

## FOREWORD

This repair manual has been prepared to provide essential information on body panel repair methods (including cutting and welding operations, but excluding painting) for the TOYOTA AVENSIS/CORONA FWD.

Applicable models: AT220, 221 series  
AZT220 series  
CDT220 series  
CT220 series  
ST220 series  
ZZT220, 221 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, etc. However, it should be noted that the front fenders of the TOYOTA models is bolted on and require no welding.

When repairing, don't cut and join areas that are not shown in this manual. Only work on the specified contents to maintain body strength.

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 repair procedures and specifications other than collision-damaged body components of the TOYOTA AVENSIS/CORONA FWD refer to the repair manuals.

If you require the above manuals, please contact your TOYOTA Dealer.

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**

# **TOYOTA AVENSIS/CORONA FWD REPAIR MANUAL FOR COLLISION DAMAGE**

|                                |           |
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First Printing: Oct. 20, 1997 01-971020-00



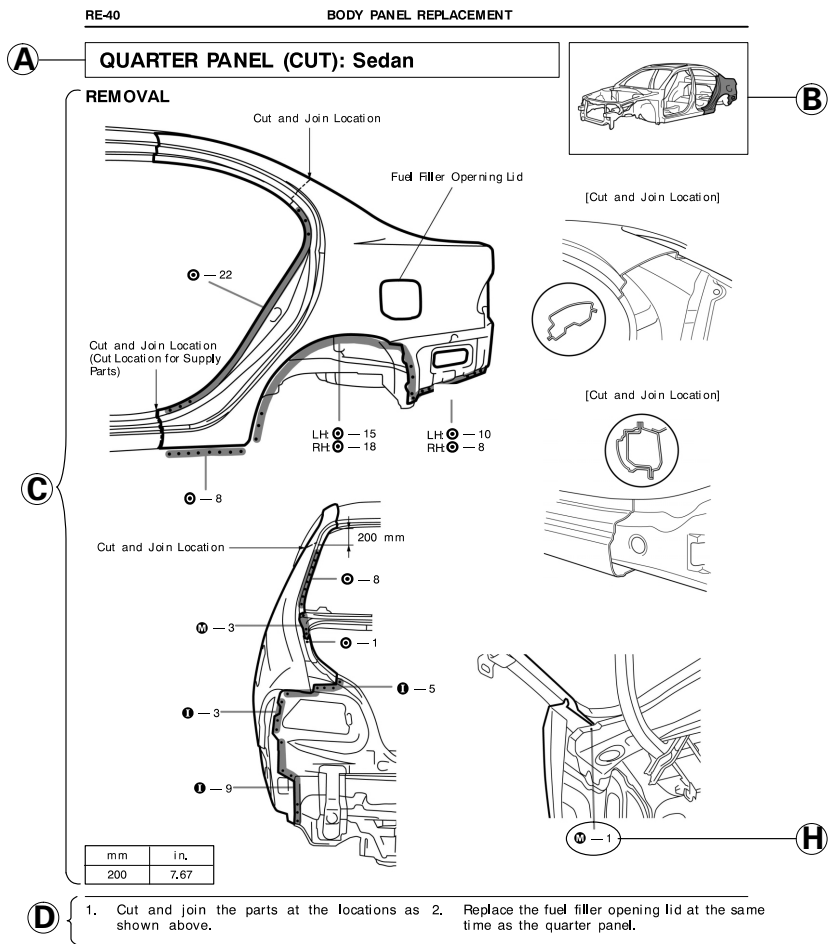
# INTRODUCTION

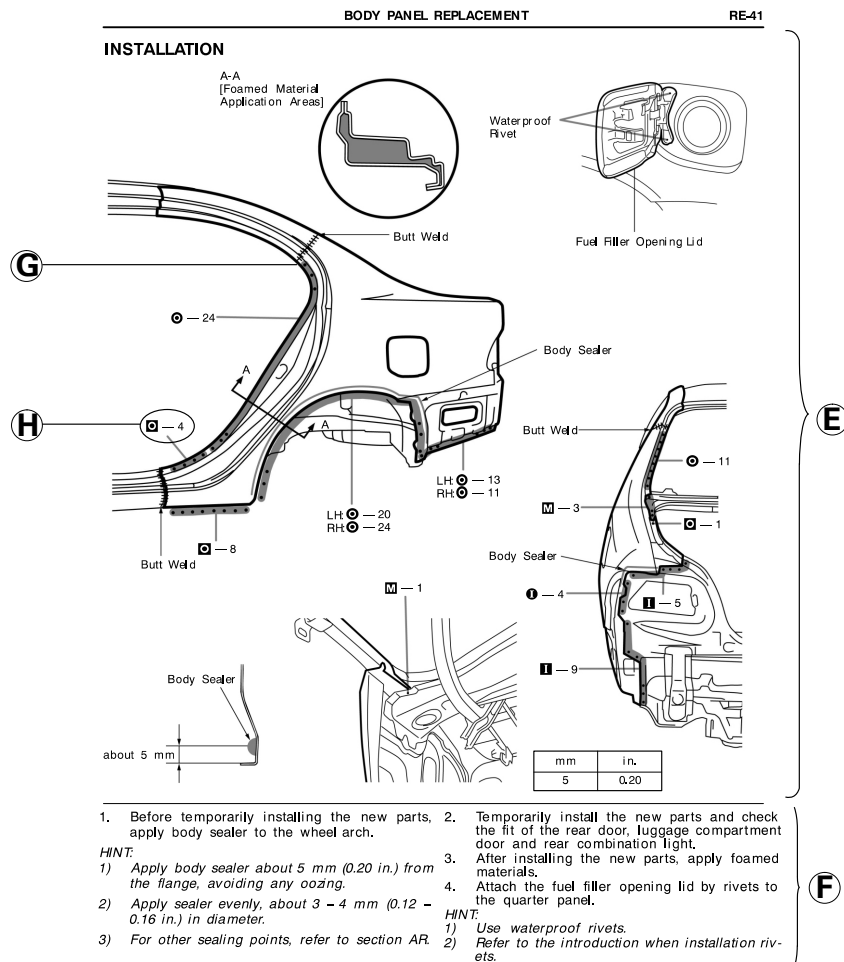
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HOW TO USE THIS MANUAL

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.



**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**

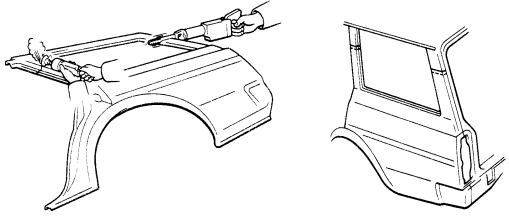
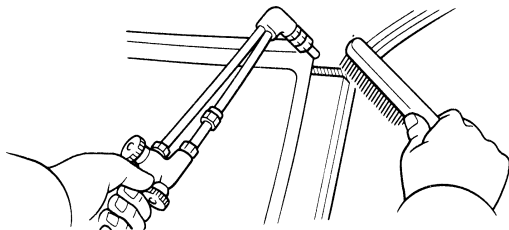
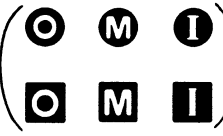
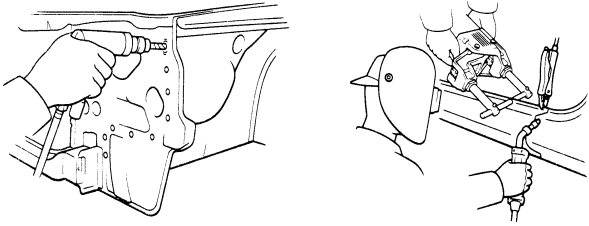
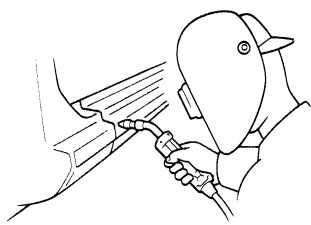
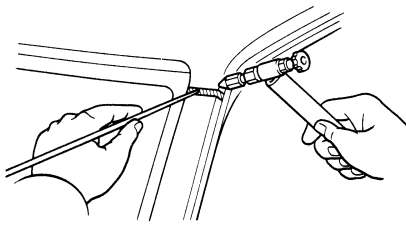
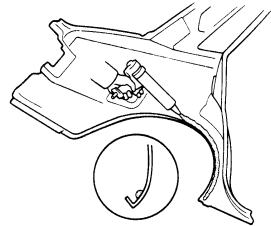
See page IN-4.

**H : ILLUSTRATION OF WELD POINTS**

Weld method and panel position symbols.  
See page IN-5.

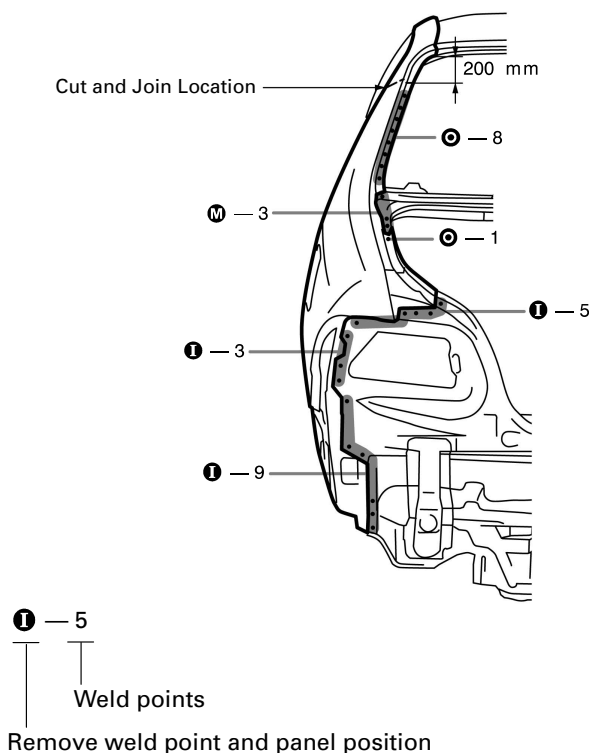
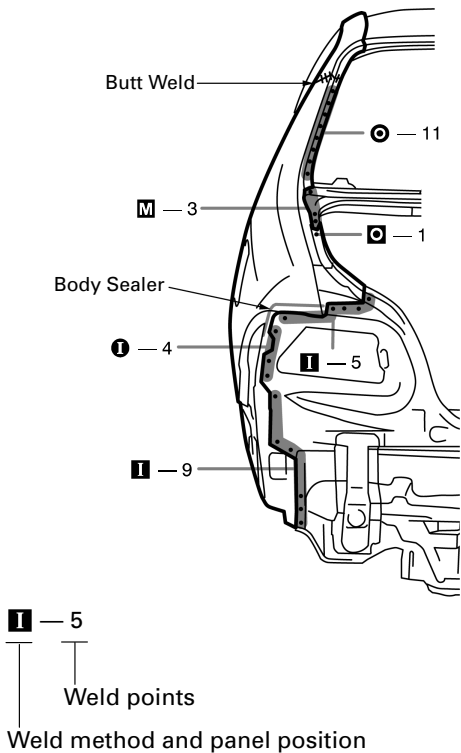
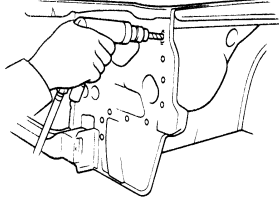
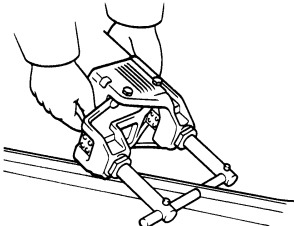
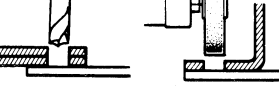
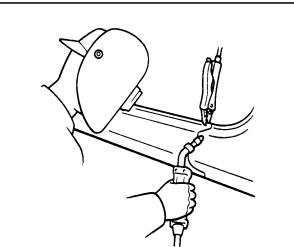
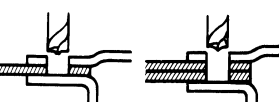
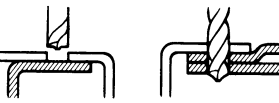
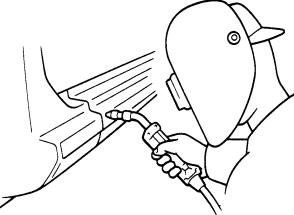
## SYMBOLS

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                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                                                                          | SAW CUT OR<br>ROUGH CUT                                                 |    |
|                                                                                          | REMOVE BRAZE                                                            |    |
| <br> | WELD POINTS<br><br>SPOT WELD OR<br>MIG PLUG WELD<br><br>(See page IN-5) |   |
|                                                                                        | CONTINUOUS MIG<br>WELD (BUTT WELD<br>OR TACK WELD)                      |  |
|                                                                                        | BRAZE                                                                   |  |
|                                                                                        | BODY SEALER                                                             |  |

## Illustration of Weld Point Symbols

### EXAMPLE:

| REMOVAL                                                                                                                                                                                                                                                           |                    |                                                                                     | INSTALLATION                                                                                                                                                                                                                                                      |               |                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------|
|                                                                                                                                                                                 |                    |                                                                                     |                                                                                                                                                                                |               |                                                                                       |
| SYMBOL                                                                                                                                                                                                                                                            | MEANING            | ILLUSTRATION                                                                        | SYMBOL                                                                                                                                                                                                                                                            | MEANING       | ILLUSTRATION                                                                          |
| <br><br> | Remove Weld Points |  | <br><br> | Spot Weld     |  |
|                                                                                                                                                                                | (Outside)          |  | <br><br> | Mig Plug Weld |  |
|                                                                                                                                                                                | (Middle)           |  |                                                                                                                                                                                                                                                                   |               |                                                                                       |
|                                                                                                                                                                                | (Inside)           |  |                                                                                                                                                                                                                                                                   |               |                                                                                       |
| <b>HINT:</b> Panel position symbols are as seen from the working posture.                                                                                                                                                                                         |                    |                                                                                     |                                                                                                                                                                                | Spot MIG Weld |  |

## 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 kΩ/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

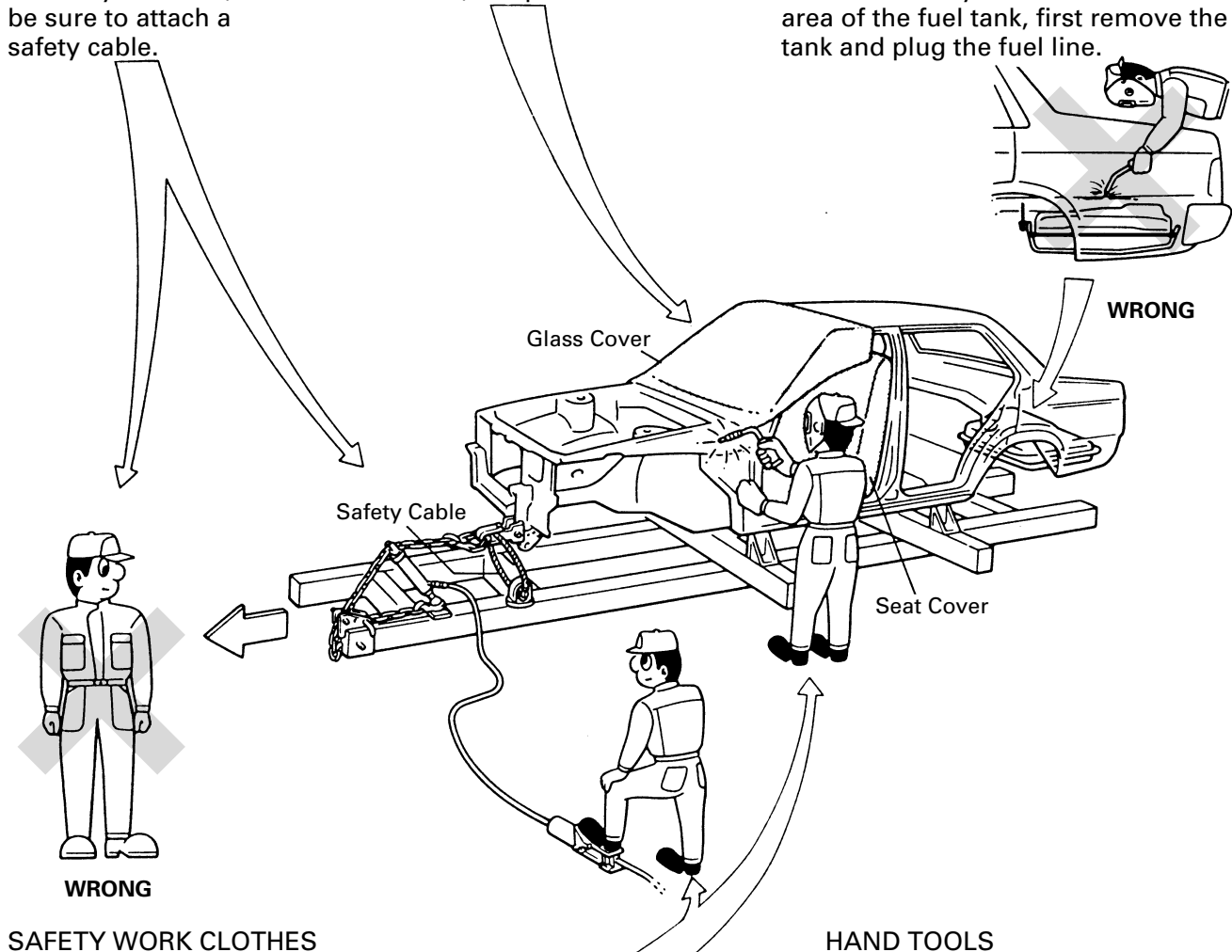
Never stand in direct line with the chain when using a puller on the body or frame, and be sure to attach a safety cable.

#### 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



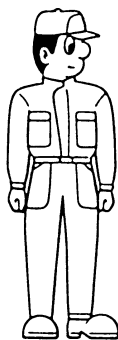
Face  
Protector



Eye  
Protector



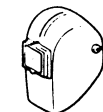
Safety  
Shoes



Welder's  
Glasses



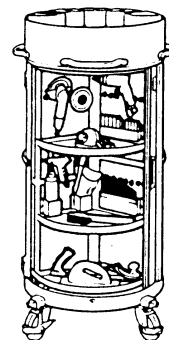
Ear  
Plugs



Head  
Protector



Welder's  
Gloves



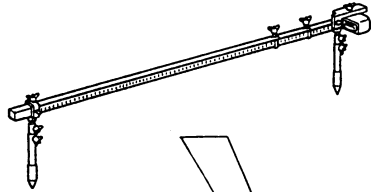
Body  
Tools  
Stand

## 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

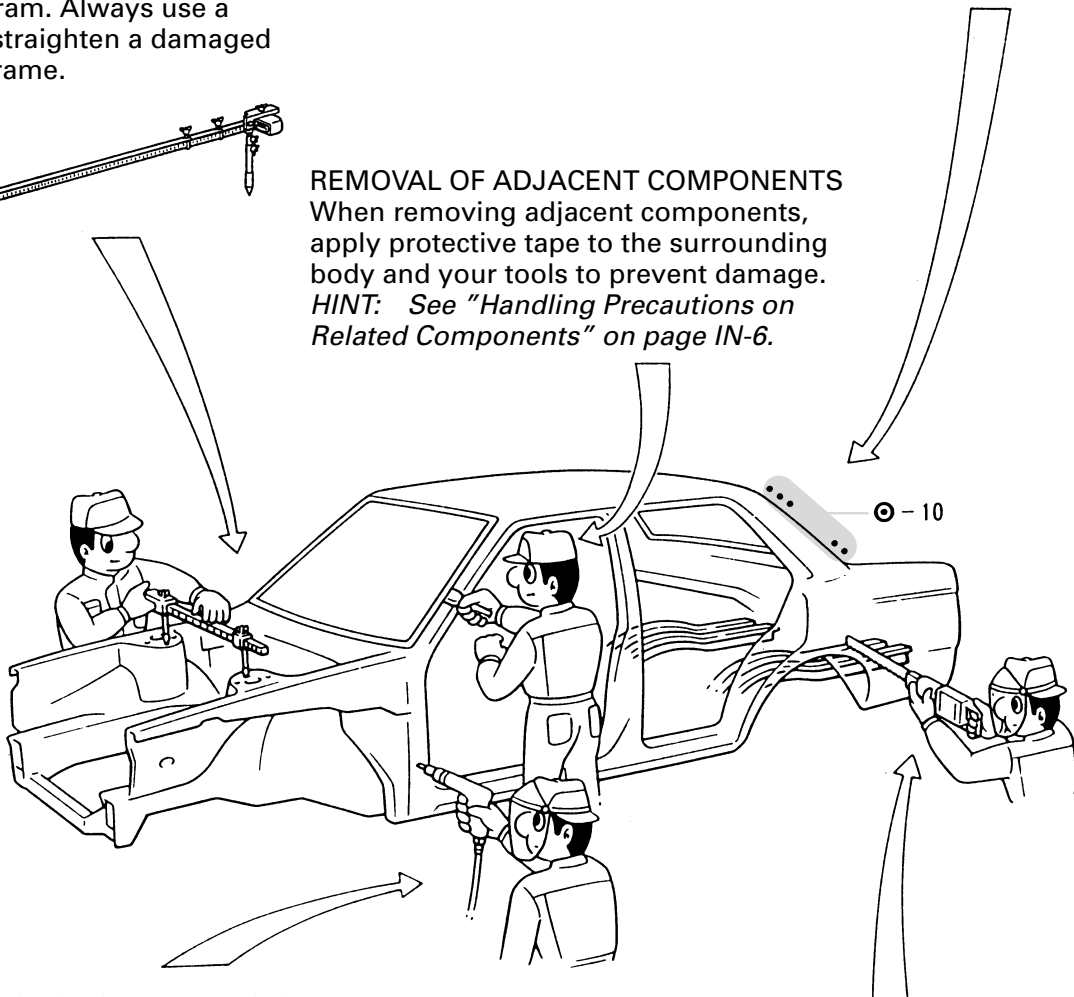
The number of spot welds and the panel positions to be removed are shown for your reference.

*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.

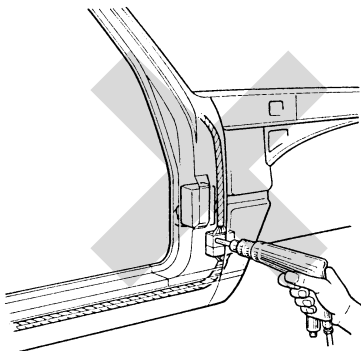
*HINT: See "Handling Precautions on Related Components" on page IN-6.*



#### 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.

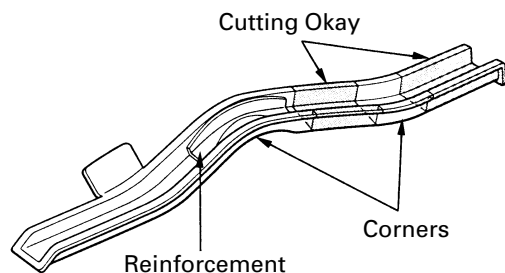
*HINT: See "Handling Precautions on Related Components" on page IN-6.*



**WRONG**

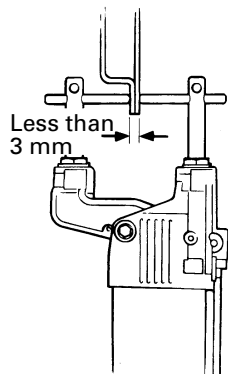
#### CUTTING AREA

Always cut in a straight line and avoid reinforced area.



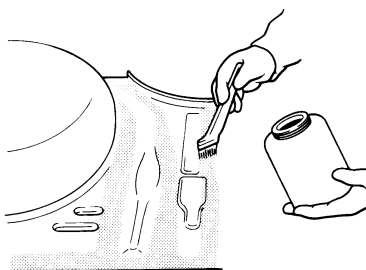
## PREPARATION FOR INSTALLATION

### 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.

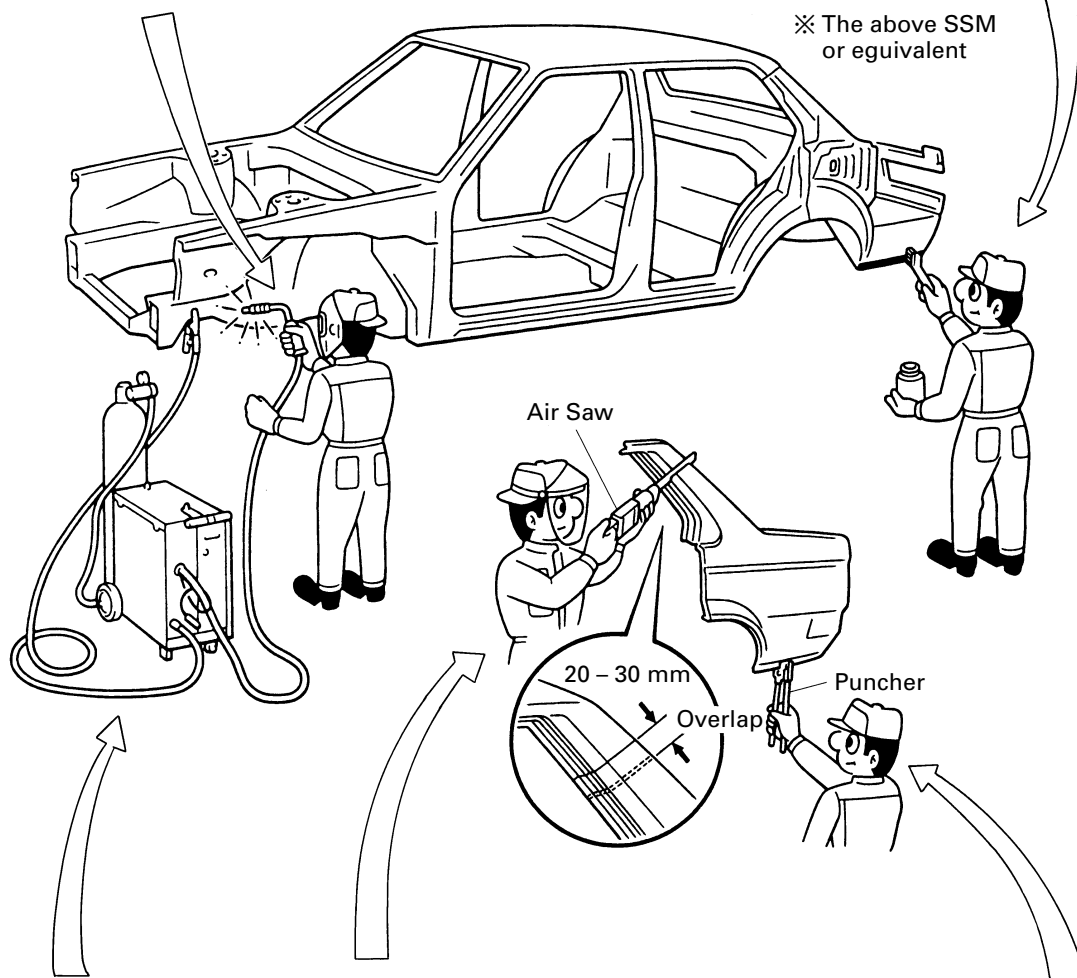
### APPLICATION OF WELD-THROUGH PRIMER (SPOT SEALER)



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.

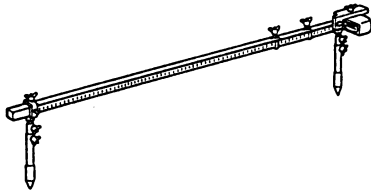
REFERENCE: mm (in.)

| Thickness of welded portion | Size of plug hole      |
|-----------------------------|------------------------|
| 1.0 (0.04) under            | 5 (0.20) $\phi$ over   |
| 1.0 (0.04) – 1.5 (0.06)     | 6.5 (0.26) $\phi$ over |
| 1.5 (0.06) over             | 8 (0.31) $\phi$ over   |

## INSTALLATION

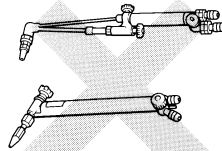
### PRE-WELDING MEASUREMENTS

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



### WELDING PRECAUTIONS

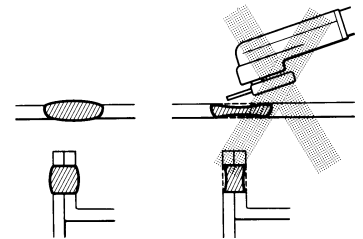
1. The number of welding spots should be as follows.  
Spot weld:  $1.3 \times \text{No. of manufacturer's spots}$ .  
Plug weld: More than No. of manufacturer's plugs.



WRONG

### POST-WELDING REFINISHING

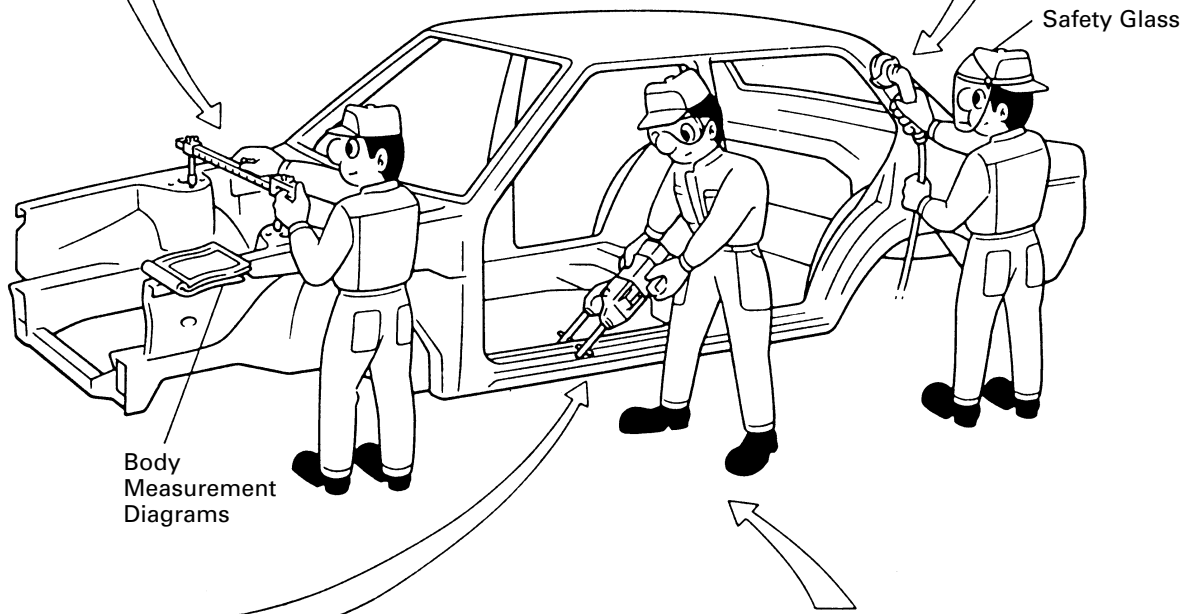
1. Always check the welded spots to insure they are secure.
2. When smoothing out the weld spots with a disc grinder, be careful not to grind off too much as this would weaken the weld.



OKAY

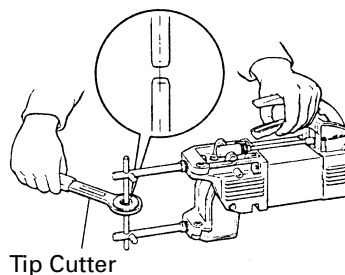
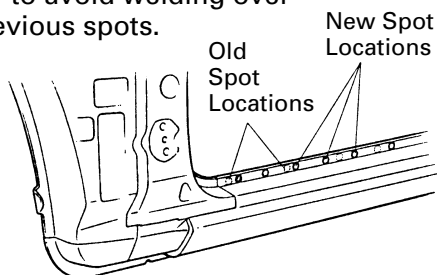
WRONG

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.



Tip Cutter

### 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-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)

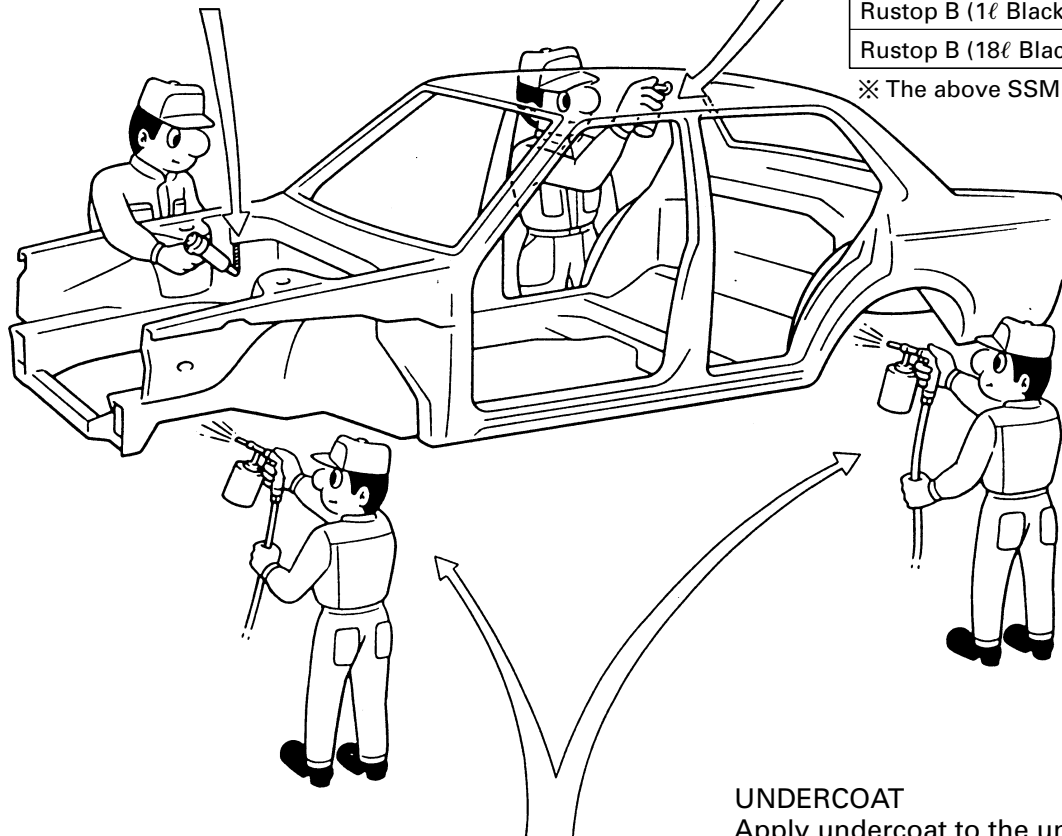
Apply anti-rust agent to following sections.

- 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

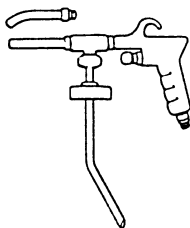
Apply undercoat to the underbody and wheel housings.



Undercoating  
(Oil base)



Undercoating  
(Water base)

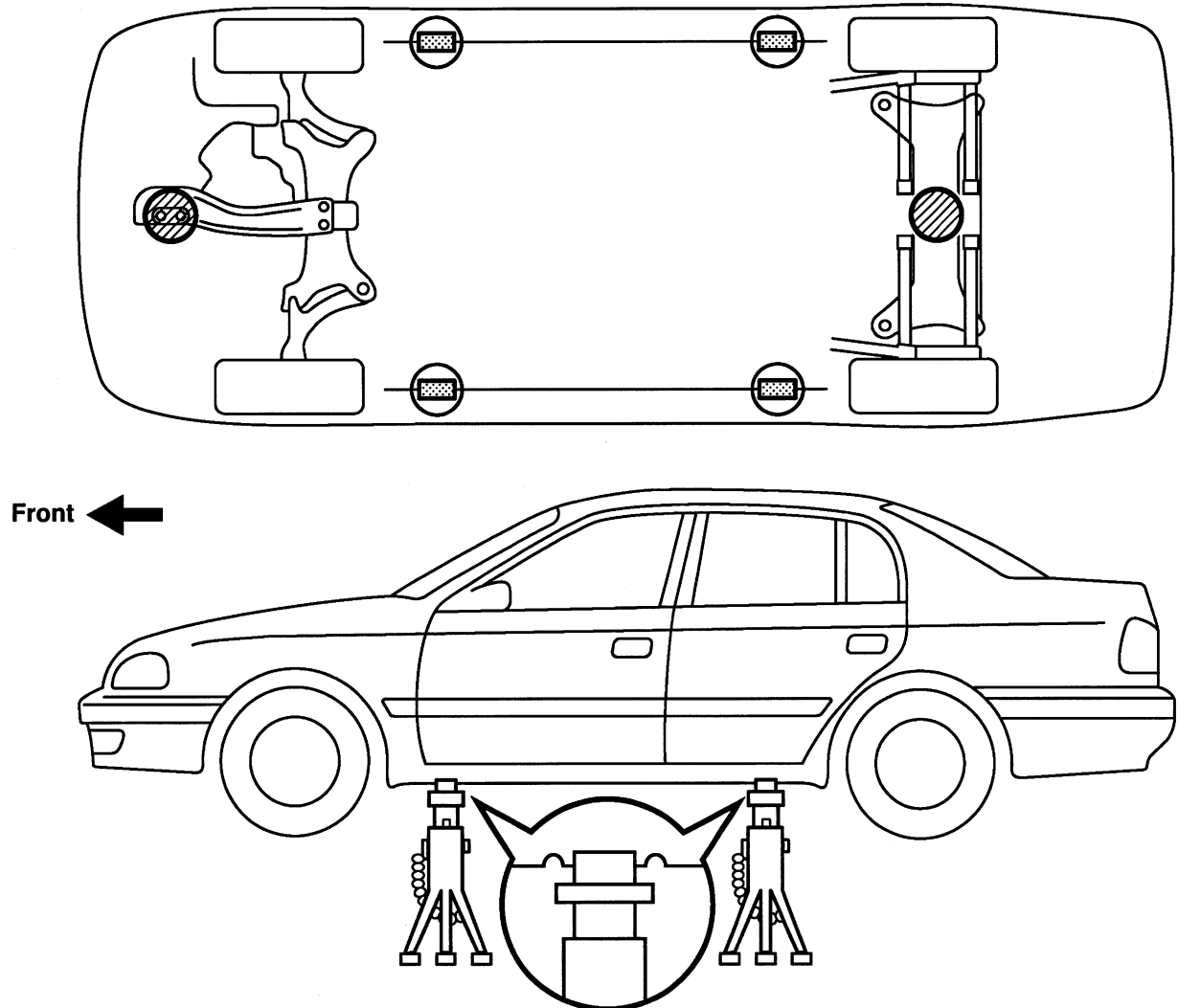


Spray Gun

| 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



### JACK POSITION

Front ----- Front center member

Rear ----- Rear suspension member

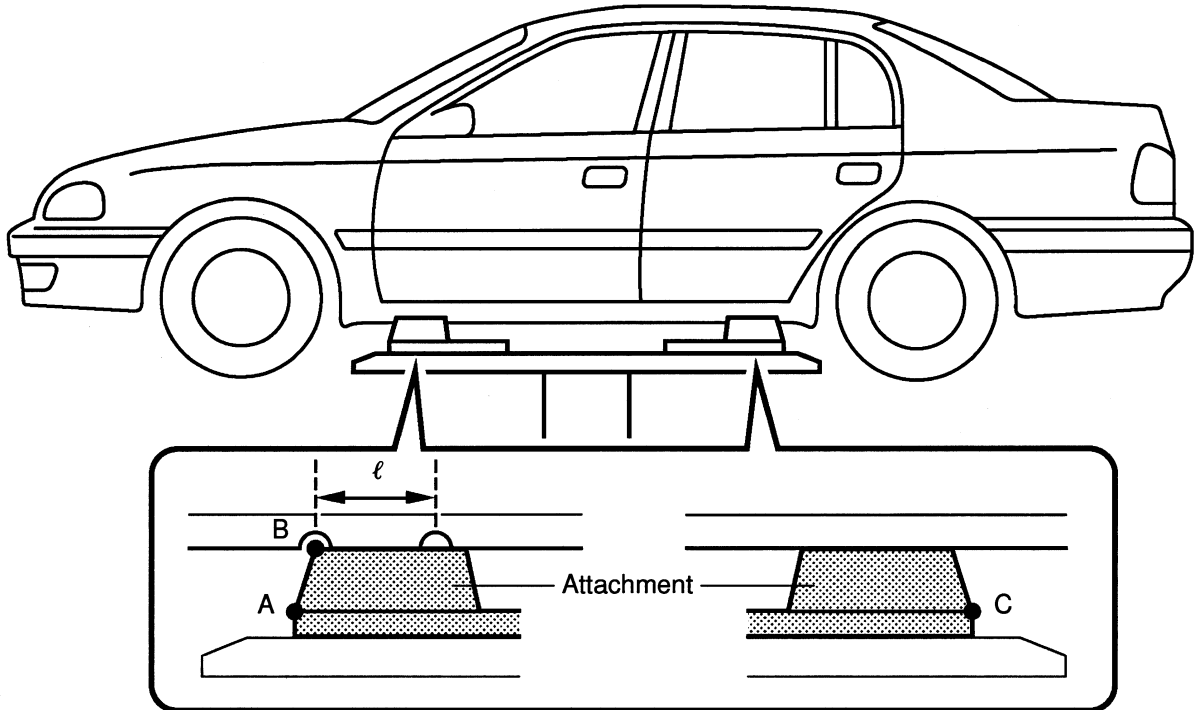
**CAUTION :** When jacking-up the rear and front, make sure the car is not carrying any extra weight.

### PANTOGRAPH JACK POSITION

### SUPPORT POSITION

Safety stand and swing arm type lift -----

## PLATE TYPE LIFT

**HINT :**

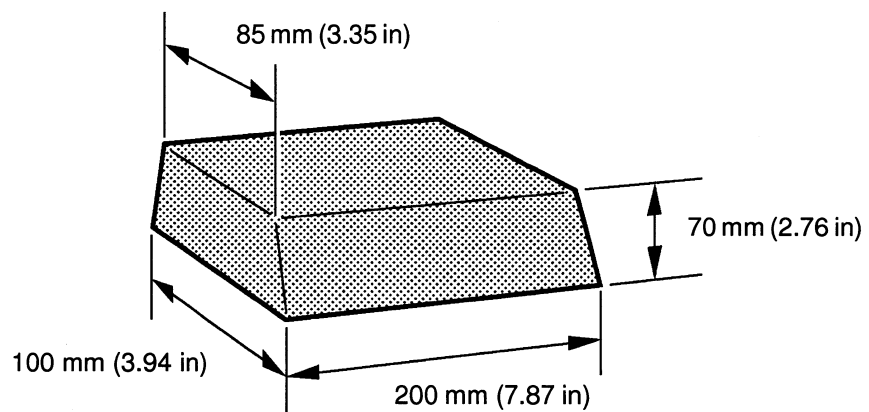
Left and right set position

Place the vehicle over the center of the lift.

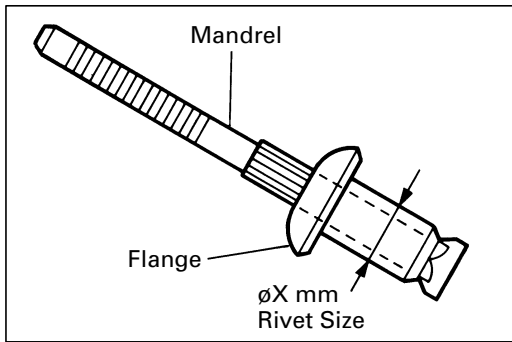
Front and rear set position

- 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 ( $\ell$ ).

## Attachment dimensions







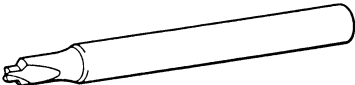
## RIVET REMOVAL AND INSTALLATION

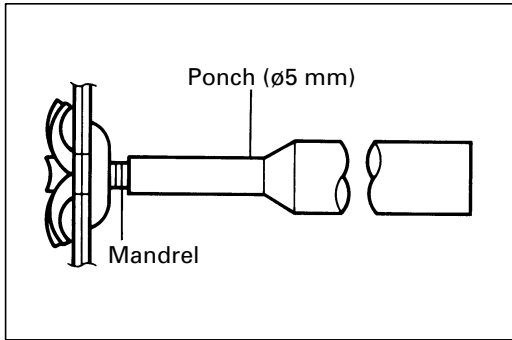
### PARTS NAME AND VARIETY OF RIVET

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

## RIVET REMOVAL

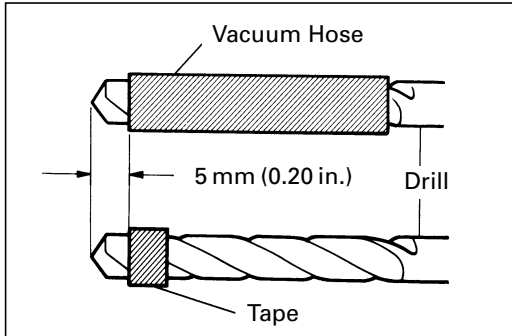
### 1. SELECTION OF CUTTING TOOL

|                                                                        | Cutting tool                                                                                                                                                                                    | Note                                                                                                                                                                       |            |       |       |         |       |         |         |                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------|-------|---------|-------|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Aluminum-Rivet<br>Steel-Rivet<br>T-Rivet      with ø6.4 mm             | Drill blade <table><tr><th>Rivet size</th><th>Blade size</th></tr><tr><td>ø4 mm</td><td>ø4 mm</td></tr><tr><td>ø4.8 mm</td><td>ø5 mm</td></tr><tr><td>ø6.4 mm</td><td>ø6.5 mm</td></tr></table> | Rivet size                                                                                                                                                                 | Blade size | ø4 mm | ø4 mm | ø4.8 mm | ø5 mm | ø6.4 mm | ø6.5 mm | <ul style="list-style-type: none"><li>● Cutting can be done with drill blade or rivet cutter for an aluminum-rivet with ø4.8 mm.</li><li>● When a rivet cutter is used for an aluminum-rivet (except ø4.8 mm), a steel-rivet, or a T-rivet with ø6.4 mm, it is possible that the drill will spin abnormally damaging the rivet hole and breaking the rivet cutter.</li></ul> |
| Rivet size                                                             | Blade size                                                                                                                                                                                      |                                                                                                                                                                            |            |       |       |         |       |         |         |                                                                                                                                                                                                                                                                                                                                                                              |
| ø4 mm                                                                  | ø4 mm                                                                                                                                                                                           |                                                                                                                                                                            |            |       |       |         |       |         |         |                                                                                                                                                                                                                                                                                                                                                                              |
| ø4.8 mm                                                                | ø5 mm                                                                                                                                                                                           |                                                                                                                                                                            |            |       |       |         |       |         |         |                                                                                                                                                                                                                                                                                                                                                                              |
| ø6.4 mm                                                                | ø6.5 mm                                                                                                                                                                                         |                                                                                                                                                                            |            |       |       |         |       |         |         |                                                                                                                                                                                                                                                                                                                                                                              |
| Aluminum-Rivet      with ø4.8 mm<br>Waterproof-Rivet      with ø4.8 mm | Rivet Cutter (P/N 09060-60350)<br>                                                                           | <ul style="list-style-type: none"><li>● When a ordinary cutter is used for a waterproof-rivet with ø4.8 mm the rivet can not be cut as it spins with the cutter.</li></ul> |            |       |       |         |       |         |         |                                                                                                                                                                                                                                                                                                                                                                              |

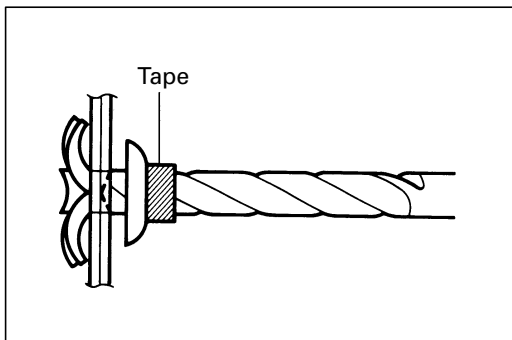


## 2. RIVET REMOVAL

- (1) T-Rivet with  $\phi 6.4$  mm:  
Using a punch with  $\phi 5$  mm, stamp out the mandrel.



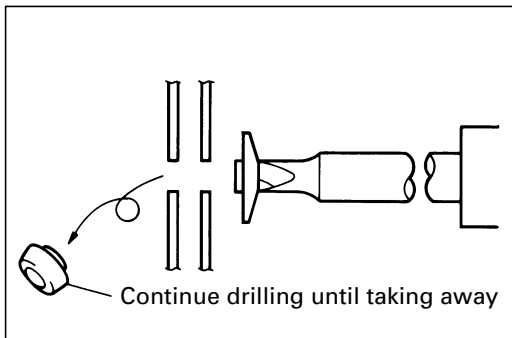
- (2) Put tape around the drill blade 5 mm (0.20 in.) from the tip to prevent damage to the rivet hole.
- (3) Attach the drill blade or a rivet cutter to the drill.



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

### NOTE:

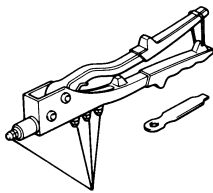
- While upward drilling, wear a protective glasses.
- If a drill is strongly pushed deeply in to a rivet, the rivet can't be cut as it spins together with the drill.
- Prizing the hole with a drill can lead to damage to the rivet hole or the breaking of the rivet cutter.
- Take care as the cut rivet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



- (5) Aluminum-Rivet and Waterproof-Rivet with  $\phi 4.8$  mm:  
Even if flange is taken off, continue drilling and push out remaining fragments with the drill.

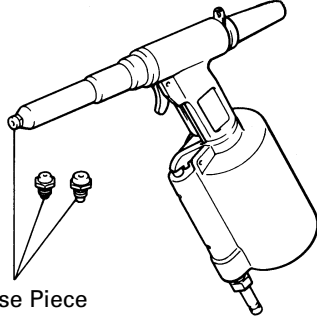
- (6) Steel-Rivet:  
If the flange is taken off, stop drilling and pull out the remaining fragments with a pliers.
- (7) T-Rivet with  $\phi 6.4$  mm:  
If the flange is taken off, stop drilling and push out the remaining fragments with a punch with  $\phi 5$  mm or pull out the remaining fragments with pliers.

Hand Riveter



Nose Piece

Air Riveter (P/N 09050-20010)



Nose Piece

## RIVET INSTALLATION

### 1. RIVET INSTALLATION

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

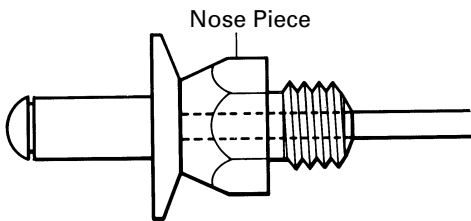
| Item                                                     | Installation tool           |
|----------------------------------------------------------|-----------------------------|
| Aluminum-Rivet<br>Waterproof-Rivet<br>with $\phi 4.8$ mm | Hand Riveter or Air Riveter |
| Steel-Rivet<br>T-Rivet<br>with $\phi 6.4$ 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<br>$\phi 4.0$ mm Steel<br>$\phi 4.8$ mm Waterproof |
| Nose piece No. 2 | 09050-02030  | Copper | $\phi 4.8$ mm Aluminum<br>$\phi 4.8$ mm Steel                             |
| Nose piece No. 3 | 09050-02040  | Black  | $\phi 6.4$ mm T-Rivet                                                     |

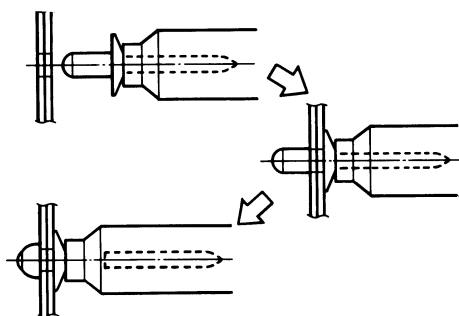


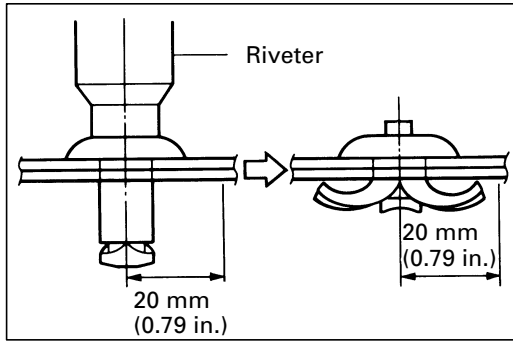
Nose Piece

- (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.

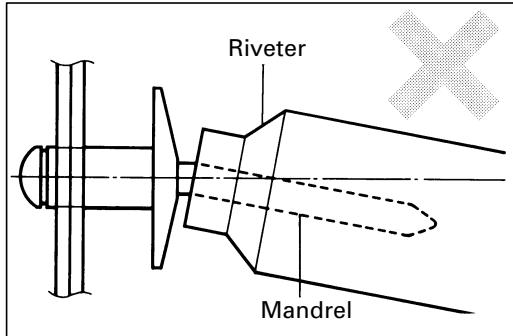
**NOTE:**

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

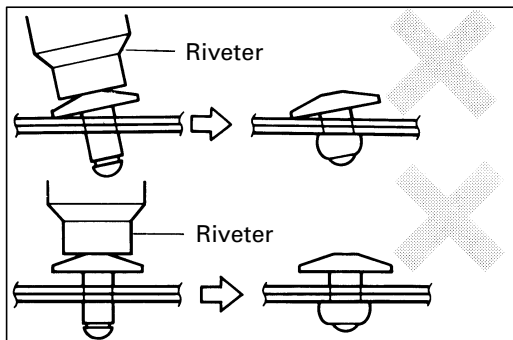




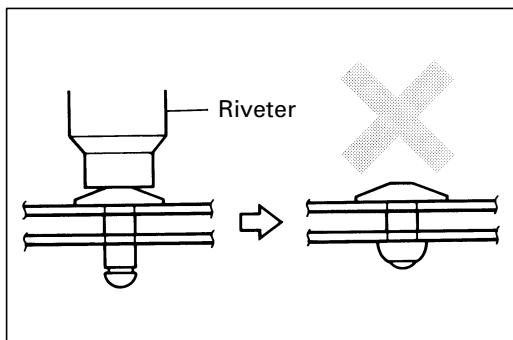
- **T-Rivet with  $\varnothing 6.4$  mm:**  
Do not place your hands or the wire harness within a radius of 20 mm (0.79 in.) from the rivet, as the rivet is cut and opened in this area.



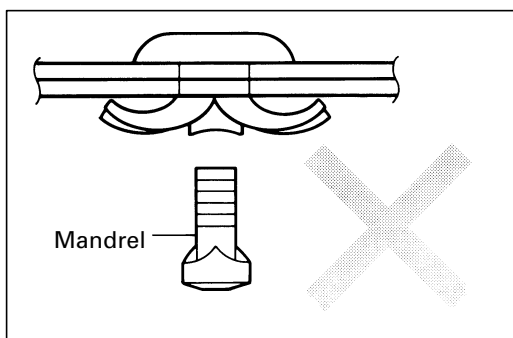
- **Prizing a riveter damages the riveter showing that it is not tightened correctly and bends the mandrel.**



- **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                            |

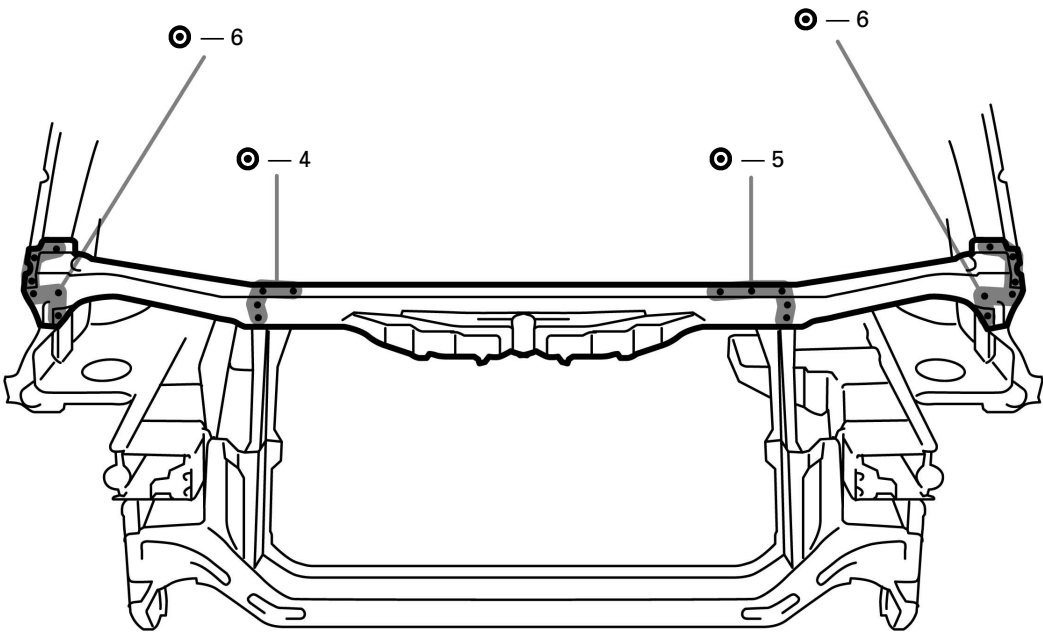
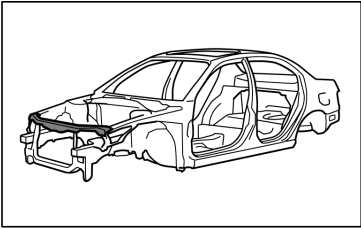


# BODY PANEL REPLACEMENT

|                                               | Page   |
|-----------------------------------------------|--------|
| RADIATOR UPPER SUPPORT (ASSY) .....           | RE-2   |
| RADIATOR SIDE SUPPORT (ASSY) .....            | RE-4   |
| FRONT CROSSMEMBER (ASSY) .....                | RE-6   |
| RADIATOR SUPPORT (ASSY) .....                 | RE-8   |
| FRONT FENDER FRONT APRON (ASSY) .....         | RE-10  |
| COWL TOP SIDE PANEL (ASSY) .....              | RE-12  |
| COWL TOP SIDE REINFORCEMENT (ASSY) .....      | RE-14  |
| FRONT FENDER APRON (ASSY) .....               | RE-16  |
| FRONT SIDE MEMBER (CUT-P)                     |        |
| Right Side .....                              | RE-18  |
| Left Side .....                               | RE-21  |
| FRONT SIDE MEMBER (ASSY) .....                | RE-24  |
| FRONT BODY PILLER (CUT) .....                 | RE-26  |
| CENTER BODY PILLER (CUT) .....                | RE-31  |
| FRONT DOOR OUTER PANEL (ASSY) .....           | RE-34  |
| REAR DOOR OUTER PANEL (ASSY) .....            | RE-36  |
| ROCKER OUTER PANEL (CUT) .....                | RE-38  |
| QUARTER PANEL (CUT) .....                     | RE-40  |
| QUARTER PANEL (CUT-P) .....                   | RE-50  |
| QUARTER WHEEL HOUSING OUTER PANEL (ASSY)      |        |
| Right Side .....                              | RE-56  |
| Left Side .....                               | RE-62  |
| BACK DOOR OPENING REINFORCEMENT (ASSY) .....  | RE-68  |
| BODY LOWER BACK PANEL (ASSY) .....            | RE-70  |
| ROOF SIDE INNER REAR PANEL (ASSY)             |        |
| Right Side .....                              | RE-76  |
| Left Side .....                               | RE-78  |
| REAR FLOOR INNER REAR CROSSMEMBER (CUT-H) ... | RE-80  |
| REAR FLOOR INNER REAR CROSSMEMBER (CUT) ..... | RE-82  |
| REAR FLOOR PAN (ASSY) .....                   | RE-84  |
| REAR FLOOR SIDE PANEL (ASSY) .....            | RE-88  |
| REAR FLOOR SIDE REAR MEMBER (ASSY) .....      | RE-92  |
| REAR FLOOR NO.2 CROSSMEMBER (ASSY) .....      | RE-96  |
| REAR FLOOR SIDE MEMBER (ASSY) .....           | RE-98  |
| ROOF PANEL (ASSY) .....                       | RE-102 |

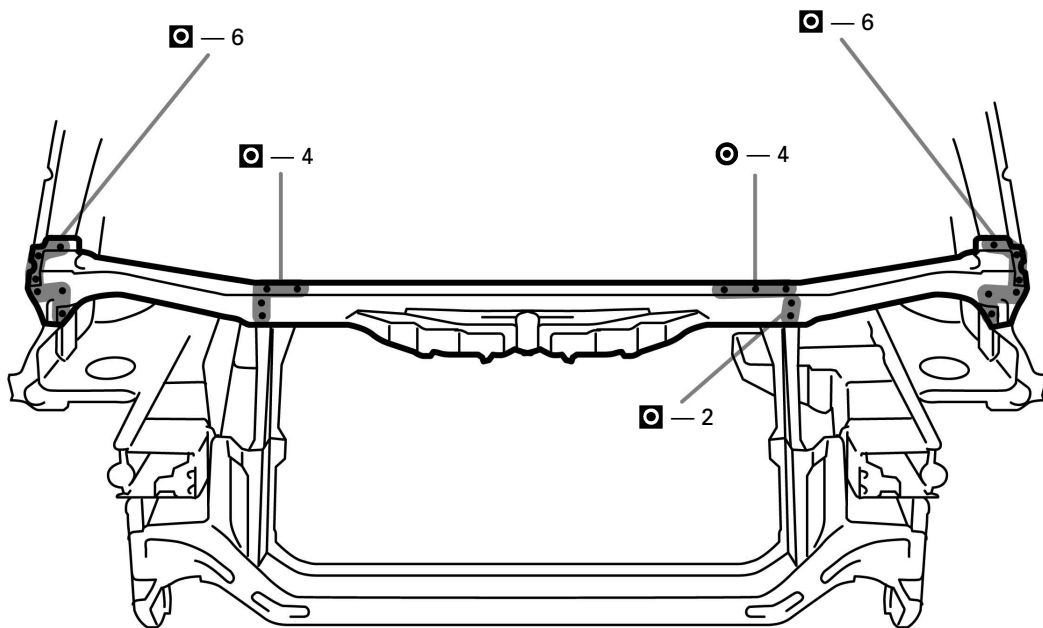
RADIATOR UPPER SUPPORT (ASSY)

REMOVAL



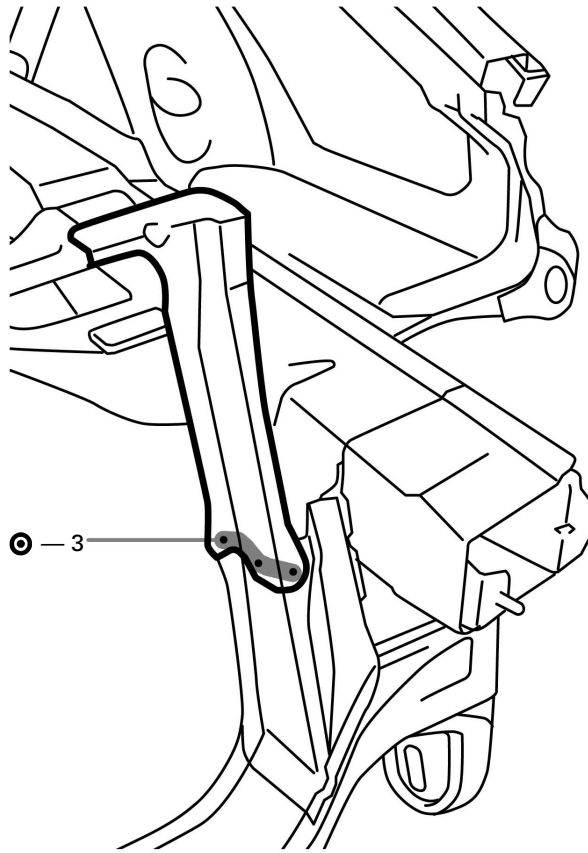
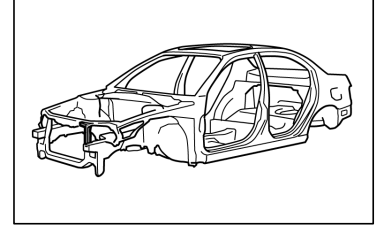


## INSTALLATION

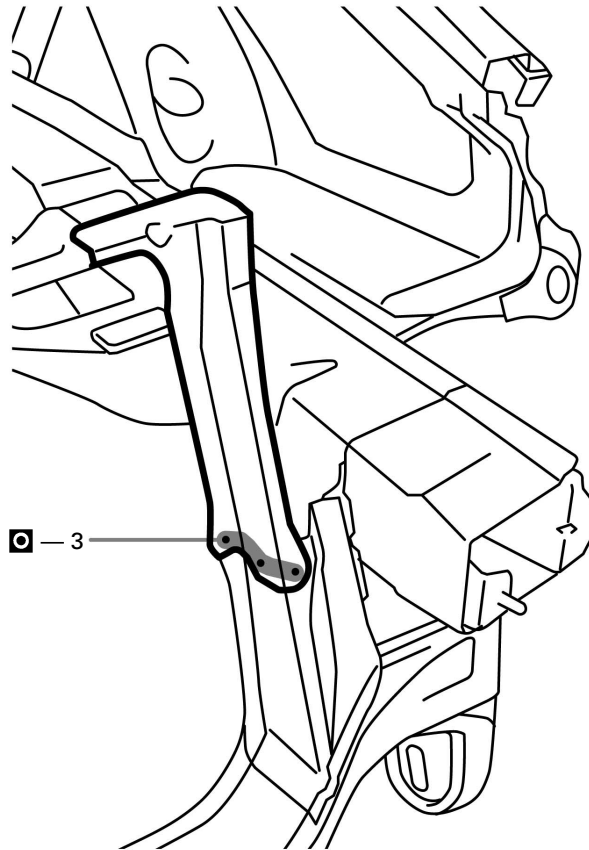


1. Temporarily install the new parts and measure each part in accordance with the body dimension diagram.

*HINT: First install the hood lock support.*

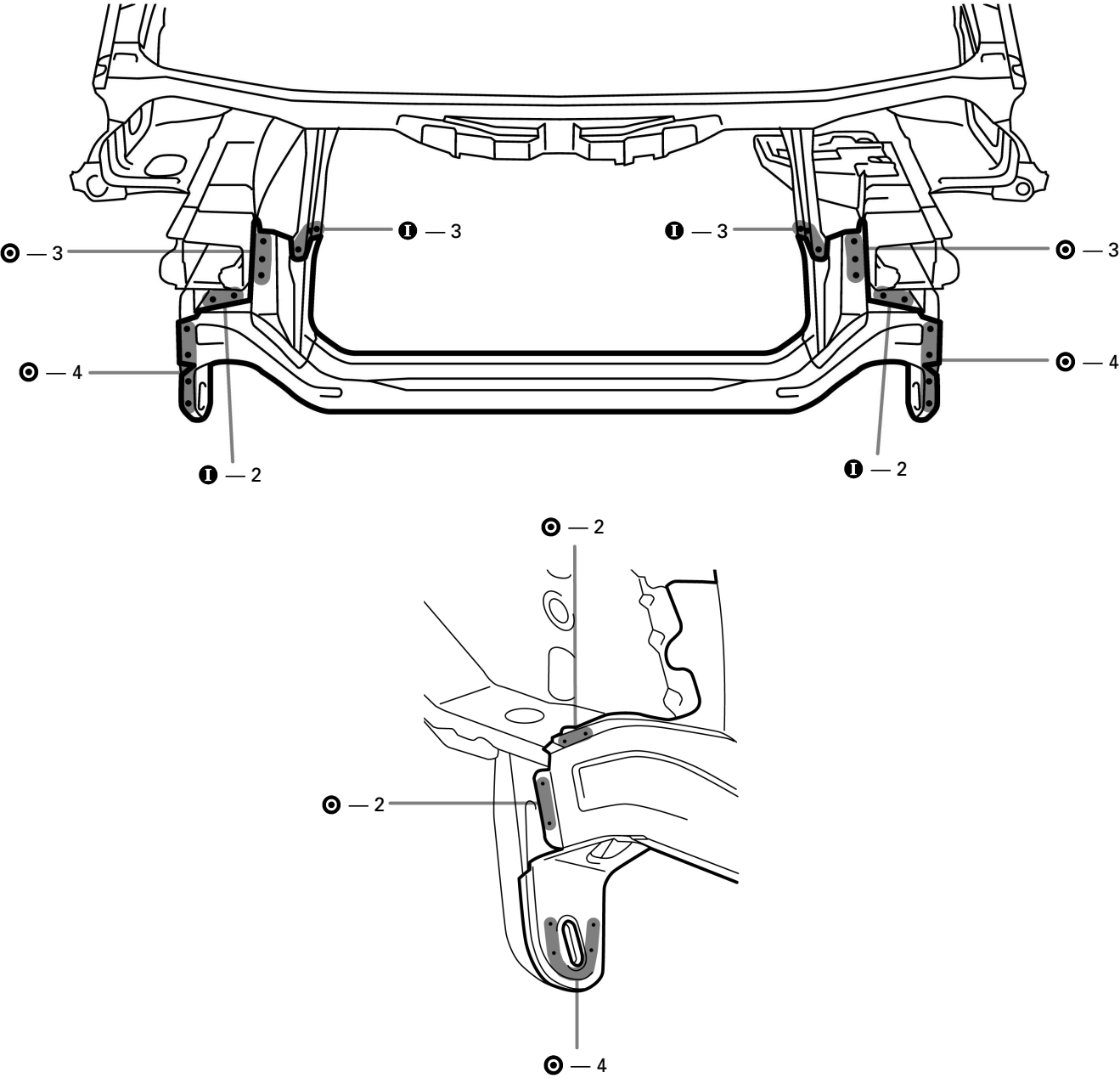
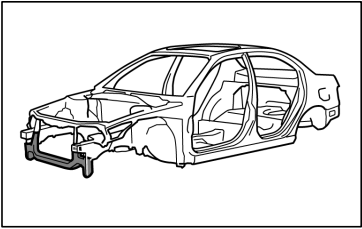
**RADIATOR SIDE SUPPORT (ASSY)****REMOVAL (With the radiator upper support removed.)**

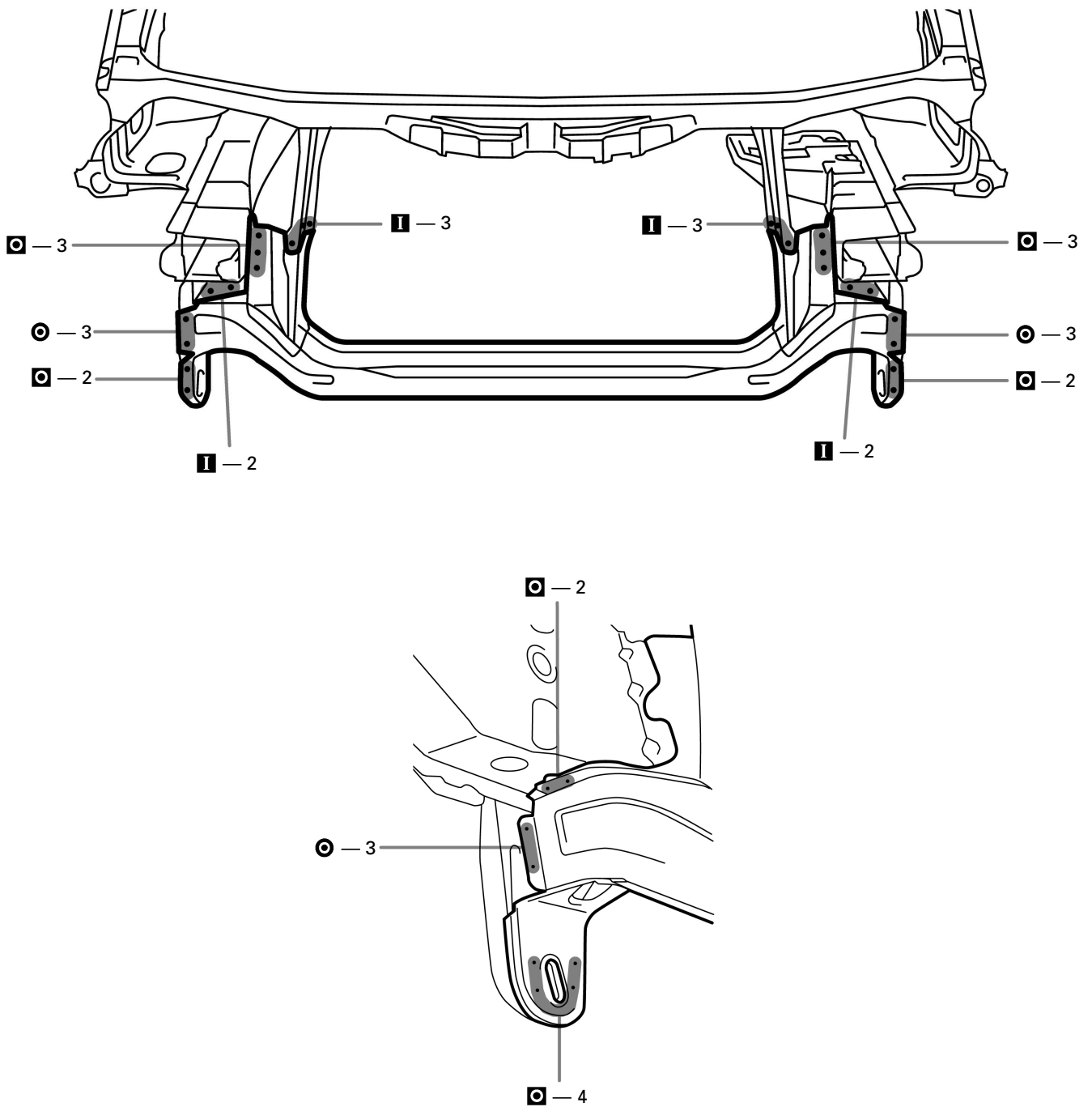
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**INSTALLATION**

FRONT CROSSMEMBER (ASSY)

REMOVAL

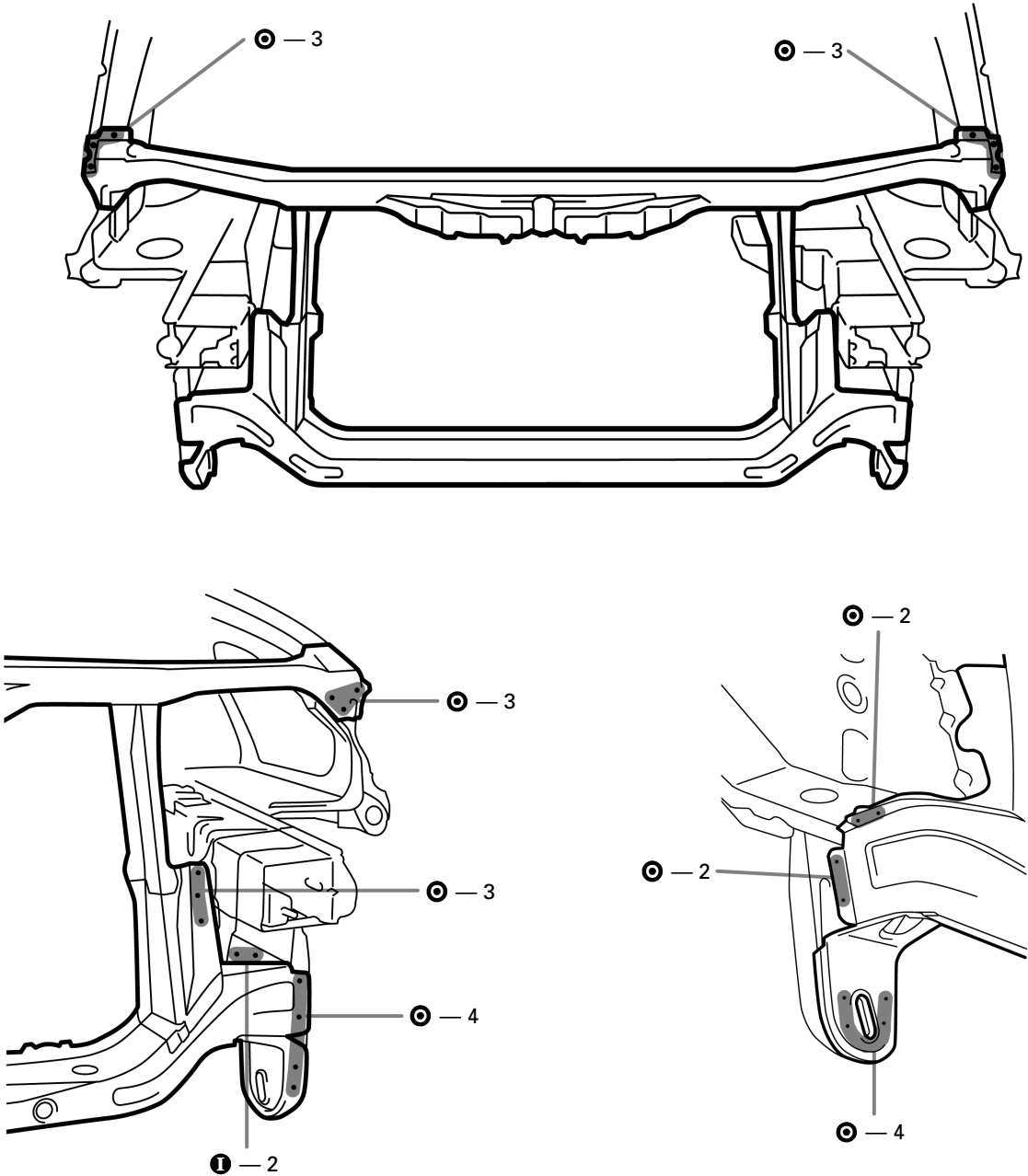
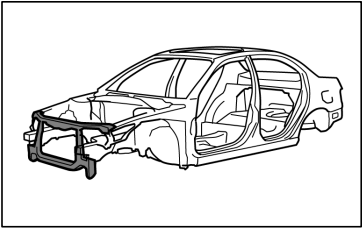


**INSTALLATION**

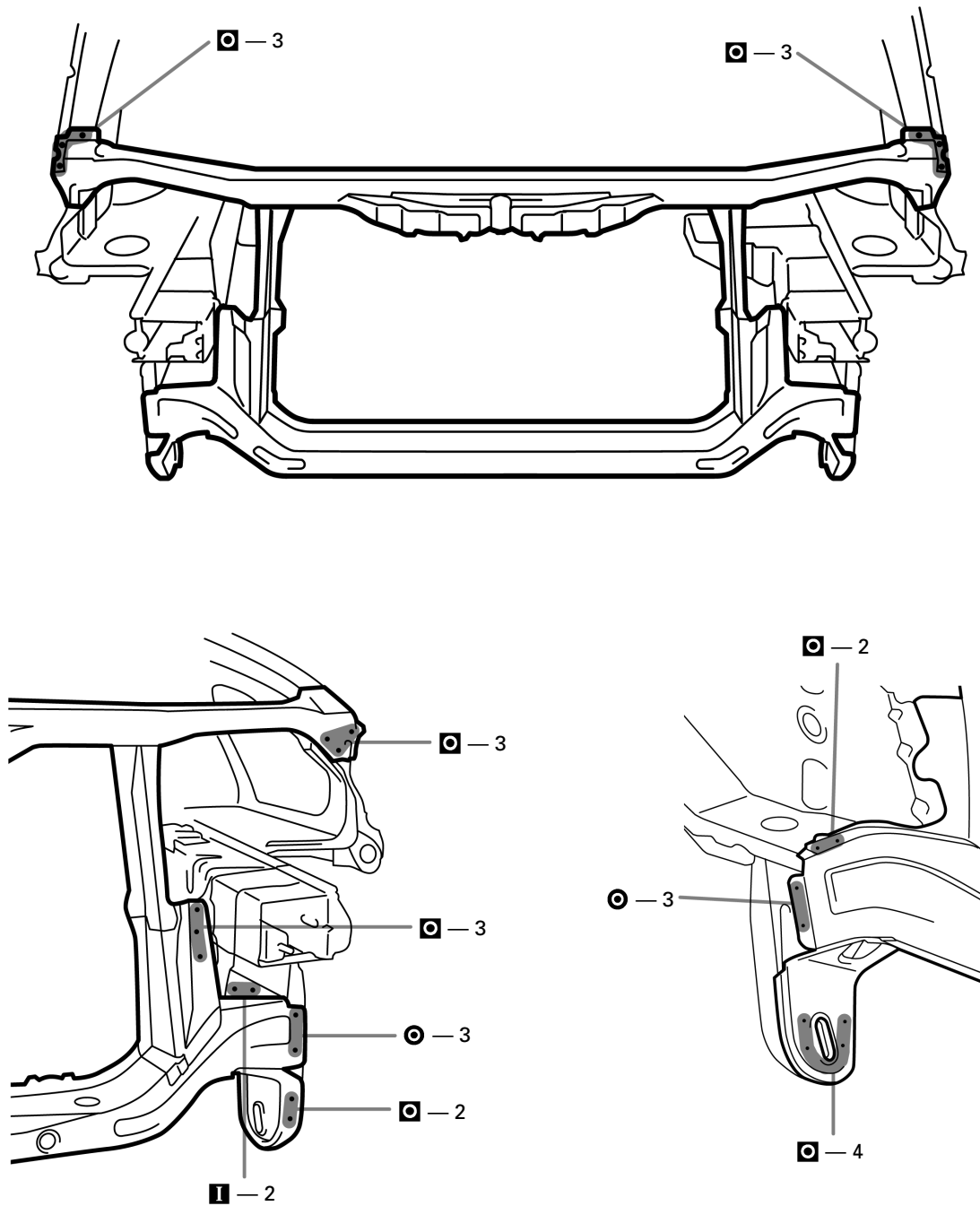
1. Temporarily install the new parts and measure each part in accordance with the body dimension diagram.

RADIATOR SUPPORT (ASSY)

REMOVAL



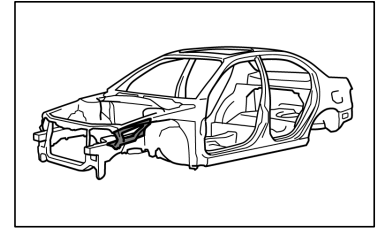
## INSTALLATION



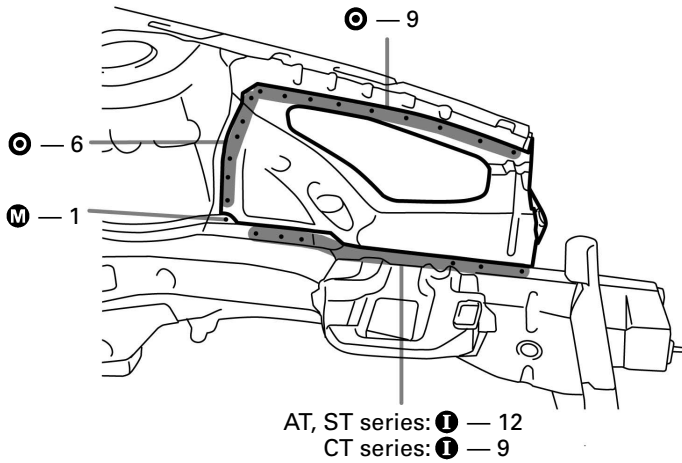
1. Temporarily install the new parts and measure each part in accordance with the body dimension diagram.

## FRONT FENDER FRONT APRON (ASSY)

### REMOVAL (With the radiator upper support removed.)

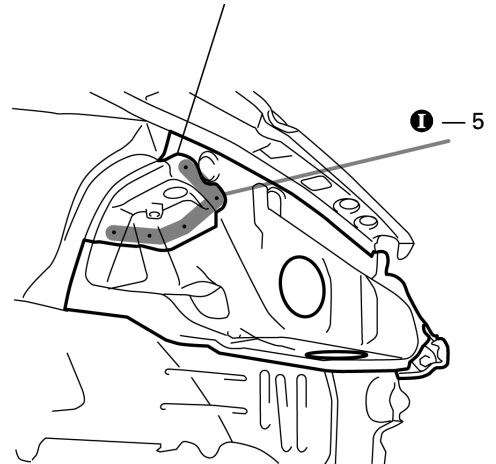


[LH]

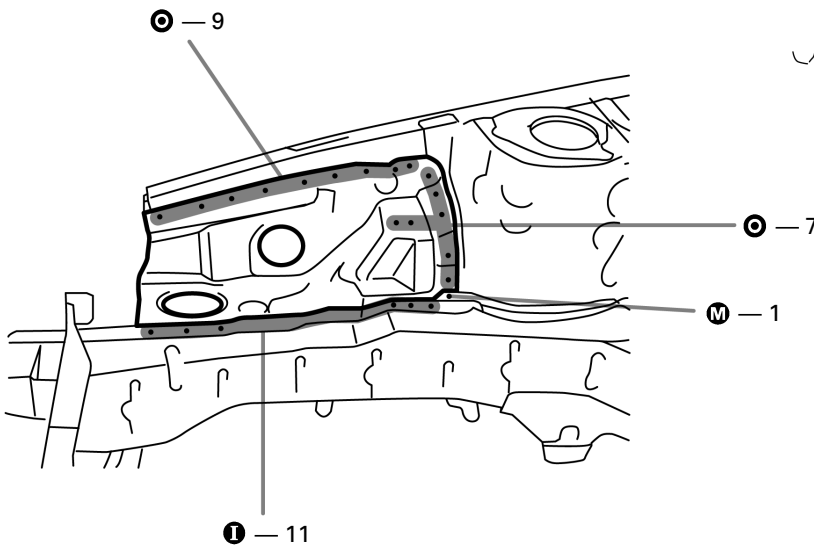


[RH]

Engine Mounting Bracket



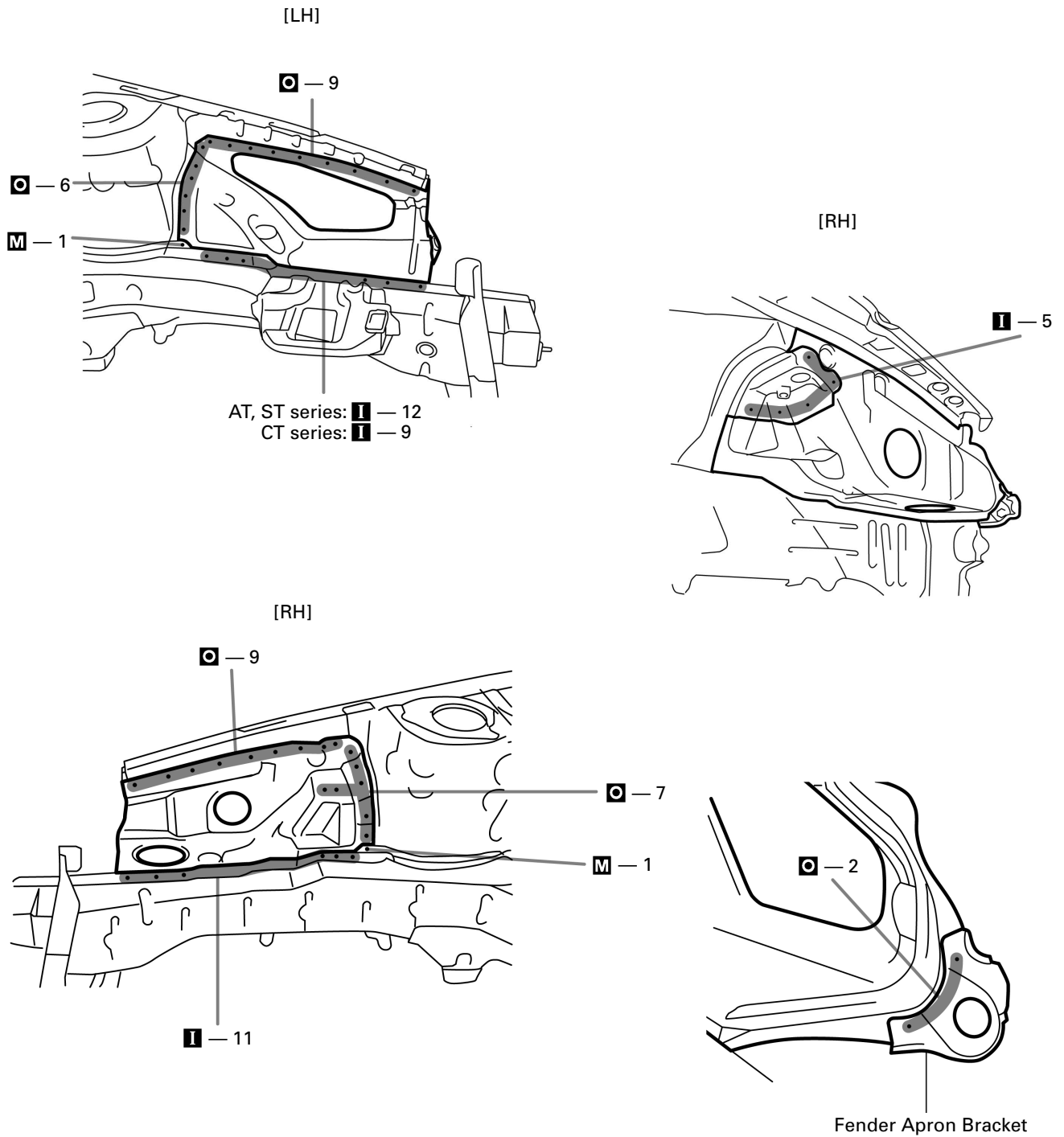
[RH]



1. Leave the engine mounting bracket to the vehicle side and remove the front fender front apron.



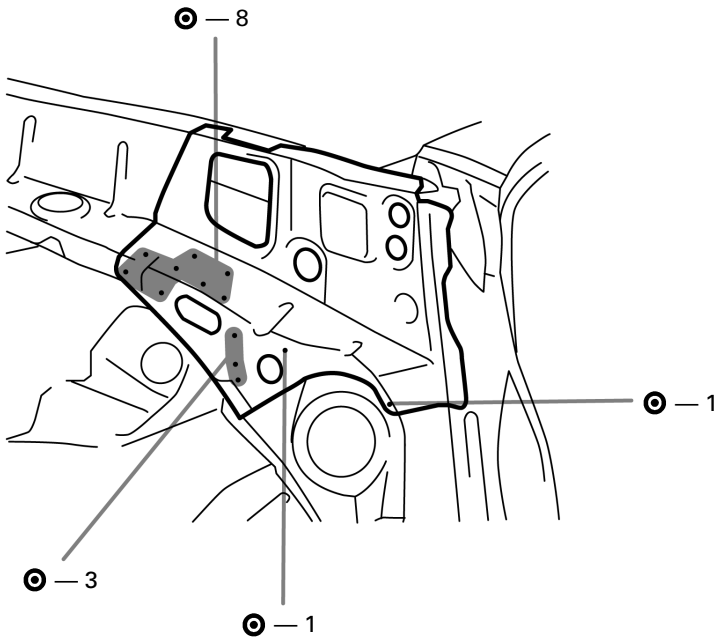
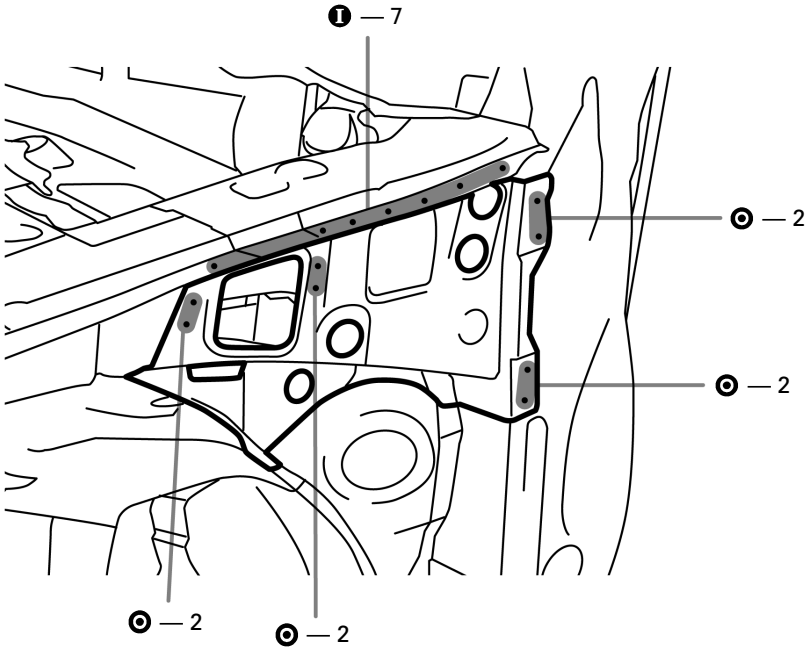
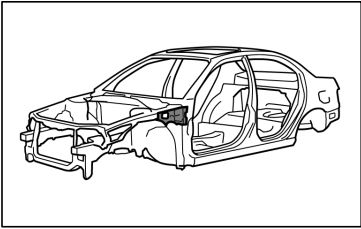
## INSTALLATION



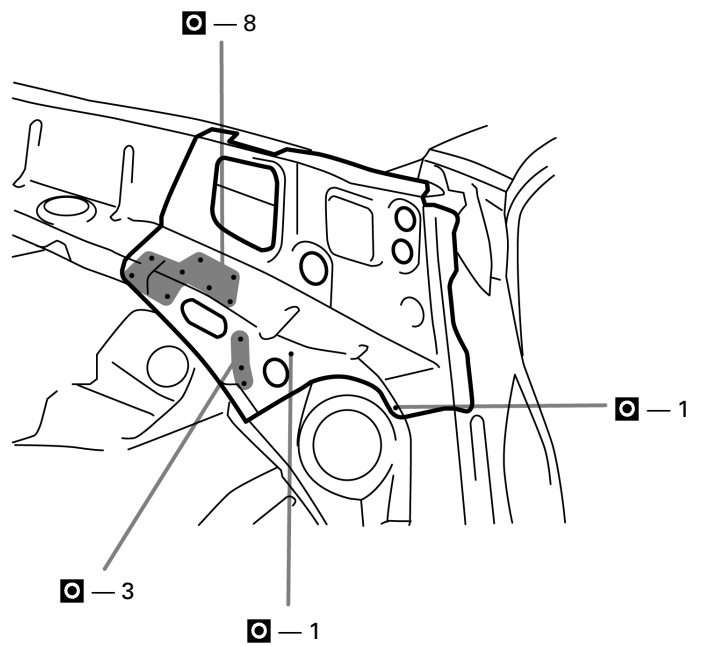
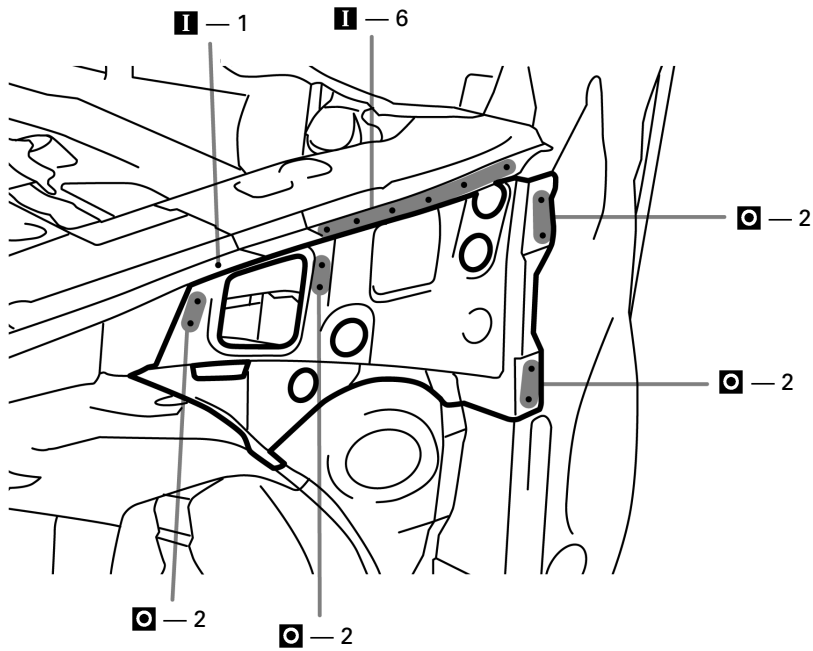
1. Temporarily install the new parts and measure each part in accordance with the body dimension diagram.

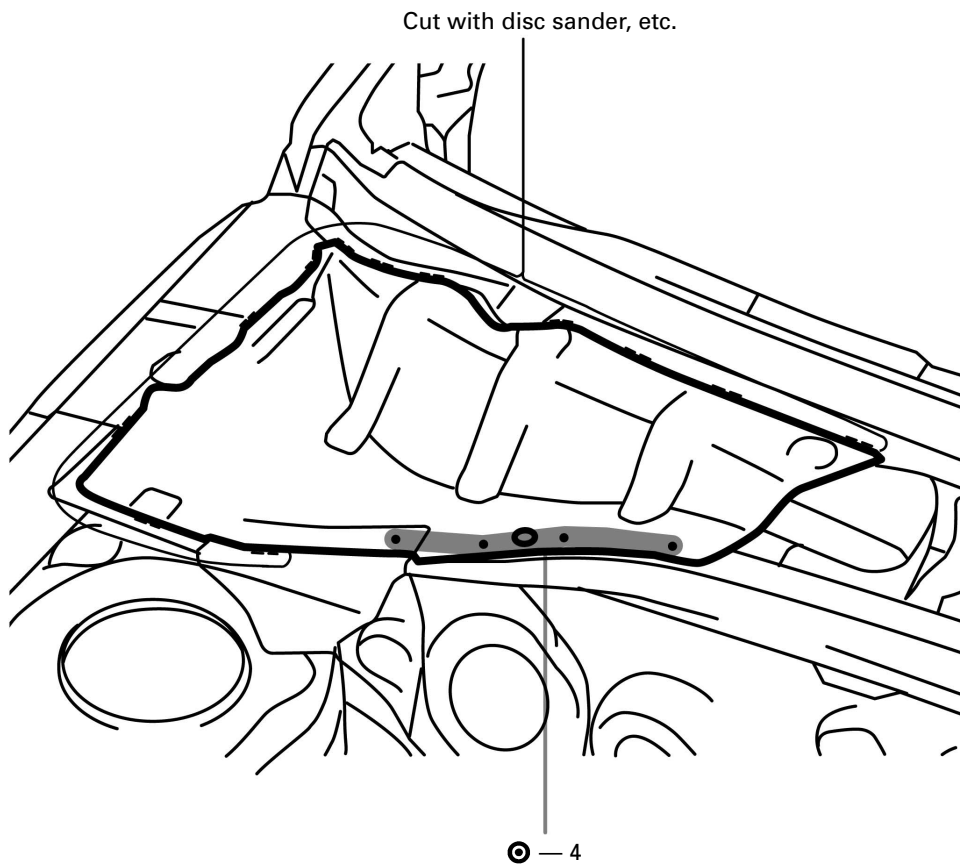
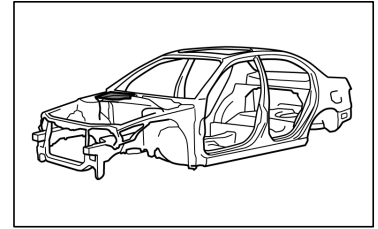
COWL TOP SIDE PANEL (ASSY)

REMOVAL

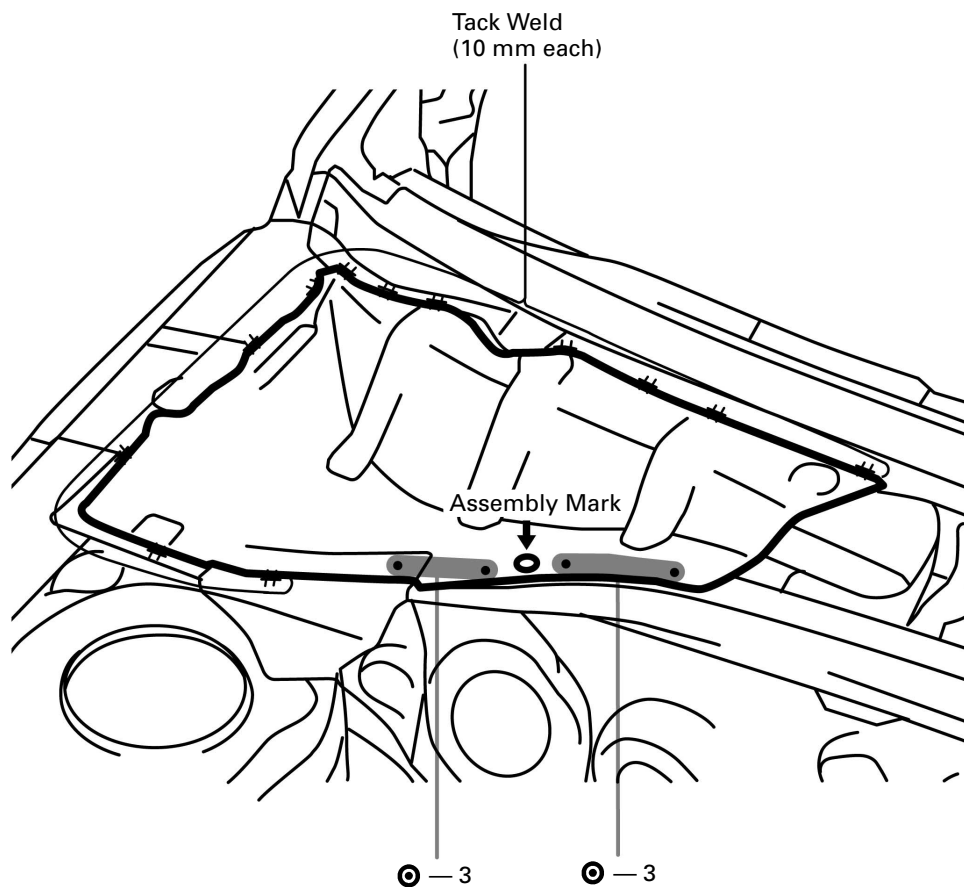


# INSTALLATION



**COWL TOP SIDE REINFORCEMENT (ASSY)****REMOVAL**

## INSTALLATION

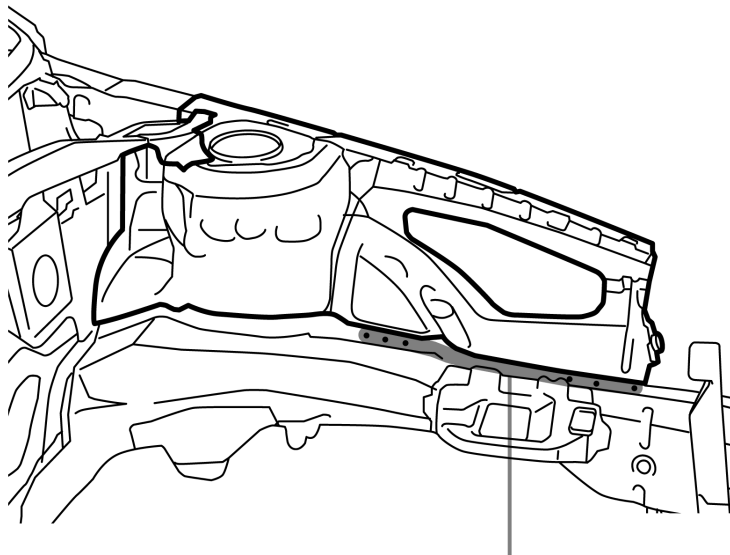
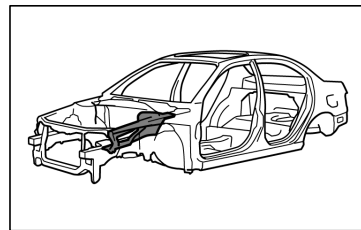


| mm | in.  |
|----|------|
| 10 | 0.39 |

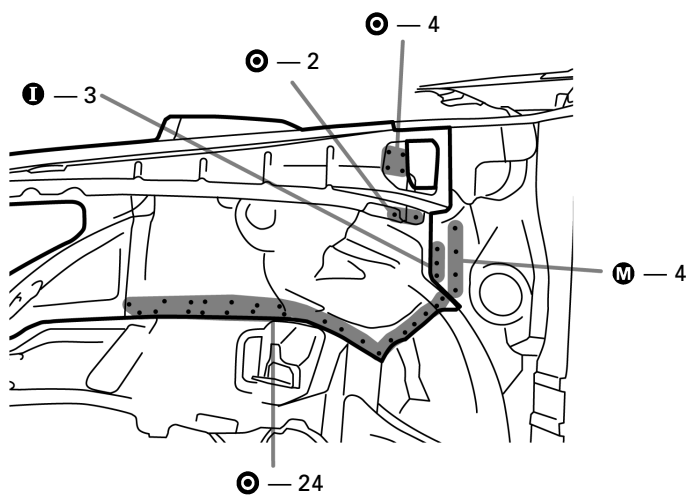
1. When temporarily installing the new parts, determine the installation position by the assembly mark.

## FRONT FENDER APRON (ASSY)

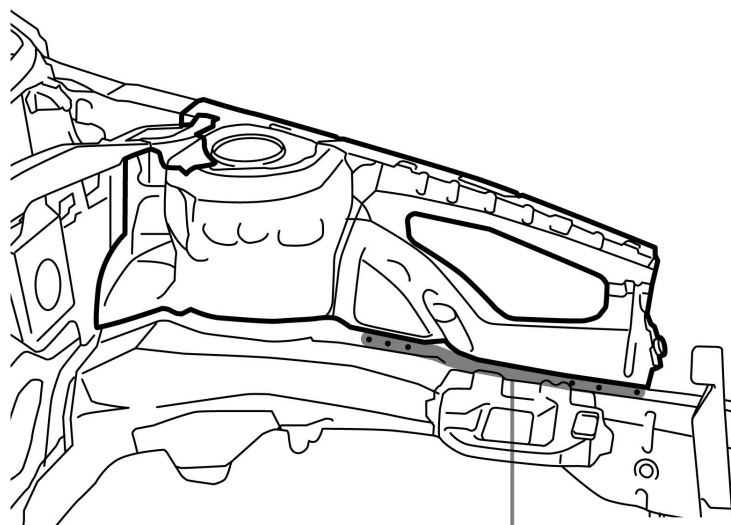
**REMOVAL** (With the radiator upper support, cowl top side panel and cowl top side reinforcement removed.)



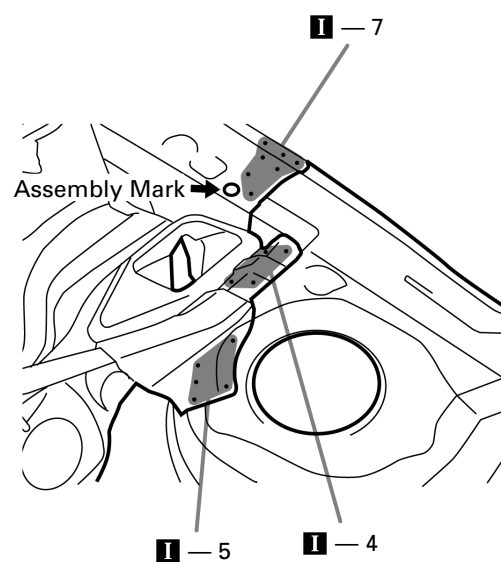
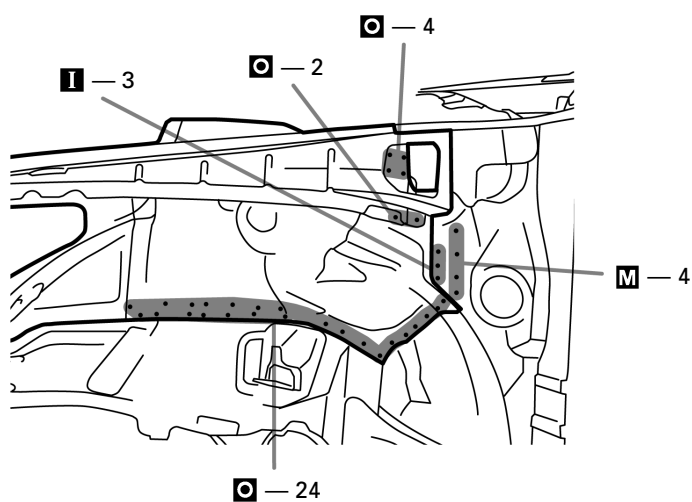
LH (AT, ST series): ① — 12  
 LH (CT series): ① — 9  
 RH: ① — 11



## INSTALLATION



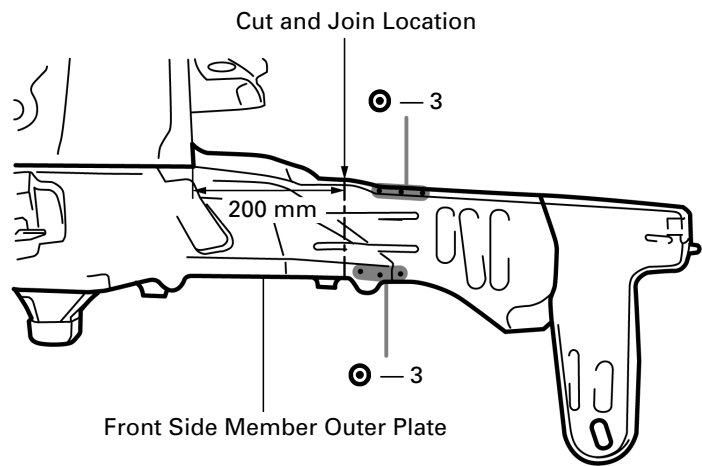
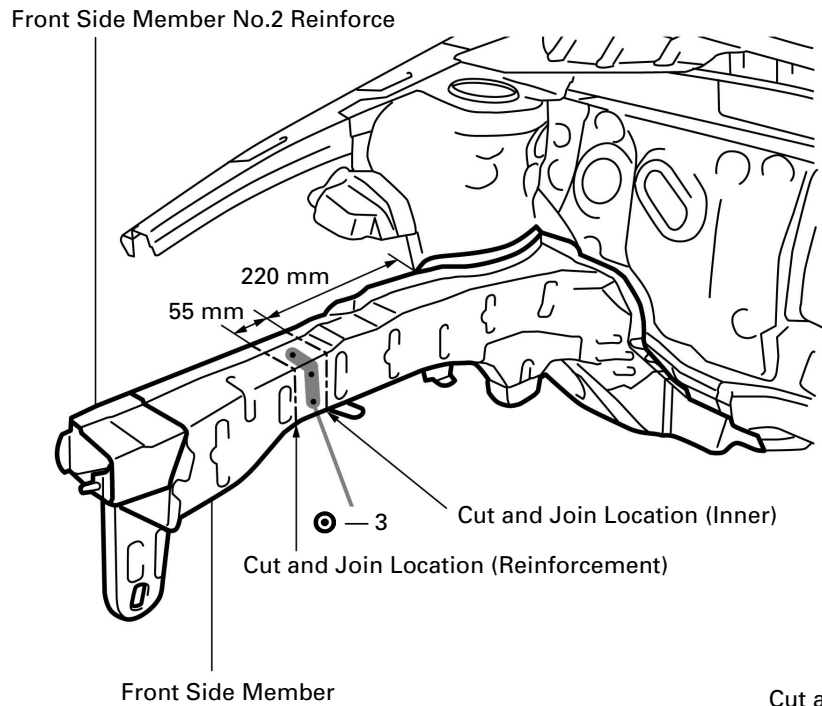
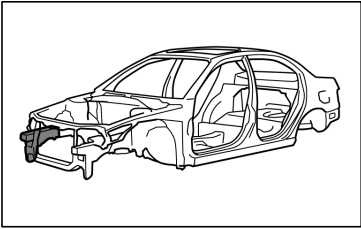
LH (AT, ST series): **I** — 12  
 LH (CT series): **I** — 9  
 RH: **I** — 11



1. When temporarily installing the new parts, determine the installation position by the assembly mark.
2. Measurements must be accurate with the body dimension diagram, as this affects the front wheel alignment.
3. Temporarily install the front fender and hood, and check the fit.

FRONT SIDE MEMBER (CUT-P): RH

REMOVAL (With the radiator support and front fender front apron removed.)

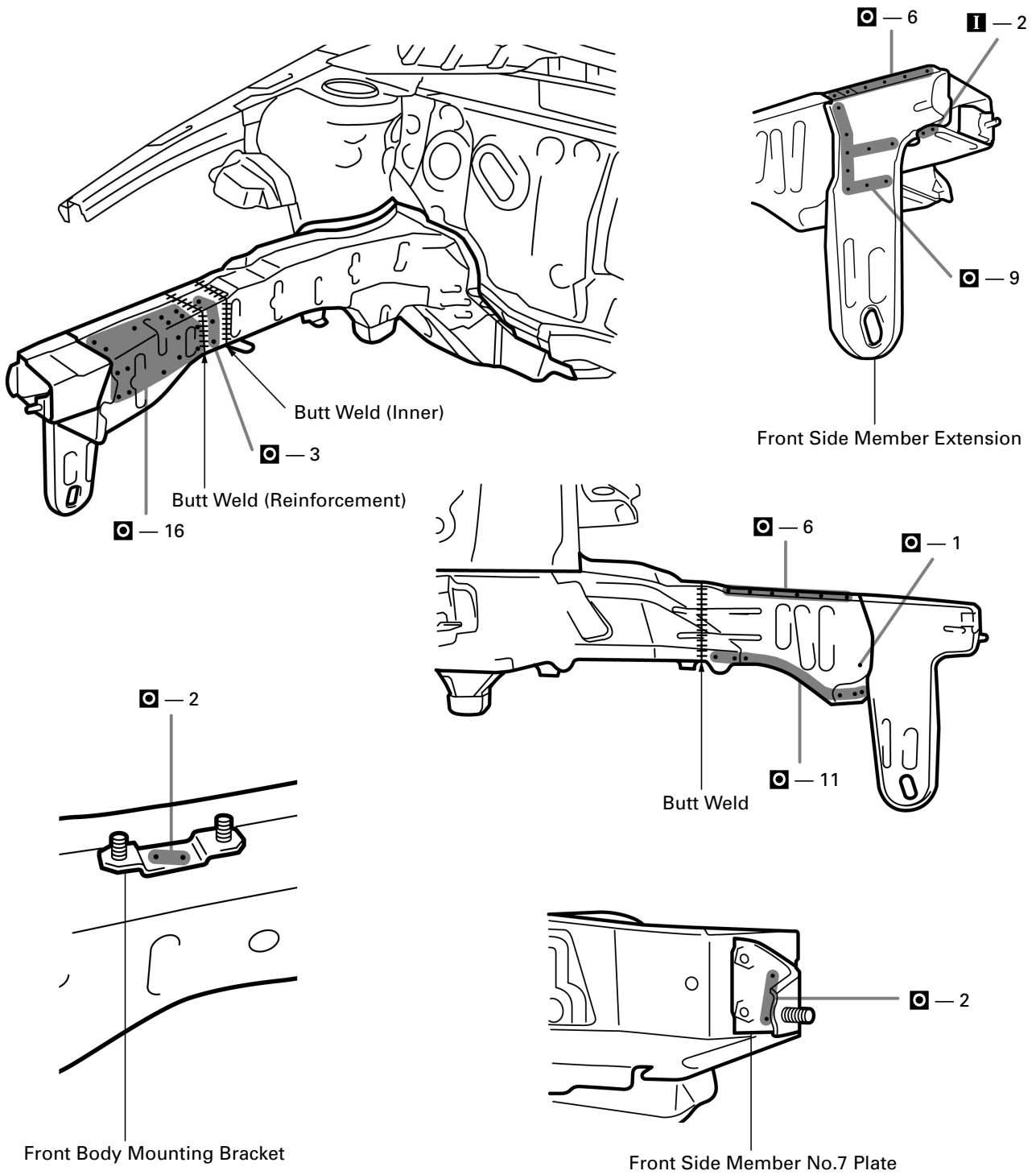


| mm  | in.  |
|-----|------|
| 55  | 2.17 |
| 200 | 7.87 |
| 220 | 8.66 |

1. Cut and join the parts at the locations as shown above.
2. Shift the cut and join location of the front side member, front side member No.2 reinforce and front side member outer plate.



## INSTALLATION

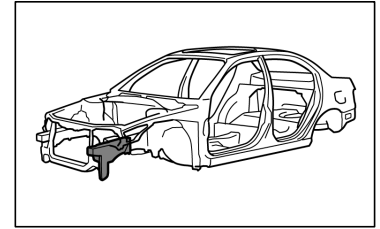


1. Temporarily install the new parts and measure each part in accordance with the body dimension diagram.

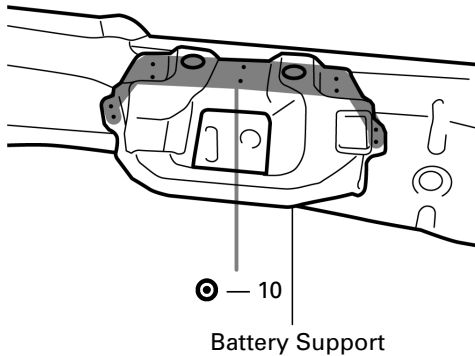


## FRONT SIDE MEMBER (CUT-P): LH

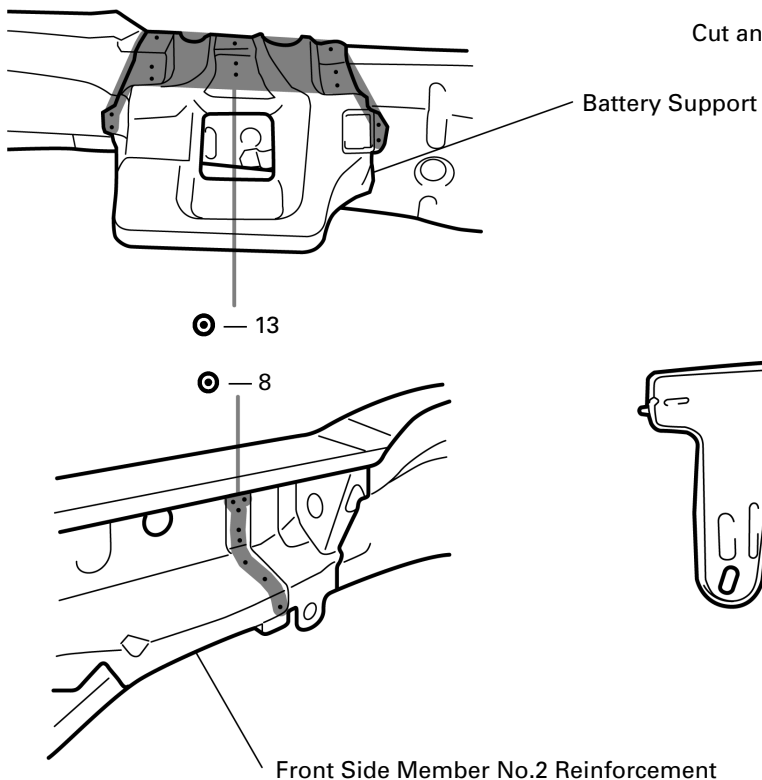
**REMOVAL** (With the radiator support and front fender front apron removed.)



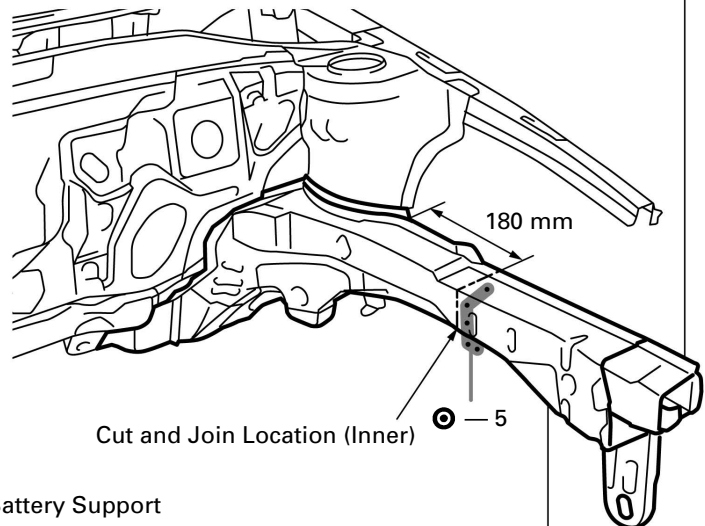
[AT, ST series]



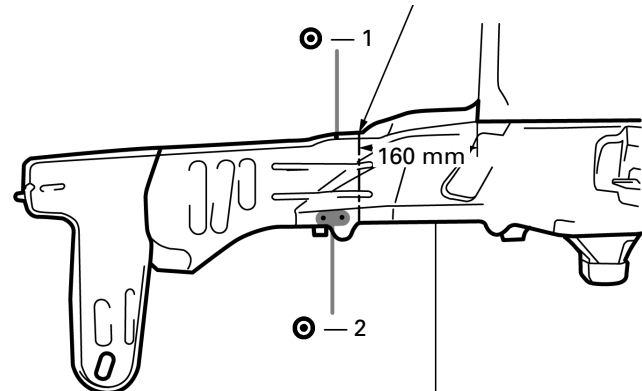
[CT series]



Front Side Member No.2 Reinforce



Cut and Join Location

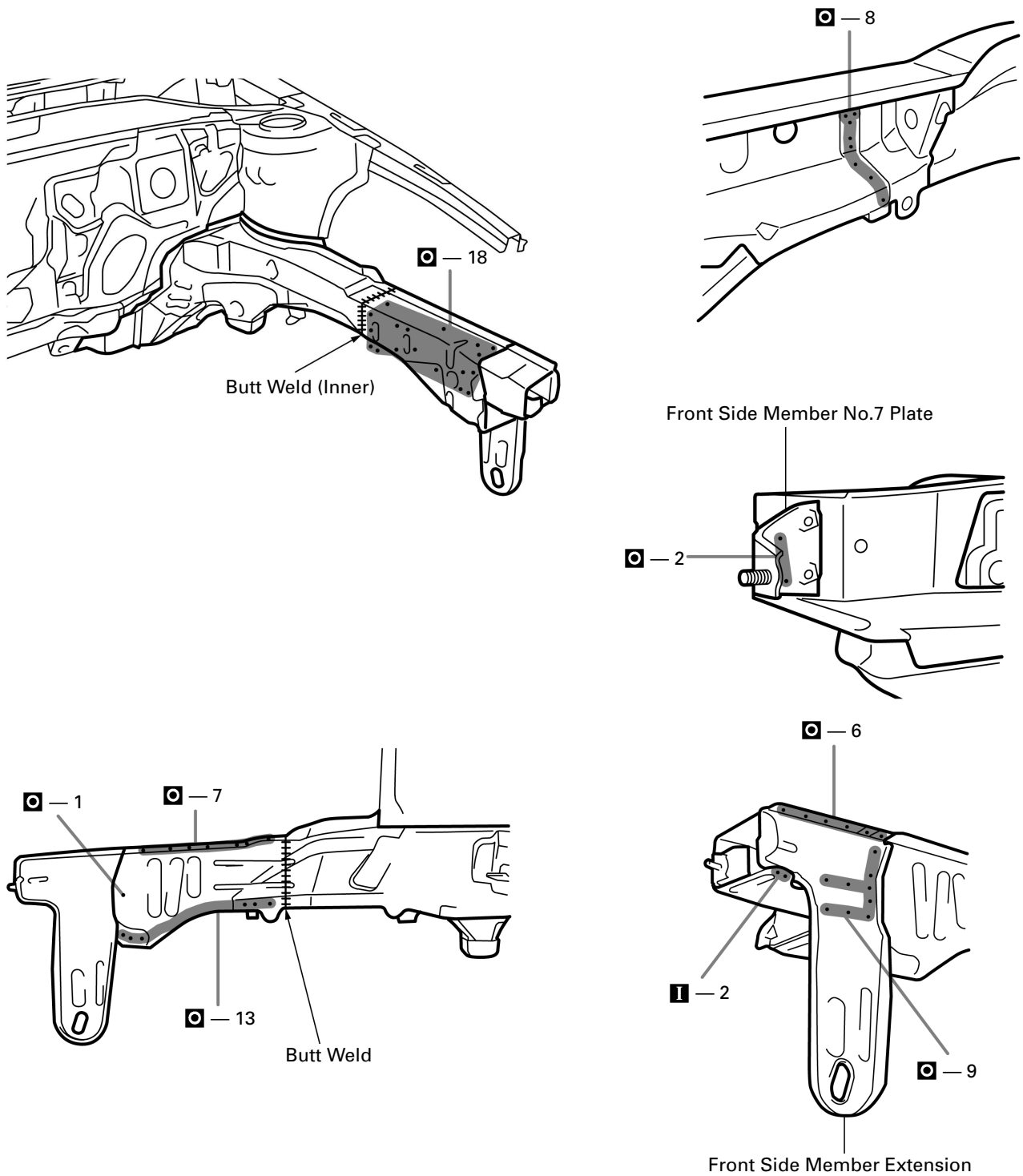


Front Side Member Outer Plate

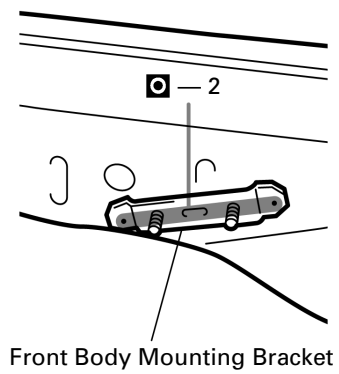
| mm  | in.  |
|-----|------|
| 160 | 6.30 |
| 180 | 7.09 |

1. After removing the battery support, cut and join the parts at the locations as shown above.
2. Shift the cut and join location of the front side member and front side member outer plate.
3. Remove the front side member No.2 reinforcement from the front side member No.2 reinforce.

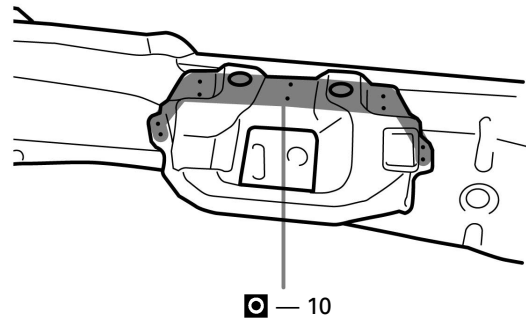
## INSTALLATION



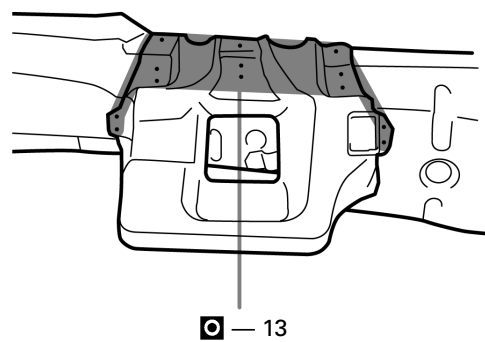
1. Temporarily install the new parts and measure each part in accordance with the body dimension diagram.



[AT, ST series]

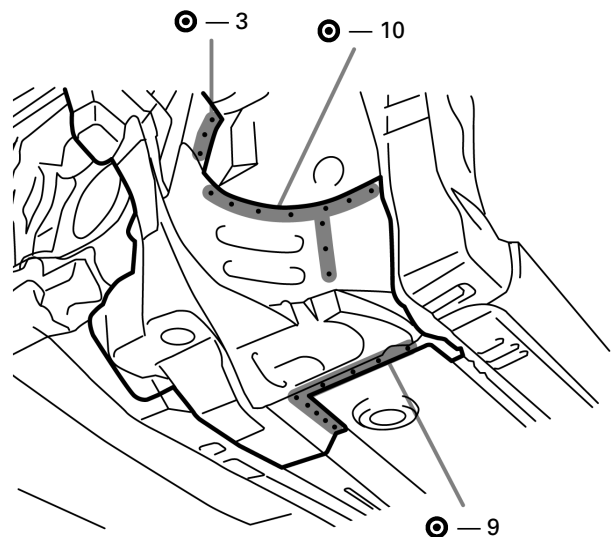
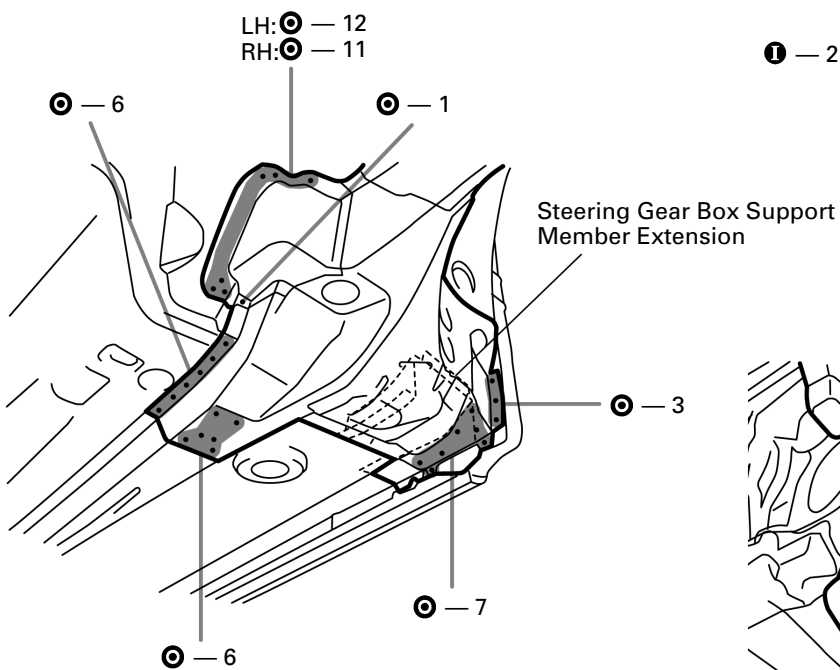
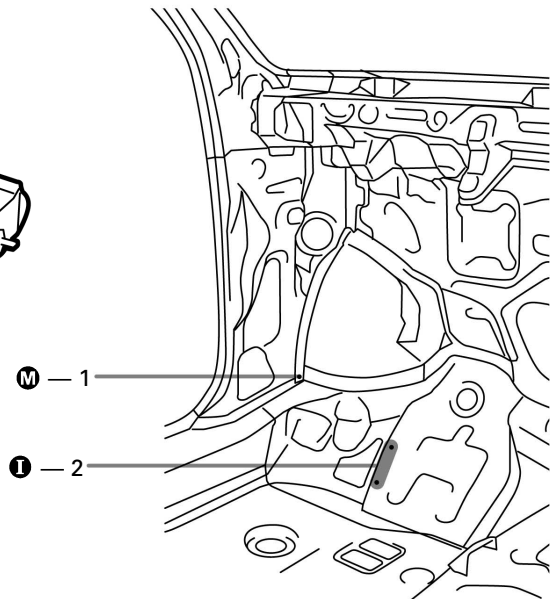
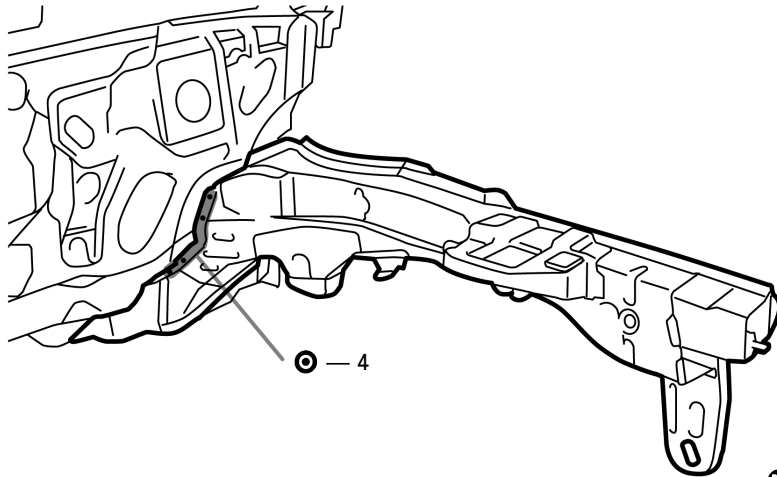
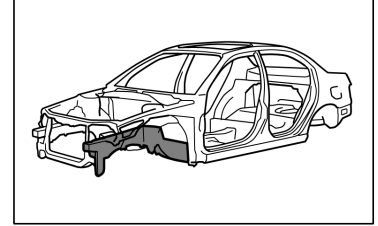


[CT series]



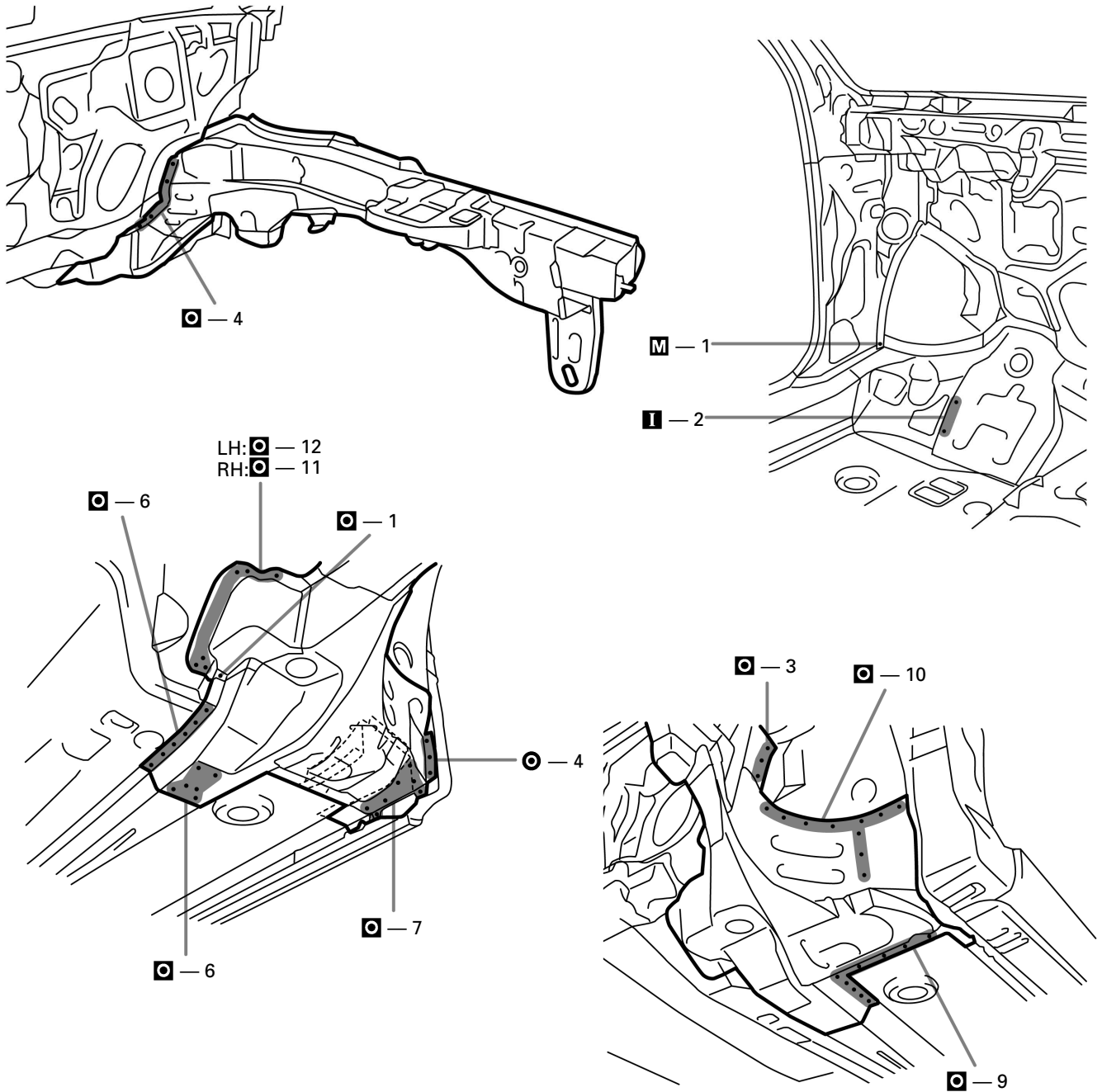
## FRONT SIDE MEMBER (ASSY)

**REMOVAL** (With the radiator support and front fender apron removed.)



1. Leave the steering gear box support member extension to the vehicle side and remove the front side member.

## INSTALLATION

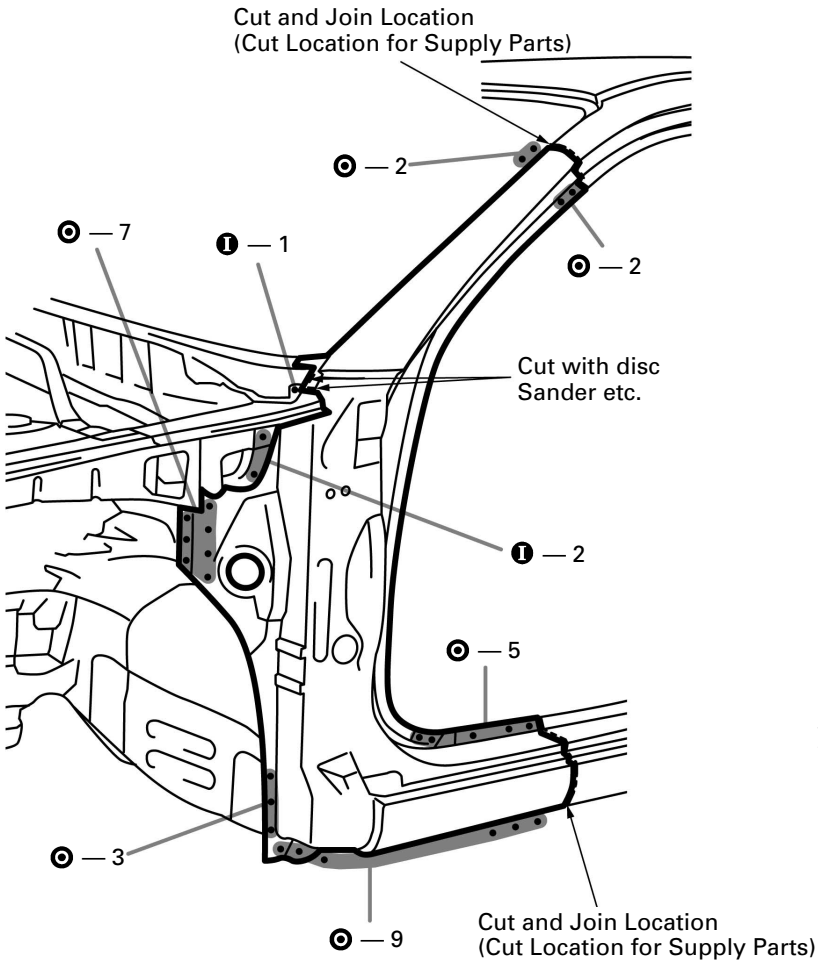
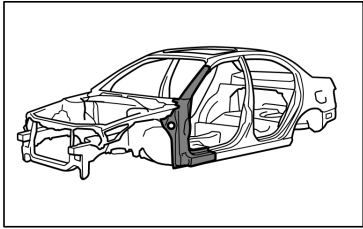


1. Temporarily install the new parts and measure each part in accordance with the body dimension diagram.

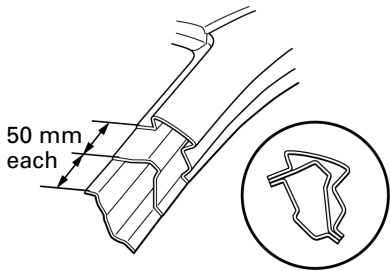
**HINT:** Make sure each measurement is correct, as this parts affects the front wheel alignment.

FRONT BODY PILLAR (CUT)

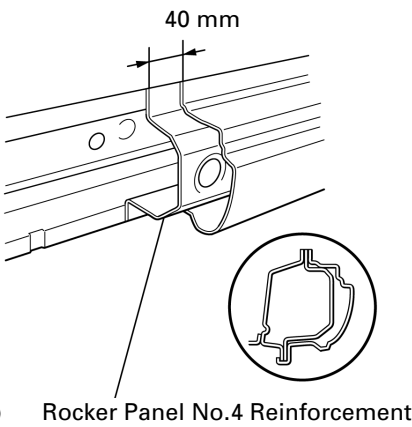
REMOVAL (With the cowl top side panel and cowl top side reinforcement removed.)



[Cut and Join Location]



[Cut and Join Location]



| mm | in.  |
|----|------|
| 40 | 1.60 |
| 50 | 1.97 |

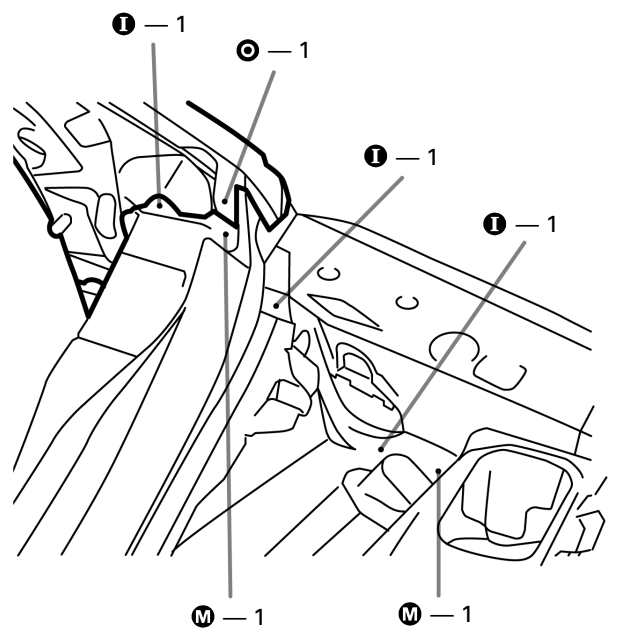
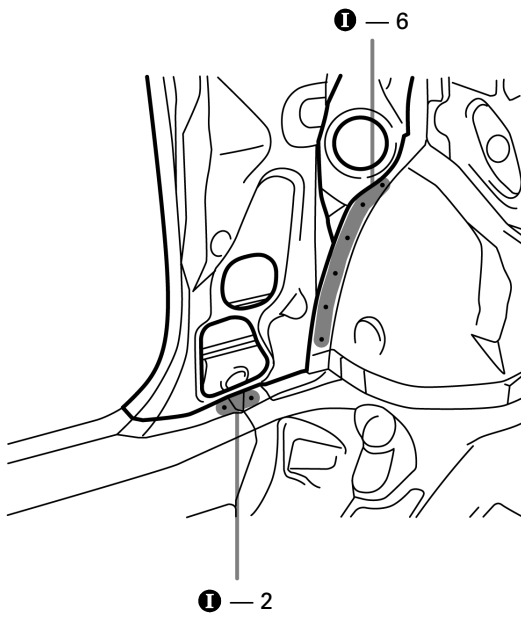
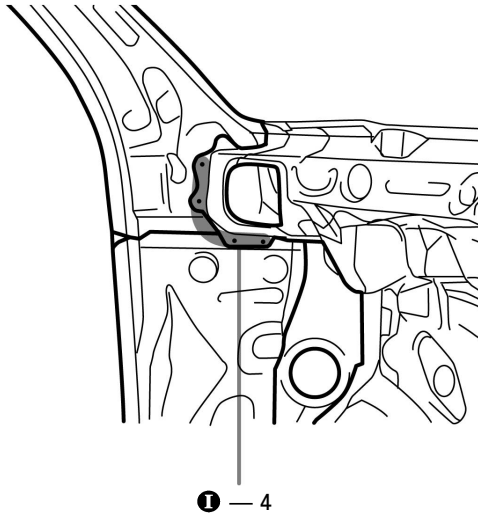
1.

Cut and join the parts at the locations as shown above.
2.

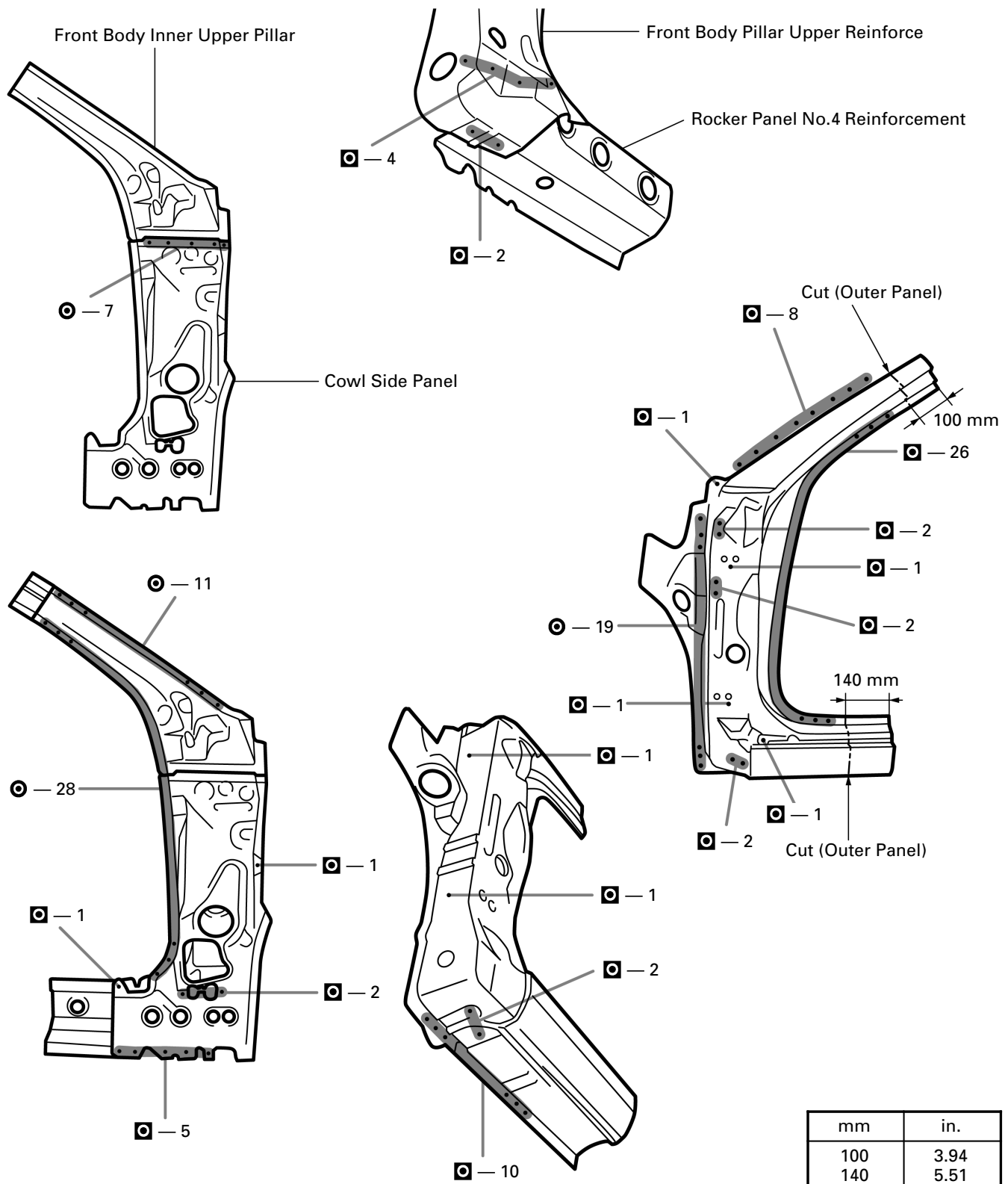
Shift the each cut and join locations of the outer pillar, reinforcement and inner pillar.
3.

Shift the each cut and join locations of the outer panel and rocker panel No.4 reinforcement.



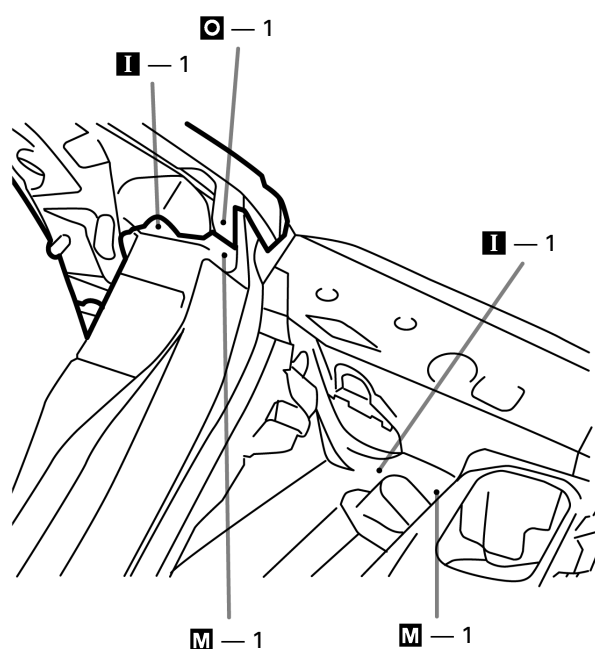
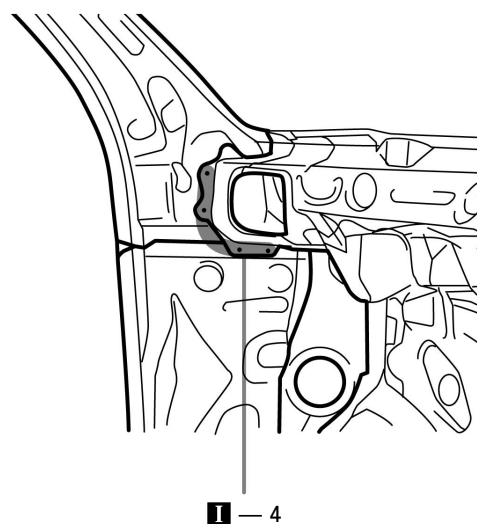
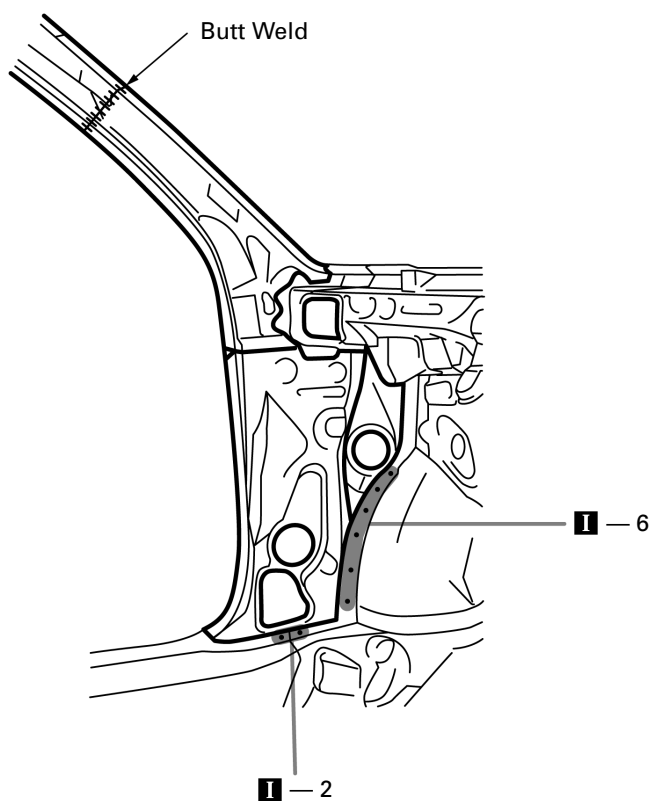


## INSTALLATION



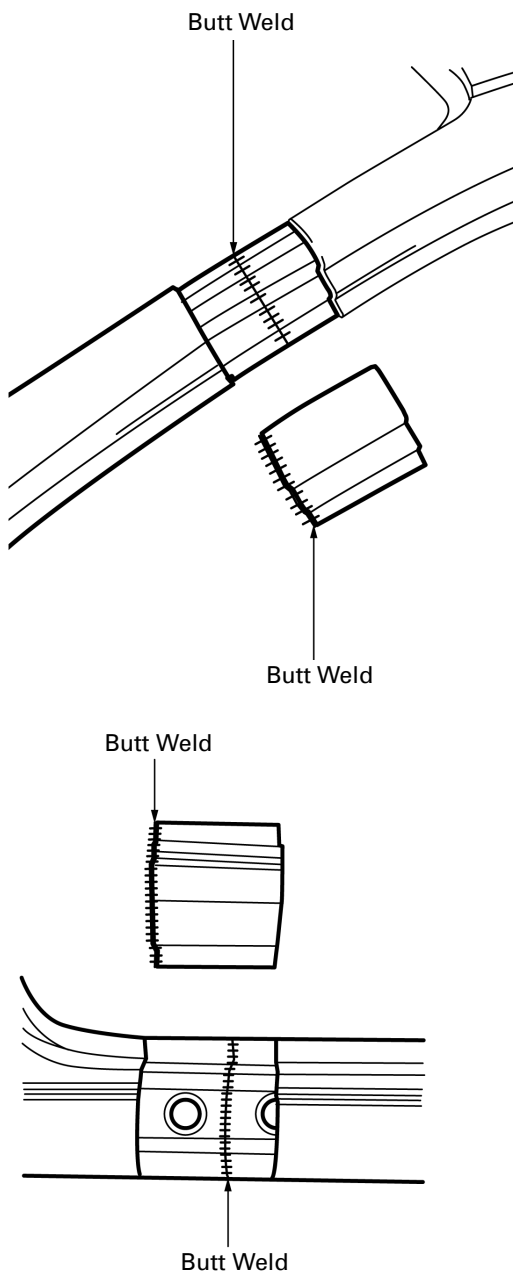
1. Cut a width of 100 mm (3.94 in.) at the top of the outer pillar and a 140 mm (5.51 in.) at the rocker.
2. Before temporarily installing the new parts, weld the front body inner upper pillar, cowl side panel, front body pillar upper reinforce, rocker panel No.4 reinforcement and outer panel with standard points.

(Continued on Next Page)



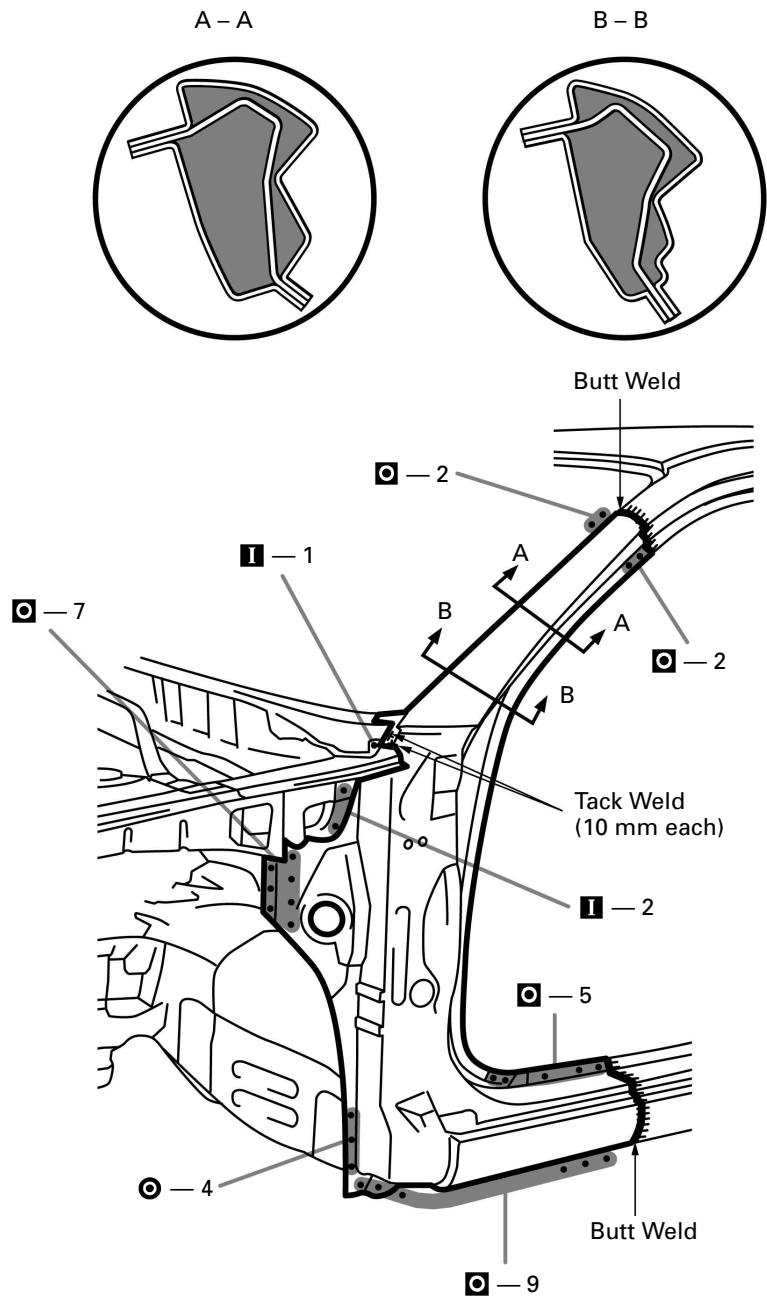
3. Temporarily install the new parts and measure each part in accordance with the body dimension diagram.
4. Before welding the new parts, check the fit of the front door, front fender and windshield glass.

**(Cont'd)**



|    |      |
|----|------|
| mm | in.  |
| 10 | 0.39 |

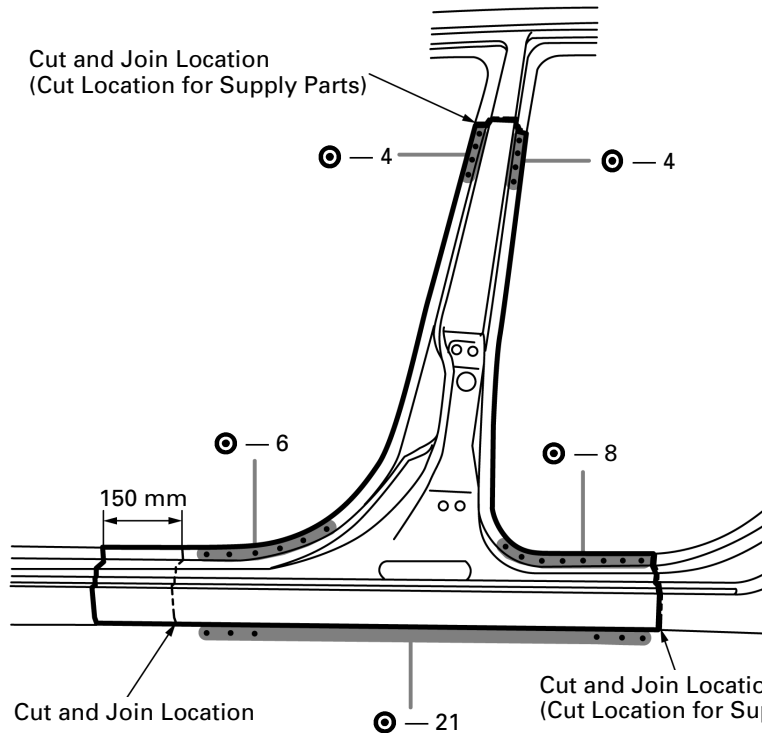
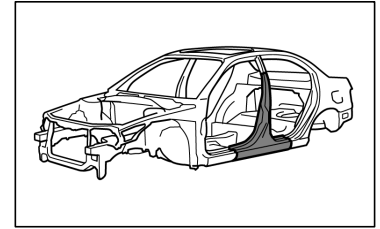
### [Foamed Material Application Areas]



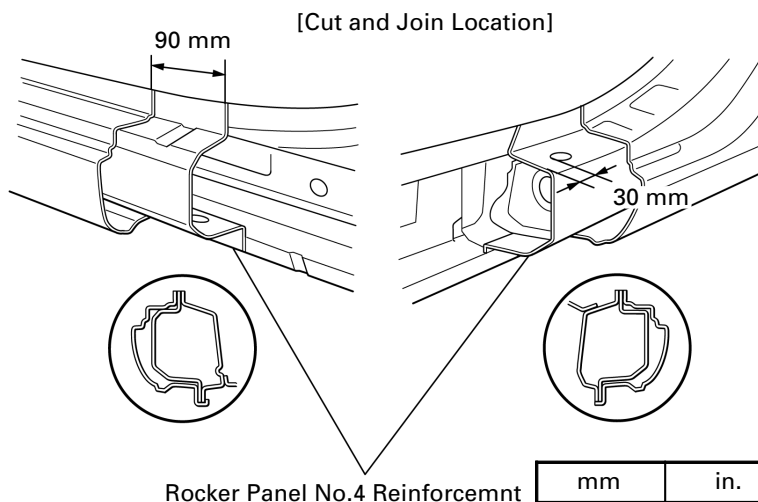
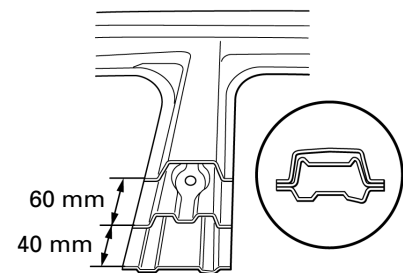
5. At the front pillar's cut and join location, install the outer panel after butt welding the front pillar reinforcement.
6. At the rocker's cut and join location, install the outer panel after butt welding the rocker panel No.4 reinforcement.

## CENTER BODY PILLAR (CUT)

### REMOVAL

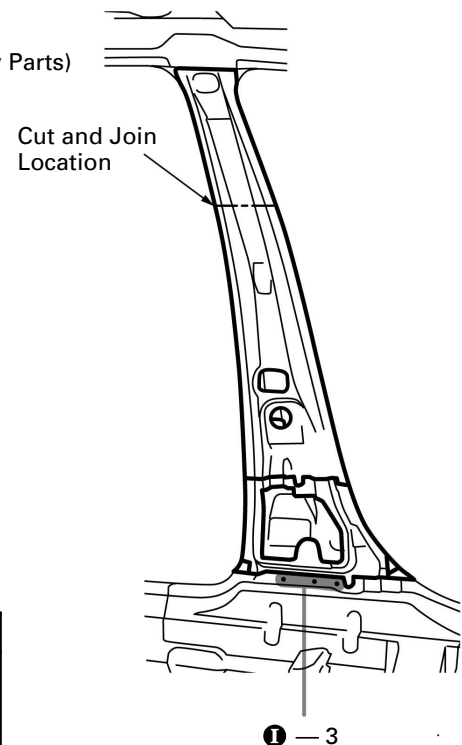


[Cut and Join Location]



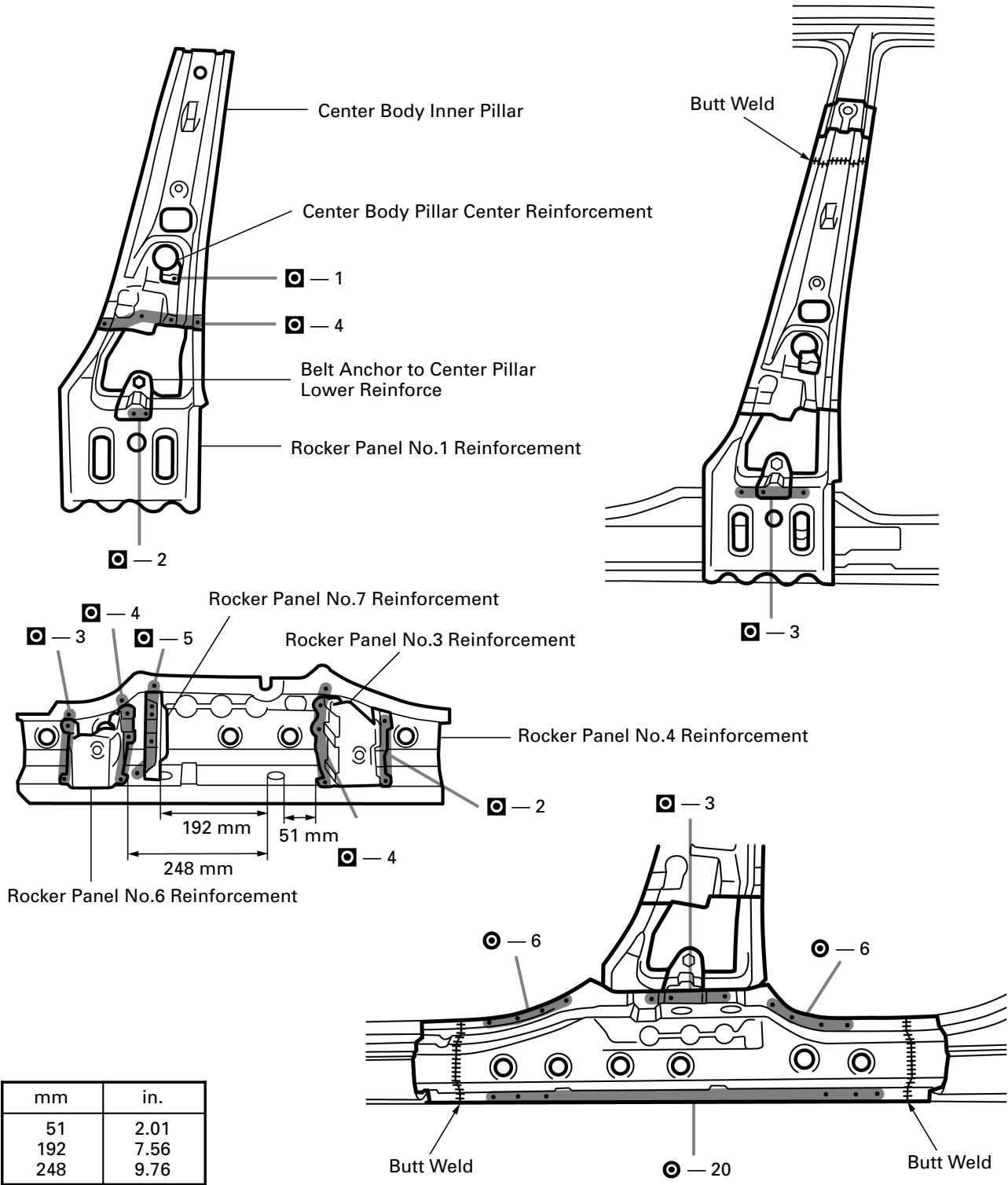
Rocker Panel No.4 Reinforcement

| mm  | in.  |
|-----|------|
| 30  | 1.18 |
| 40  | 1.57 |
| 60  | 2.36 |
| 90  | 3.54 |
| 150 | 5.91 |

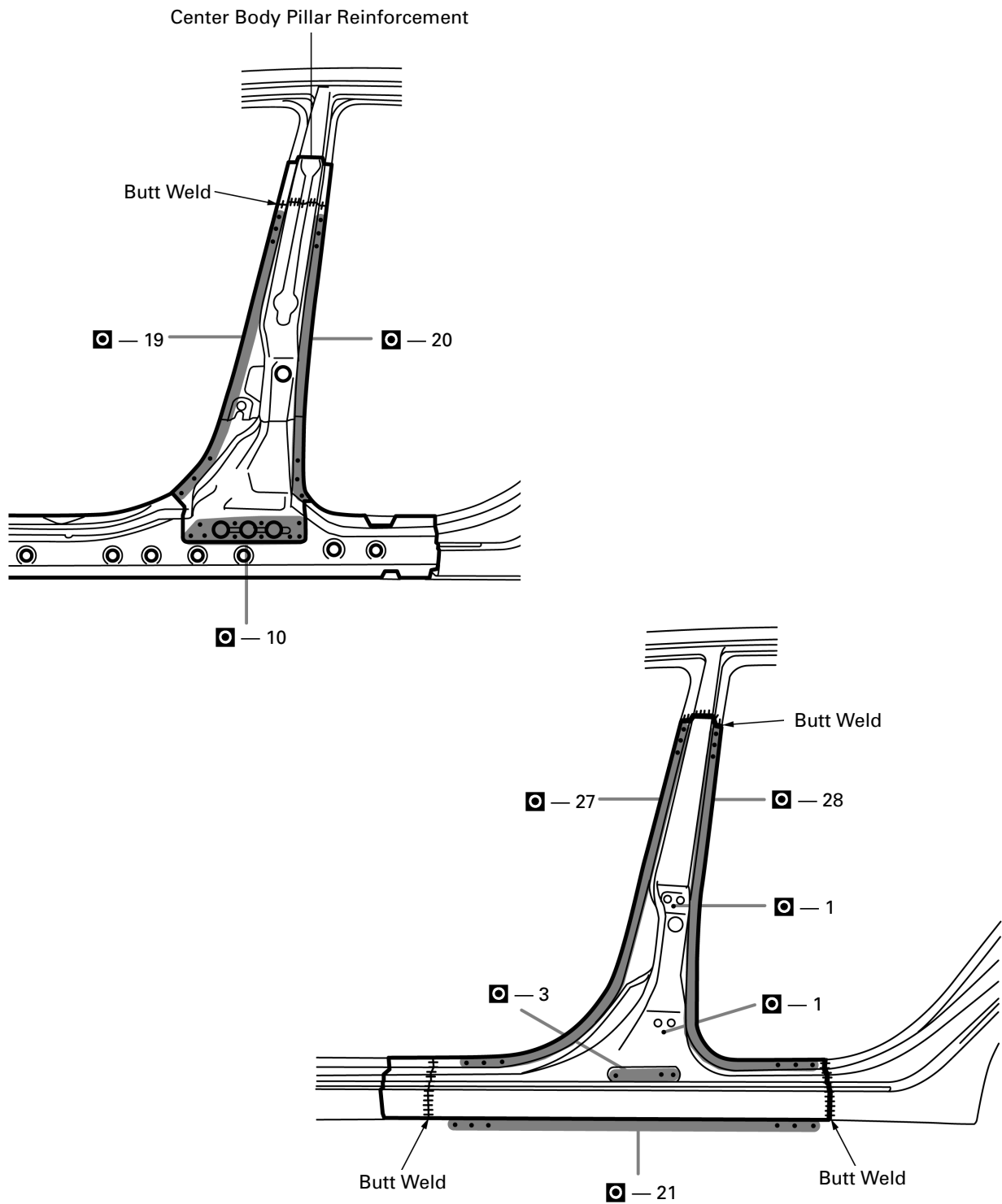


1. Cut and join the parts at the locations as shown above.
2. Shift the each cut and join locations of the center outer pillar, reinforcement and inner pillar.
3. Shift the each cut and join locations of the rocker outer and rocker panel No.4 reinforcement.

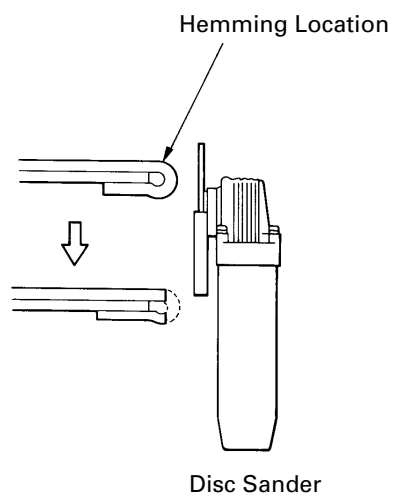
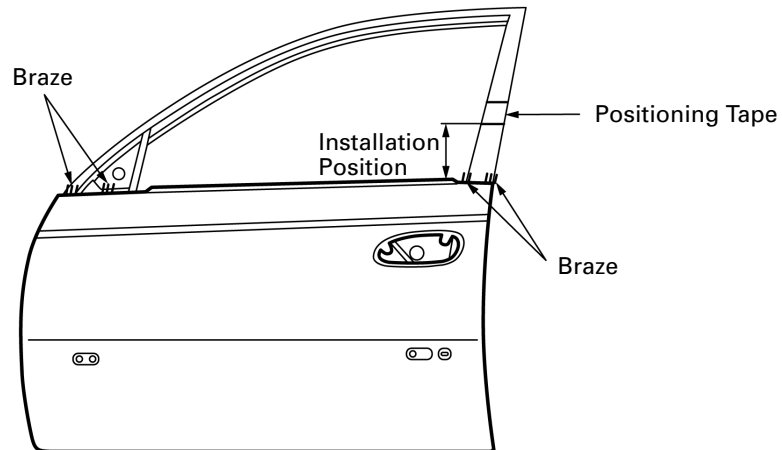
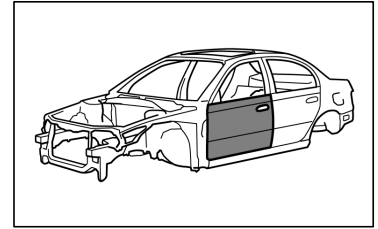
INSTALLATION



1. Before temporarily installing the new parts, weld the center body inner pillar, center body pillar center reinforcement, belt anchor to center pillar lower reinforce, rocker panel No.1 reinforcement, rocker panel No.4 reinforcement, rocker panel No.3 reinforcement, rocker panel No.7 reinforcement and rocker panel No.6 reinforcement with standard points.
2. Temporarily install the new parts and measure each part in accordance with the body dimension diagram.



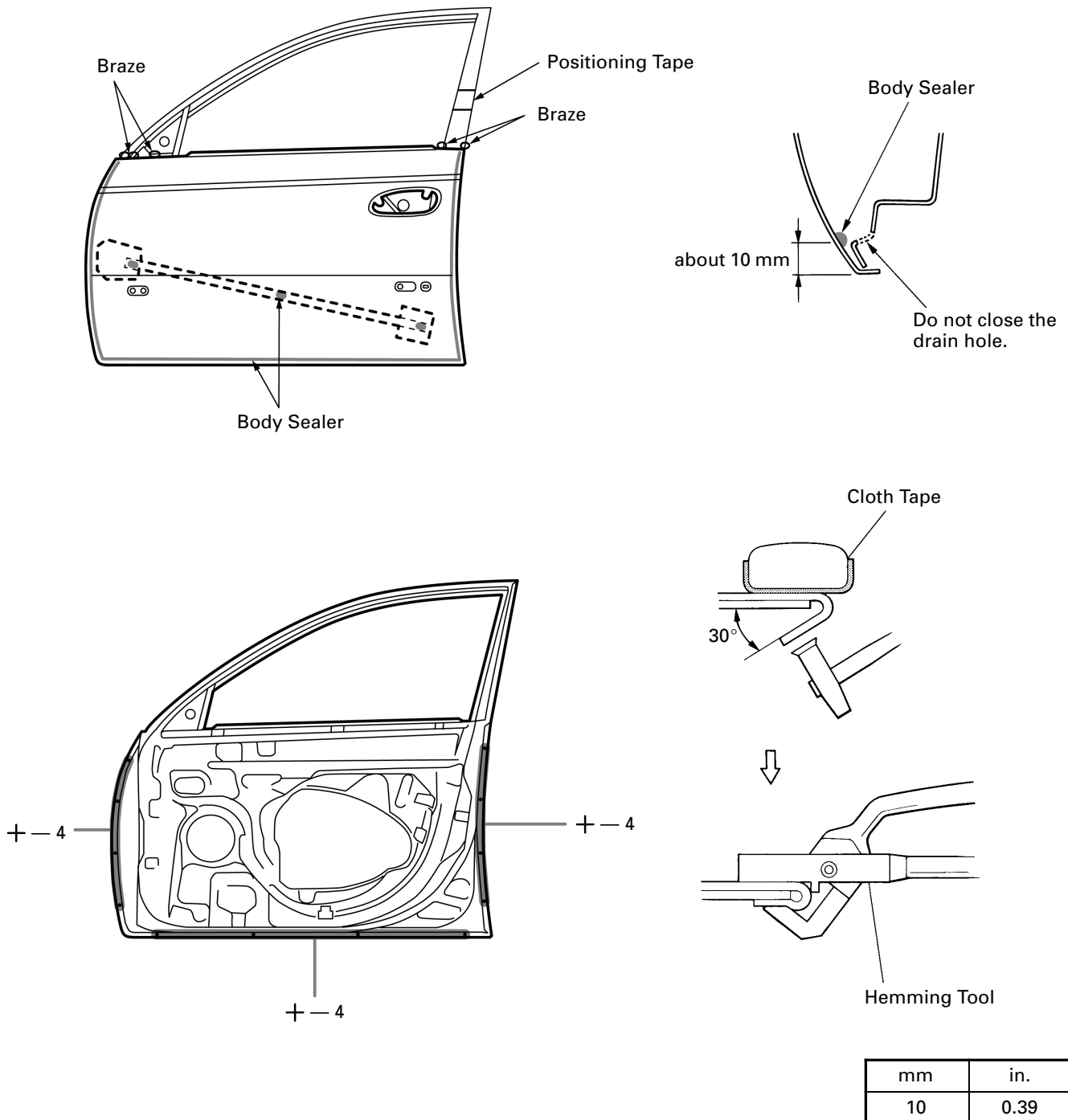
3. Before welding the new parts, check the fit of the front door and rear door.

**FRONT DOOR OUTER PANEL (ASSY)****REMOVAL**

1. Before removing the outer panel, make the installation position with a tape.
2. After grinding off the hemming location, remove the outer panel.



## INSTALLATION



1. Before temporarily installing the new parts, apply body sealer to the back side of the new parts and side impact protection beam.

**HINT:**

- 1) Apply just enough sealer for the side impact beam to touch the new panel. Apply sealer evenly around the flange area, about 10 mm (0.39 in.) from the edge, as shown.
- 2) For other sealing points, refer to Section AR.

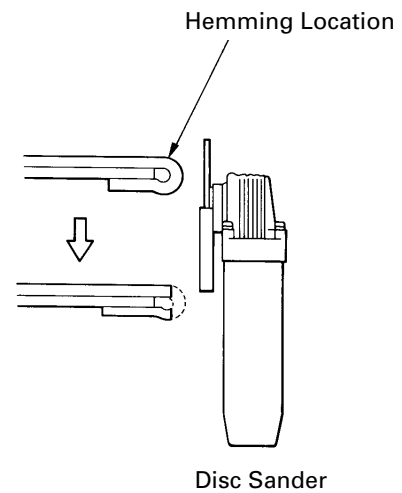
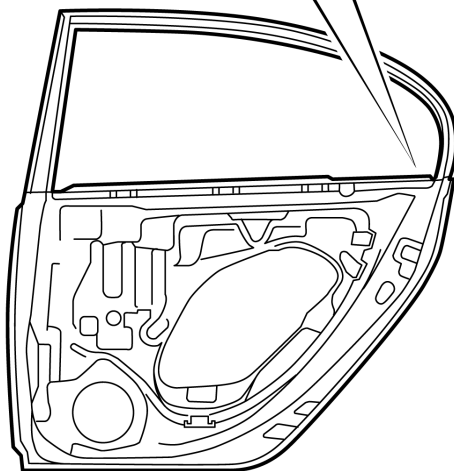
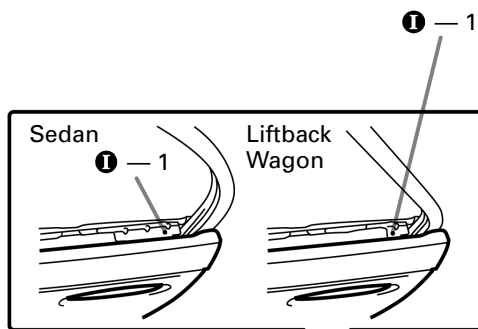
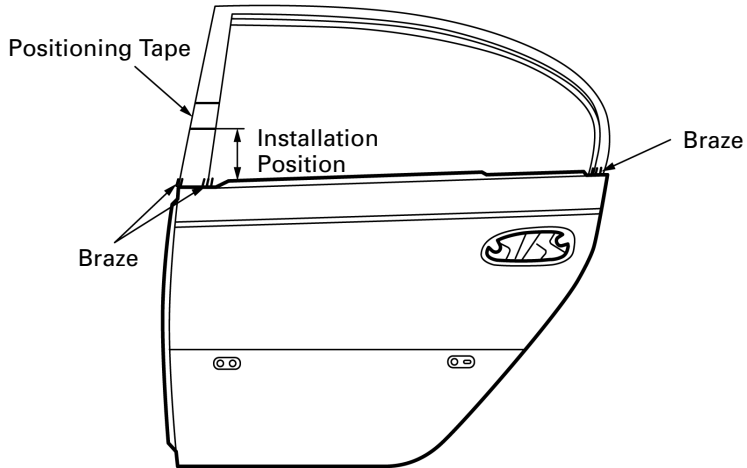
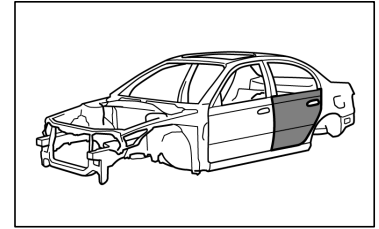
2. Bend the flange hem about 30° with a hammer and dolly, then fasten tightly with a hemming tool.

**HINT:**

- 1) Perform hemming in three steps, being careful not to warp the panel.
- 2) If a hemming tool cannot be used, hem with a hammer and dolly.

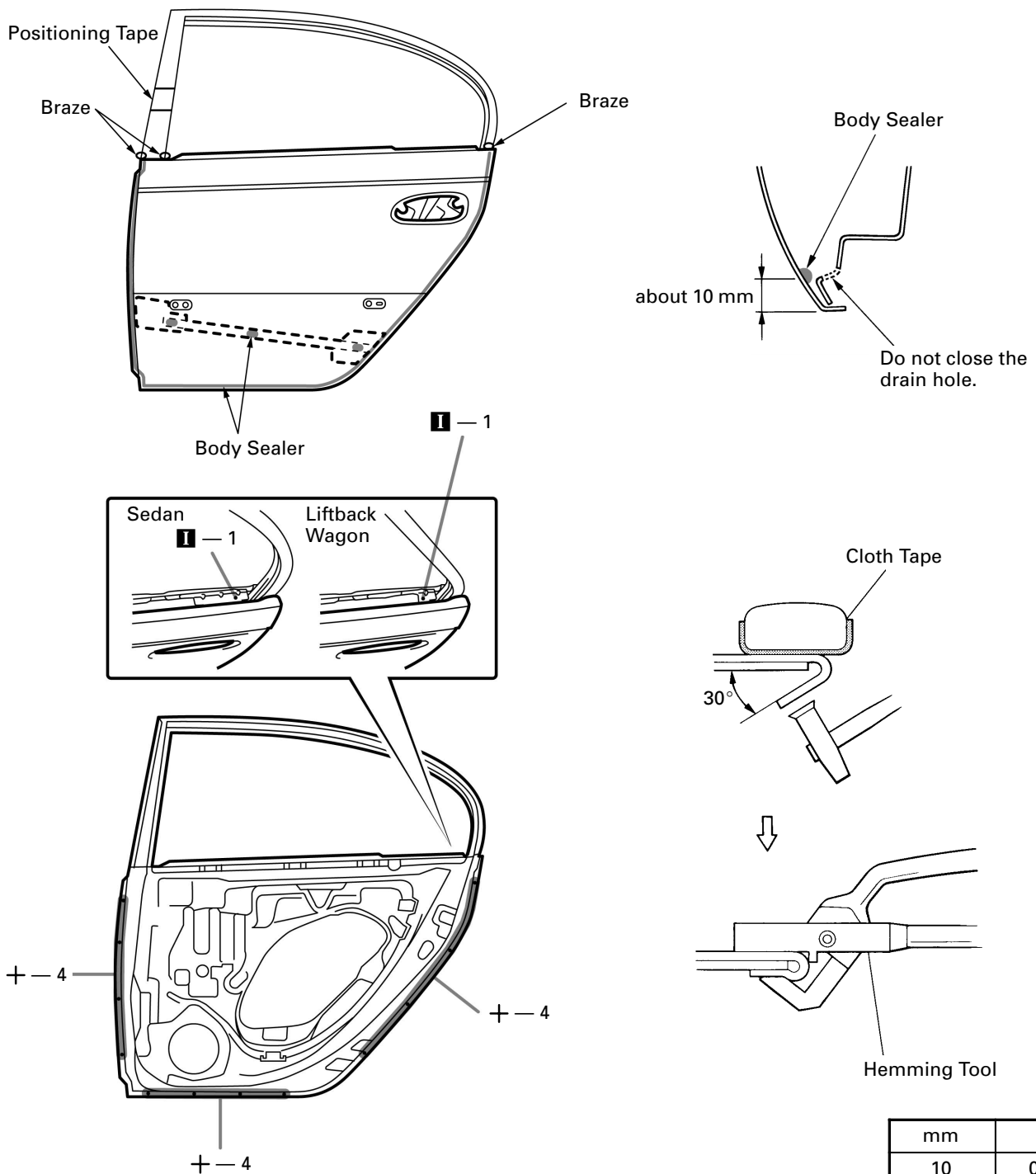
## REAR DOOR OUTER PANEL (ASSY)

### REMOVAL



1. Before removing the outer panel, make the installation position with a tape.
2. After grinding off the hemming location, remove the outer panel.

## INSTALLATION



1. Before temporarily installing the new parts, apply body sealer to the back side of the new parts and side impact protection beam.

**HINT:**

- 1) Apply just enough sealer for the side impact beam to touch the new panel. Apply sealer evenly around the flange area, about 10 mm (0.39 in.) from the edge, as shown.
- 2) For other sealing points, refer to Section AR.

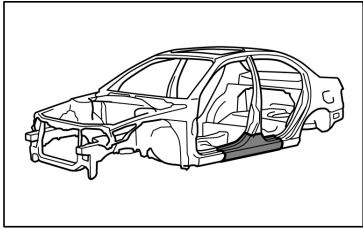
2. Bend the flange hem about 30° with a hammer and dolly, then fasten tightly with a hemming tool.

**HINT:**

- 1) Perform hemming in three steps, being careful not to warp the panel.
- 2) If a hemming tool cannot be used, hem with a hammer and dolly.

ROCKER OUTER PANEL (CUT)

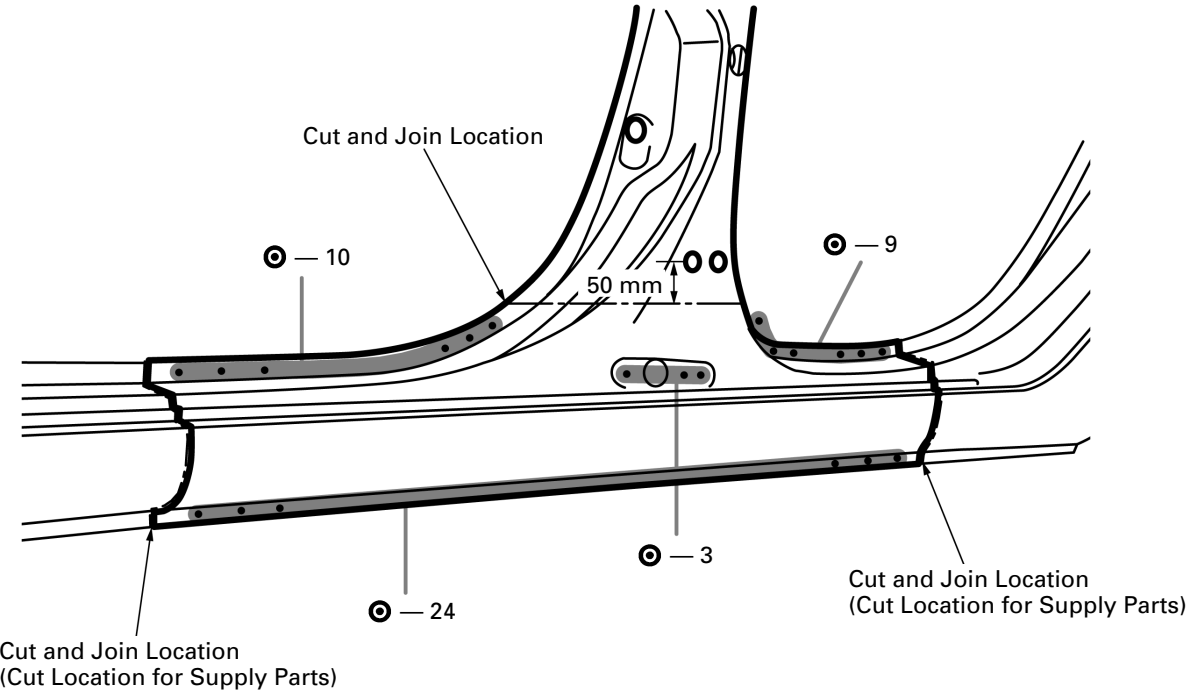
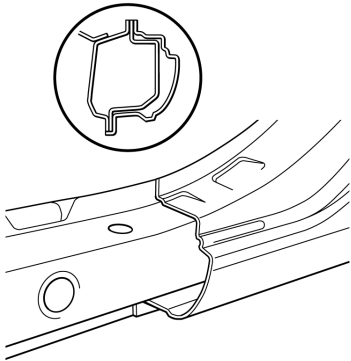
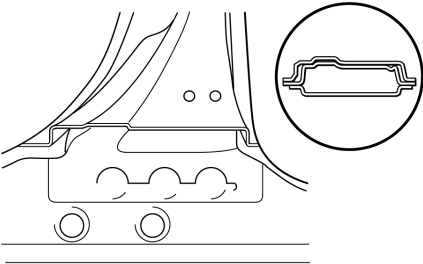
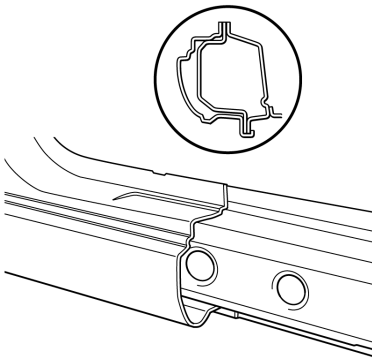
REMOVAL



[Cut and Join Location]

[Cut and Join Location]

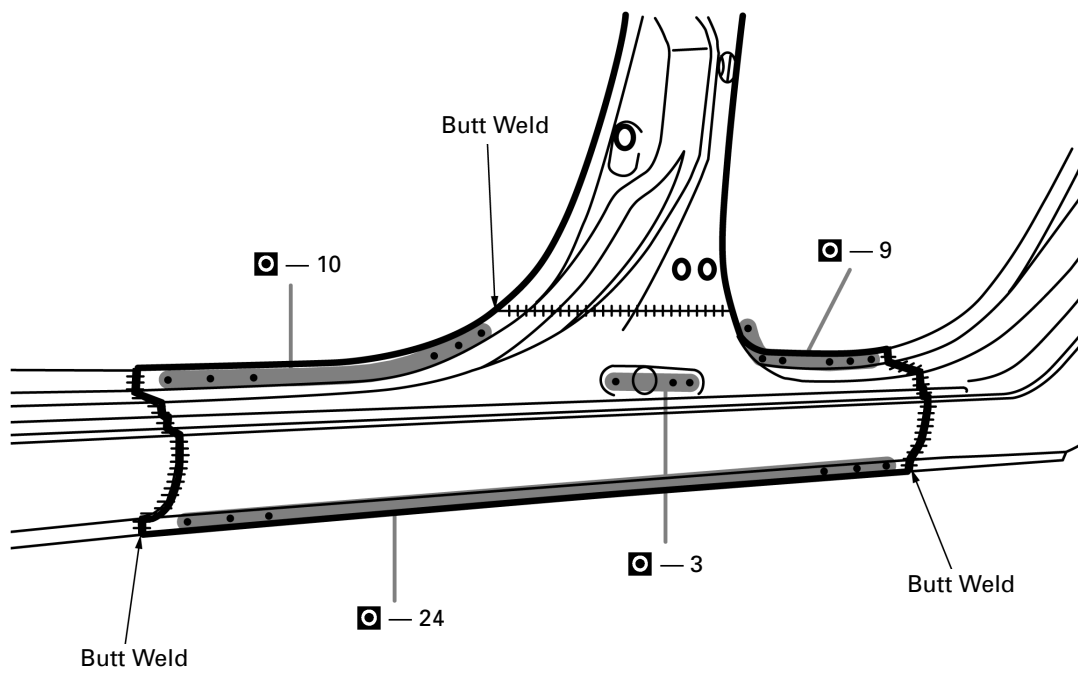
[Cut and Join Location]



1. Cut and join the parts at the locations as shown above.

| mm | in.  |
|----|------|
| 50 | 1.97 |

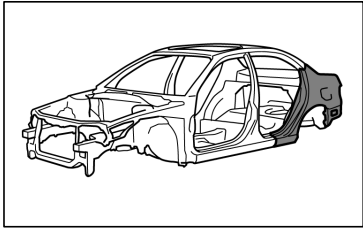
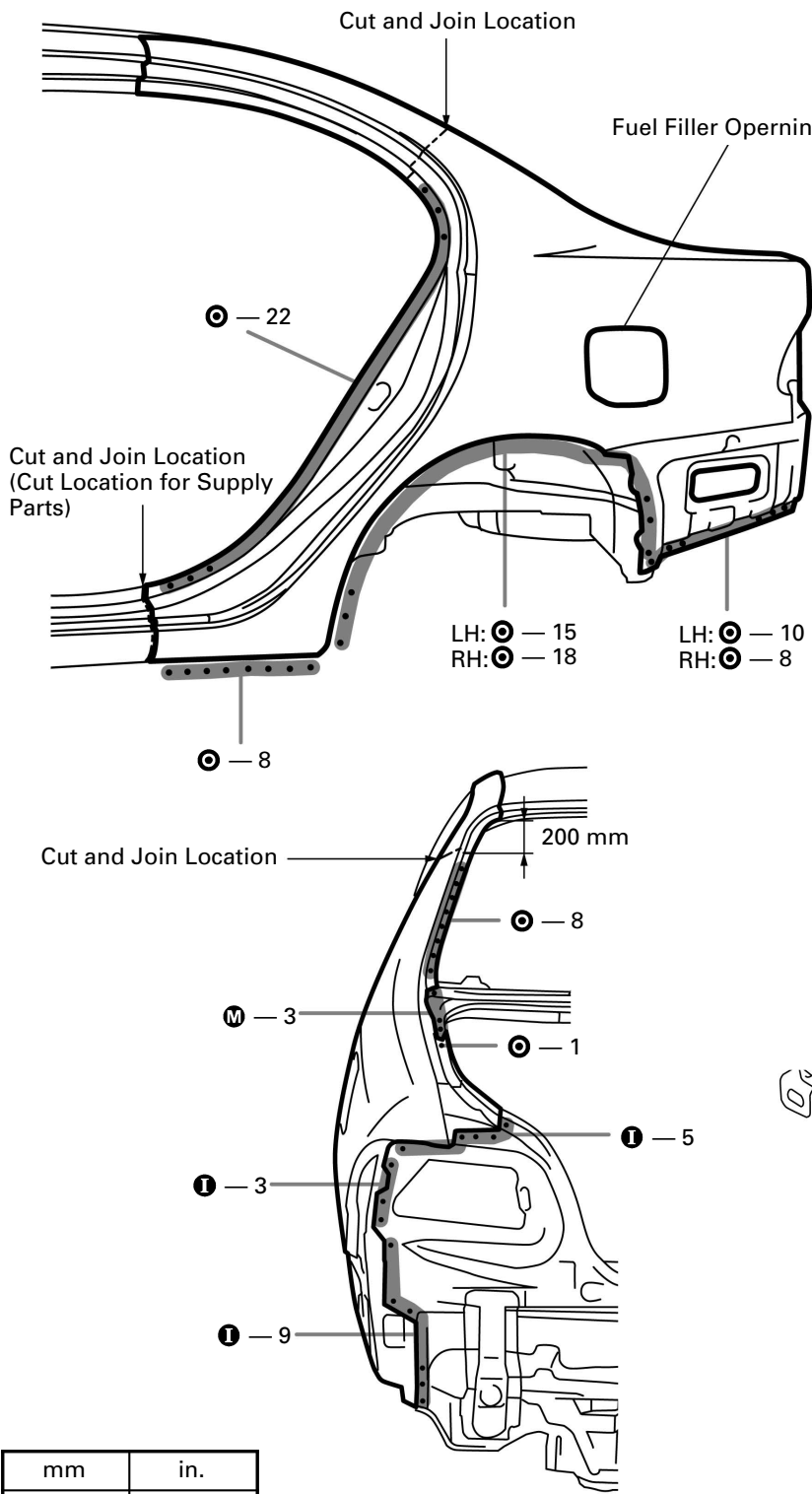
## INSTALLATION



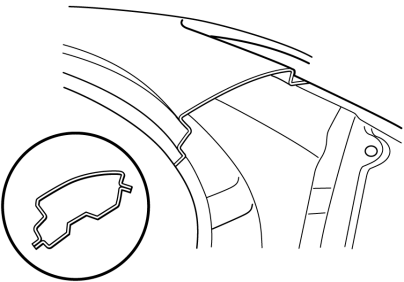
1. Temporarily installing the new parts, check the fit of the front door and rear door.

QUARTER PANEL (CUT): Sedan

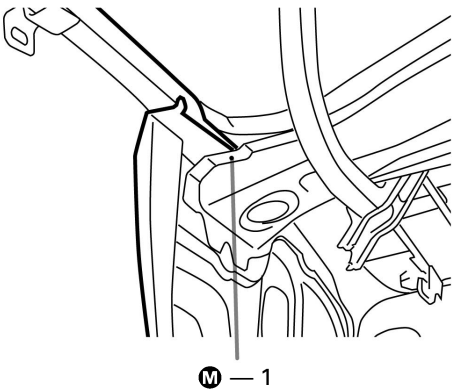
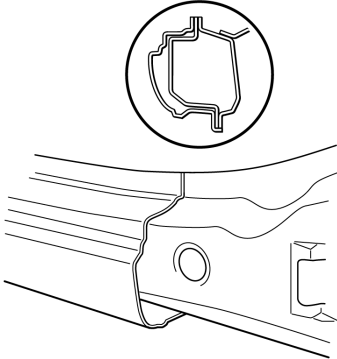
REMOVAL



[Cut and Join Location]



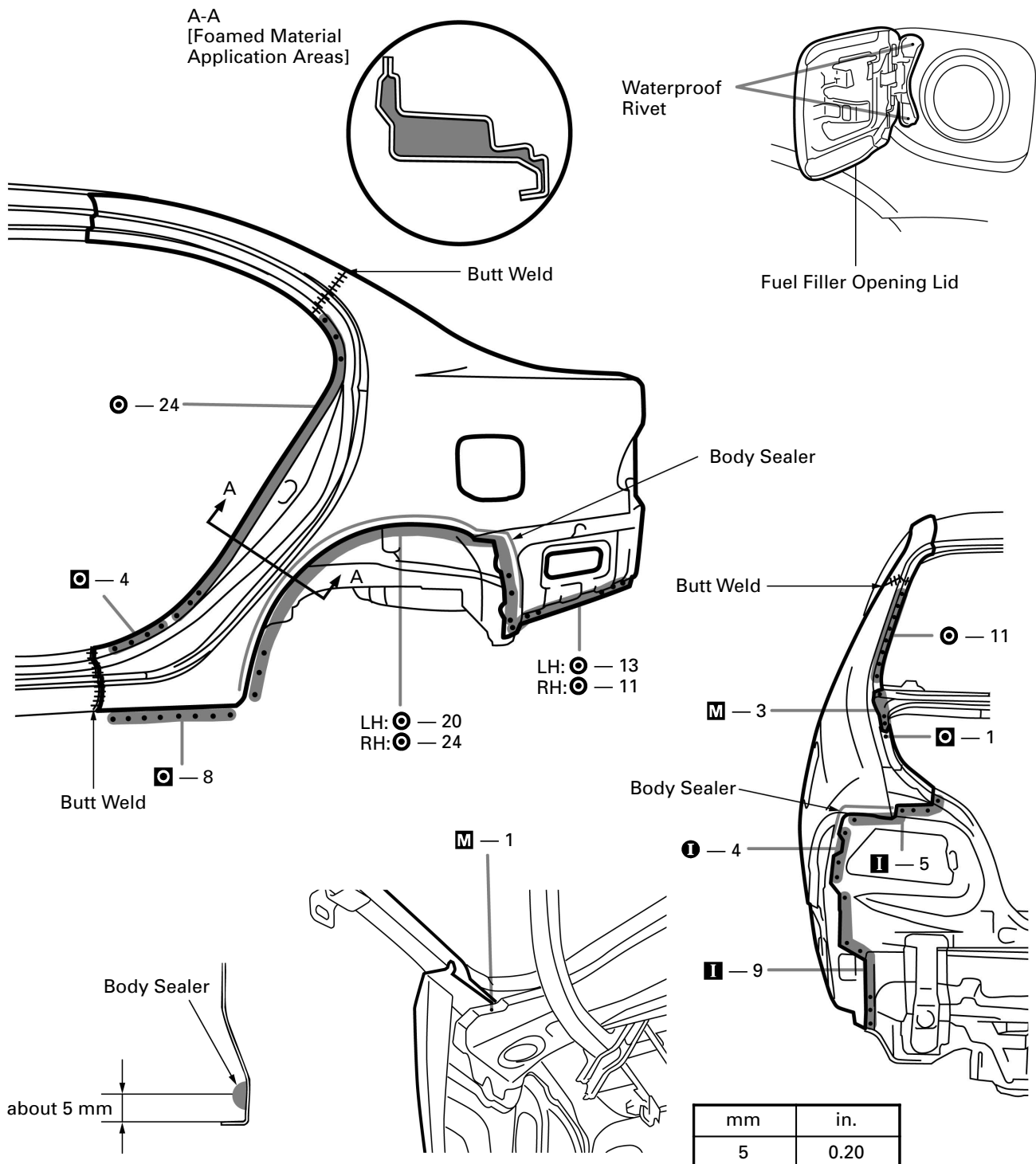
[Cut and Join Location]



| mm  | in.  |
|-----|------|
| 200 | 7.87 |

1. Cut and join the parts at the locations as shown above.
2. Replace the fuel filler opening lid at the same time as the quarter panel.

## INSTALLATION



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

## HINT:

- 1) Apply body sealer about 5 mm (0.20 in.) from the flange, avoiding any oozing.
- 2) Apply sealer evenly, about 3 – 4 mm (0.12 – 0.16 in.) in diameter.
- 3) For other sealing points, refer to section AR.

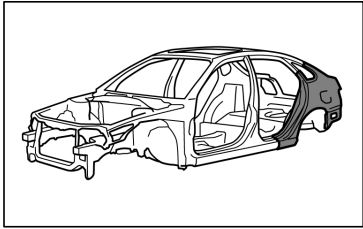
2. Temporarily install the new parts and check the fit of the rear door, luggage compartment door and rear combination light.
3. After installing the new parts, apply foamed materials.
4. Attach the fuel filler opening lid by rivets to the quarter panel.

## HINT:

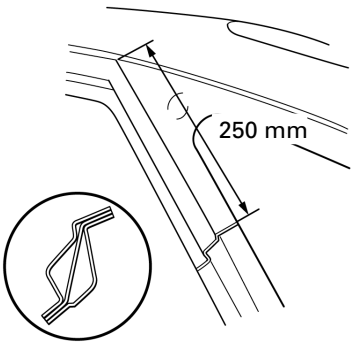
- 1) Use waterproof rivets.
- 2) Refer to the introduction when installation rivets.

QUARTER PANEL (CUT): Liftback

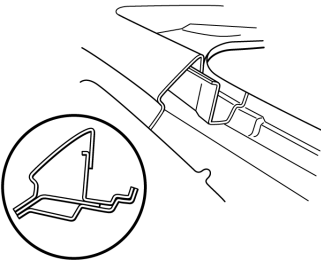
REMOVAL



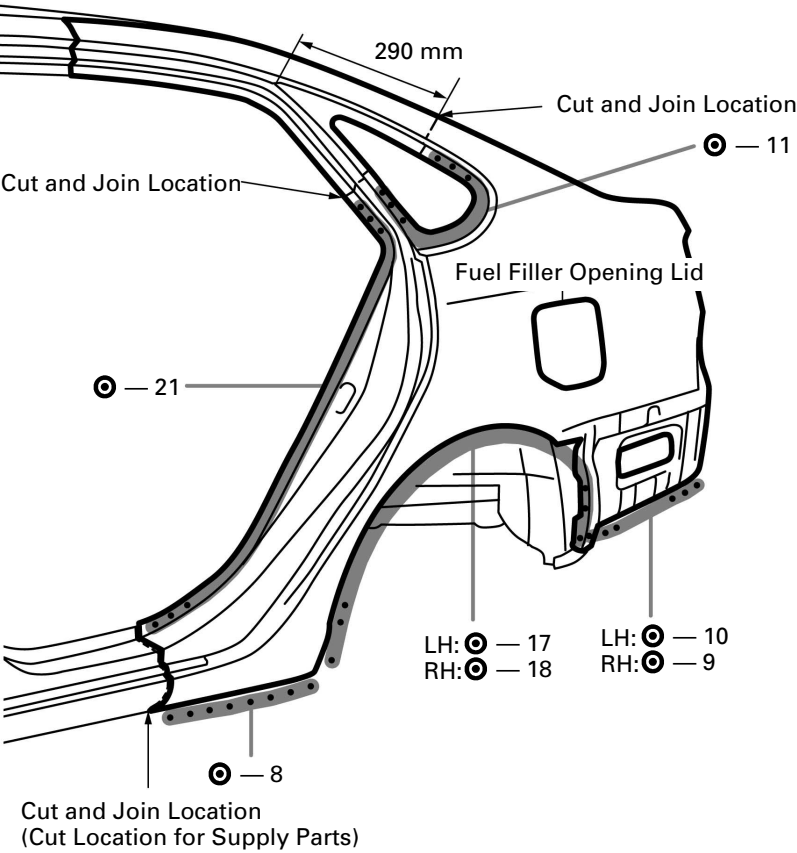
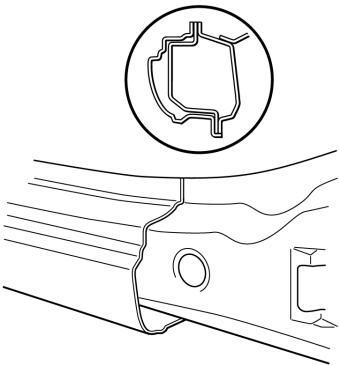
[Cut and Join Location]



[Cut and Join Location]



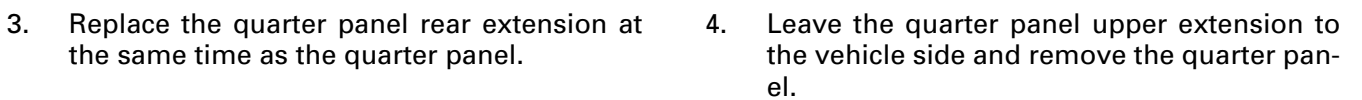
[Cut and Join Location]



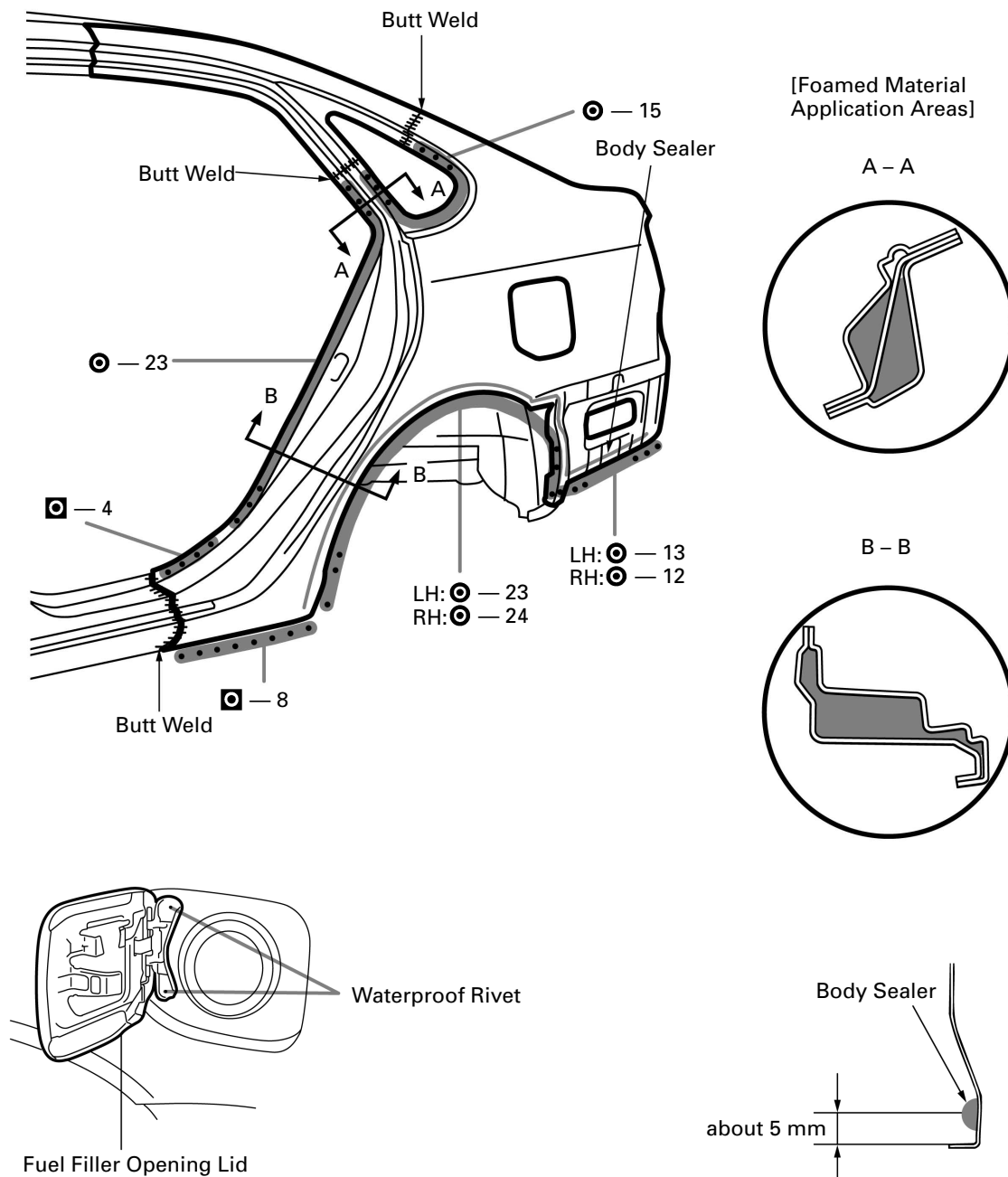
| mm  | in.   |
|-----|-------|
| 250 | 9.84  |
| 290 | 11.42 |

1. Cut and join the parts at the locations as shown above.
2. Replace the fuel filler opening lid at the same time as the quarter panel.





## INSTALLATION



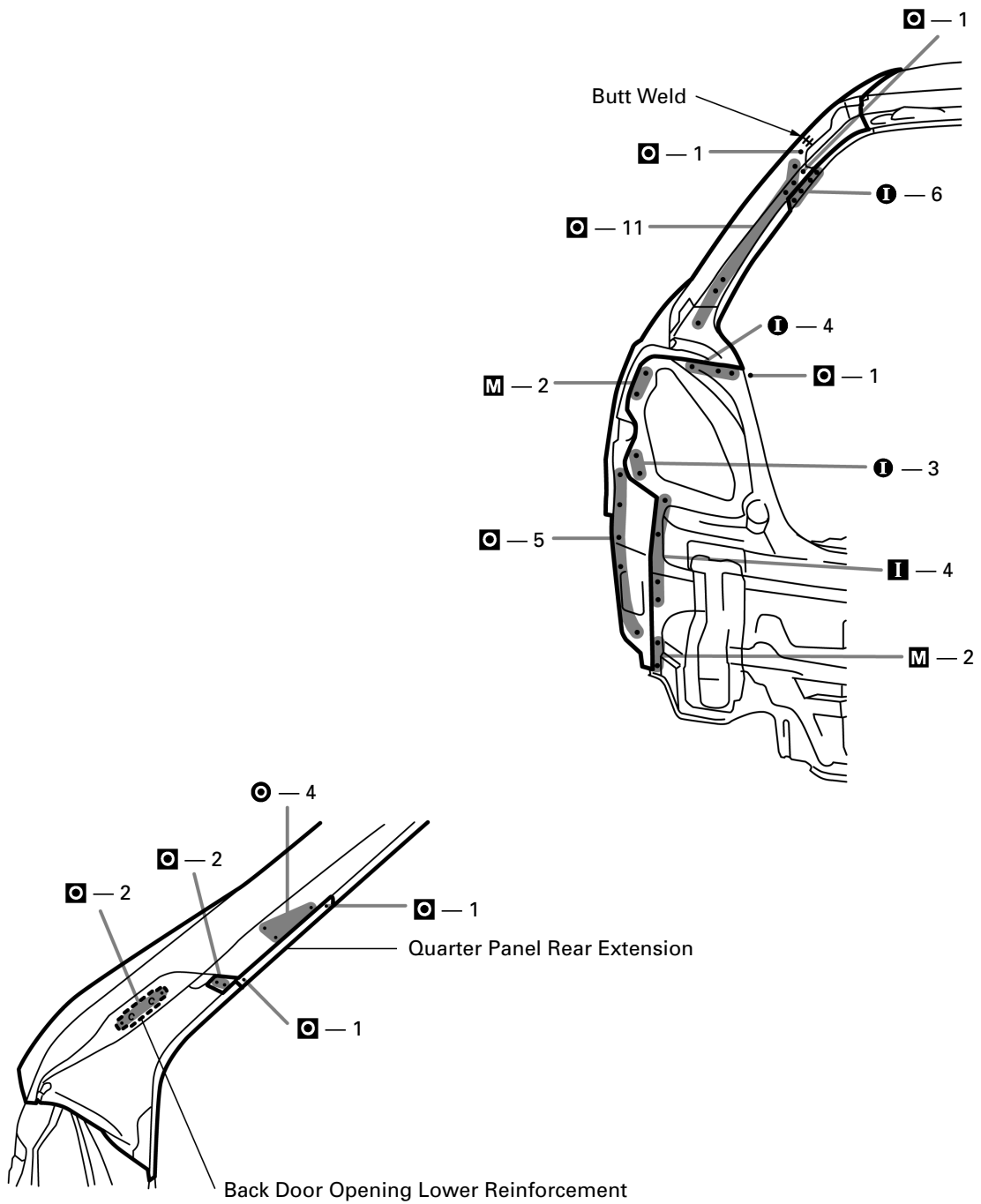
| mm | in.  |
|----|------|
| 5  | 0.20 |

- Before temporarily installing the new parts, apply body sealer to the wheel arch.

## HINT:

- Apply body sealer about 5 mm (0.20 in.) from the flange, avoiding any oozing.
- Apply sealer evenly, about 3 – 4 mm (0.12 – 0.16 in.) in diameter.
- For other sealing points, refer to section AR.

- Before temporarily installing the new parts, weld the quarter panel rear extension and back door opening lower reinforcement with standard points.
- Temporarily install the new parts and check the fit of the rear door, back door and rear combination light.



4. After installing the new parts, apply foamed materials.

5. Attach the fuel filler opening lid by rivets to the quarter panel.

HINT:

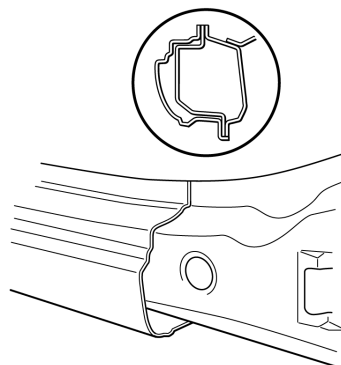
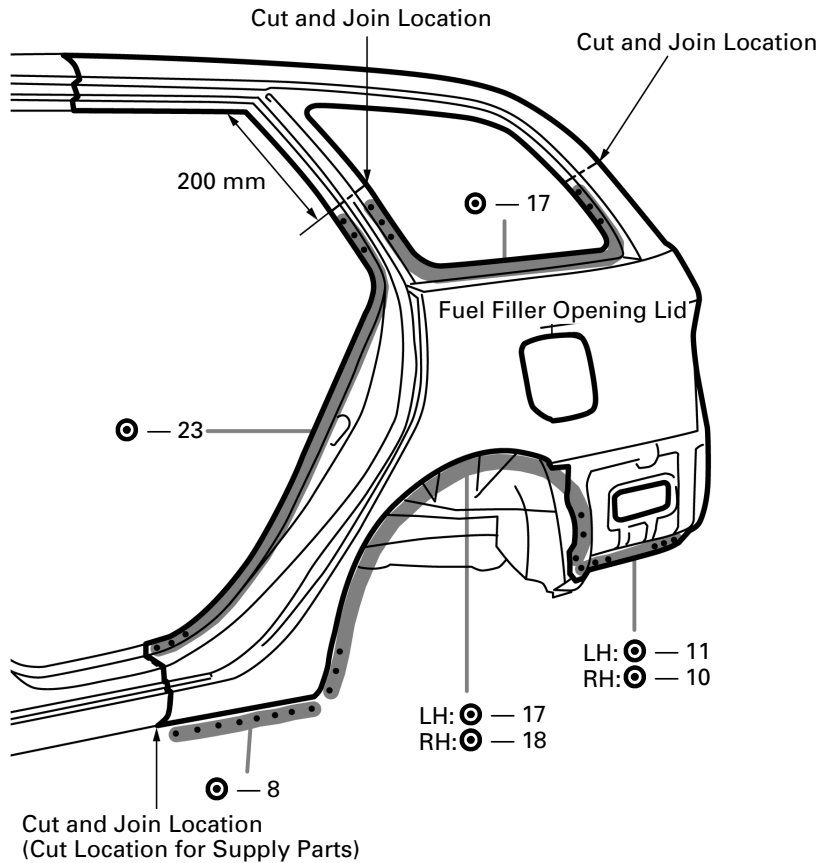
1) Use waterproof rivets.

2) Refer to the introduction when installation rivets.

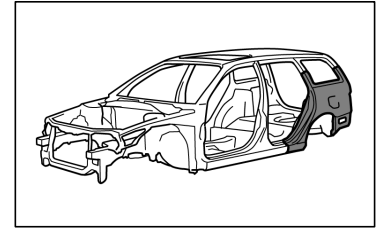


### QUARTER PANEL (CUT): Wagon

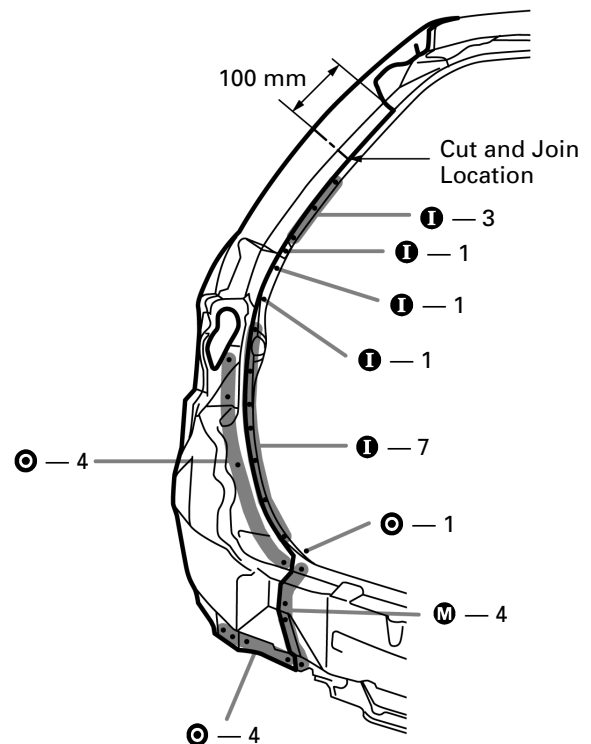
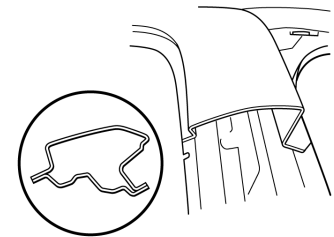
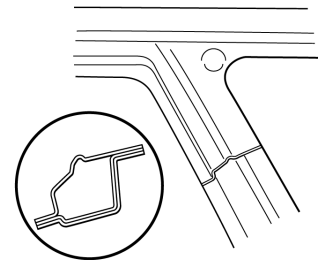
## REMOVAL



| mm  | in.  |
|-----|------|
| 100 | 3.94 |
| 200 | 7.87 |

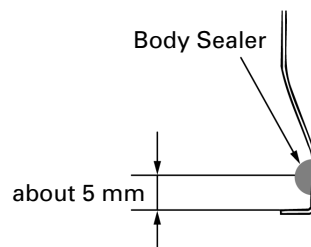
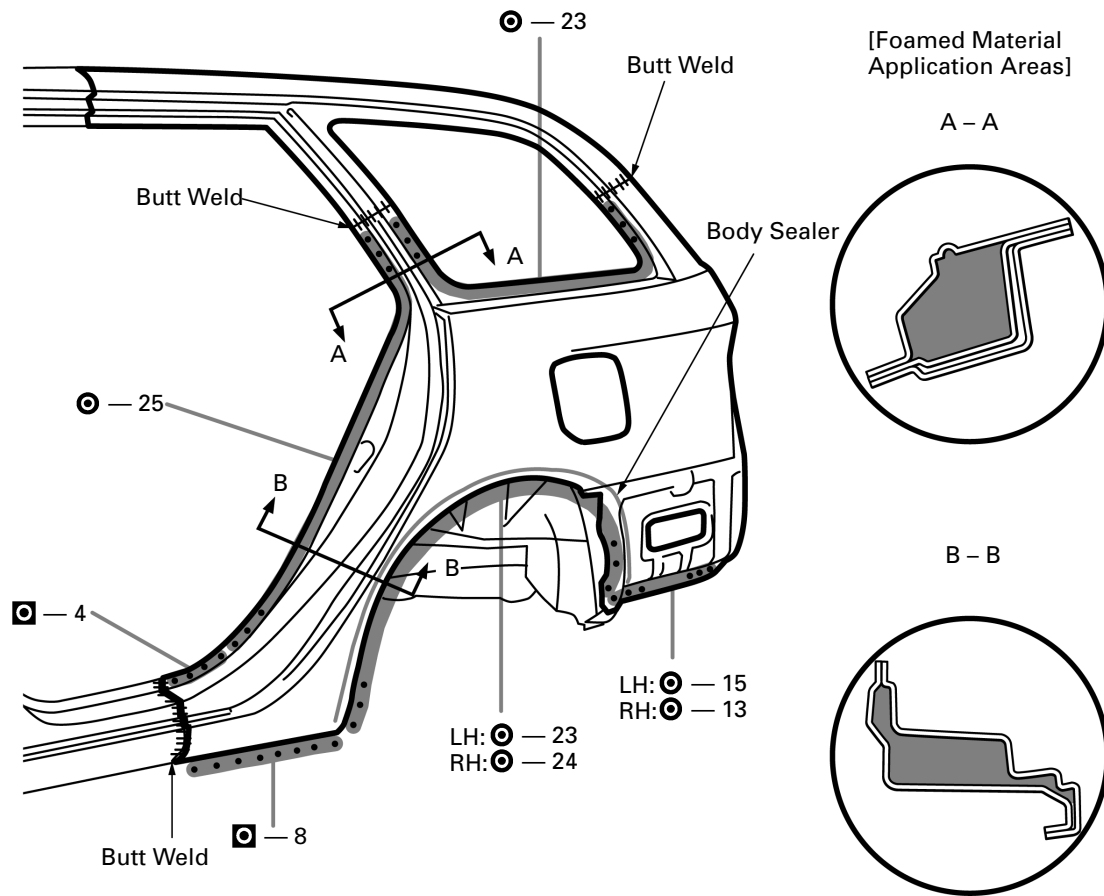


[Cut and Join Location]



1. Cut and join the parts at the locations as shown above.
2. Replace the fuel filler opening lid at the same time as the quarter panel.

## INSTALLATION



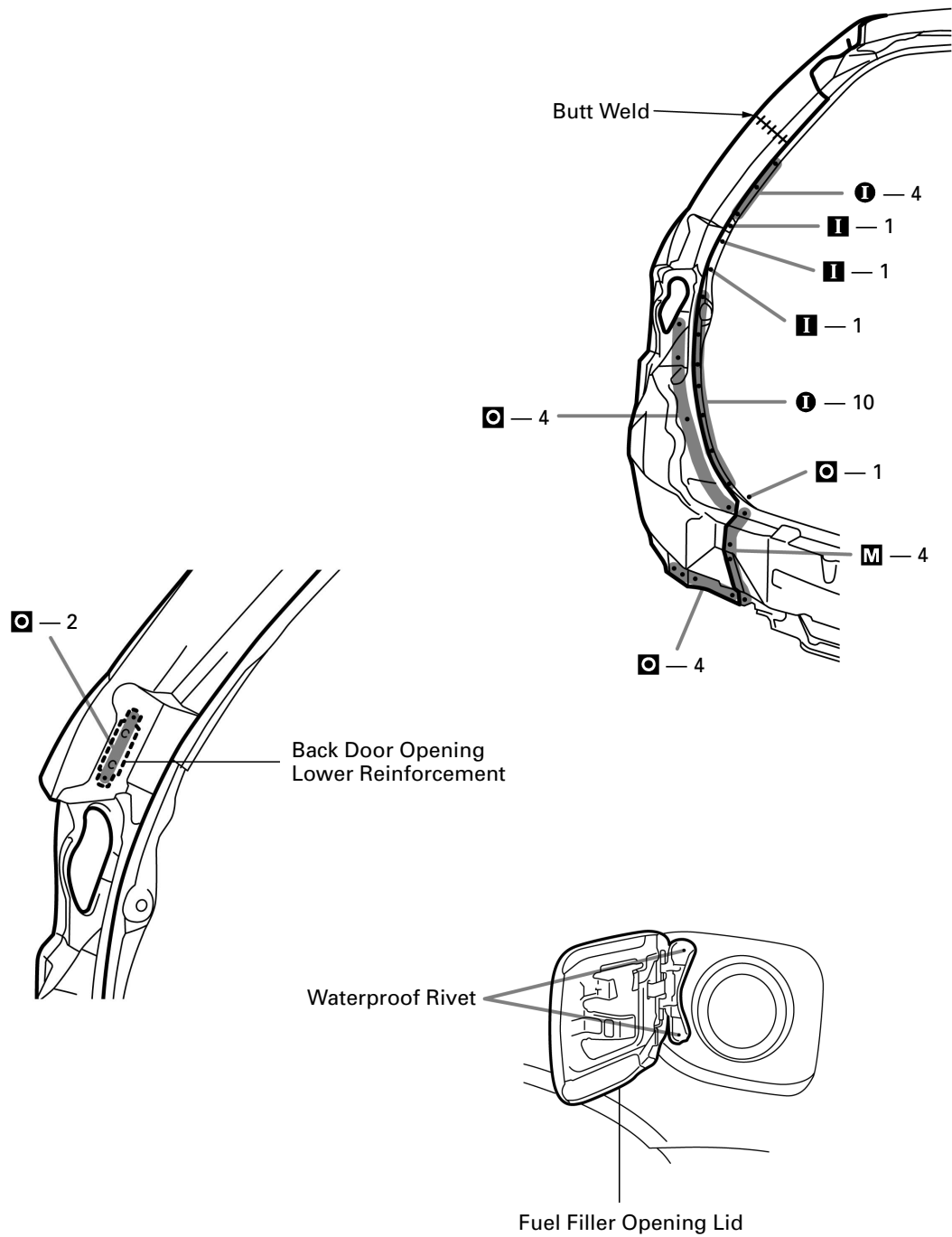
| mm | in.  |
|----|------|
| 5  | 0.20 |

- Before temporarily installing the new parts, apply body sealer to the wheel arch.

## HINT:

- Apply body sealer about 5 mm (0.20 in.) from the flange, avoiding any oozing.
- Apply sealer evenly, about 3 – 4 mm (0.12 – 0.16 in.) in diameter.
- For other sealing points, refer to section AR.

- Before temporarily installing the new parts, weld the back door opening lower reinforcement with standard points.
- Temporarily install the new parts and check the fit of the rear door, back door and rear combination light.

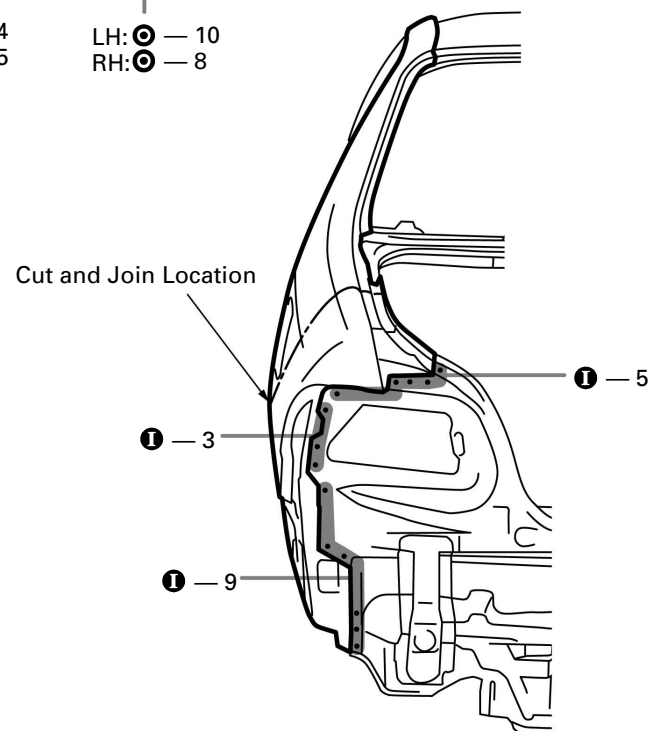
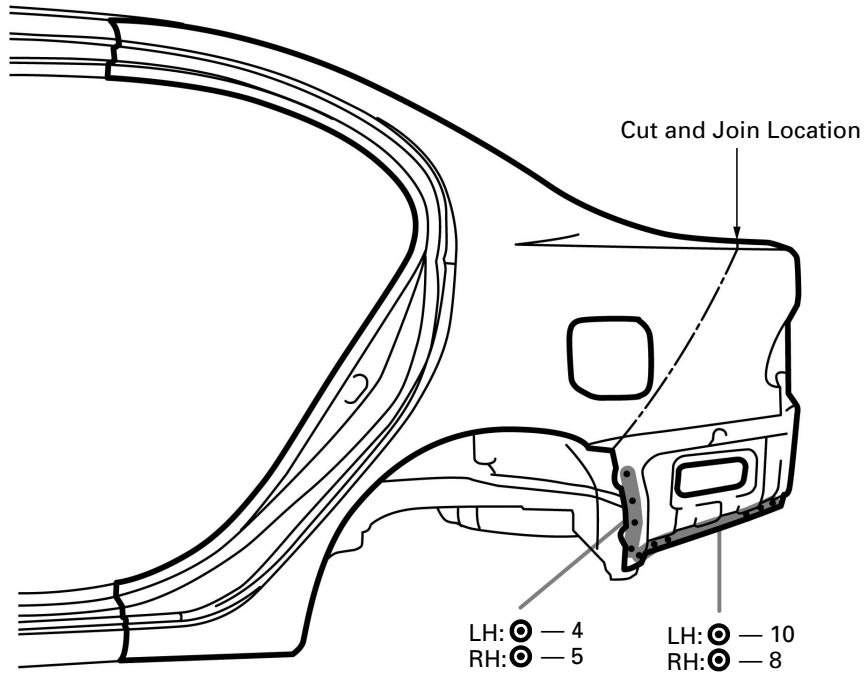
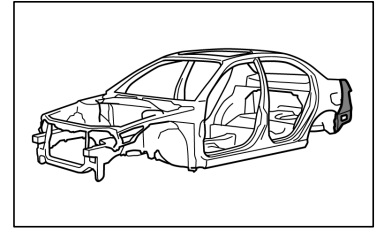


4. After installing the new parts, apply foamed materials.

5. Attach the fuel filler opening lid by rivets to the quarter panel.

HINT:

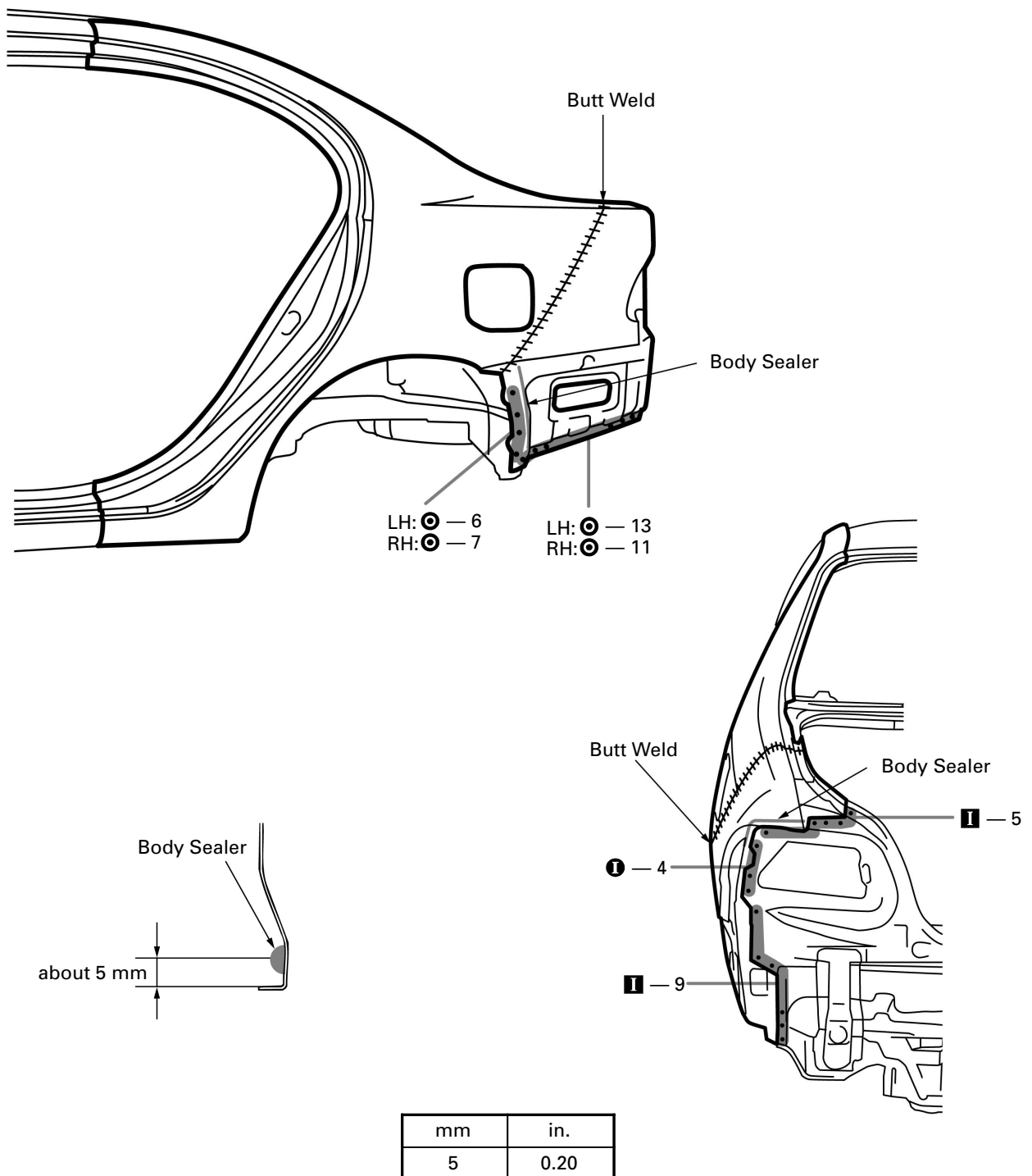
- 1) Use waterproof rivets.
- 2) Refer to the introduction when installation rivets.

**QUARTER PANEL (CUT-P): Sedan****REMOVAL**

1. Cut and join the parts at the location as shown above.



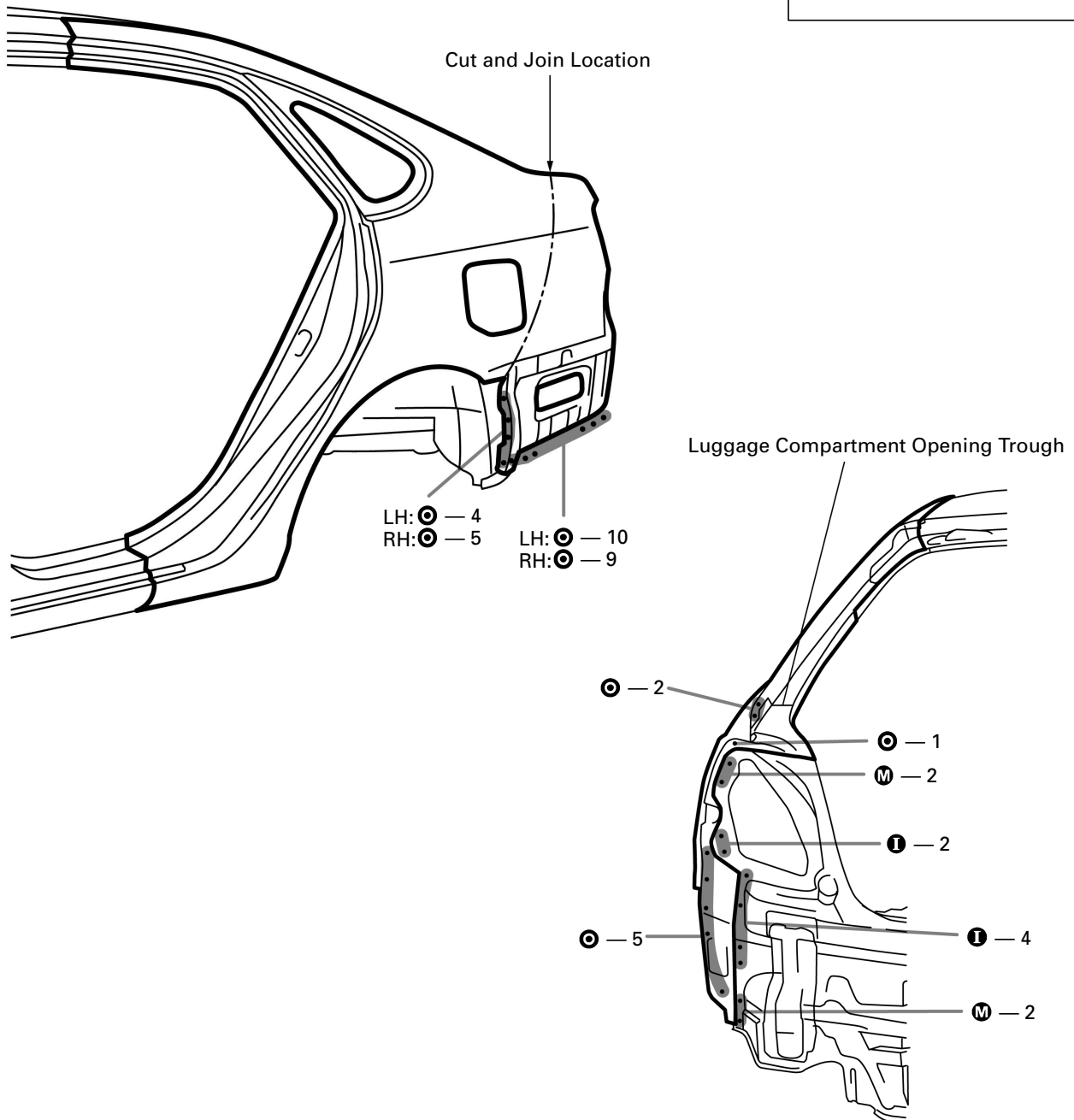
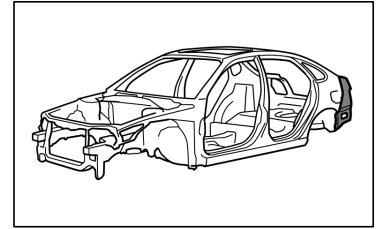
## INSTALLATION



1. Before temporarily installing the new parts, apply body sealer to the wheel arch.
  2. temporarily install the new parts and check the fit of the luggage compartment door and rear combination light.
- HINT:**
- 1) Apply body sealer about 5 mm (0.20 in.) from the flange, avoiding any oozing.
  - 2) Apply sealer evenly, about 3 – 4 mm (0.12 – 0.16 in.) in diameter.
  - 3) For other sealing points, refer to section AR.

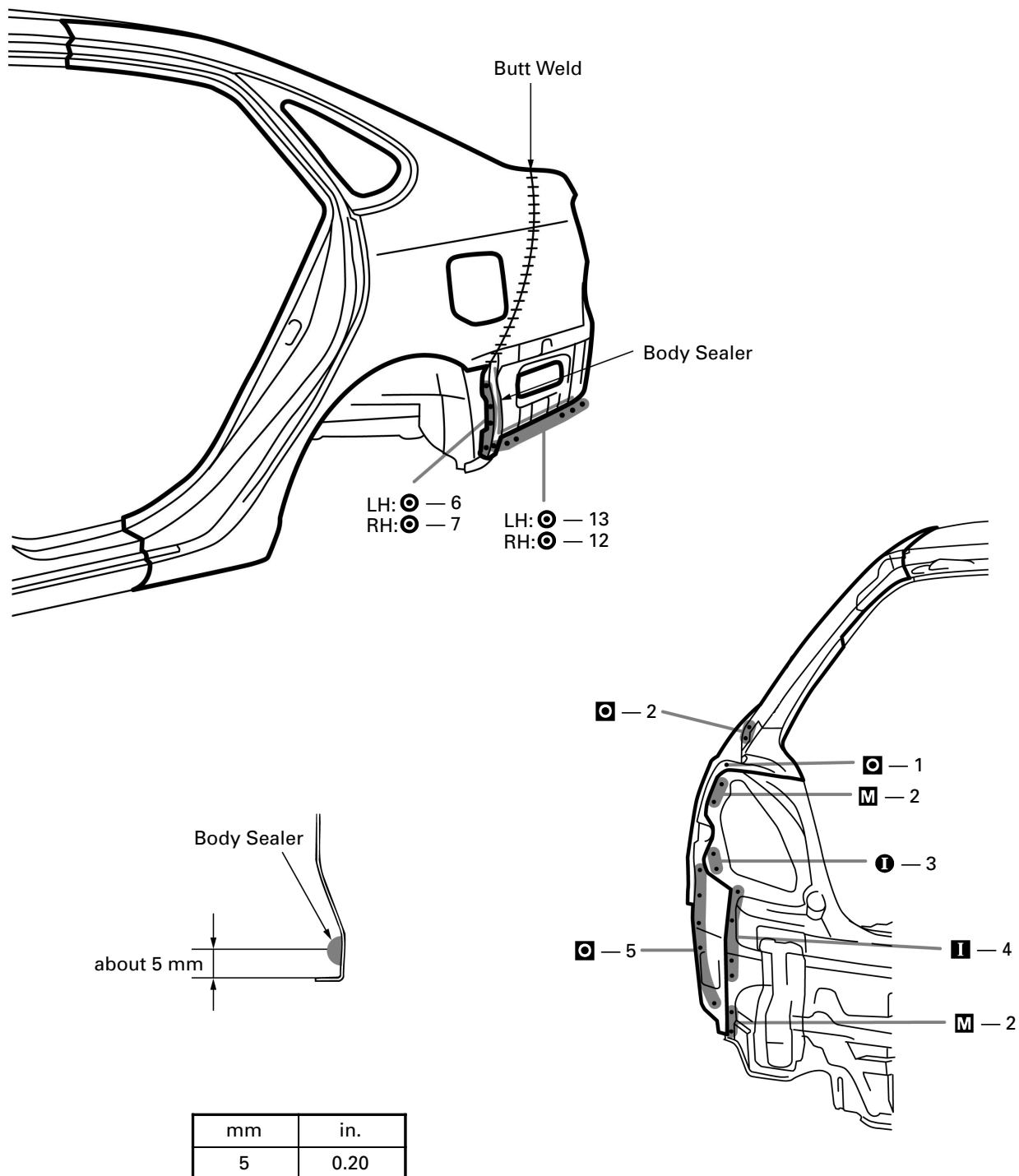
## QUARTER PANEL (CUT-P): Liftback

### REMOVAL



1. Cut and join the parts at the location as shown above.
2. Leave the luggage compartment opening trough to the vehicle side and remove the quarter panel.

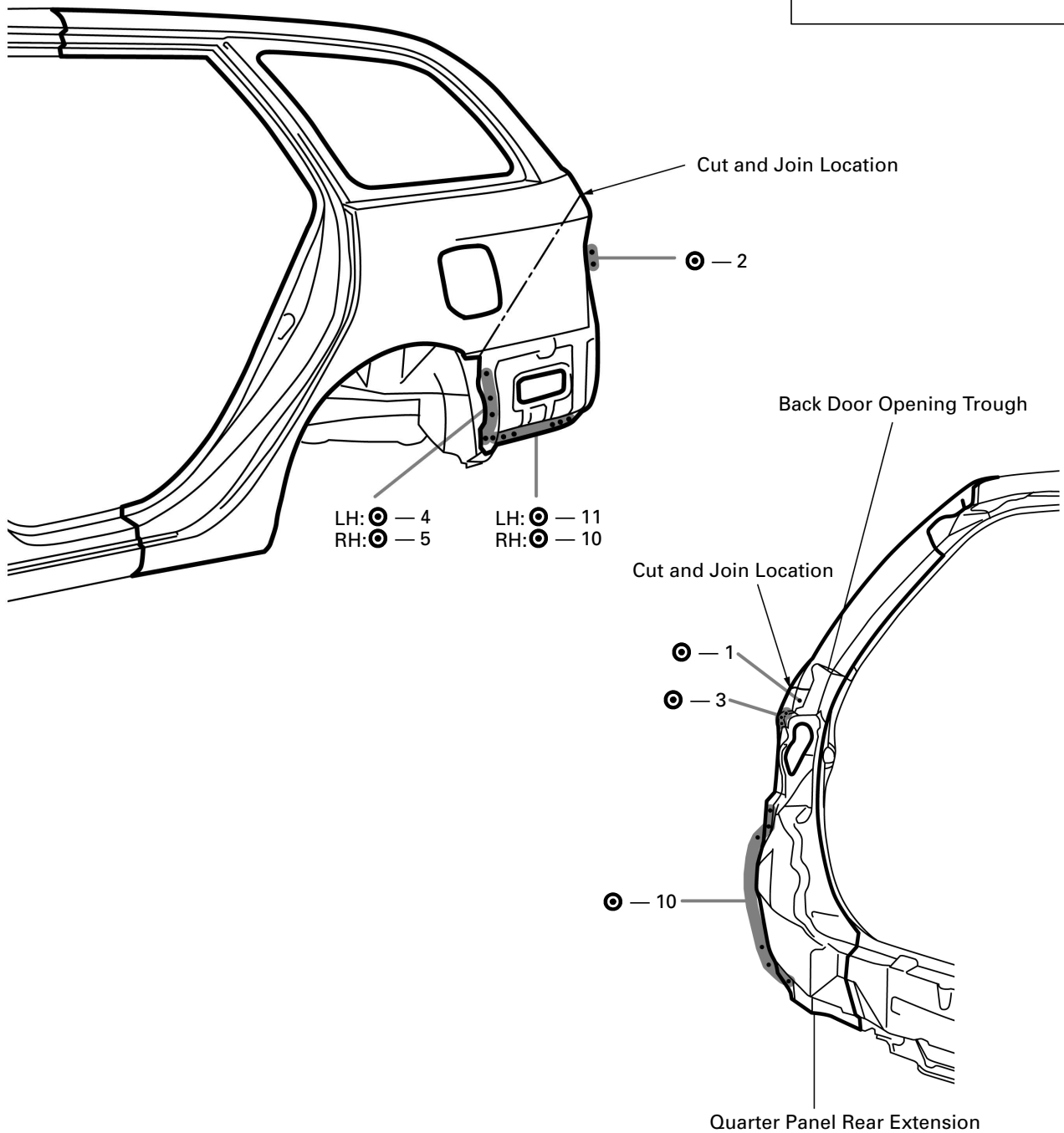
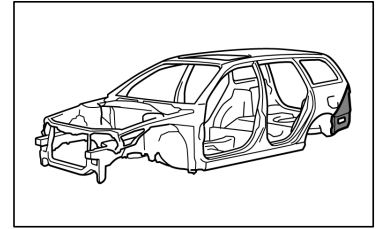
## INSTALLATION



1. Before temporarily installing the new parts, apply body sealer to the wheel arch.
  2. Temporarily install the new parts and check the fit of the back door and rear combination light.
- HINT:**
- 1) Apply body sealer about 5 mm (0.20 in.) from the flange, avoiding any oozing.
  - 2) Apply sealer evenly, about 3 – 4 mm (0.12 – 0.16 in.) in diameter.
  - 3) For other sealing points, refer to section AR.

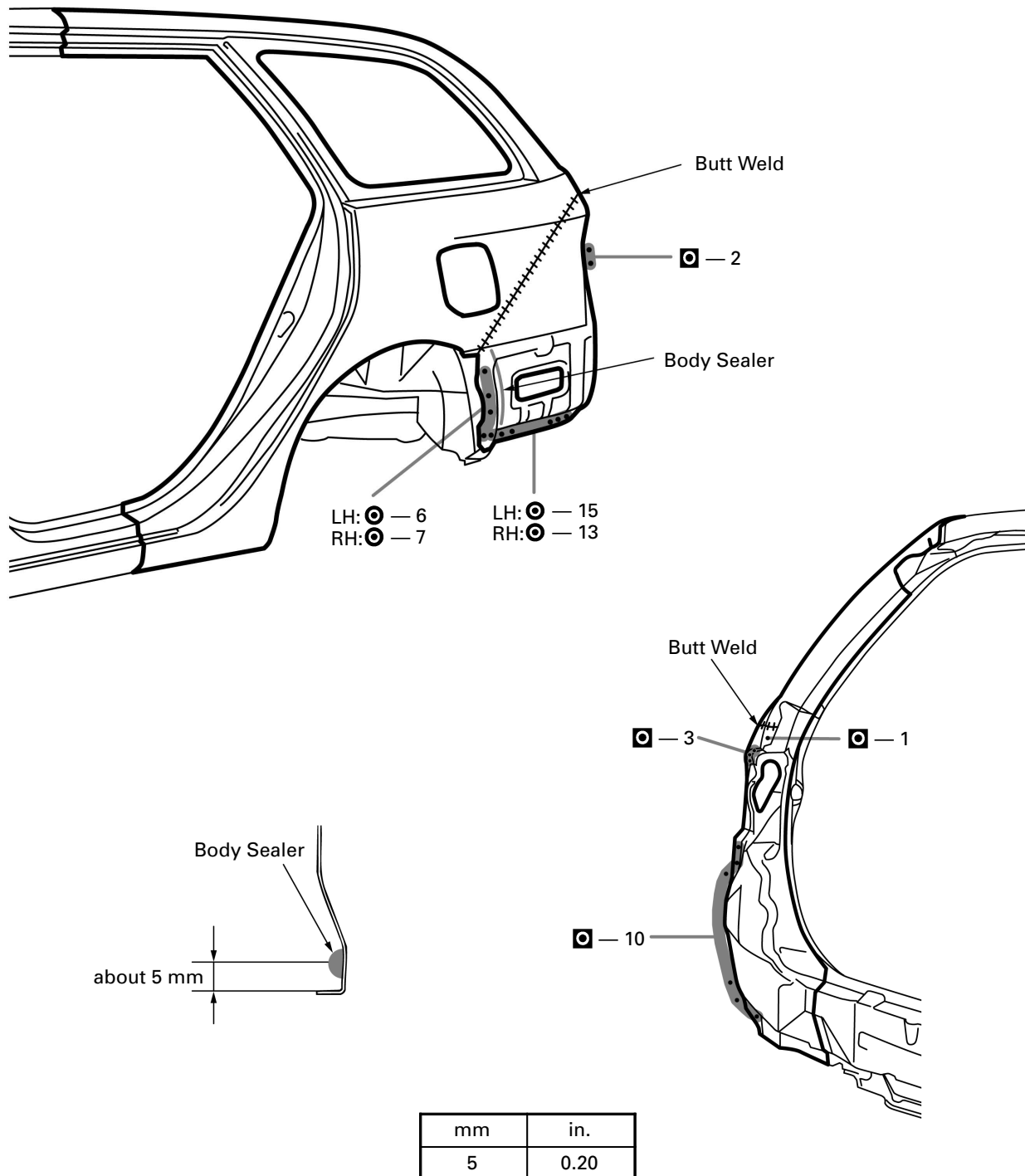
## QUARTER PANEL (CUT-P): Wagon

### REMOVAL



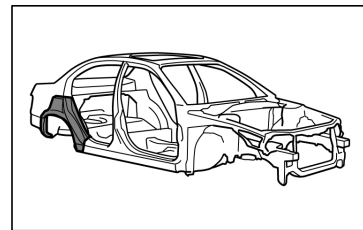
1. Cut and join the parts at the location as shown above.
2. Leave the back door opening trough and quarter panel rear extension to the vehicle side and remove the quarter panel.

## INSTALLATION

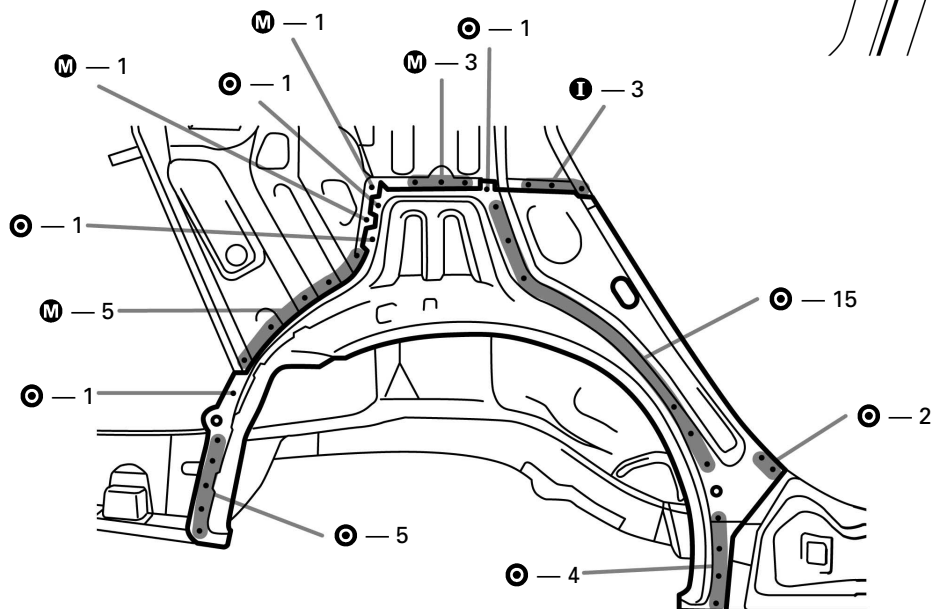
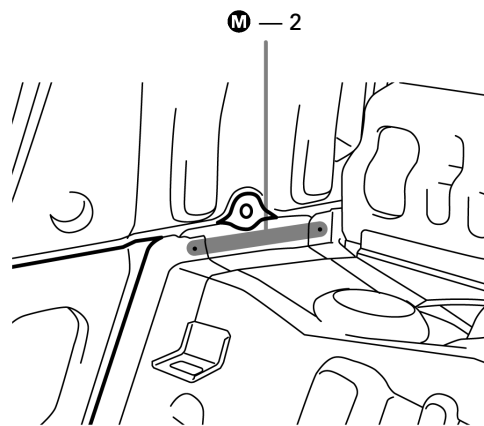
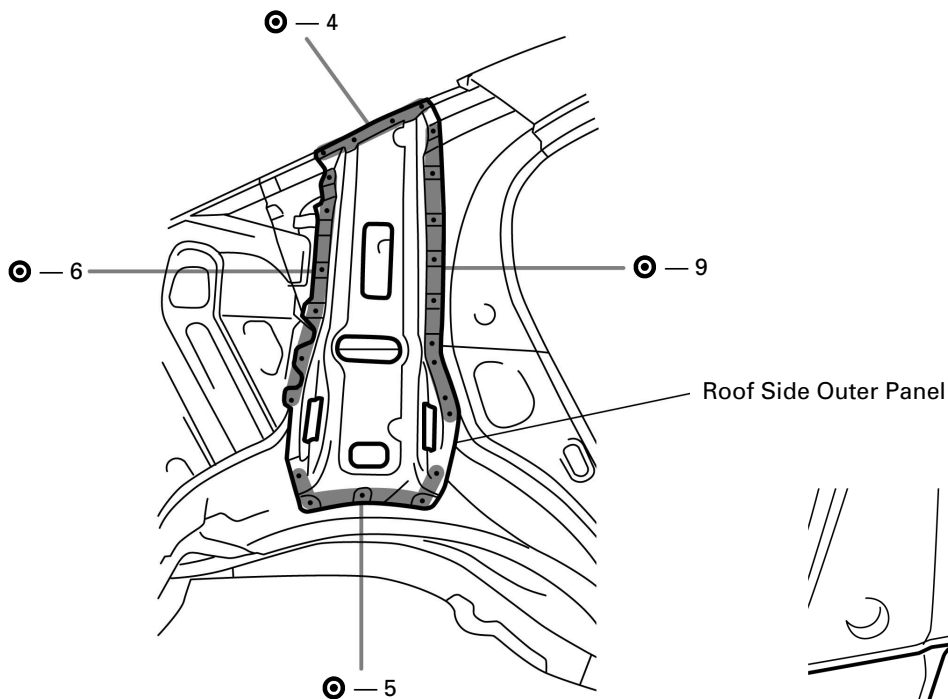


- Before temporarily installing the new parts, apply body sealer to the wheel arch.
  - Temporarily install the new parts and check the fit of the back door and rear combination light.
- HINT:**
- Apply body sealer about 5 mm (0.20 in.) from the flange, avoiding any oozing.
  - Apply sealer evenly, about 3 – 4 mm (0.12 – 0.16 in.) in diameter.
  - For other sealing points, refer to section AR.

## QUARTER WHEEL HOUSING OUTER PANEL (ASSY): Sedan RH

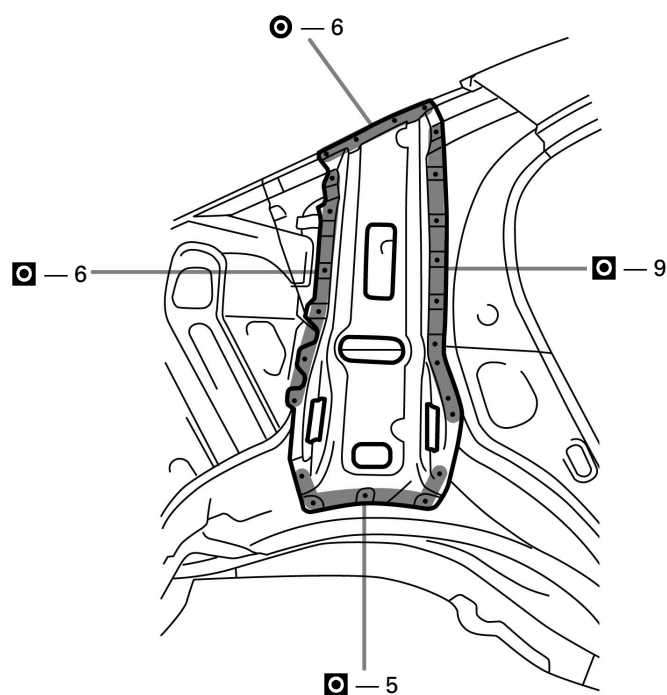
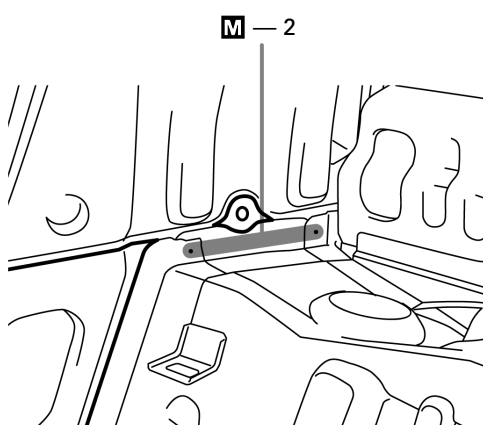
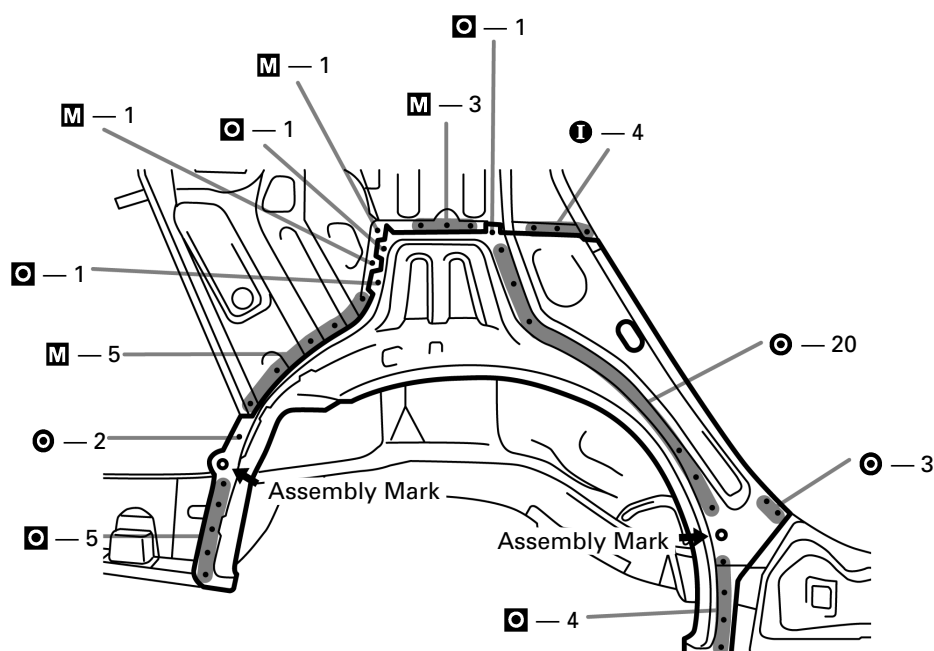


### REMOVAL (With the quarter panel removed.)



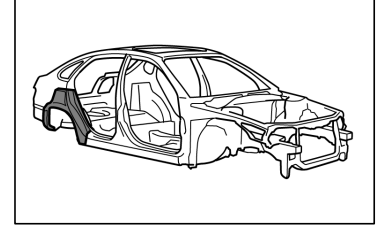
1. After removing the roof side outer panel, remove the quarter wheel housing outer panel.

## INSTALLATION

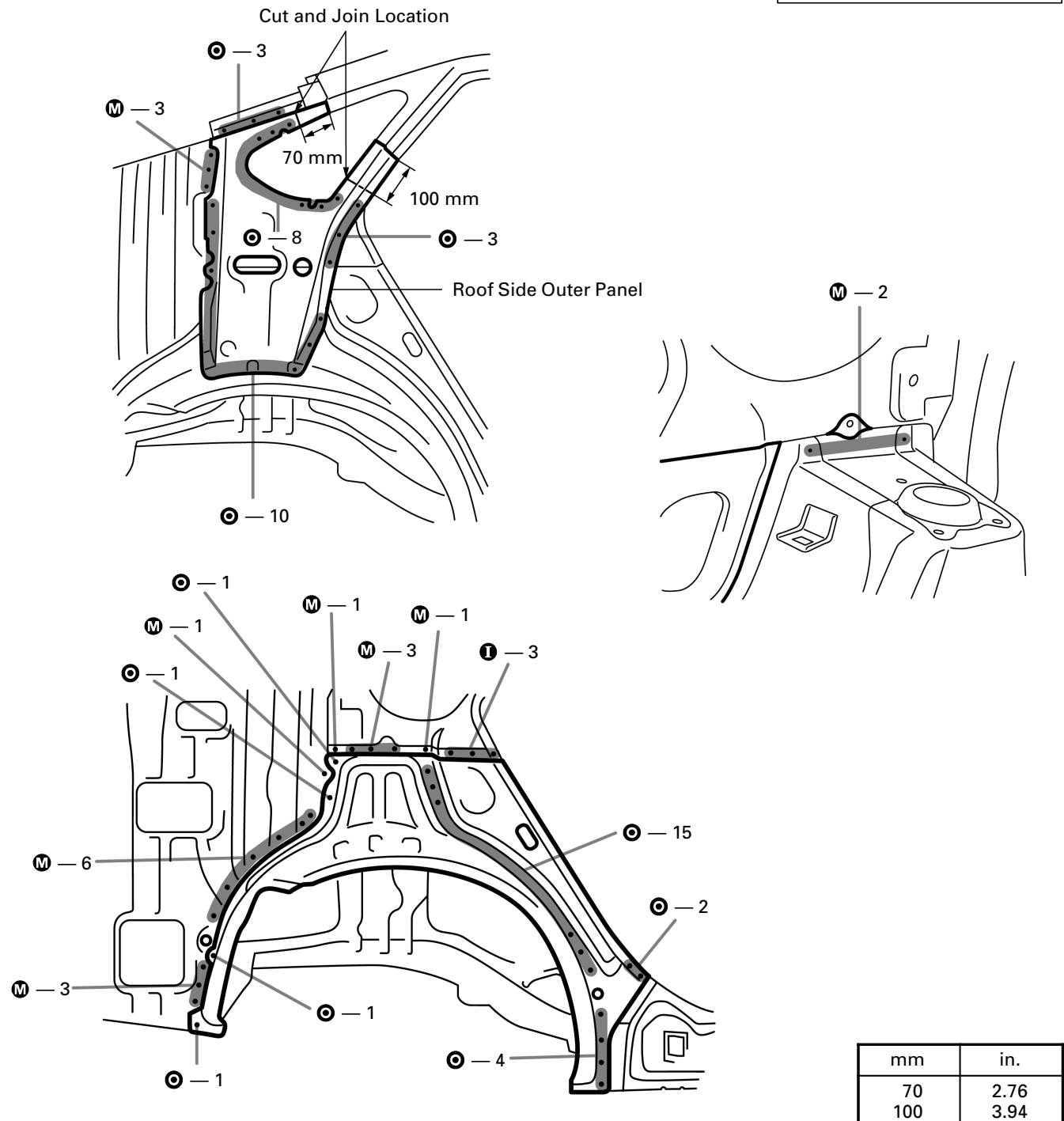


1. Determine the position of the new parts by the assembly marks of the inner and outer panels.
2. Before welding the new parts, temporarily install the quarter panel and check the fit.

## QUARTER WHEEL HOUSING OUTER PANEL (ASSY): Liftback RH



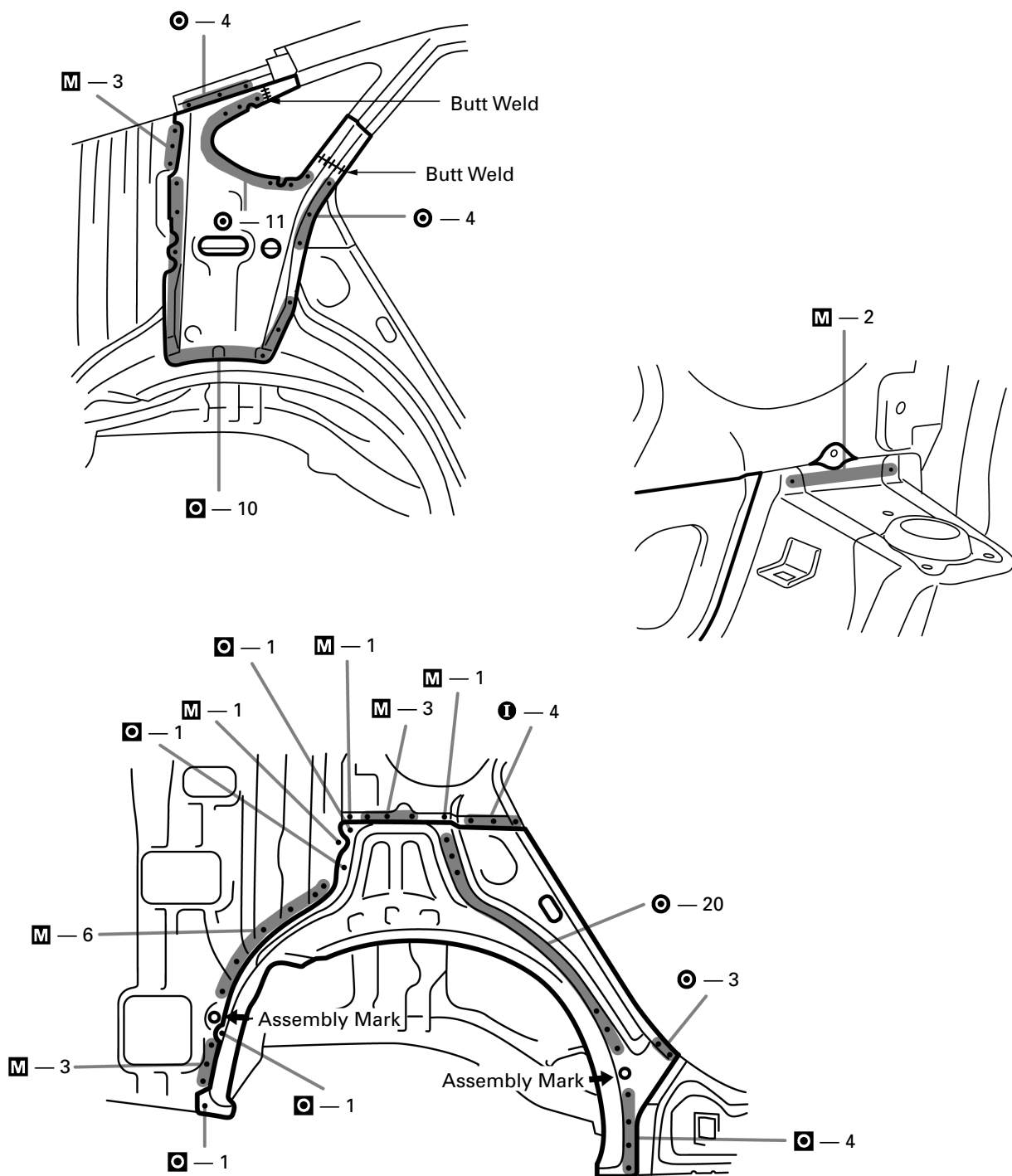
### REMOVAL (With the quarter panel removed.)



1. Cut the roof side outer panel at the location shown in the above figure and remove the quarter wheel housing outer panel.

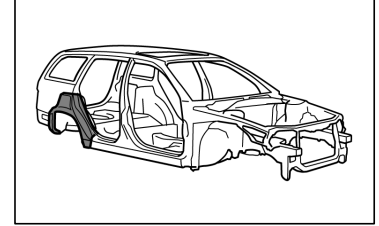


## INSTALLATION

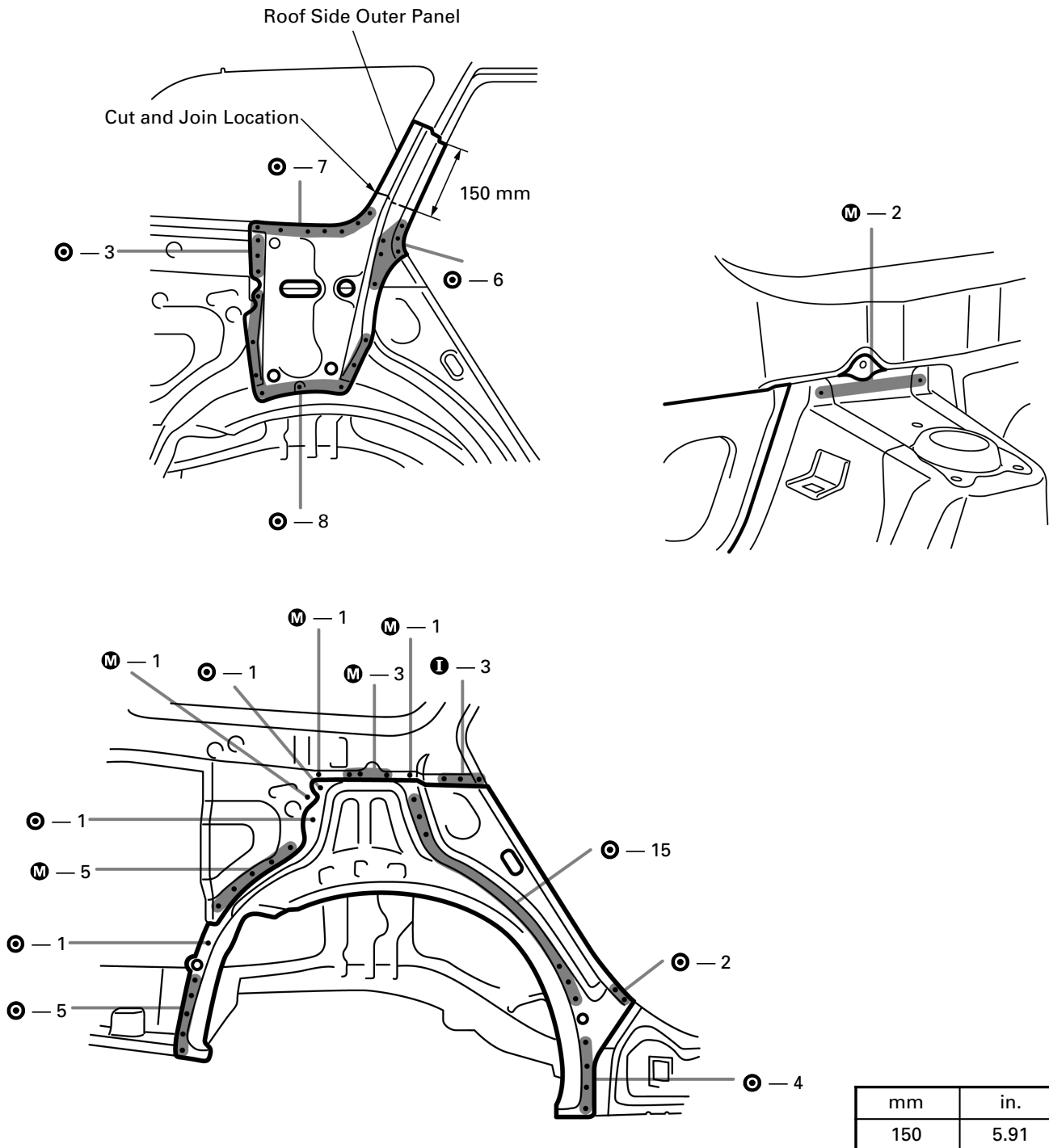


1. Determine the position of the new parts by the assembly marks of the inner and outer panels.
2. Before welding the new parts, temporarily install the quarter panel and check the fit.

## QUARTER WHEEL HOUSING OUTER PANEL (ASSY): Wagon RH

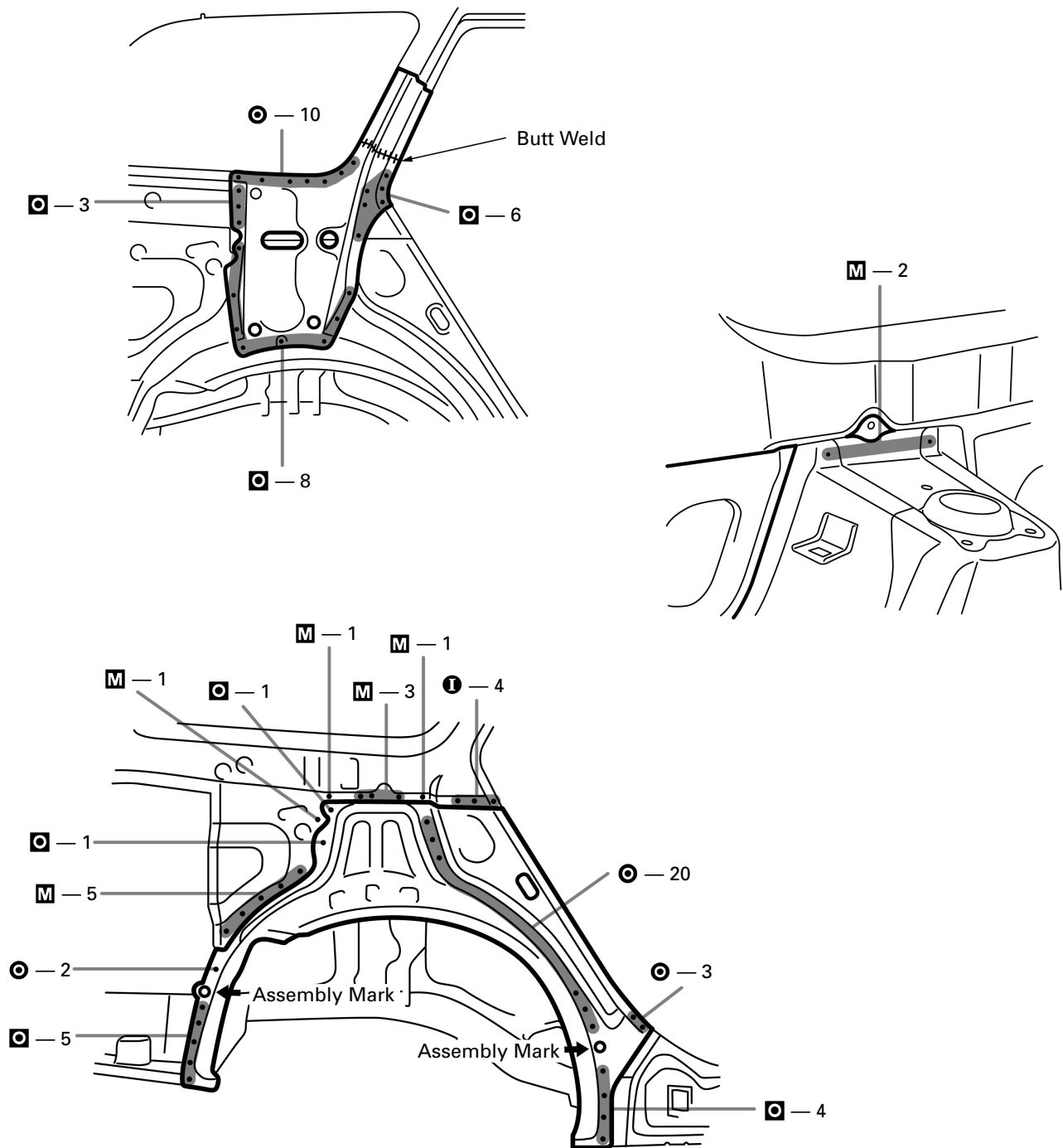


### REMOVAL (With the quarter panel removed.)



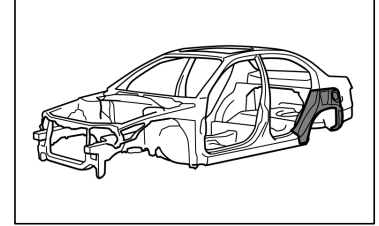
1. Cut the roof side outer panel at the location shown in the above figure and remove the quarter wheel housing outer panel.

## INSTALLATION

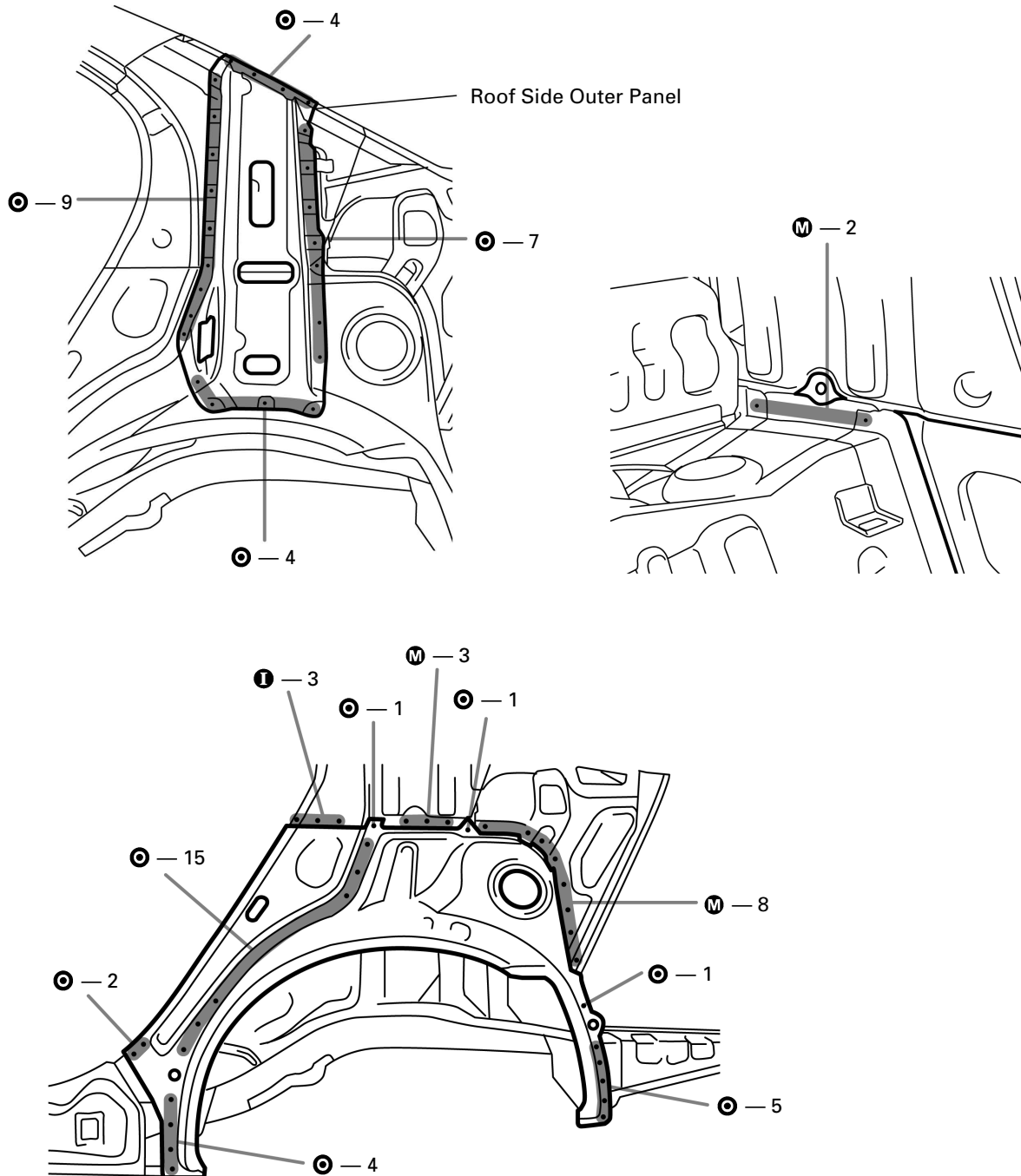


1. Determine the position of the new parts by the assembly marks of the inner and outer panels.
2. Before welding the new parts, temporarily install the quarter panel and check the fit.

## QUARTER WHEEL HOUSING OUTER PANEL (ASSY): Sedan LH

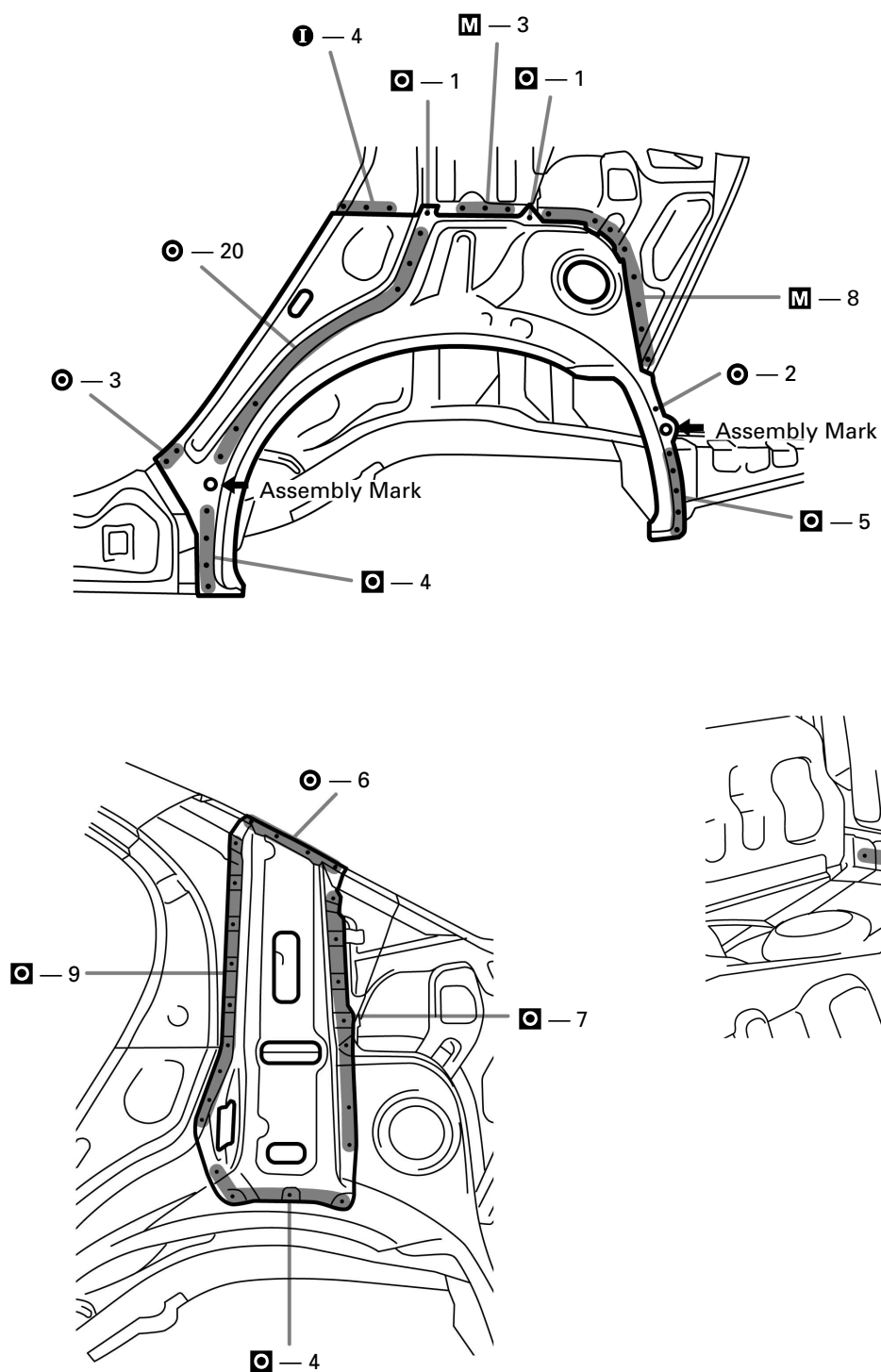


**REMOVAL (With the quarter panel removed.)**



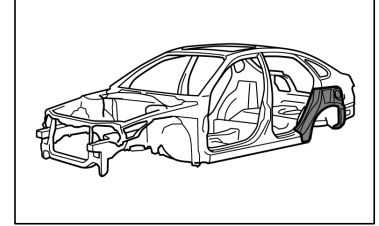
1. After removing the roof side outer panel, remove the quarter wheel housing outer panel.

## INSTALLATION

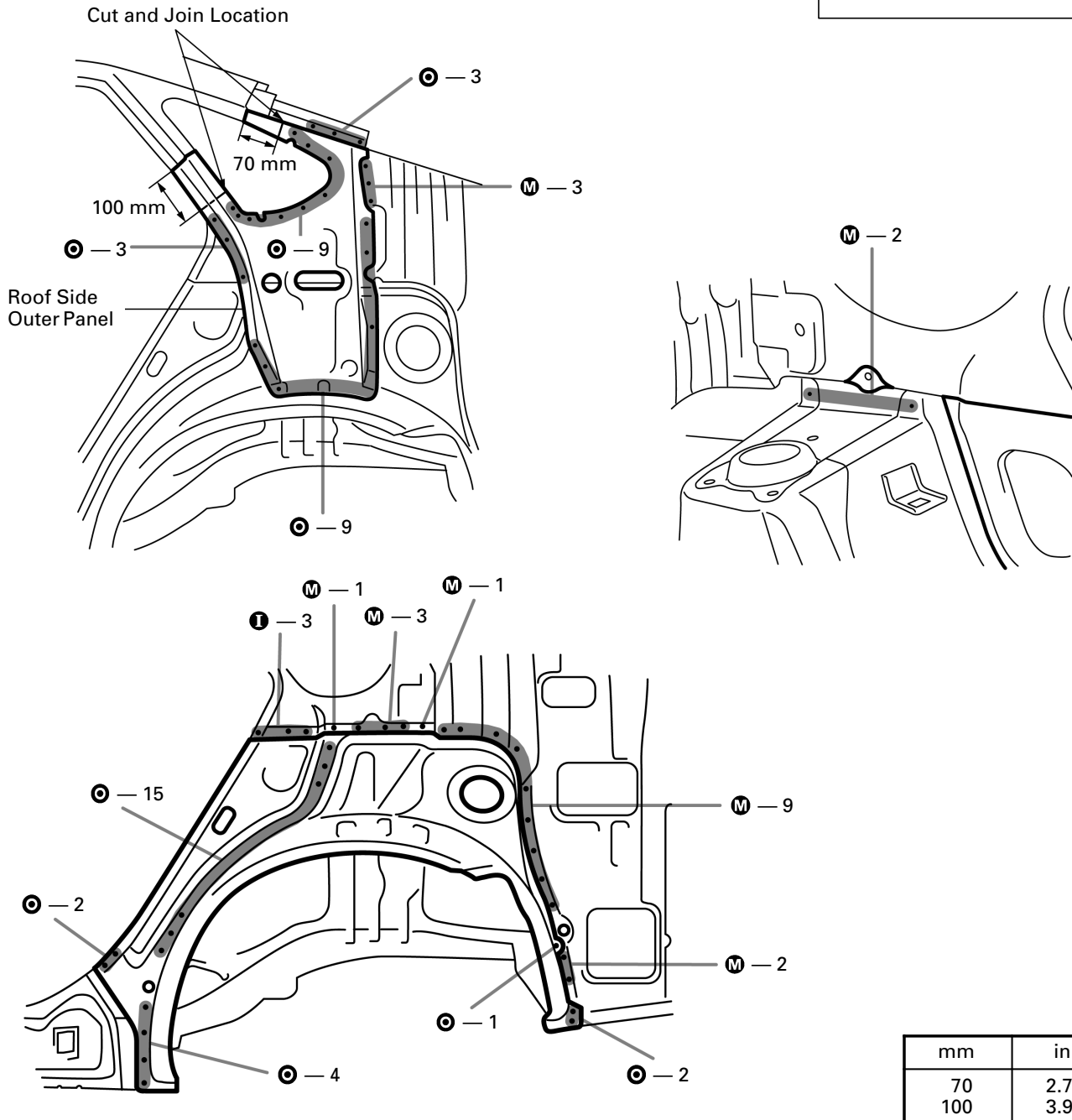


1. Determine the position of the new parts by the assembly marks of the inner and outer panels.
2. Before welding the new parts, temporarily install the quarter panel and check the fit.

## QUARTER WHEEL HOUSING OUTER PANEL (ASSY): Liftback LH

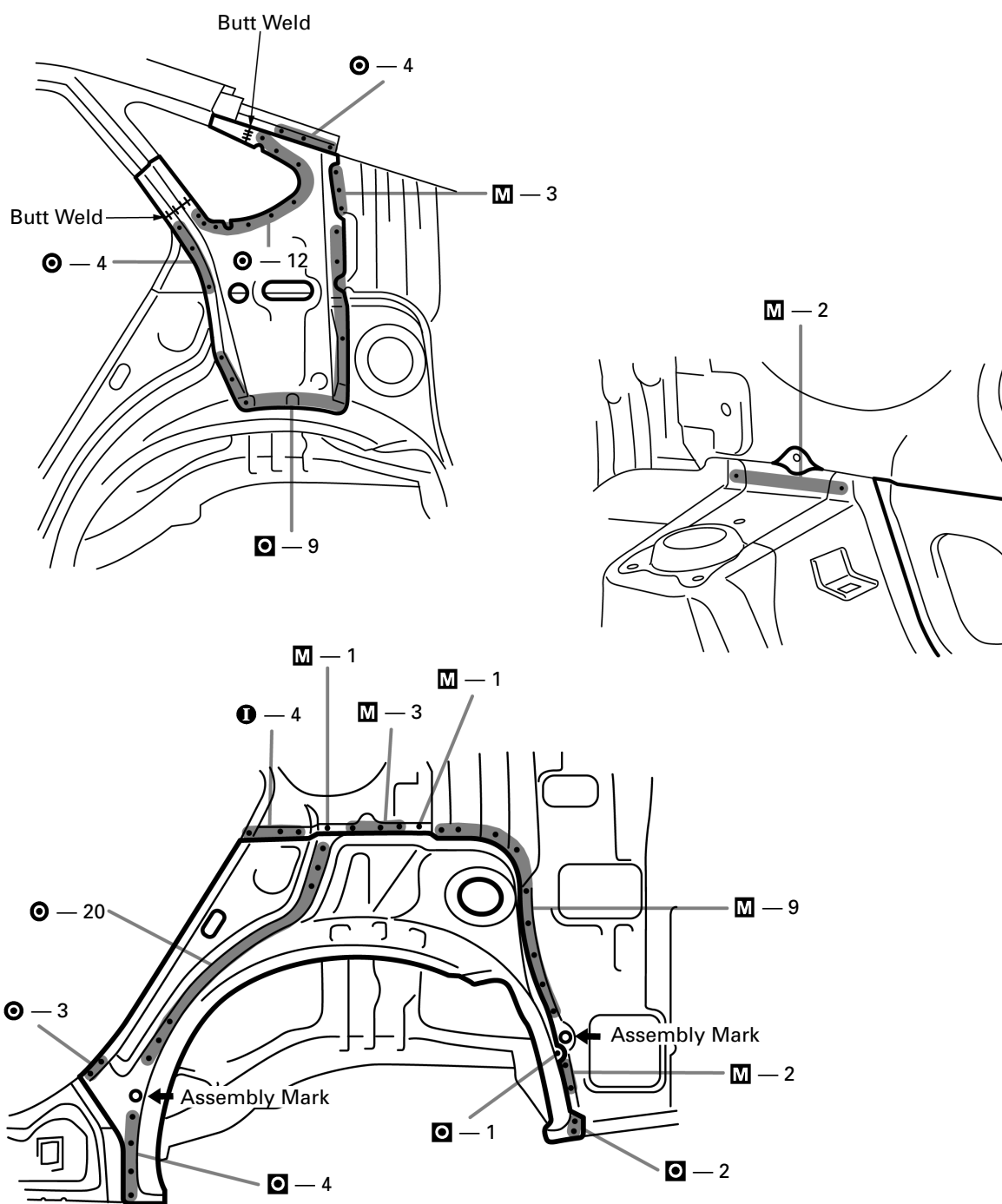


### REMOVAL (With the quarter panel removed.)



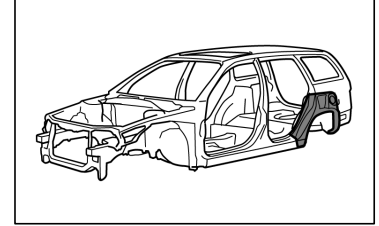
1. Cut the roof side outer panel at the location shown in the above figure and remove the quarter wheel housing outer panel.

## INSTALLATION

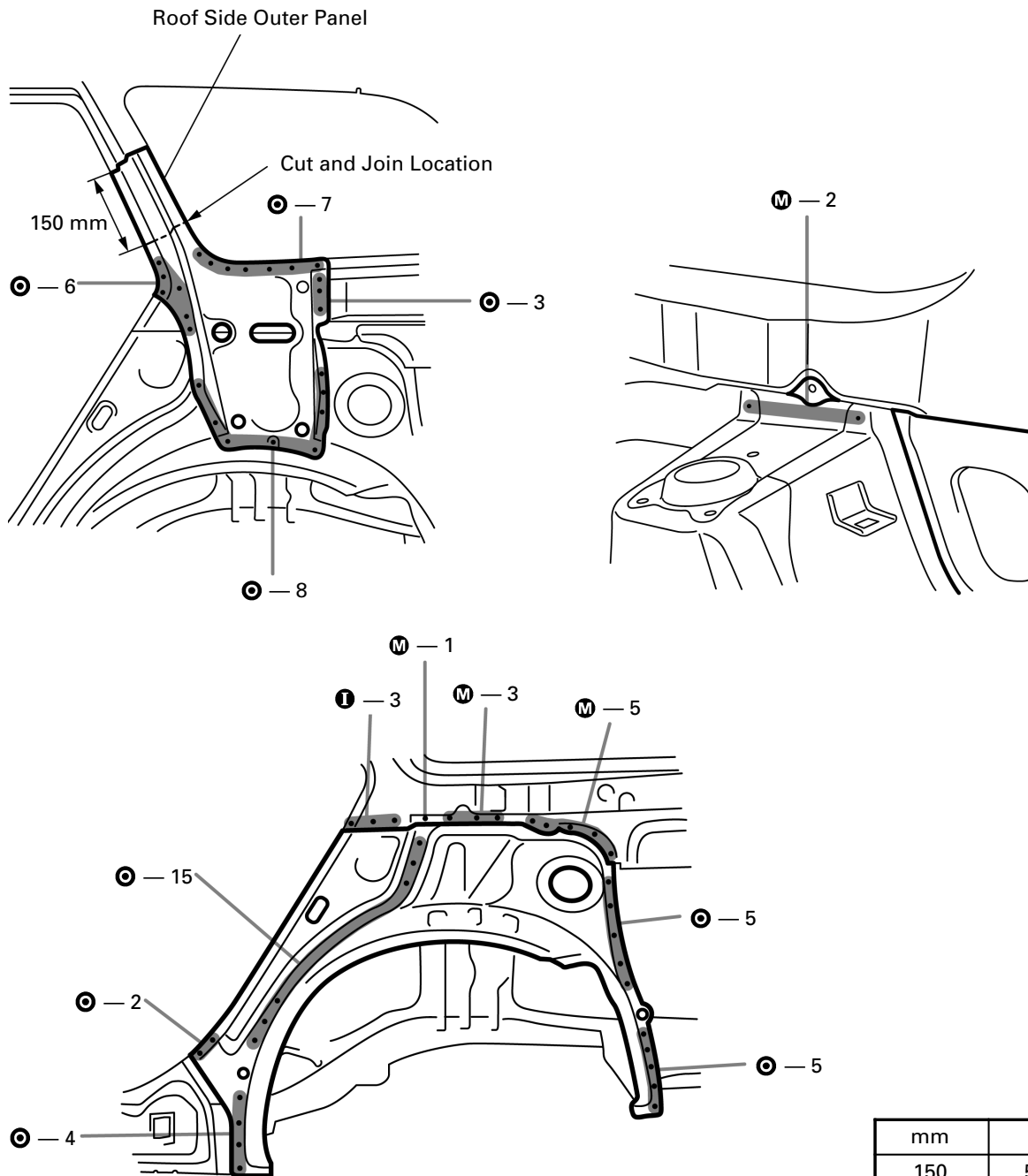


1. Determine the position of the new parts by the assembly marks of the inner and outer panels.
2. Before welding the new parts, temporarily install the quarter panel and check the fit.

## QUARTER WHEEL HOUSING OUTER PANEL (ASSY): Wagon LH



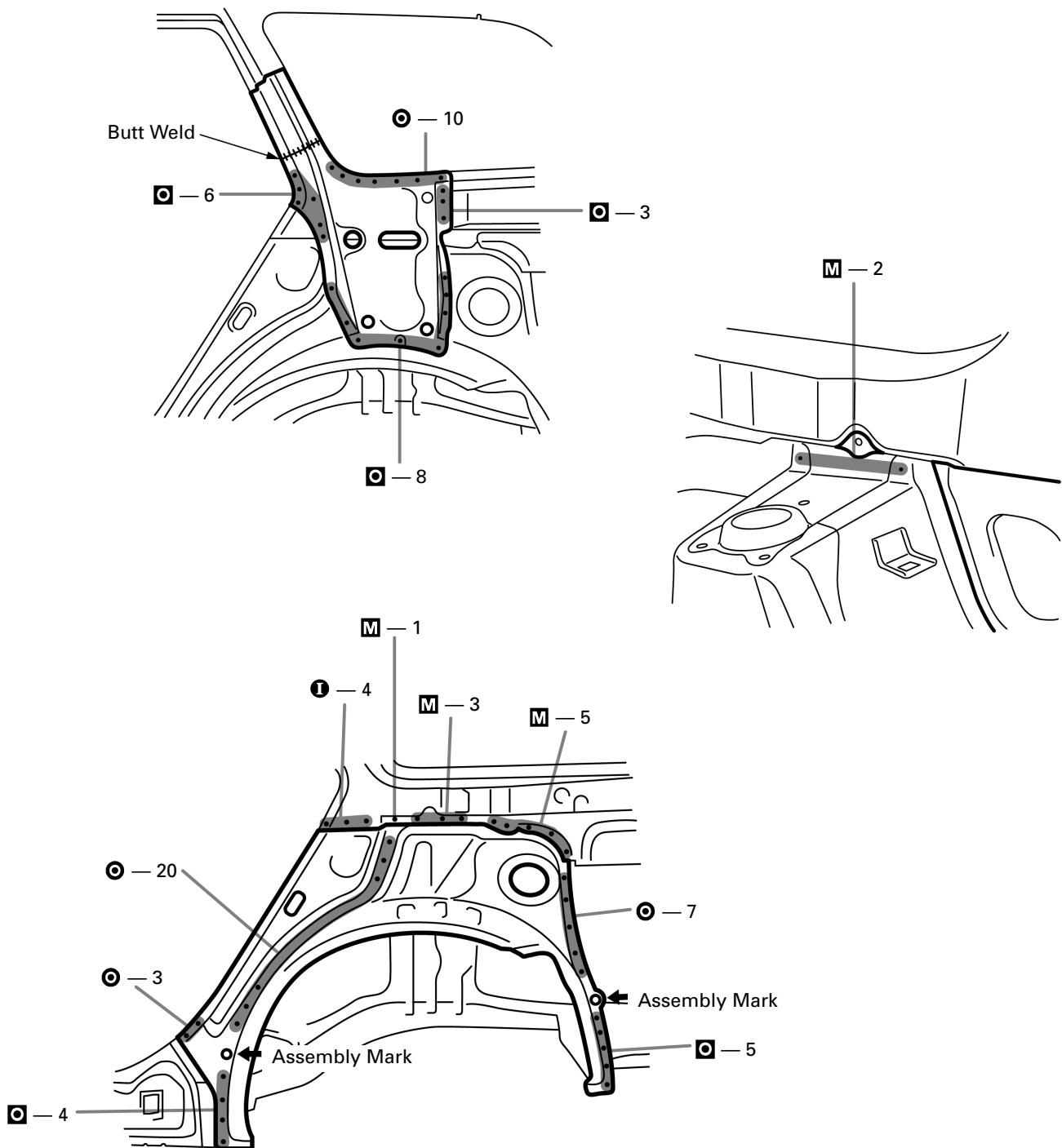
### REMOVAL (With the quarter panel removed.)



1. Cut the roof side outer panel at the location shown in the above figure and remove the quarter wheel housing outer panel.

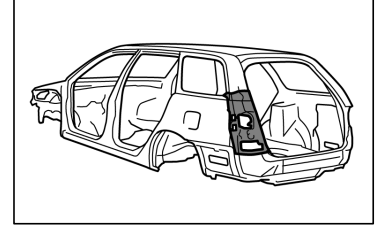


## INSTALLATION

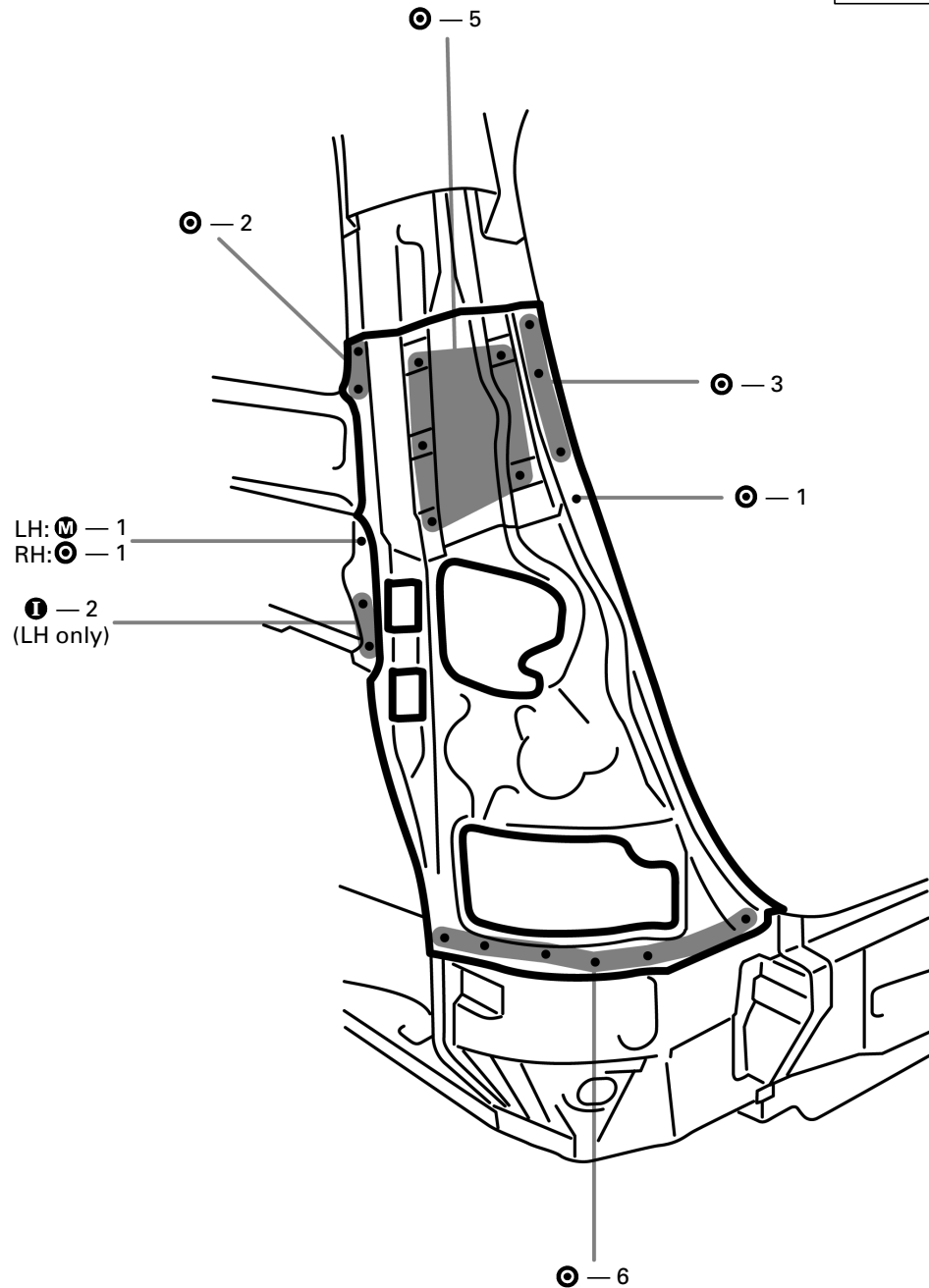


1. Determine the position of the new parts by the assembly marks of the inner and outer panels.
2. Before welding the new parts, temporarily install the quarter panel and check the fit.

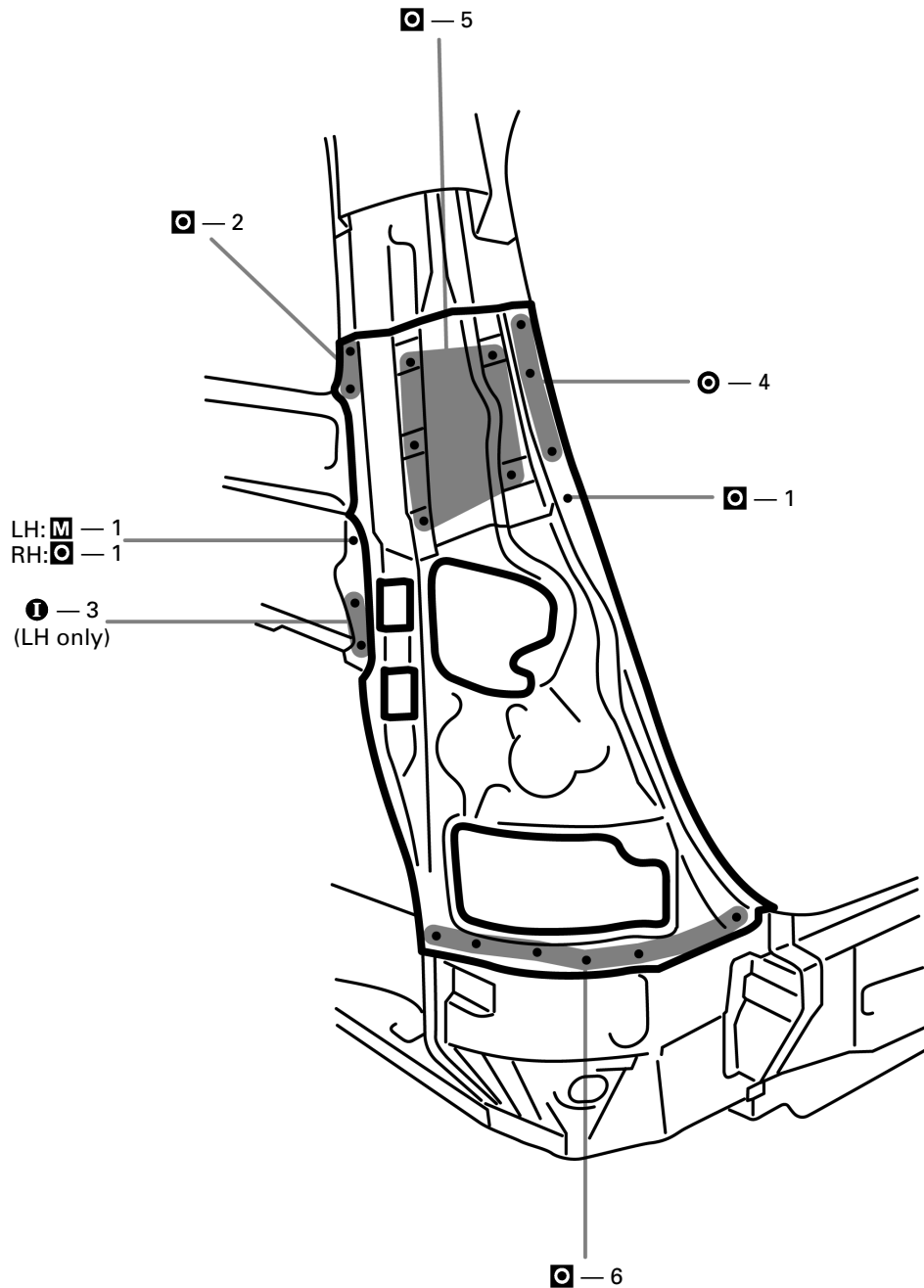
## BACK DOOR OPENING REINFORCEMENT (ASSY): Wagon



**REMOVAL (With the quarter panel removed.)**



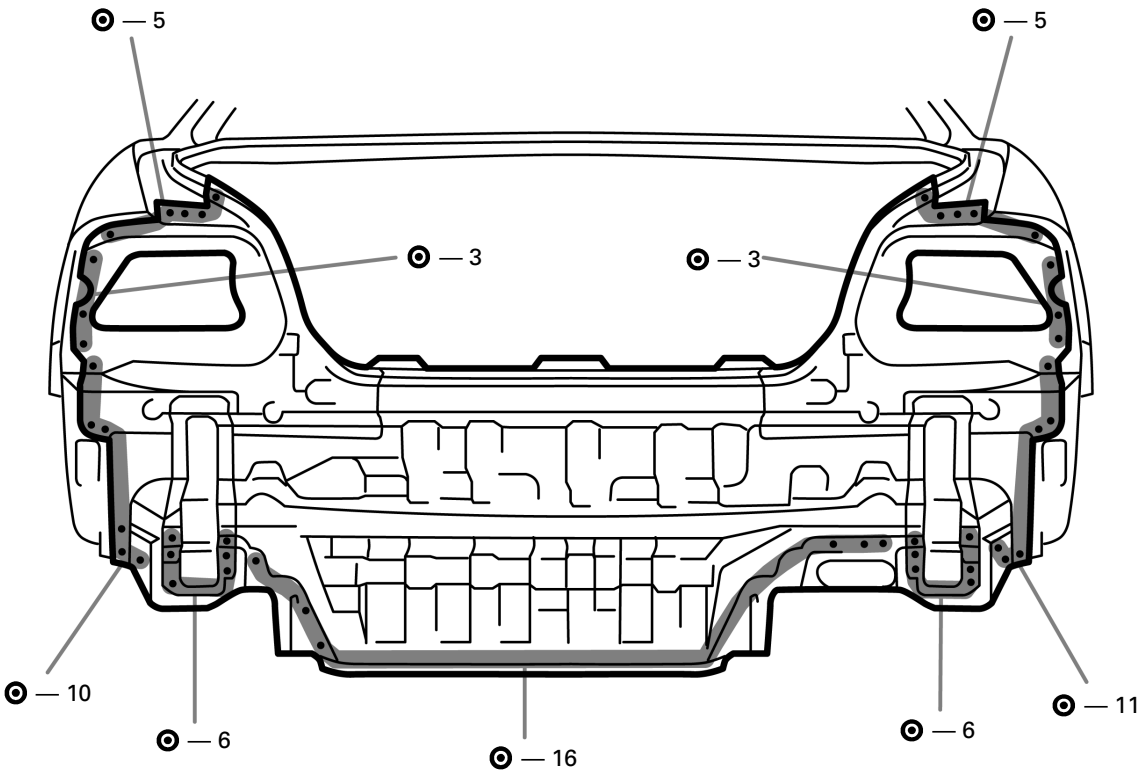
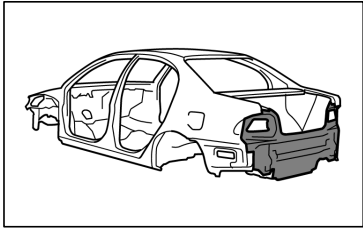
## INSTALLATION



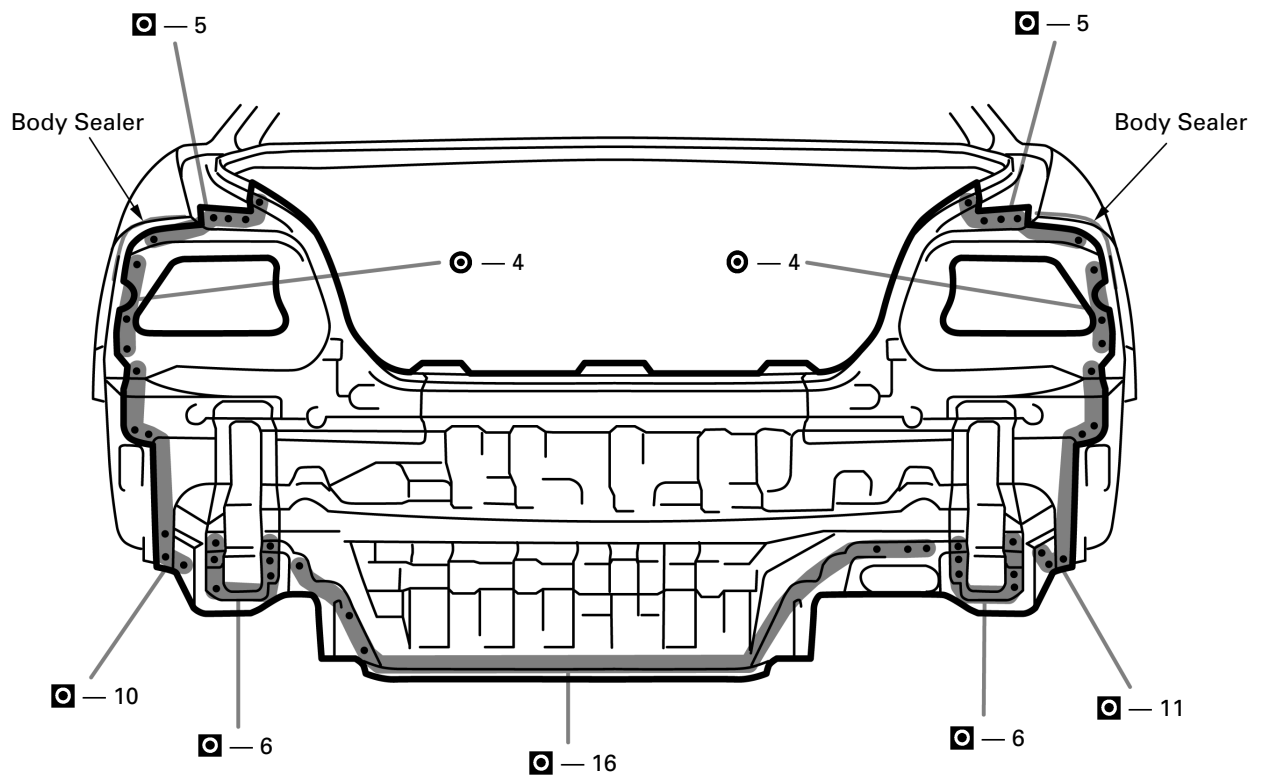
1. Before welding the new parts, temporarily install the quarter panel and check the fit.

**BODY LOWER BACK PANEL (ASSY): Sedan**

**REMOVAL**



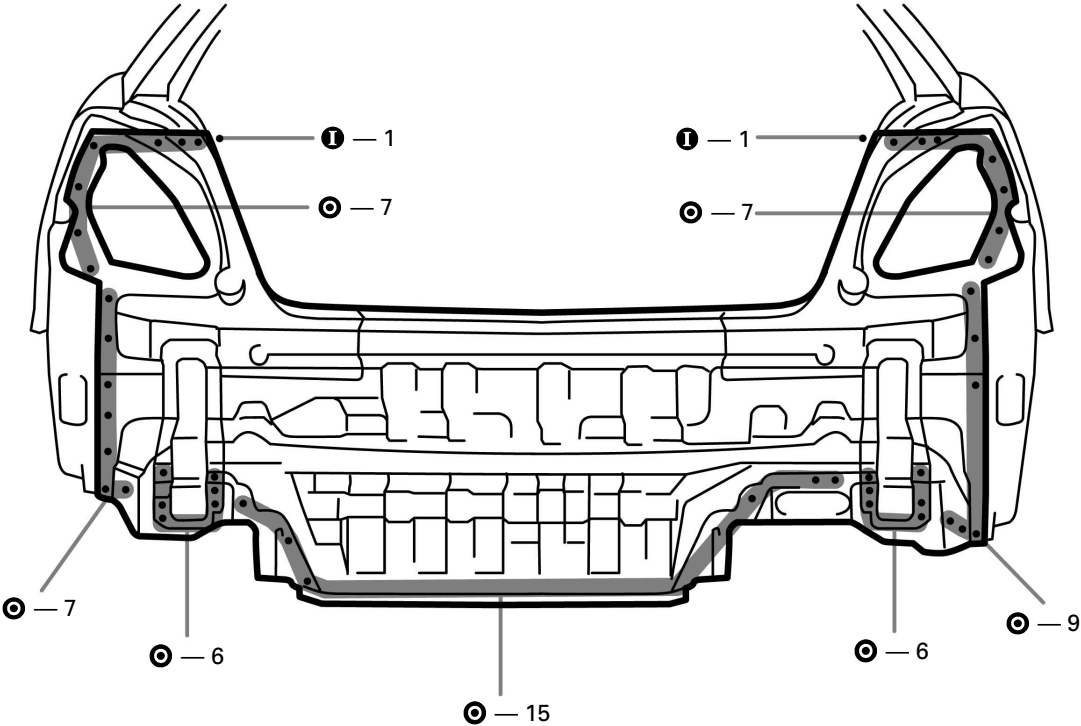
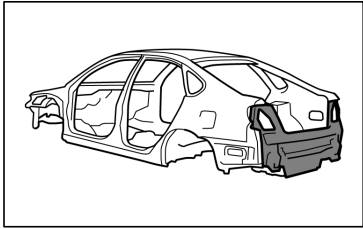
## INSTALLATION



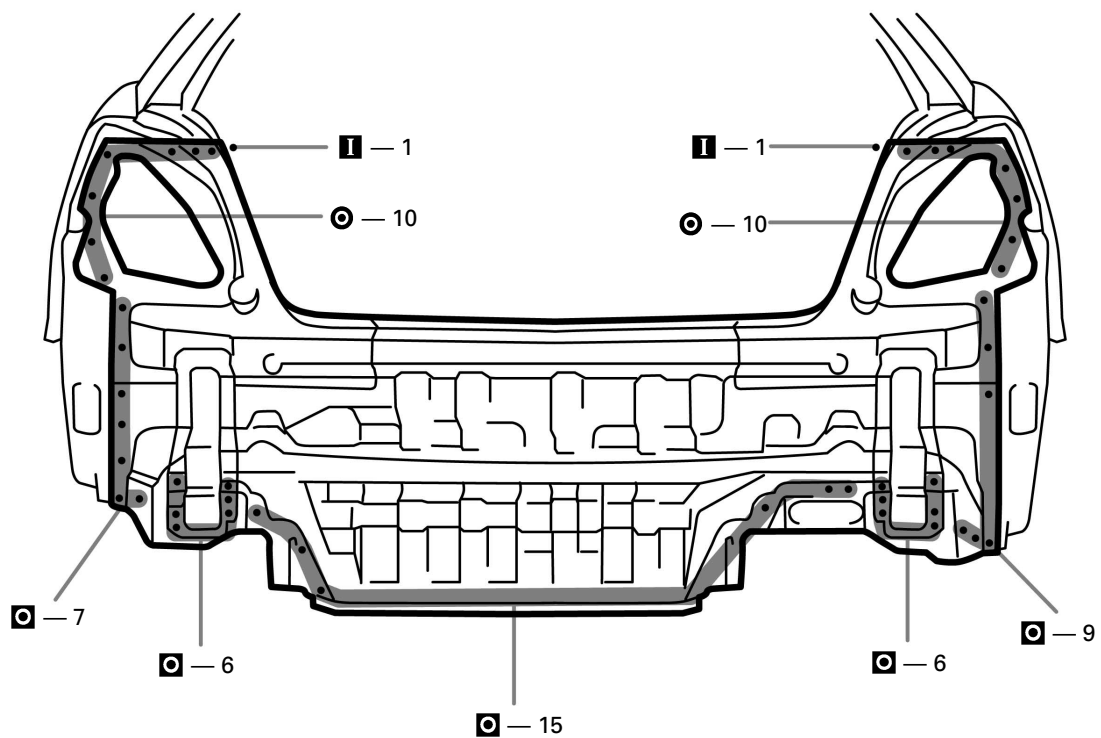
1. Temporarily install the new parts and check the fit of the luggage compartment door and rear combination light.

BODY LOWER BACK PANEL (ASSY): Liftback

REMOVAL



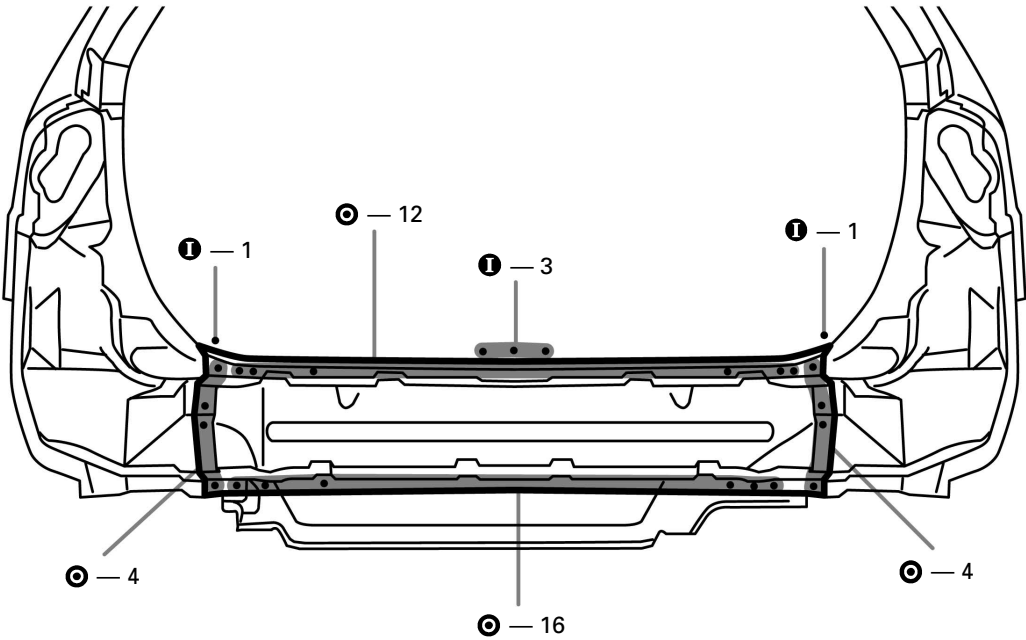
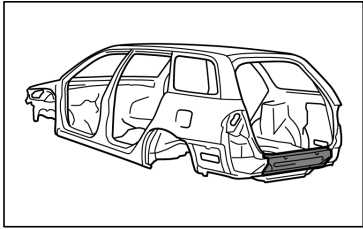
## INSTALLATION



1. Temporarily install the new parts and check the fit of the back door and rear combination light.

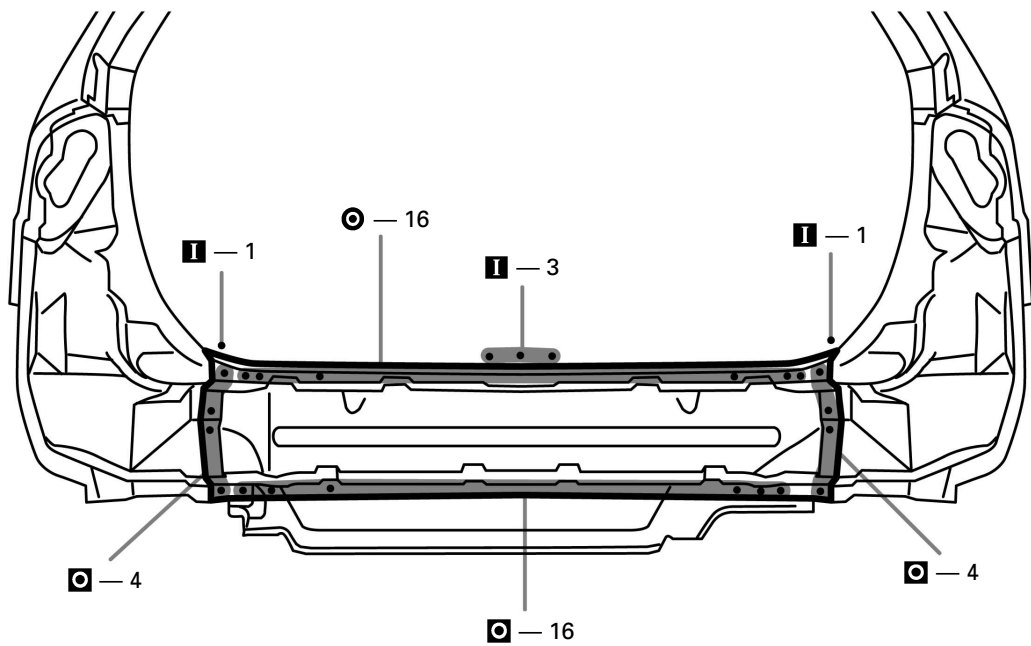
**BODY LOWER BACK PANEL (ASSY): Wagon**

**REMOVAL**

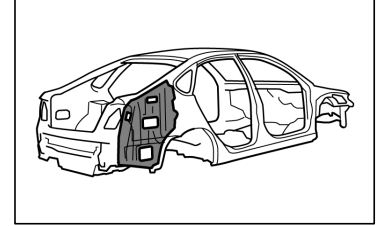




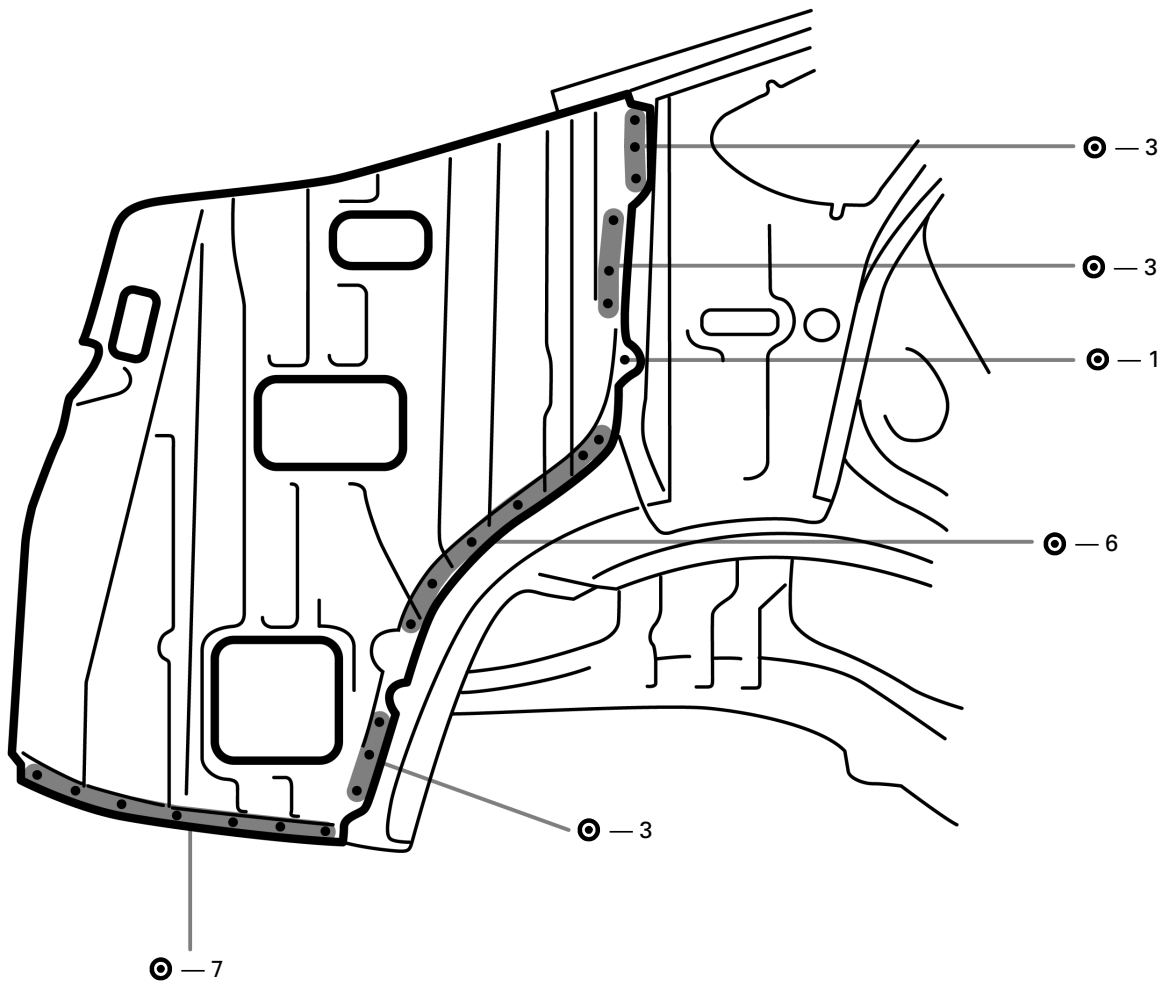
## INSTALLATION



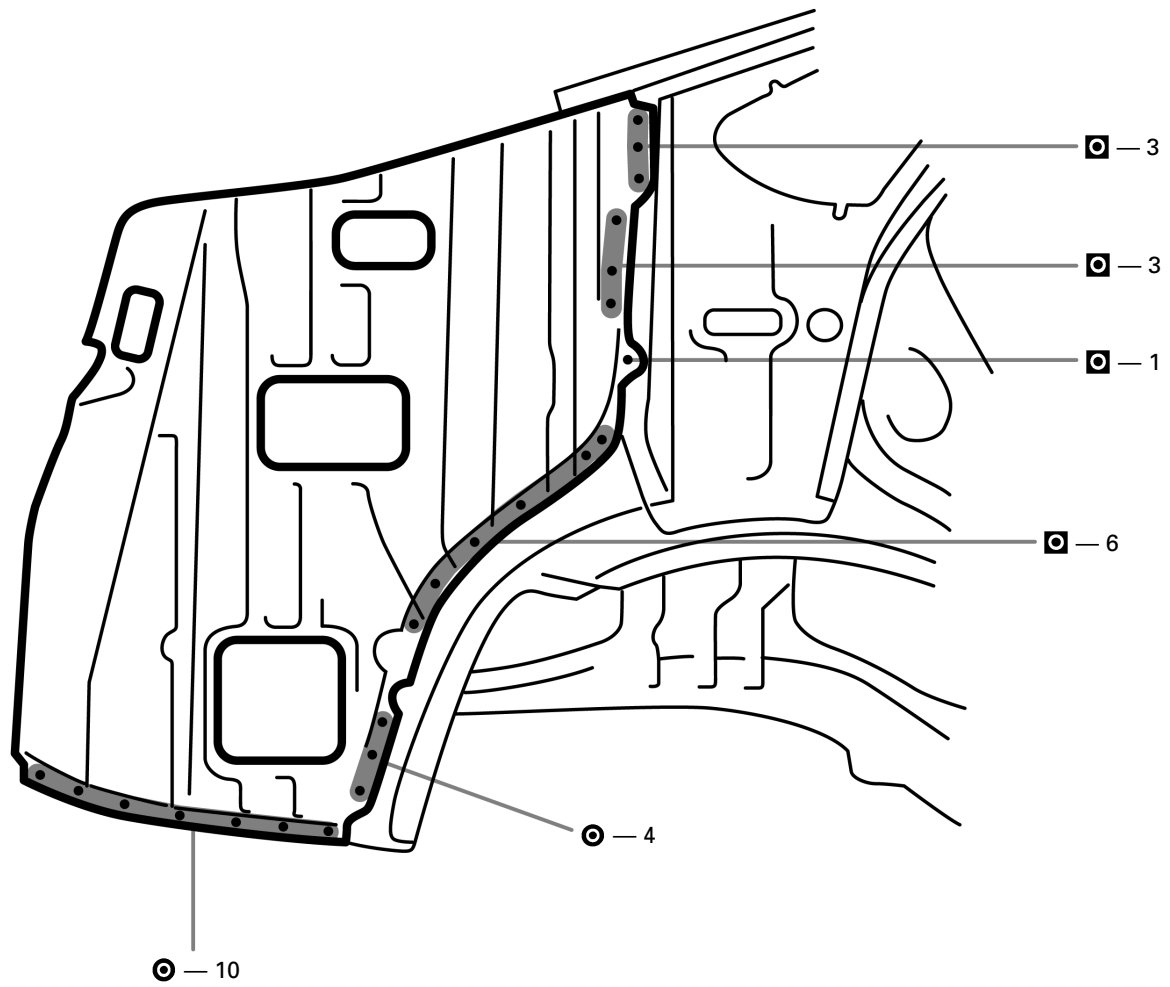
1. Temporarily install the new parts and check the fit of the back door.

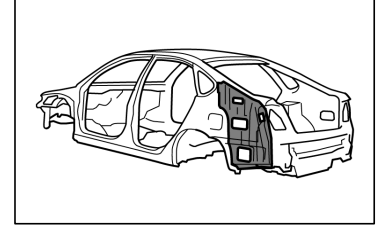
**ROOF SIDE INNER REAR PANEL (ASSY):  
Liftback RH**

**REMOVAL** (With the quarter panel and body lower back panel removed.)

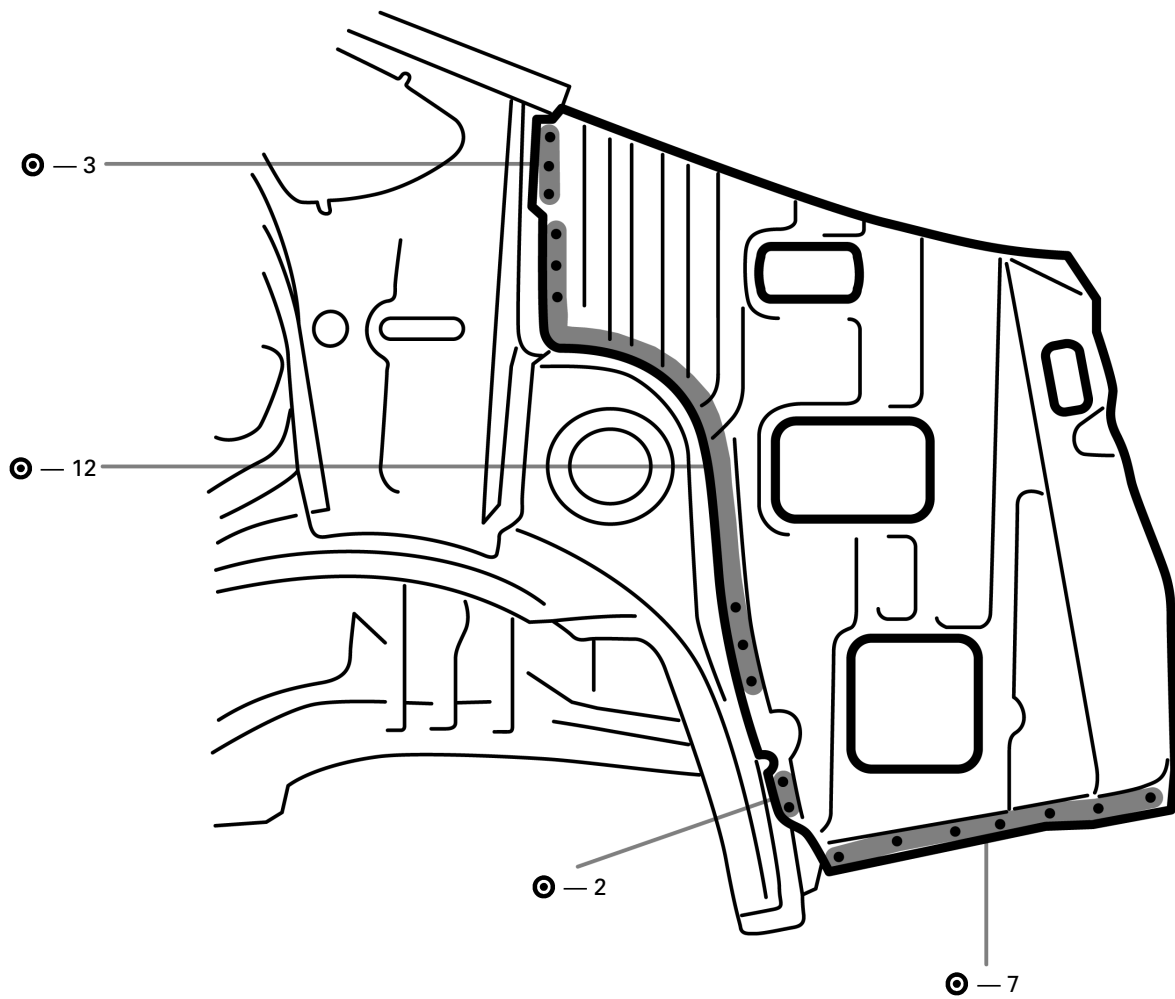


## INSTALLATION

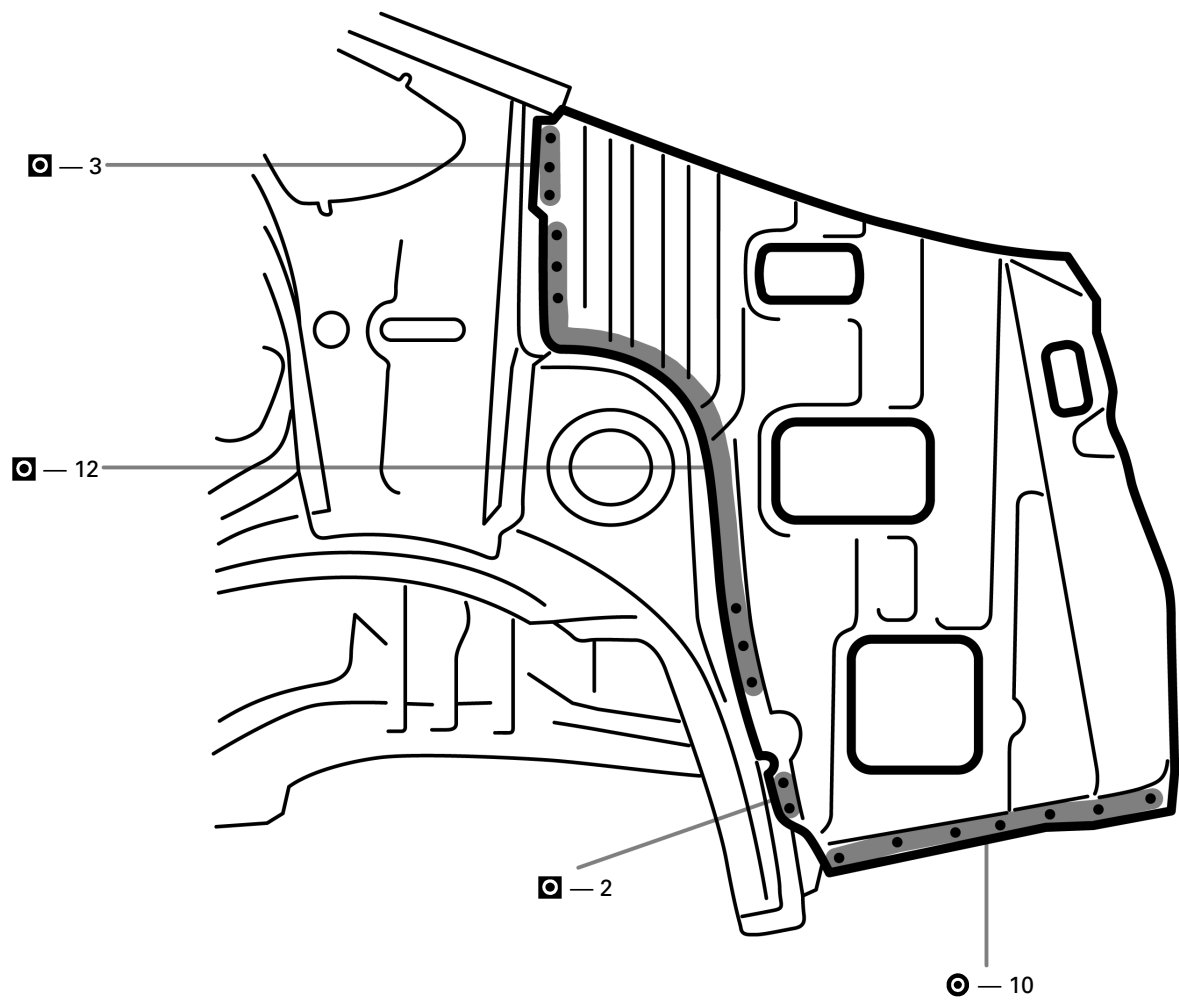


**ROOF SIDE INNER REAR PANEL (ASSY):  
Liftback LH**

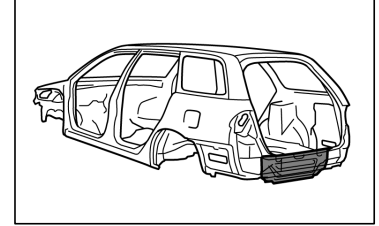
**REMOVAL** (With the quarter panel and body lower back panel removed.)



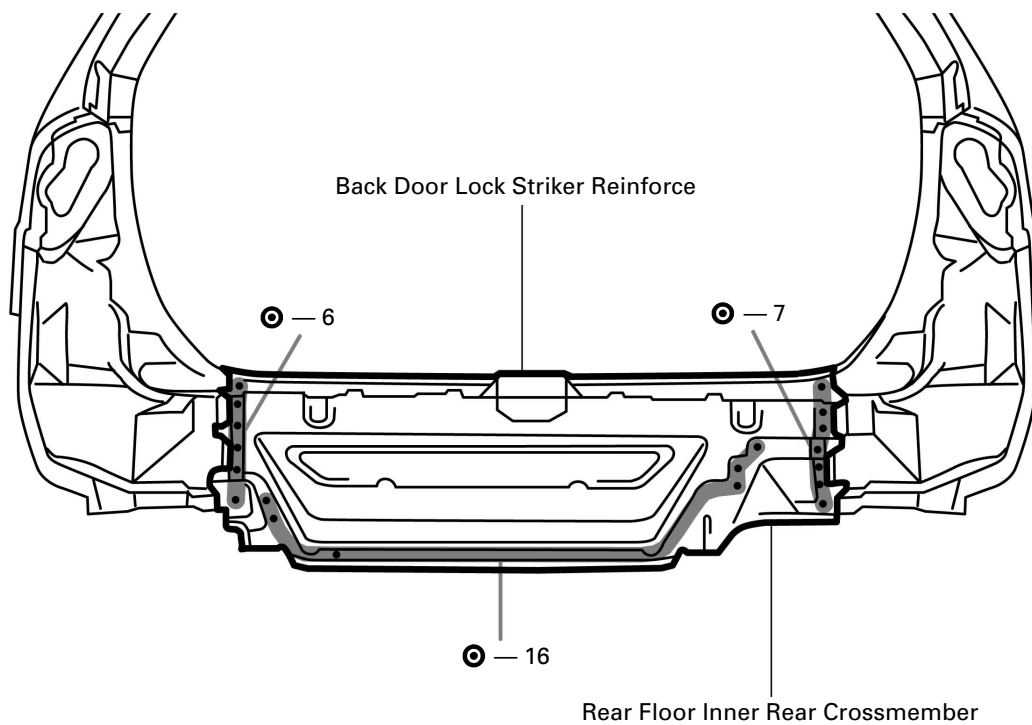
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**INSTALLATION**

## REAR FLOOR INNER REAR CROSSMEMBER (CUT-H): Wagon

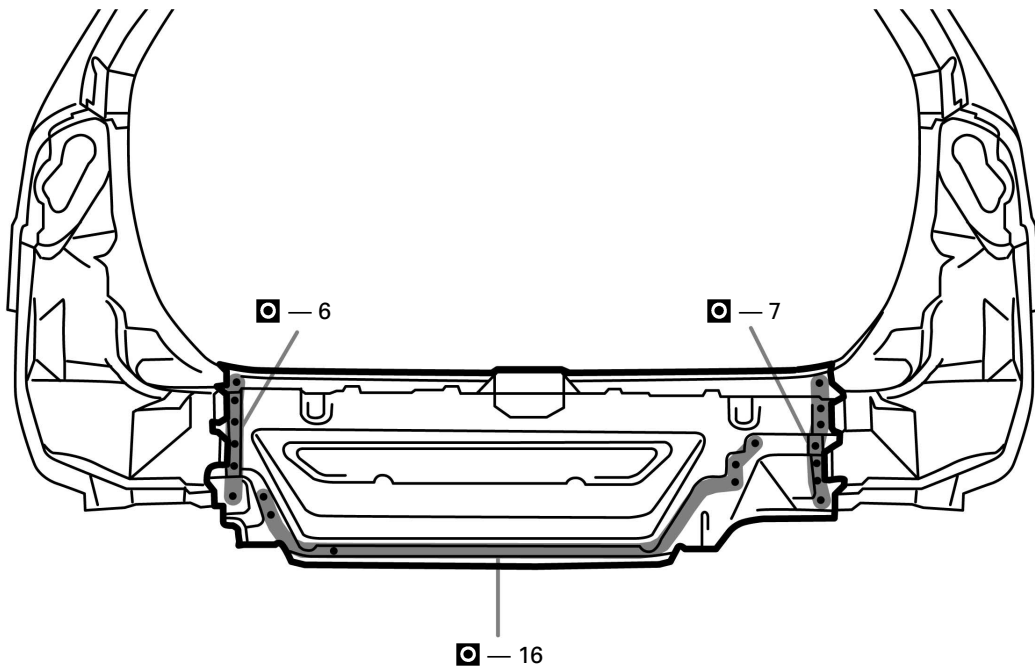


**REMOVAL** (With the body lower back panel removed.)



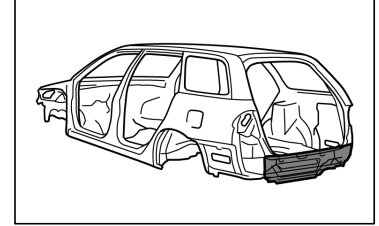
1. Remove the back door lock striker reinforce and rear floor inner rear crossmember.

---

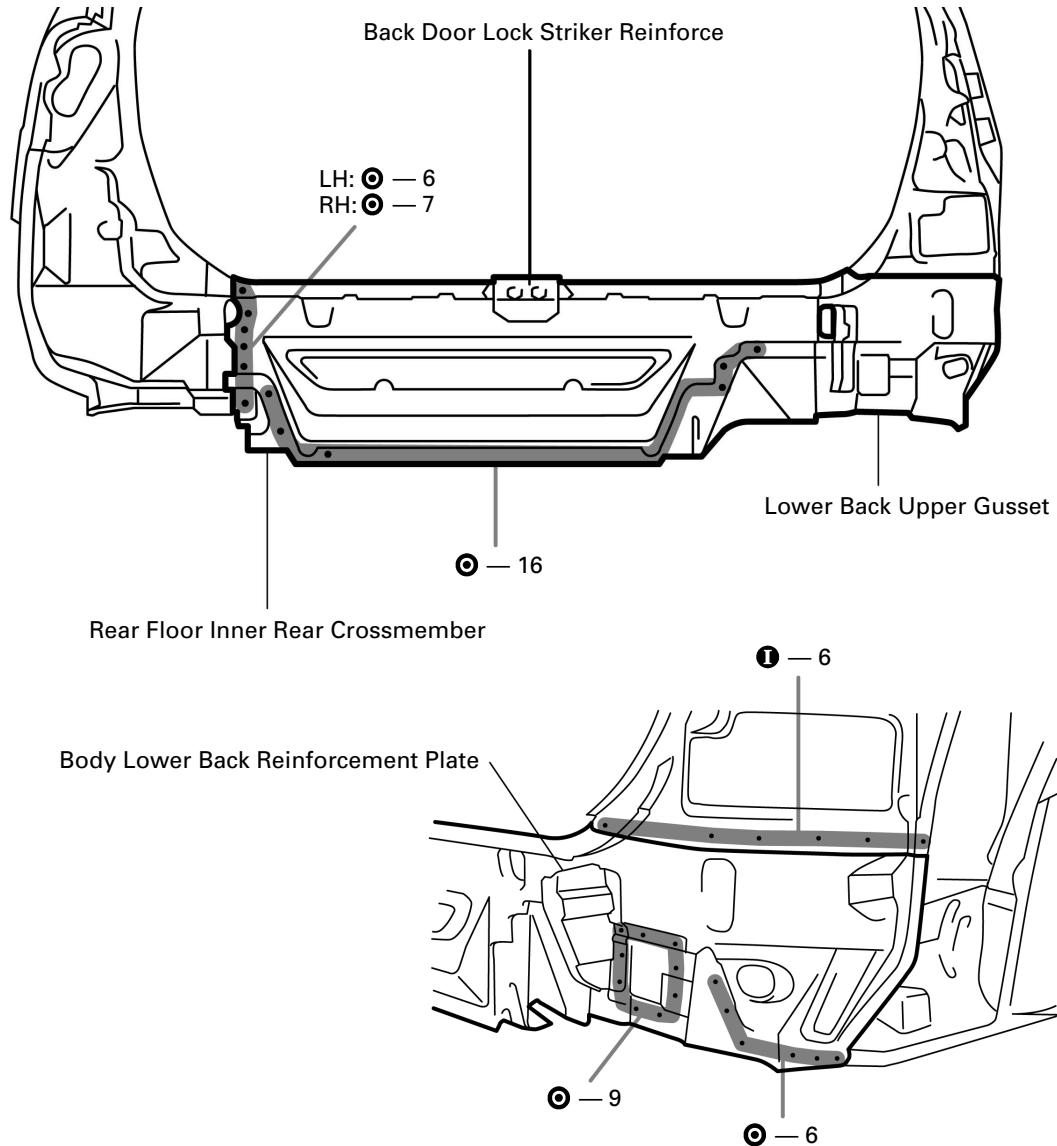
**INSTALLATION**

- 
1. Before welding the new parts, temporarily install the body lower back panel and check the fit.

## REAR FLOOR INNER REAR CROSSMEMBER (CUT): Wagon

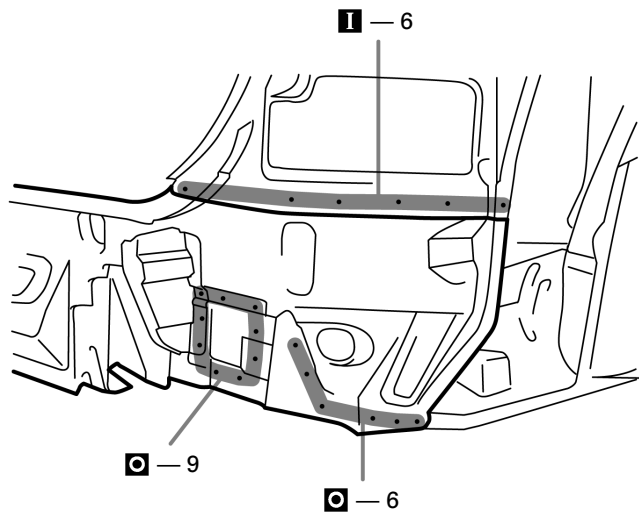
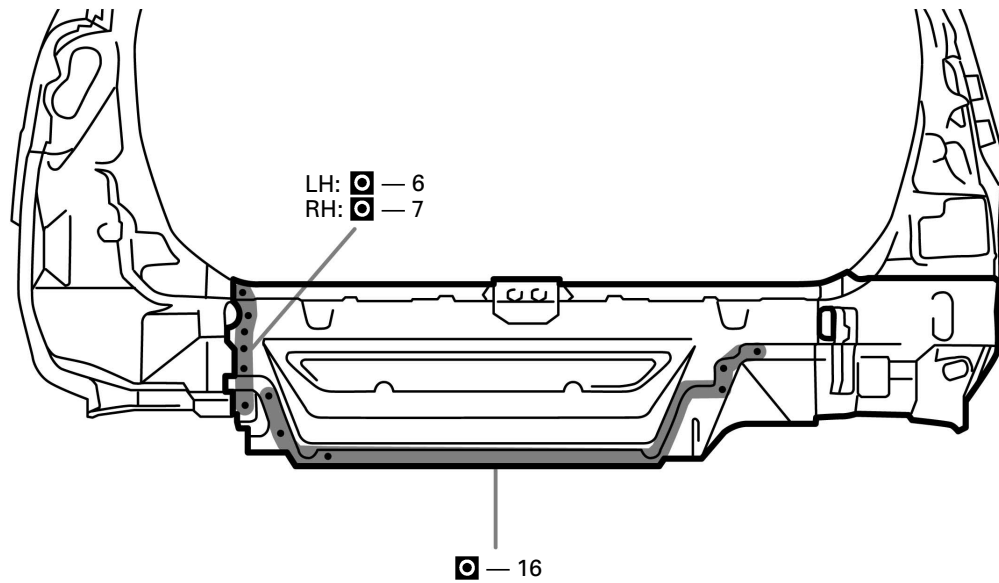


**REMOVAL** (With the quarter panel and body lower back panel removed.)



1. Remove the back door lock striker reinforce, rear floor inner rear crossmember, lower back upper gusset and body lower back reinforcement plate.

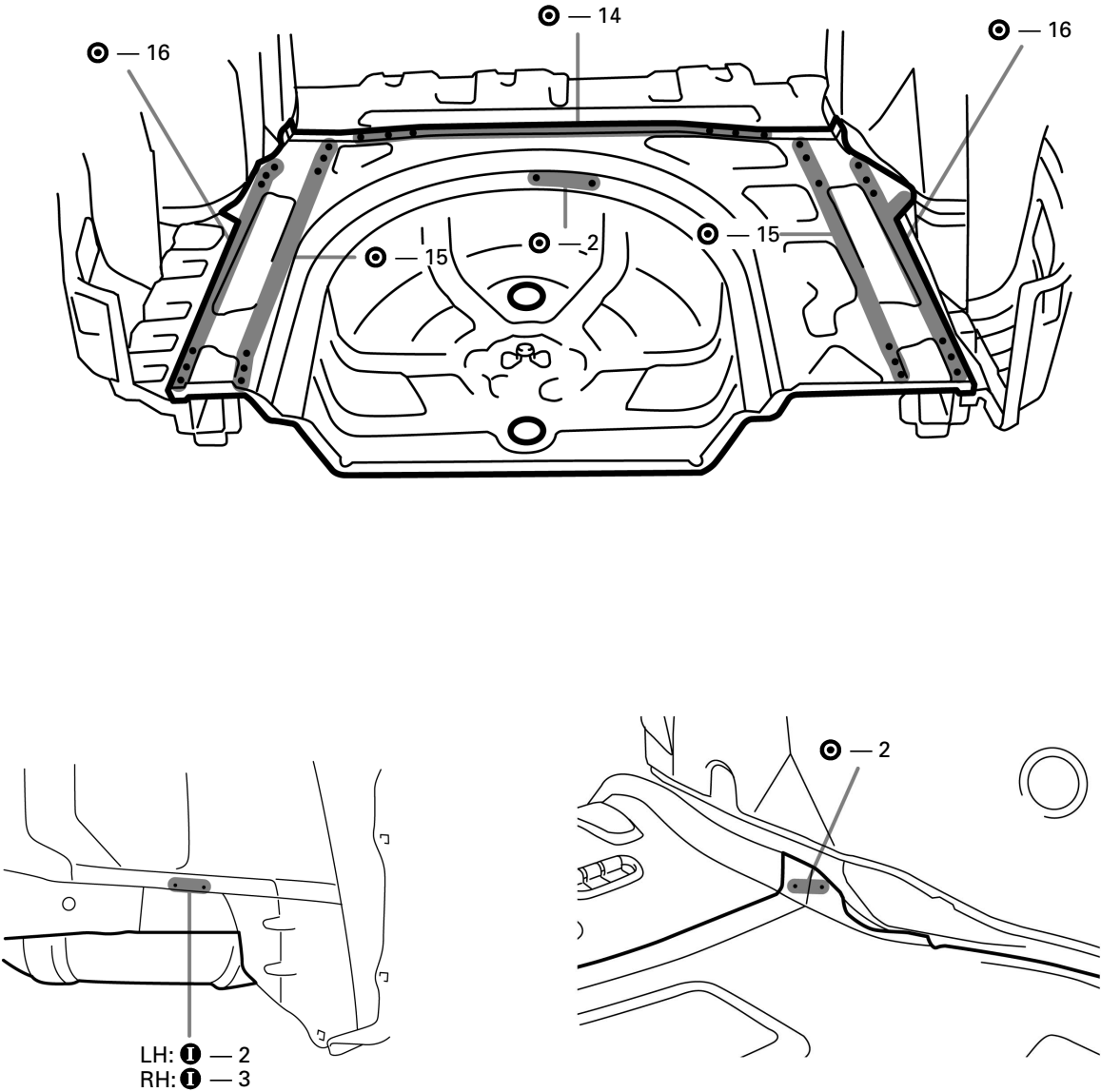
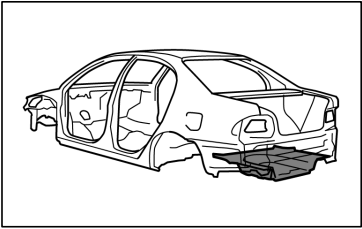


**INSTALLATION**

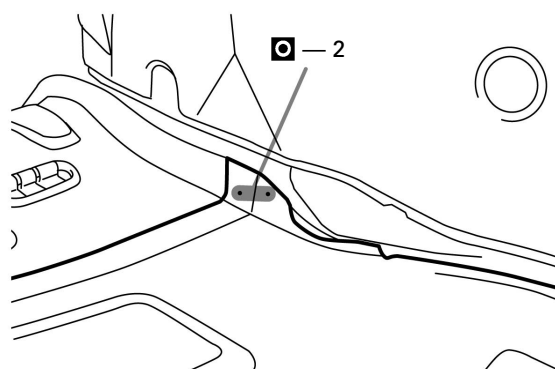
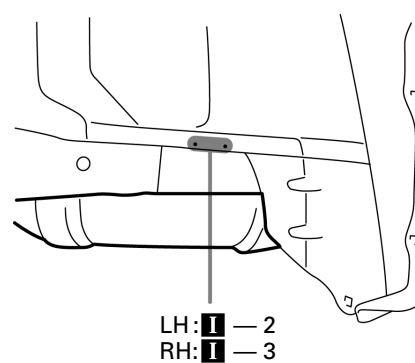
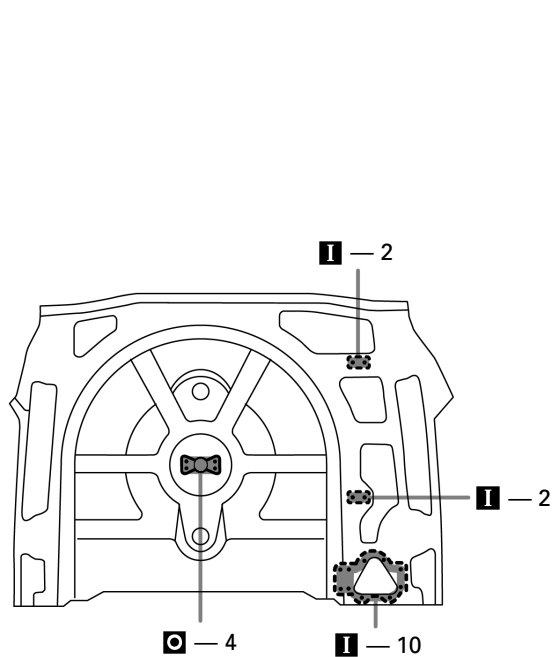
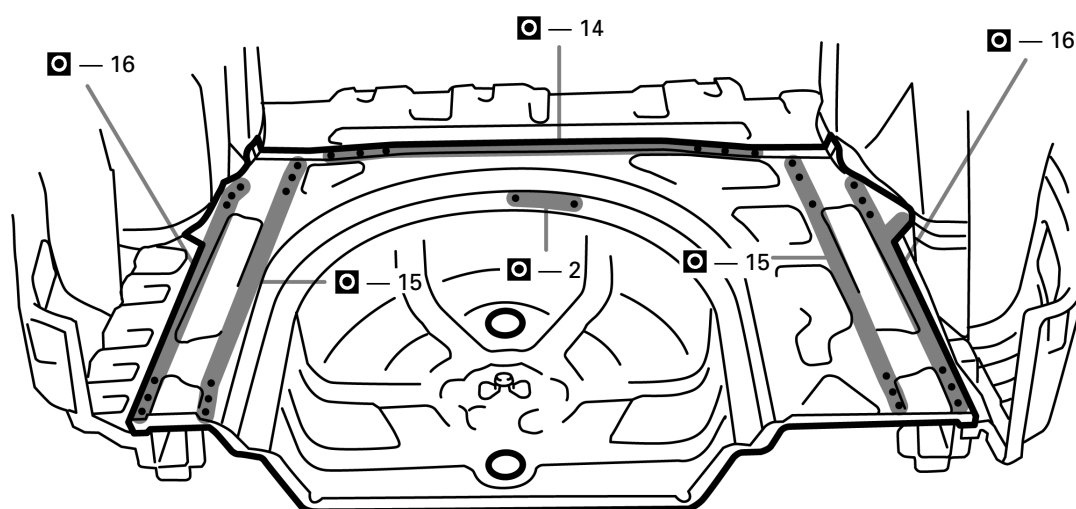
1. Before welding the new parts, temporarily install the quarter panel and body lower back panel and check the fit.

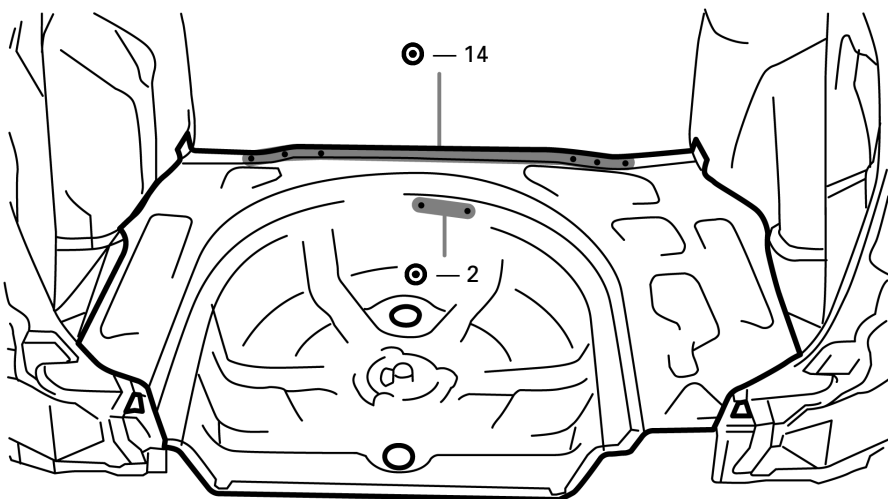
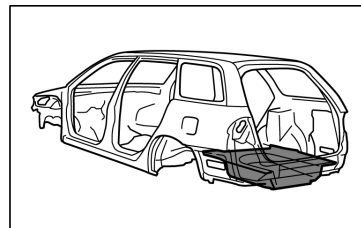
**REAR FLOOR PAN (ASSY): Sedan, Liftback**

**REMOVAL** (With the body lower back panel removed.)

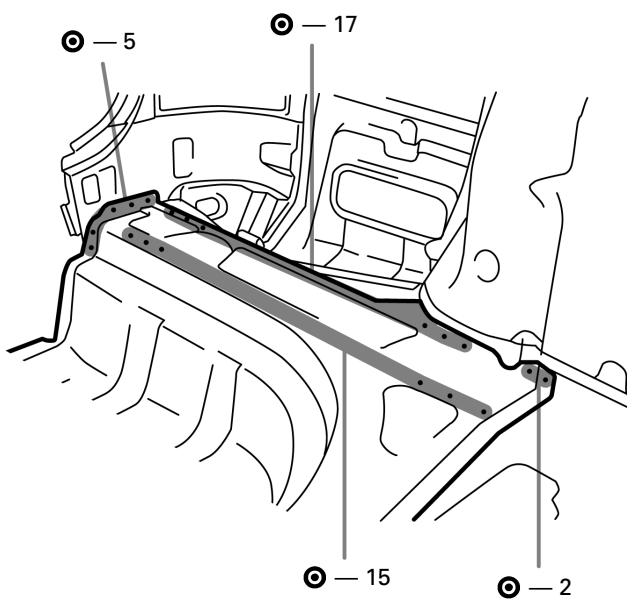
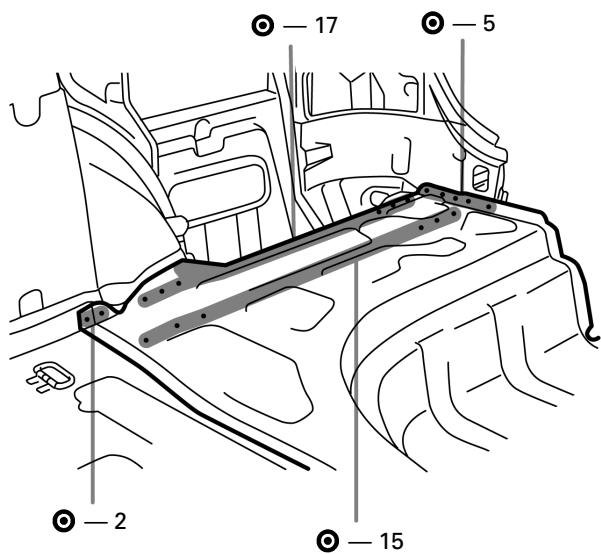
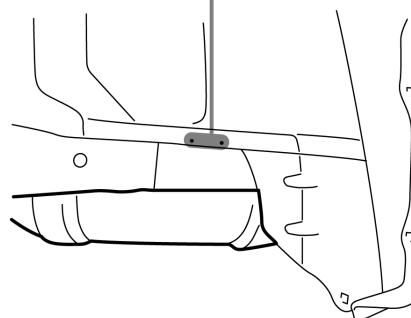


# INSTALLATION

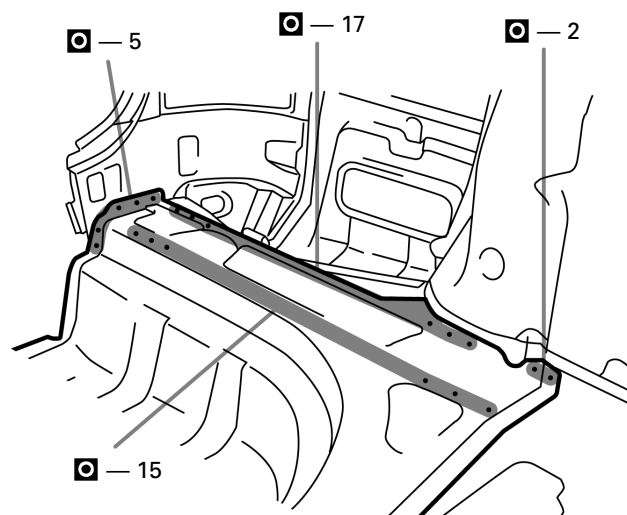
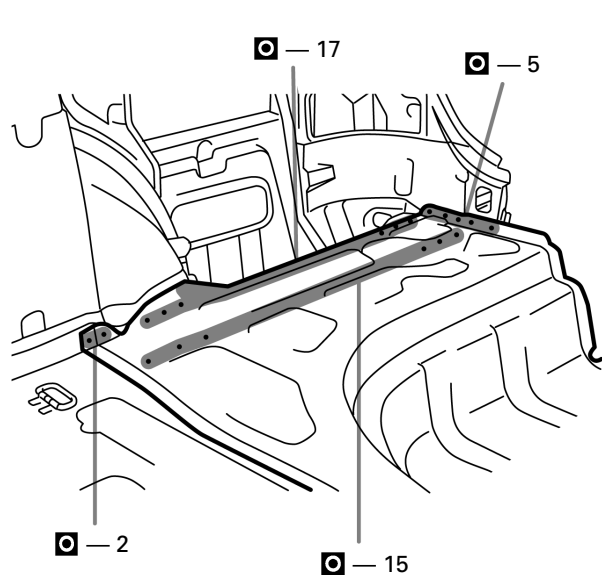
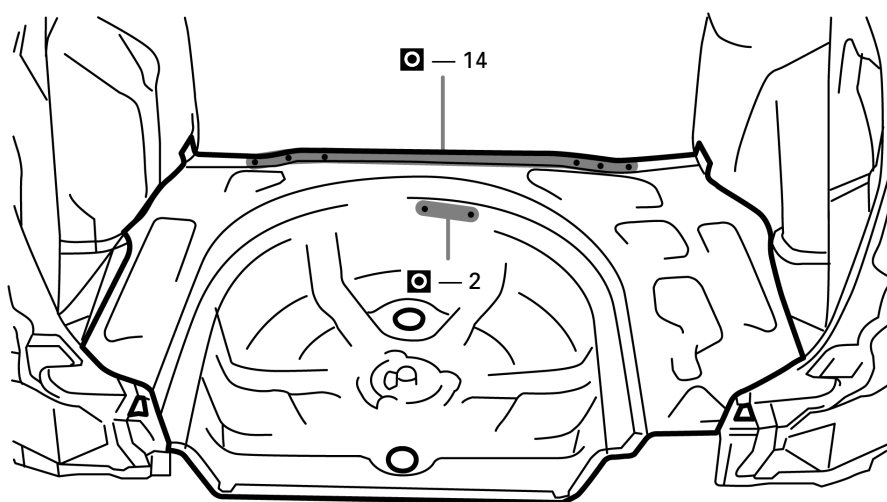
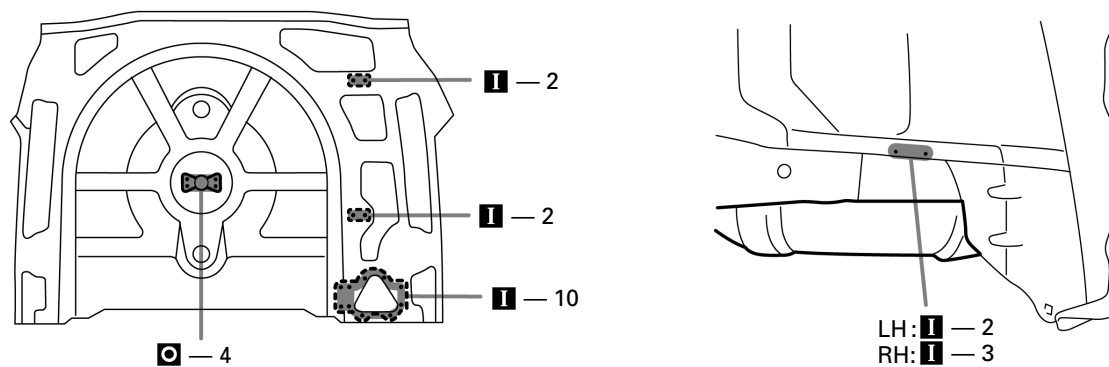


**REAR FLOOR PAN (ASSY): Wagon****REMOVAL (With the rear floor inner rear crossmember removed.)**

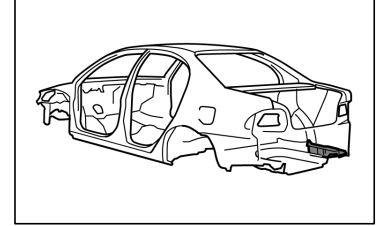
LH: ① — 2  
RH: ① — 3



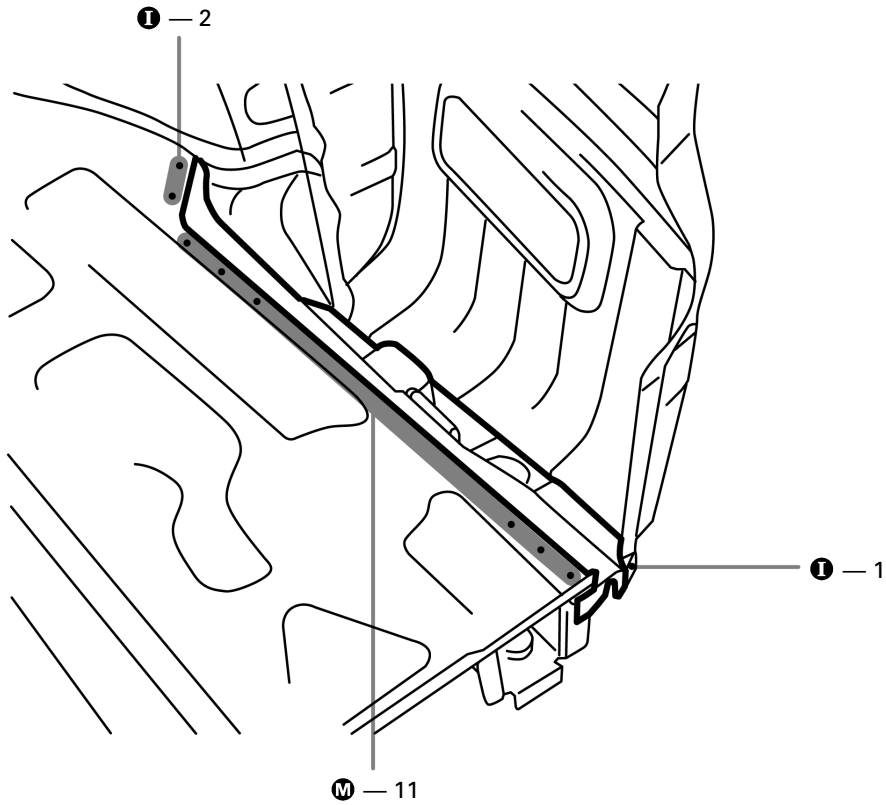
# INSTALLATION



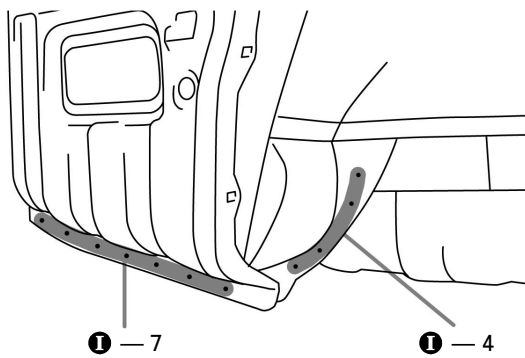
## REAR FLOOR SIDE PANEL (ASSY): Sedan, Liftback



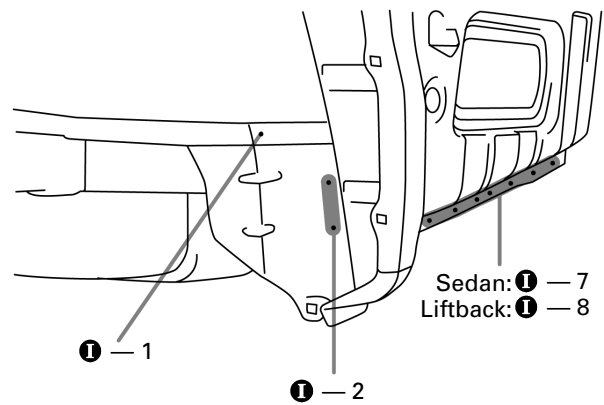
**REMOVAL (With the body lower back panel removed.)**



[RH]

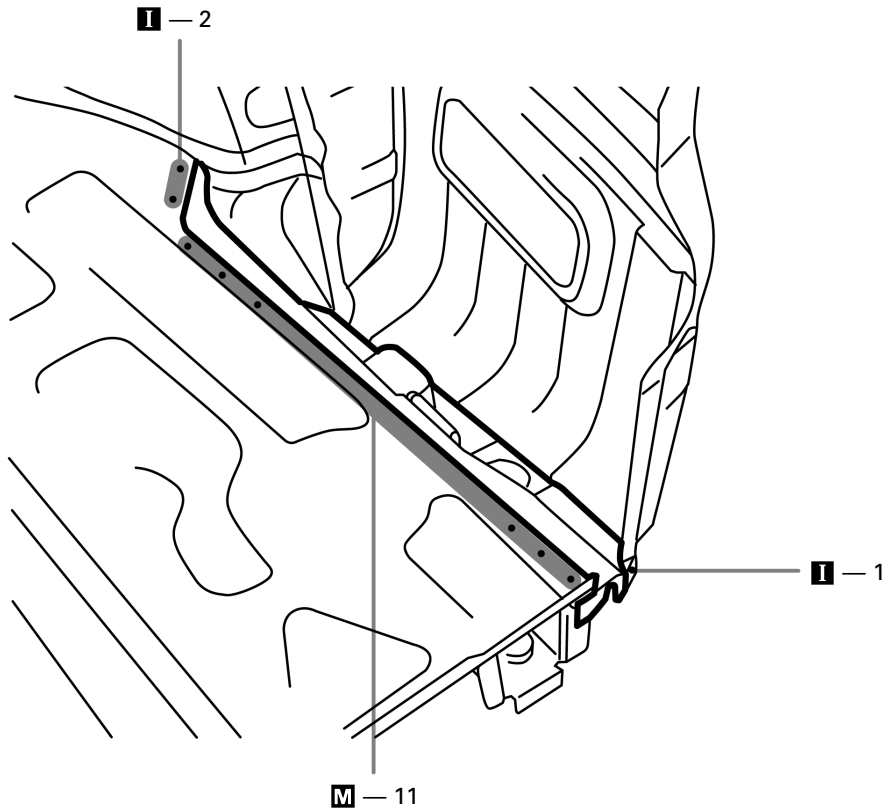


[LH]

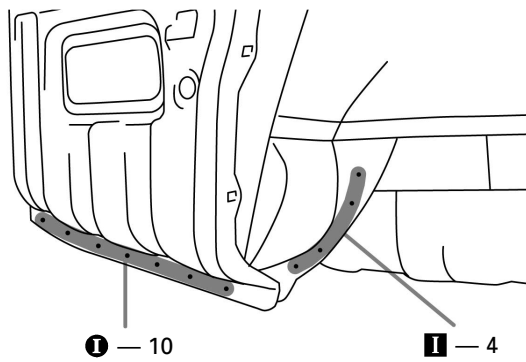


Sedan: 1-7  
Liftback: 1-8

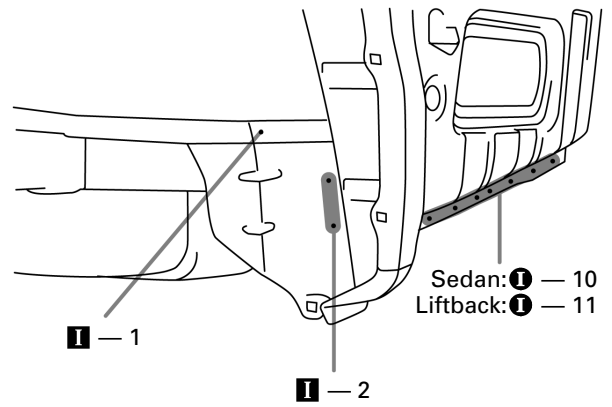
# INSTALLATION



[RH]

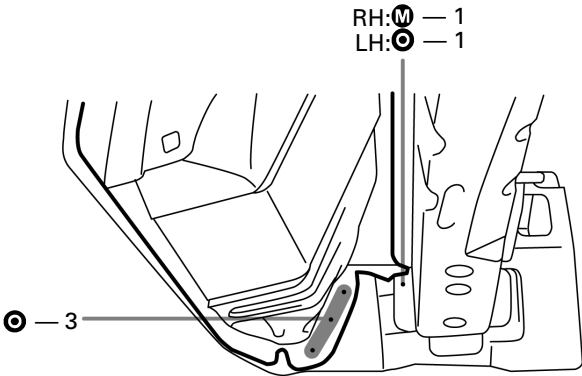
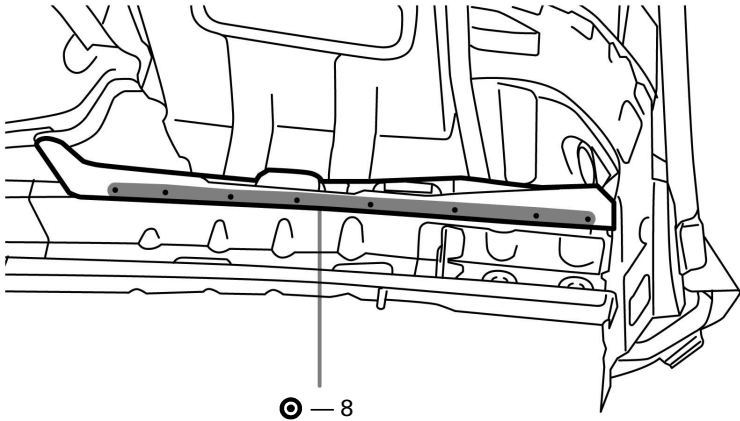
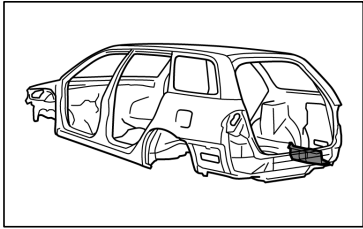


[LH]



REAR FLOOR SIDE PANEL (ASSY): Wagon

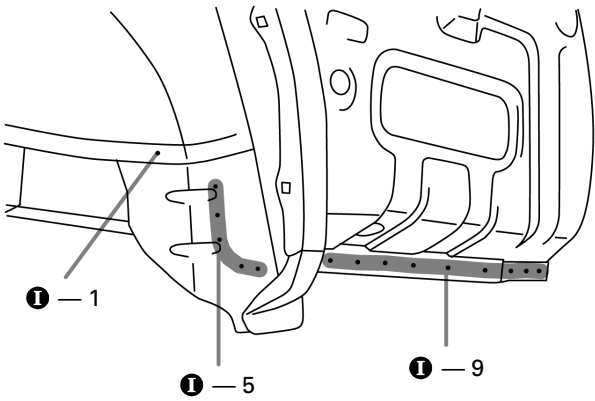
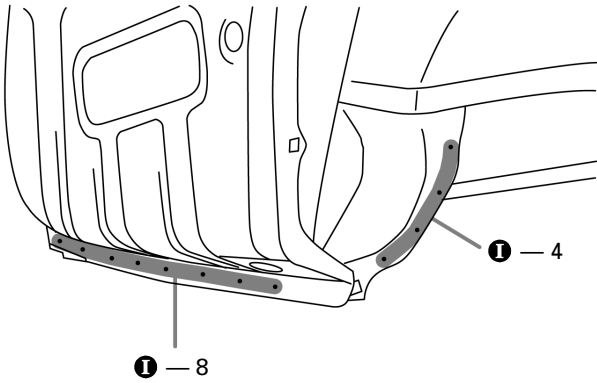
REMOVAL (With the rear floor pan removed.)



RH: M — 1  
LH: O — 1

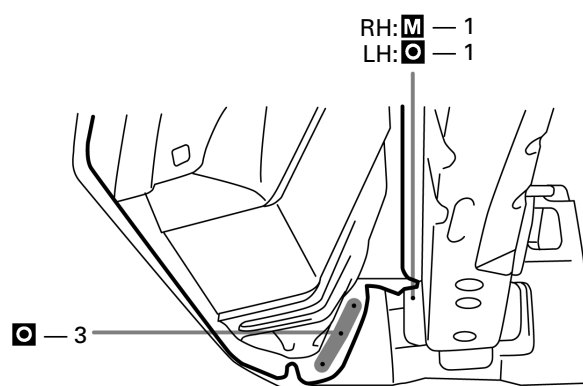
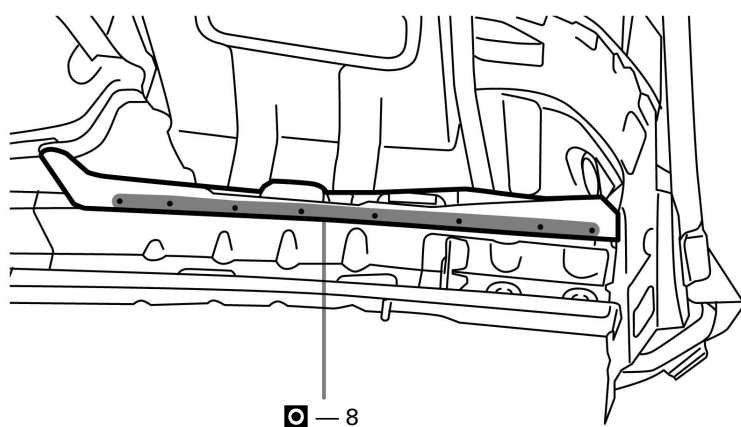
[RH]

[LH]



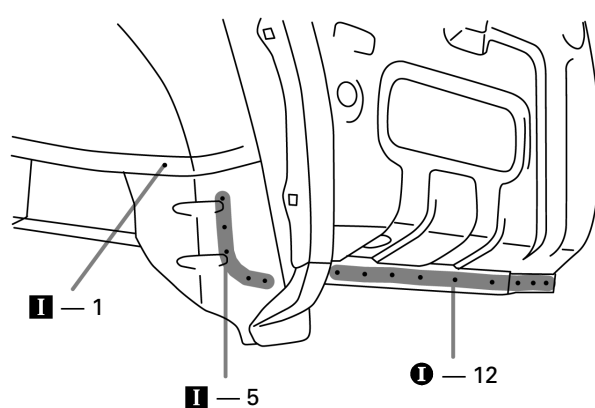
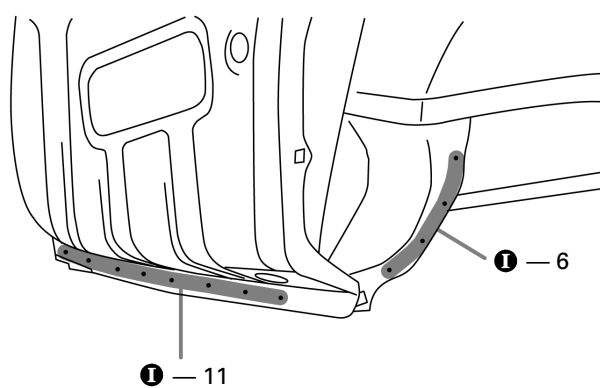


# INSTALLATION

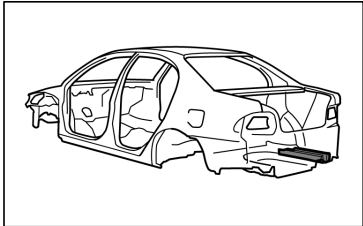


[RH]

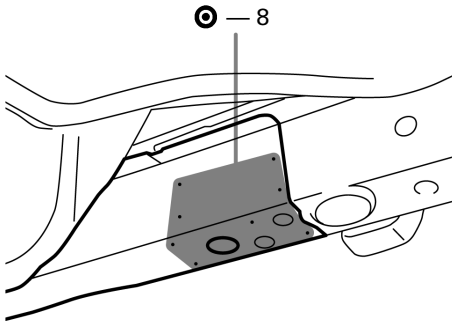
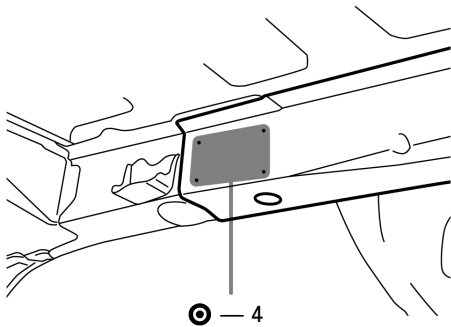
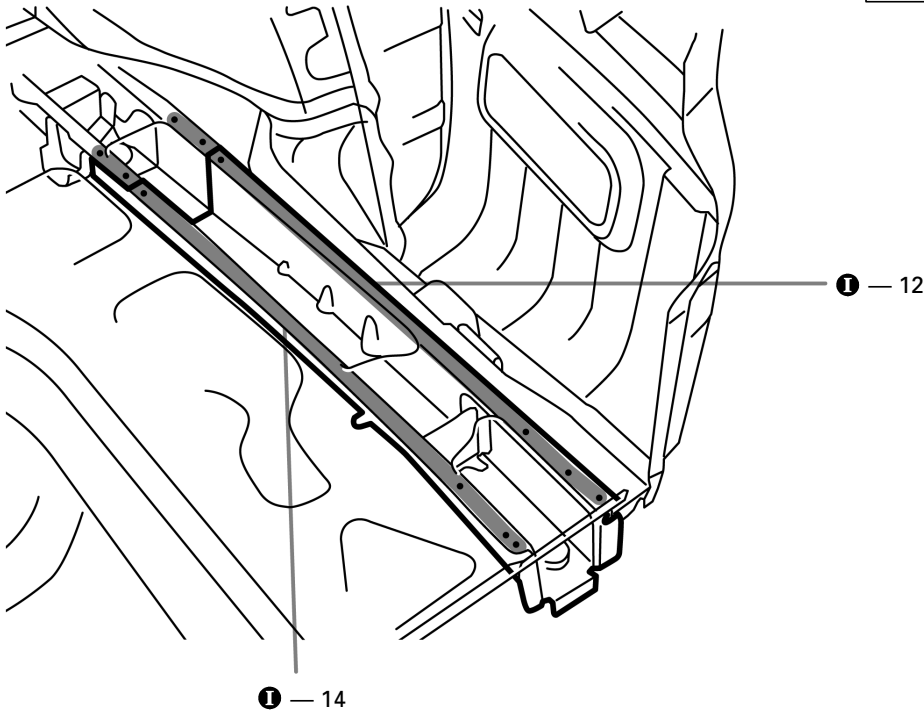
[LH]



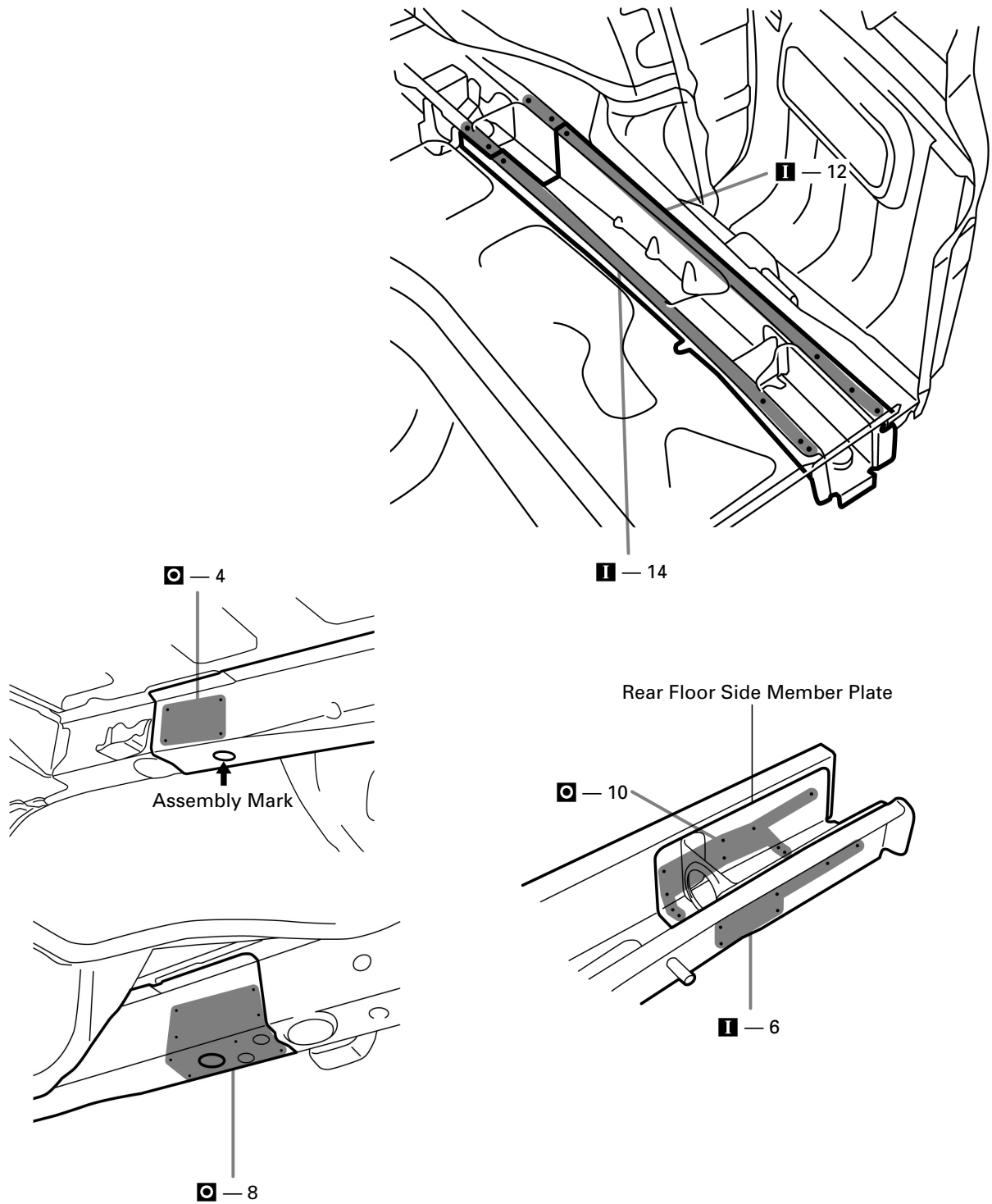
**REAR FLOOR SIDE REAR MEMBER (ASSY):  
Sedan, Liftback**



**REMOVAL (With the body lower back panel removed.)**

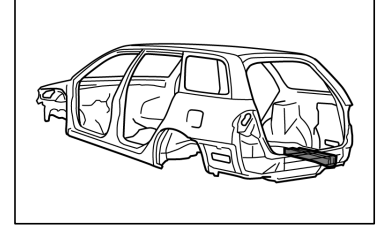


## INSTALLATION

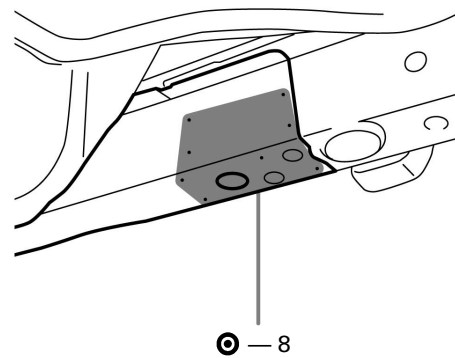
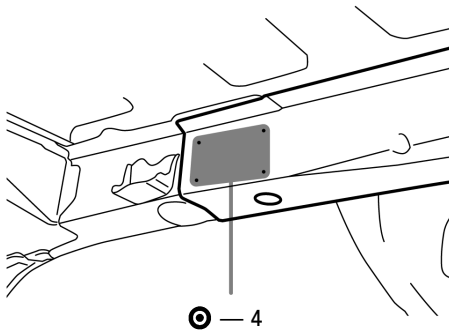
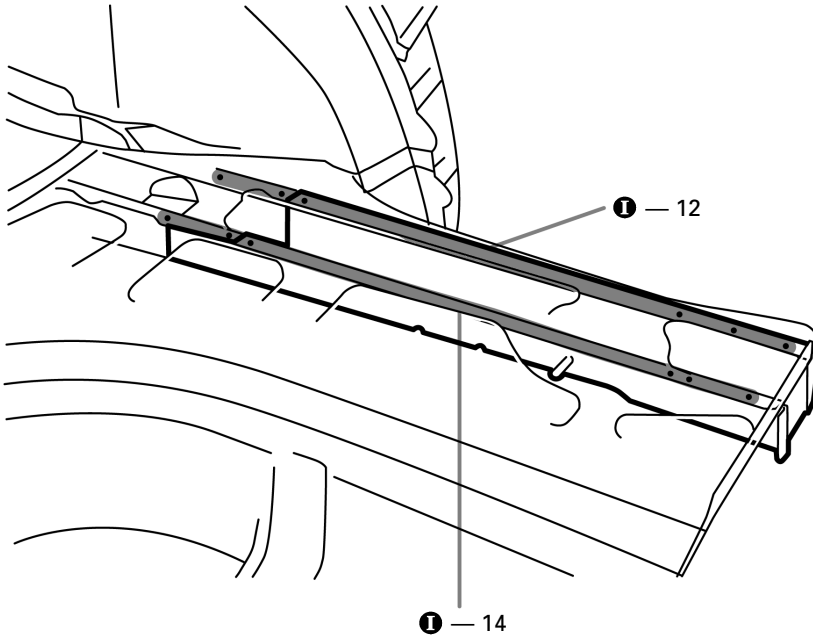


1. When temporarily installing the new parts, determine the installation position by the assembly mark. Then, measure each part in accordance with the body dimension diagram.
2. Weld the rear floor side member plate to the rear floor side rear member.

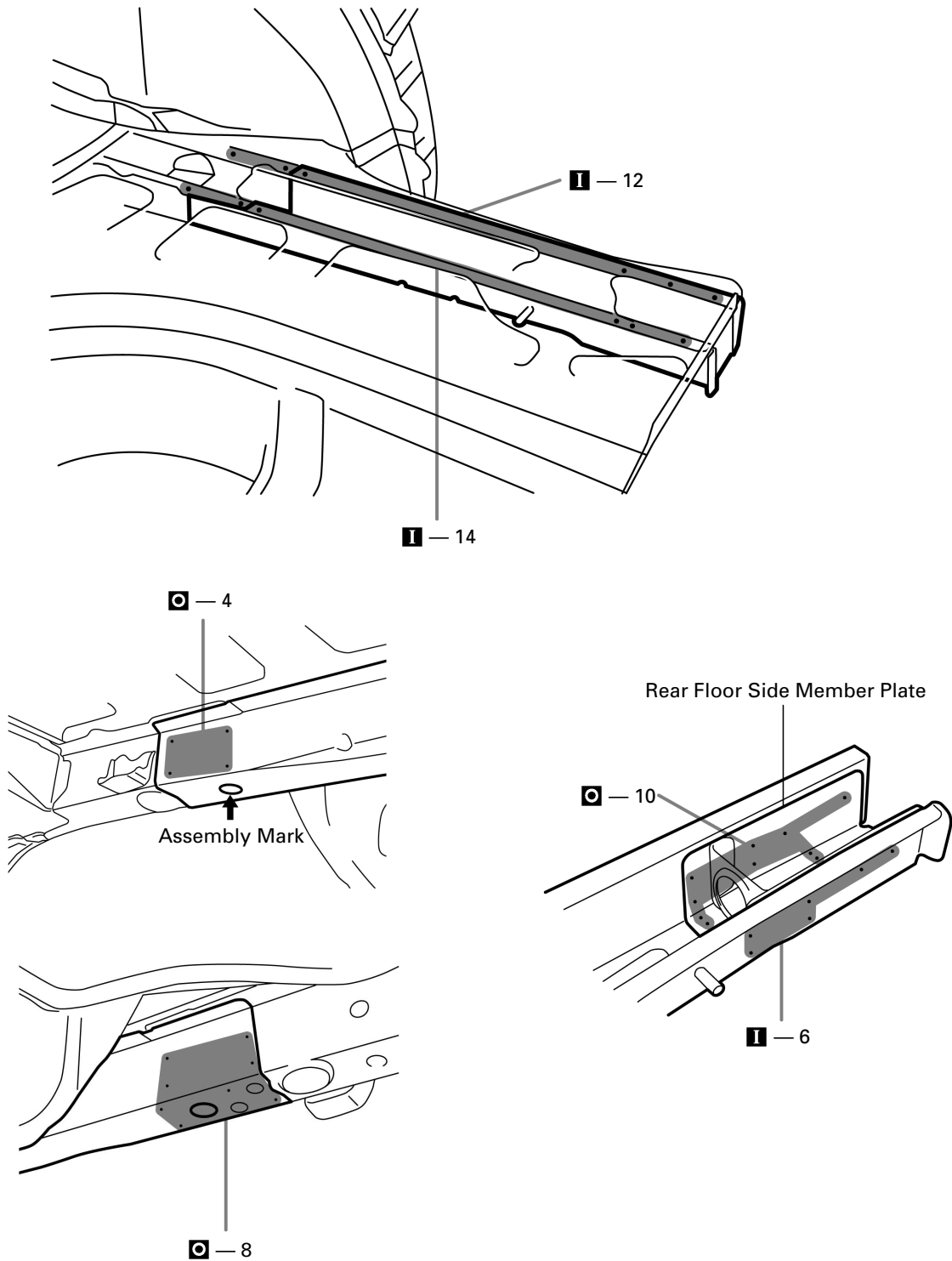
## REAR FLOOR SIDE REAR MEMBER (ASSY): Wagon



**REMOVAL** (With the rear floor inner rear crossmember removed.)



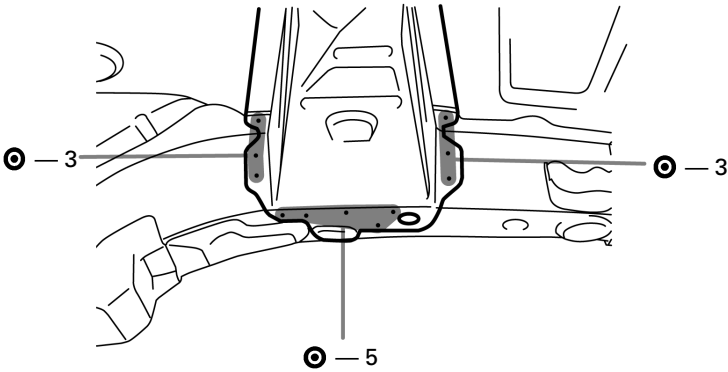
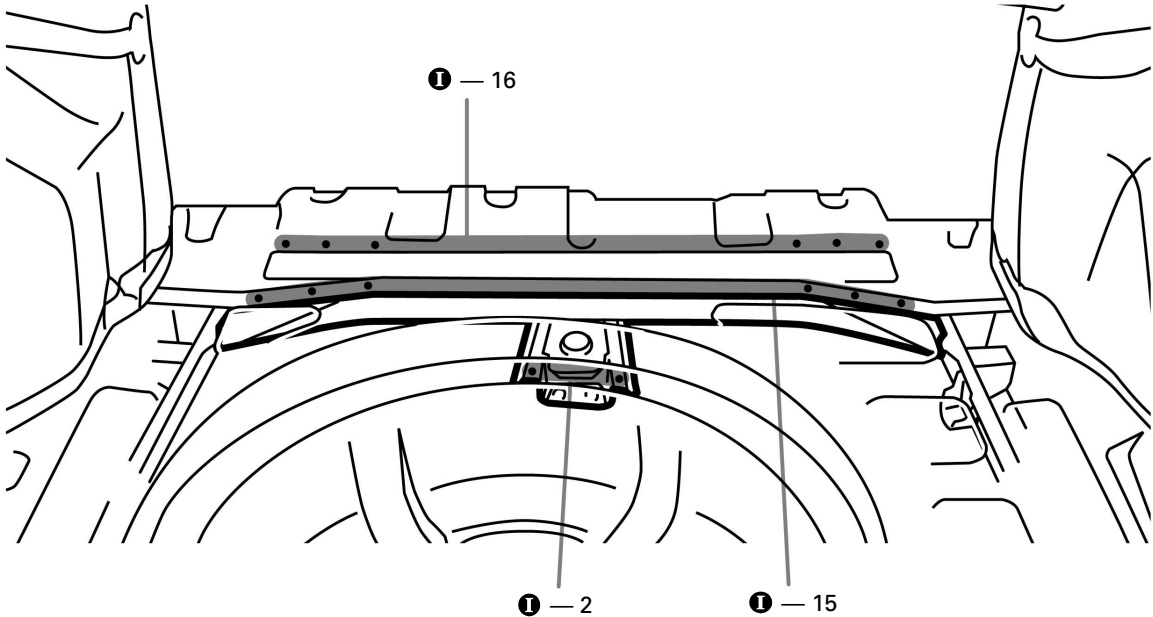
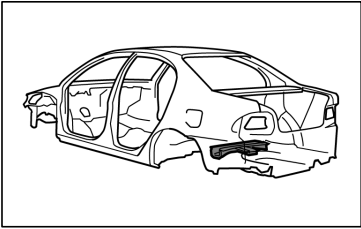
## INSTALLATION



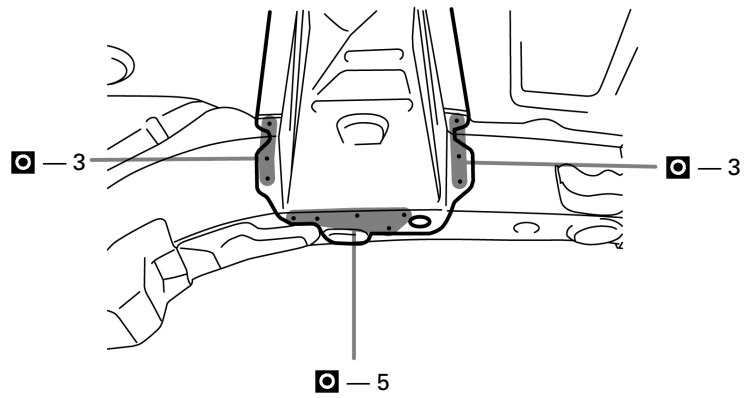
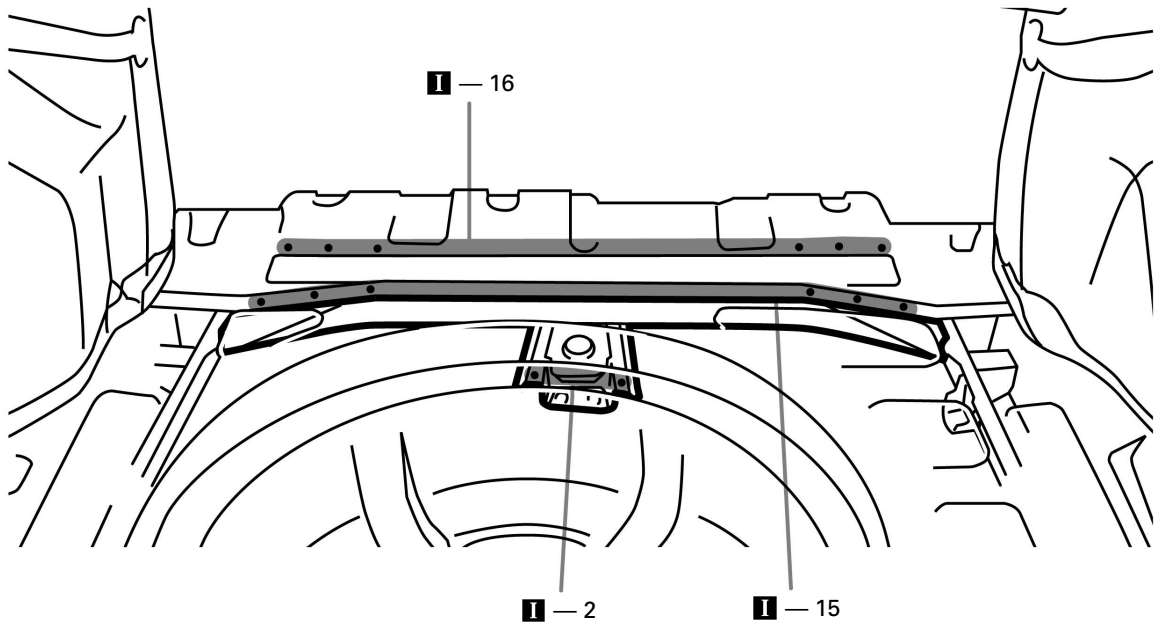
1. When temporarily installing the new parts, determine the installation position by the assembly mark. Then, measure each part in accordance with the body dimension diagram.
2. Weld the rear floor side member plate to the rear floor side rear member.

REAR FLOOR No.2 CROSSMEMBER (ASSY)

REMOVAL

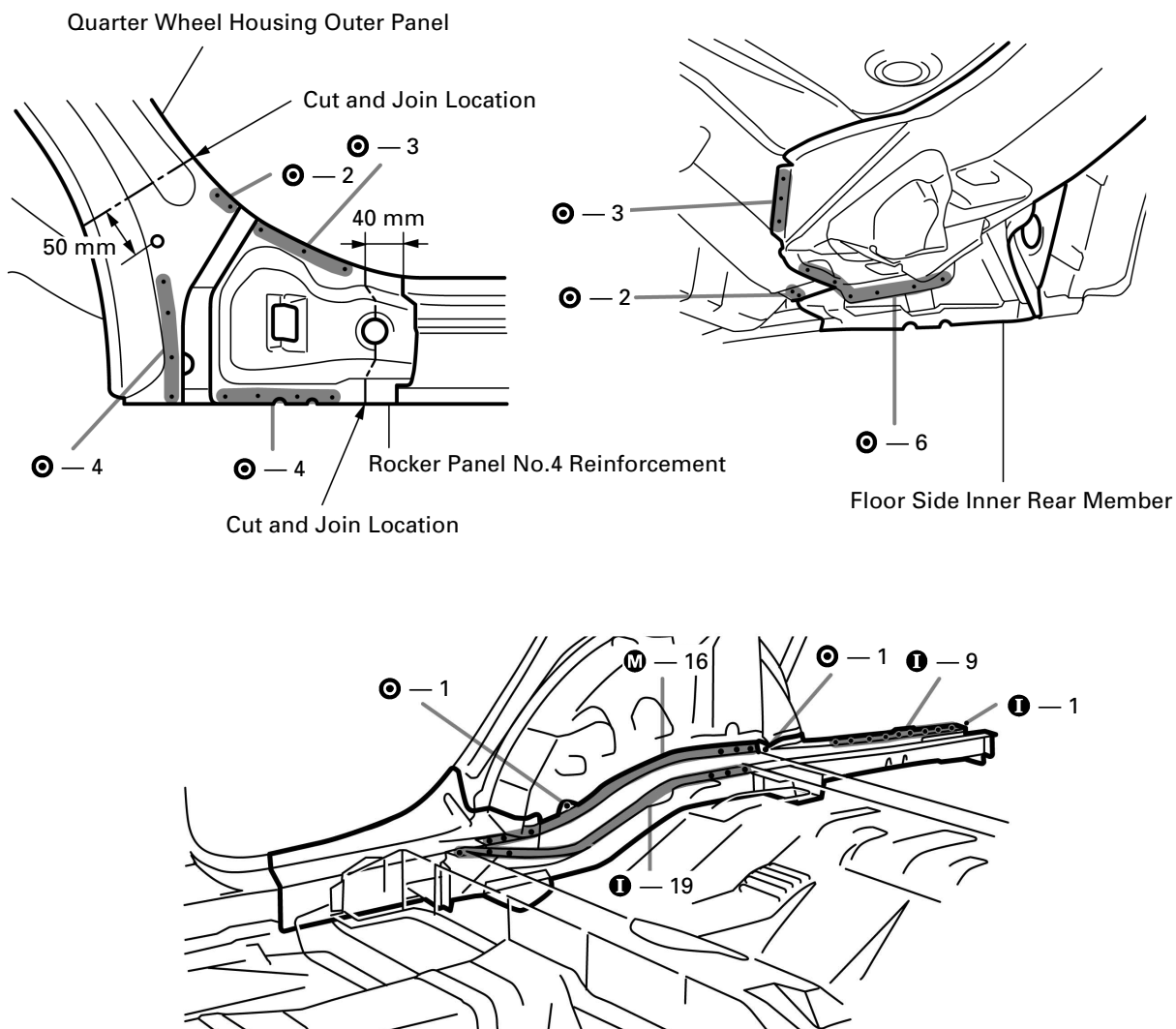
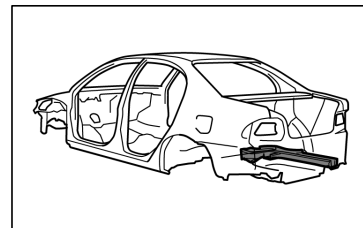


## INSTALLATION



## REAR FLOOR SIDE MEMBER (ASSY)

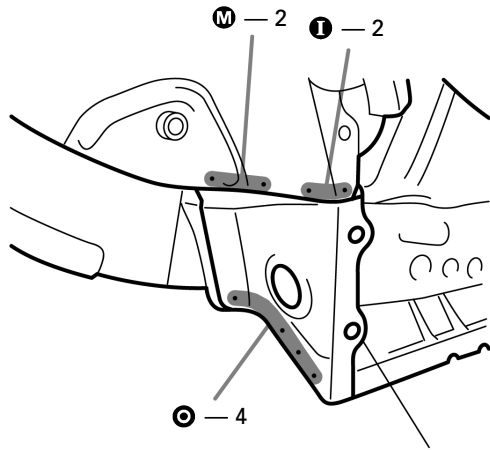
**REMOVAL** (With the quarter panel, rear floor pan and rear floor No.2 crossmember removed.)



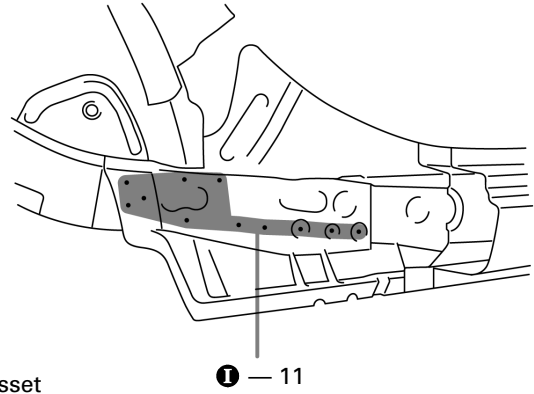
| mm | in.  |
|----|------|
| 40 | 1.57 |
| 50 | 1.97 |

1. Splice the rocker panel No.4 reinforcement rear and the quarter wheel housing outer panel at the locations illustrated above, and remove the quarter wheel housing front gusset.
2. Leave the floor side inner rear member to the vehicle side and remove the rear floor side member.

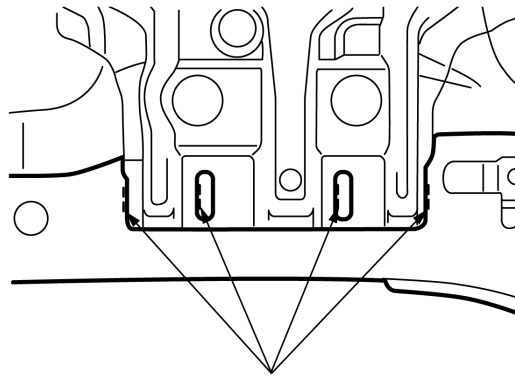




Quarter Wheel House Front Gusset

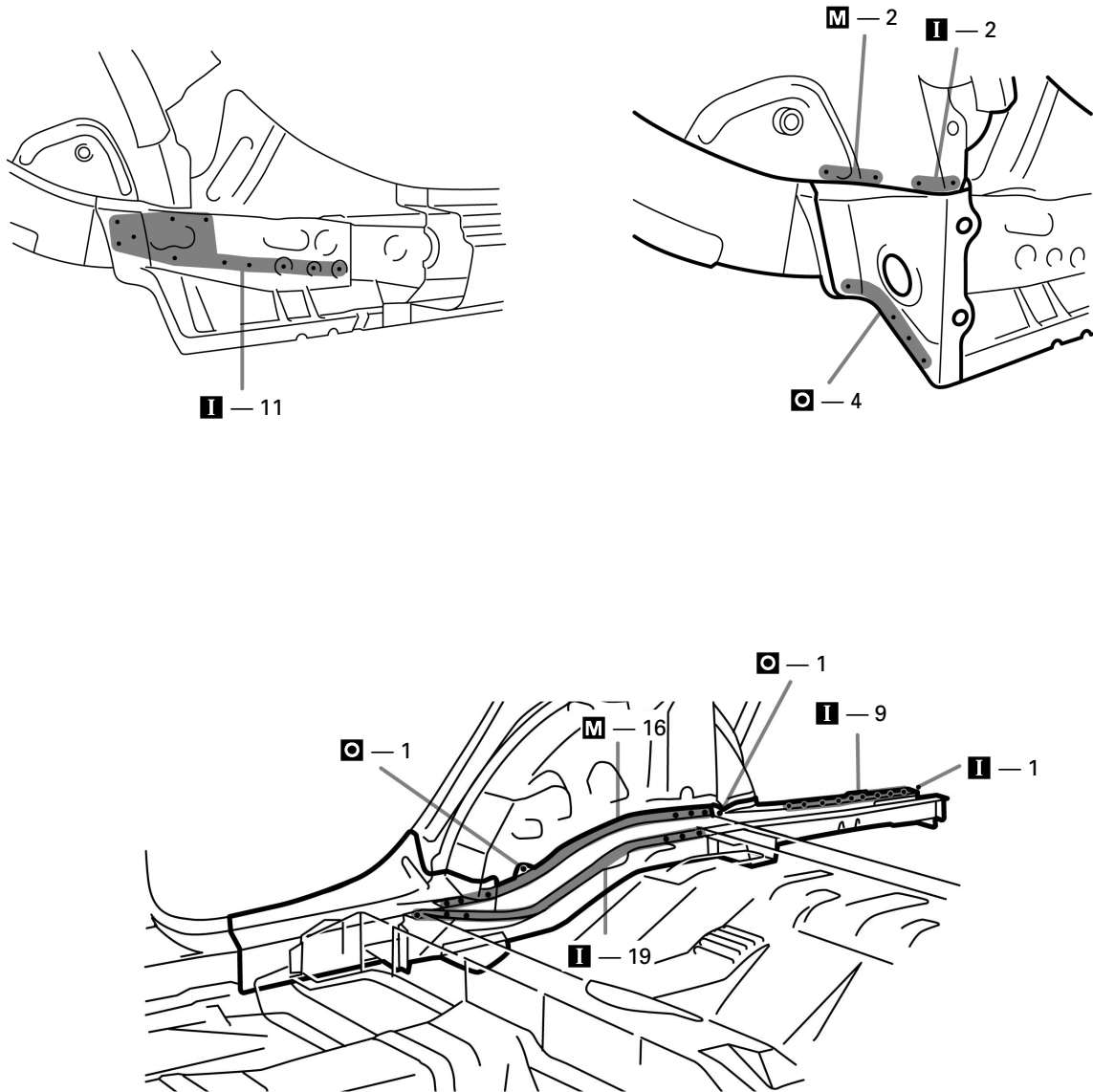


[Liftback, Wagon]

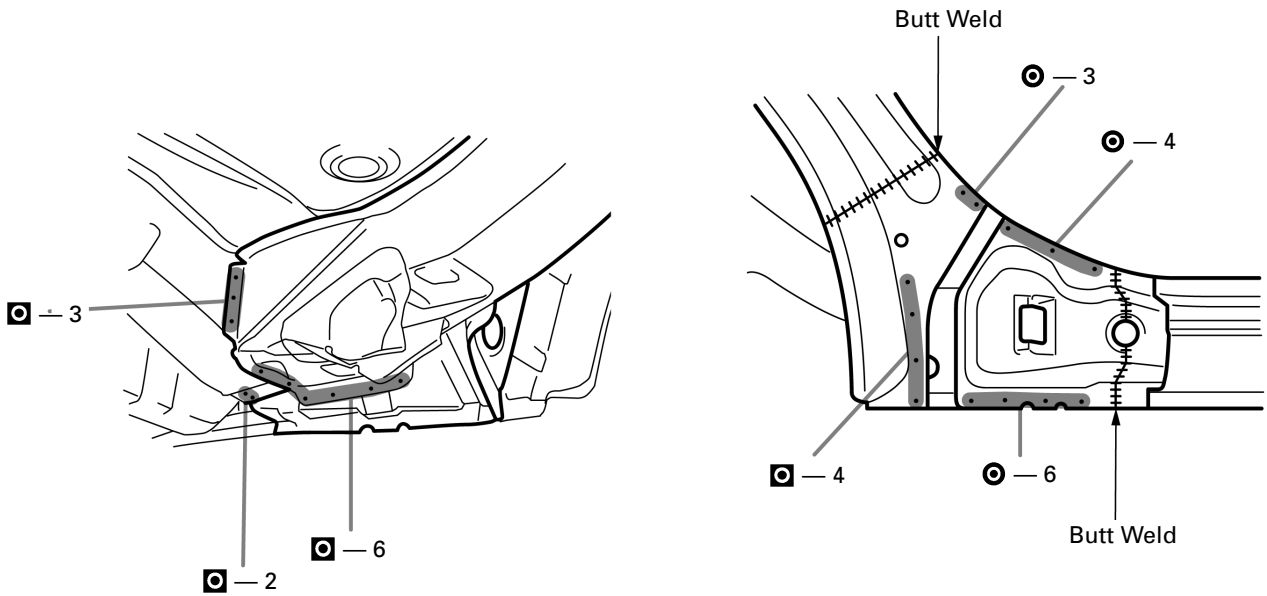


Cut with disc sander, etc.

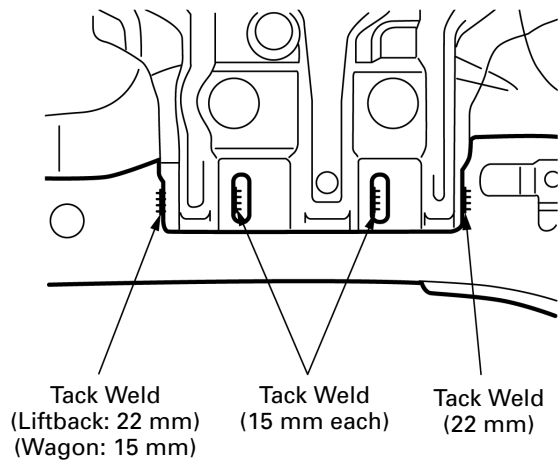
---

**INSTALLATION**

- 
1. Temporarily install the new parts and measure each part in accordance with the body dimension diagram.



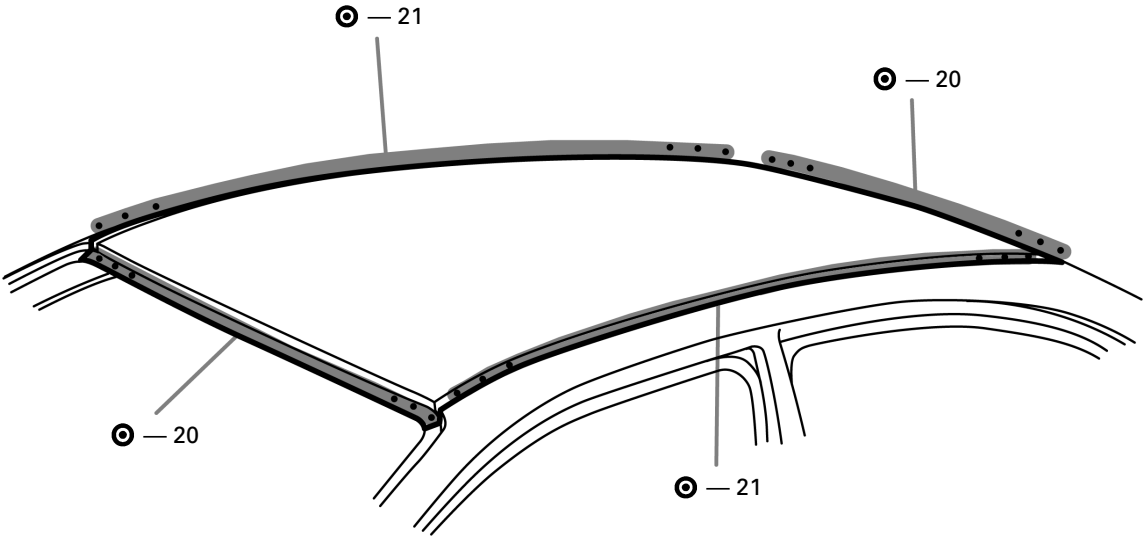
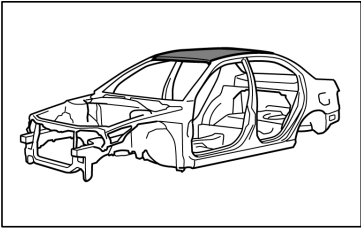
[Liftback, Wagon]



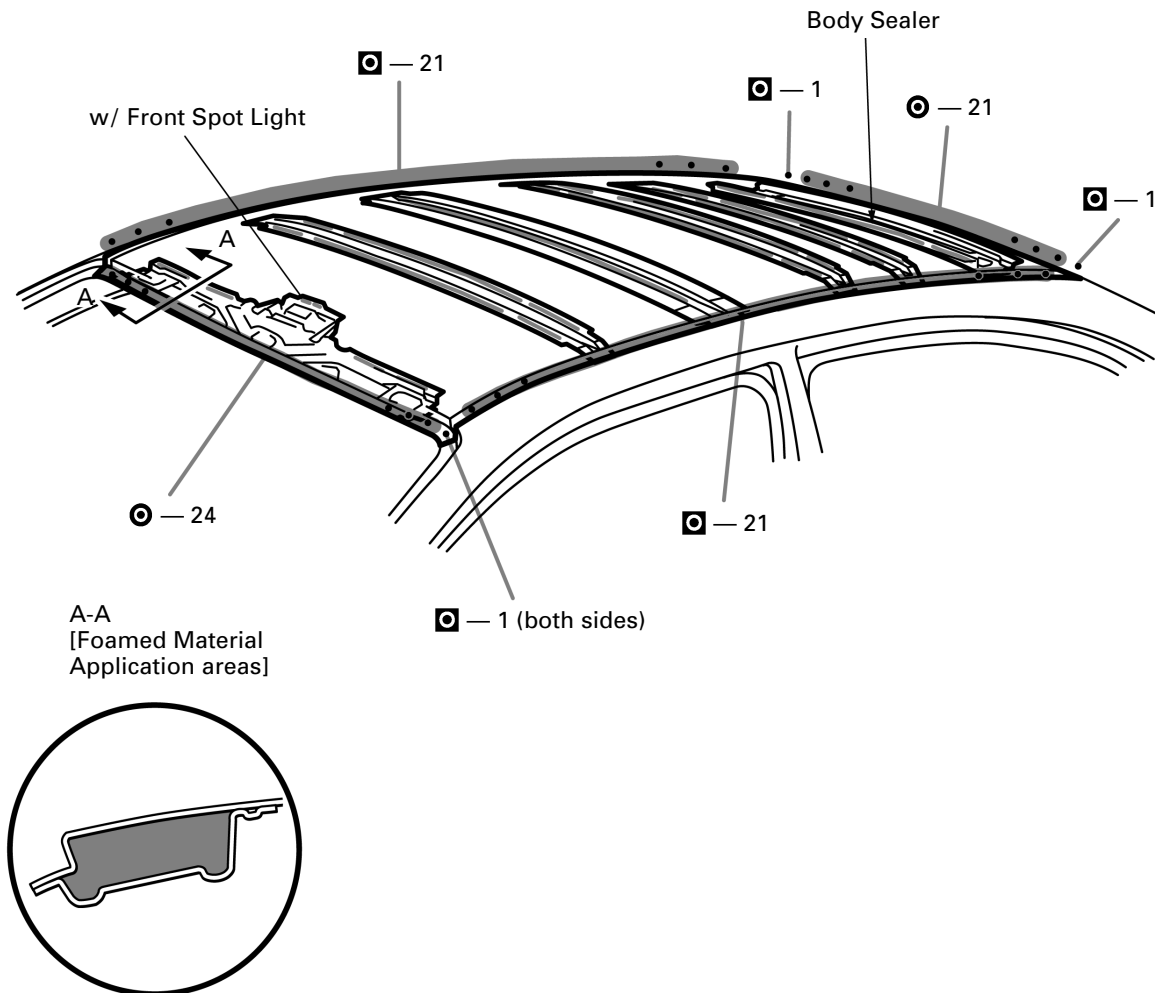
| mm | in.  |
|----|------|
| 15 | 0.59 |
| 22 | 0.87 |

**ROOF PANEL (ASSY): Sedan w/o Sun Roof**

**REMOVAL**



## INSTALLATION



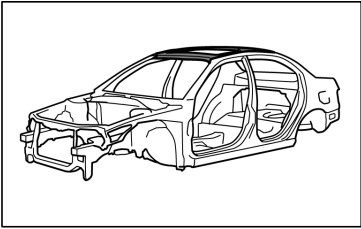
1. Before temporarily installing the new parts, apply body sealer to the windshield header panel, roof panel reinforcement and back window upper frame.
2. Apply foamed material to the windshield header panel.

**HINT:**

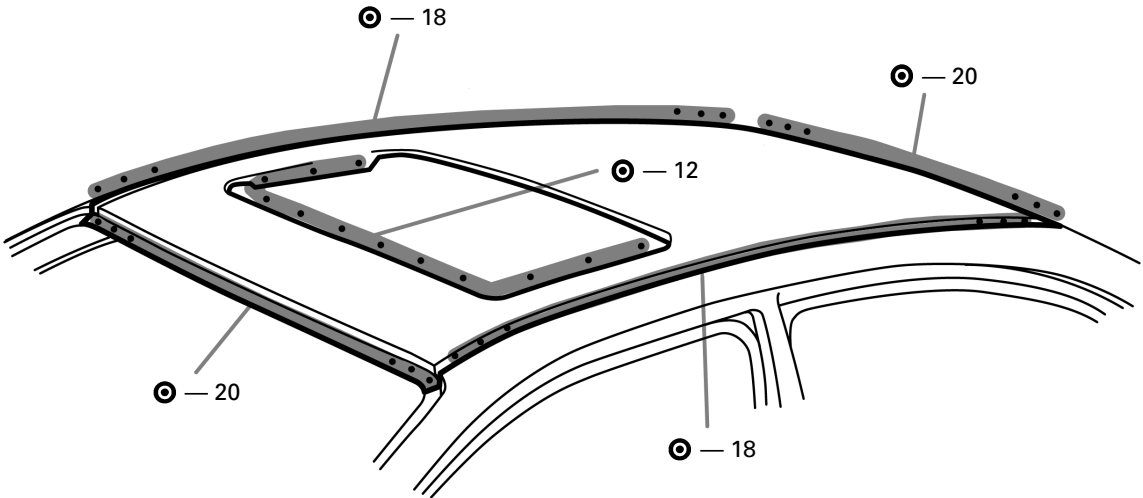
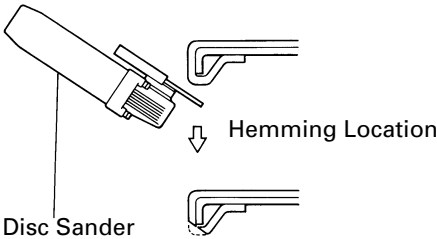
- 1) Apply just enough sealer for the new parts to make contact.
- 2) For other sealing points, refer to section AR.

ROOF PANEL (ASSY): Sedan w/ Sun Roof

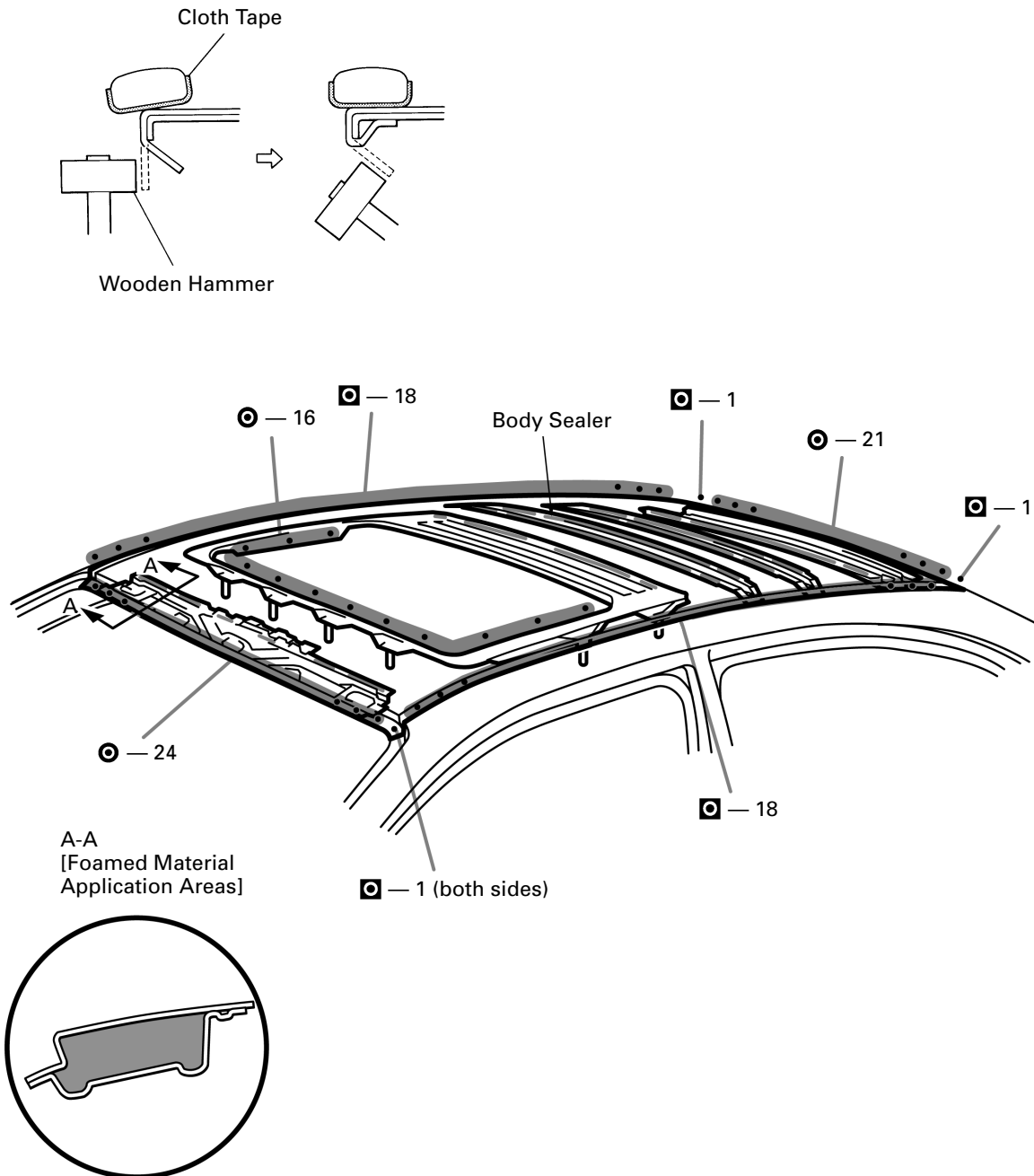
REMOVAL



[If reusing the roof panel reinforcement]



## INSTALLATION



1. Before temporarily installing the new parts, apply body sealer to the windshield header panel, roof panel reinforcement and back window upper frame.

**HINT:**

- 1) Apply just enough sealer for the new parts to make contact.
- 2) For other sealing points, refer to section AR.

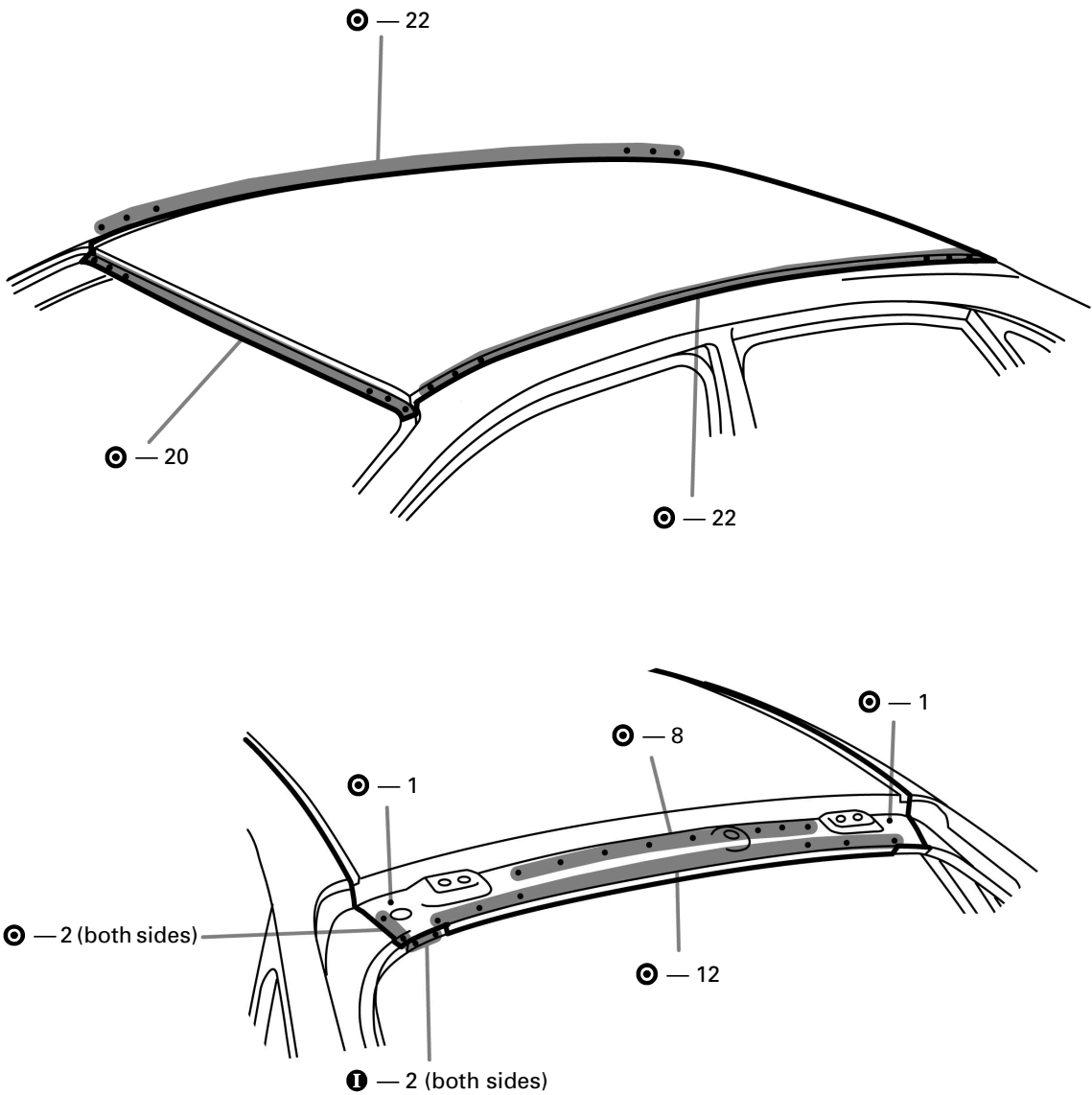
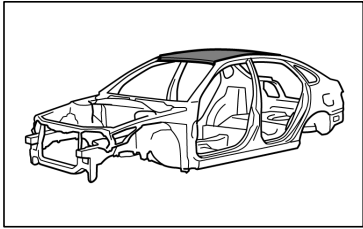
2. Bend the flange hem with a wooden hammer and dolly.

**HINT:** Perform hemming three steps, being careful not to warp the panel.

3. Apply foamed material to the windshield header panel.

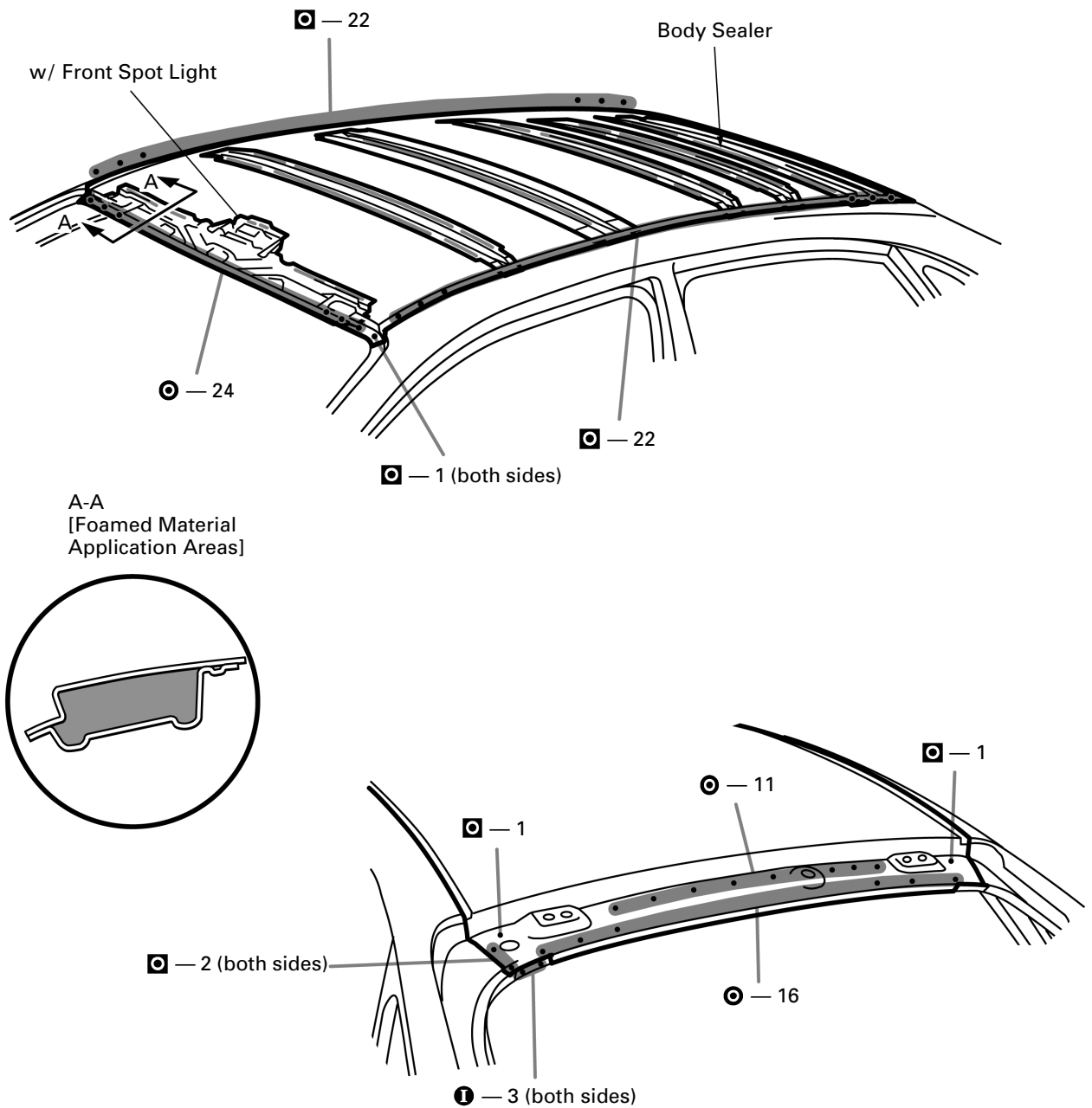
ROOF PANEL (ASSY): Liftback w/o Sun Roof

REMOVAL





## INSTALLATION



1. Before temporarily installing the new parts, apply body sealer to the windshield header panel, roof panel reinforcement and back door opening frame.

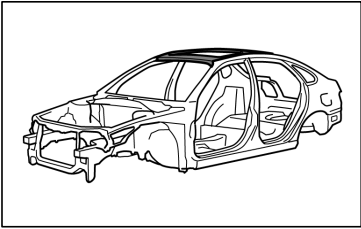
2. Apply foamed material to the windshield header panel.

**HINT:**

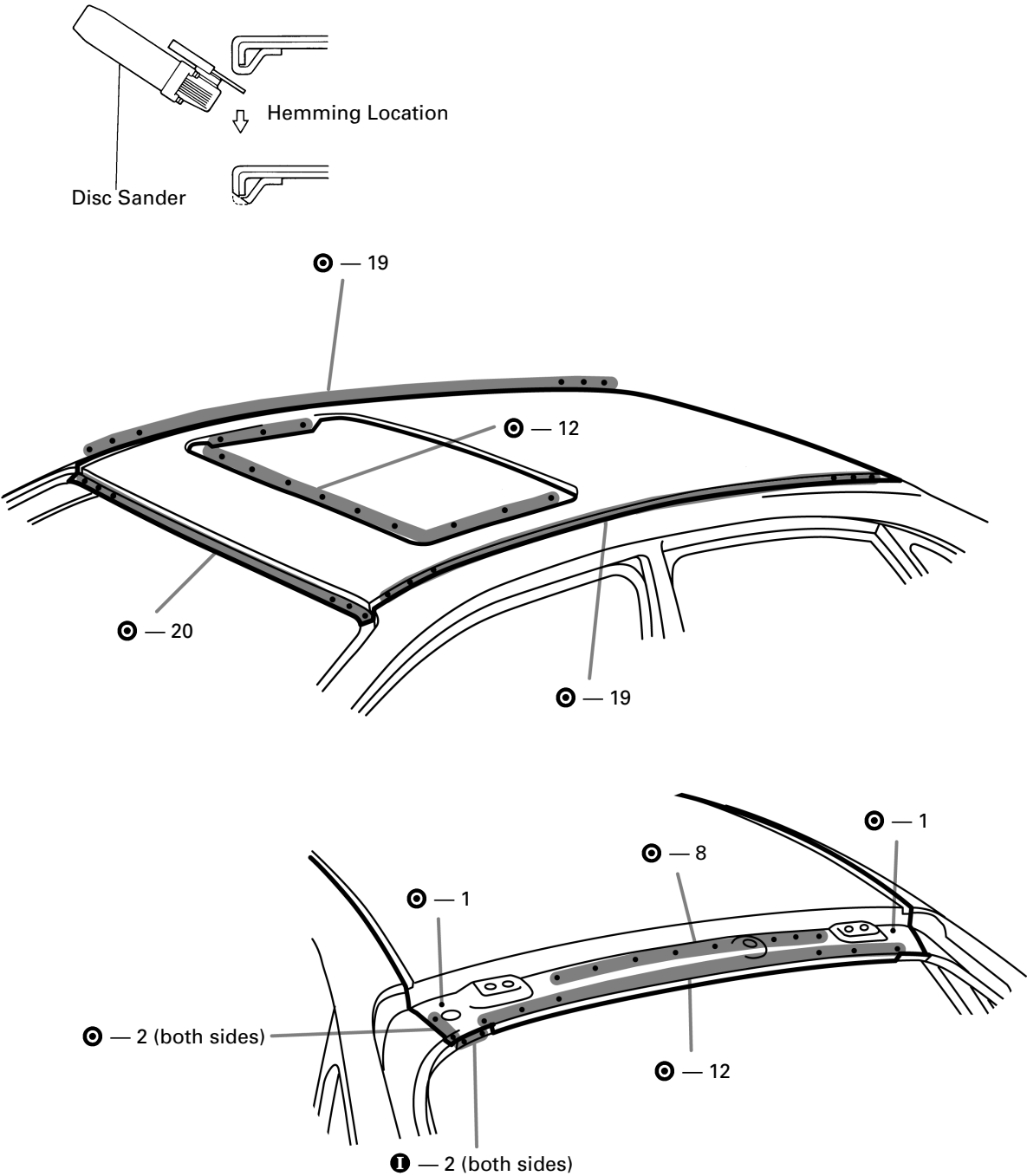
- 1) Apply just enough sealer for the new parts to make contact.
- 2) For other sealing points, refer to section AR.

ROOF PANEL (ASSY): Liftback w/ Sun Roof

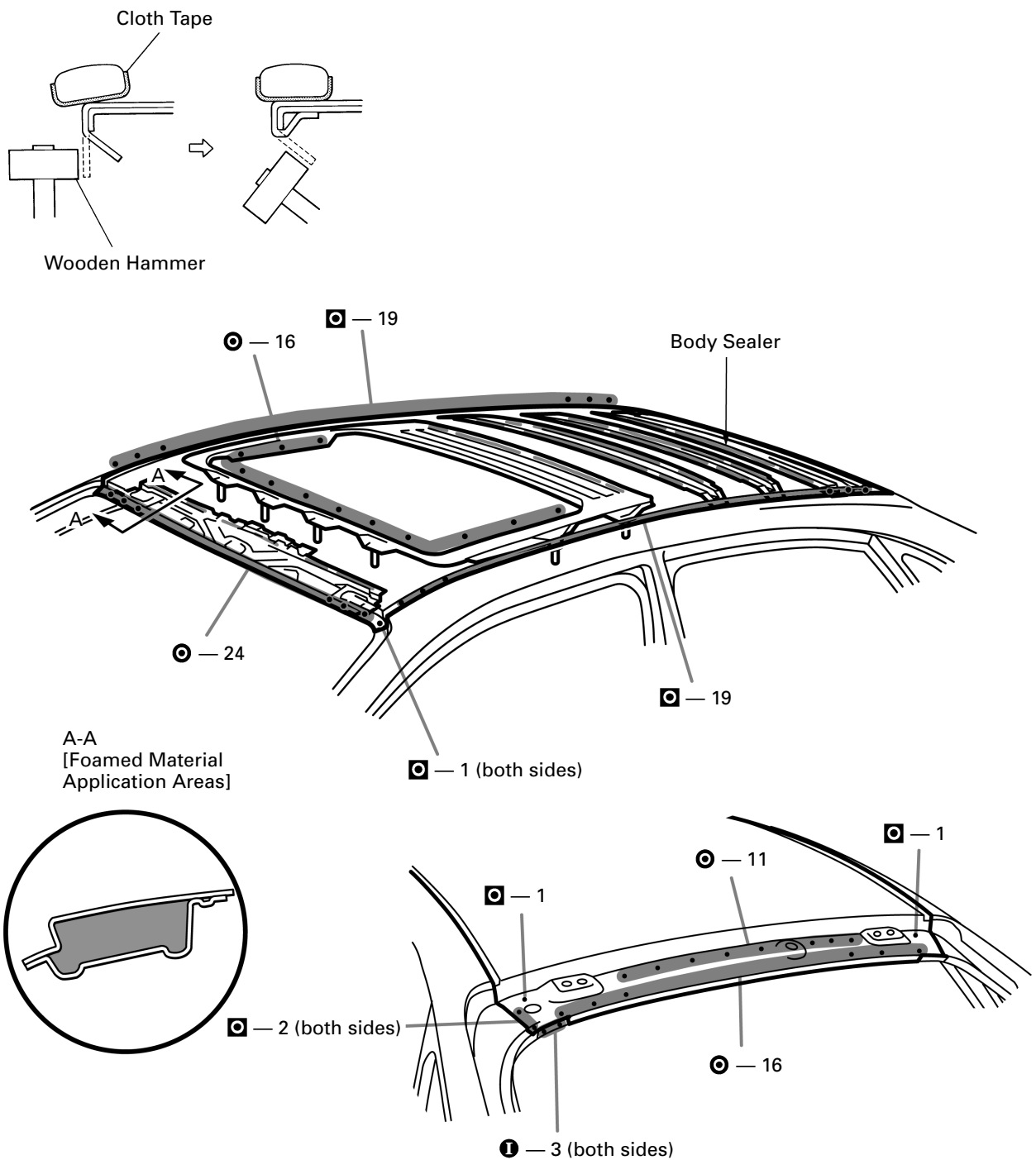
REMOVAL



[If reusing the roof panel reinforcement]



## INSTALLATION



1. Before temporarily installing the new parts, apply body sealer to the windshield header panel, roof panel reinforcement and back door opening frame.

**HINT:**

- 1) Apply just enough sealer for the new parts to make contact.
- 2) For other sealing points, refer to section AR.

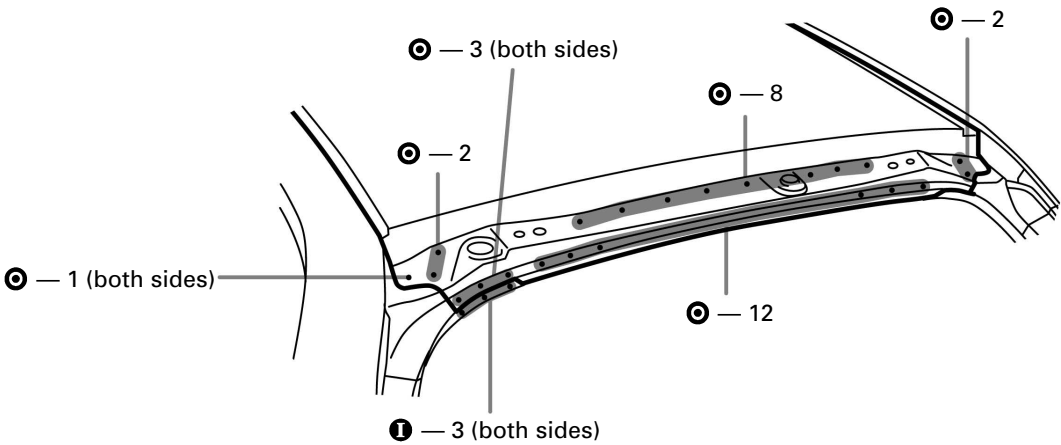
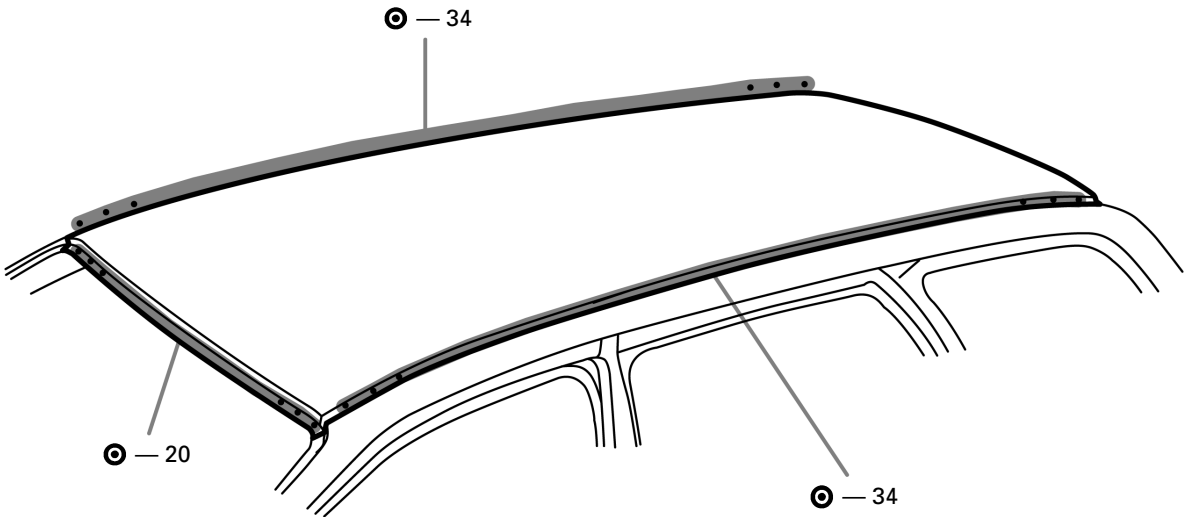
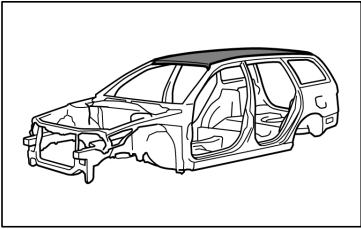
2. Bend the flange hem with a wooden hammer and dolly.

*HINT: Perform hemming three steps, being careful not to warp the panel.*

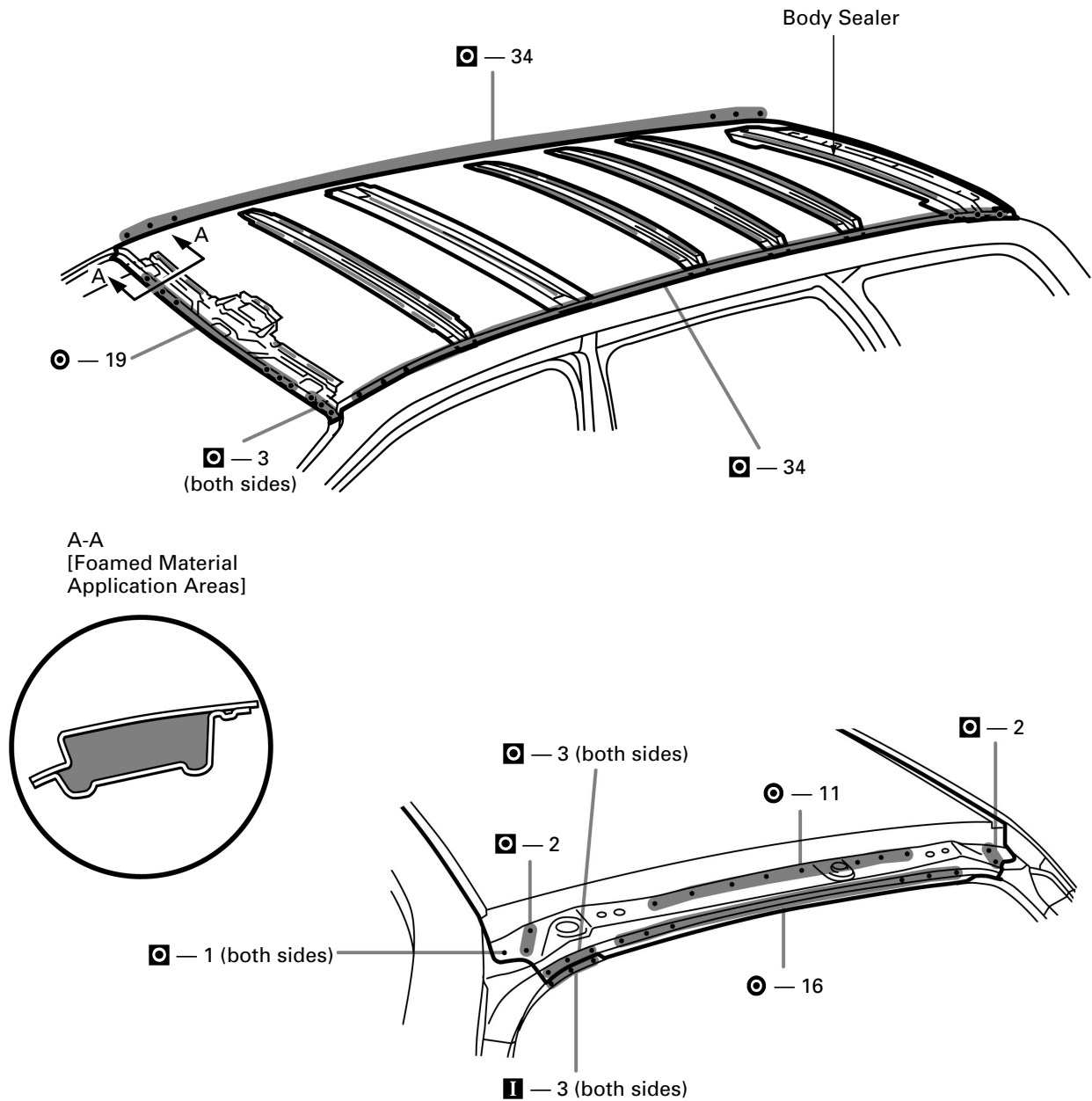
3. Apply foamed material to the windshield header panel.

ROOF PANEL (ASSY): Wagon w/o Sun Roof

REMOVAL



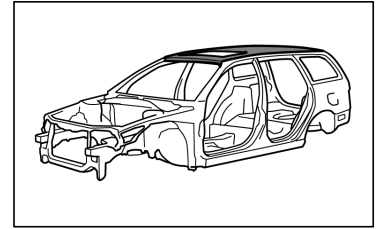
## INSTALLATION



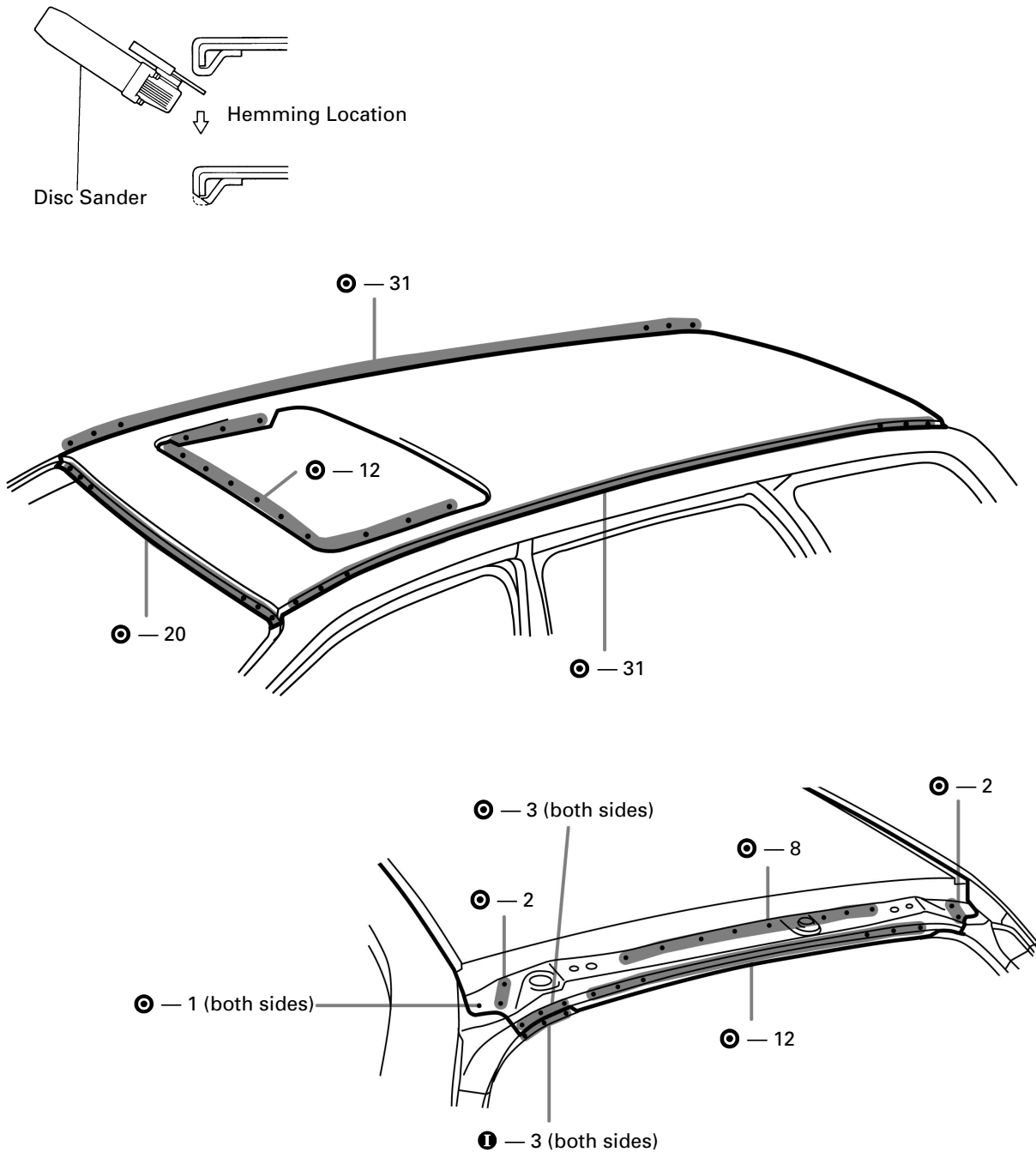
1. Before temporarily installing the new parts, apply body sealer to the windshield header panel, roof panel reinforcement and back door opening frame.
2. Apply foamed material to the windshield header panel.

**HINT:**

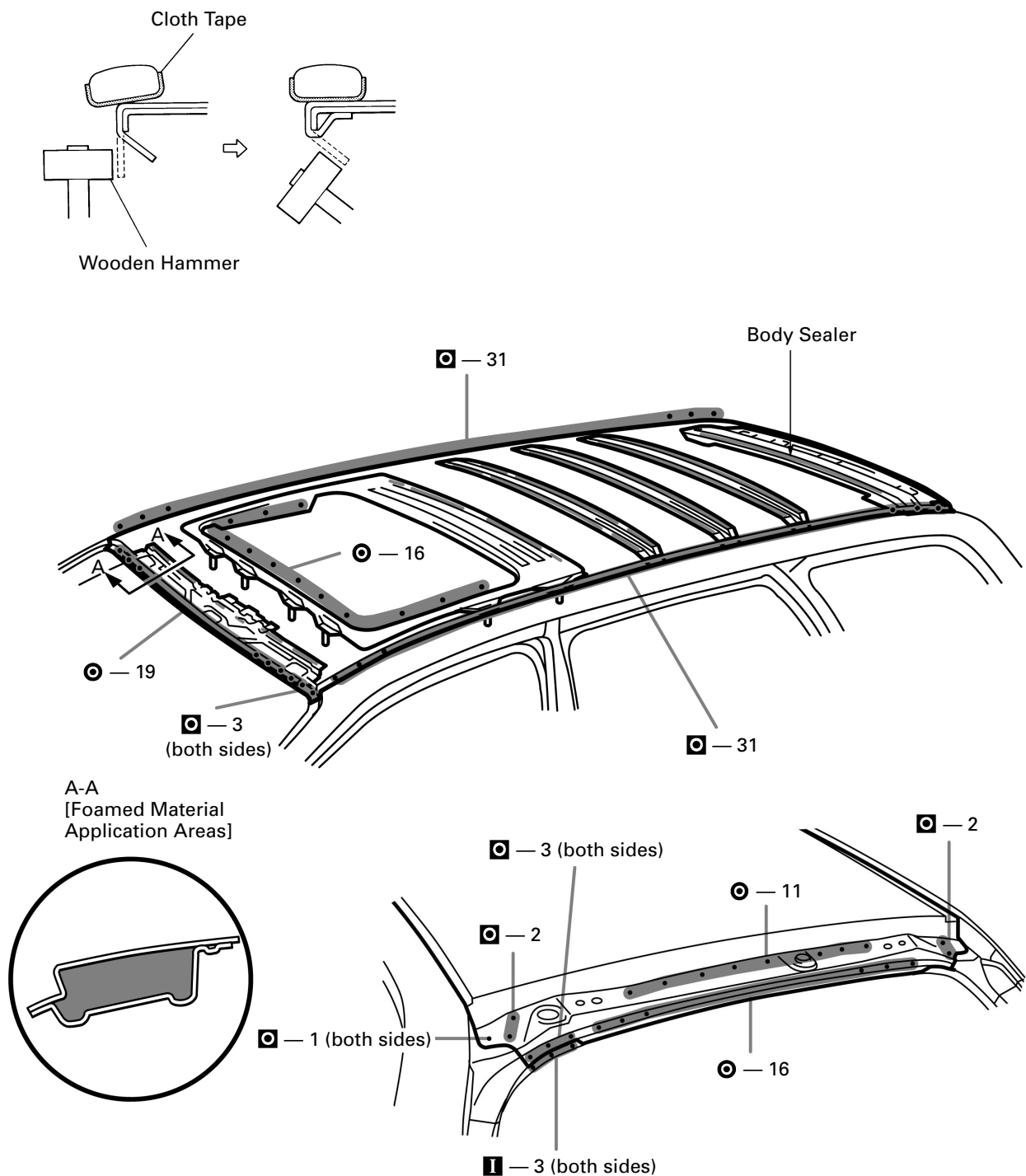
- 1) Apply just enough sealer for the new parts to make contact.
- 2) For other sealing points, refer to section AR.

**ROOF PANEL (ASSY): Wagon w/ Sun Roof****REMOVAL**

[If reusing the roof panel reinforcement]



## INSTALLATION



1. Before temporarily installing the new parts, apply body sealer to the windshield header panel, roof panel reinforcement and back door opening frame.

**HINT:**

- 1) Apply just enough sealer for the new parts to make contact.
- 2) For other sealing points, refer to section AR.

2. Bend the flange hem with a wooden hammer and dolly.

**HINT:** Perform hemming three steps, being careful not to warp the panel.

3. Apply foamed material to the windshield header panel.





# BODY PANEL CONSTRUCTION

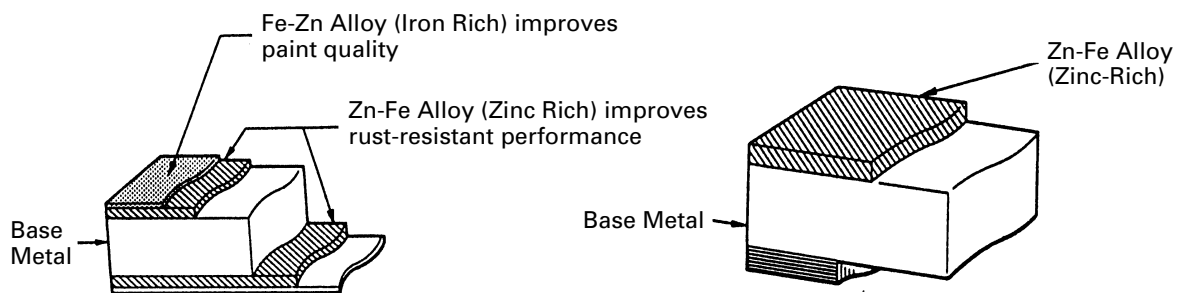
|                                        | Page |
|----------------------------------------|------|
| HIGH-STRENGTH STEEL (HSS) PARTS .....  | CN-2 |
| RUST-RESISTANT SHEET STEEL PARTS ..... | CN-3 |



## RUST-RESISTANT SHEET STEEL PARTS

Rust-Resistant Sheet Steel have zinc, tin or aluminum etc, plating over the base metal surface in order to improve the corrosion resistance of the sheet metal. This sheeting is used on areas that require anti-corrosive abilities but there is no need to distinguish the differences between rust resistant sheet steel and ordinary sheet steel in body repair.

Body panels on TOYOTA models are made of two different melted galvanized sheet steel. The ordinary melted galvanized sheet has a zinc plating over the base metal surface and when heated a zinc-iron alloy plating. The zinc-iron double layered galvanized sheet has a iron rich and another zinc-rich layer above the sheet steel. These 2 layers improve paint adhesion. These two melted galvanized sheet steels are used selectively according to need.



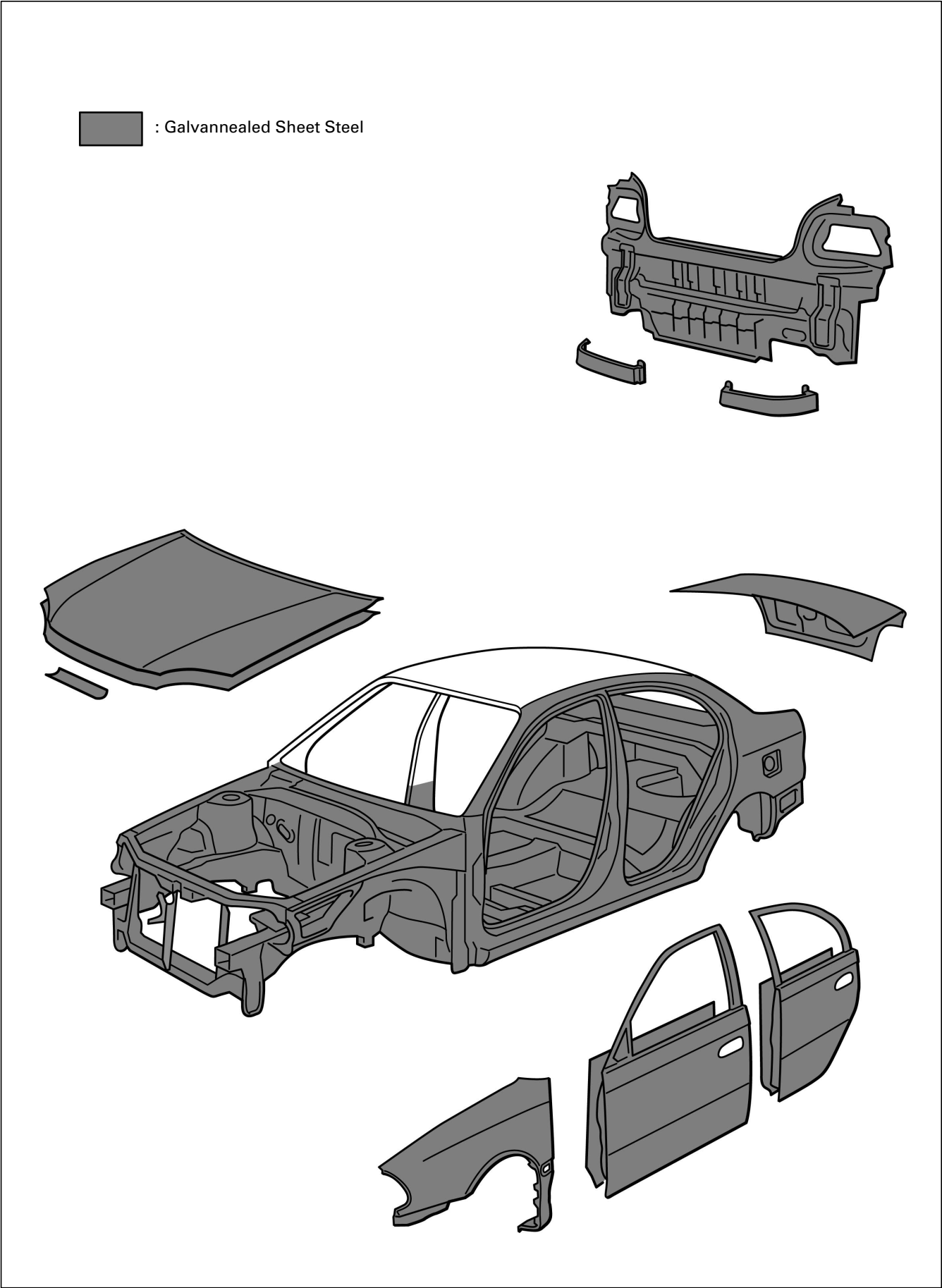
Double Layered Zinc-Iron Galvanized Sheet Steel

Galvanized Sheet Steel

The handling of Rust-Resistant Sheet Steel is the same as for ordinary sheet steel, but the following should be observed.

1. **Panel Welding:** The paint as well as the zinc portion must be removed completely from the welding area to guarantee good welding integrity.
2. **Anti-Rust Treatment:** Since the zinc plating is lost after welding, anti-rust treatment of the welded area must be thoroughly performed (refer to section AR).

 : Galvannealed Sheet Steel



# PLASTIC BODY PARTS

|                                      |             |
|--------------------------------------|-------------|
|                                      | <b>Page</b> |
| HANDLING PRECAUTIONS .....           | <b>PP-2</b> |
| LOCATION OF PLASTIC BODY PARTS ..... | <b>PP-4</b> |

## 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* resistant temperature limit °C (°F) | Resistance to alcohol or gasoline                                                                          | Notes                                                                                 |
|------|--------------------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| AAS  | Acrylonitrile<br>Acrylic Styrene     | 80<br>(176)                               | Alcohol is harmless if applied only for short time in small amounts (e.g., quick wiping to remove grease). | Avoid gasoline and organic or aromatic solvents.                                      |
| ABS  | Acrylonitrile<br>Butadiene Styrene   | 80<br>(176)                               | Alcohol is harmless if applied only for short time in small amounts (e.g., quick wiping to remove grease). | Avoid gasoline and organic or aromatic solvents.                                      |
| AES  | Acrylonitrile<br>Ethylene Styrene    | 80<br>(176)                               | Alcohol is harmless if applied only for short time in small amounts (e.g., quick wiping to remove grease). | Avoid gasoline and organic or aromatic solvents.                                      |
| ASA  | Acrylonitrile<br>Styrene<br>Acrylate | 80<br>(176)                               | Alcohol is harmless if applied only for short time in small amounts (e.g., quick wiping to remove grease). | Avoid gasoline and organic or aromatic solvents.                                      |
| CAB  | Cellulose<br>Acetate                 | 80<br>(176)                               | Alcohol is harmless if applied only for short time in small amounts (e.g., quick wiping to remove grease). | Avoid gasoline and organic or aromatic solvents.                                      |
| EPDM | Ethylene<br>Propylene                | 100<br>(212)                              | Alcohol is harmless.<br>Gasoline is harmless if applied only for short time in small amounts.              | Most solvents are harmless but avoid dipping in gasoline, solvents, etc.              |
| FRP  | Fiber<br>Reinforced<br>Plastics      | 180<br>(356)                              | Alcohol and gasoline are harmless.                                                                         | Avoid alkali.                                                                         |
| EVA  | Ethylene<br>Acetate                  | 70<br>(158)                               | Alcohol is harmless if applied only for short time in small amounts (e.g., quick wiping to remove grease). | Avoid gasoline and organic or aromatic solvents.                                      |
| PA   | Polyamide<br>(Nylon)                 | 80<br>(176)                               | Alcohol and gasoline are harmless.                                                                         | Avoid battery acid.                                                                   |
| PBT  | Polybutylene<br>Terephthalate        | 160<br>(320)                              | Alcohol and gasoline are harmless.                                                                         | Most solvents are harmless.                                                           |
| PC   | Polycarbonate                        | 120<br>(248)                              | Alcohol is harmless.                                                                                       | Avoid gasoline, brake fluid, wax, wax removers and organic solvents.<br>Avoid alkali. |

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

| Code | Material name                 | Heat* resistant temperature limit °C (°F) | Resistance to alcohol or gasoline                                                                                        | Notes                                                                    |
|------|-------------------------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| PE   | Polyethylene                  | 80<br>(176)                               | Alcohol and gasoline are harmless.                                                                                       | Most solvents are harmless.                                              |
| PET  | Polyethylene Terephthalate    | 75<br>(167)                               | Alcohol and gasoline are harmless.                                                                                       | Avoid dipping in water.                                                  |
| PMMA | Polymethyl Methacrylate       | 80<br>(176)                               | Alcohol is harmless if applied only for short time in small amounts.                                                     | Avoid dipping or immersing in alcohol, gasoline, solvents, etc.          |
| POM  | Polyoxymethylene (Polyacetal) | 100<br>(212)                              | Alcohol and gasoline are harmless.                                                                                       | Most solvents are harmless.                                              |
| PP   | Polypropylene                 | 80<br>(176)                               | Alcohol and gasoline are harmless.                                                                                       | Most solvents are harmless.                                              |
| PPO  | Modified Polyphenylene Oxide  | 100<br>(212)                              | Alcohol is harmless.                                                                                                     | Gasoline is harmless if applied only for quick wiping to remove grease.  |
| PS   | Polystyrene                   | 60<br>(140)                               | Alcohol and gasoline are harmless if applied only for short time in small amounts.                                       | Avoid dipping or immersing in alcohol, gasoline, solvents, etc.          |
| PUR  | Polyurethane                  | 80<br>(176)                               | Alcohol is harmless if applied only for very short time in small amounts (e.g., quick wiping to remove grease).          | Avoid dipping or immersing in alcohol, gasoline, solvents, etc.          |
| PVC  | Polyvinylchloride (Vinyl)     | 80<br>(176)                               | Alcohol and gasoline are harmless if applied only for short time in small amounts (e.g., quick wiping to remove grease). | Avoid dipping or immersing in alcohol, gasoline, solvents, etc.          |
| SAN  | Styrene Acrylonitrile         | 80<br>(176)                               | Alcohol is harmless if applied only for short time in small amounts (e.g., quick wiping to remove grease).               | Avoid dipping or immersing in alcohol, gasoline, solvents etc.           |
| TPO  | Thermoplastic Olefine         | 80<br>(176)                               | Alcohol is harmless. Gasoline is harmless if applied only for short time in small amounts.                               | Most solvents are harmless but avoid dipping in gasoline, solvents, etc. |
| TPU  | Thermoplastic Polyurethane    | 80<br>(176)                               | Alcohol is harmless if applied only for short time in small amounts (e.g., quick wiping to remove grease).               | Avoid dipping or immersing in alcohol, gasoline, solvents, etc.          |
| TSOP | TOYOTA Super Olefine Polymer  | 80<br>(176)                               | Alcohol and gasoline are harmless.                                                                                       | Most solvents are harmless.                                              |
| UP   | Unsaturated Polyester         | 110<br>(233)                              | Alcohol and gasoline are harmless.                                                                                       | Avoid alkali.                                                            |

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

## LOCATION OF PLASTIC BODY PARTS

| Parts Name                               | Code          |
|------------------------------------------|---------------|
| Front Bumper Cover                       | PP            |
| Radiator Grille                          | ABS · ABS/ASA |
| Radiator Lower Grille                    | PP            |
| Radiator Grille Finish Plate             | PP            |
| Front Turn Signal Light                  | PMMA/PC/ABS   |
| Side Turn Signal Light                   | PMMA          |
| Front Fender Outside Moulding            | PVC           |
| Front Fender Mudguard                    | PP/TPO        |
| Outer Rear View Mirror                   | ASA · ABS/ASA |
| Front Door Outside Handle                | PC/PBT        |
| Front Door Outside Moulding              | PVC           |
| Rear Door Outside Handle                 | PC/PBT        |
| Rear Door Outside Moulding               | PVC           |
| Quarter Panel Mudguard Rear              | PP/EPDM       |
| Rear Combination Light                   | PMMA/PC/ABS   |
| Rear Light (Wagon)                       | PMMA/PC/ABS   |
| Luggage Compartment Door Outside Garnish | PC/PBT        |
| License Plate Light                      | PMMA/PC/ABS   |
| Rear Bumper Cover                        | PP            |
| Roof Rail Leg Cover (Wagon)              | ABS           |

**HINT:**

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



# ANTI-RUST TREATMENT

|                                                           | Page  |
|-----------------------------------------------------------|-------|
| GENERAL INFORMATION .....                                 | AR-2  |
| BODY PANEL SEALING AREAS .....                            | AR-4  |
| BODY PANEL UNDERCOATING AREAS .....                       | AR-12 |
| BODY PANEL ANTI-RUST AGENT<br>APPLICATION AREAS .....     | AR-13 |
| BODY PANEL ANTI-CHIPPING PAINT<br>APPLICATION AREAS ..... | AR-14 |

## GENERAL INFORMATION

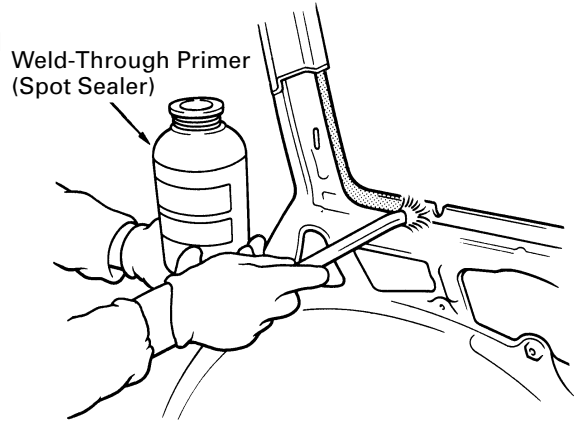
Anti-rust treatment is necessary before welding and before and after the painting process.

### ANTI-RUST TREATMENT BEFORE WELDING

#### 1. WELD-THROUGH PRIMER (SPOT SEALER) APPLICATION

For anti-corrosion measures, always apply the weld-through primer (spot sealer) to welding surfaces where the paint film has been removed.

*HINT: Apply the weld-through primer (spot sealer) so that it does not ooze out from the joining surfaces.*

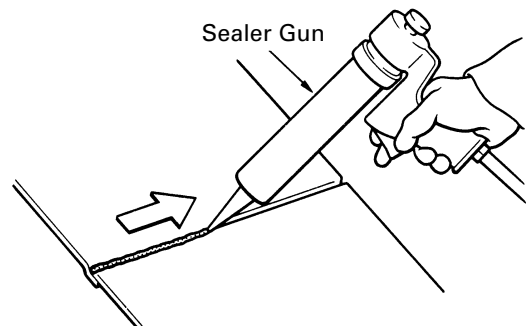


**WELD-THROUGH PRIMER (SPOT SEALER) APPLICATION**

### ANTI-RUST TREATMENT BEFORE PAINTING PROCESS

#### 1. BODY SEALER APPLICATION

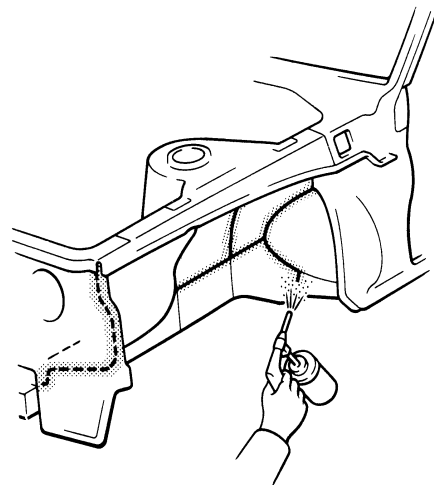
For water-proofing and anti-corrosion measures, always apply the body sealer to the body panel seams and hems of the doors, hoods, etc.



**BODY SEALER APPLICATION**

#### 2. UNDERCOAT APPLICATION

To prevent corrosion and protect the body from damage by flying stones, always apply sufficient undercoat to the bottom surface of the under body and inside of the wheel housings.

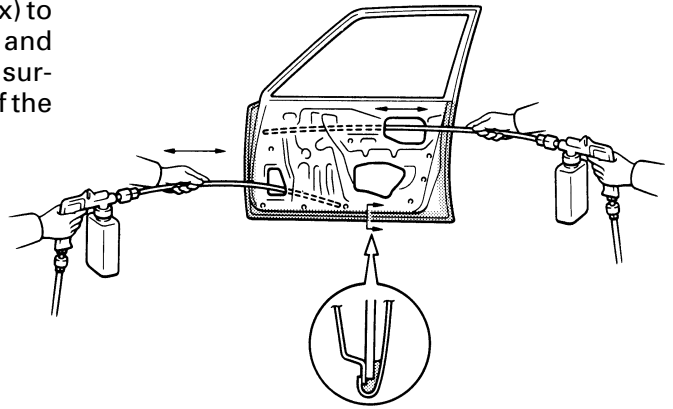


**UNDERCOAT APPLICATION**

## ANTI-RUST TREATMENT AFTER PAINTING PROCESS

### 1. ANTI-RUST AGENT (WAX) APPLICATION

To preserve impossible to paint areas from corrosion, always apply sufficient anti-rust agent (wax) to the inside of the hemming areas of the doors and hoods, and around the hinges, or the welded surfaces inside the boxed cross-section structure of the side member, body pillar, etc.



ANTI-RUST AGENT (WAX) APPLICATION

## REFERENCE: ANTI-RUST TREATMENT BY PAINTING

Painting prevents corrosion and protects the sheet metal from damage. In this section, anti-chipping paint only for anti-corrosion purpose is described.

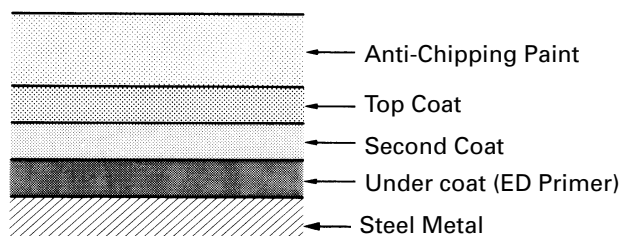
### 1. ANTI-CHIPPING PAINT

To prevent corrosion and protect the body from damage by flying stones, etc., apply anti-chipping paint to the rocker panel, wheel arch areas, valance panel, etc.

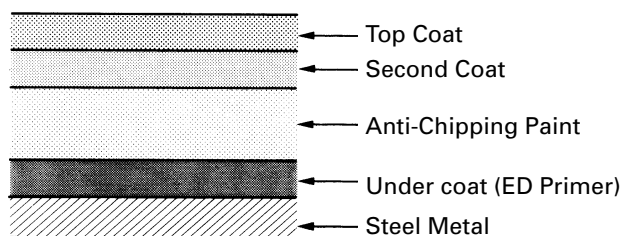
**HINT:**

*Depending on the model or the application area, there are cases where the application of anti-chipping paint is necessary before the second coat or after the top coat.*

- Apply the anti-chipping paint after the top coat.



- Apply the anti-chipping paint before the second coat.

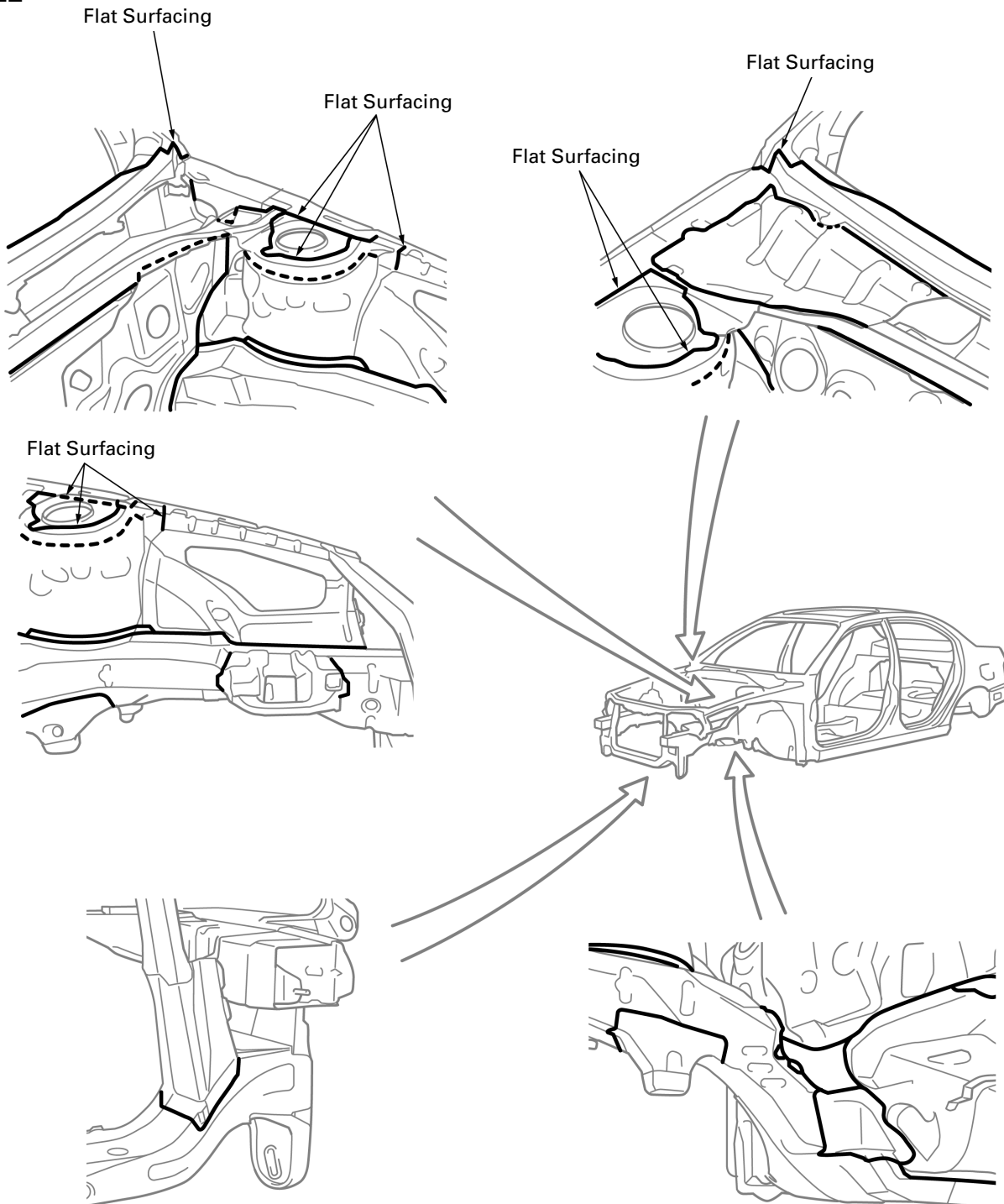


## BODY PANEL SEALING AREAS

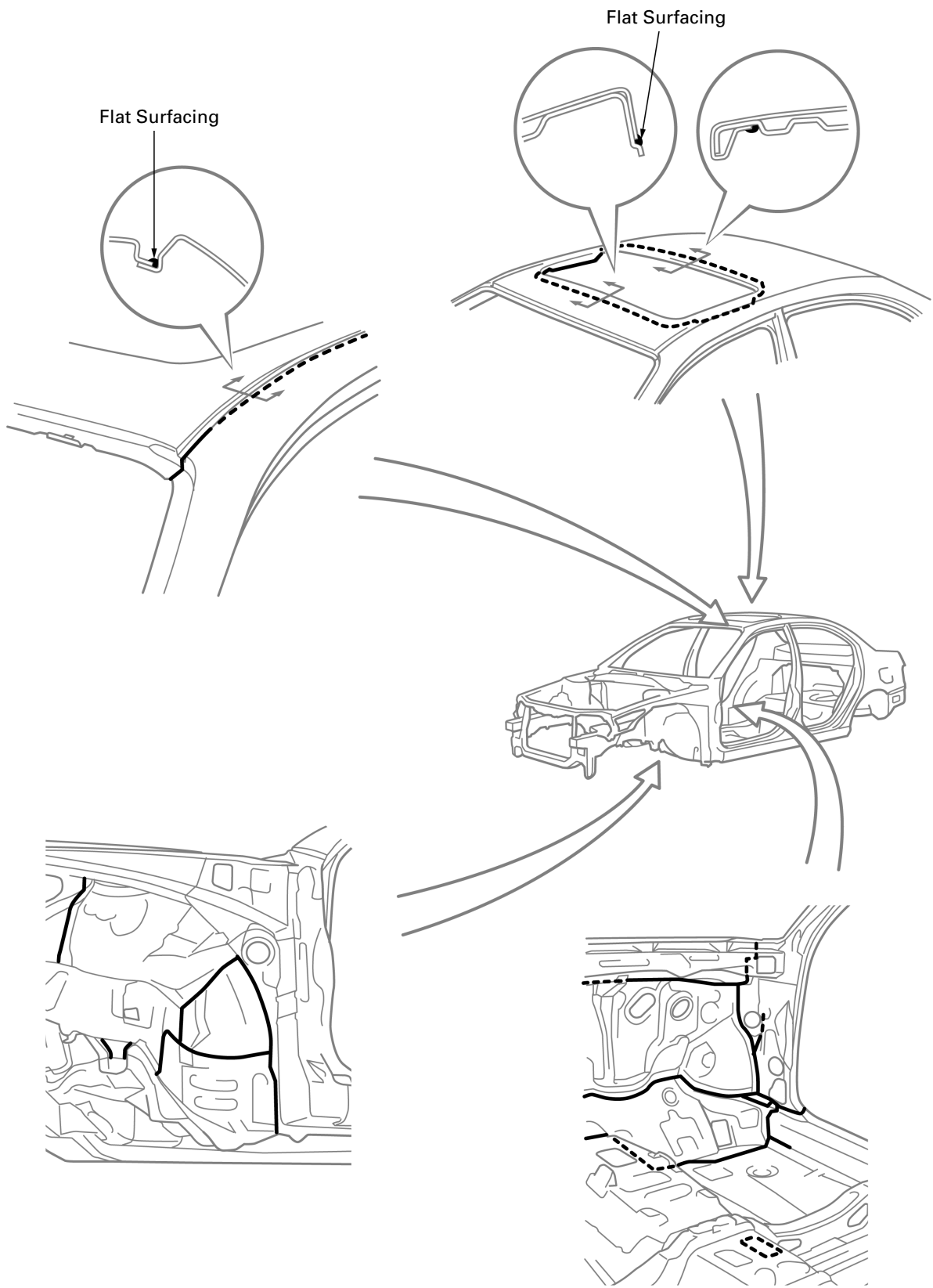
### HINT:

1. Prior to applying body sealer, clean the area with a rag soaked in a grease, wax and silicone remover.
2. If weld-through primer was used, first wipe off any excess and coat with anti-corrosion primer before applying body sealer.
3. Wipe off excess body sealer with a rag soaked in a grease, wax and silicone remover.
4. If body sealer is damaged by peeling, cracks, etc., be sure to repair as necessary.

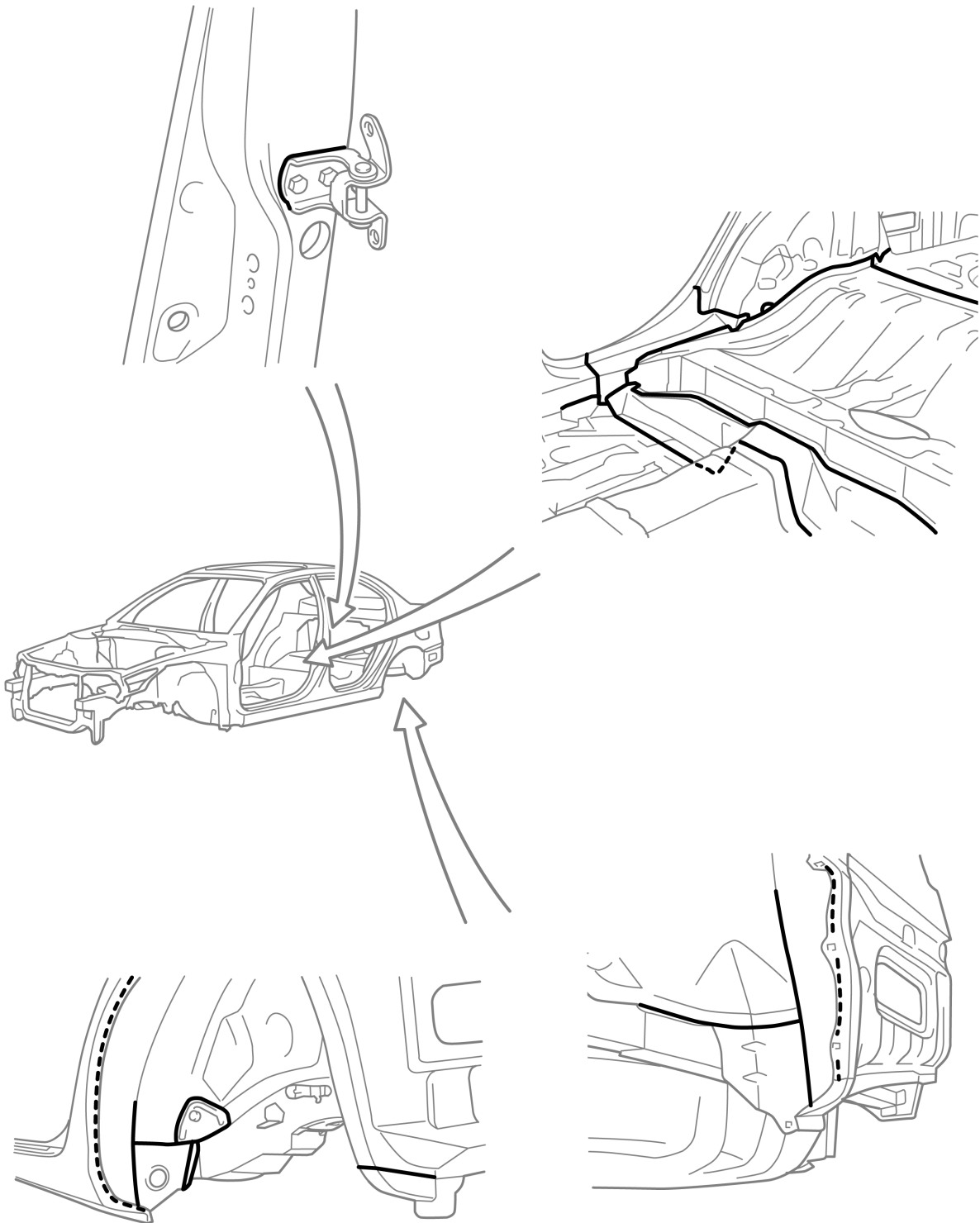
### ALL



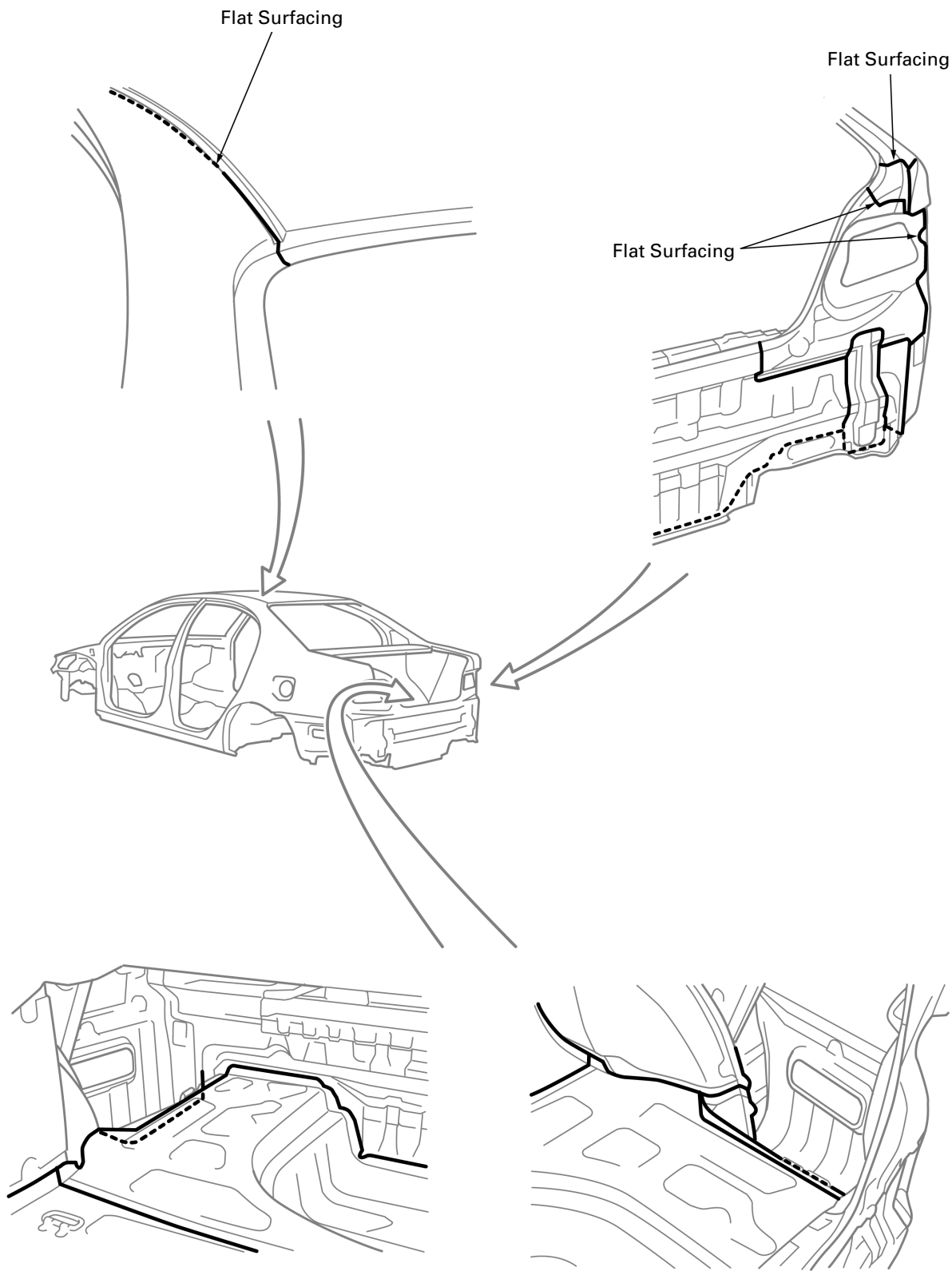
ALL



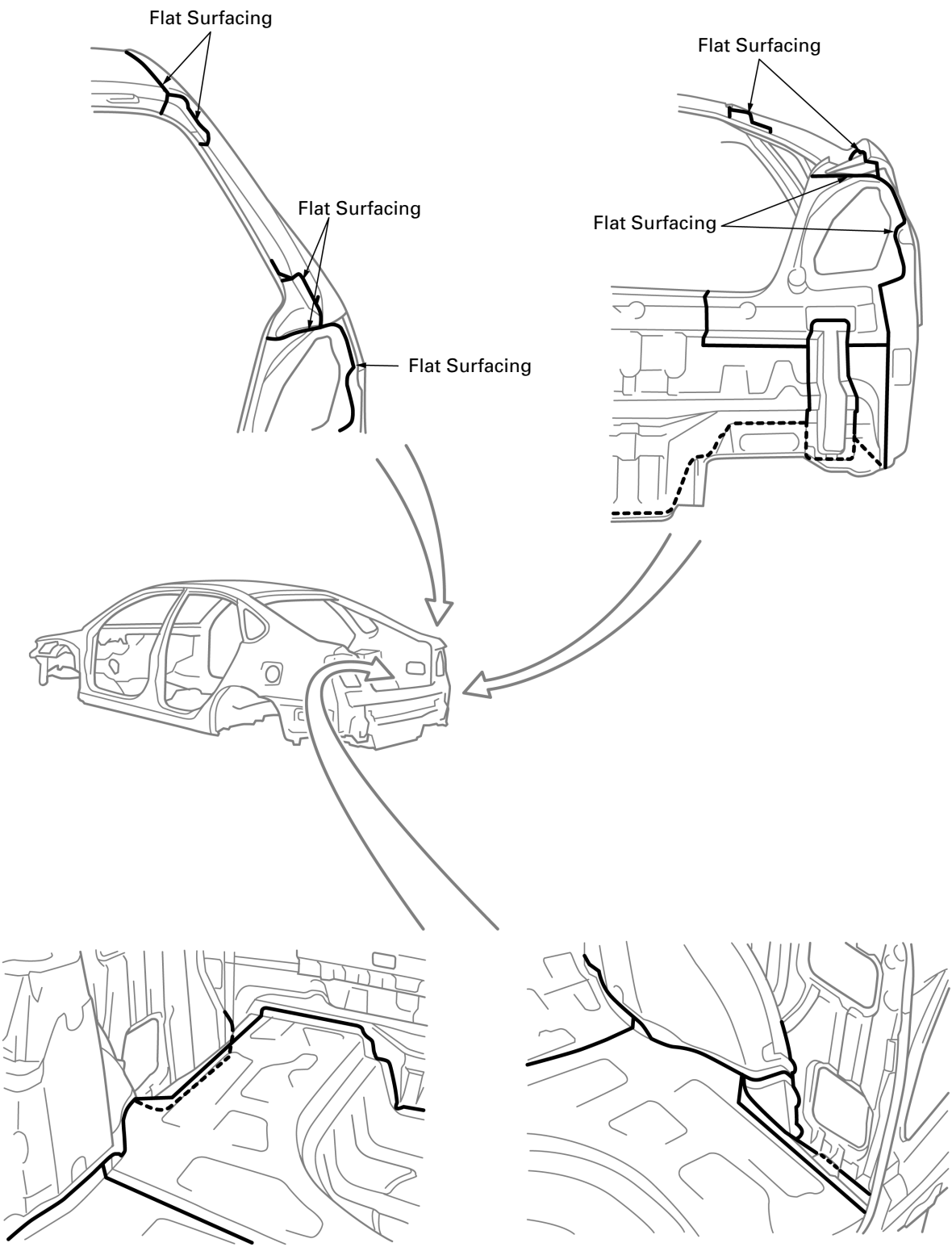
ALL



SEDAN

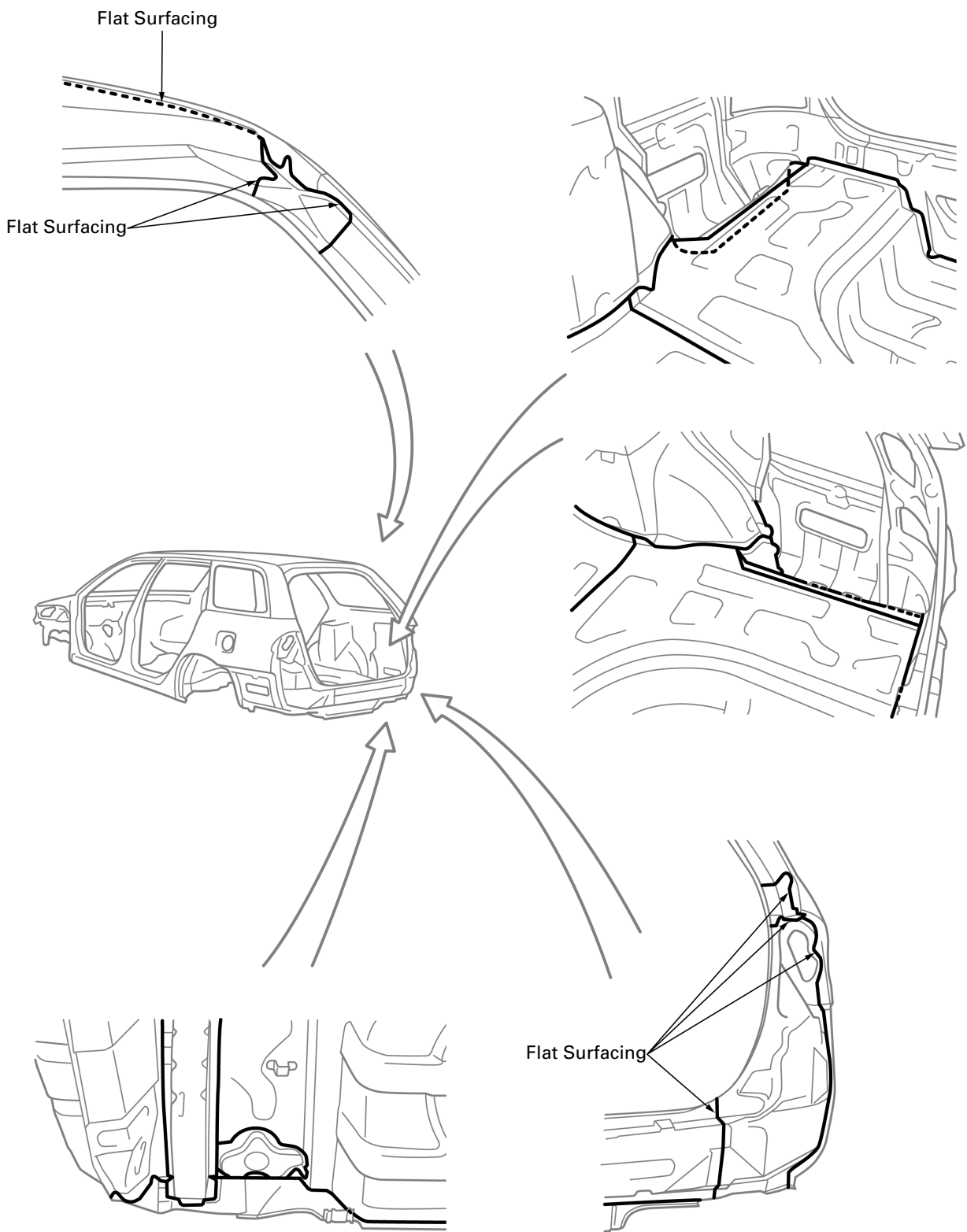


LIFTBACK

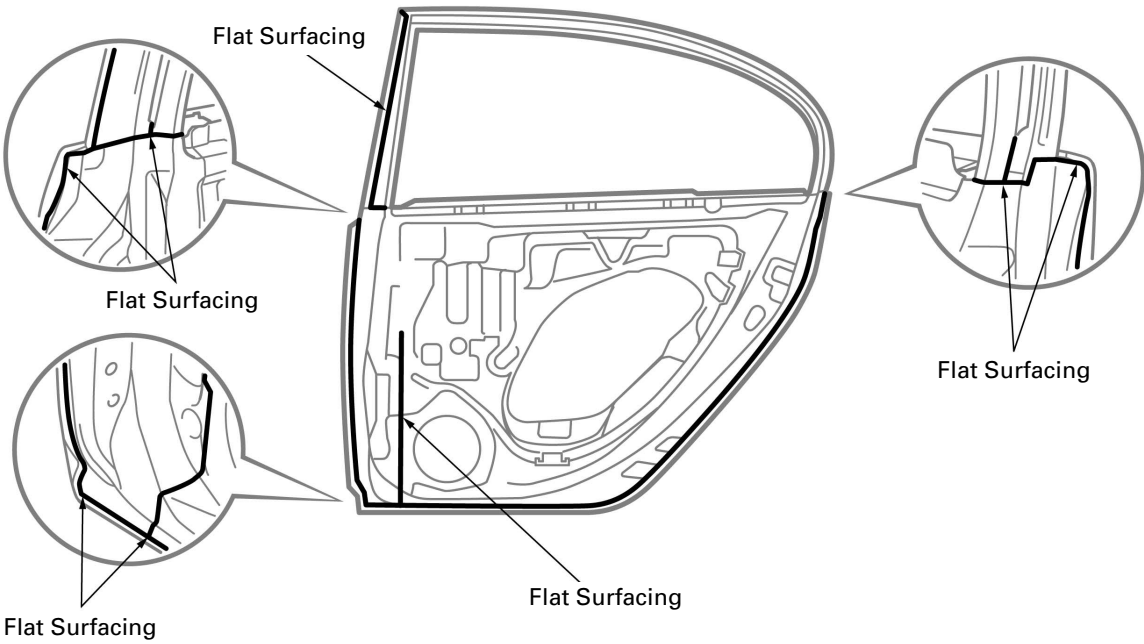
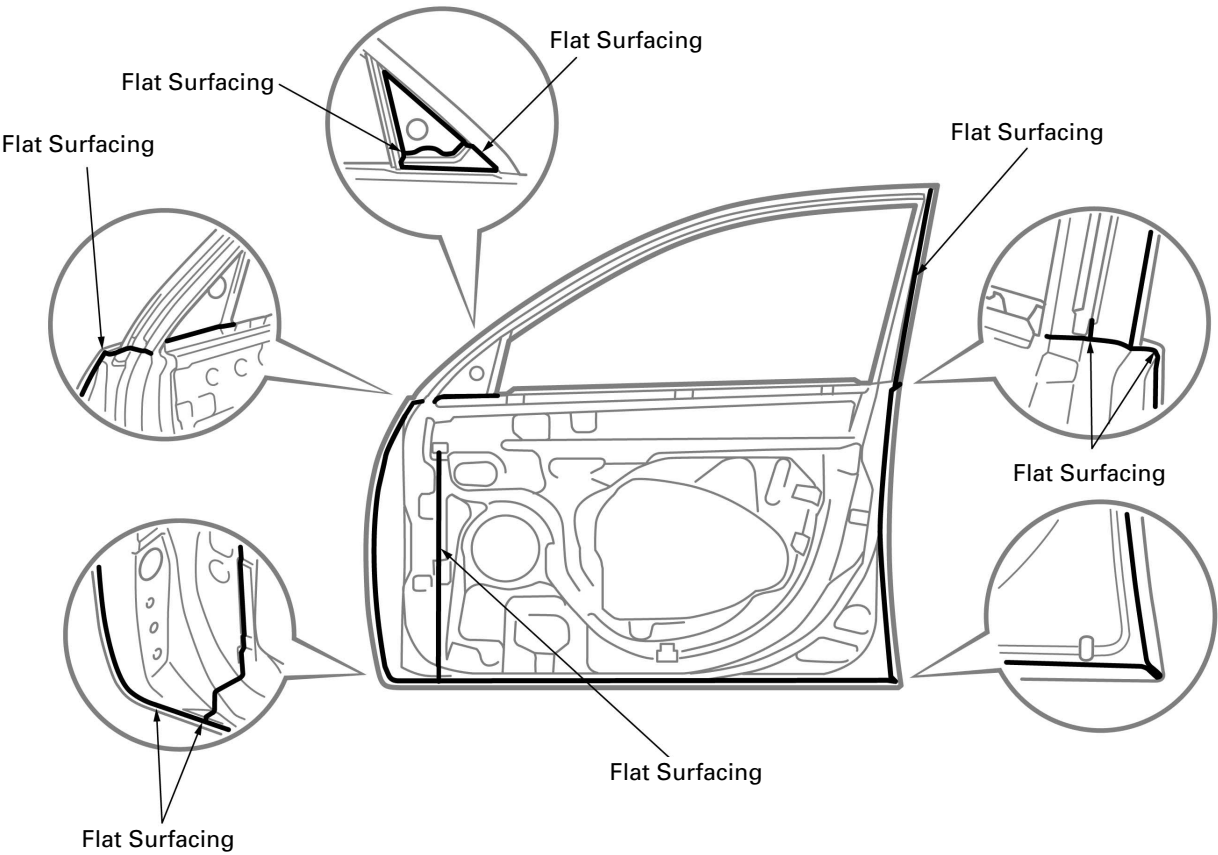




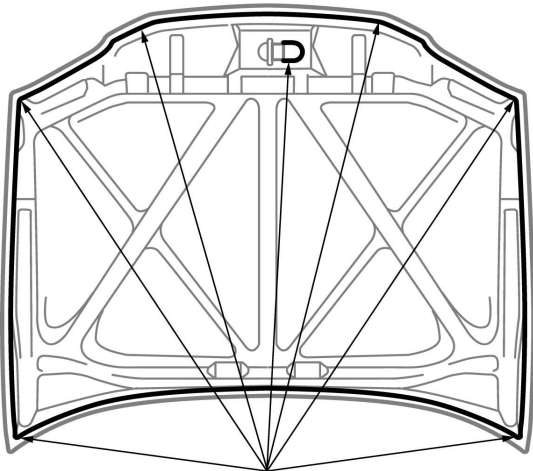
WAGON



ALL

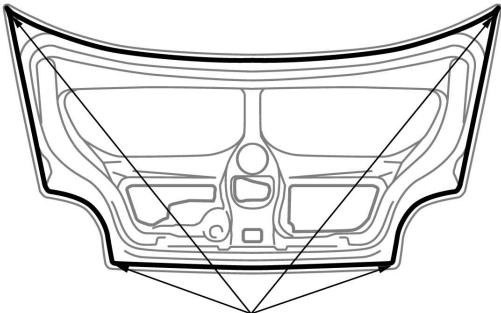


[ALL]



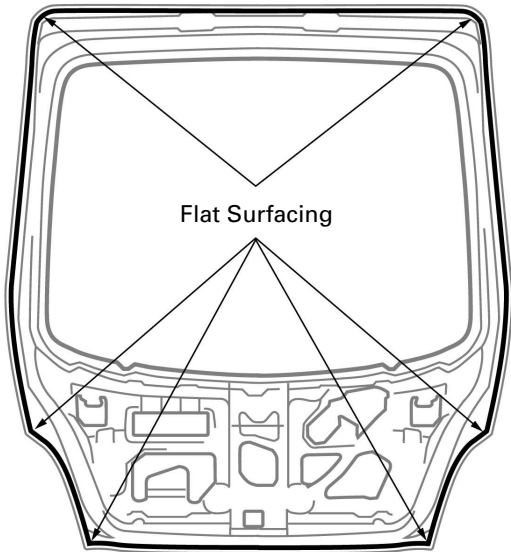
Flat Surfacing

[SEDAN]



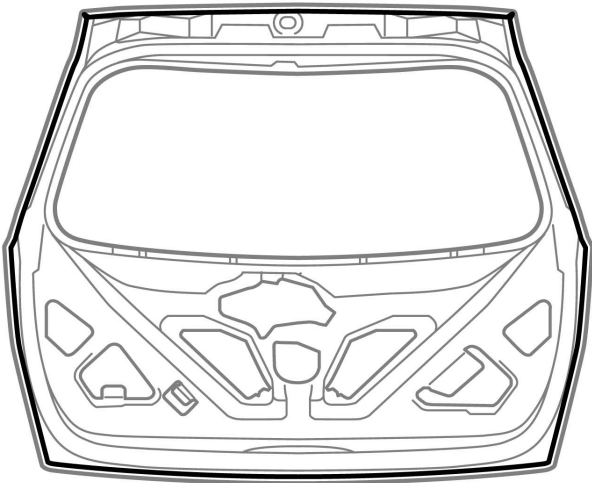
Flat Surfacing

[LIFTBACK]



Flat Surfacing

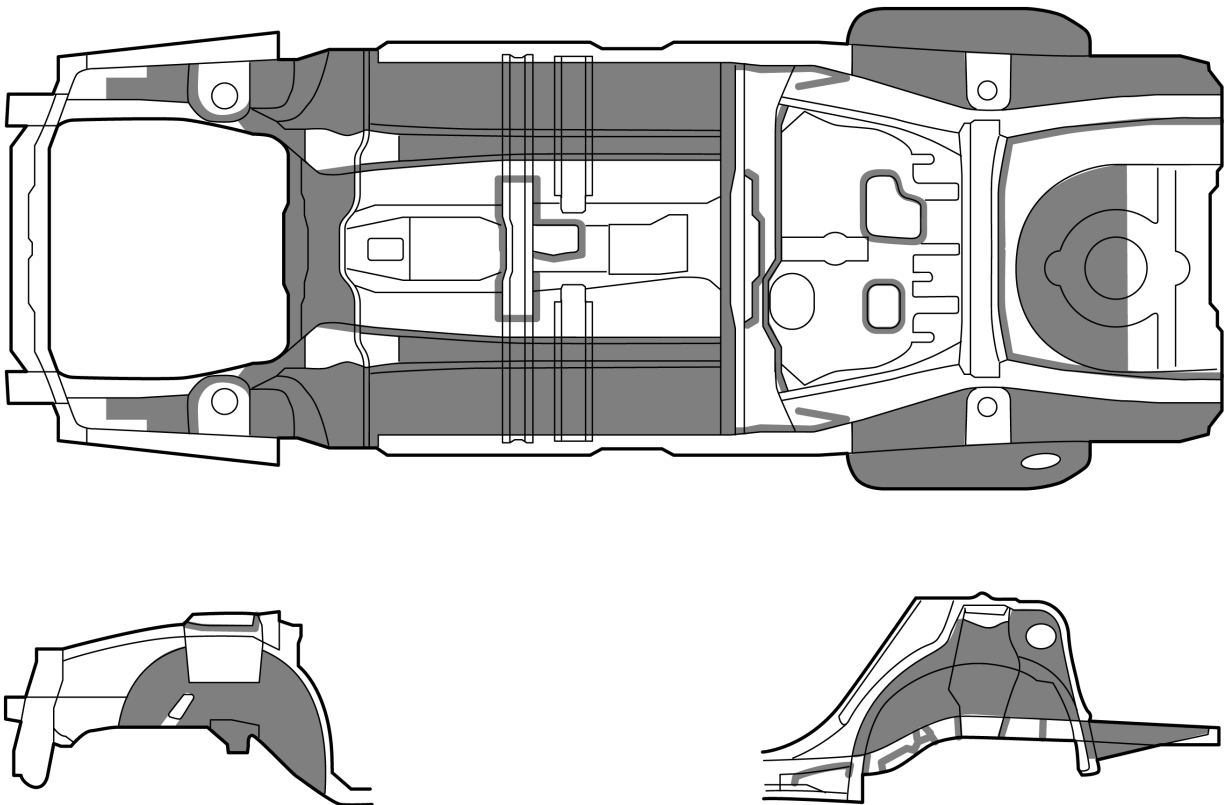
[WAGON]



## BODY PANEL UNDERCOATING AREAS

### HINT:

1. First wipe off any dirt, grease or oil with a rag soaked in a grease, wax and silicone remover.
2. Cover the surrounding areas with masking paper to avoid coating unnecessary areas. If other areas are accidentally coated, wipe off the coating immediately.
3. Apply the first coating of undercoat to all welded areas and panel joints, then apply a second coat over the entire area.
4. Do not coat parts which become hot, such as the tailpipe, or moving parts, such as the propeller shaft.
5. Besides the locations described below, apply undercoating to all weld points under the body to insure corrosion prevention.
6. Be sure to seal the edge of the flange of the member and bracket with undercoating.
7. If undercoat is damaged by peeling, cracks, etc., be sure to repair as necessary.
8. Before the undercoat apply sealer allowing rust prevention to be attained.

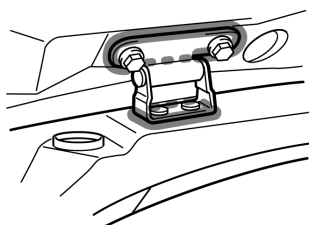


REFERENCE: Referring to the notes above, undercoating should be applied according to the specifications for your country.

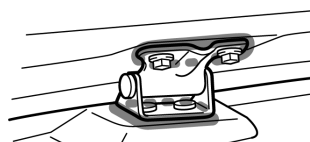
## BODY PANEL ANTI-RUST AGENT (WAX) APPLICATION AREAS

### HINT:

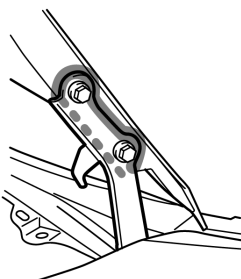
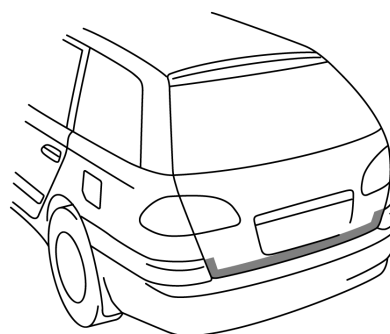
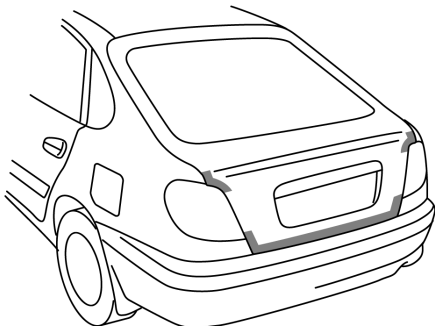
1. Whenever adjusting the doors and hoods, apply anti-rust agent (wax) around the hinges.
2. Even if partially repairing a part, apply anti-rust agent (wax) over the entire application area of the part.
3. Wipe off the anti-rust agent immediately with a rag soaked in a grease, wax and silicone remover, if accidentally applied to other areas.



Back Door Hinge



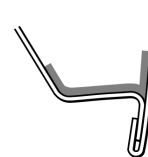
Back Door Hinge



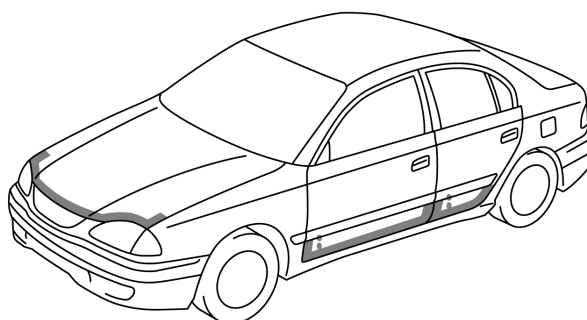
Hood Hinge



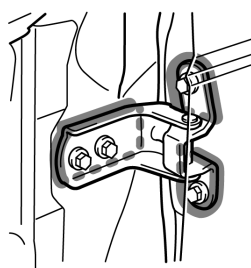
Back Door



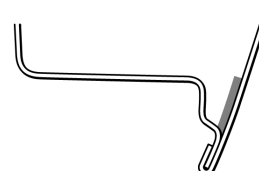
Back Door



Hood



Door Hinge

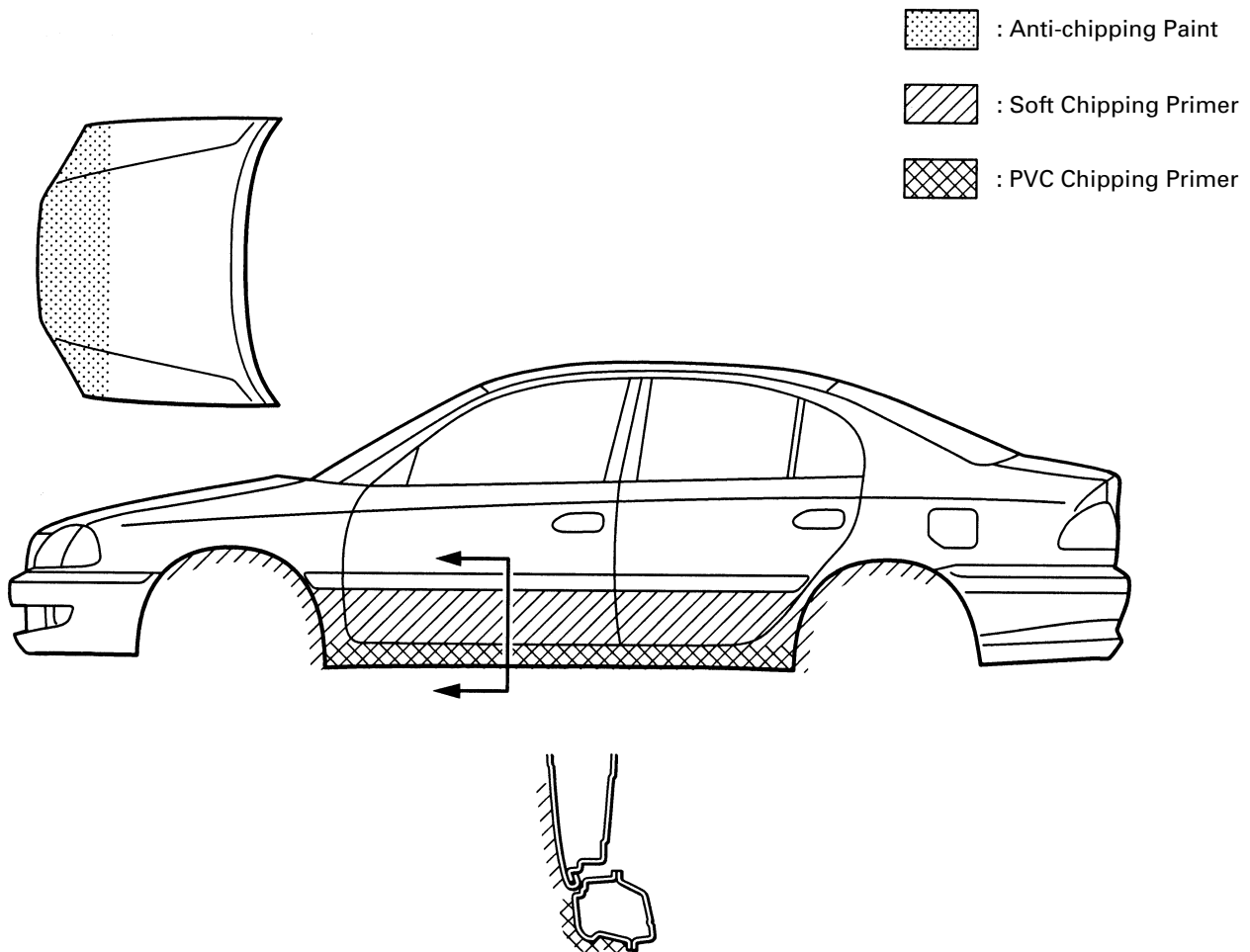


Front Door, Rear Door

## BODY PANEL ANTI-CHIPPING PAINT APPLICATION AREAS

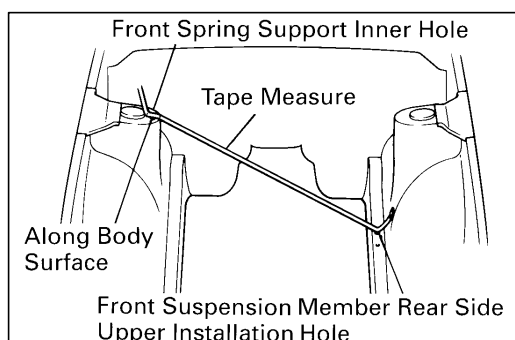
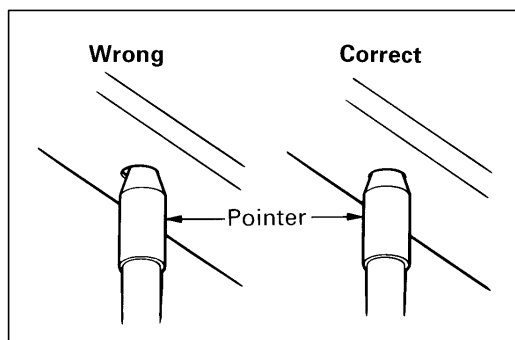
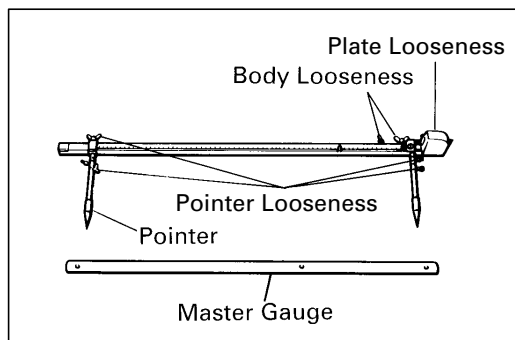
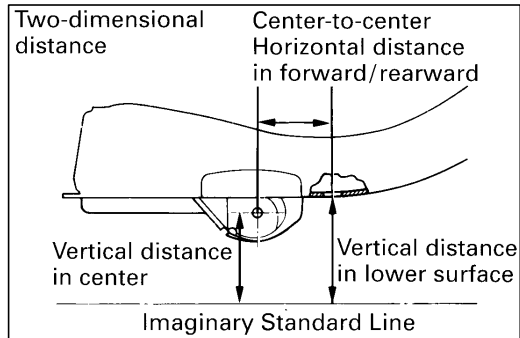
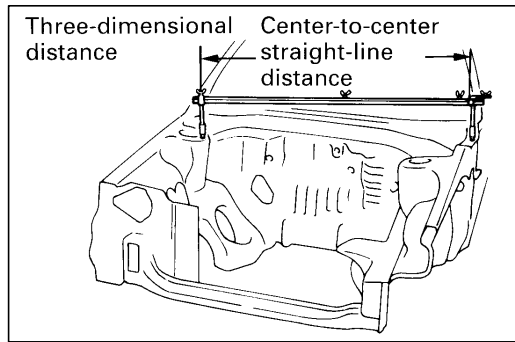
### HINT:

1. Anti-chipping paint should be applied to some areas before the second coat and to others after the top coat.
2. If other areas are accidentally coated, wipe off the paint immediately with a rag soaked in a grease, wax and silicone remover.



# BODY DIMENSIONS

|                               |      |
|-------------------------------|------|
|                               | Page |
| GENERAL INFORMATION .....     | DI-2 |
| BODY DIMENSION DRAWINGS ..... | DI-3 |



## GENERAL INFORMATION

### 1. BASIC DIMENSIONS

- (a) There are two types of dimensions in the diagram. (Three-dimensional distance)

- Straight-line distance between the centers of two measuring points.

(Two-dimensional distance)

- Horizontal distance in forward/rearward between the centers of two measuring points.
  - The height from an imaginary standard line.
- (b) Incases in which only one dimension is given, left and right are symmetrical.
- (c) The dimensions in the following drawing indicate actual distance. Therefore, please use the dimensions as a reference.

### 2. MEASURING

- (a) Basically, all measurements are to be done with a tracking gauge. For portions where it is not possible to use a tracking gauge, a tape measure should be used.
- (b) Use only a tracking gauge that has no looseness in the body, measuring plate, or pointers.

#### HINT:

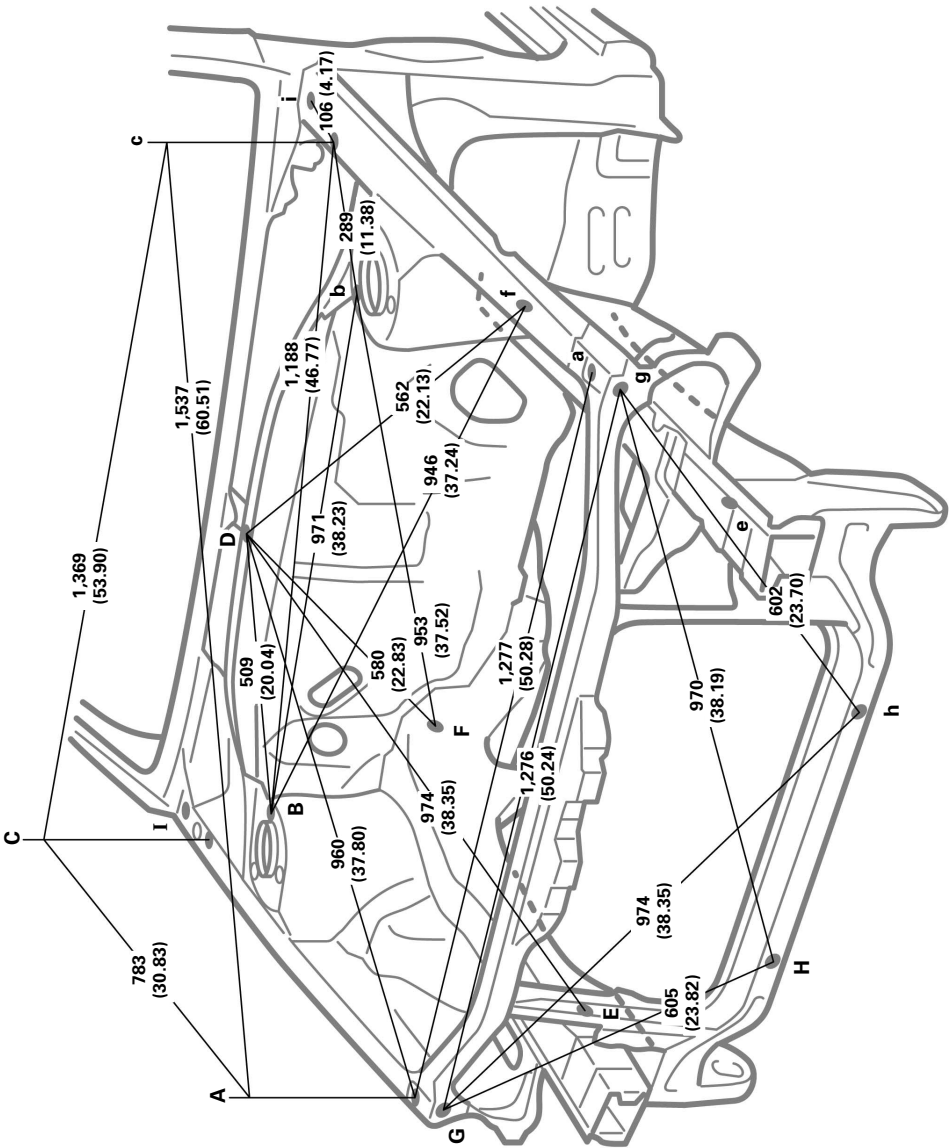
1. The height of the left and right pointers must be equal.
2. Always calibrate the tracking gauge before measuring or after adjusting the pointer height.
3. Take care not to drop the tracking gauge or otherwise shock it.
4. Confirm that the pointers are securely in the holes.

- (c) When using a tape measure, avoid twists and bends in the tape.
- (d) When tracking a diagonal measurement from the front spring support inner hole to the suspension member upper rear installation hole, measure along the front spring support panel surface.



BODY DIMENSION DRAWINGS  
ENGINE COMPARTMENT

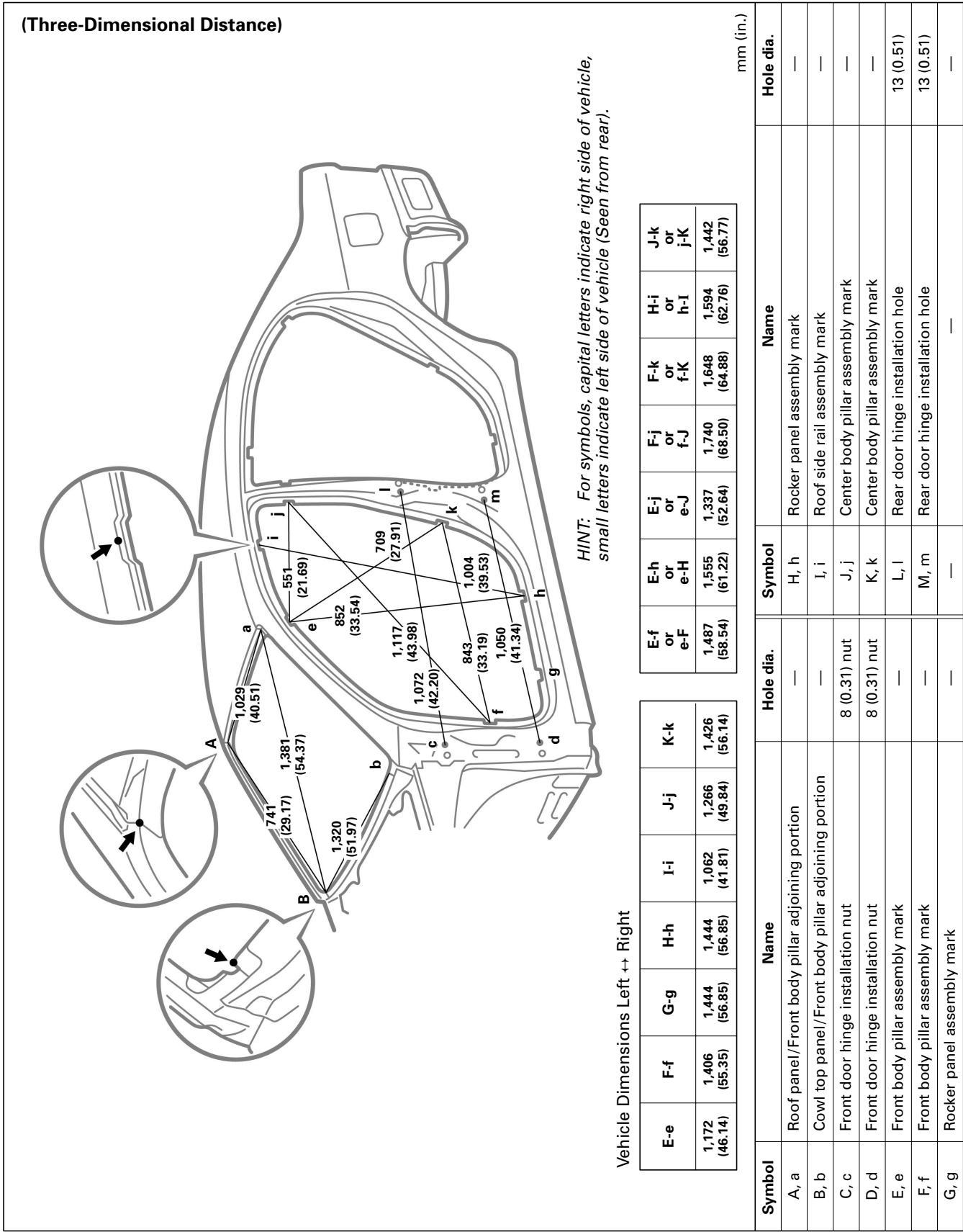
(Three-Dimensional Distance)



HINT: For symbols, capital letters indicate right side of vehicle,  
small letters indicate left side of vehicle (Seen from rear).

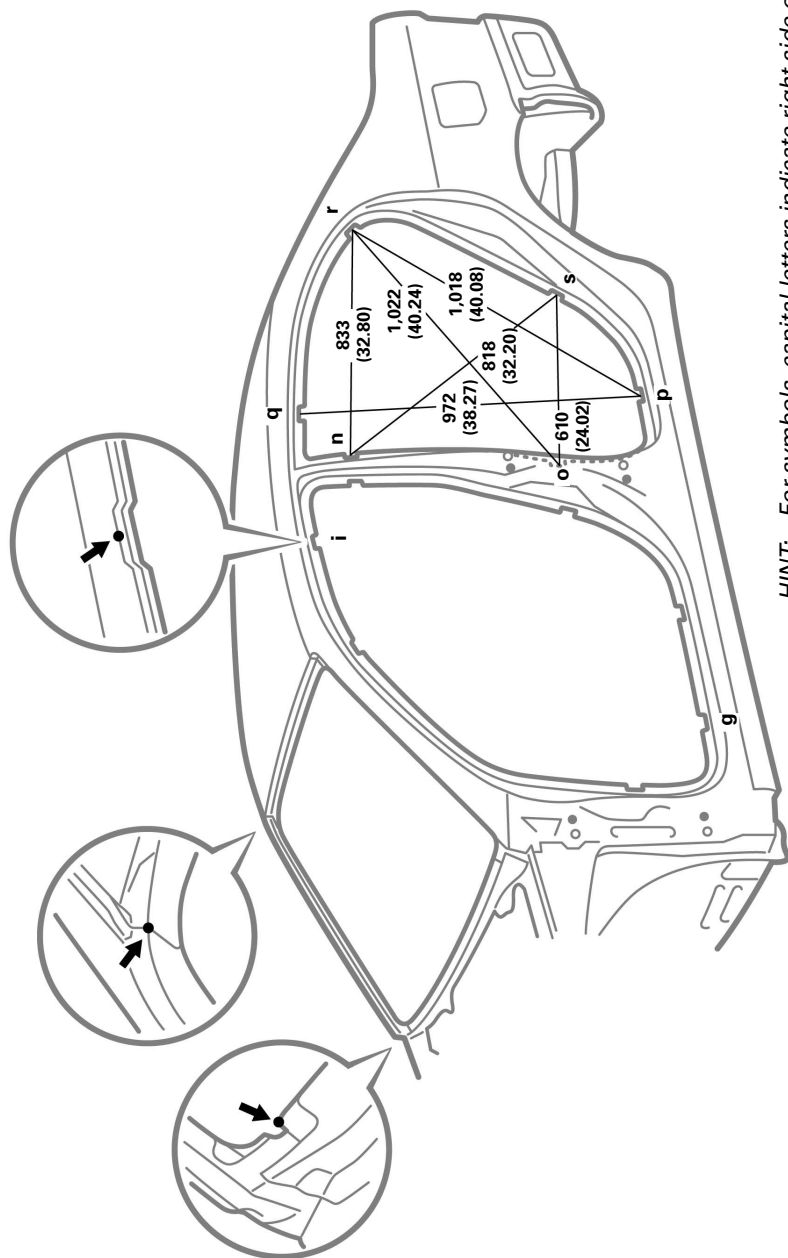
| Symbol | Name                                     | Hole dia.    | Symbol | Name                                 | Hole dia.    |
|--------|------------------------------------------|--------------|--------|--------------------------------------|--------------|
| A, a   | Front fender installation nut – front    | 6 (0.24) nut | F, f   | Front side member working hole       | 18 (0.71)    |
| B, b   | Front spring support hole – inner        | 11 (0.43)    | G, g   | Radiator upper support standard hole | 10 (0.39)    |
| C, c   | Front fender installation nut – rear     | 6 (0.24) nut | H, h   | Front crossmember standard hole      | 15 (0.59)    |
| D      | Cowl ventilator louver installation hole | 6 (0.24)     | I, i   | Hood hinge installation nut – rear   | 8 (0.31) nut |
| E, e   | Front side member working hole           | 18 (0.71)    | —      | —                                    | —            |

BODY OPENING AREAS  
(Side View – Front)



**(Side View: Sedan – Rear)**

**HINT:** For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (Seen from rear).

Vehicle Dimensions Left  $\leftrightarrow$  Right

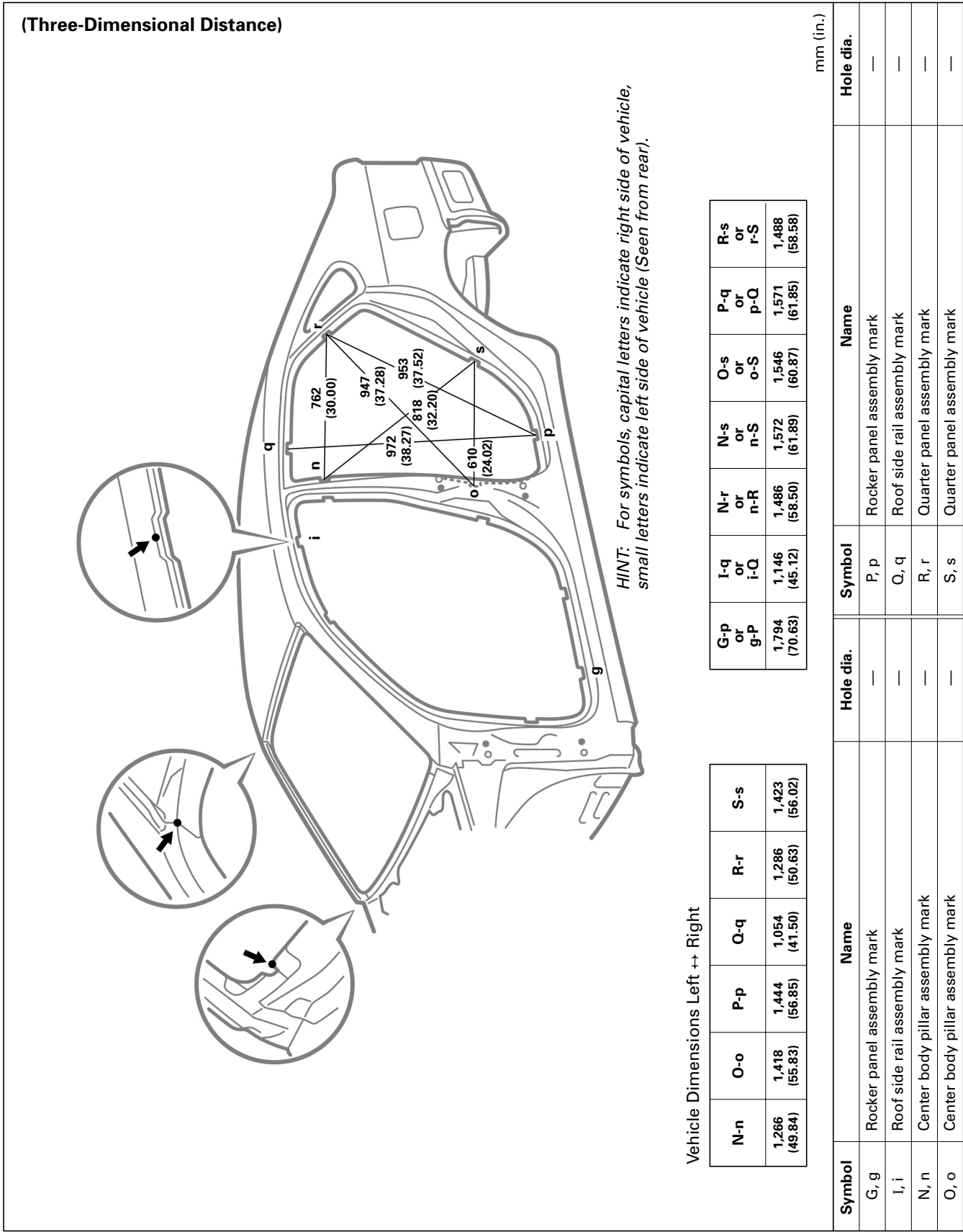
| N-n              | O-o              | P-p              | Q-q              | R-r              | S-s              |
|------------------|------------------|------------------|------------------|------------------|------------------|
| 1.266<br>(49.84) | 1.418<br>(55.83) | 1.444<br>(56.85) | 1.054<br>(41.50) | 1.262<br>(49.69) | 1.423<br>(56.02) |

| G-p<br>or<br>g-P | I-q<br>or<br>i-Q | N-r<br>or<br>n-R | N-s<br>or<br>n-S | O-s<br>or<br>o-S | P-q<br>or<br>p-Q | R-s<br>or<br>r-S |
|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| 1.794<br>(70.63) | 1.146<br>(45.12) | 1.514<br>(59.61) | 1.572<br>(61.89) | 1.546<br>(60.87) | 1.571<br>(61.85) | 1.499<br>(59.02) |

| Symbol | Name                             | Hole dia. | Symbol | Name                         | Hole dia. |
|--------|----------------------------------|-----------|--------|------------------------------|-----------|
| G, g   | Rocker panel assembly mark       | —         | P, p   | Rocker panel assembly mark   | —         |
| I, i   | Roof side rail assembly mark     | —         | Q, q   | Roof side rail assembly mark | —         |
| N, n   | Center body pillar assembly mark | —         | R, r   | Quarter panel assembly mark  | —         |
| O, o   | Center body pillar assembly mark | —         | S, s   | Quarter panel assembly mark  | —         |

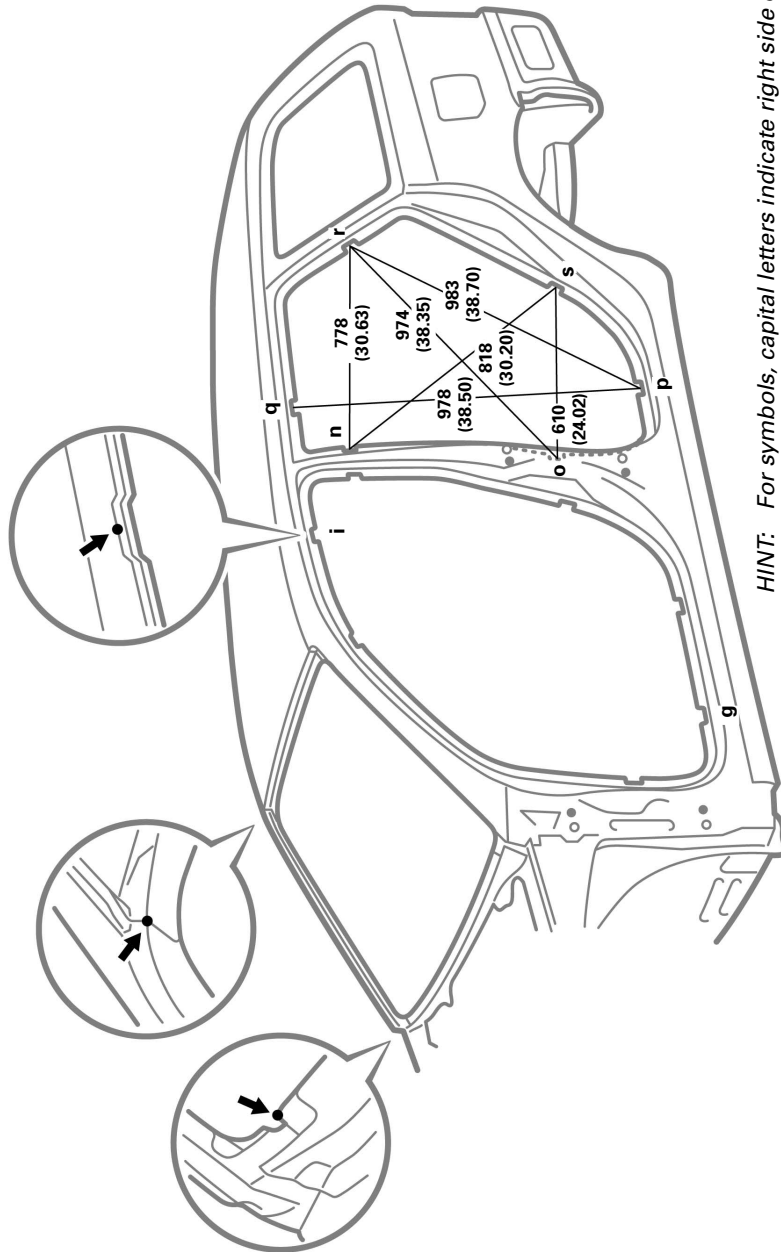
BODY OPENING AREAS  
(Side View: Liftback – Rear)



## BODY OPENING AREAS

### (Side View: Wagon – Rear)

(Three-Dimensional Distance)



**HINT:** For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (Seen from rear).

Vehicle Dimensions Left ↔ Right

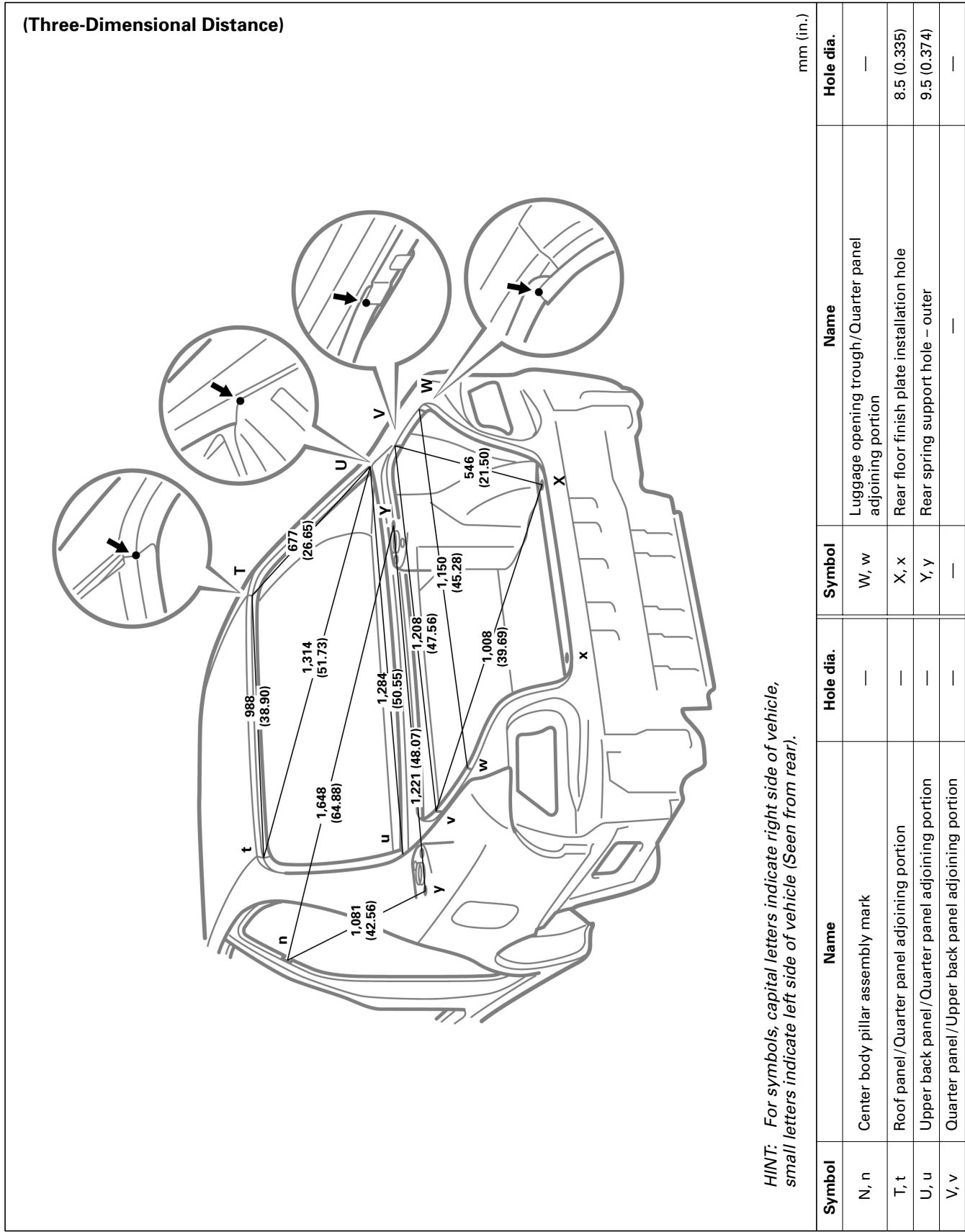
| N-n              | O-o              | P-p              | Q-q              | R-r              | S-s              |
|------------------|------------------|------------------|------------------|------------------|------------------|
| 1,266<br>(49.84) | 1,418<br>(55.83) | 1,444<br>(56.85) | 1,048<br>(41.26) | 1,264<br>(49.76) | 1,423<br>(56.02) |

| G-p<br>or<br>g-P | I-q<br>or<br>i-Q | N-r<br>or<br>n-R | O-s<br>or<br>o-S | P-q<br>or<br>p-Q | R-s<br>or<br>r-S |
|------------------|------------------|------------------|------------------|------------------|------------------|
| 1,794<br>(70.63) | 1,125<br>(44.29) | 1,485<br>(58.46) | 1,572<br>(60.87) | 1,571<br>(61.85) | 1,490<br>(58.66) |

mm (in.)

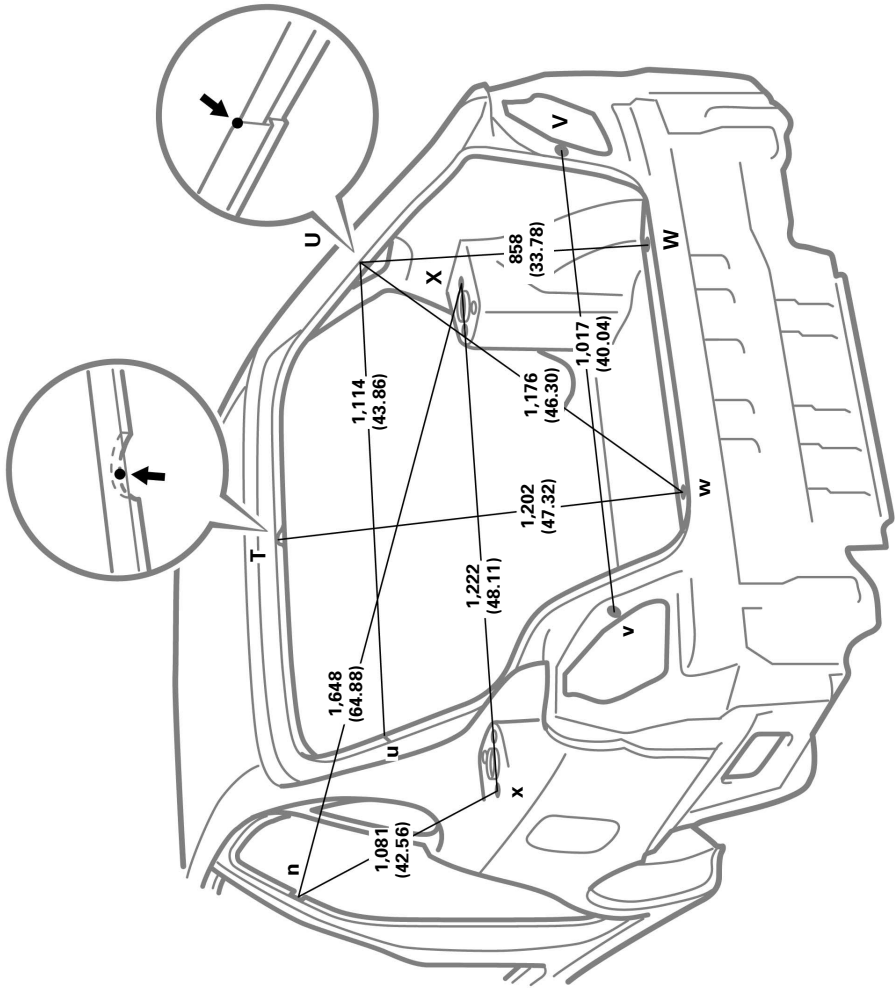
| Symbol | Name                             | Hole dia. | Symbol | Name                         | Hole dia. |
|--------|----------------------------------|-----------|--------|------------------------------|-----------|
| G, g   | Rocker panel assembly mark       | —         | P, p   | Rocker panel assembly mark   | —         |
| I, i   | Roof side rail assembly mark     | —         | Q, q   | Roof side rail assembly mark | —         |
| N, n   | Center body pillar assembly mark | —         | R, r   | Quarter panel assembly mark  | —         |
| O, o   | Center body pillar assembly mark | —         | S, s   | Quarter panel assembly mark  | —         |

BODY OPENING AREAS  
(Rear View: Sedan)



BODY OPENING AREAS  
(Rear View: Liftback)

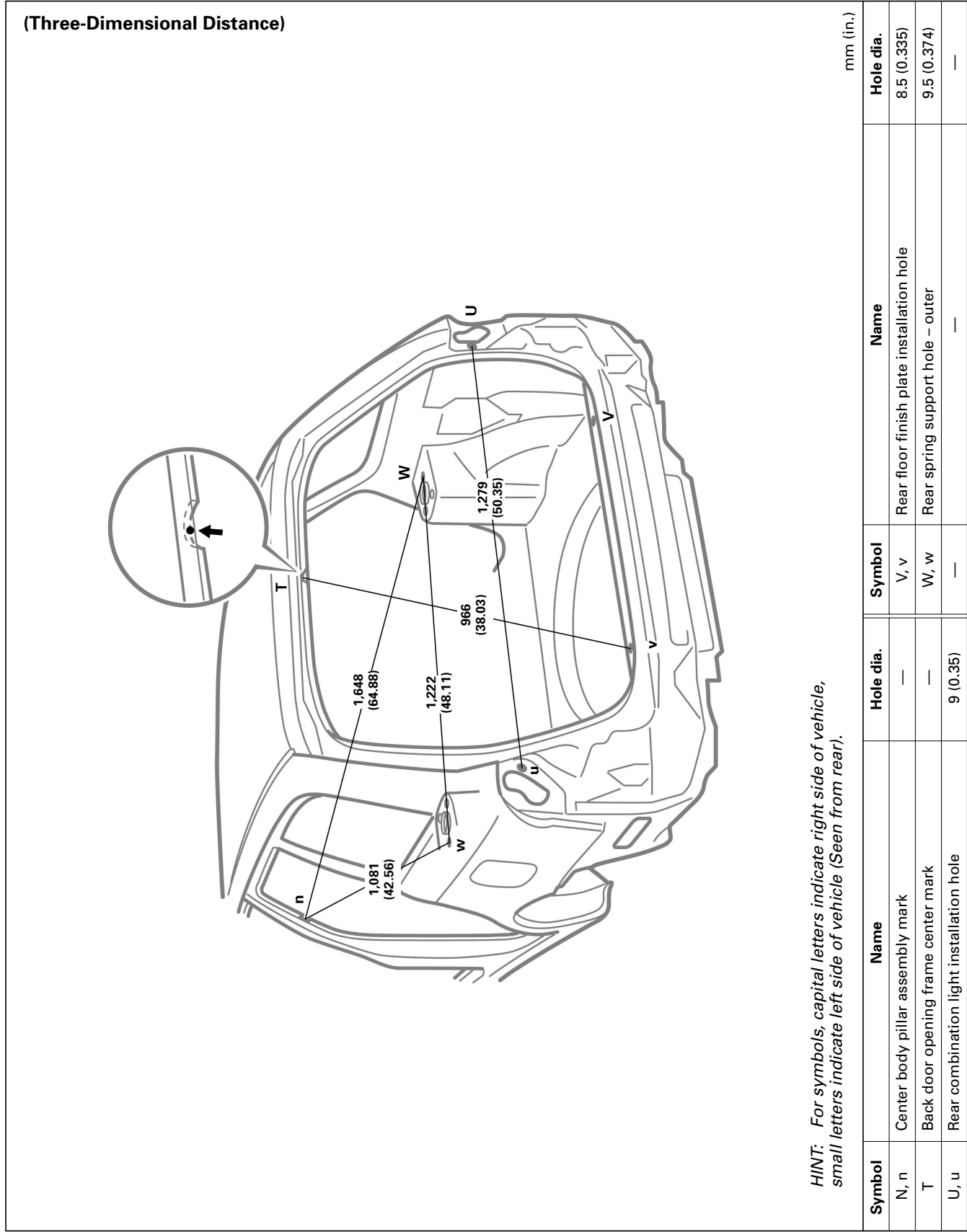
(Three-Dimensional Distance)



HINT: For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (Seen from rear).

| Symbol | Name                                                  | Hole dia. | Symbol | Name                                      | Hole dia.   |
|--------|-------------------------------------------------------|-----------|--------|-------------------------------------------|-------------|
| N, n   | Center body pillar assembly mark                      | —         | V, v   | Rear combination light installation hole  | 10 (0.39)   |
| T      | Back door opening frame center mark                   | —         | W, w   | Rear floor finish plate installation hole | 8.5 (0.335) |
| U, u   | Roof side inner panel/Quarter panel adjoining portion | —         | X, x   | Rear spring support hole – outer          | 9.5 (0.374) |

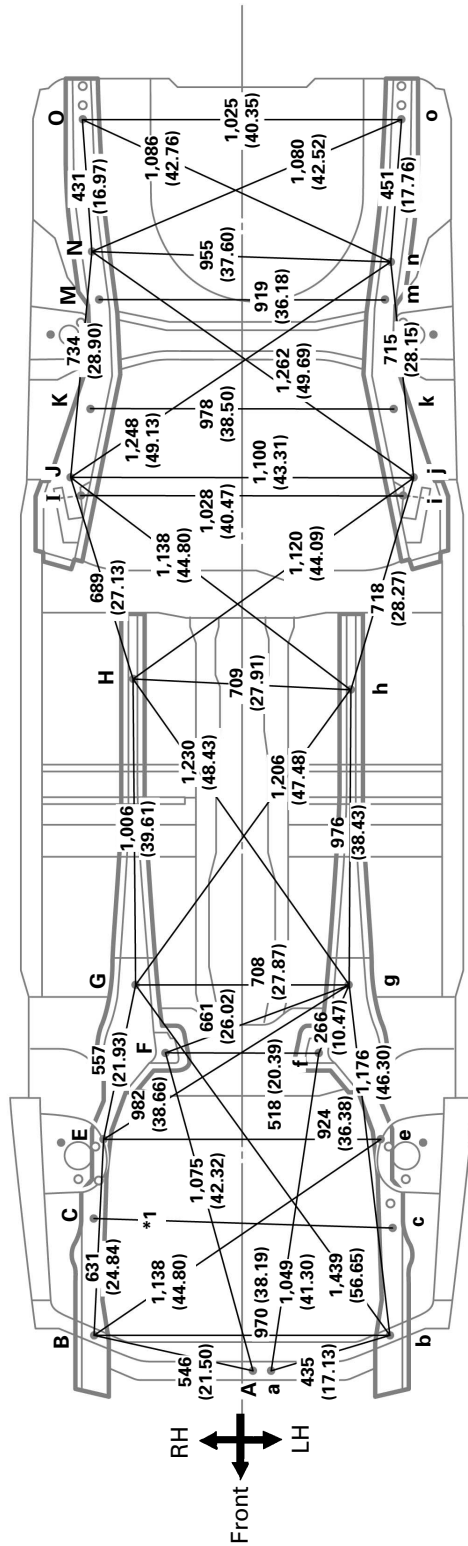
BODY OPENING AREAS  
(Rear View: Wagon)



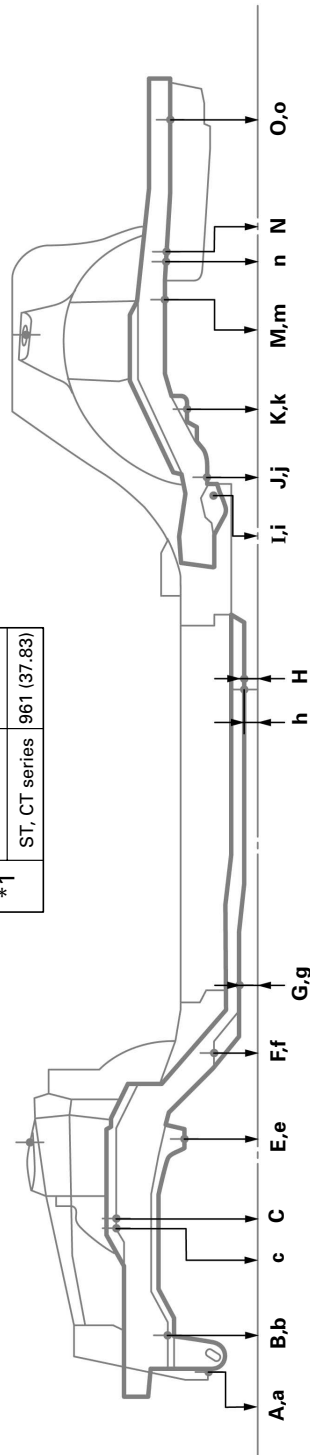


## UNDER BODY

(Three-Dimensional Distance)

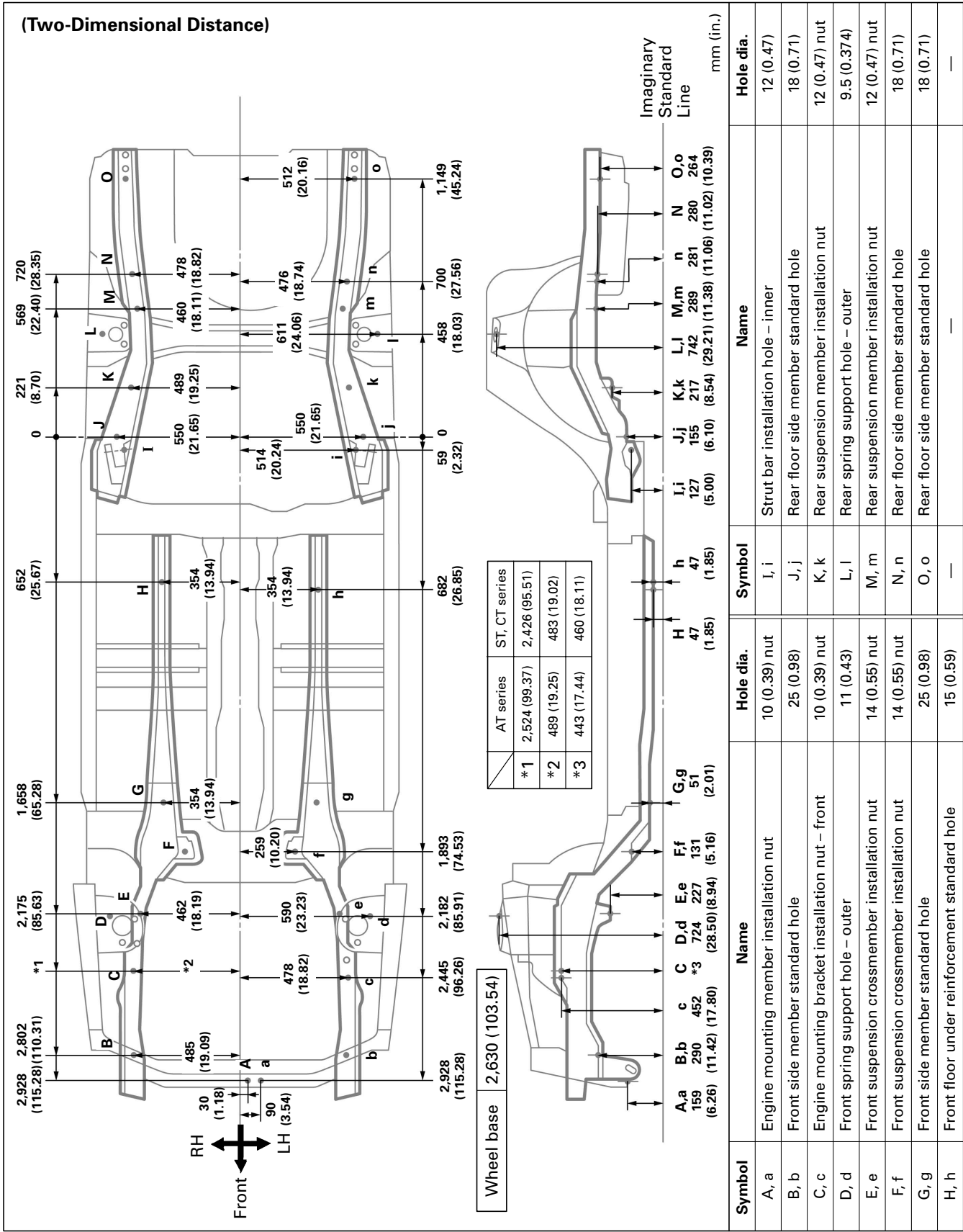


|    |               |             |
|----|---------------|-------------|
| *1 | AT series     | 970 (38.19) |
|    | ST, CT series | 961 (37.83) |



| Symbol | Name                                             | Hole dia.     | Symbol | Name                                    | Hole dia.     |
|--------|--------------------------------------------------|---------------|--------|-----------------------------------------|---------------|
| A, a   | Engine mounting member installation nut          | 10 (0.39) nut | I, i   | Strut bar installation hole – inner     | 12 (0.47)     |
| B, b   | Front side member standard hole                  | 25 (0.98)     | J, j   | Rear floor side member standard hole    | 18 (0.71)     |
| C, c   | Engine mounting bracket installation nut – front | 10 (0.39) nut | K, k   | Rear suspension member installation nut | 12 (0.47) nut |
| E, e   | Front suspension crossmember installation nut    | 14 (0.55) nut | M, m   | Rear suspension member installation nut | 12 (0.47) nut |
| F, f   | Front suspension crossmember installation nut    | 14 (0.55) nut | N, n   | Rear floor side member standard hole    | 18 (0.71)     |
| G, g   | Front side member standard hole                  | 25 (0.98)     | O, o   | Rear floor side member standard hole    | 18 (0.71)     |
| H, h   | Front floor under reinforcement standard hole    | 15 (0.59)     | —      | —                                       | —             |

UNDER BODY (Cont'd)



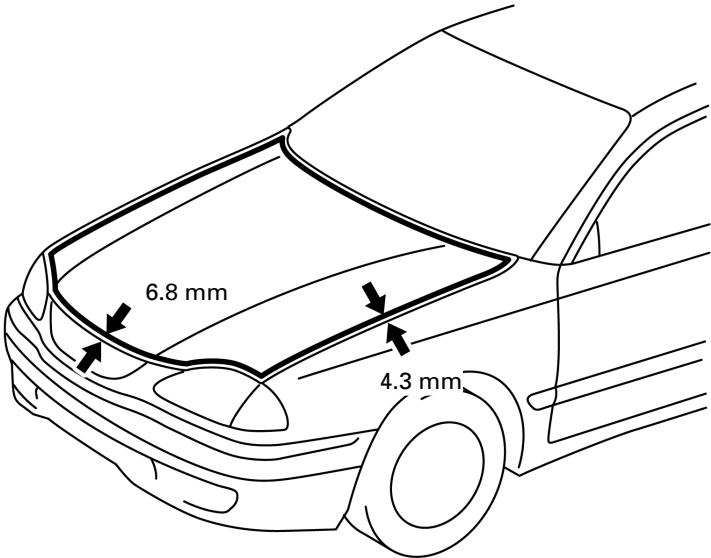
# APPENDIX

|                                                |             |
|------------------------------------------------|-------------|
|                                                | <b>Page</b> |
| <b>FIT STANDARDS .....</b>                     | <b>AP-2</b> |
| <b>SILENCER SHEET INSTALLATION AREAS .....</b> | <b>AP-4</b> |

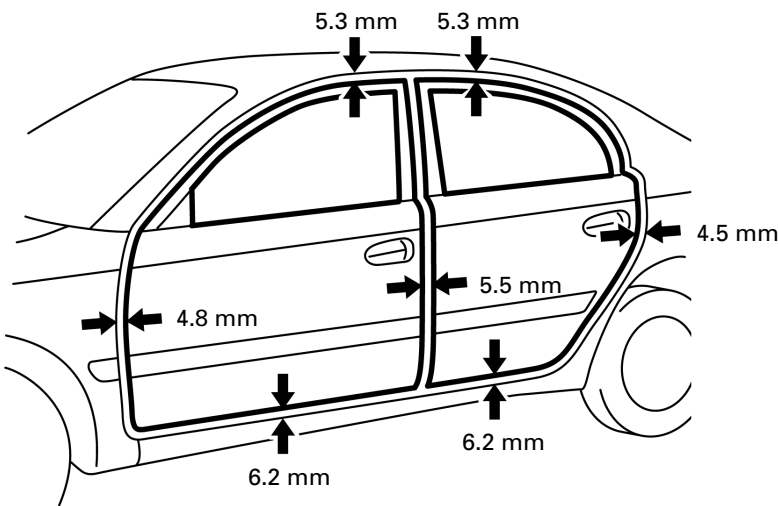
FIT STANDARDS

After doors and the engine hood are installed, be sure to perform fit adjustment to prevent abnormal wind noise and ensure a good appearance.

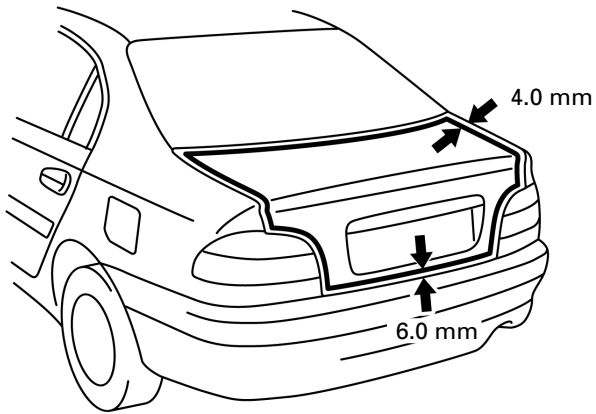
ALL



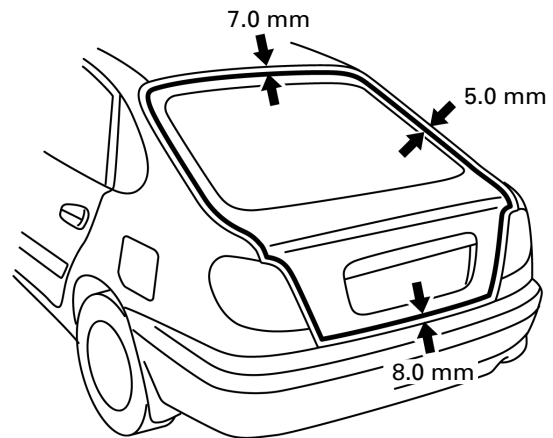
| mm  | in.   |
|-----|-------|
| 4.3 | 0.169 |
| 4.5 | 0.177 |
| 4.8 | 0.189 |
| 5.3 | 0.209 |
| 5.5 | 0.217 |
| 6.2 | 0.244 |
| 6.8 | 0.268 |



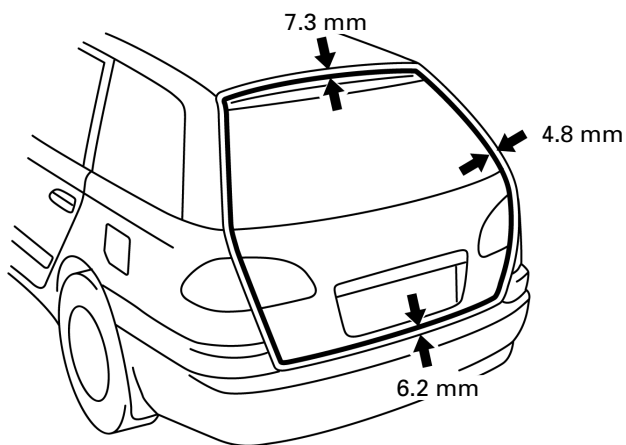
[SEDAN]



[LIFTBACK]



[WAGON]



| mm  | in.   |
|-----|-------|
| 4.0 | 0.157 |
| 4.8 | 0.189 |
| 5.0 | 0.197 |
| 6.0 | 0.236 |
| 6.2 | 0.244 |
| 7.0 | 0.276 |
| 7.3 | 0.287 |
| 8.0 | 0.315 |

SILENCER SHEET INSTALLATION AREAS

