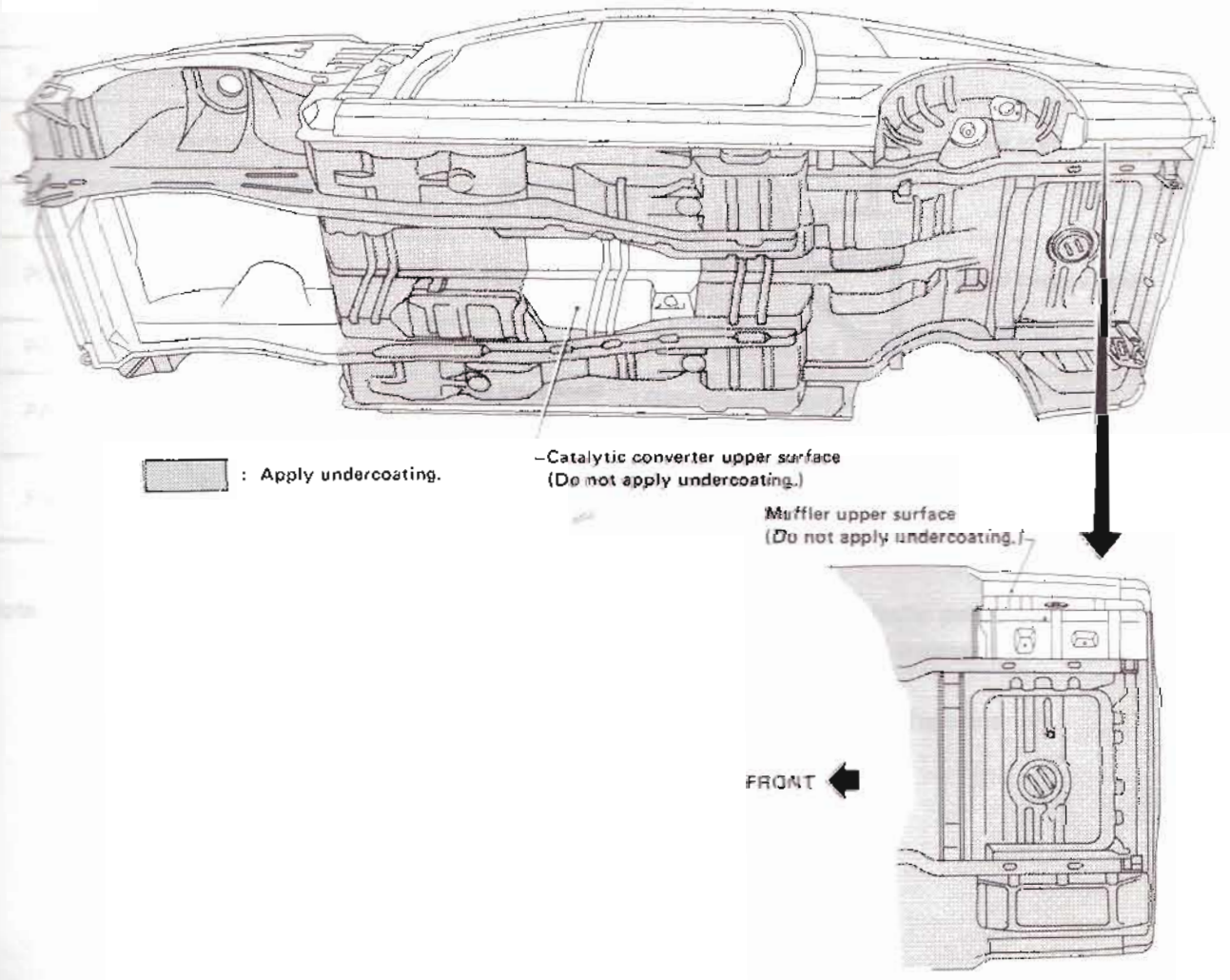


UNDERCOATING

The undersides of the floor and wheelhouse are undercoated to prevent rust vibration, noise and stone chipping.
Therefore, when such a panel is replaced or repaired, apply undercoating to that part. Use an undercoating which is rust preventive, soundproof, vibration-proof, shock-resistant, adhesive, and durable.

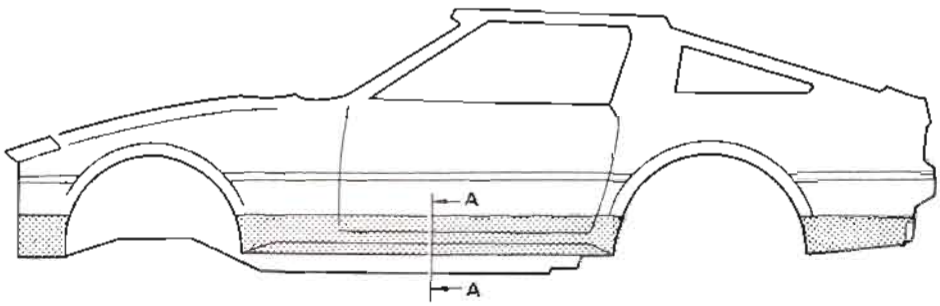
Precautions in undercoating

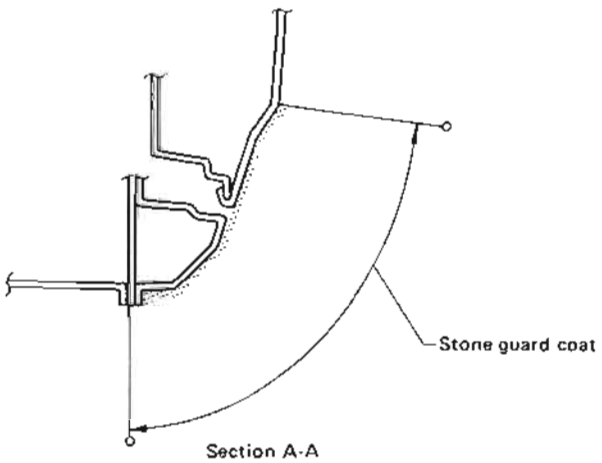
1. Do not apply undercoating to any place unless specified (such as the areas above the muffler and catalyst converter which are subjected to heat).
2. Do not undercoat the exhaust pipe, other parts which become hot, and rotary parts such as the propeller shaft, etc.
3. Apply undercoating thicker than 500 μ.



STONE GUARD COAT

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





Section A-A

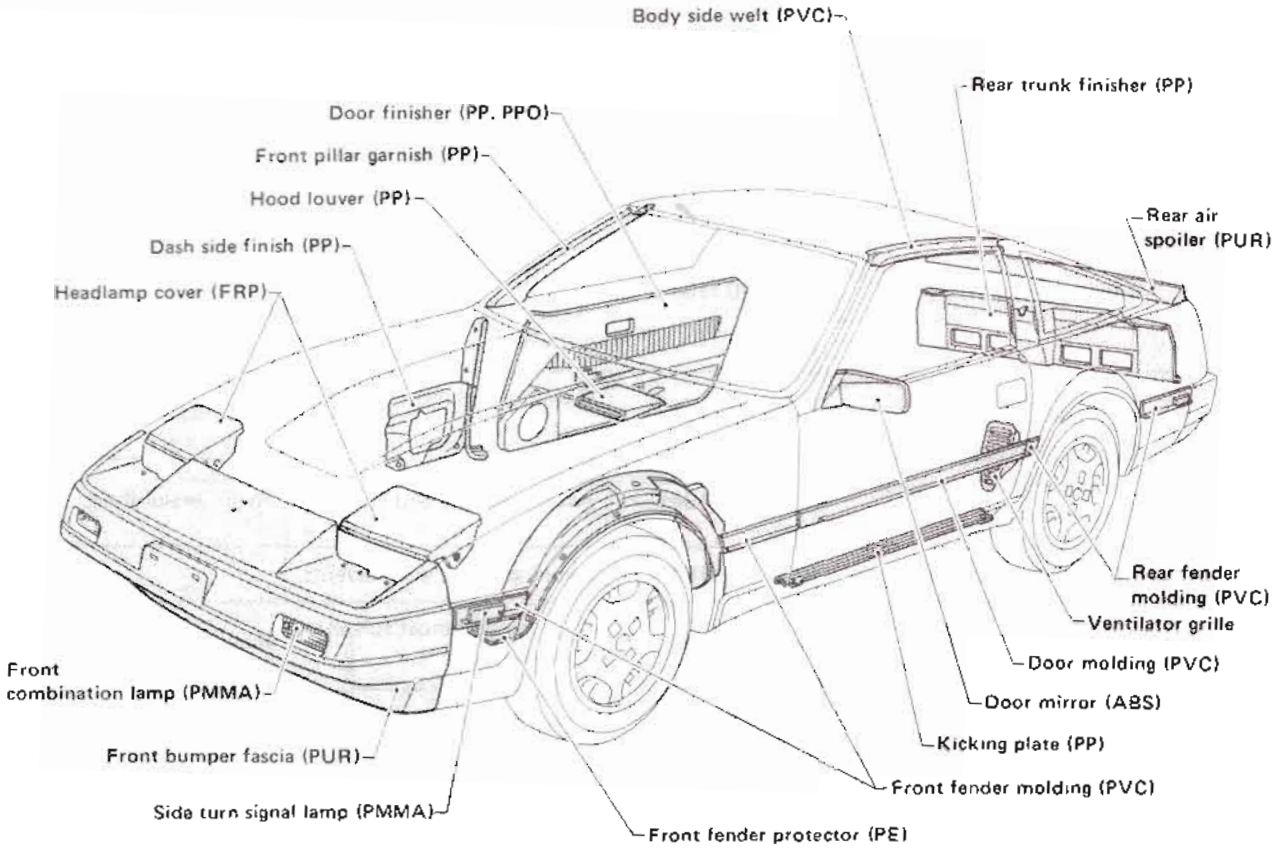
HANDLING PRECAUTIONS FOR PLASTICS

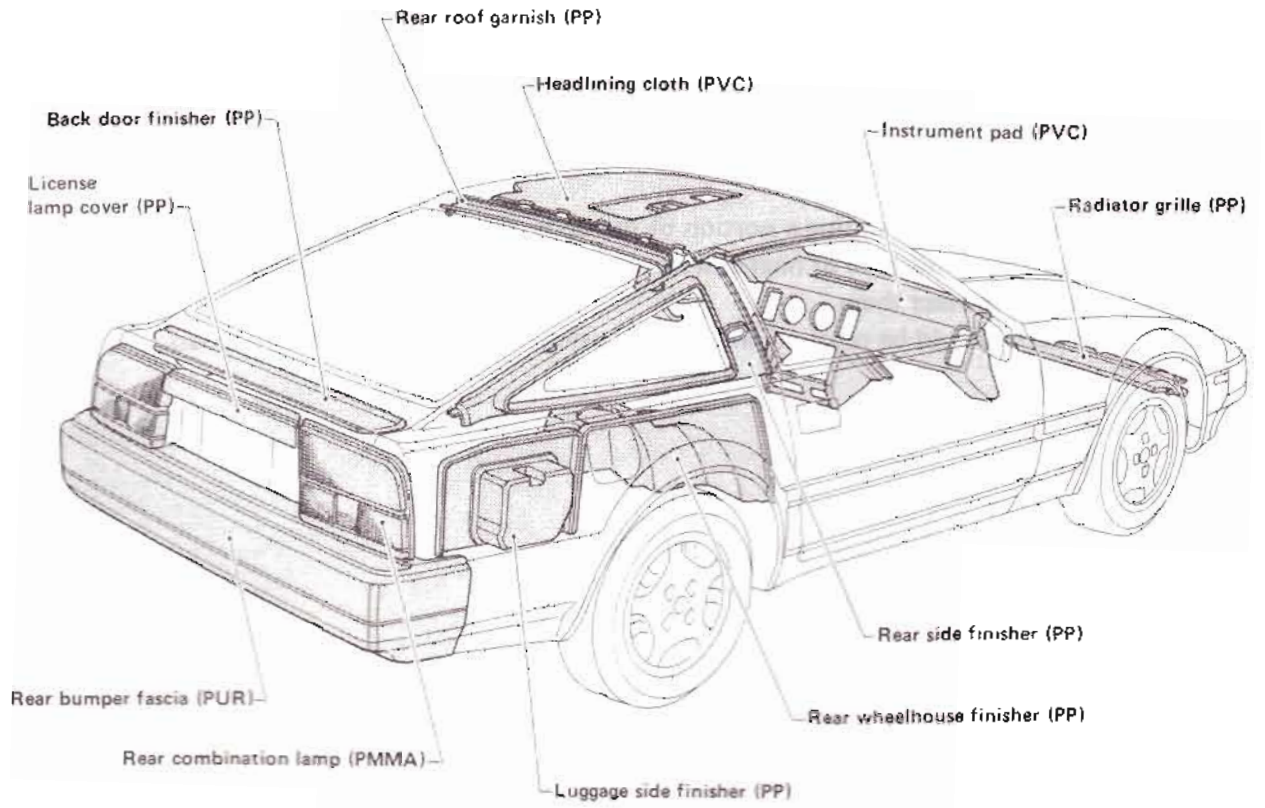
Abbreviation	Material name	Heat resisting temperature °C (°F)	Resistance to gasoline and solvents	Other cautions
PE	Polyethylene	80 (176)	Gasoline and most solvents are harmless.	Flammable
PVC	Polyvinyl chloride	90 (194)	Gasoline and most solvents are harmless if applied for a very short time (wipe up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

Note: 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

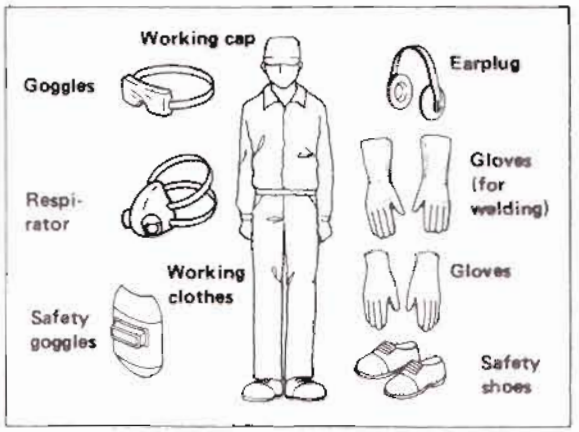




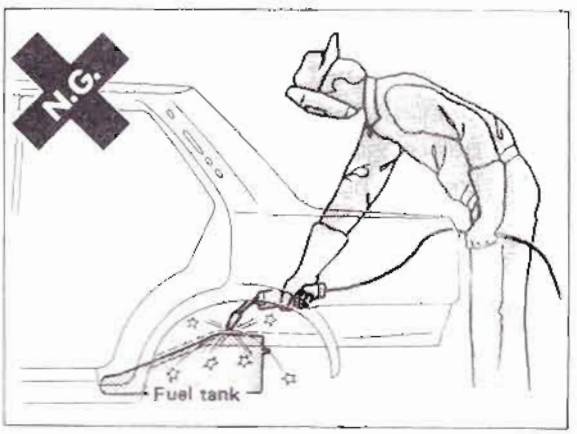
PRECAUTIONS IN OPERATION

SAFETY PRECAUTIONS

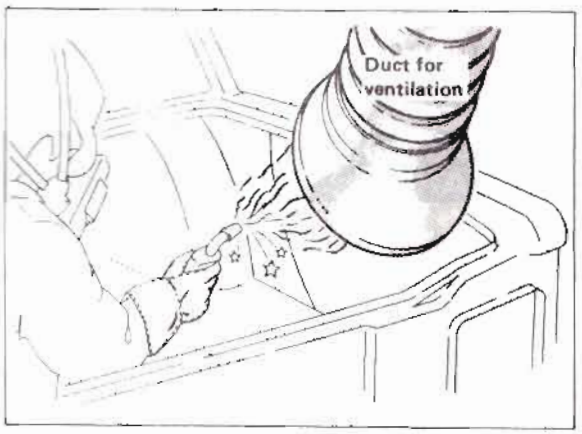
1. Wear protectors
   - Be sure to wear goggles, earplugs, respirator, gloves and so forth depending on the work to be performed. Working clothes, safety shoes, and working cap must be worn as usual.



2. Safety stand
   - After jacking up a vehicle body, be sure to support it with the safety stand. For the supporting positions, refer to "Lifting Points".
3. Inflammables
   - Before starting repair work, be sure to disconnect the negative terminal of the battery.
   - When welding parts near the fuel tank, be sure to remove the fuel tank. Plug the filler port of the tank.
   - Plug the fuel pipe and brake pipes to avoid leakage when removing connectors from the pipes.

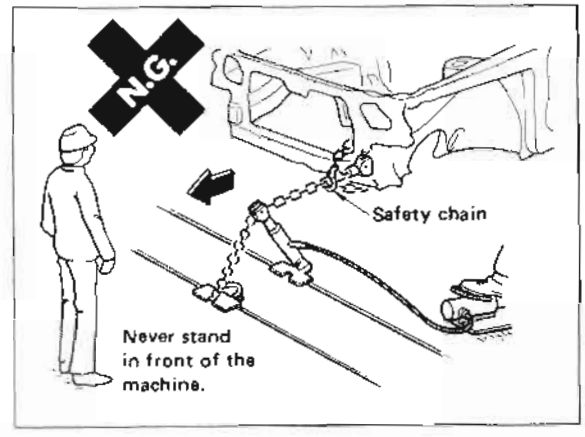


4. Working environment
   - Pay attention to ventilation and the health of operators.
   - Paint and sealant may generate poisonous gases when heated by fire. To prevent this, do not use a gas welder for cutting off damaged portions. Use an air saw or an air chisel.
   - Use a belt sander or rotary wire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



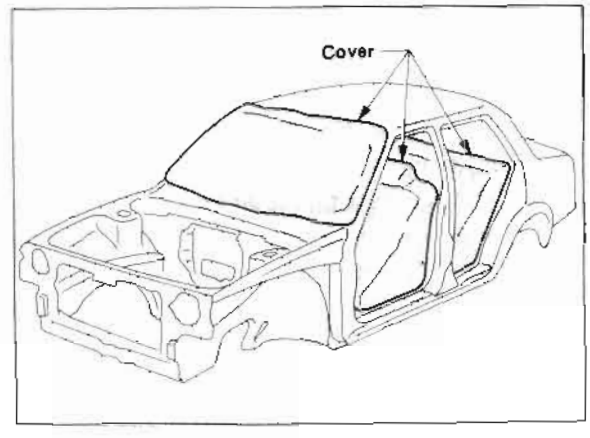
PRECAUTIONS IN OPERATION

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



PROTECTION OF BODY AND EXTERNALLY ATTACHED PARTS

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



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

PRECAUTIONS IN REPLACING OPERATION

Use of genuine parts

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

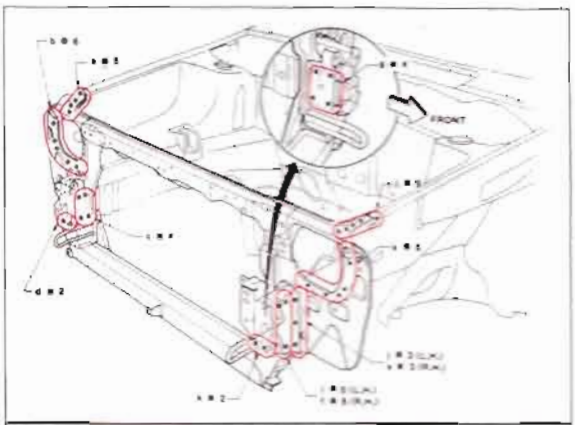
PRECAUTIONS IN OPERATION

WELDING PRECAUTIONS

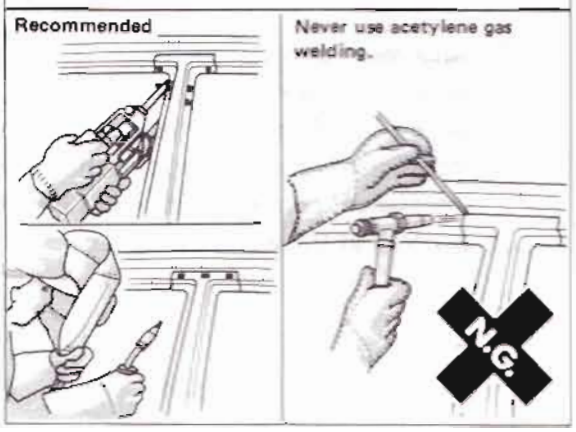
General precautions

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

- The REPLACING 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 descriptions.



- Resistance spot welding is superior in weld strength to other welding processes. In addition, it features a low amount of thermal strain, a short welding time and finishing is unnecessary.
  For these reasons, it is recommended that resistance spot welding be used whenever possible.
  Further, use of mig welding is recommended for locations where resistance spot welding cannot be utilized.
  Caution: Gas welding (oxyacetylene gas welding) must not be used because it causes a decline in strength of areas surrounding the welded parts.



Note: 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

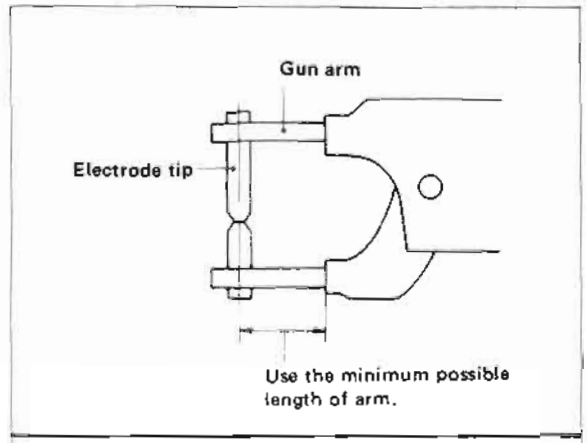
1. Spot welder

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

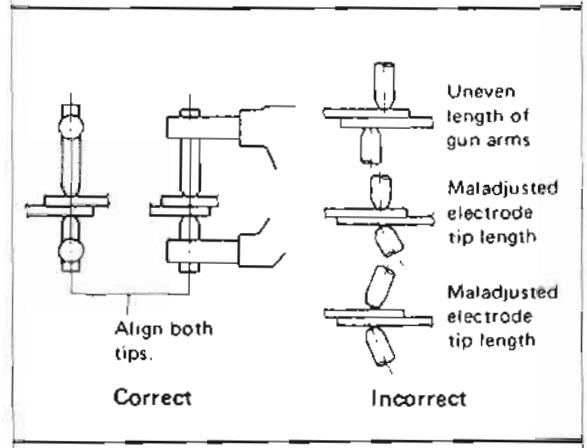
a. Keep the gun arm as short as possible to obtain the maximum pressure for welding.

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



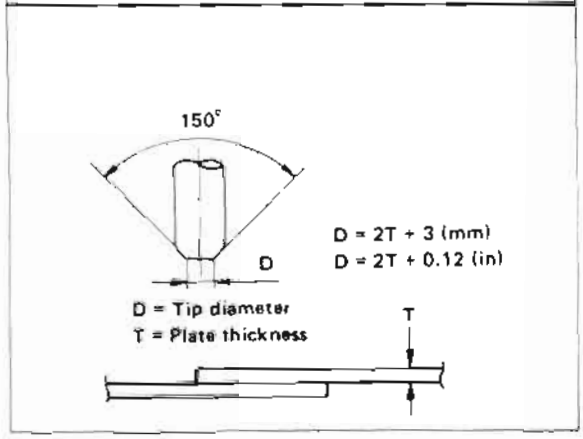
(2) Alignment of electrode tips

Align the upper and lower electrode tips on the same axis. Poor alignment of the tips causes insufficient pressurizing, and this results in insufficient current density and insufficient strength at the welded portions.



(3) Diameter of electrode tip

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



Unit: mm (in)

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

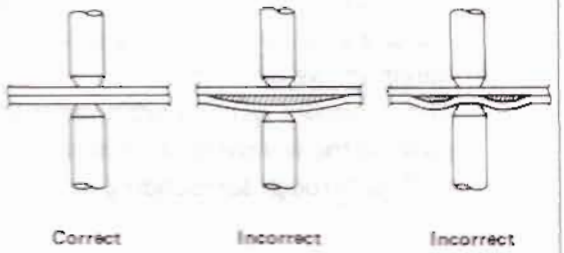
2. Condition of the panel

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

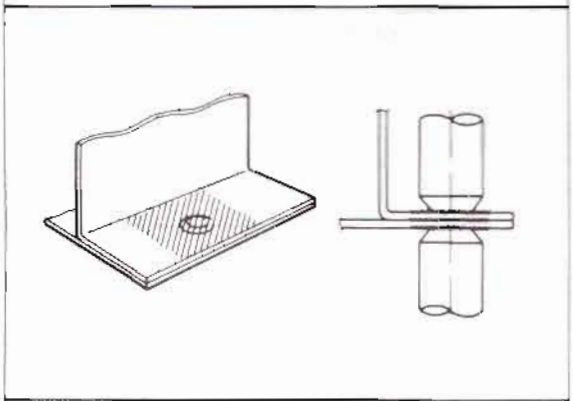
Before beginning, it is necessary to thoroughly check the condition of the panel, and make any necessary corrections.

PRECAUTIONS IN OPERATION

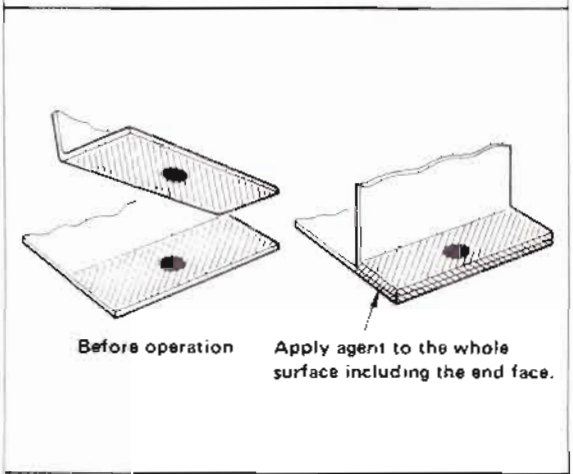
(1) Clearance between welding surfaces
Any clearance between the surfaces to be welded causes poor current flow. Even if welding can be made without removing such gap, the welded area would become smaller, resulting in insufficient strength.
Flatten the two surfaces to remove the gaps, and clamp them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



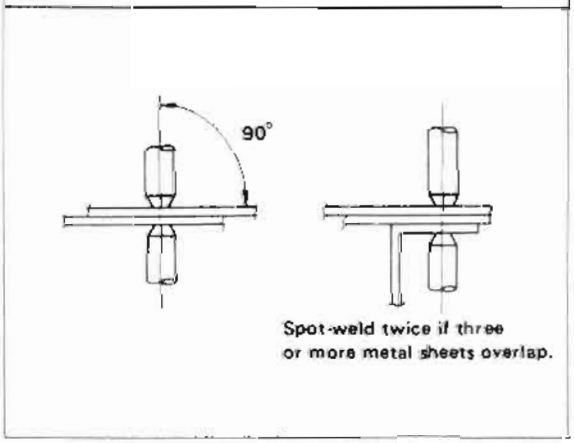
(2) Metal surfaces to be welded
Paint film, rust, dust, or any other contamination on the metal surfaces to be welded cause insufficient current flow and poor results.
Remove such foreign matter from the surfaces to be welded.



(3) Corrosion prevents processing on metal surface
Coat the surfaces to be welded with an anti-corrosion agent that has higher conductivity.
It is important to apply the agent evenly even to the end face of the panel.



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



PRECAUTIONS IN OPERATION

(4) No. of points of spot-welding

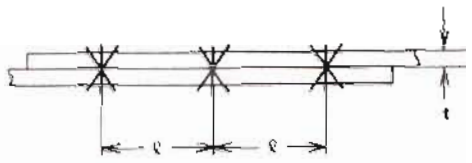
Generally, the capacity of spot welding machines available in a repair shop is smaller than that of welding machines at the factory. Accordingly, the number of points of spot-welding should be increased by 20 to 30% in a service shop compared to spot-welding in the factory.

(5) Minimum welding pitch

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

Unit: mm (in)

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



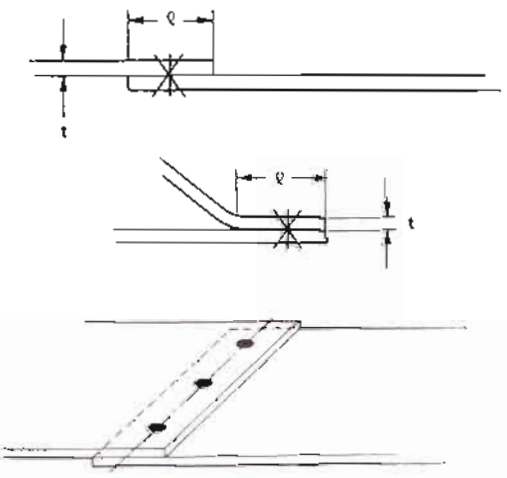
(6) Minimum lap of panels

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

Unit: mm (in)

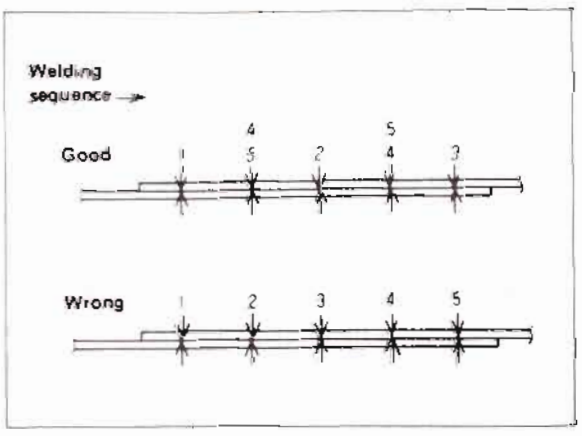
Thickness (t)	Minimum pitch (ℓ)
0.6 (0.024)	11 (0.43)
0.8 (0.031)	11 (0.43)
1.0 (0.039)	12 (0.47)
1.2 (0.047)	14 (0.55)
1.6 (0.063)	16 (0.63)
1.8 (0.071)	17 (0.67)

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



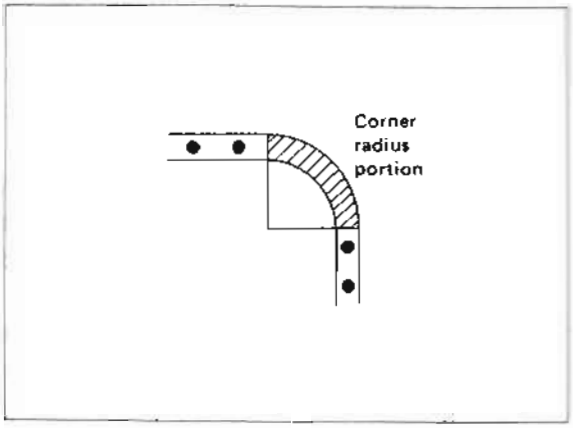
(7) Spotting sequence

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



PRECAUTIONS IN OPERATION

(8) Welding corners
Do not weld the corner radius portion. Welding this portion results in stress concentration of stress which leads to cracks.
Examples
- Upper corner of front and center pillars
- Front upper portion of rear fender
- Corner portion of front and rear windows

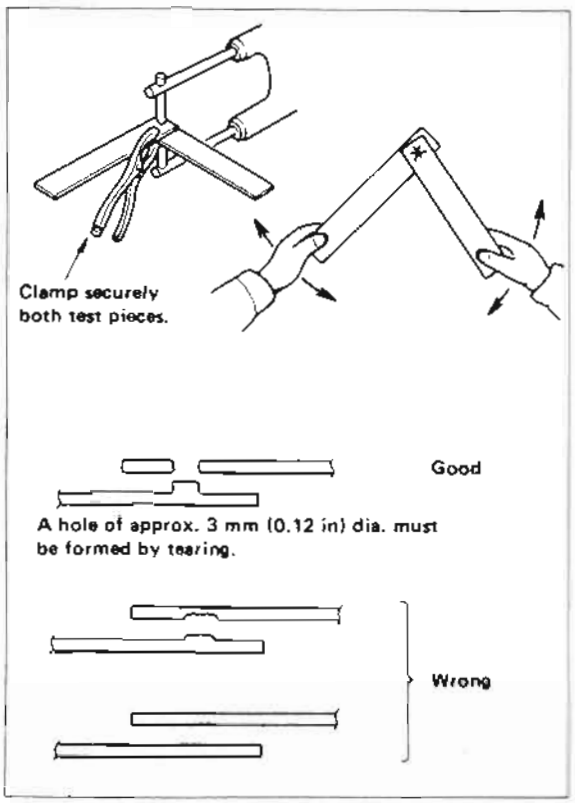


4. Inspection of welded portion
Spot-welded portions can be checked by visual inspection and destructive inspection. The destructive inspection explained below can be adopted easily at the time of welding. Before and after welding, be sure to perform this destructive inspection to check the strength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

(1) Check by using test piece (Confirmation before operation)
- Prepare test pieces having the same thickness as the panel to be welded and weld them together. Break the welded portion by twisting and examine the condition of the ruptured portion.

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

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



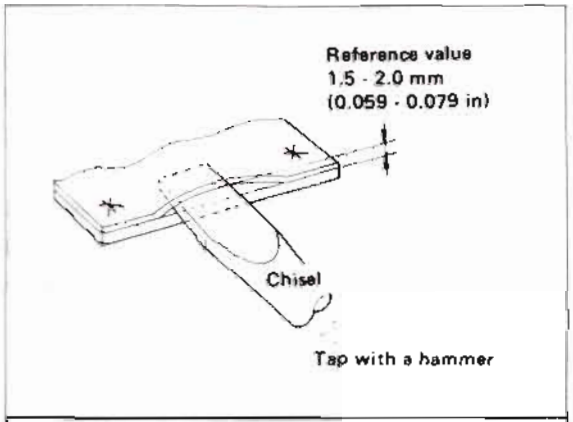
PRECAUTIONS IN OPERATION

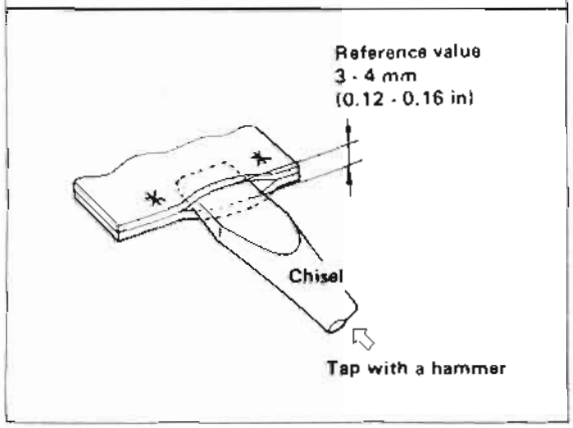
(2) Check by using chisel and hammer (Confirmation after welding)

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

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

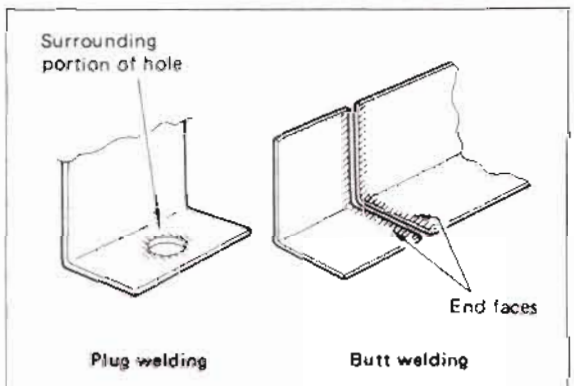
- If the thickness of the plates is not equal, the clearance between the plates must be limited to 1.5 to 2.0 mm (0.059 to 0.079 in). Note that further opening of the plates can become a destructive test.
- Be sure to repair the deformed portion of the panel after inspection.



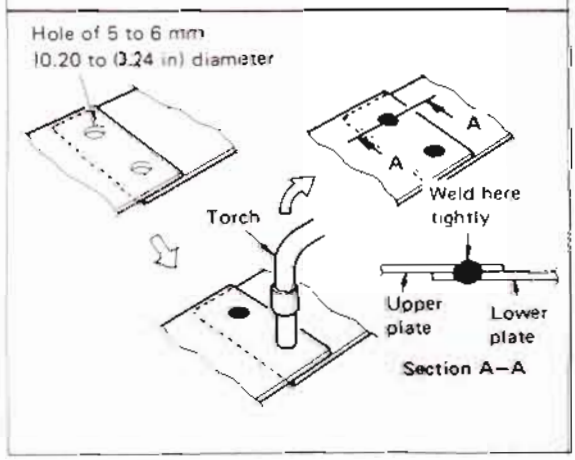


Mig Welding

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



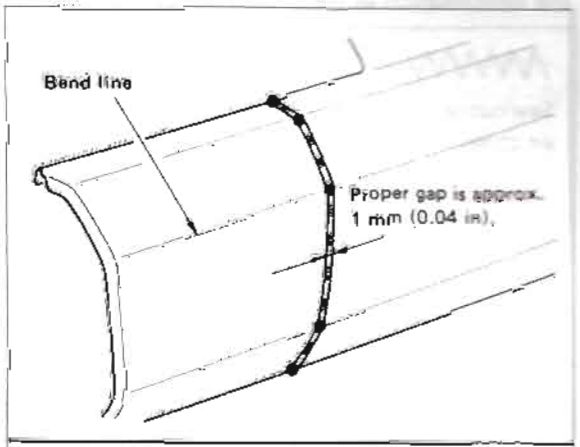
2. Precautions in welding
   (1) Plug welding
   a. Open a hole of 5 to 6 mm (0.20 to 0.24 in) diameter on one of the two metal plates to be welded and keep the upper plate and lower plate in tight contact.
   b. Apply the torch at right angle to the plate and fill metal into the hole at a stretch. Note that intermittent welding leads to the generation of oxide film on the surface and this causes blowholes. If this occurs remove the oxide film with a wire brush.
   c. Make sure that the upper and lower plates are welded together tightly.



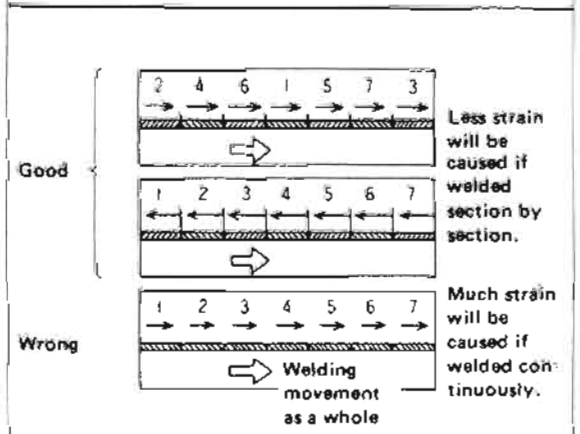
PRECAUTIONS IN OPERATION

(2) Butt welding

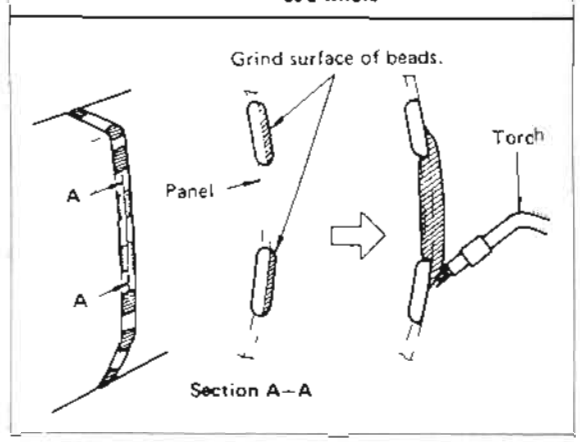
a. Before performing this welding, tack-weld two pieces of the metals to be welded to prevent generation of strains and to align two metal surfaces. Tack two metal pieces by placing point welds and then fill in the spaces by placing short welding beads.



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



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

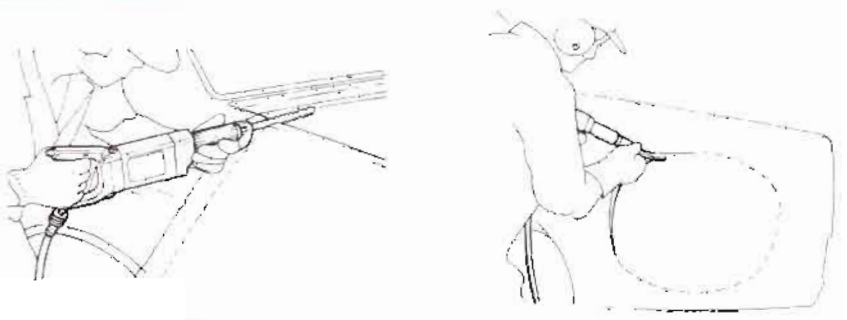


3. Inspection of welded portion
Refer to the inspection method described for spot welding.

DESCRIPTION SYMBOLS FOR CUTTING AND WELDING/BRAZING OPERATIONS

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

Saw cut or
air chisel cut

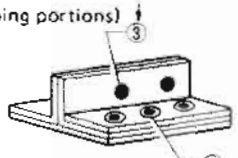


Spot weld

● ● ● ●
2-spot welds

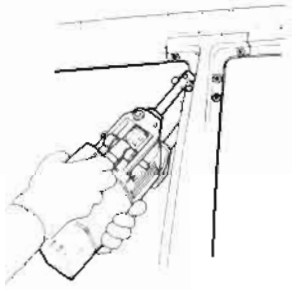
⊙ ⊙ ⊙ ⊙
3-spot welds

2-spot welds
(2-panel overlapping portions)



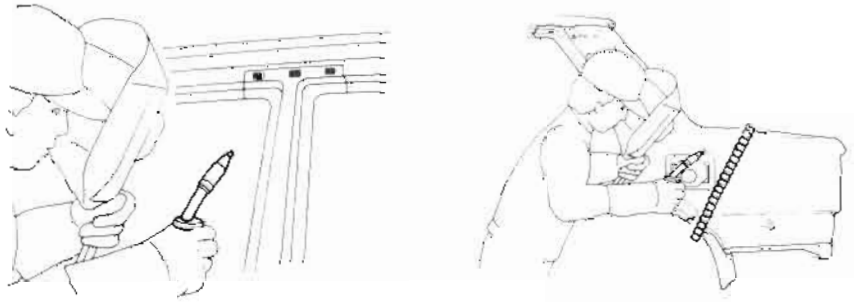
3-spot welds
(3-panel overlapping portions)

Note: The value in parentheses ( ) indicates the number of spot welds.

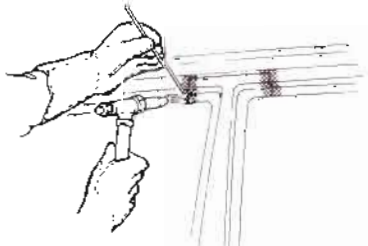


■ ■ ■
Mig plug weld

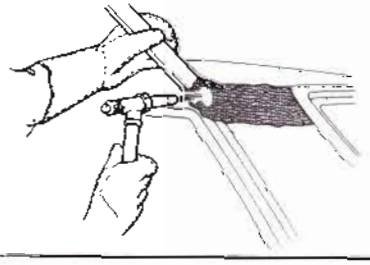
Mig seam weld/
Point weld



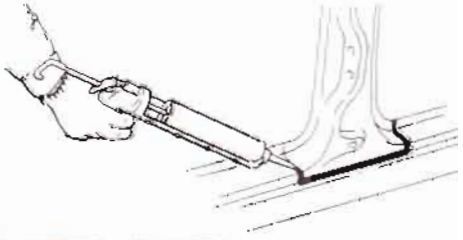
Brazing



Soldering



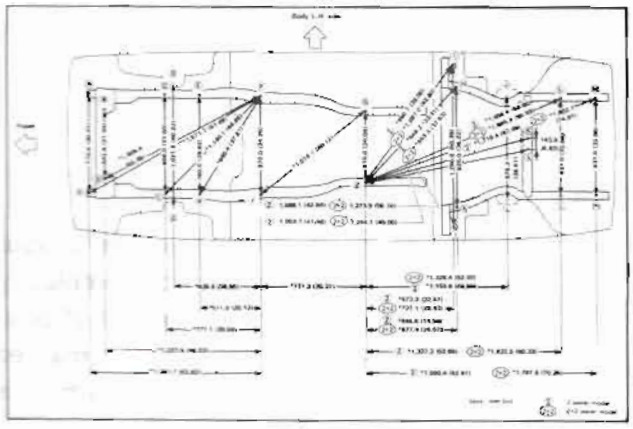
Sealing



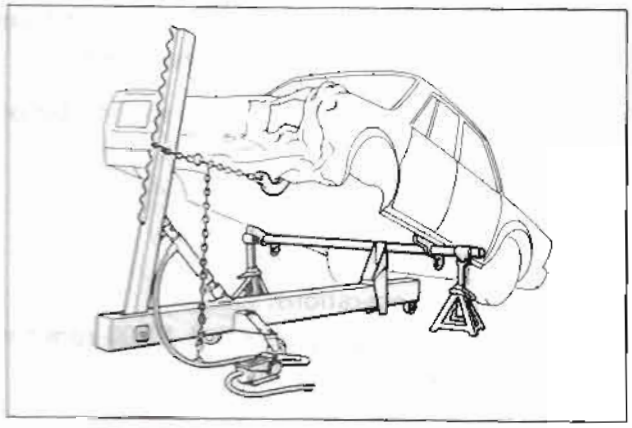
PROCEDURES FOR REMOVAL AND INSTALLATION

REMOVAL

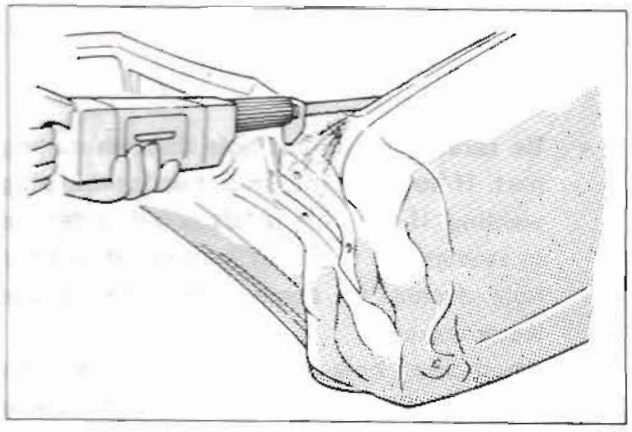
(1) Carefully check to see if any other part has been damaged by measuring major dimensions of relative part locations. Refer to "Body Alignment" drawing.
Tools required:
- Centering gauge
- Tracking gauge
- Convex rule
- Jack, rigid rack or car lift



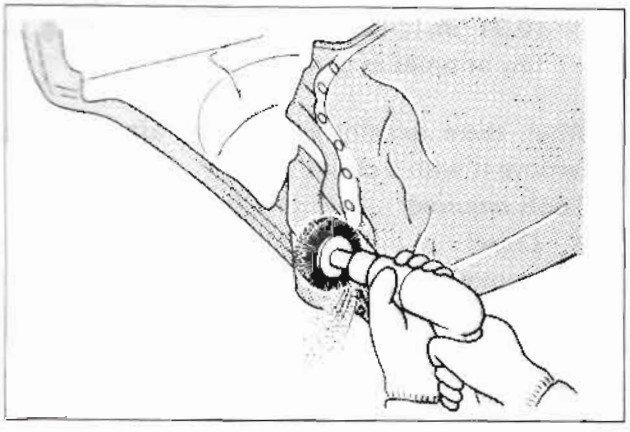
(2) Conduct drawing operation with a body-frame repair system, depending on condition of deformation. Correct parts that are to be reused according to "Body Alignment" drawing.
Precaution in operation:
- Drawing chains must be positively attached to body and other locations so that they will not come off during operation.



(3) Cut off damaged portions to improve job efficiency.
Tools required:
- Air saw
- Air chisel



(4) When spot welded portions are not apparent, remove paint with a rotary wire brush.
Tools required:
- Rotary wire brush



PROCEDURES FOR REMOVAL AND INSTALLATION

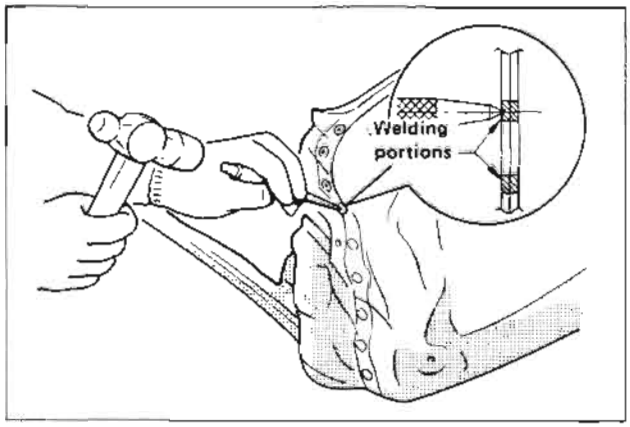
(5) Center punch spot welded portion for positioning a drill.

Tools required:

- Hammer
- Center punch

Precautions in operations:

- Drive center punch deeply in center of spot weld nugget. Nugget cannot be completely cut by a drill if center punched out of position. Also, if hole location is marked shallowly, drill may move around which is dangerous.
- In principle, punching must be done from sides of parts that are to be removed.



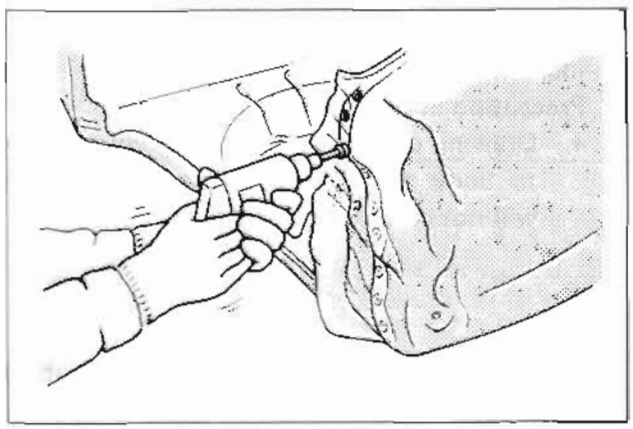
(6) Drill spot welded portions with a spot cutter or air drill.

Tools required:

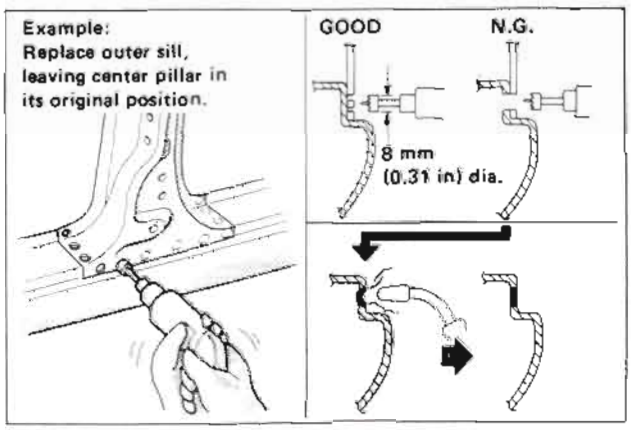
- Spot cutter
- Air drill

Precautions in operations:

- Use a drill running at about 1,000 rpm for ease of work.



- Be careful not to cut hole through mating part. If hole is made, stop it up by mig plug welding. If the hole is left as it is, a decline in strength of that part may result. Also, a hole facing to compartment can cause water leakage.
- When using hole drilled in welded portion as plug welding hole for new parts, use a drill of a small diameter [below 8 mm (0.31 in)], and try to finish welding as few at times as possible.



(7) When there remains welded part after drilling, remove it with a chisel.

Tools required:

- Chisel
- Hammer

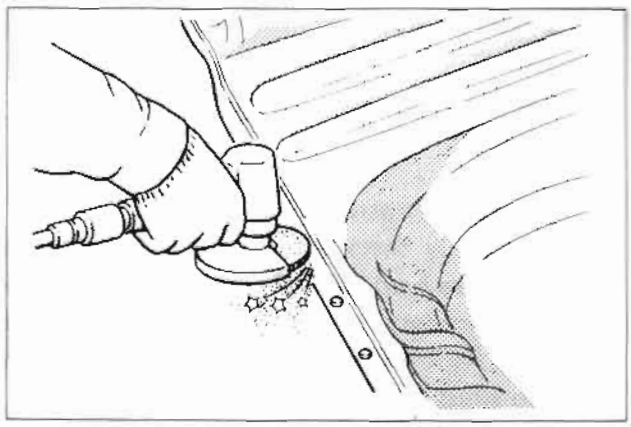
PROCEDURES FOR REMOVAL AND INSTALLATION

PREPARATION FOR INSTALLING MATING PARTS

(1) Dress weld nuggets on base metal with a sander.

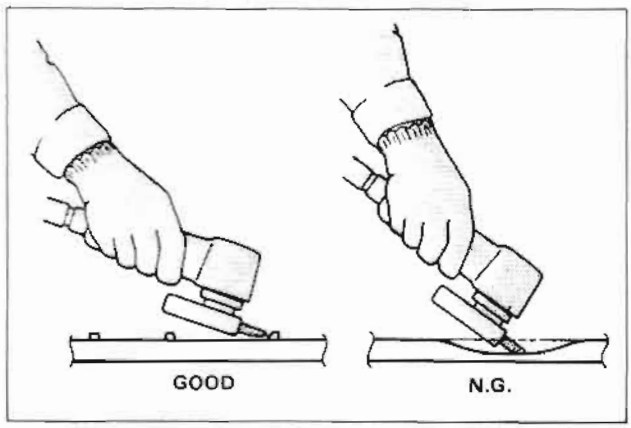
Tools required:

- Air sander
- Disc sander



Precautions in operations:

- Be careful not to cut base metal too much. This will result in a decrease in plate thickness and therefore in strength.



- Clean dressed surface and its vicinity to remove iron powder. Iron powder, if left, can corrode, penetrating into base metal.

PROCEDURES FOR REMOVAL AND INSTALLATION

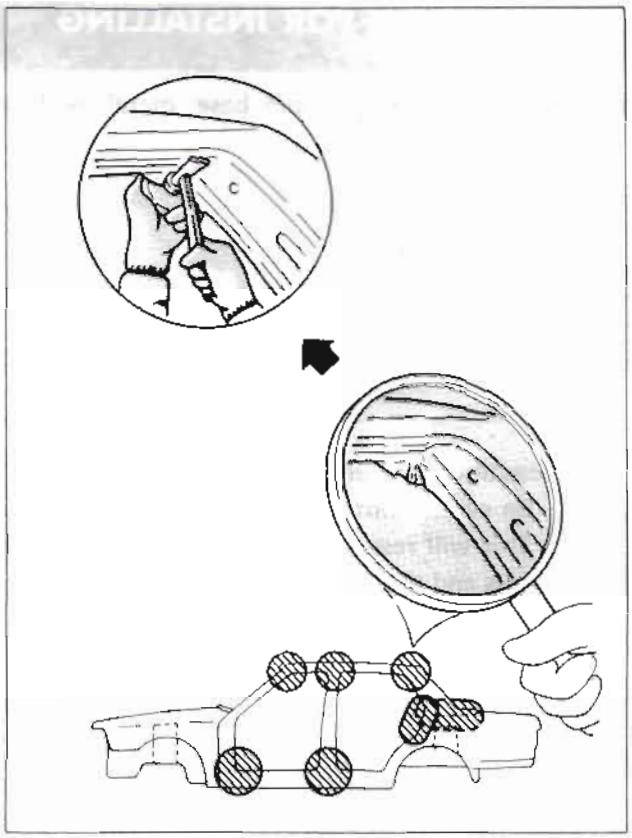
(2) Correct deformed area with a hammer and dolly.

Tools required:

- Hammer
- Dolly

Precaution in operation:

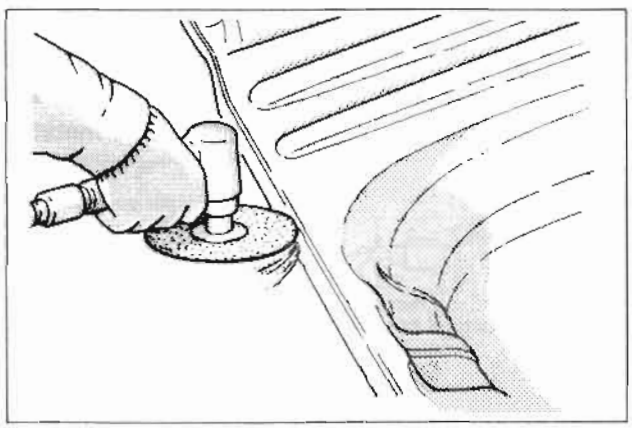
- **Carefully check for damage of inner panels that are hard to find, and be sure to repair the smallest deformity. A deformed part, if left, will cause a decrease in strength due to stress concentration there.**



(3) Remove paint at welded portions.

Tools required:

- Belt sander
- Disc sander



(4) Apply weld-through primer to portions of new parts and body panel that are to be welded.

PROCEDURES FOR REMOVAL AND INSTALLATION

PREPARATION FOR INSTALLING NEW PARTS

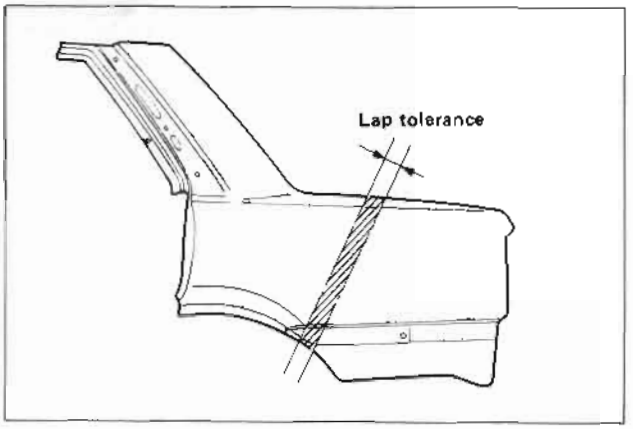
(1) When partial replacement by grafting is intended, cut off service parts with allowance [Approx. 50 mm (1.97 in)] for lapping mating part.

Tools required:

- Air saw
- Scriber
- Hacksaw
- Convex rule (or equivalent)

Note:

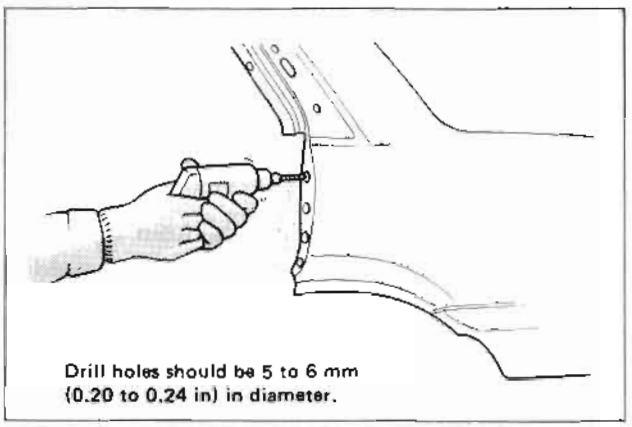
In order to maintain the original functions and high quality of the vehicle, it is recommended that you use genuine Nissan parts at all times.



(2) Mig plug weld portions beyond reach of a spot welder. To do this, drill 5 or 6 mm (0.20 or 0.24 in) mig plug weld holes.

Tools required:

- Puncher
- Air drill



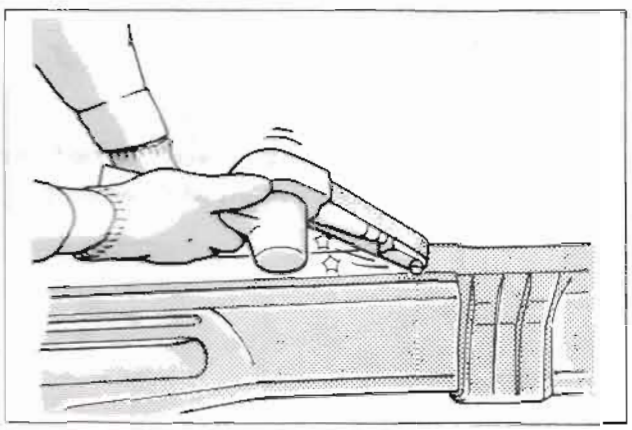
(3) Remove paint from portions to be welded.

Tools required:

- Belt sander
- Disc sander

Precaution in operation:

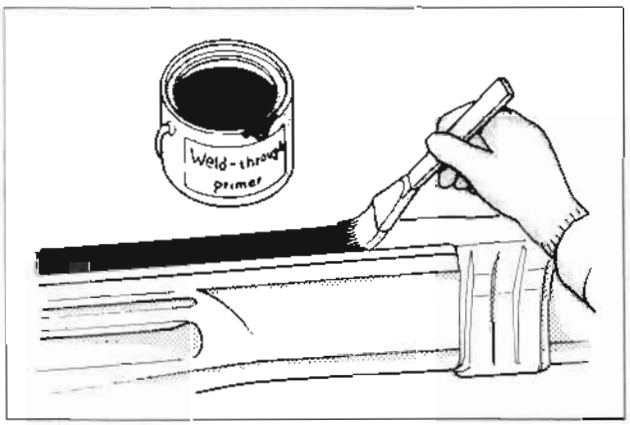
- **Remove paint from both sides of all portions that are to be welded, such as surfaces to be spot welded, peripheries of mig plug weld holes, and end faces to be butt welded. Remaining paint will result in reduced strength of spot welds due to insufficient electrification and produce blowholes in mig plug welding.**



(4) Remove paint from and apply weld-through primer to portions of service parts and body panel that are spot welded.

Tools required:

- Brush



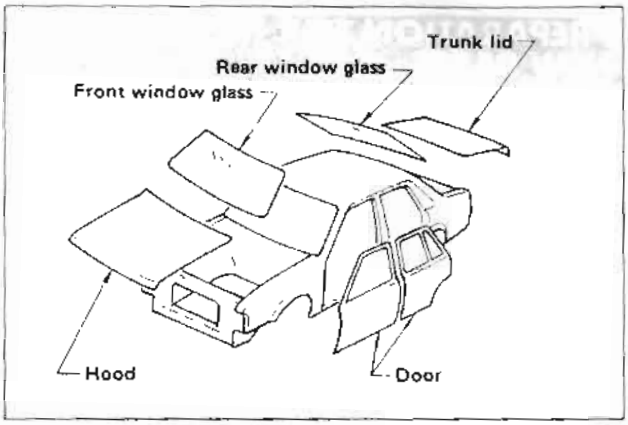
PROCEDURES FOR REMOVAL AND INSTALLATION

INSTALLATION

(1) Temporarily install new service parts.

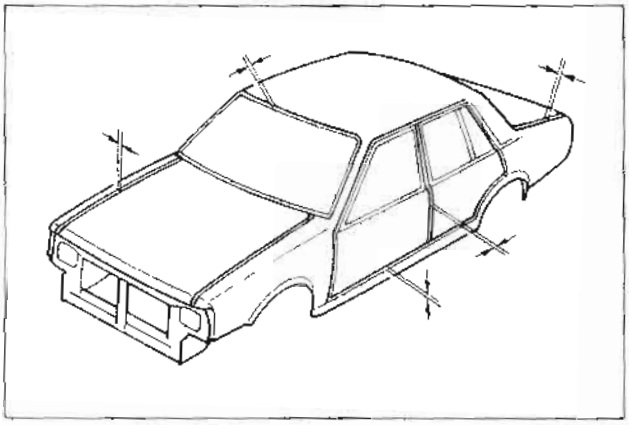
Tools required:

- Vise clamps
- Convex rule
- Tracking gauge
- Centering gauge
- Portable power
- Jack
- Spot welder
- Mig welder



Precautions in operations:

- Service parts must be located in place as indicated in "Body Alignment" drawing.
- Temporarily install new parts to openings (such as windshield glass, door, hood and trunk lid). Check and adjust clearances, grades and parallelism.
- After adjusting alignment, hold these parts stationary with vise clamps, spot welding, etc.



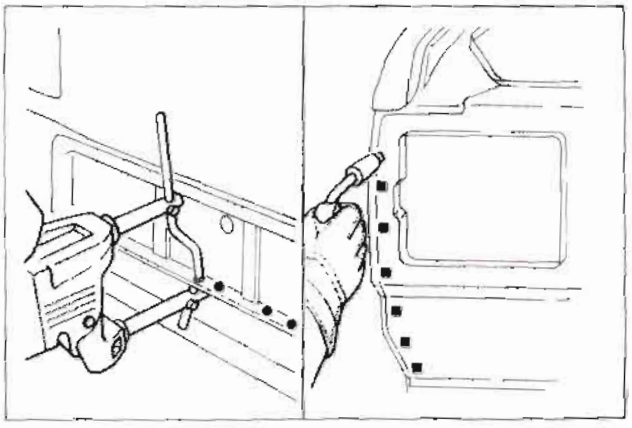
(2) Weld all necessary portions.

Tools required:

- Spot welder
- Mig welder

Precaution in operation:

- Welding must be positively carried out, referring to "Precautions when welding".



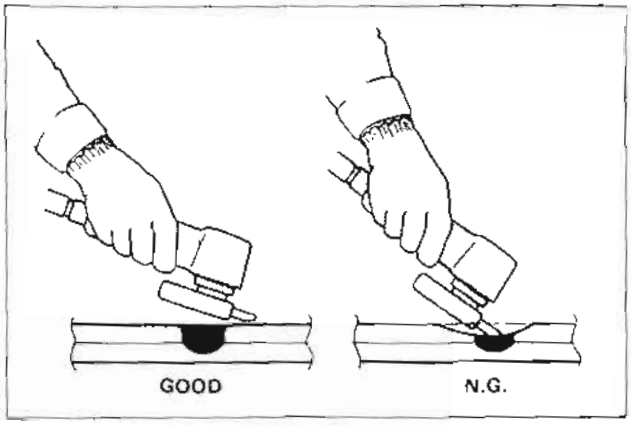
(3) Dress mig welds with a sander.

Tools required:

- Air sander
- Disc sander

Precautions in operations:

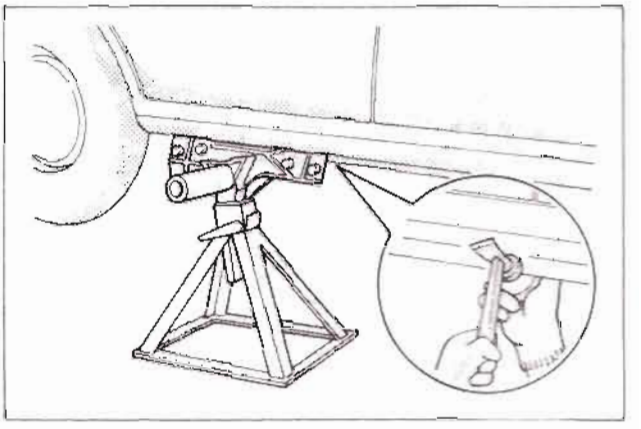
- Be careful not to cut welded portions too much. Otherwise, thickness of panel will decrease and therefore strength decline.



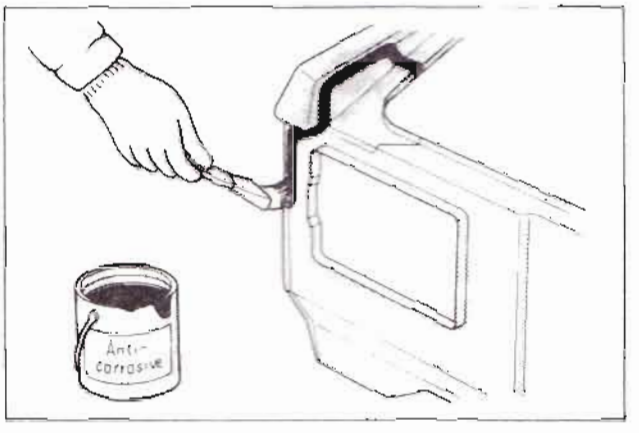
PROCEDURES FOR REMOVAL AND INSTALLATION

- Remove iron powder from dressed surfaces and their vicinity. Iron powder will corrode, penetrating into base metal.

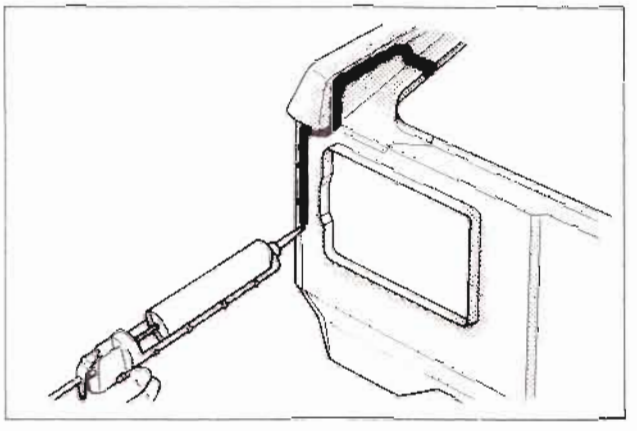
(4) If a body-frame repair system is used, be sure to repair portions of body panel that have been clamped.



(5) Treat welded portions with anti-corrosive.

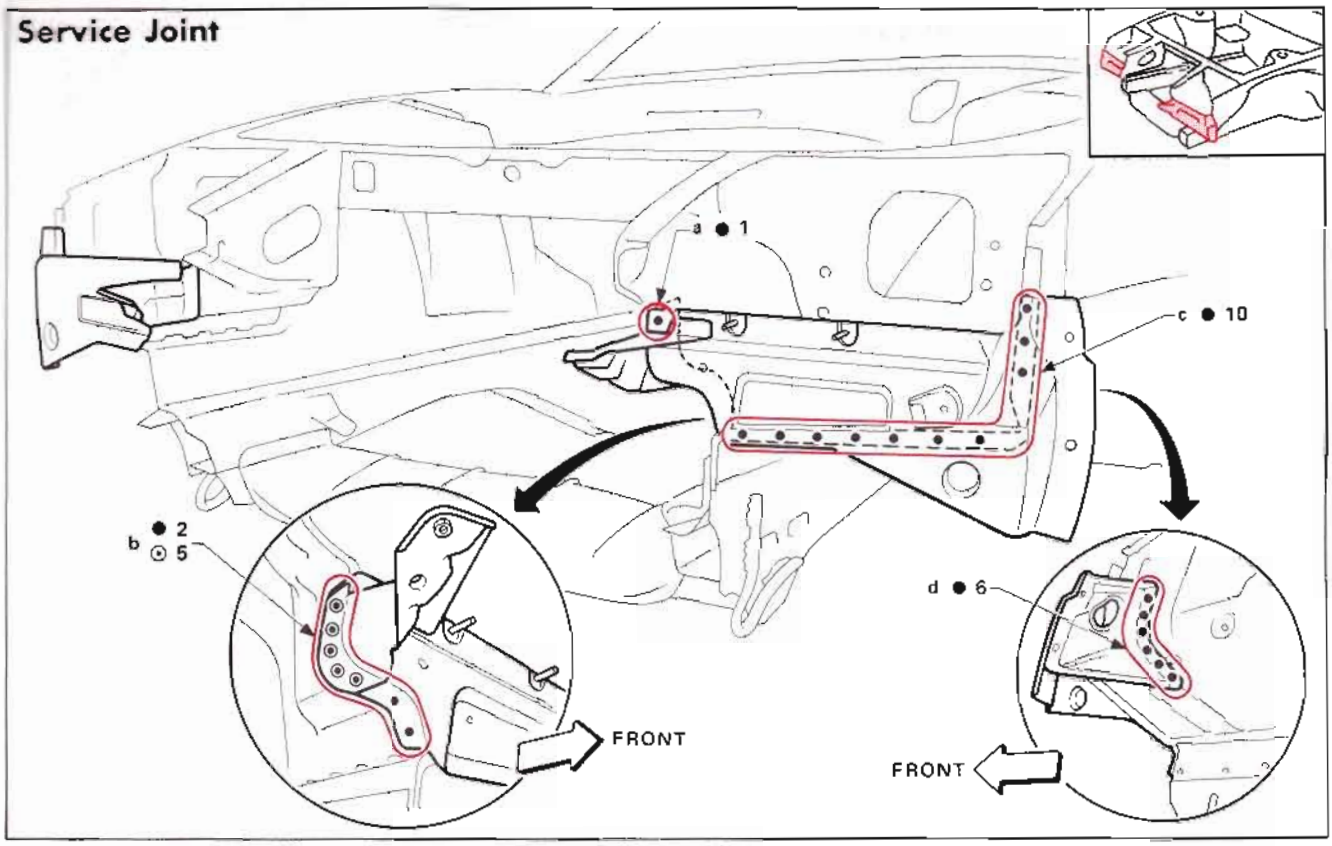


(6) Apply sealer to joints of service parts. Refer to "Body Sealing" drawings.



REPLACING OPERATION

FRONT HOODLEDGE GUSSET

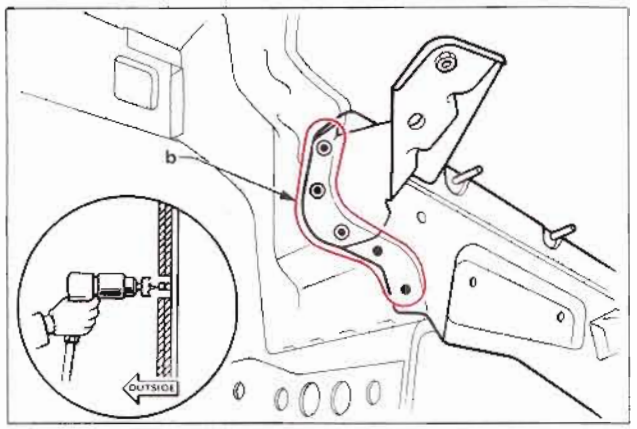


Portions to be welded		
a. Side radiator core support	c. Hoodledge	d. Hoodledge
b. Side radiator core support		

FRONT HOODLEDGE GUSSET

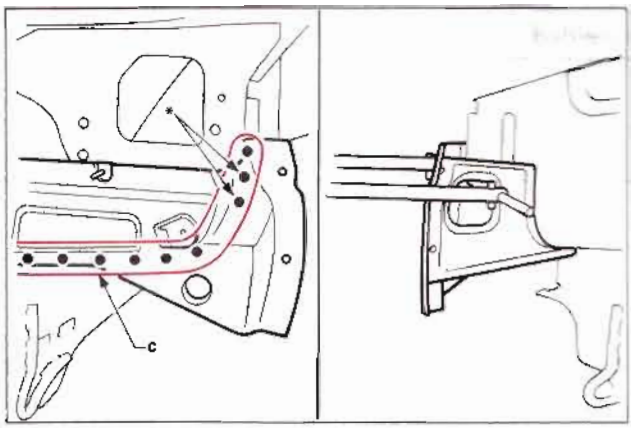
REMOVING REMINDER

- Spot cut 2 panels of 3-layered part at portion (b) from outside.

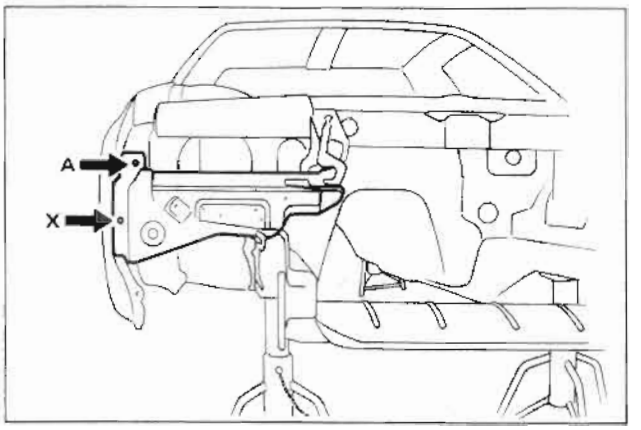


INSTALLING REMINDERS

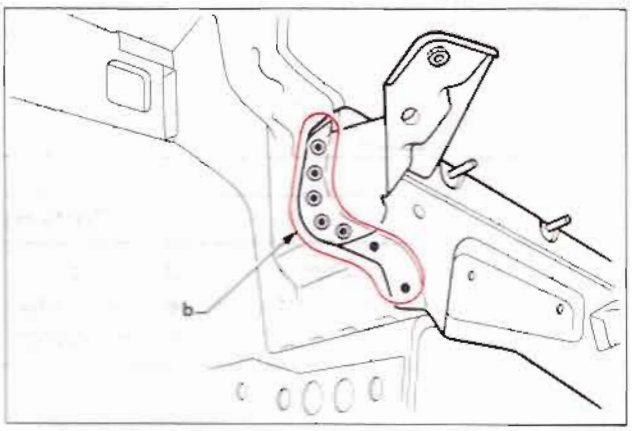
- When spot welding radiator core support at portion (c*), insert spot welder electrode tip from the opening in baffle plate for easy operation.



- Install service part, temporarily install front fender, and tighten bolts into fender attaching holes at portions (A) and (X) to fix fender in place.

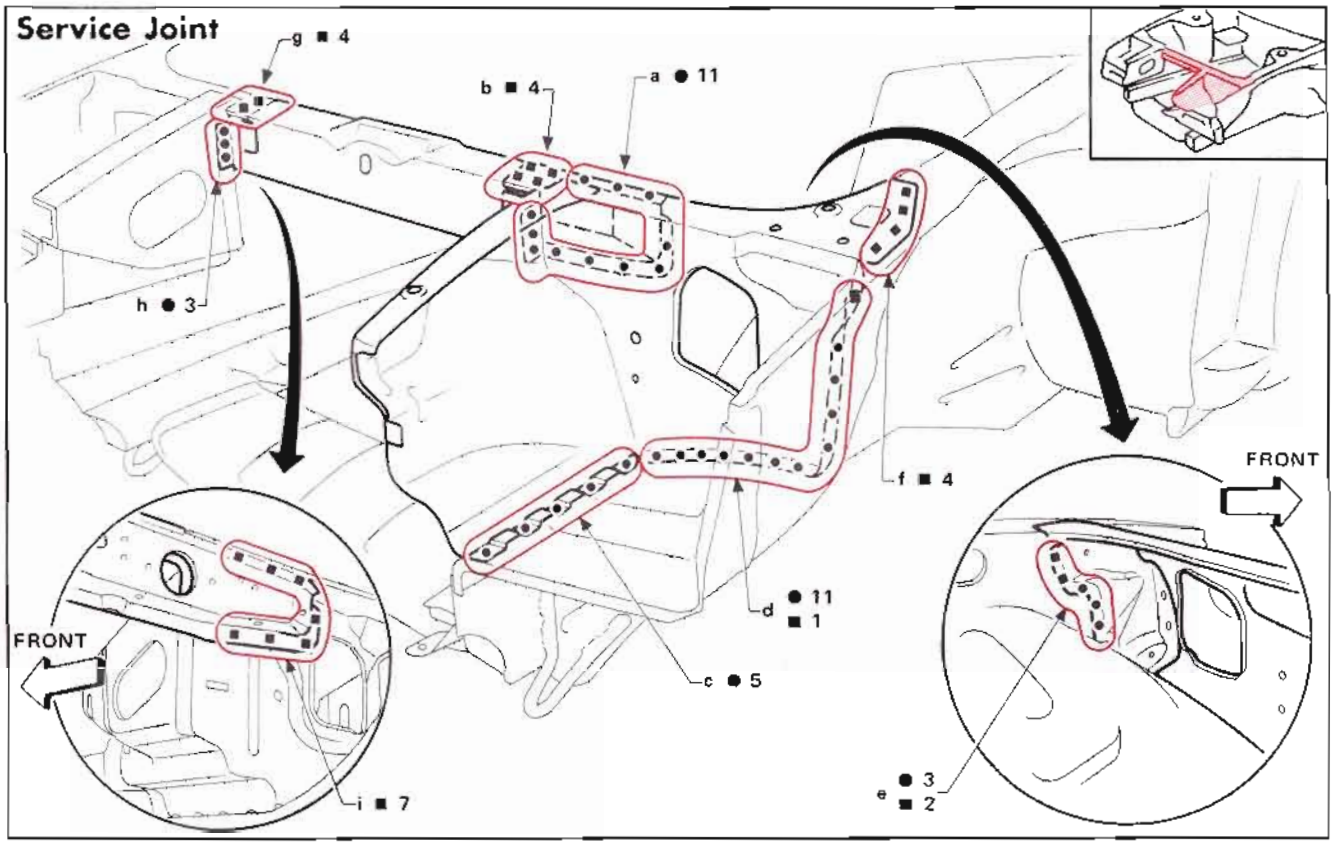


- Spot weld 3-layered part at portion (b).



RADIATOR CORE SUPPORT

(Work after front hoodledge gusset has been removed.)

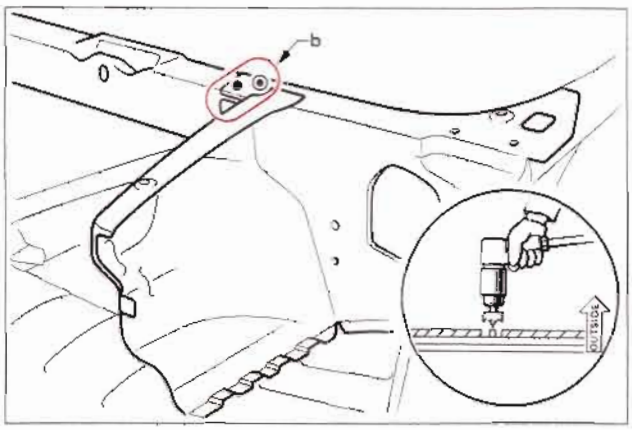


Portions to be welded

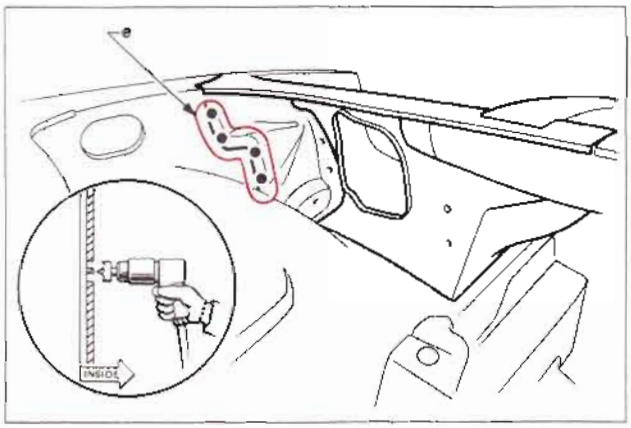
a. Upper radiator core support	d. Hoodledge	g. Side radiator core support
b. Upper radiator core support	e. Hoodledge	h. Side radiator core support
c. Hoodledge	f. Hoodledge	i. Side radiator core support

REMOVING REMINDERS

- Spot cut only top panel of 3-layered part at portion (b).

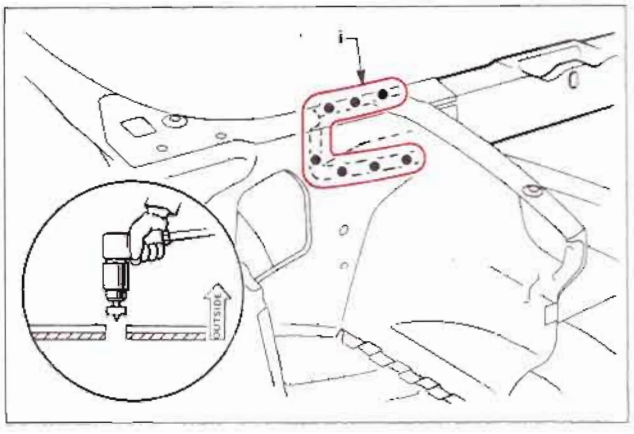


- Spot cut only one panel of 2-layered part at portion (e) from inside of engine compartment.

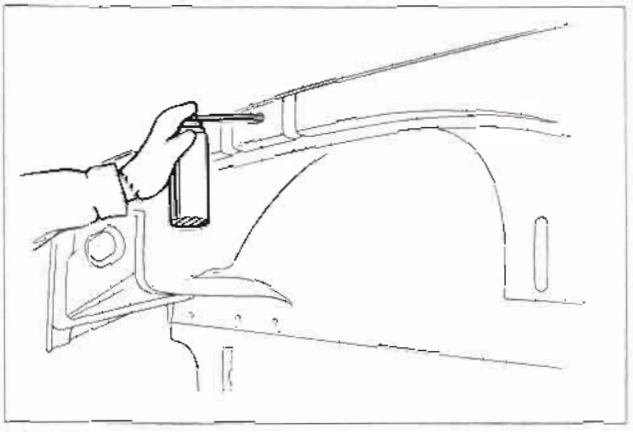


RADIATOR CORE SUPPORT

- When replacing upper radiator core support and side radiator core support at the same time, spot cut completely through 2-layered part at portion (i).

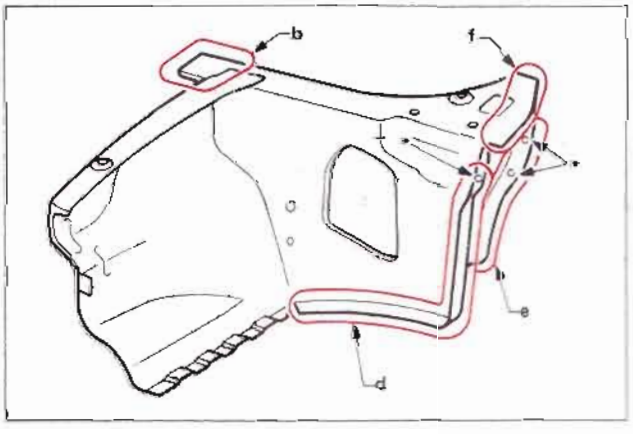


- When treating mig plug welded parts at portions (d), (e) and (f) with an anti-corrosive agent, be sure to apply anti-corrosive agent through hole in hoodledge reinforcement.

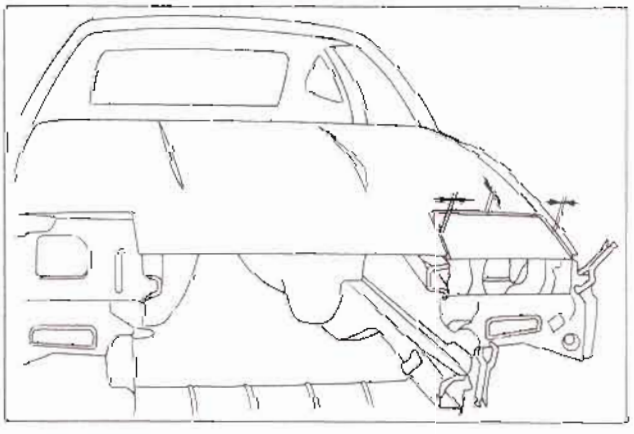


INSTALLING REMINDERS

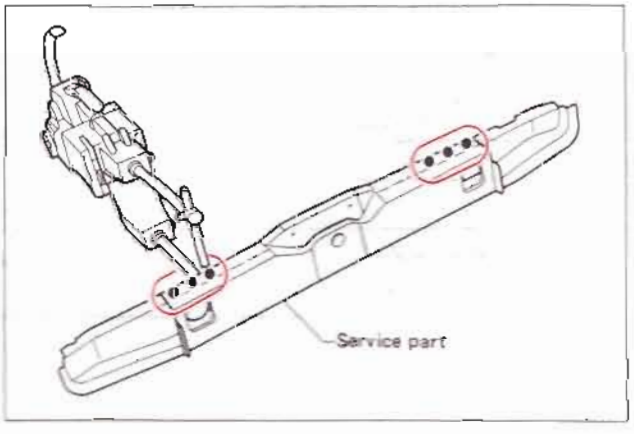
- Drill mig plug weld holes at portions (b), (f), (d*) and (e*) of service part.



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

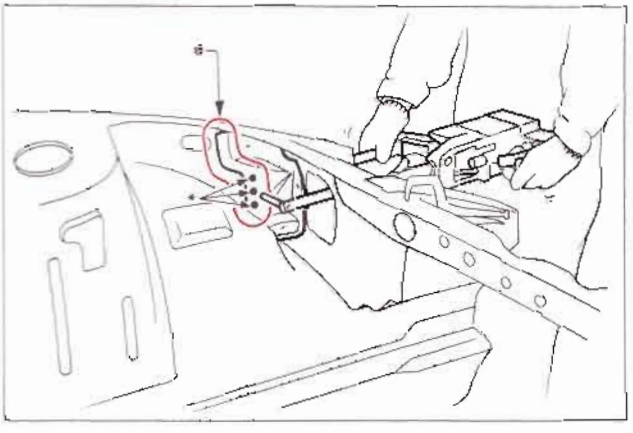


- Spot weld portion (e) of service part at 3 additional points.

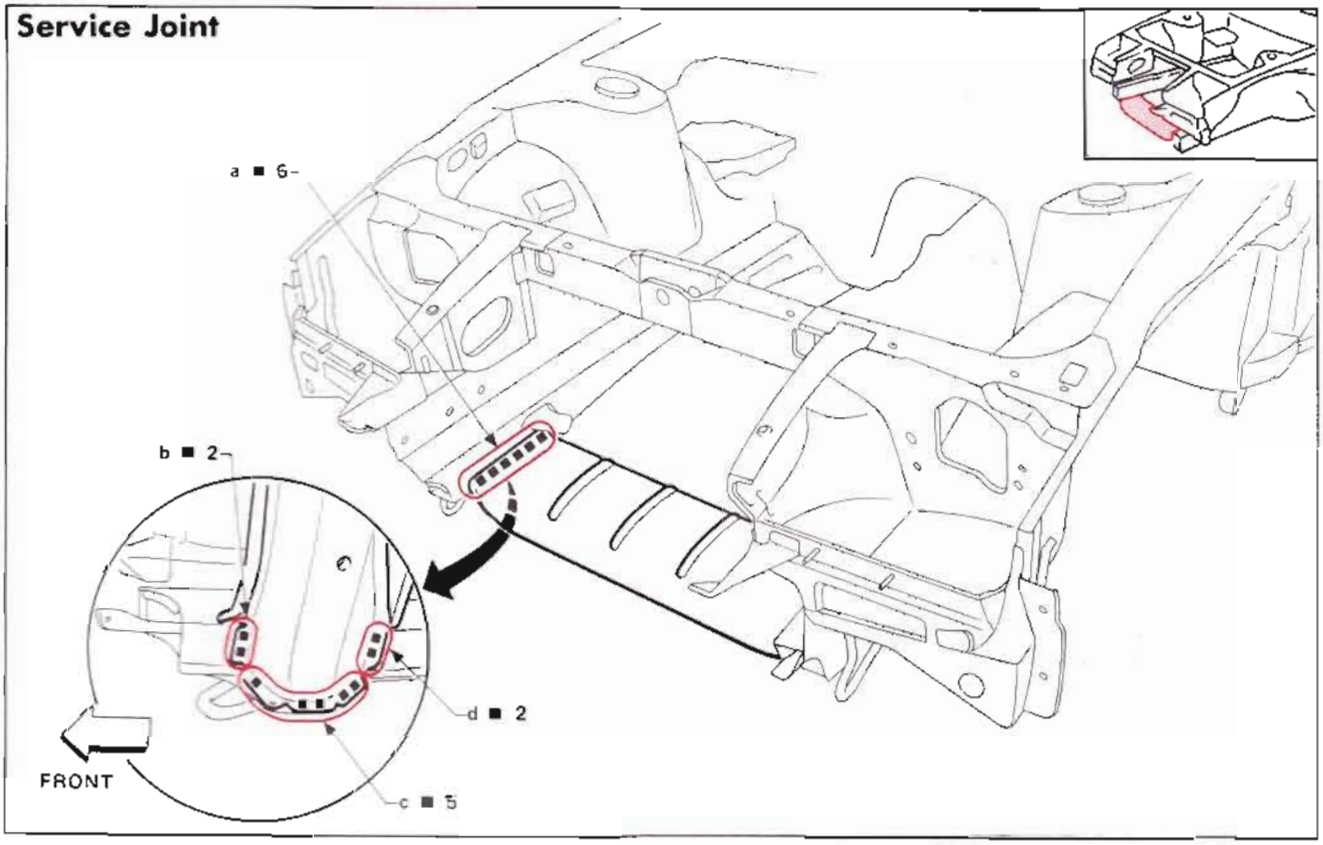


- Insert spot welder gun arm from the opening in headlamp housing and spot weld portion (e*).

  Note: Be careful not to bring gun arm into contact with vehicle body.



FRONT CROSSMEMBER



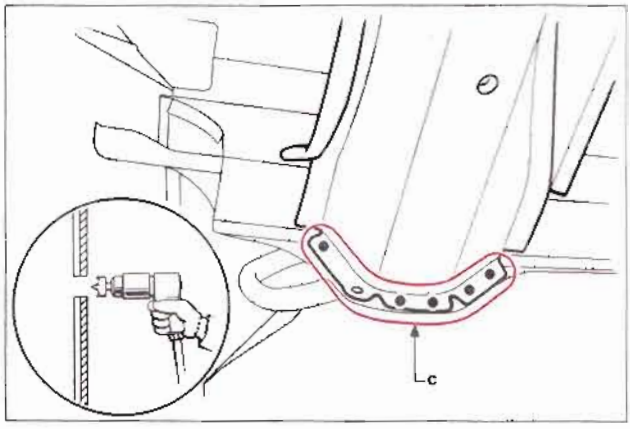
Portions to be welded

a. Front side member
b. Front side member
c. Side member plate
d. Front side member

FRONT CROSSMEMBER

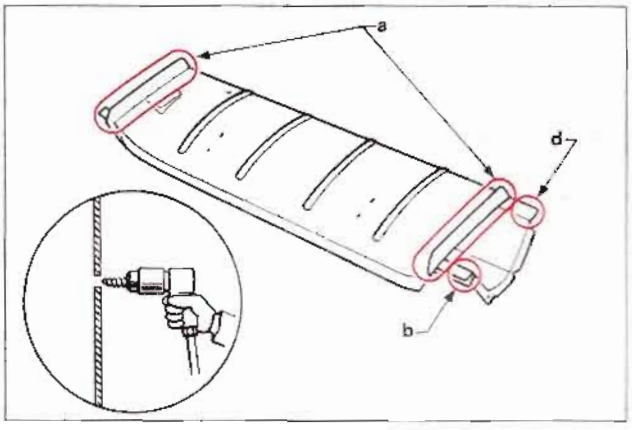
REMOVING REMINDER

- Spot cut completely through weld at portion (c). When installing, use those holes as plug weld holes.

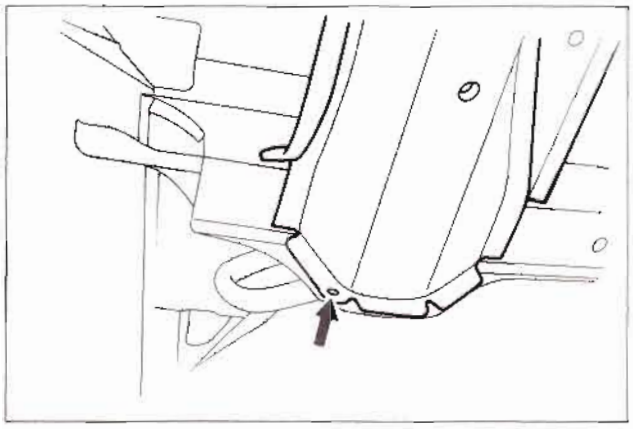


INSTALLING REMINDERS

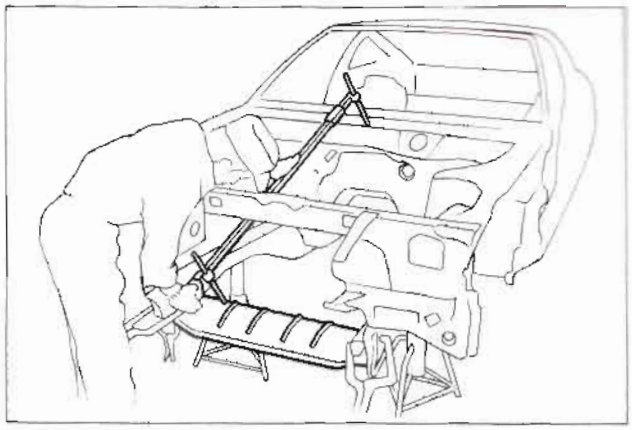
- Drill mig plug weld holes at portions (a), (b) and (d) of service part.



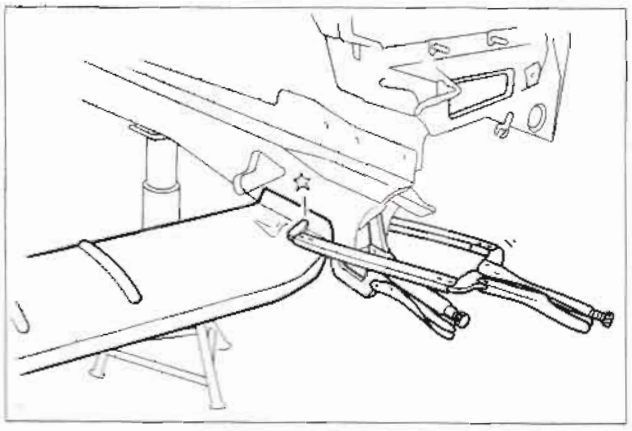
- When installing service part, fix it to side member with nuts and bolts using reference hole.



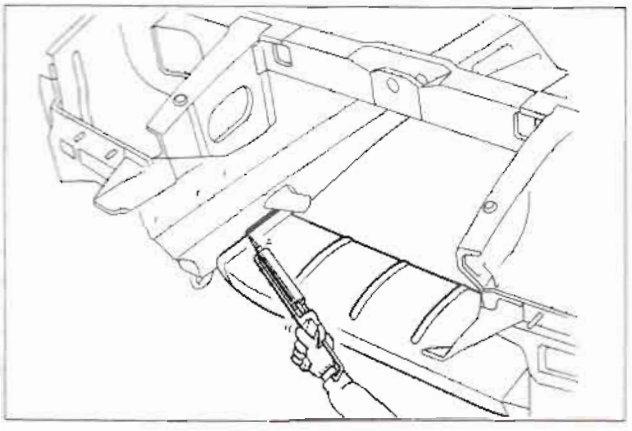
- Adjust position of service part according to "BODY ALIGNMENT" drawing.



- Hold surface of service part to be welded securely with vise clamps and mig plug weld.

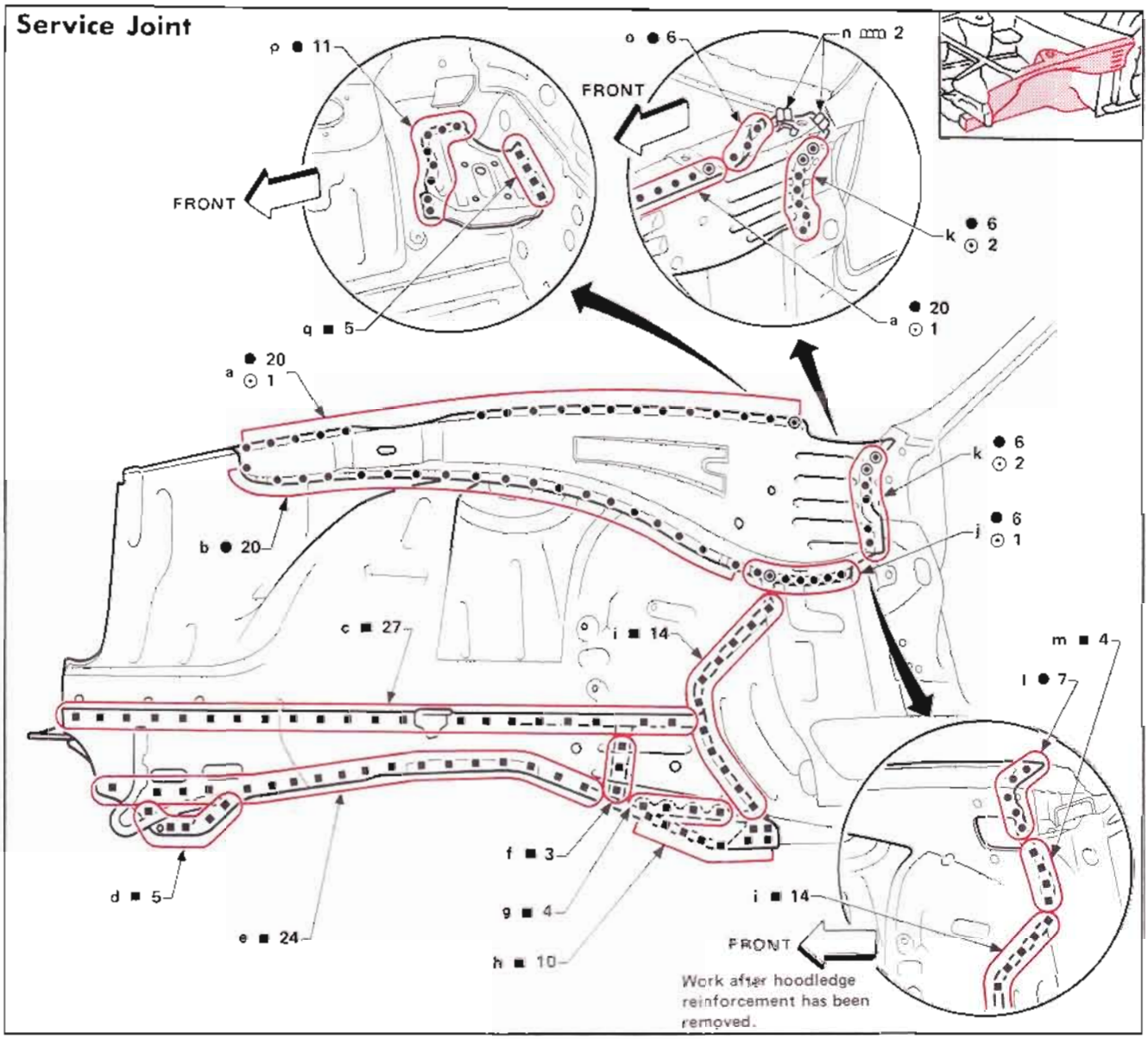


- Apply sealer.



HOODLEDGE

(Work after side radiator core support has been removed.)



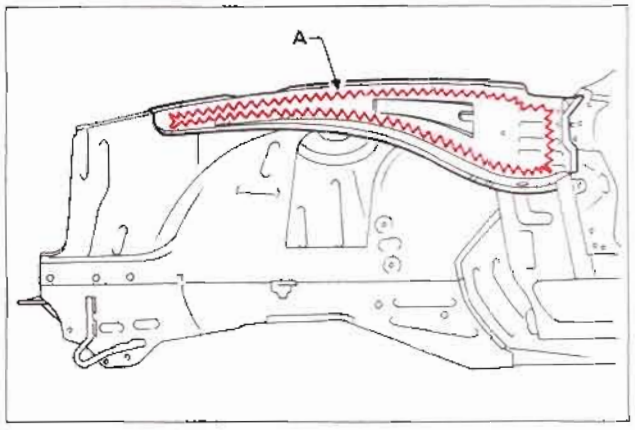
Portions to be welded

a. Hoodledge
Hoodledge & cowl top
b. Hoodledge
c. Front side member
d. Front crossmember
e. Front side member
f. Front side member
g. Front side member
h. Center side member
i. Lower dash panel
j. Side dash panel
Side dash panel & hoodledge
k. Front pillar
Front pillar & cowl top
l. Cowl top
m. Side dash panel & lower dash panel
n. Cowl top
o. Cowl top
p. Hoodledge
q. Lower dash panel

HOODLEDGE

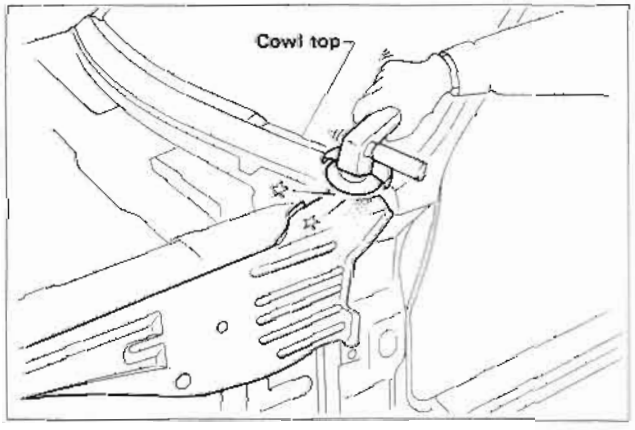
REMOVING REMINDERS

- When removing hoodledge reinforcement, cut off portion (A) so that welded part can be easily spot cut later.

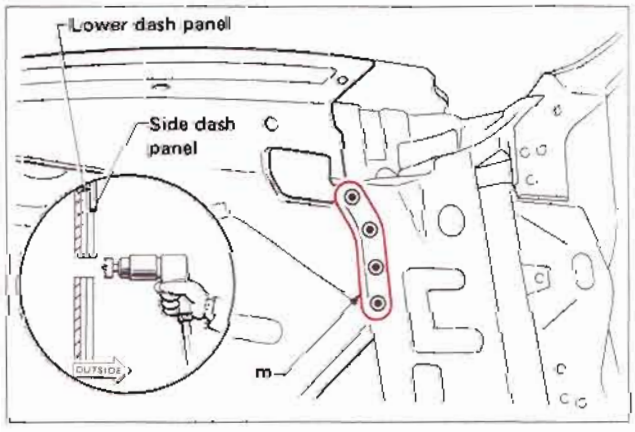


- Cut welded part at portion (f) with a sander.

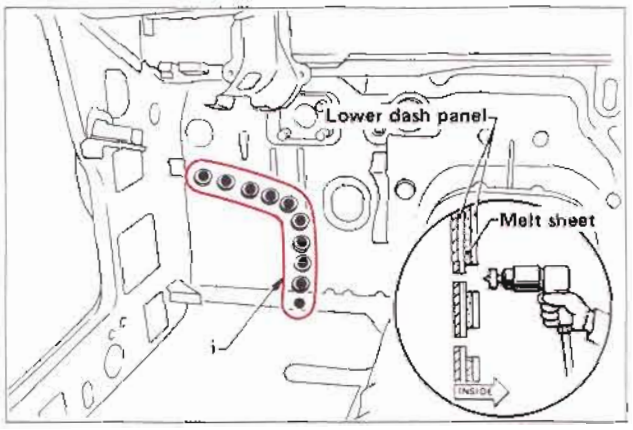
  Note: Be careful not to damage cowl top.



- Spot cut completely through 3-layered part at portion (m). When installing, use those holes as mig plug weld holes.

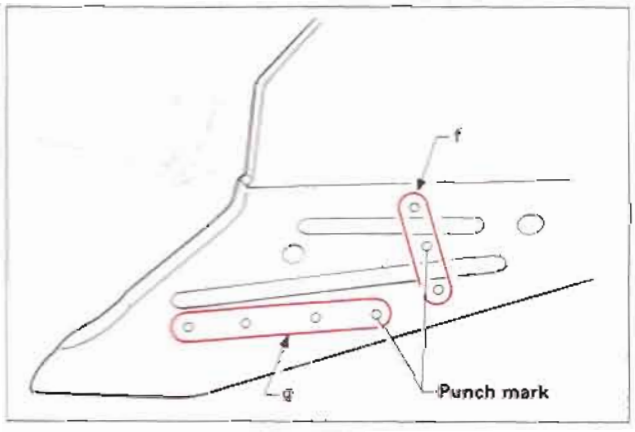


- Spot cut completely through portion (i) so that mig plug welding can be used from inside of passenger compartment when installing.
  The mating panel (lower dash panel) is a sandwich steel plate, whose inner panel and melt sheet are notched in areas to be welded.



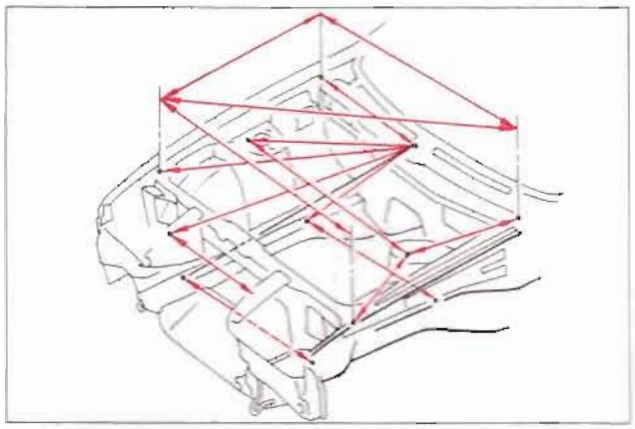
INSTALLING REMINDERS

- When drilling mig plug weld holes at portions (f) and (g) of service part, drill them at punched parts of service part.

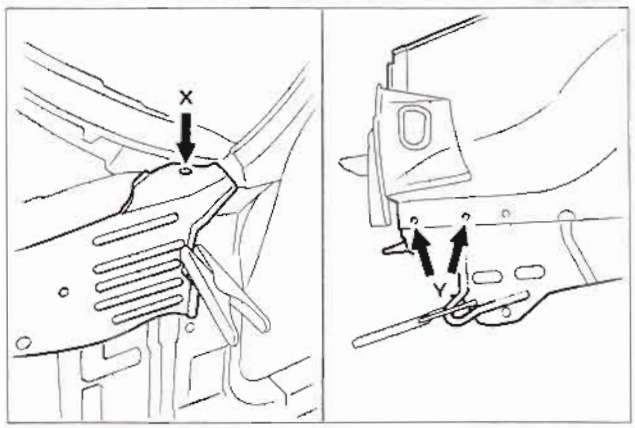


HOODLEDGE

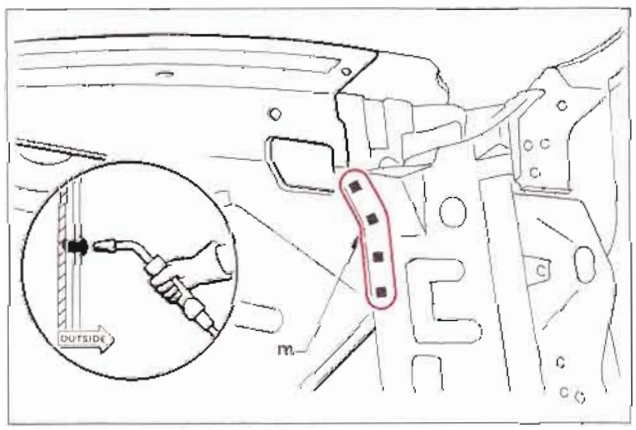
- Install service part and related parts such as side radiator core support, etc. together. Adjust various dimensions of relative part locations according to "BODY ALIGNMENT" drawing.



- Tighten front fender locating hole (X) and bumper locating hole (Y) with bolt.

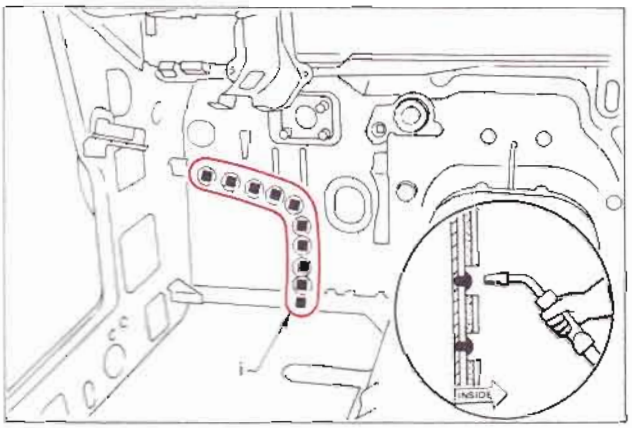


- Mig plug weld 3-layered part at portion (m) from outside.

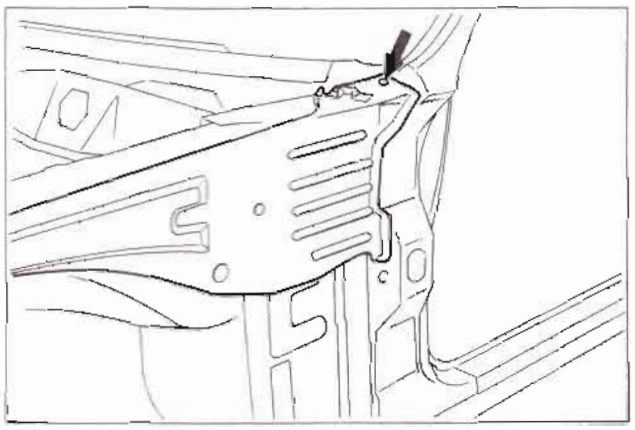


- Mig plug weld portion (i) from inside of engine compartment.

  Note: If one of two plates to be welded slides out of position during welding from outside, sandwich steel plate melt sheet will burn and produce gases.
  This will result in insufficient strength of the weld due to poor welding-in of deposit metal.

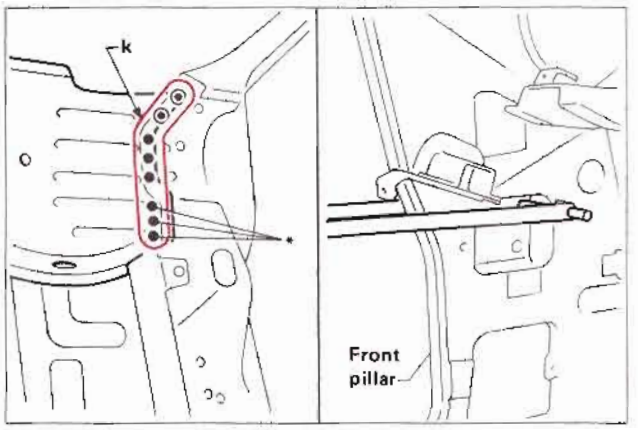


- Align fender locating hole and install hoodledge reinforcement.



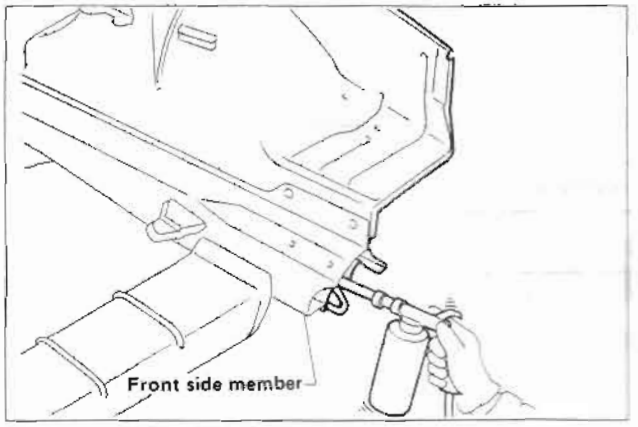
HOODLEDGE

- Insert spot welder gun arm from the opening of front pillar and spot weld portion (k*).

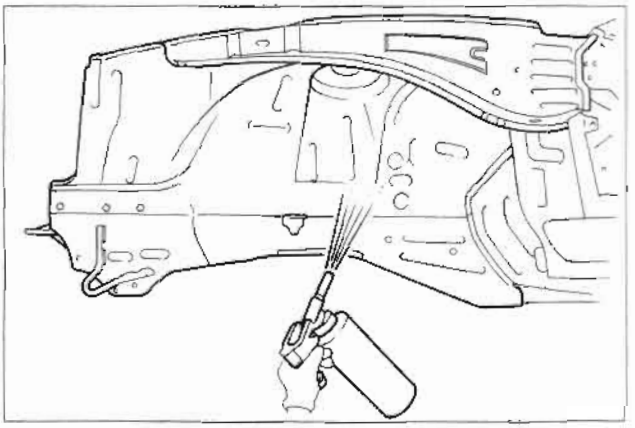


- Coat welded parts with anti-corrosive agent.

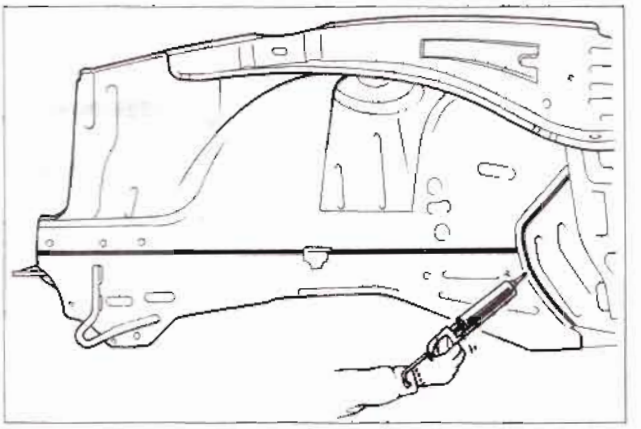
  Note: Be sure to apply anti-corrosive agent to inside of front side member.



- Apply undercoating to inside of wheelhouse.

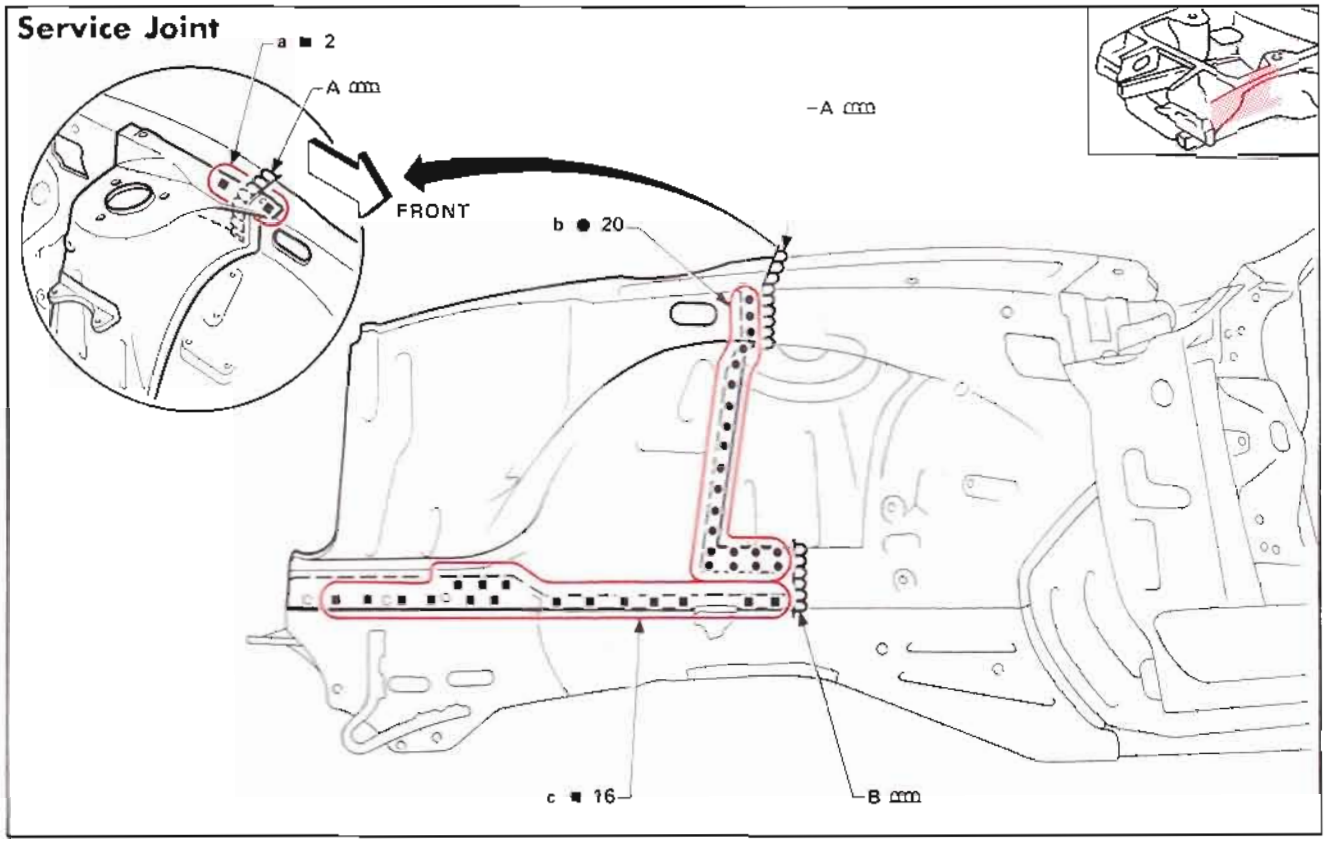


- Apply sealer.



HOODLEDGE (Partial Replacement)

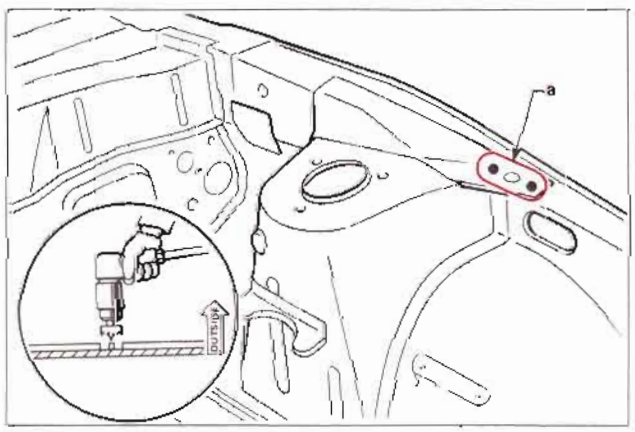
(Work after hoodledge reinforcement has been removed.)



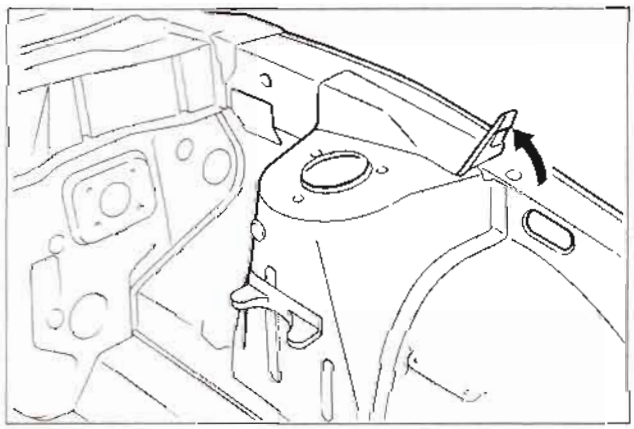
Portions to be welded		
a. Front strut housing gusset	b. Front strut housing	c. Side member plate

REMOVING REMINDERS

- Spot cut only top panel of welded part at portion (a).

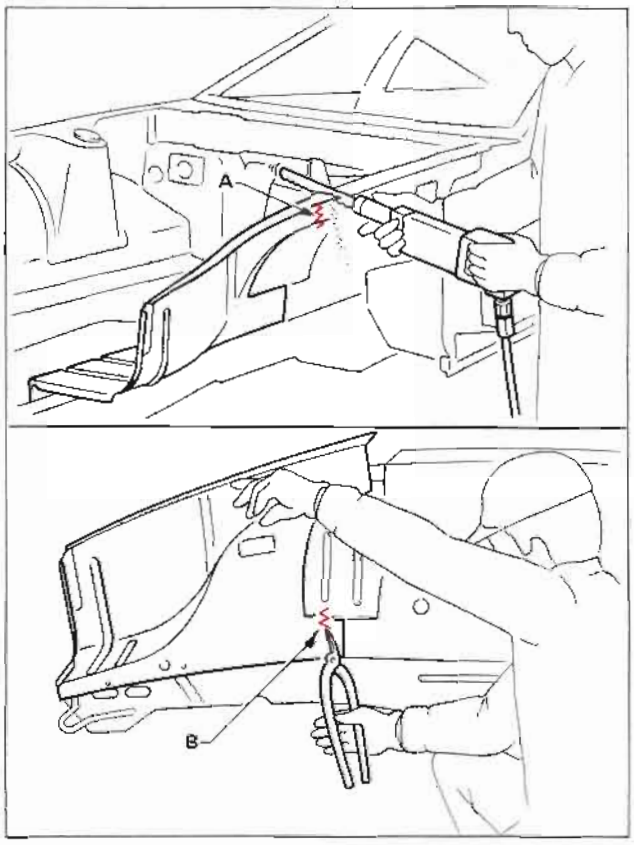


- When cutting portion (a), bend strut housing gusset for easy operation.



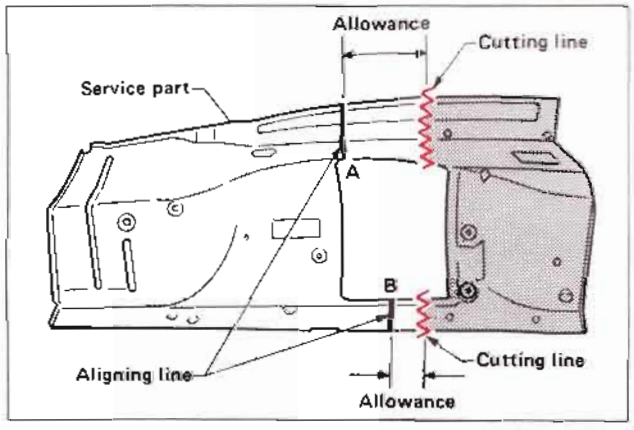
HOODLEDGE (Partial Replacement)

- Cut portions (A) and (B) with an air saw.

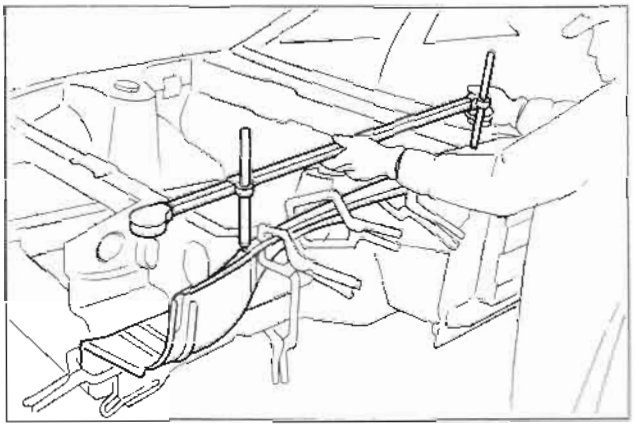


INSTALLING REMINDERS

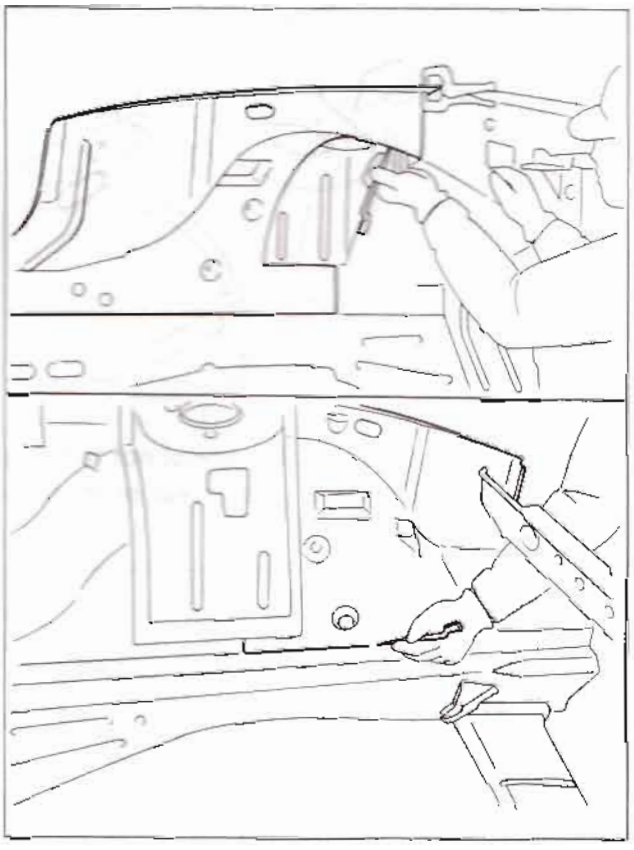
- Cut off service part with enough allowance so that it laps over cutting line of body.



- Temporarily install service part according to "BODY ALIGNMENT" drawing. At this time, install fender to see if it can be installed in place properly.

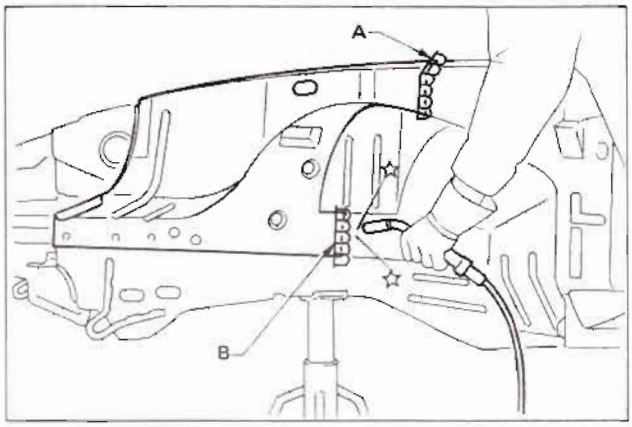


- Scribe service part along cutting line of body. Use scribed line as a standard for drilling mig plug weld holes.

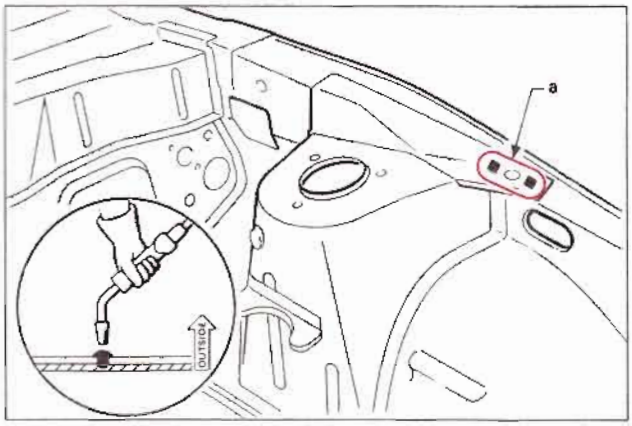


HOODLEDGE (Partial Replacement)

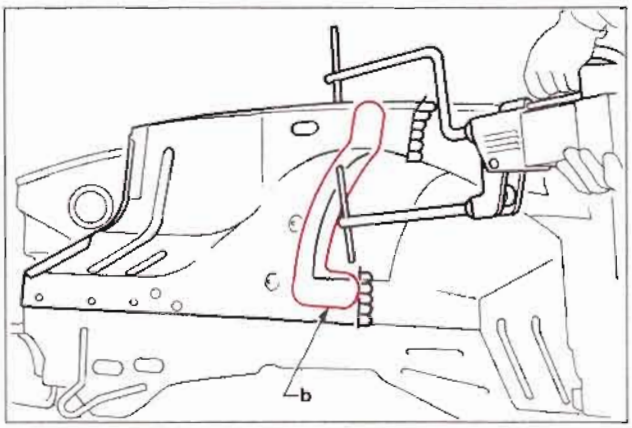
- Cut service part accurately along scribed line with an air saw.
- Mig weld portions (A) and (B) continuously and finish welded surfaces with a sander.



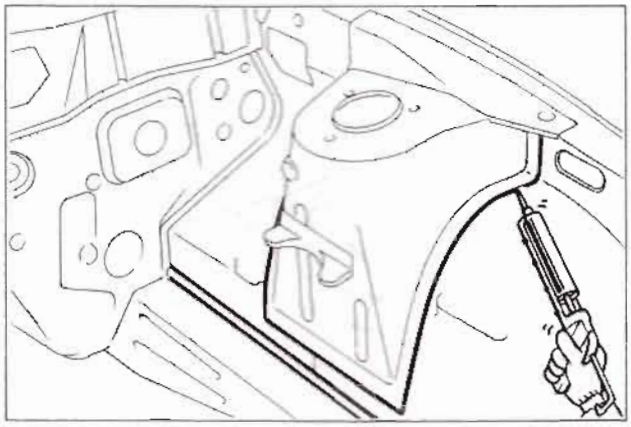
- Straighten strut housing gusset as before and mig plug weld portion (a).



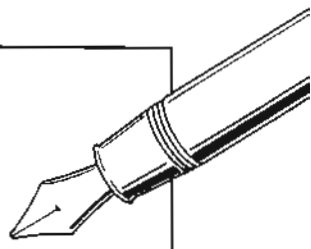
- Spot weld portion (b). Be careful not to bring gun arm into contact with areas other than parts to be welded.



- Apply sealer.

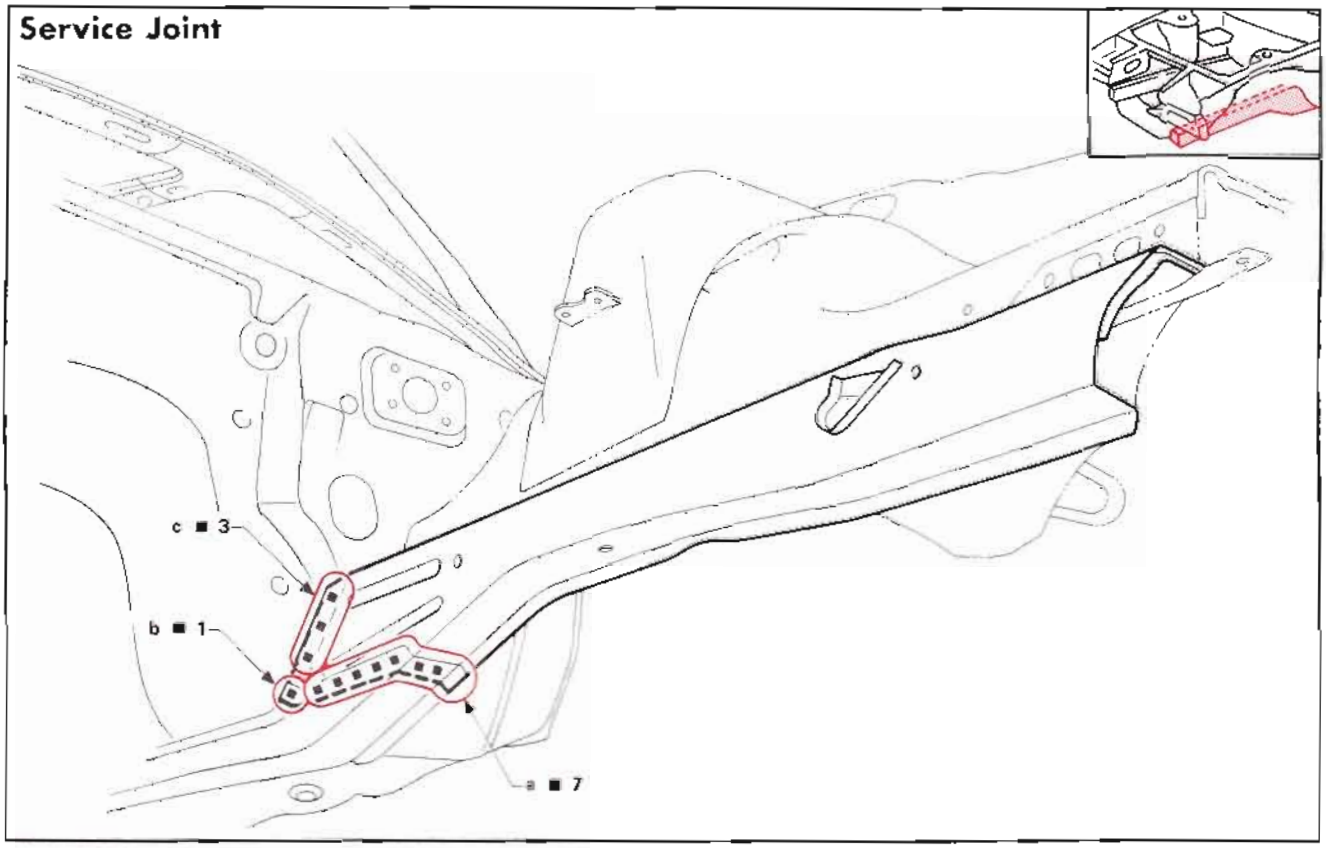


Note



FRONT SIDE MEMBER

(Work after hoodledge has been removed.)

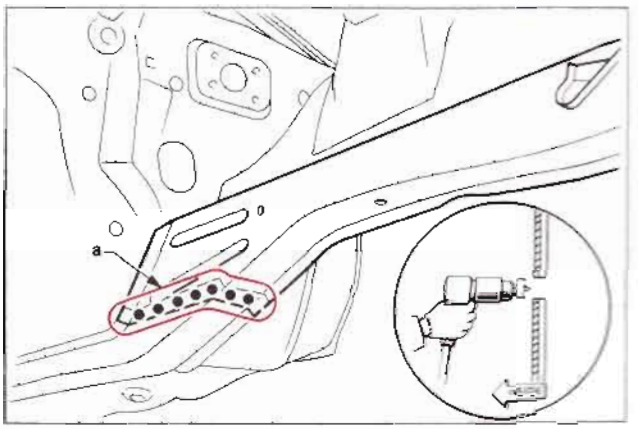


Portions to be welded		
a. Center side member	b. Lower dash panel & center side member	c. Lower dash panel

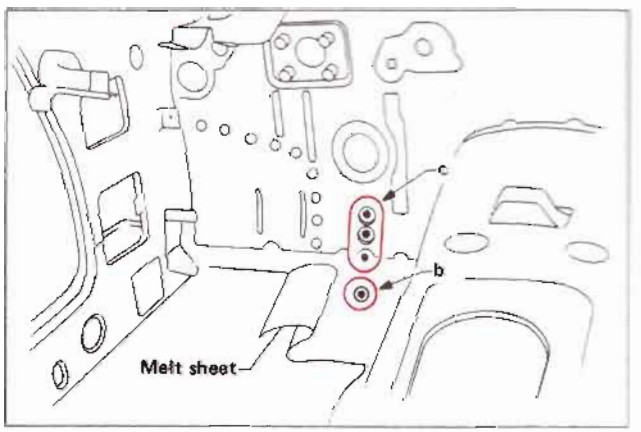
FRONT SIDE MEMBER

REMOVING REMINDERS

- Spot cut completely through 2-layered part at portion (a). When installing, use those holes as mig plug weld holes.

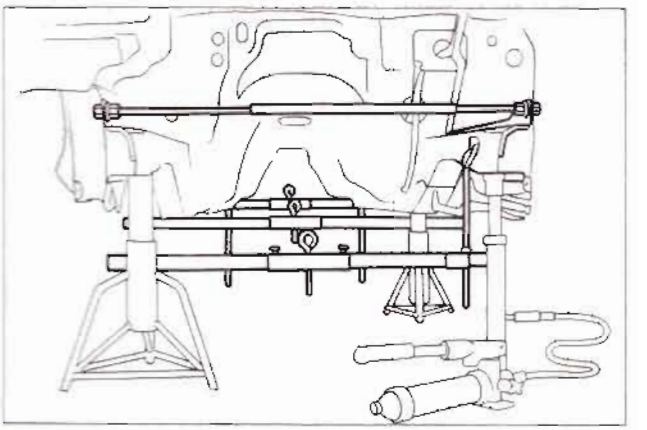


- Spot cut completely through portions (b) and (c) from inside of passenger compartment. Remove melt sheet from portion (b) before spot cutting.

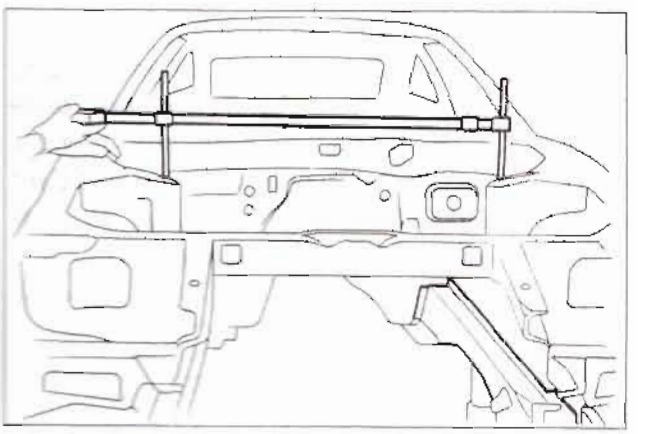


INSTALLING REMINDERS

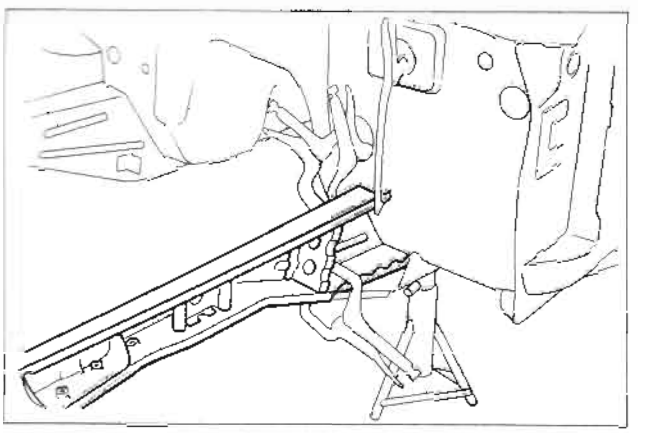
- Using a centering gauge, properly position service part of front side member according to "BODY ALIGNMENT" drawing. Then hold service part in place with vise clamps and port power.



- Install service parts such as hoodledge and front crossmember. Adjust various dimensions of relative part locations according to "BODY ALIGNMENT" drawing.

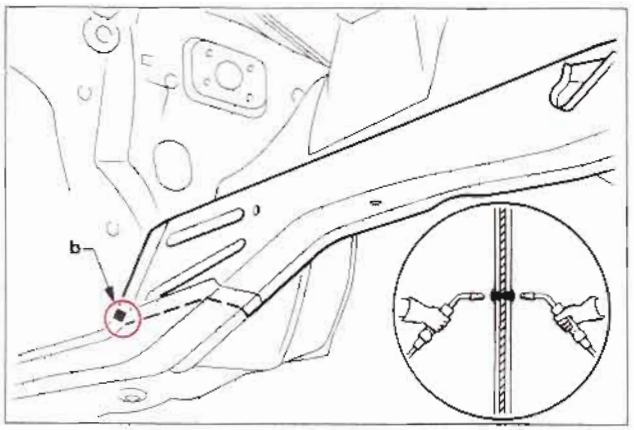


- To facilitate securing side member to lower dash panel, insert vise clamps from the opening in lower dash panel.



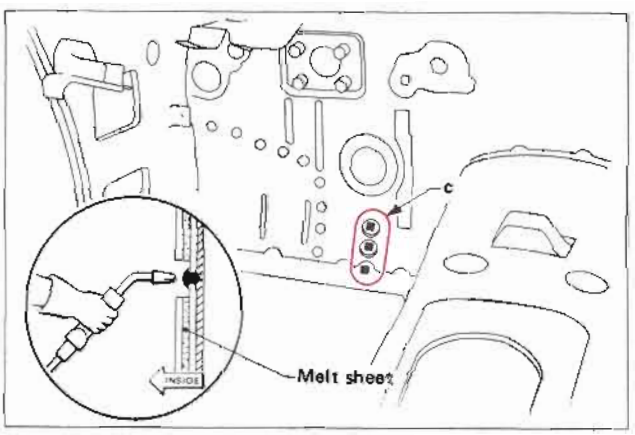
FRONT SIDE MEMBER

- Mig plug weld portion (b) from inside and outside of passenger compartment.

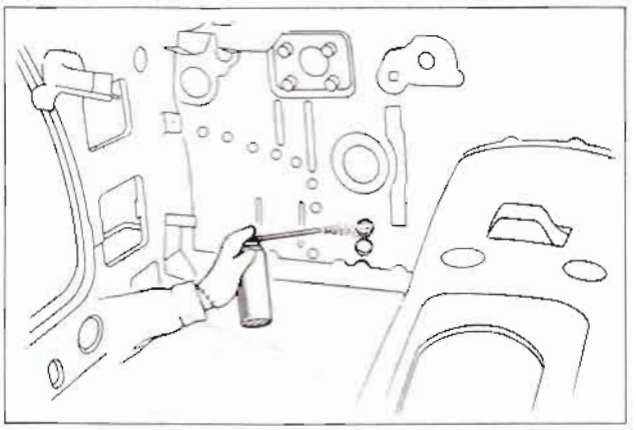


- Mig plug weld portion (c) from inside of passenger compartment.

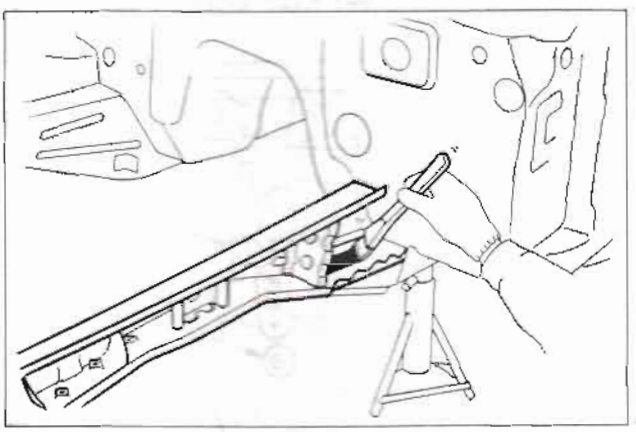
  Note: If one of two plates to be welded slides out of position during welding from outside, sandwich steel plate melt sheet will burn and produce gases. This will result in insufficient strength of the weld due to poor welding-in of deposit metal.



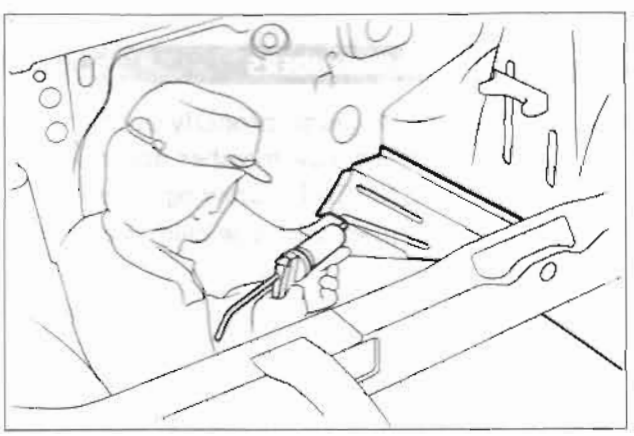
- Coat surfaces to be welded with an anti-corrosive agent.



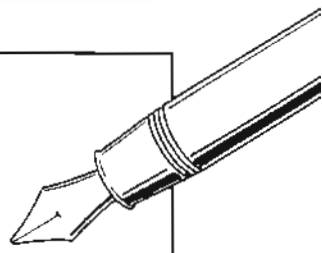
Note: Apply an anti-corrosive agent to inside of front side member. Applying an undercoating to the said part is recommended for more effective rust prevention.



- Apply sealer.

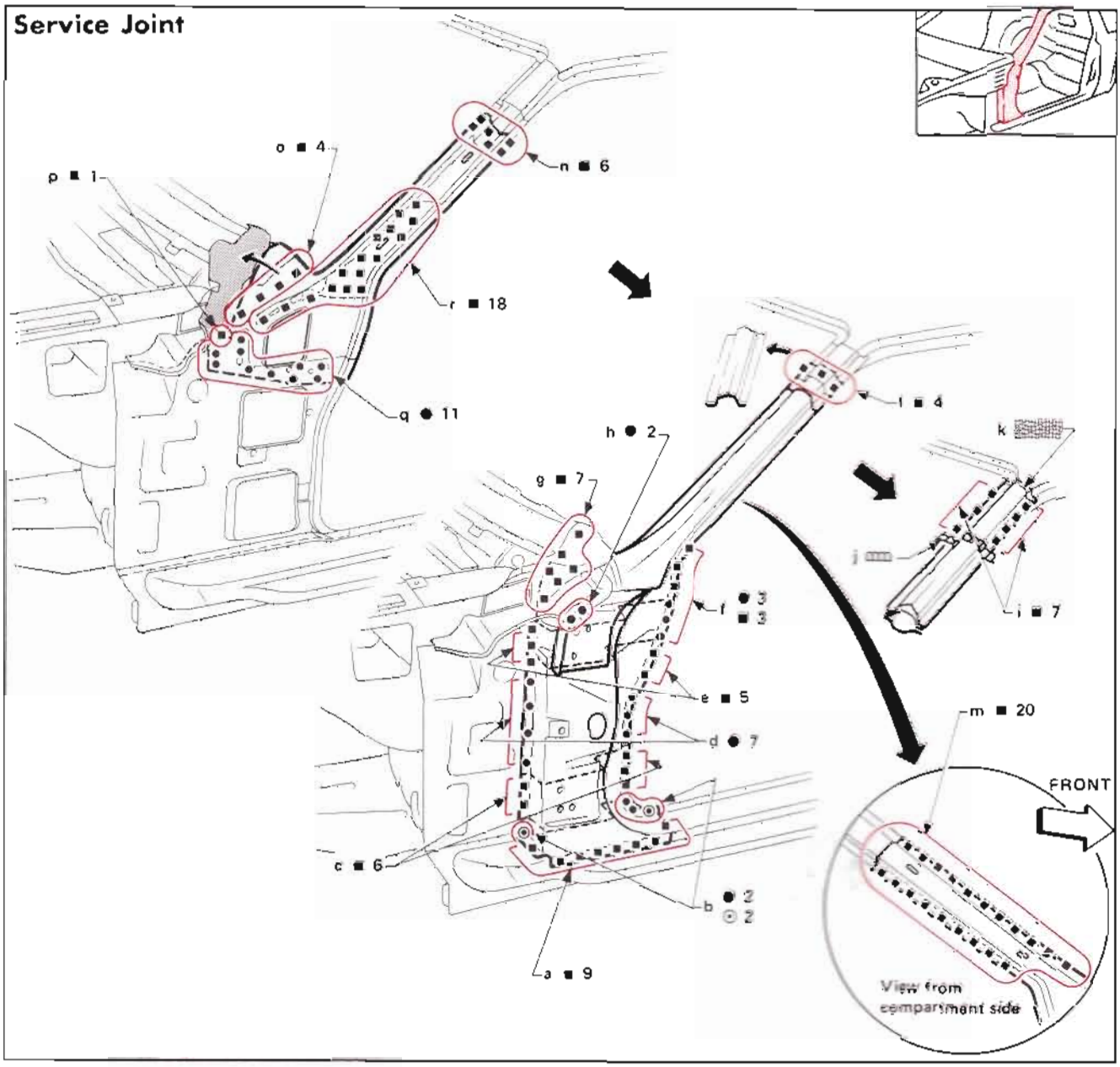


Note



FRONT PILLAR

(Work after hoodledge reinforcement has been removed.)



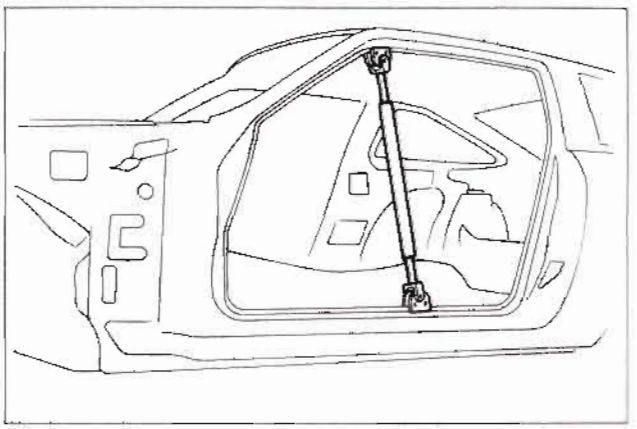
Portions to be welded

a. Outer sill
b. Side dash panel
Side dash panel & inner sill
c. Side dash panel & front pillar hinge
d. Side dash panel
e. Side dash panel & inner front pillar
f. Inner front pillar
Inner front pillar & Inner windshield pillar
g. Cowl top
Cowl top & outer front pillar
h. Cowl top
i. Outer windshield pillar
Outer pillar & inner windshield pillar
j. Main outer pillar
k. Roof
l. Outer windshield pillar
m. Inner windshield pillar
n. Inside upper panel
o. Inner windshield pillar
p. Cowl top & side dash panel
q. Side dash panel
r. Inner front pillar reinforcement

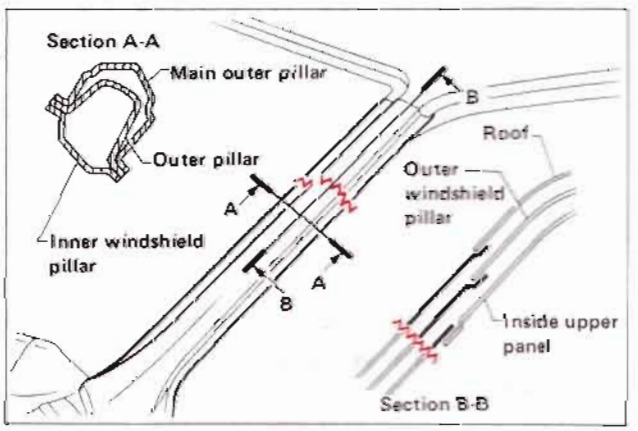
FRONT PILLAR

REMOVING REMINDERS

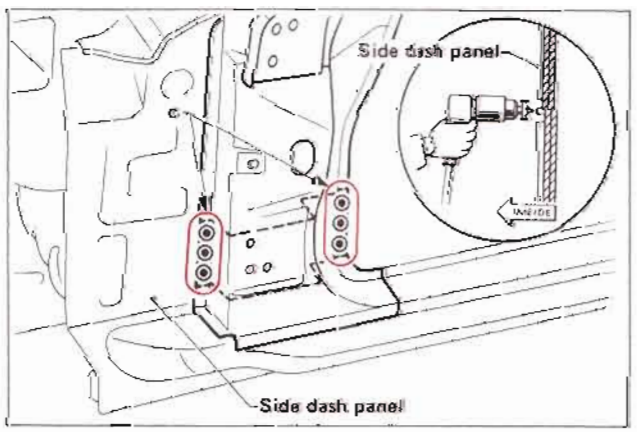
- Support roof to prevent deformation while cutting.



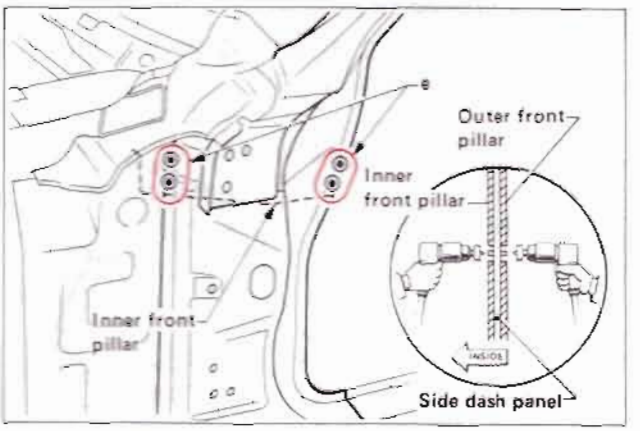
- Cut off front pillar at flanged end of inside upper panel.



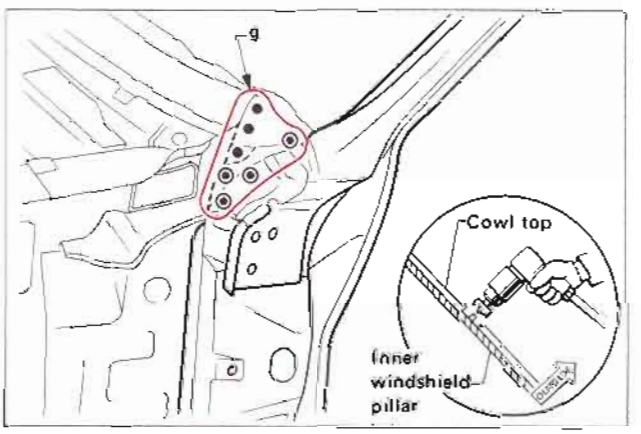
- Spot cut only one panel at portion (c) from inside.
  When installing, use these holes as mig plug weld holes.



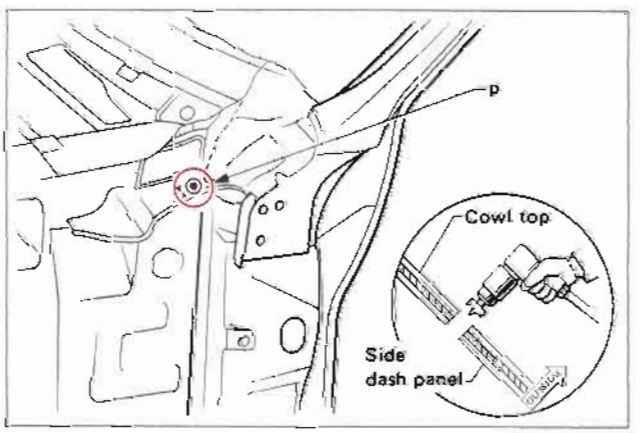
- Cut one panel on both sides at portion (e).



- Spot cut only one outer panel at portion (g). When installing, use these holes as mig plug weld holes.



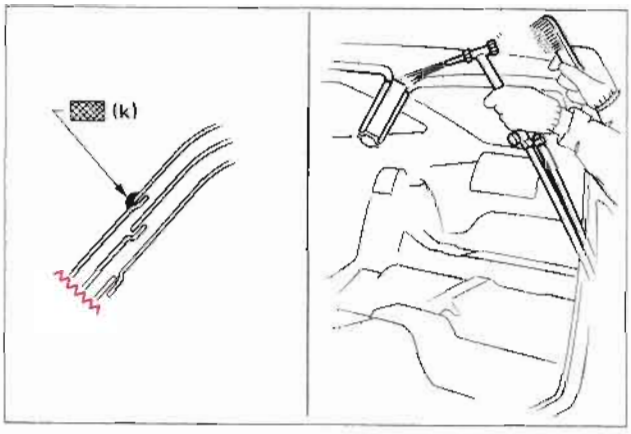
- Spot cut completely through portion (p).



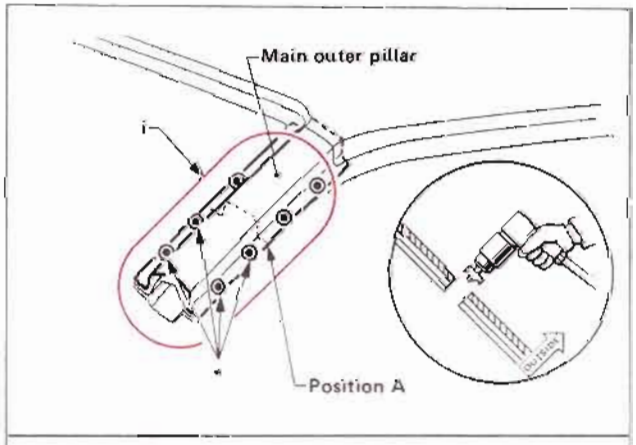
FRONT PILLAR

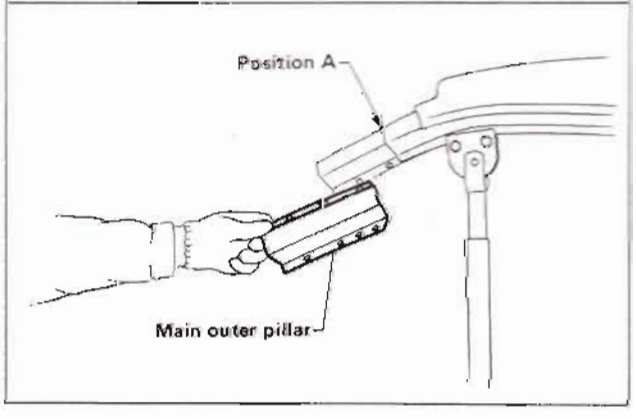
- Remove joint of front pillar and roof using the following steps:

1. Remove brazing at joining portion of roof and main outer pillar.

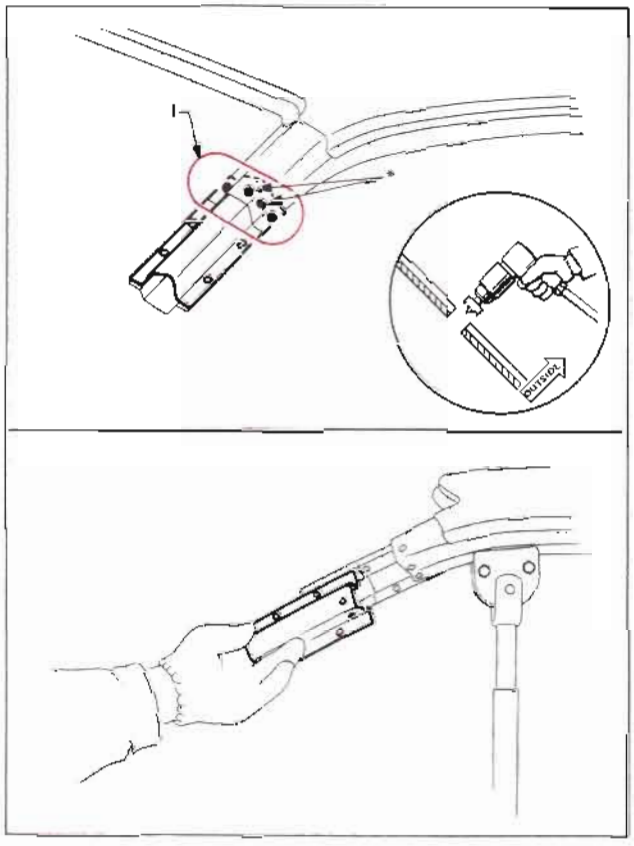


2. Spot cut completely through portion (i*); spot cut only one outer panel of others; and then remove main outer pillar.

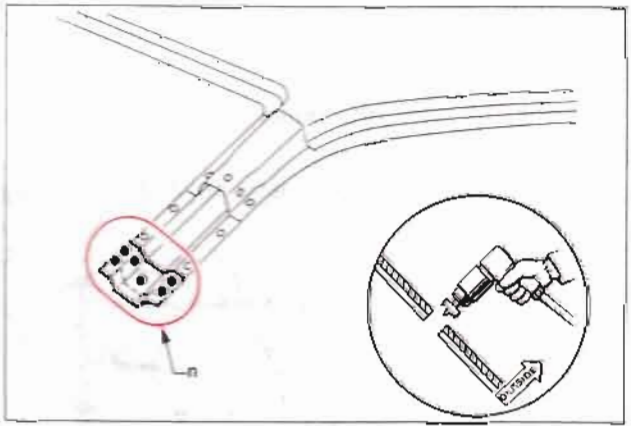




3. Spot cut completely through portion (l*); spot cut only one outer panel of others; and then remove intermediate outer pillar.



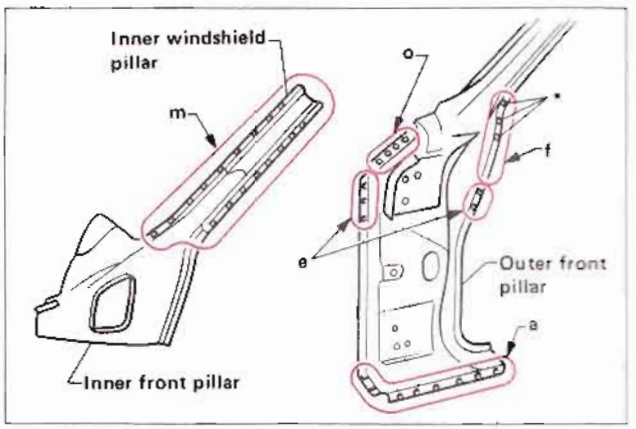
4. Spot cut completely through portion (n) to remove inner windshield pillar.



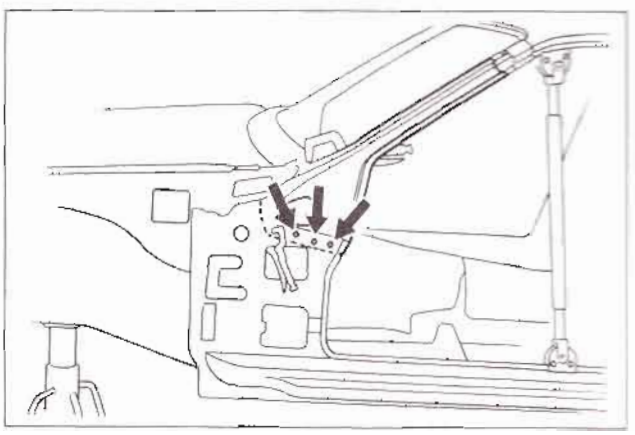
FRONT PILLAR

INSTALLING REMINDERS

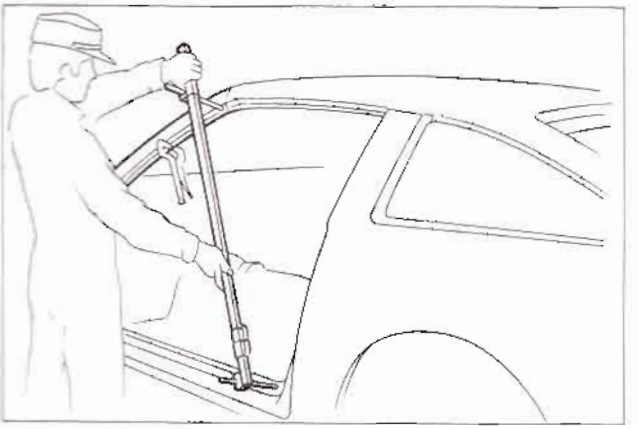
- Drill plug weld holes on service parts of outer front pillar at portions (a), (e), (f*) and (o) and service parts of inner windshield pillar at portion (m).



- When installing, align inner front pillar with inner windshield pillar at reference holes. Install service part in accordance with dimension drawing.

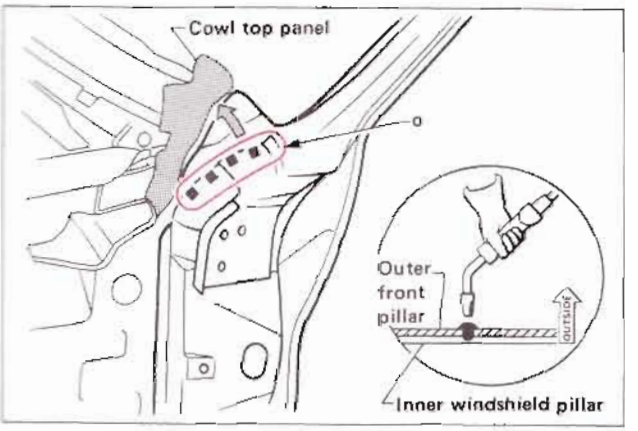


- Install door, fender, etc. and check for proper alignment.



- Slightly bend overlapping portion of cowl top panel to gain access to portion (o) to be plug welded. Dress welding surfaces with a sander. After welding, straighten bent portion.

  Note: Always plug weld portion (o), then portion (g).

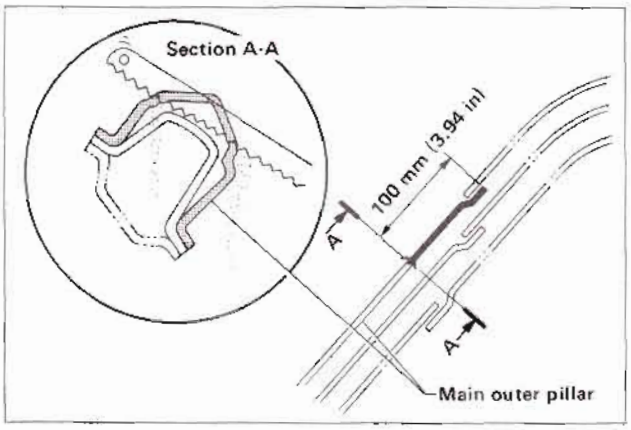


FRONT PILLAR

- Weld joint of front pillar and roof using the following steps:

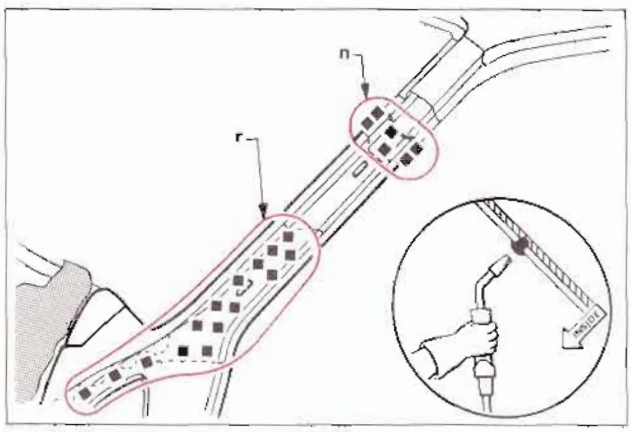
1. Cut service parts of main outer pillar panel at approx. 100 mm (3.94 in) from its upper end.

   Note: If inner panel is accidentally cut, repair it by mig welding.

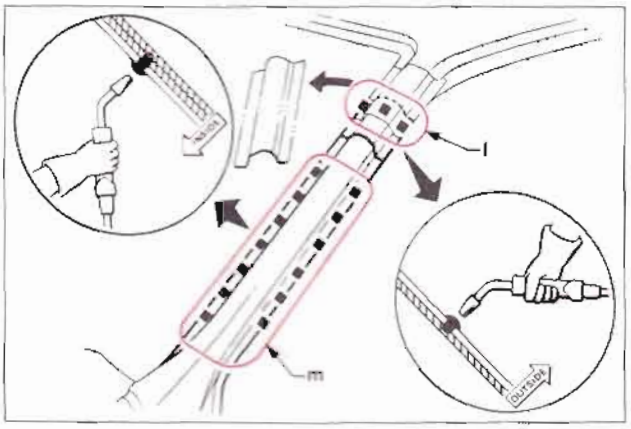


2. Before installing outer front pillar, install inner windshield pillar and mig plug weld at portions (n) and (r) from inside of passenger compartment side.

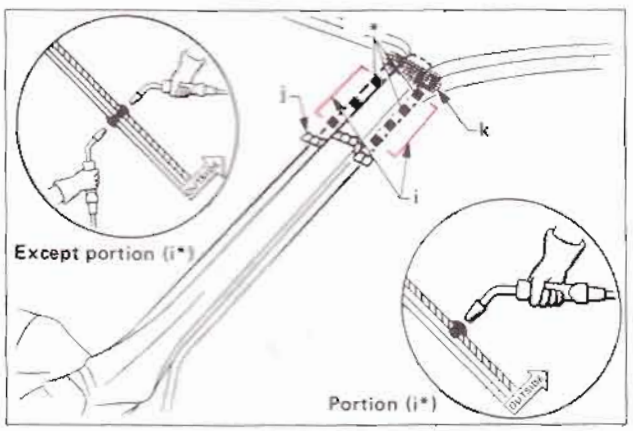
   Apply anti-corrosive agent to welded portions.



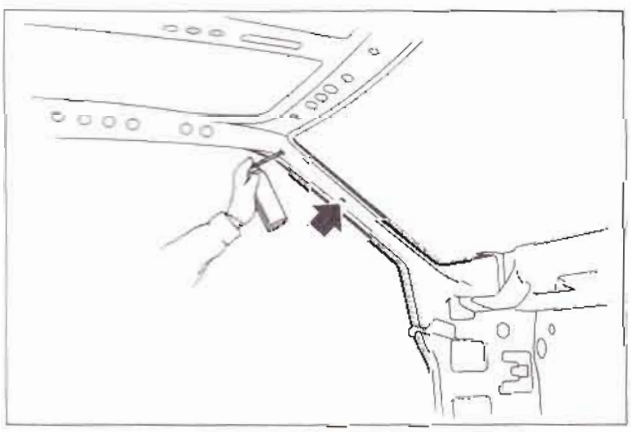
3. Install outer front pillar and mig plug weld at portions (m) and (l).



- Install cut-off part of main outer pillar. Weld by mig plug welding at portion (i) and mig seam welding at portion (j). Soldering should be done at portion (k).

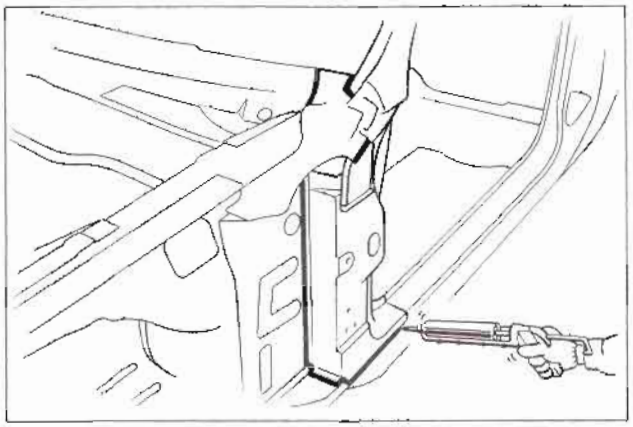


- Sufficiently apply anti-corrosive agent to inside of front pillar.

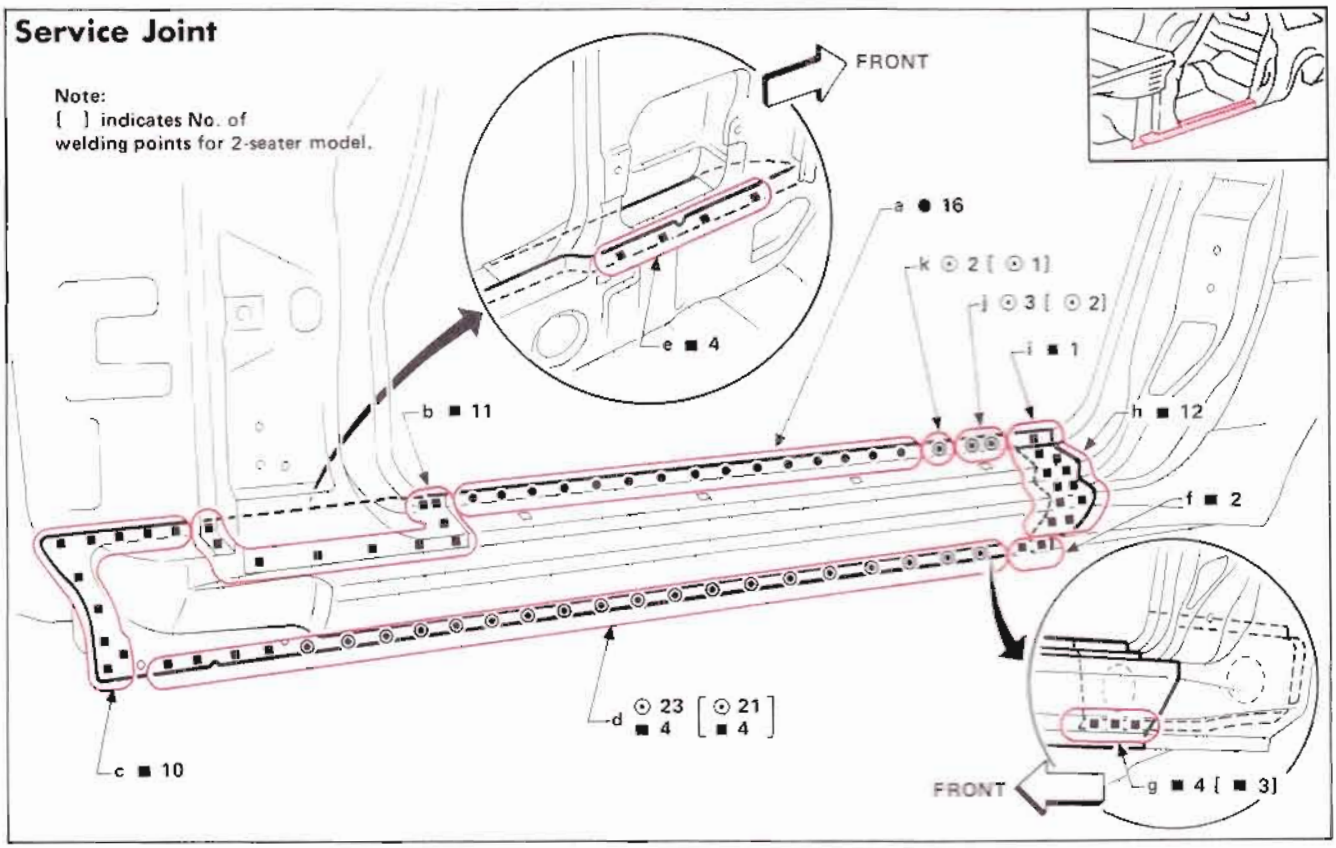


FRONT PILLAR

- Apply sealer.



OUTER SILL



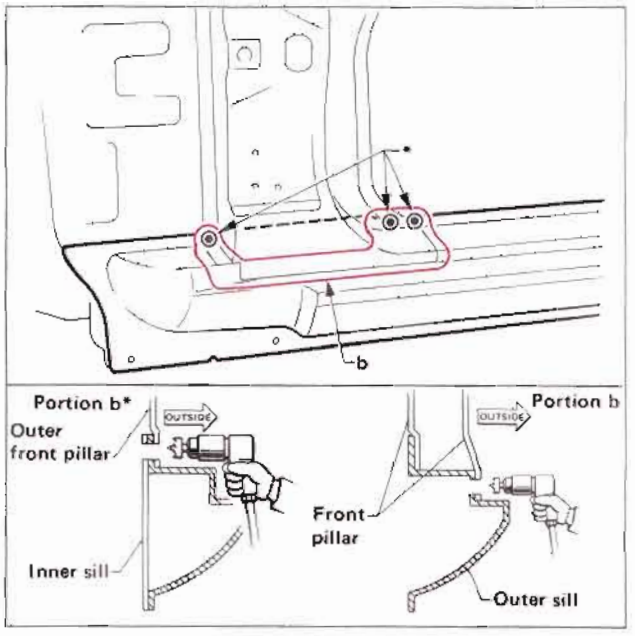
Portions to be welded

a. Inner sill
b. Front pillar outer panel
Front pillar outer panel & inner sill
c. Inner sill
Inner sill & side dash panel
d. Inner sill
Inner sill & front floor
e. Inner sill & side dash panel
f. Rear fender & inner sill
g. Rear fender & outer sill reinforcement
Outer sill reinforcement
h. Rear fender
i. Rear fender & outer sill reinforcement
j. Inner sill & outer sill reinforcement
k. Inner sill & outer sill reinforcement

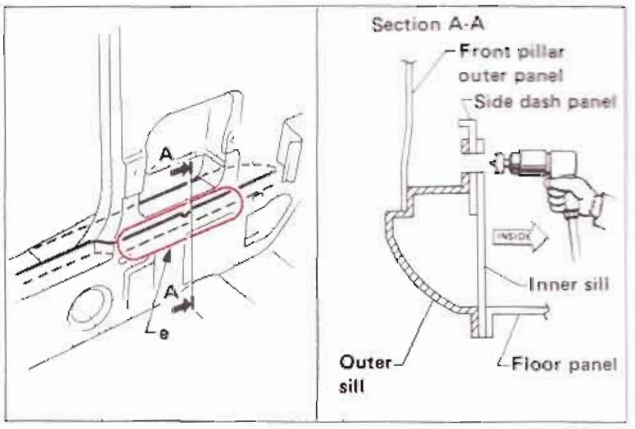
OUTER SILL

REMOVING REMINDERS

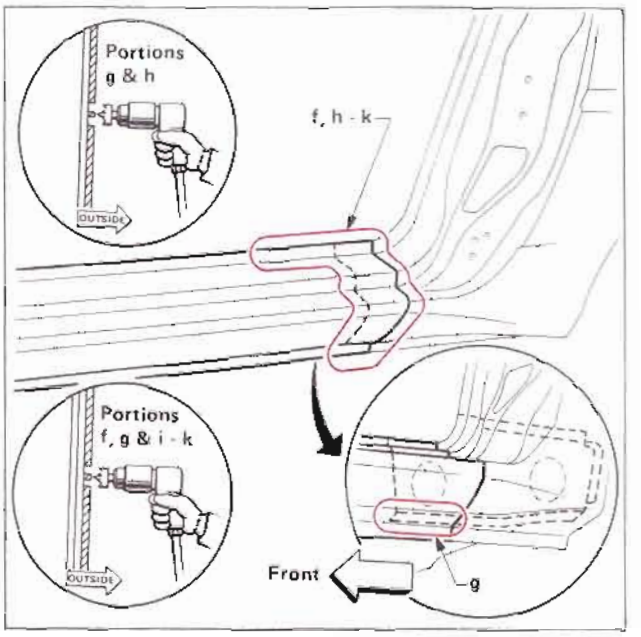
- Spot cut completely through 2-layered and 3-layered (*) welds at portion (b). When installing, use those holes as mig plug weld holes.



- Spot cut completely through portion (e).



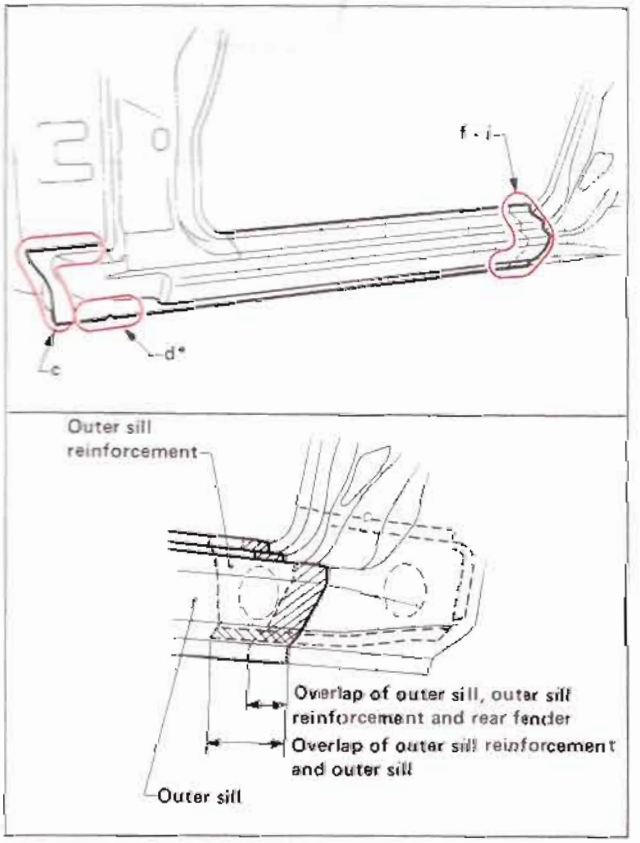
- Spot cut only one panel at portions (f), (g), (h), (i), (j) and (k).



INSTALLING REMINDERS

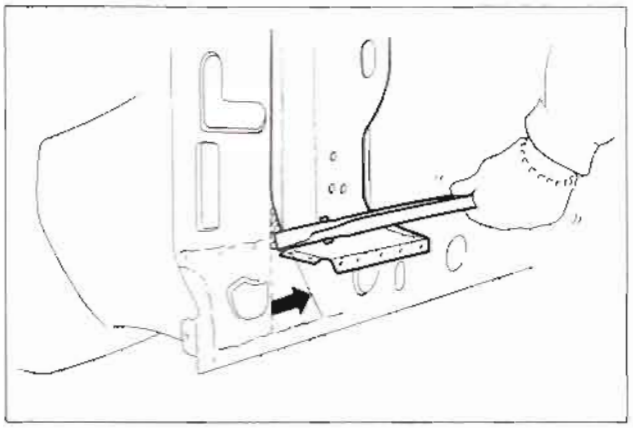
- Drill mig plug weld holes at portions (c), (d*), (f), (g), (h) and (i) of service part.

  Note: Prior to drilling, make sure that there is an adequate lap allowance for lapping mating panel.

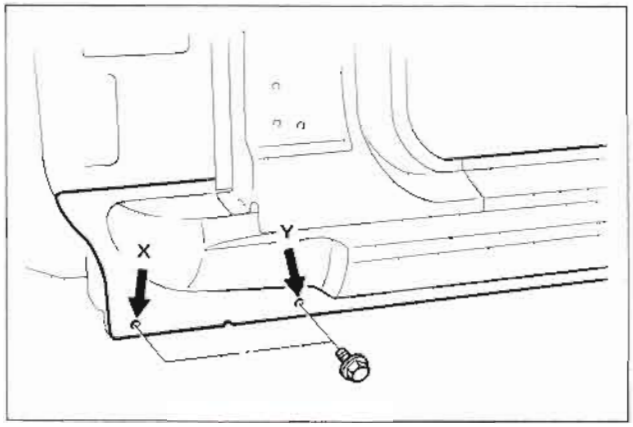


OUTER SILL

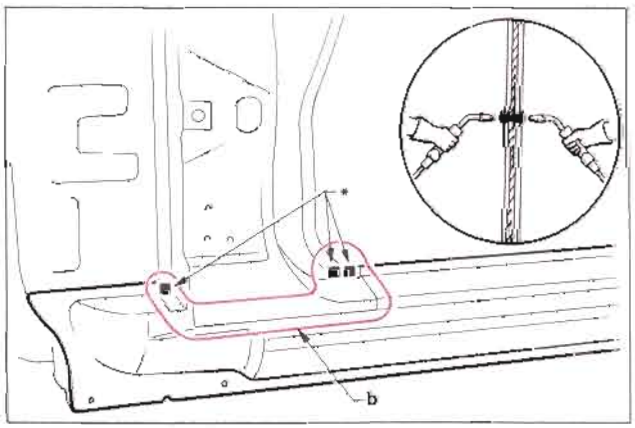
- When installing service part, bend front pillar slightly outward and insert service part in place.



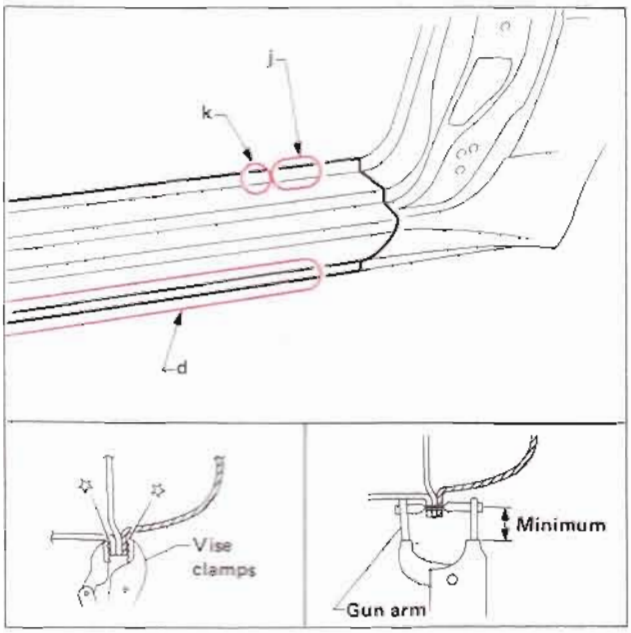
- Tighten bolts into fender attaching holes (X, Y) to decide position of service part.



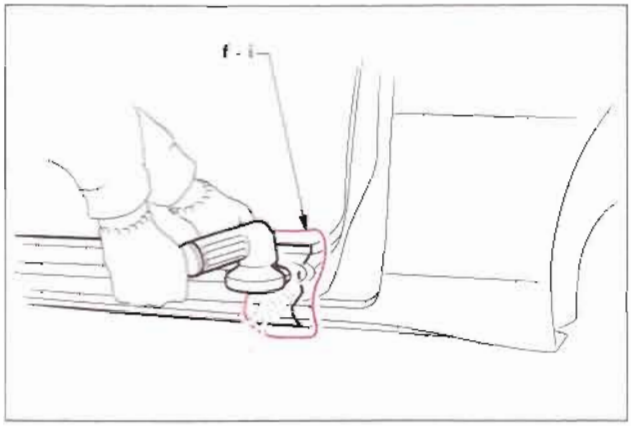
- Mig plug weld 3-layered part at portion (b*) from both sides.



- When spot welding 3-layered parts at portions (d), (J) and (k), be sure to bring panels into close contact so that no gap exists between them. Also, adjust the gun arm of welder as short as possible to obtain the maximum pressure.

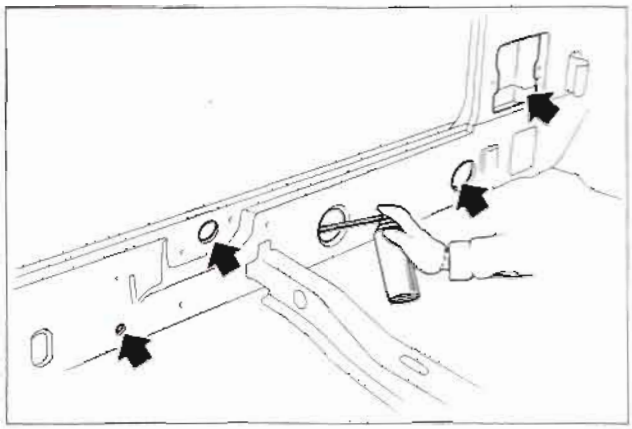


- Dress mig plug welded parts at portions (f), (g), (h) and (i) with a sander.



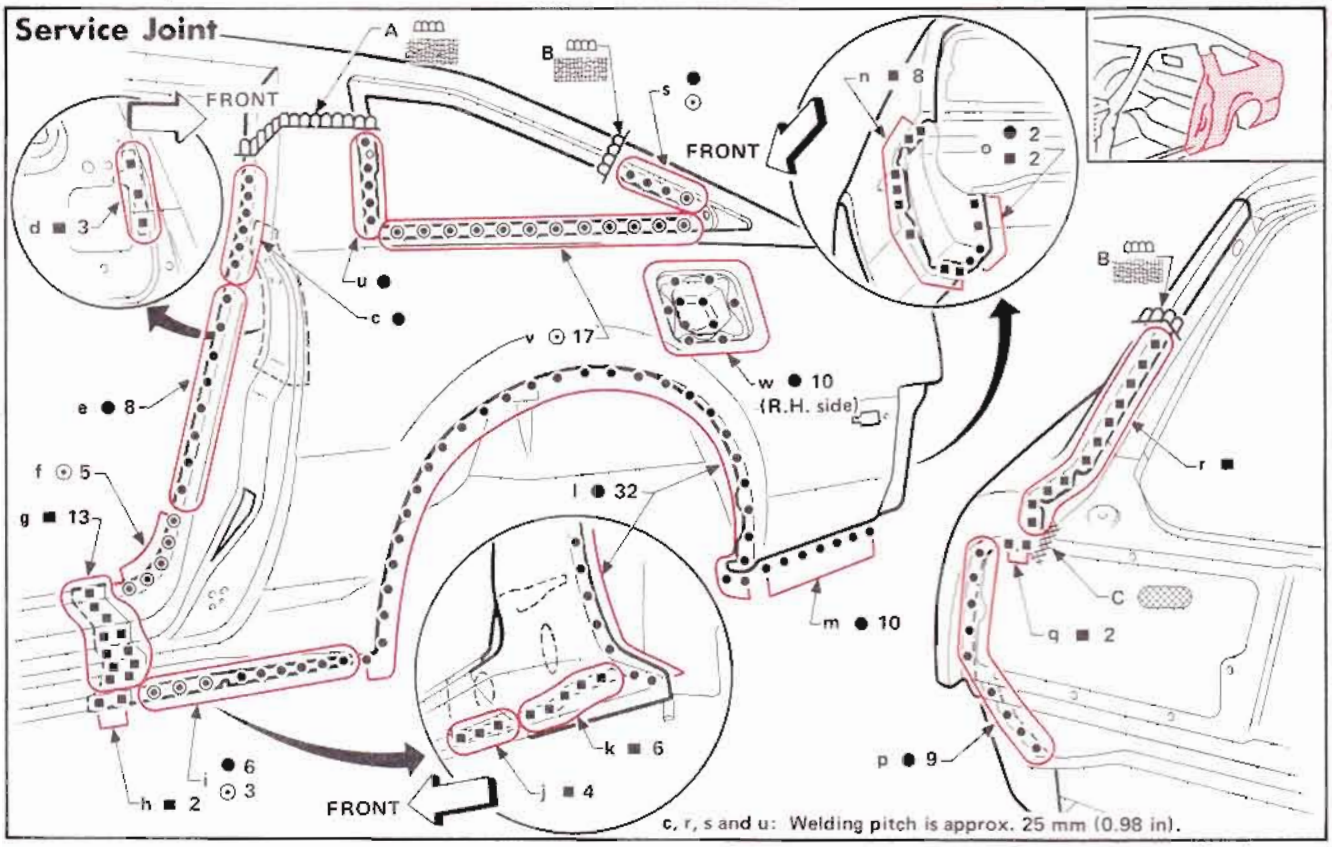
OUTER SILL

- Apply anti-corrosive agent to inside of outer sill.

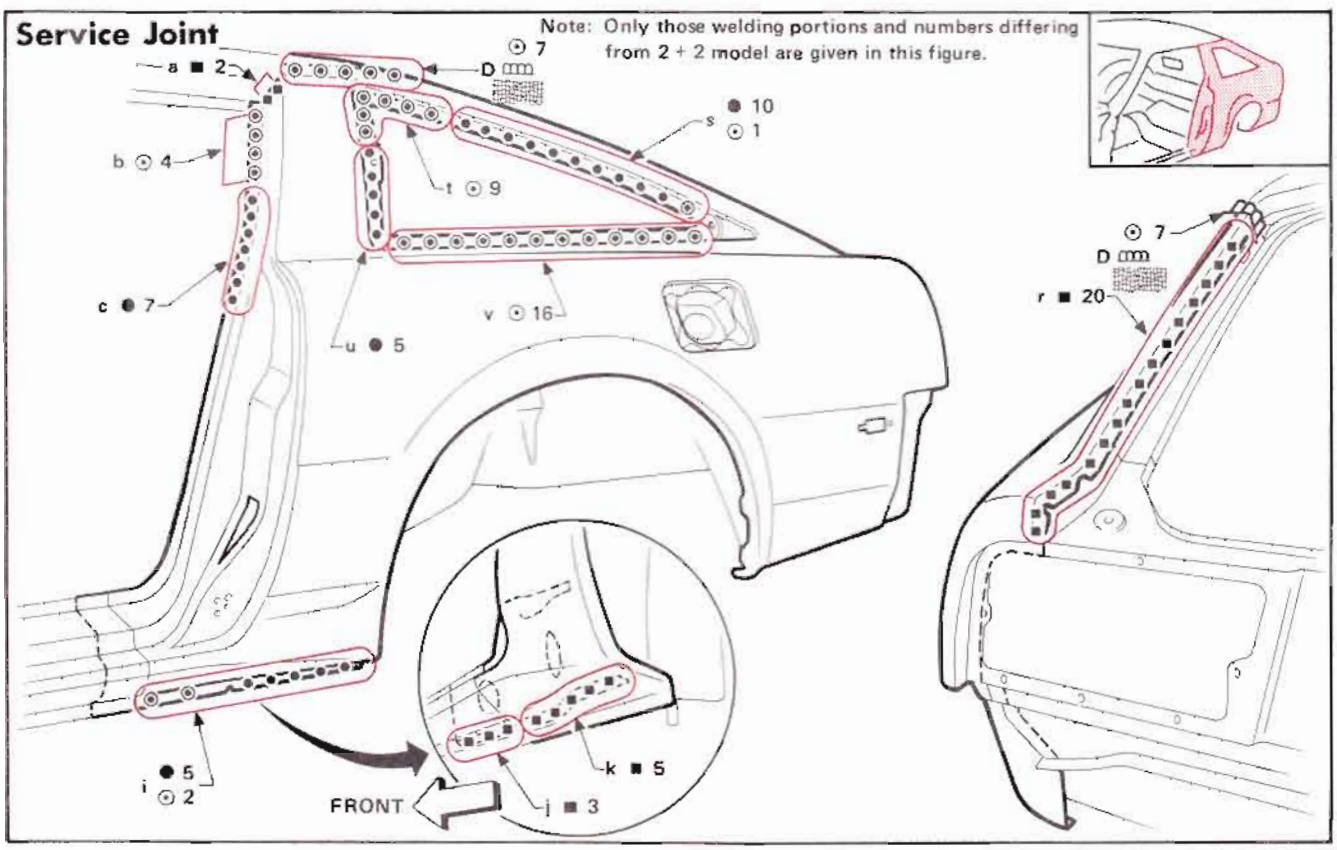


REAR FENDER

(2 + 2 model)



(2 seater model)

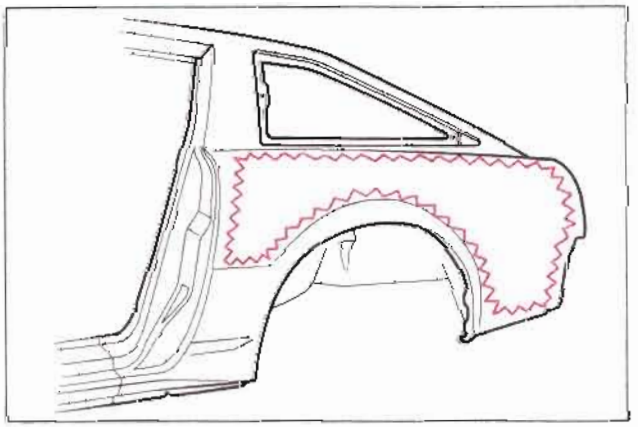


REAR FENDER

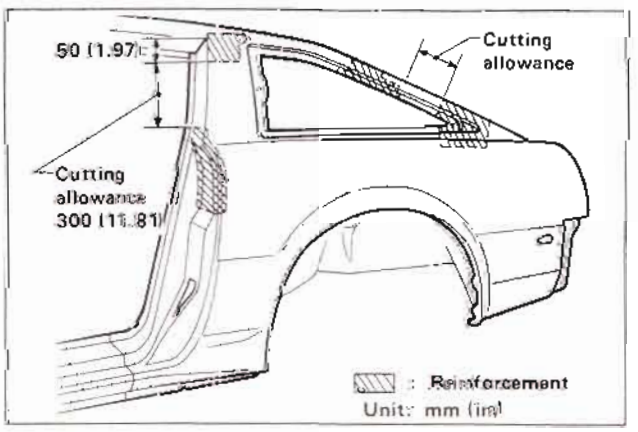
Portions to be welded					
a.	Rear fender connector (2-seater model only)	j.	Outer sill & outer sill reinforcement	r.	Rear fender extension
b.	Side panel & inside waist panel (2-seater model only)	k.	Outer sill reinforcement	s.	Side panel & rear fender extension Side panel
c.	Side panel	l.	Outer rear wheelhouse	t.	Side panel & outer side roof rail (2-seater model only)
d.	Side panel	m.	Rear side panel	u.	Side panel
e.	Side panel	n.	Rear fender end & rear side panel	v.	Side panel
f.	Inner sill & outer sill reinforcement		Rear fender end	w.	Outer rear wheelhouse Filler lid base
g.	Outer sill & inner sill Outer sill reinforcement	o.	Lower rear panel & rear side panel	A.	Rear fender
h.	Outer sill & inner sill		Rear side panel	B.	Rear fender
i.	Inner sill & front floor Front floor	p.	Upper rear panel	C.	Upper rear panel
		q.	Upper rear panel & side panel	D.	Roof panel (2-seater model only)

REMOVING REMINDERS

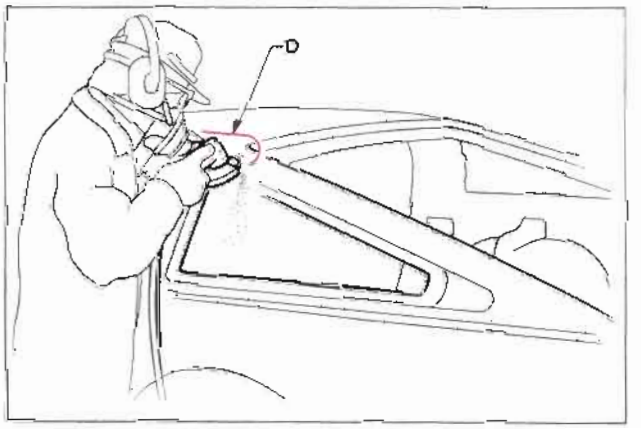
- Cut off damaged portion so that spot welds can be easily cut later.



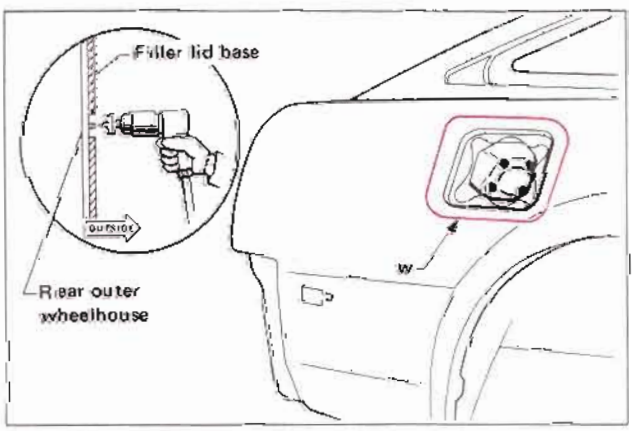
- On 2 + 2 model, cut off pillar. Avoid cutting pillar reinforcement.



- On 2 seater model, remove brazing from roof in order to replace rear fender assembly.

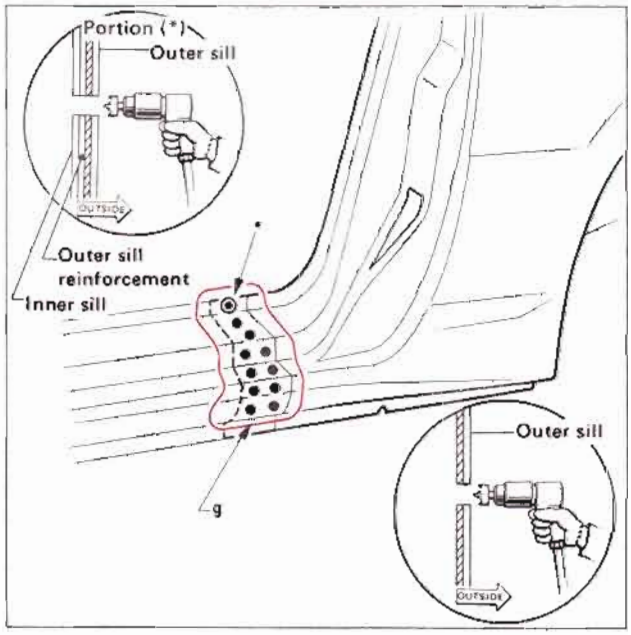


- Spot cut welds joining filler lid base and rear outer wheelhouse.

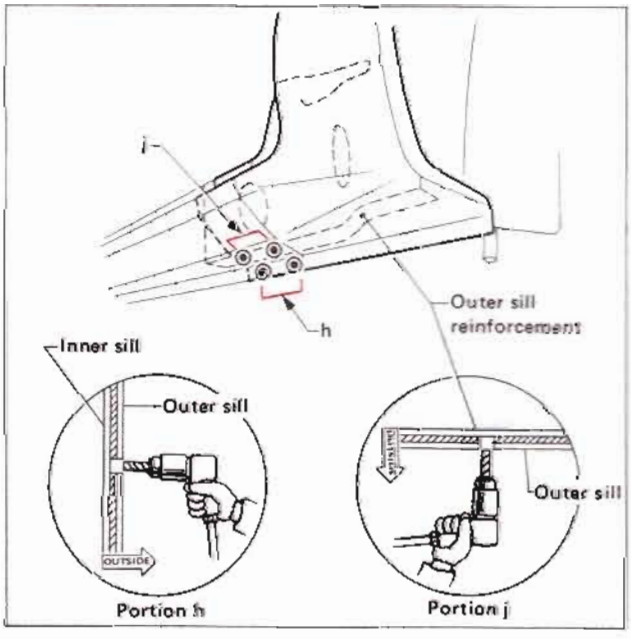


REAR FENDER

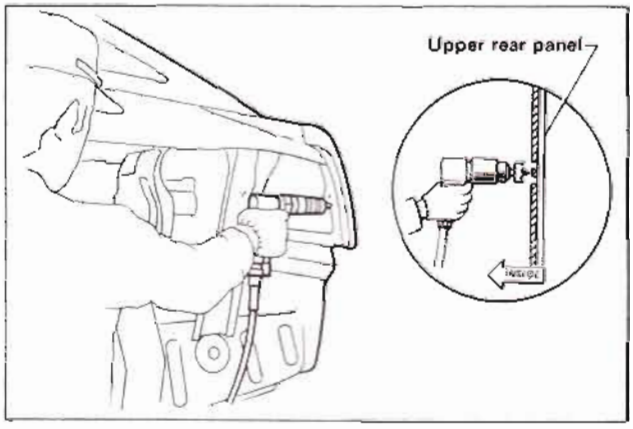
- Spot cut completely through portion (g). When installing, use these holes as mig plug weld holes.



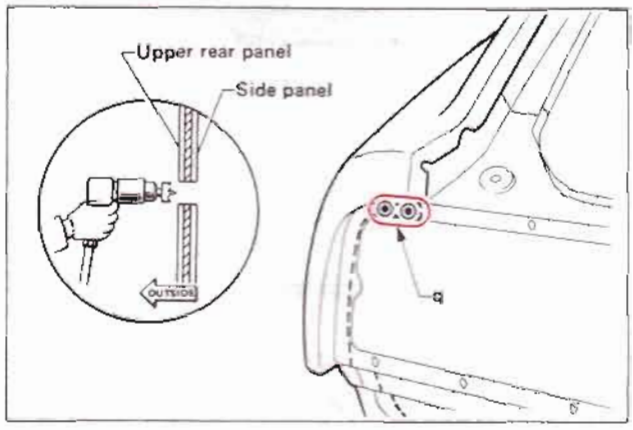
- Cut welds on outer two panels of 3-layered part at portions (h) and (j) using a drill with flat tip.
  When installing, use these holes as mig plug weld holes.



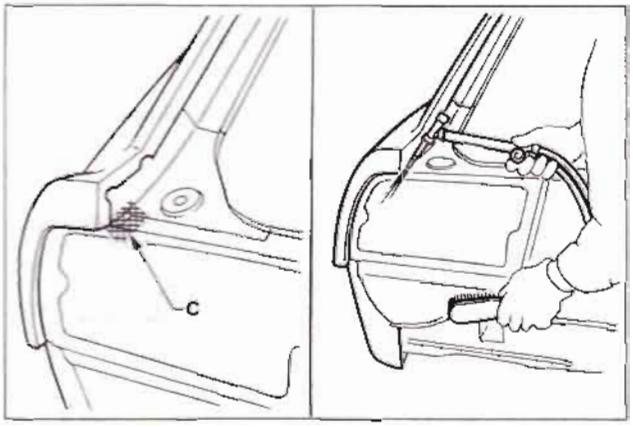
- Spot cut welds at portion (p) from inside.



- Spot cut completely through 3-layered part at portion (q). When installing, mig plug weld from both sides.

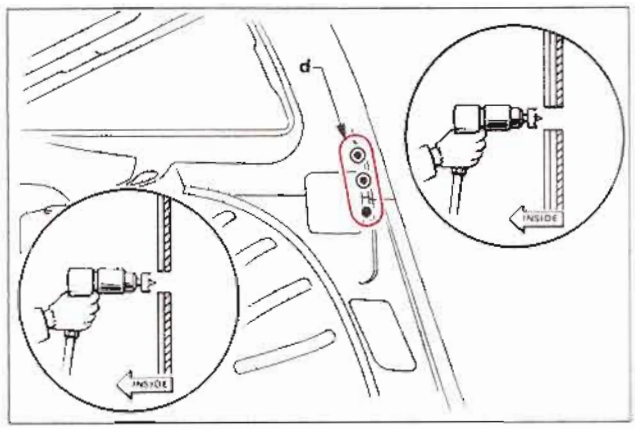


- Remove brazing from portion (C).



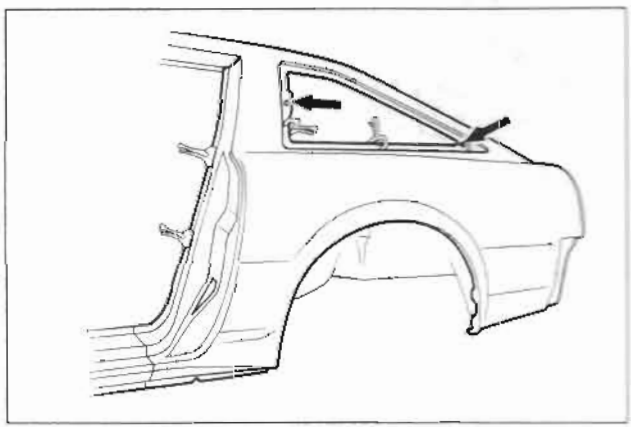
REAR FENDER

- Spot cut completely through 2- and 3-layered parts at portion (d). When installing, use these holes as mig plug weld holes.

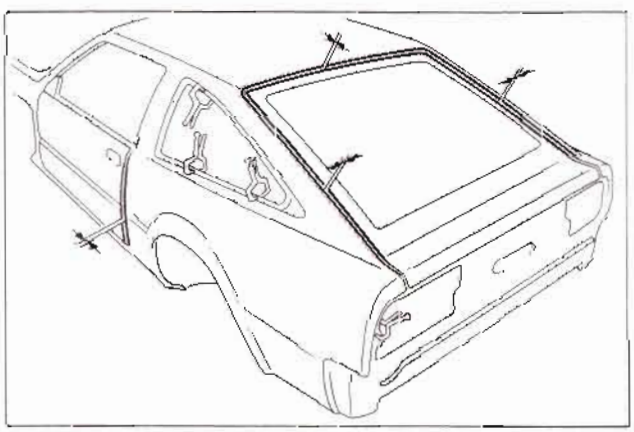


INSTALLING REMINDERS

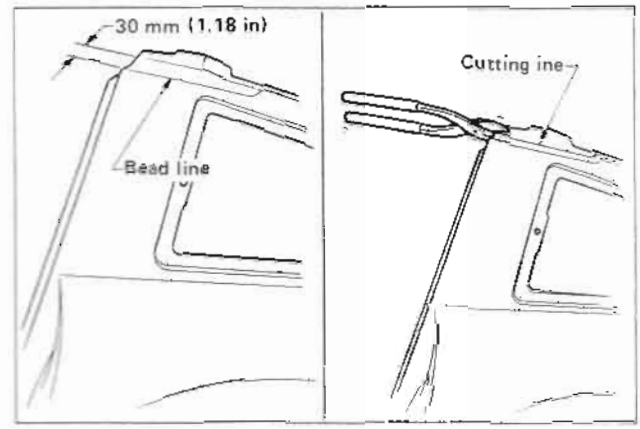
- Align service part at reference holes.



- Install front and back doors. Check clearances, grades and parallelism.

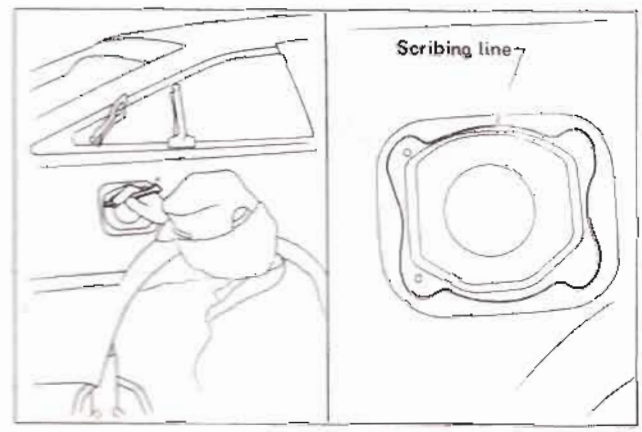


- On 2 seater model, cut service part at 30 mm (1.18 in) above bead line of rear fender.

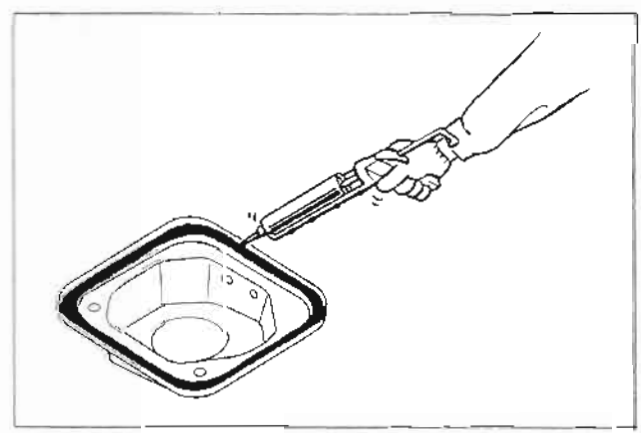


- Install fuel filler lid base using the following steps:

1. Temporarily install rear fender and fuel filler lid base, and scribe a line for proper positioning of parts.

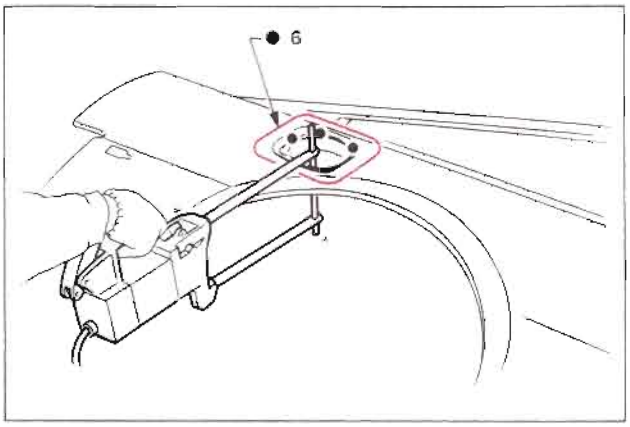


2. Remove service part and apply sealer.

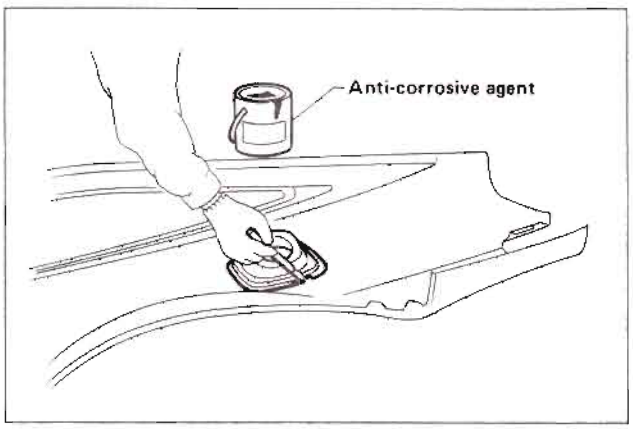


REAR FENDER

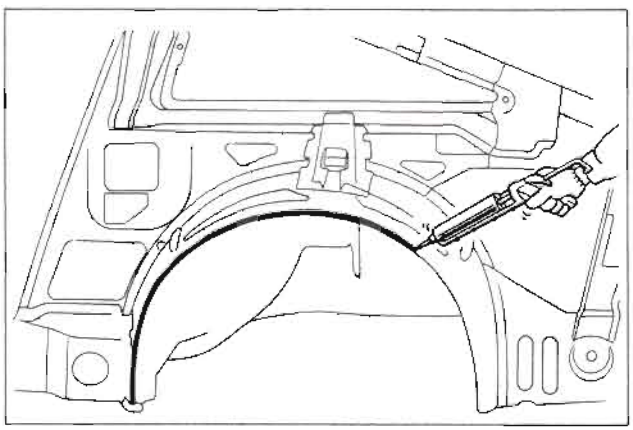
3. Align rear fender with fuel filler lid base at scribed line, and spot weld.



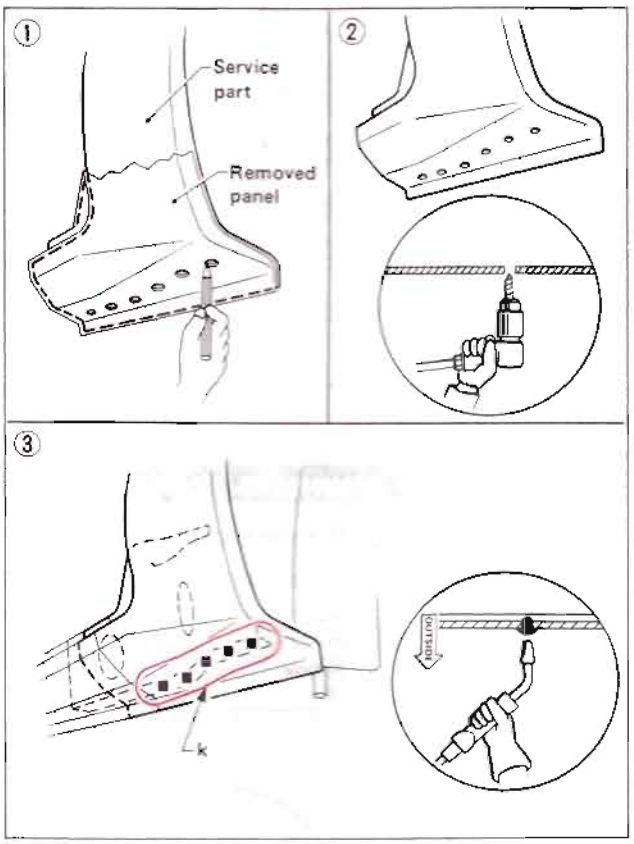
4. Apply anti-corrosive agent to welded portion.



- Apply sealer to wheel arch.

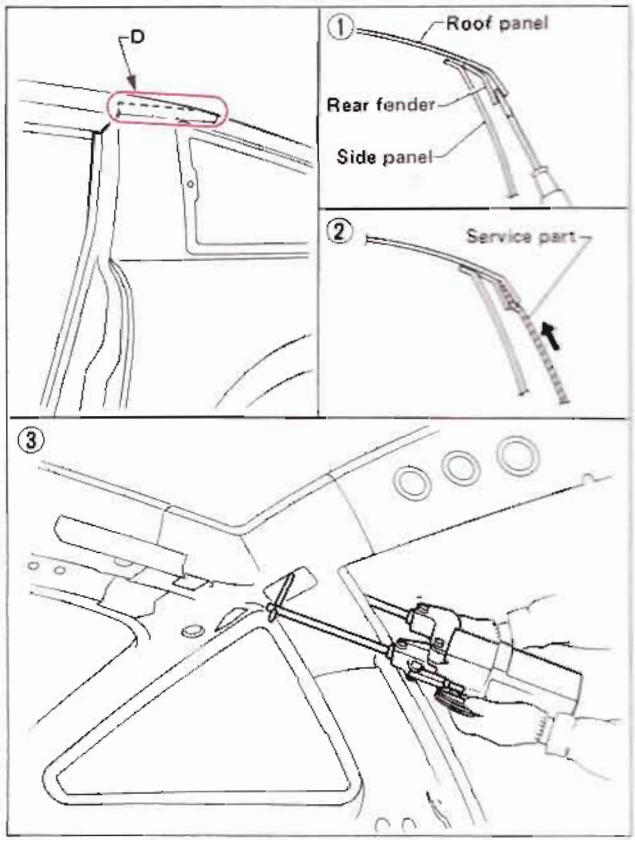


- Place removed panel on service part, and mark mig plug weld holes on the latter at portion (k) in relation to spot cut holes on the former. Drill holes and mig plug weld.

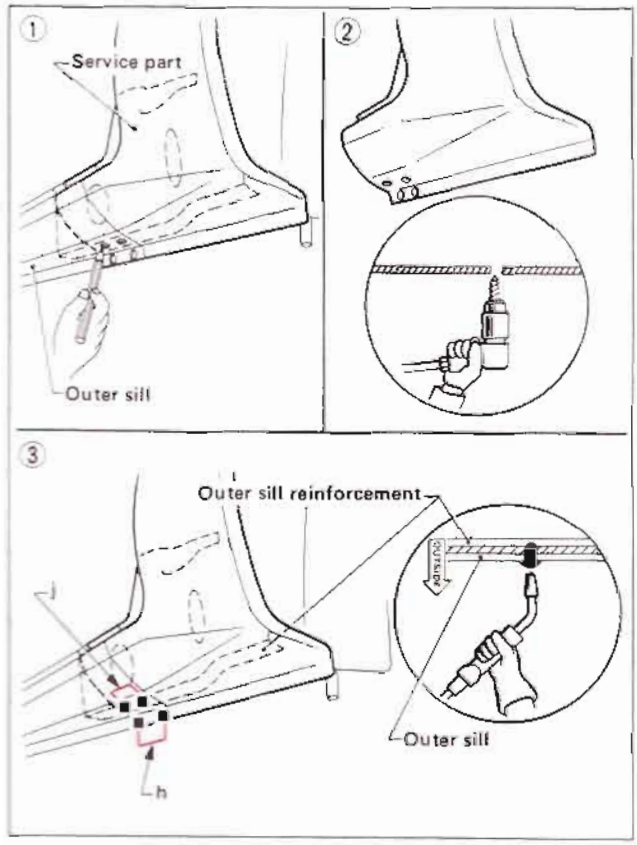


REAR FENDER

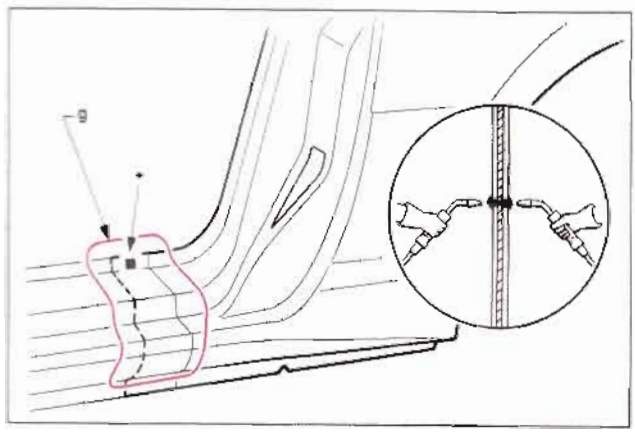
- Insert service part between roof and rear fender at portion (D), and spot weld. Welding portions are accessible from side panel opening.



- Temporarily install service part and mark mig plug weld holes in relation to cut holes on outer sill. Drill holes and mig plug weld 3-layered part at portions (h) and (j).

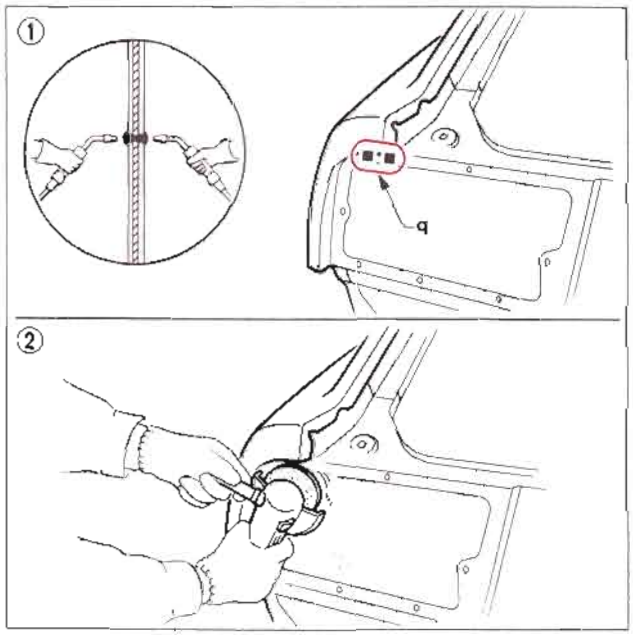


- Mig plug weld on both sides of 3-layered part at portion (g*).

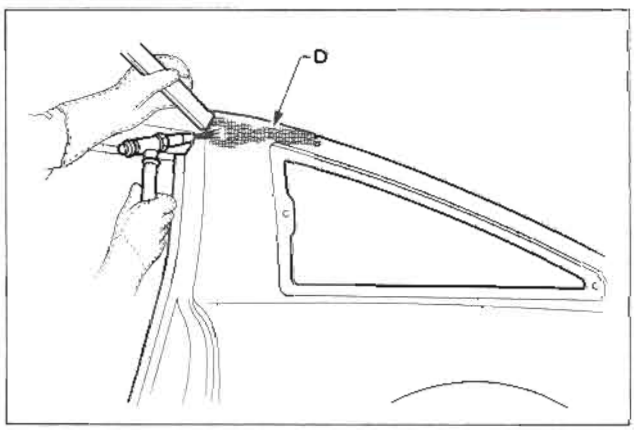


REAR FENDER

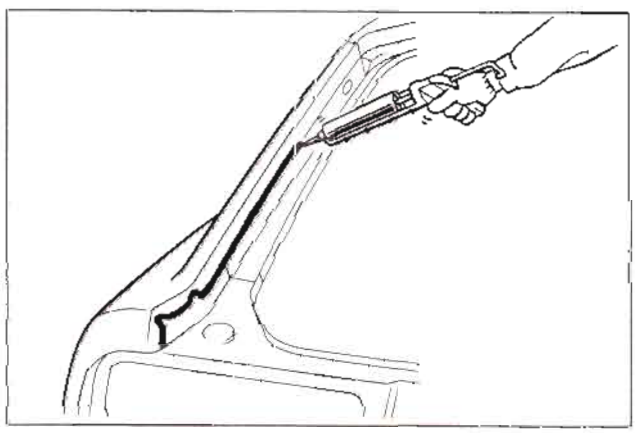
- Mig plug weld both sides at portion (q). After welding, dress welds with a sander.



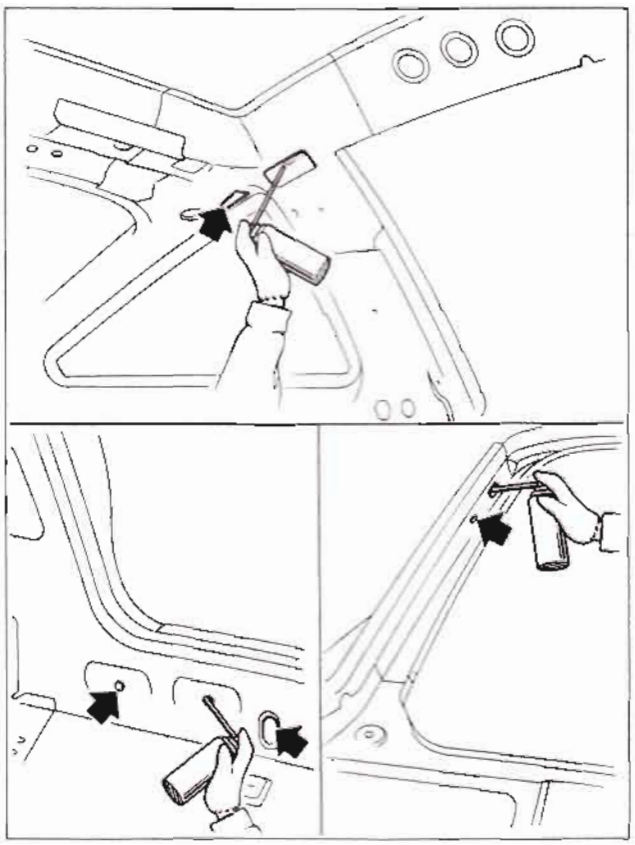
- Solder mating surface of roof and rear fender at portion (D).



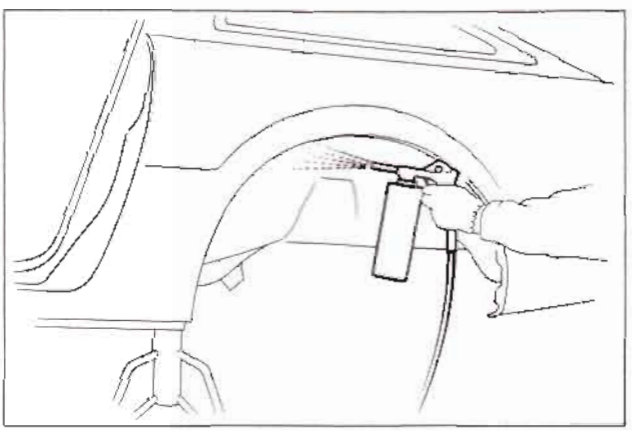
- Apply sealer.



- Apply anti-corrosive agent to mating surface of roof and rear fender at portion (D) and inside of outer sill and rear pillar.



- Apply anti-corrosive agent to welds on lower side of vehicle body and undercoating to inside of wheelhouse.

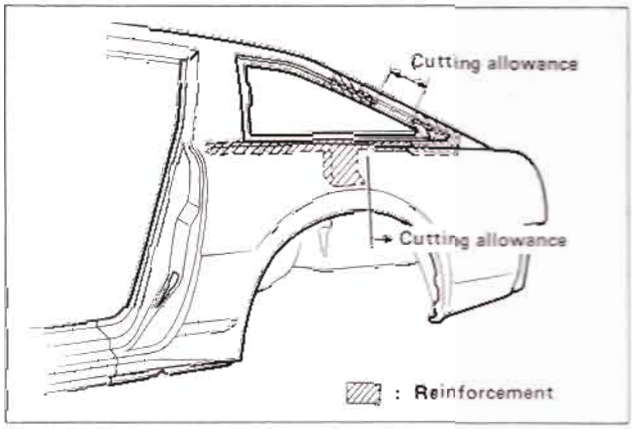


REAR FENDER (Partial Replacement)

Refer to Service Joint drawing under REAR FENDER.

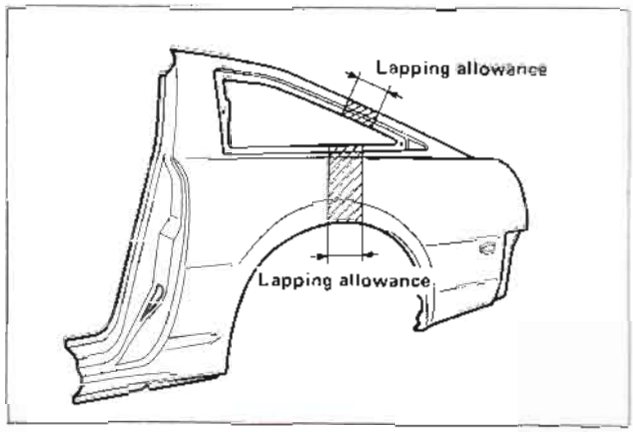
REMOVING REMINDER

- When replacing part of rear fender, determine portion to be cut so that welding length is as short as possible and reinforcing plate is not affected.

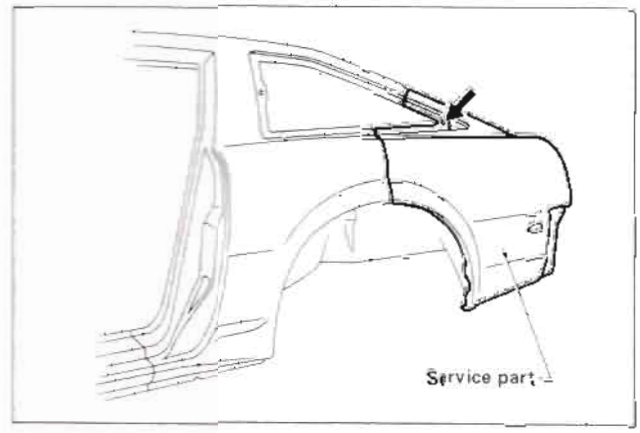


INSTALLING REMINDERS

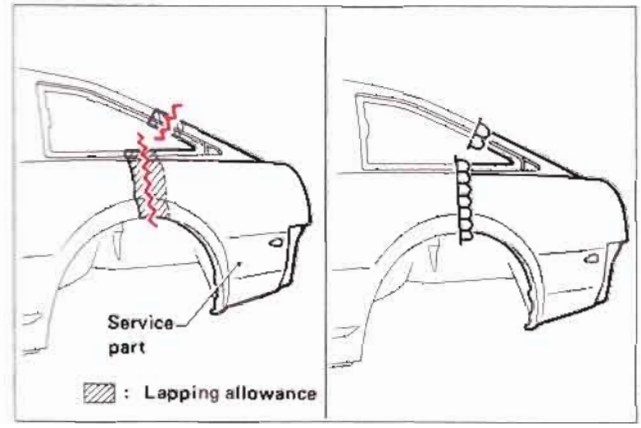
- Cut off service part with allowance of approx. 30 to 50 mm (1.18 to 1.97 in) for lapping mating part.



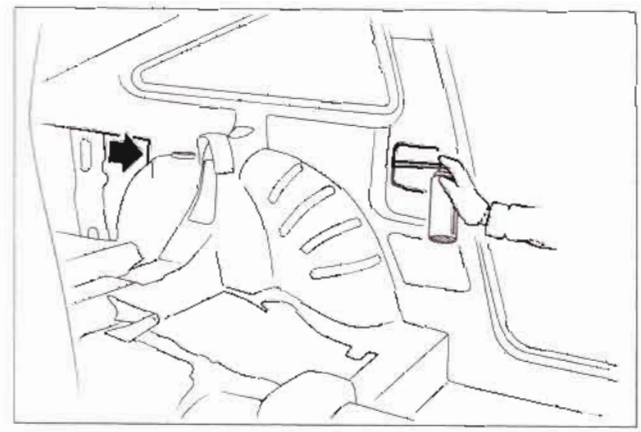
- Align service part with reference hole during installation.



- Cut overlapped portion of service part and proceed with mig seam welding.

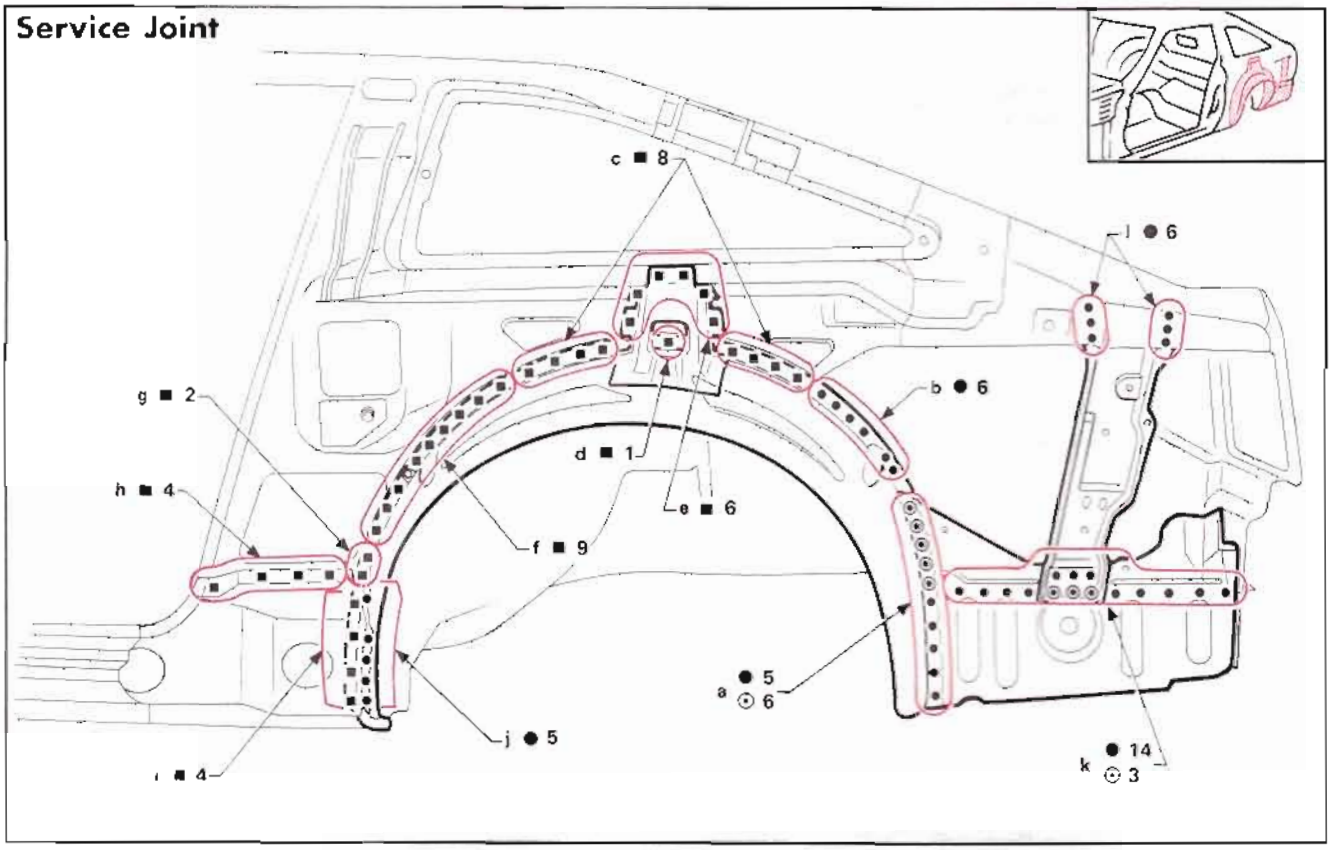


- Apply anti-corrosive agent to mig seam welds from inside.



OUTER REAR WHEELHOUSE

(Work after rear fender has been removed.)



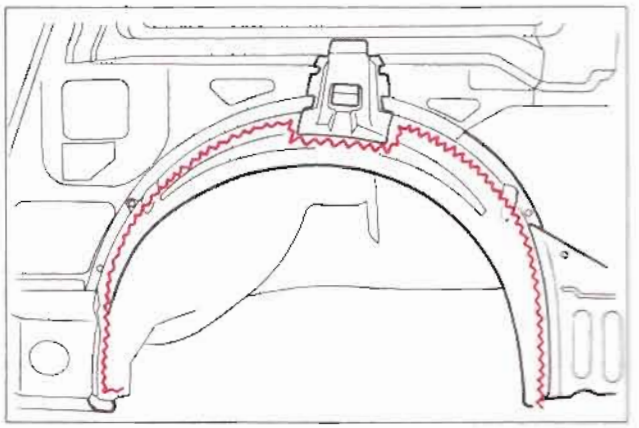
Portions to be welded

a. Inside rear panel & inner rear wheelhouse.
Inside rear panel
b. Inner rear wheelhouse
c Side panel & inner rear wheelhouse
d. Side panel & inner rear wheelhouse
e. Side panel
f. Side panel & inner rear wheelhouse
g. Side panel & inner rear wheelhouse
h. Side panel
i. Inner rear wheelhouse
j. Outer sill reinforcement
k. Rear floor & tail corner brace reinforcement
Rear floor
l. Side panel

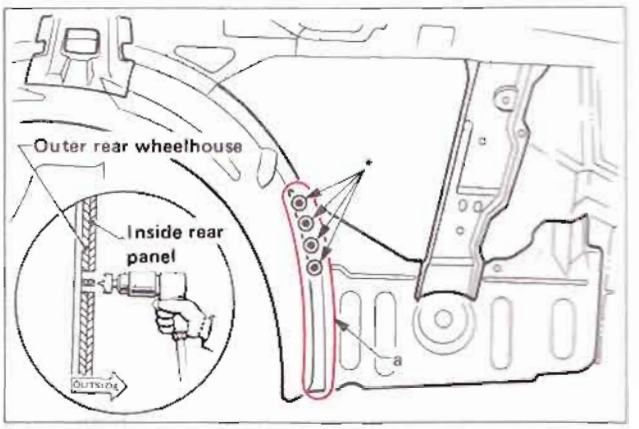
OUTER REAR WHEELHOUSE

REMOVING REMINDERS

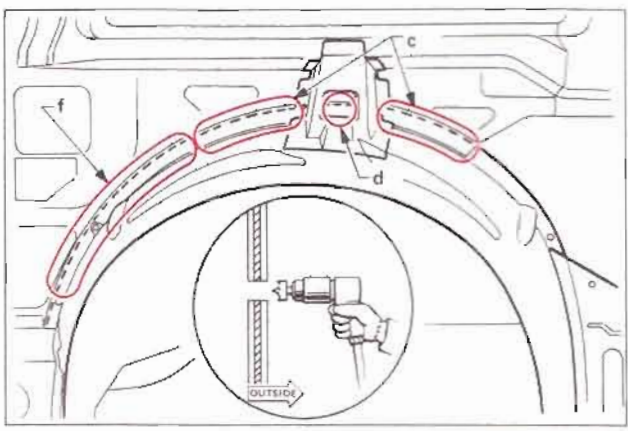
- Cut off outer wheelhouse so that welded part can be easily spot cut.



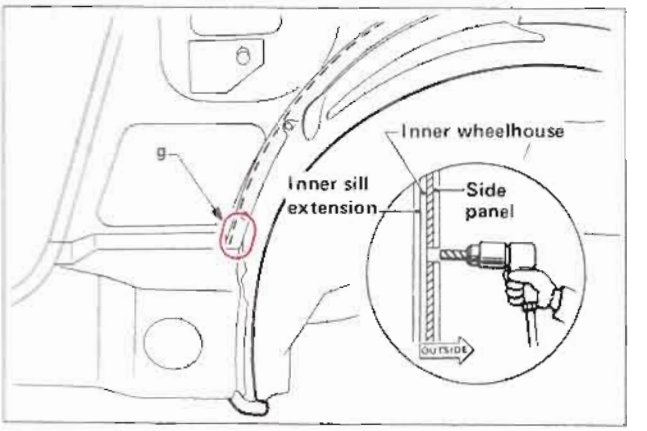
- Spot cut two outer panels of 3-layered part at portion (a*).



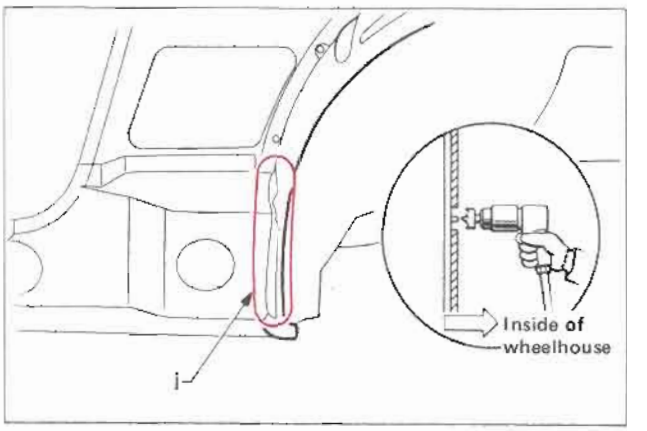
- Spot cut completely through 3-layered part at portions (c), (d) and (f). When installing, mig plug weld from both sides.



- Cut two outer panels of portion (g) from outside using a drill with flat tip.

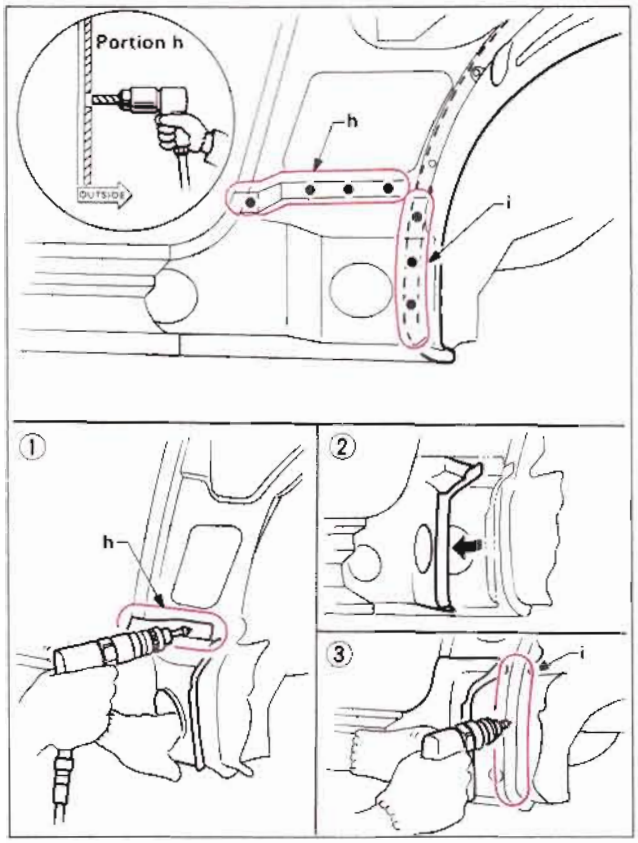


- Spot cut only one panel at portion (j) from inside of wheelhouse.

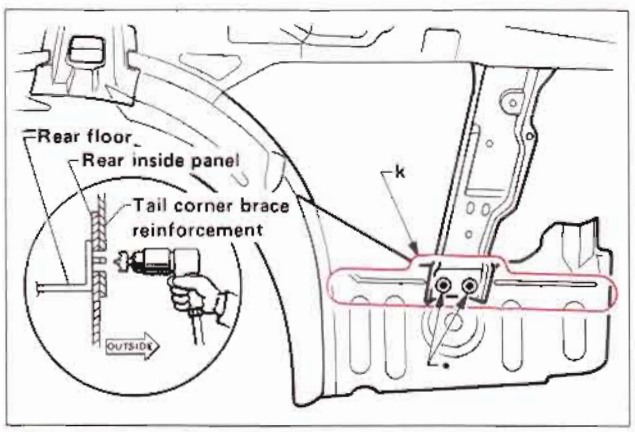


OUTER REAR WHEELHOUSE

- To gain access to portion (i), cut welds at portion (h) using a drill with flat tip and pull outer sill reinforcement outward. Then, spot cut welds at portion (i).

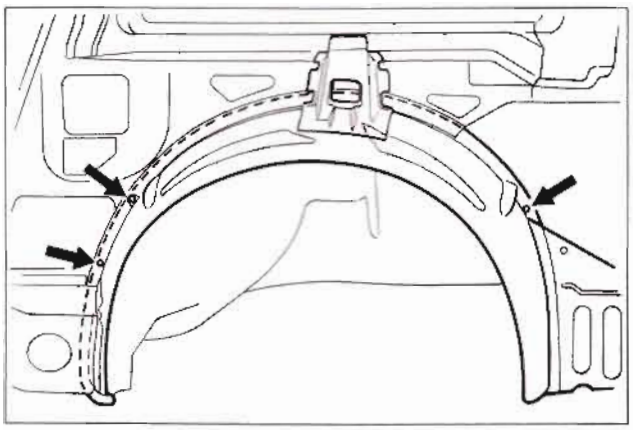


- Spot cut two outer panels of 3-layered part at portion (k*).

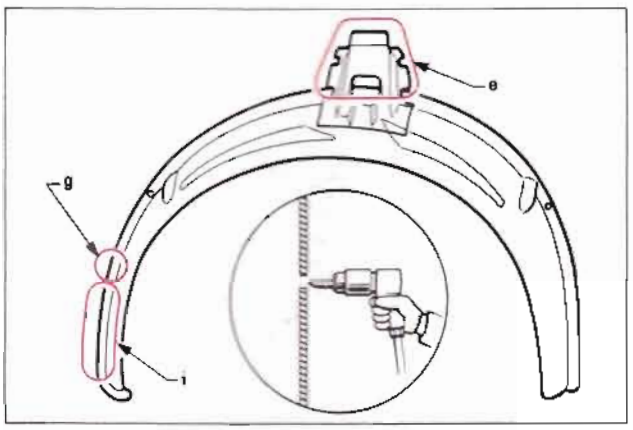


INSTALLING REMINDERS

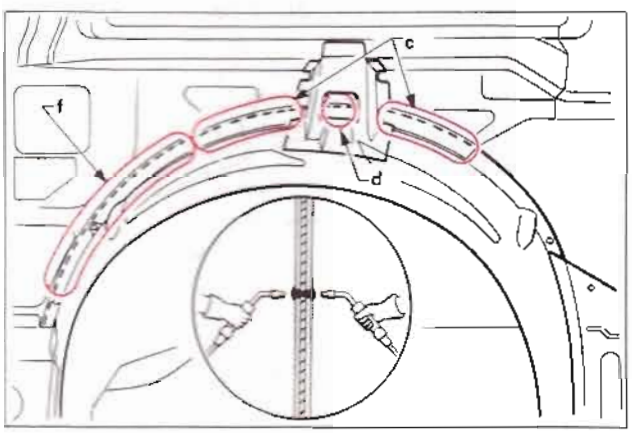
- Align service part at reference holes when installing.



- Drill plug weld holes at portions (e), (g) and (i) of service part.

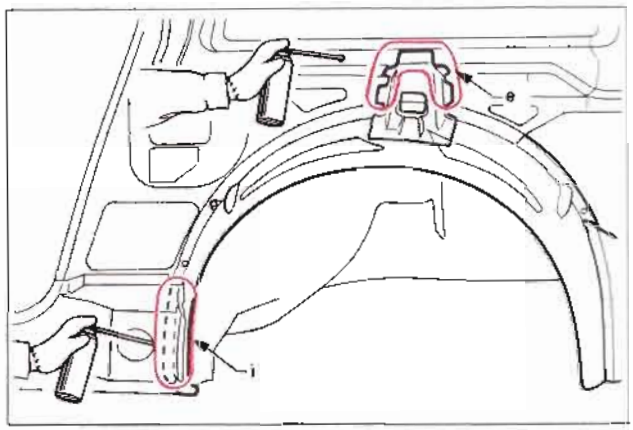


- Mig plug weld portions (c), (d) and (f) from both sides, and dress welds with a sander.

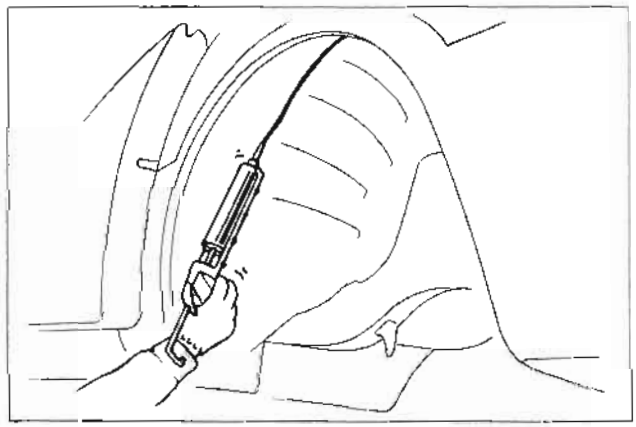


OUTER REAR WHEELHOUSE

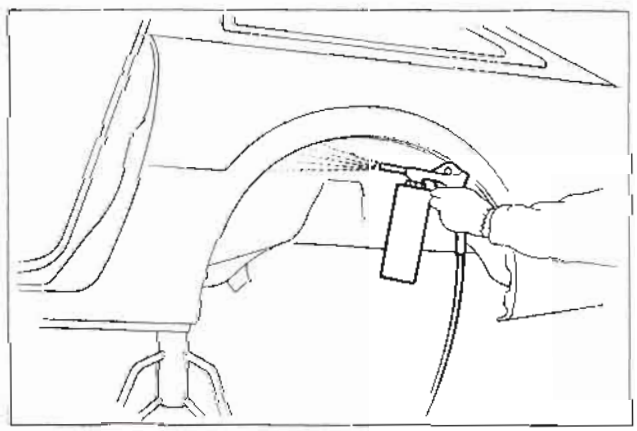
- Apply anti-corrosive agent to mig plug welds at portions (e) and (i) through openings.



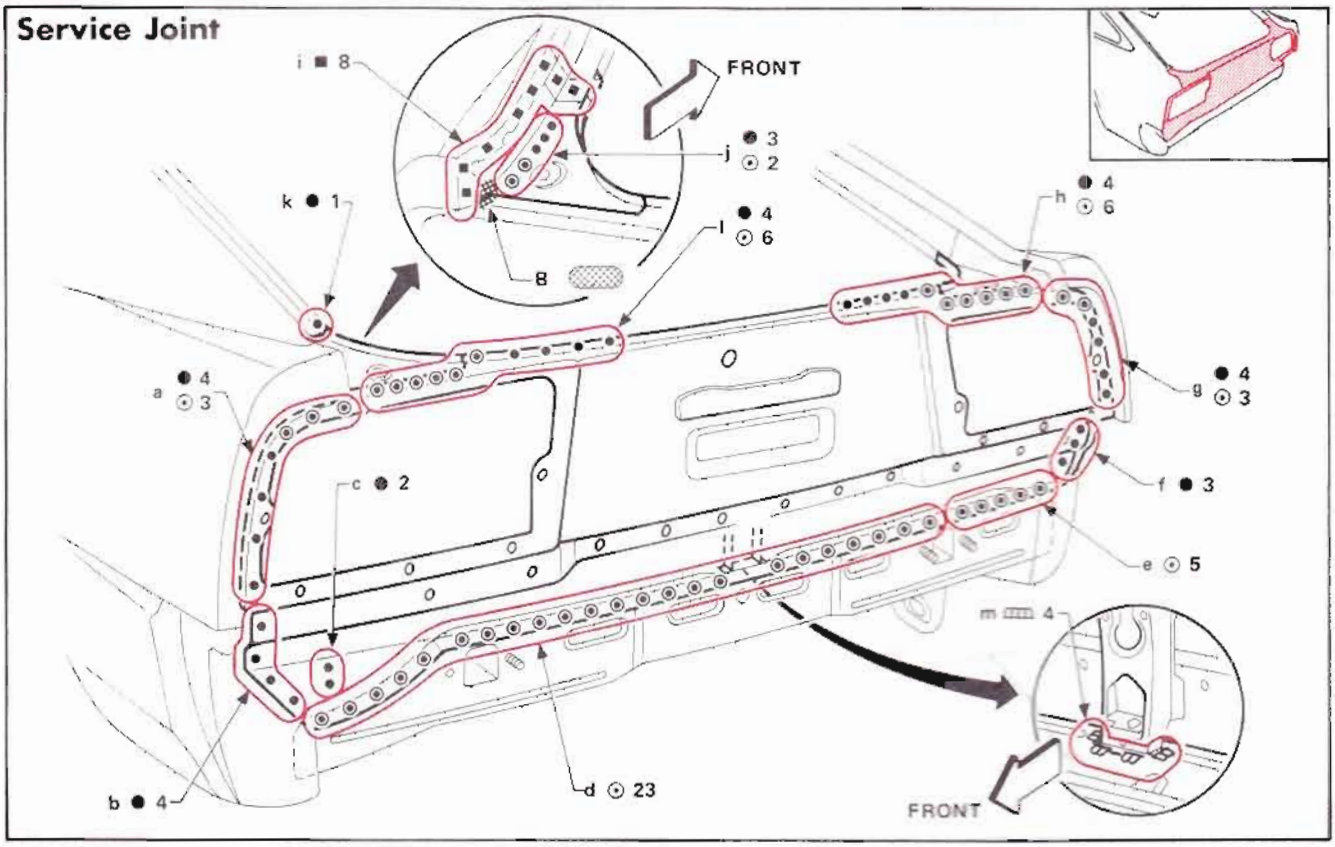
- Apply sealer.



- Apply undercoating to inside of wheelhouse.



UPPER REAR PANEL



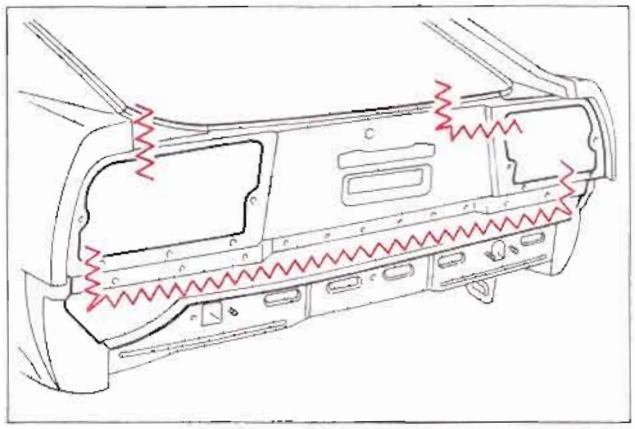
Portions to be welded

a. Rear fender & side panel
Rear fender
b. Rear fender end
c. Inside rear panel
d. Rear floor & lower rear panel
e. Wheelhouse panel & lower rear panel
f. Rear fender end
g. Rear fender & side panel
Rear fender
h. Rear fender extension & side panel
Rear fender extension
i. Rear fender extension
j. Side panel & rear fender extension
Side panel
k. Rear fender extension
l. Rear fender extension & side panel
Rear fender extension
m. Rear floor

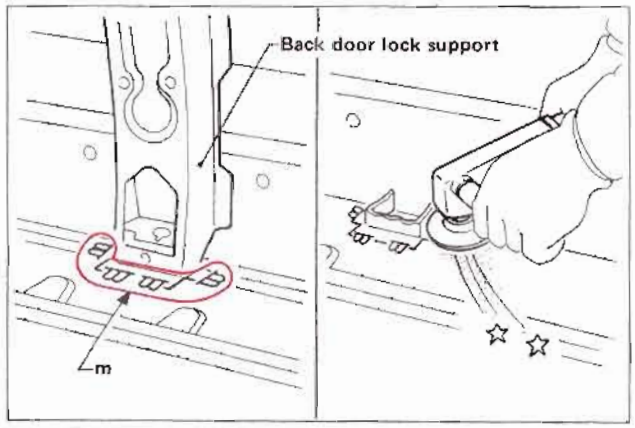
UPPER REAR PANEL

REMOVING REMINDERS

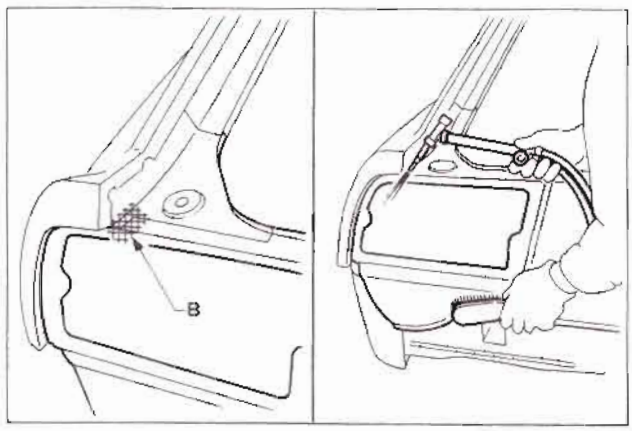
- Cut off damaged portion so that welded part can be easily spot cut later.



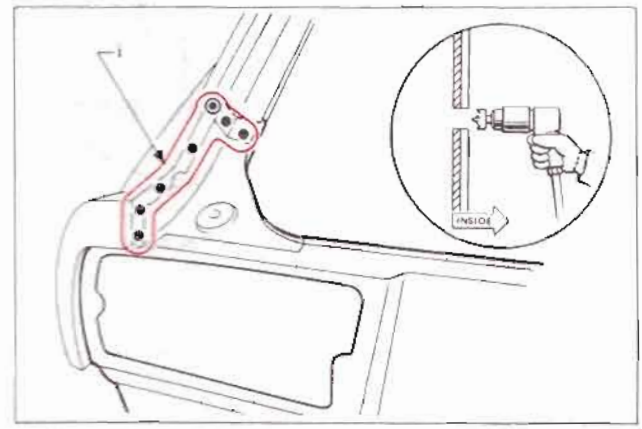
- Cut and dress welds with a sander on back door lock support and rear floor.



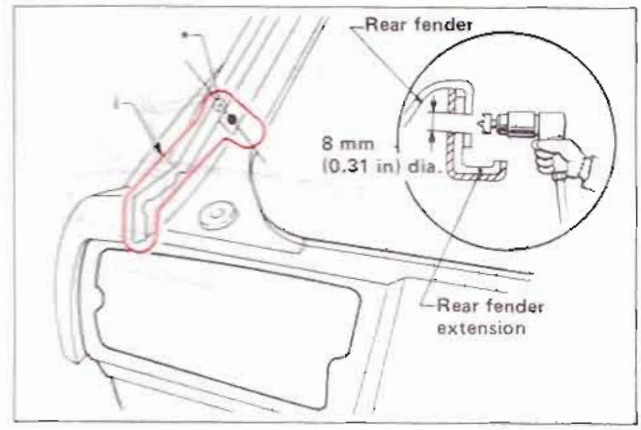
- Remove brazing from portion (B).



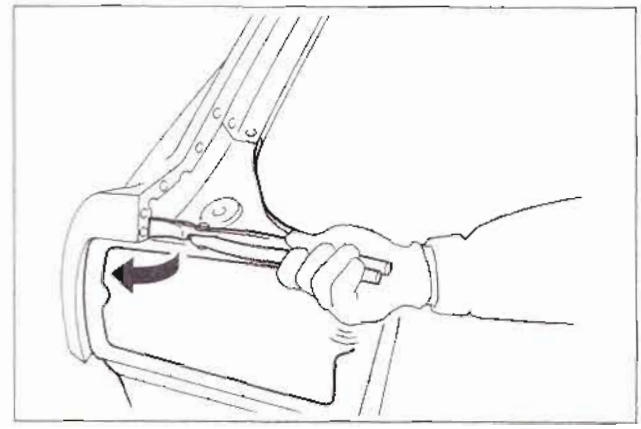
- If it is necessary to replace corner panel of rear fender extension, spot cut completely through portion (i). When installing, use these holes as mig plug weld holes.



- Portion marked with (*) cannot be seen from outside. To cut that portion, use an 8 mm dia. spot cutter to cut completely through 3-layered part.

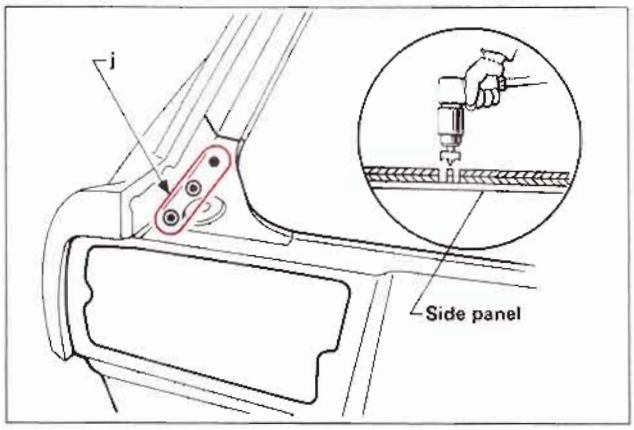


- When removing corner panel from rear fender extension, pull flanged portion of rear fender outward.



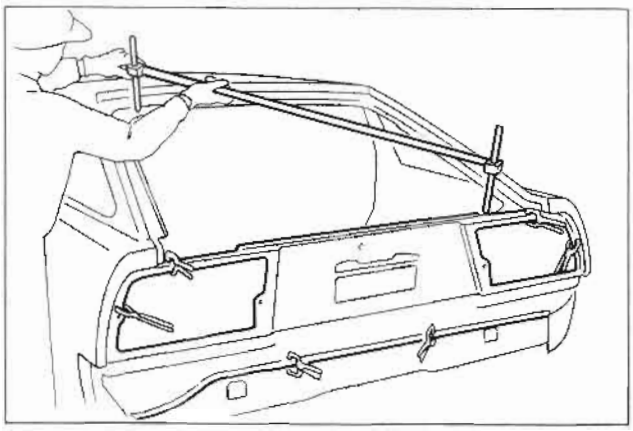
UPPER REAR PANEL

- Spot cut two outer panels of 3-layered part at portion (j).

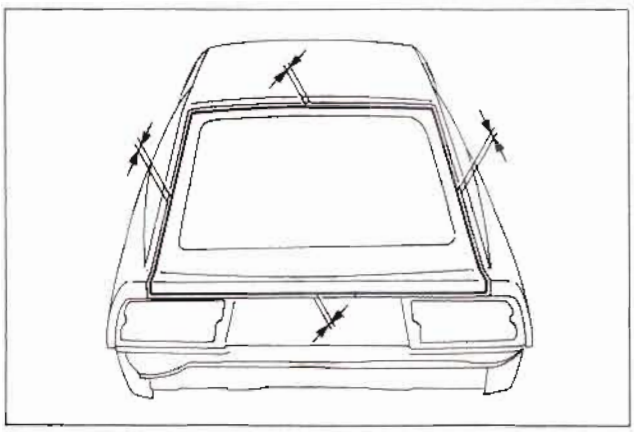


INSTALLING REMINDERS

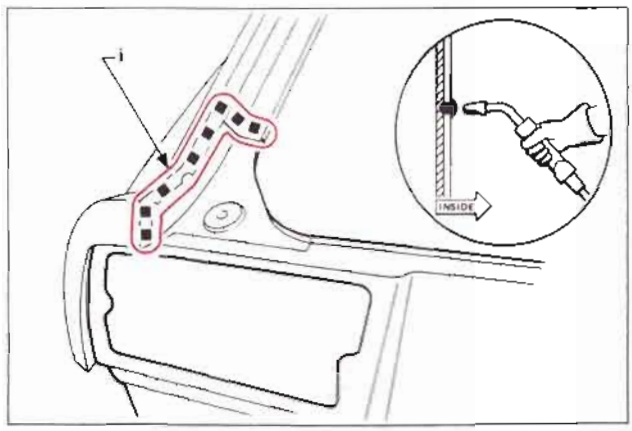
- Install service part and align it in accordance with dimension drawing.



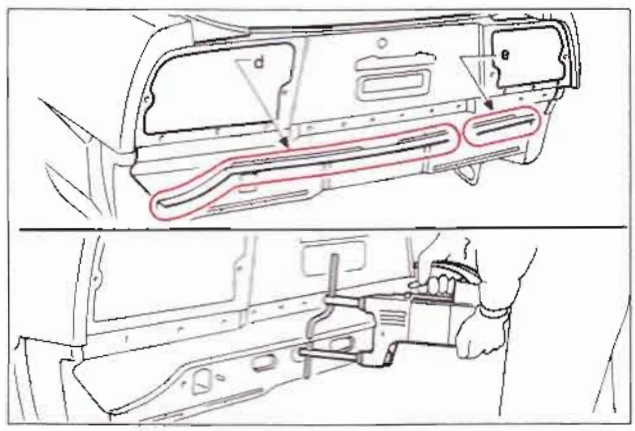
- Install back door and check clearances, grades and parallelism.



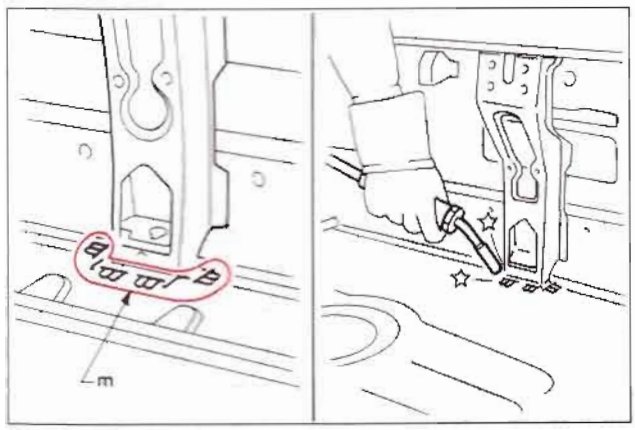
- Mig plug weld portion (i).



- When spot welding porions (d) and (e), do not allow electrode tip and arm to contact any area other than welding spots.

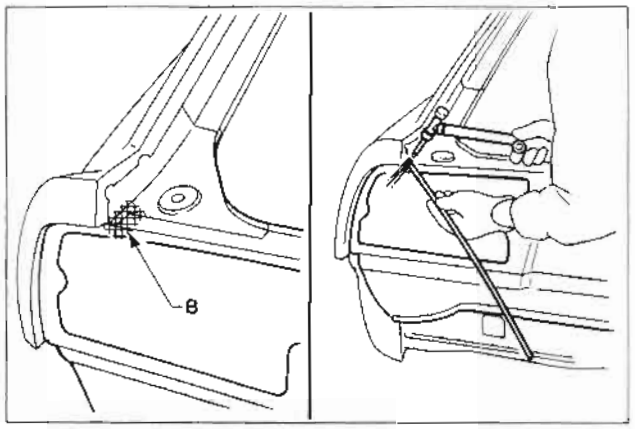


- Mig point weld back door lock support.

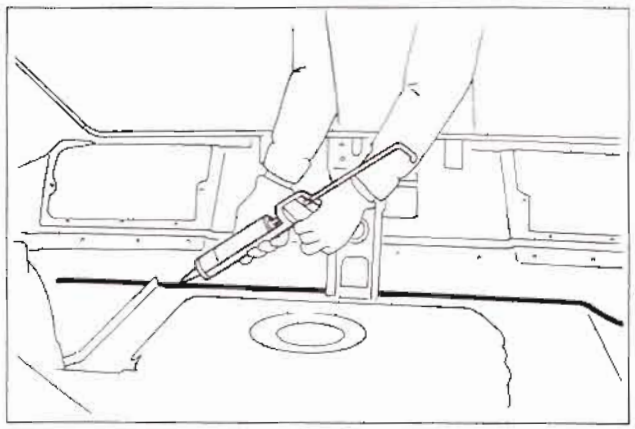


UPPER REAR PANEL

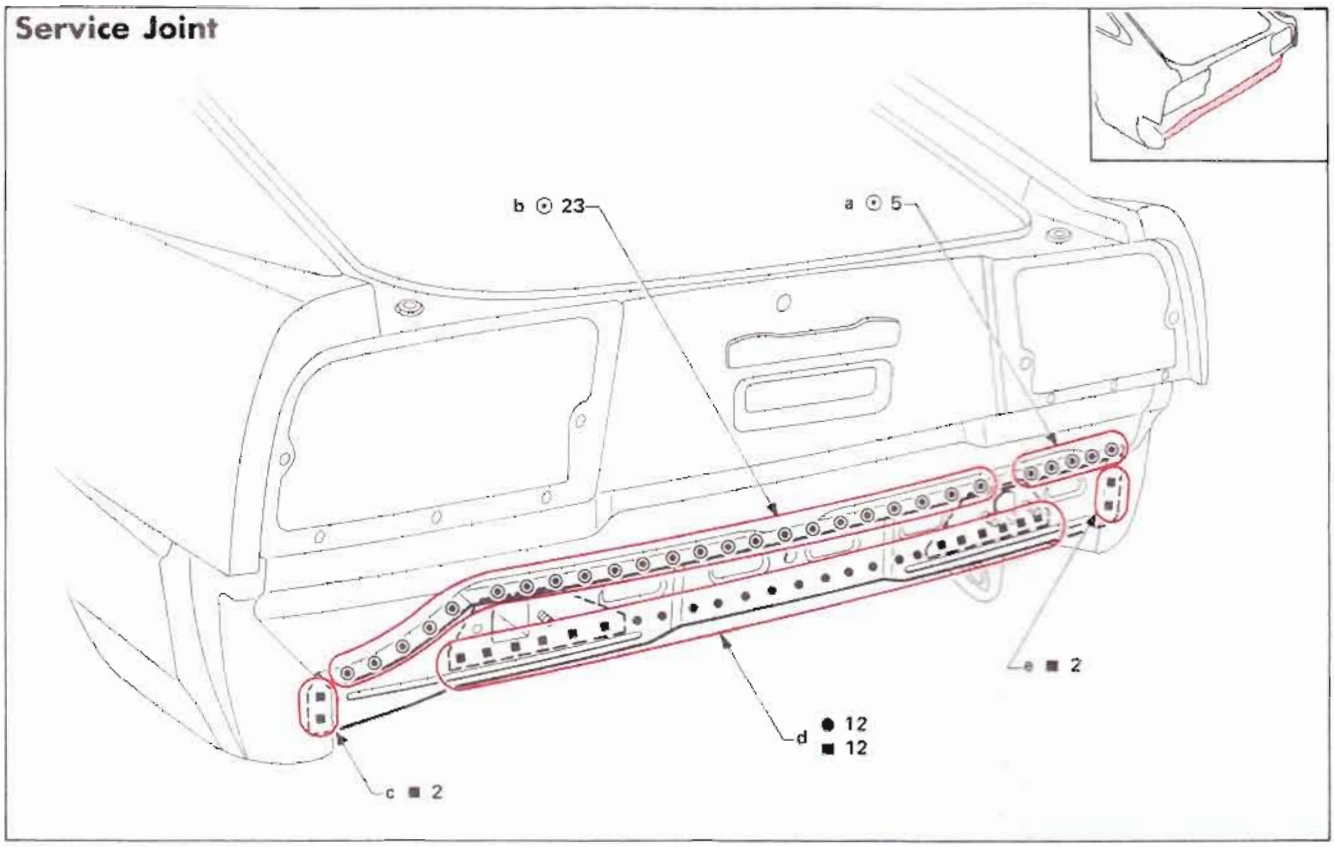
- Braze portion (B) and dress it with a sander.



- Apply sealer in accordance with sealing drawing.



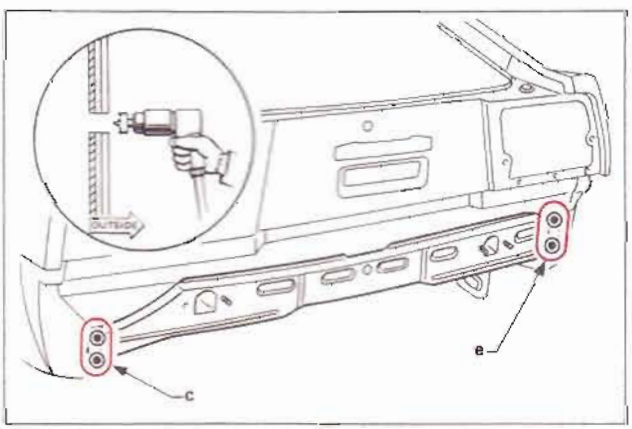
LOWER REAR PANEL



Portions to be welded		
a. Upper rear panel & wheelhouse panel	d. Rear crossmember & rear side member	e. Inside rear panel & rear fender end
b. Rear floor & upper rear panel	Rear crossmember	
c. Inside rear panel & rear fender end		

REMOVING REMINDER

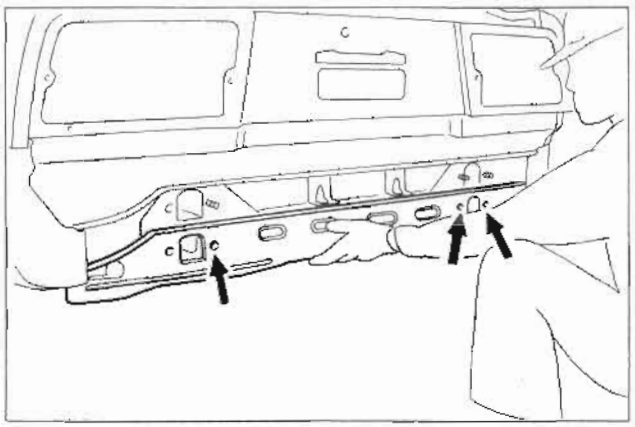
- Spot cut completely through 3-layered part at portions (c) and (e). When installing, use those holes as mig plug weld holes.



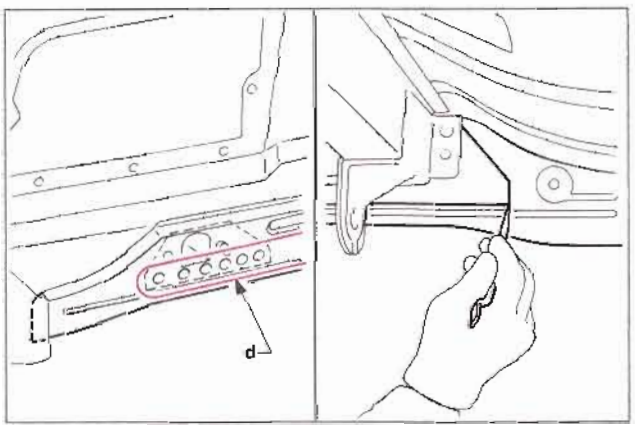
LOWER REAR PANEL

INSTALLING REMINDERS

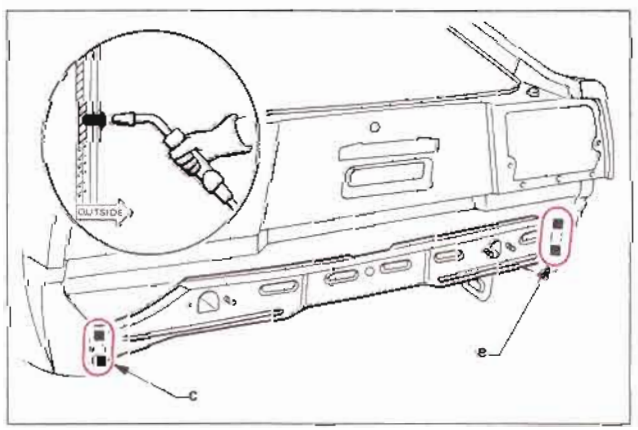
- When installing service part, secure it in place by tightening rear bumper mounting bolts with nuts.



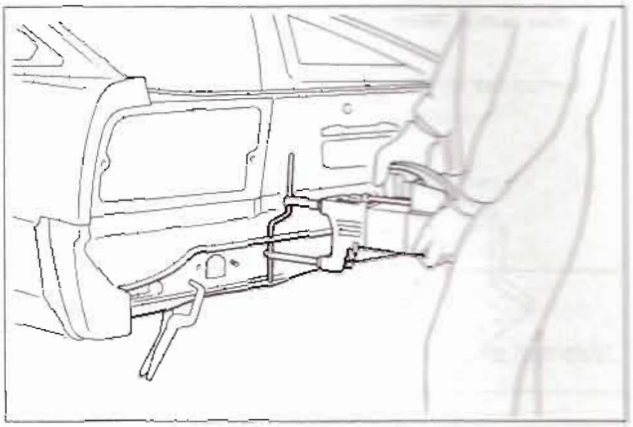
- Temporarily install service part and scribe service part along end of rear side member so that it serves as a standard for drilling plug weld holes.



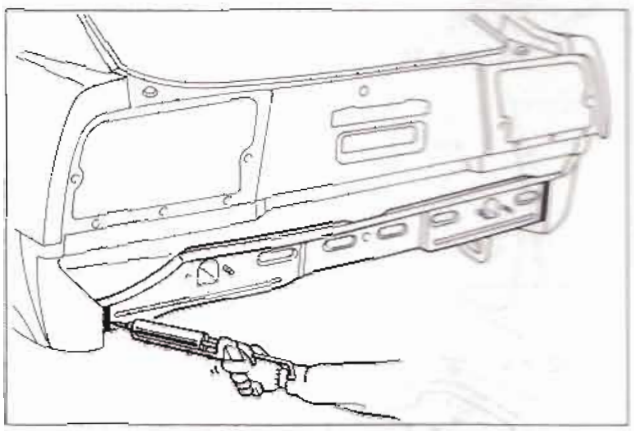
- Mig plug weld portions (c) and (e) and finish welded surface with a sander.



- Use spot welder electrode arms like those shown in figure. Do not allow electrode tip and arm to contact any area other than welding spots.

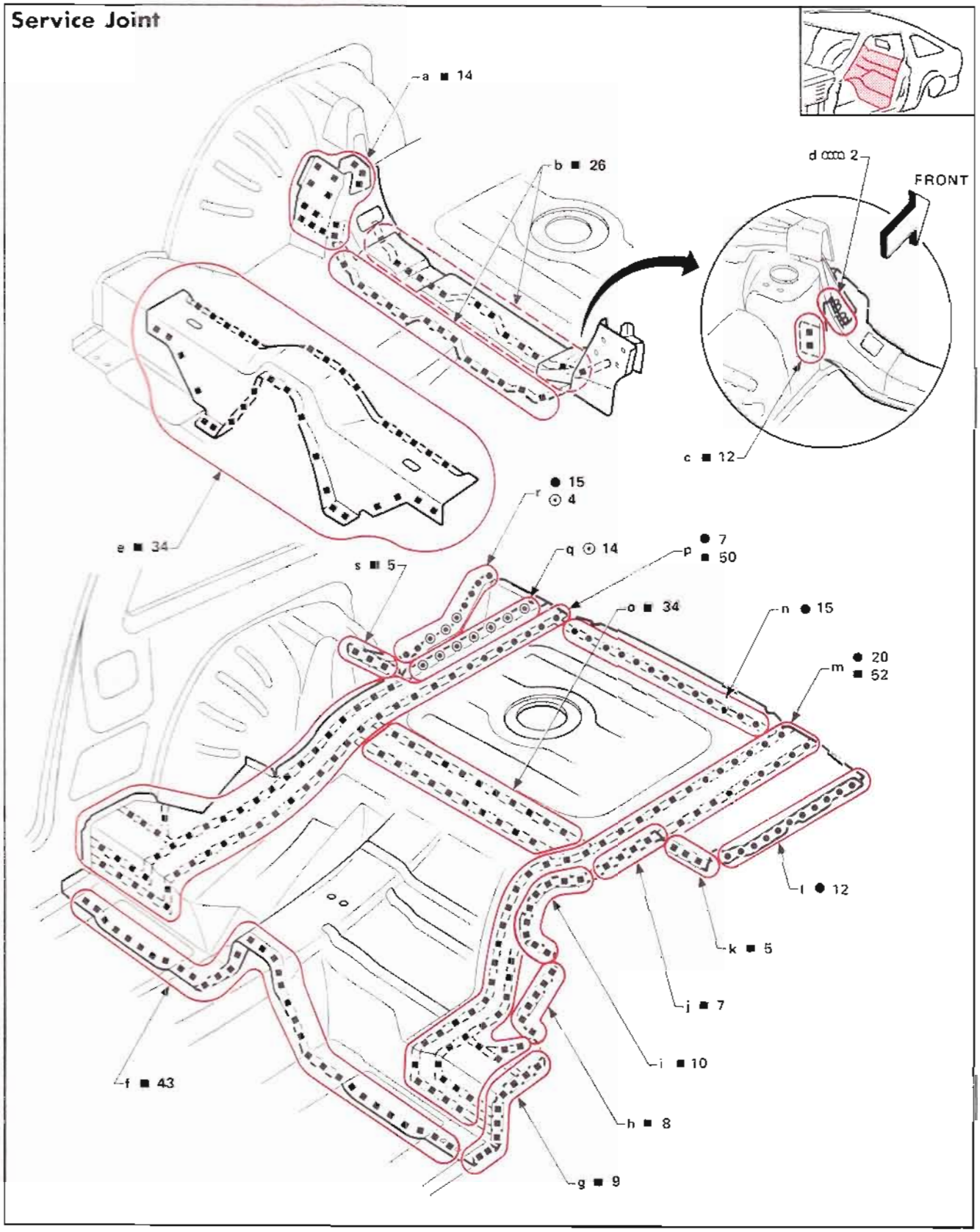


- Apply sealer.



REAR FLOOR

(Work after upper rear panel and lower rear panel have been removed.)



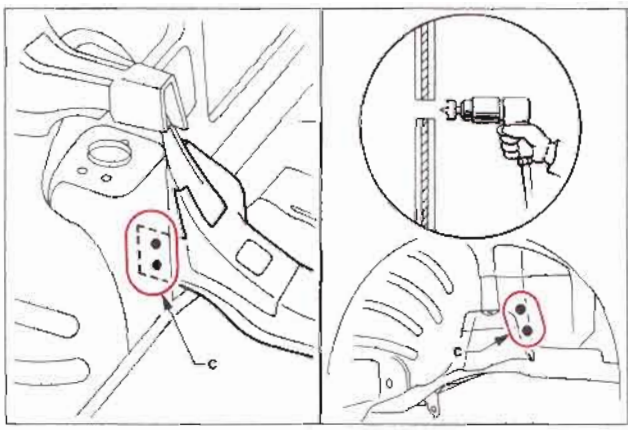
REAR FLOOR

Portions to be welded

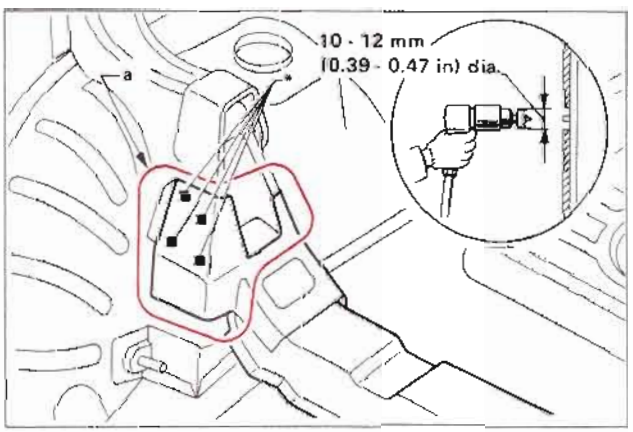
a. Rear side member (Not welded to rear floor)
b. Rear suspension crossmember
c. Rear side member & inner rear wheelhouse (Not welded to rear floor)
d. Inner rear wheelhouse (Not welded to rear floor)
e. Rear outer crossmember
f. Front floor & center side member Front floor
g. Inner sill
h. Inner rear wheelhouse & rear side member Inner rear wheelhouse
i. Rear side member
j. Inner rear wheelhouse
k. Inner rear wheelhouse
l. Rear inside panel
m. Rear side member
n. Rear crossmember
o. Differential mounting crossmember
p. Rear side member
q. Wheelhouse panel & rear side member
r. Rear inside panel & tail corner brace reinforcement Rear inside panel
s. Inner rear wheelhouse

REMOVING REMINDERS

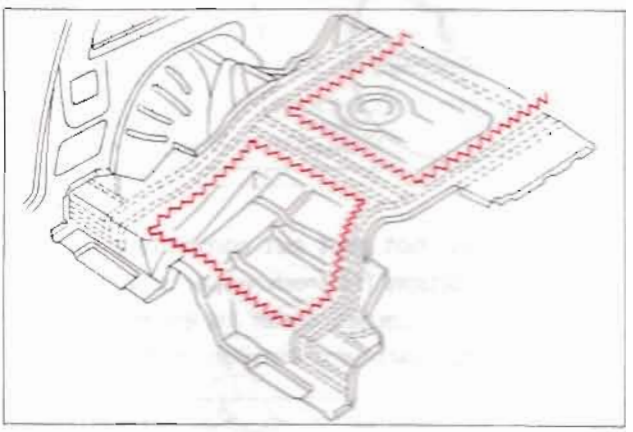
- When replacing rear floor assembly, rear suspension crossmember needs to be removed.
- Spot cut completely through portion (c) from inside of wheelhouse. When installing, mig plug weld from both sides.



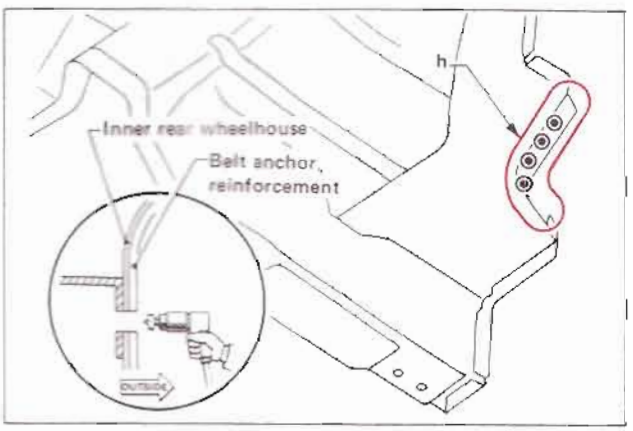
- Cut one panel at mig plug welded portion (a*) with a 10 to 12 mm dia. spot cutter.



- Cut off damaged section to facilitate removal.

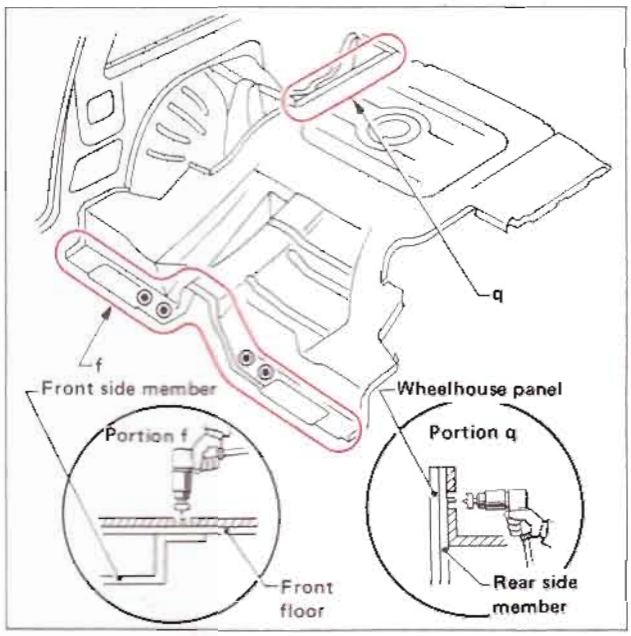


- Spot cut completely through welds on 3-layered part at portion (h) from inside of wheelhouse.

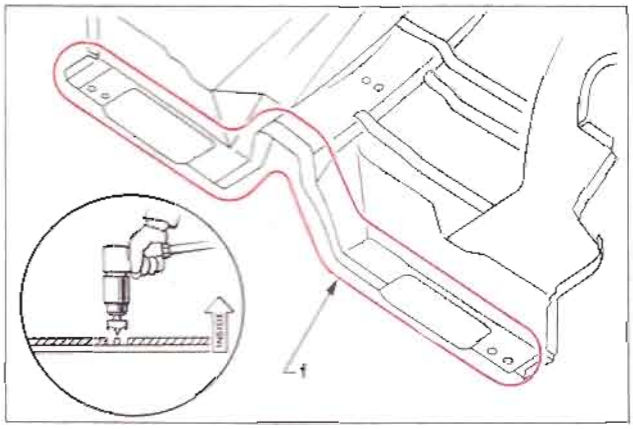


REAR FLOOR

- Spot cut only one panel of 3-layered part at welded portions (f) and (q).

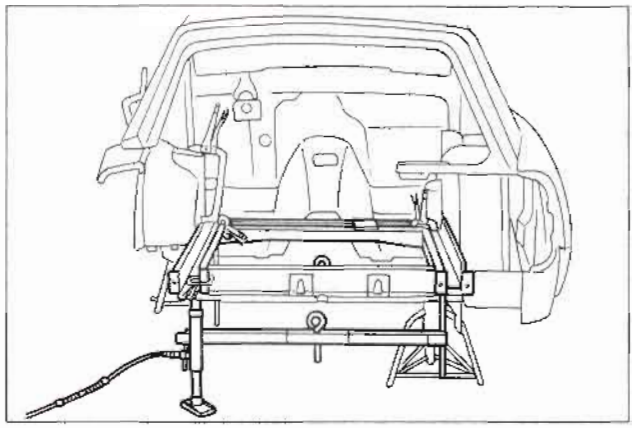


Note: Do not spot cut completely through portion (f) from upper side of floor. This causes water to enter passenger compartment through spot cut holes.

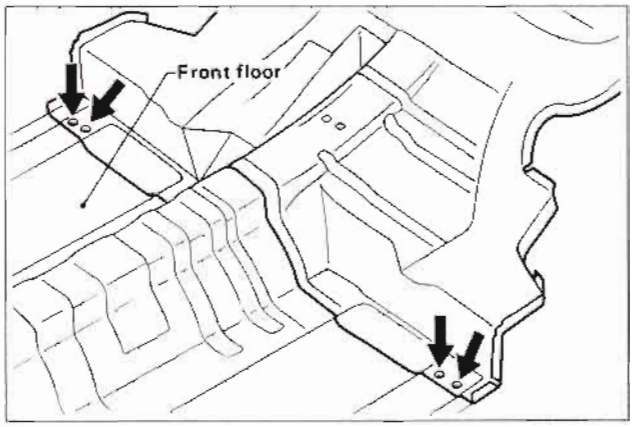


INSTALLING REMINDERS

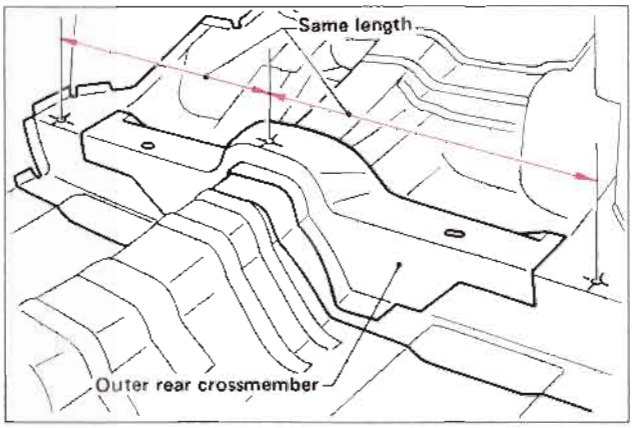
- Correct rear side member in accordance with "BODY ALIGNMENT" drawing.



- Align rear floor with front floor at reference holes.

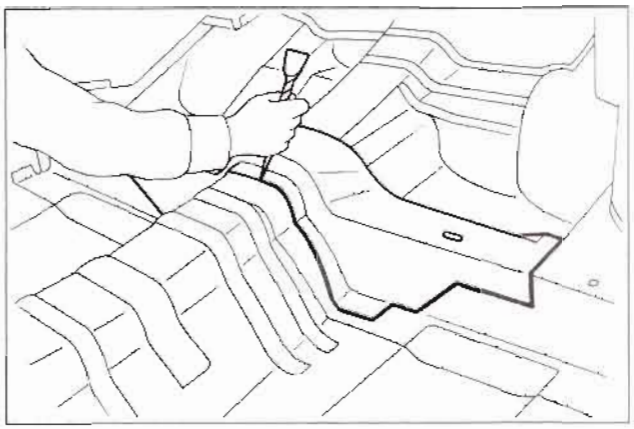


- Temporarily install rear floor and rear outer crossmember, and adjust their locations.

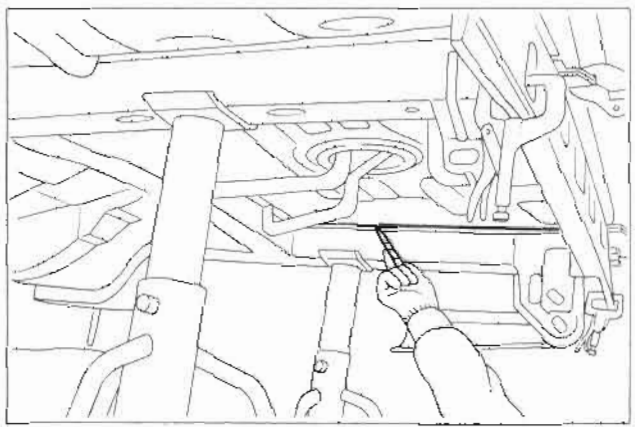


REAR FLOOR

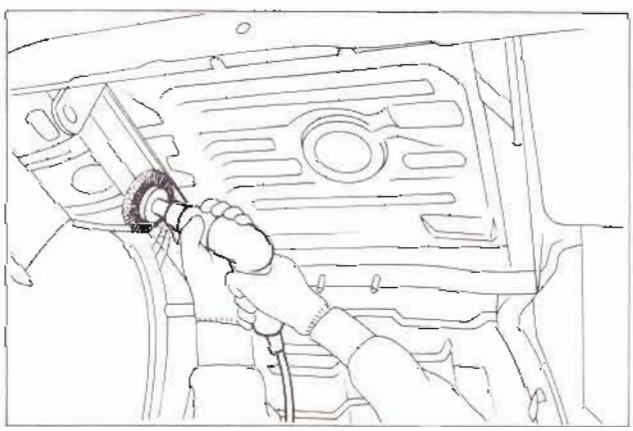
- Scribe a line on rear floor along flanged end of rear outer crossmember for proper positioning.



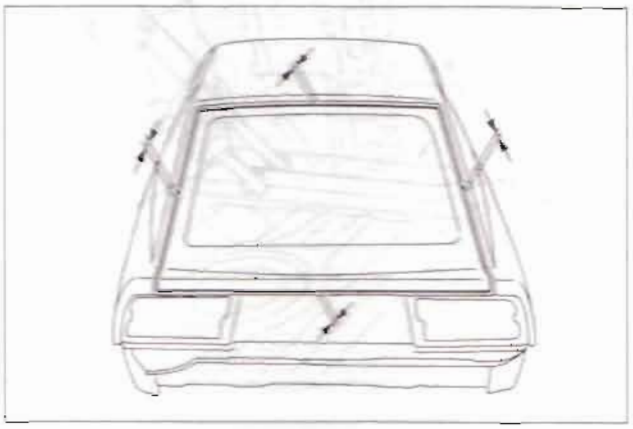
- Install new service part. Scribe a line along flanged ends of rear side member and rear crossmember on lower surface of floor.
  The lines help determine the location of plug weld holes to be drilled.



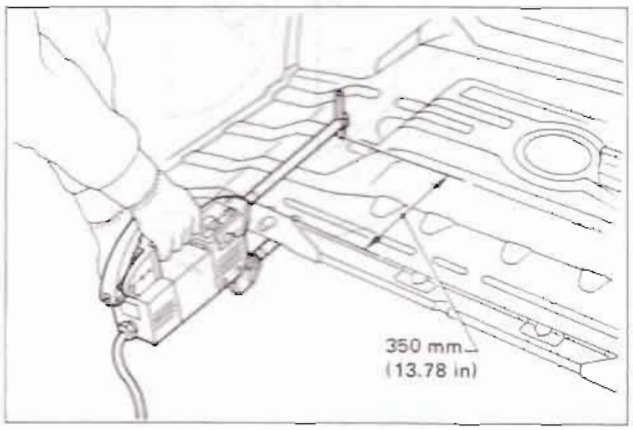
- Before welding, remove undercoating from welding portions of mating part (rear side member).



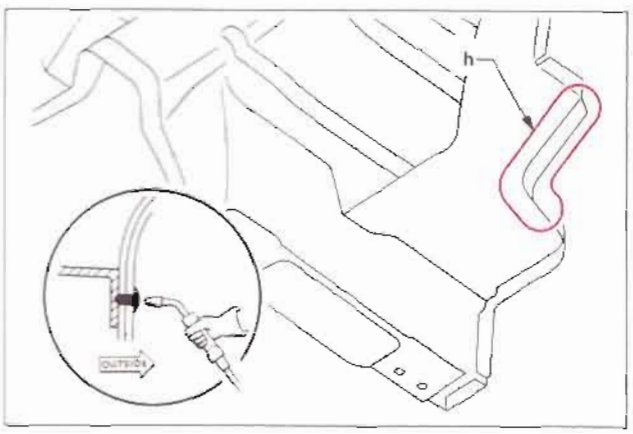
- Temporarily install service part along with wheelhouse, rear fender and back door, and check clearances, grades and parallelism.



- Spot weld rear floor to rear side member as far as possible [approx. 350 mm (13.78 in) from rear end of rear floor].

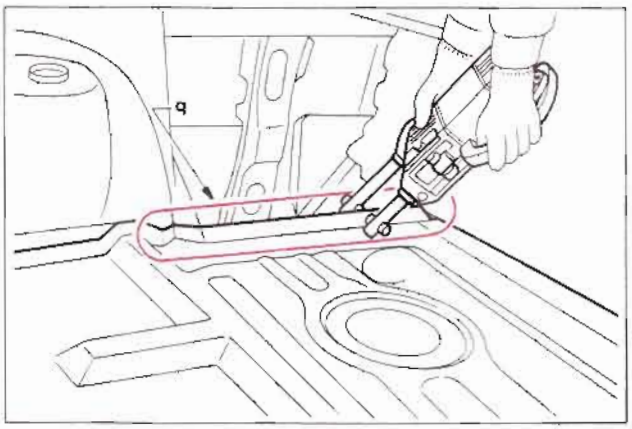


- Mig plug weld portion (h) from inside of wheelhouse.

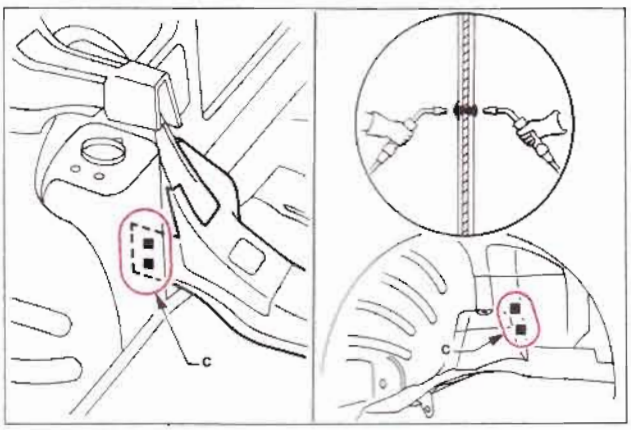


REAR FLOOR

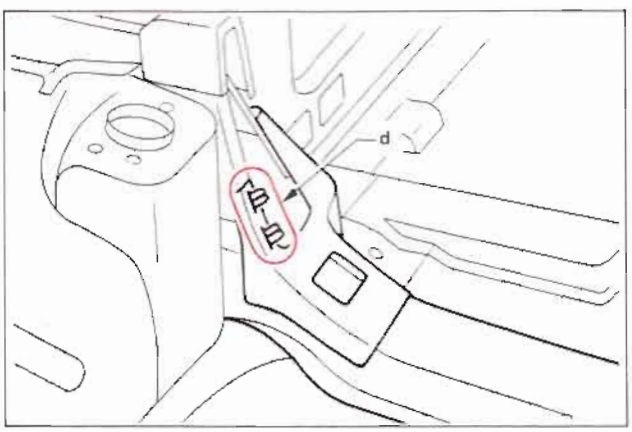
- Perform spot welding twice at portion (q) of 3-layered part.



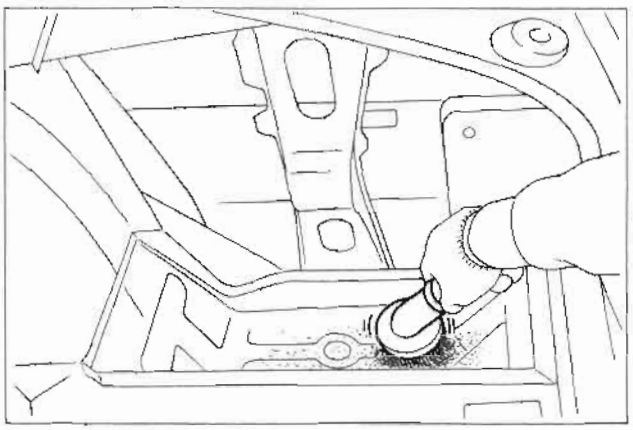
- Plug weld both sides at portion (c).



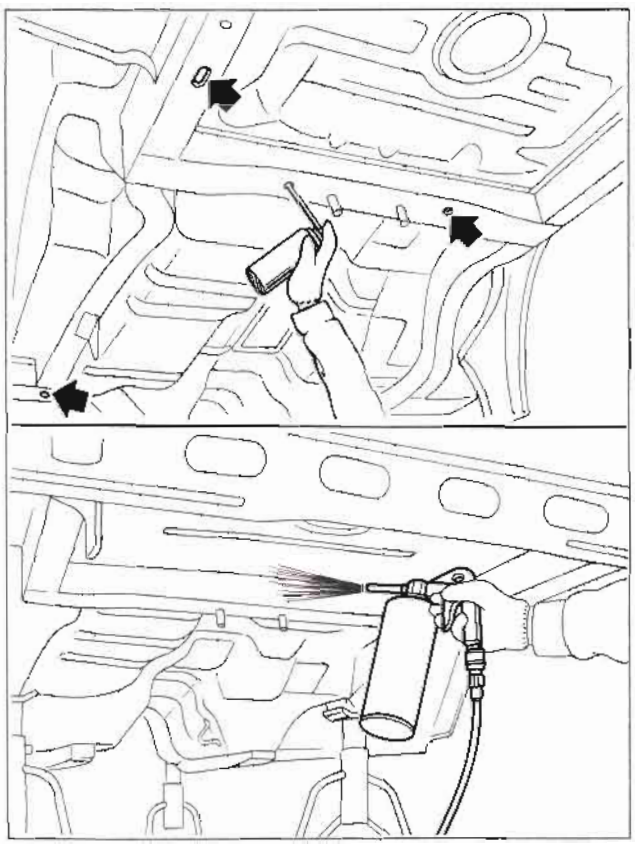
- Mig point weld portion (d).



- To prevent rust formation, completely clean metal chips/powder.

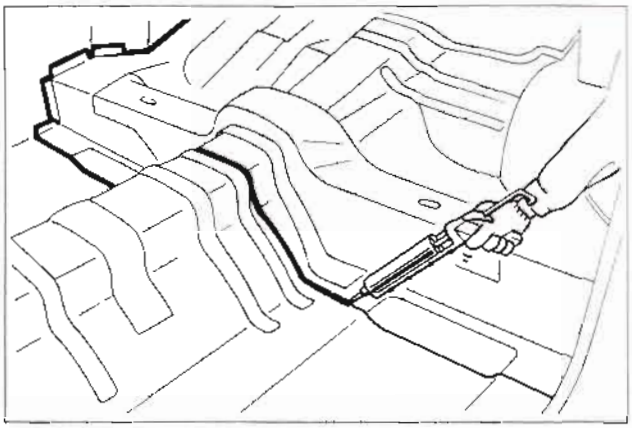


- Apply anti-corrosive wax to inside of members and undercoating to underside of floor.



REAR FLOOR

- Apply sealer.

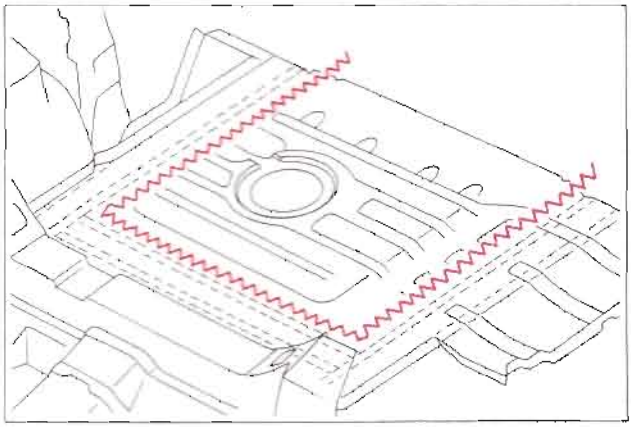


REAR FLOOR (Partial Replacement)

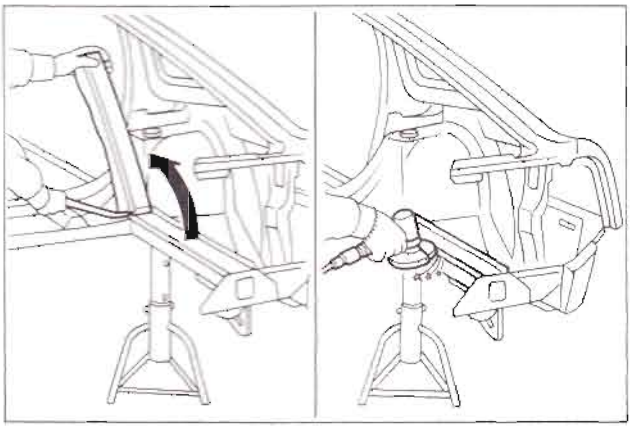
Refer to Service Joint drawing under REAR FLOOR.

REMOVING REMINDERS

- Cut rear floor panel at flanged end of differential mounting crossmember.

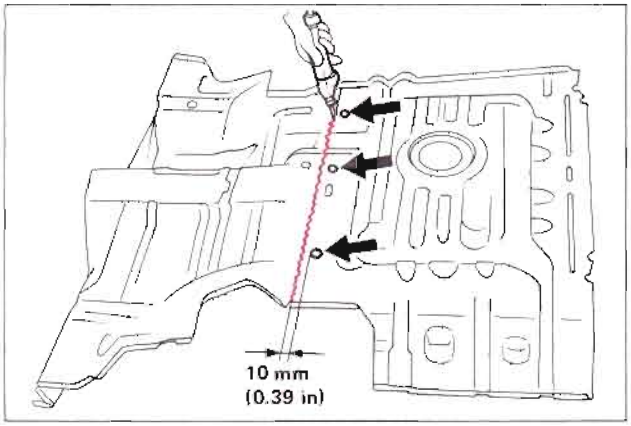


- After spot cutting overlapping portions of rear floor and rear side member, bend rear floor panel and cut. Dress cut portion of rear floor panel with a sander.

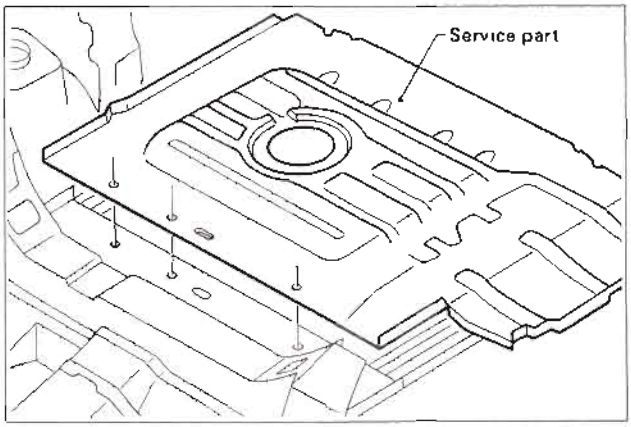


INSTALLING REMINDERS

- Cut service part at 10 mm (0.39 in) front of reference hole's periphery.



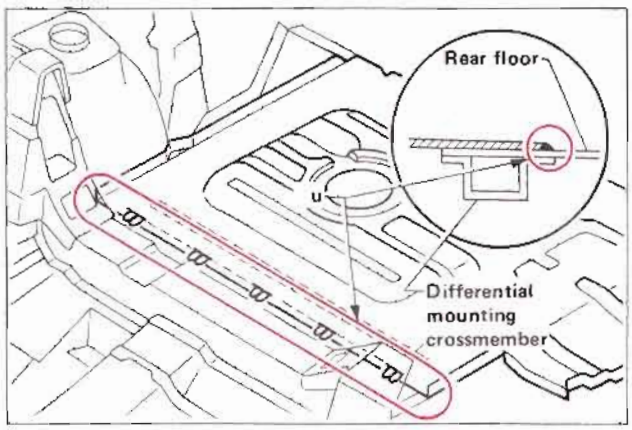
- Align service part with mating panel at reference holes when installing.



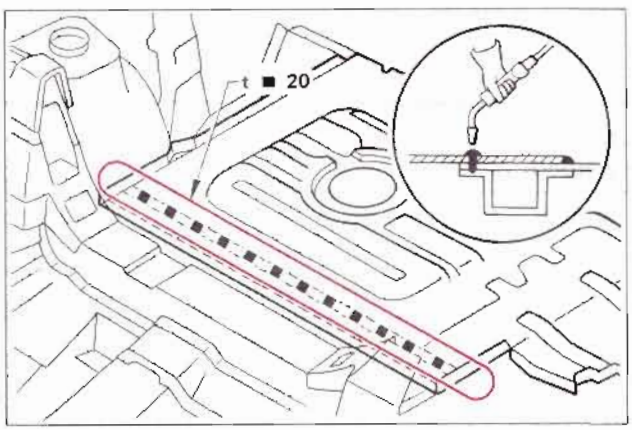
REAR FLOOR (Partial Replacement)

- Mig point weld several points of 2-layered rear floor at portion (u) first.

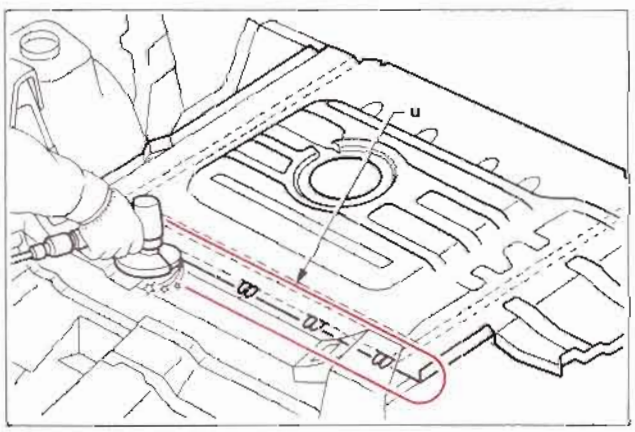
  Note: Do not mig plug weld first at portion (u). Otherwise, panel may be deformed by heat.



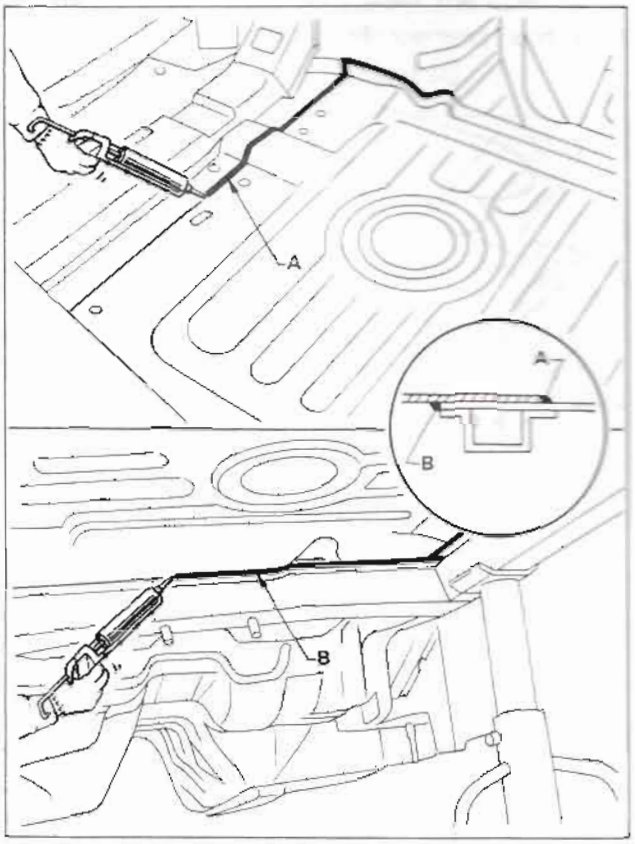
- Mig plug weld portion (t).



- After mig plug welding portion (u), dress its surface.

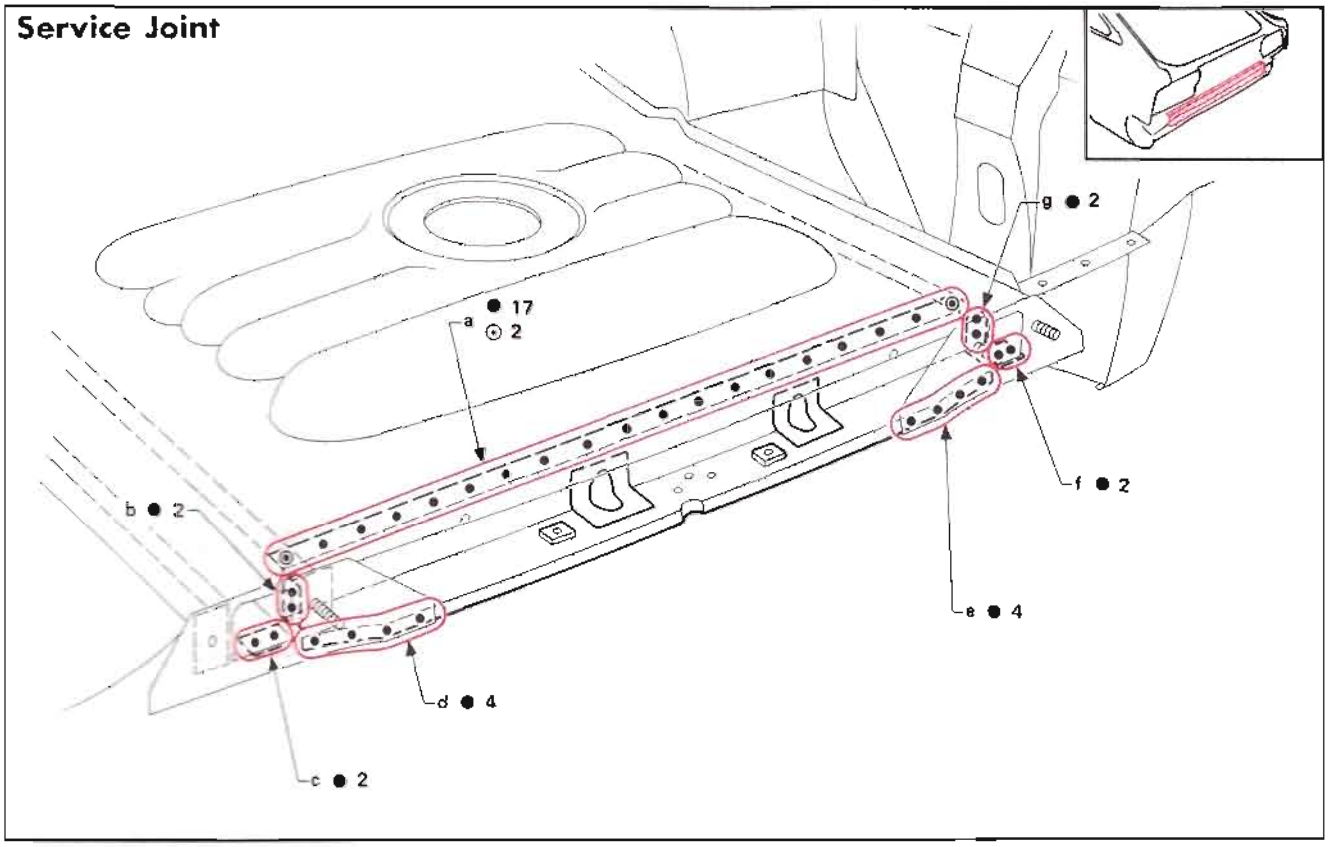


- Apply sealer to portion (A) from upper side and portion (B) from lower side.



REAR CROSSMEMBER

(Work after upper rear panel and lower rear panel have been removed.)

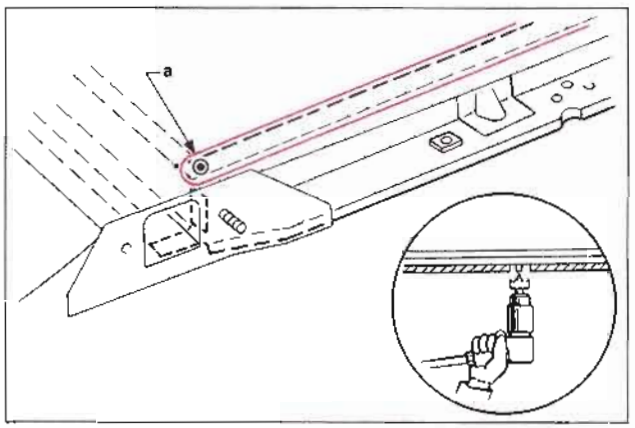


Portions to be welded		
a. Rear side member & rear floor Rear floor	c. Rear side member d. Rear side member	e. Rear side member f. Rear side member
b. Rear side member	e. Rear side member	g. Rear side member

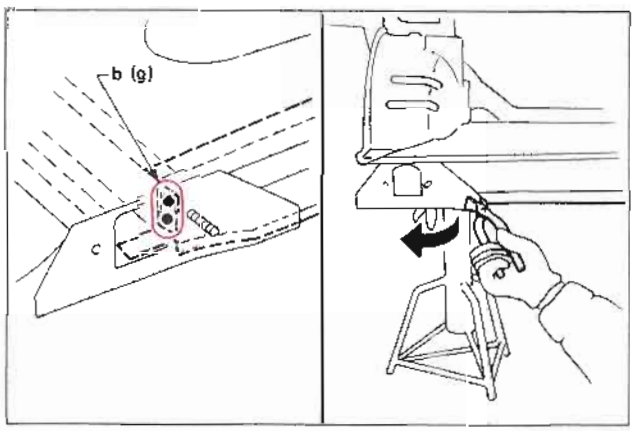
REAR CROSSMEMBER

REMOVING REMINDERS

- Remove 3-layered part at portion (a) by cutting only bottom panel with a spot cutter.

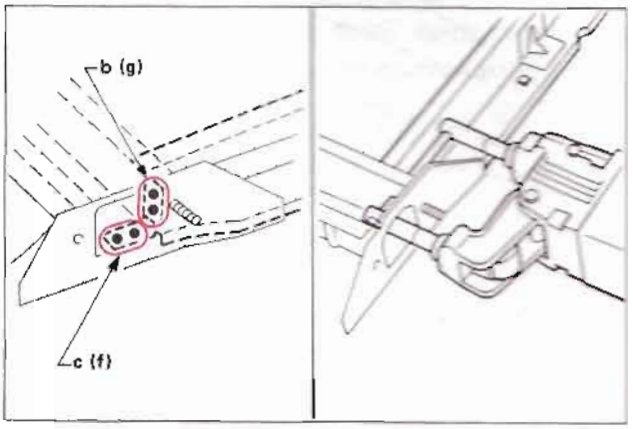


- Bend rear side member reinforcement as far as possible in order to use a spot cutter. Then remove spot welds at portions (b) and (g).

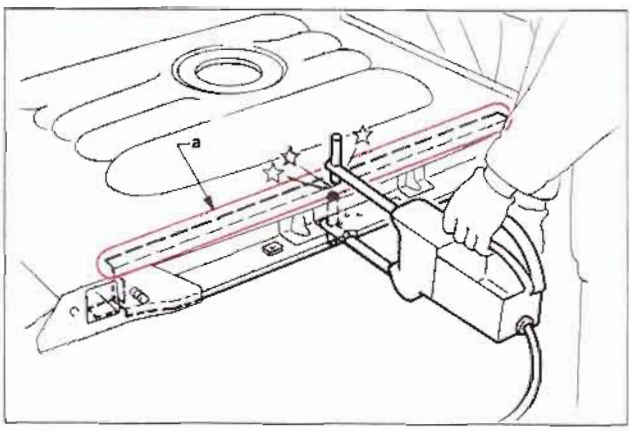


INSTALLING REMINDERS

- Insert spot welder arm from the opening of rear side member reinforcement and spot weld portions (b), (c), (f) and (g).

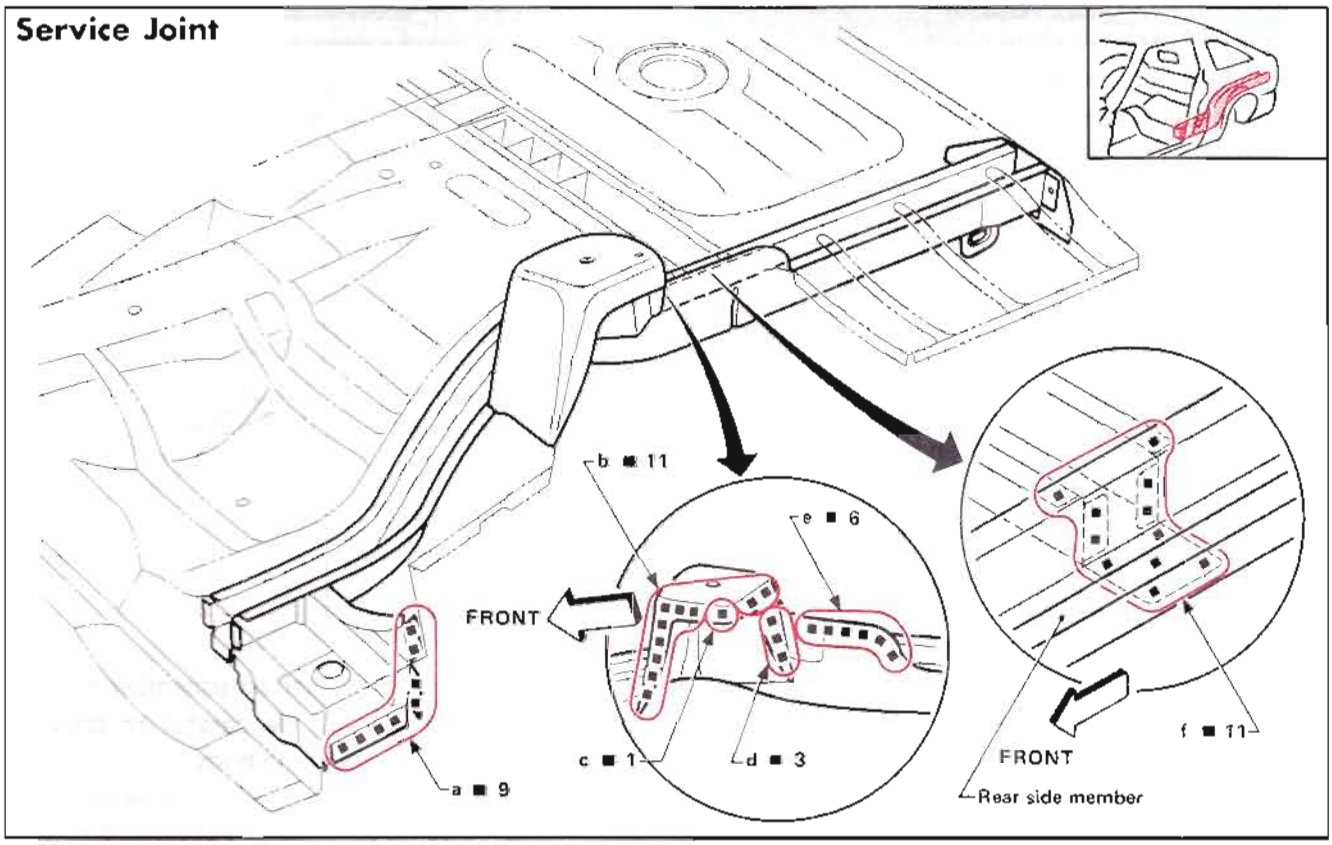


- When spot welding rear crossmember to rear floor at portion (a), be careful to prevent welder arm from touching body.



REAR SIDE MEMBER

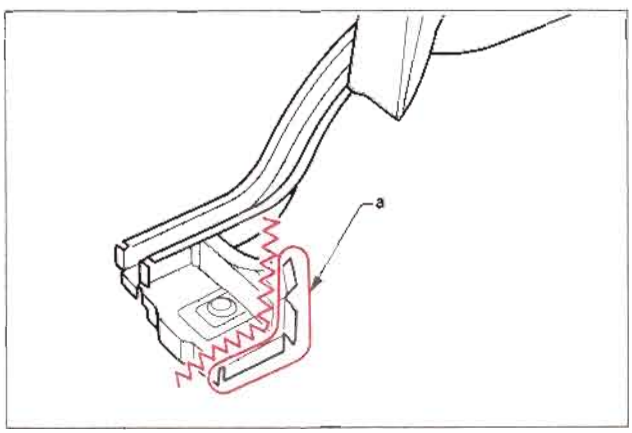
(Work after rear floor has been removed.)



Portions to be welded		
a. Inner sill extension	d. Rear shock absorber housing & rear suspension crossmember	f. Differential mounting crossmember
b. Inner rear wheelhouse	e. Inner rear wheelhouse	
c. Inner rear wheelhouse & rear shock absorber housing		

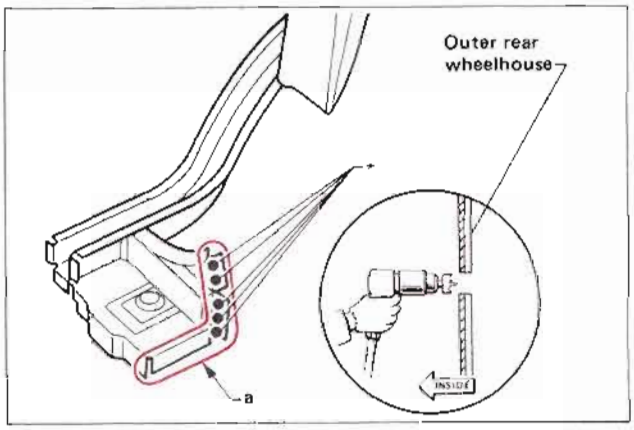
REMOVING REMINDERS

- Cut off rear side member to facilitate removal.

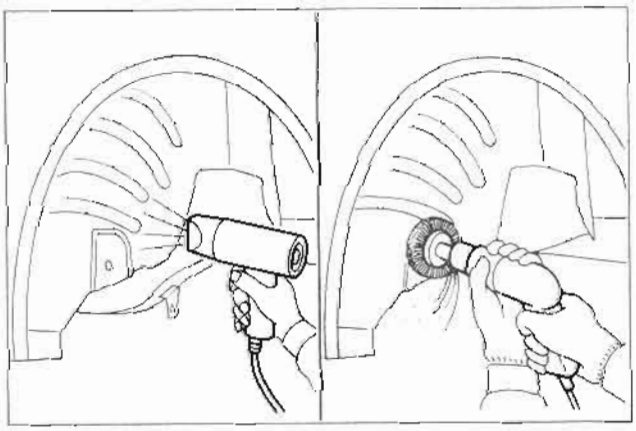


REAR SIDE MEMBER

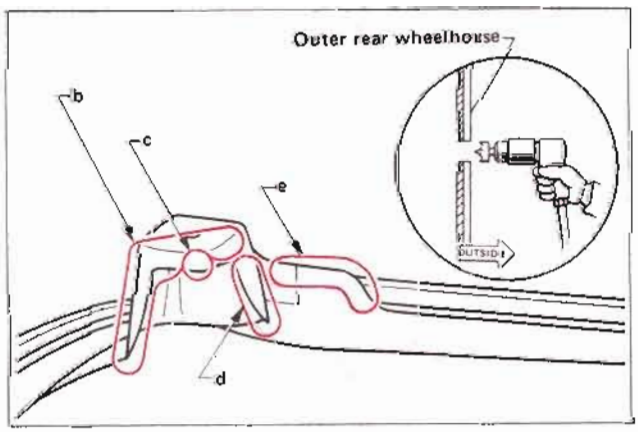
- Spot cut completely through portion (a*) and cut only one panel of other portions.



- Remove undercoating from wheelhouse at welded portions with a wire brush while applying heat.

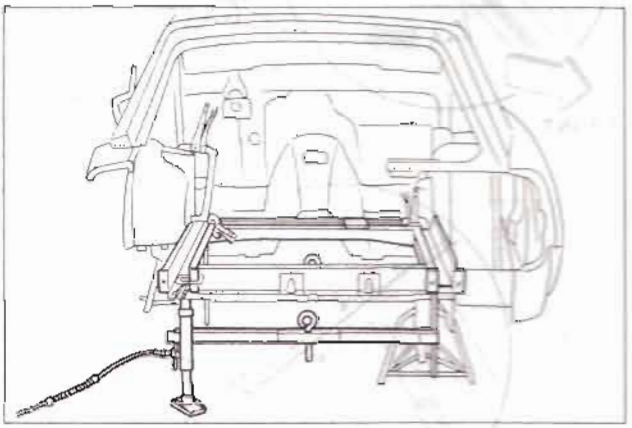


- Spot cut completely through portions (b), (c), (d) and (e) from outside.

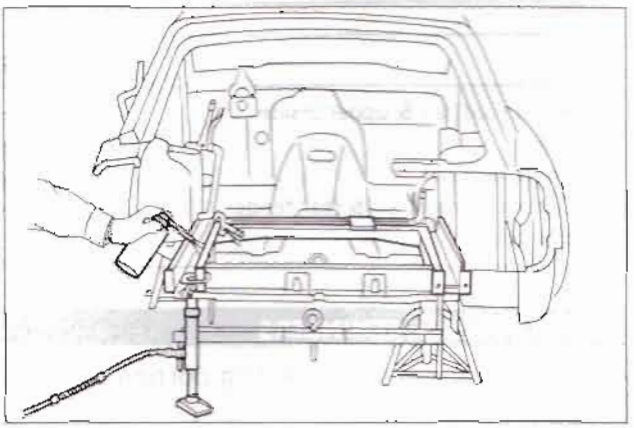


INSTALLING REMINDERS

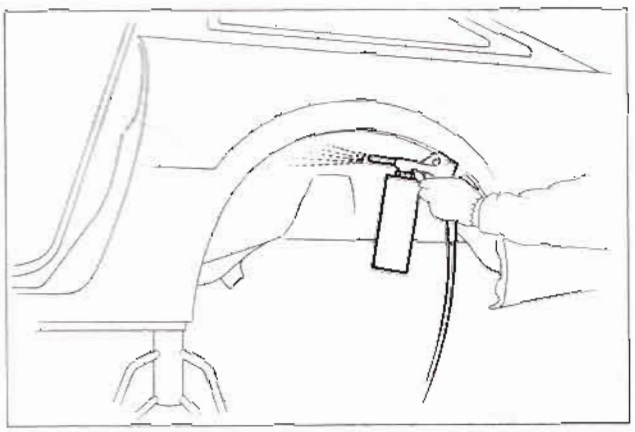
- Correct differential mounting crossmember if deformed according to dimensions.
- Align service part in accordance with dimension drawing. Support it with a jack or port power to prevent it from being misaligned. Use a centering gauge for correct positioning.



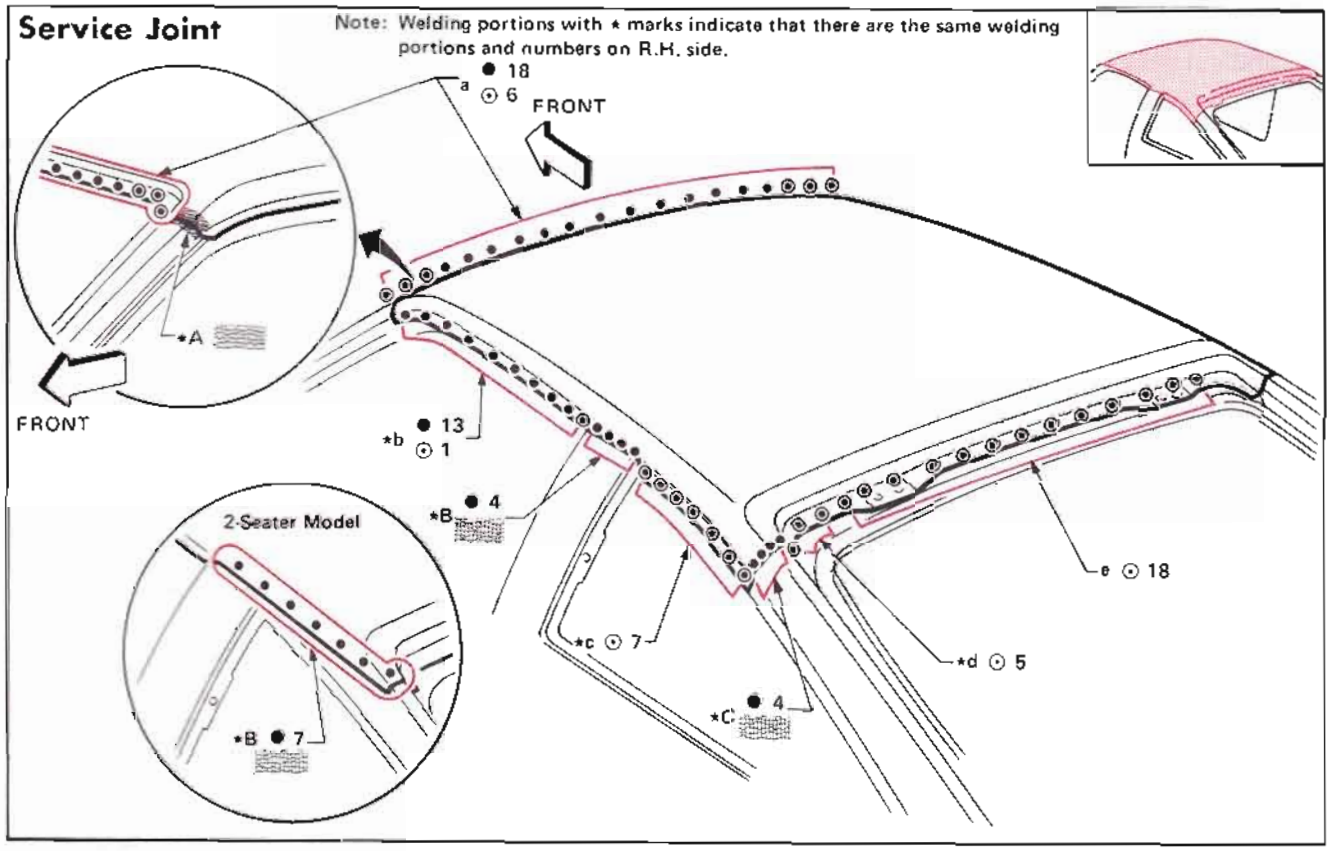
- Apply anti-corrosive wax to inside of rear side member.



- Apply undercoating to inside of rear wheelhouse.



ROOF PANEL

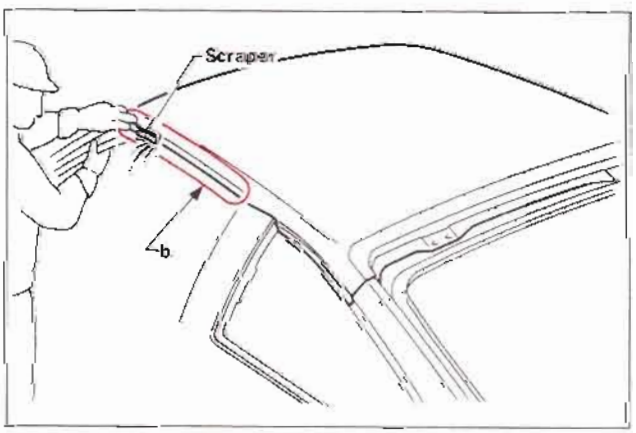


Portions to be welded

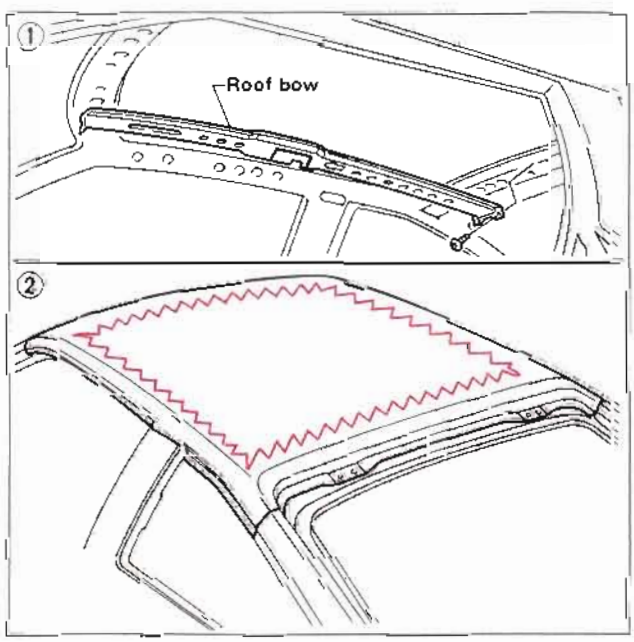
a. Front roof rail & upper inside panel
Front roof rail
b. Outer side roof rail & rear fender connector
Outer side roof rail
c. Rear fender & side panel (2 + 2 model only)
d. Rear fender extension & side panel
e. Rear roof rail
A. Front pillar
B. Rear fender
C. Rear fender (2 + 2 model only)

REMOVING REMINDERS

- Remove sealer from welding portion (b) with a scraper.

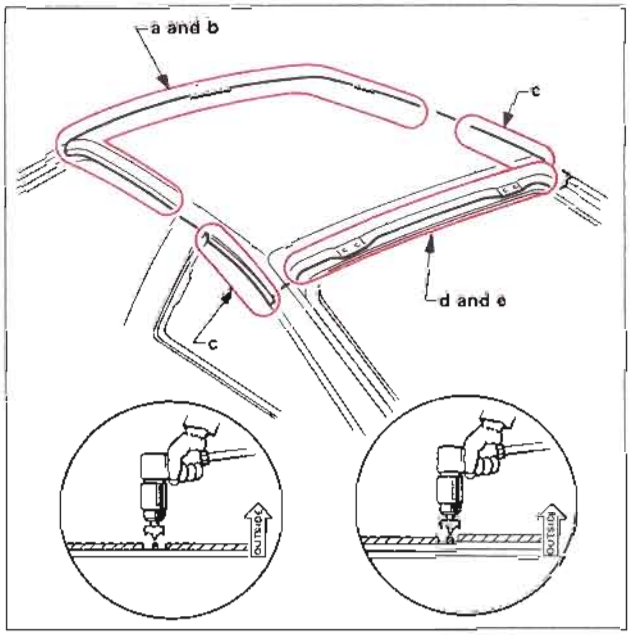


- Remove roof bow and cut off roof to facilitate removal of roof.



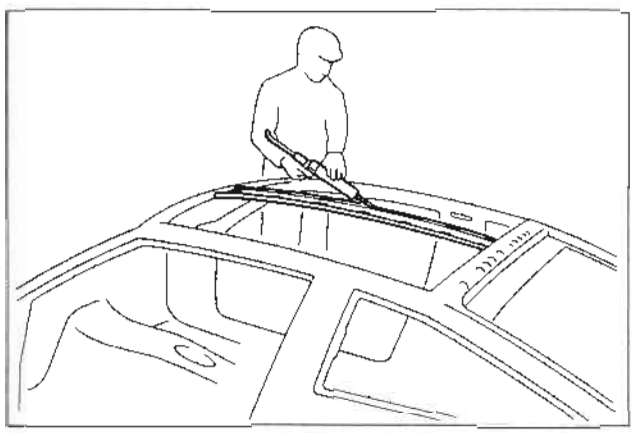
ROOF PANEL

- Do not spot cut through mating part.

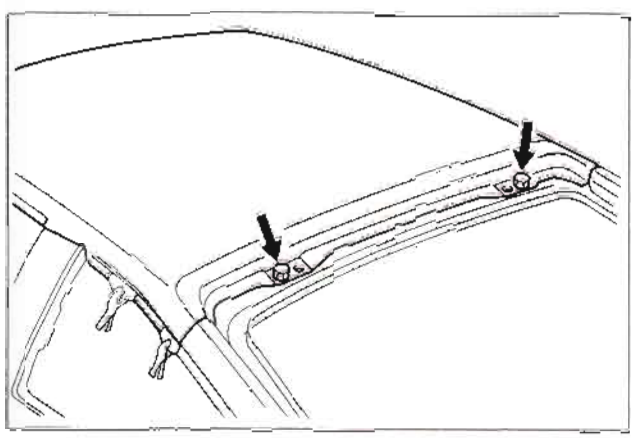


INSTALLING REMINDERS

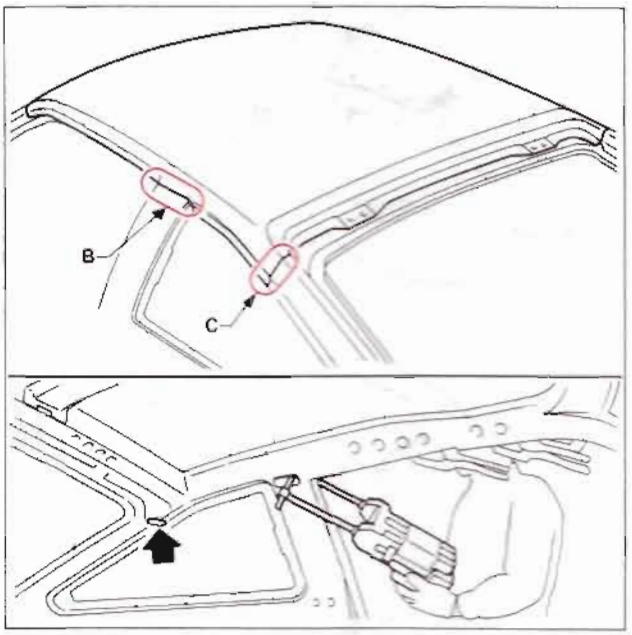
- Apply bonding agent to roof bow.



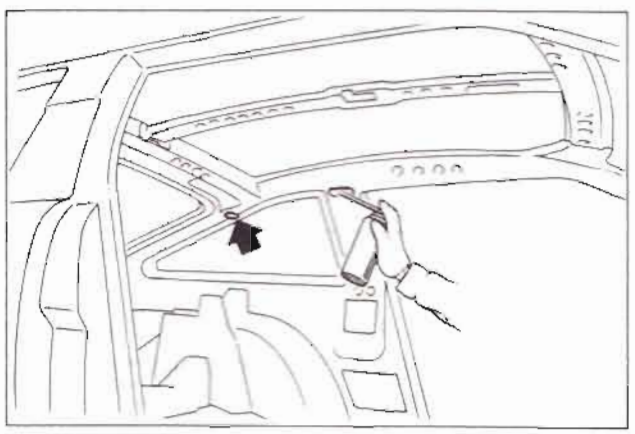
- When installing service part, fix it with bolts at back door hinge holes.



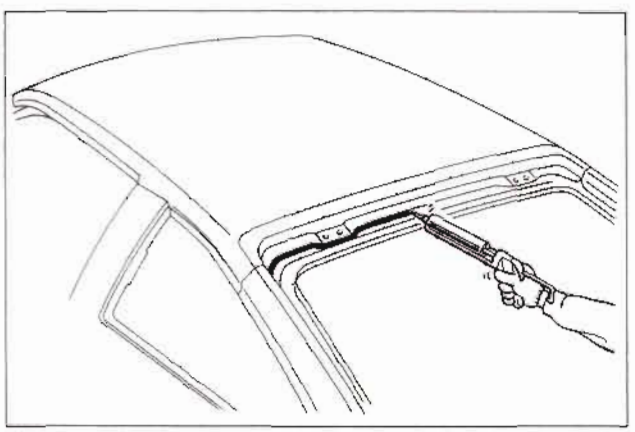
- On 2 + 2 seater model, spot weld portions (B) and (C) with welder's tip inserted through opening of side panel.



- Apply anti-corrosive agent to inside of panel.

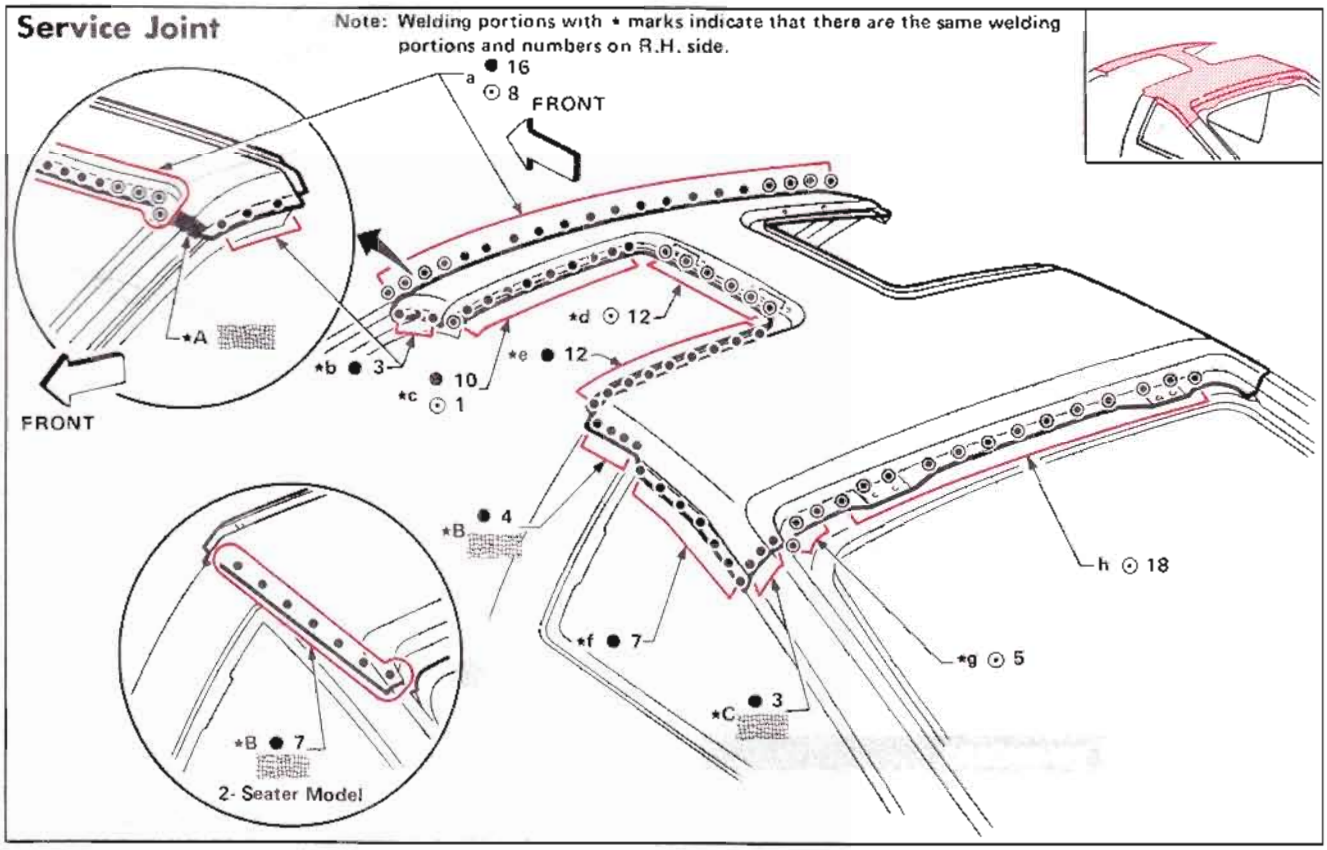


- Apply sealer.



ROOF PANEL

T-BAR ROOF



Portions to be welded

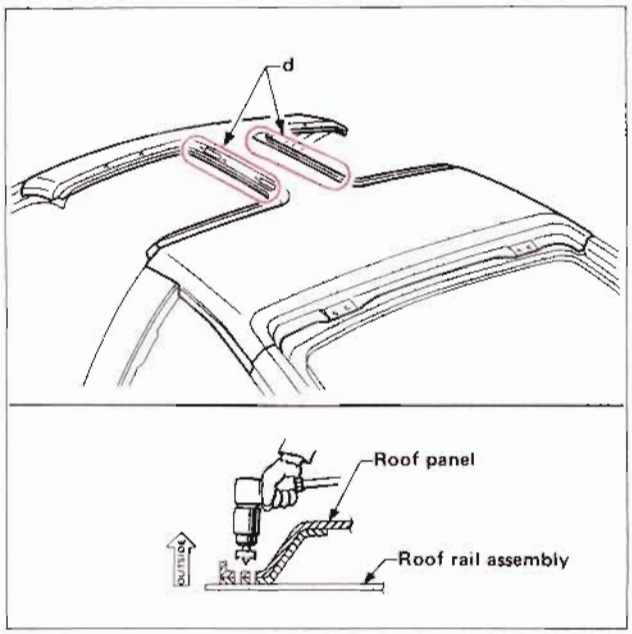
a.	Roof rail assembly	e.	Roof rail assembly	h.	Roof rail assembly
b.	Roof rail assembly	f.	Rear fender (2 + 2 model only)	A.	Front pillar
c.	Roof rail assemlby	g.	Rear fender extension & side panel	B.	Rear fender
d.	Roof rail assembly			C.	Rear fender (2 + 2 model only)

ROOF PANEL

T-BAR ROOF

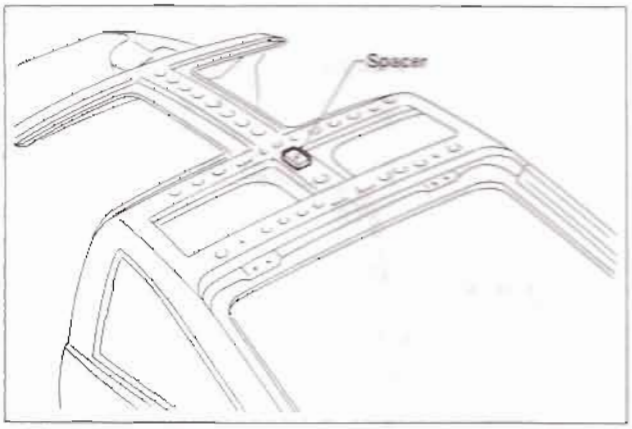
REMOVING REMINDER

- Cut the two upper panels of 3-layered parts at (d).

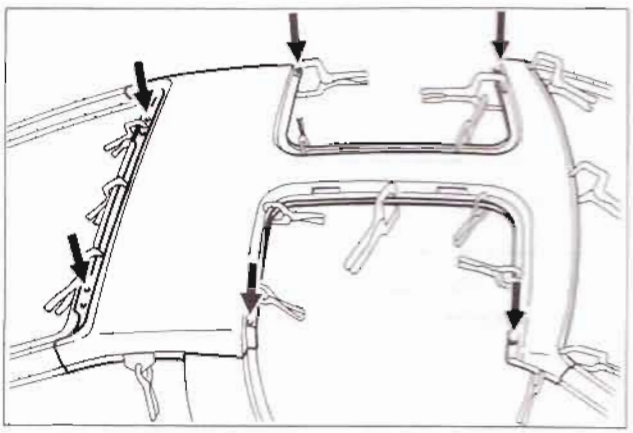


INSTALLING REMINDERS

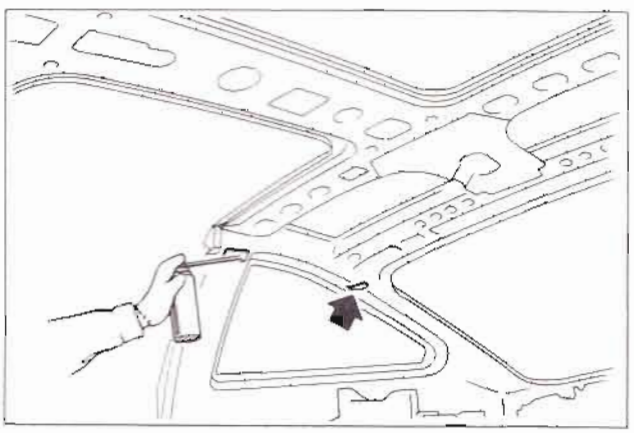
- Install spacer properly.



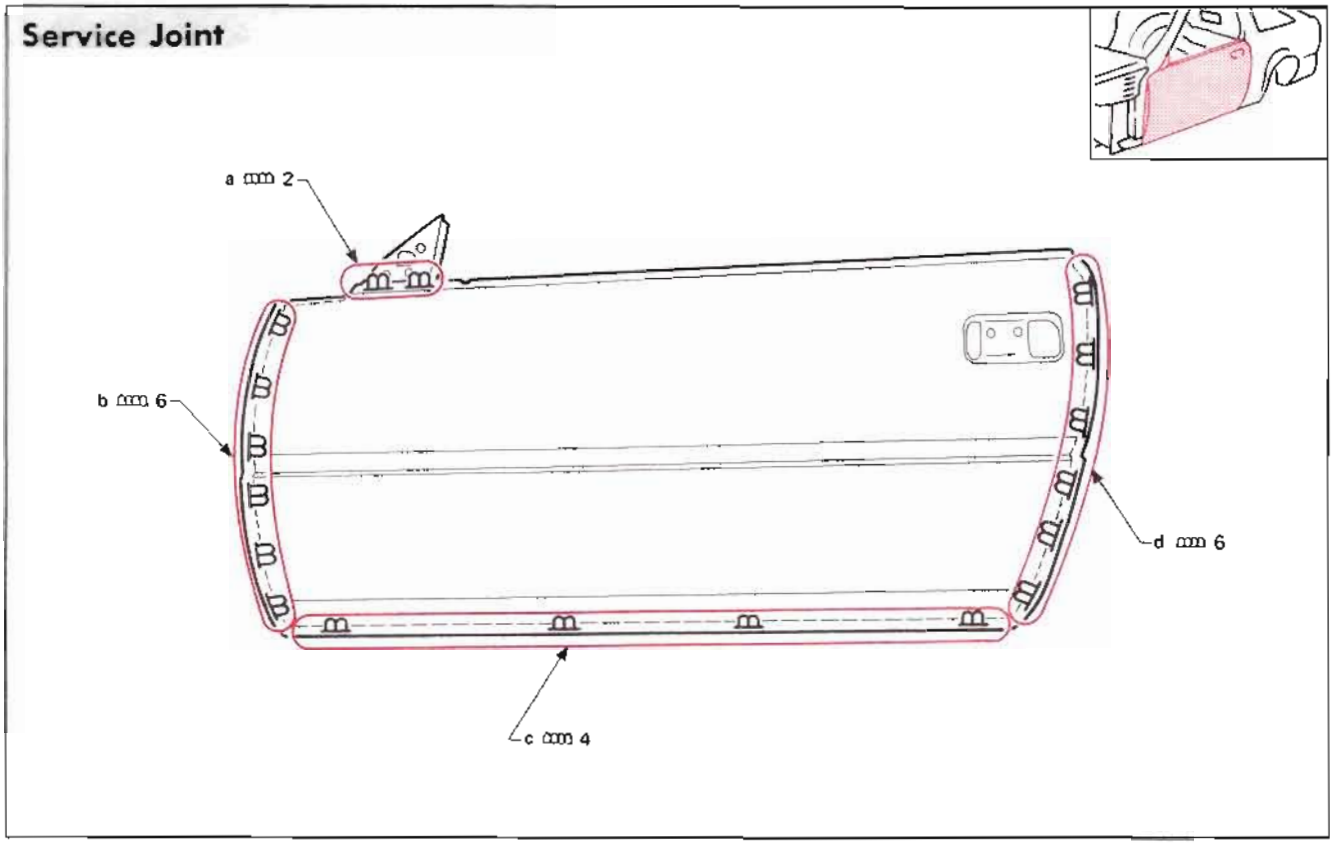
- Align back door hinge and drain pipe mounting holes with service part.



- Apply anti-corrosive agent to portions (B) and (C) through opening of side panel.



FRONT DOOR OUTER PANEL

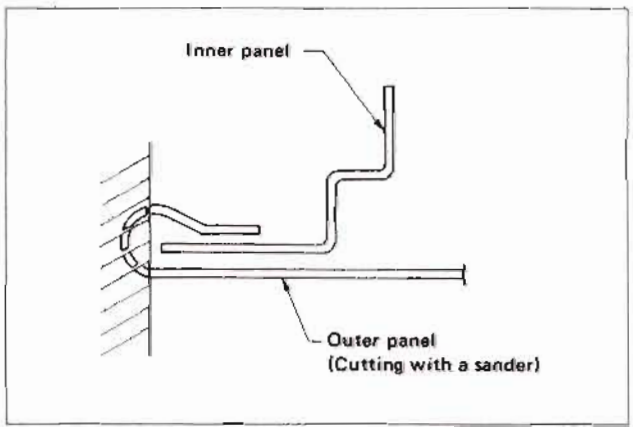


Portions to be welded		
a. Door mirror mounting reinforcement	b. Inner panel	d. Inner panel
	c. Inner panel	

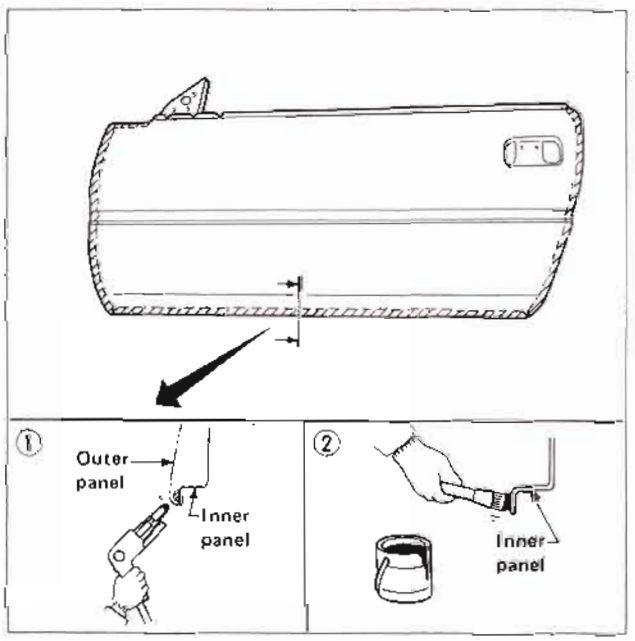
FRONT DOOR OUTER PANEL

REMOVING REMINDERS

- Cut off outer door panel hem with a sander. Be careful not to cut inner panel.

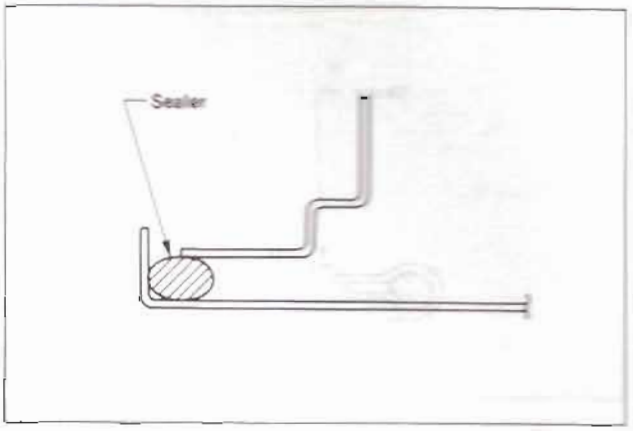


- After removing outer door panel, polish inner panel with a sander and apply an anti-corrosive agent.



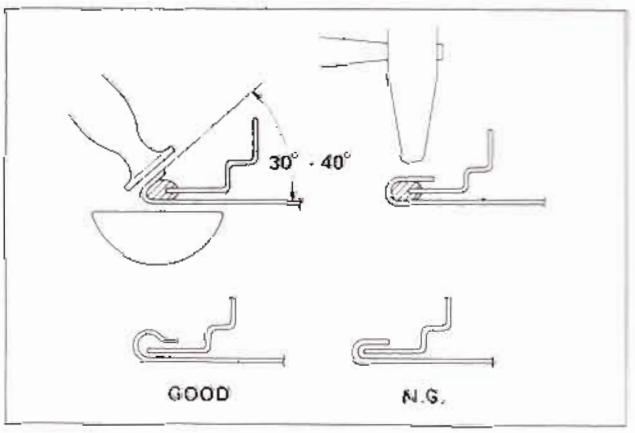
INSTALLING REMINDERS

- Coat outer door panel hem with sealer.

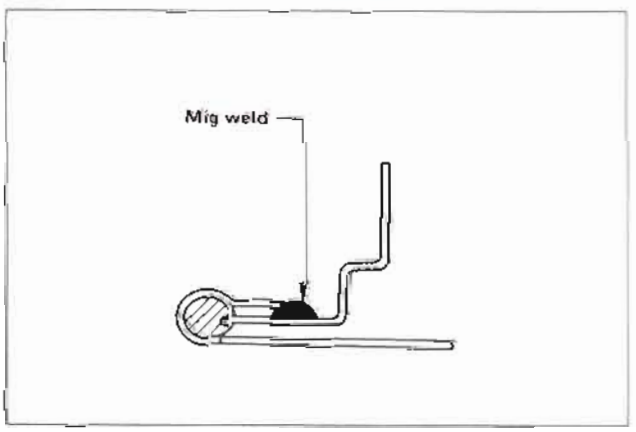


- Carry out hemming work in two steps.

  Note: Be sure to hem the entire periphery of panel.

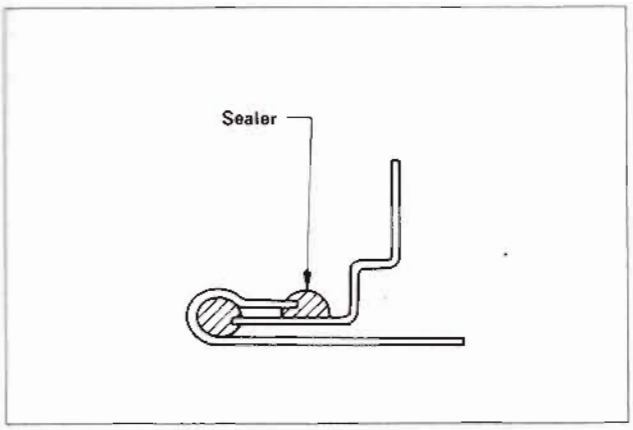


- Mig weld after hemming work.

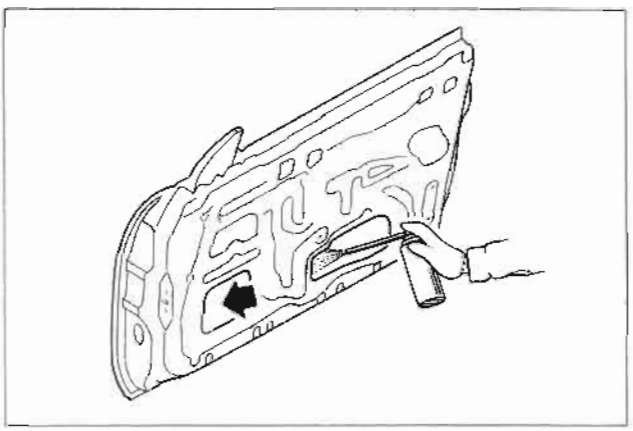


FRONT DOOR OUTER PANEL

- Apply sealer to the entire edge of panel's hemmed part.



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



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