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 SCION tC.

Applicable models: ANT10 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 SCION model 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 SCION tC refer to the repair manuals.

If you require the above manuals, please contact your SCION 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

VIEWS OF THIS TEXT

Scope of the repair work explanation

- This text explains the welding panel replacement instructions from the vehicle's white body condition. We have abbreviated the explanations of the removal and reinstallation of the equipment parts up to the white body condition and of the installation, inspection, adjustment and final inspection of equipment parts after replacing the weld panel.

Section categories

- Each section has been divided as shown below.

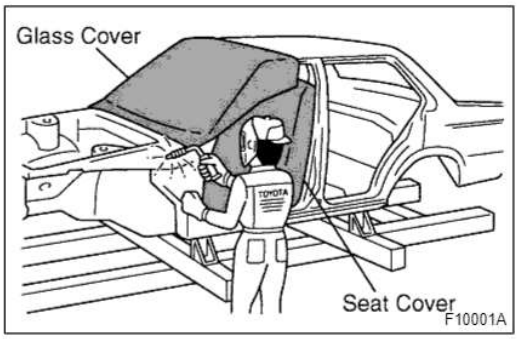
Section Title	Contents	Examples
INTRODUCTION	Explanation of general body repair. Views of weld panel replacement instructions.	Cautionary items. Views of weld panel replacement instructions.
BODY PANEL REPLACEMENT	Instructions for replacing the weld panels from the white body condition, from which bolted parts have been removed, with individual supply parts.	Front side member replacement. Quarter panel replacement.
BODY DIMENSIONS	Body aligning measurements.	Dimension diagrams.
PAINT • COATING	Scope and type of anti-rust treatment, etc. together with weld panel replacement.	Under coat. Body sealer.

Abbreviation of contents in this text.

- The following essential procedures have been abbreviated. When actually working, conduct this work properly.
  (1) Jack and lift operations.
  (2) Clean and wash removed parts, if necessary.
  (3) Visual inspection.

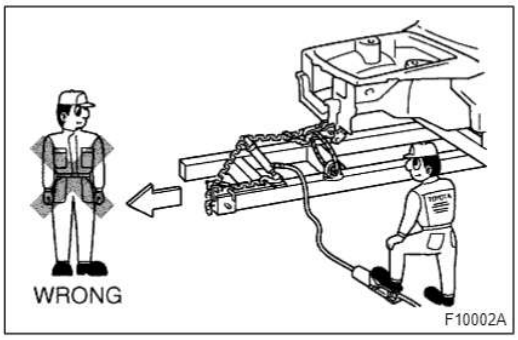
GENERAL REPAIR INSTRUCTIONS

1. WORK PRECAUTIONS



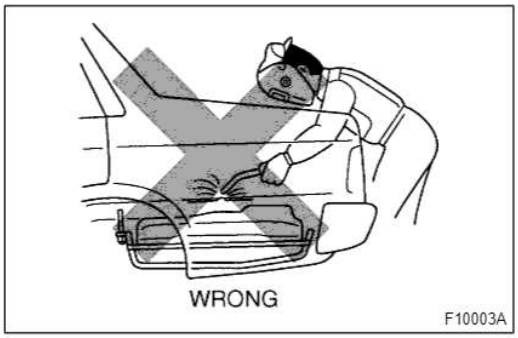
(a) VEHICLE PROTECTION

(1) When welding, protect the painted surfaces, windows, seats and carpet with heat resistant, fire-proof covers.



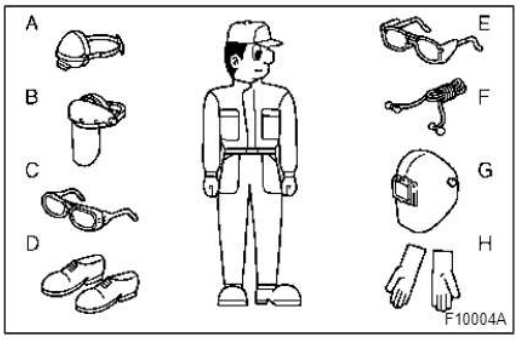
(b) SAFETY

(1) 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.



(2) Before performing repair work, check for fuel leaks. If a leak is found, be sure to close the opening totally.

(3) If it is necessary to use a flame in the area of the fuel tank, first remove the tank and plug the fuel line.



(c) SAFETY WORK CLOTHES

(1) 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.

Code	Name
A	Dust-Prevention Mask
B	Face Protector
C	Eye Protector
D	Safety Shoes
E	Welder's Glasses
F	Ear Plugs
G	Head Protector
H	Welder's Gloves

2. HANDLING PRECAUTIONS OF PLASTIC BODY PARTS

(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 table.

(3) When repairing metal body parts adjoining plastic body parts (by brazing, frame cutting, welding, painting etc.), consideration must be given to the property of the plastic.

Code	Material name	Heat* resistant temperature limit °C (°F)	Resistance to alcohol or gasoline	Notes
AAS	Acrylonitrile Acrylic Styrene	80 (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 Butadiene Styrene	80 (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 Ethylene Styrene	80 (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 Styrene Acrylate	80 (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 Acetate	80 (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 Propylene	100 (212)	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.
FRP	Fiber Reinforced Plastics	180 (356)	Alcohol and gasoline are harmless.	Avoid alkali.
EVA	Ethylene Acetate	70 (158)	Alcohol is harmless if applid only for short time in small amounts (e.g., quick wiping to remove grease).	Avoid gasoline and organic or aromatic solvents.
E/VAC	Ethylene/ Vinyl Acetate Copolymer Resin	70 (158)	Alcohol is harmless if applid only for short time in small amounts (e.g., quick wiping to remove grease).	Avoid gasoline and organic or aromatic solvents.
PA	Polyamide (Nylon)	80 (176)	Alcohol and gasoline are harmless.	Avoid battery acid.
PBT	Polybutylene Terephthalate	160 (320)	Alcohol and gasoline are harmless.	Most solvents are harmless.
PC	Polycarbonate	120 (248)	Alcohol is harmless.	Avoid gasoline brake fluid, wax, wax removers and organic solvents. 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 (176)	Alcohol and gasoline are harmless.	Most solvents are harmless.
PET	Polyethylene Terephthalate	75 (167)	Alcohol and gasoline are harmless.	Avoid dipping in water.
PMMA	Polymethyl Methacrylate	80 (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 (212)	Alcohol and gasoline are harmless.	Most solvents are harmless.
PP	Polypropylene	80 (176)	Alcohol and gasoline are harmless.	Most solvents are harmless.
PPF	Composite Reinforced Polypropylene	80 (176)	Alcohol and gasoline are harmless.	Most solvents are harmless.
PPO	Modified Polyphenylene Oxide	100 (212)	Alcohol is harmless.	Gasoline is harmless if applied only for quick wiping to remove grease.
PS	Polystyrene	60 (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 (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 (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 (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 (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 (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 (176)	Alcohol and gasoline are harmless.	Most solvents are harmless.
UP	Unsaturated Polyester	110 (233)	Alcohol and gasoline are harmless.	Avoid alkali.

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

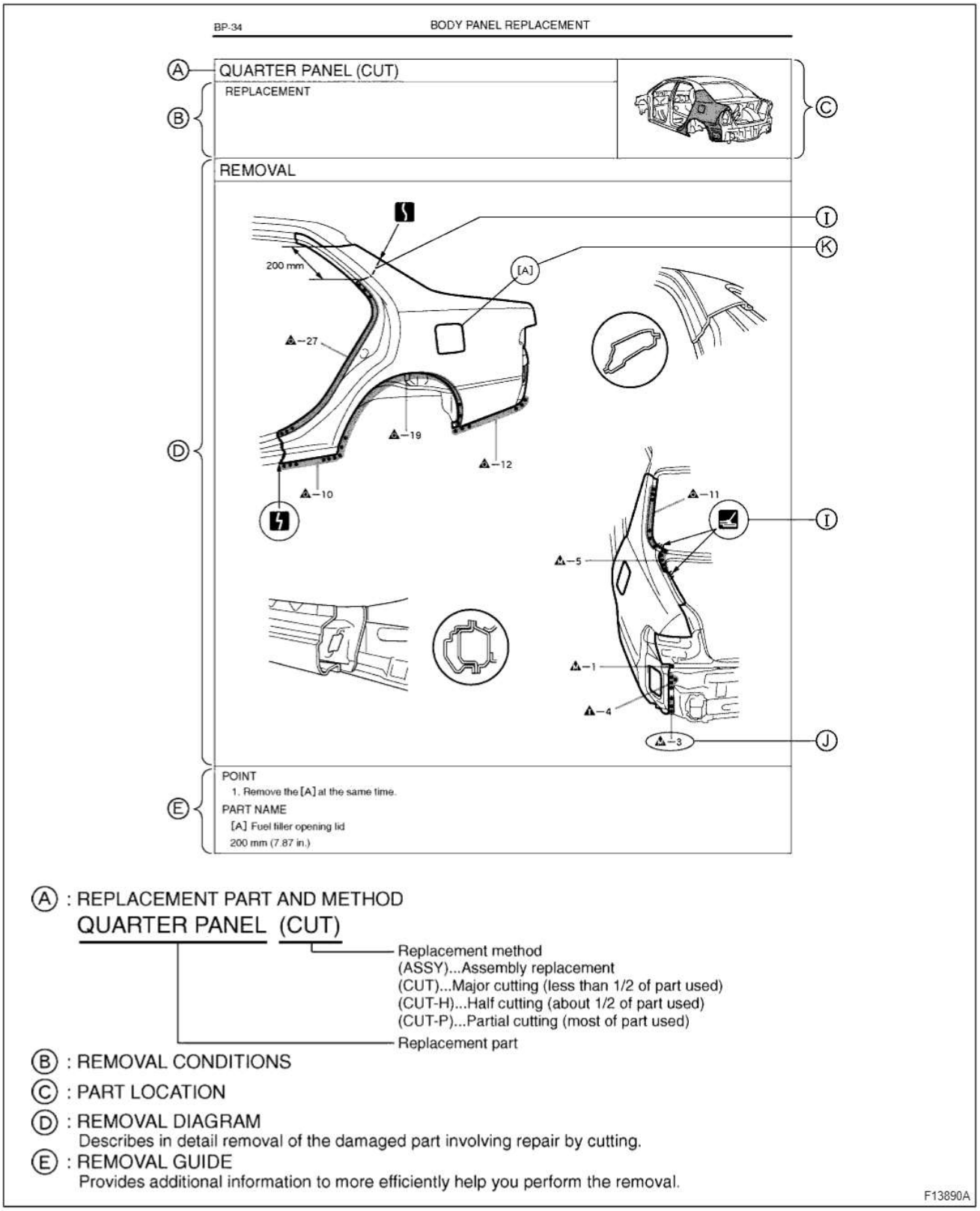
3. LOCATION OF PLASTIC BODY PARTS

Parts Name	Code
Radiator Grille	ABS
Radiator Lower Grille	TSOP
Front Bumper Cover	TSOP
Front Bumper Hole Cover	TSOP
Front Bumper Guard Cover	TSOP
Headlight	PC/PP
Cowl Top Ventilator Louver	TSOP
Outer Rear View Mirror	ASA/ABS
Front Door Outside Handle	PC/PBT
Side Mudguard	TSOP
Center Stop Light	PMMA/ABS
Back Door Outside Garnish	ABS
License Plate Light	PC
Rear Combination Light	PMMA/PC/ASA
Rear Bumper Cover	TSOP

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

HOW TO USE THIS MANUAL

1. BODY PANEL REPLACEMENT THIS MANUAL



Ⓐ : REPLACEMENT PART AND METHOD

QUARTER PANEL (CUT)

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

Ⓑ : REMOVAL CONDITIONS

Ⓒ : PART LOCATION

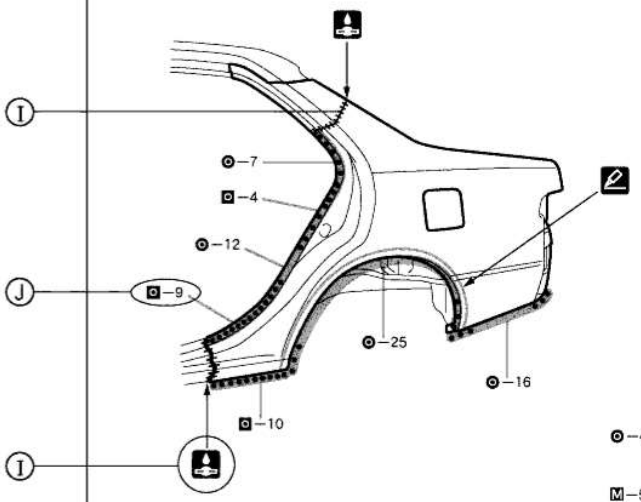
Ⓓ : REMOVAL DIAGRAM
Describes in detail removal of the damaged part involving repair by cutting.

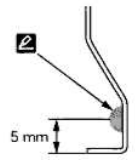
Ⓔ : REMOVAL GUIDE
Provides additional information to more efficiently help you perform the removal.

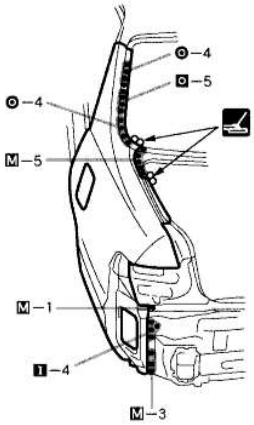
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INSTALLATION
- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding.This affects the appearance of the finish.
- After welding,apply the polyurethane foam with corresponding parts.
- After welding,apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer,apply anti-rust agent to the inside of the necked section structural weld spots.

Ⓕ







Ⓖ

POINT
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.) front 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 PC.

Ⓗ

Ⓕ : INSTALLATION CONDITIONS

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

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

Ⓘ : SYMBOLS
(See page IN-7)

Ⓙ : INSTALLATION OF WELD POINTS
Weld method and panel position symbols(See page IN-9)

Ⓚ : PART NAME

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2. SYMBOLS

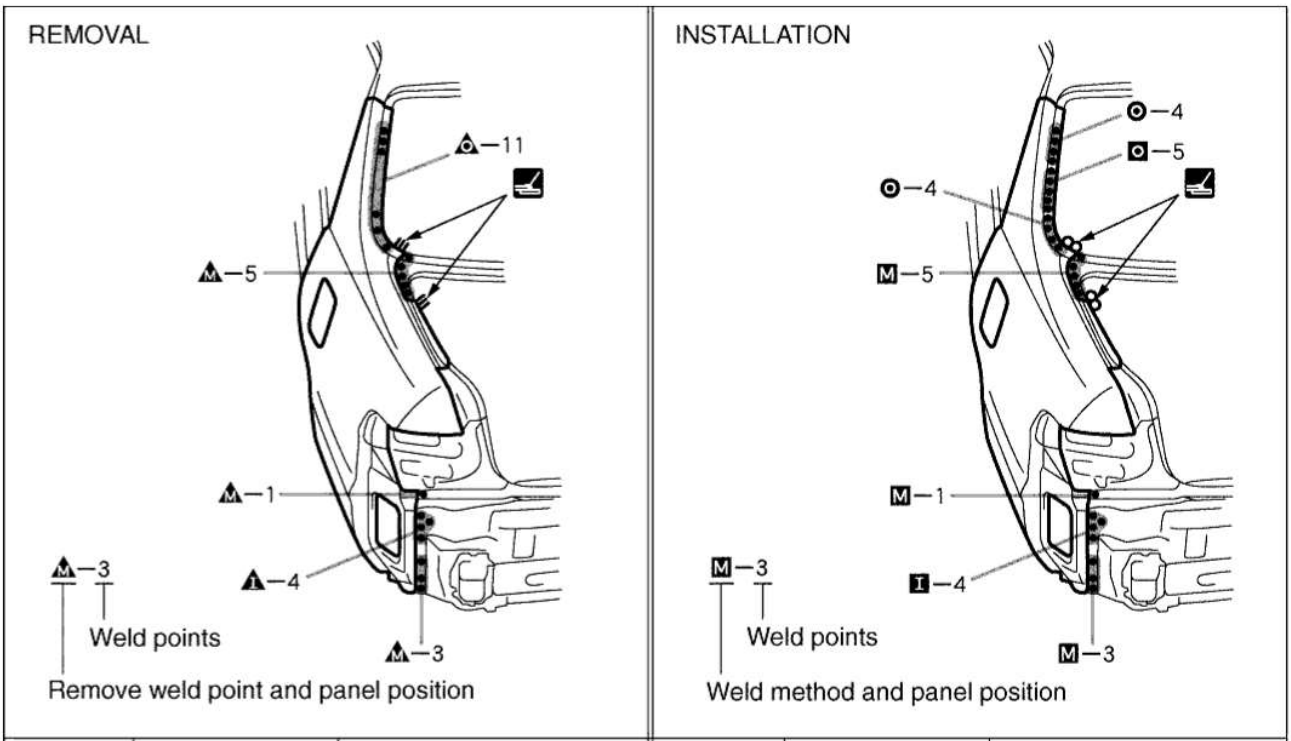
The following symbols are used in the welding diagrams in section BP of this manual to indicate cutting areas and the types of weld required.

SYMBOLS		MEANING	ILLUSTRATION
		CUT AND JOIN LOCATION (SAW CUT)	
		CUT AND JOIN LOCATION (Cut Location for Supply Parts)	
		CUT LOCATION	
		CUT WITH DISC SANDER,ETC.	
		BRAZE (Removal)	
		BRAZE (Installation)	
	—	WELD POINTS	
	—	SPOT WELD OR MIG PLUG WELD (See Page IN-9)	
		CONTINUOUS MIG WELD (BUTT WELD)	
		CONTINUOUS MIG WELD (TACK WELD)	
		BODY SEALER	F13893A

SYMBOLS		MEANING	ILLUSTRATION
—		Assembly Mark	—
	—	BODY SEALER (Flat Finishing)	
	—	BODY SEALER (No flat Finishing)	
			F13894A

3. ILLUSTRATION OF WELD POINT SYMBOLS

EXAMPLE:



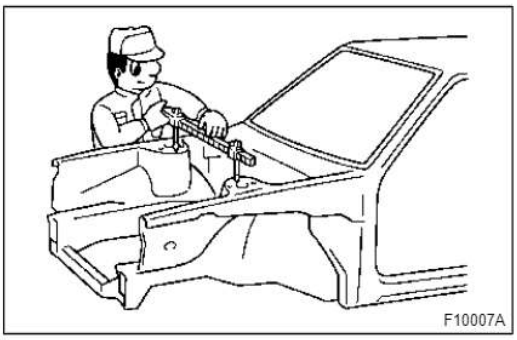
SYMBOLS	MEANING	ILLUSTRATION
O M I	Remove Weld Points	
O	(Outside)	
M	(Middle)	
I	(Inside)	

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

SYMBOLS	MEANING	ILLUSTRATION
O M I	Spot Weld	
O M I	MIG Plug Weld	
+	Spot MIG Weld	

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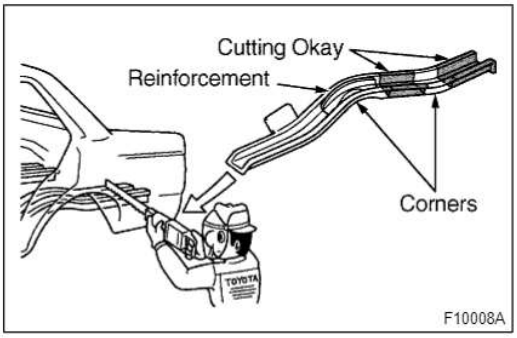
PROPER AND EFFICIENT WORK PROCEDURES



1. REMOVAL

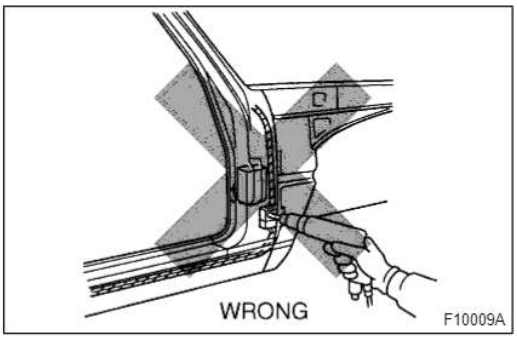
(a) PRE-REMOVAL MEASURING

(1) Before removal or cutting operations, take measurements in accordance with the dimension diagram. Always use a puller to straighten a damaged body or frame.



(b) CUTTING AREA

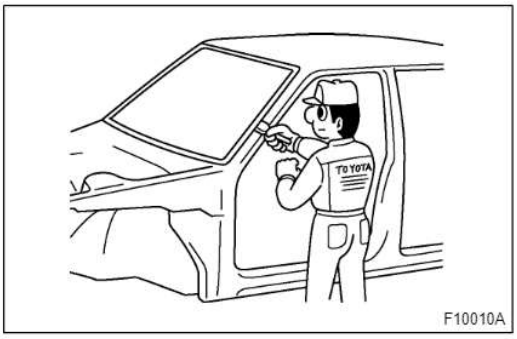
(1) Always cut in a straight line and avoid reinforced area.



(c) PRECAUTIONS FOR DRILLING OR CUTTING

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

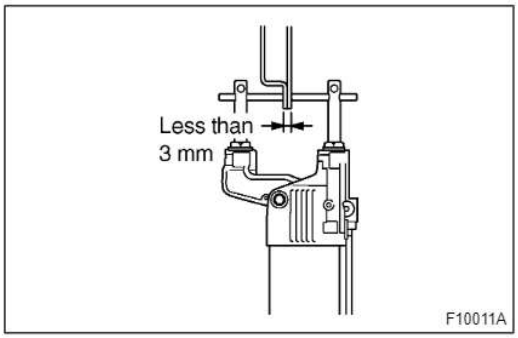
HINT: See “Handling Precautions on Related Components” on page IN-15.



(d) REMOVAL OF ADJACENT COMPONENTS

(1) 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-15.

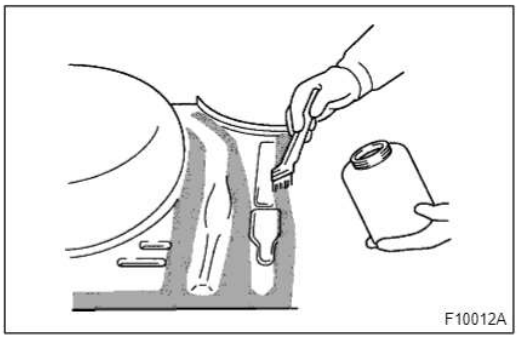


2. PREPARATION FOR INSTALLATION

(a) SPOT WELD POINTS

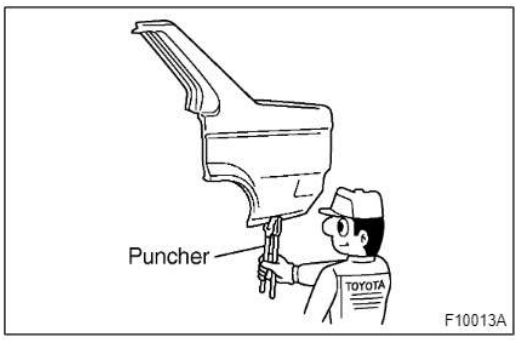
(1) When welding panels with a combined thickness of over 3 mm (0.12 in.), use a MIG (Metal Inert Gas) welder for plug welding.

HINT: Spot welding will not provide sufficient durability for panels over 3 mm (0.12 in.) thick.



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

(1) Remove the paint from the portion of the new parts and body to be welded, and apply weld-through primer.

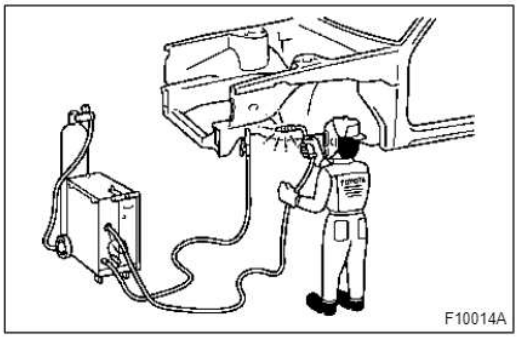


(c) MAKING HOLES FOR PLUG WELDING

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

REFERENCE: mm (in.)

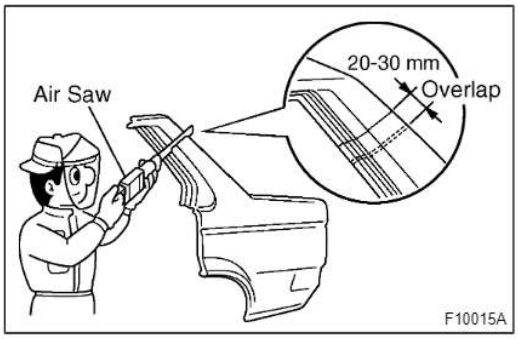
Thickness of welded portion	Size of plug hole
1.0 (0.04) under	5 (0.20) ø over
1.0 (0.04) – 1.6 (0.06)	6.5 (0.26) ø over
1.7 (0.07) – 2.3 (0.09)	8 (0.31) ø over
2.4 (0.09) over	10 (0.39) ø over



(d) SAFETY PRECAUTIONS FOR ELECTRICAL COMPONENTS

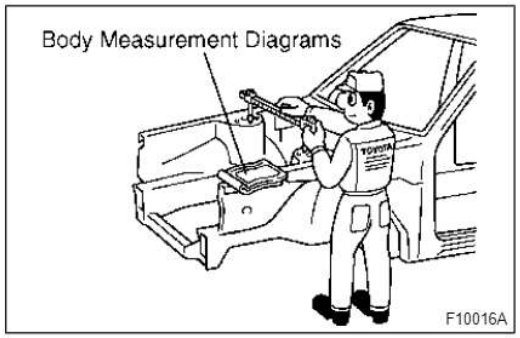
(1) When welding, there is a danger that electrical components will be damaged by the electrical current flowing through the body.

(2) Before starting work, disconnect the negative terminal of the battery and ground the welder near the welding location of the body.



(e) ROUGH CUTTING OF JOINTS

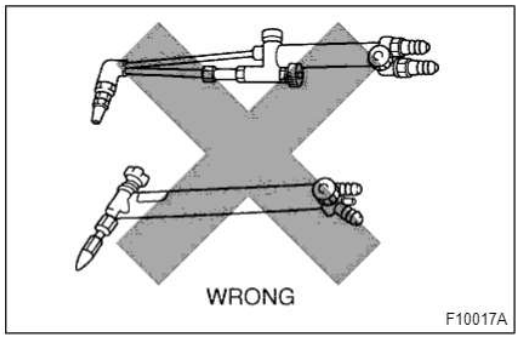
(1) For joint areas, rough cut the new parts, leaving 20 – 30 mm (0.79 – 1.18 in.) overlap.



3. INSTALLATION

(a) PRE-WELDING MEASUREMENTS

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

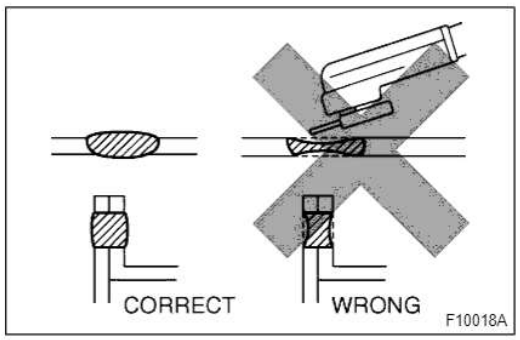


(b) WELDING PRECAUTIONS

(1) The number of welding spots should be as follows.

Spot weld: 1.3 X No. of manufacturer's spots.
Plug weld: More than No. of manufacturer's plugs.

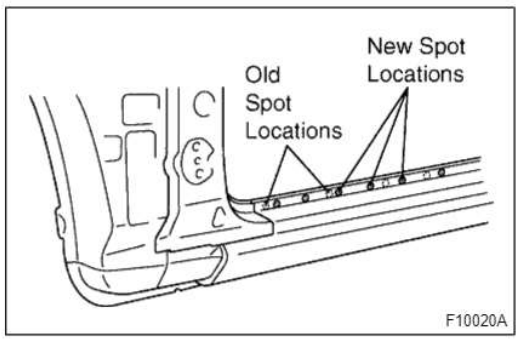
(2) Plug welding should be done with a MIG (Metal Inert Gas) welder. Do not gas weld or braze panels at areas other than specified.



(c) POST-WELDING REFINISHING

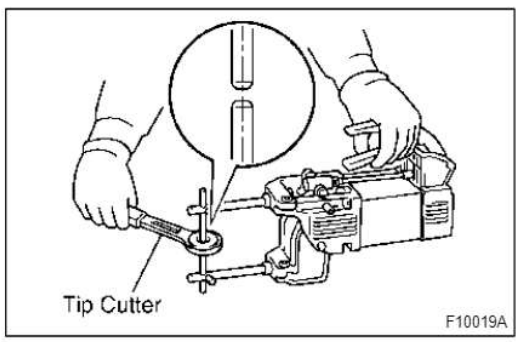
(1) Always check the welded spots to insure they are secure.

(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.



(d) SPOT WELD LOCATIONS

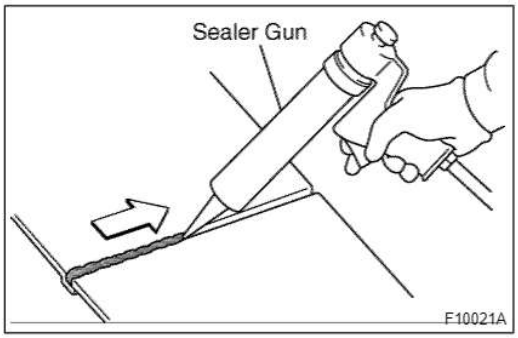
(1) Try to avoid welding over previous spots.



(e) SPOT WELDING PRECAUTIONS

(1) The shape of the welding tip point has an effect on the strength of the weld.

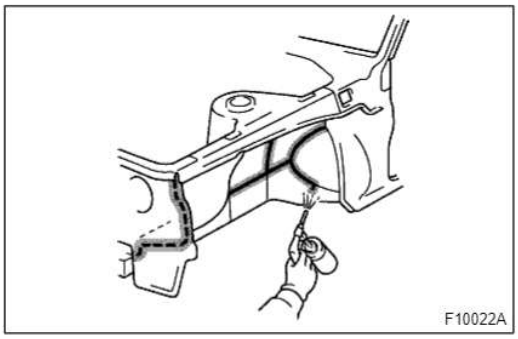
(2) Always insure that the seams and welding tip are free of paint.



4. ANTI-RUST TREATMENT

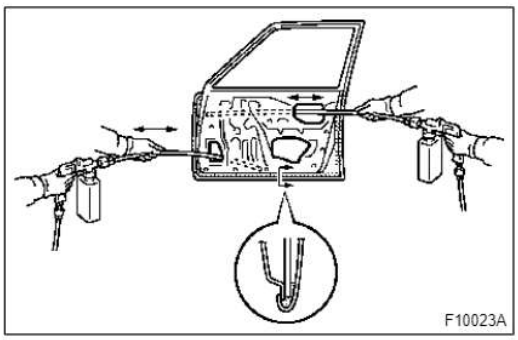
(a) BODY SEALER APPLICATION

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



(b) UNDERCOAT APPLICATION

(1) 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.



5. ANTI-RUST TREATMENT AFTER PAINTING PROCESS

(a) ANTI-RUST AGENT (WAX) APPLICATION

(1) 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.

6. ANTI-RUST TREATMENT BY PAINTING

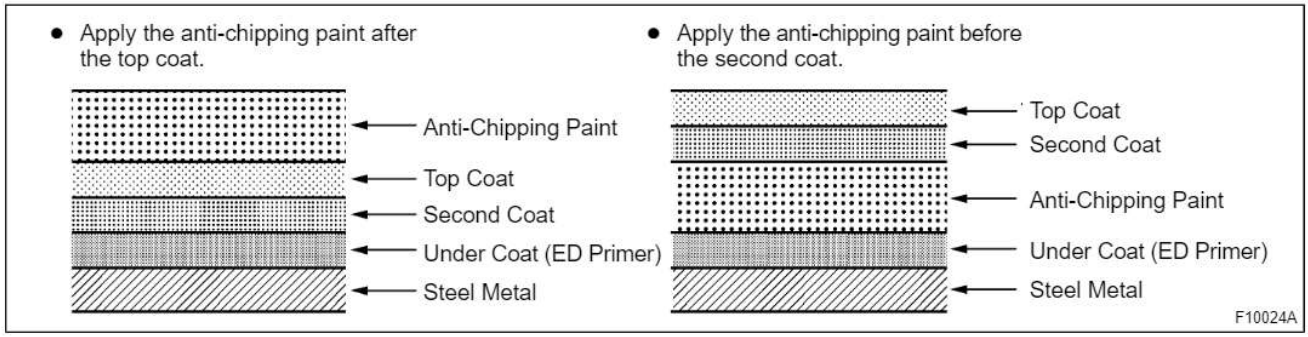
REFERENCE:

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

(a) ANTI-CHIPPING PAINT

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



HANDLING PRECAUTIONS ON RELATED COMPONENTS

1. BRAKE SYSTEM

The brake system is one of the most important safety components. Always follow the directions and notes given in brake (32) section of the repair manual for the relevant model when handling brake system parts.

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

2. 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 section.

Component to be aligned	Section of repair manual for relevant model
Front Wheels	Front Suspension (26) section
Rear Wheels	Rear Suspension (27) section

3. 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.

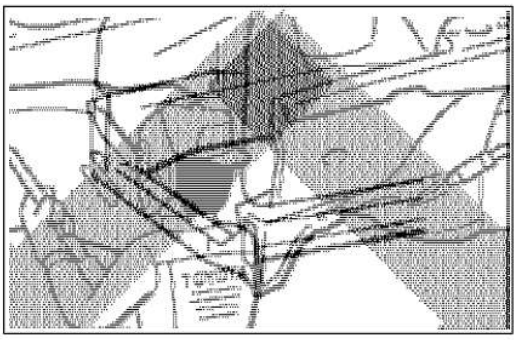
4. ECU (ELECTRONIC CONTROL UNIT)

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).

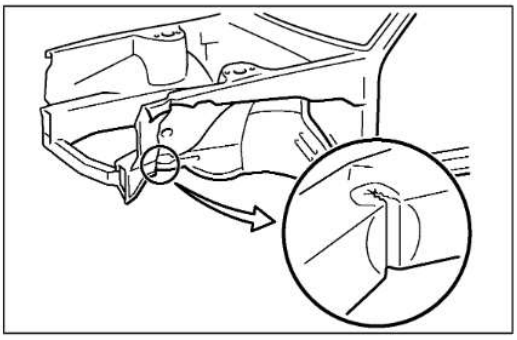
  NOTICE: If it is possible the ambient temperature may reach 80° C (176° F) or more, remove the ECUs from the vehicle before starting work.
- Be careful not to drop the ECUs and not to apply physical shocks to them.

PRECAUTIONS FOR REPAIRING BODY STRUCTURE PANELS



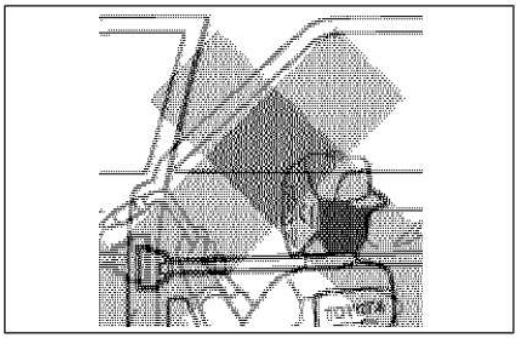
1. HEAT REPAIR FOR BODY STRUCTURE PANELS

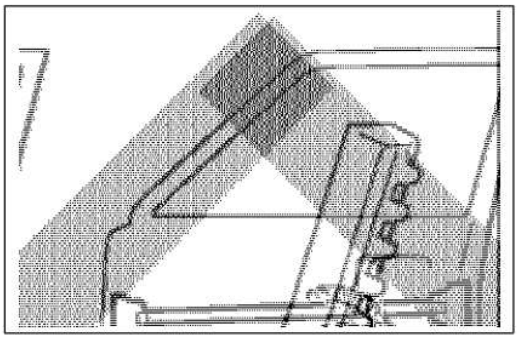
Toyota prohibits the use of the heat repair method on body structure panels when repairing a vehicle damaged in a collision.
Panels that have high strength and rigidity, as well as a long life span for the automobile body are being sought after.
At Toyota, in order to fulfill these requirement, we use high tensile strength steel sheets and rust preventive steel sheets on the body.
High tensile steel sheets are made with alloy additives and a special heat treatment in order to improve the strength.
To prevent the occurrence of rust for a long period of time, the surface of the steel is coated with a zinc alloy.
If a body structure parts are heat repaired with an acetylene torch or other heating source, the crystalline organization of the steel sheet will change and the strength of the steel sheet will be reduced.
The ability of the body to resist rust is significantly lowered as well since the rust resistant zinc coating is destroyed by heat and the steel sheet surface is oxidized.



2. STRUCTURE PANEL KINKS

A sharp deformation angle on the panel that cannot be returned to its original shape by pulling or hammering is called kink.
Since structure parts are designed to exhibit its performance in their original shape, if parts are deformed in an accident, or if the deformed parts are repaired and reused, the parts may become unable to exhibit the same performance as intended in the design.
It is necessary to replace the part where the kink has occurred.





3. IMPACT BEAM REPAIR

The impact beam and bracket are necessary and important parts that help reduce the probability of injury to passengers in side collisions.

For impact beam, we use special high tensile strength steel.

The high tensile strength steel maintains its special crystalline organization by heat treatment or alloy additives.

Since these parts are designed to exhibit its performance in their original shape, if parts are deformed in an accident, or if the deformed parts are repaired and reused, the parts may become unable to exhibit the same performance as intended in the design.

If the impact beam or bracket is damaged, replace the door assembly which has the damaged beam.

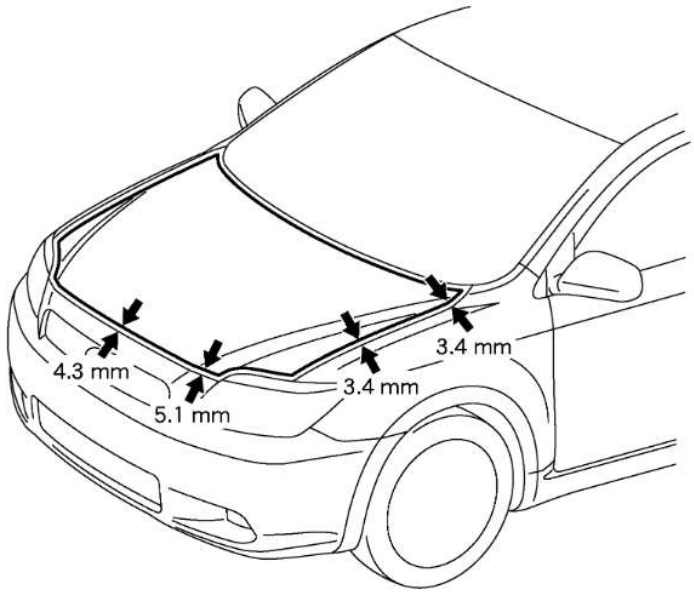
Also, the bumper reinforcement is a necessary and important part that helps reduce the probability of injury to passengers in front collisions, and for the same reasons explained above, should be replaced if damaged.

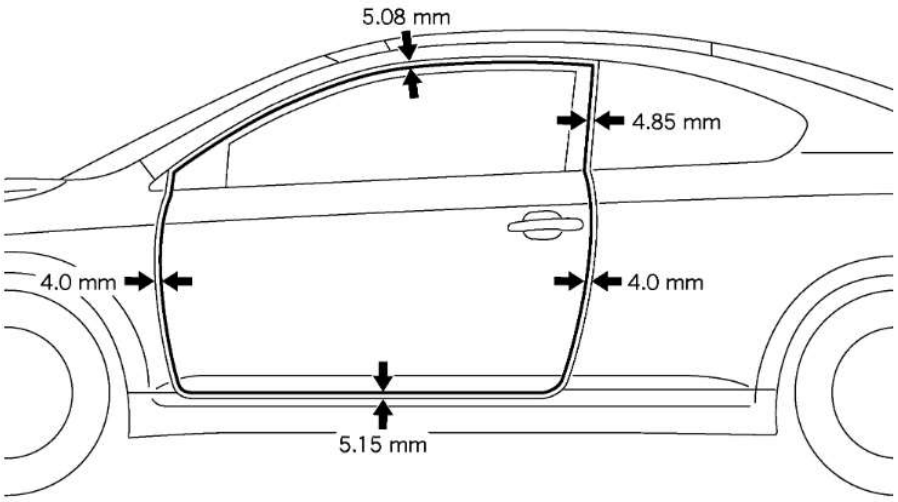
ABBREVIATIONS USED IN THIS MANUAL

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
2WD	Two 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

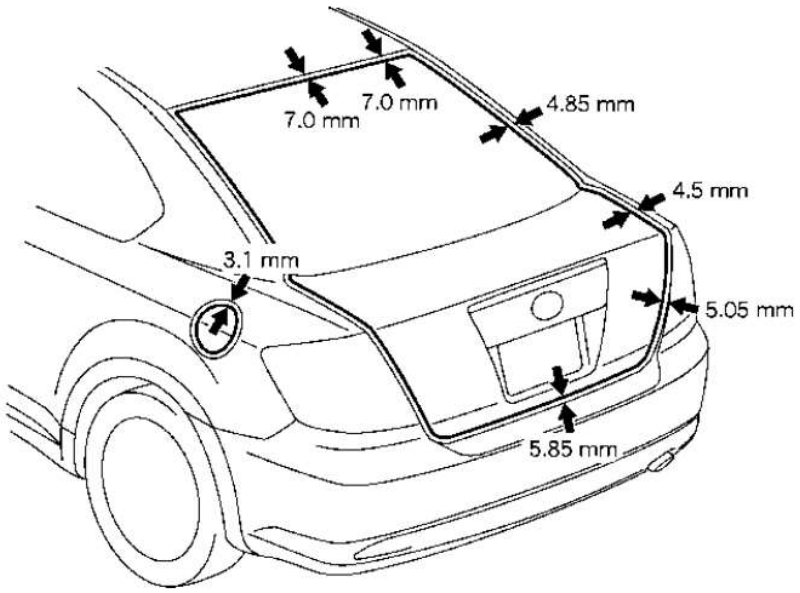
FIT STANDARDS





F20186

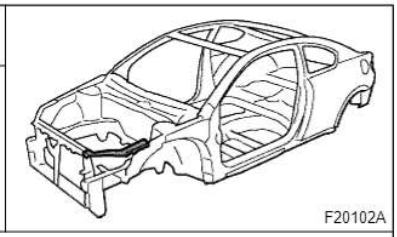
3.4 mm (0.134 in.)	4.0 mm (0.157 in.)	4.3 mm (0.169 in.)
4.85 mm (0.191 in.)	5.08 mm (0.200 in.)	5.1 mm (0.201 in.)
5.15 mm (0.203 in.)	—	—



F20187

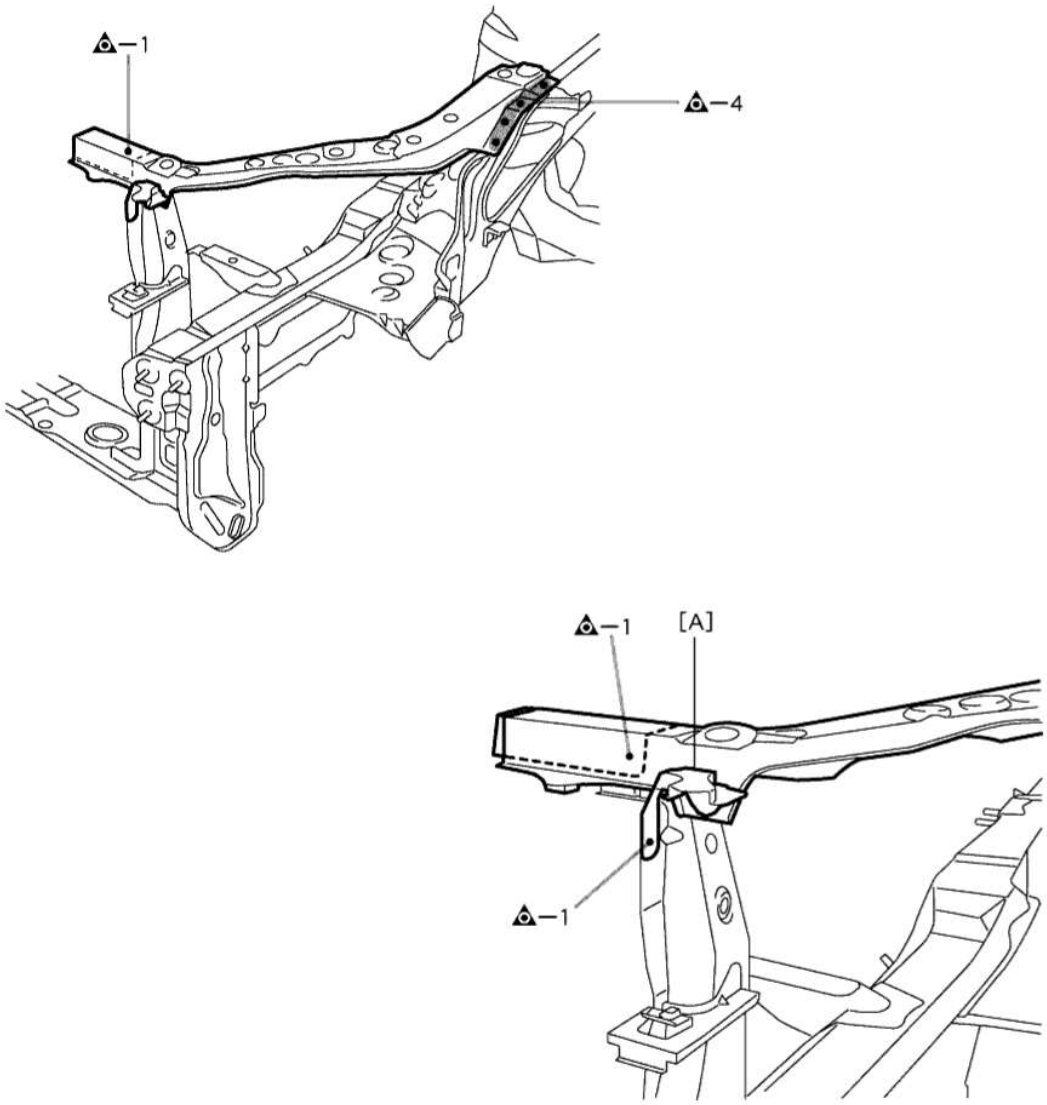
3.1 mm (0.122 in.)	4.5 mm (0.177 in.)	4.85 mm (0.191 in.)
5.05 mm (0.199 in.)	5.85 mm (0.230 in.)	7.0 mm (0.276 in.)

RADIATOR UPPER SUPPORT (ASSY)


F20102A

REPLACEMENT

REMOVAL



F20102

POINT

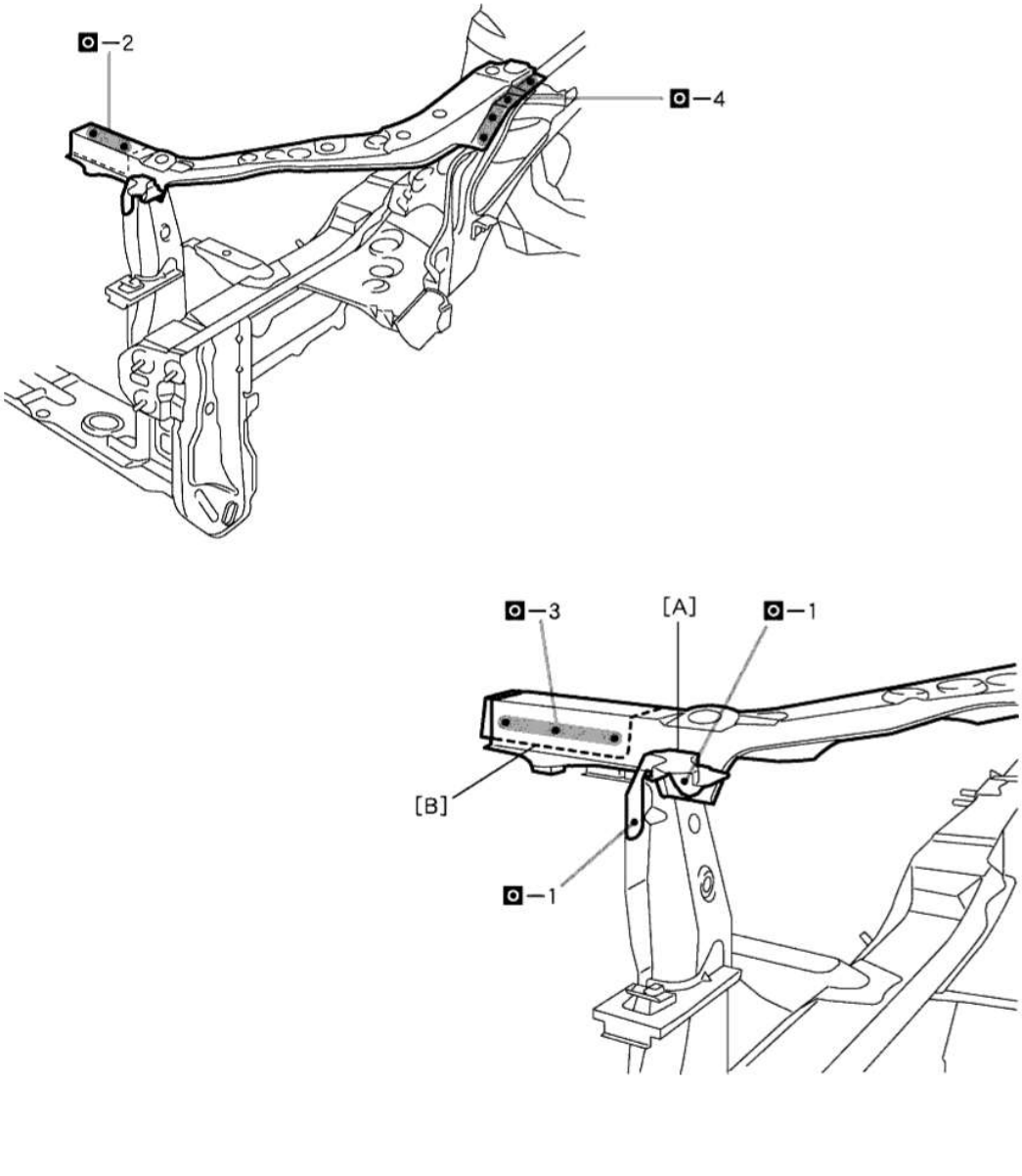
1 Remove the [A] at the same time.

PART NAME

[A] Front Bumper Stay

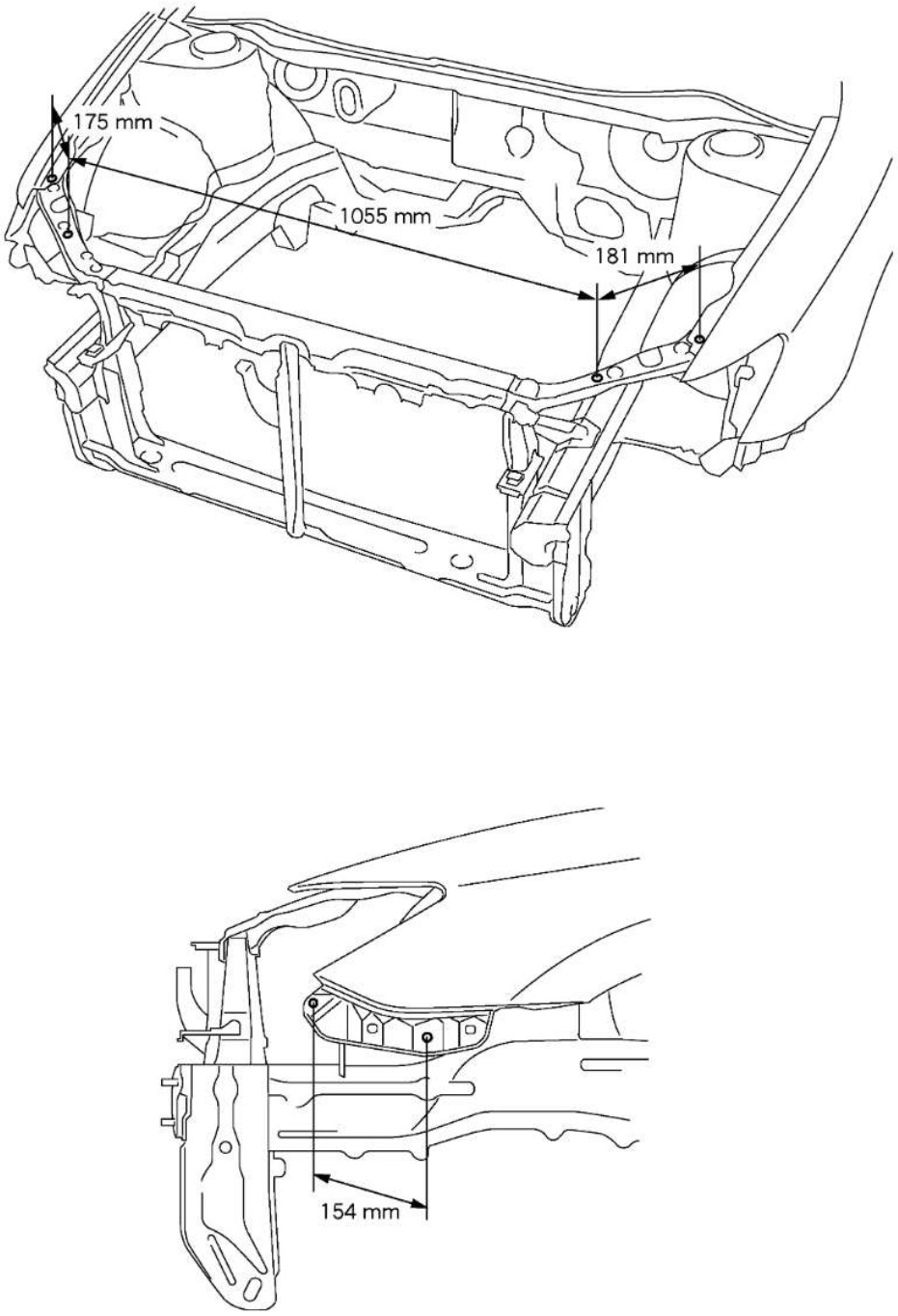
INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.



PART NAME

[A] Front Bumper Stay [B] Radiator Support Reinforcement

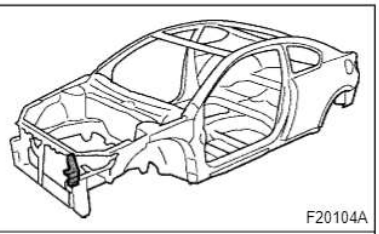


POINT

1 Measure the dimensions before installing the headlights.
2 These values are reference values.

154 mm (6.06 in.)	175 mm (6.89 in.)	181 mm (7.13 in.)	1055 mm (41.54 in.)

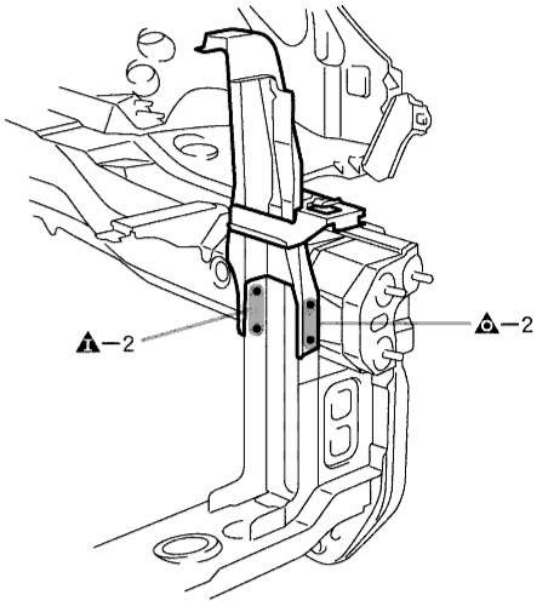
RADIATOR SUPPORT UPPER BRACE (ASSY)

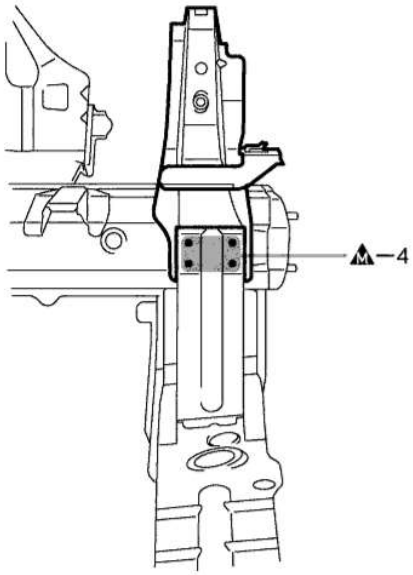

F20104A

REPLACEMENT

With the radiator upper support removed.

REMOVAL

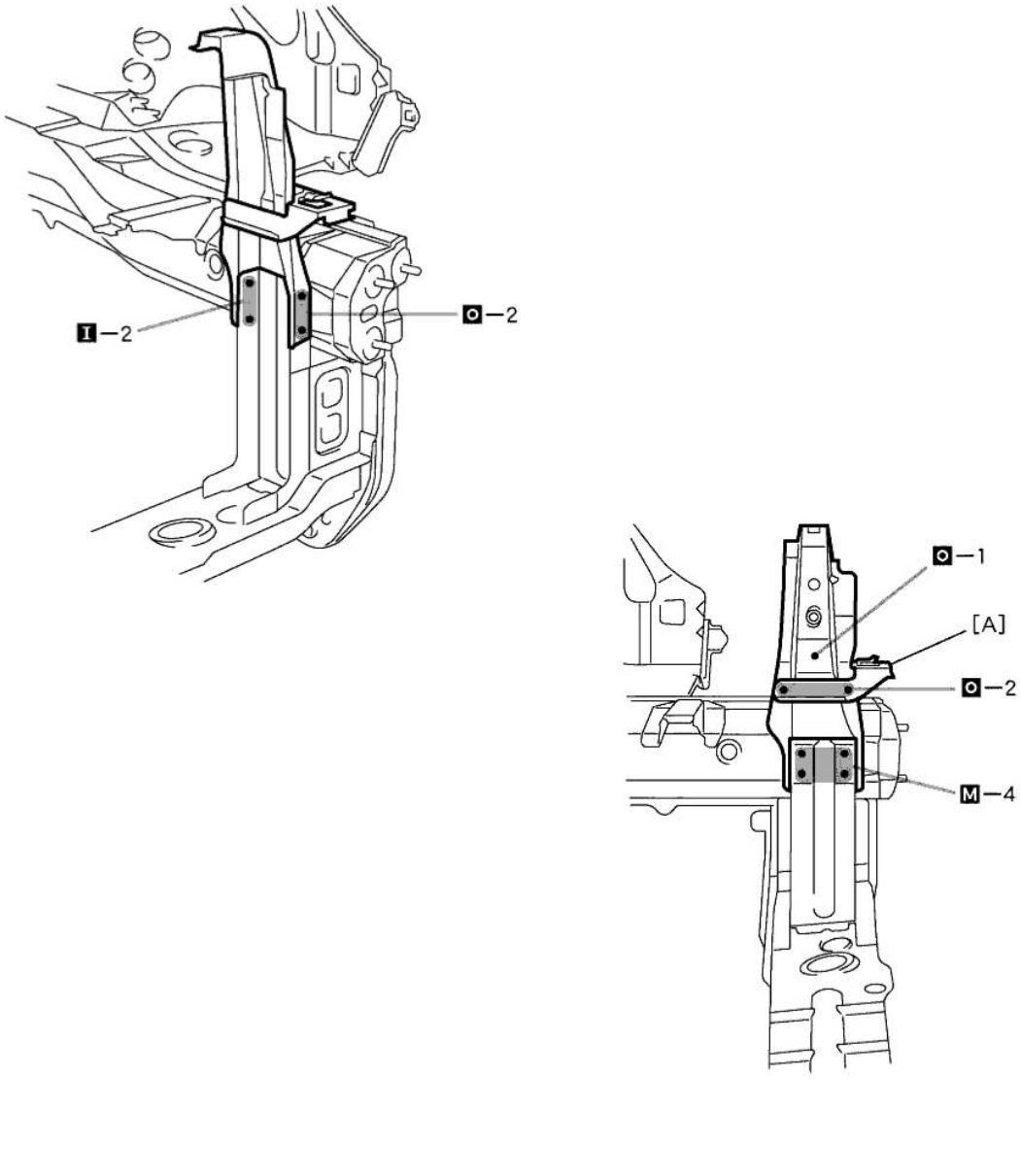




F20104

INSTALLATION

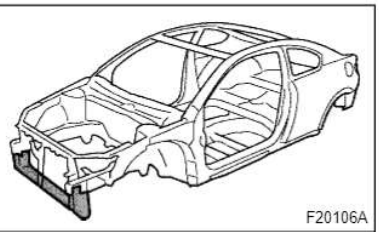
- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.



PART NAME

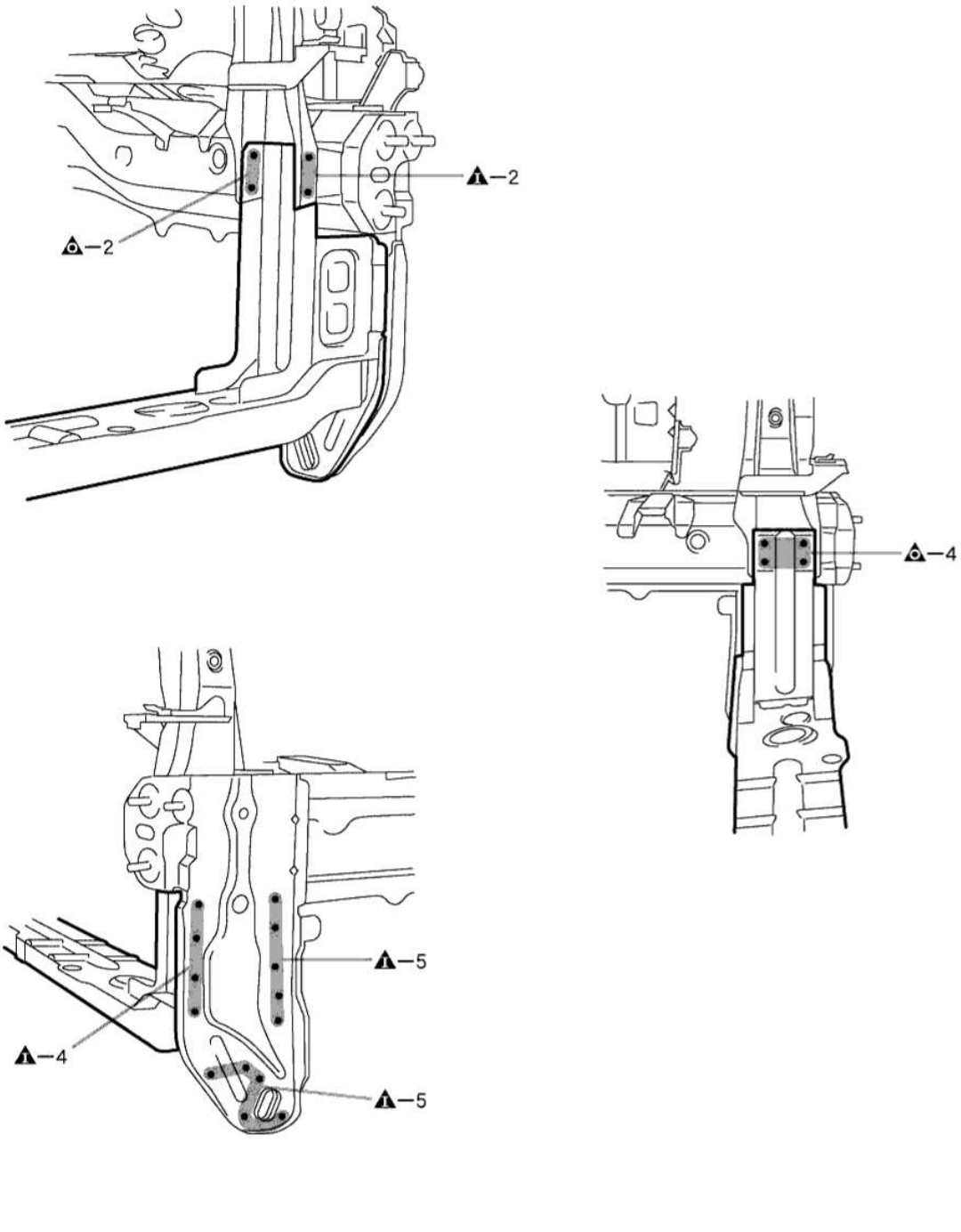
[A] Front Bumper Side Mounting Bracket

FRONT CROSSMEMBER (ASSY)


F20106A

REPLACEMENT

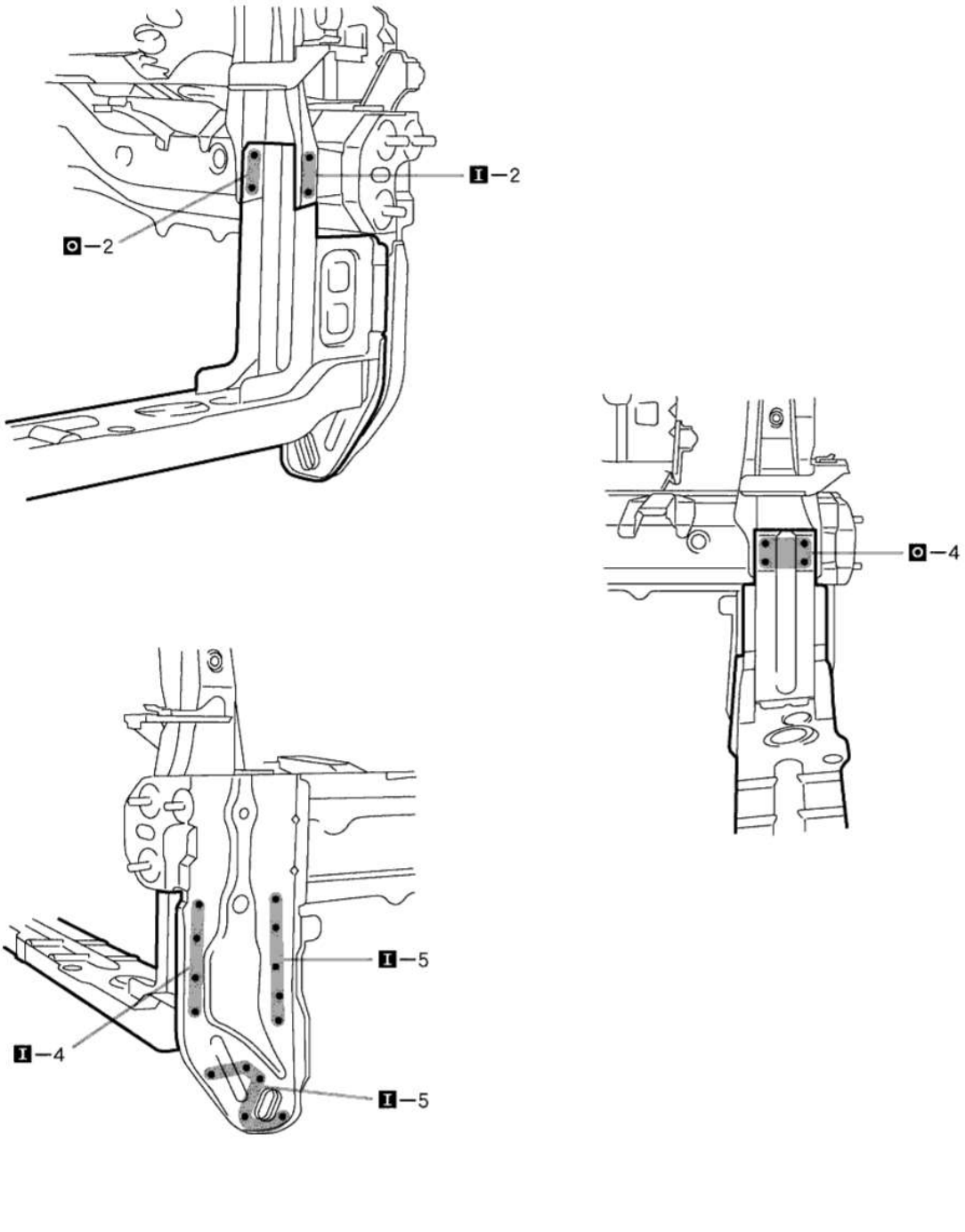
REMOVAL



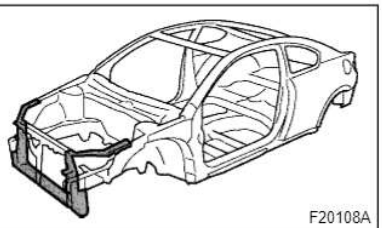
F20106

INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.

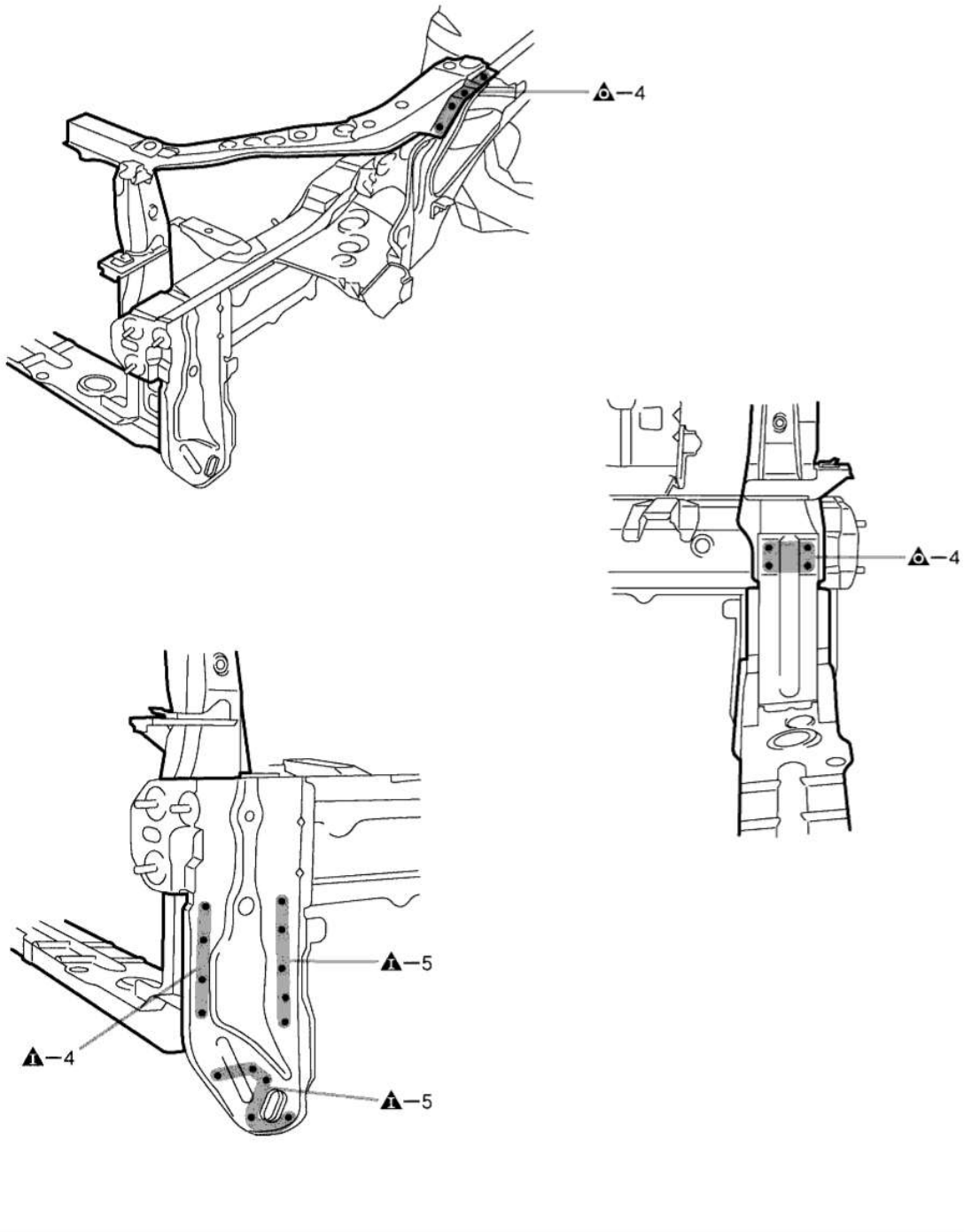


RADIATOR SUPPORT (ASSY)



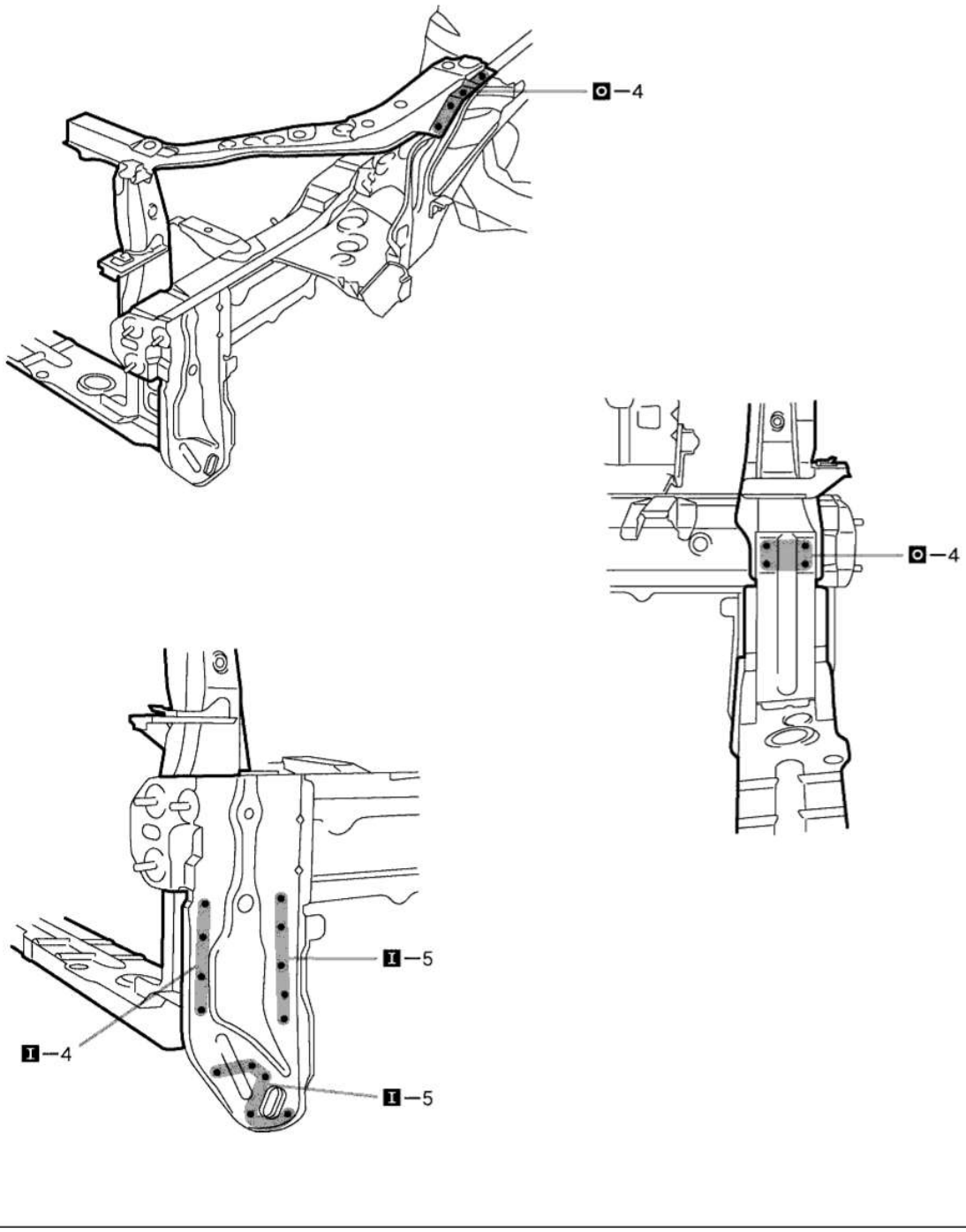
REPLACEMENT

REMOVAL

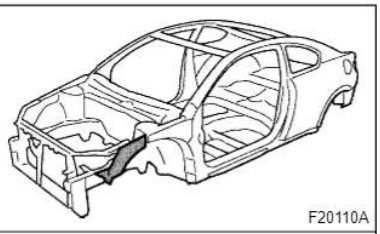


INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.



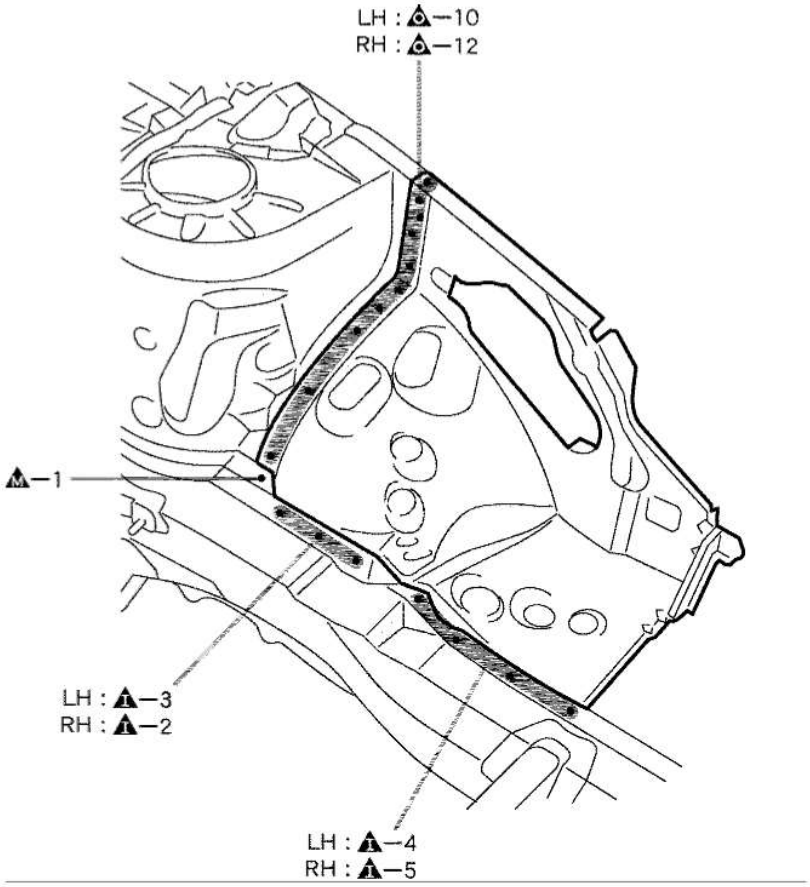
FRONT FENDER FRONT APRON WITH SUPPORT (ASSY)


F20110A

REPLACEMENT

With the radiator upper support removed.

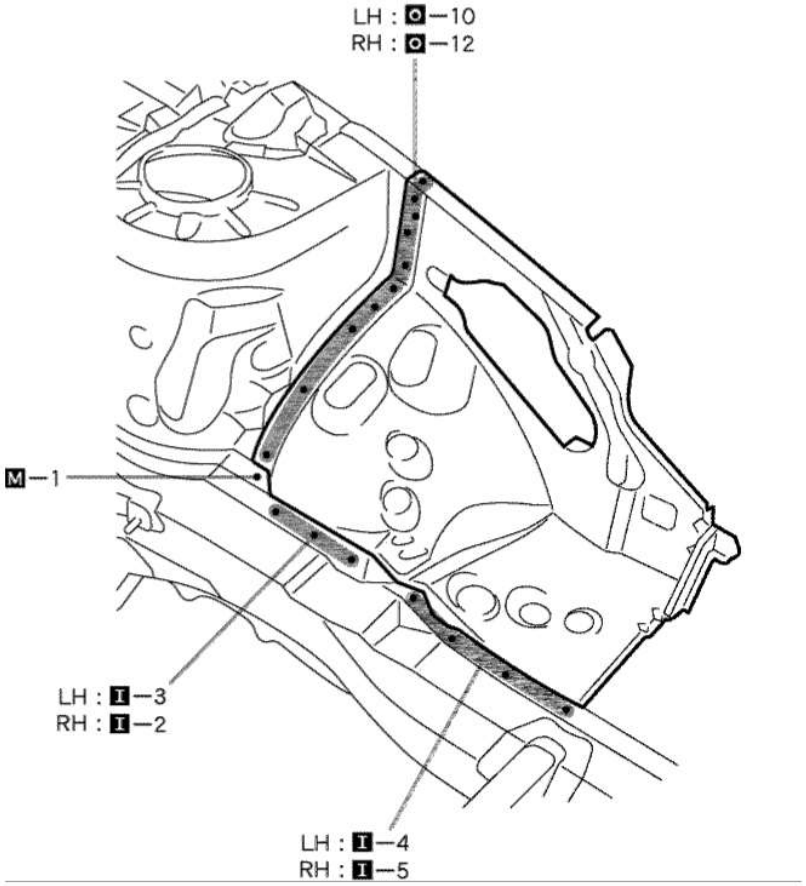
REMOVAL



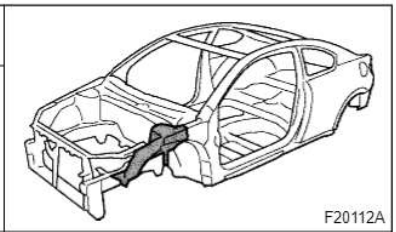
F20110

INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.



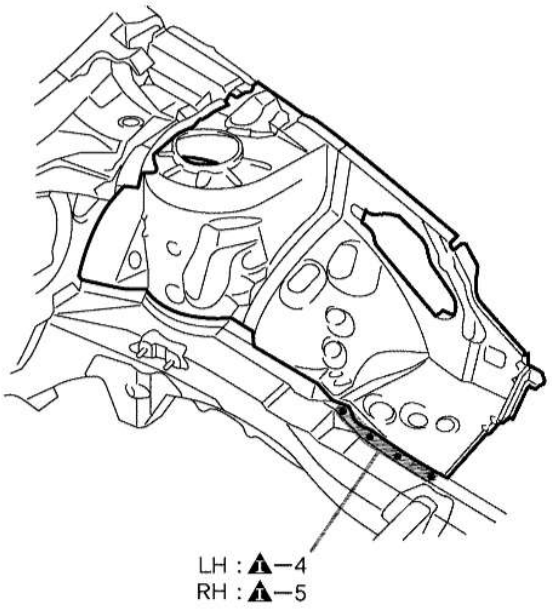
FRONT FENDER APRON (ASSY)

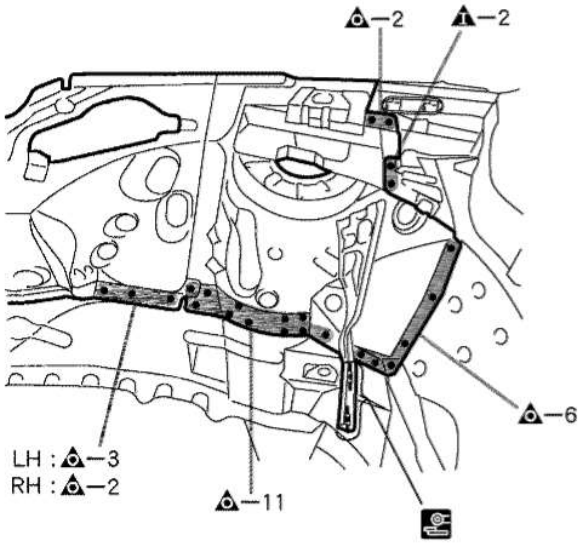

F20112A

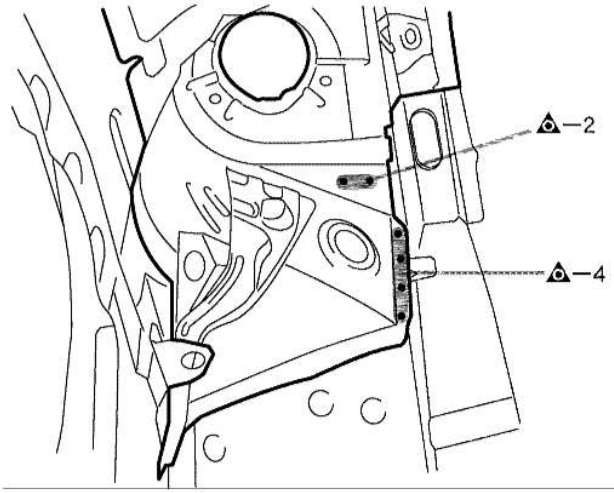
REPLACEMENT

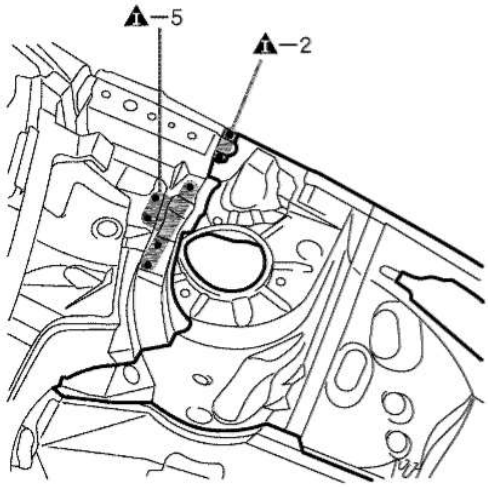
With the radiator upper support and cowl top side panel removed.

REMOVAL





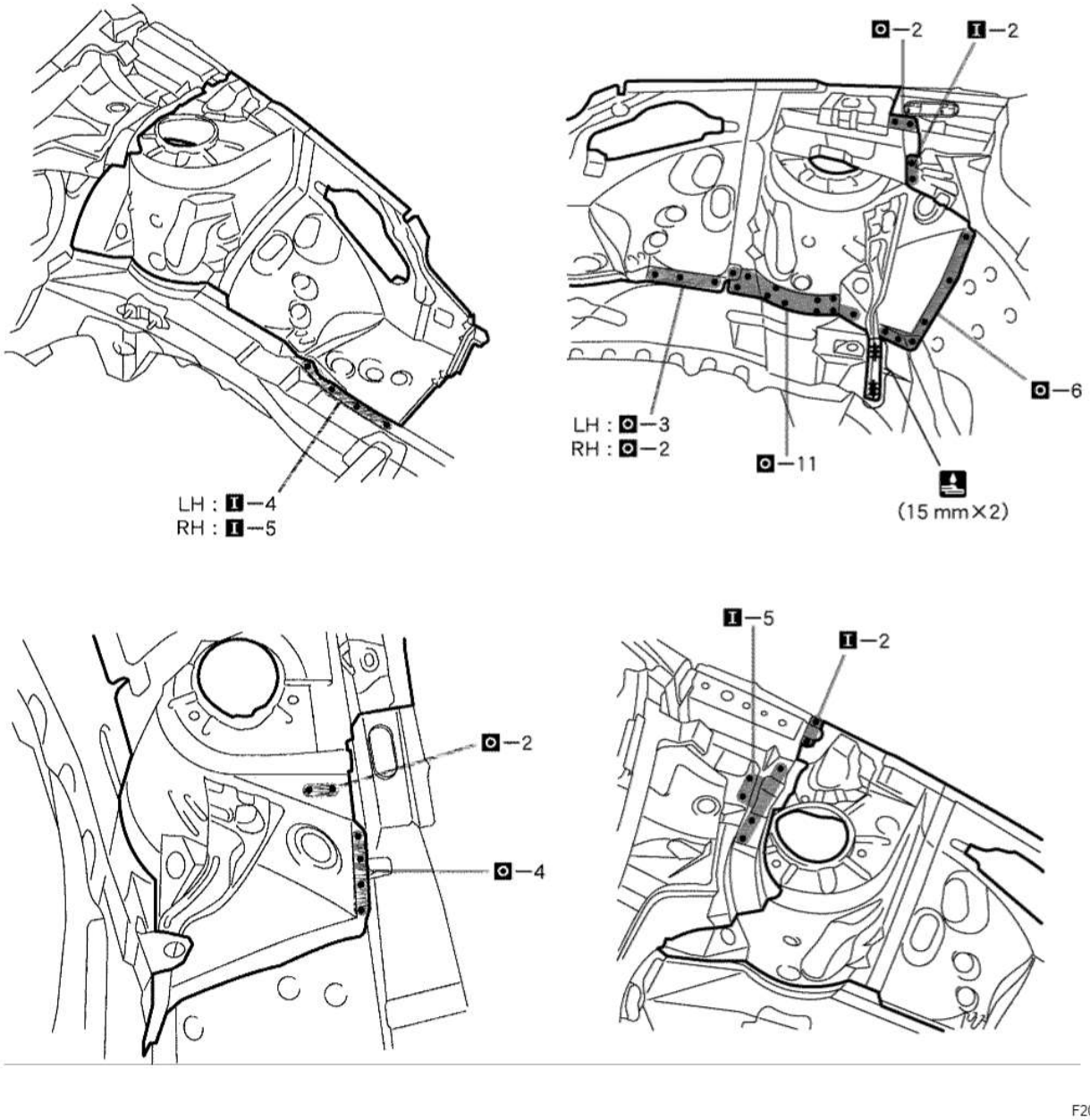




F20112

INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.



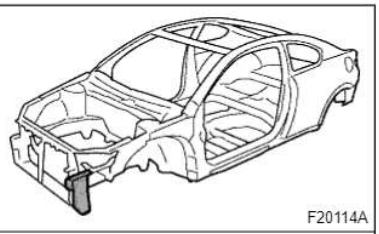
POINT

1 Inspect the fitting of the front fender and hood, etc,. before welding, since this affects the appearance of the finish.

2 Make sure each measurement is corect, as this parts affects the front wheel alignment.

15 mm (0.59 in.)

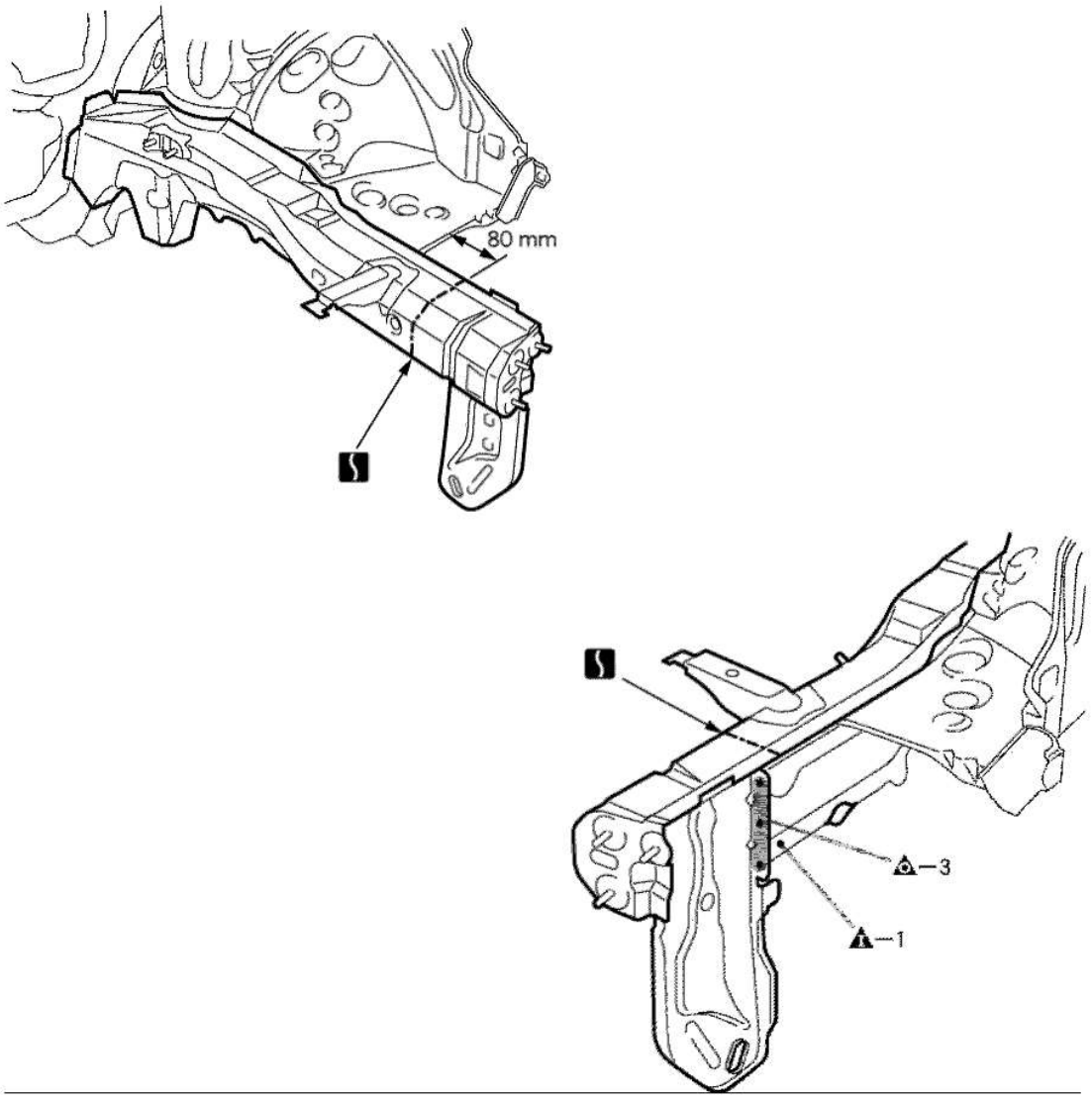
FRONT SIDEMEMBER (CUT-P)


F20114A

REPLACEMENT

With the radiator support upper brace and front crossmember removed.

REMOVAL

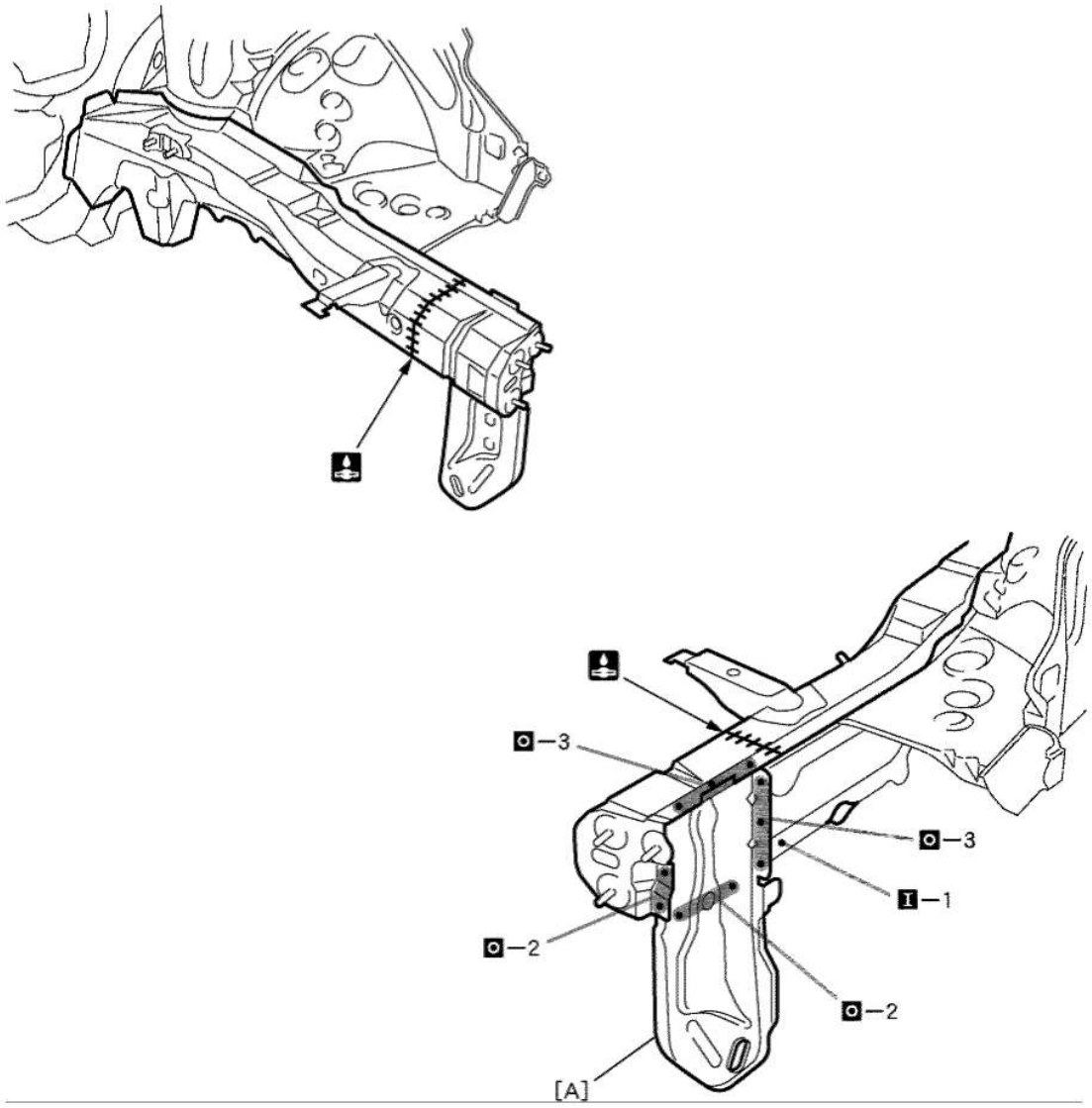


F20114

80 mm (3.15 in.)

INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.

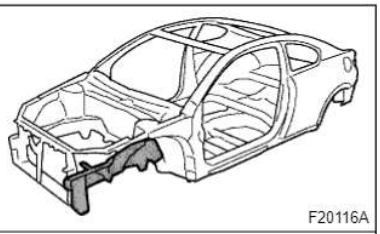


F20115

PART NAME

[A] Front Bumper Arm Retainer

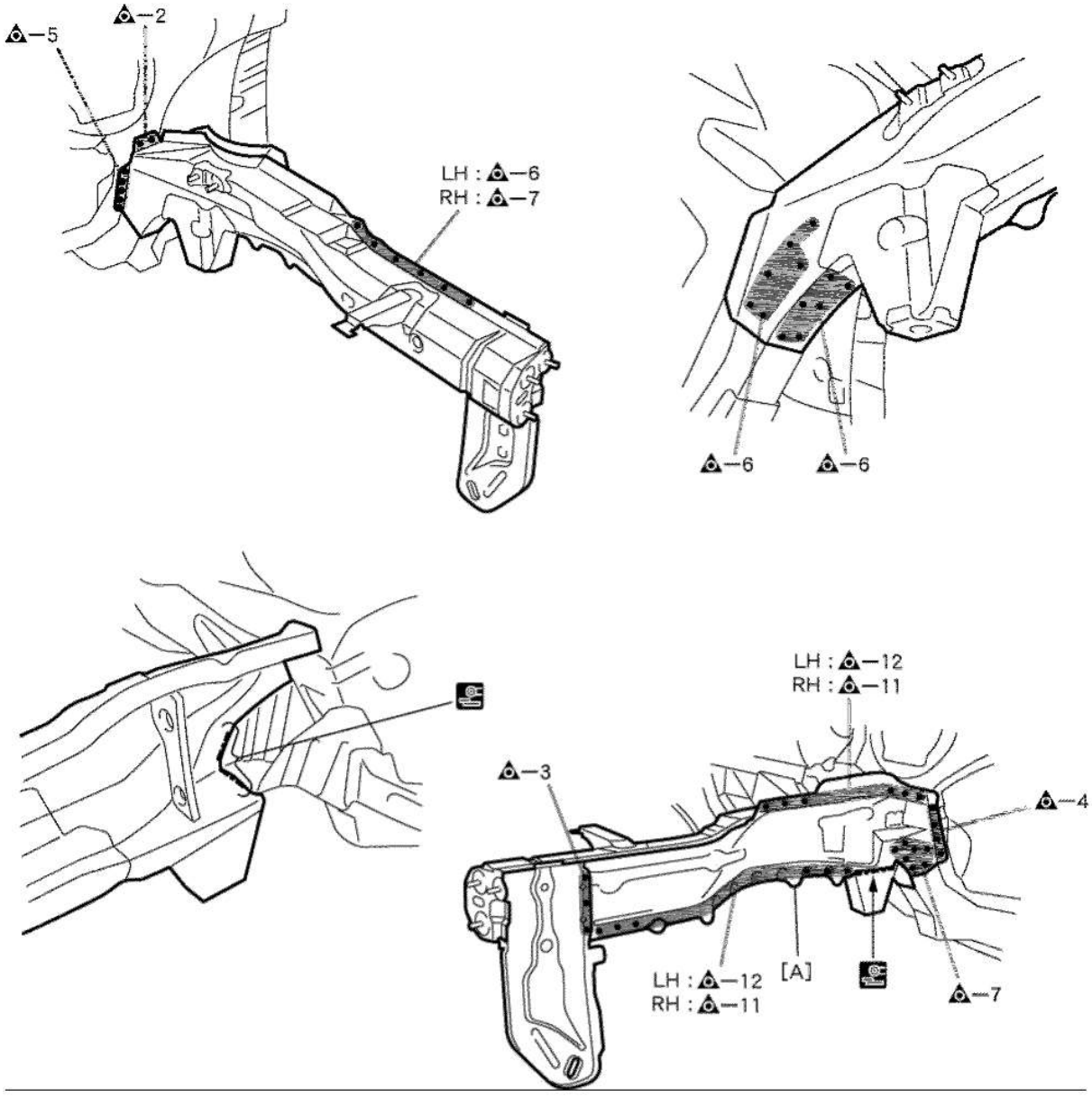
FRONT SIDEMEMBER (ASSY)


F20116A

REPLACEMENT

With the radiator support upper brace, front crossmember and front fender apron removed.

REMOVAL



F20116

POINT

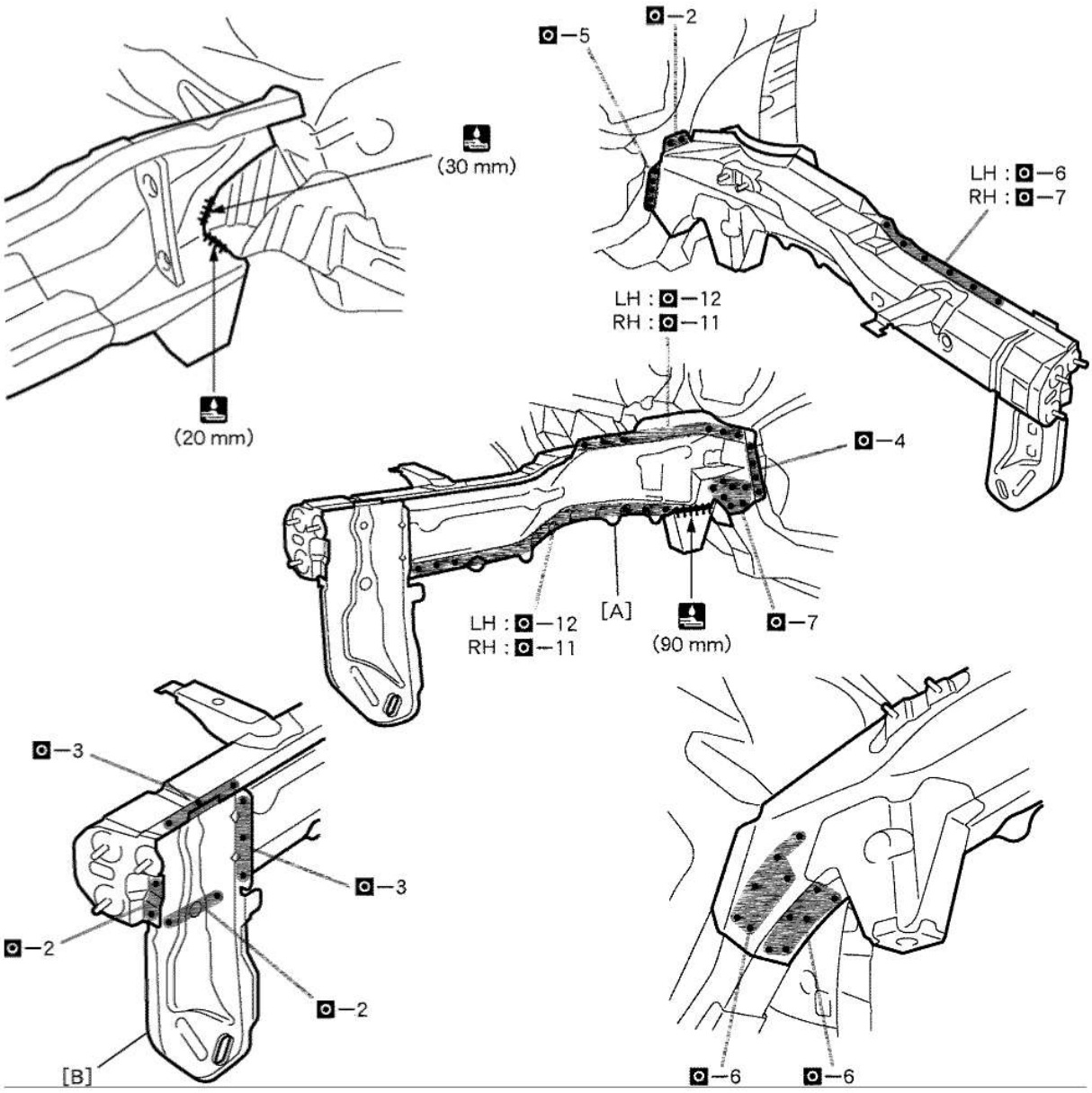
1 After removing the [A], remove the front sidemember.

PART NAME

[A] Front Sidemember Outer Plate

INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.



POINT

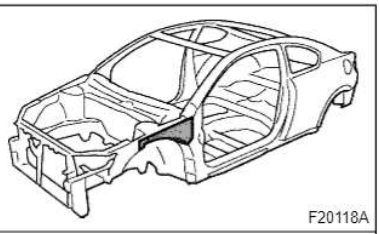
1 Make sure each measurement is corect, as this parts affects the front wheel alignment.

PART NAME

[A] Front Sidemember Outer Plate [B] Front Bumper Mounting Reinforcement

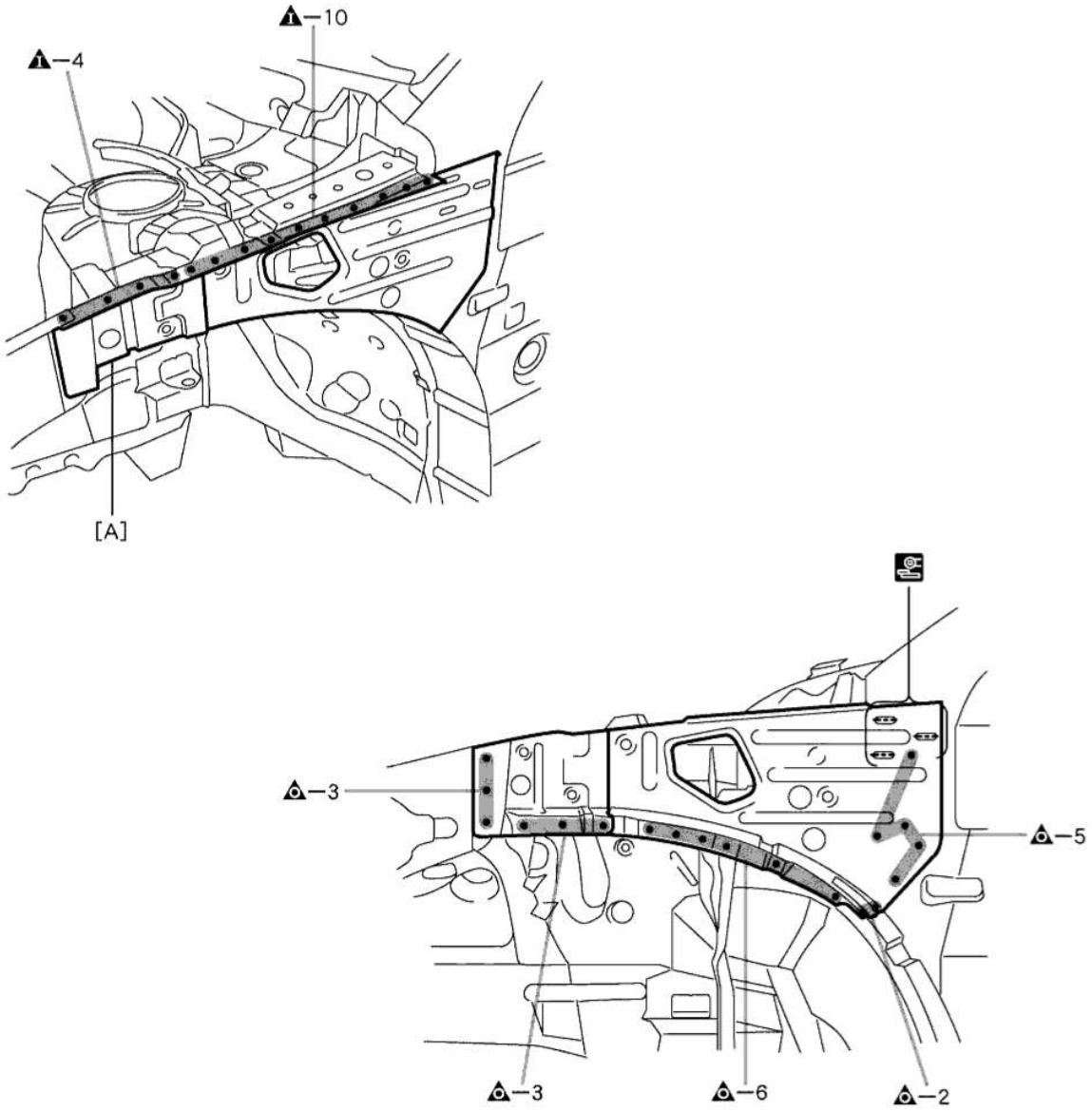
20 mm (0.79 in.) 30 mm (1.18 in.) 90 mm (3.54 in.)

COWL TOP SIDE PANEL (ASSY)


F20118A

REPLACEMENT

REMOVAL



F20118

POINT

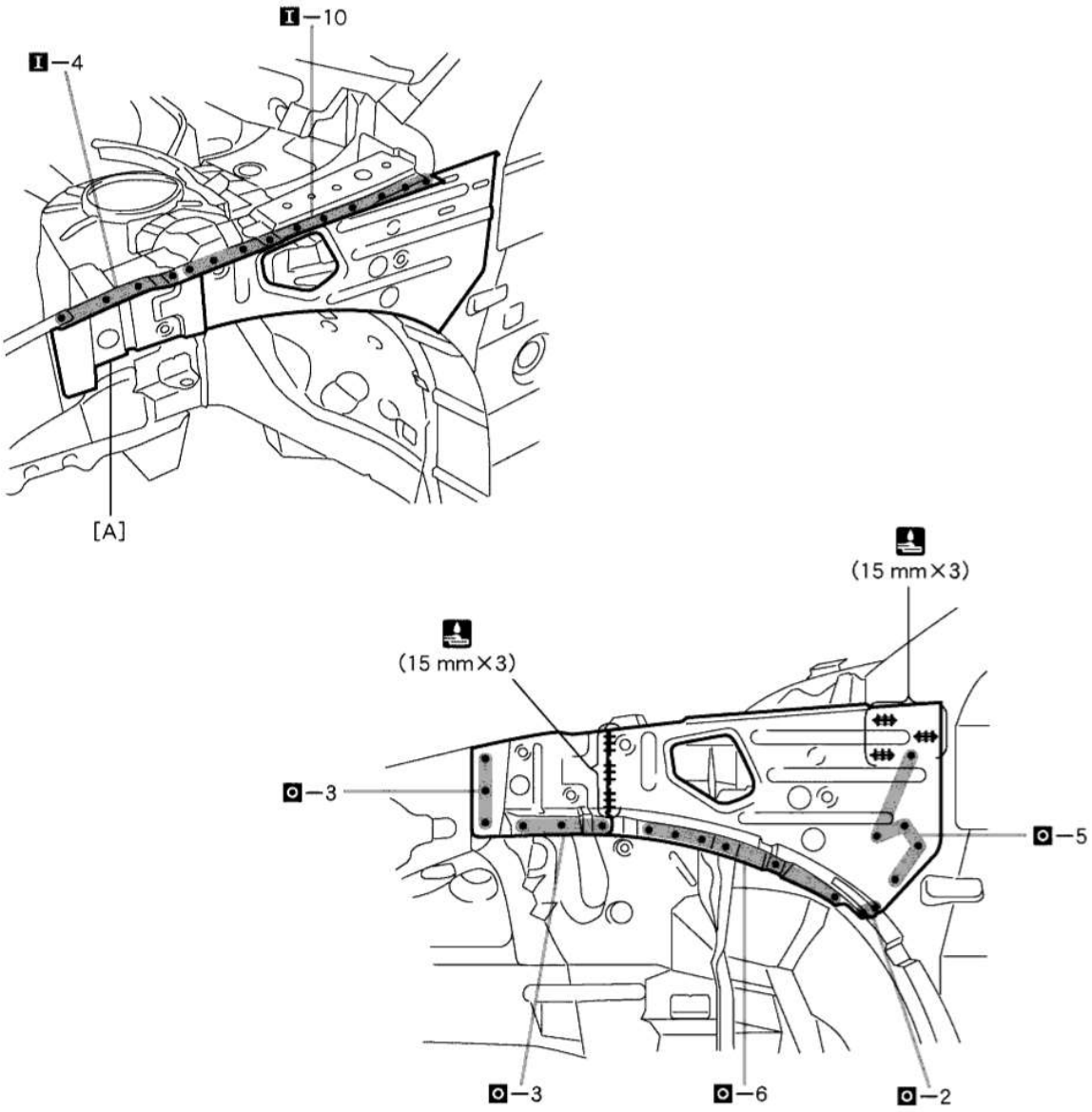
1 Remove the [A] at the same time.

PART NAME

[A] Cowl Top To Apron Brace

INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.

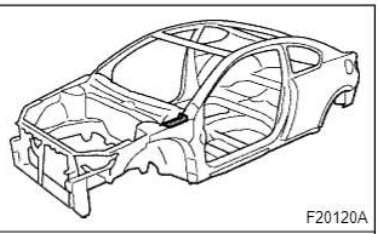


PART NAME

[A] Cowl Top To Apron Brace

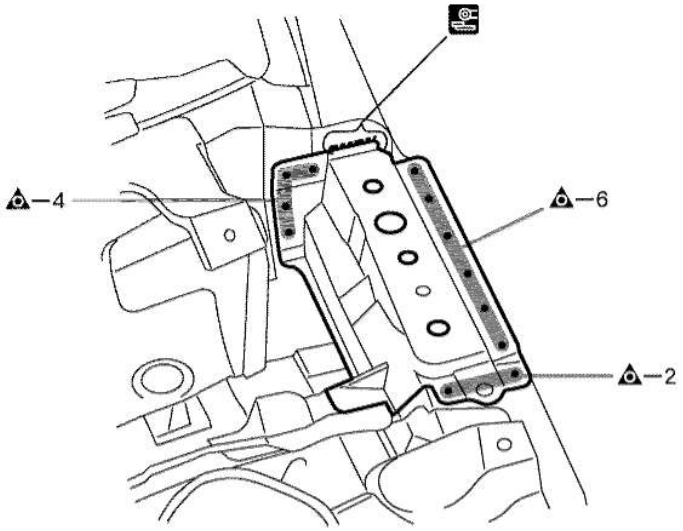
15 mm (0.59 in.)

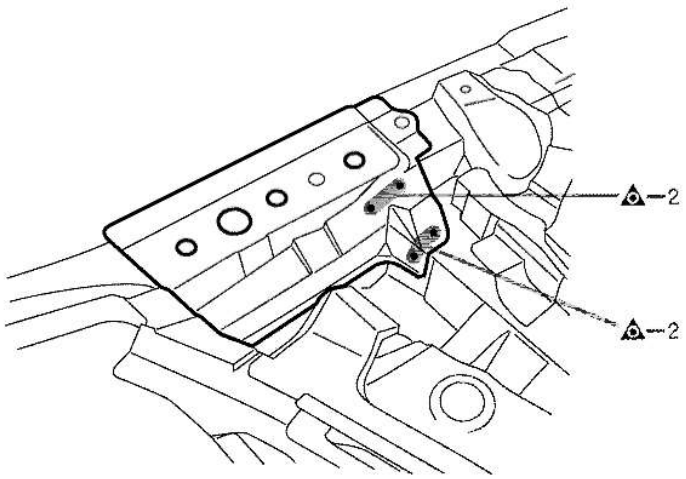
COWL TOP UPPER SIDE PANEL (ASSY)


F20120A

REPLACEMENT

REMOVAL

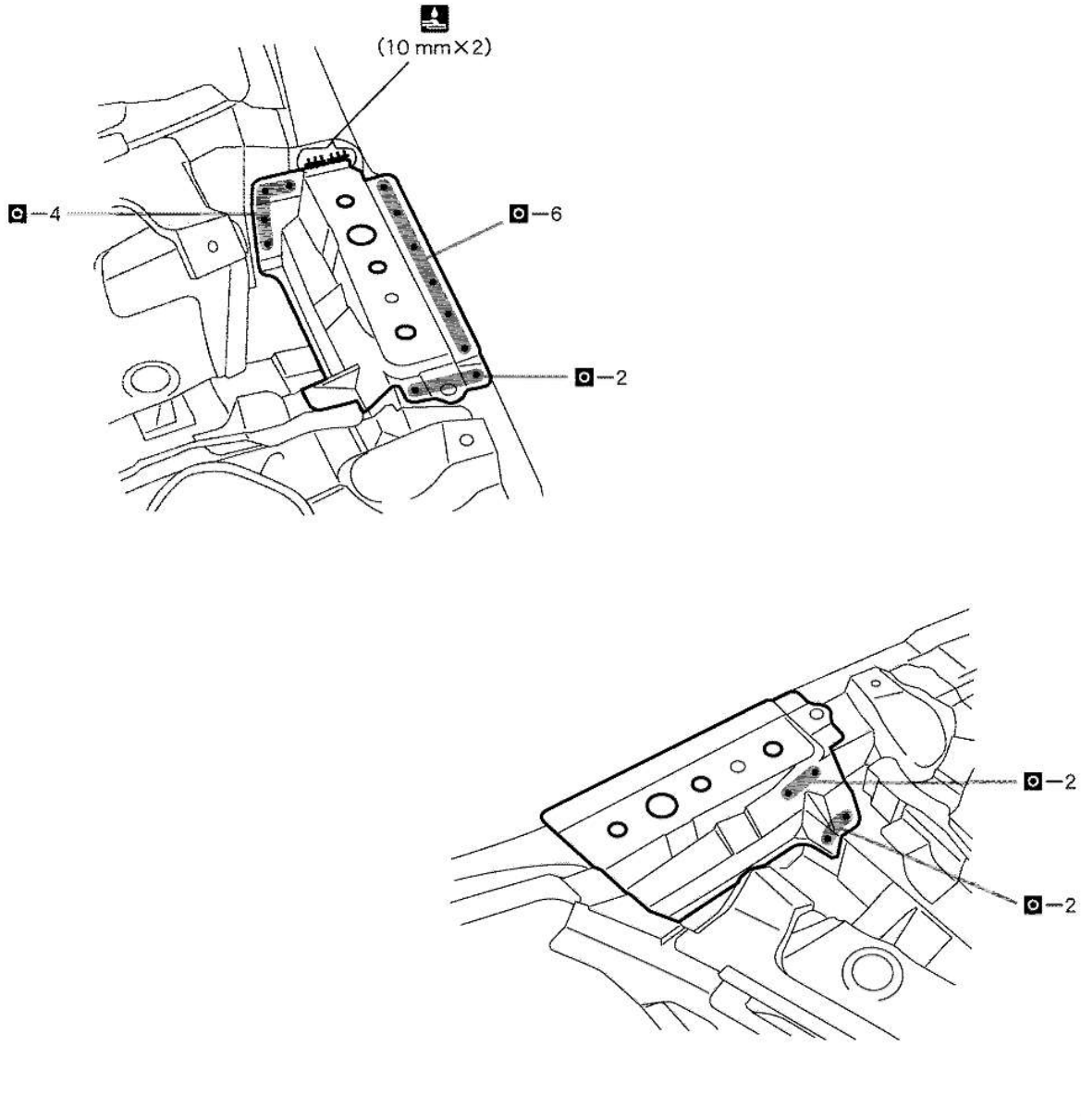




F20120

INSTALLATION

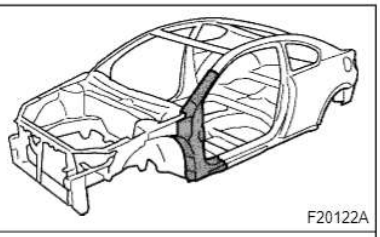
- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.



F20121

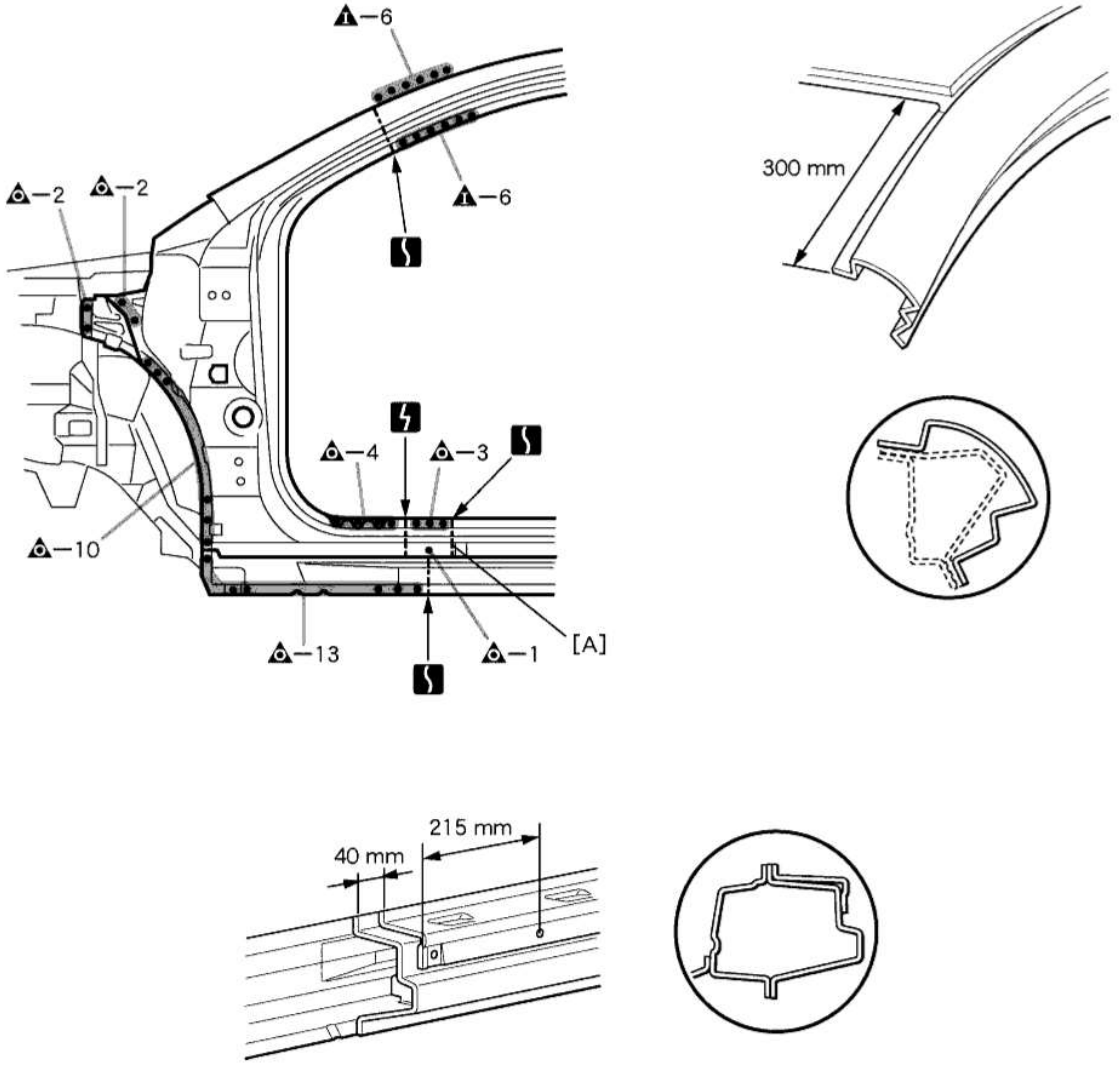
10 mm (0.39 in.)

FRONT BODY PILLAR (CUT)


F20122A

REPLACEMENT
With the cowl top side panel removed.

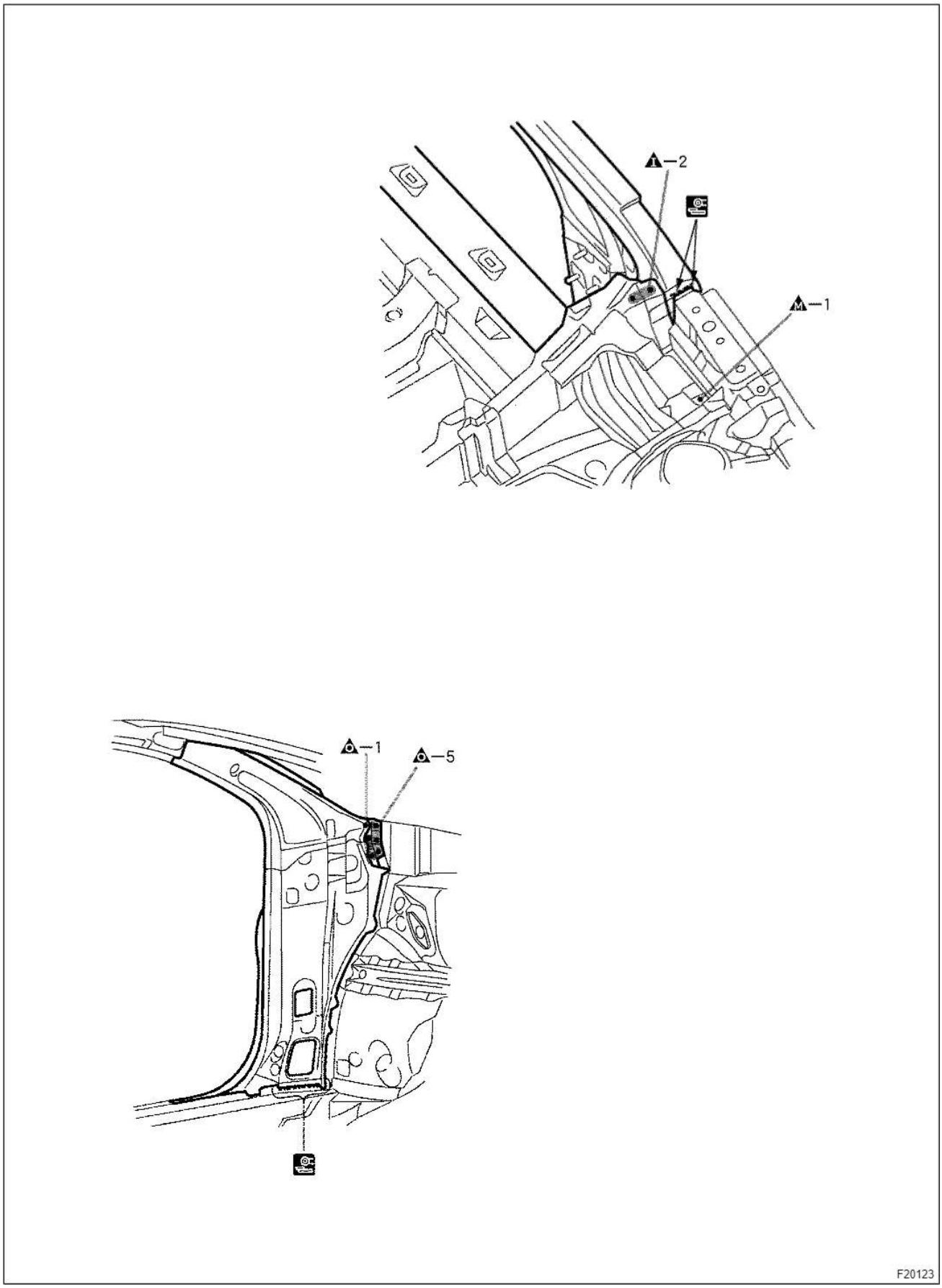
REMOVAL



F20122

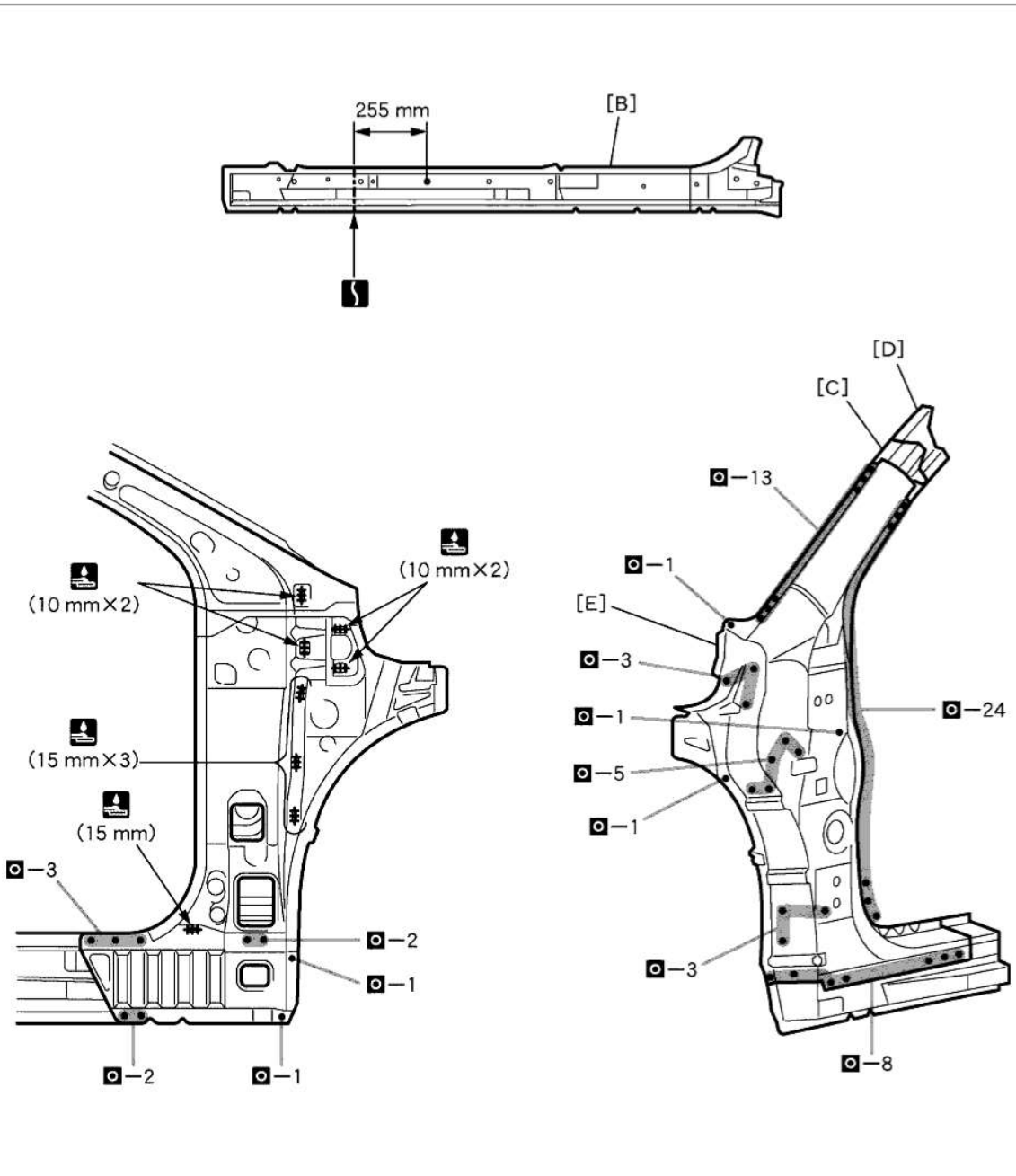
POINT
1 [A]: Reuse

PART NAME
[A] Rocker Outer Panel
40 mm (1.57 in.) 215 mm (8.46 in.) 300 mm (11.81 in.)


2
1
1
5
F20123

INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.



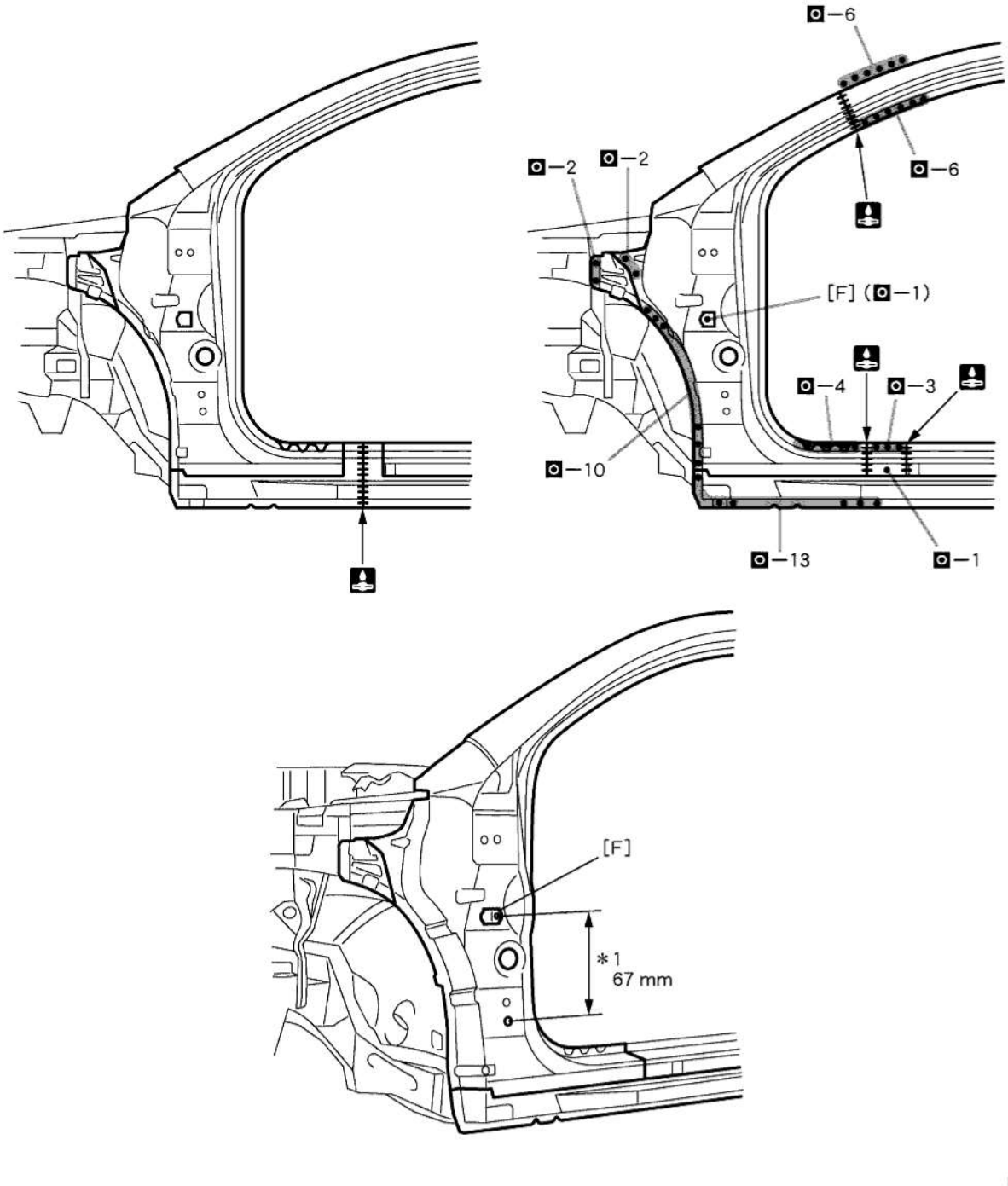
POINT

1 Before temporarily installing the new parts, weld the [B], [C], [D] and [E] with standard points.

PART NAME

[B] Rocker Outer Reinforcement [C] Front Body Pillar Lower Reinforce [D] Front Body Inner Pillar
[E] Outer Pillar

10 mm (0.39 in.) 15 mm (0.59 in.) 255 mm (10.04 in.)



POINT

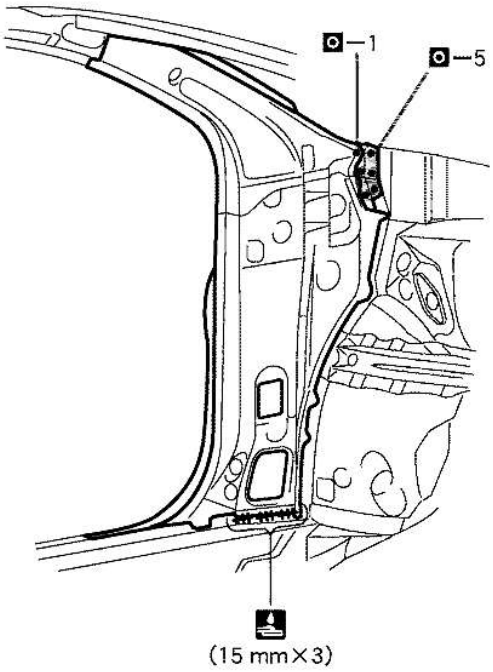
1 Inspect the fitting of the front door, front fender and windshield glass, etc., before welding, since this affects the appearance of the finish.

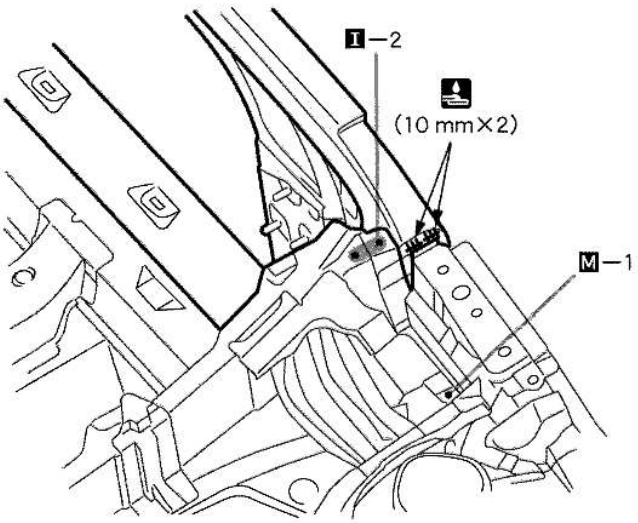
2 *1: Reference value

PART NAME

[F] No.6 Pillar Outer Bracket

67 mm (2.64 in.)

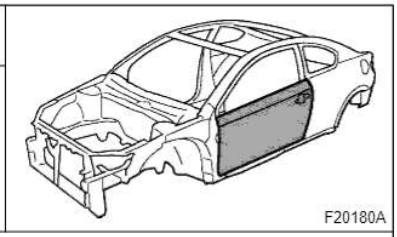




F20126

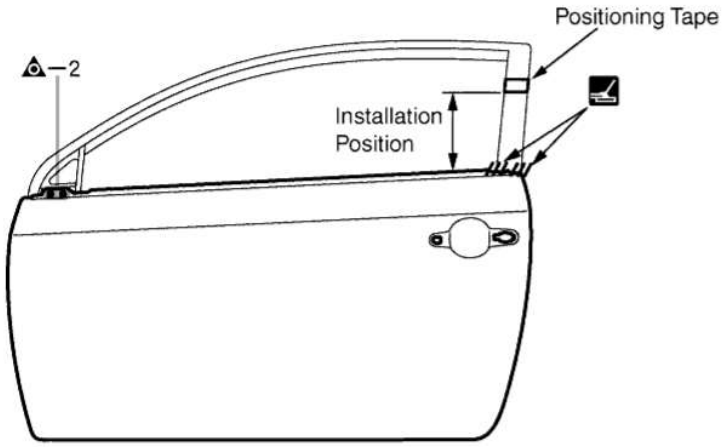
10 mm (0.39 in.) 15 mm (0.59 in.)

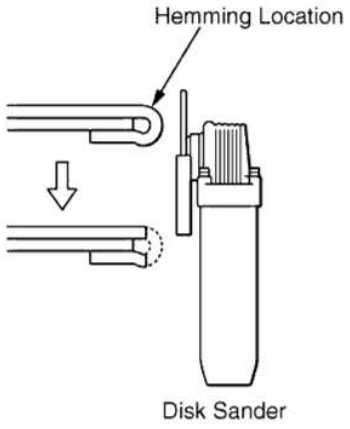
FRONT DOOR OUTER PANEL (ASSY)


F20180A

REPLACEMENT

REMOVAL





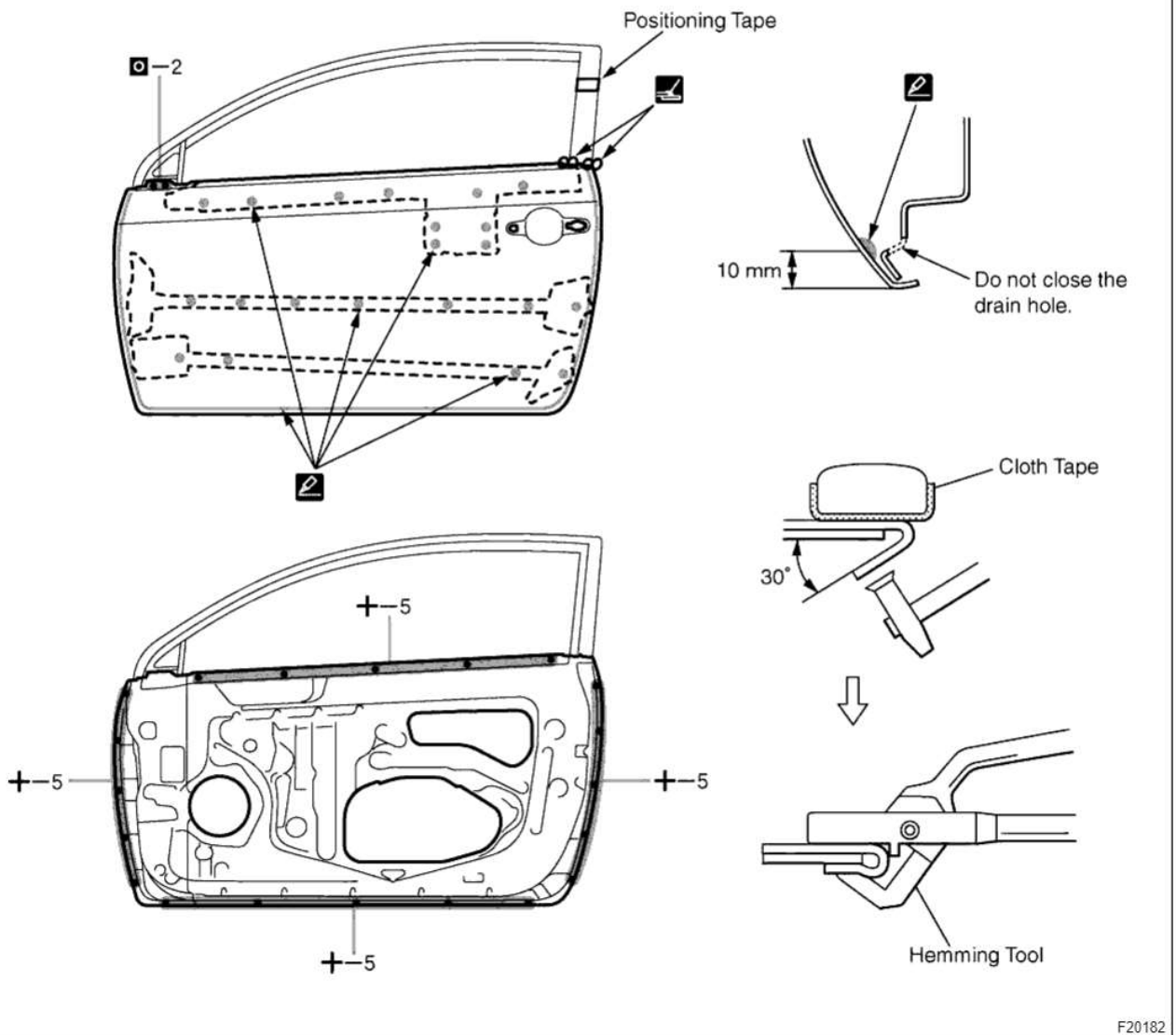
F20180

POINT

1 Before removing the outer panel, mark the installation position with a tape.
2 Before removing the outer panel, establish its exact position inrelation to the window frame using a reference marker, etc.
3 After grinding off the hemming location, remove the outer panel.

INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.

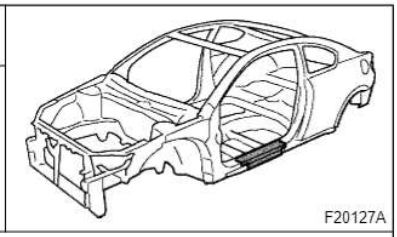


POINT

1 Before temporarily installing the new parts, apply body sealer to the reinforcement, side impact protection beam and backside of the new parts.
HINT:
1) Apply sealer evenly about 10 mm (0.39 in.) from the flange and 3 mm (0.12 in.) in diameter to the outer panel and apply just enough sealer for the reinforcement and side impact protection beam to make contact.

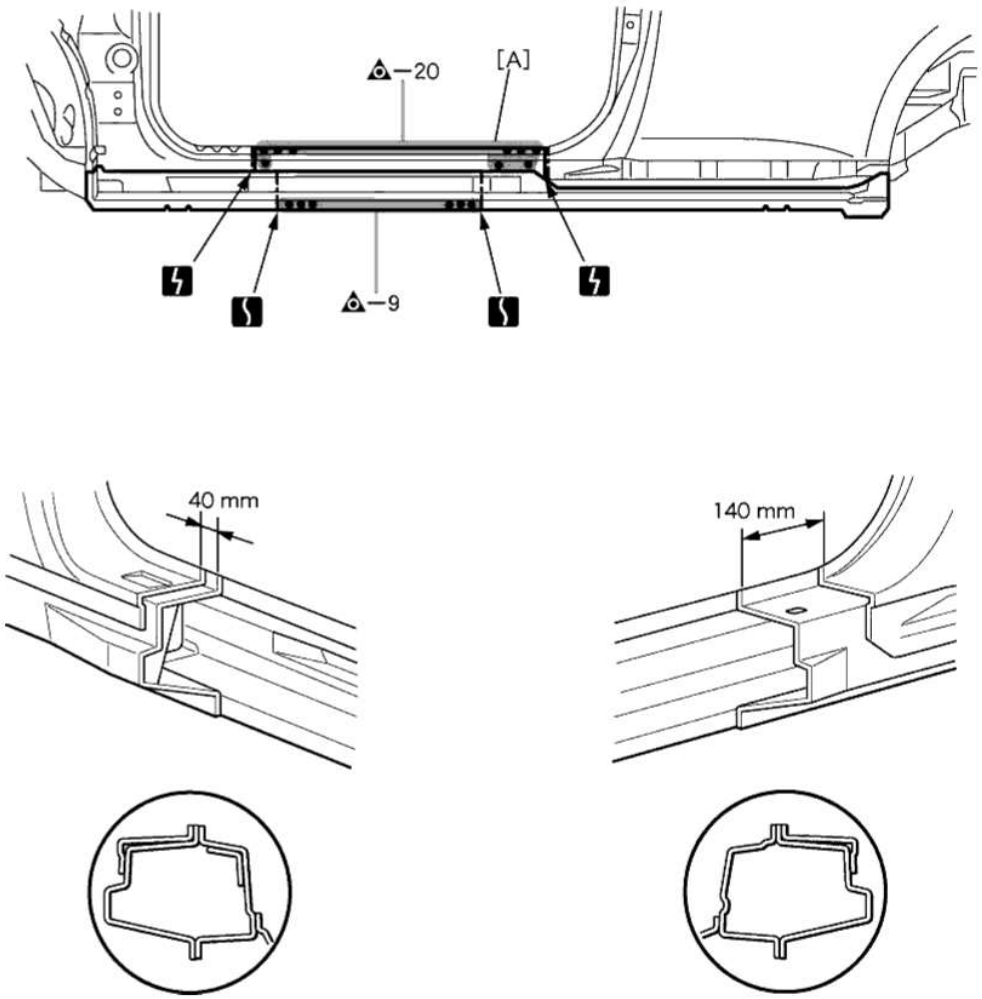
2 Bend the flange hem about 30° with a hammer and dolly, then fasten tightly with a hemming tool.
HINT:
1) Perform hemming in three steps, being careful not to warp the panel.
2) If a hemming tool cannot be used, hem with a hammer and dolly.

ROCKER PANEL (CUT)


F20127A

REPLACEMENT

REMOVAL



F20127

POINT

1 Remove the [A] at the same time.

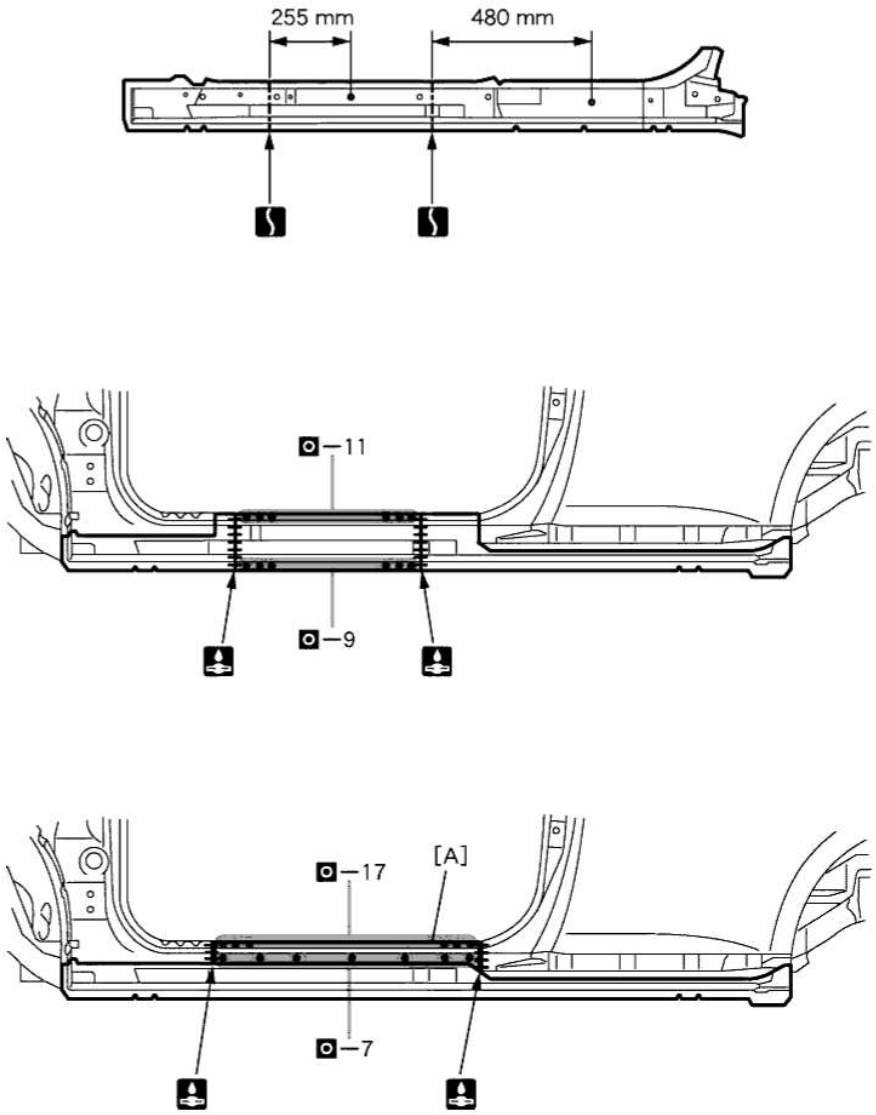
PART NAME

[A] Rocker Outer Reinforcement

40 mm (1.57 in.) 140 mm (5.51 in.)

INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.



POINT

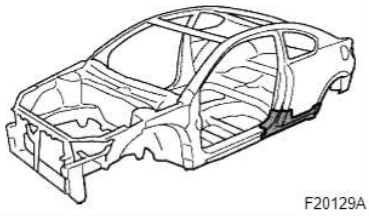
1 Inspect the fitting of the front door, etc., before welding, since this affects the appearance of the finish.

PART NAME

[A] Rocker Outer Reinforcement

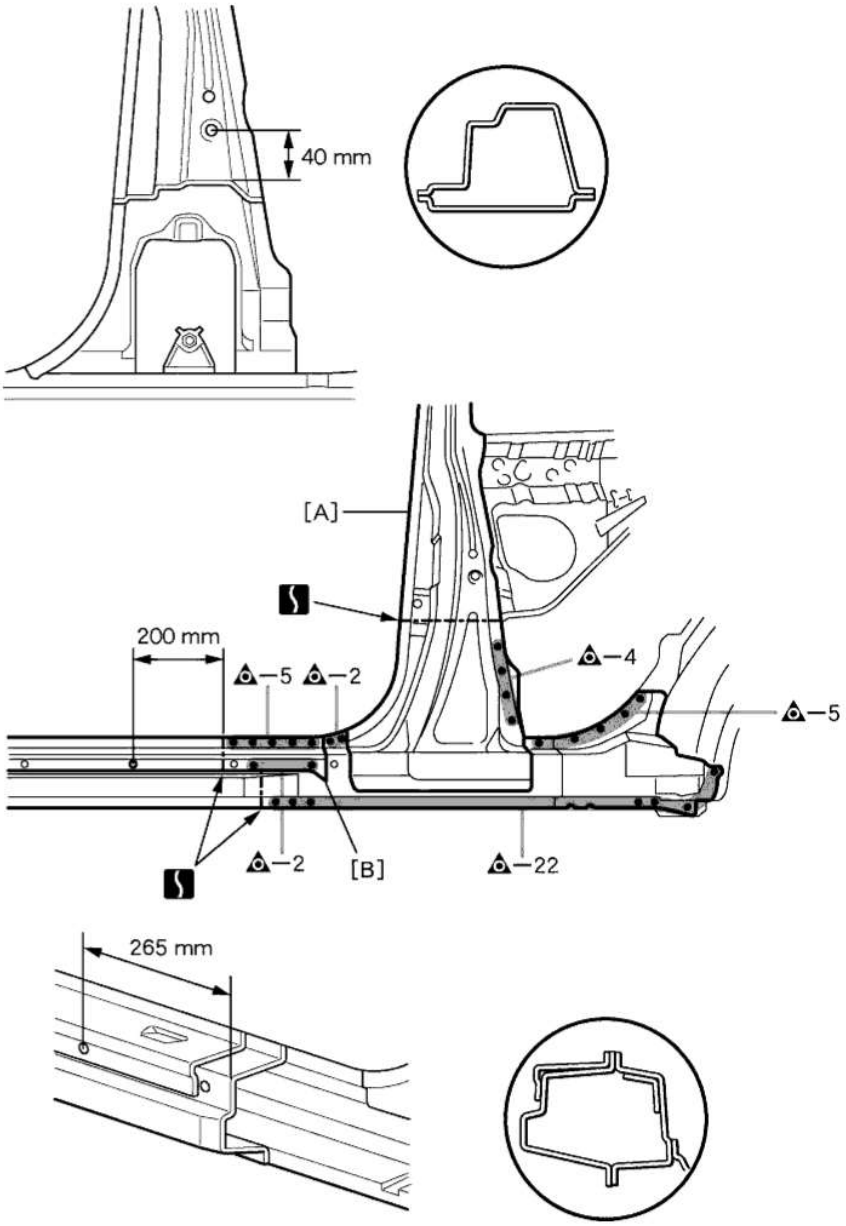
255 mm (10.04 in.) 480 mm (18.90 in.)

ROCKER OUTER REINFORCEMENT (CUT-H)


F20129A

REPLACEMENT
With the quarter panel removed.

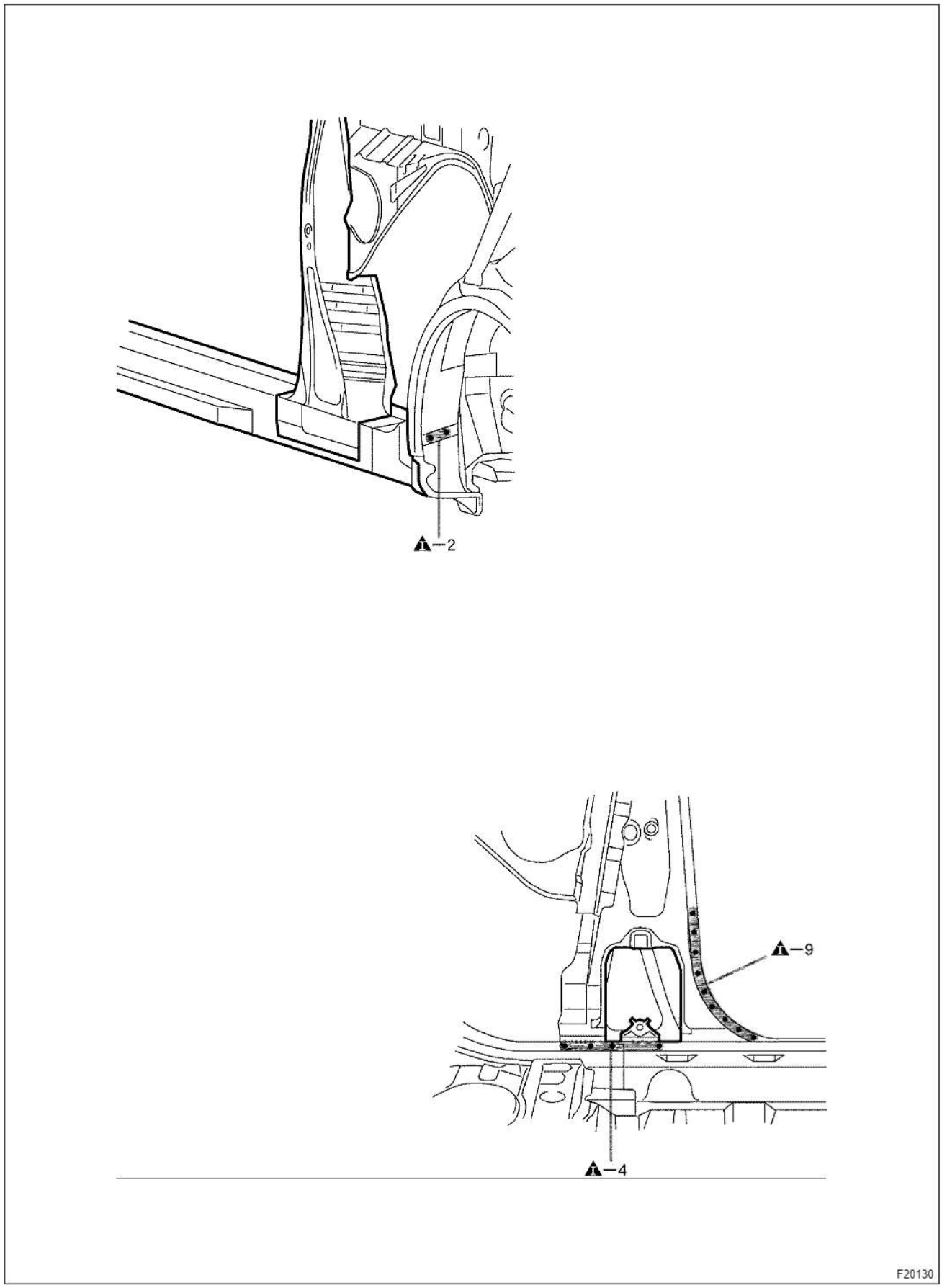
REMOVAL



F20129

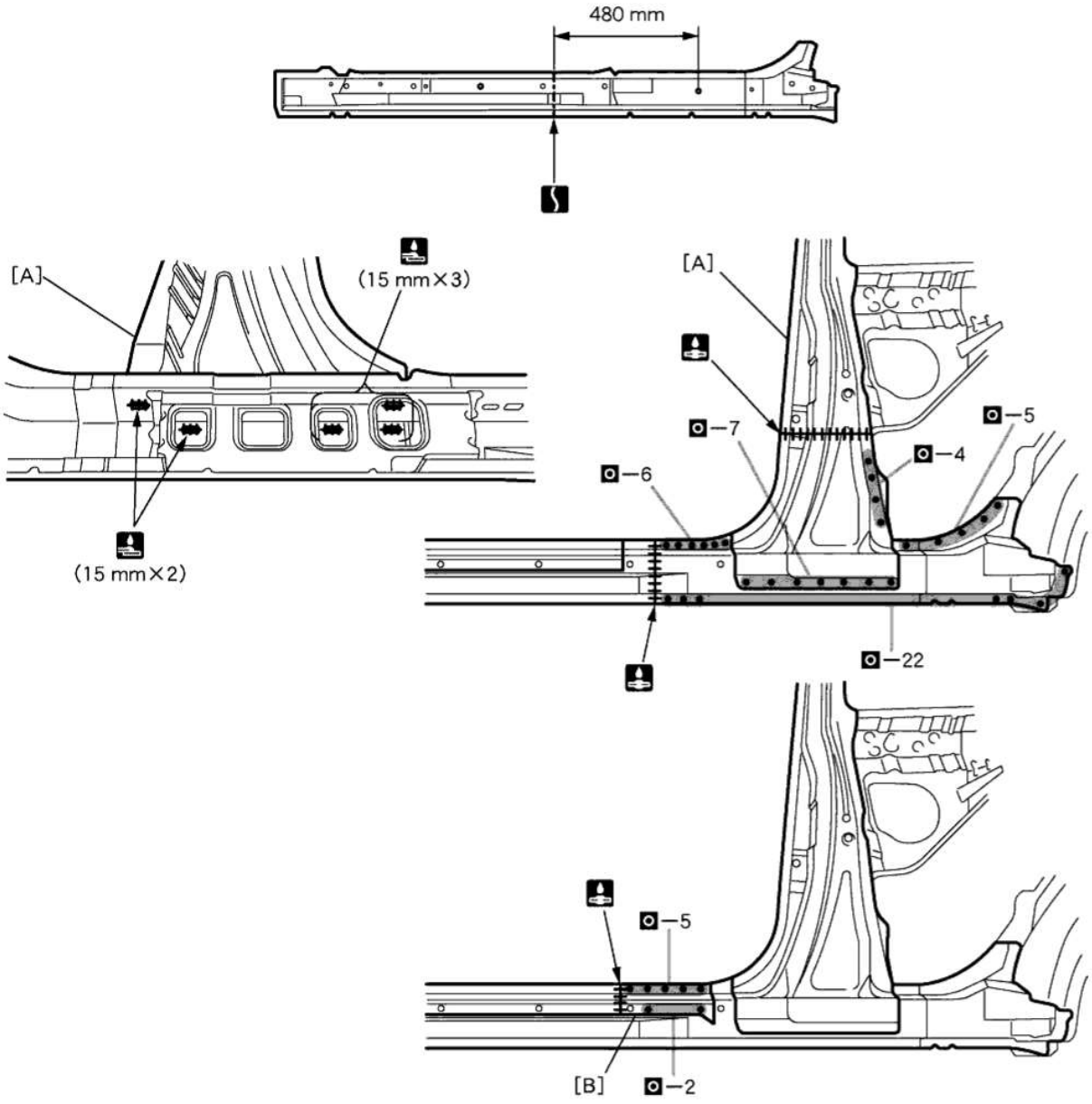
POINT
1 [B]: Reuse

PART NAME
[A] Center Body Pillar Reinforcement [B] Rocker Outer Panel
40 mm (1.57 in.) 200 mm (7.87 in.) 265 mm (10.43 in.)


2
9
4
F20130

INSTALLATION

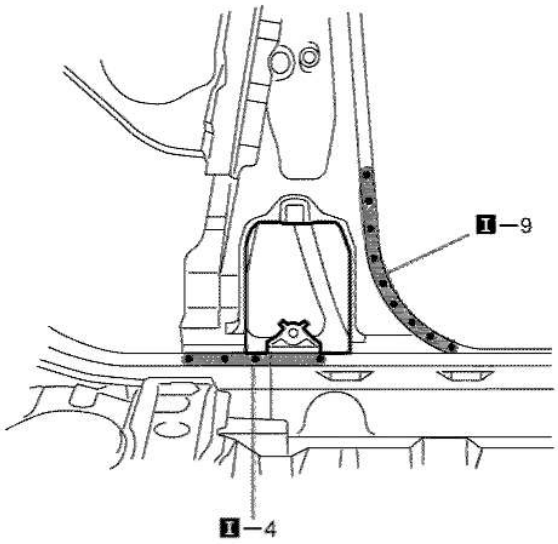
- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.

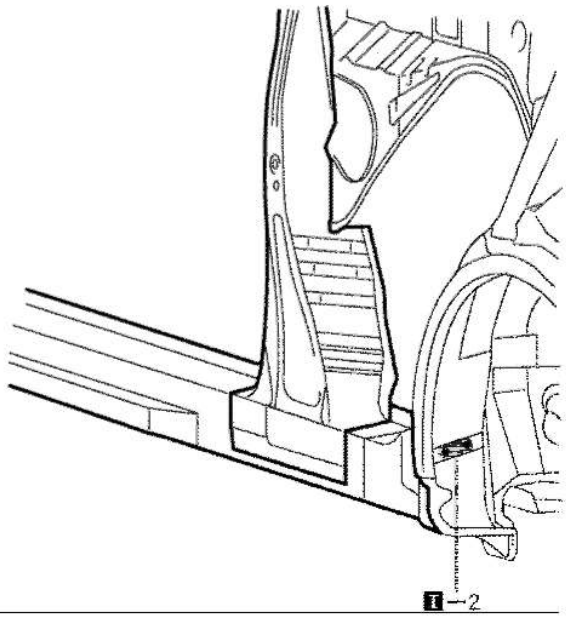


PART NAME

[A] Center Body Pillar Reinforcement [B] Rocker Outer Panel

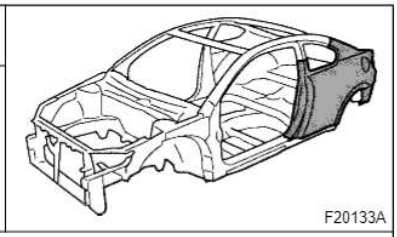
15 mm (0.59 in.) 480 mm (18.90 in.)





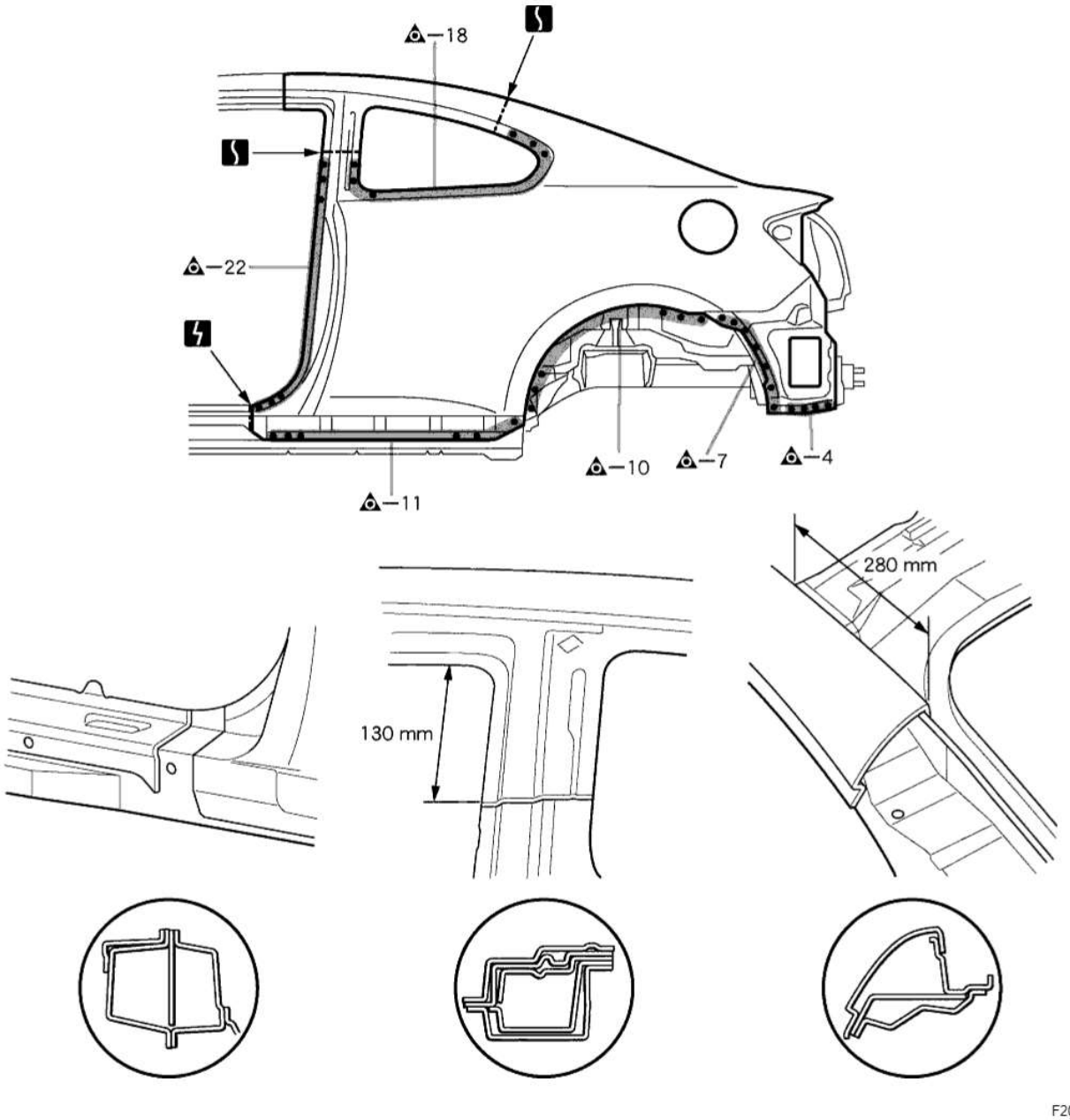
F20132

QUARTER PANEL (CUT)


F20133A

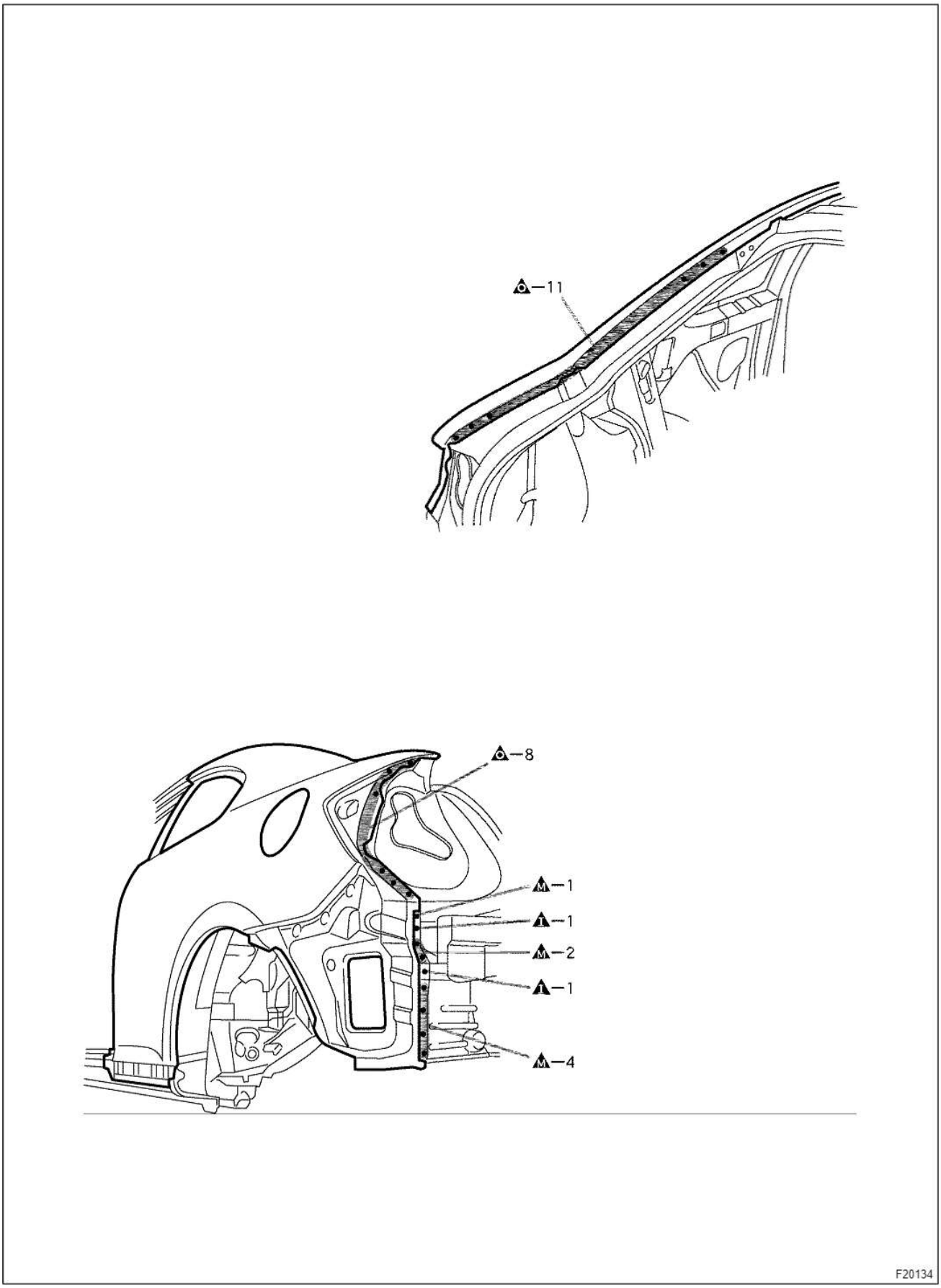
REPLACEMENT

REMOVAL



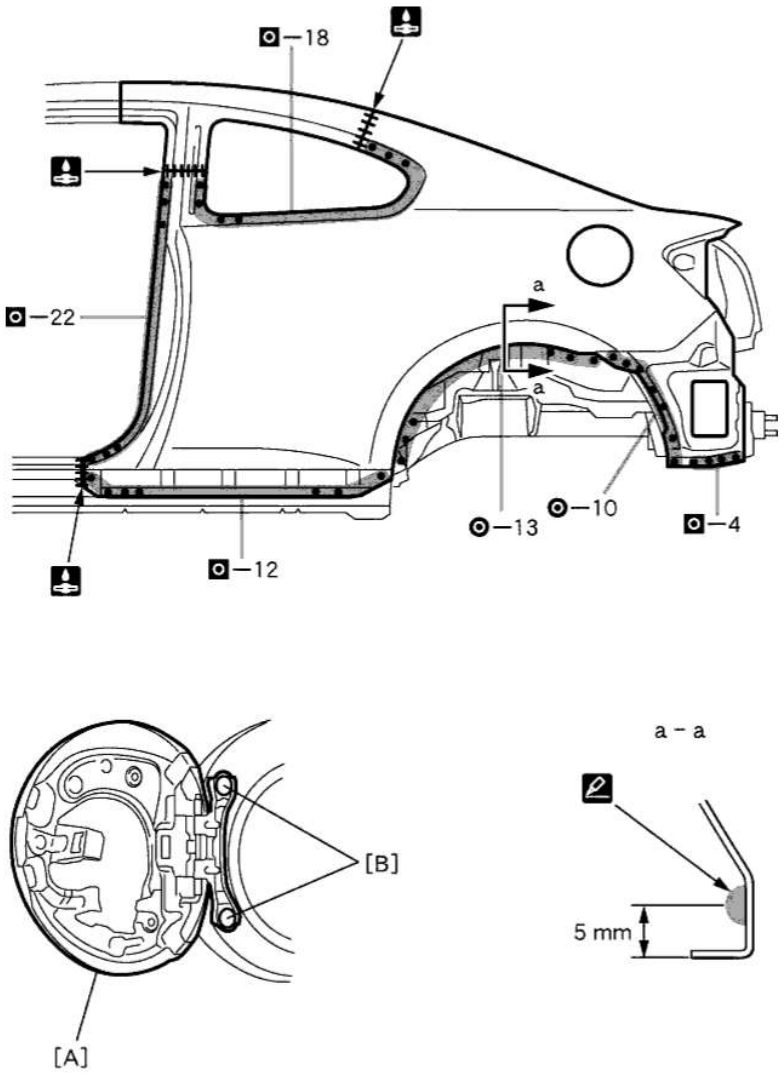
F20133

130 mm (5.12 in.) 280 mm (11.02 in.)


A—11
A—8
M—1
1—1
M—2
1—1
M—4
F20134

INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.



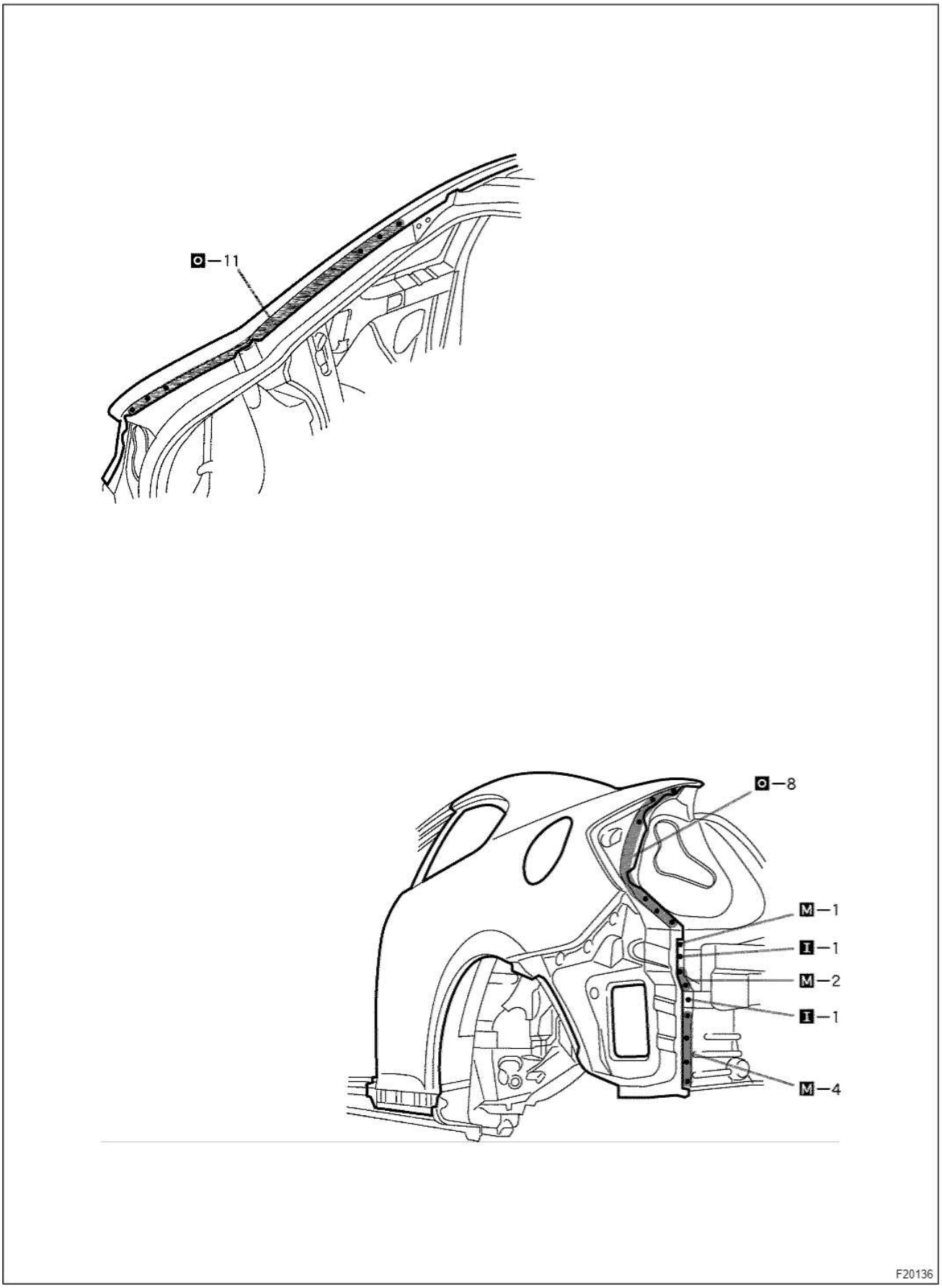
POINT

1 Before temporarily installing the new parts, apply body sealer to the wheel arch.
HINT:
1) Applybody 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.

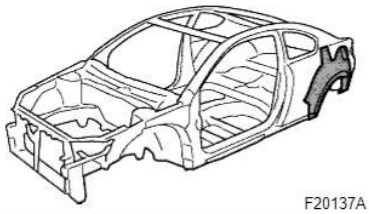
2 Inspect fitting of the front door, back door and rear combination light, etc., before welding, since this affects the appearance of the finish.

PART NAME

[A] Fuel Filler Opening Lid [B] Rivets

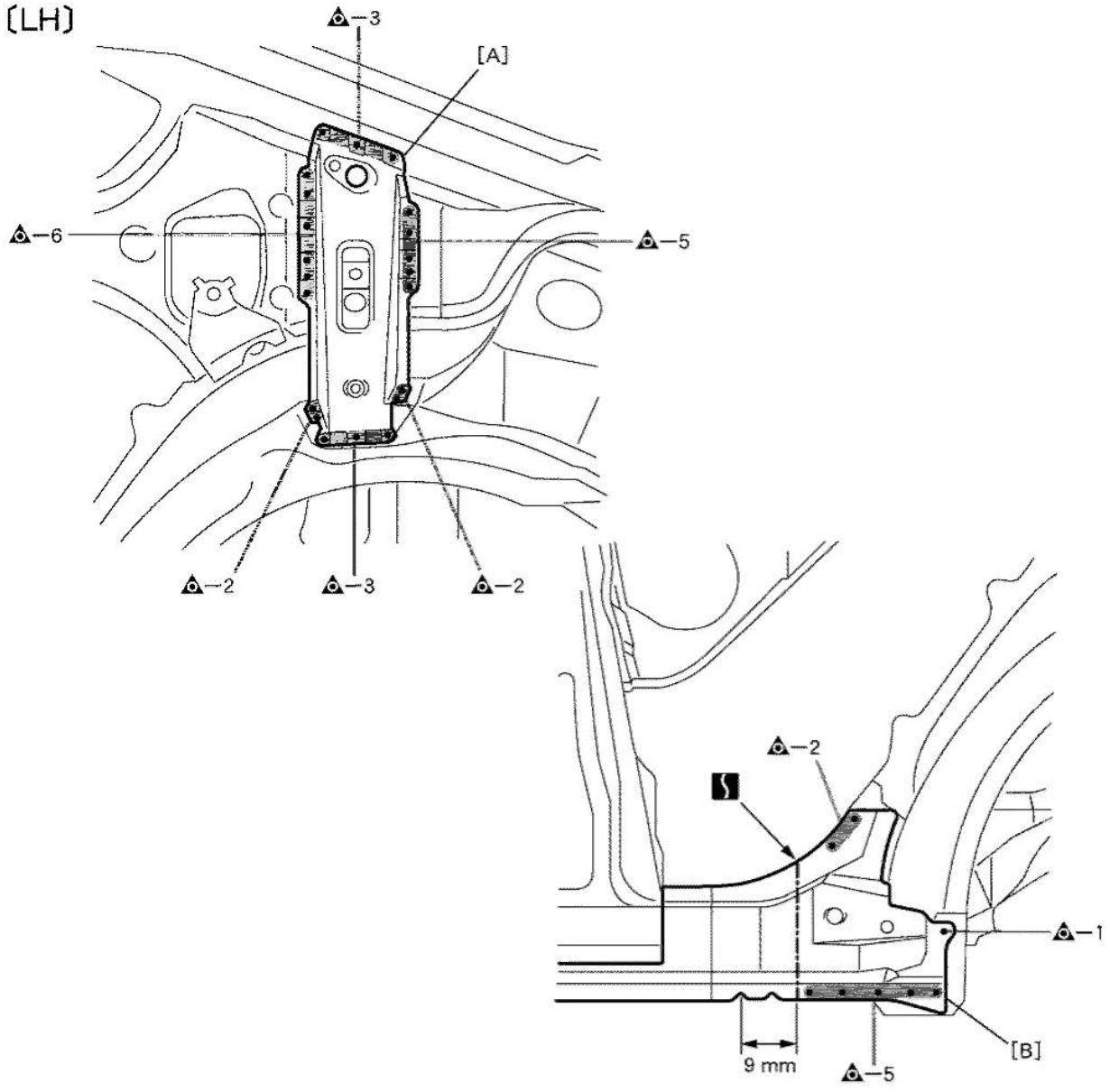

O—11
O—8
M—1
I—1
M—2
I—1
M—4
F20136

QUARTER WHEEL HOUSING OUTER PANEL (ASSY)


F20137A

REPLACEMENT
With the quarter panel removed.

REMOVAL



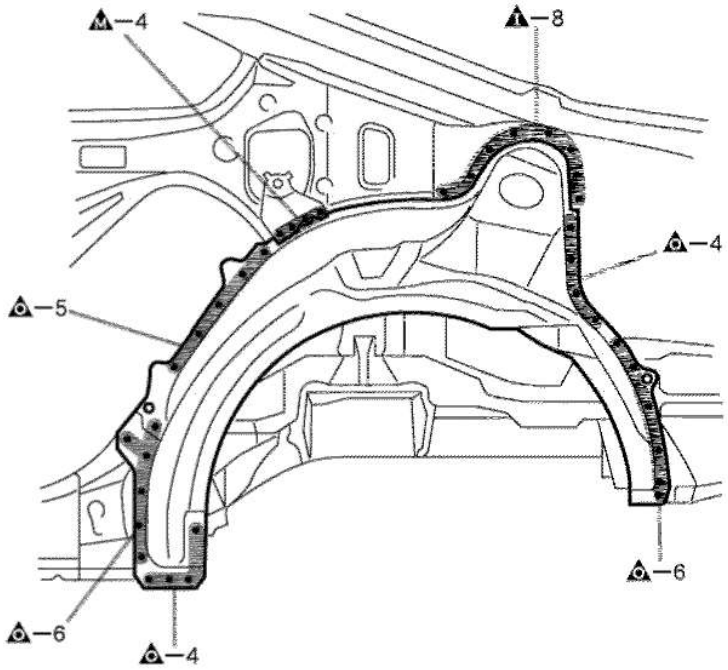
F20137

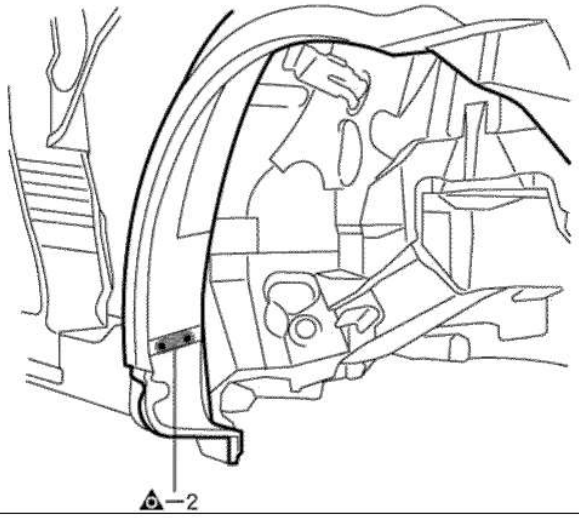
POINT
1 After removing the [A] and [B], remove the quarter wheel housing outer panel.

PART NAME
[A] Roof Side Outer Panel [B] Rocker Outer Reinforcement

9 mm (0.35 in.)

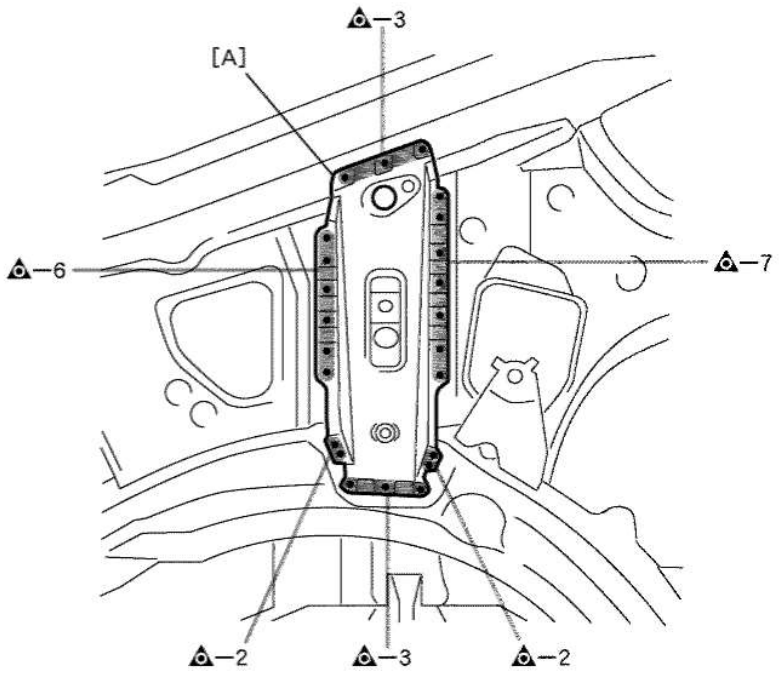
(LH)

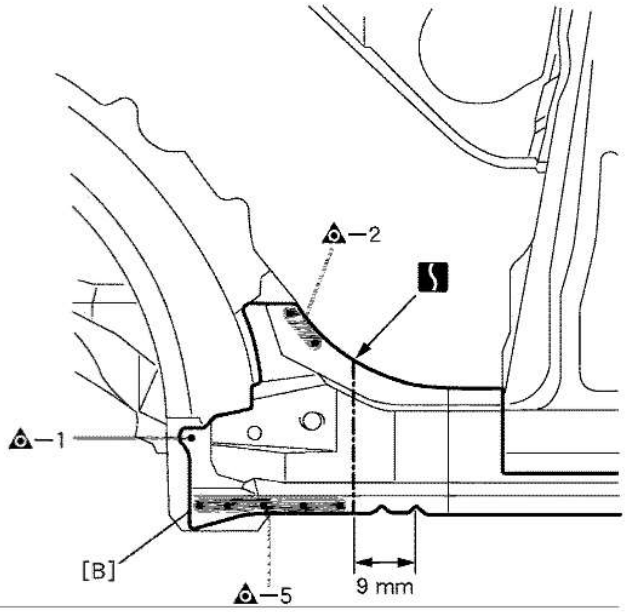




F20138

(RH)





F20139

POINT

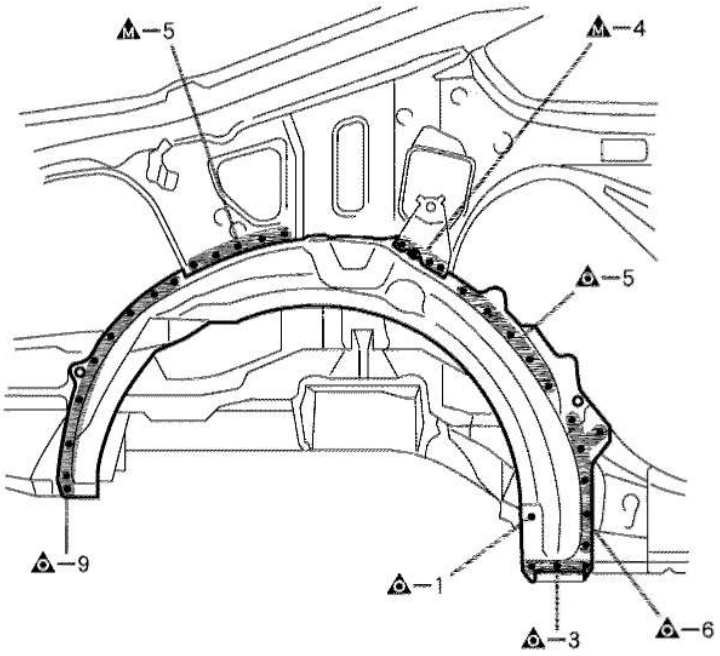
1 After removing the [A] and [B], remove the quarter wheel housing outer panel.

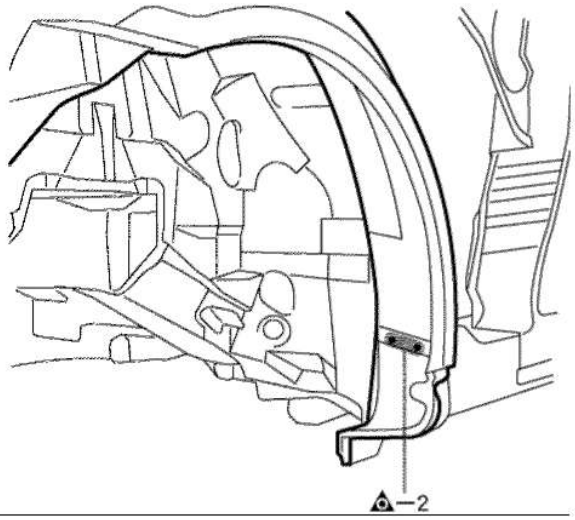
PART NAME

[A] Roof Side Outer Panel [B] Rocker Outer Reinforcement

9 mm (0.35 in.)

(RH)



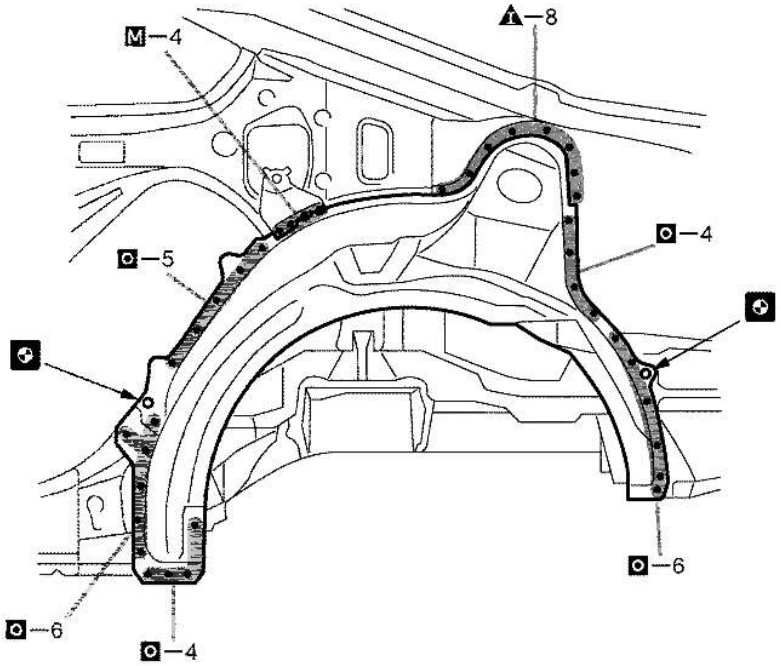


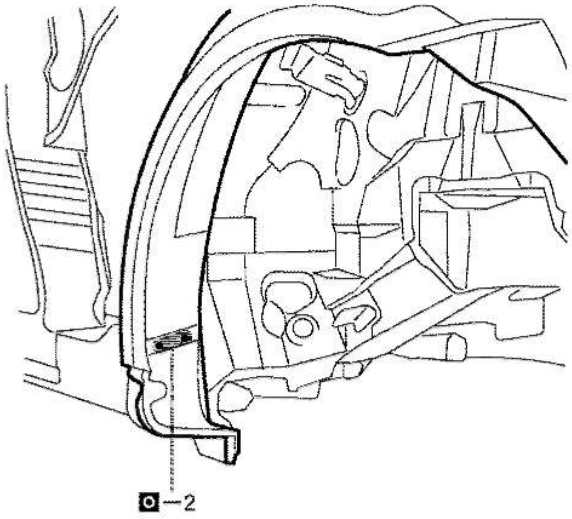
F20140

INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.

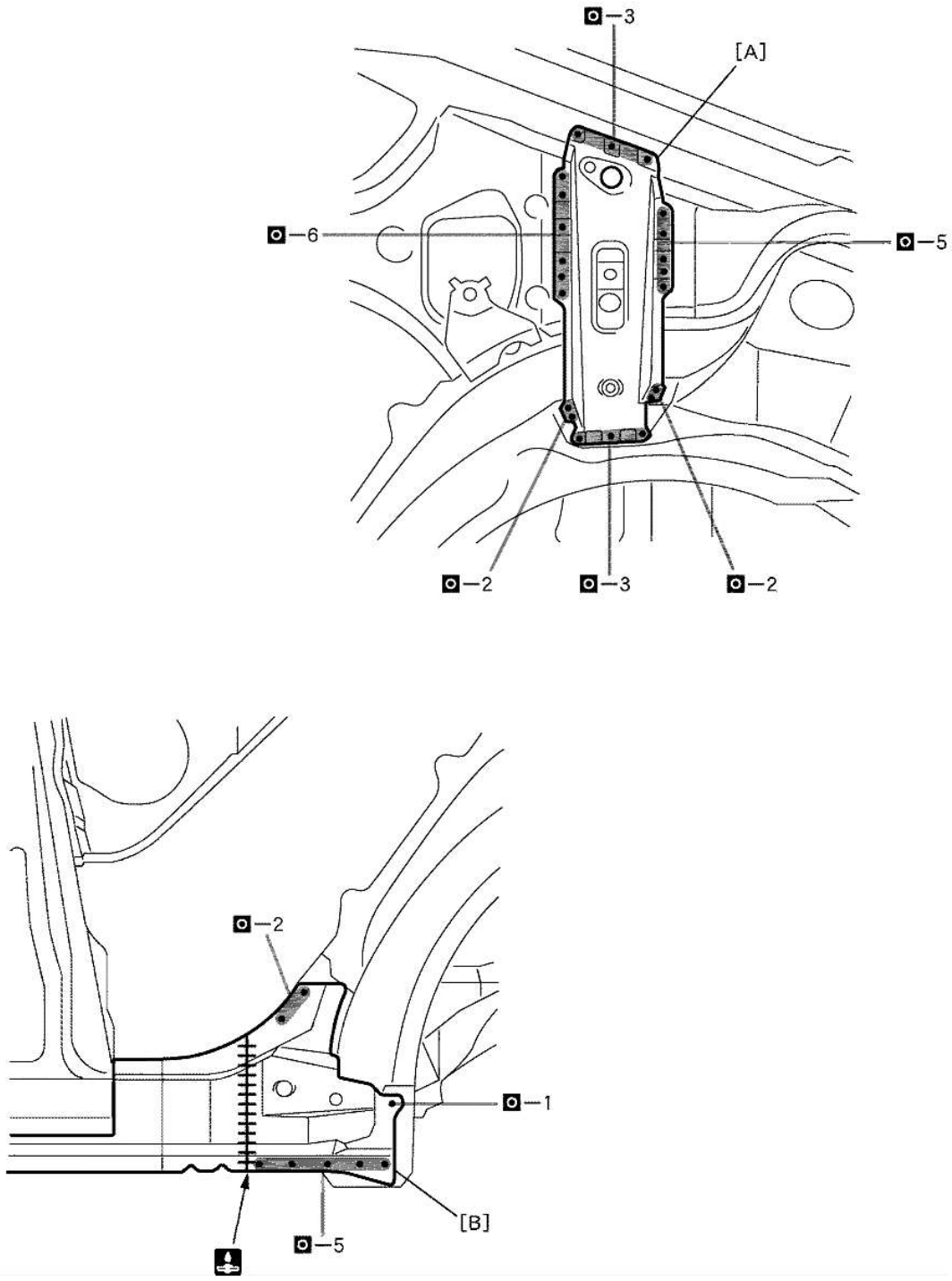
(LH)





F20141

(LH)



F20142

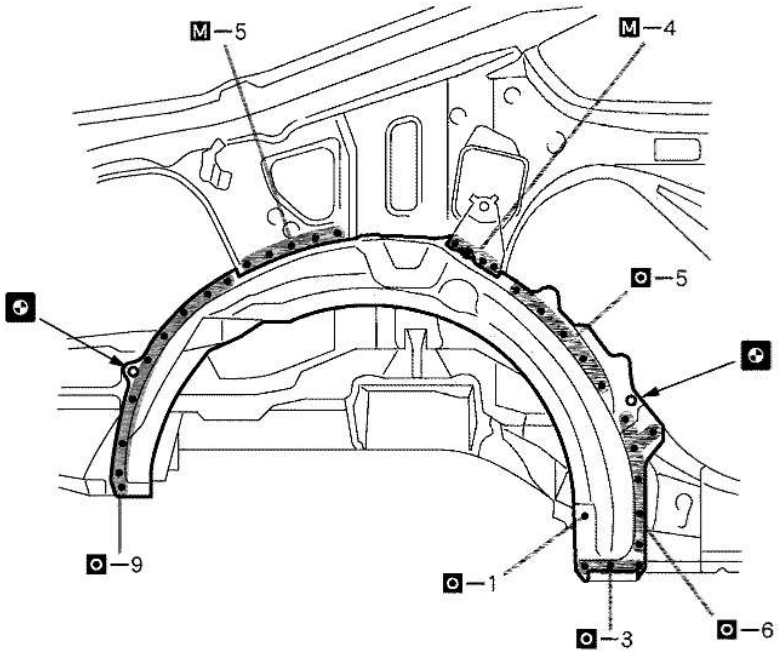
POINT

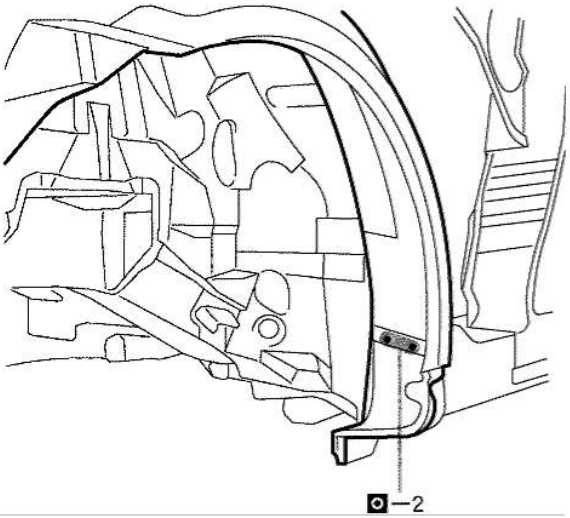
1 After welding the quarter wheel housing outer panel to the vehicle side install the [A] and [B].

PART NAME

[A] Roof Side Outer Panel [B] Rocker Outer Reinforcement

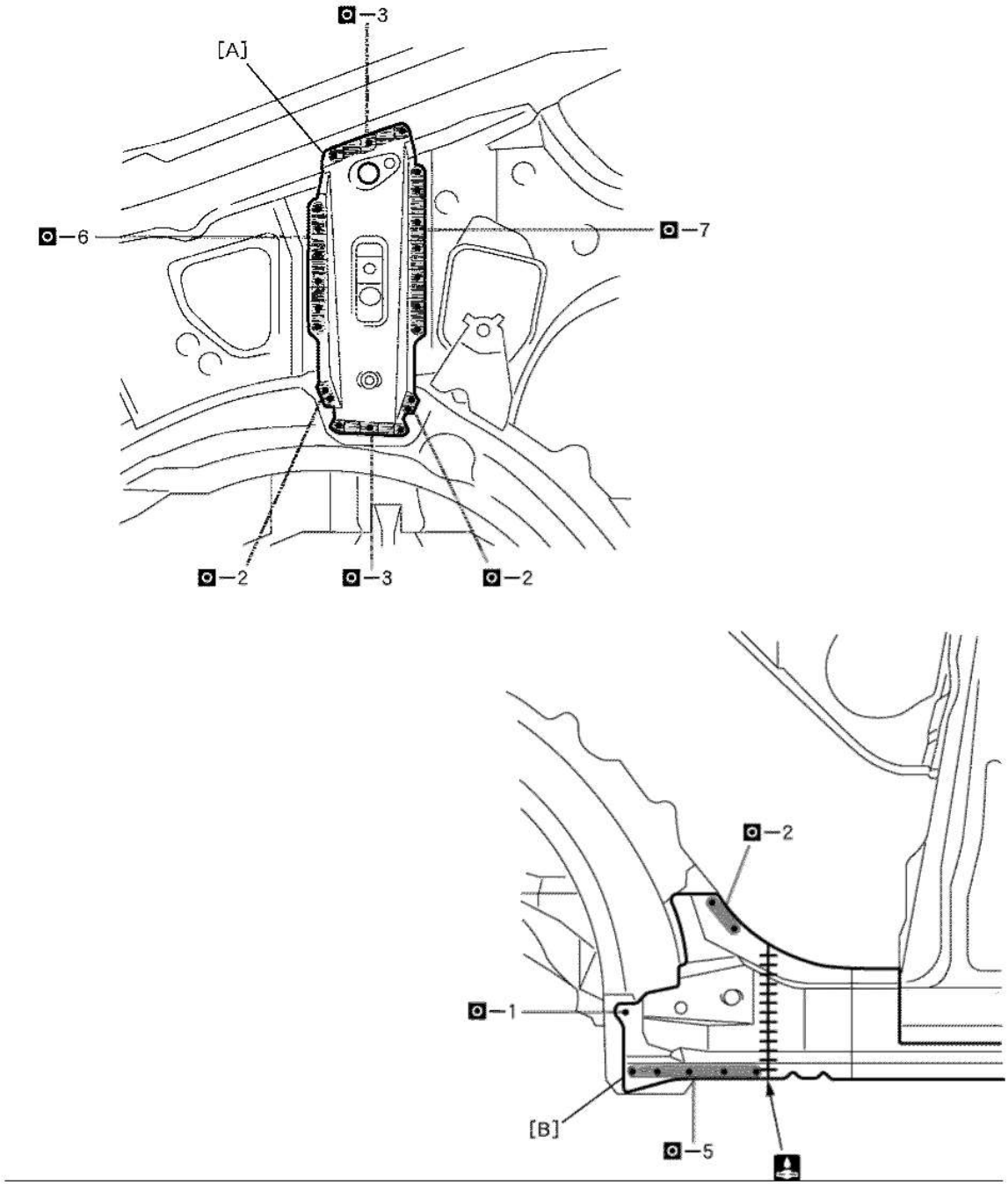
(RH)





F20143

(RH)



F20144

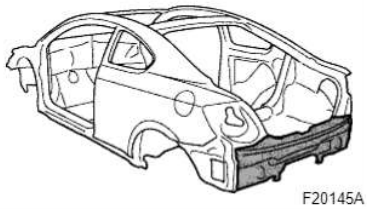
POINT

1 After welding the quarter wheel housing outer panel to the vehicle side install the [A] and [B].

PART NAME

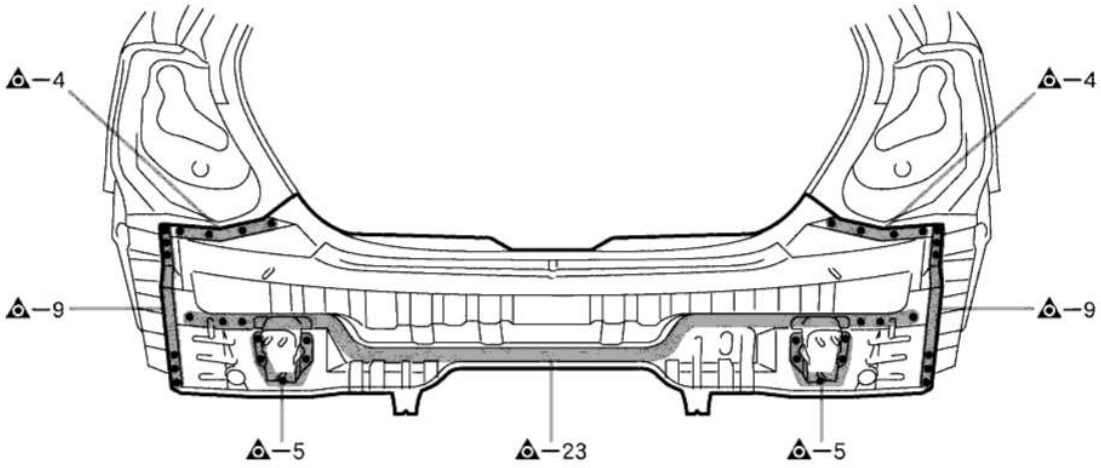
[A] Roof Side Outer Panel [B] Rocker Outer Reinforcement

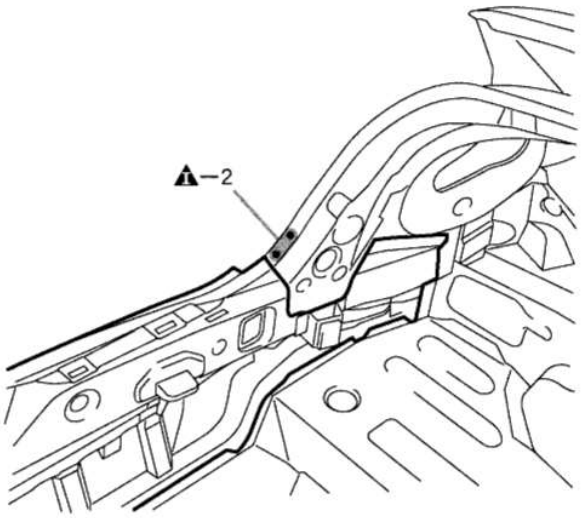
BODY LOWER BACK PANEL (ASSY)


F20145A

REPLACEMENT

REMOVAL

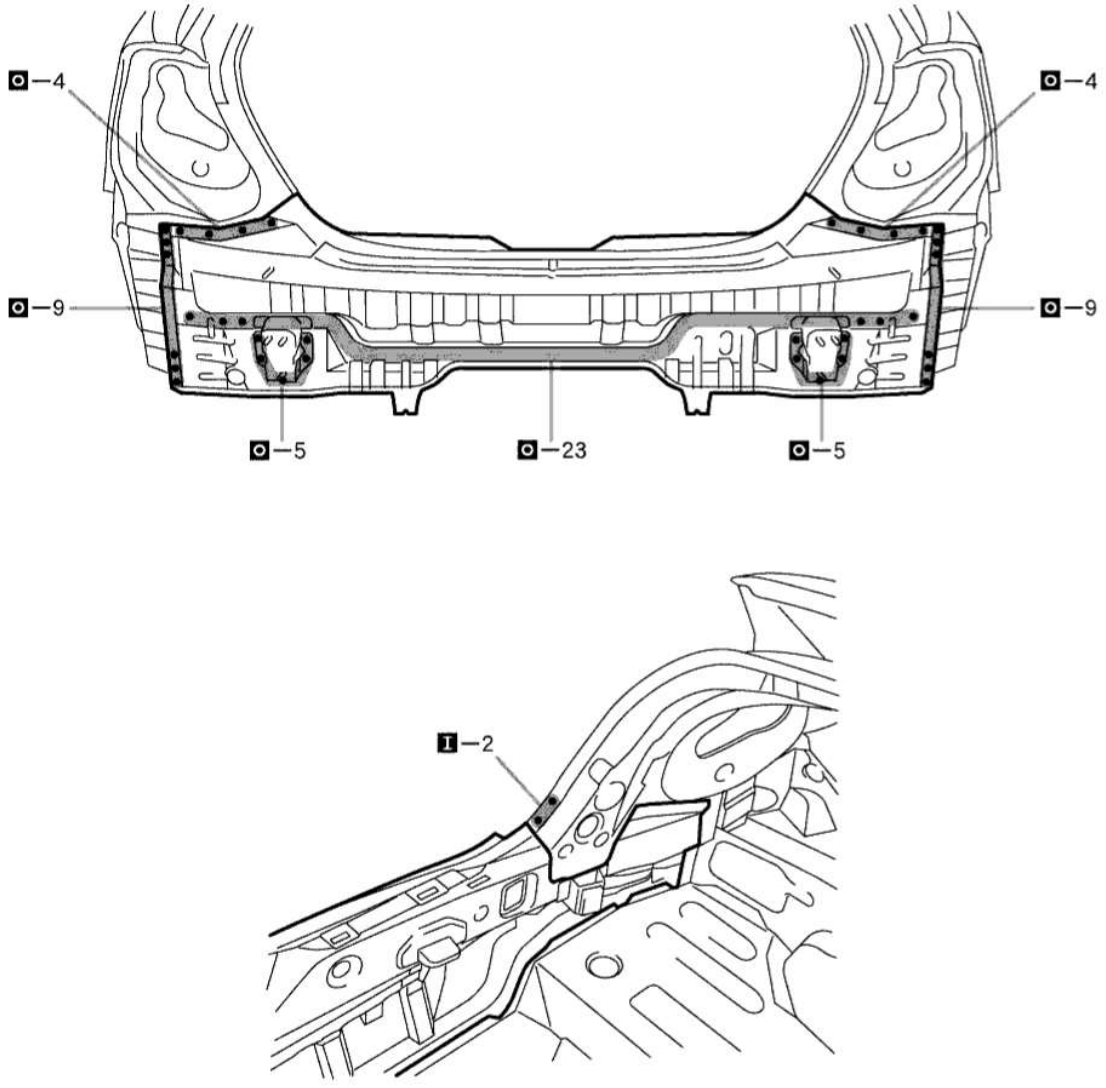




F20145

INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.

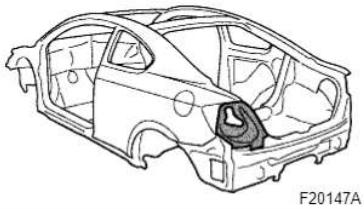


F20146

POINT

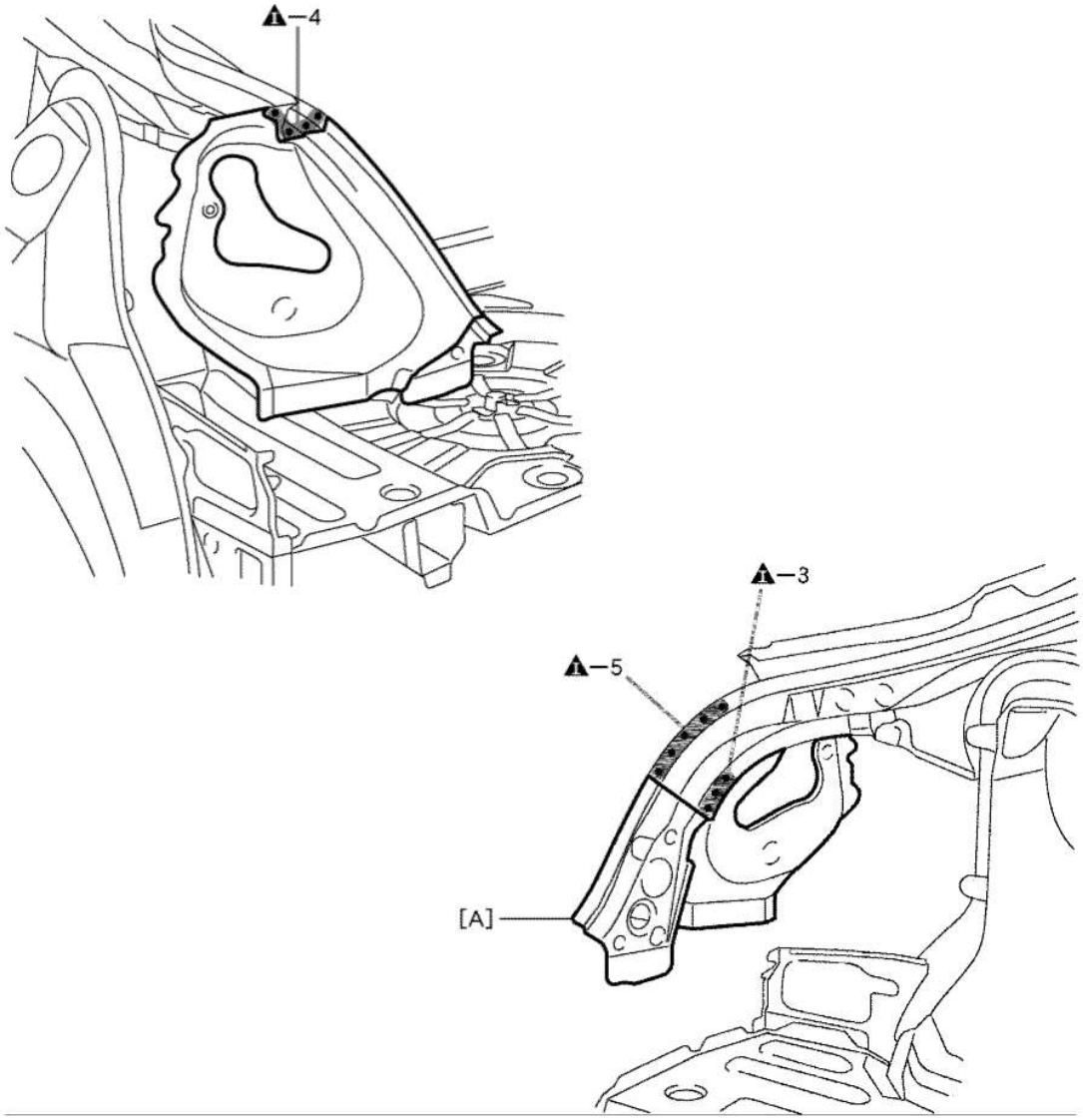
1 Inspect the fitting of the back door and rear combination light, etc., before welding, since this affects the appearance of the finish.

QUARTER PANEL END HOUSING (ASSY)


F20147A

REPLACEMENT
With the quarter panel and body lower back panel removed.

REMOVAL



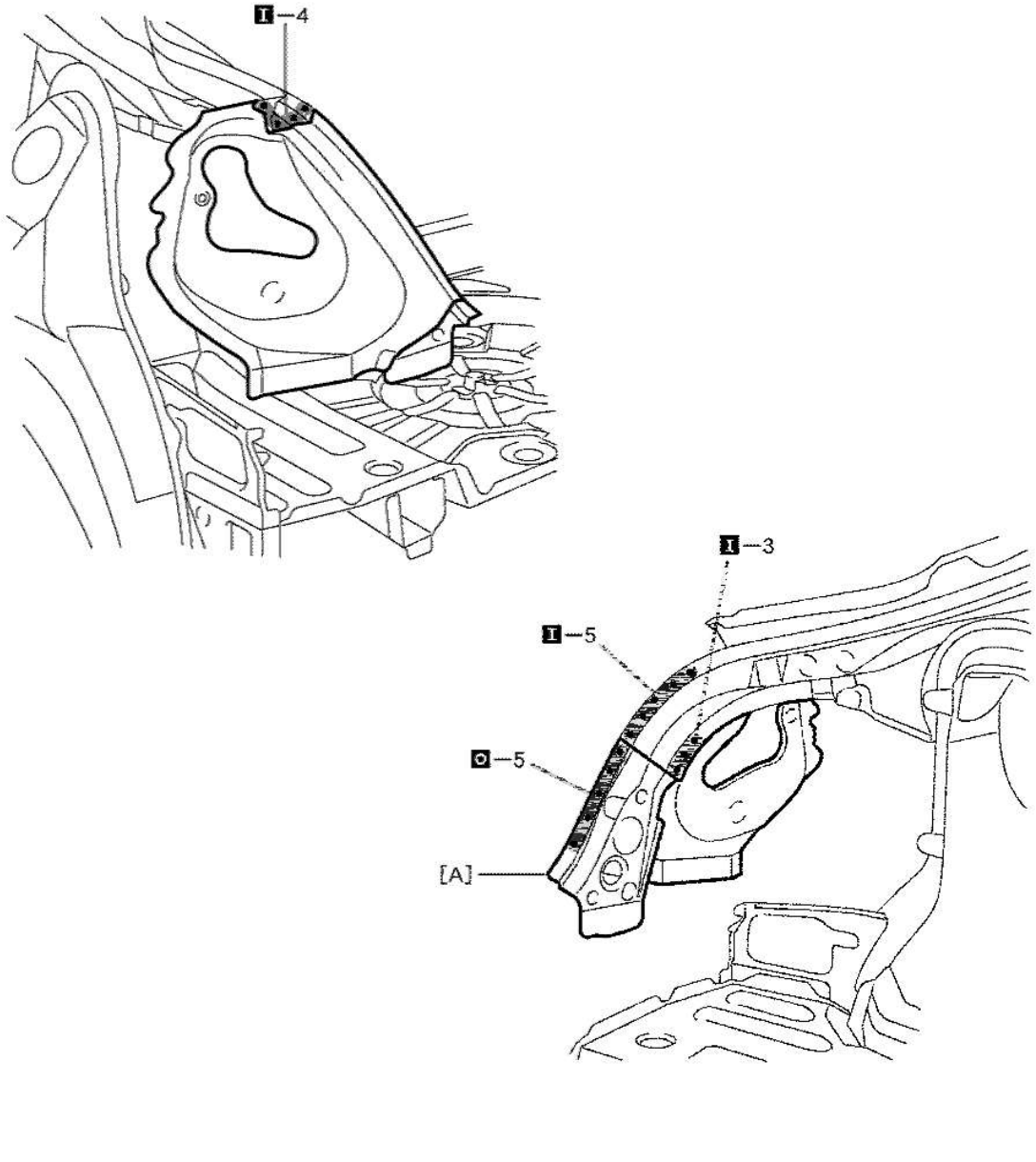
F20147

POINT
1 Remove the [A] at the same time.

PART NAME
[A] Quarter Panel Rear Lower Extension

INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.



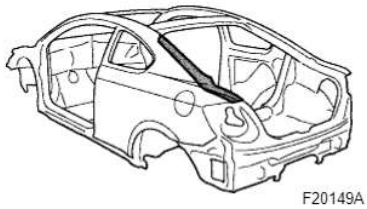
POINT

1 Inspect the fitting of the back door and rear combination light, etc., before welding, since this affects the appearance of the finish.

PART NAME

[A] Quarter Panel Rear Lower Extension

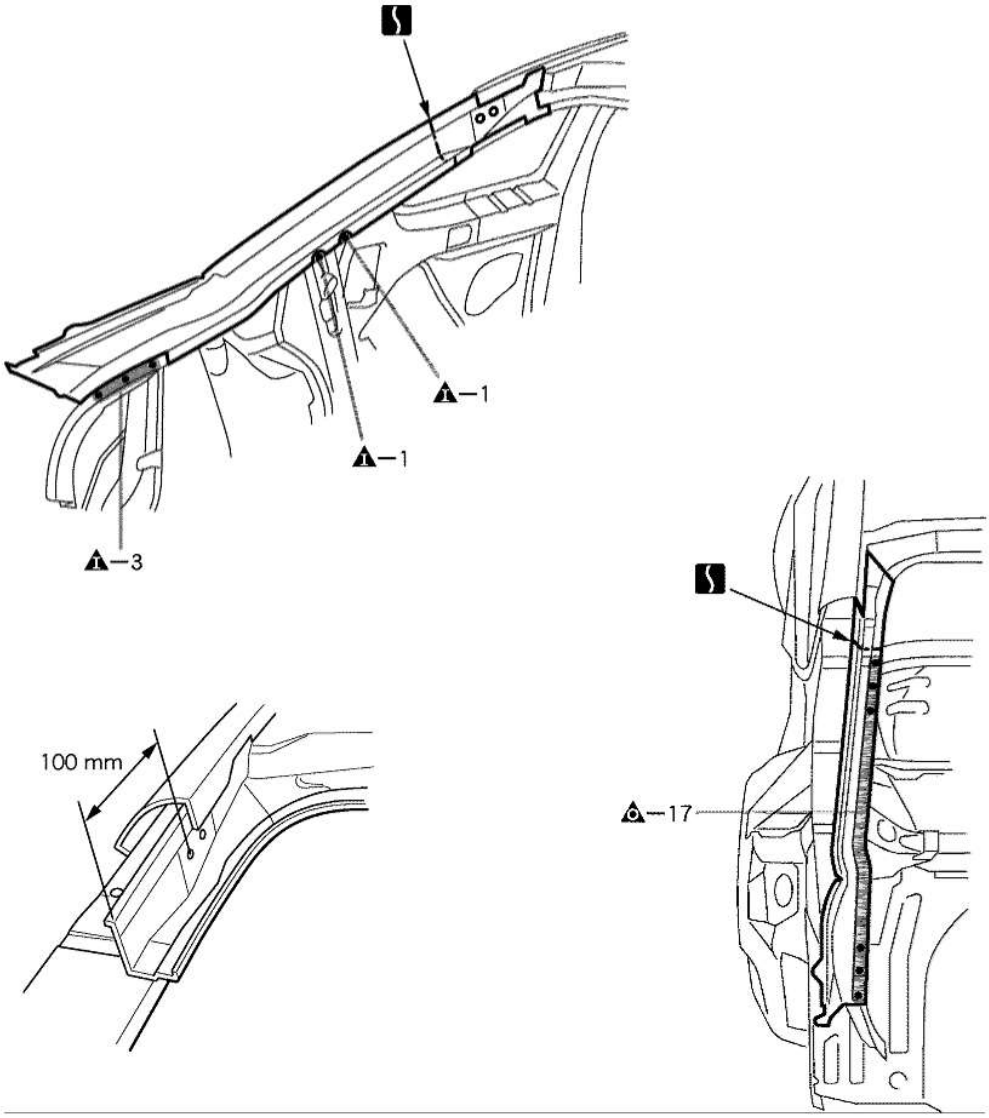
QUARTER PANEL UPPER EXTENSION (CUT)


F20149A

REPLACEMENT

With the quarter panel end housing removed.

REMOVAL

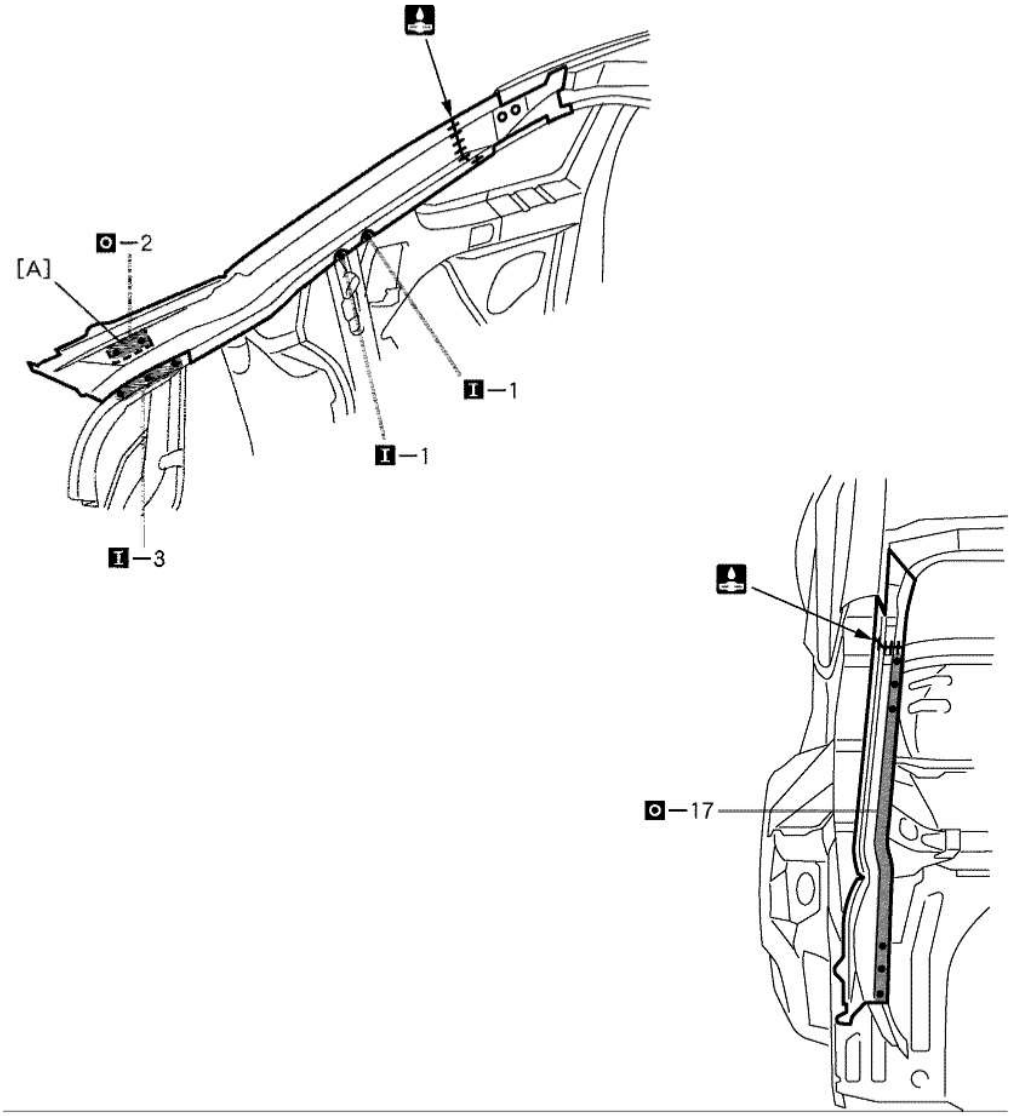


F20149

100 mm (3.94 in.)

INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.



F20150

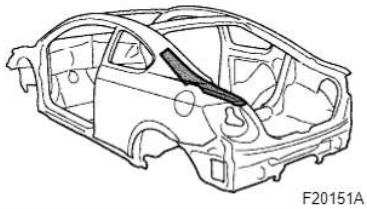
POINT

1 Inspect the fitting of the back door etc., before welding, since this affects the appearance of the finish.

PART NAME

[A] Back Door Opening Lower Reinforcement

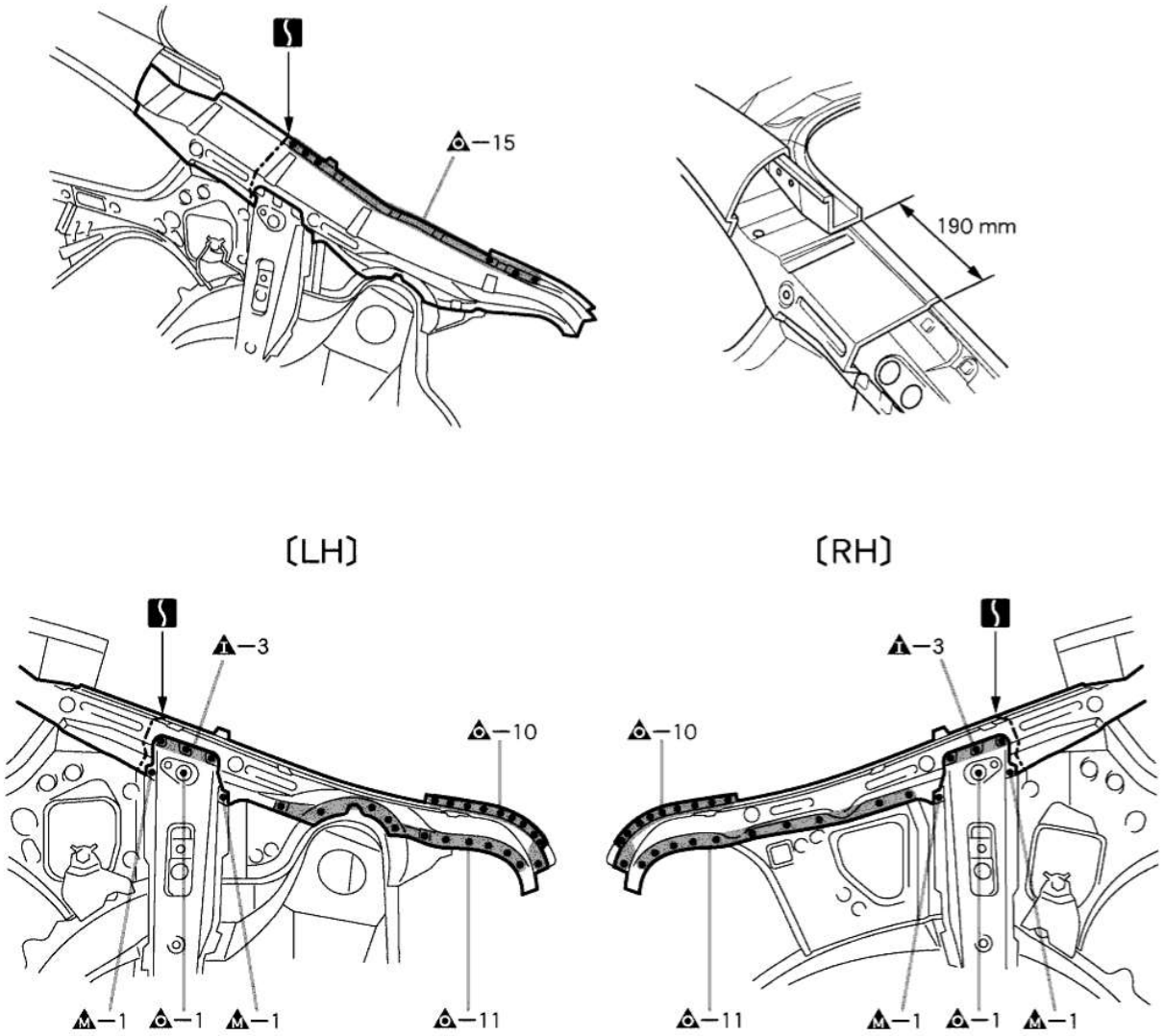
BACK DOOR OPENING SIDE REINFORCEMENT (CUT)


F20151A

REPLACEMENT

With the quarter panel upper extension removed.

REMOVAL

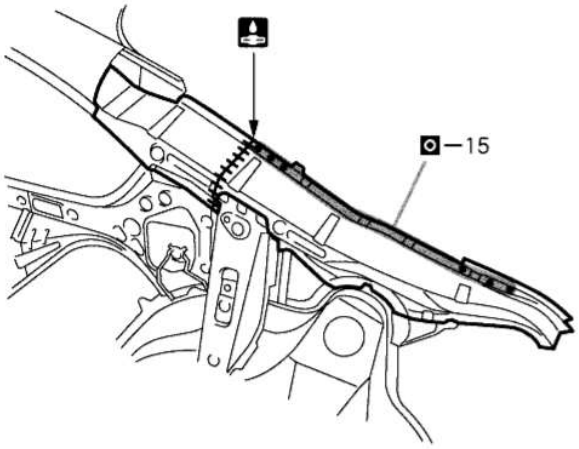


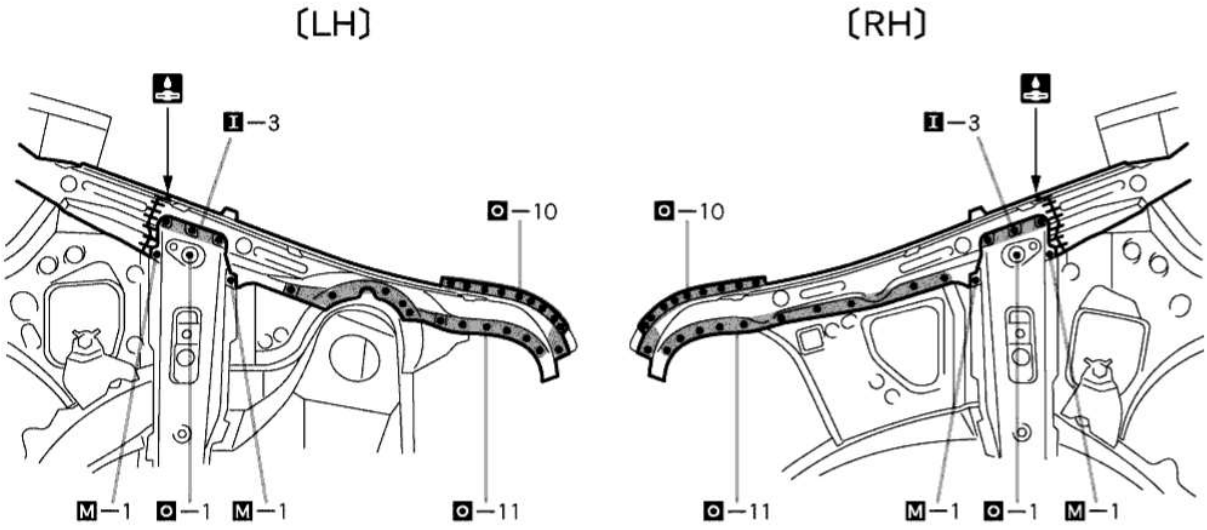
F20151

190 mm (7.48 in.)

INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.



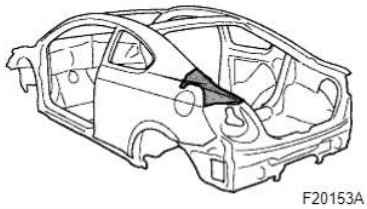


F20152

POINT

1 Inspect the fitting of the back door etc., before welding, since this affects the appearance of the finish.

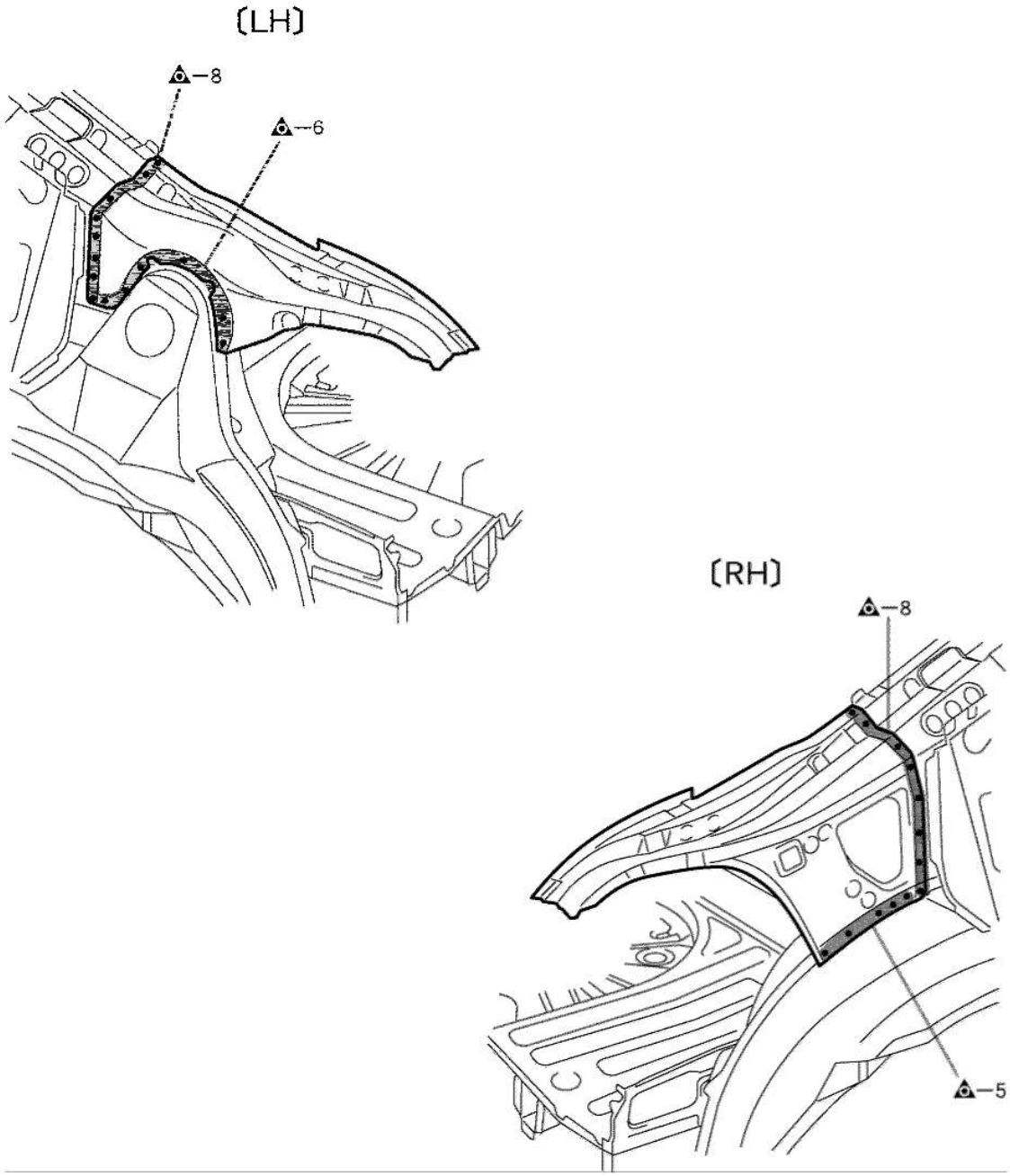
QUARTER INNER REAR PANEL (ASSY)


F20153A

REPLACEMENT

With the back door opening side reinforcement removed.

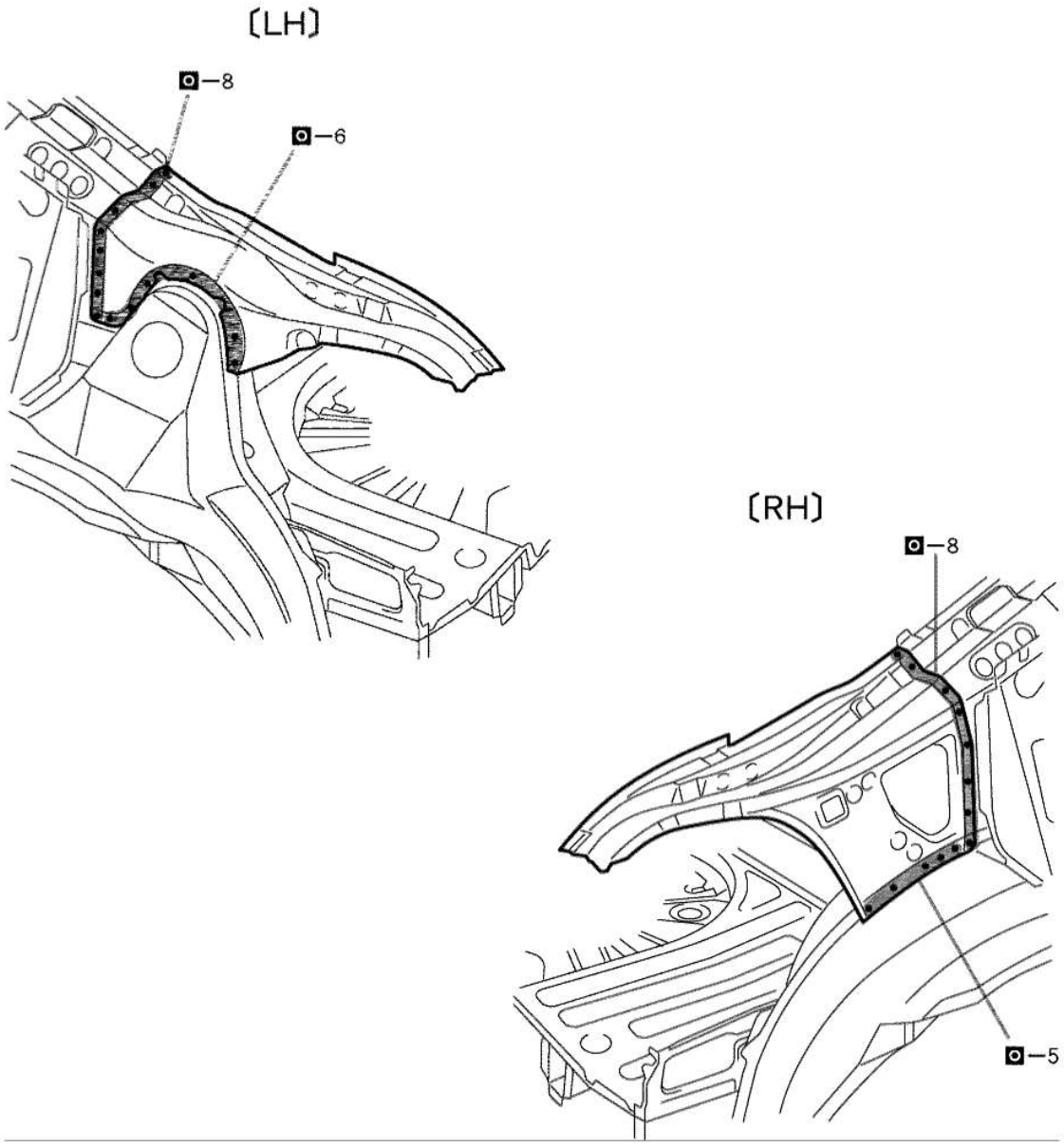
REMOVAL



F20153

INSTALLATION

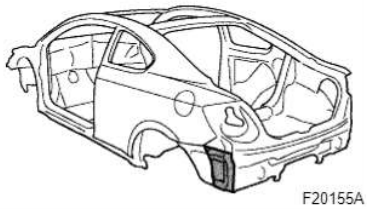
- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.



POINT

1 Inspect the fitting of the back door etc., before welding, since this affects the appearance of the finish.

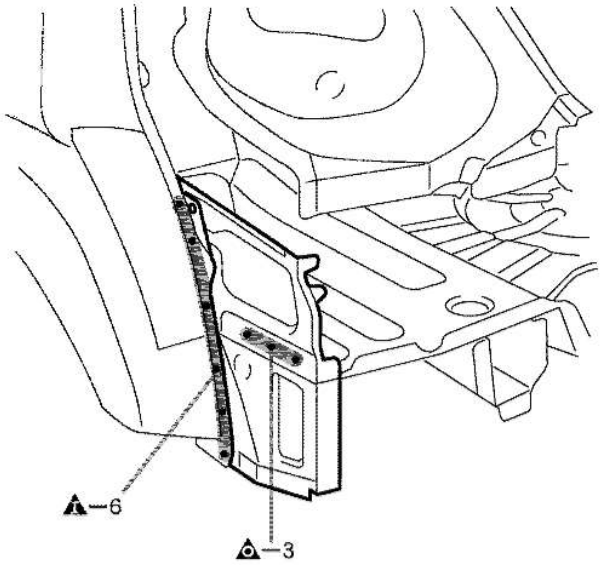
QUARTER WHEEL HOUSING REAR GUSSET (ASSY)

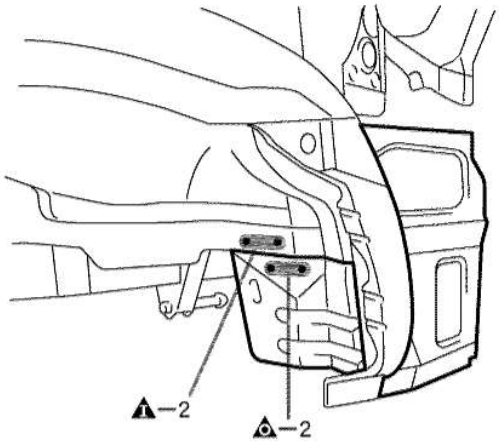

F20155A

REPLACEMENT

With the quarter panel and body lower back panel removed.

REMOVAL

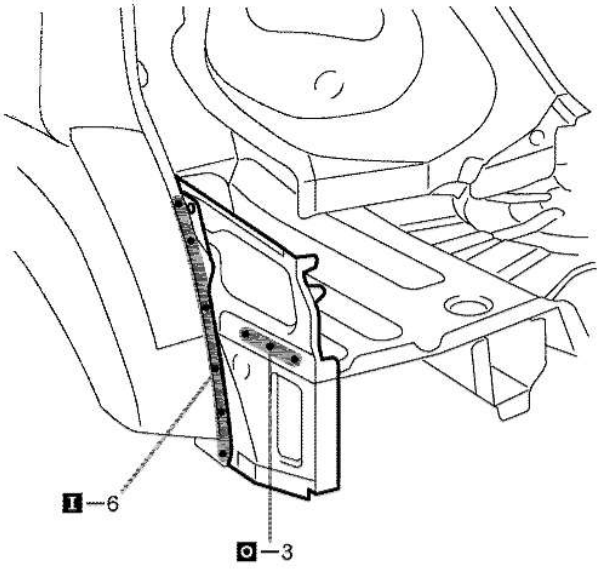


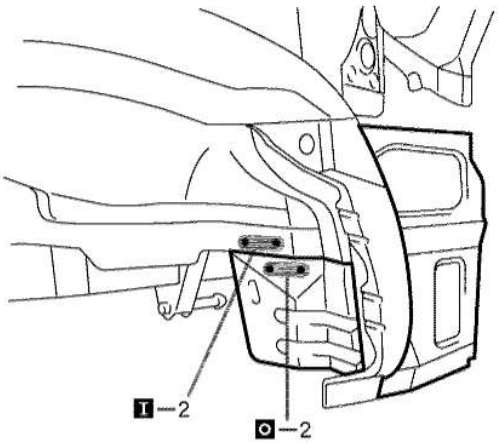


F20155

INSTALLATION

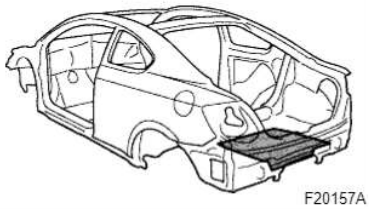
- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.





F20156

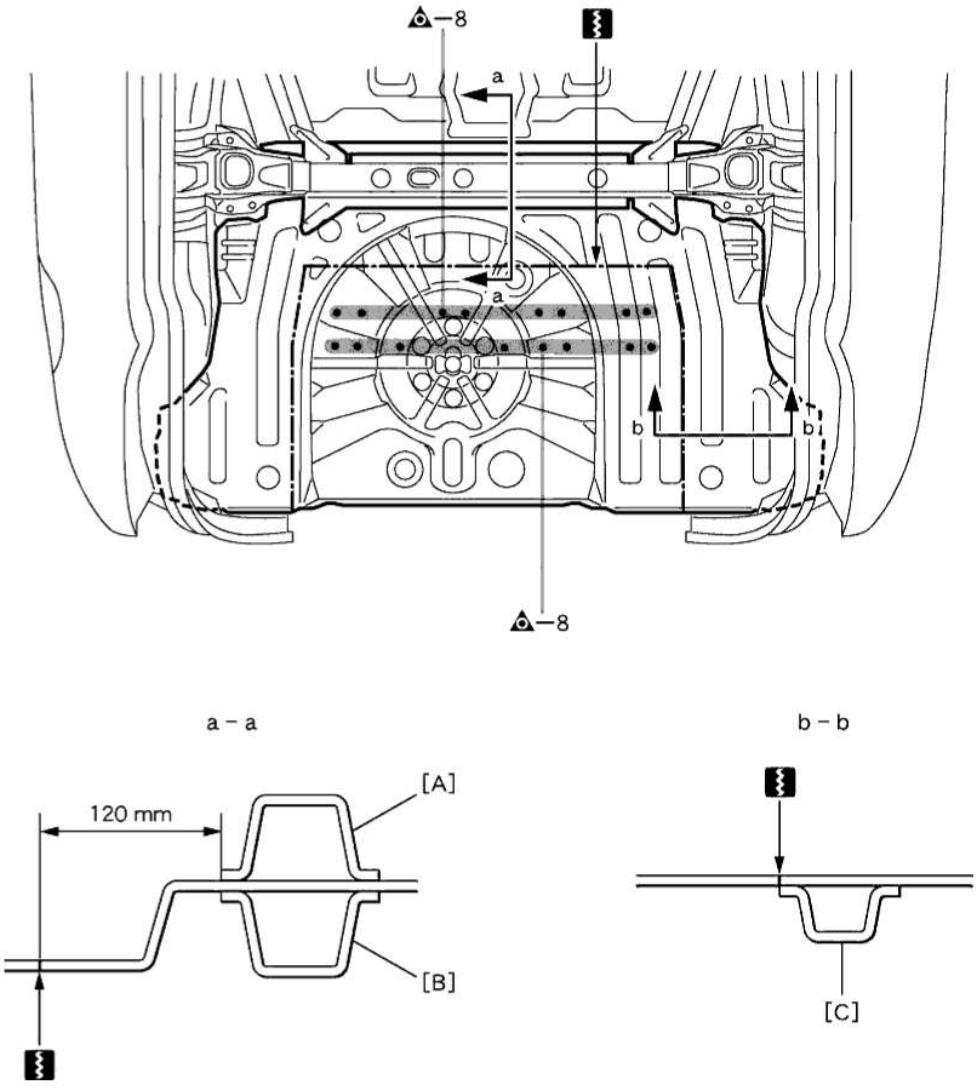
REAR FLOOR PAN (CUT-P)


F20157A

REPLACEMENT

With the body lower back panel removed.

REMOVAL



F20157

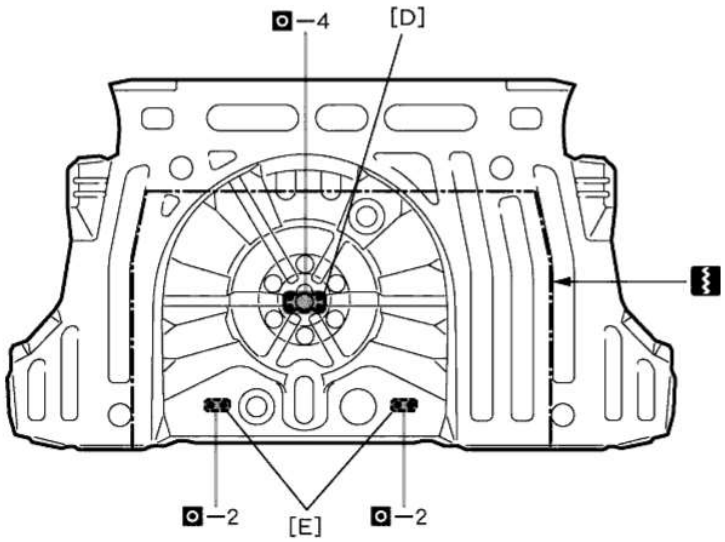
PART NAME

[A] Rear Floor Center Crossmember
[B] Rear Floor No.2 Crossmember
[C] Rear Floor Side Rear Member

120 mm (4.72 in.)

INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.



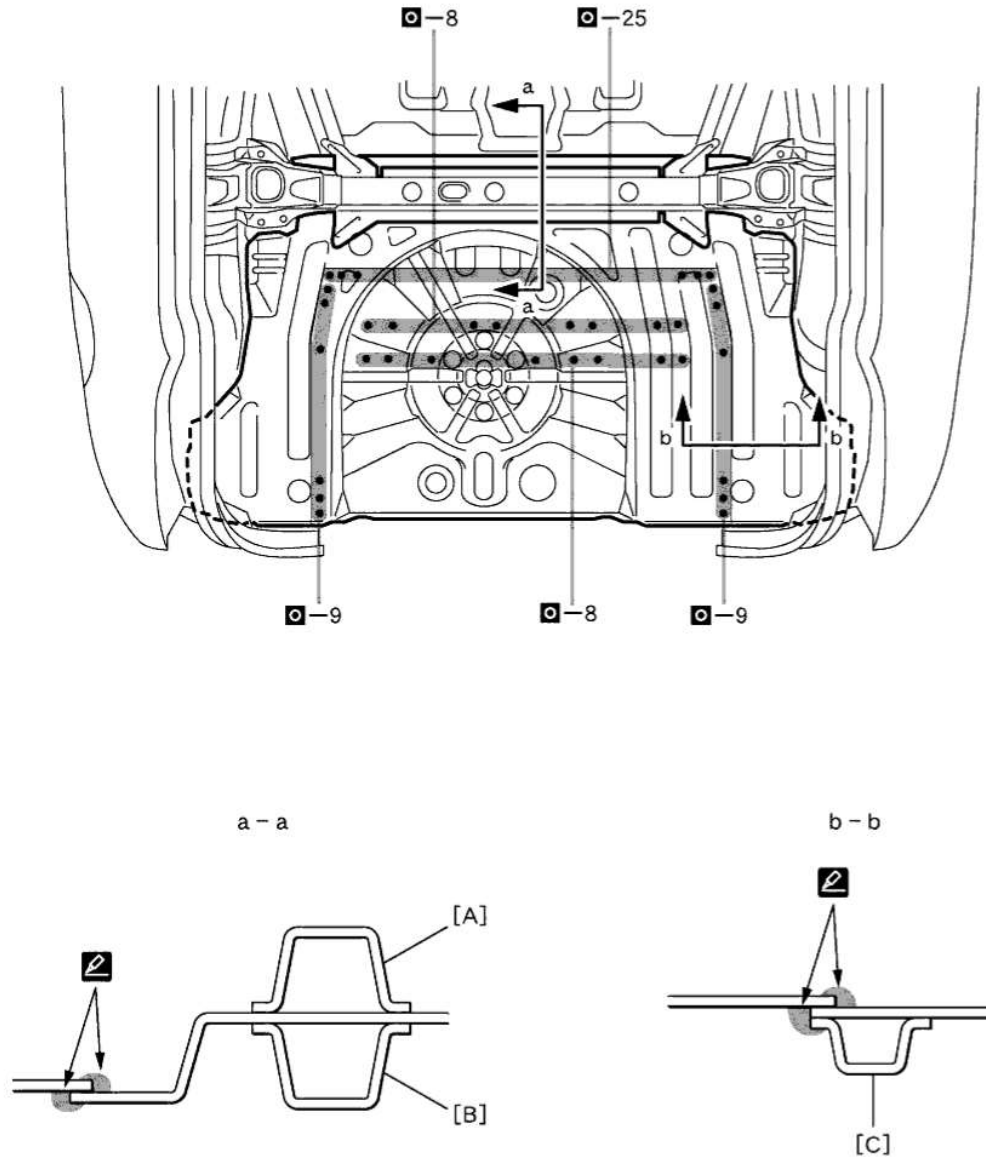
F20158

POINT

1 Cut the new part so that it overlaps the previous cut location by approximatery 20 mm (0.79 in.).

PART NAME

[D] Spare Wheel Clamp Bracket [E] Fuel Tube No.3 Bracket



POINT

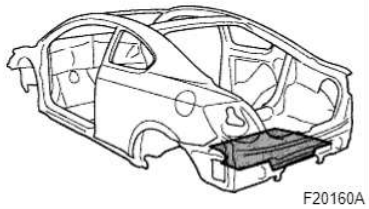
1 Plug weld the overlapping portion of the new parts.
HINT:
1) Be sure the portion to be welded are align and not loose.

2 Coat the overlapping opening portion from the both sides with body sealer.

PART NAME

[A] Rear Floor Center Crossmember
[B] Rear Floor No.2 Crossmember
[C] Rear Floor Side Rear Member

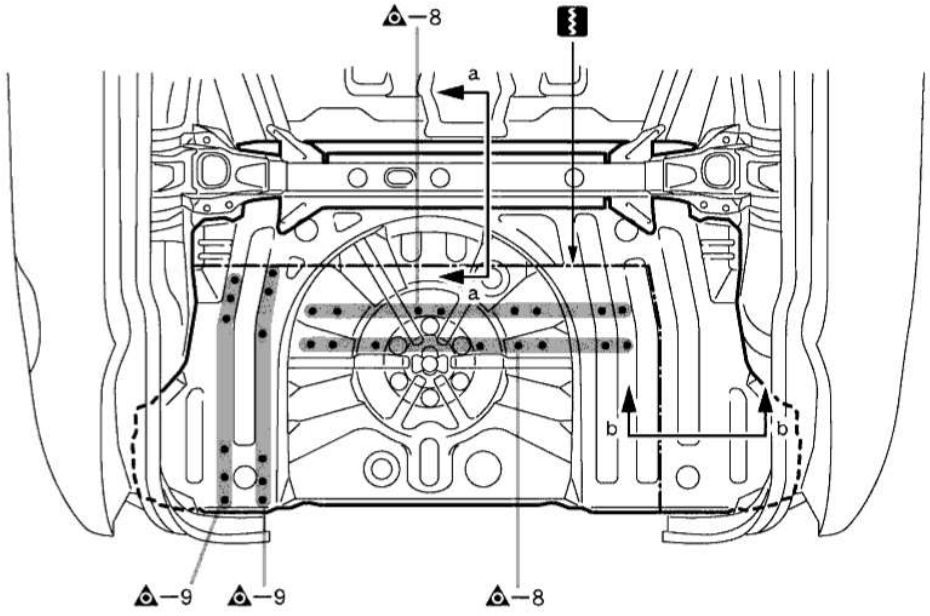
REAR FLOOR PAN (CUT-H)

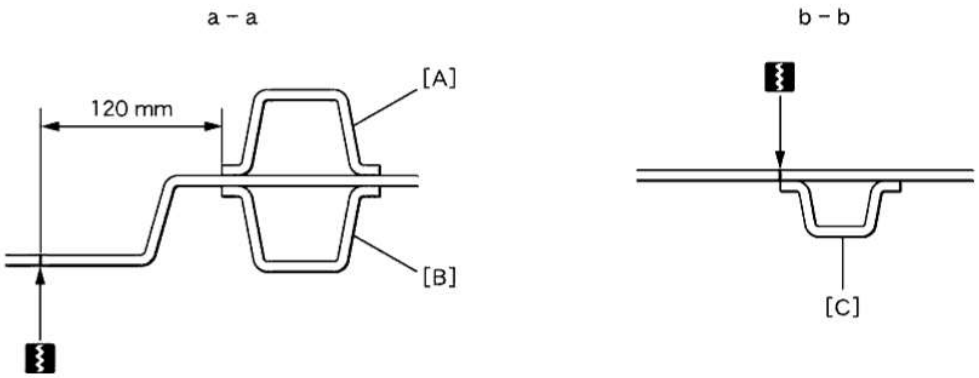

F20160A

REPLACEMENT

With the body lower back panel removed.

REMOVAL



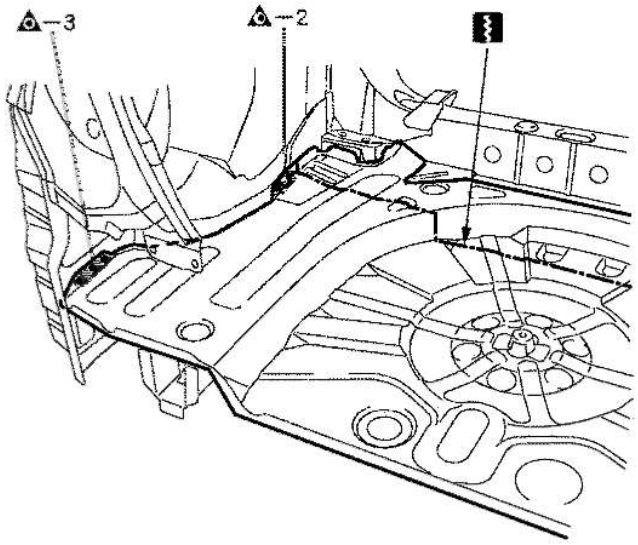


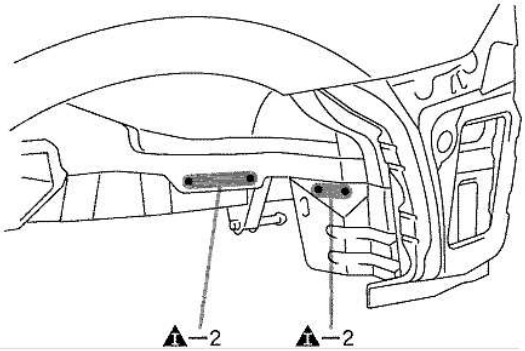
F20160

PART NAME

[A] Rear Floor Center Crossmember [B] Rear Floor No.2 Crossmember
[C] Rear Floor Side Rear Member

120 mm (4.72 in.)

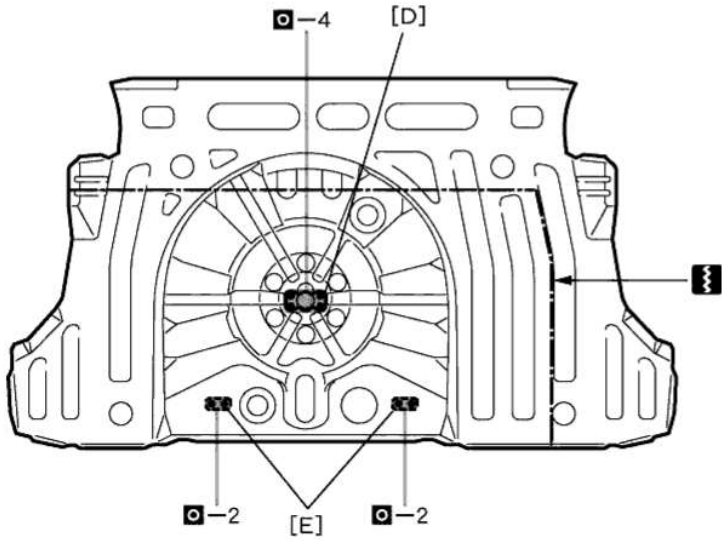




F20166

INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.



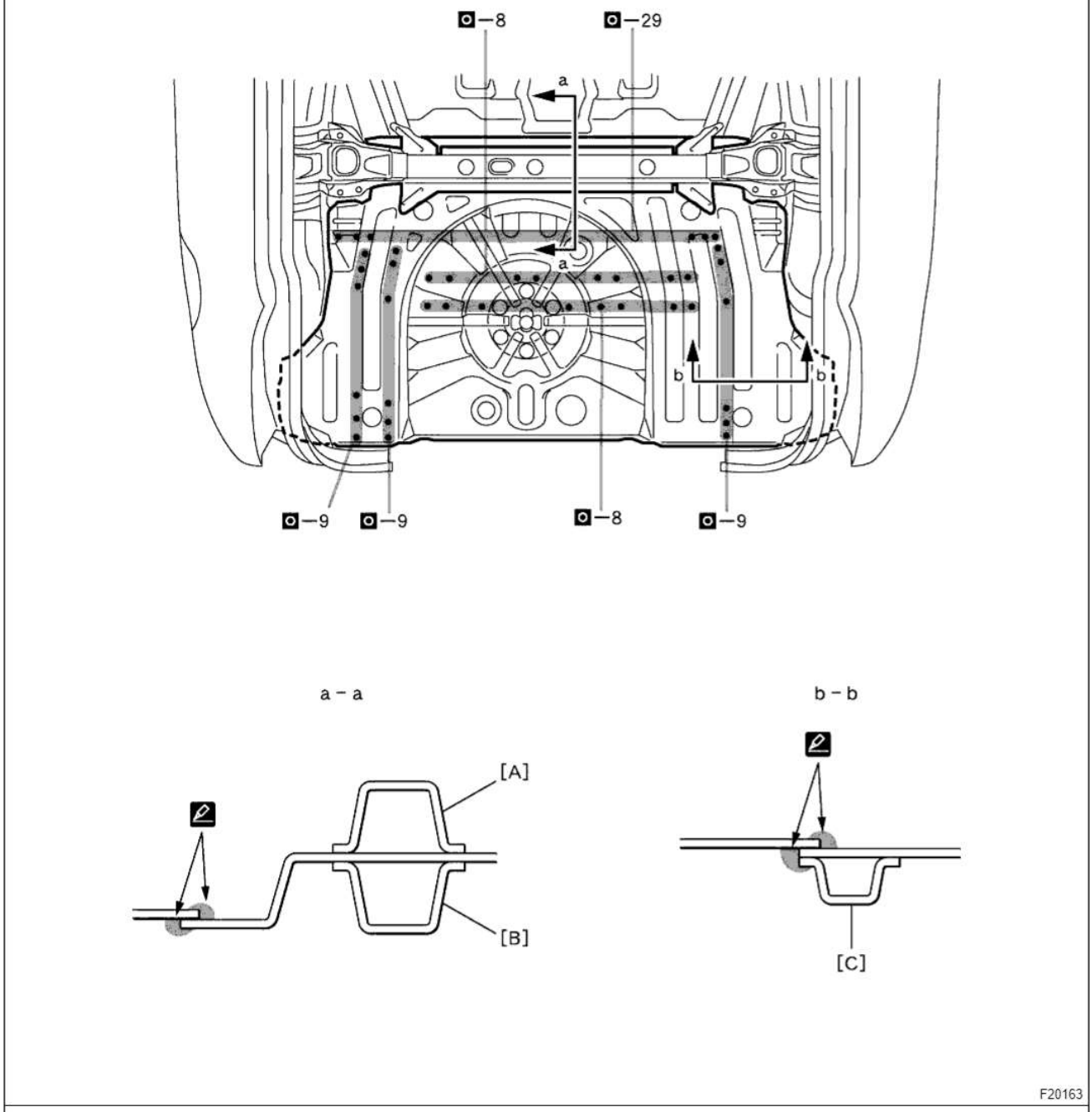
F20162

POINT

1 Cut the new part so that it overlaps the previous cut location by approximatery 20 mm (0.79 in.).

PART NAME

[D] Spare Wheel Clamp Bracket [E] Fuel Tube No.3 Bracket



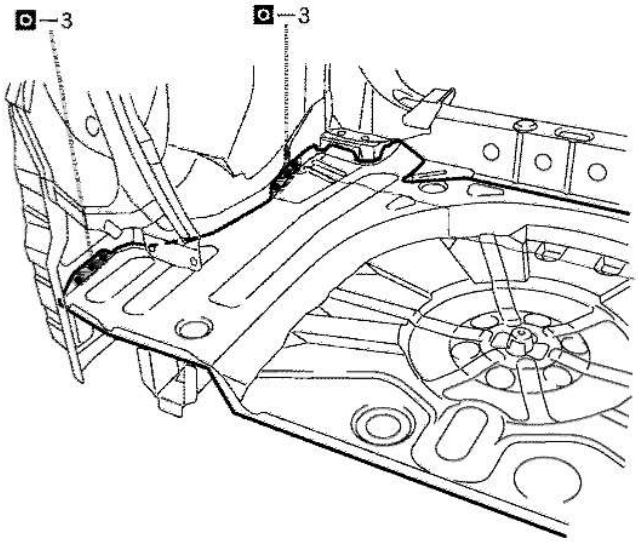
POINT

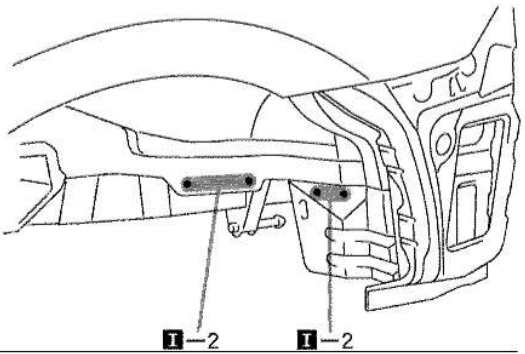
1 Plug weld the overlapping portion of the new parts.
HINT:
1) Be sure the portion to be welded are align and not loose.

2 Coat the overlapping opening portion from the both sides with body sealer.

PART NAME

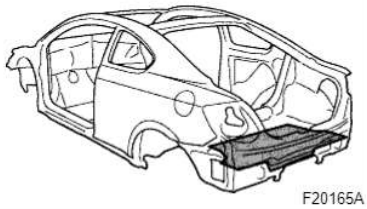
[A] Rear Floor Center Crossmember
[B] Rear Floor No.2 Crossmember
[C] Rear Floor Side Rear Member





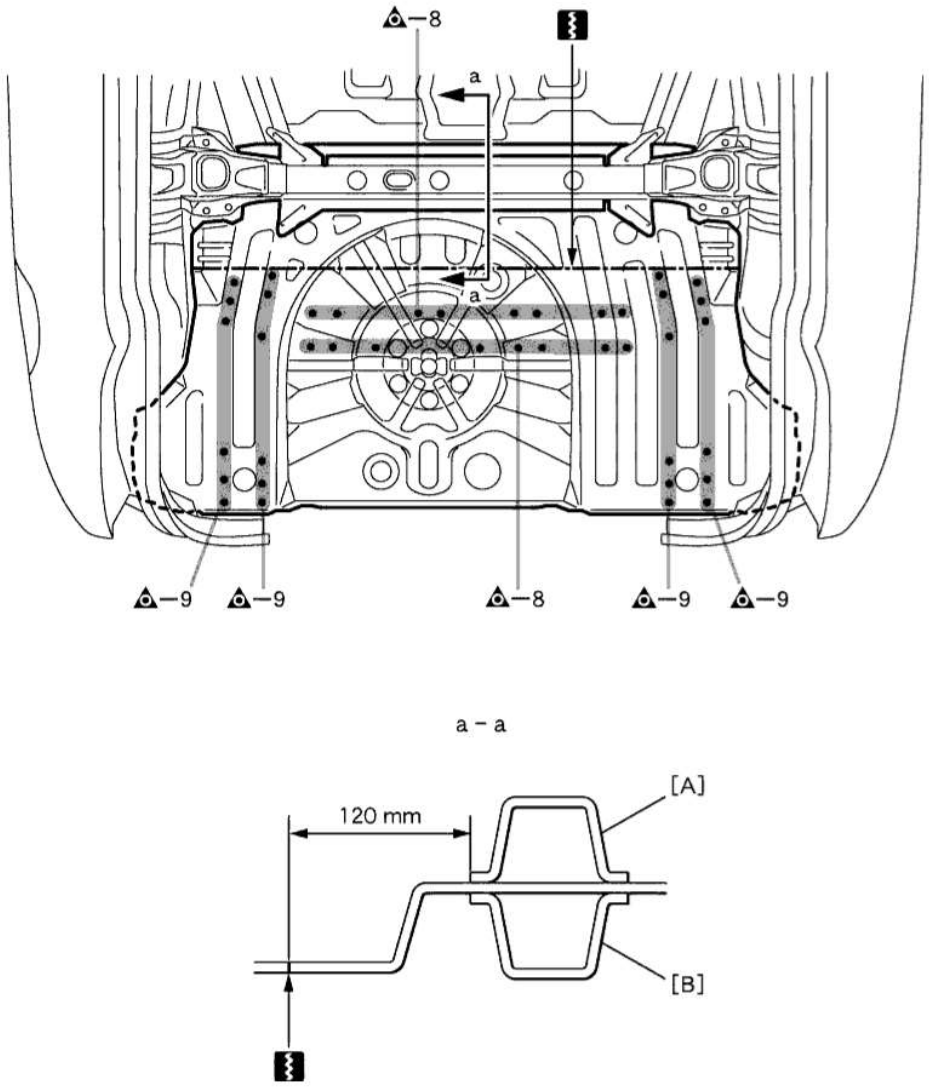
F20164

REAR FLOOR PAN (CUT)


F20165A

REPLACEMENT
With the body lower back panel removed.

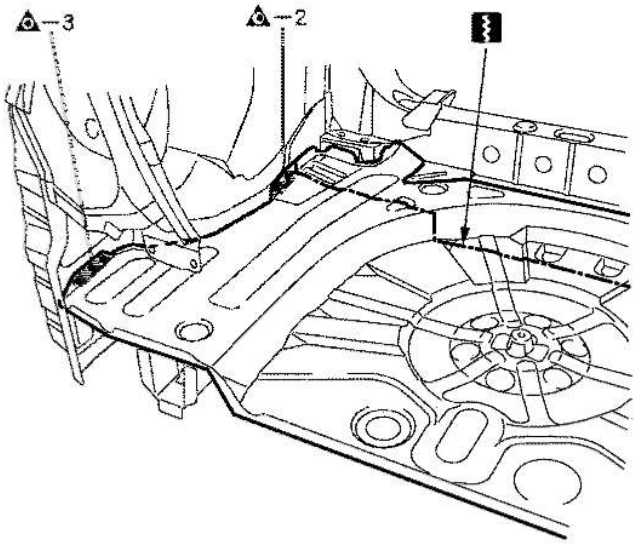
REMOVAL

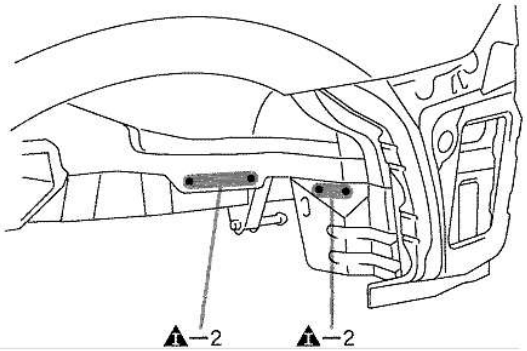


F20165

PART NAME
[A] Rear Floor Center Crossmember [B] Rear Floor No.2 Crossmember

120 mm (4.72 in.)

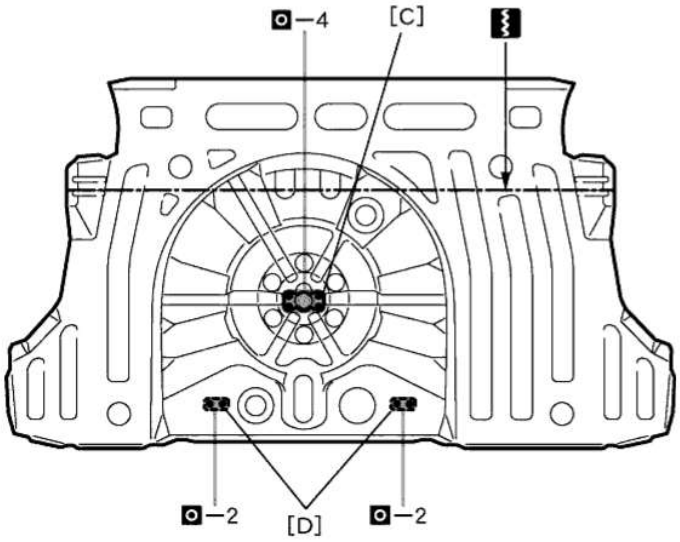




F20166

INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.



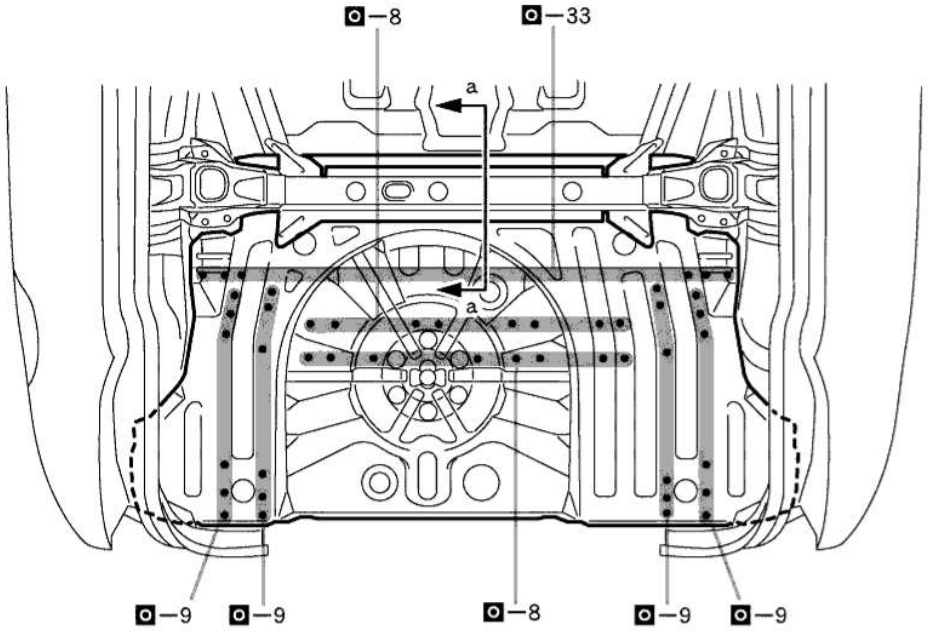
F20167

POINT

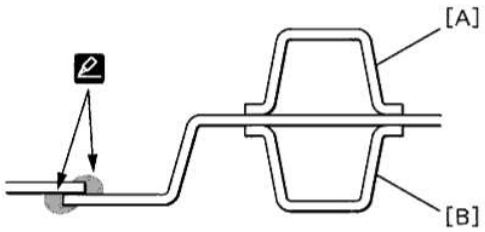
1 Cut the new part so that it overlaps the previous cut location by approximatery 20 mm (0.79 in.).

PART NAME

[C] Spare Wheel Clamp Bracket [D] Fuel Tube No.3 Bracket



a - a



F20168

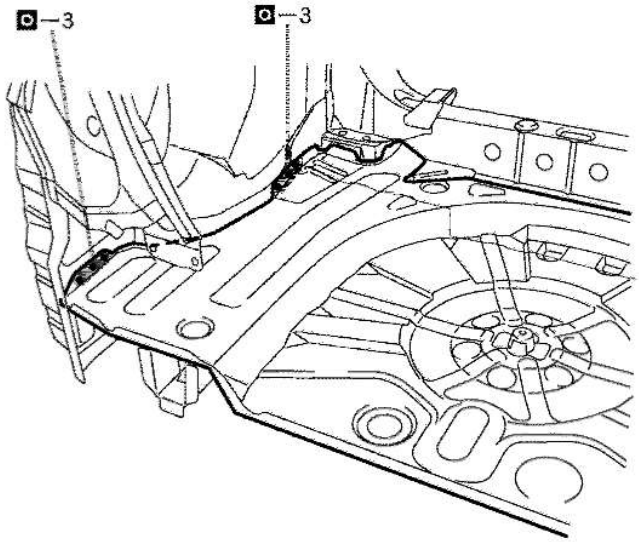
POINT

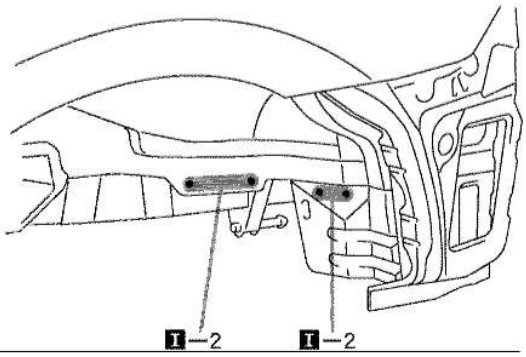
1 Plug weld the overlapping portion of the new parts.
HINT:
1) Be sure the portion to be welded are align and not loose.

2 Coat the overlapping opening portion from the both sides with body sealer.

PART NAME

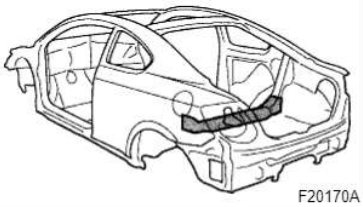
[A] Rear Floor Center Crossmember [B] Rear Floor No.2 Crossmember





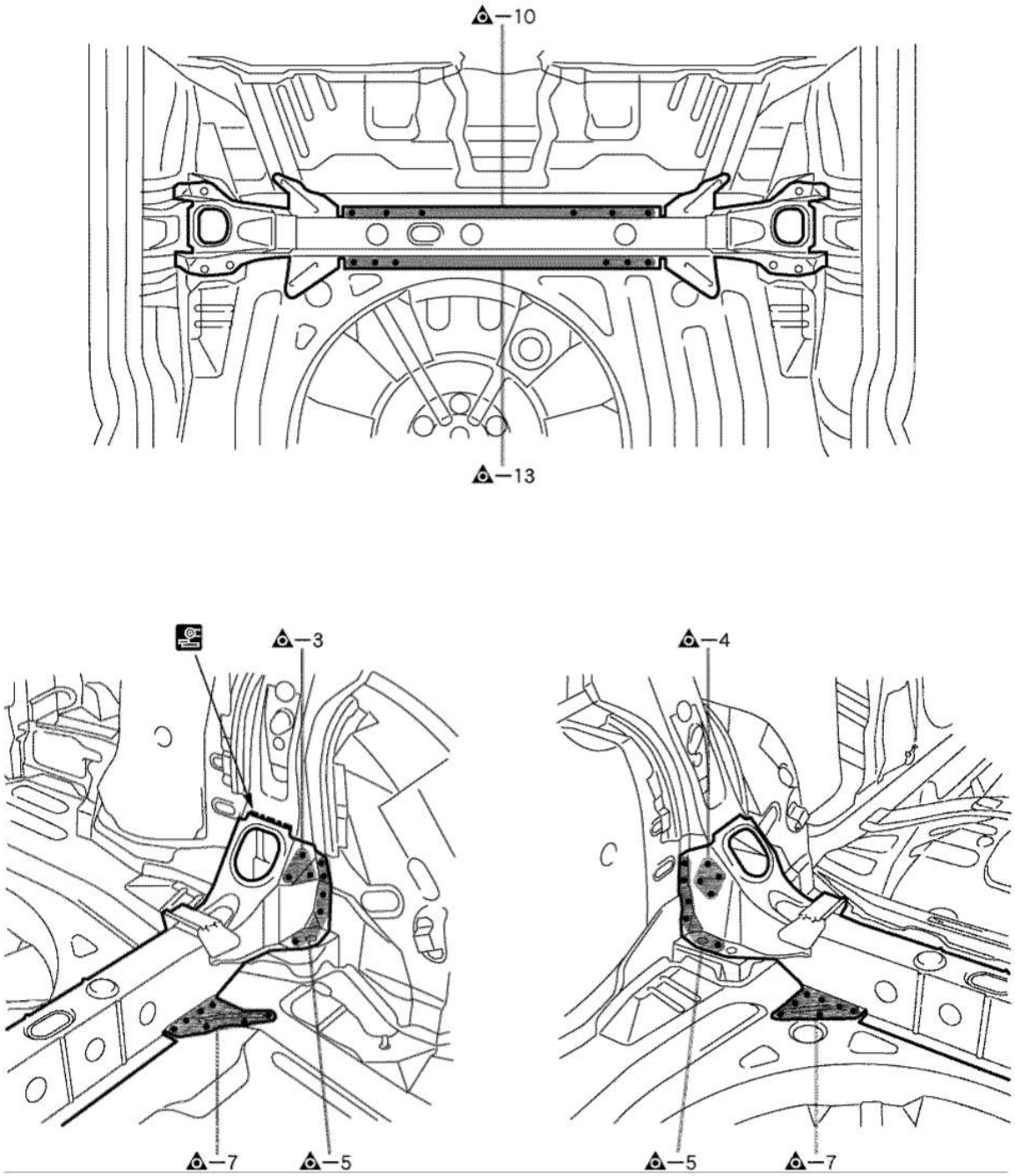
F20169

REAR FLOOR CENTER CROSSMEMBER (ASSY)


F20170A

REPLACEMENT

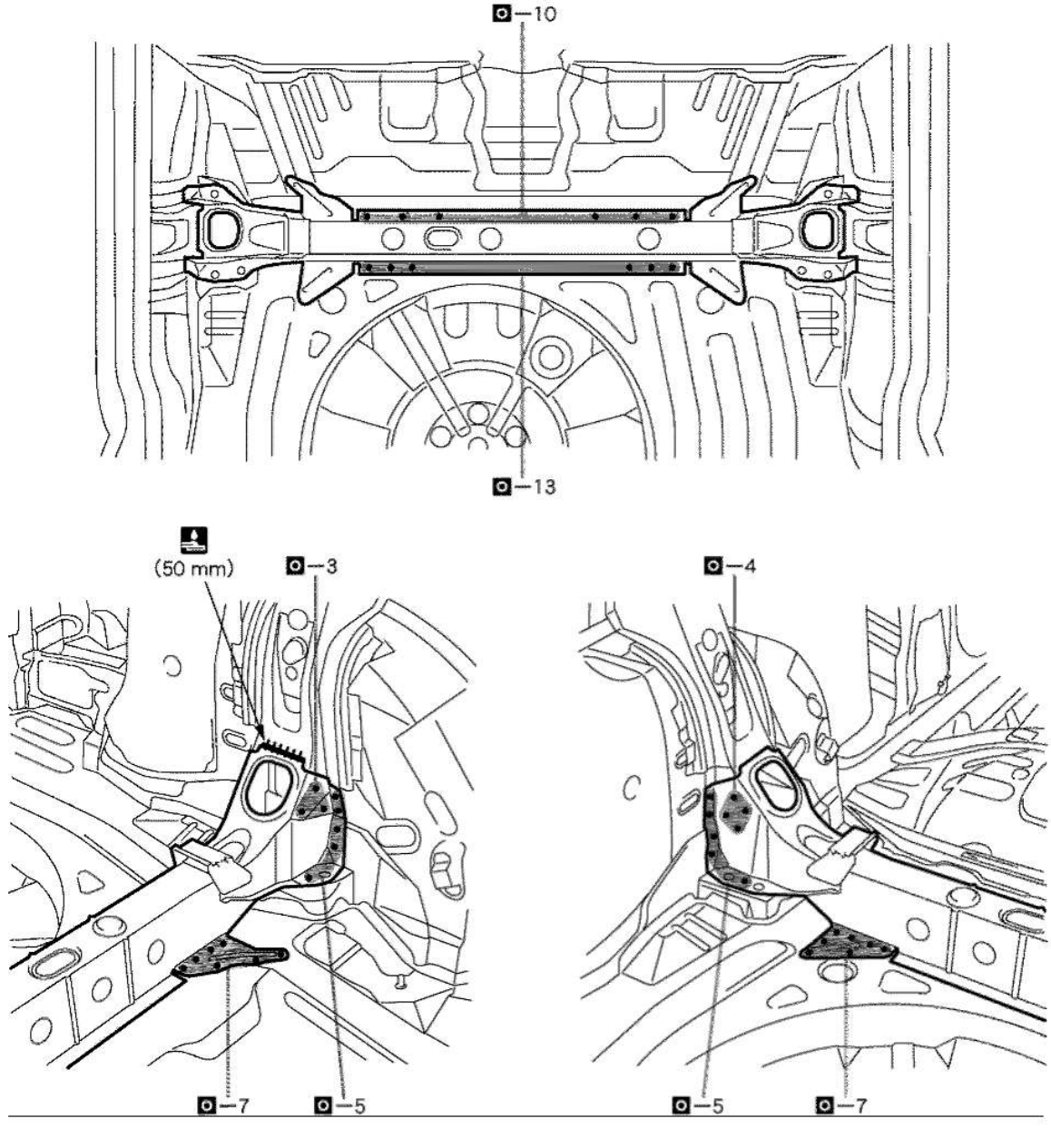
REMOVAL



F20170

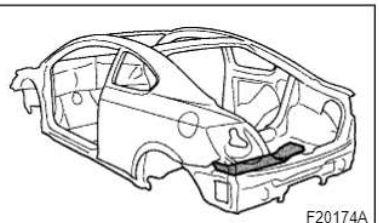
INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.



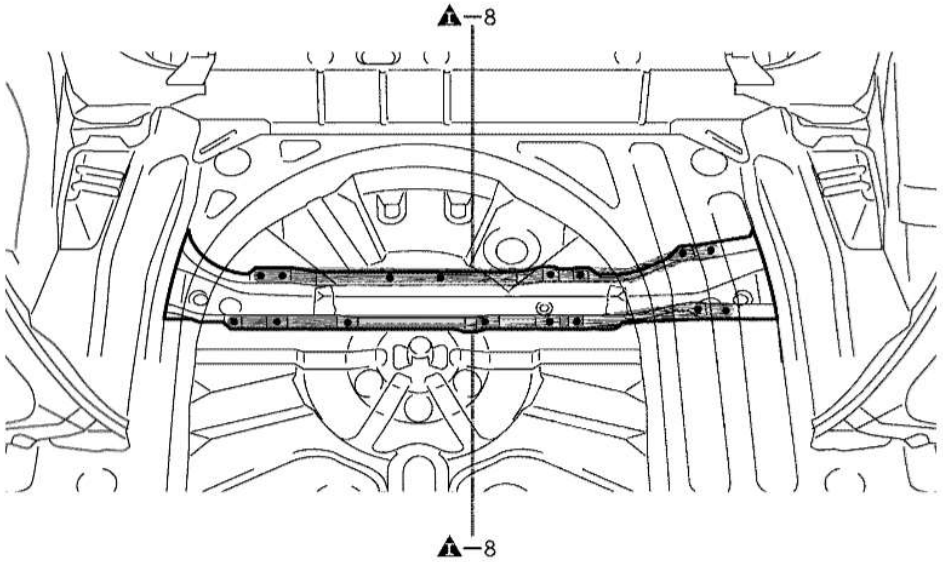
50 mm (1.97 in.)

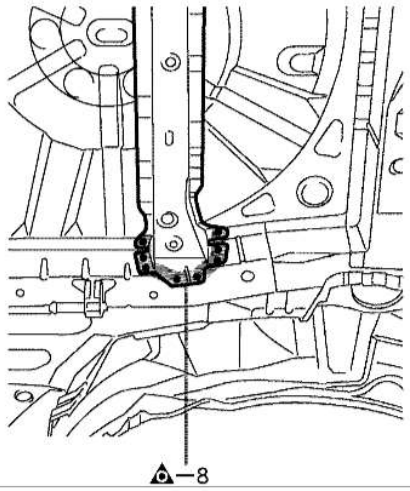
REAR FLOOR NO.3 CROSSMEMBER (ASSY)


F20174A

REPLACEMENT

REMOVAL

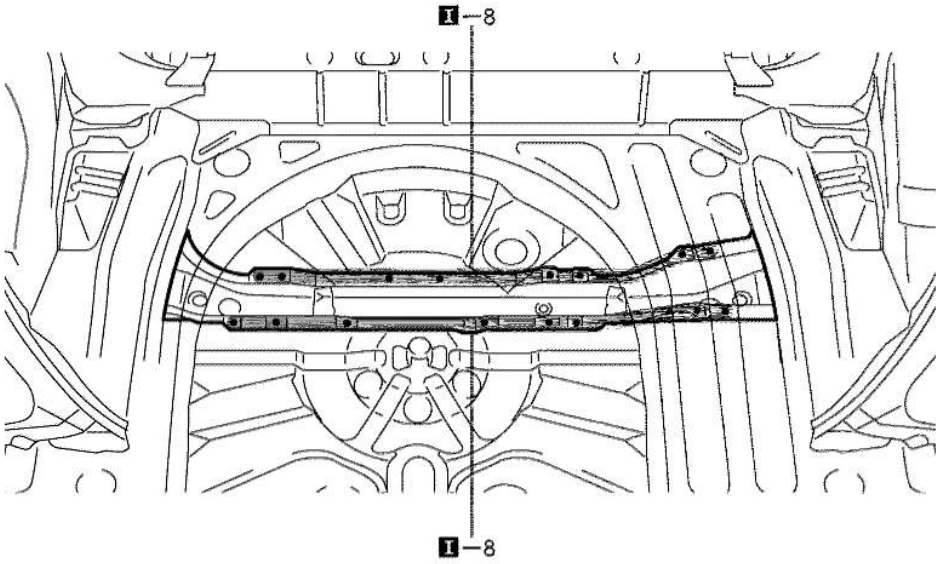


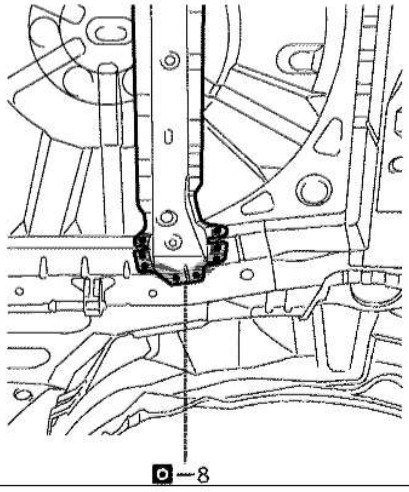


F20174

INSTALLATION

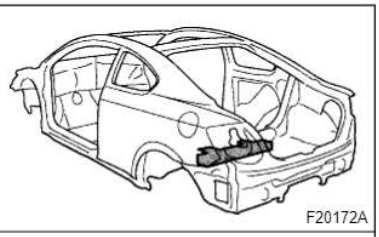
- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.





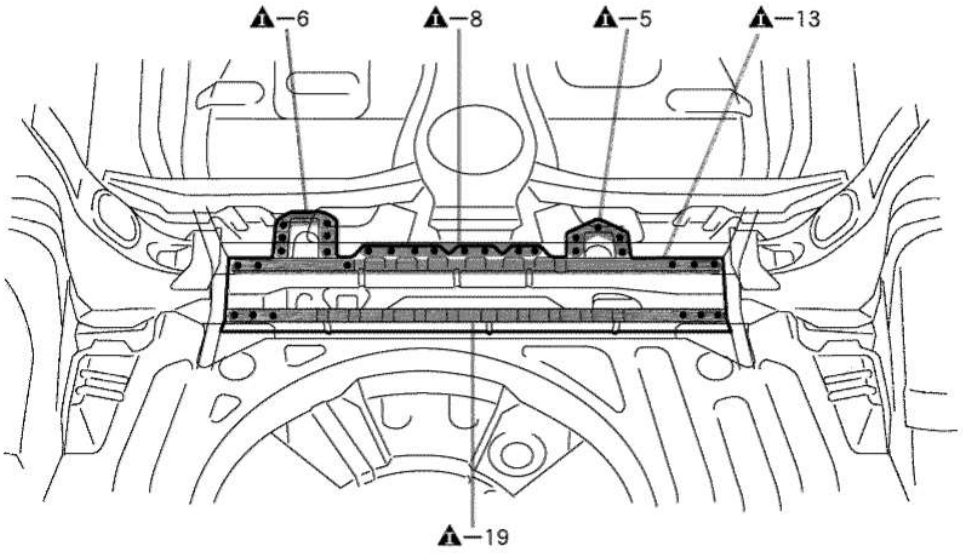
F20175

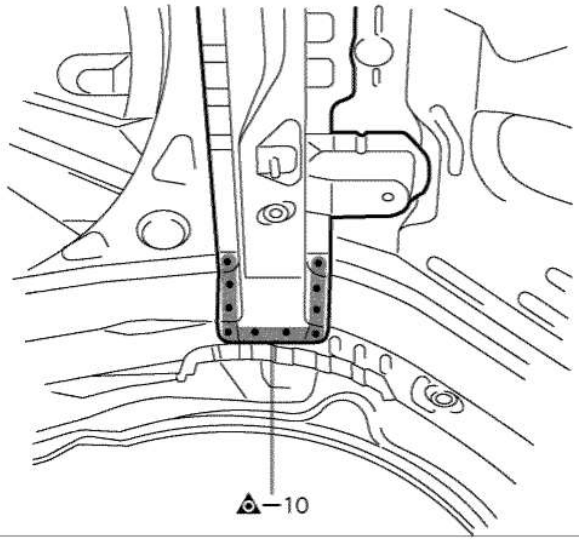
REAR FLOOR NO.2 CROSSMEMBER (ASSY)


F20172A

REPLACEMENT

REMOVAL

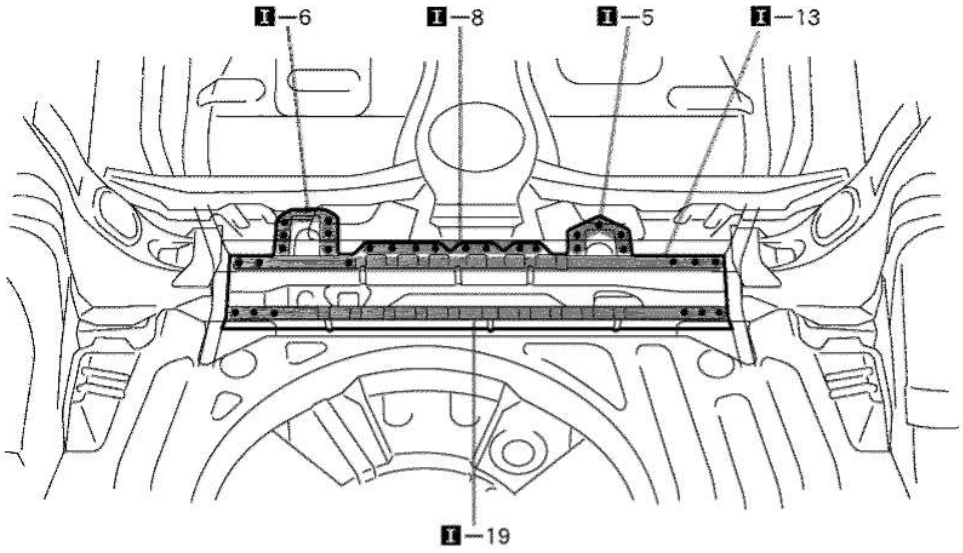


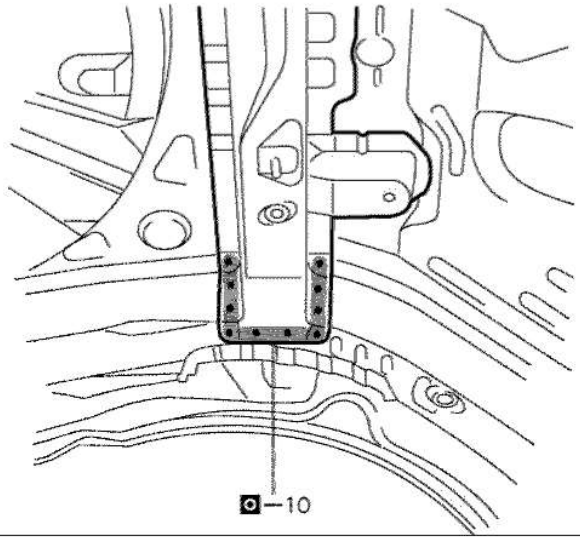


F20172

INSTALLATION

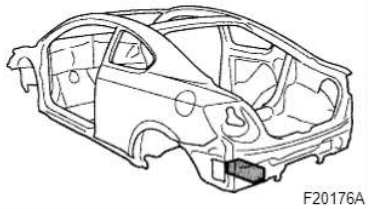
- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.





F20173

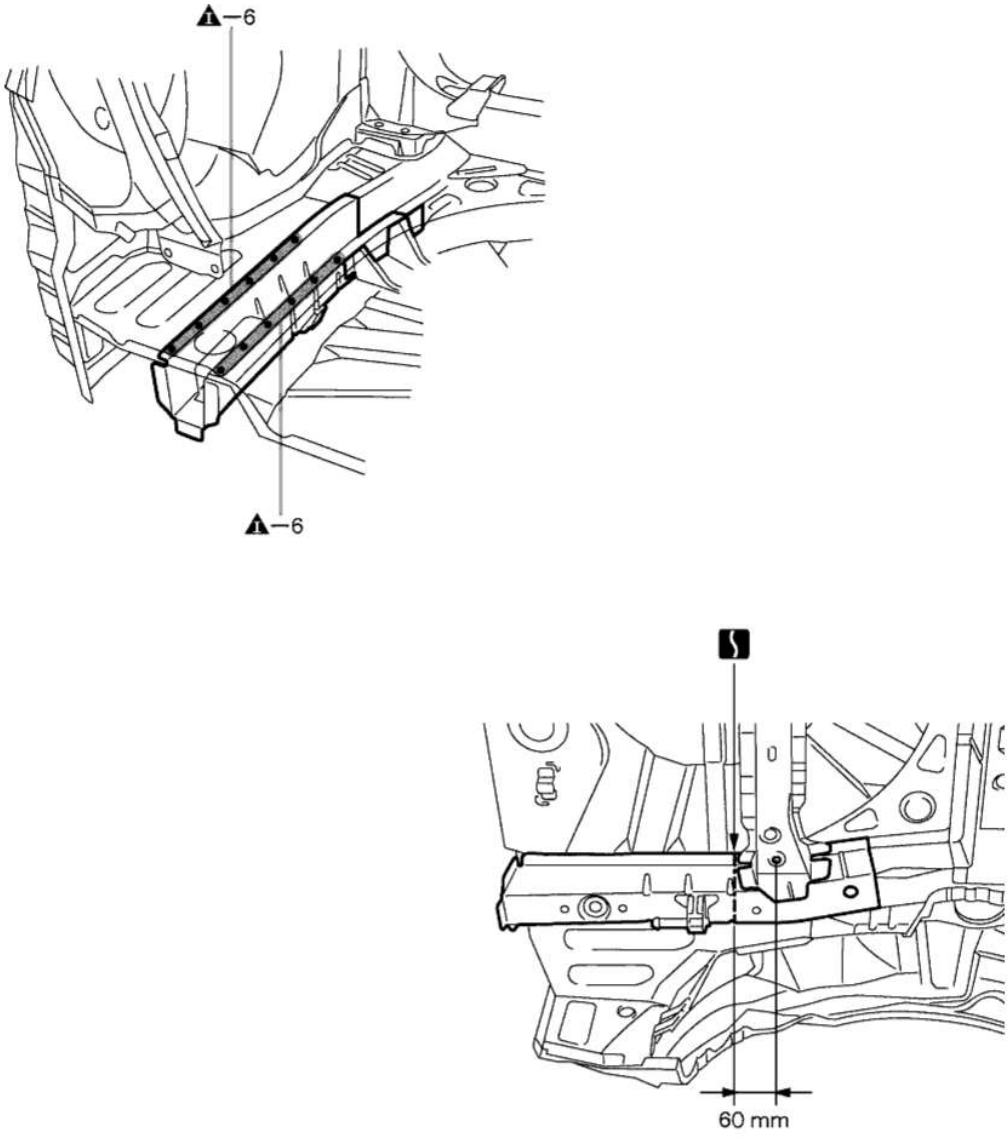
REAR FLOOR SIDE REAR MEMBER (CUT-H)


F20176A

REPLACEMENT

With the body lower back panel removed.

REMOVAL

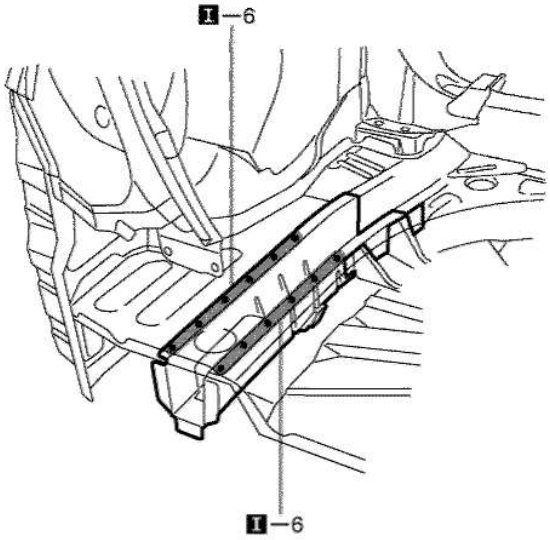


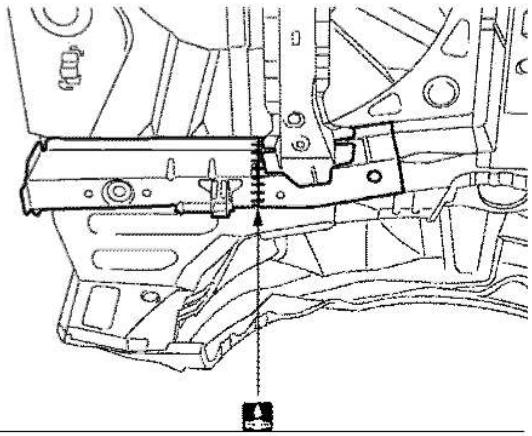
F20176

60 mm (2.36 in.)

INSTALLATION

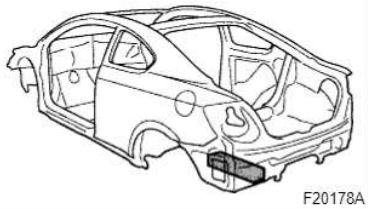
- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.





F20177

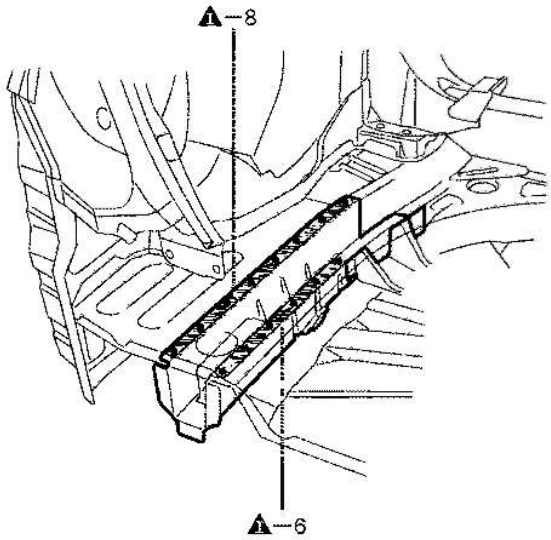
REAR FLOOR SIDE REAR MEMBER (ASSY)

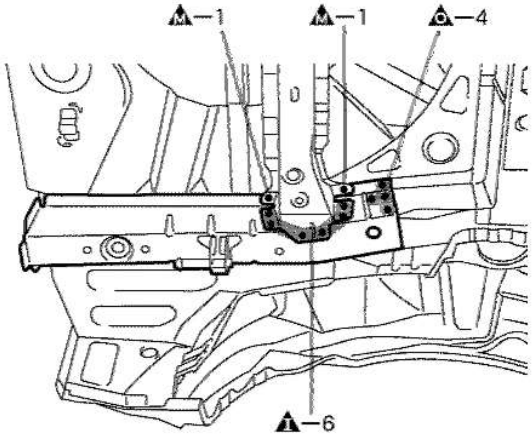

F20178A

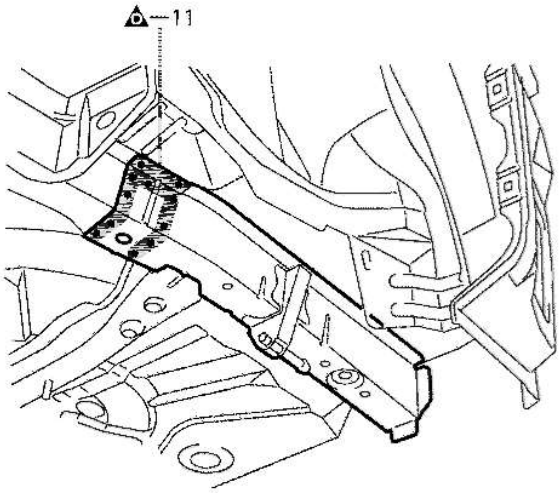
REPLACEMENT

With the body lower back panel removed.

REMOVAL



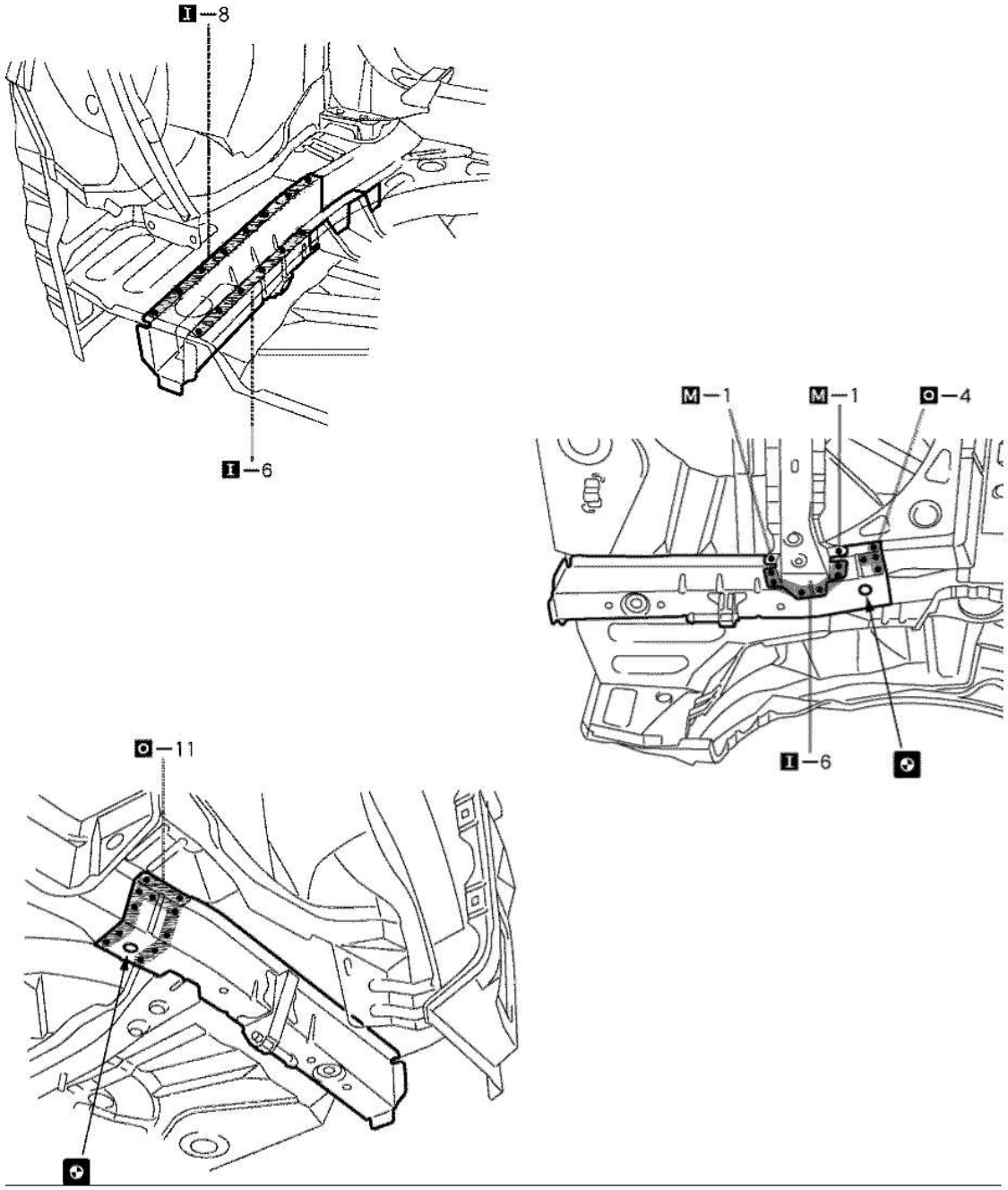




F20178

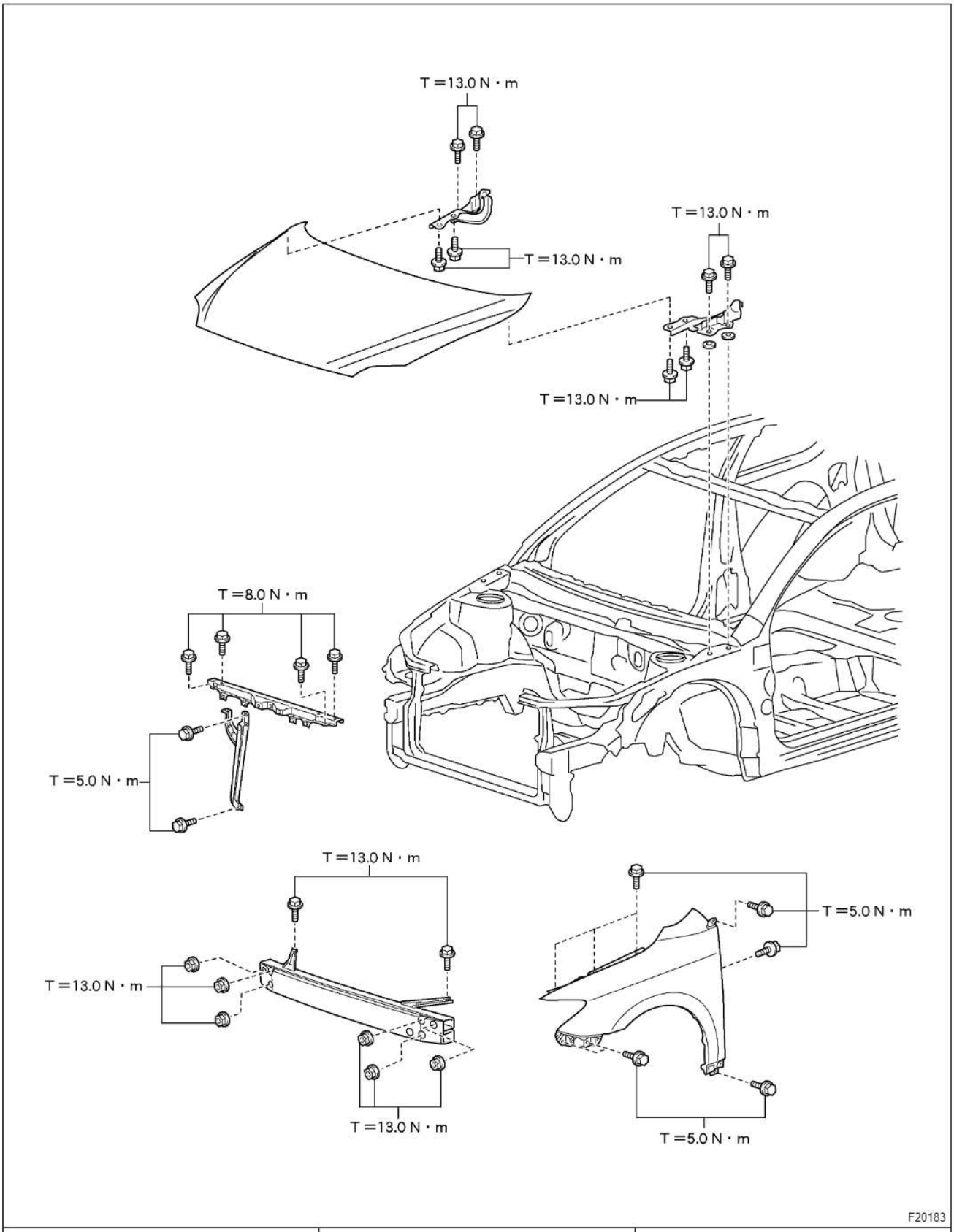
INSTALLATION

- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply the polyurethane foam to the corresponding parts.
- After welding, apply body sealer and under-coating to the corresponding parts.
- After applying the top coat layer, apply anti-rust agent to the inside of the necked section structural weld spots.

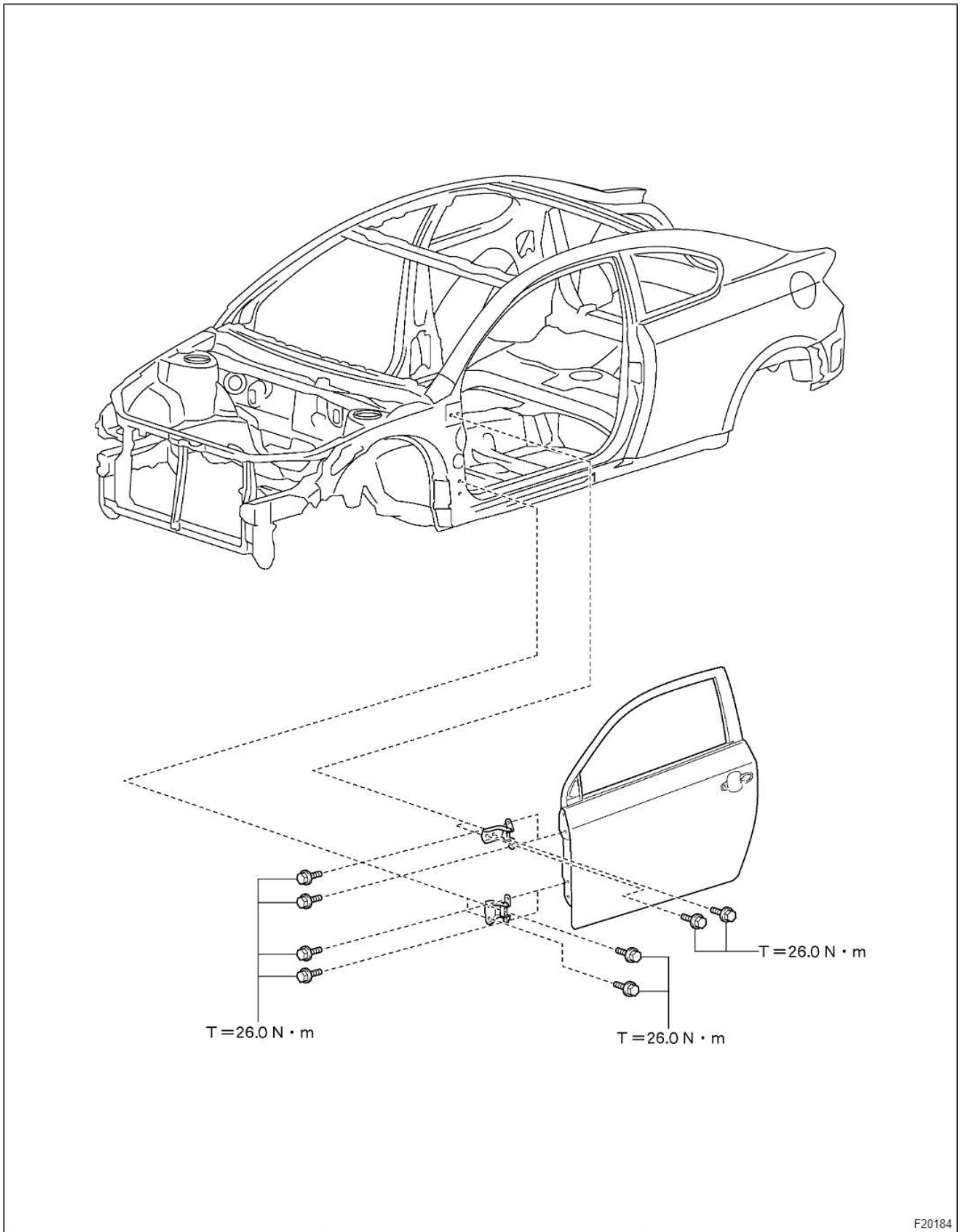


F20179

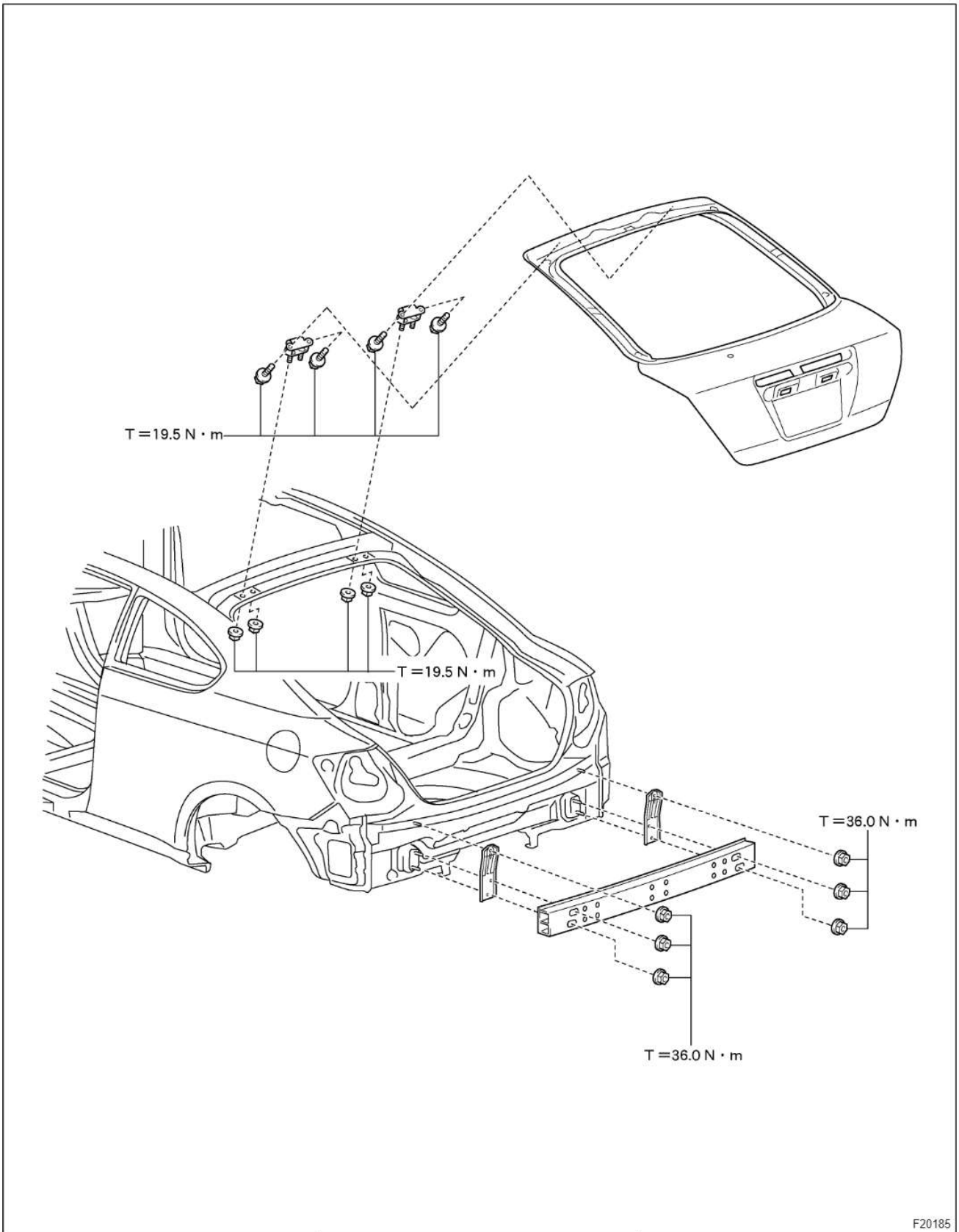
OUTER PANEL INSTALLATION TORQUE



5.0 N·m (51.0 kgf·cm, 44 in·lbf)	8.0 N·m (81.6 kgf·cm, 71 in·lbf)	13.0 N·m (132.6 kgf·cm, 10 ft·lbf)



26.0 N·m (265.2 kgf·cm, 19 ft·lbf)	—	—



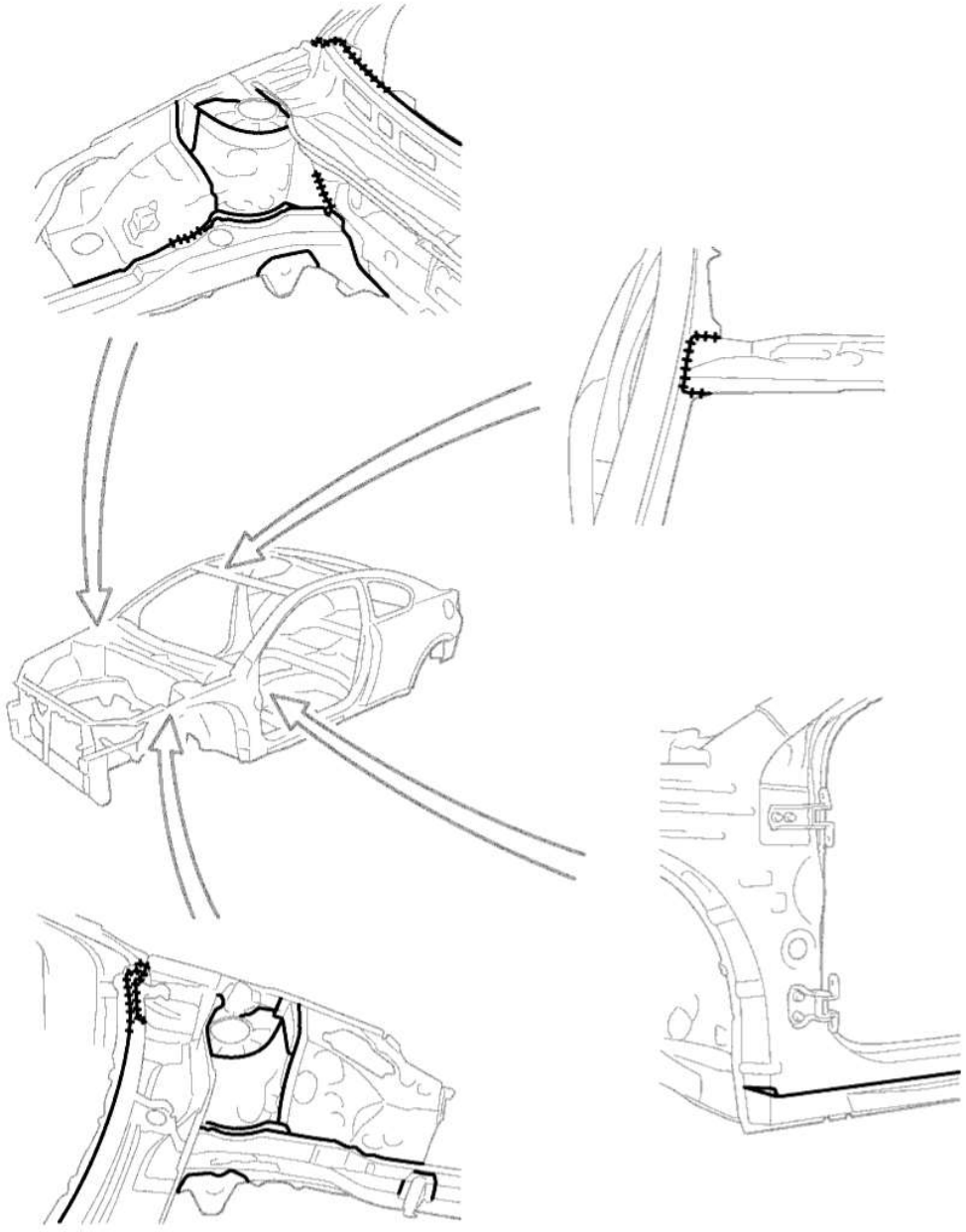
19.5 N·m (198.9 kgf·cm, 14 ft·lbf)	36.0 N·m (367.2 kgf·cm, 27 ft·lbf)	—

BODY PANEL SEALING AREAS

HINT:
1) *Prior to applying body sealer, clean the area with a rag soaked in 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 silicone remover.*
4) *If body sealer is damaged by peeling, cracks, etc., be sure to repair as necessary.*

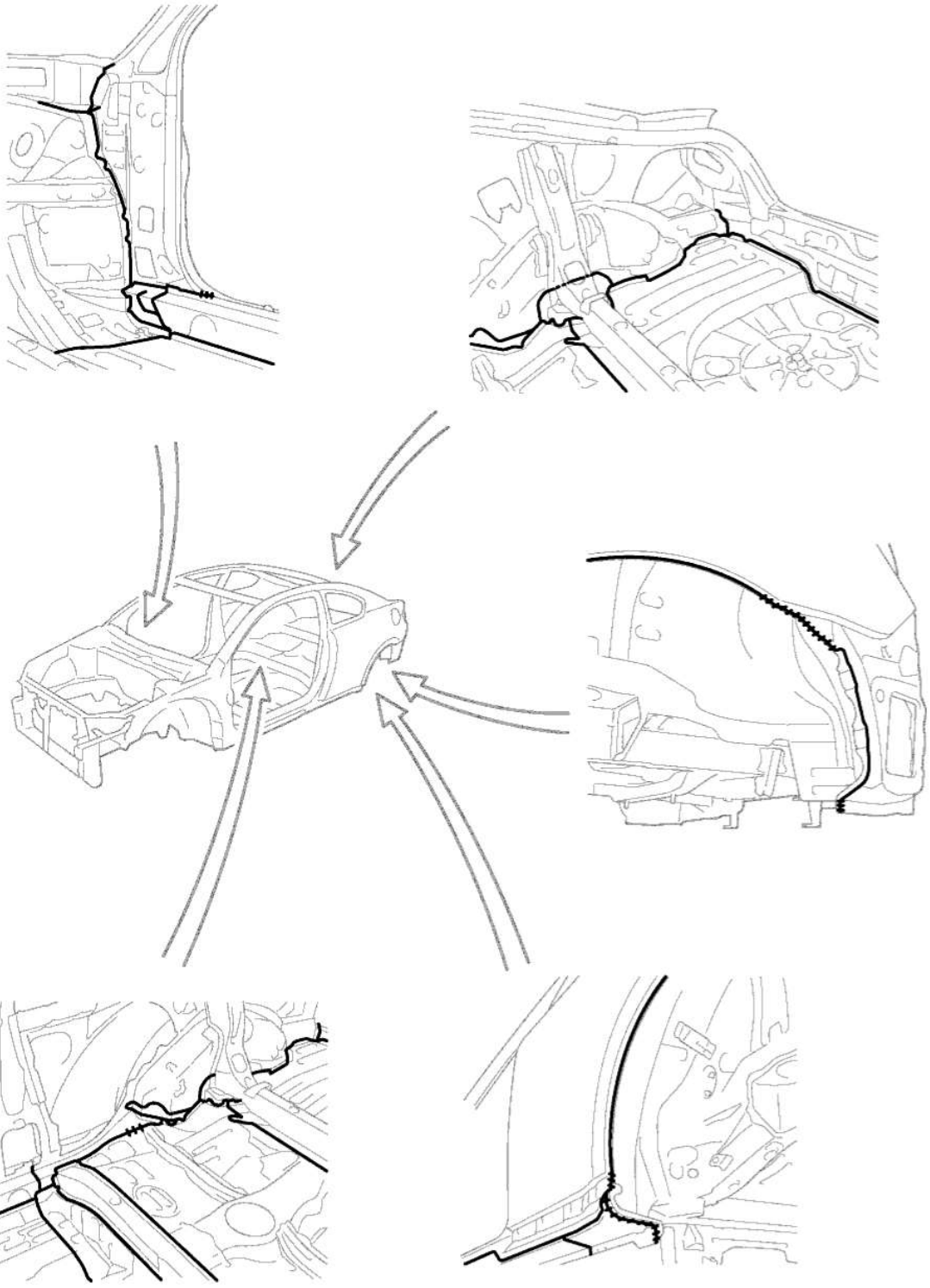
++++++++++	Flat Finishing	————	No Flat Finishing

1. ENGINE COMPARTMENT

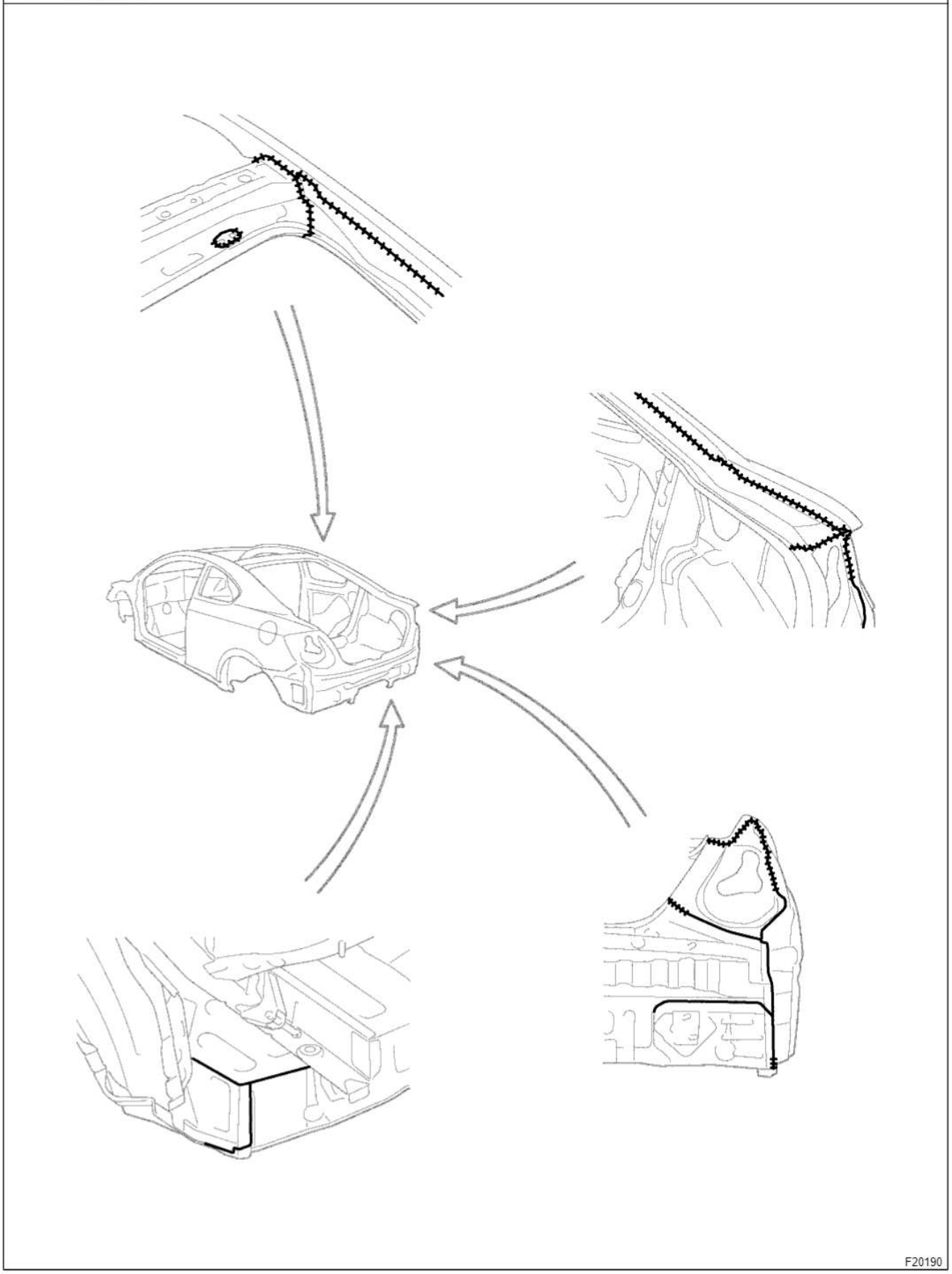


F20188

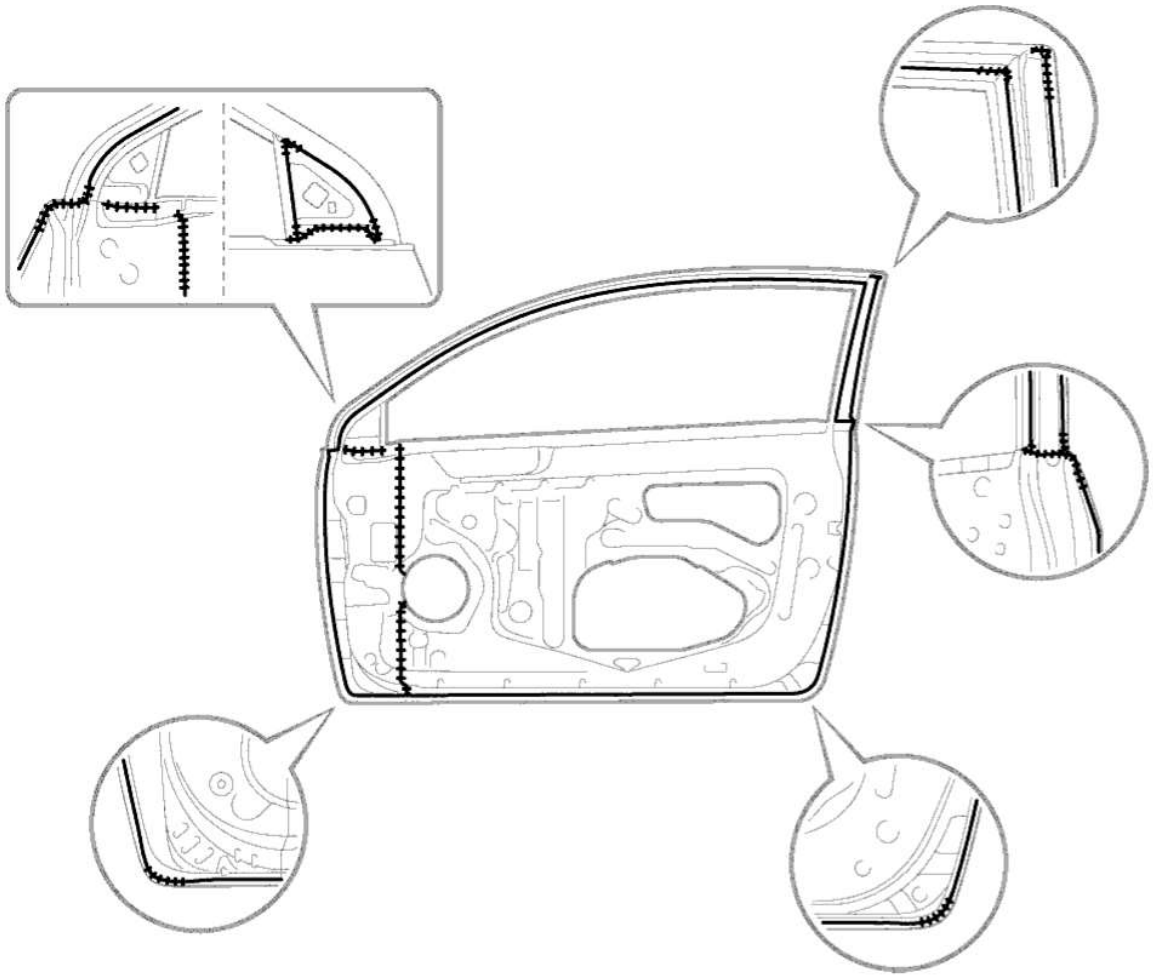
2. INSIDE

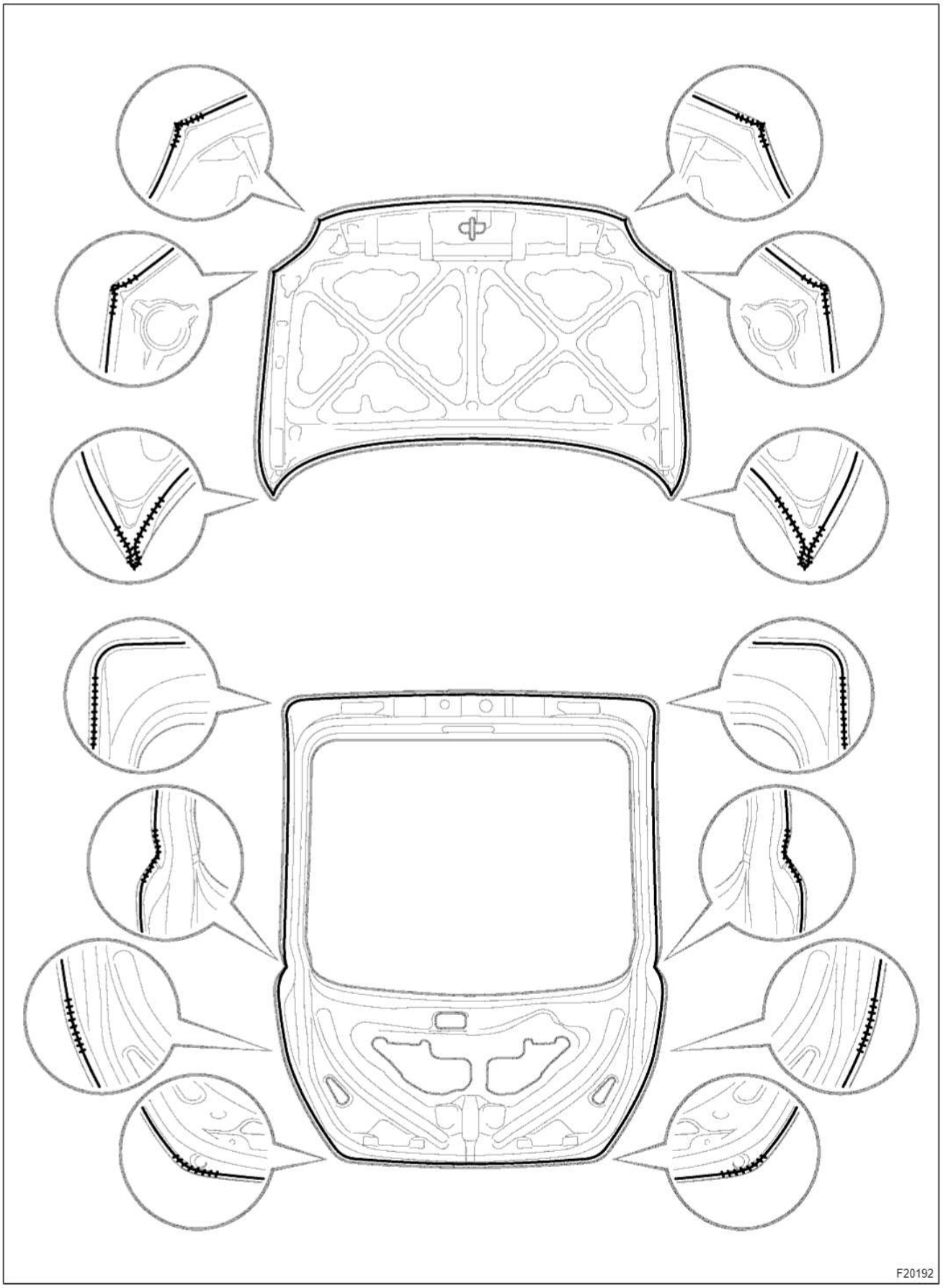


3. OUTSIDE



4. DOOR PARTS

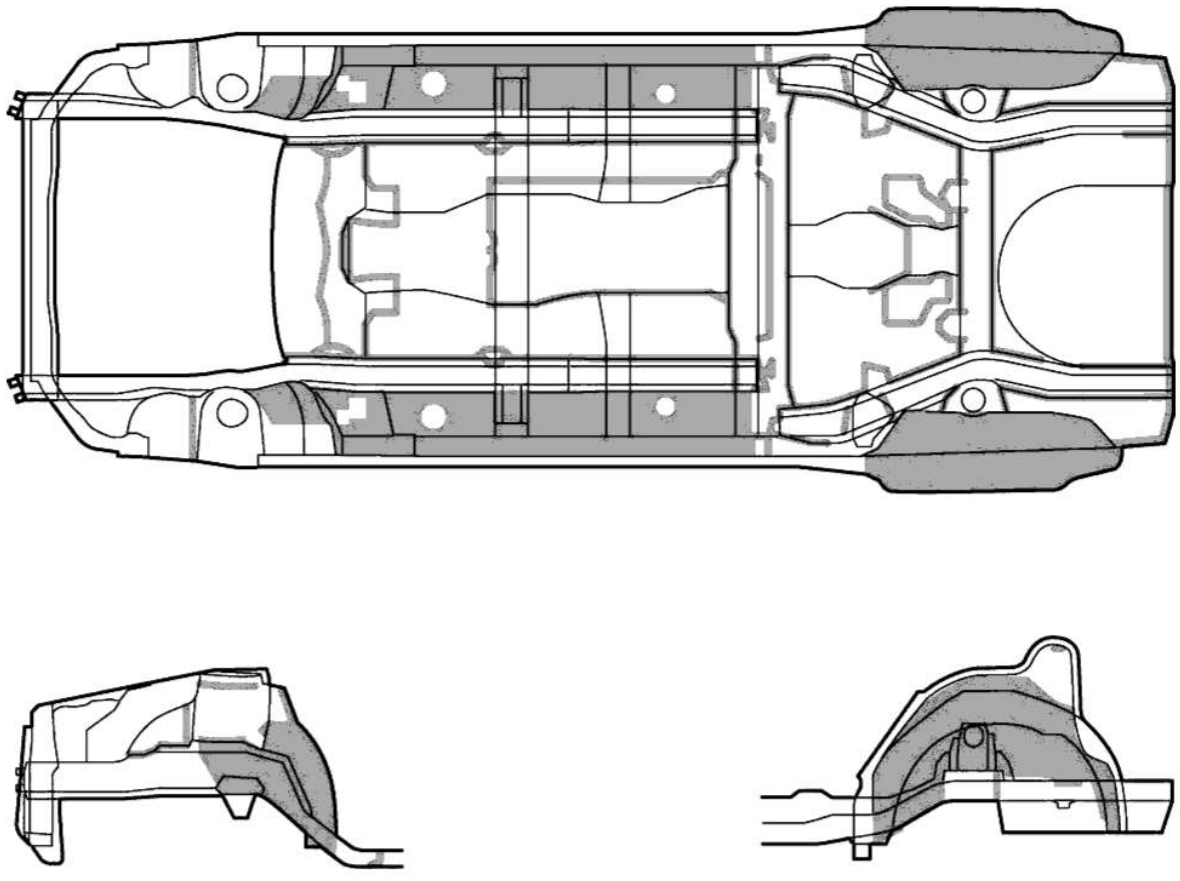



F20192

BODY PANEL UNDERCOATING AREAS

HINT:

1) *First wipe off any dirt, grease or oil with a rag soaked in silicone remover.*
2) *Cover the surrounding areas with masking paper to avoid coating unnecessary areas. If other areas are accidently 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.*



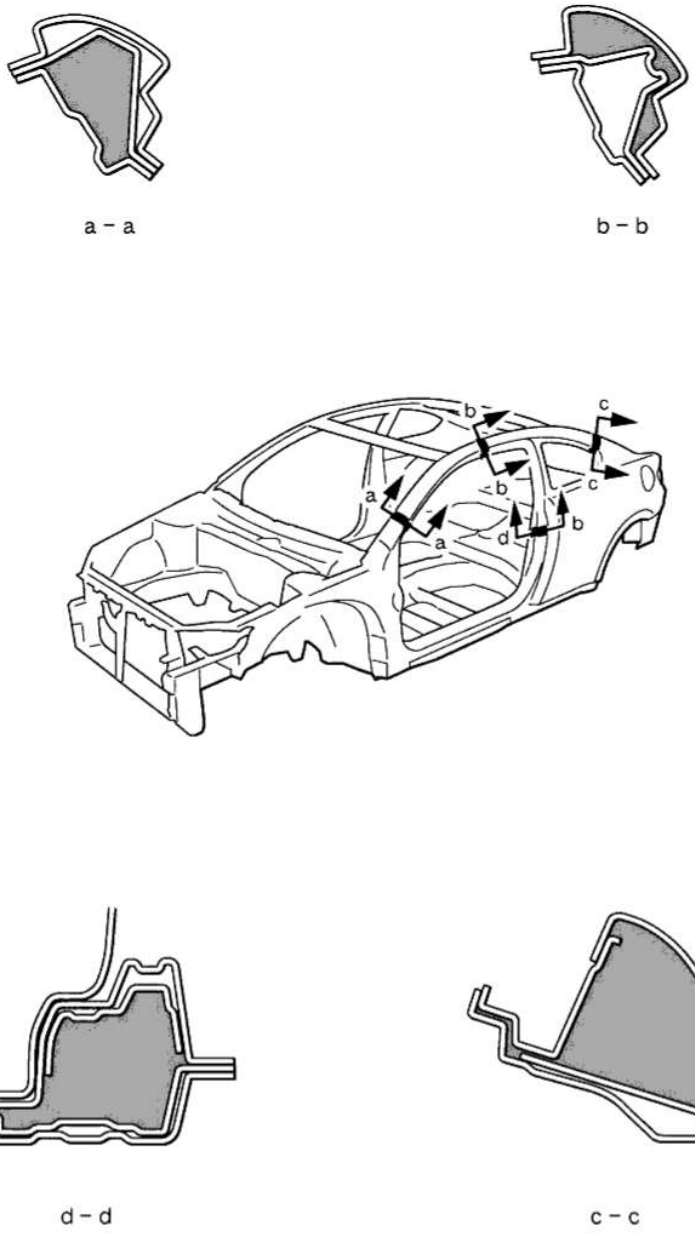
F20193

REFERENCE

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

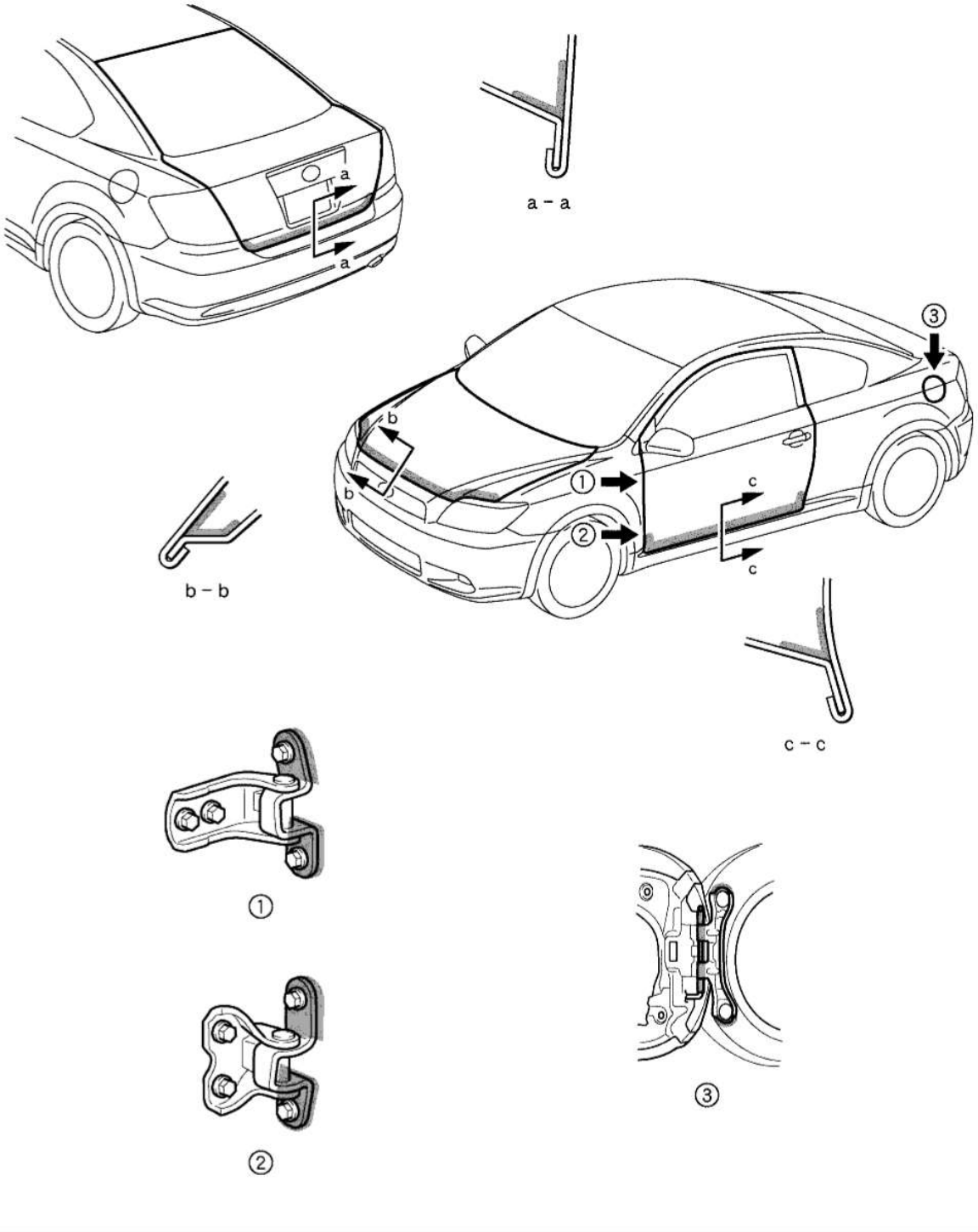
FOAMED MATERIAL APPLICATION AREAS

The sections shown in the figure below are filled with foamed material to provide noise insulation.
After repairing these sections or their peripheries, refill with foamed materials.
HINT:
1) Use the service holes located on the reverse side of the body panel to refill with foamed materials.
2) When handling foamed material, follow the directions of the material's manufacturer.

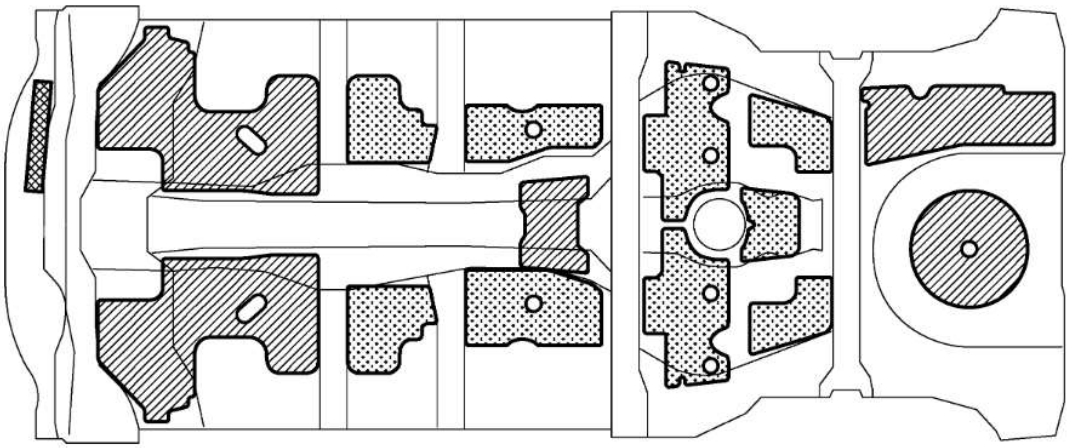


BODY PANEL ANTI-RUST AGENT (WAX) APPLICATION AREAS

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 silicone remover, if accidently applied to other areas.*



SILENCER SHEET INSTALLATION AREAS

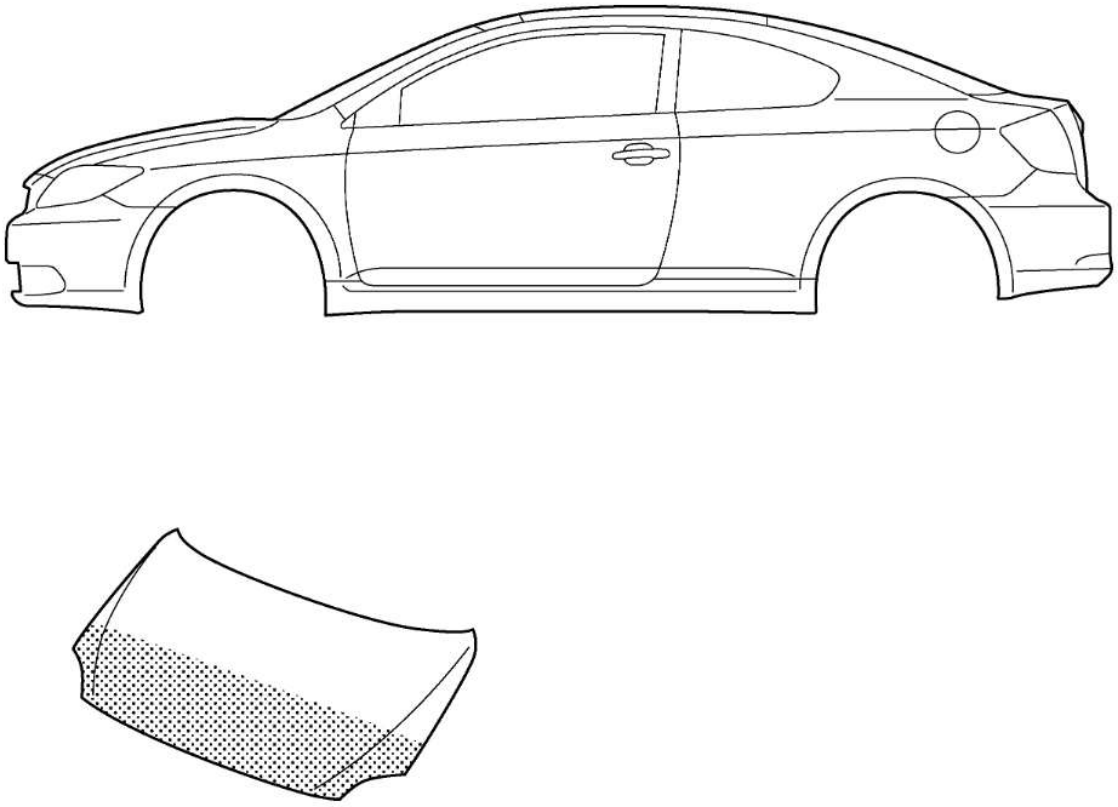


F20196

Thickness of Silencer Sheet					
	1.5 mm (0.059 in.)		2.0 mm (0.079 in.)		4.5 mm (0.177 in.)

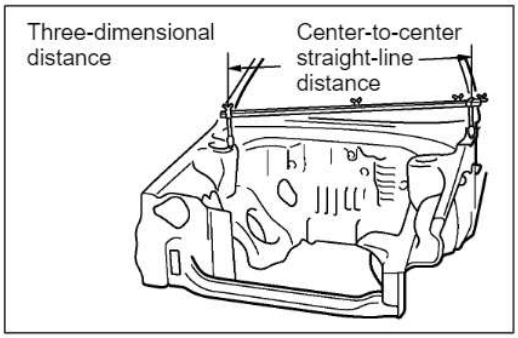
BODY PANEL ANTI-CHIPPING PAINT APPLICATION AREAS

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



F20197

	Soft Chipping	—	—



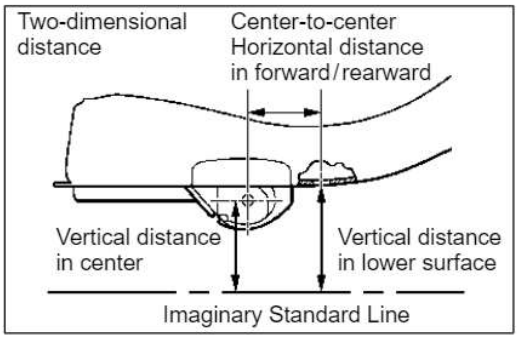
GENERAL INFORMATION

1. BASIC DIMENSIONS

(a) There are two types of dimensions in the diagram.

(1) (Three-dimensional distance)

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

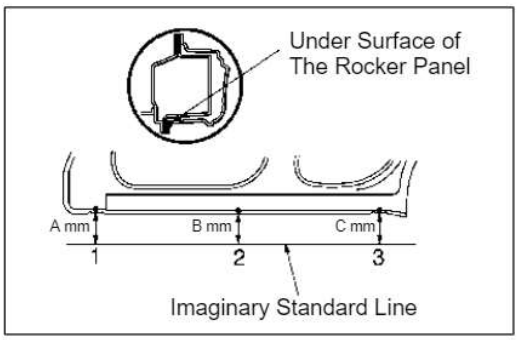


(2) (Two-dimensional distance)

- Horizontal distance in forward/rearward between the centers of two measuring points.
- The height from an imaginary standard line.

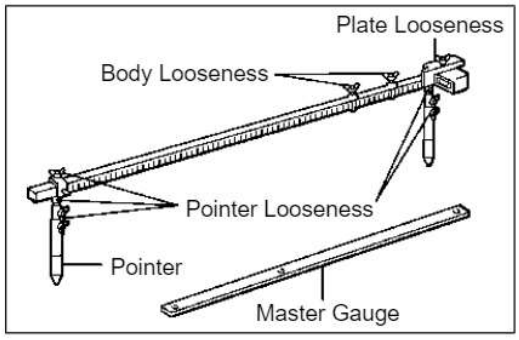
(b) In cases in which only one dimension is given, left and right are symmetrical.

(c) The dimensions in the following drawing indicate actual distance. Therefore, please use the dimensions as a reference.



(d) The line that connects the places listed below is the imaginary standard line when measuring the height. (The dimensions are printed in the text.)

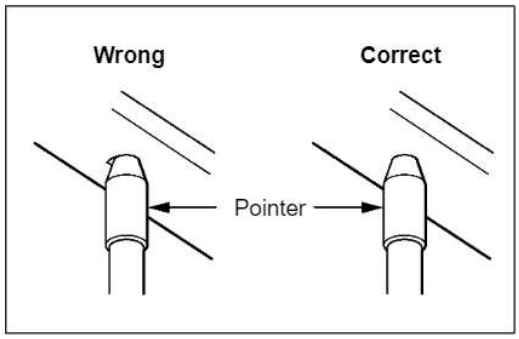
SYMBOL	Name
1	The place that was lowered A mm from the under surface of the rocker panel centered on the front jack up point.
2	The place that was lowered B mm from the under surface of the rocker panel centered between 1 and 3.
3	The place that was lowered C mm from the under surface of the rocker panel centered on the rear jack up point.



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.

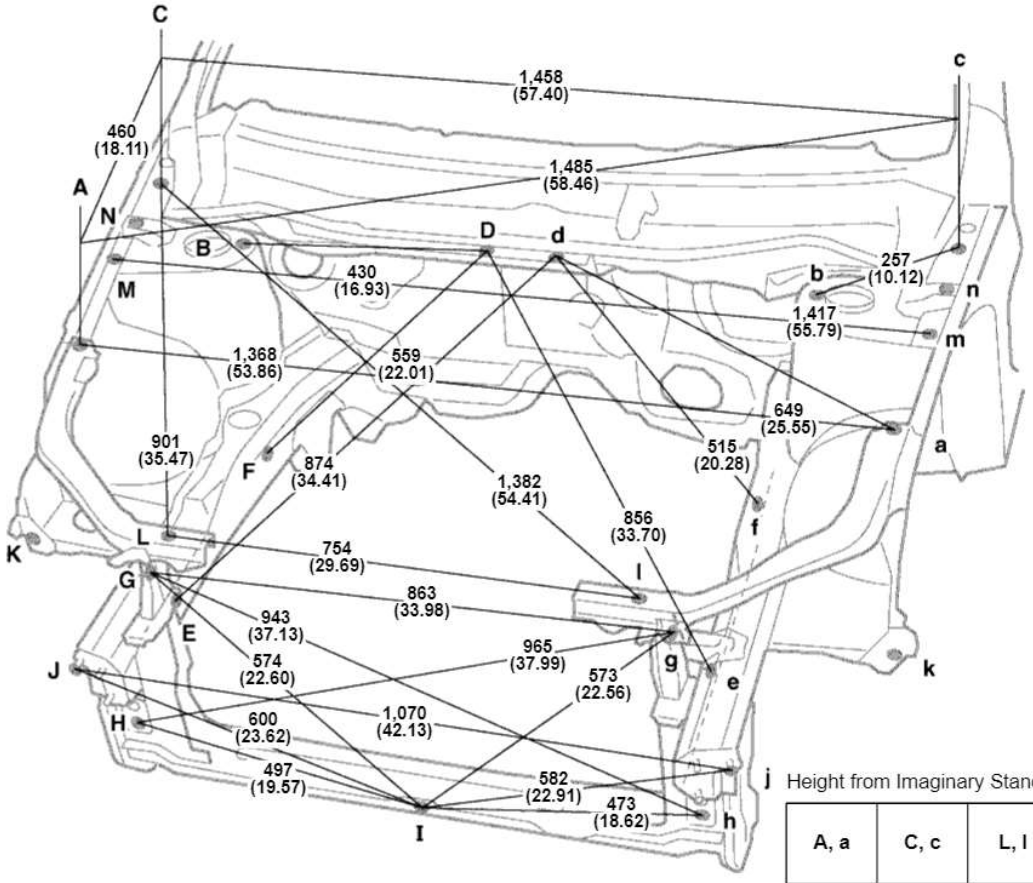
4) Confirm that the pointers are securely in the holes.

(c) When using a tape measure, avoid twists and bends in the tape.

BODY DIMENSION DRAWINGS

ENGINE COMPARTMENT

(Three-Dimensional Distance)



j Height from Imaginary Standard Line

A, a	C, c	L, l
702 (27.64)	768 (30.24)	622 (24.49)

Vehicle Dimensions

A-d or a-D	A-m or a-M	A-n or a-N	B-b	B-c or b-C	B-f	b−F	D-E
822 (32.36)	1,410 (55.51)	1,436 (56.54)	1,023 (48.28)	1,248 (49.13)	1,010 (39.76)	1,038 (40.87)	770 (30.31)

d-e	D-f	d-F	H-h	K-k	M-n or m-N	N-n
756 (29.76)	654 (25.75)	693 (27.28)	954 (37.56)	1,458 (57.40)	1,430 (56.30)	1,437 (56.57)

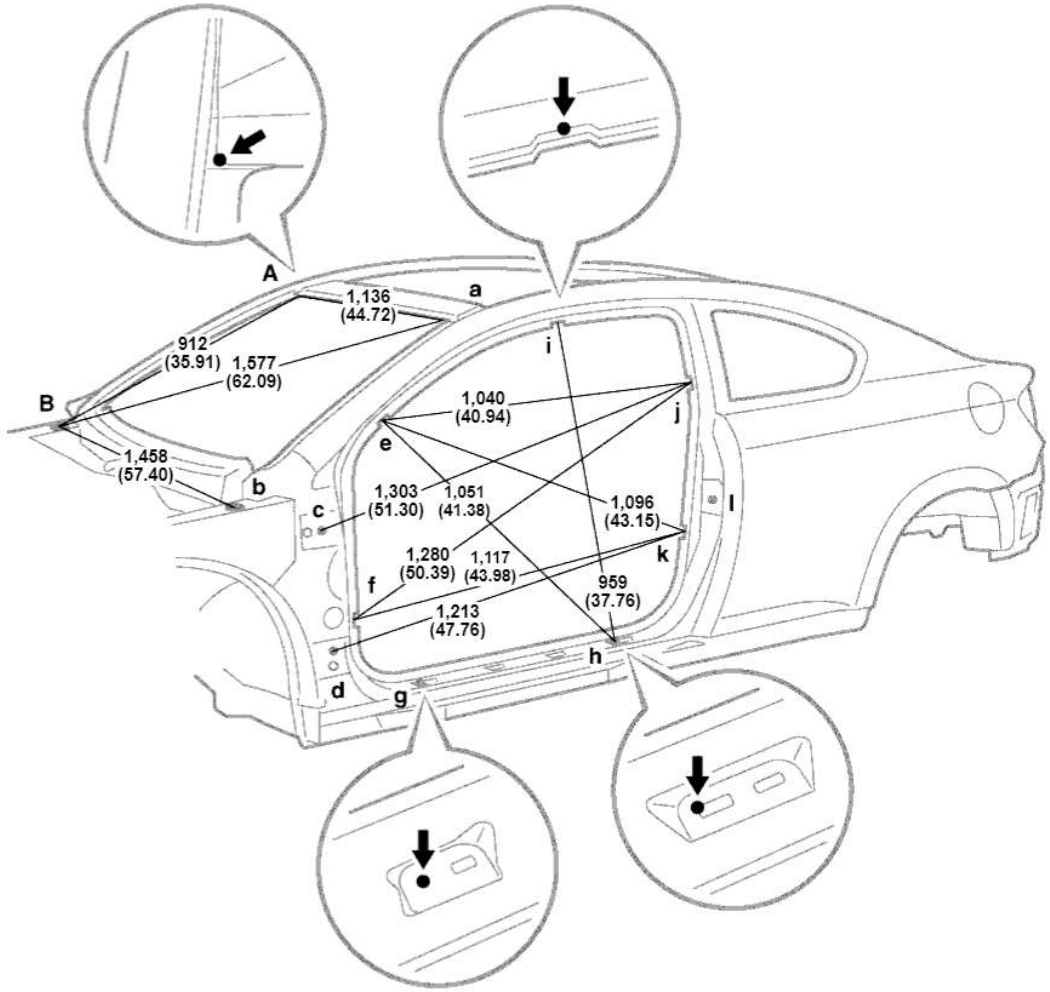
HINT: For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (Seen from rear).

mm (in.)

Symbol	Name	Hole dia.	Symbol	Name	Hole dia.
A, a	Front fender installation nut	6 (0.24) nut	H, h	Front crossmember side reinforcement standard hole	10 (0.39)
B, b	Front spring support hole-inner	11 (0.43)	I	Hood lock support installation nut	6 (0.24) nut
C, c	Hood hinge installation nut	8 (0.31) nut	J, j	Front bumper energy absorber installation bolt	8 (0.31) bolt
D, d	Cowl top ventilator louver installation hole	7 (0.28)	K, k	Front fender extention standard hole	7 (0.28)
E, e	Front side member standard hole	18 (0.71)	L, l	Radiator installation hole	6 (0.24)
F	Front side member standard hole	12 (0.47)	M, m	Front apron to cowl side upper member standard hole	10 (0.39)
f	Engine mounting installation nut	10 (0.39) nut			
G, g	Radiator support standard hole	10 (0.39)	N, n	Front fender installation nut	6 (0.24) nut

BODY OPENING AREAS (Side View)

(Three-Dimensional Distance)



Vehicle Dimensions Left ↔ Right

E-e	F-f	G-g	H-h	I-i	J-j	K-k	L-l
1,350 (53.15)	1,431 (56.34)	1,518 (59.76)	1,511 (59.49)	1,172 (46.14)	1,377 (54.21)	1,442 (56.77)	1,552 (61.10)

E-f or e-F	E-h or e-H	E-j or e-J	E-k or e-K	F-j or f-J	F-k or f-K	G-h or g-H	H-i or h-I	J-k or j-K
1,488 (58.58)	1,776 (69.92)	1,715 (67.52)	1,774 (69.84)	1,899 (74.76)	1,819 (71.61)	1,609 (63.35)	1,643 (64.69)	1,489 (58.62)

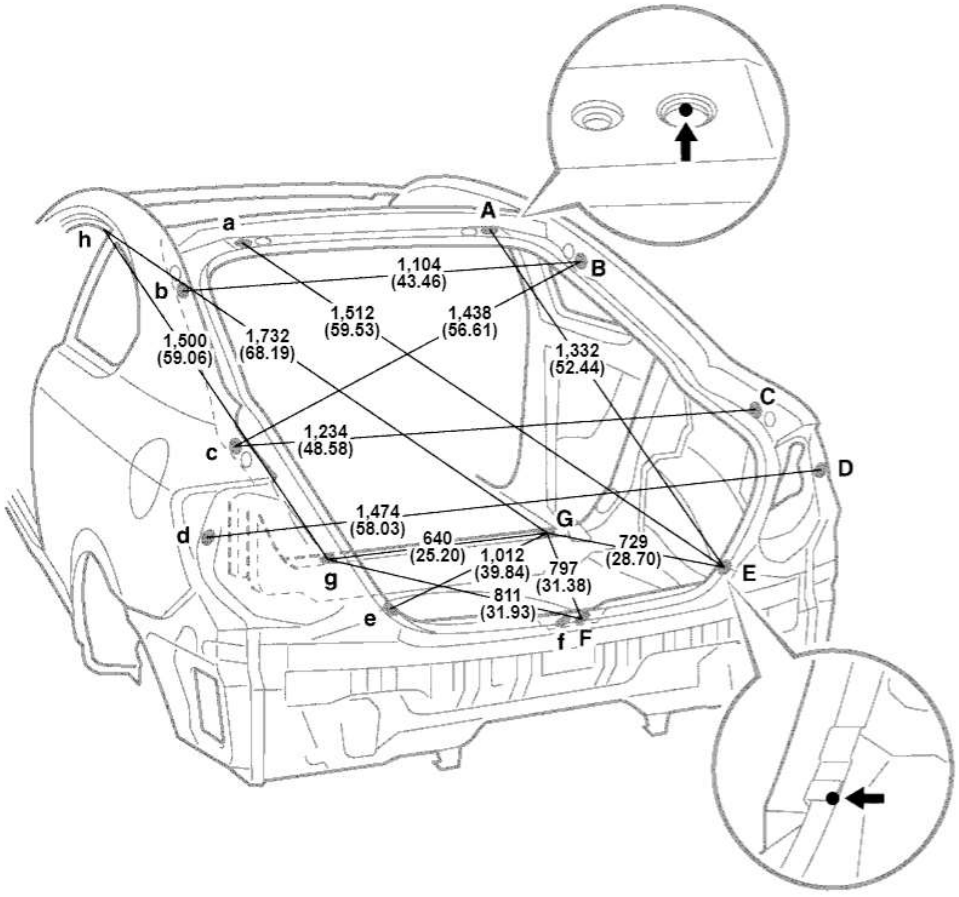
HINT: For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (Seen from rear).

mm (in.)

Symbol	Name	Hole dia.	Symbol	Name	Hole dia.
A, a	Windshield header panel corner	—	G, g	Front door scuff plate installation hole	7 (0.28)
B, b	Hood hinge installation nut	8 (0.31) nut	H, h	Front door scuff plate installation hole	19 × 8 (0.75 × 0.31)
C, c	Front door hinge installation nut	8 (0.31) nut	I, i	Roof side rail assembly mark	—
D, d	Front door hinge installation nut	8 (0.31) nut	J, j	Quarter panel assembly mark	—
E, e	Front body pillar assembly mark	—	K, k	Quarter panel assembly mark	—
F, f	Front body pillar assembly mark	—	L, l	Front door lock striker installation nut	8 (0.31) nut

BODY OPENING AREAS (Rear View)

(Three-Dimensional Distance)



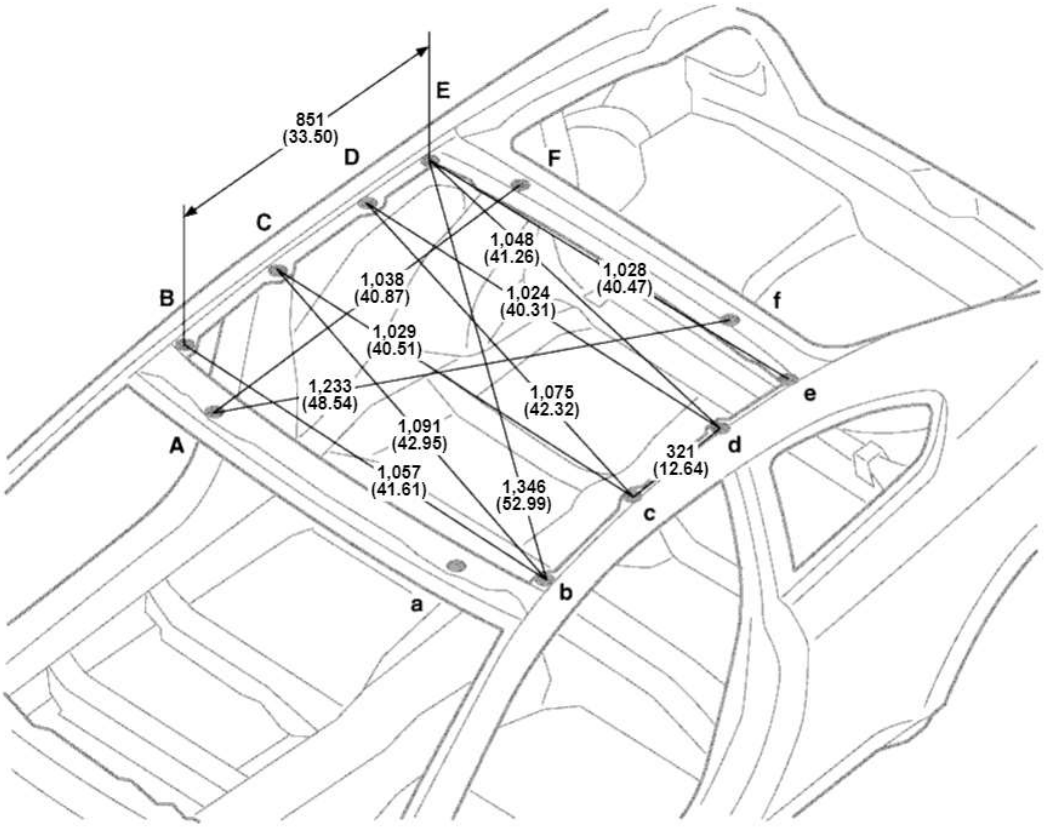
HINT: For sysmbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (Seen from rear).

mm (in.)

Symbol	Name	Hole dia.	Symbol	Name	Hole dia.
A, a	Back door hinge installation hole-outer	13 (0.51)	E, e	Quarter panel extension/Body lower back panel adjoining portion	—
B, b	Back door damper stay installation nut	6 (0.24) nut	F, f	Back door lock striker installation nut	8 (0.31)
C, c	Back door lower stopper installation nut	5 (0.20) nut	G, g	Rear floor center crossmember standard hole	13 (0.51)
D, d	Quarter panel standard hole	13 (0.51)	H, h	Roof side rail assembly mark	—

BODY OPENING AREAS (Top View)

(Three-Dimensional Distance)



Vehicle Dimensions

A-a	F-f
710 (27.95)	624 (24.57)

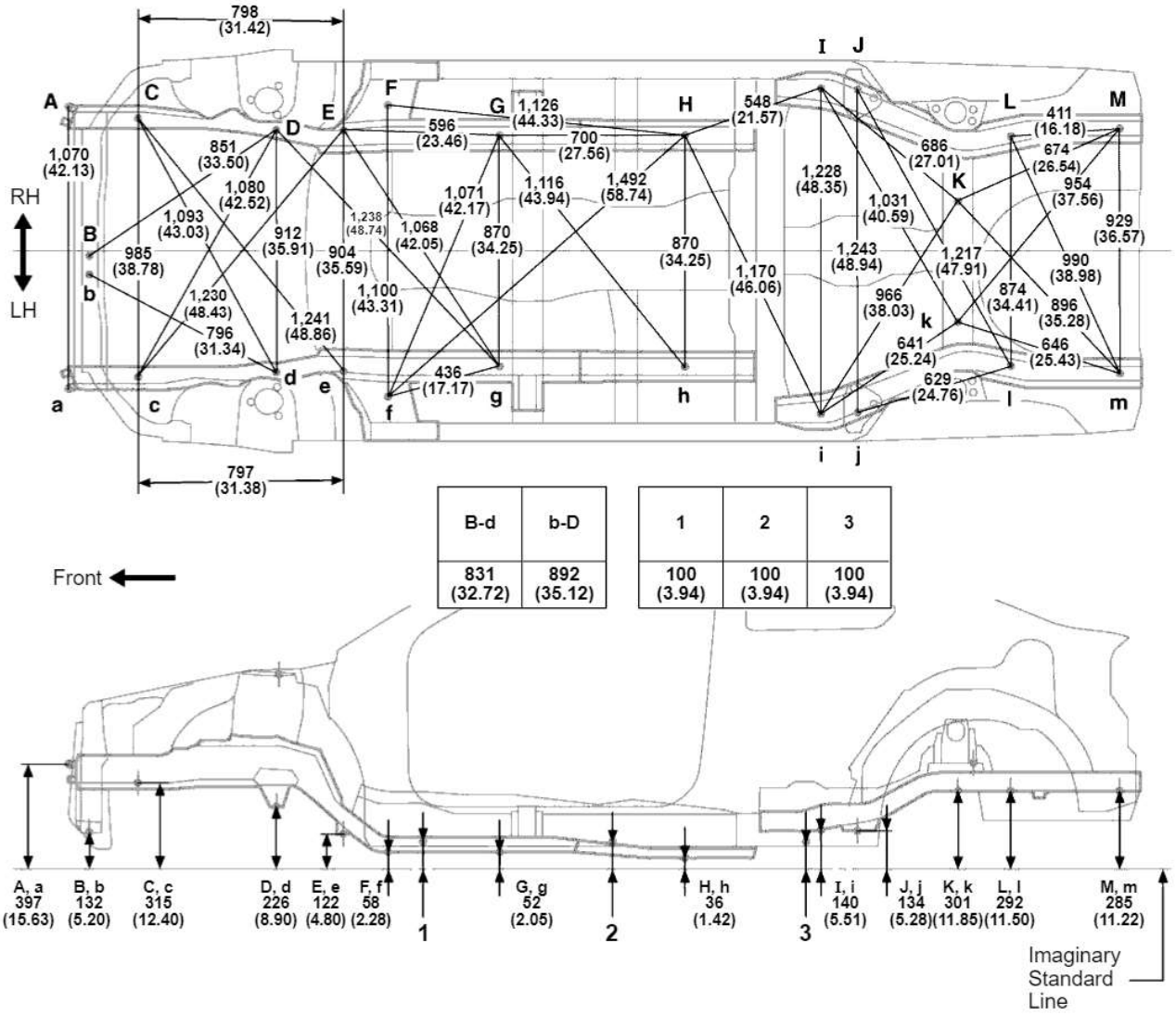
HINT: For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (Seen from rear).

mm (in.)

Symbol	Name	Hole dia.	Symbol	Name	Hole dia.
A, a	Sliding roof installation hole	12 (0.47)	D, d	Sliding roof installation hole	13 (0.51)
B, b	Sliding roof installation hole	15 × 13 (0.59 × 0.51)	E, e	Sliding roof installation hole	14 × 13 (0.55 × 0.51)
C, c	Sliding roof installation hole	13 (0.51)	F, f	Sliding roof installation hole	12 (0.47)

UNDER BODY

(Three-Dimensional Distance)



B-d	b-D
831 (32.72)	892 (35.12)

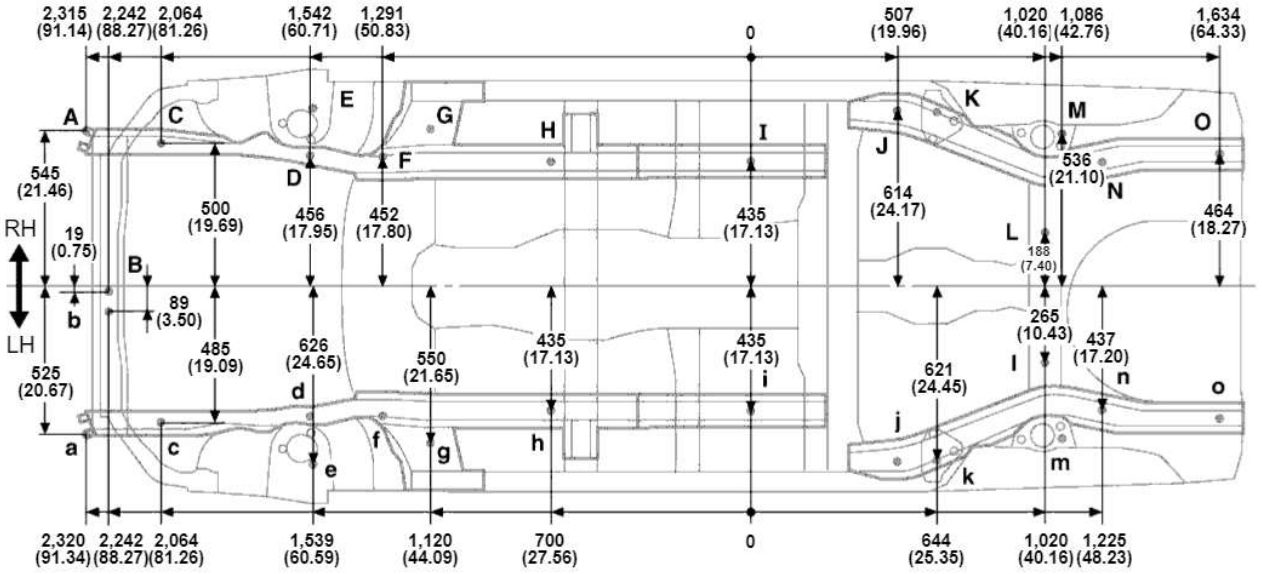
1	2	3
100 (3.94)	100 (3.94)	100 (3.94)

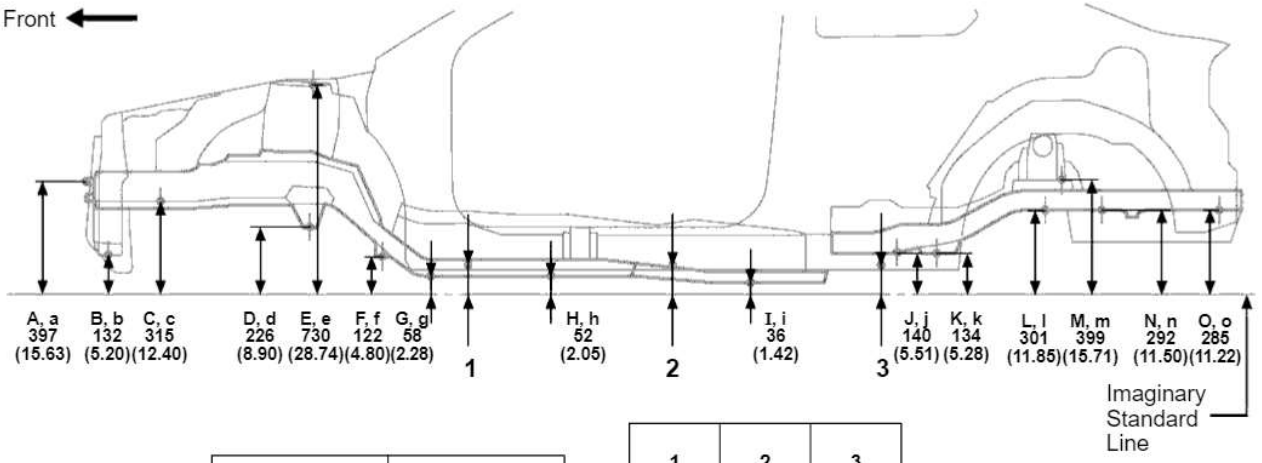
mm (in.)

Symbol	Name	Hole dia.	Symbol	Name	Hole dia.
A, a	Front bumper enegy absorber installation bolt	8 (0.31) bolt	H, h	Front floor under reinforcement standard hole	10 (0.39)
B, b	Center member installation nut	10 (0.39) nut	I, i	Rear floor side member standard hole	25 (0.98)
C, c	Front side member standard hole	18 (0.71)	J, j	Rear suspension arm installation nut	12 (0.47) nut
D, d	Front suspension member installation nut	16 (0.63) nut	K, k	Rear floor No.2 crossmember standard hole	10 (0.39)
E, e	Front suspension member installation nut	14 (0.55) nut	L, l	Rear suspension member installation nut	14 (0.55) nut
F, f	Torque box front standard hole	25 (0.98)	M, m	Transport hook installation nut	10 (0.39) nut
G, g	Front side member standard hole	18 (0.71)	—	—	—

UNDER BODY

(Two-Dimensional Distance)





Wheel base	3,569 (140.51)

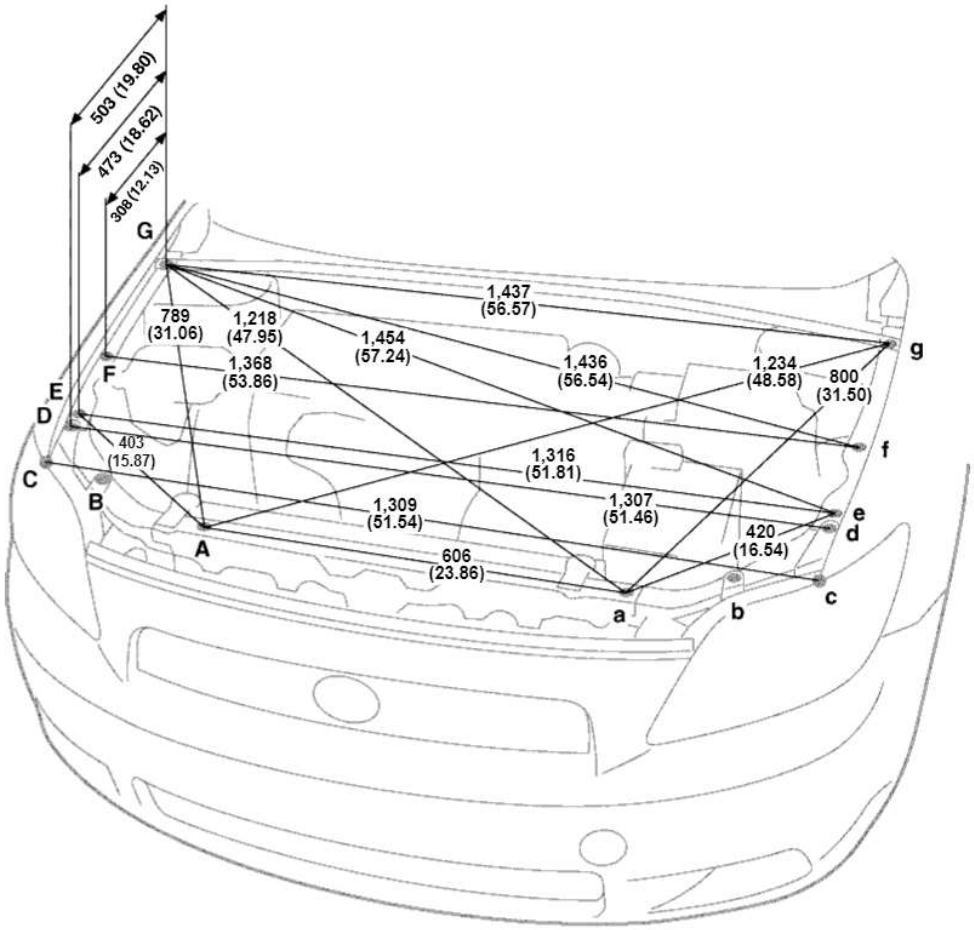
1	2	3
100 (3.94)	100 (3.94)	100 (3.94)

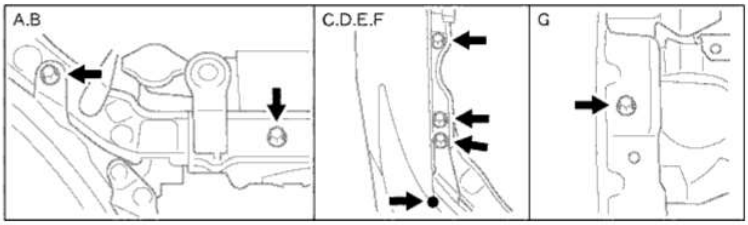
mm (in.)

Symbol	Name	Hole dia.	Symbol	Name	Hole dia.
A, a	Front bumper enegy absorber installation bolt	8 (0.31) bolt	I, i	Front floor under reinforcement standard hole	10 (0.39)
B, b	Center member installation nut	10 (0.39) nut	J, j	Rear floor side member standard hole	25 (0.98)
C, c	Front side member standard hole	18 (0.71)	K, k	Rear suspension arm installation nut	12 (0.47) nut
D, d	Front suspension member installation nut	16 (0.63) nut	L, l	Rear floor No.2 crossmember standard hole	10 (0.39)
E, e	Front spring support hole-outer	11 (0.43)	M, m	Rear spring support hole-rear outer	15 (0.59)
F, f	Front suspension member installation nut	14 (0.55) nut	N, n	Rear suspension member installation nut	14 (0.55) nut
G, g	Torque box front standard hole	25 (0.98)	O, o	Transport hook installation nut	10 (0.39) nut
H, h	Front side member standard hole	18 (0.71)	—	—	—

REFERENCE VALUE
ENGINE COMPARTMENT

(Three-Dimensional Distance)





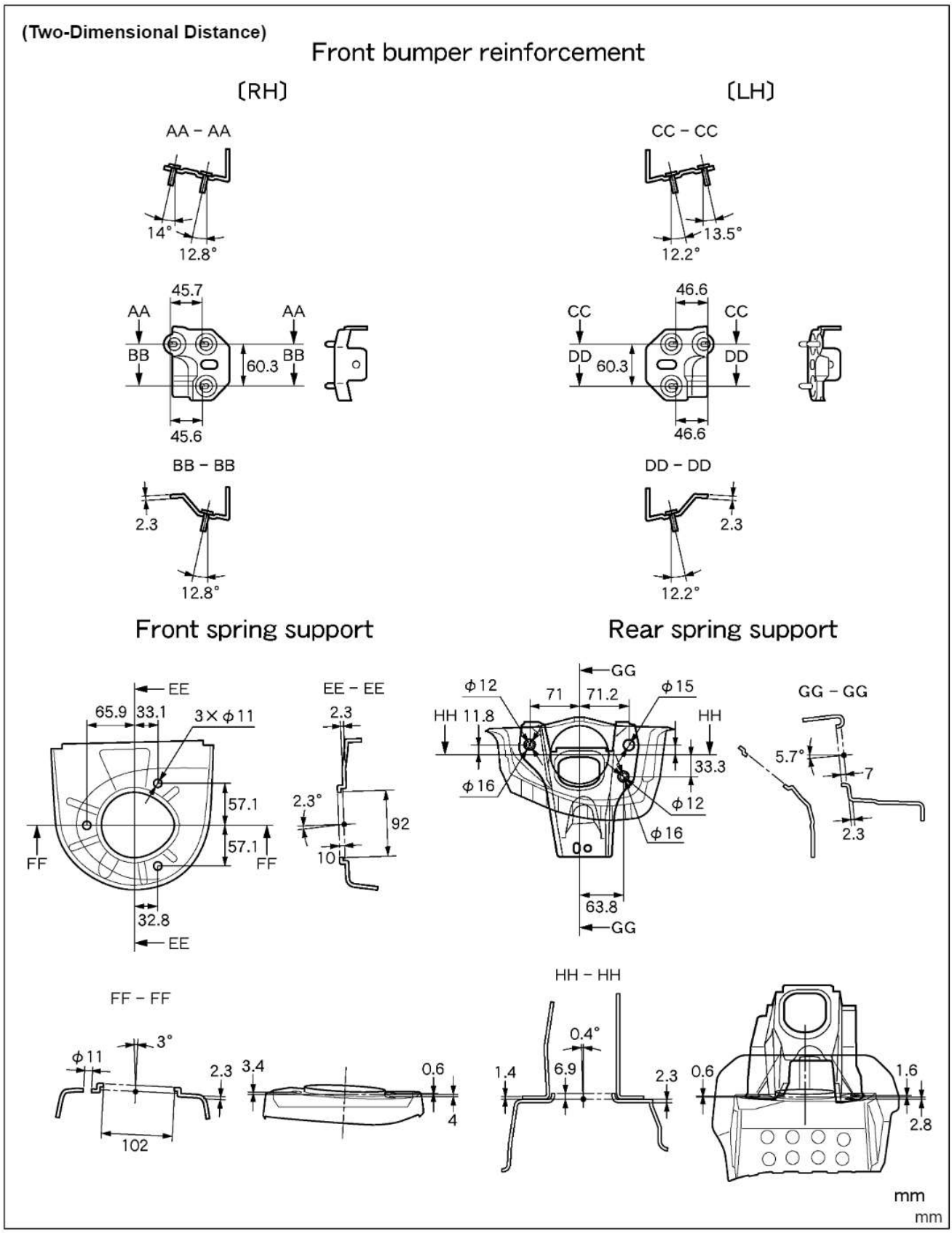
B-b	B-D	B-d	b-d	b-D	A-e	a-E	E-f or e-F
1,055 (41.54)	175 (6.89)	1,188 (46.77)	181 (7.13)	1,187 (46.73)	993 (39.09)	974 (38.35)	1,352 (53.23)

HINT:
1) These values are actual measurements made on this model.
   Use these reference values.
2) Measure point “G, g” with the cowl top ventilator louver removed.

mm (in.)

Symbol	Name	Hole dia.	Symbol	Name	Hole dia.
A, a	Radiator upper support installation bolt	—	E, e	Front fender installation bolt	—
B, b	Headlight installation screw	—	F, f	Front fender installation bolt	—
C, c	Front end of front fender	—	G, g	Hood hinge installation bolt	—
D, d	Headlight installation screw	—	—	—	—

UNDER BODY


(Two-Dimensional Distance)
Front bumper reinforcement
〔RH〕
〔LH〕
AA – AA
14°
12.8°
45.7
AA
AA
BB
BB
60.3
45.6
CC – CC
13.5°
12.2°
46.6
CC
CC
DD
60.3
DD
46.6
BB – BB
2.3
12.8°
DD – DD
2.3
12.2°
Front spring support
Rear spring support
EE
65.9
33.1
3×φ11
57.1
57.1
FF
FF
32.8
EE
EE – EE
2.3
2.3°
92
10
GG
φ12
71
71.2
φ15
HH 11.8
HH
33.3
φ16
φ12
φ16
63.8
GG
GG – GG
5.7°
7
2.3
FF – FF
φ11
3°
2.3
102
3.4
0.6
4
HH – HH
0.4°
1.4
6.9
2.3
0.6
1.6
2.8
mm
mm