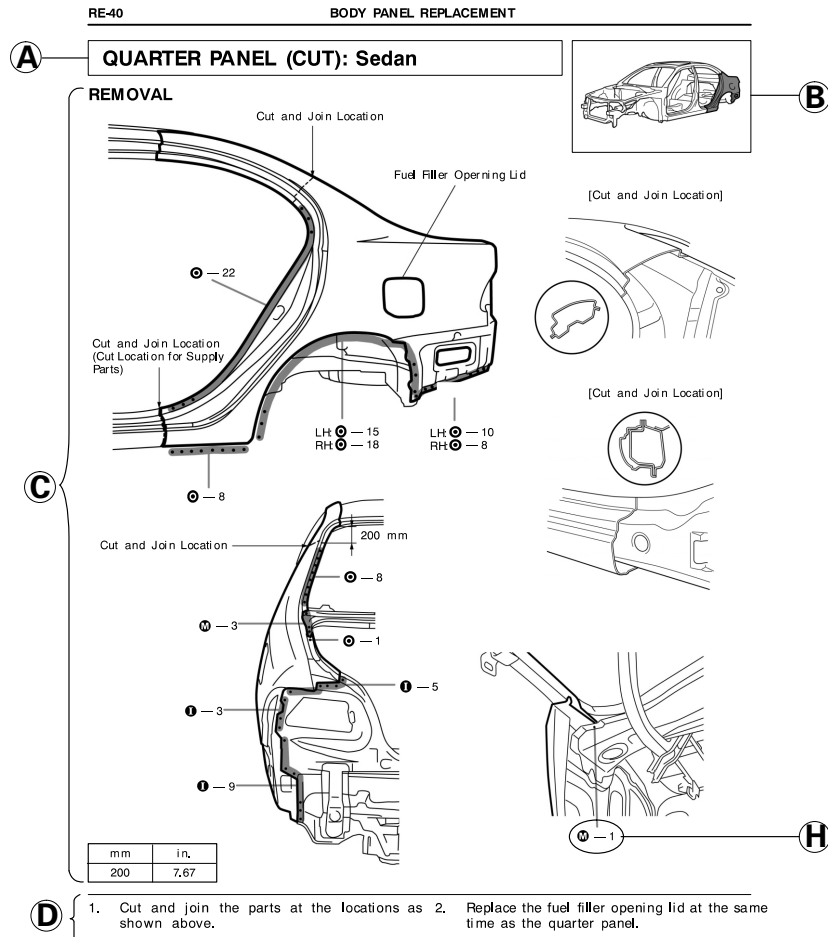

INTRODUCTION

	Page
HOW TO USE THIS MANUAL	IN-2
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HANDLING PRECAUTIONS ON RELATED COMPONENTS	IN-6
GENERAL REPAIR INSTRUCTIONS	IN-10
VEHICLE LIFT AND SUPPORT LOCATIONS	IN-15
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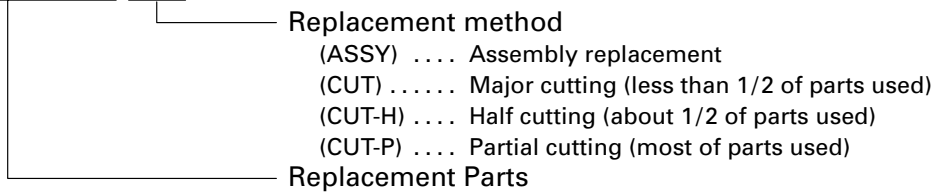
HOW TO USE THIS MANUAL

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 PARTS AND METHOD**

QUARTER PANEL (CUT)



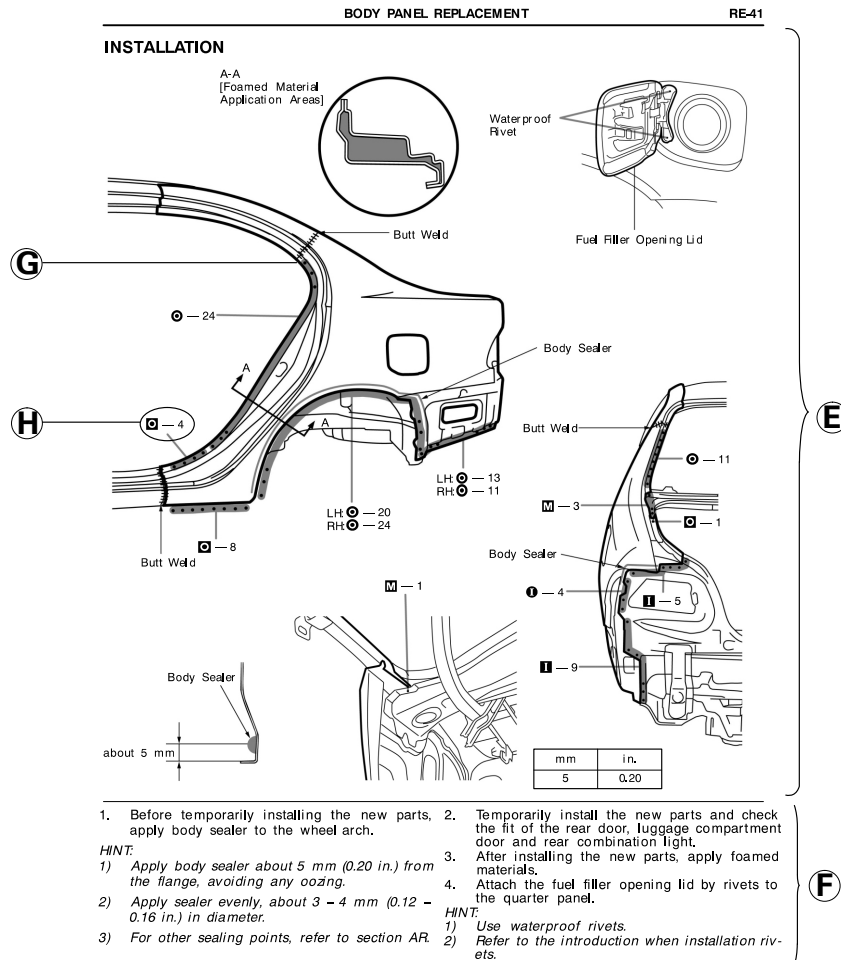
B : **PARTS LOCATION**

C : **REMOVAL DIAGRAM**

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

D : **REMOVAL GUIDE**

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



E : INSTALLATION DIAGRAM

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

F : INSTALLATION GUIDE

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

G : SYMBOLS

See page IN-4.

H : ILLUSTRATION OF WELD POINTS

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.


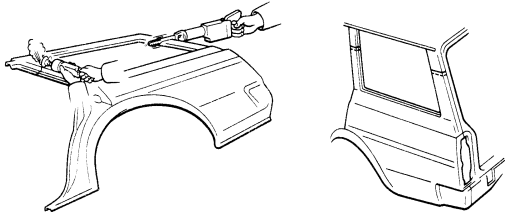

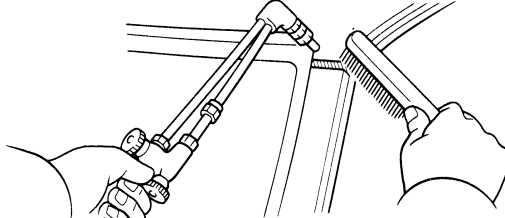
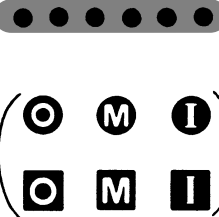
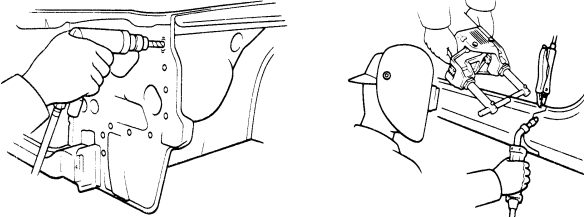

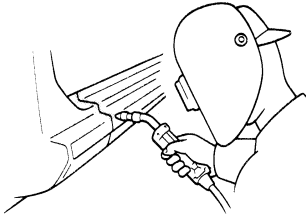

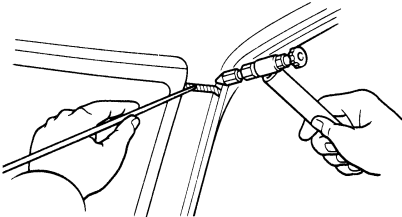

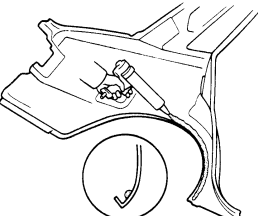
SYMBOLS	MEANING	ILLUSTRATION
	<p>SAW CUT OR ROUGH CUT</p>	
	<p>REMOVE BRAZE</p>	
	<p>WELD POINTS SPOT WELD OR MIG PLUG WELD (See page IN-5)</p>	
	<p>CONTINUOUS MIG WELD (BUTT WELD OR TACK WELD)</p>	
	<p>BRAZE</p>	
	<p>BODY SEALER</p>	

Illustration of Weld Point Symbols

EXAMPLE:

REMOVAL	INSTALLATION

SYMBOL	MEANING	ILLUSTRATION	SYMBOL	MEANING	ILLUSTRATION
 	Remove Weld Points		 	Spot Weld	
	(Outside)		 	Mig Plug Weld	
	(Middle)		 	Spot MIG Weld	
	(Inside)			Spot MIG Weld	

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

HANDLING PRECAUTIONS ON RELATED COMPONENTS

1. FOR VEHICLES EQUIPPED WITH SRS AIRBAG AND SEAT BELT PRETENSIONER

The AVENSIS/CORONA FWD is equipped with an SRS (Supplemental Restraint System), such as the driver airbag and front passenger airbag and seat belt pretensioners.

Failure to carry out service operations in the correct sequence could cause the supplemental restraint system to unexpectedly deploy during servicing, possibly leading to a serious accident.

Further, if a mistake is made in servicing the supplemental restraint system, it is possible the SRS may fail to operate when required. Before servicing (including removal or installation of parts, inspection or replacement), be sure to read the following items carefully, then follow the correct procedure described in this manual.

- Malfunction symptoms of the supplemental restraint system are difficult to confirm, so the diagnostic trouble codes become the most important source of information when troubleshooting. When troubleshooting the supplemental restraint system, always inspect the diagnostic trouble codes before disconnecting the battery.
- Work must be started after 90 seconds from the time the ignition switch is turned to the "LOCK" position and the negative (-) terminal cable is disconnected from the battery. (The supplemental restraint system is equipped with a back-up power source so that if work is started within 90 seconds of disconnecting the negative (-) terminal cable from the battery, the SRS may deploy.)
When the negative (-) terminal cable is disconnected from the battery, memory of the clock and audio systems will be cancelled. So before starting work, make a record of the contents memorized by the audio memory system.
Then when work is finished, reset the clock and audio systems as before.
To avoid erasing the memory of each memory system, never use a back-up power supply from outside the vehicle.
- Even in cases of a minor collision where the SRS does not deploy, the passenger's airbag assembly, the steering wheel pad and seat belt pretensioners should be inspected.
- Never use SRS parts from another vehicle. When replacing parts, replace them with new parts.
- Before repairs, remove the airbag sensor if shocks are likely to be applied to the sensor during repairs.
- Never disassemble and repair the airbag sensor assembly, steering wheel pad in order to reuse it.
- If the airbag sensor assembly, steering wheel pad have been dropped, or if there are cracks, dents or other defects in the case, bracket or connector, replace them with new ones.
- Do not expose the airbag sensor assembly, steering wheel pad directly to hot air or flames.
- Use a volt/ohmmeter with high impedance (10 k Ω /V minimum) for troubleshooting of the electrical circuit.
- Information labels are attached to the periphery of the SRS components. Follow the instructions on the notices.
- After work on the supplemental restraint system is completed, check the SRS warning light.

- Before repairing the body, remove the SRS parts if, during repair, shocks are likely to be applied to the sensors due to vibrations of the body or direct tapping with tools or other parts.
- Do not expose the SRS parts directly to hot air or flames.

NOTICE:

- 1) *The maximum ambient temperature tolerance is 120° C (248° F) for the front airbag sensor, 105° C (221° F) for the center airbag sensor assembly and 93° C (200° F) for the steering wheel pad, and front passenger airbag assembly. If it is possible that the ambient temperature may reach or exceed the temperature limit, remove the sensors and the steering wheel pad from the vehicle or protect them with a hot insulation material before starting work.*
 - 2) *Prior to welding, remove adjacent SRS parts from the vehicle or protect them with fire-proof covers.*
- If the vehicle is damaged, visually inspect for damage to the steering wheel pad using the inspection procedures described in section RS of the repair manual for the relevant model year.

STEERING WHEEL PAD (with Airbag)

- When removing the steering wheel pad or handling a new steering wheel pad, it should be placed with the pad top surface facing up.
In this case, the twin-lock type connector lock lever should be in the locked state and care should be taken to place it so the connector will not be damaged. In addition do not store a steering wheel pad on top of another one. Storing the pad with its metallic surface up may lead to a serious accident if the airbag inflates for some reason.
- Never measure the resistance of the airbag squib. (This may cause the airbag to deploy, which is very dangerous.)
- Grease should not be applied to the steering wheel pad and the pad should not be cleaned with detergents of any kind.
- Store the steering wheel pad where the ambient temperature remains below 93°C (200°F), without high humidity and away from electrical noise.
- When using electric welding, first disconnect the airbag connector (yellow color and 2 pins) under the steering column near the combination switch connector before starting work.
- When disposing of a vehicle or the steering wheel pad alone, the airbag should be deployed using an SST before disposal.
Carry out the operation in a safe place away from electrical noise.

FRONT PASSENGER AIRBAG ASSEMBLY

- Always store a removed or new front passenger airbag assembly with the airbag deployment direction facing up. Storing the airbag assembly with the airbag deployment direction facing down could cause a serious accident if the airbag inflates.
- Never measure the resistance of the airbag squib.
(This may cause the airbag deploy, which is very dangerous.)
- Grease should not be applied to the front passenger airbag assembly and the airbag door should not be cleaned with detergents of any kind.
- Store the airbag assembly where the ambient temperature remains below 93°C (200°F), without high humidity and away from electrical noise.
- When using electric welding, first disconnect the airbag connector (yellow color and 2 pins) installed on the glove compartment finish plate at the left side of the glove compartment before starting work.
- When disposing of a vehicle or the airbag assembly alone, the airbag should be deployed using an SST before disposal.
Perform the operation in a safe place away from electrical noise.

SEAT BELT PRETENSIONER

- Before doing any operation which will apply a strong shock to the vehicle, or before removing the seat belt pretensioner, be sure to apply the sensor shock.
- Never disassemble the seat belt pretensioner.
- Do not subject the seat belt pretensioner to shocks or bring magnets close to it.
- Do not expose the seat belt pretensioner to high temperature or fire.
- Do not drop the seat belt pretensioner. Never use a seat belt pretensioner which has been dropped.
- Never install the seat belt pretensioner in another vehicle.
- Store removed seat belt pretensioners on a flat, stable surface.
- After frontal collision, always check whether the seat belt pretensioners have been activated.
- When disposing of a vehicle or the pretensioner by itself, always activate the pretensioner before disposal.
- The seat belt pretensioner is hot when activated, so let it cool down fully before you dispose of it. Never apply water to the seat belt pretensioner.

AIRBAG SENSOR ASSEMBLY

- Never reuse the airbag sensor assembly involved in a collision when the SRS has deployed.
- The connectors to the airbag sensor assembly should be connected or disconnected with the sensor mounted on the floor. If the connectors are connected or disconnected while the airbag sensor assembly is not mounted to the floor, it could cause undesired ignition of the supplemental restraint system.
- Work must be started after 90 seconds from the time the ignition switch is turned to the "LOCK" position and the negative (-) terminal cable is disconnected from the battery, even if only loosening the set bolts of the airbag sensor assembly.

WIRE HARNESS AND CONNECTOR

- The SRS wire harness is integrated with the cowl wire harness assembly and floor wire harness assembly. The wires for the SRS wire harness are encased in a yellow corrugated tube. All the connectors for the system are also a standard yellow color. If the SRS wire harness becomes disconnected or the connector becomes broken due to an accident, etc., repair or replace it as shown on page.

2. COMPONENTS ADJACENT TO THE BODY PANELS

Various types of component parts are mounted directly on or adjacently to the body panels. Strictly observe the following precautions to prevent damaging these components and the body panels during handling.

- Before repairing the body panels, remove their components or apply protective covers over the components.
- Before prying components off using a screwdriver or a scraper, etc., attach protective tape to the tool tip or blade to prevent damaging the components and the body paint.
- Before removing components from the outer surface of the body, attach protective tape to the body to ensure no damage to painted areas.

HINT: Apply touch-up paint to any damaged paint surfaces.

- Before drilling or cutting sections, make sure that there are no wires, etc. on the reverse side.

3. BRAKE SYSTEM

The brake system is one of the most important safety components. Always follow the directions and notes given in section BR of the repair manual for the relevant model year when handling brake system parts.

NOTICE: When repairing the brake master cylinder or TRAC system, bleed the air out of the TRAC system.

4. DRIVE TRAIN AND CHASSIS

The drive train and chassis are components that can have great effects on the running performance and vibration resistance of the vehicle. After installing components in the sections listed in the table below, perform alignments to ensure correct mounting angles and dimensions. Particularly accurate repair of the body must also be done to ensure correct alignment.

HINT: Correct procedures and special tools are required for alignment. Always follow the directions given in the repair manual for the relevant model during alignment and section DI of this manual.

Component to be aligned	Section of repair manual for relevant model
Front Wheels	Suspension and Axle (SA) section
Rear Wheels	Suspension and Axle (SA) section

5. ECU (ELECTRONIC CONTROL UNIT)

Many ECUs are mounted in this vehicle.

Take the following precautions during body repair to prevent damage to the ECUs.

- Before starting electric welding operations, disconnect the negative (–) terminal cable from the battery.
When the negative (–) terminal cable is disconnected from the battery, memory of the clock and audio systems will be cancelled. So before starting work, make a record of the contents memorized by each memory system. Then when work is finished, reset the clock and audio systems as before.
When the vehicle has tilt and telescopic steering, power seat and outside rear view mirror, which are all equipped with memory function, it is not possible to make a record of the memory contents. So when the operation is finished, it will be necessary to explain this fact to the customer, and request the customer to adjust the features and reset the memory.
- Do not expose the ECUs to ambient temperatures above 80°C (176°F).
NOTICE: If it is possible the ambient temperature may reach 80°C (176°F) or more, remove the ECUs from the vehicle before starting work.
- Be careful not to drop the ECUs and not to apply physical shocks to them.

GENERAL REPAIR INSTRUCTIONS

Work Precautions

SAFETY

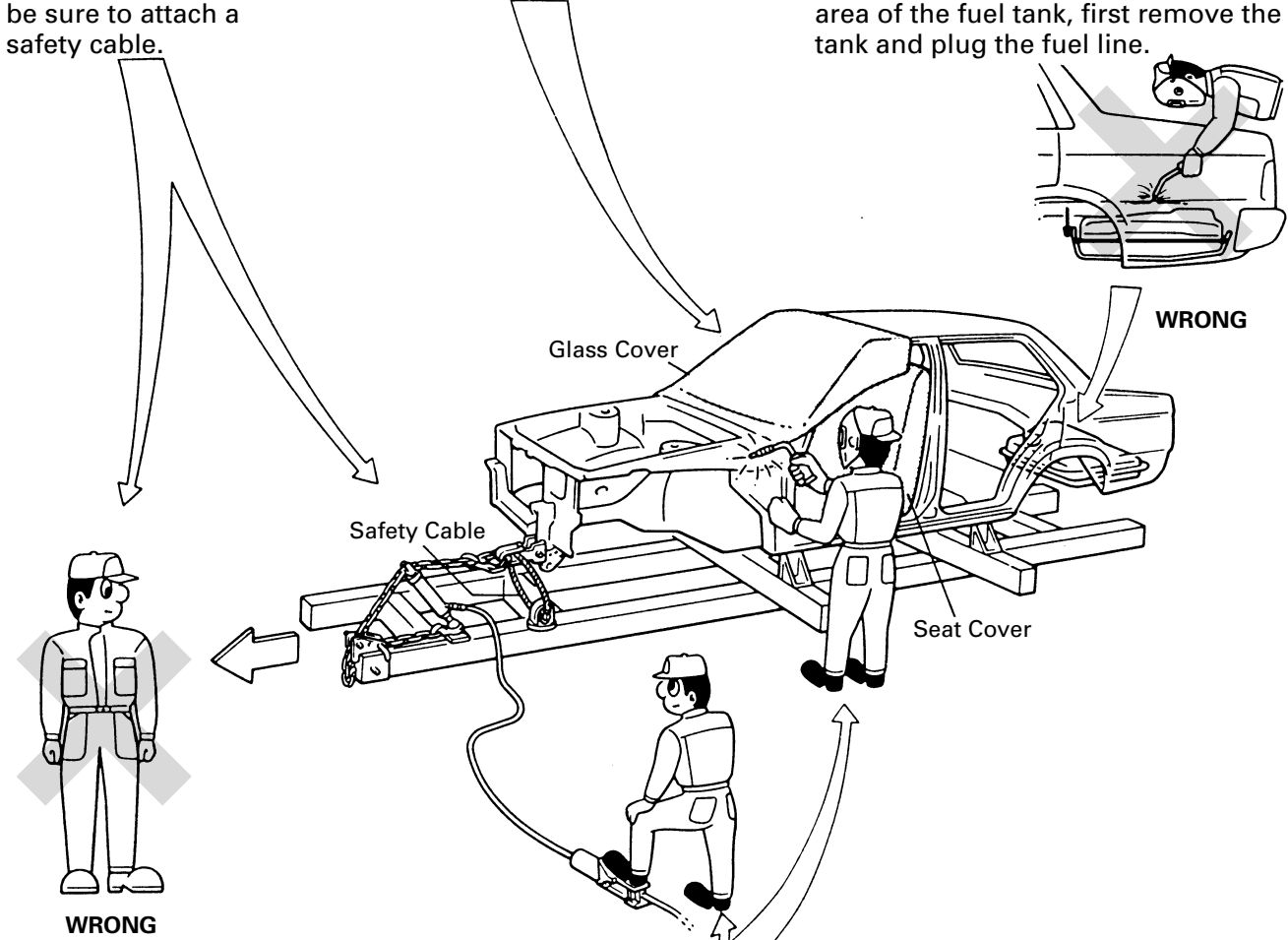
Never stand in direct line with the chain when using a puller on the body or frame, and be sure to attach a safety cable.

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's wear, cap and safety shoes, the appropriate gloves, head protector, glasses, ear plugs, face protector, dust-prevention mask, etc. should be worn as the situation demands.

HAND TOOLS

Keeping your hand tools in neat order improve your work efficiency.

Dust-Prevention Mask



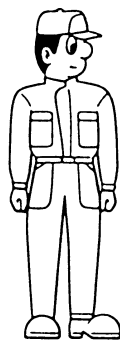
Face Protector



Eye Protector



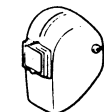
Safety Shoes



Welder's Glasses



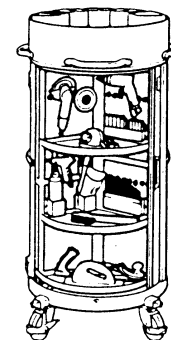
Ear Plugs



Head Protector



Welder's Gloves



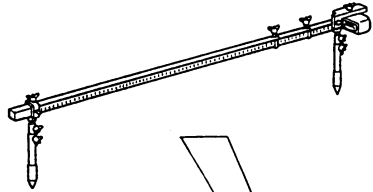
Body Tools Stand

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.



NUMBER OF SPOT WELDS AND PANEL POSITIONS

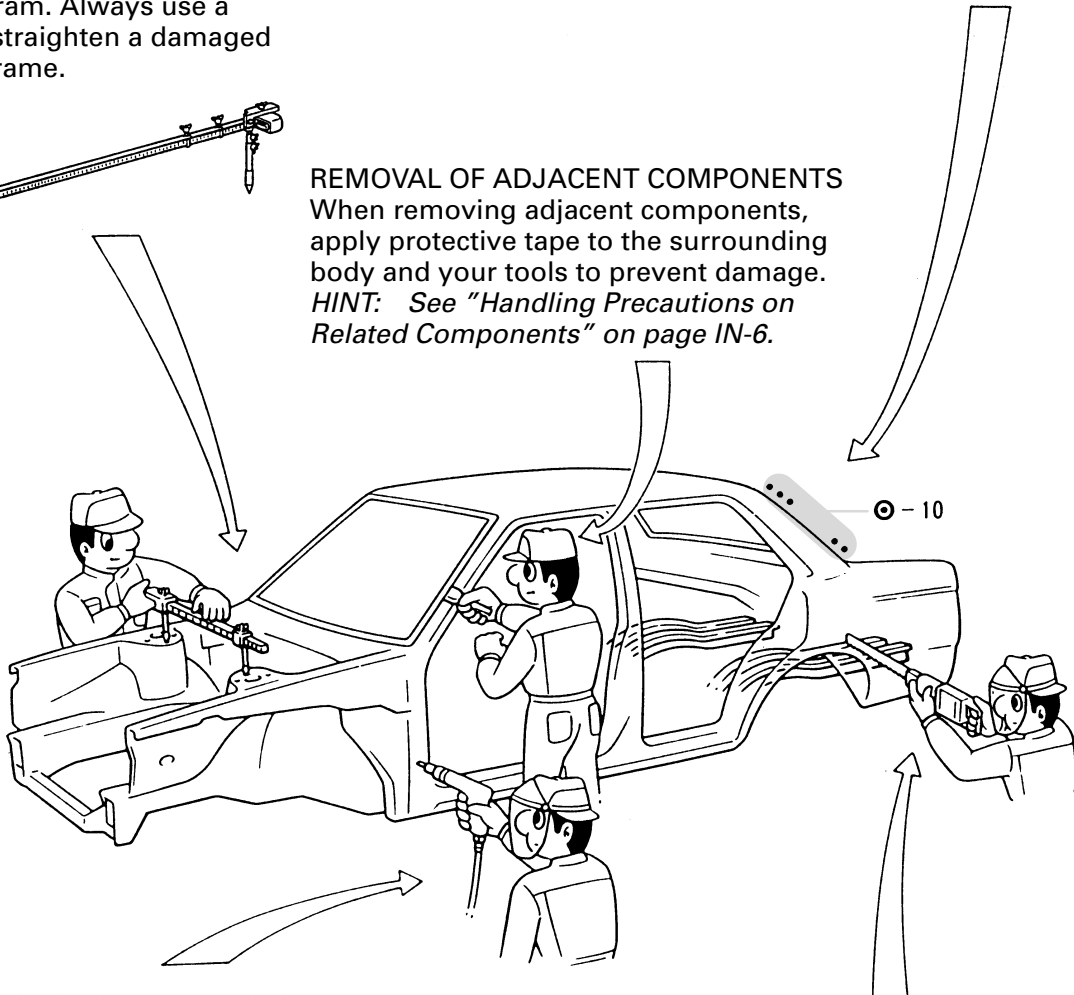
The number of spot welds and the panel positions to be removed are shown for your reference.

HINT: See "Symbols" on page IN-4,5.

REMOVAL OF ADJACENT COMPONENTS

When removing adjacent components, apply protective tape to the surrounding body and your tools to prevent damage.

HINT: See "Handling Precautions on Related Components" on page IN-6.



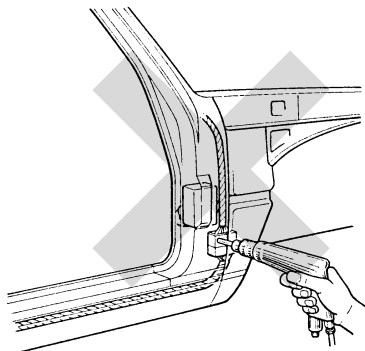
PRECAUTIONS FOR DRILLING OR CUTTING

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

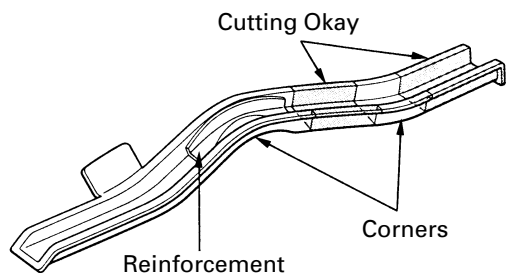
HINT: See "Handling Precautions on Related Components" on page IN-6.

CUTTING AREA

Always cut in a straight line and avoid reinforced area.

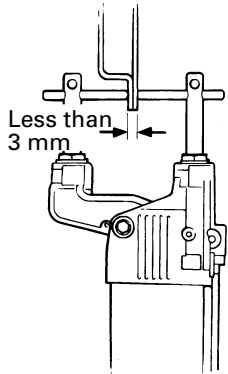


WRONG



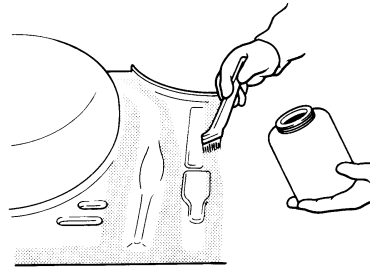
PREPARATION FOR INSTALLATION

SPOT WELD POINTS



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

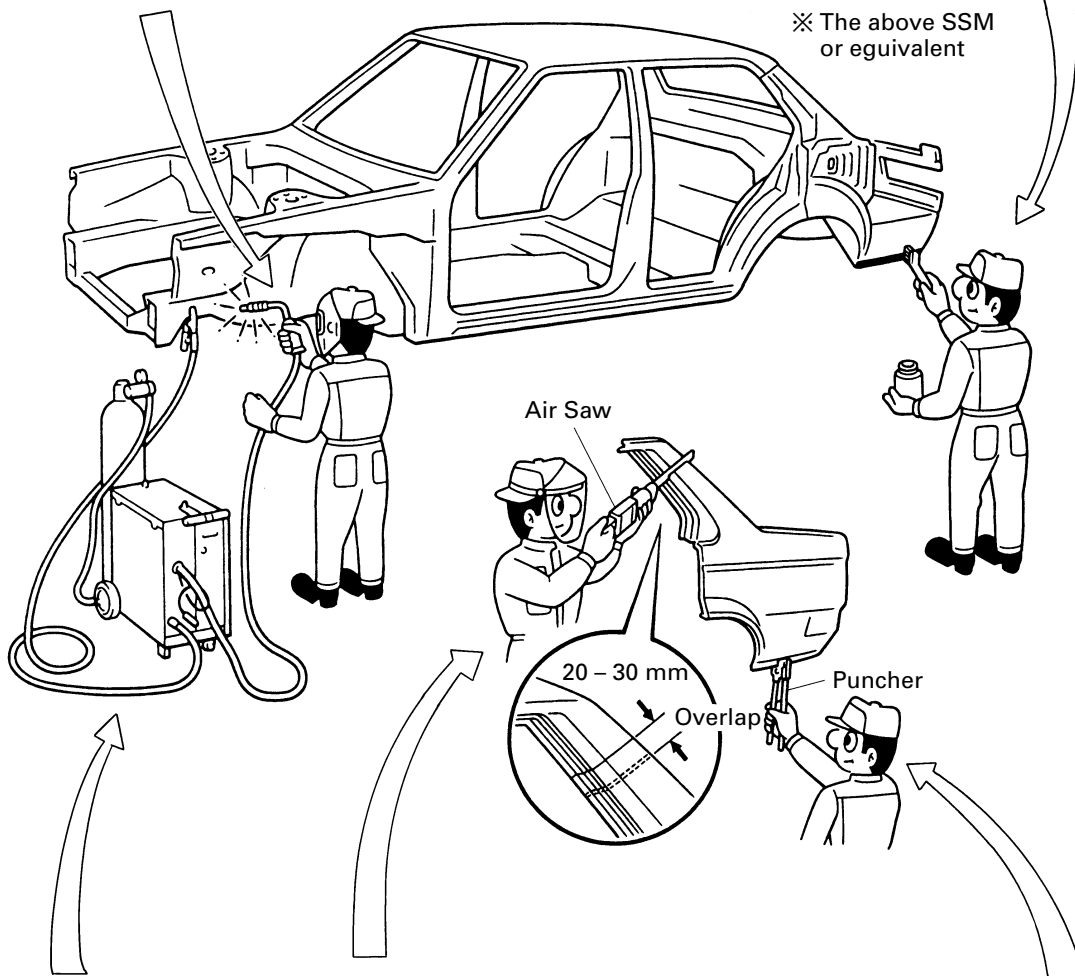
APPLICATION OF WELD-THROUGH PRIMER (SPOT SEALER)



Remove the paint from the portion of the new parts and body to be welded, and apply weld-through primer. *HINT: See "ANTI-RUST TREATMENT" on page AR-2.*

Parts Name	Parts Number
Spot Sealer	08839-00070

※ The above SSM or equivalent



SAFETY PRECAUTIONS FOR ELECTRICAL COMPONENTS. When welding there is a danger that electrical components will be damaged by the electrical current flowing through the body. Before starting work disconnect the negative terminal of the battery and ground the welder near the welding location of the body.

ROUGH CUTTING OF JOINTS
For joint areas, rough cut the new parts, leaving 20 – 30 mm (0.79 – 1.18in.) 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.

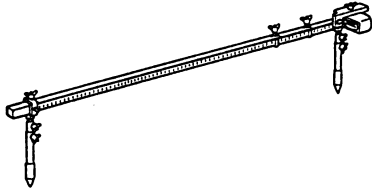
REFERENCE: mm (in.)

Thickness of welded portion	Size of plug hole
1.0 (0.04) under	5 (0.20) ϕ over
1.0 (0.04) – 1.5 (0.06)	6.5 (0.26) ϕ over
1.5 (0.06) over	8 (0.31) ϕ over

INSTALLATION

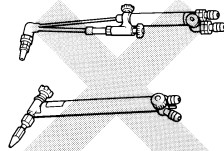
PRE-WELDING MEASUREMENTS

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



WELDING PRECAUTIONS

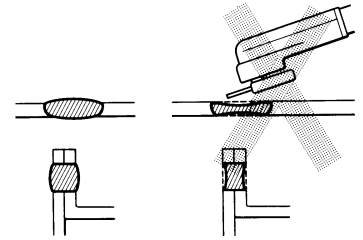
1. The number of welding spots should be as follows.
Spot weld: 1.3 x No. of manufacturer's spots.
Plug weld: More than No. of manufacturer's plugs.



WRONG

POST-WELDING REFINISHING

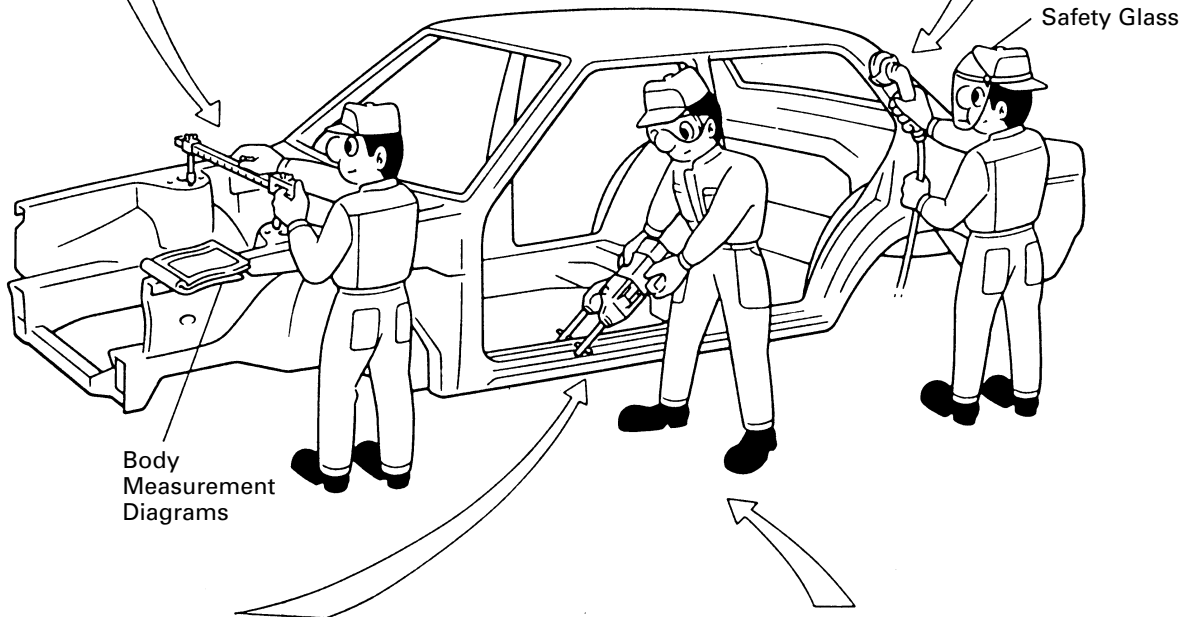
1. Always check the welded spots to insure they are secure.
2. When smoothing out the weld spots with a disc grinder, be careful not to grind off too much as this would weaken the weld.



OKAY

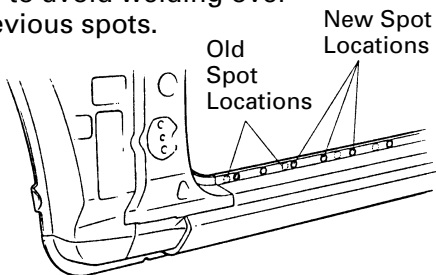
WRONG

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.



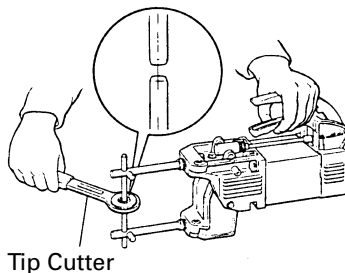
SPOT WELD LOCATIONS

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.



Tip Cutter

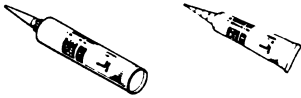
ANTI-RUST TREATMENT

When replacing body panels, always apply body sealer, anti-rust agent or undercoat according to the requirements of your country.

HINT: For further details, see the description given in Section AR of this manual.

BODY SEALER

Apply body sealer to the required areas.



Cartridge Type Tube Type

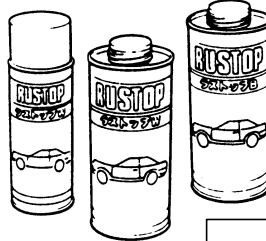
Parts Name	Parts Number
Body Sealer, White (Cartridge Type)	08839-00020
Body Sealer, White (Tube Type)	08839-00030
Body Sealer, Black (Cartridge Type)	08839-00040

※ The above SSM or equivalent

ANTI-RUST AGENT (WAX)

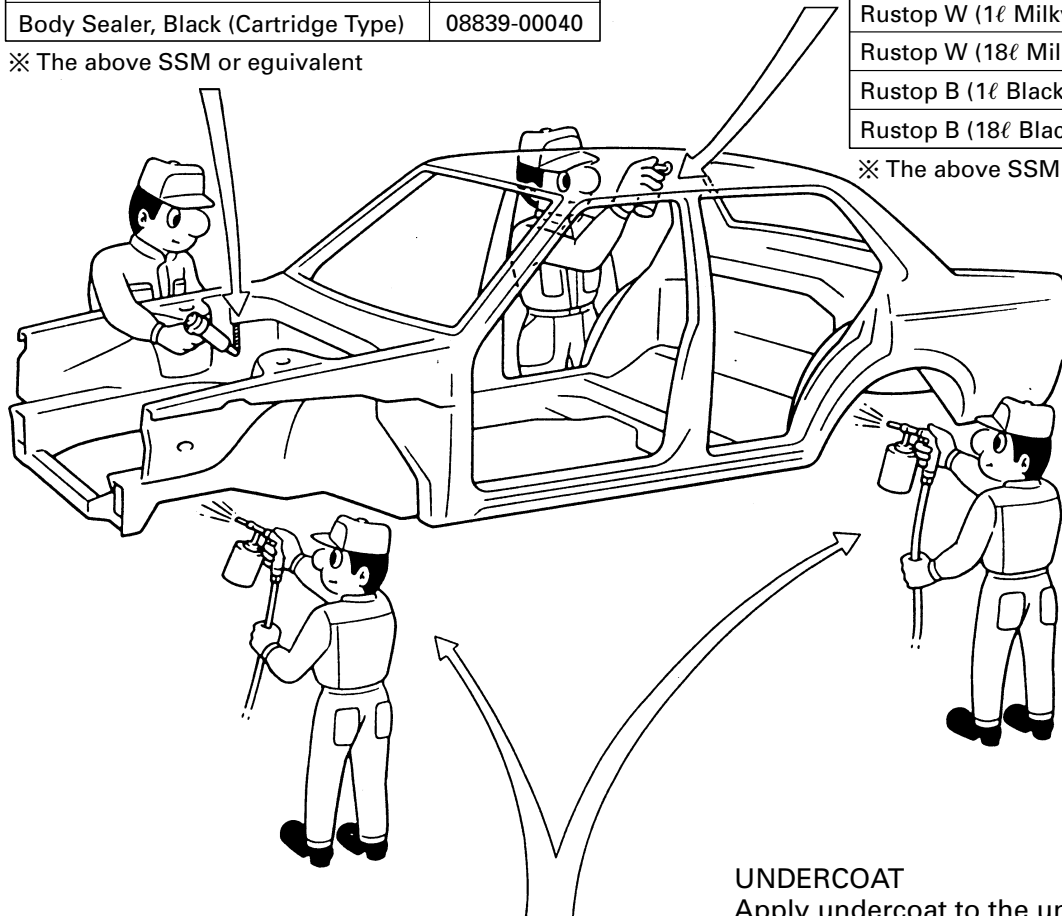
Apply anti-rust agent to following sections.

- Inside of the hems of the doors and hood.
- Around the hinges of the doors and hood.
- Inside of the welded parts with boxed cross-section.



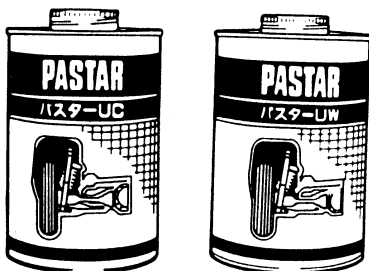
Parts Name	Parts Number
Rustop W (Aerosol)	08860-00200
Rustop W (1ℓ Milky White)	08860-00210
Rustop W (18ℓ Milky White)	08860-00230
Rustop B (1ℓ Black)	08860-00220
Rustop B (18ℓ Black)	08860-00240

※ The above SSM or equivalent



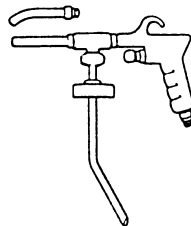
UNDERCOAT

Apply undercoat to the underbody and wheel housings.



Undercoating (Oil base)

Undercoating (Water base)

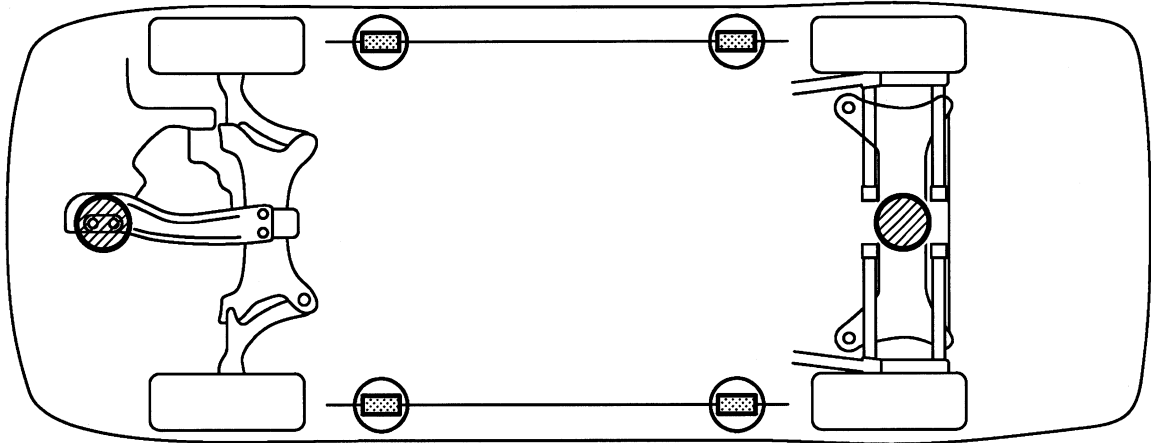


Spray Gun

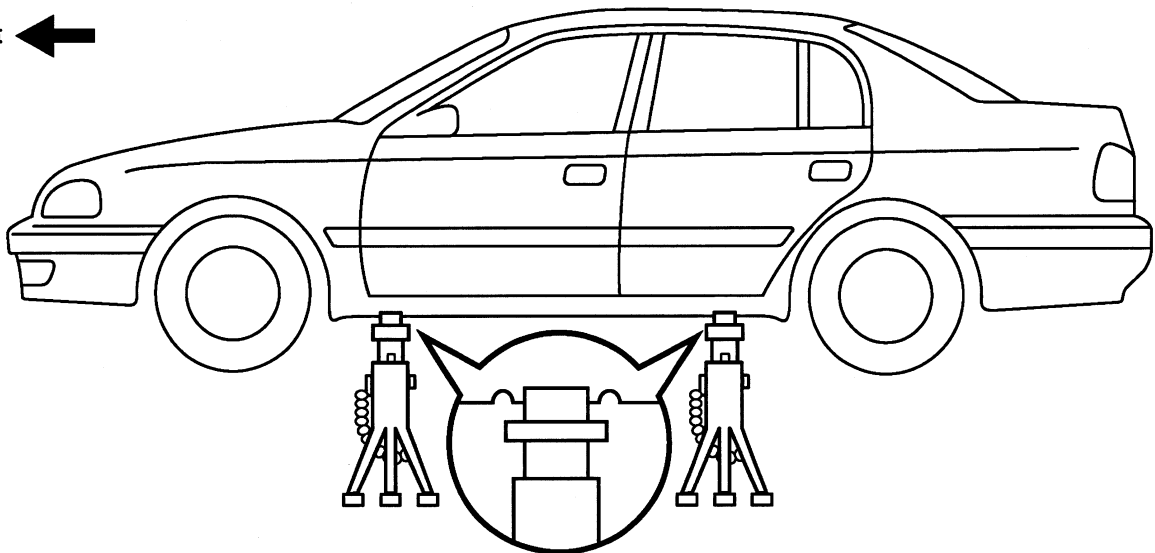
Parts Name	Parts Number
Pastar UC (Oil Base)	08836-00155
Pastar UW (Water Base)	08836-00115
Pastar Gun (For thick application)	08836-00091

※ The above SSM or equivalent

VEHICLE LIFT AND SUPPORT LOCATIONS



Front ←



JACK POSITION _____ ●

Front ----- Front center member

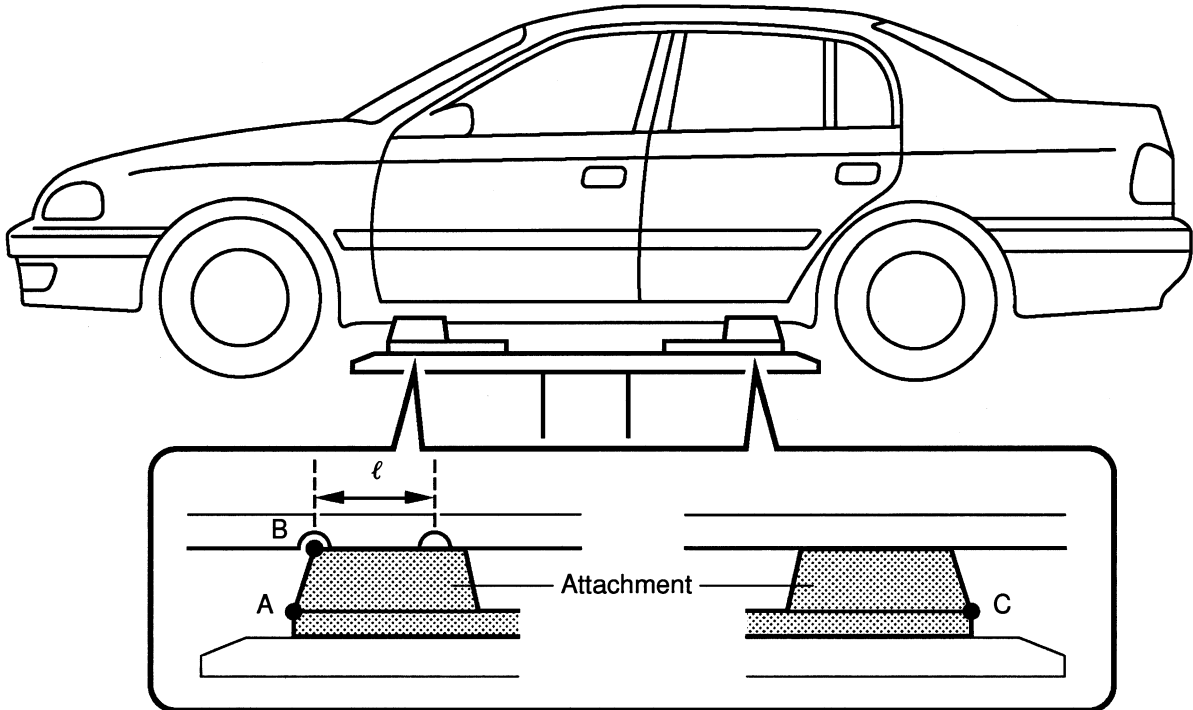
Rear ----- Rear suspension member

CAUTION : When jacking-up the rear and front, make sure the car is not carrying any extra weight.

PANTOGRAPH JACK POSITION _____ ○

SUPPORT POSITION
Safety stand and swing arm type lift ----- ■

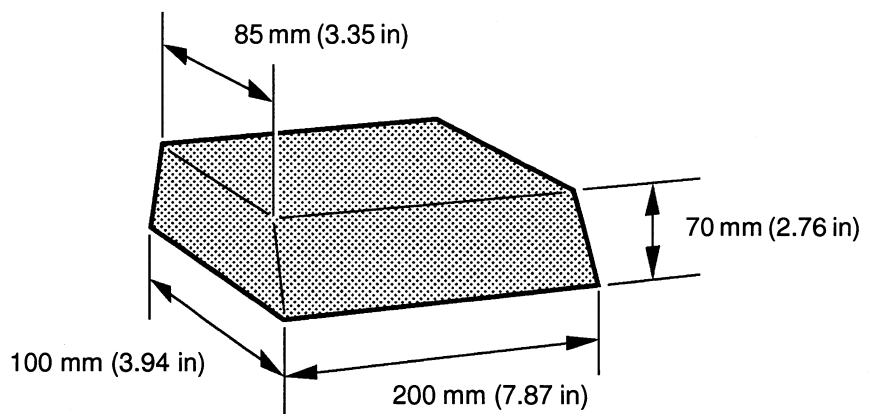
PLATE TYPE LIFT

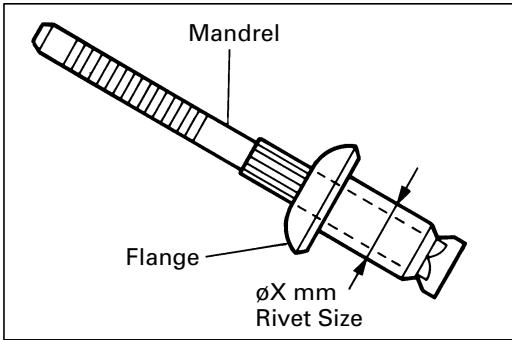


HINT :

- | | |
|-----------------------------|--|
| Left and right set position | Place the vehicle over the center of the lift. |
| Front and rear set position | <ul style="list-style-type: none"> • Align the cushion gum ends of the plate with the attachment lower ends (A, C). • Align the attachment upper end (B) with the front jack supporting point (ℓ). |

Attachment dimensions





RIVET REMOVAL AND INSTALLATION

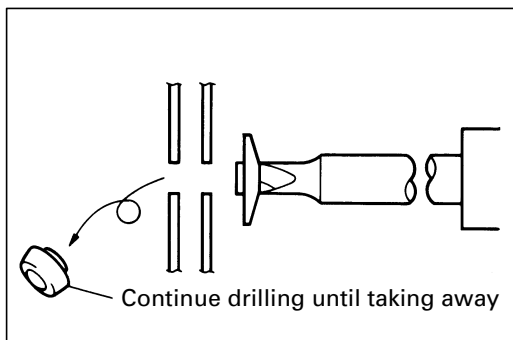
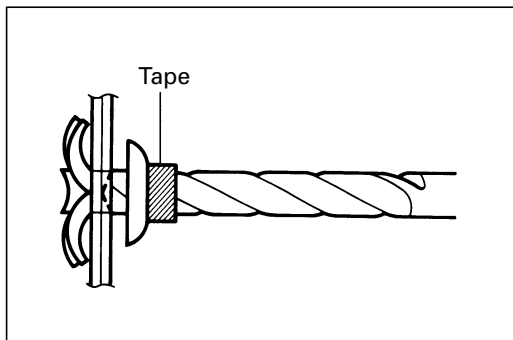
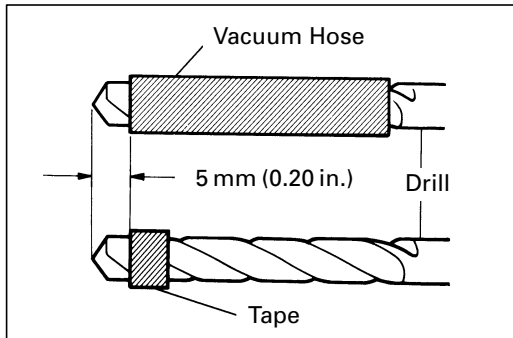
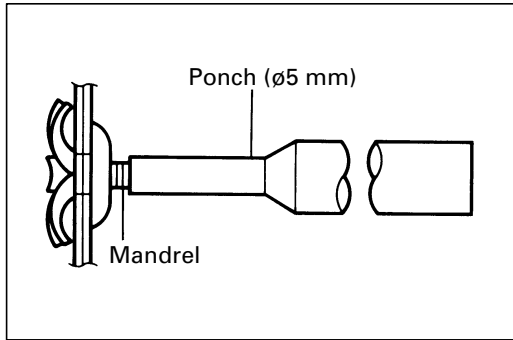
PARTS NAME AND VARIETY OF RIVET

	Aluminum-Rivet	Steel-Rivet	Waterproof-Rivet	T-Rivet
External Appearance	Before installation 	Before installation 	Before installation 	Before installation
	After installation Outer Inner	After installation Outer Inner	After installation Waterproof Seal Outer Inner	After installation Mandrel Outer Inner
Characteristics	<ul style="list-style-type: none"> • Small nonwaterproof rivet • No magnetic adherence 	<ul style="list-style-type: none"> • Small nonwaterproof rivet • Magnetic adherence 	<ul style="list-style-type: none"> • Small waterproof rivet • Waterproof seal 	<ul style="list-style-type: none"> • Large waterproof rivet • Mandrel sticks out after installation

RIVET REMOVAL

1. SELECTION OF CUTTING TOOL

	Cutting tool	Note								
Aluminum-Rivet Steel-Rivet T-Rivet with $\phi 6.4$ mm	Drill blade <table border="1"> <thead> <tr> <th>Rivet size</th> <th>Blade size</th> </tr> </thead> <tbody> <tr> <td>$\phi 4$ mm</td> <td>$\phi 4$ mm</td> </tr> <tr> <td>$\phi 4.8$ mm</td> <td>$\phi 5$ mm</td> </tr> <tr> <td>$\phi 6.4$ mm</td> <td>$\phi 6.5$ mm</td> </tr> </tbody> </table>	Rivet size	Blade size	$\phi 4$ mm	$\phi 4$ mm	$\phi 4.8$ mm	$\phi 5$ mm	$\phi 6.4$ mm	$\phi 6.5$ mm	<ul style="list-style-type: none"> • Cutting can be done with drill blade or rivet cutter for an aluminum-rivet with $\phi 4.8$ mm. • When a rivet cutter is used for an aluminum-rivet (except $\phi 4.8$ mm), a steel-rivet, or a T-rivet with $\phi 6.4$ mm, it is possible that the drill will spin abnormally damaging the rivet hole and breaking the rivet cutter.
Rivet size	Blade size									
$\phi 4$ mm	$\phi 4$ mm									
$\phi 4.8$ mm	$\phi 5$ mm									
$\phi 6.4$ mm	$\phi 6.5$ mm									
Aluminum-Rivet with $\phi 4.8$ mm Waterproof-Rivet with $\phi 4.8$ mm	Rivet Cutter (P/N 09060-60350) 	<ul style="list-style-type: none"> • When an ordinary cutter is used for a waterproof-rivet with $\phi 4.8$ mm the rivet can not be cut as it spins with the cutter. 								



2. RIVET REMOVAL

- (1) T-Rivet with ø6.4 mm:
Using a punch with ø5 mm, stamp out the mandrel.

- (2) Put tape around the drill blade 5 mm (0.20 in.) from the tip to prevent damage to the rivet hole.

- (3) Attach the drill blade or a rivet cutter to the drill.

- (4) Gently and vertically put the drill to the rivet, and cut the rivets flange.

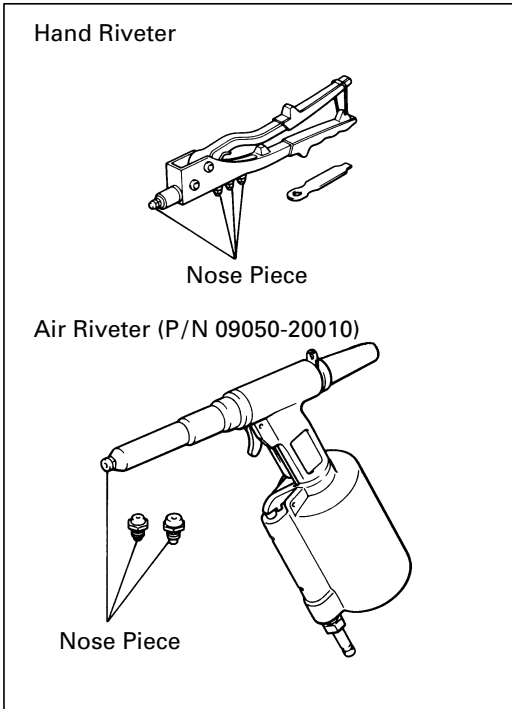
NOTE:

- While upward drilling, wear a protective glasses.
- If a drill is strongly pushed deeply in to a rivet, the rivet can't be cut as it spins together with the drill.
- Prizing the hole with a drill can lead to damage to the rivet hole or the breaking of the rivet cutter.
- Take care as the cut rivet is hot.

- (5) Aluminum-Rivet and Waterproof-Rivet with ø4.8 mm:
Even if flange is taken off, continue drilling and push out remaining fragments with the drill.

- (6) Steel-Rivet:
If the flange is taken off, stop drilling and pull out the remaining fragments with a pliers.

- (7) T-Rivet with ø6.4 mm:
If the flange is taken off, stop drilling and push out the remaining fragments with a punch with ø5 mm or pull out the remaining fragments with pliers.

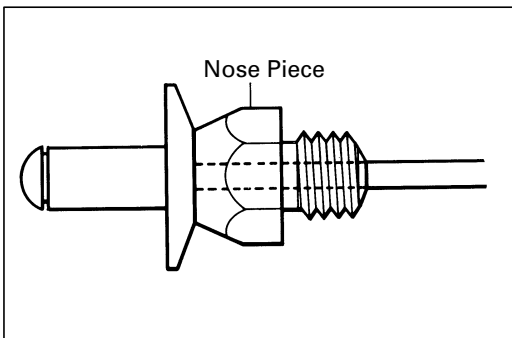


RIVET INSTALLATION

1. RIVET INSTALLATION

- (1) Apply touch-up paint at the area.
- (2) Select an installation tool.

Item	Installation tool
Aluminum-Rivet Waterproof-Rivet with $\phi 4.8$ mm	Hand Riveter or Air Riveter
Steel-Rivet T-Rivet with $\phi 6.4$ mm	Air Riveter

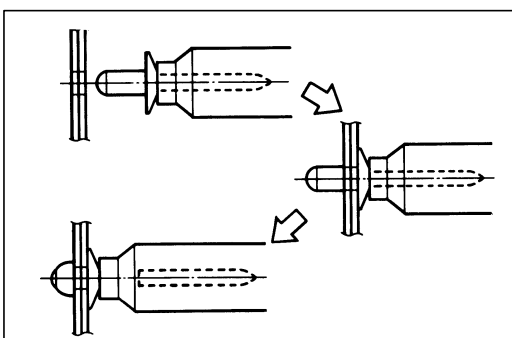


- (3) Select the smallest a nose piece possible for a rivets mandrel.

NOTE: Wrong selection of a nose piece may cause the riveter to be damaged or bad tightening.

<Reference> Nose piece of Air Riveter

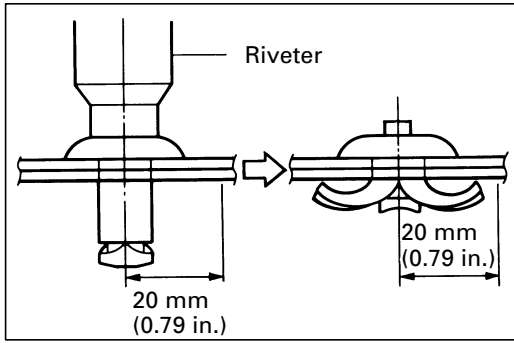
Parts Name	Parts Number	Color	Rivet type
Nose piece No. 1	09050-02020	Silver	$\phi 4.0$ mm Aluminum $\phi 4.0$ mm Steel $\phi 4.8$ mm Waterproof
Nose piece No. 2	09050-02030	Copper	$\phi 4.8$ mm Aluminum $\phi 4.8$ mm Steel
Nose piece No. 3	09050-02040	Black	$\phi 6.4$ mm T-Rivet



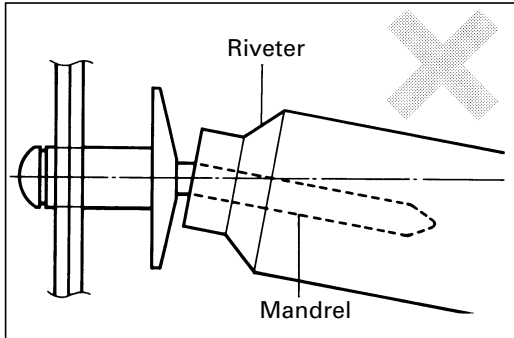
- (4) Insert the nose piece to the riveter and then the mandrel of the new rivet into the nose piece.
- (5) Vertically insert the rivet into a hole and keep place it strongly.

NOTE:

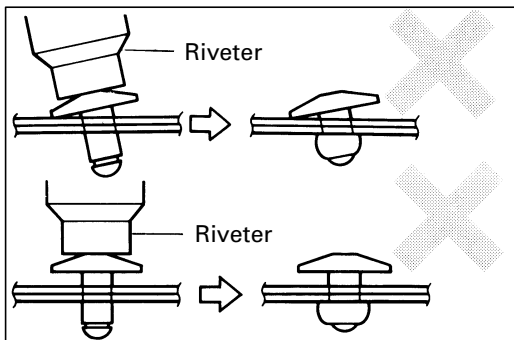
- If the tip of the rivet is not deformed or the mandrel is not cut, repeat process (5) again.



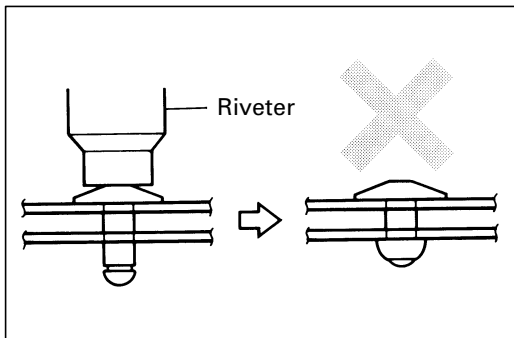
- **T-Rivet with $\varnothing 6.4$ mm:**
Do not place your hands or the wire harness within a radius of 20 mm (0.79 in.) from the rivet, as the rivet is cut and opened in this area.



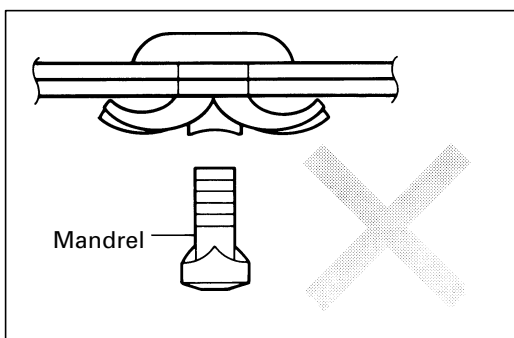
- **Prizing a riveter damages the riveter showing that it is not tightened correctly and bends the mandrel.**



- **Loose tightening may result from either tilting the riveter while handling or the riveter not connecting to the material.**



- **Loose tightening also occurs when a rivet is applied between materials without touching.**



- **T-Rivet with $\varnothing 6.4$ mm:**
When a mandrel of a rivet is lost, the rivet should be replaced to prevent loose tightening.

ABBREVIATIONS USED IN THIS MANUAL

For convenience, the following abbreviations are used in this manual.

ABS	Antilock Brake System
A/C	Air Conditioner
assy	assembly
ECT	Electronic Controlled Transmission
ECU	Electronic Control Unit
e.g.	Exempli Gratia (for Example)
Ex.	Except
FWD	Front Wheel Drive Vehicles
4WD	Four Wheel Drive Vehicles
in.	inch
LH	Left-hand
LHD	Left-hand Drive
MIG	Metal Inert Gas
M/Y	Model Year
PPS	Progressive Power Steering
RH	Right-hand
RHD	Right-hand Drive
SRS	Supplemental Restraint System
SSM	Special Service Materials
w/	with
w/o	without

- MEMO -
