FOREWORD

This repair manual has been prepared as a supplement to TOYOTA SUPRA collision damaged repair manual to provide information on the repair methods (including cutting and welding operations, but excluding painting) recommended by TOYOTA for collision−damaged body components of the TOYOTA SUPRA WITH SPORT ROOF.

Applicable models: MA70 series

This manual consists of body repair methods, exploded diagrams and illustrations of the body components and other information relating to body panel replacement such as handling precautions, tools, equipment, etc.

Body construction will sometimes differ depending on specifications and country of destination. Therefore, please keep in mind that the information contained herein is based on vehicles for general destinations.

For the service of specifications and repair procedures other than collision−damaged body components of the TOYOTA SUPRA WITH SPORT ROOF, refer to the following repair manuals.

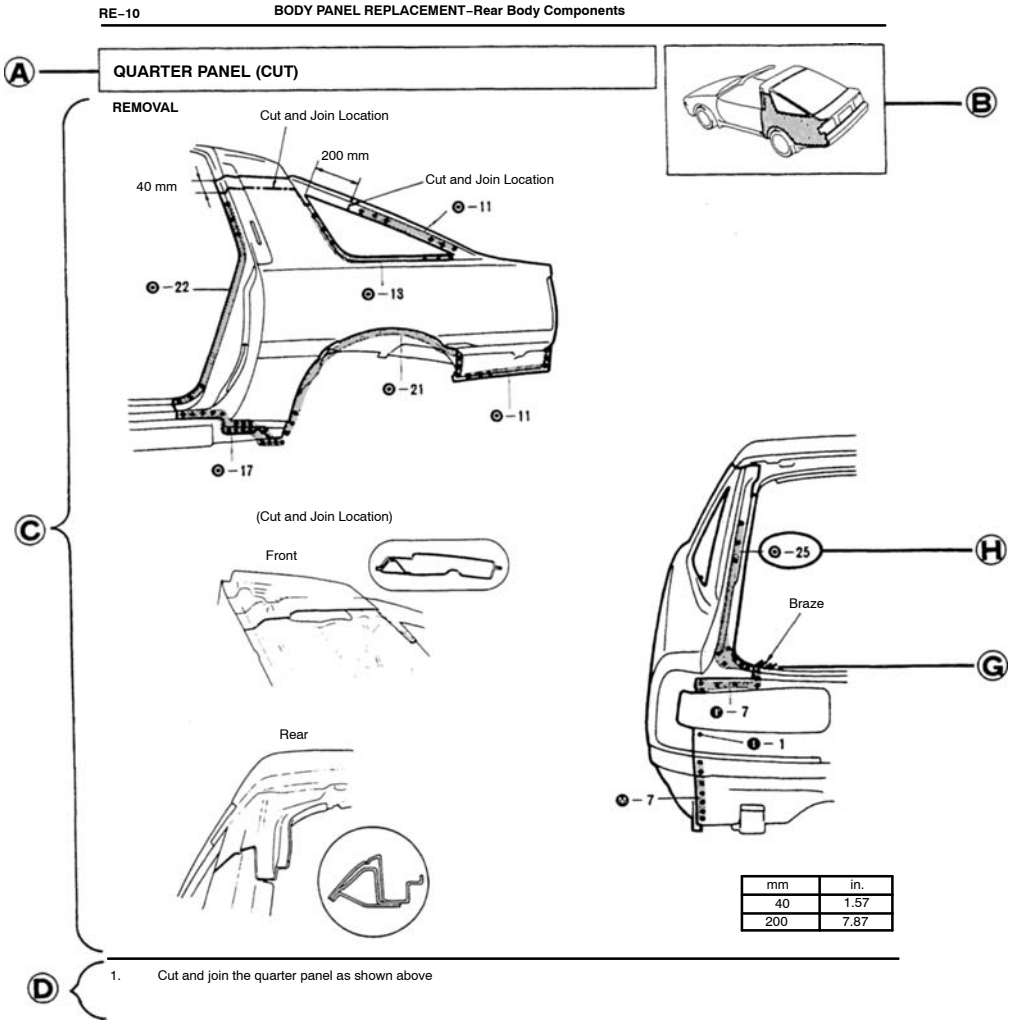
Manual Name	Pub. No.
7M−GE Engine Repair Manual	RM029E
TOYOTA SUPRA Chassis and Body Repair Manual	RM427E
TOYOTA SUPRA Chassis and Body Repair Manual Supplement	RM036E
TOYOTA SUPRA Electrical Wiring Diagram Manual	EWD013E
TOYOTA SUPRA Repair Manual (USA and Canada)	M/Y Version
TOYOTA SUPRA Electrical Wiring Diagram Manual (USA and Canada)	M/Y Version
TOYOTA SUPRA collision Damaged Repair Manual	BRM005E
Fundamental Body Repair Procedures	BRM002E
Fundamental Painting Procedures	36438E

All information contained in this manual is the most up−to−date at the time of publication. However, specifications and procedures are subject to change without prior notice.

TOYOTA MOTOR CORPORATION

HOW TO USE THIS MANUAL

Each repair method description provided in Section RE of this manual comprises two pages, divided into 2 blocks (REMOVAL AND INSTALLATION) and includes illustrations to facilitate body repair.



A REPLACEMENT PART AND METHOD

QUARTER PANEL (CUT)

- Replacement method
  - (ASSY) . . . . . Assembly replacement
  - (CUT) . . . . . Major cutting (less than 1/2 of part used)
  - (CUT–W) . . . Half cutting (about 1/2 of part used)
  - (CUT–P) . . . . Partial cutting (most of part used)
- Replacement part

B BODY VARIATIONS AND PART LOCATION

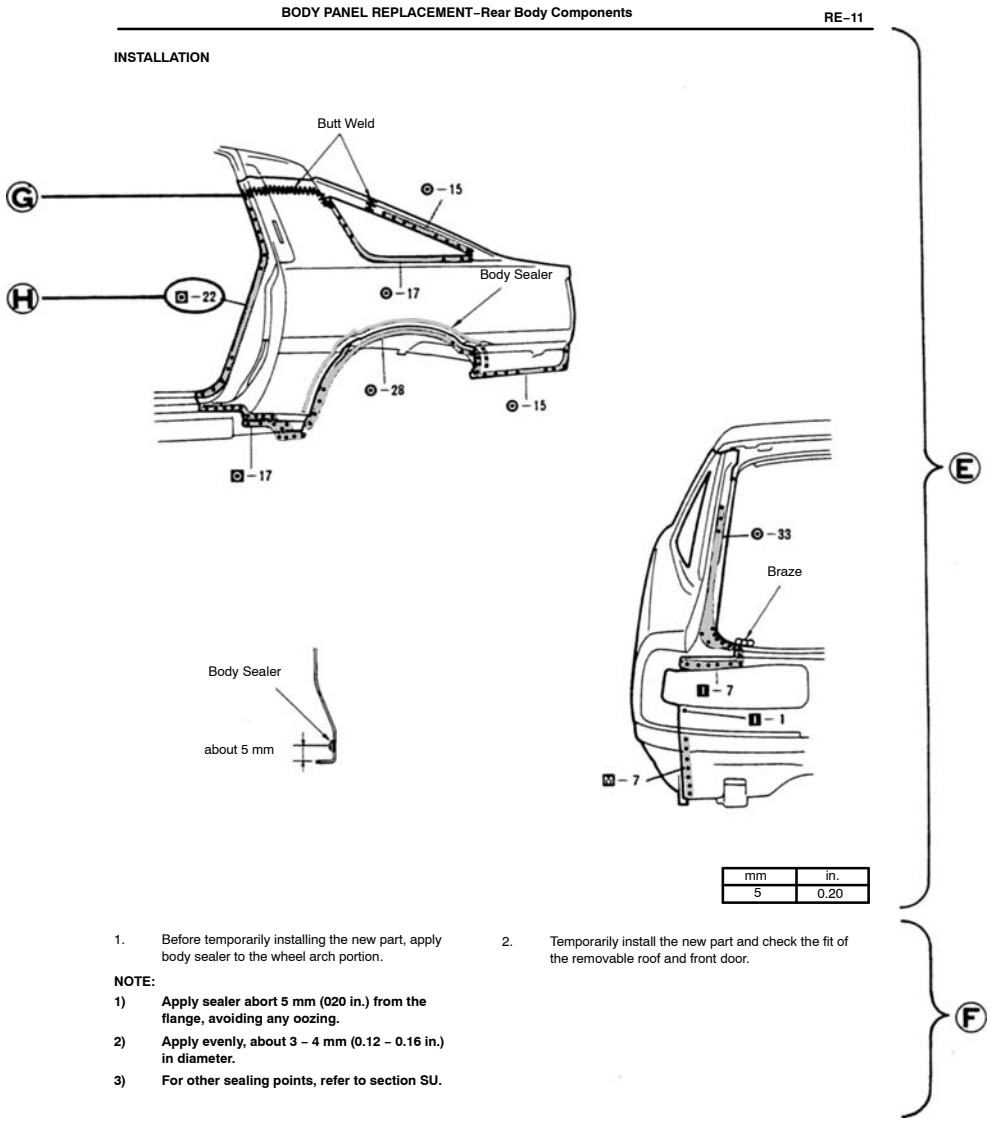
Body variations: Non . . All models

C REMOVAL DIAGRAM

Describes in detail removal of the damaged part involving repair by cutting.

D REMOVAL GUIDE

Provides additional information to more efficiently help you perform the removal.



Ⓔ INSTALLATION DIAGRAM
Describes in detail installation of the new part involving repair by welding and/or cutting, but excluding painting.

Ⓕ INSTALLATION GUIDE
Provides additional information to more efficiently help you perform the installation.

Ⓖ SYMBOLS
See page IN–4.

Ⓗ ILLUSTRATION OF WELD POINT
Weld method and panel position symbols.
See page IN–5.

SYMBOLS

The following symbols are used in the welding Diagrams in Section RE of this manual to indicate cutting areas and the types of weld required.

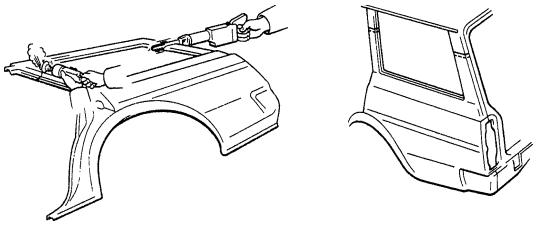
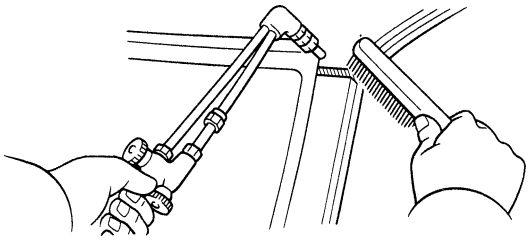
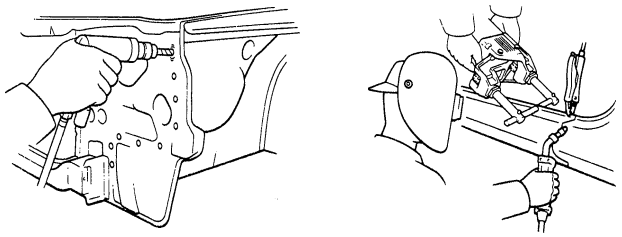
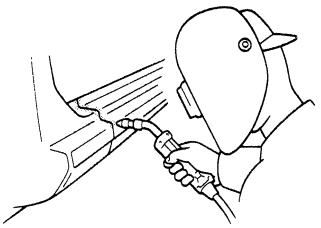
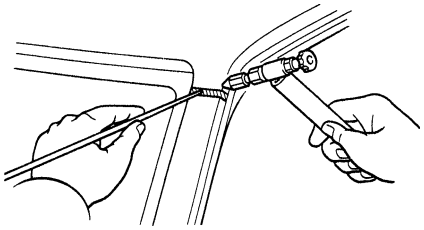
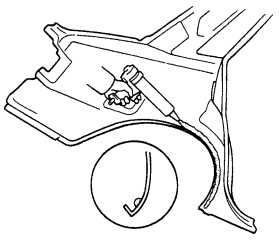
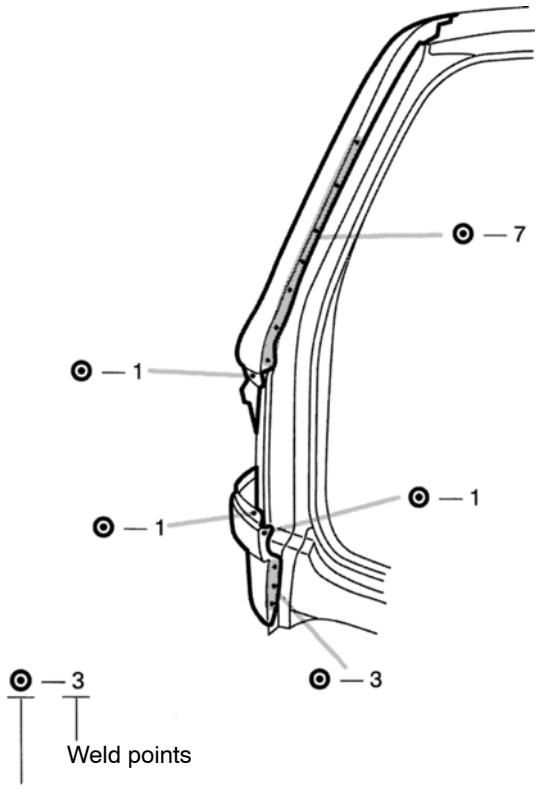
SYMBOLS	MEANING	ILLUSTRATION
	SAW CUT OR ROUGH CUT	
	REMOVE BRAZE	
	WELD POINTS SPOT WELD OR MIG PLUG WELD (See page IN–5)	
	CONTINUOUS MIG WELD (BUTT WELD OR TACK WELD)	
	BRAZE	
	BODY SEALER	

Illustration of Weld Point Symbols

EXAMPLE:

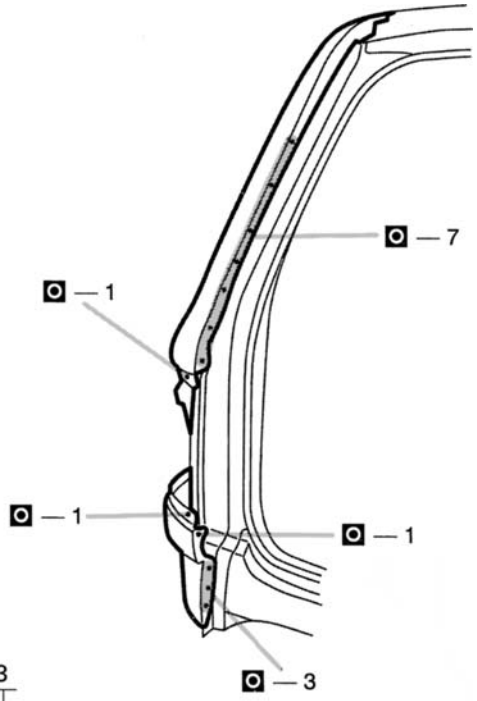
REMOVAL



Weld points

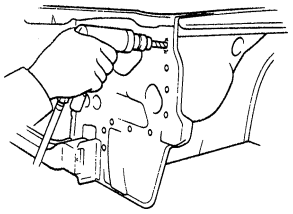
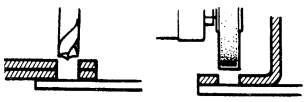
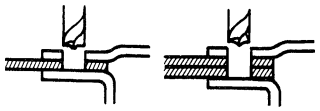
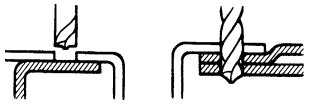
Remove weld point and panel position

INSTALLATION

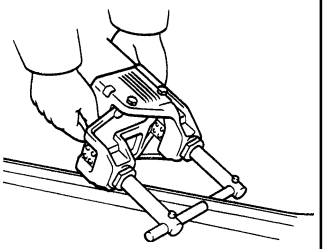
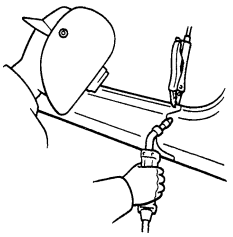
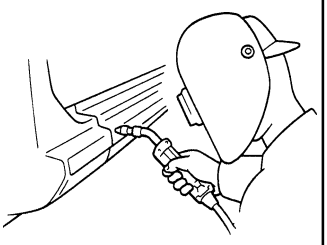


Weld points

Weld method and panel position

SYMBOL	MEANING	ILLUSTRATION
O M I	Remove Weld Points	
O	(Outside)	
M	(Middle)	
I	(Inside)	

HINT: Panel position syrnbols are as seen from the working posture.

SYMBOL	MEANING	ILLUSTRATION
O M I	Spot Weld	
O M I	Mig Plug Weld	
+	Spot MIG Weld	

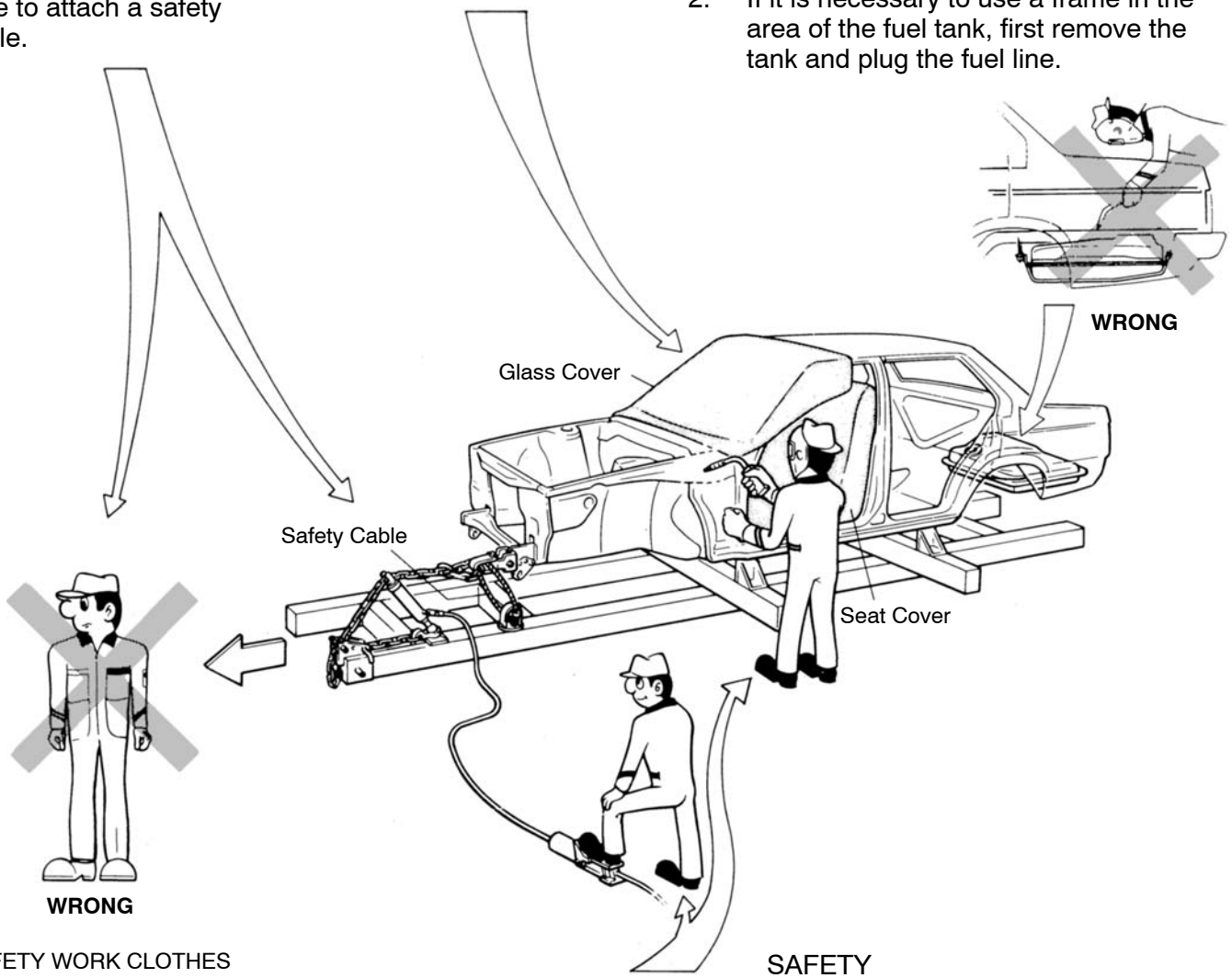
GENERAL REPAIR INSTRUCTIONS

Work Precautions

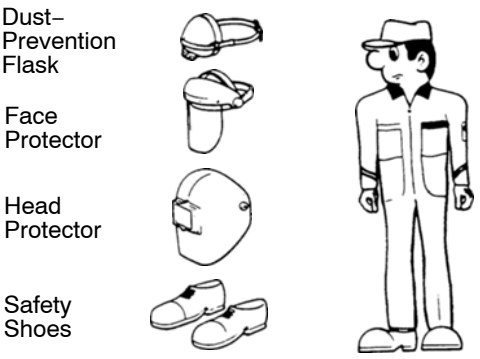
SAFETY
Never stand in direct line with the chain when using a puller on the body or frame, and be sure to attach a safety cable.

VEHICLE PROTECTION
When welding, protect the painted surfaces, windows, seats and carpet with heat–resistant, fire–proof covers.

SAFETY
1. Before performing repair work, check for fuel leaks. If a leak is found, be sure to close the opening totally.
2. If it is necessary to use a frame in the area of the fuel tank, first remove the tank and plug the fuel line.



SAFETY WORK CLOTHES
In addition to the usual mechanic wear, cap and safety shoes, the necessary gloves, head protector, glasses, ear plugs, face protector, dust–prevention mask, etc. should be worn as the situation demands.



SAFETY
Before performing repair work, disconnect the battery cables.

HAND TOOLS
Keeping your hand tools in neat order will have an effect on your work efficiency.

Proper and Efficient Work Procedures

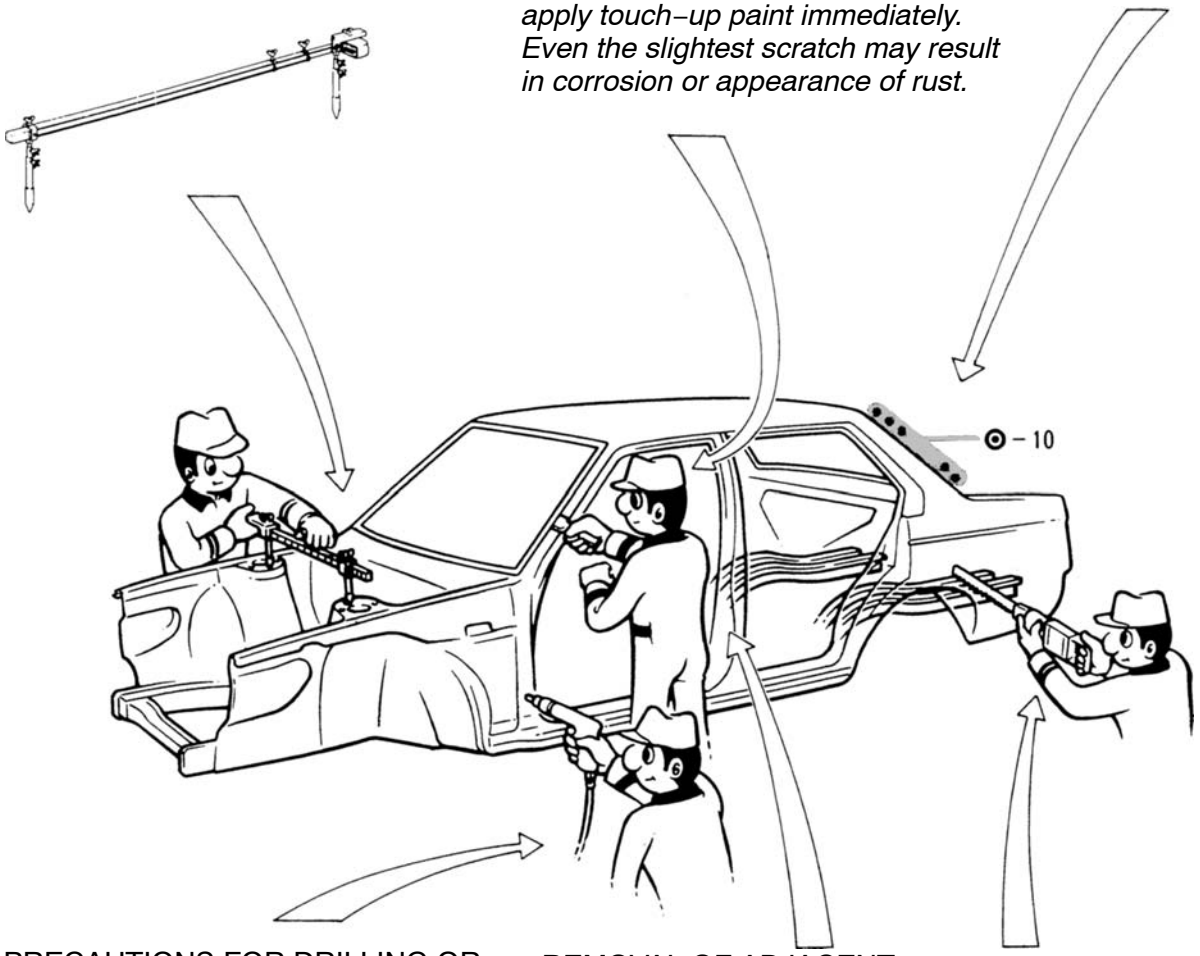
REMOVAL

PRE−REMOVAL MEASURING
Before removal or cutting operations, take measurements in accordance with the dimension diagram. Always use a puller to straighten a damaged body or frame.

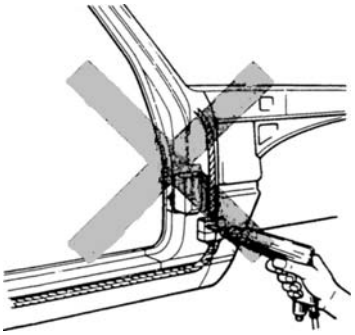
REMOVAL OF ADJACENT COMPONENTS
When removing adjacent components, apply protective tape to the surrounding body and your tools to prevent damage.
CAUTION:

1. *Be especially careful not to damage screw or clip holes.*
2. *If the paint is accidently scratched, apply touch−up paint immediately. Even the slightest scratch may result in corrosion or appearance of rust.*

NO. OF SPOT WELDS
Make a note of the number of spot welds for later reference.
NOTE: The number of spot welds may vary depending on the vehicle.



PRECAUTIONS FOR DRILLING OR CUTTING
Check behind any area to be drilled or cut to insure that there are no hoses, wires, etc., that may be damaged.

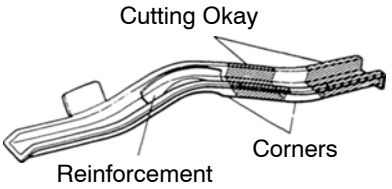


WRONG

REMOVAL OF ADJACENT PARTS
When removing adjacent parts by avoid accidental marring, etc., wrapping the tools used and surrounding body parts in protective tape.
NOTE:

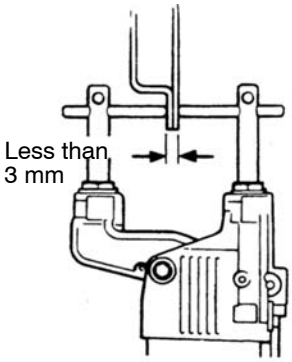
1) **Take particular care not to damage any screw or clip holes.**
2) **If you do scratch a painted surface, retouch immediately after. Even a small scratch will result in rust and corrosion.**

CUTTING AREA
Always cut in a straight line and avoid reinforced areas.



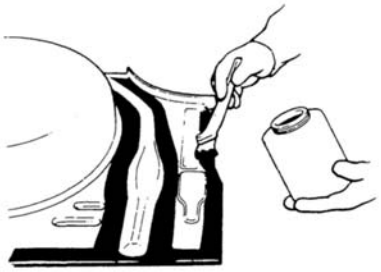
PREPARATION FOR INSTALLATION

SPOT WELD POINTS

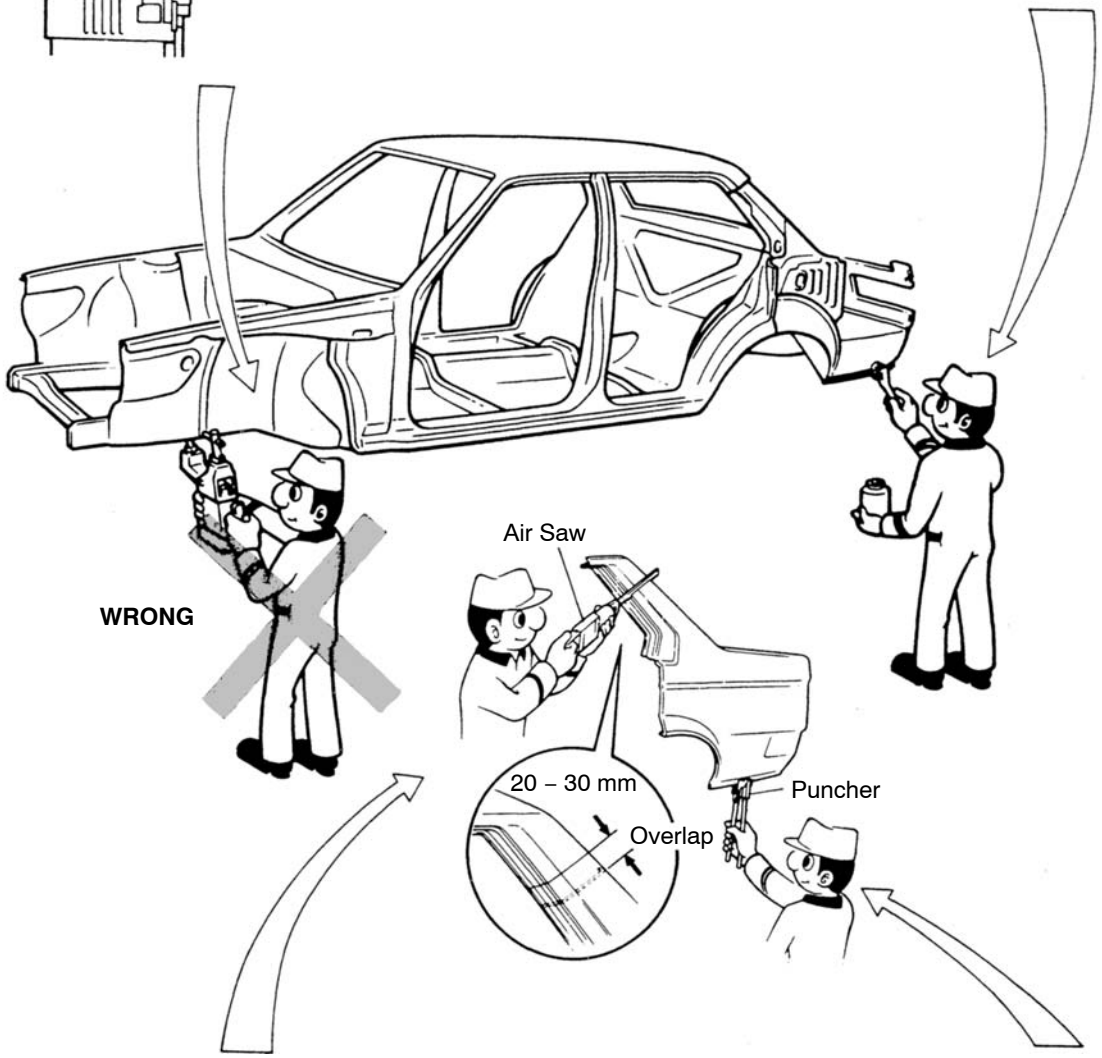


When welding panels with a combined thickness of over 3 mm (0.12 in.), use a MIG (Metal Inert Gas) welder for plug welding.
NOTE: Spot welding will not provide sufficient durability for panels over 3 mm (0.12 in.) thick.

APPLICATION OF WELD–THROUGH PRIMER



For treatment against corrosion, remove the paint from the portion of the new part and body to be welded, and apply weld–through primer.



ROUGH CUTTING OF JOINTS

For joint areas, rough cut the new part, leaving 20 – 30 mm (0.79 – 1.18 in.) overlap.

MAKING HOLES FOR PLUG WELDING

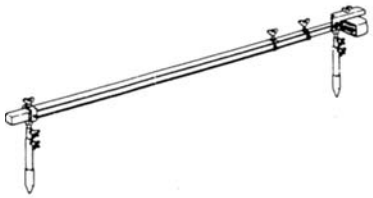
For areas where a spot welder cannot be used, use a puncher or drill to make holes for plug welding.

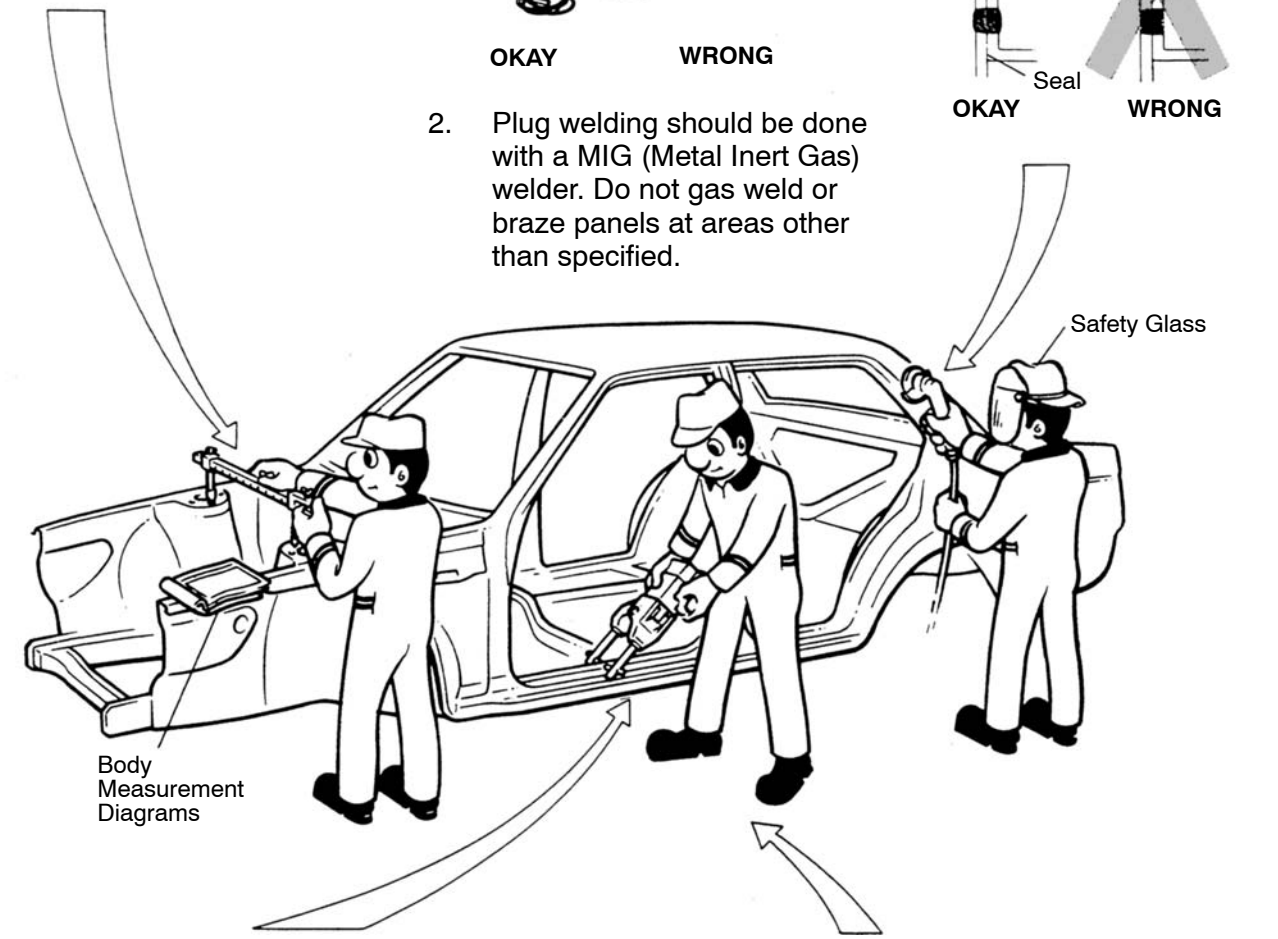
REFERENCE: mm (in.)

Thickness of welded portion	Size of plug hole
1.0 (0.04) under	5 (0.20) ϕ over
1.0 (0.04) over	6.5 (0.26) ϕ over

INSTALLATION

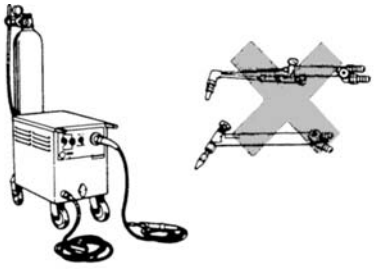
PRE–WELDING MEASUREMENTS
Always take measurements before installing underbody or engine components to insure correct assembly. After installation, confirm proper fit.





WELDING PRECAUTIONS

1. The number of welding spots should be as follows.
   Spot weld: 1.3 x No. of manufacturer's spots.
   Plug weld: More than No. of manufacturer's plugs.

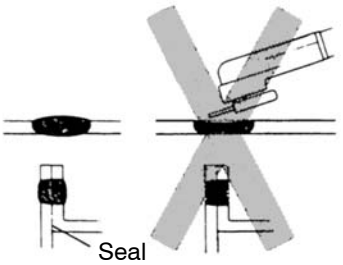


OKAY **WRONG**

2. Plug welding should be done with a MIG (Metal Inert Gas) welder. Do not gas weld or braze panels at areas other than specified.

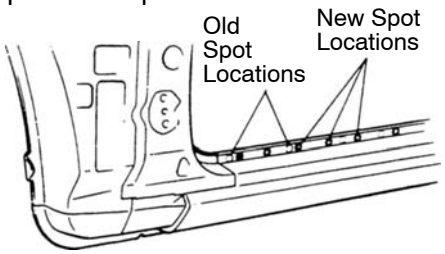
POST–WELDING REFINISHING

1. Always check the welded spots to insure they are secure.
2. When smoothing out the weld spots with a disc grinder, be careful not to grind off too much as this would weaken the weld.

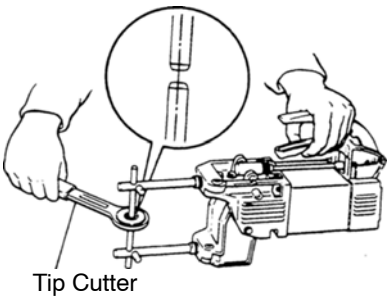


OKAY **WRONG**

SPOT WELD LOCATIONS
Try to avoid welding over previous spots.



SPOT WELDING PRECAUTIONS



1. The shape of the welding tip point has an effect on the strength of the weld.
2. Always insure that the seams and welding tip are free of paint.

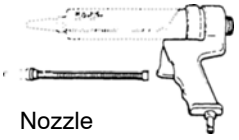
ANTI−CORROSIVE TREATMENT

When replacing body panels, always apply body sealer, anti−rust treatment or undercoating according to the requirements of your country.

BODY SEALER
Apply body sealer to the required areas.

Cartridge Type

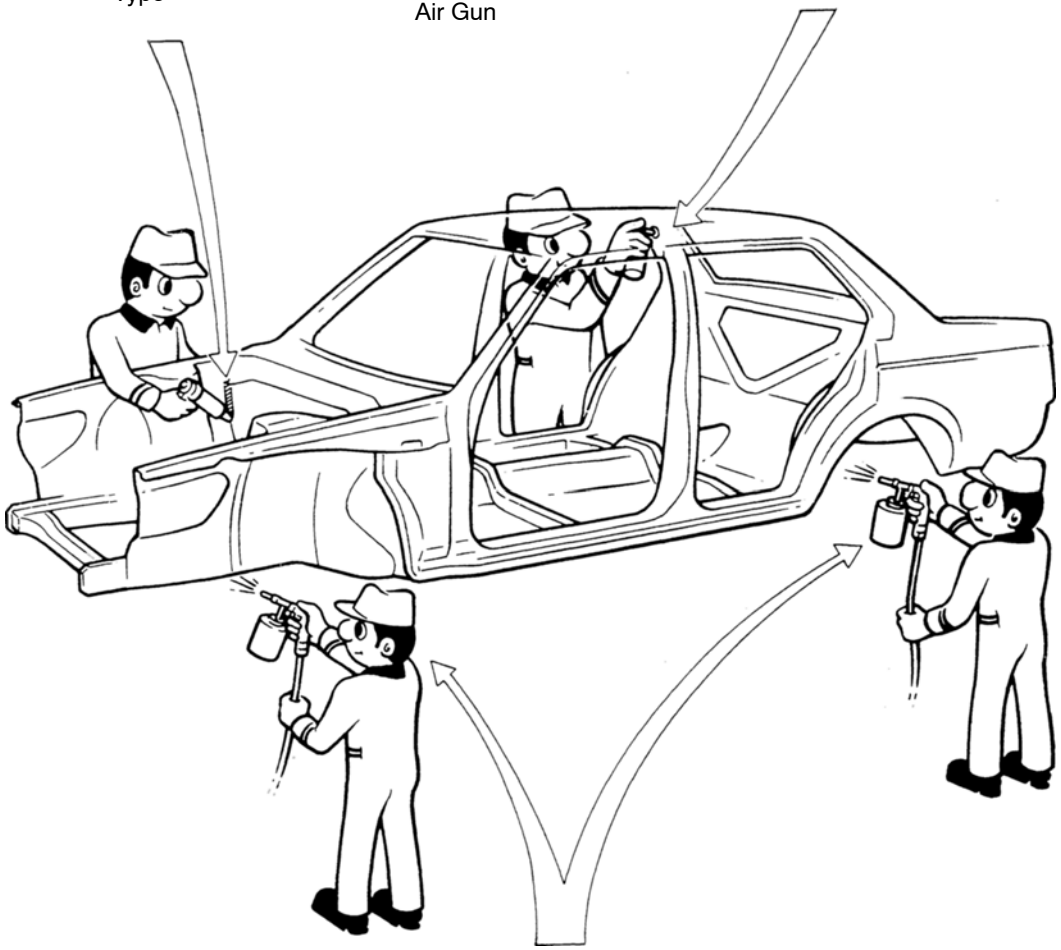
Tube Type



Nozzle

Air Gun

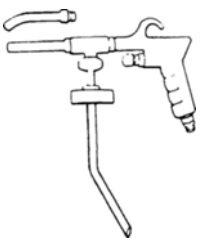
CHASSIS RUST−PROOFING
Anti−rust treatment for welding spots or inside brazed areas (torque box).



UNDERCOATING
Anti−rust treatment for underbody welding spots and wheel housings.

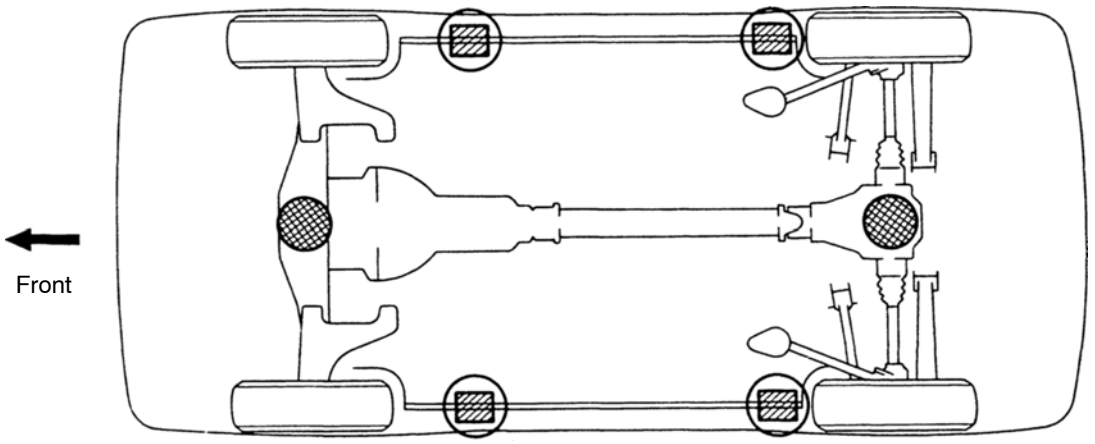
Undercoating (Oil base)

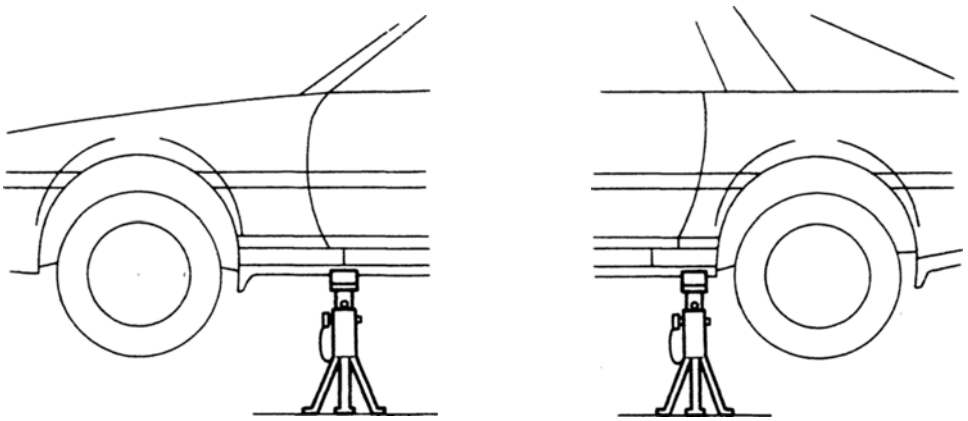
Undercoating (Water base)



Spray Gun

VEHICLE LIFT AND SUPPORT LOCATIONS





JACK POSITION

Front . . . . . Center of front suspension crossmember
Rear . . . . . Center of differential carrier

PANTOGRAPH JACK POSITION

SUPPORT POSITION

Safety stand . . . . . .

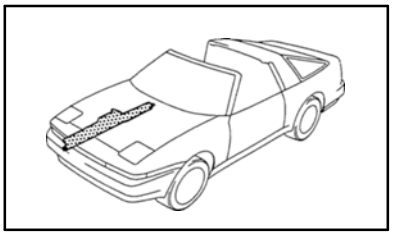
IN0088
IN0089

ABBREVIATIONS USED IN THIS MANUAL

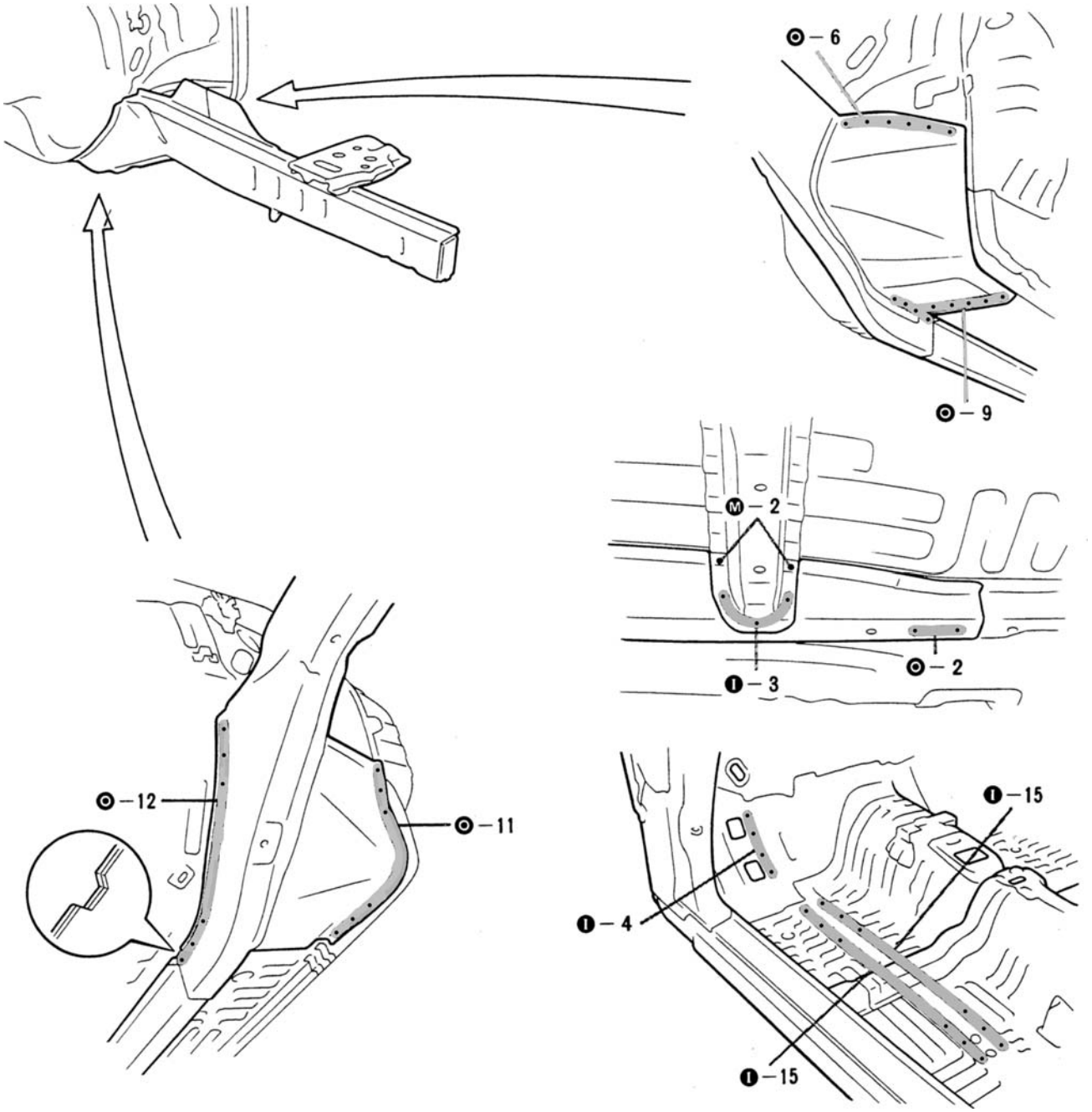
For convenience the following abbreviations are used in this manual.

Assy, assy	Assembly, assembly
Sub−assy	Sub−assembly
Ex.	Except
in.	Inch
IRS	Independent Rear Suspension
4−link	4−link Rear Suspension
MIG	Metal Inert Gas
M/Y	Model Year
OPN	Operation
SP	Spot Weld (Resistance Spot Weld)
w/	With
w/o	Without
FR	Front
RR	Rear
RH	Right−hand
RHD	Right−hand Drive
LH	Left−hand
LHD	Left−hand Drive

FRONT SIDE MEMBER (ASSY)

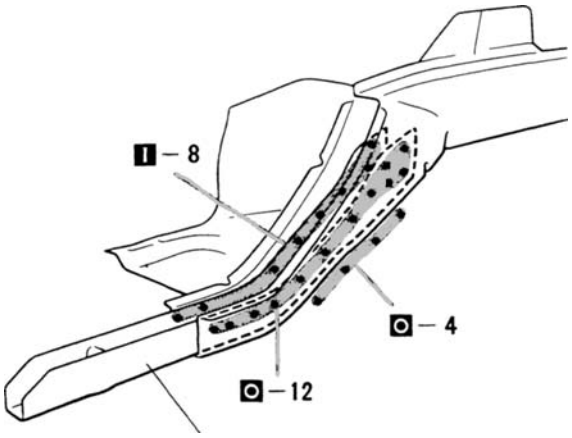


REMOVAL (With the front fender apron removed.)

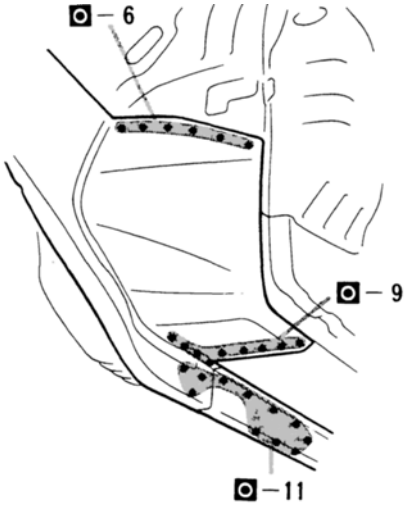


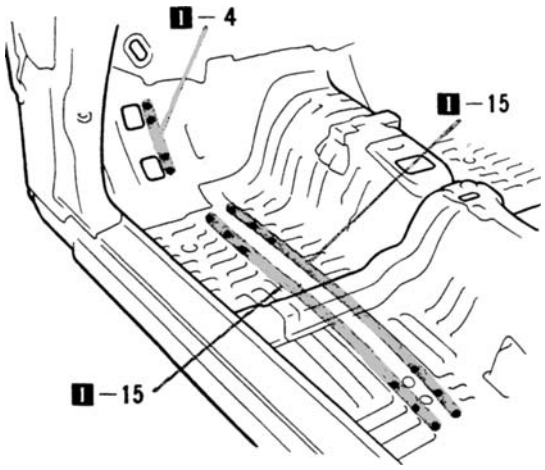
1. Replace the front floor under reinforcement together with the front side member reinforcement.

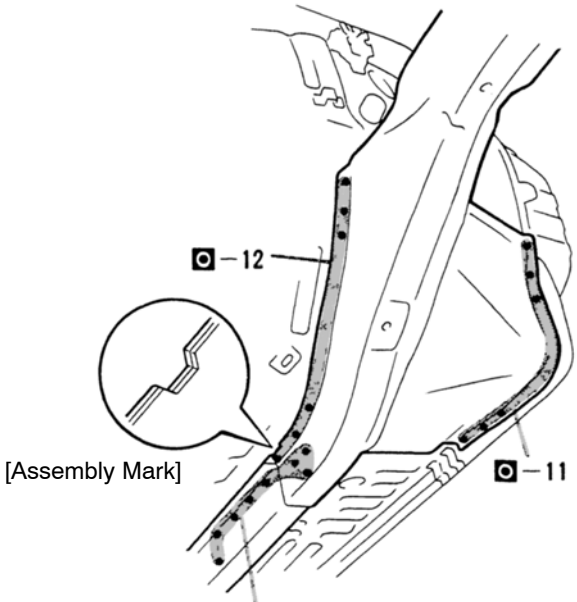
INSTALLATION



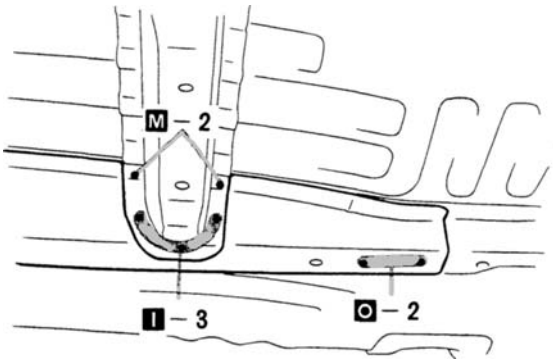
Front Side Member
Rear Reinforcement

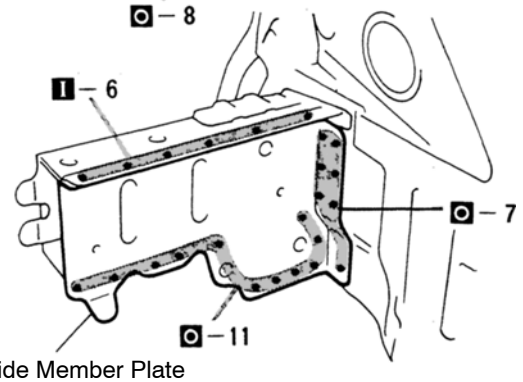






[Assembly Mark]

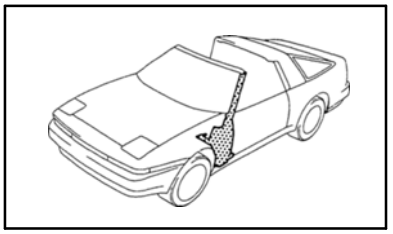




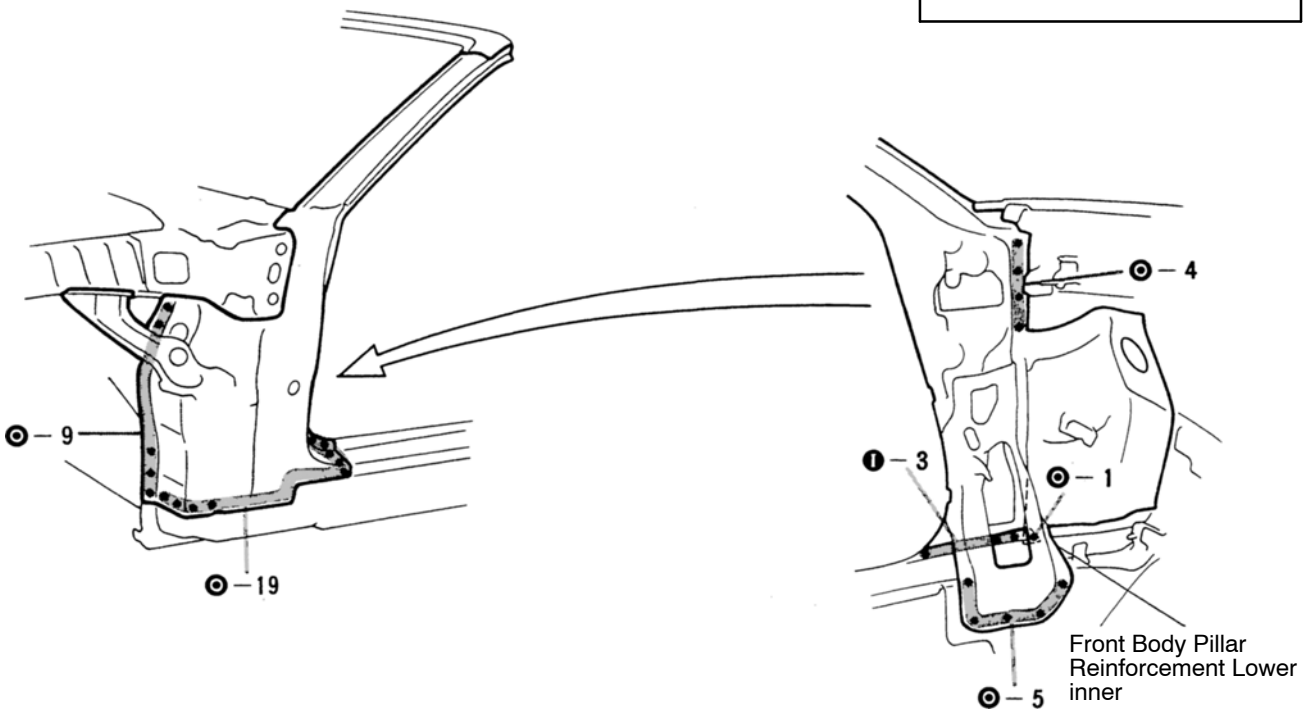
Front Side Member Plate

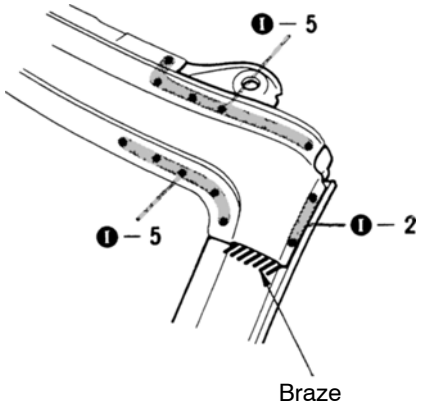
1. Before temporarily installing the new part, weld the front side member reinforcement to front side member.
2. Temporarily install the new member, measure each part in accordance with the body dimension diagram.

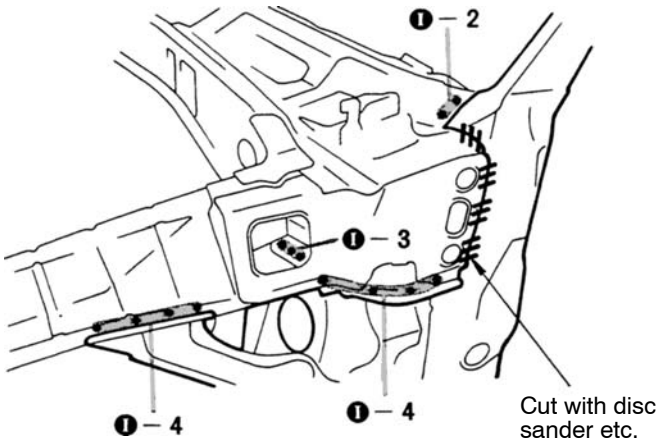
FRONT BODY PILLAR (ASSY)



REMOVAL

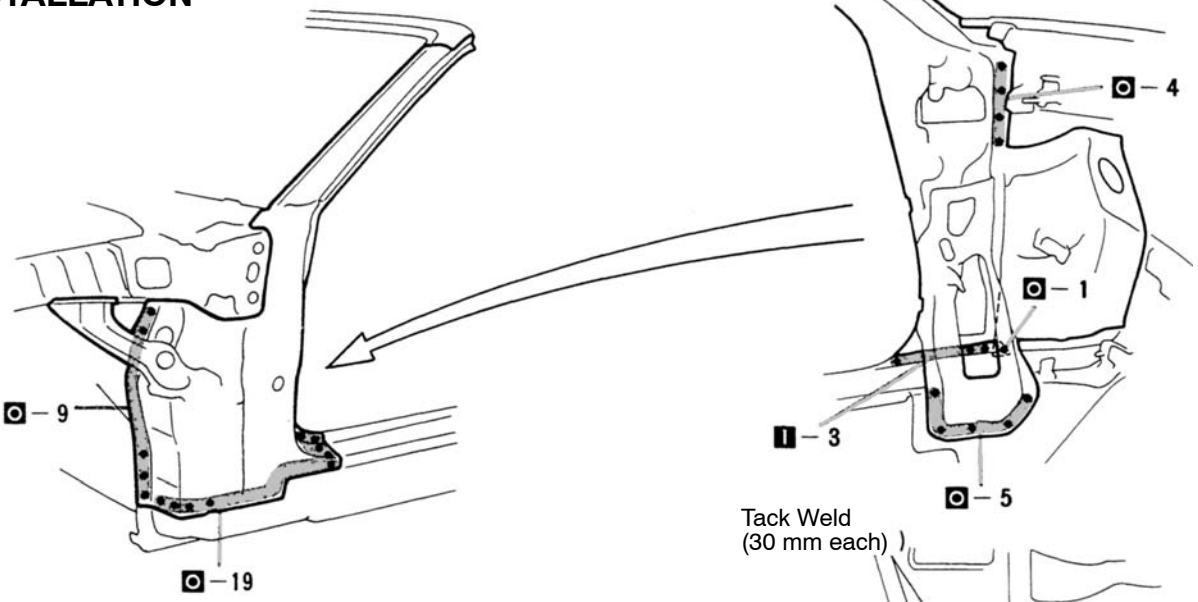


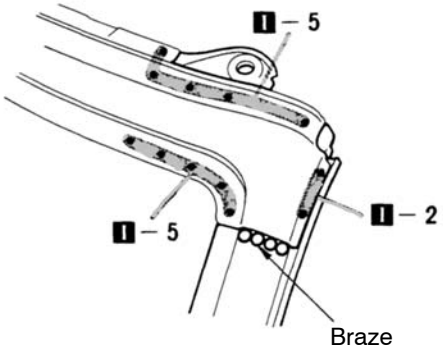


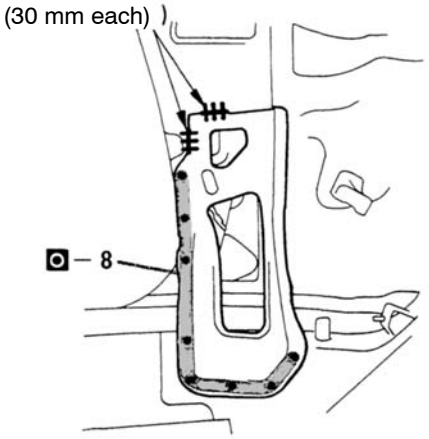


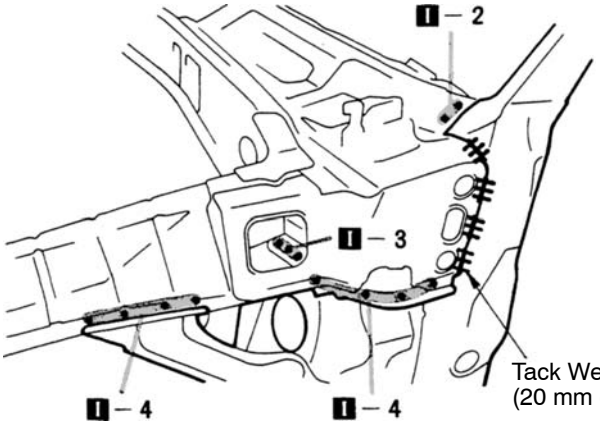
1. Replace the front body pillar together with front body pillar reinforcement lower inner.

INSTALLATION

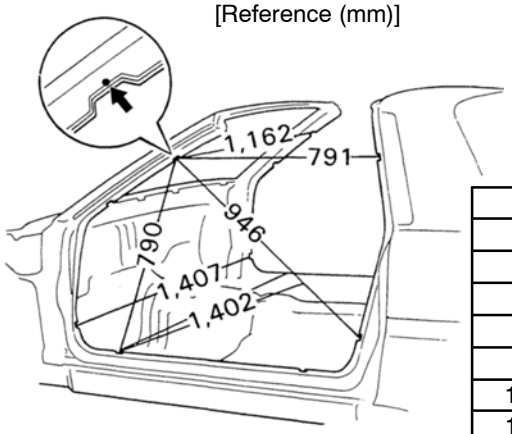








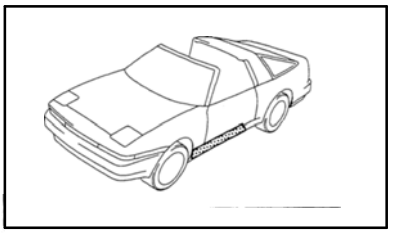
[Reference (mm)]



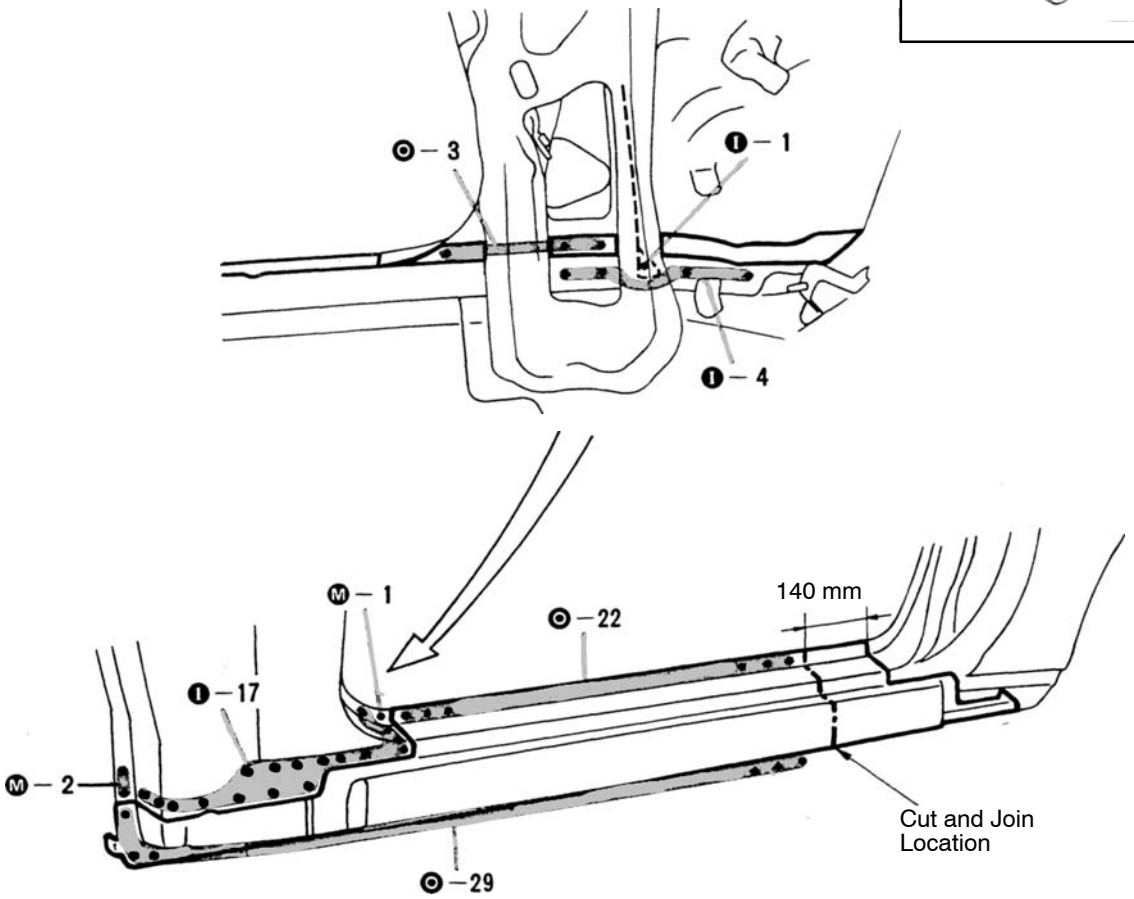
mm	in.
20	0.79
30	1.18
790	31.10
791	31.14
946	37.24
1,162	45.75
1,402	55.20
1,407	55.39

1. Temporarily install the new part and check the fit of the removable roof, front door, front fender, hood and windshield glass.

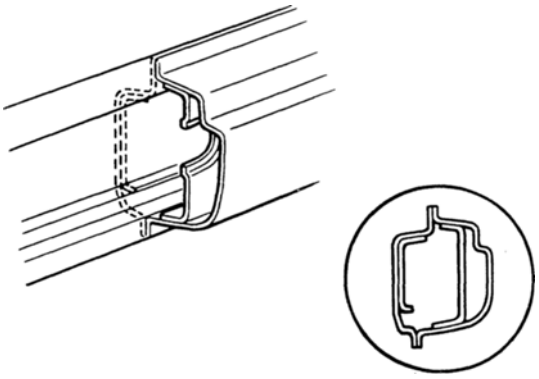
OUTER ROCKER PANEL (CUT)



REMOVAL



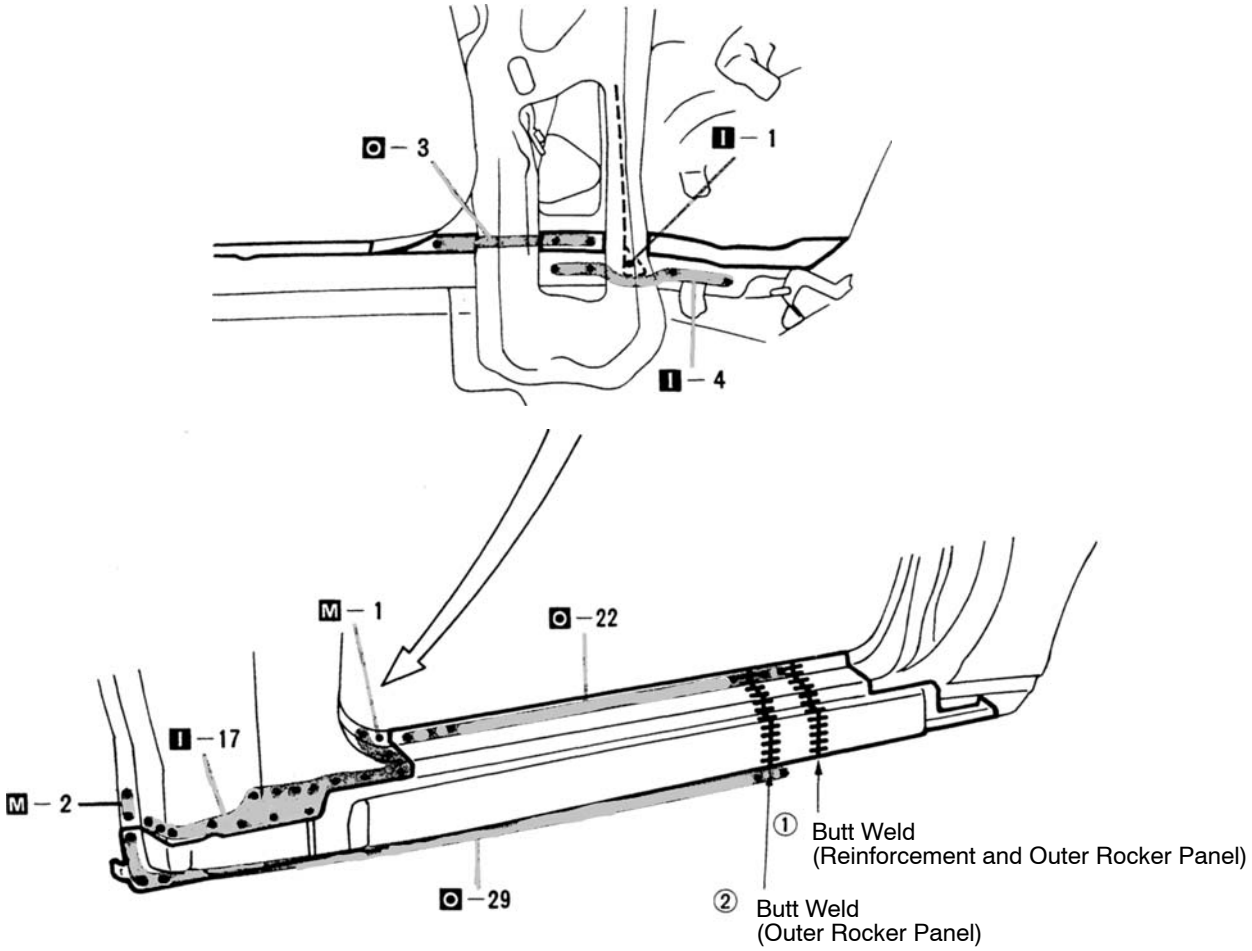
[Cut and Join Location]

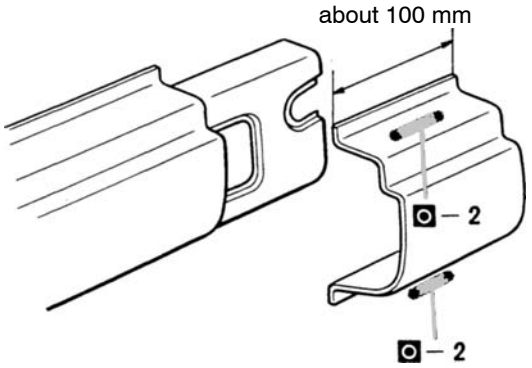


mm	in.
140	5.51

1. Cut the outer rocker panel together with reinforcement as shown above.

INSTALLATION

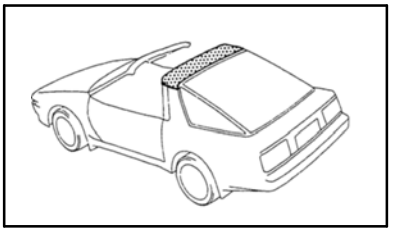




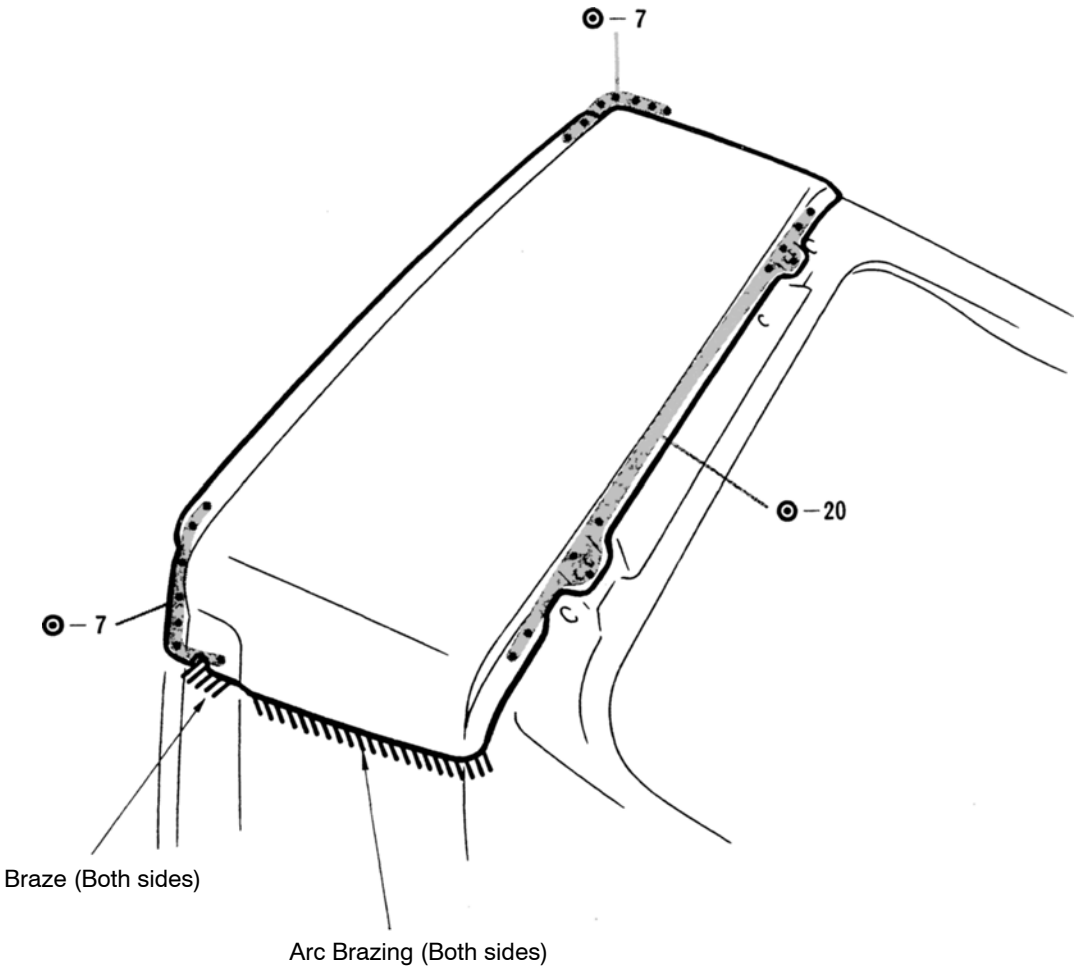
mm	in.
100	3.94

1. After cutting the supply part (outer rocker panel and reinforcement) at the butt weld location 1, cut the outer rocker panel only about 100 mm (3.94 in.).
2. Temporarily install the new part and check the fit of the removable roof and front door.
3. After butt welding the reinforcement and anti-rust treatment for the welding spots, butt weld the outer rocker panel.

ROOF PANEL (ASSY)



REMOVAL

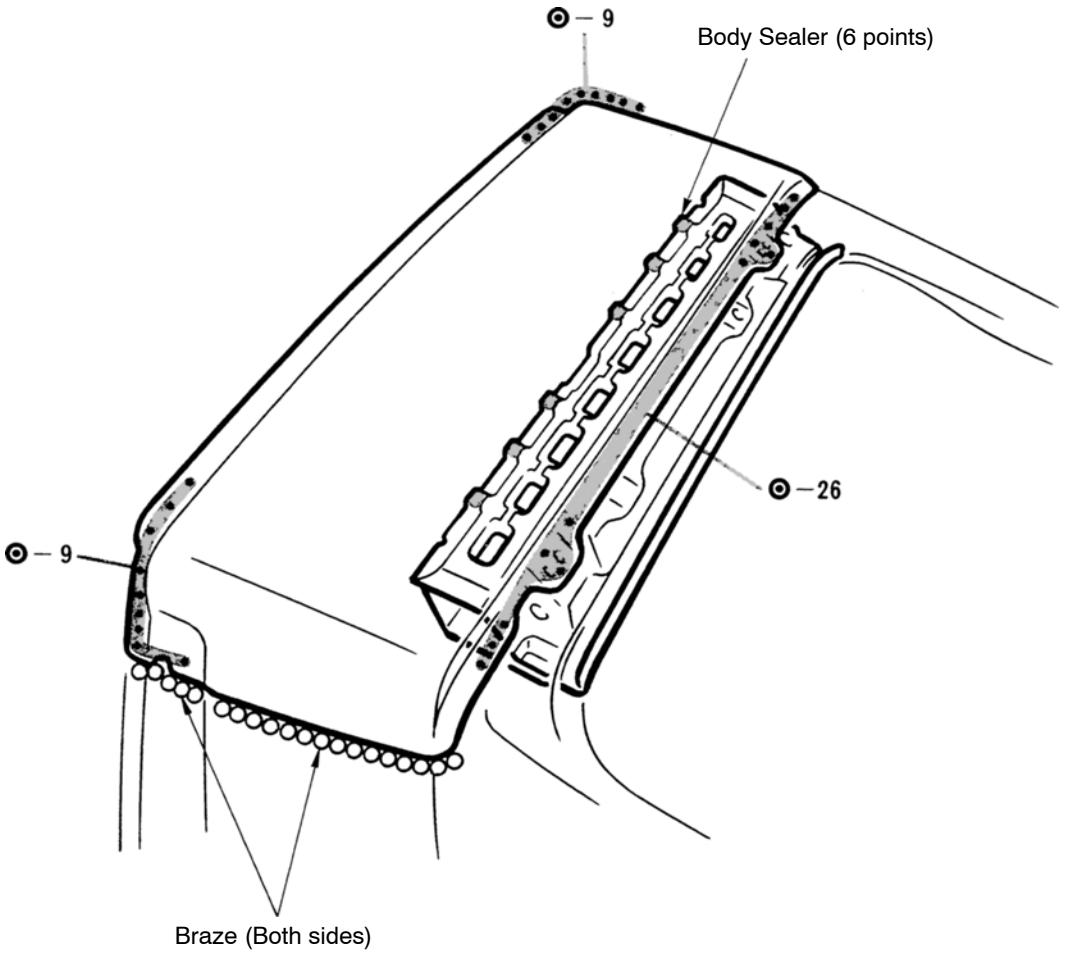


1. Heat the braze area of the quarter panel and scrape off the brazing with a wire brush.

NOTE: Be careful not to overheat the pillar side.

2. Cut off the roof panel tip at the quarter panel arc brazing connection with a cut grinder etc.

INSTALLATION



1. Before temporarily installing the new part, apply body sealer to the back door opening frame.

NOTE:

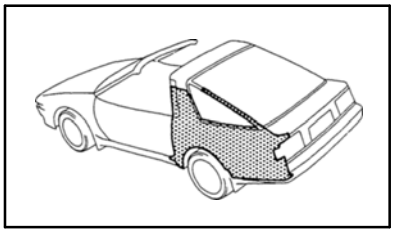
1) Apply just enough sealer for the new part to make contact.

2) For other sealing points, refer to section SU.

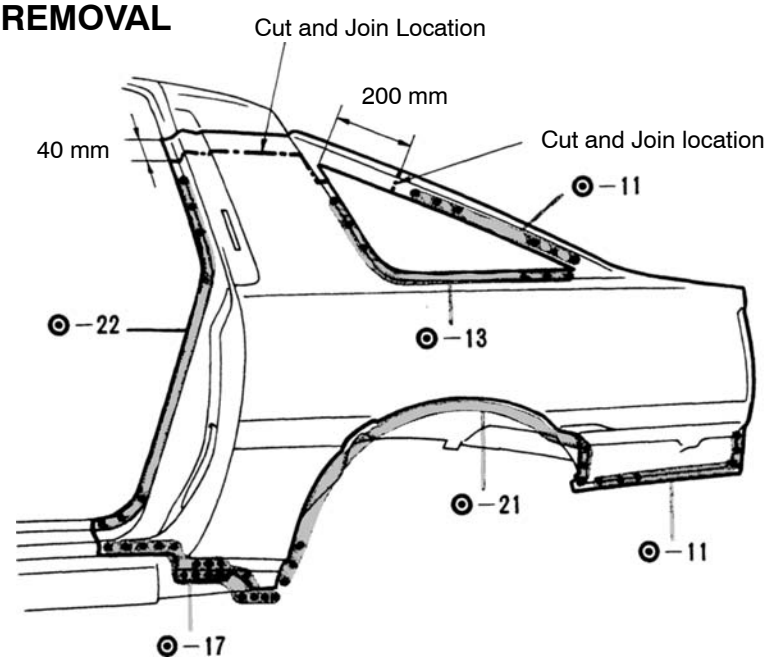
2. Braze the front body pillar and quarter panel connection.

NOTE: Before performing these operations, place a wet rag on the roof panel to protect it from damage.

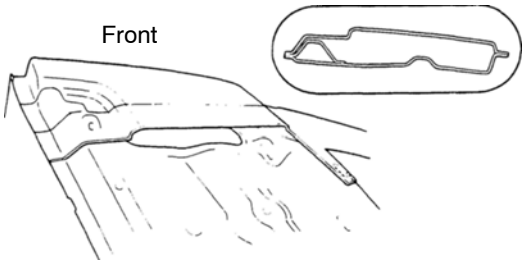
QUARTER PANEL (CUT)

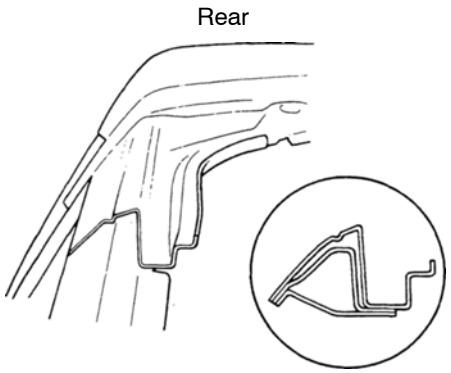


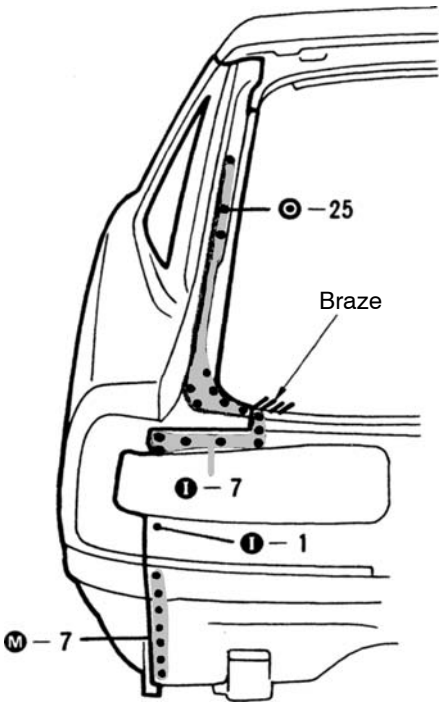
REMOVAL



[Cut and Join Location]



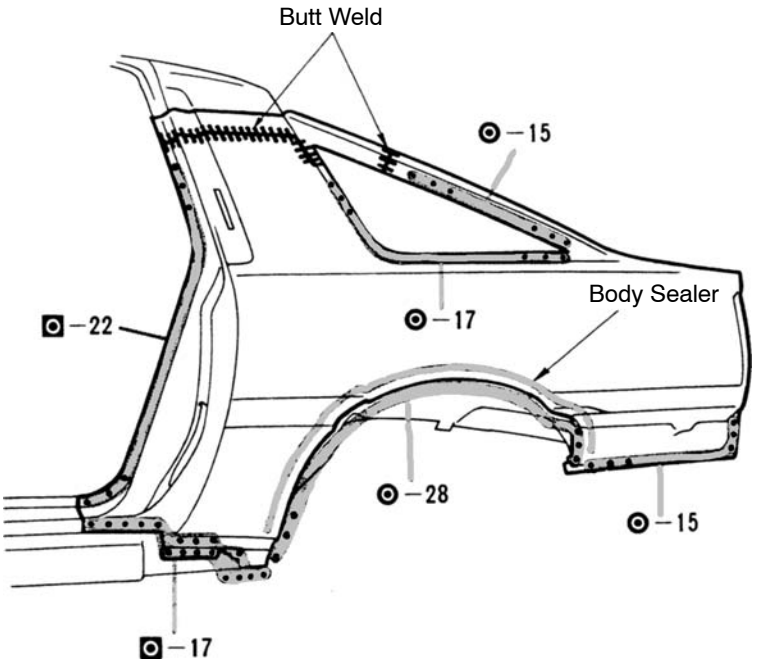


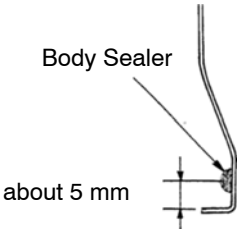


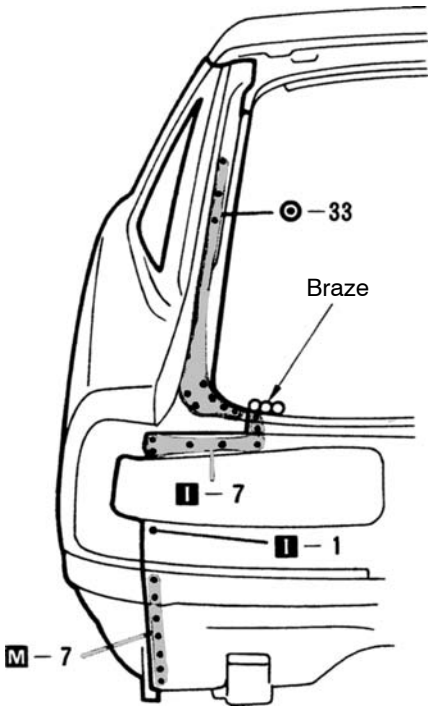
mm	in
40	1.57
200	7.87

1. Cut and join the quarter panel as shown above.

INSTALLATION







mm	in.
5	0.20

1. Before temporarily installing the new part, apply body sealer to the wheel arch portion.

NOTE:

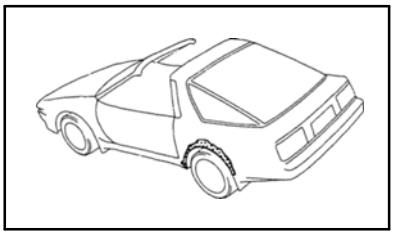
1) Apply sealer about 5 mm (0.20 in.) from the flange, avoiding any oozing.

2) Apply evenly, about 3 – 4 mm (0.12 – 0.16 in.) in diameter.

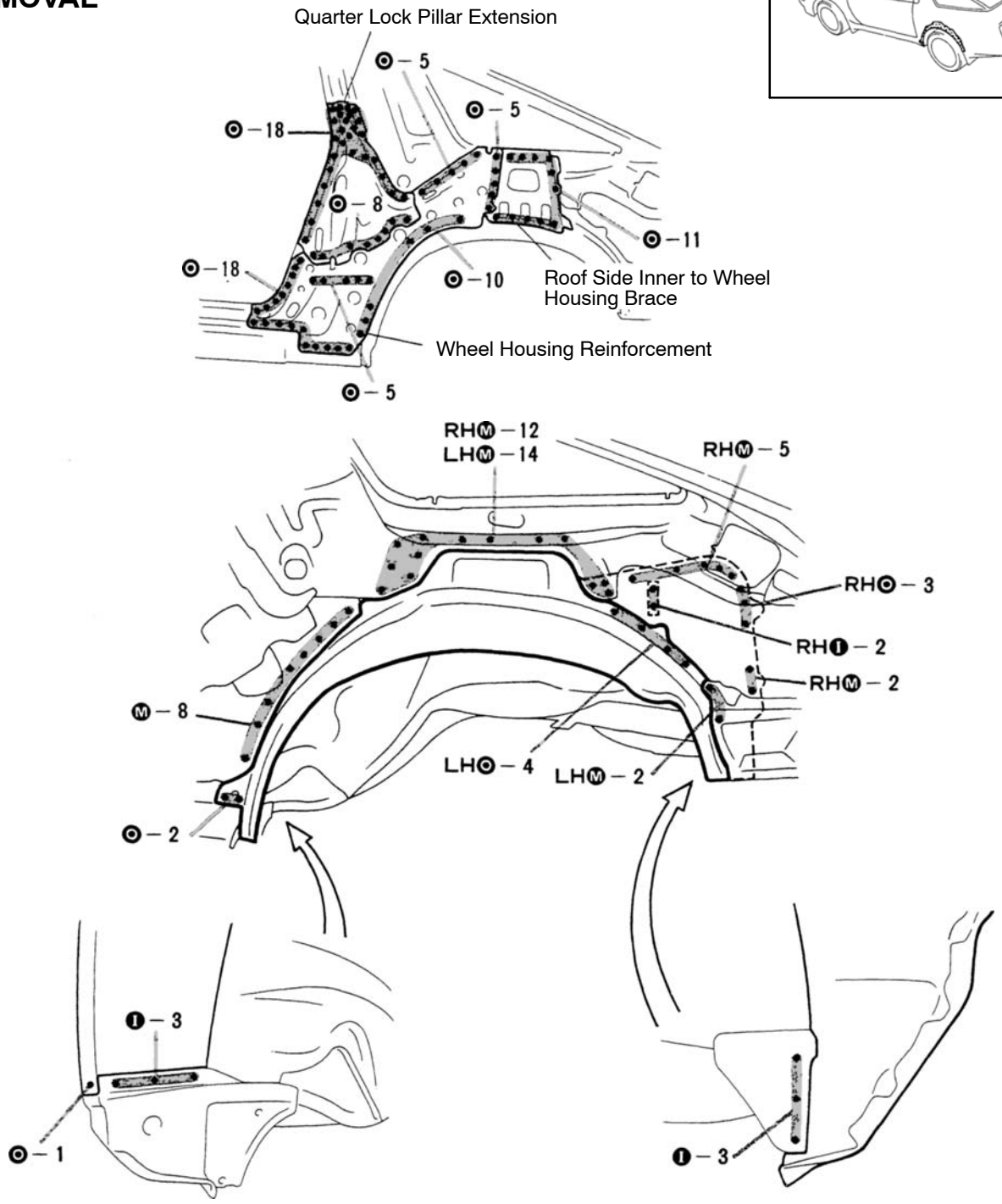
3) For other sealing points, refer to section SU.

2. Temporarily install the new part and check the fit of the removable roof and front door.

QUARTER WHEEL HOUSING OUTER PANEL

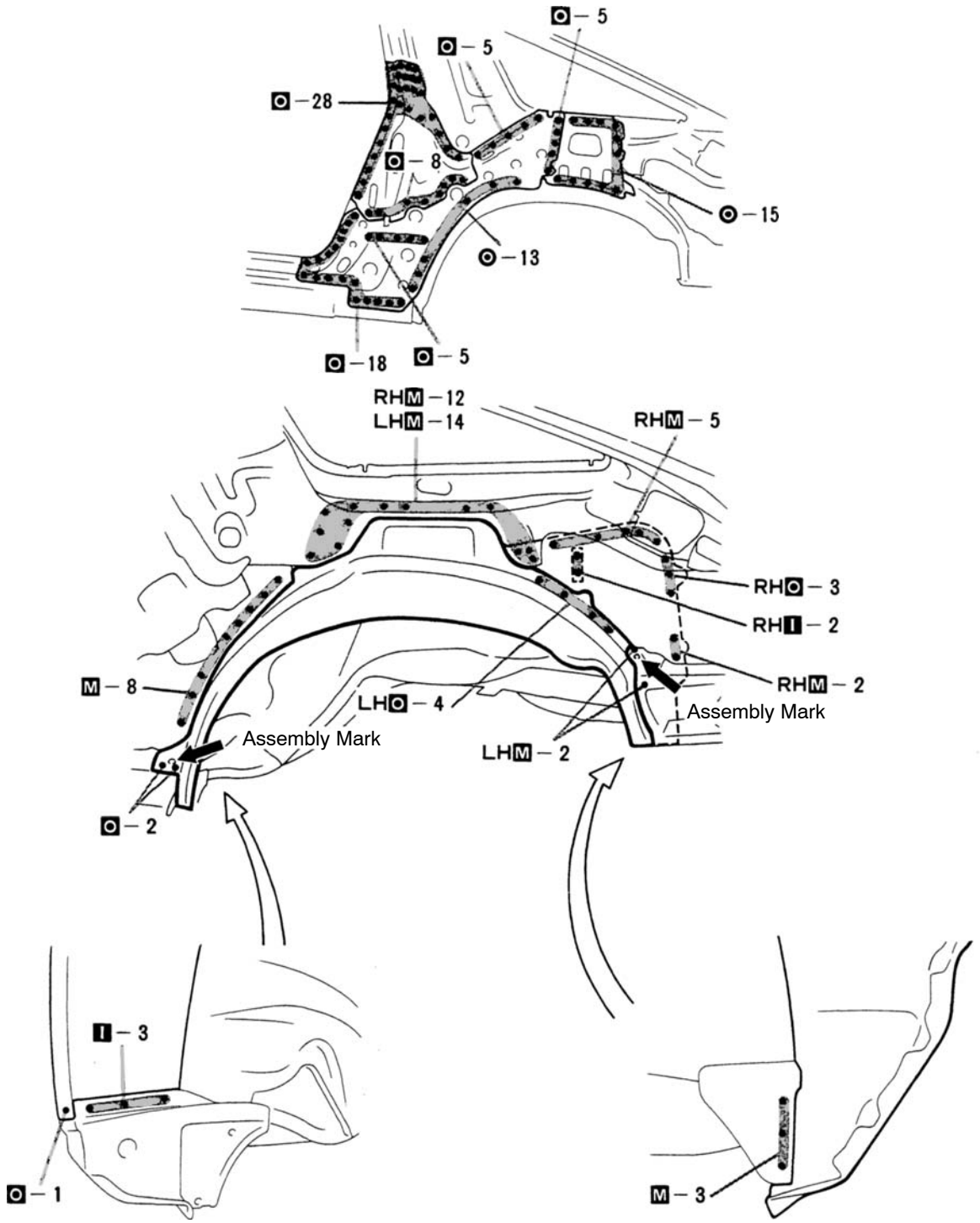


REMOVAL

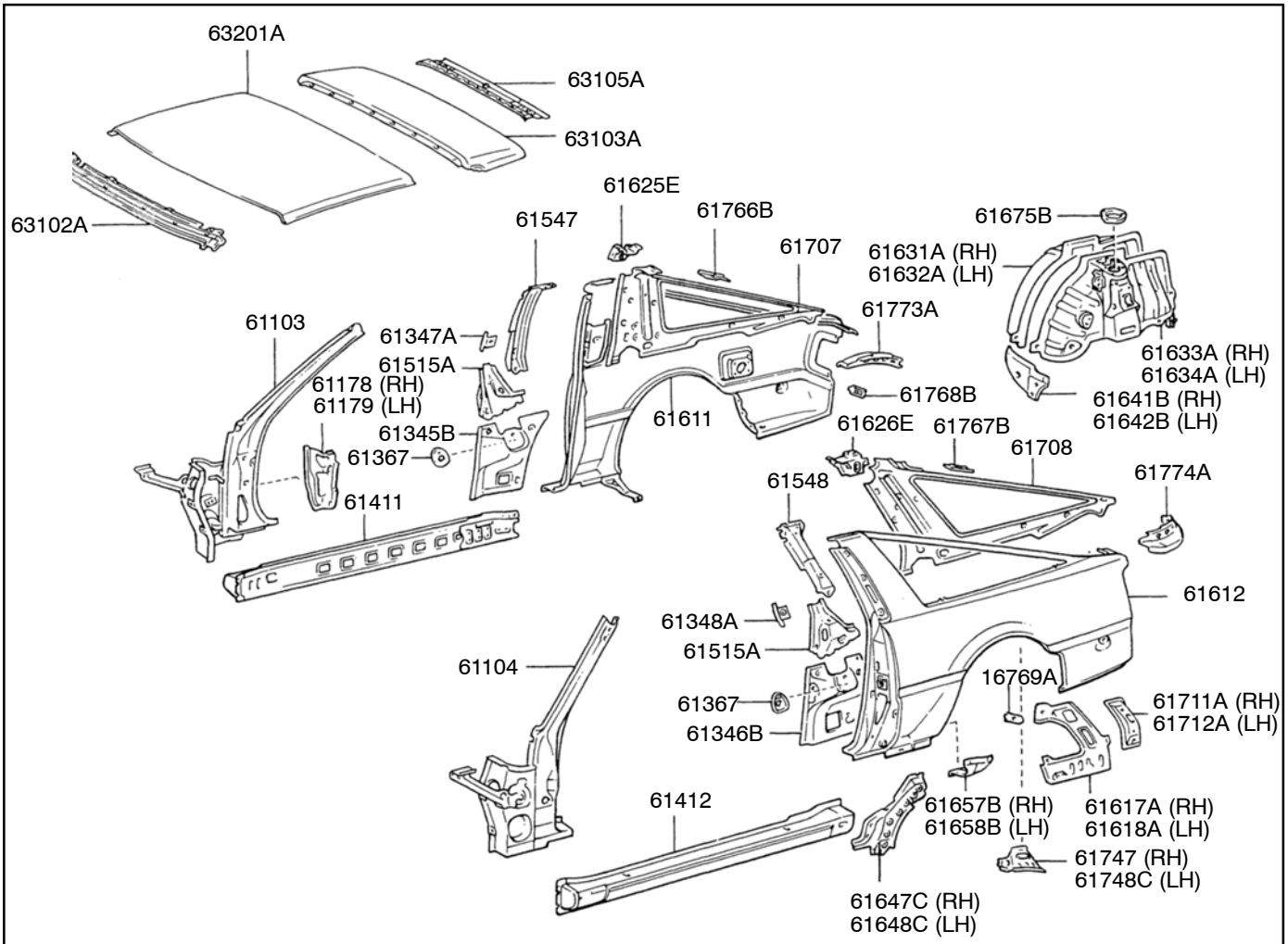


1. After removing the quarter lock pillar extension, wheel housing reinforcement and roof side inner to wheel housing brace, cut and join the quarter wheel housing outer panel.

INSTALLATION



1. Determine the position of the new part by the assembly marks of the inner and outer panels.
2. Before welding the new part, temporarily install the quarter panel and check the fit.



Code	Part Name	Code	Part Name
61103 61104	Front Body Pillar Sub−Assy	61641B 61642B	Quarter Wheel Housing Gusset
61107 61108	Front Body Outer Pillar Sub−Assy	61647C 61648C	Wheel Housing Reinforcement
61345B 61346B	Center Body Inner Lower Pillar	61657B 61658B	Quarter Panel End Lower Housing
61347A 61348A	Belt Anchor to Center Pillar Reinforcement	61675B	Rear Suspension Spring Support Reinforcement
61367	Belt Anchor to Center Pillar Lower Reinforcement	61707 61708	Quarter Inner Panel Sub−Assy
61388A 61389A	Center Body Pillar End Plate	61711A 61712A	Roof Side Outer Reinforcement
61411 61412	Rocker Outer Panel	61747 61748C	Roof Side Inner to Wheel Housing Brace
61515A	Quarter Lock Pillar Extension	61766B 61767B	Roof Side Inner to Wheel Housing Brace Reinforcement
61547 61548	Quarter Pillar Inner Reinforcement	61768B	Belt Anchor to Roof Side Inner Rear Reinforcement
61611 61612	Quarter Panel	61769A	Seat Belt Anchor No. 2 Reinforcement
61617A 61618A	Quarter Inner Rear Panel	61773A 61774A	Back Door Opening Lower Patch
61625E 61626E	Quarter Panel Inner Rear Extension	63102A	Windshield Header Panel
		63103A	Roof Panel Reinforcement
61631A 61632A	Quarter Wheel Housing Outer Panel	63105A	Back Door Opening Frame
		63201A	Removable Roof Panel
61633A 61634A	Quarter Wheel Housing Inner Panel	—	—

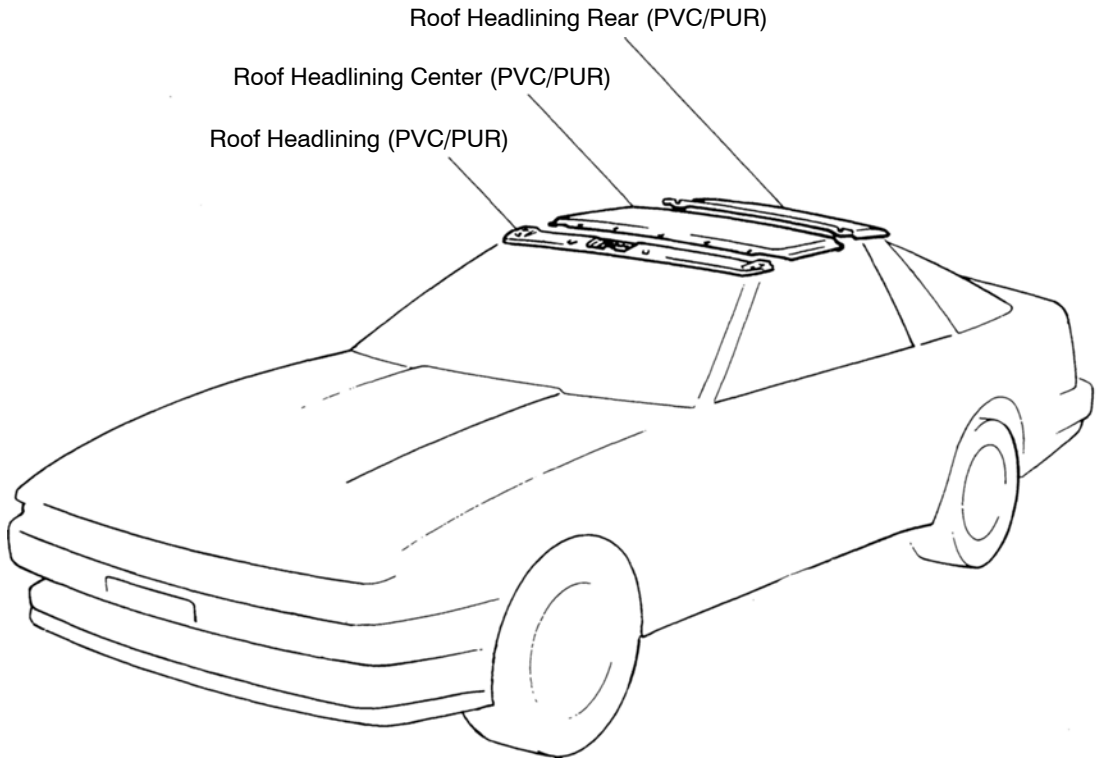
HANDLING PRECAUTIONS

1. The repair procedure for plastic body parts must conform with the type of plastic material.
2. Plastic body parts are identified by the codes in the following chart.
3. When repairing metal body parts adjoining plastic body parts (by brazing, frame cutting, welding, painting, etc.), consideration must given to the property of the plastic.

Code	Material name	Heat * resisting temperature °C (°F)	Resistance to alcohol or gasoline	Notes
PUR	Thermosetting Polyurethane	80 (176)	Alcohol is harmless if applied only for very short time in small amounts (ex., quick wiping to remove grease).	Avoid dipping or immersing in alcohol, gasoline, solvents, etc.
PVC	Polyvinylchloride (Vinyl)	80 (176)	Alcohol and gasoline are harmless if applied only for short time in small amounts (ex., quick wiping to remove grease).	Avoid dipping or immersing in alcohol, gasoline, solvents, etc.

* Temperature higher than those listed here may result in material deformation during repair.

LOCATION OF PLASTIC BODY PARTS



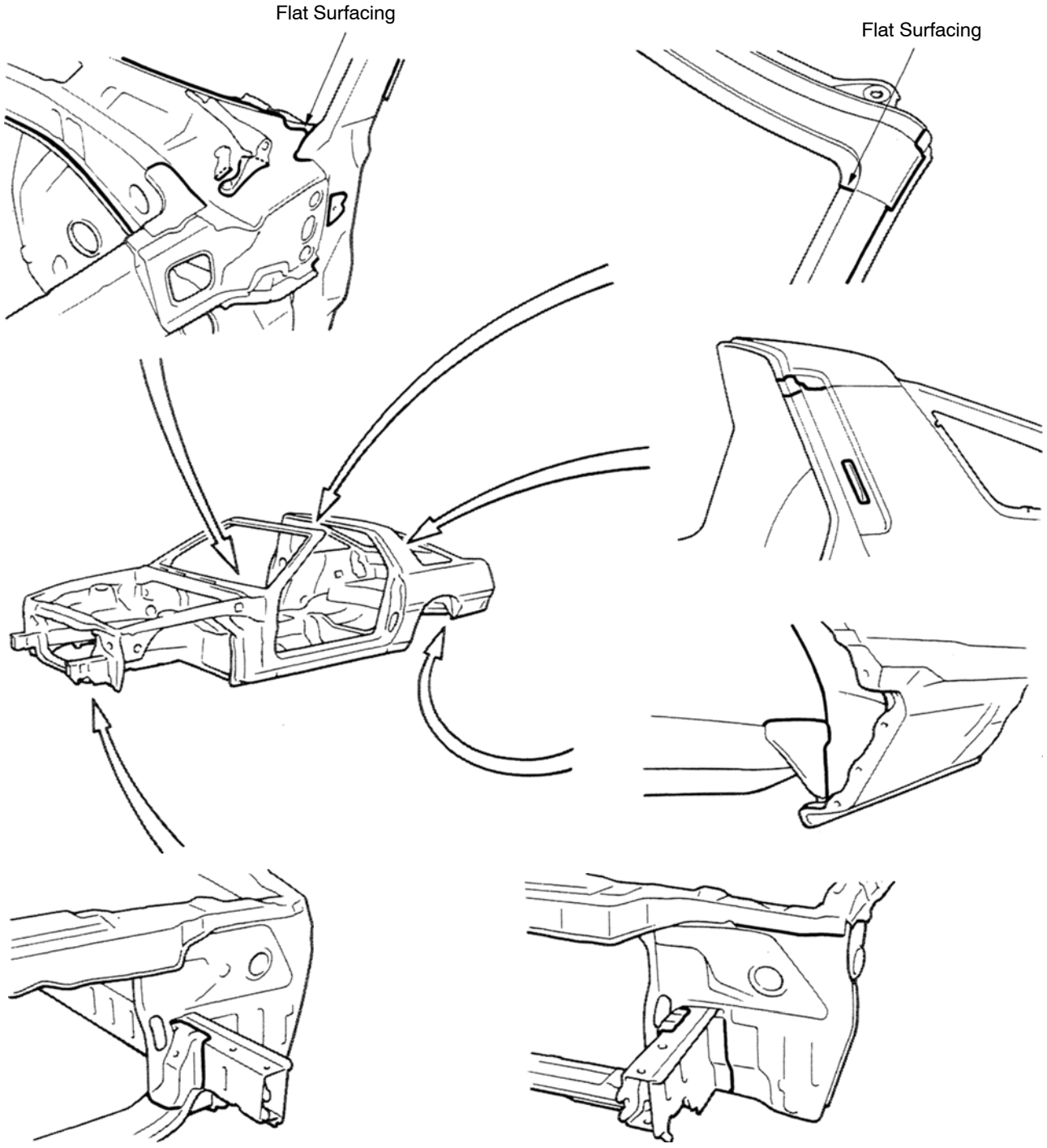
NOTE:
- **Resin material differs with model.**
/ **Made up of 2 or more kinds of materials.**

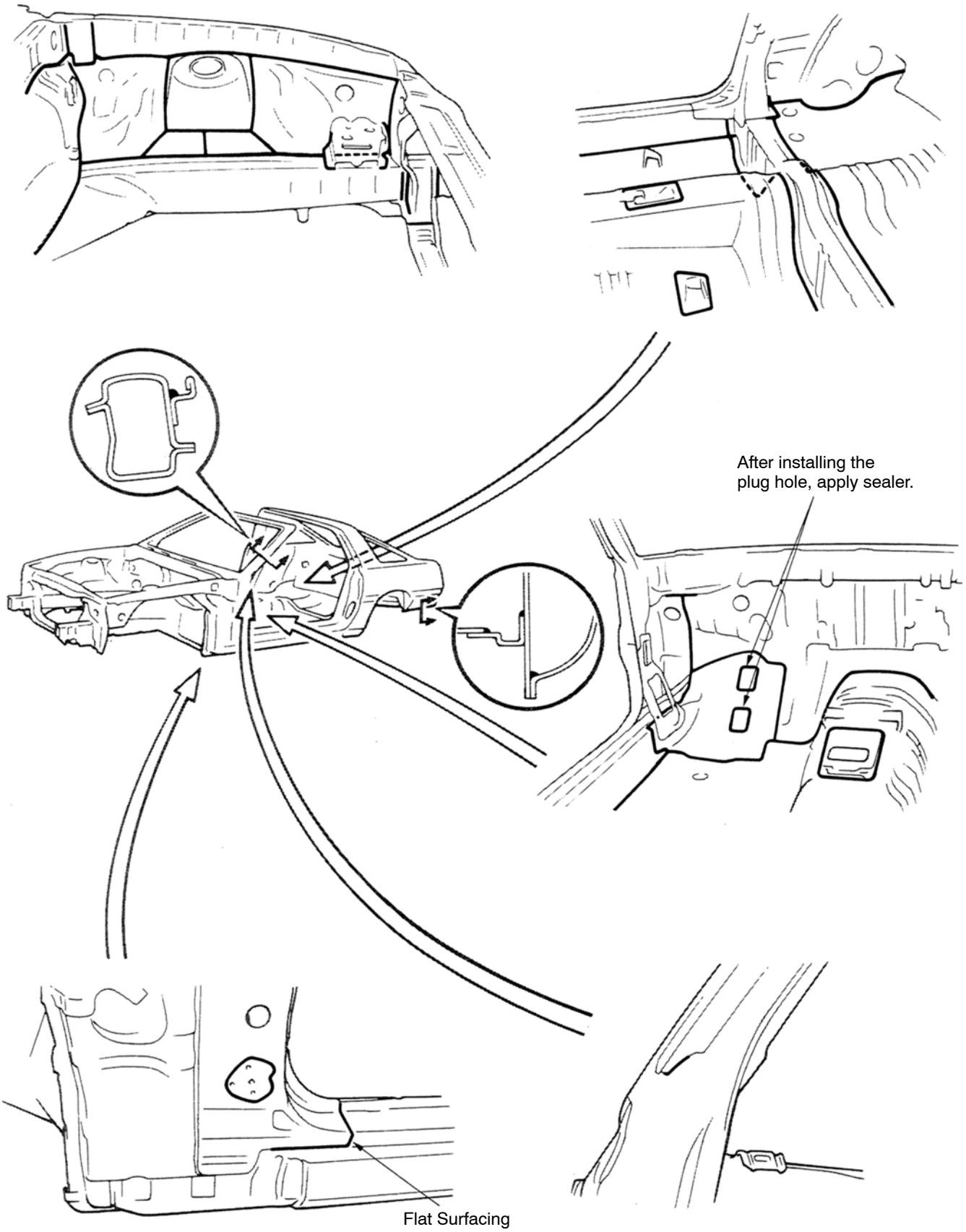
BODY PANEL SEALING AREAS

For water−proofing and anti−corrosion measures, always apply body sealer to the body panel seams and hems of the doors, hood, etc.

NOTE:

1. **Prior to applying body sealer, clean the area with a rag soaked in white gasoline.**
2. **If weld−through primer was used, first wipe off any excess with thinner, and coat with anti−corrosion primer before applying body sealer.**
3. **Wipe off any excess body sealer with a rag soaked in white gasoline.**




After installing the plug hole, apply sealer.
Flat Surfacing