

ABBREVIATIONS USED IN THIS MANUAL

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

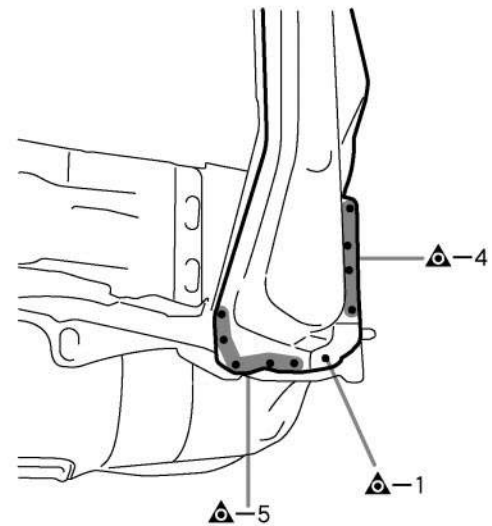
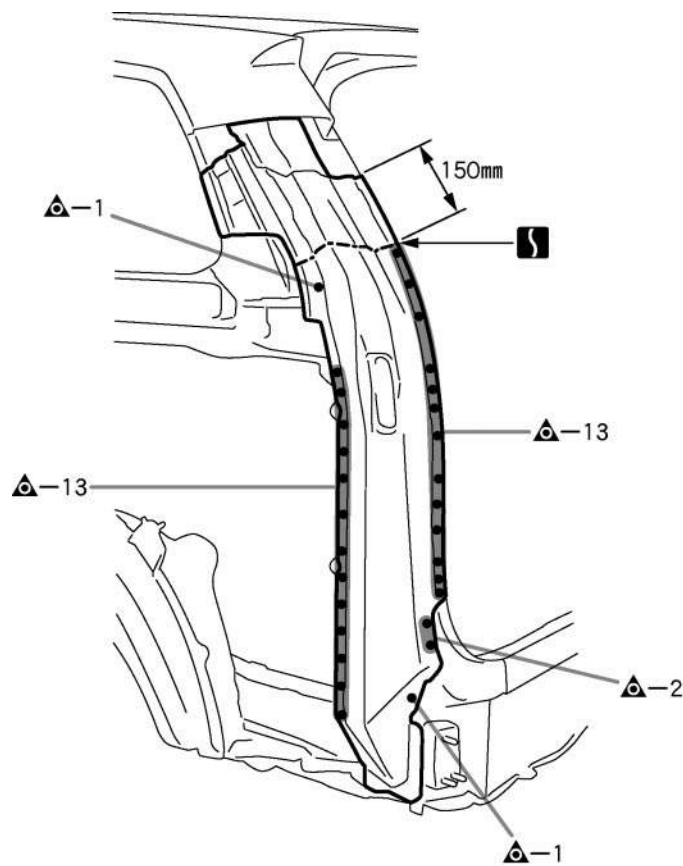
ABS	Antilock Brake System
A/C	Air Conditioner
assy	assembly
ECT	Electronic Controlled Transmission
ECU	Electronic Control Unit
e.g.	Exempli Gratia (for Example)
Ex.	Except
2WD	Two Wheel Drive Vehicles
4WD	Four Wheel Drive Vehicles
in.	inch
LH	Left-hand
LHD	Left-hand Drive
MIG	Metal Inert Gas
M/Y	Model 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

**BACK DOOR OPENING SIDE
REINFORCEMENT (CUT)****REPLACEMENT**

With the back door opening trough removed.



F15009-A

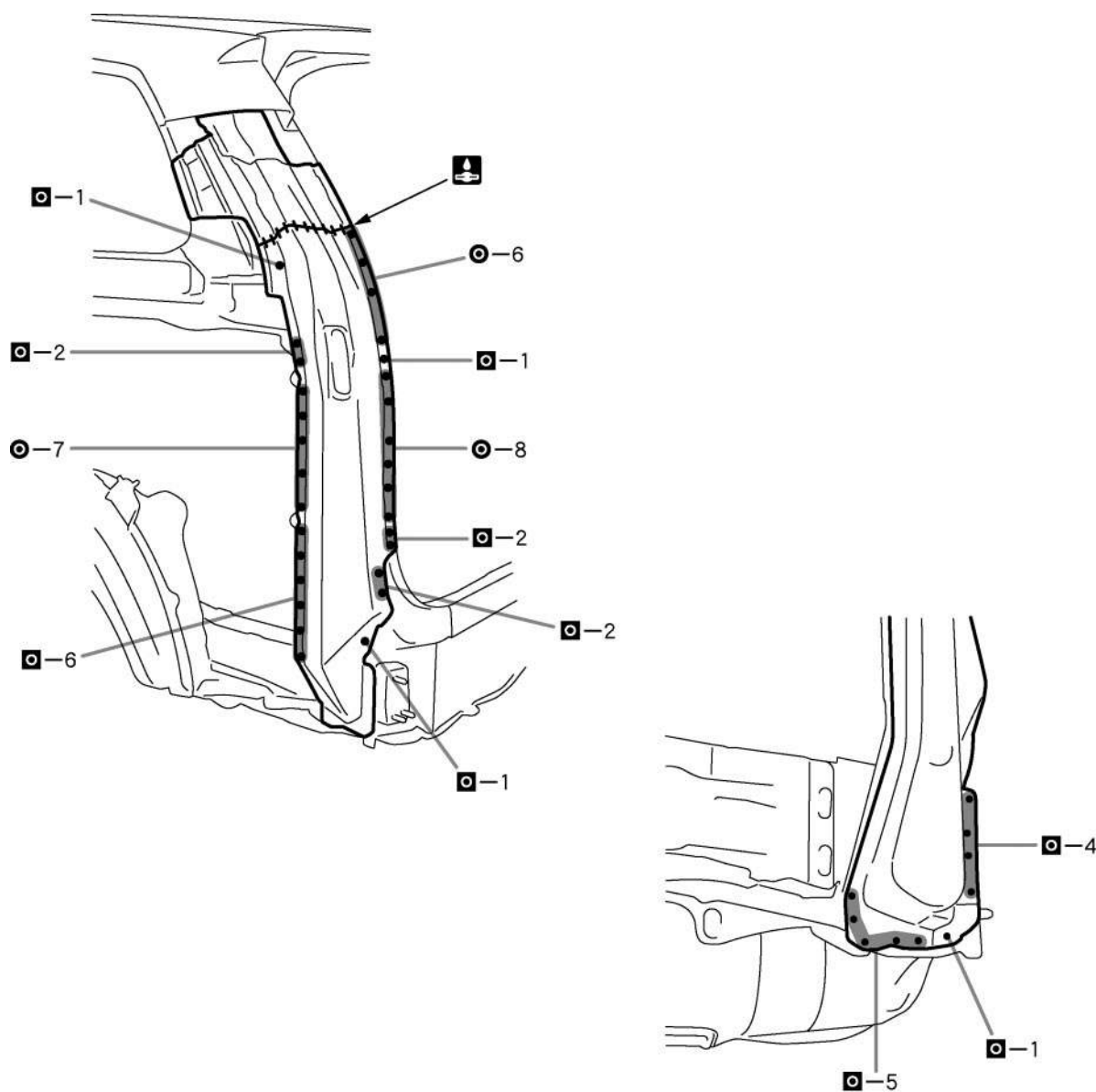
REMOVAL

F15009

150mm (5.91in.)

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.



BACK DOOR OPENING LOWER GUSSET (ASSY)

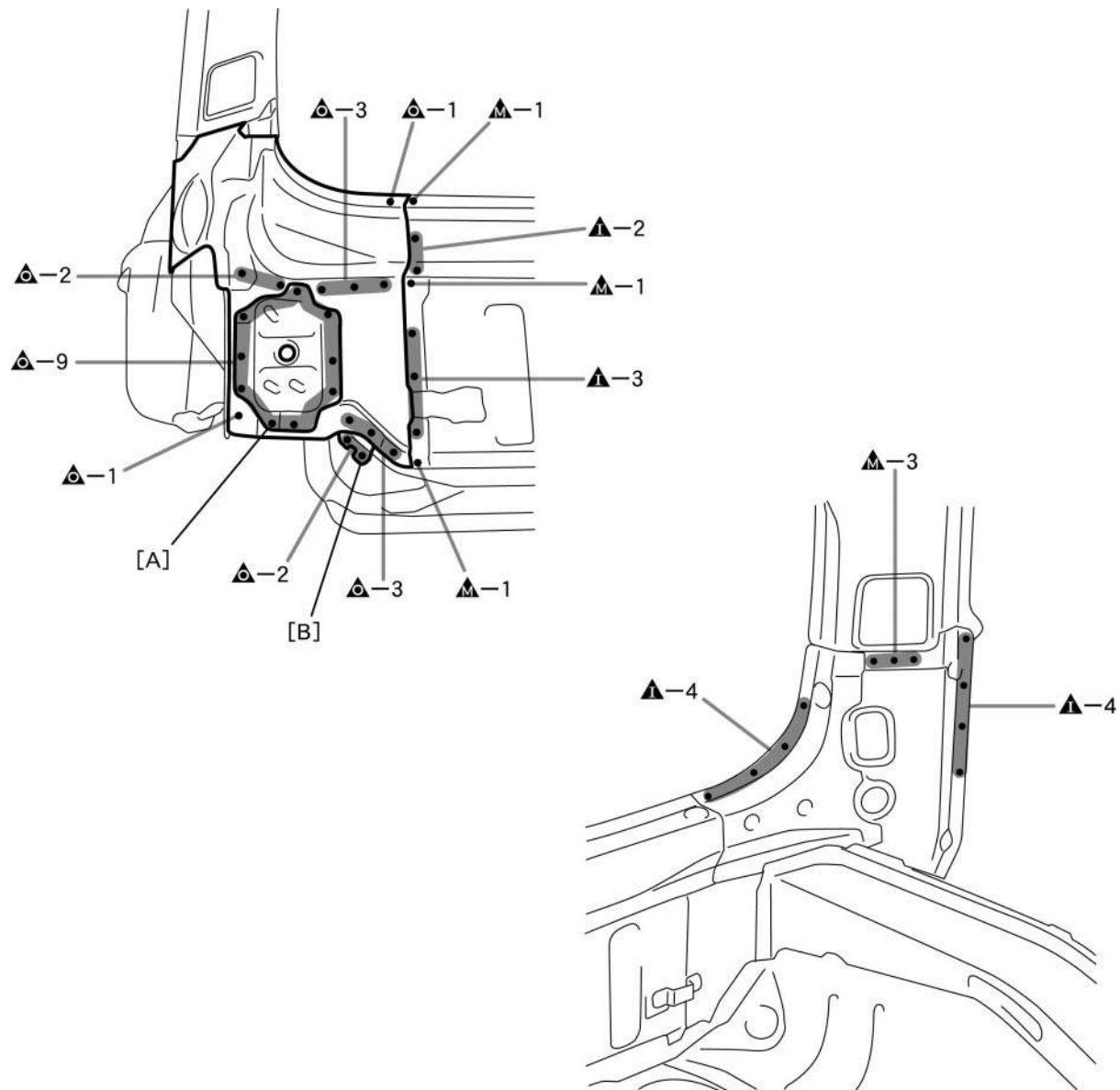
REPLACEMENT

With the back door opening side reinforcement removed.



F15011-A

REMOVAL



F15011

POINT

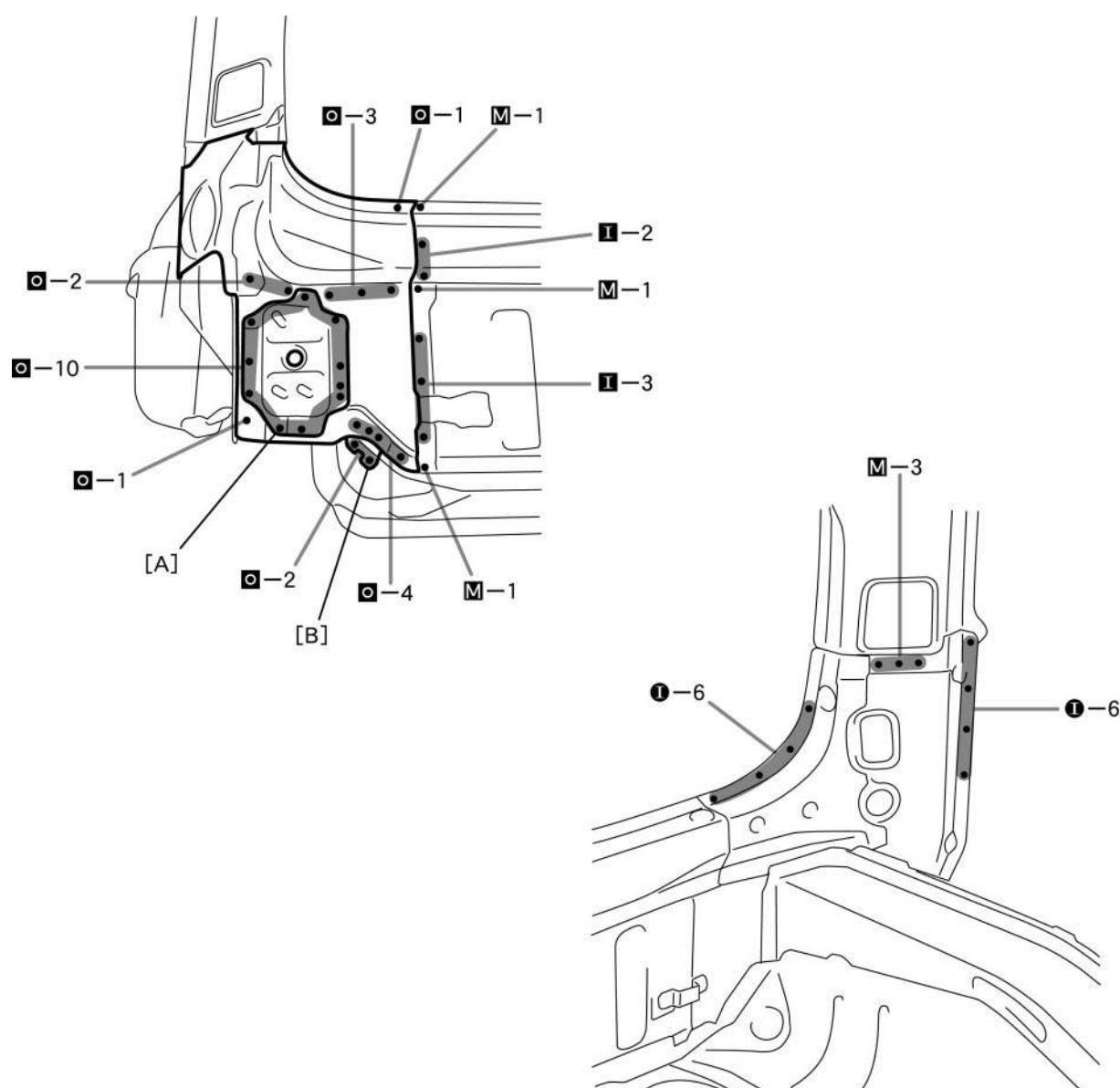
1 Remove the [A] and [B] at the same time.

PART NAME

[A] Rear Bumper Arm Support Reinforce [B] Body Lower Back Reinforcement 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.



F15012

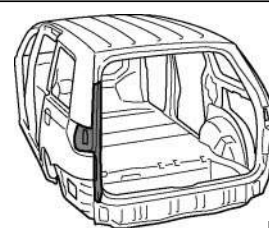
PART NAME

[A] Rear Bumper Arm Support Reinforce

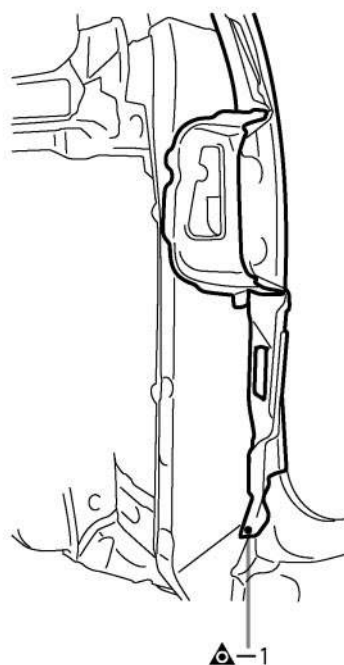
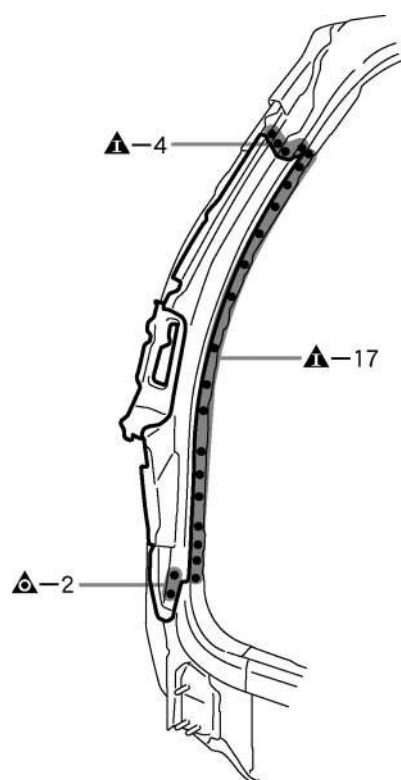
[B] Body Lower Back Reinforcement Plate

BACK DOOR OPENING TROUGH (ASSY)**REPLACEMENT**

With the quarter panel removed.



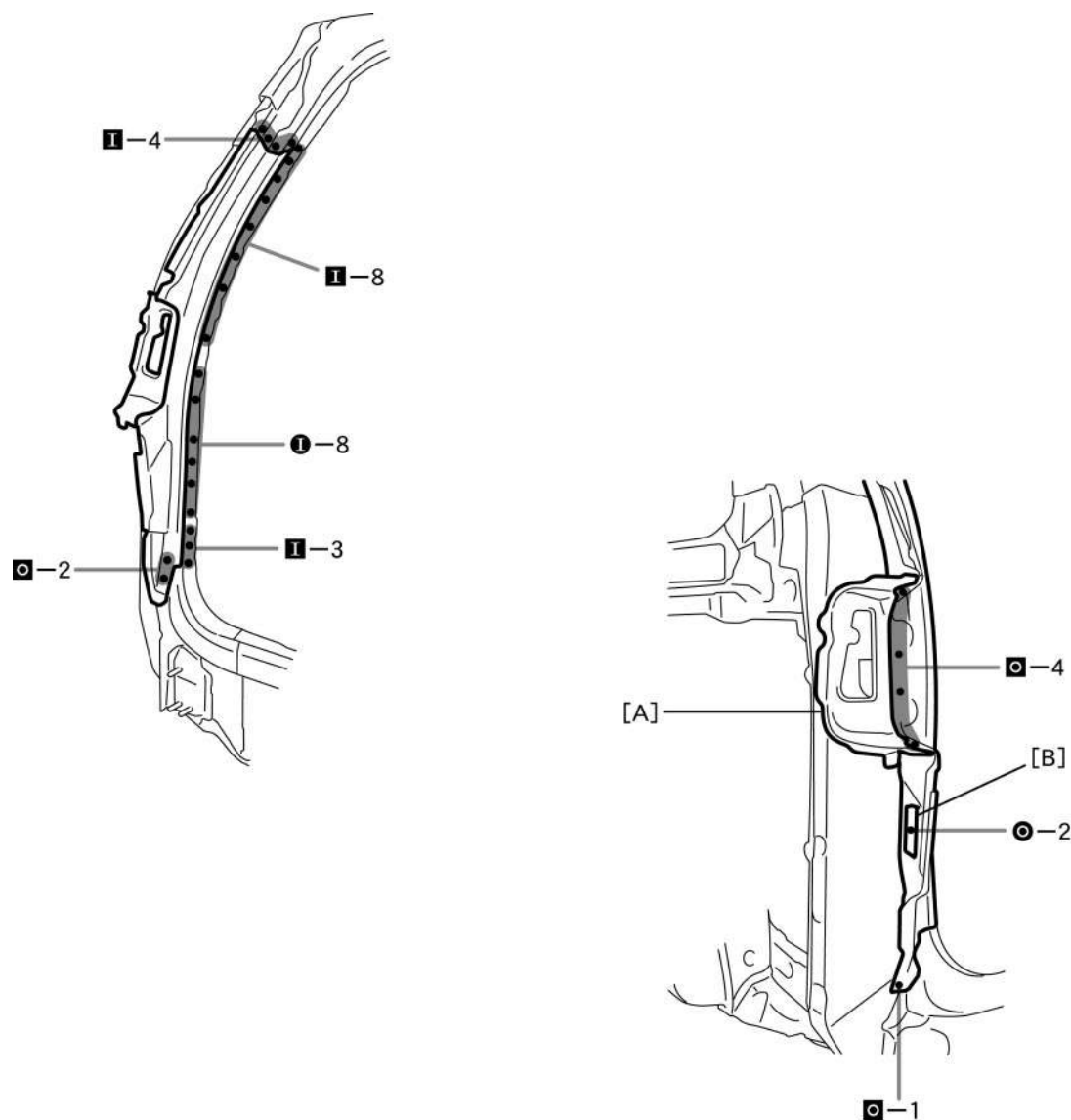
F15007-A

REMOVAL

F15007

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.



F15008

POINT

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

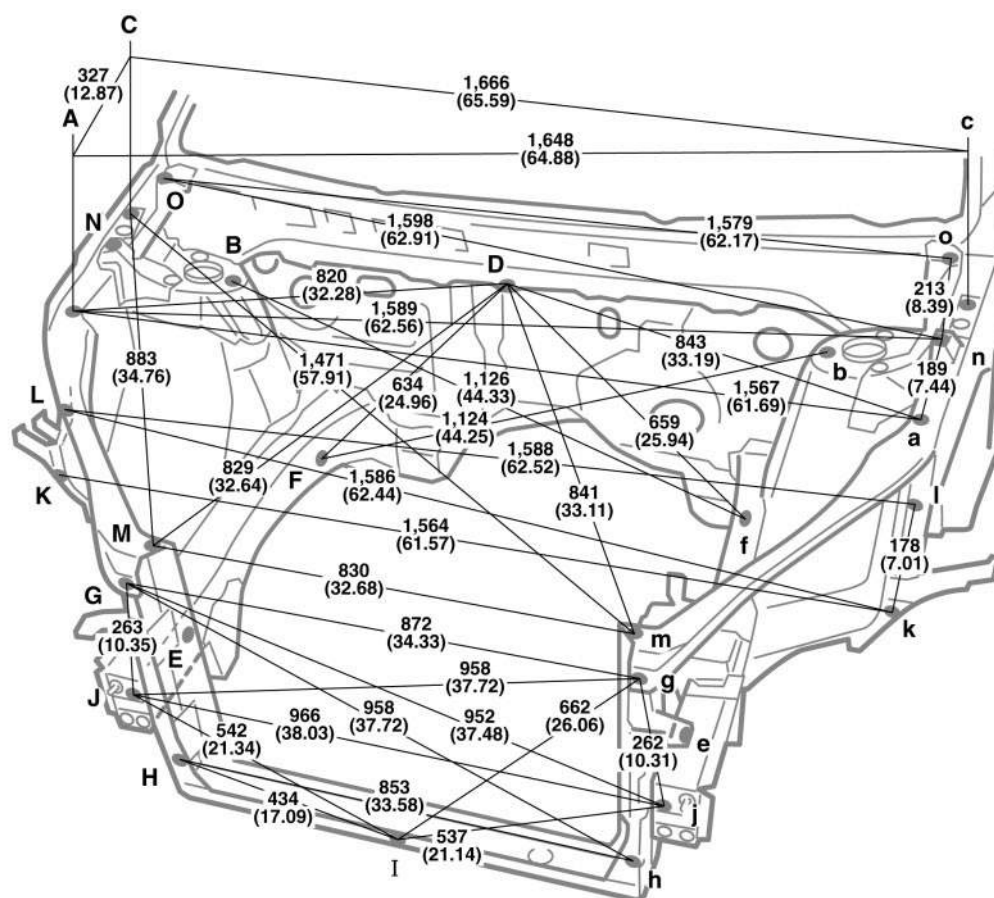
PART NAME

- [A] Quarter Panel Rear Extension [B] Back Door Side Stopper Retainer

BODY DIMENSION DRAWINGS

ENGINE COMPARTMENT

(Three-Dimensional Distance)



Height from Imaginary Standard Line

A,a	C,c	M,m
836 (32.91)	881 (34.69)	661 (26.02)

Vehicle Dimensions

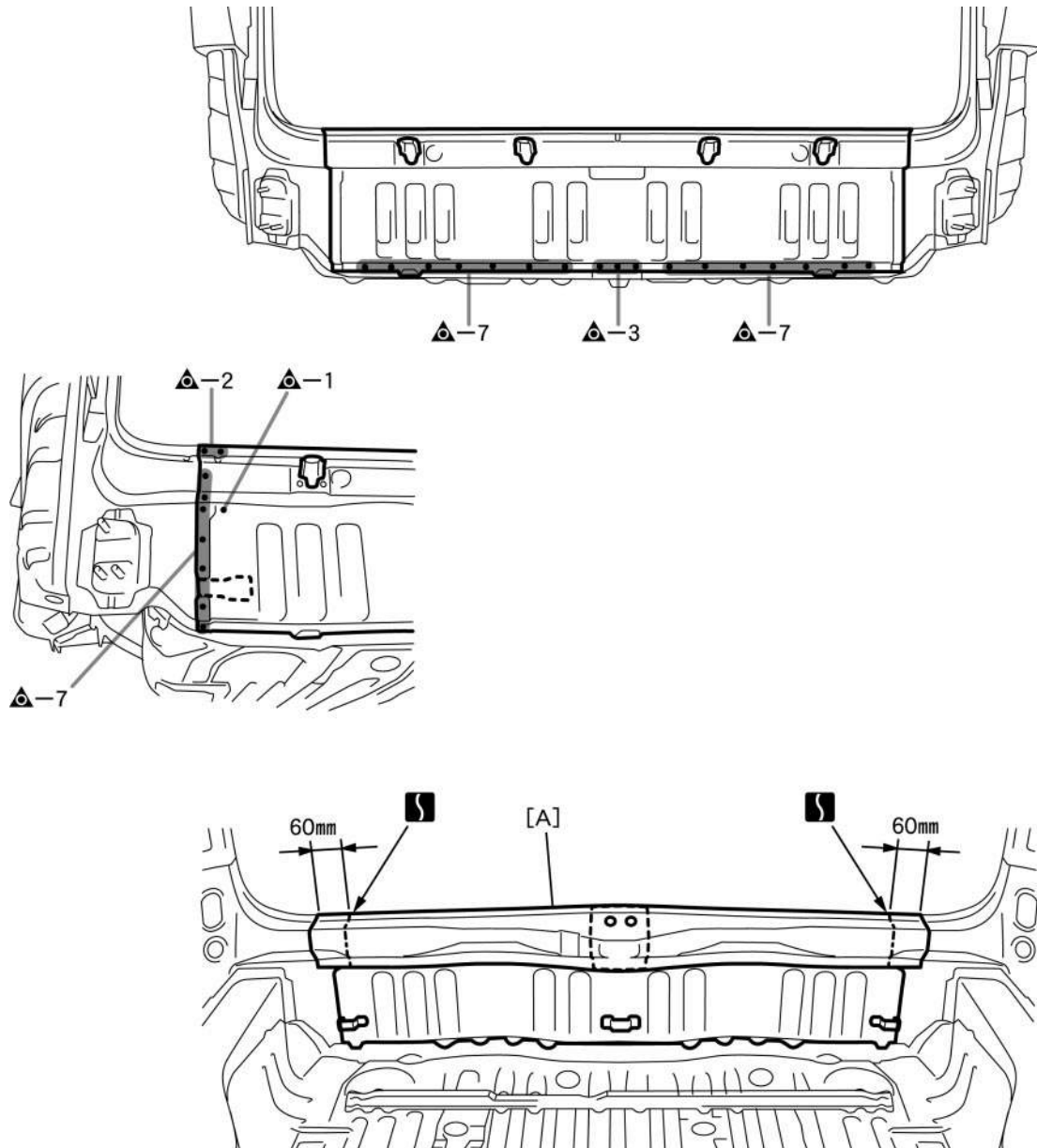
B-b	B-c or b-C	B-C or b-c	D-E	D-e	N-n
1,194 (47.01)	1,435 (56.50)	263 (10.35)	899 (35.39)	908 (35.75)	1,589 (62.56)

mm (in.)

Symbol	Name	Hole dia.	Symbol	Name	Hole dia.
A, a	Front fender installation nut	6 (0.24) nut	I	Hood lock support installation nut	6 (0.24) nut
B, b	Front spring support hole-inner	12.5 (0.492)	J, j	Front bumper reinforcement installation nut	10 (0.39) nut
C, c	Hood hinge installation nut-rear	8 (0.31) nut	K, k	Fender apron plate standard hole	10 (0.39)
D	Wire harness clamp installation hole	$\frac{12 \times 7}{0.47 \times 0.28}$	L, l	Front fender apron extension standard hole	10 (0.39)
E, e	Front side member standard hole	18 (0.71)	M, m	Radiator upper support installation nut	6 (0.24) nut
F, f	Front side member standard hole	10 (0.39)	N, n	Front fender installation nut	6 (0.24) nut
G, g	Radiator upper support installation nut	6 (0.24) nut	O, o	Front fender installation nut	6 (0.24) nut
H, h	Radiator side deflector installation hole	$\frac{10 \times 8}{0.39 \times 0.31}$	—	—	—

BODY LOWER BACK OUTER PANEL (ASSY)**REPLACEMENT**

F15017-A

REMOVAL

F15017

POINT

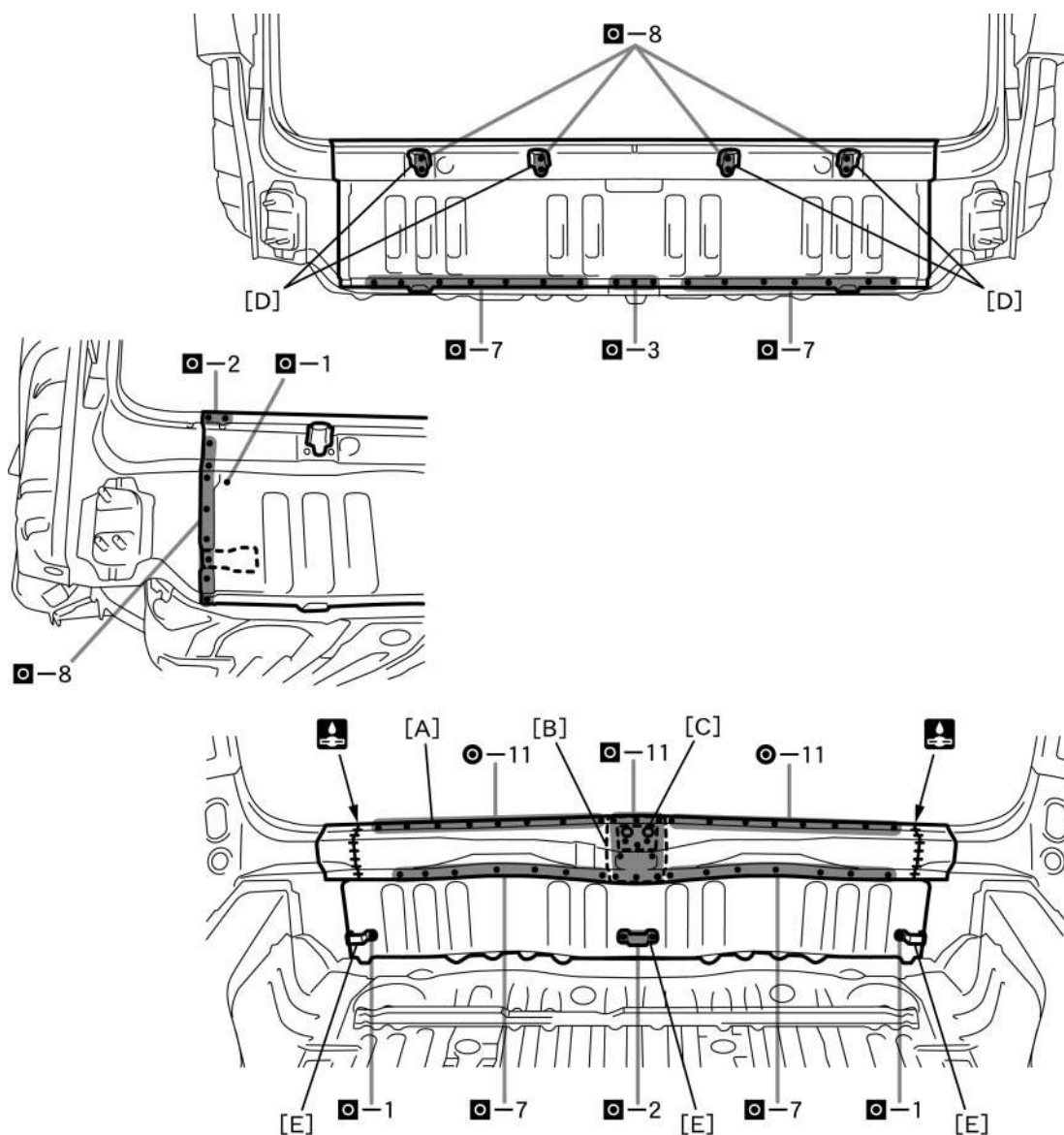
- 1 Remove the [A] at the same time.

PART NAME

[A] Body Lower Back Inner Panel
60mm (2.36in.)

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.



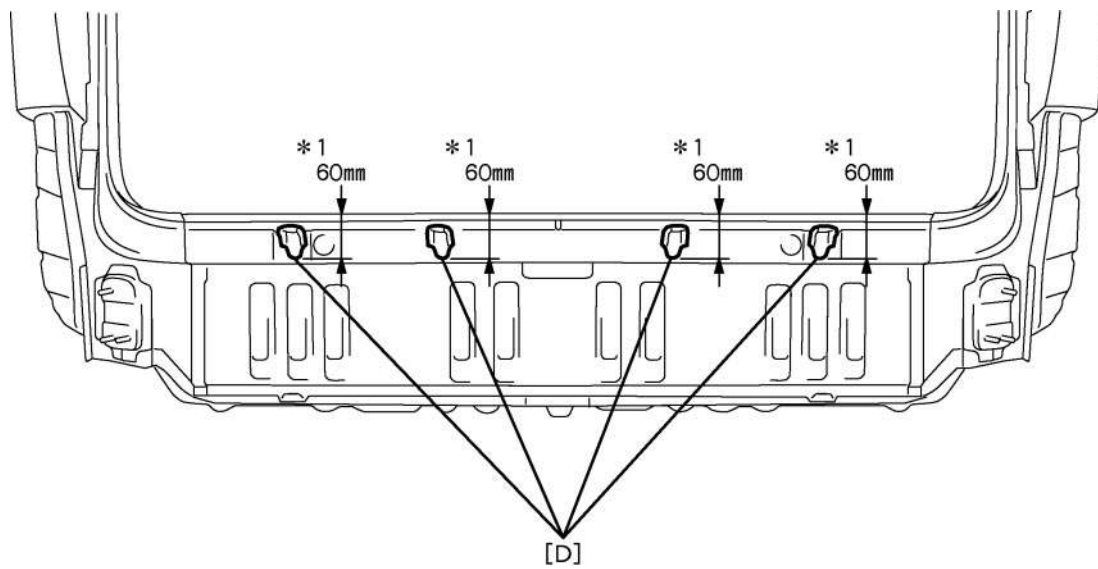
F15018

POINT

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

PART NAME

- | | |
|---------------------------------|--|
| [A] Body Lower Back Inner Panel | [B] Back Door Lock Striker Reinforcement |
| [C] Door Lock Striker Retainer | [D] Rear Bumper Upper Center Retainer |
| [E] Lower Back Trim Retainer | |



F15019

POINT

1 *1: The value is reference value.

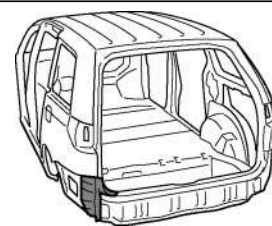
PART NAME

[D] Rear Bumper Upper Center Retainer
60mm (2.36in.)

BODY LOWER BACK PANEL REINFORCEMENT (ASSY)

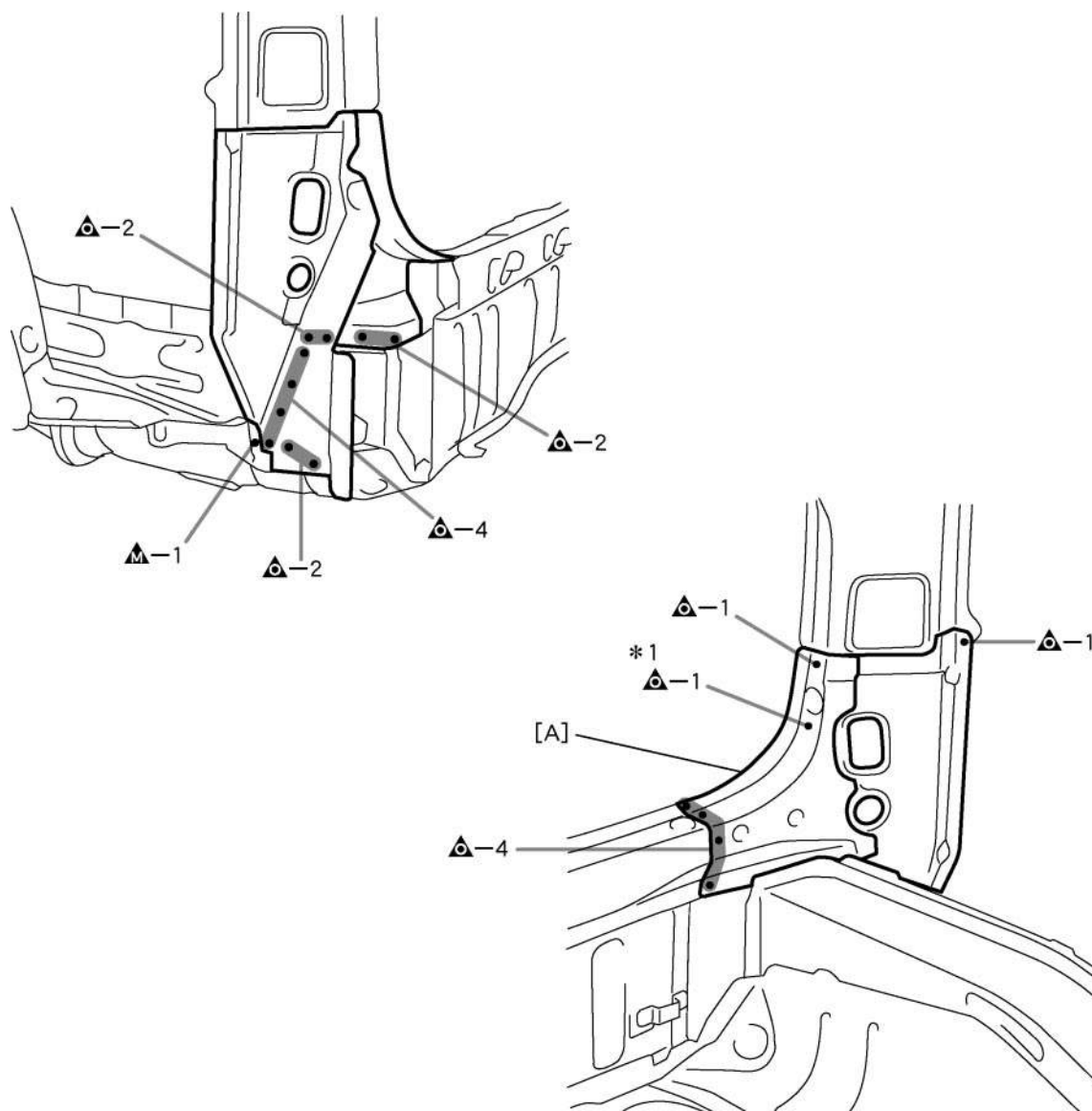
REPLACEMENT

With the back door opening lower gusset removed.



F15013-A

REMOVAL



F15013

POINT

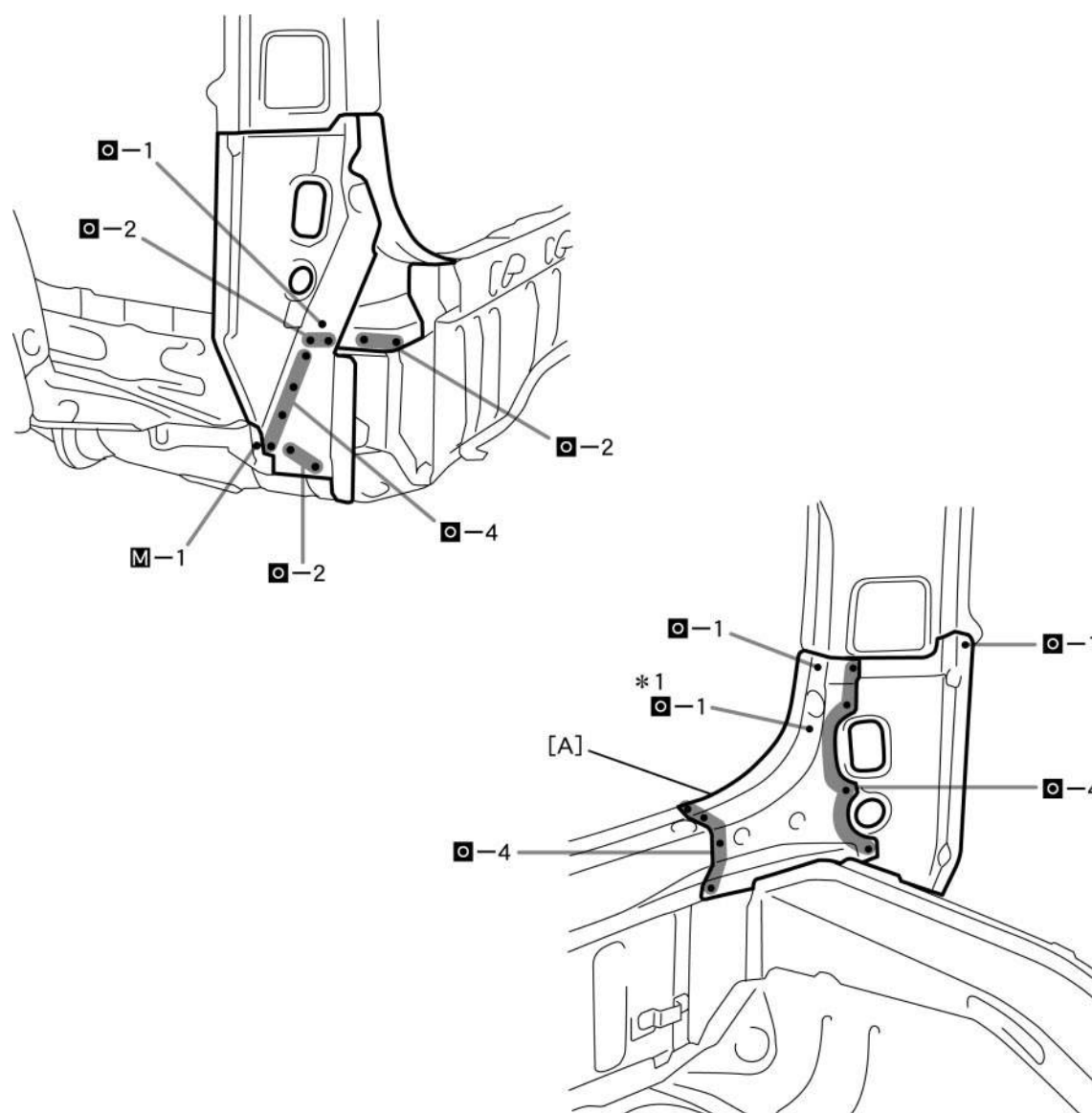
- 1 Remove the [A] at the same time.
- 2 *1: RH Only

PART NAME

[A] Lower Back Side 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.



F15014

POINT

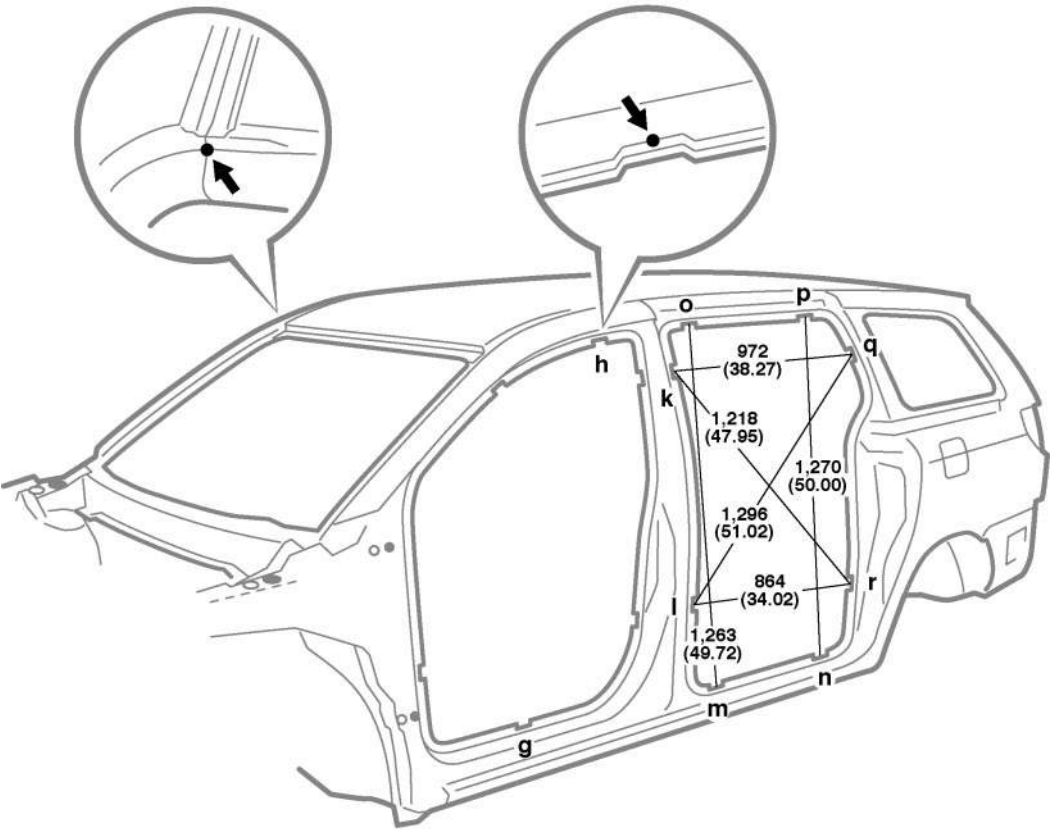
1 *1: RH Only

PART NAME

[A] Lower Back Side Panel

BODY OPENING AREAS (Side View: Rear)

(Three-Dimensional Distance)



Vehicle Dimensions Left ↔ Right

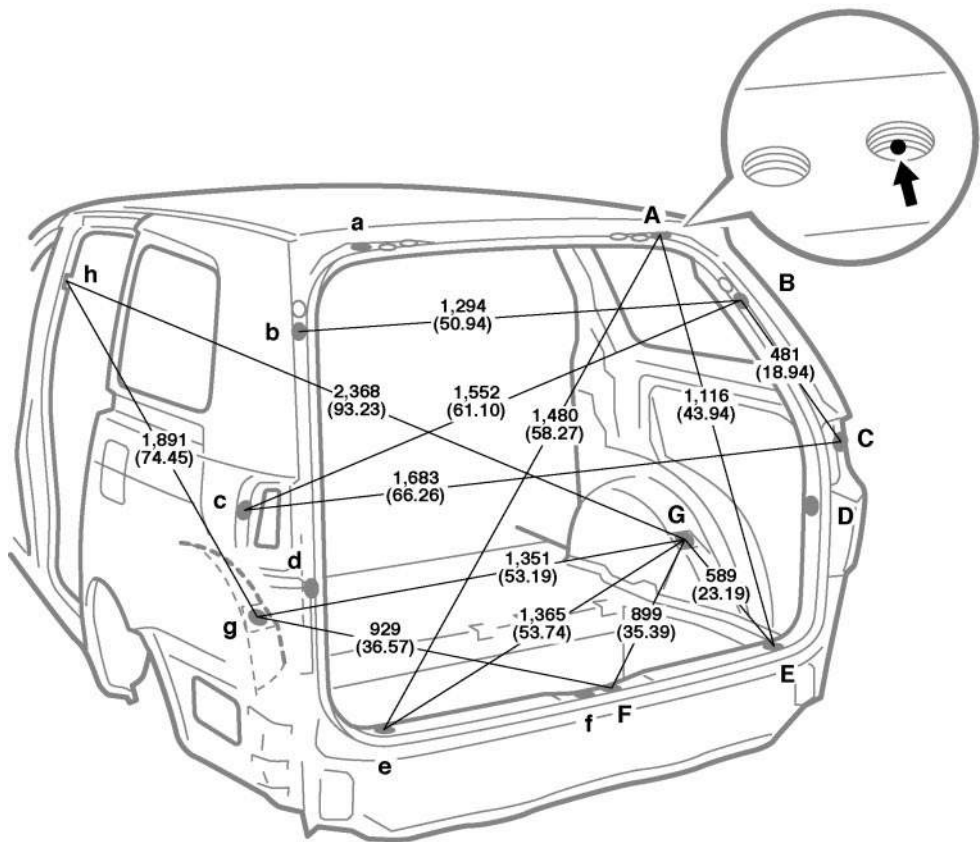
K-k	L-l	M-m	N-n	O-o	P-p	Q-q	R-r
1,506 (59.29)	1,708 (67.24)	1,759 (69.25)	1,752 (68.98)	1,391 (54.76)	1,383 (54.45)	1,498 (58.98)	1,755 (69.09)
G-n or g-N	H-p or h-P	K-q or k-Q	L-p or l-P	L-r or l-R	O-r or o-R	Q-r or q-R	
2,187 (86.10)	1,738 (68.43)	1,789 (70.43)	1,994 (78.50)	1,935 (76.18)	1,994 (78.50)	1,839 (72.40)	

mm (in.)

Symbol	Name	Hole dia.	Symbol	Name	Hole dia.
G, g	Rocker panel assembly mark	—	N, n	Rocker panel assembly mark	—
H, h	Roof side rail assembly mark	—	O, o	Roof side rail assembly mark	—
K, k	Center body pillar assembly mark	—	P, p	Roof side rail assembly mark	—
L, l	Center body pillar assembly mark	—	Q, q	Quarter panel assembly mark	—
M, m	Rocker panel assembly mark	—	R, r	Quarter panel assembly mark	—

BODY OPENING AREAS (Rear View)

(Three-Dimensional Distance)



Vehicle Dimensions Left ↔ Right

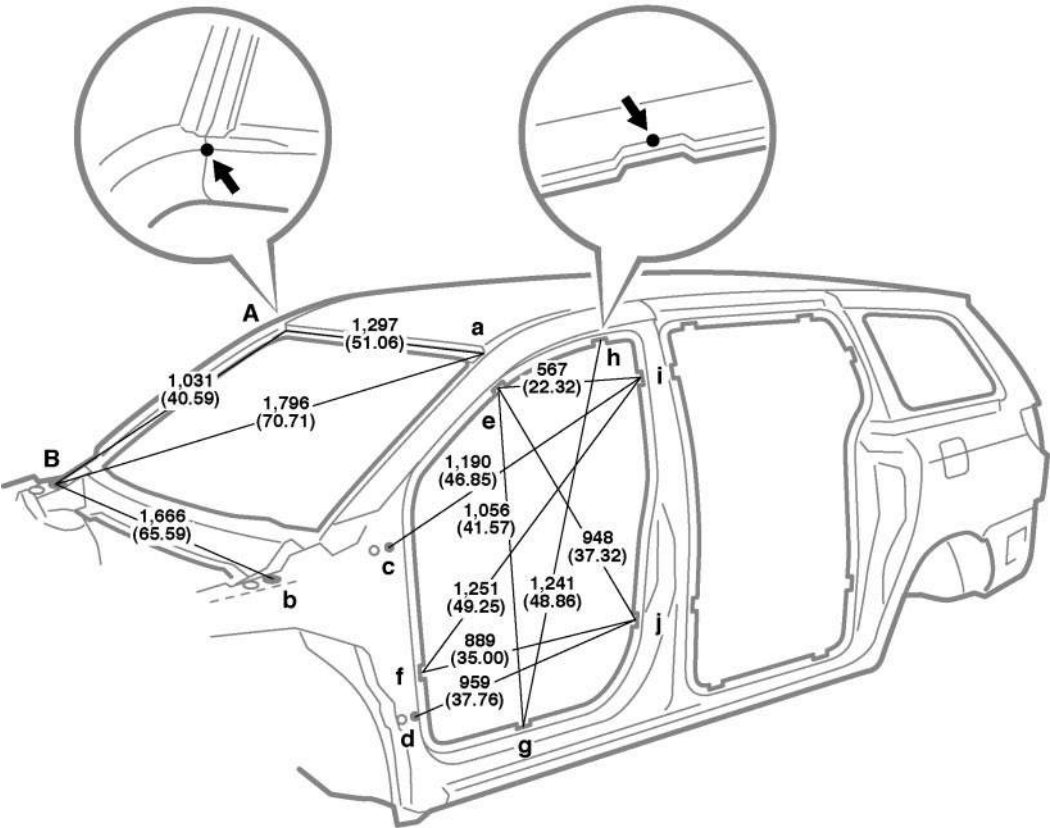
D-d
1,400 (55.12)

mm (in.)

Symbol	Name	Hole dia.	Symbol	Name	Hole dia.
A, a	Back door hinge installation hole-outer	12 (0.47)	E, e	Back door scuff plate installation hole	8.5 (0.335)
B, b	Back door damper stay installation nut-lower	8 (0.31) nut	F, f	Back door lock striker installation nut	8 (0.31) nut
C, c	Quarter Panel standard hole	13 (0.51)	G, g	Rear shock absorber installation hole	24 (0.94)
D, d	Quarter trim installation hole	8.5 (0.335)	H, h	Center body pillar assembly mark	—

BODY OPENING AREAS (Side View: Front)

(Three-Dimensional Distance)



Vehicle Dimensions Left ↔ Right

E-e	F-f	G-g	H-h	I-i	J-j
1,468 (57.80)	1,658 (65.28)	1,658 (65.28)	1,416 (55.75)	1,521 (59.88)	1,658 (65.28)

E-f or e-F	E-g or e-G	E-i or e-I	F-i or f-I	F-j or f-J	G-h or g-H	I-j or i-J
1,800 (70.87)	1,884 (74.17)	1,598 (62.91)	2,021 (79.57)	1,881 (74.06)	1,971 (77.60)	1,781 (70.12)

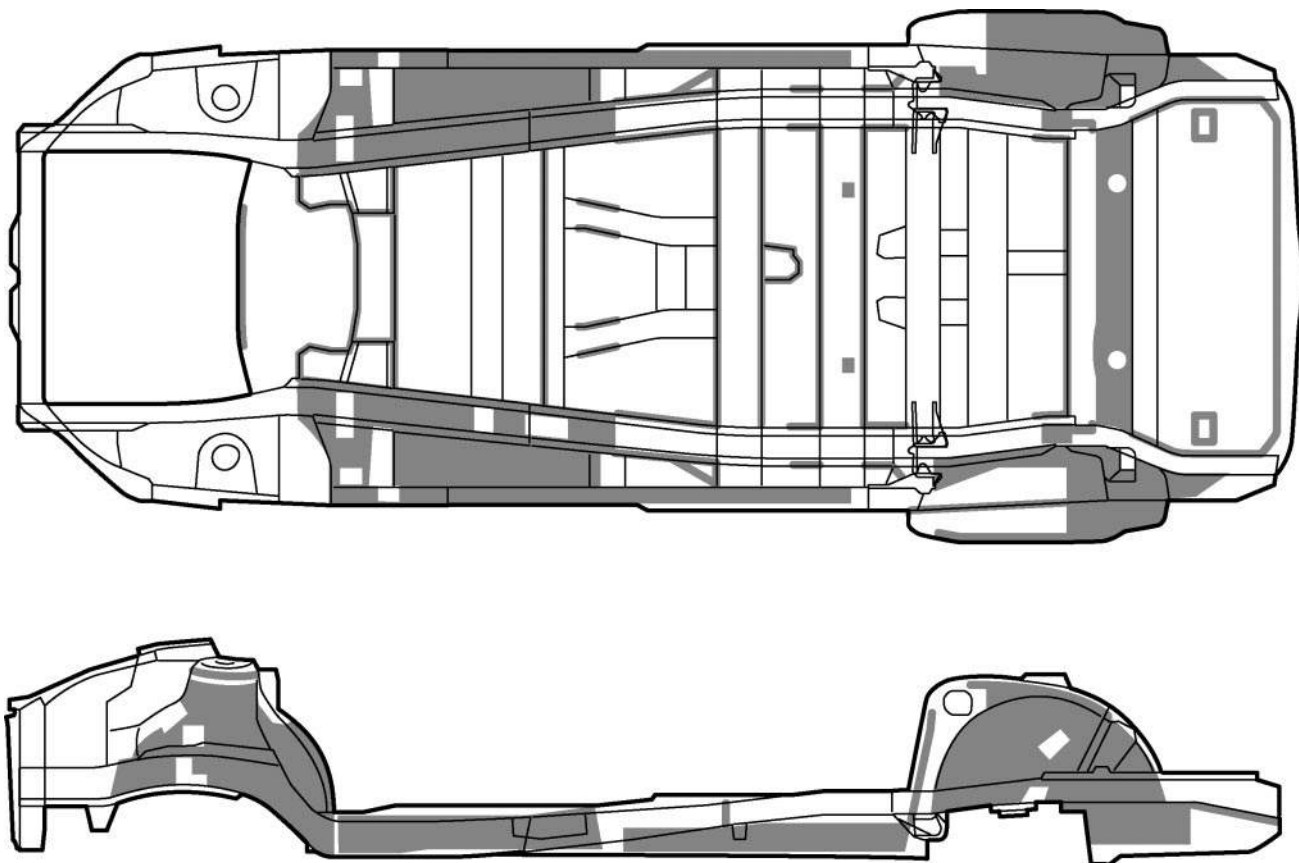
mm (in.)

Symbol	Name	Hole dia.	Symbol	Name	Hole dia.
A, a	Roof panel/Front body pillar adjoining portion	—	F, f	Front body pillar assembly mark	—
B, b	Hood hinge installation nut	8 (0.31) nut	G, g	Rocker panel assembly mark	—
C, c	Front door hinge installation nut	8 (0.31) nut	H, h	Roof side rail assembly mark	—
D, d	Front door hinge installation nut	8 (0.31) nut	I, i	Center body pillar assembly mark	—
E, e	Front body pillar assembly mark	—	J, j	Center body pillar assembly mark	—

BODY PANEL UNDERCOATING AREAS

HINT:

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



F15044

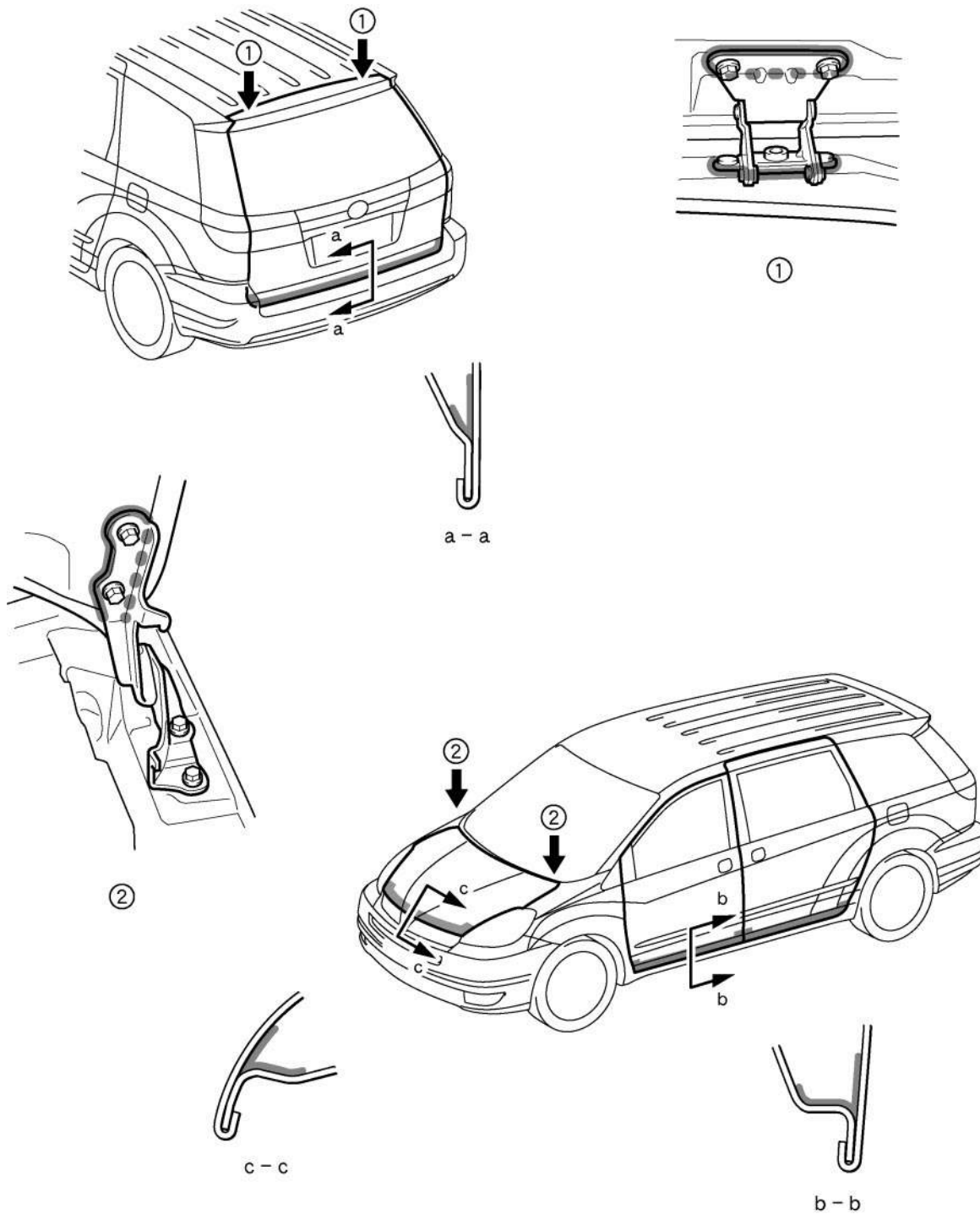
REFERENCE

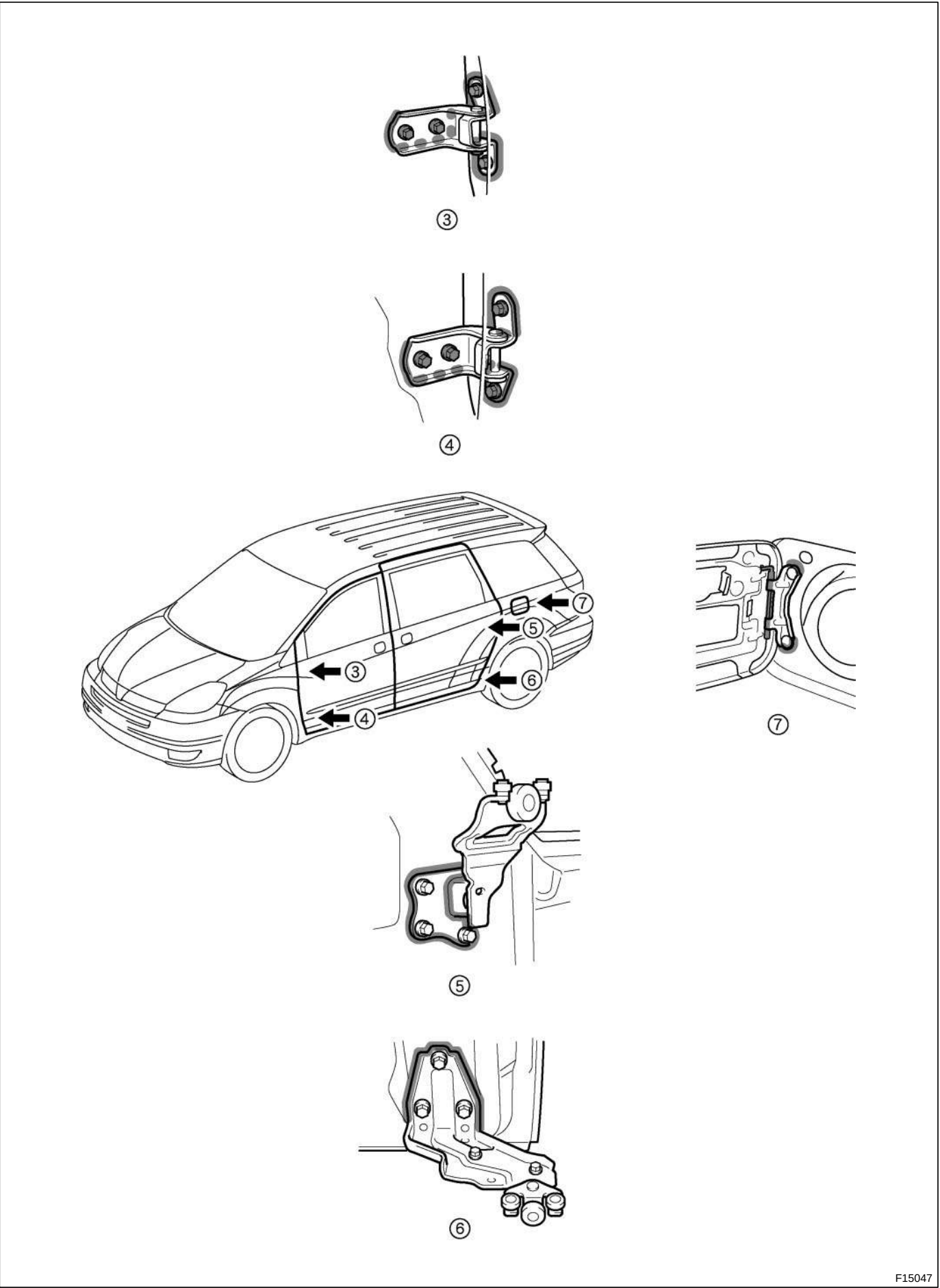
Referring to the notes above, undercoating should be applied according to the specifications for your country.

BODY PANEL ANTI-RUST AGENT (WAX) APPLICATION AREAS

HINT:

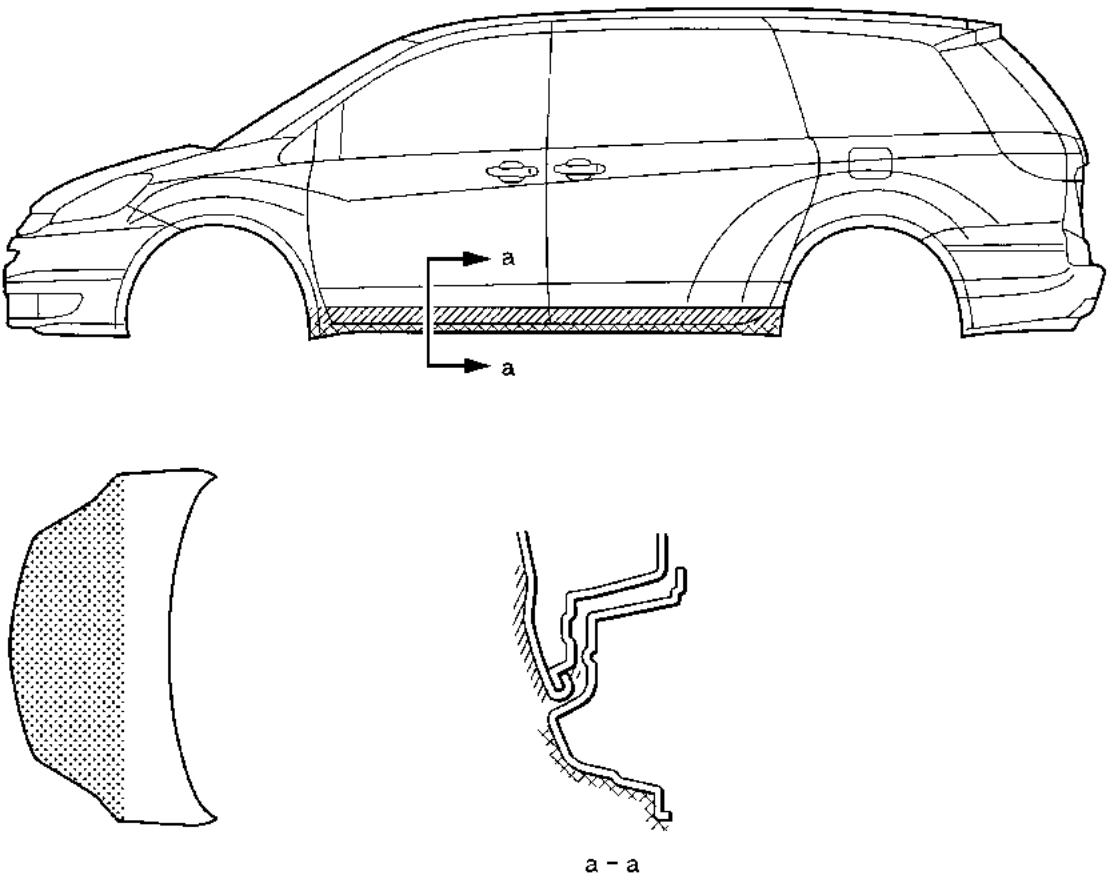
- 1) Whenever adjusting the doors and hoods, apply anti-rust agent (wax) around the hinges.
- 2) Even if partially repairing a part, apply anti-rust agent (wax) over the entire application area of the part.
- 3) Wipe off the anti-rust agent immediately with a rag soaked in a grease, wax and silicone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





BODY PANEL ANTI-CHIPPING PAINT APPLICATION AREAS

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



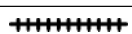
F15049

	PVC		Urethan		Soft - Chip (Poly Olefine)
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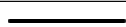
BODY PANEL SEALING AREAS

HINT:

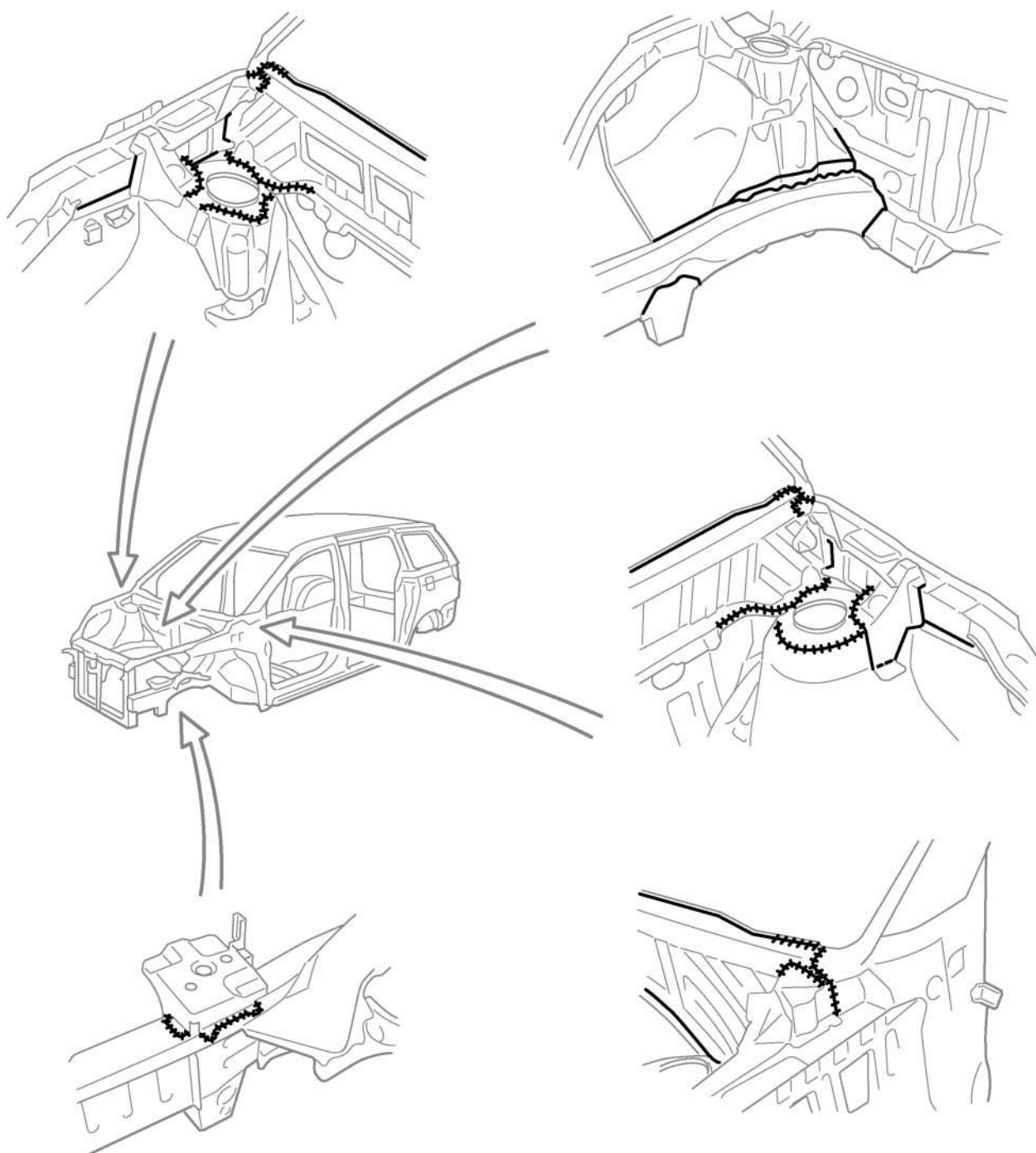
- 1) Prior to applying body sealer, clean the area with a rag soaked in grease, wax and silicone remover.
- 2) If weld-through primer was used, first wipe off any excess and coat with anti-corrosion primer before applying body sealer.
- 3) Wipe off excess body sealer with a rag soaked in a grease, wax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



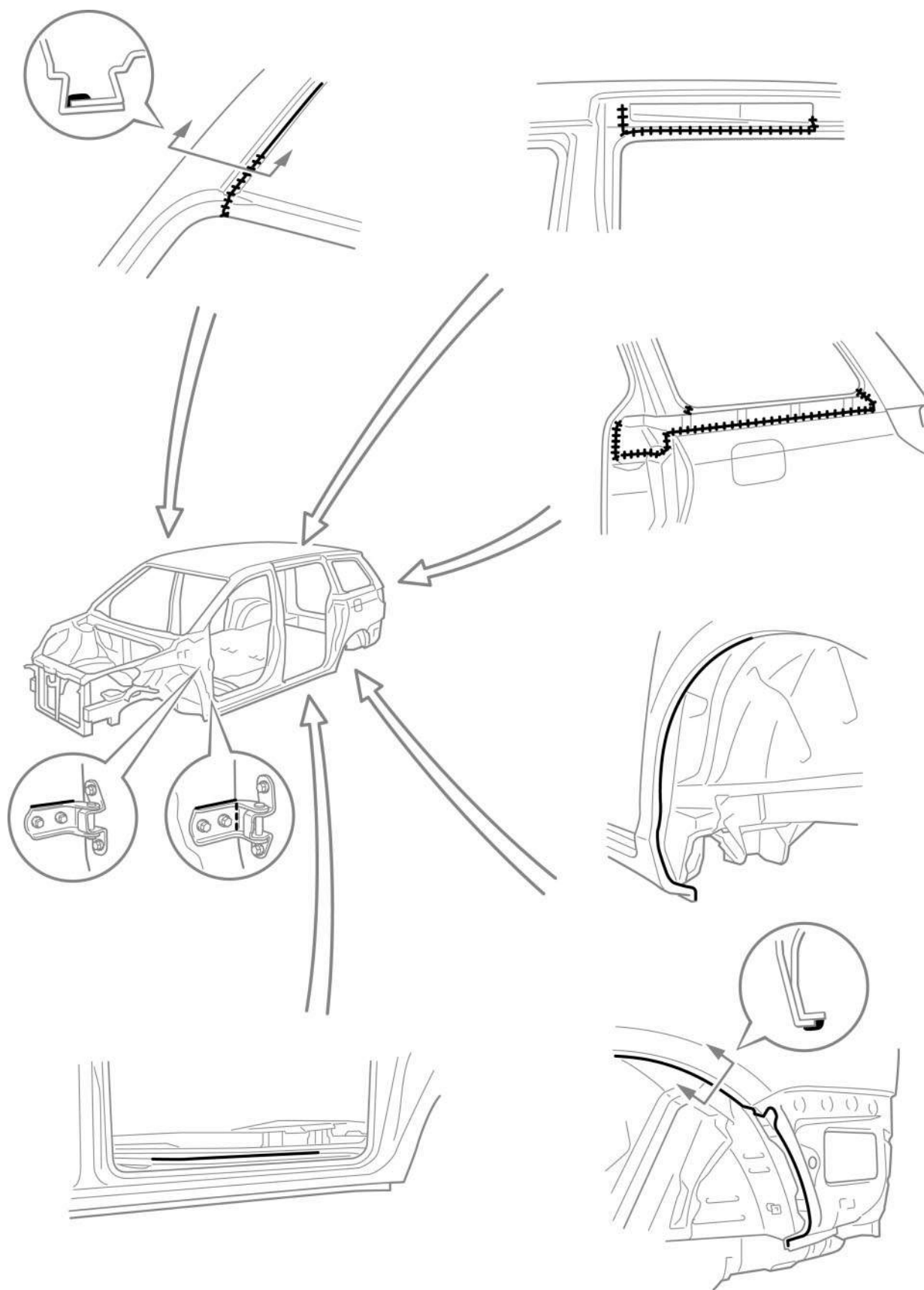
Flat Finishing



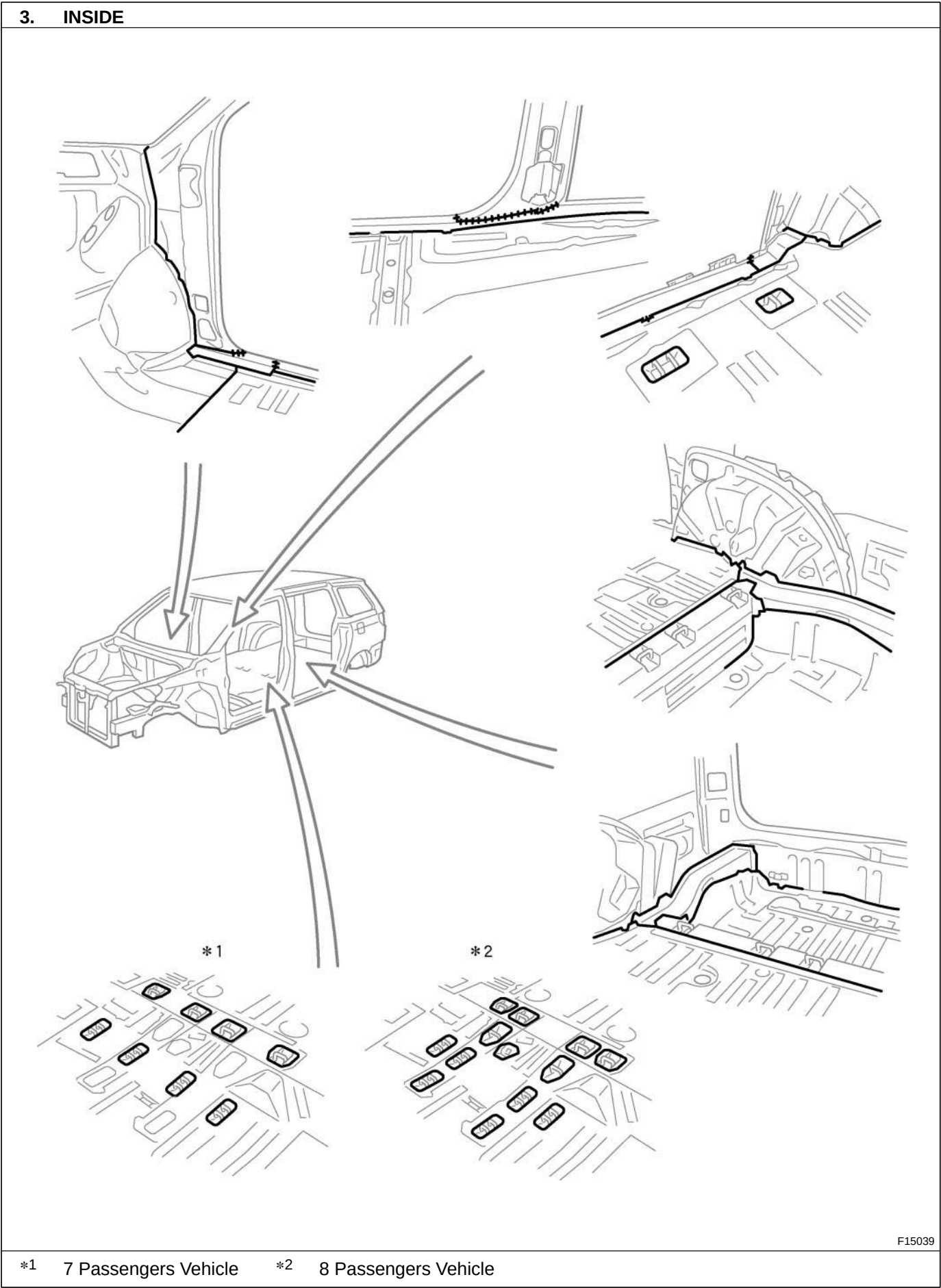
No Flat Finishing

1. ENGINE COMPARTMENT

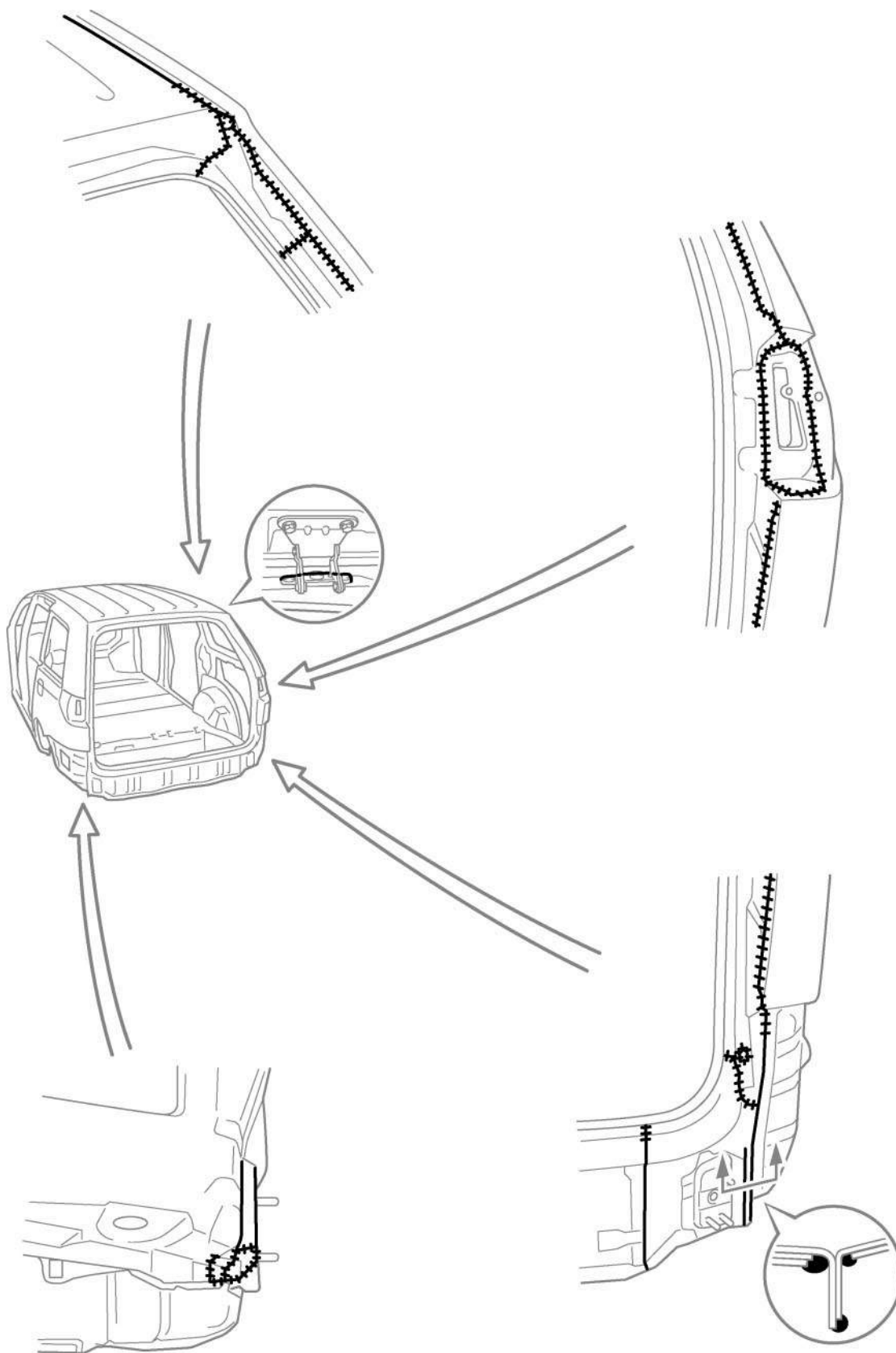
2. OUTSIDE



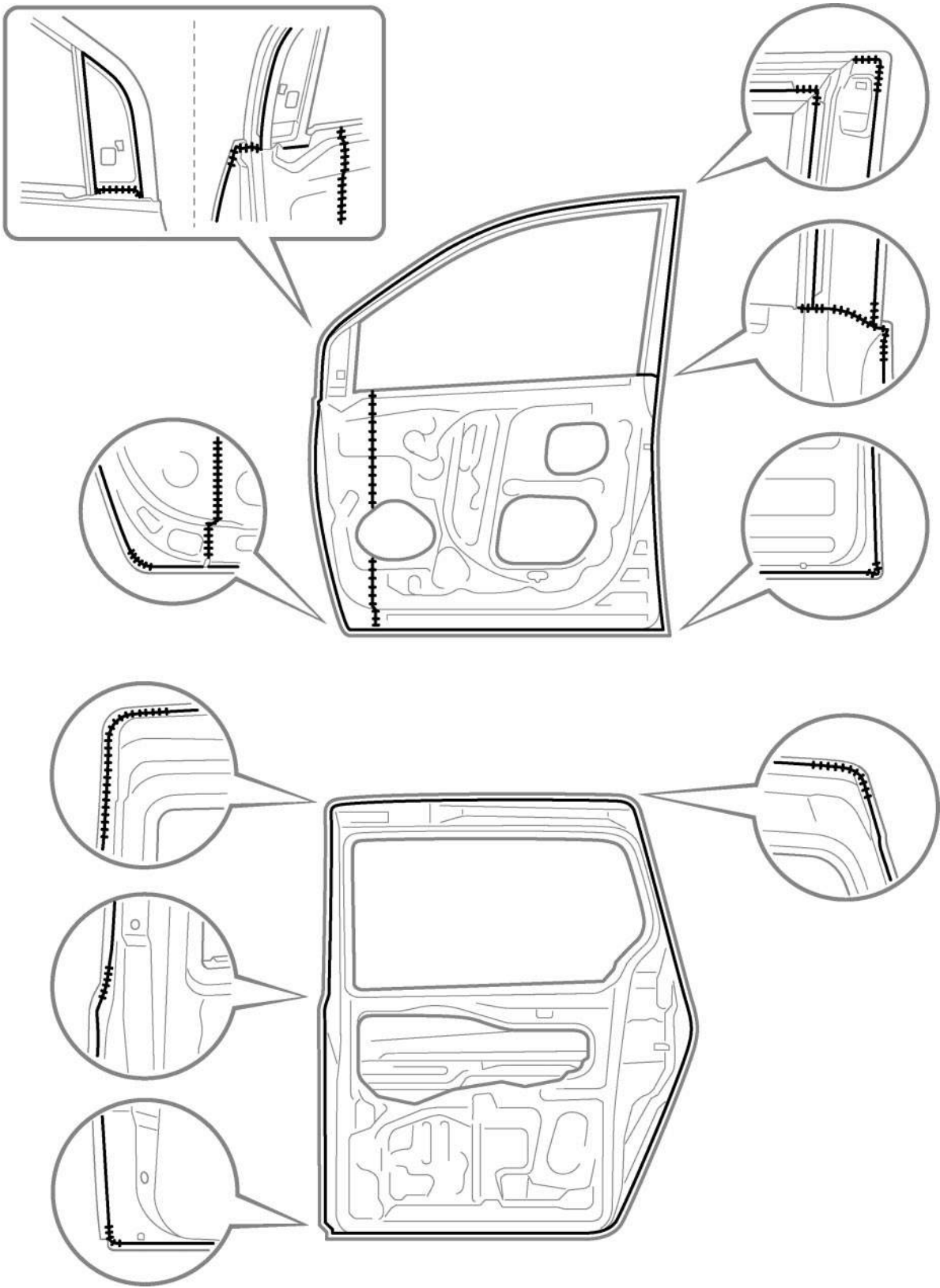
3. INSIDE

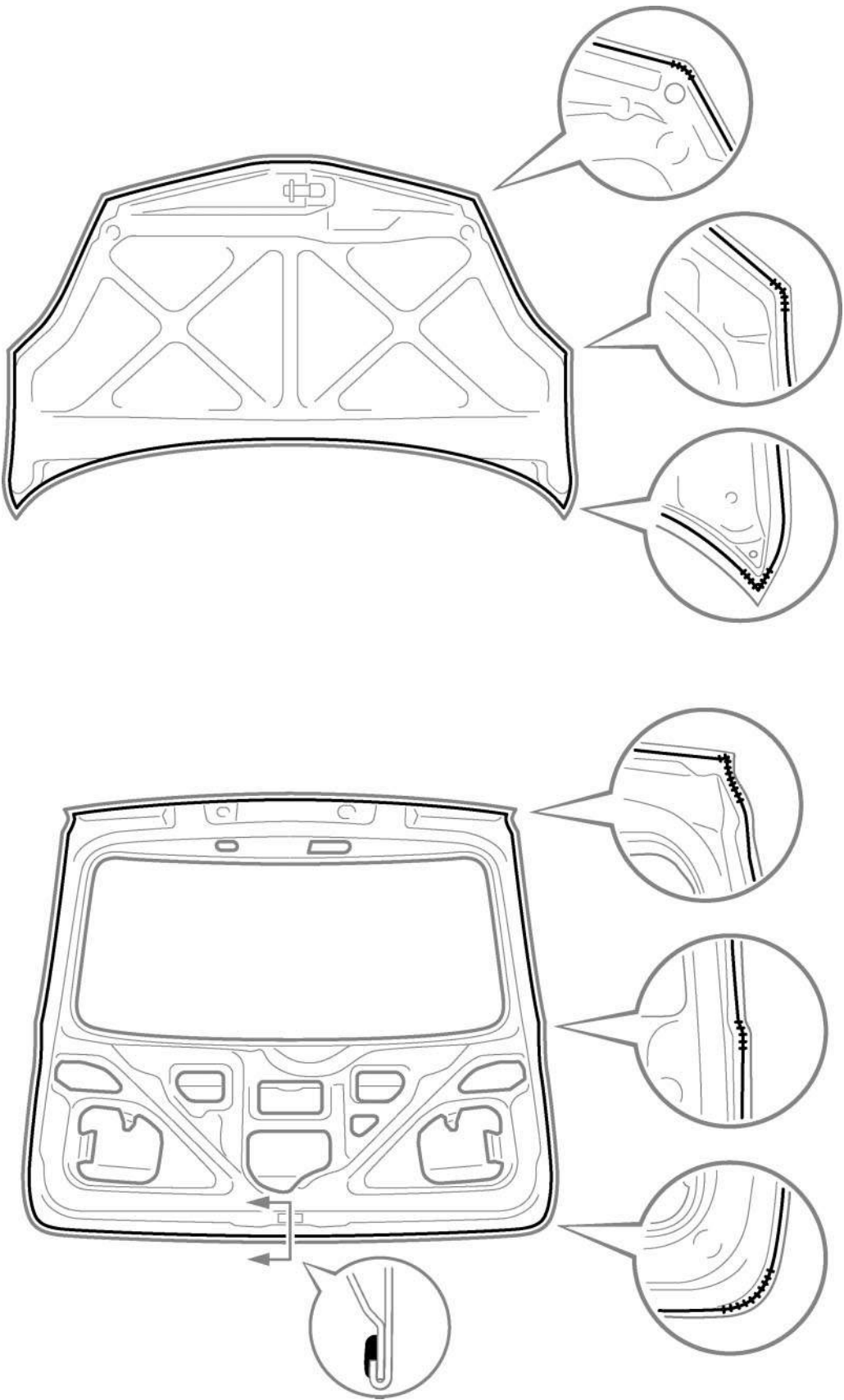


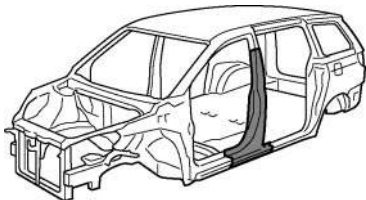
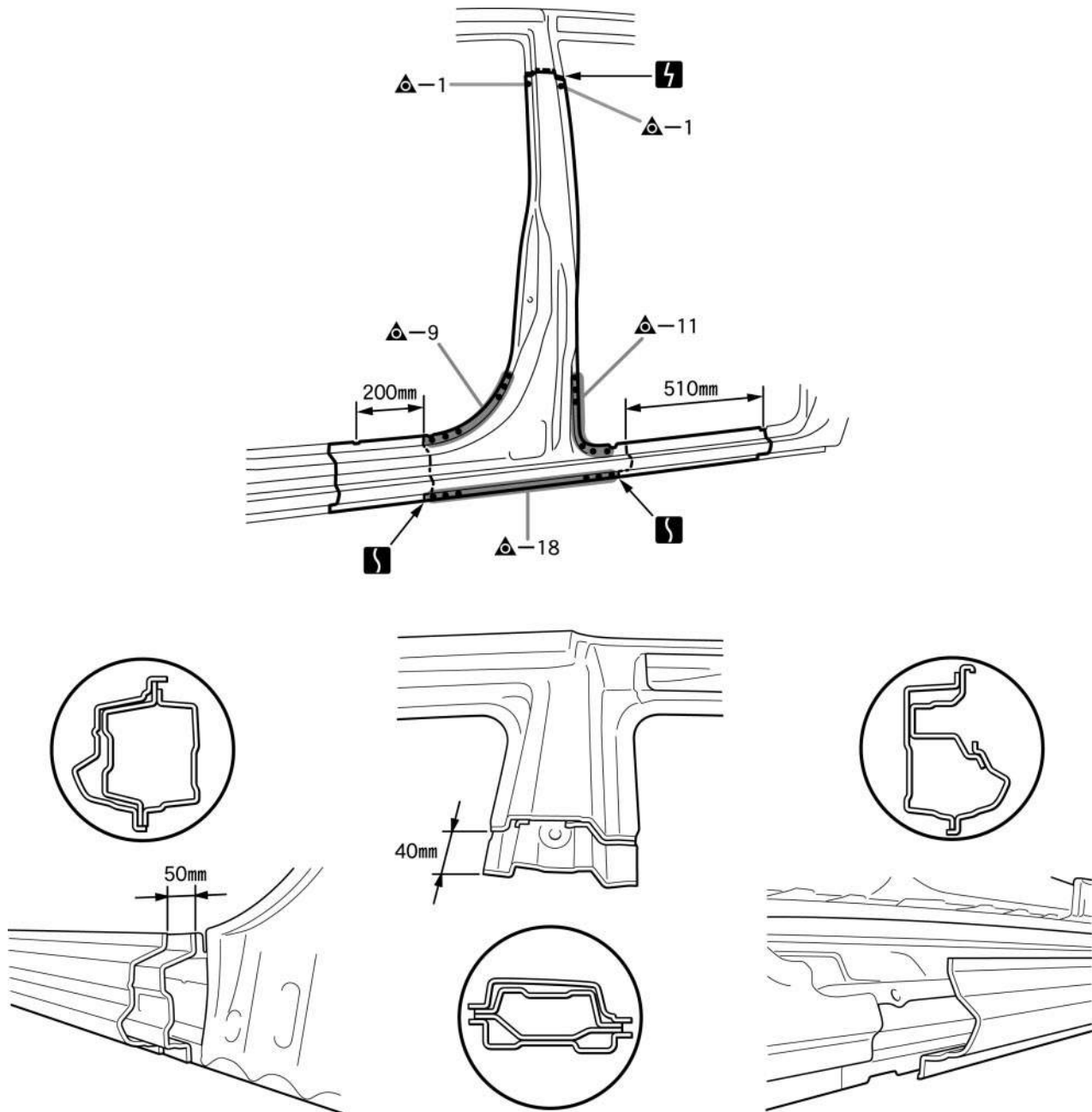
4. REAR LUGGAGE COMPARTMENT

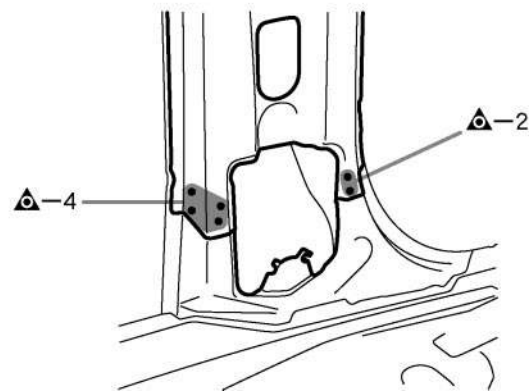
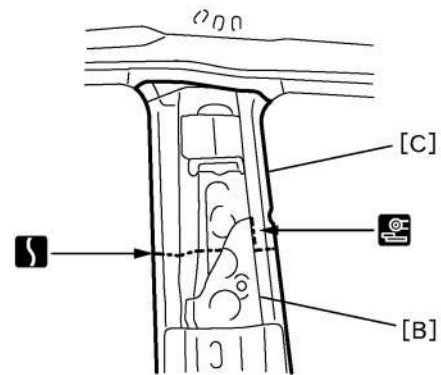
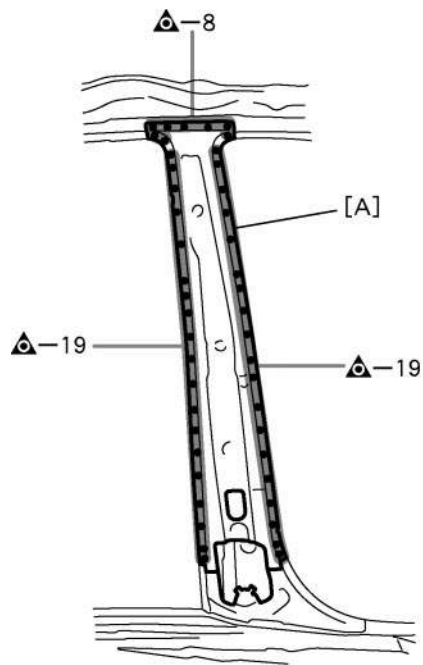


5. DOOR PARTS





CENTER BODY PILLAR (CUT)		 F14979-A	
REPLACEMENT			
REMOVAL			
 F14979			
40mm (1.57in.)	50mm (1.97in.)	200mm (7.87in.)	510mm (20.08in.)



F14980

POINT

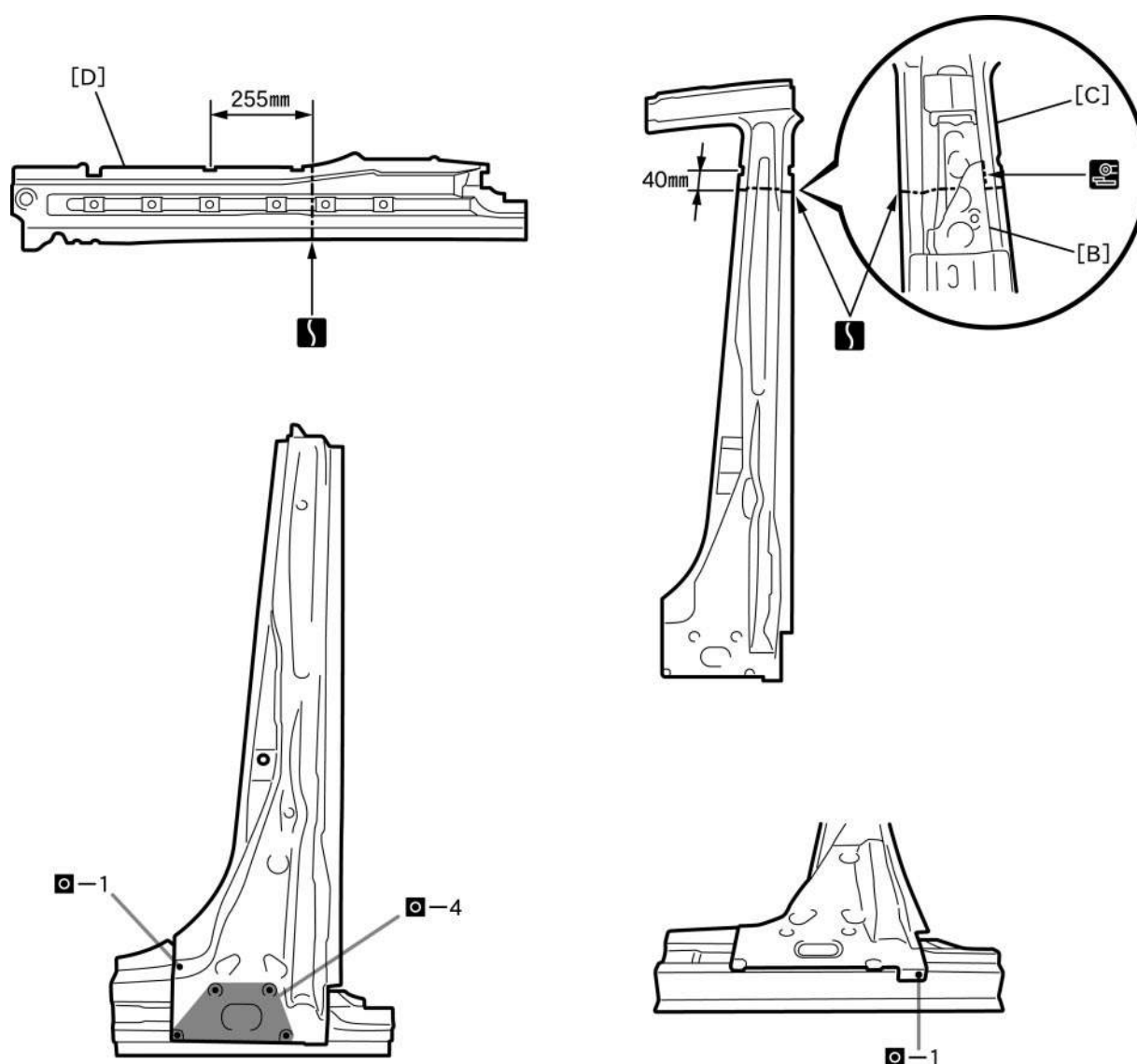
1 Separate the [B] and [C] at the welded part, at then remove the center body pillar.

PART NAME

[A] Center Body Inner Pillar [B] Center Body Pillar Center Reinforcement
[C] Center Body Pillar Outer Reinforcement

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.



F14981

POINT

- 1 Take care not to damage the internal reinforcement.

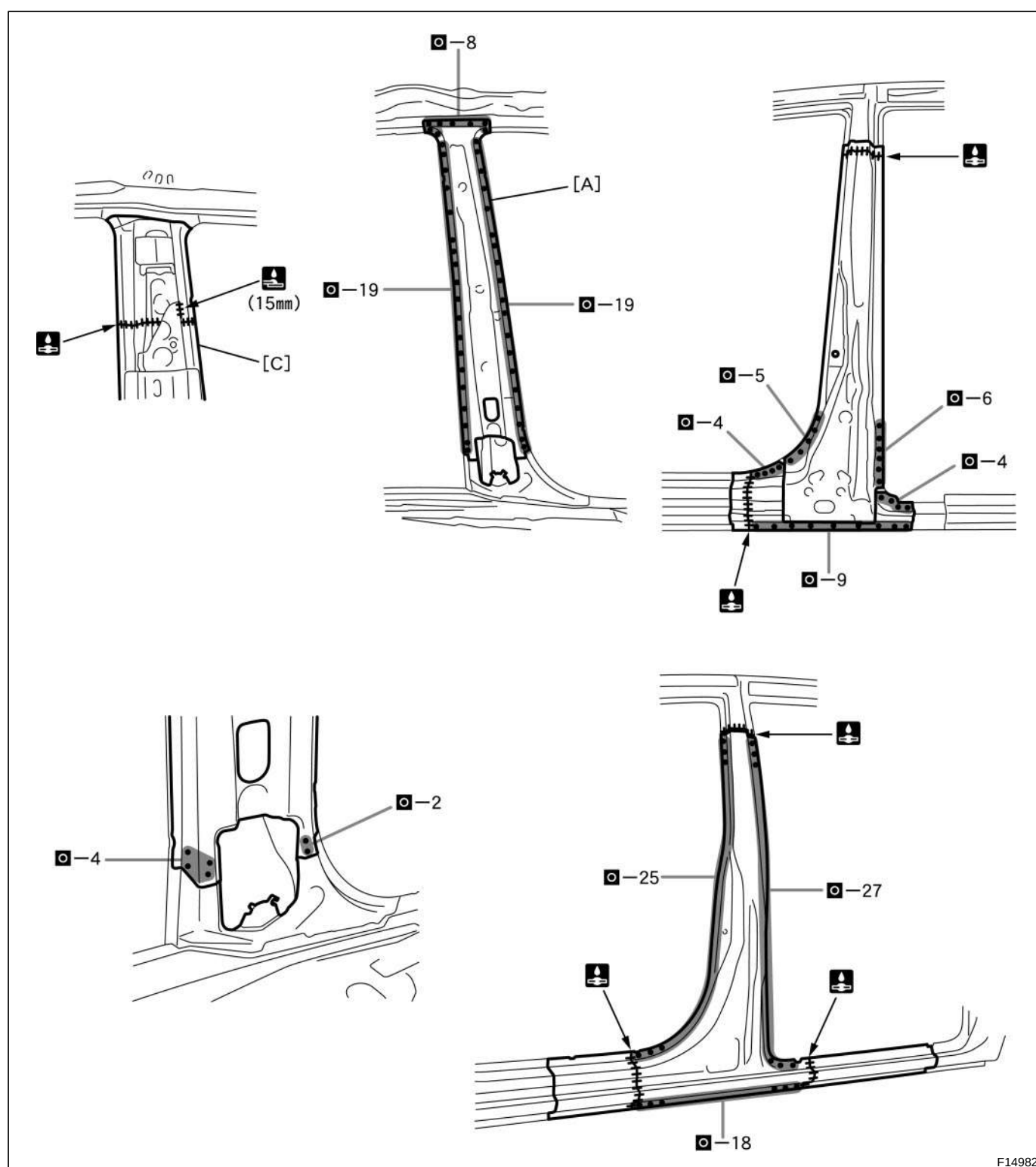
PART NAME

[B] Center Body Pillar Center Reinforcement [C] Center Body Pillar Outer Reinforcement

[D] Rocker Outer Reinforce

40mm (1.57in.)

255mm (10.04in.)



F14982

POINT

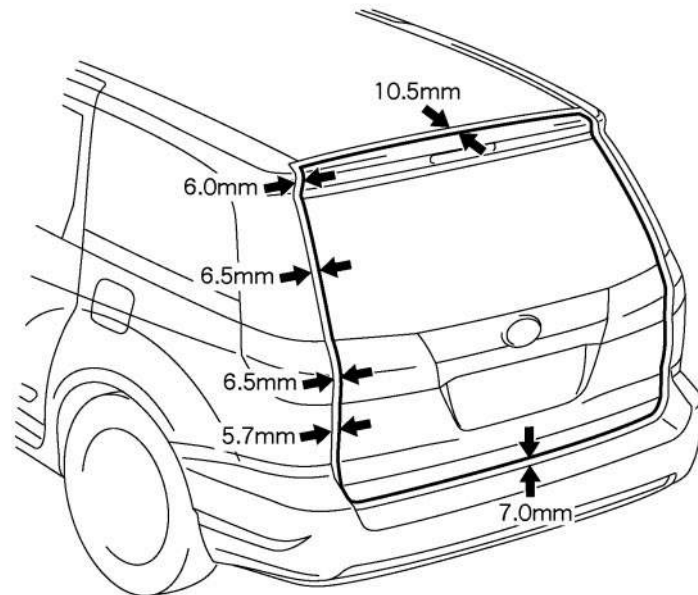
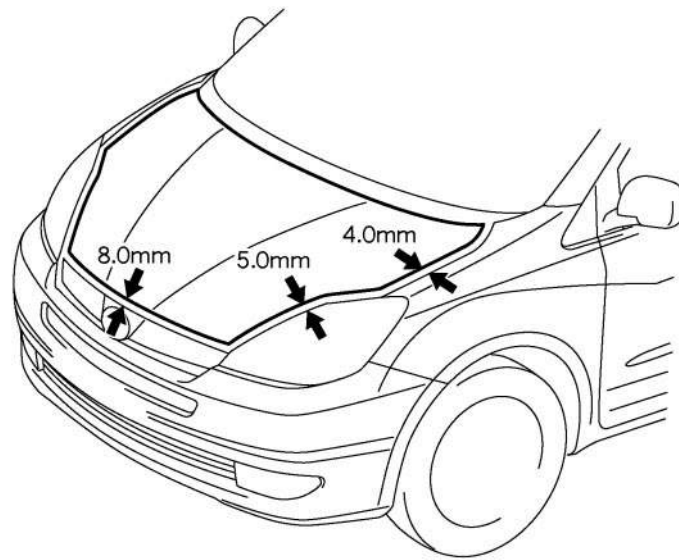
- 1 Inspect the fitting of the front door and slide door, etc., before welding, since this affects the appearance of the finish.
- 2 After welding the reinforcement to the vehicle side, install the outer panel.

PART NAME

[A] Center Body Inner Pillar [C] Center Body Pillar Outer Reinforcement

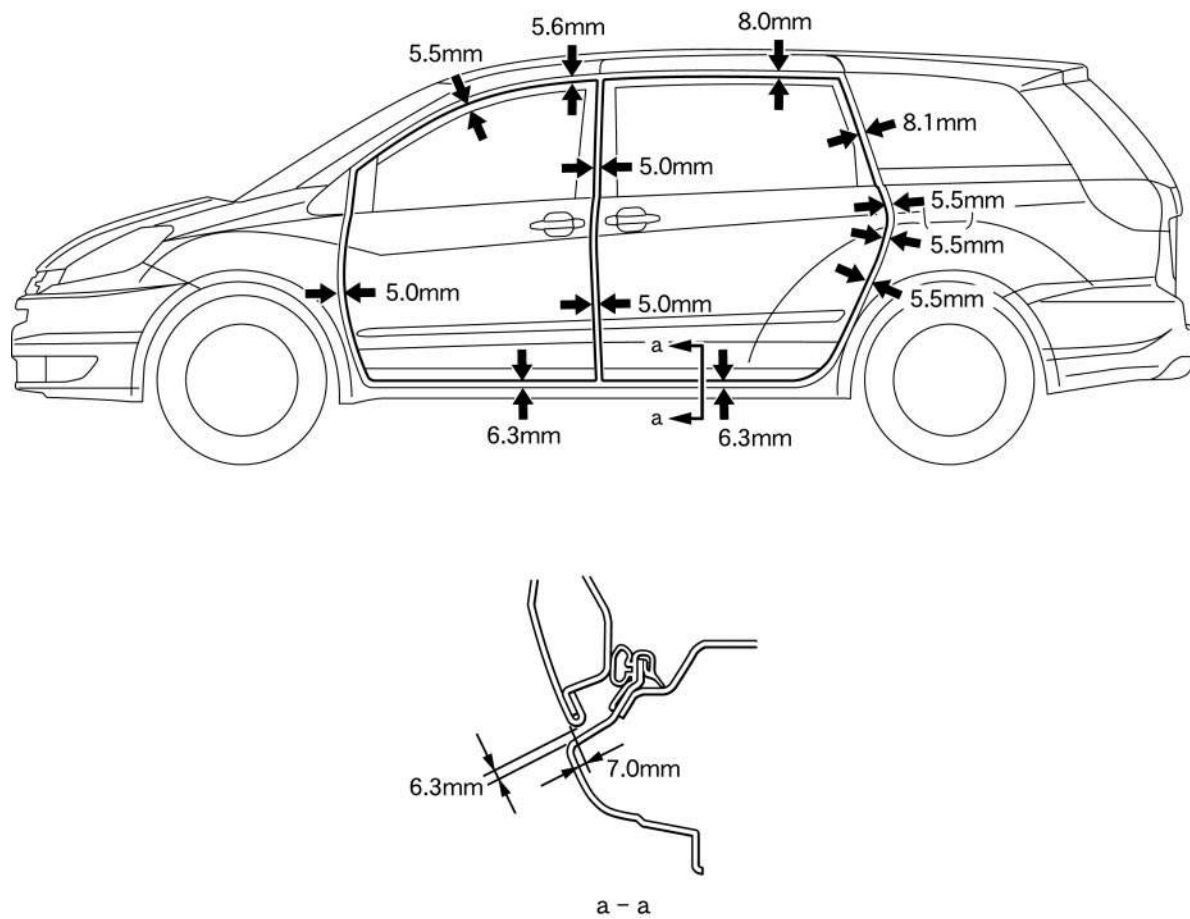
15mm (0.59in.)

FIT STANDARDS



F15050

4.0mm (0.157in.)	5.0mm (0.197in.)	5.7mm (0.224in.)
6.0mm (0.236in.)	6.5mm (0.256in.)	7.0mm (0.276in.)
10.5mm (0.413in.)		



F15051

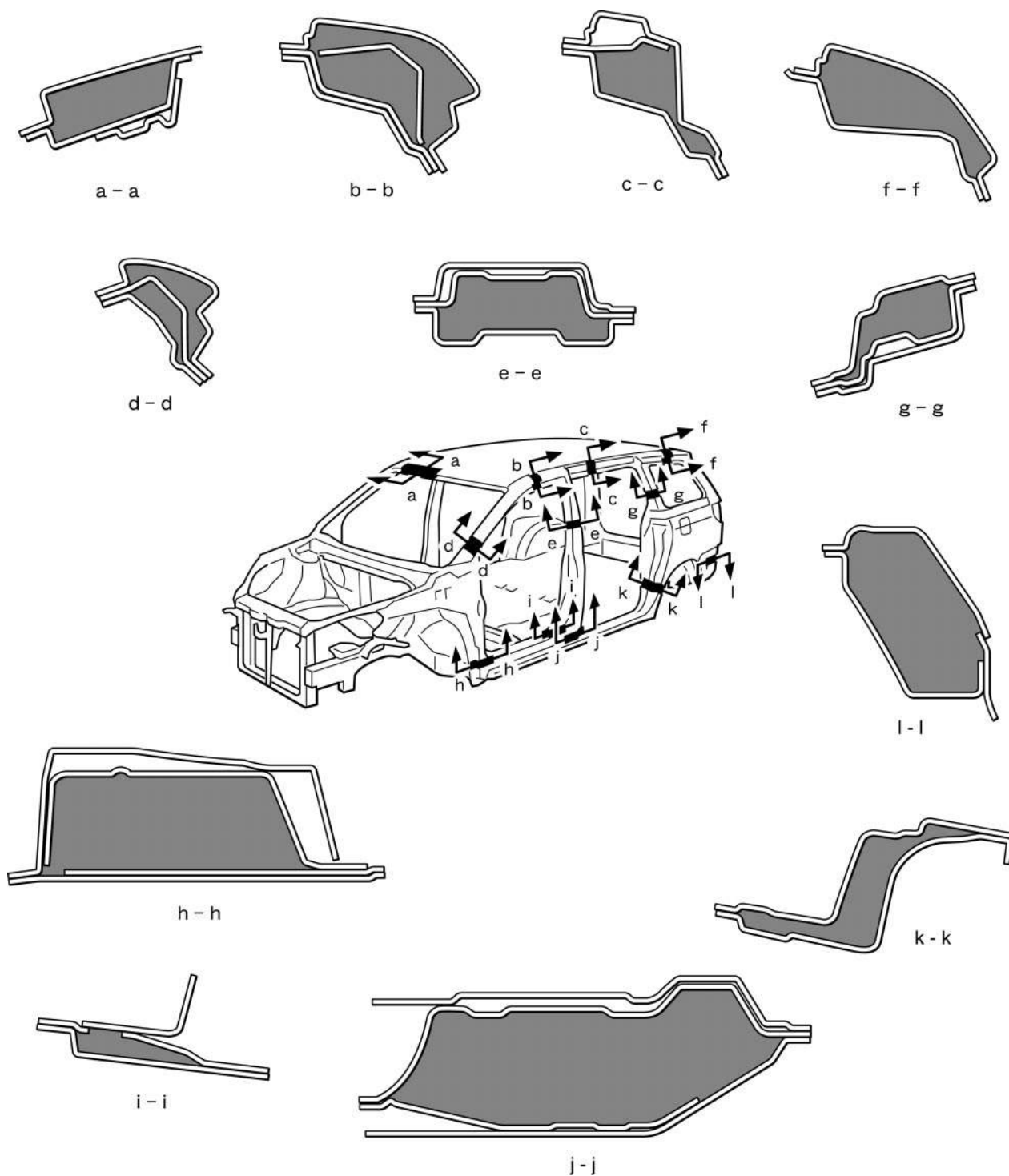
5.0mm (0.197in.)	5.5mm (0.217in.)	5.6mm (0.220in.)
6.3mm (0.248in.)	7.0mm (0.276in.)	8.0mm (0.315in.)
8.1mm (0.319in.)		

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.



FOREWORD

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

Applicable models: MCL20, 23, 25 series

This manual consists of body repair methods, exploded diagrams and illustrations of the body components and other information relating to body panel replacement such as handling precautions, etc. However, it should be noted that the front fenders of the TOYOTA 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.

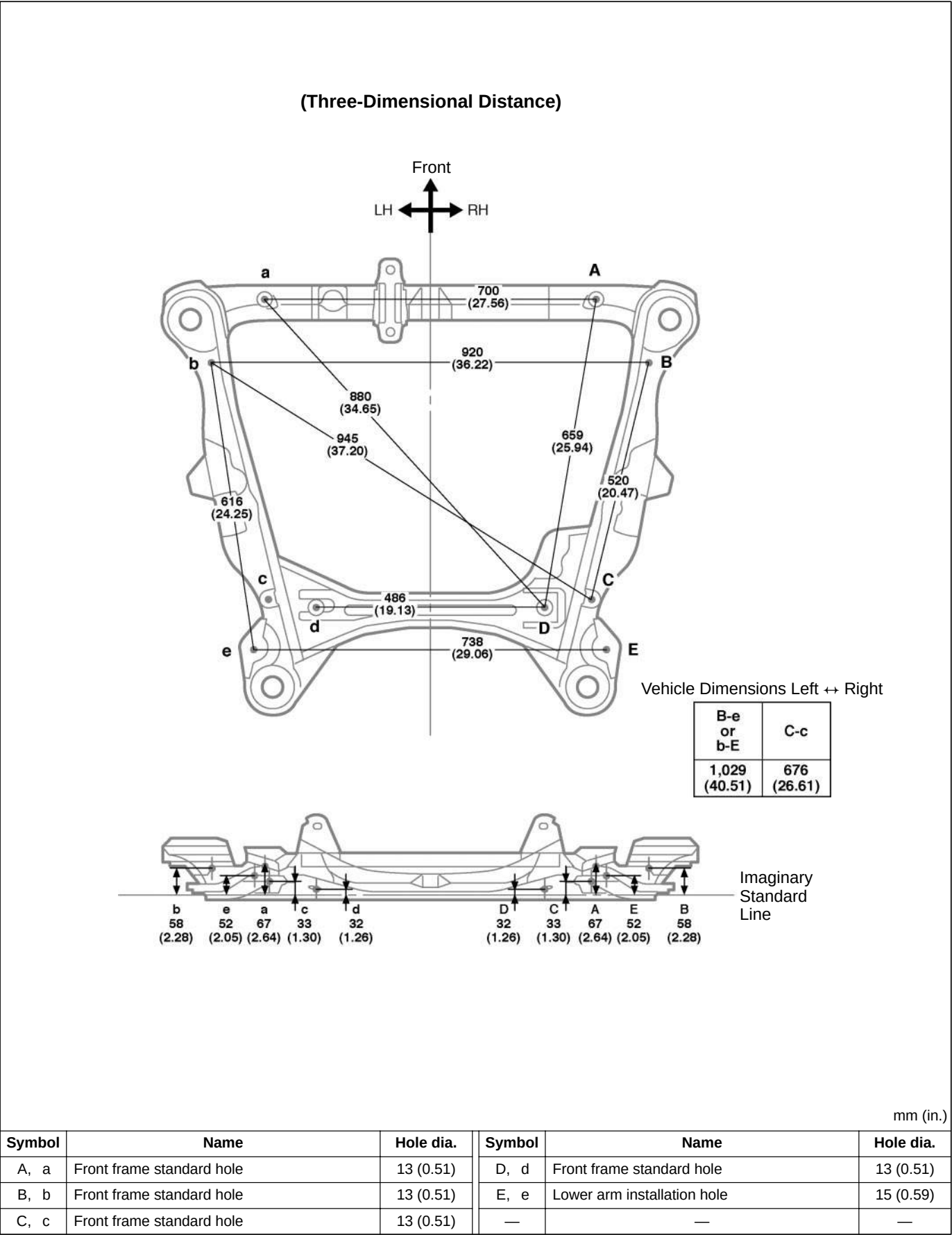
For the repair procedures and specifications other than collision-damaged body components of the TOYOTA SIENNA refer to the repair manuals.

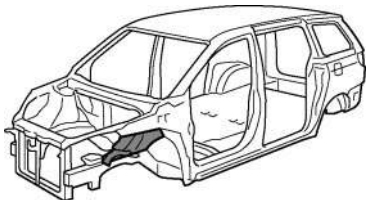
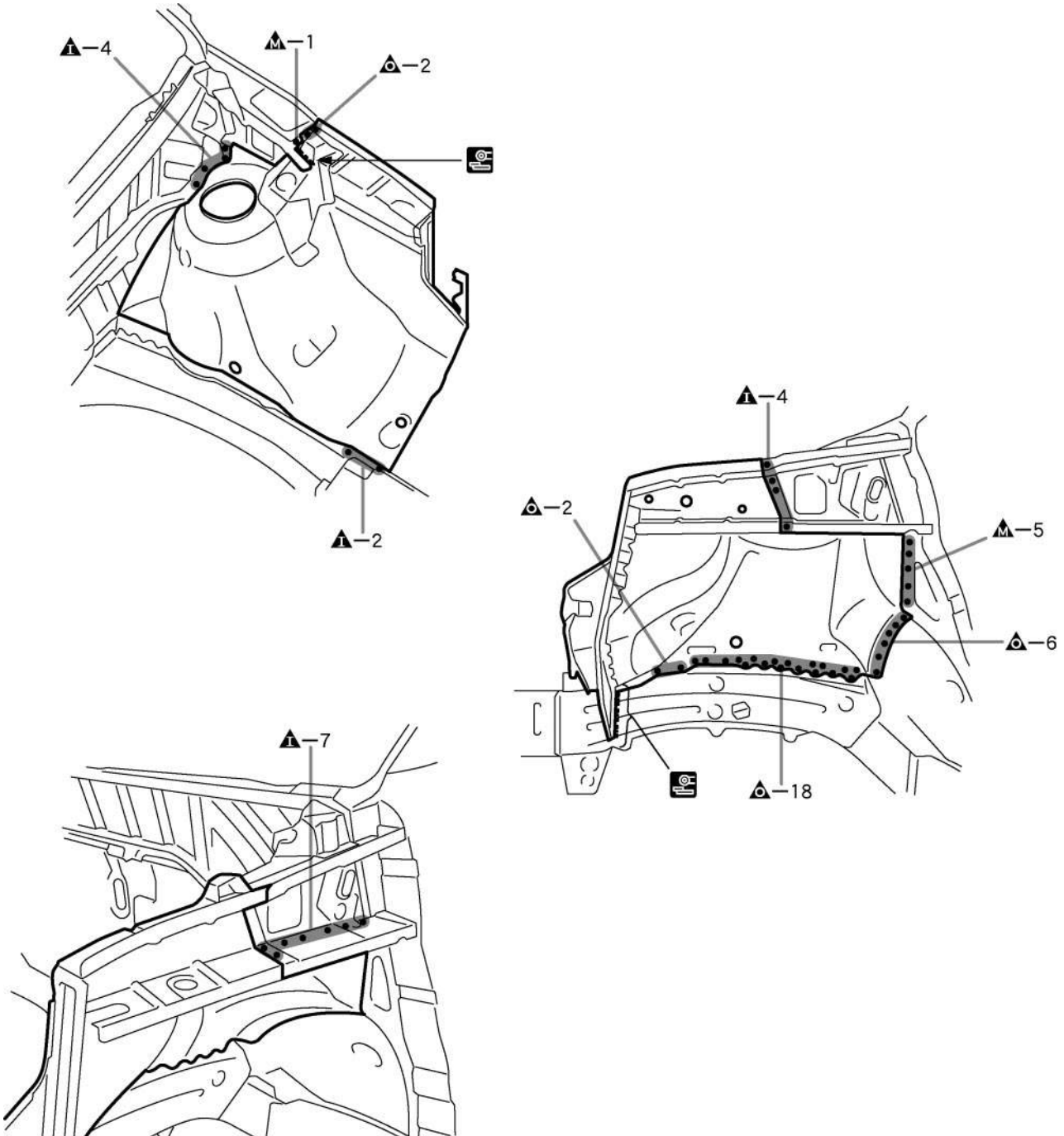
If you require the above manuals, please contact your TOYOTA Dealer.

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

TOYOTA MOTOR CORPORATION

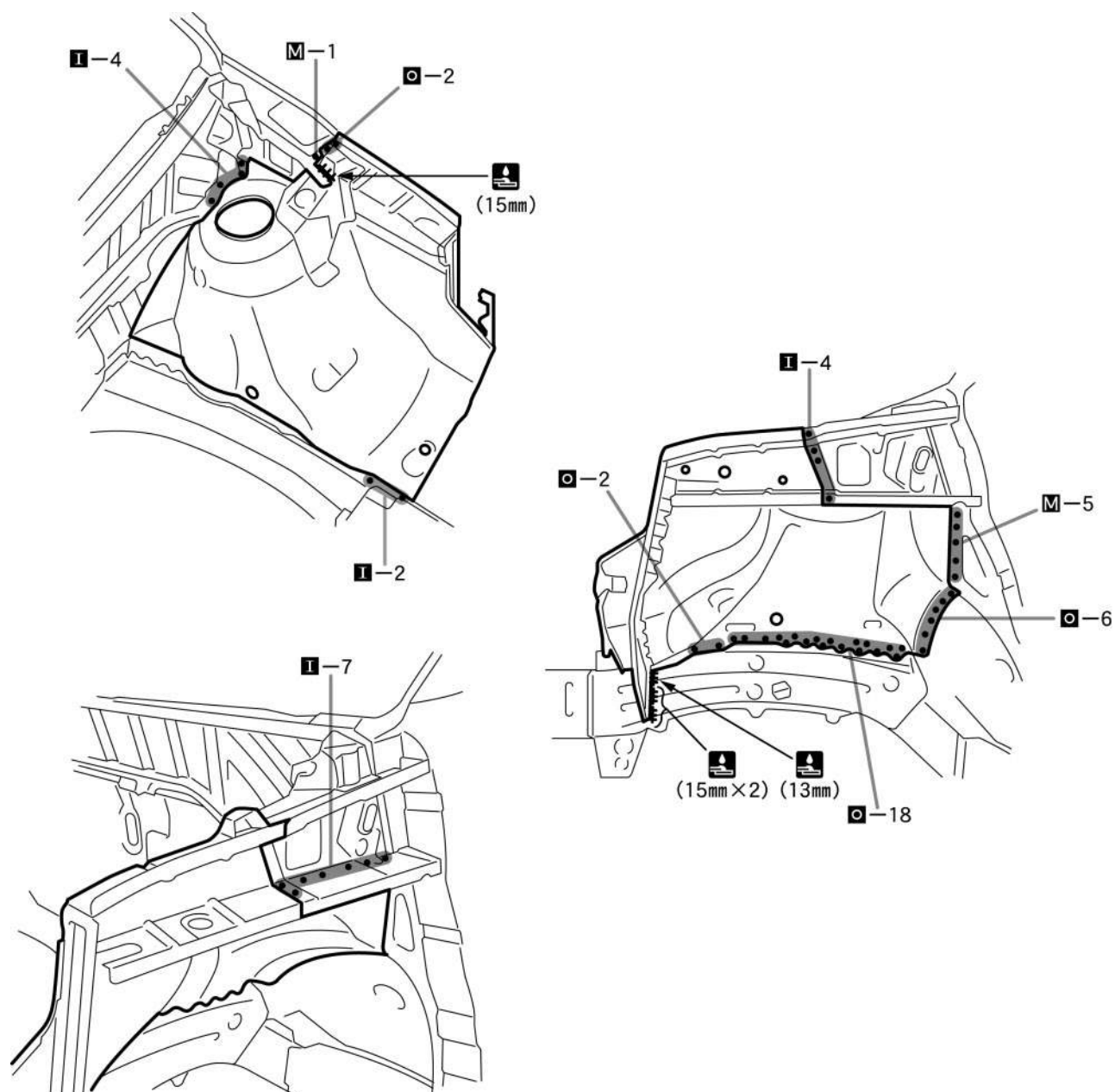
FRONT FRAME
4WD



FRONT FENDER APRON (ASSY)		 F14960-A
REPLACEMENT With the radiator upper support and front body pillar lower gusset removed.		
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.



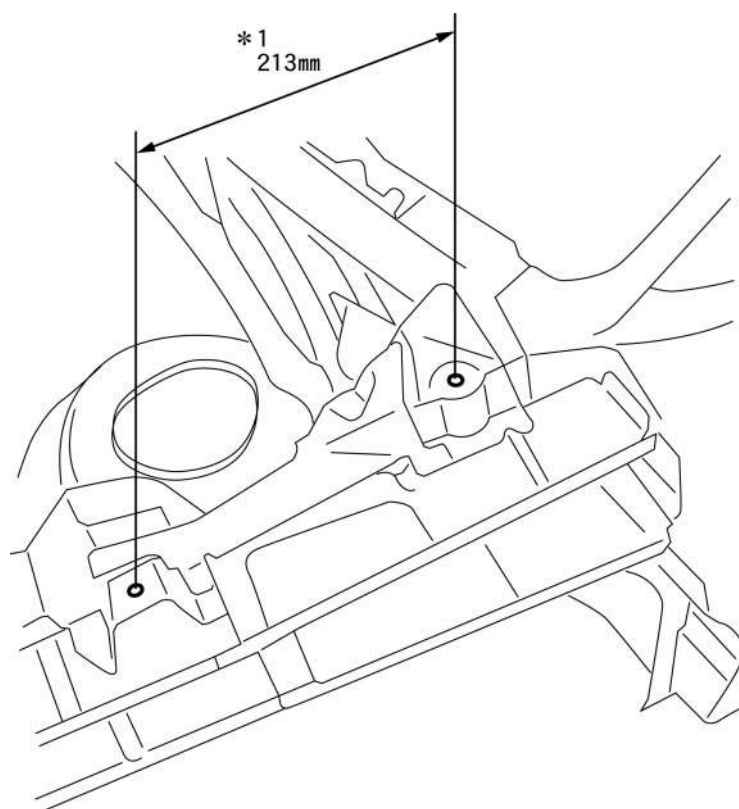
F14961

POINT

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

13mm (0.51in.)

15mm (0.59in.)



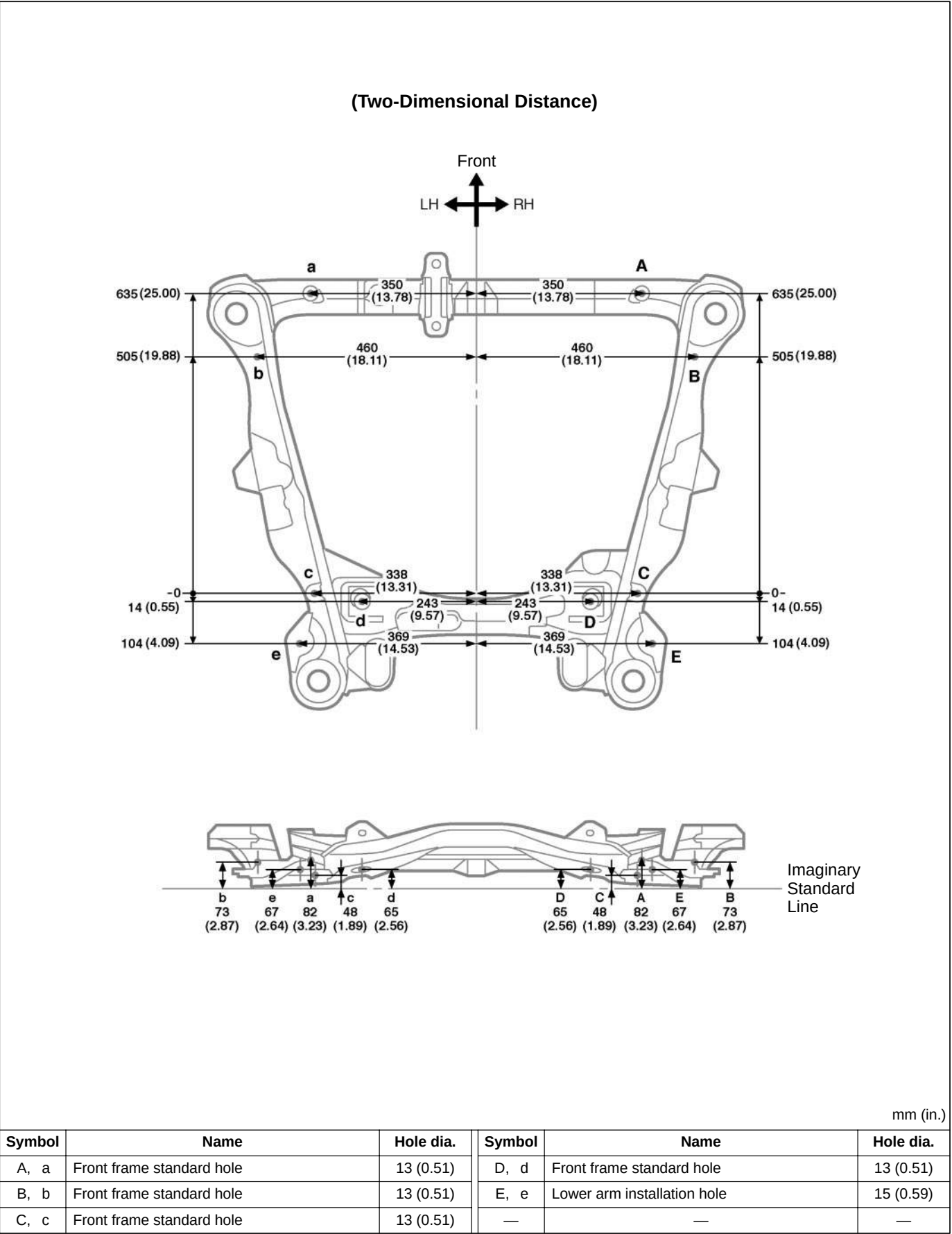
F14962

POINT

1 *1: The value is reference value.

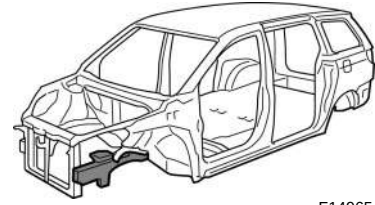
213mm (8.39in.)

FRONT FRAME
2WD

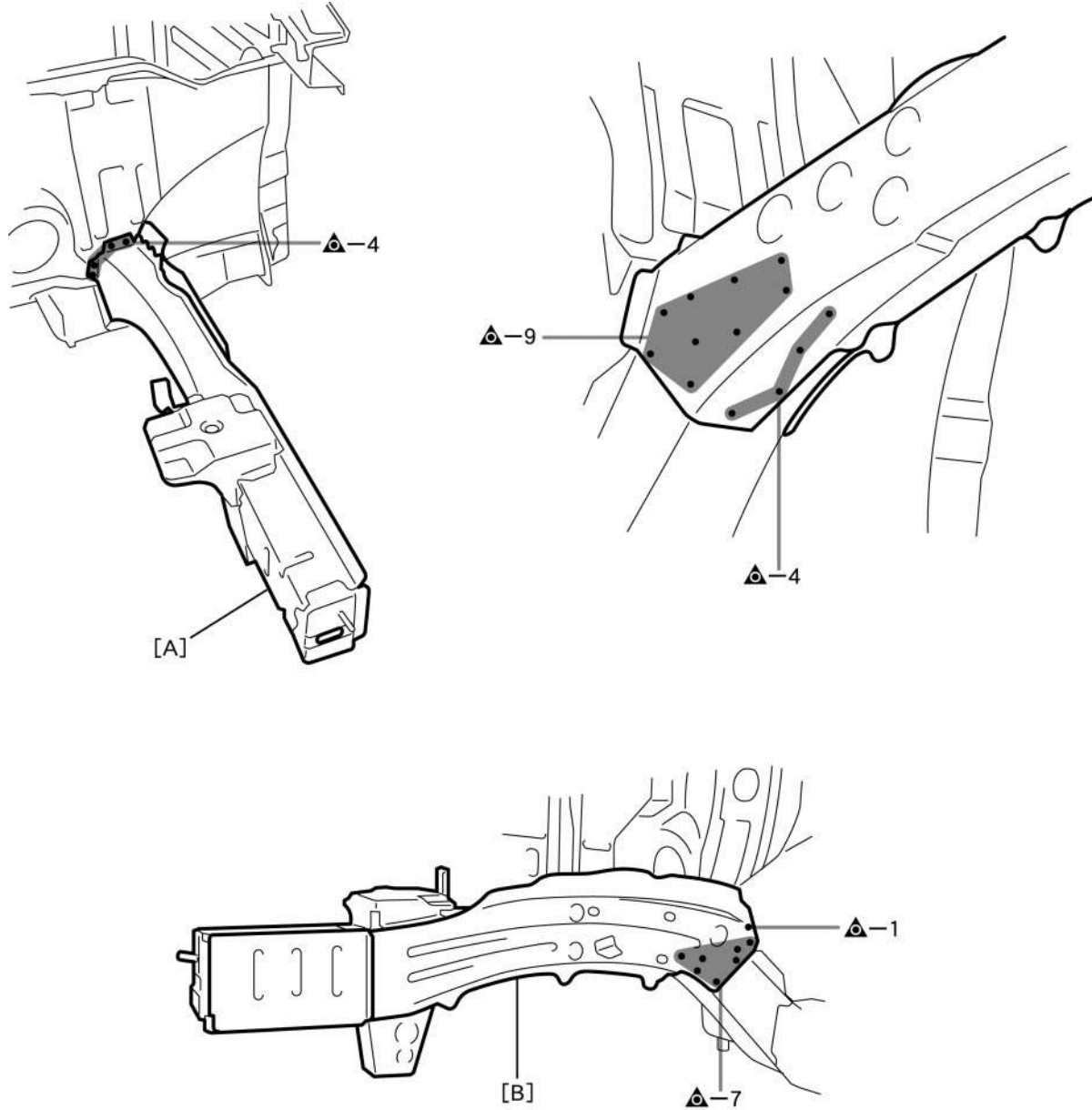


FRONT SIDE MEMBER (ASSY)**REPLACEMENT**

With the radiator support and front fender apron removed.



F14965-A

REMOVAL

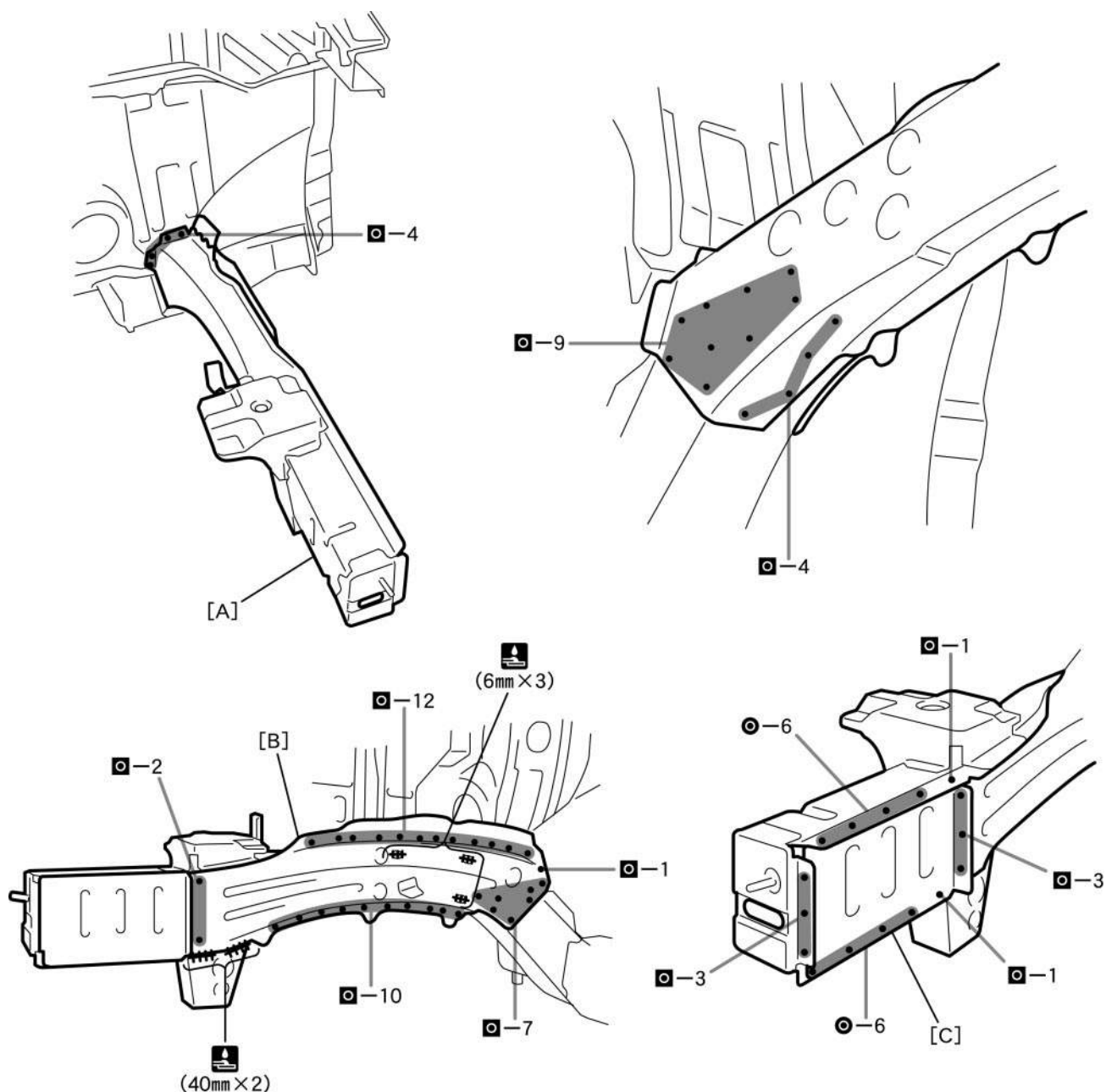
F14965

PART NAME

[A] Front Side Inner Member [B] Front Side Member 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.



F14966

POINT

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

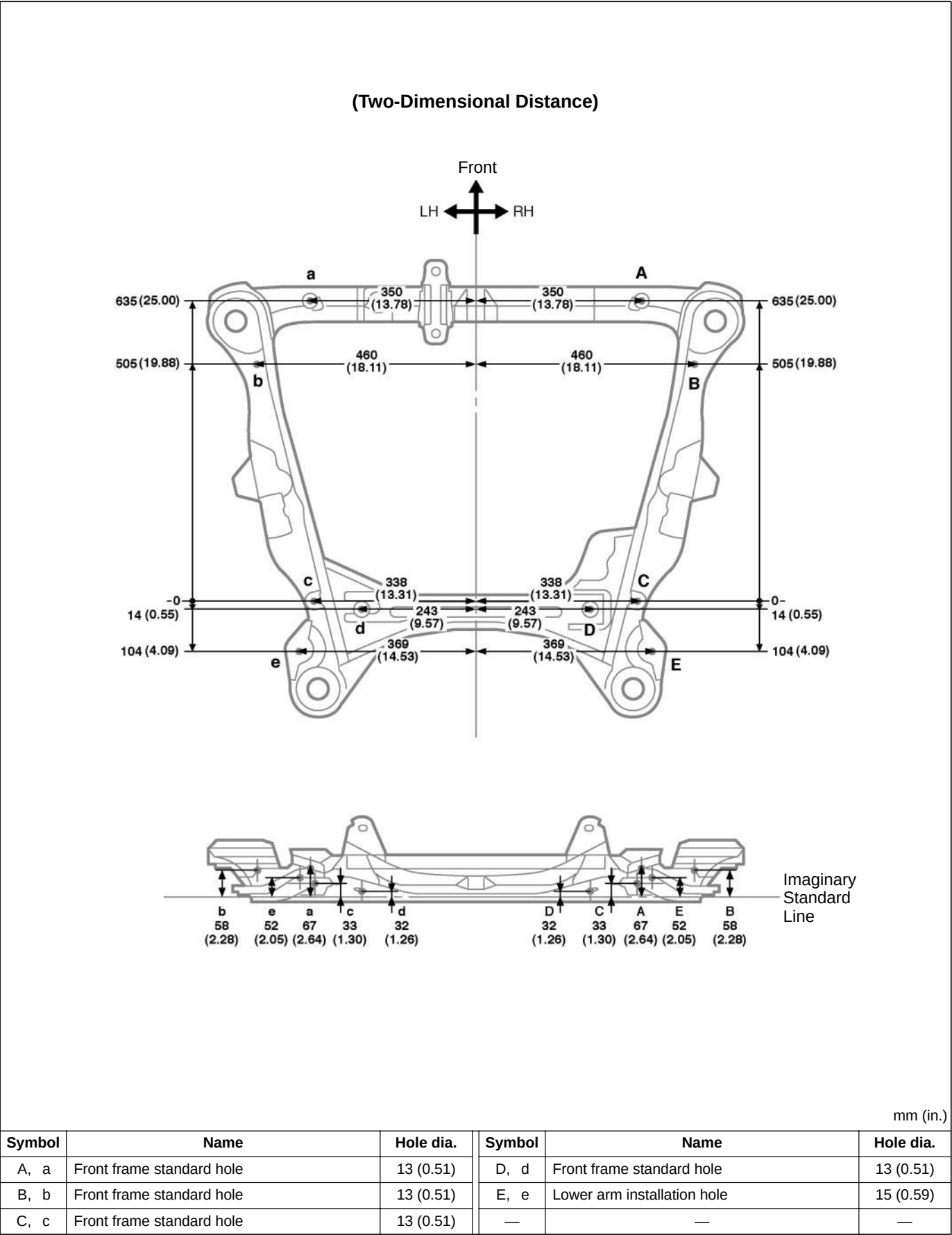
PART NAME

[A] Front Side Inner Member [B] Front Side Member Outer Plate

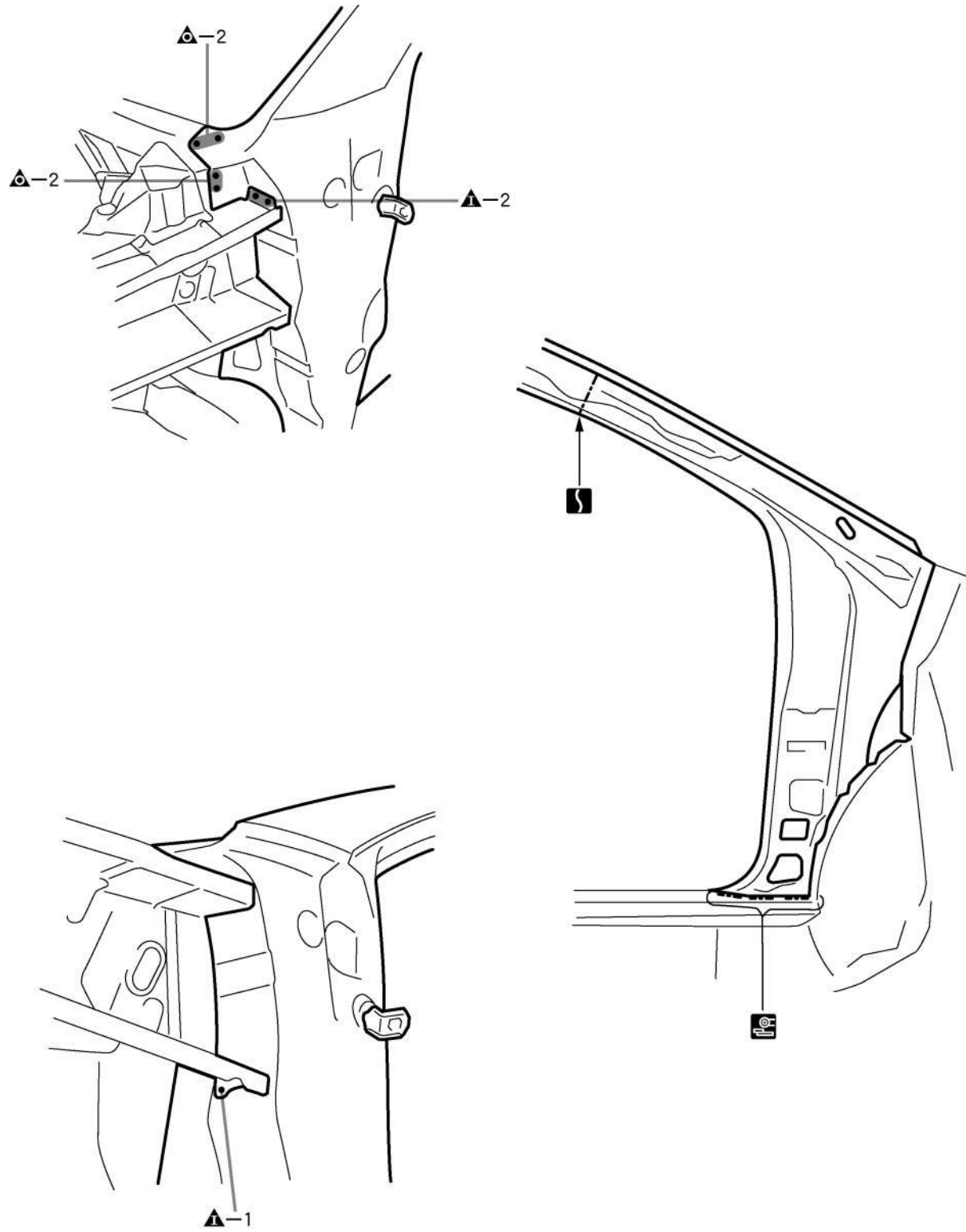
[C] Front Side Member Extension

6mm (0.24in.) 40mm (1.57in.)

FRONT FRAME
4WD

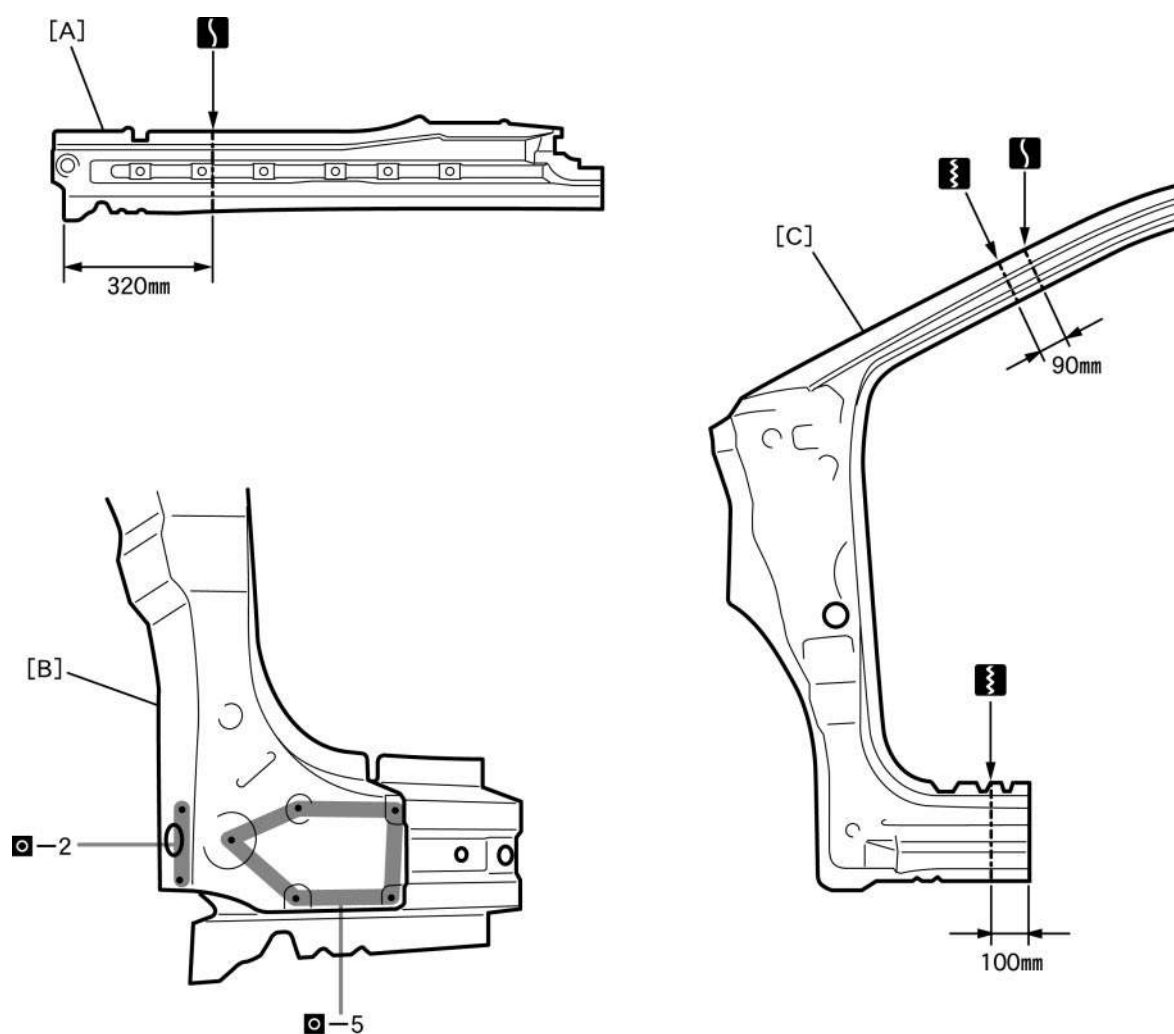


FRONT BODY PILLAR (CUT) REPLACEMENT With the front body pillar lower gusset removed.	F14971-A
REMOVAL F14971	
30mm (1.18in.) 50mm (1.97in.) 130mm (5.12in.)	



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.



F14973

POINT

- 1 Before temporarily installing the new parts, weld the [A] and [B] with standard points.
- 2 Cut the outer pillar on the pillar section and rocker section and butt weld their reinforcements before installing the outer pillar.

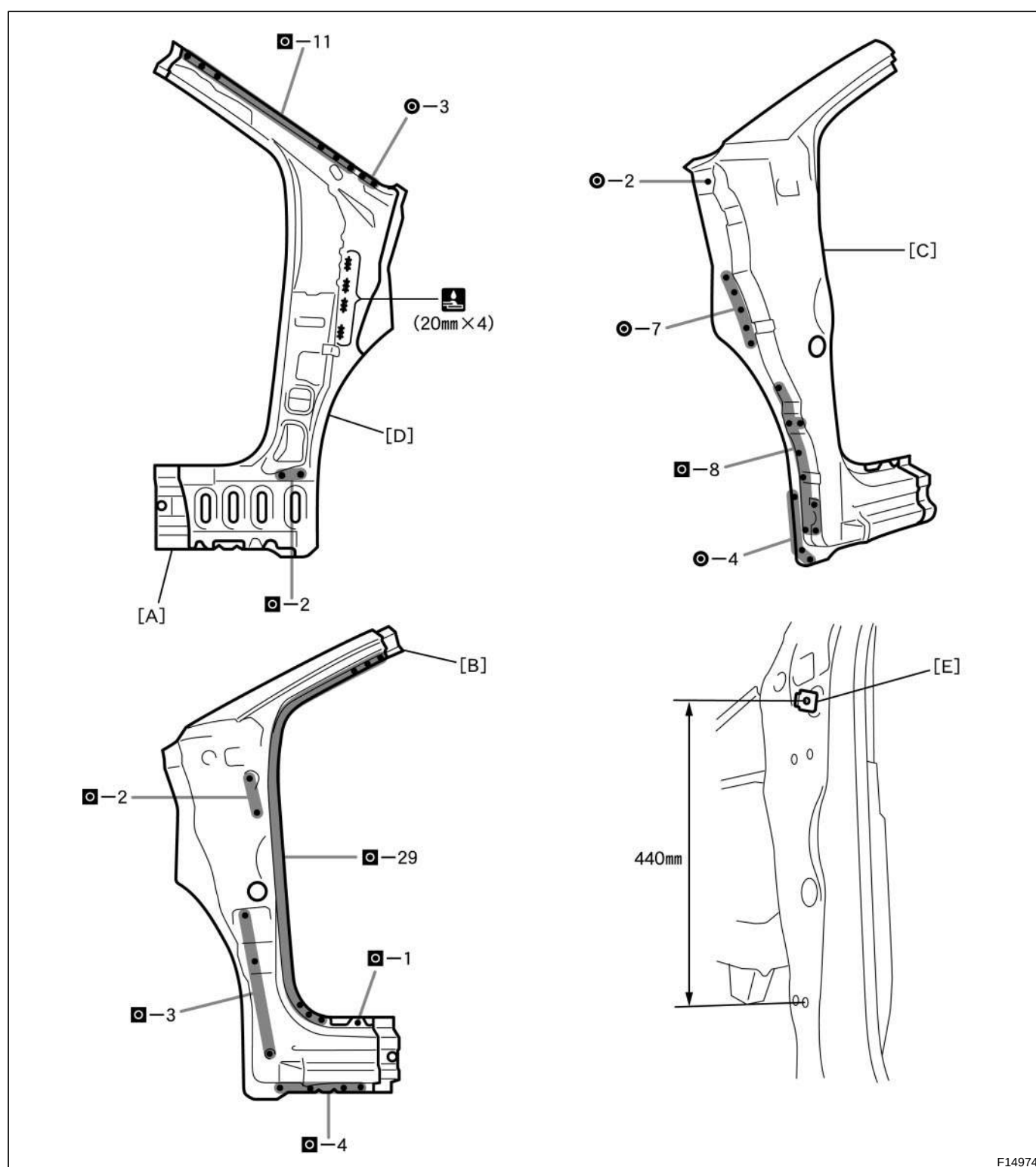
PART NAME

[A] Rocker Outer Reinforce [B] Front Body Pillar Lower Reinforce
 [C] Outer Pillar

90mm (3.54in.)

100mm (3.94in.)

320mm (12.60in.)



F14974

POINT

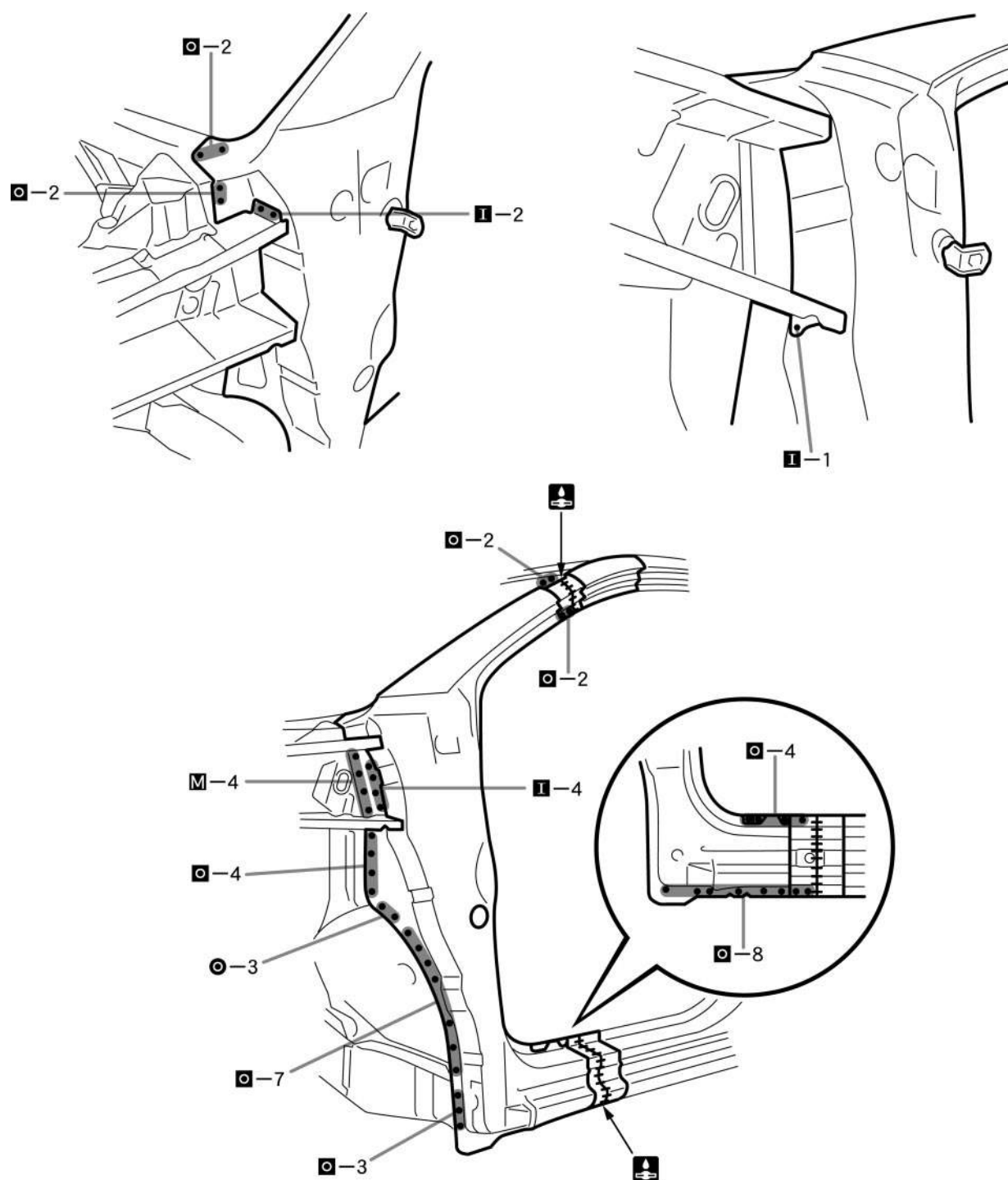
1 Before temporarily installing the new parts, weld the [A], [B], [C], [D] and [E] with standard points.

PART NAME

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

20mm (0.79in.)

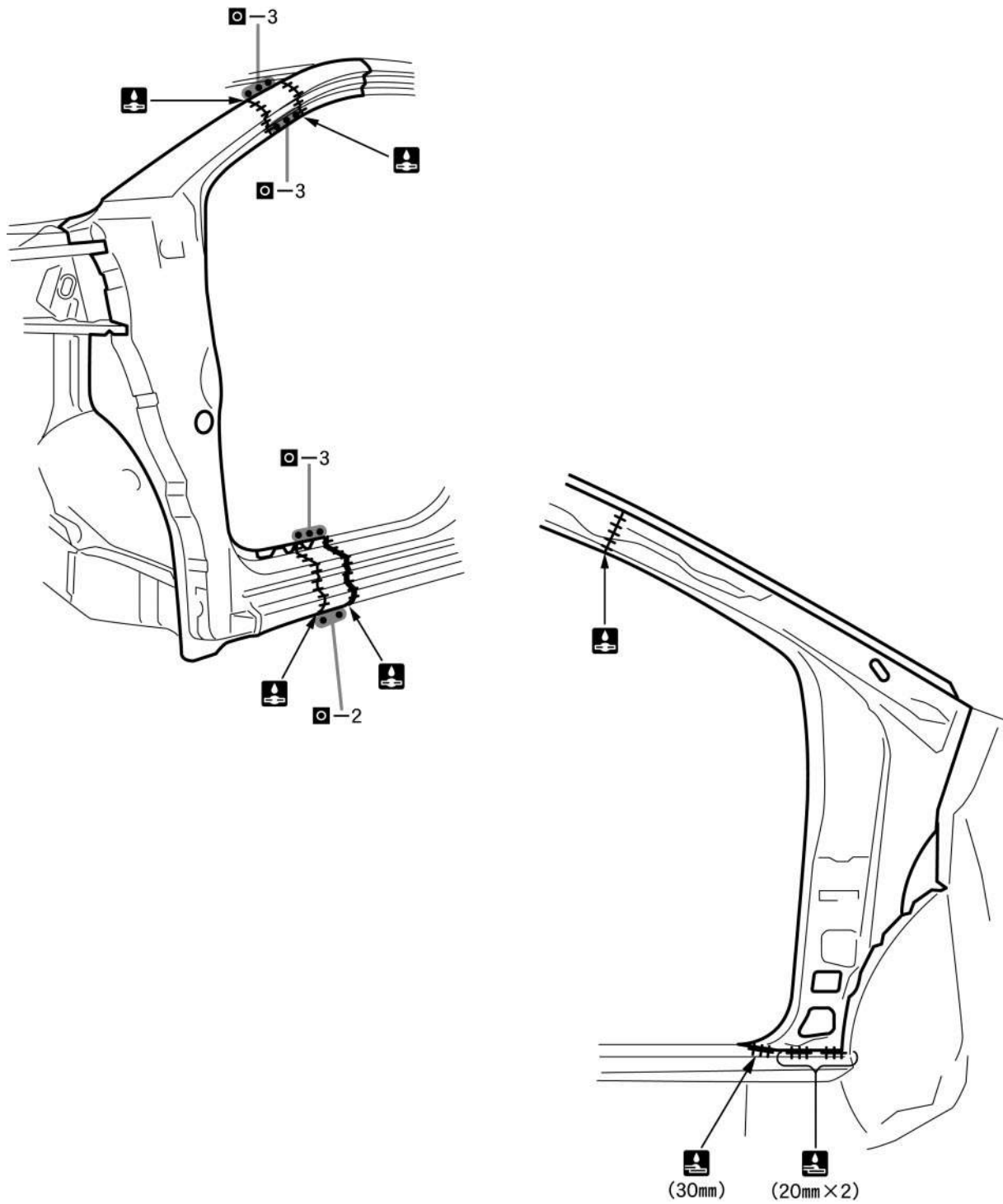
440mm (17.32in.)



F14975

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.



F14976

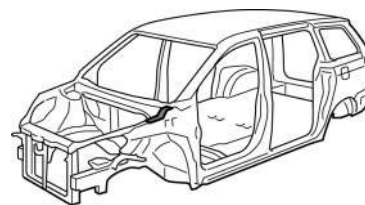
20mm (0.79in.)

30mm (1.18in.)

FRONT APRON TO COWL SIDE MEMBER (ASSY)

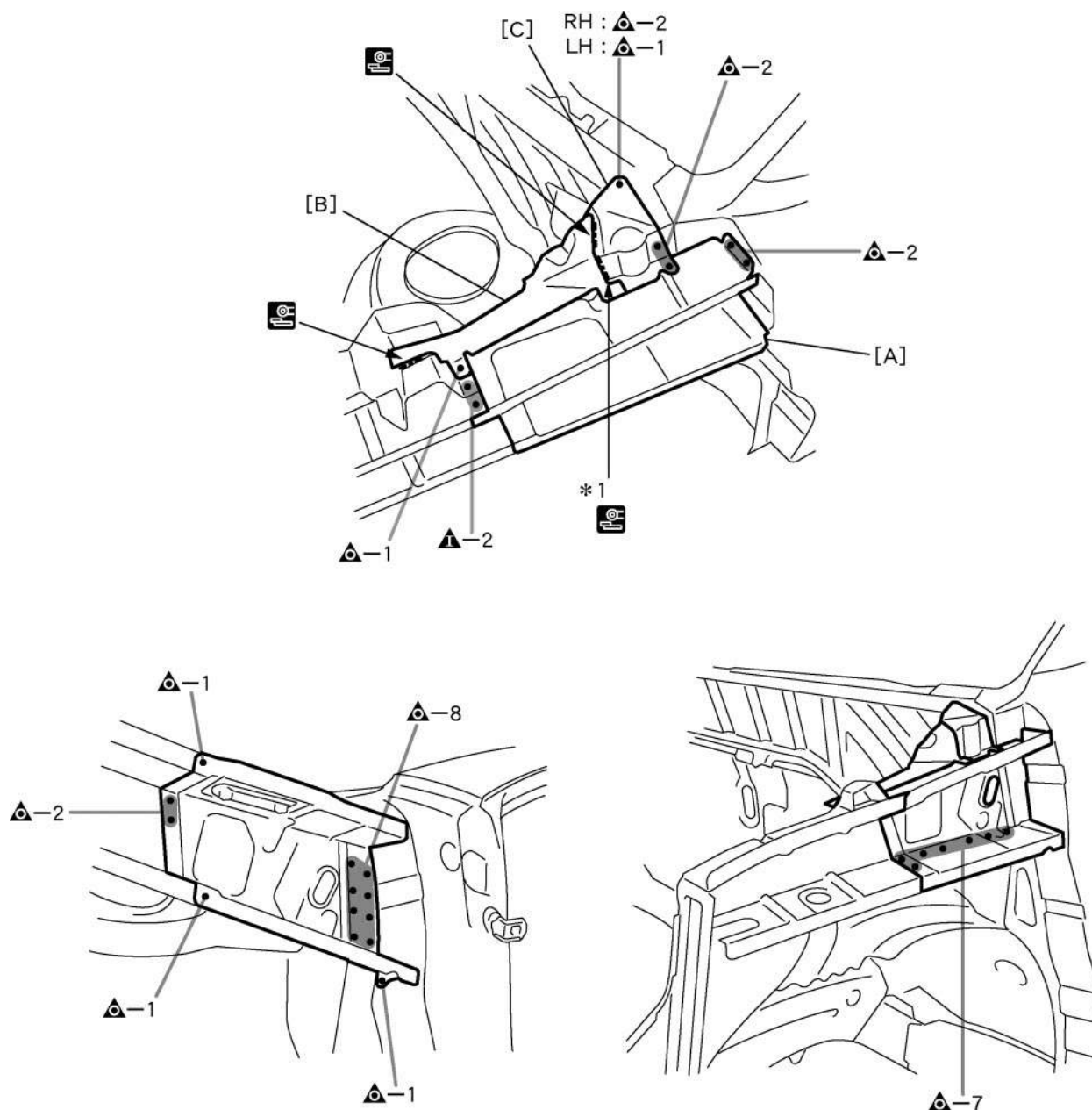
REPLACEMENT

With the front body pillar lower gusset removed.



F14967-A

REMOVAL



F14967

POINT

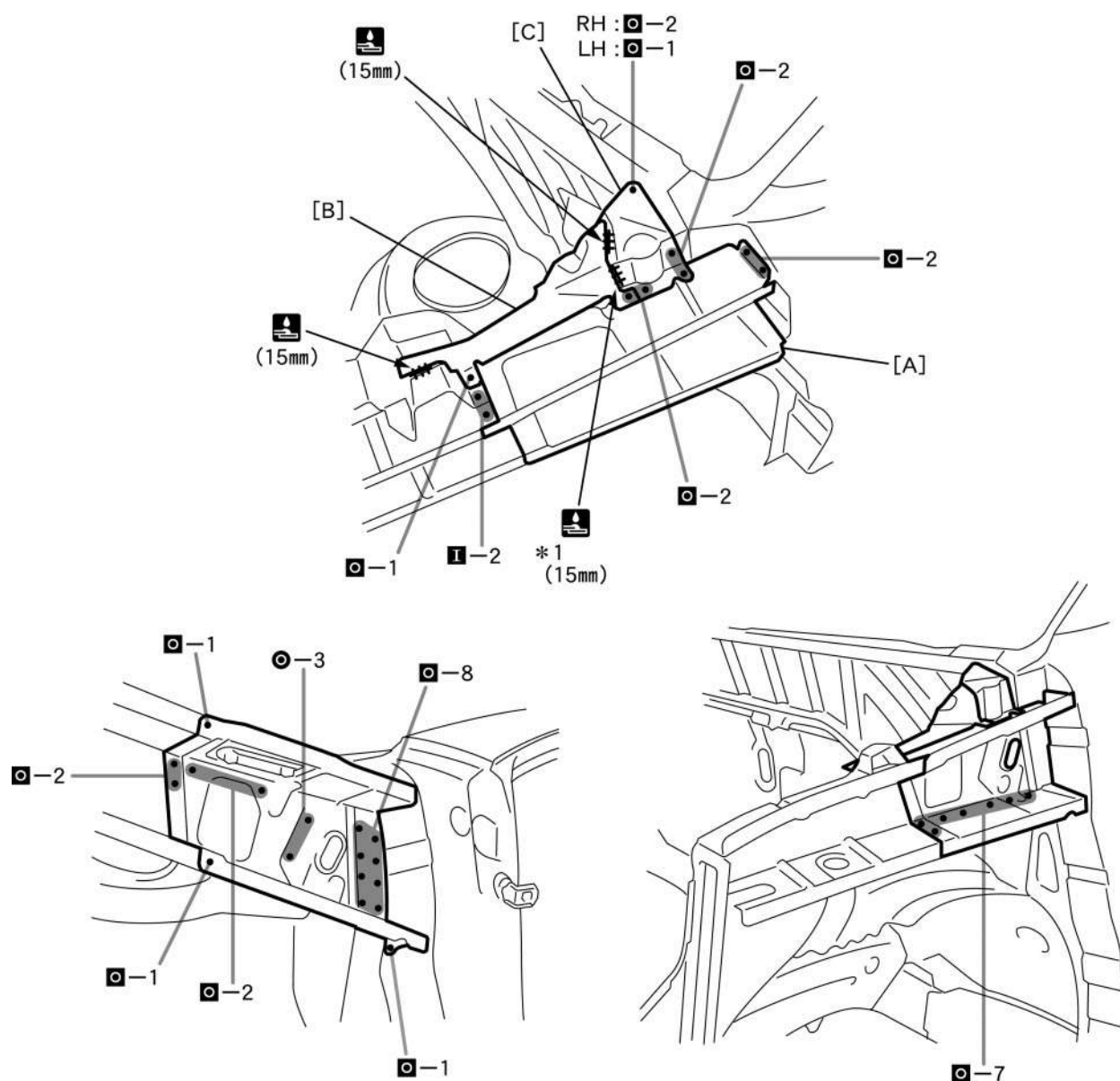
- 1 Remove the [A], [B] and [C] at the same time.
- 2 *1: RH Only

PART NAME

- [A] Front Apron To Cowl Side Member [B] Front Panel Gusset
 [C] Front Fender Apron Rear 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.



F14968

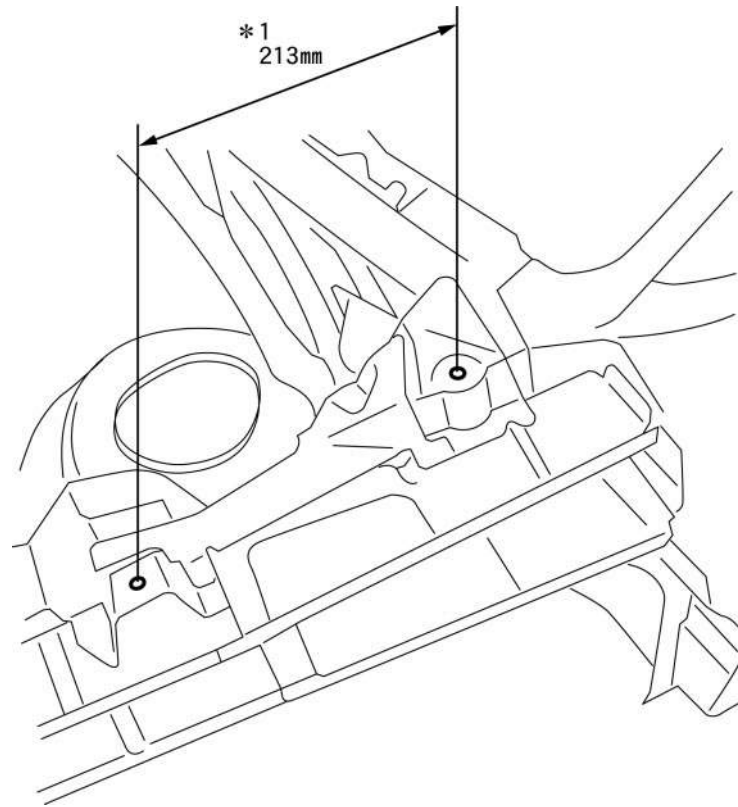
POINT

- 1 Inspect the fitting of the front fender and hood, etc., before welding, since this affects the appearance of the finish.
- 2 *1: RH Only

PART NAME

- [A] Front Apron To Cowl Side Member [B] Front Panel Gusset
 [C] Front Fender Apron Rear Extension

15mm (0.59in.)

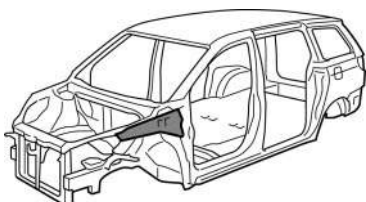
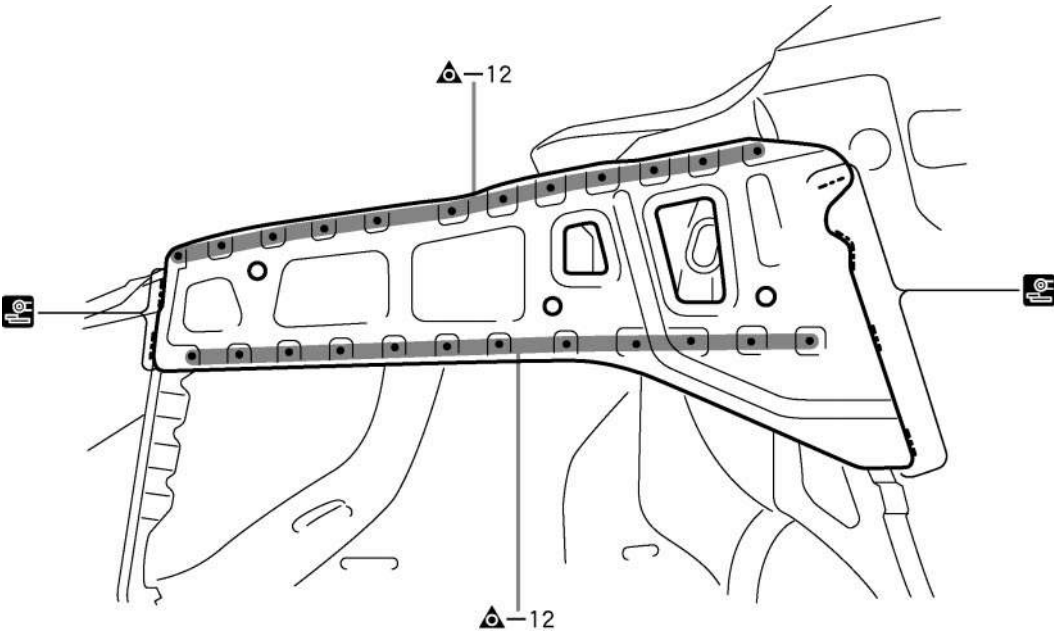


F14962

POINT

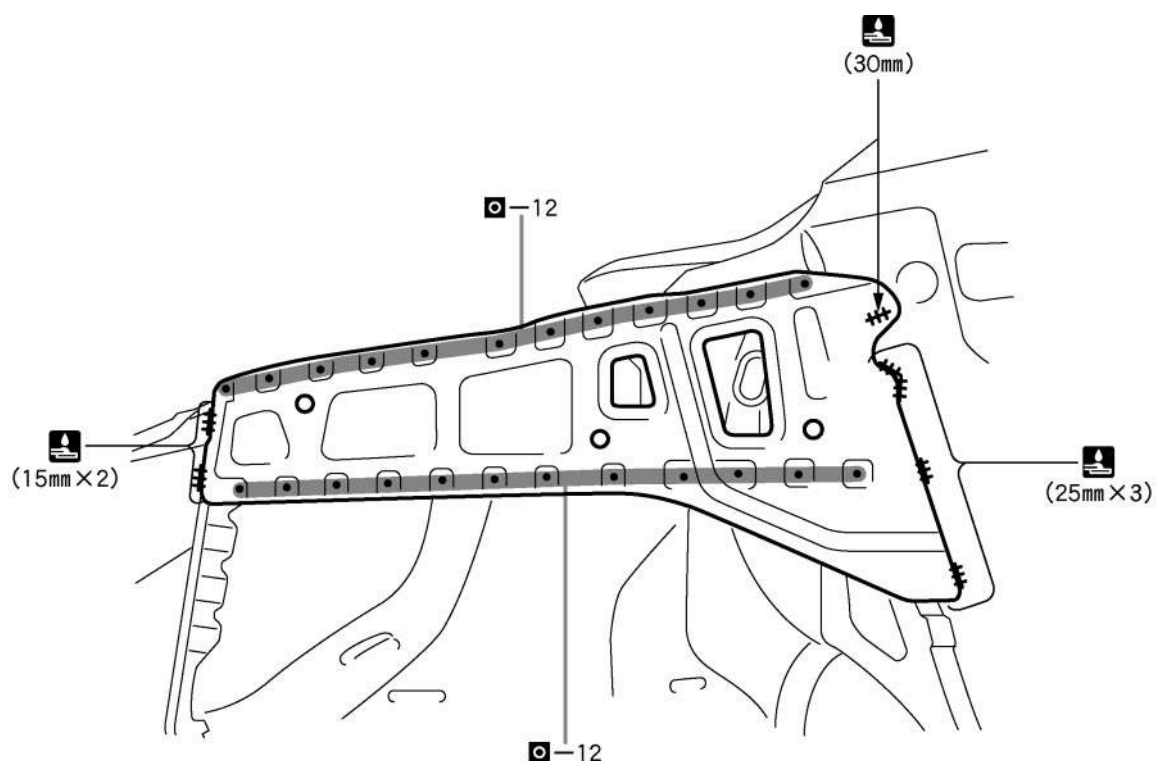
1 *1: The value is reference value.

213mm (8.39in.)

FRONT BODY PILLAR LOWER GUSSET (ASSY)	 F14969-A
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.



F14970

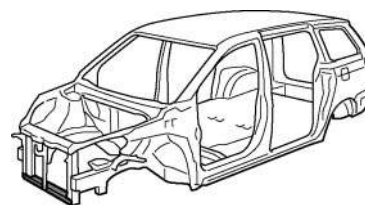
15mm (0.59in.)

25mm (0.98in.)

30mm (1.18in.)

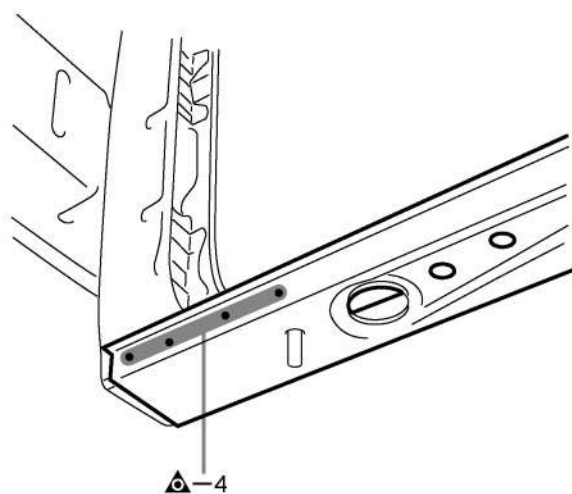
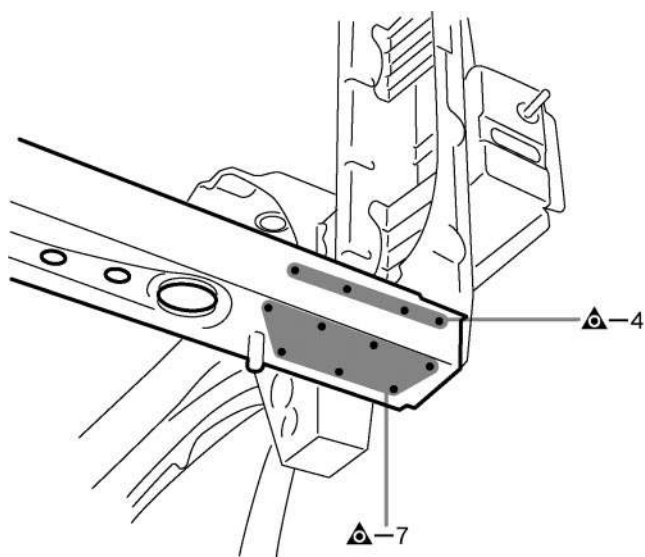
FRONT CROSSMEMBER (ASSY)

REPLACEMENT



F14953-A

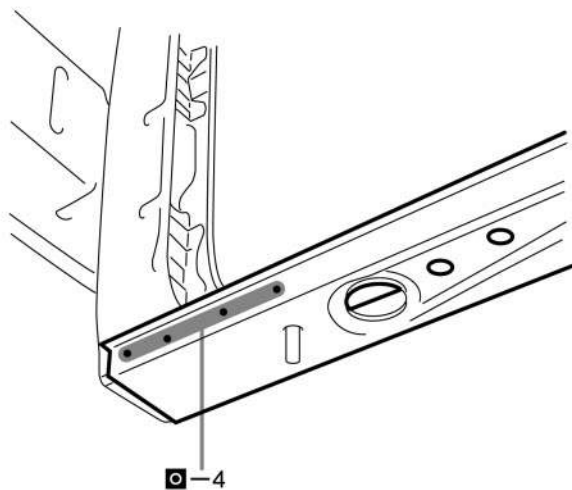
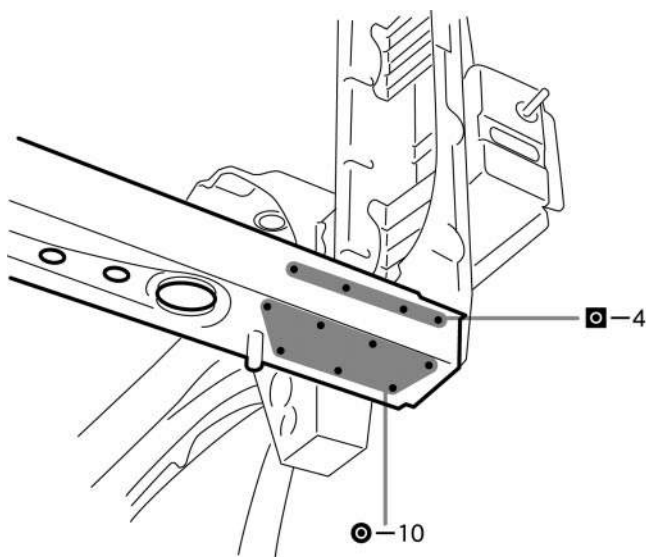
REMOVAL

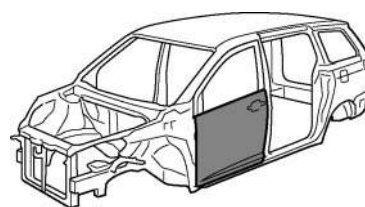


F14953

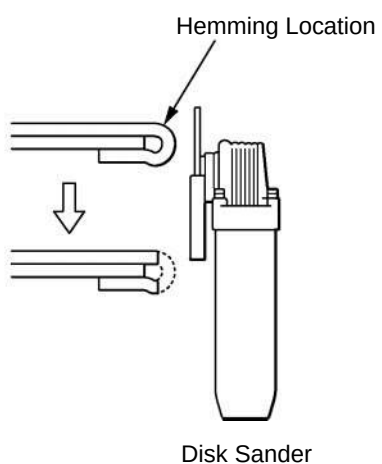
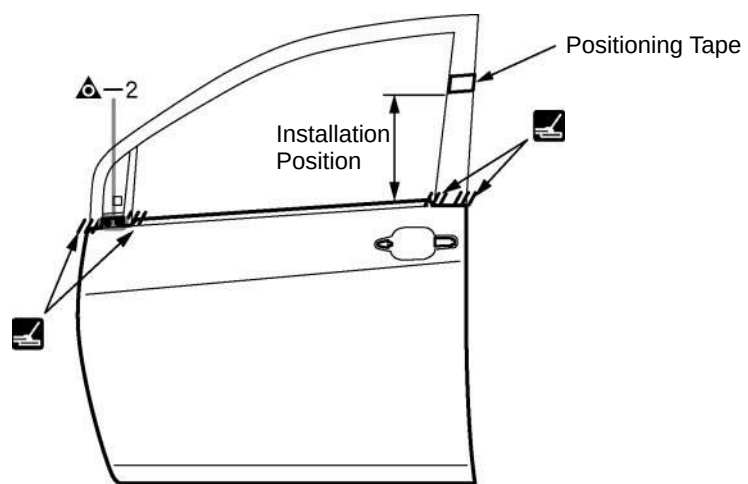
INSTALLATION

- 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 DOOR OUTER PANEL (ASSY)**REPLACEMENT**

F14983-A

REMOVAL

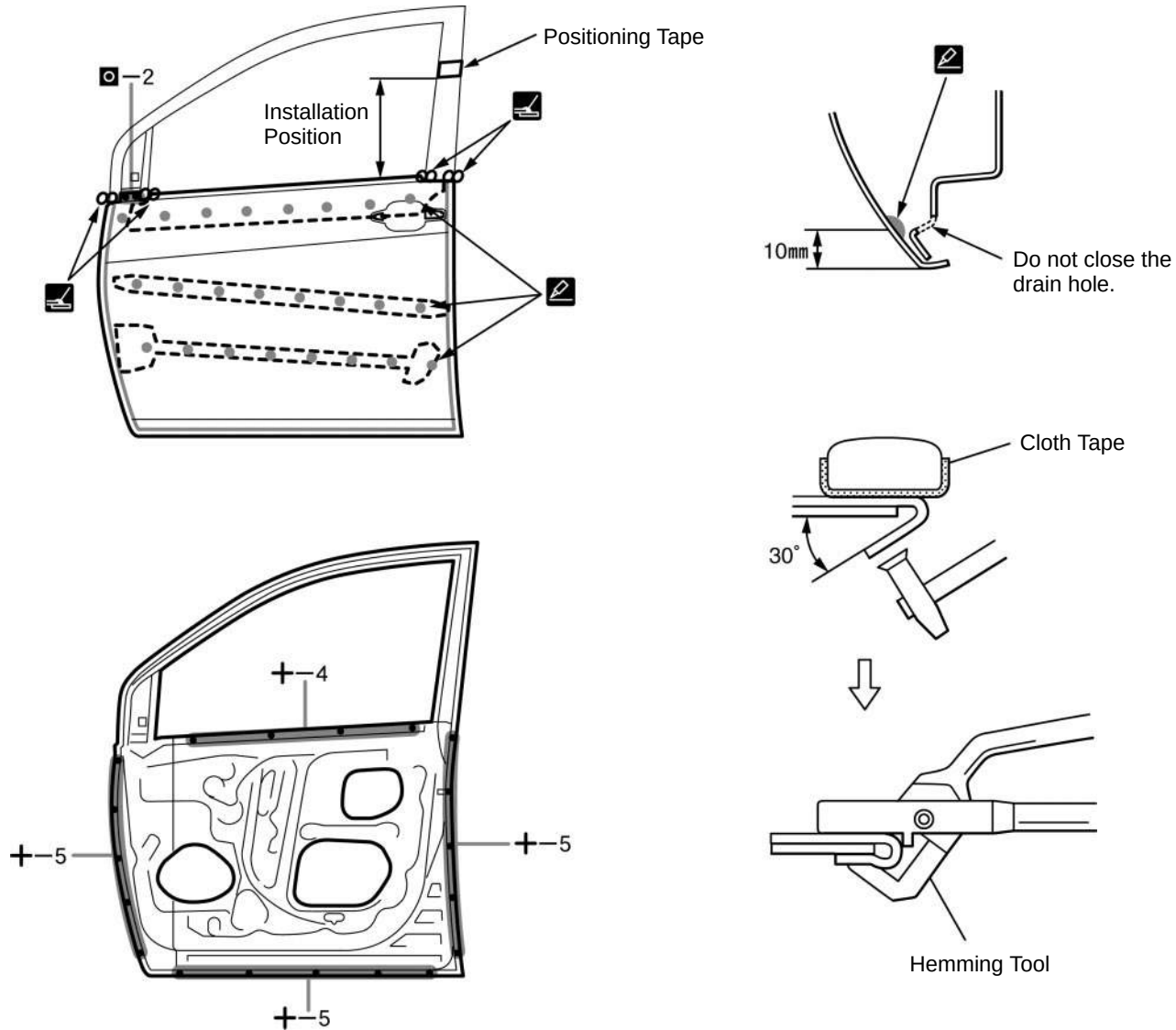
F14983

POINT

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

INSTALLATION

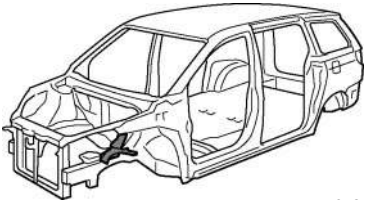
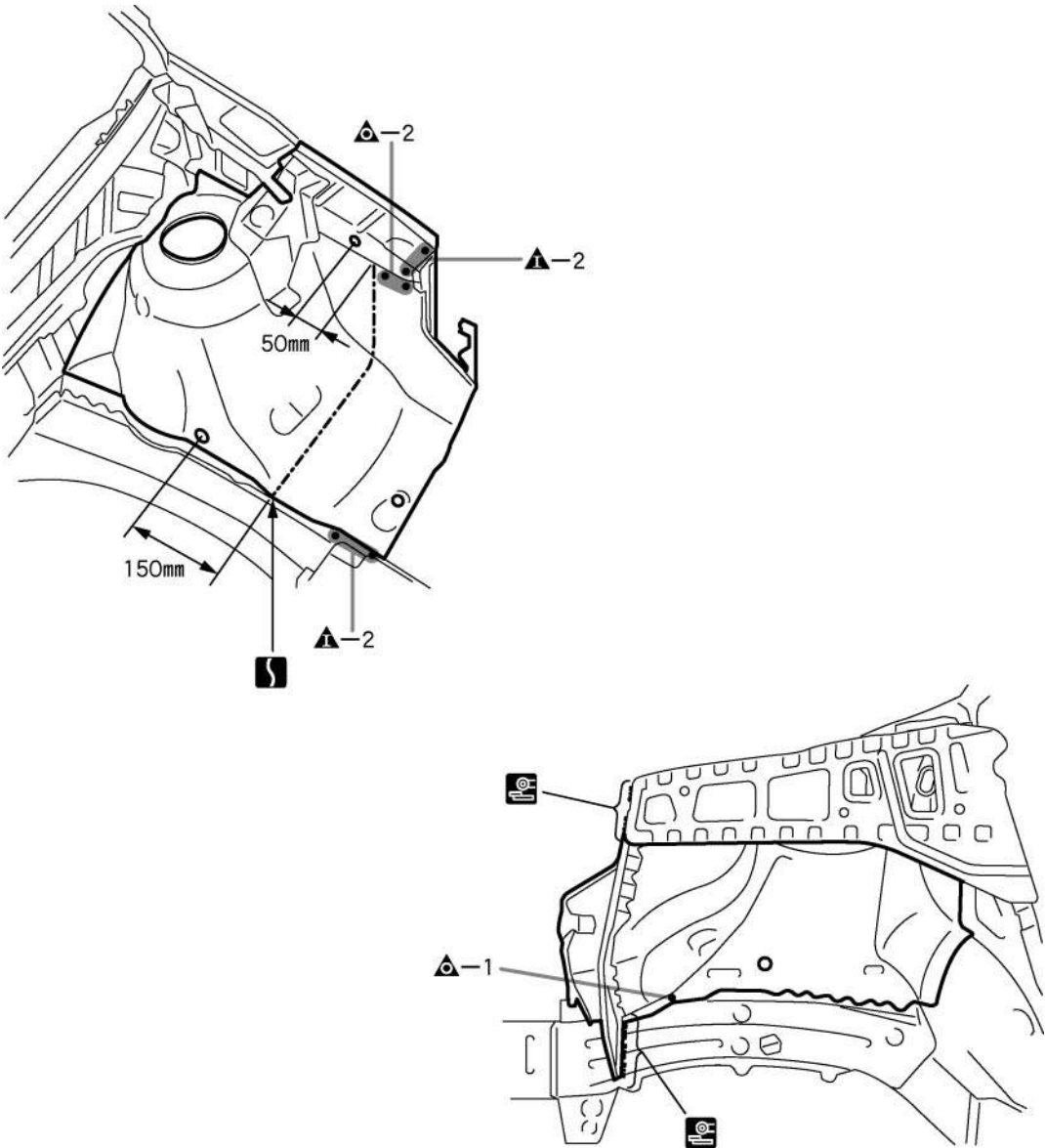
- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply 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.



F14984

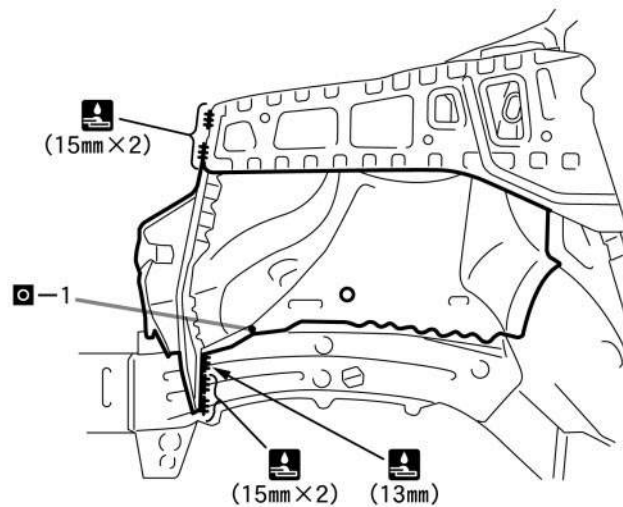
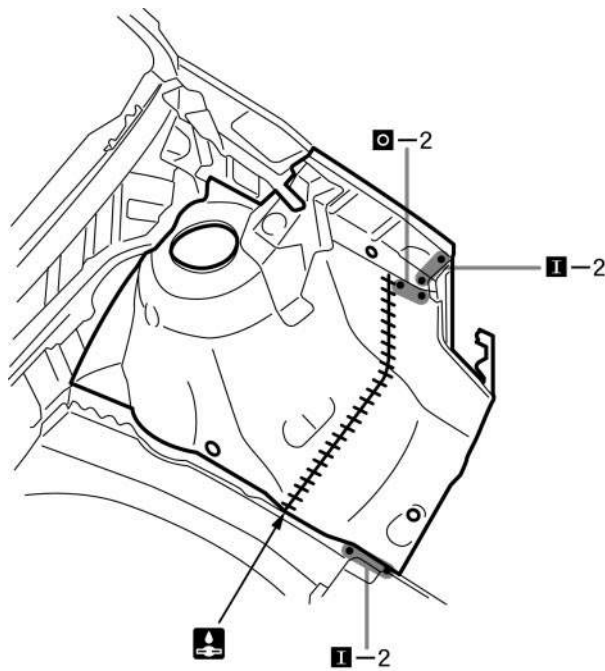
POINT

- 1 Before temporarily installing the new parts, apply body sealer to the reinforcement, side impact protection beam and back side of the new parts.
HINT:
 - 1) Apply sealer evenly about 10mm (0.39in.) from the flange and 3mm (0.12in.) 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.

FRONT FENDER APRON (CUT-P) REPLACEMENT With the radiator upper support removed.	 F14958-A
REMOVAL  F14958 50mm (1.97in.) 150mm (5.91in.)	

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.

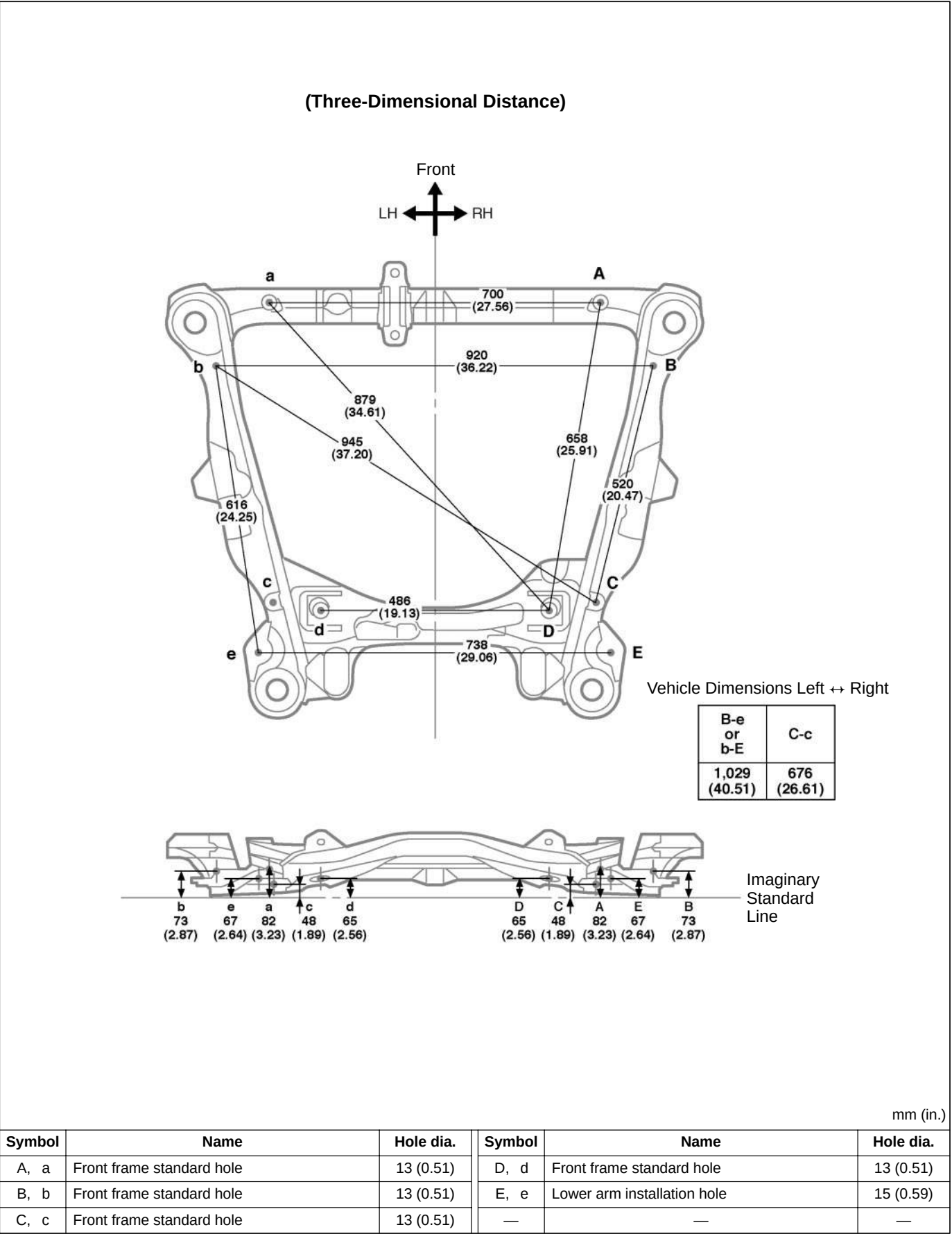


F14959

13mm (0.51in.)

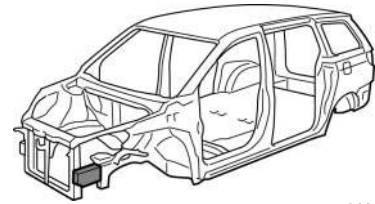
15mm (0.59in.)

FRONT FRAME
2WD

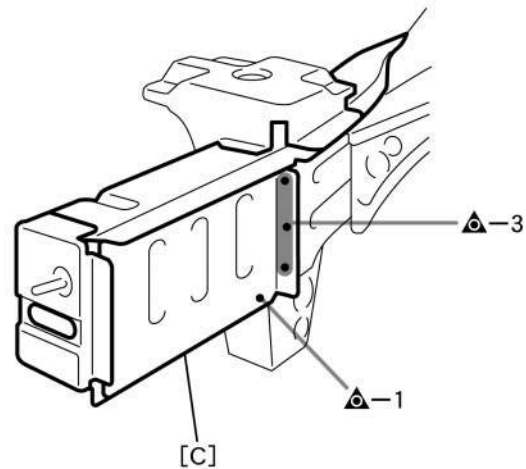
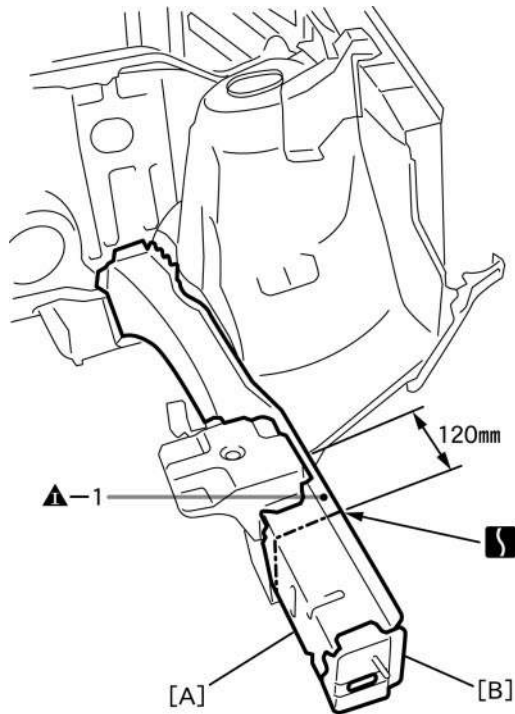


FRONT SIDE MEMBER (CUT-P)**REPLACEMENT**

With the radiator support removed.



F14963-A

REMOVAL

F14963

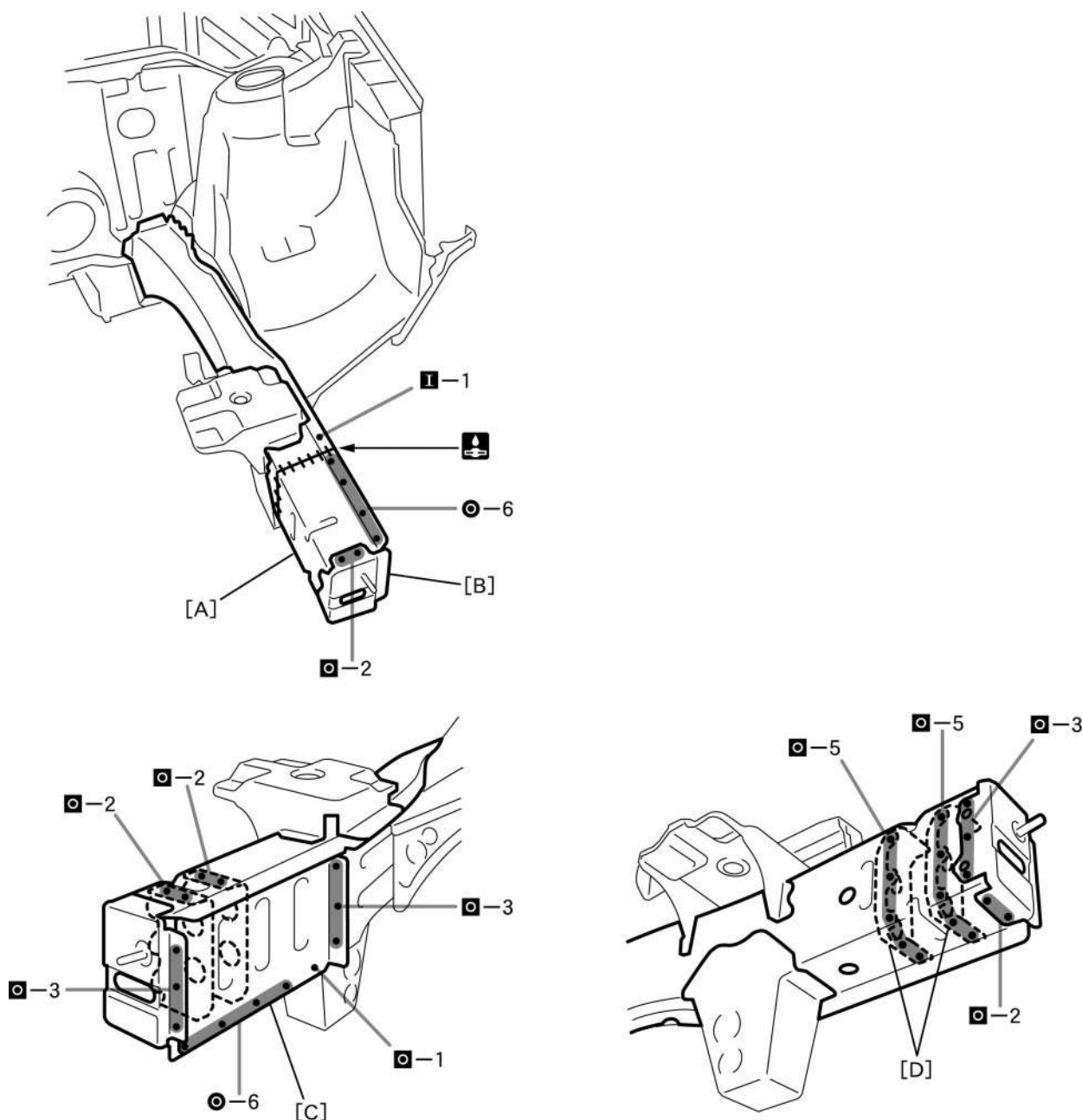
PART NAME

[A] Front Side Member [B] Front Side Member Front Plate
 [C] Front Side Member Extension

120mm (4.72in.)

INSTALLATION

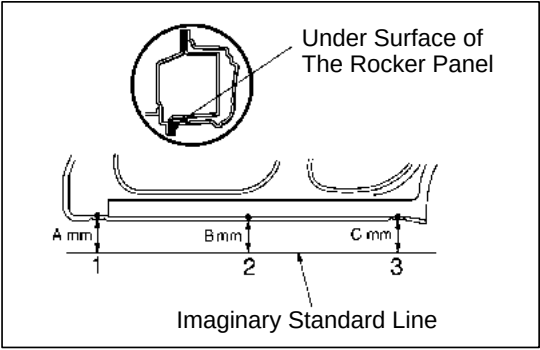
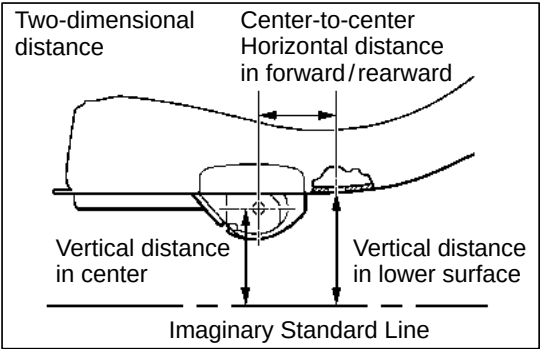
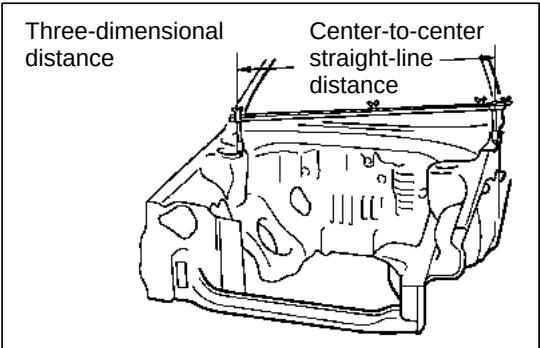
- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply 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.



F14964

PART NAME

- [A] Front Side Member [B] Front Side Member Front Plate
 [C] Front Side Member Extension [D] Front Side Member No.2 Reinforcement

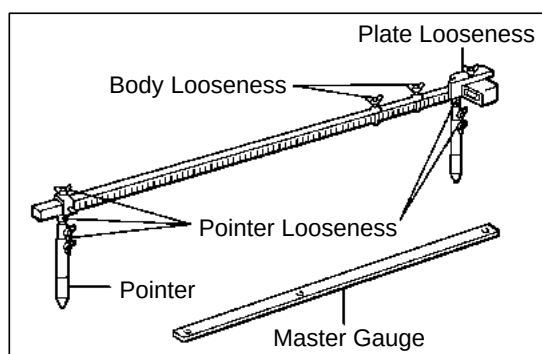


GENERAL INFORMATION

1. BASIC DIMENSIONS

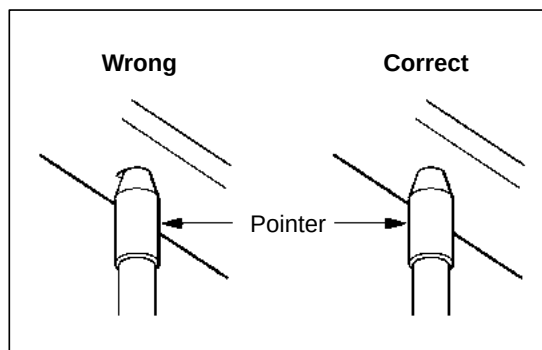
- (a) There are two types of dimensions in the diagram.
- (1) (Three-dimensional distance)
- Straight-line distance between the centers of two measuring points.
- (2) (Two-dimensional distance)
- Horizontal distance in forward/rearward between the centers of two measuring points.
 - The height from an 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.



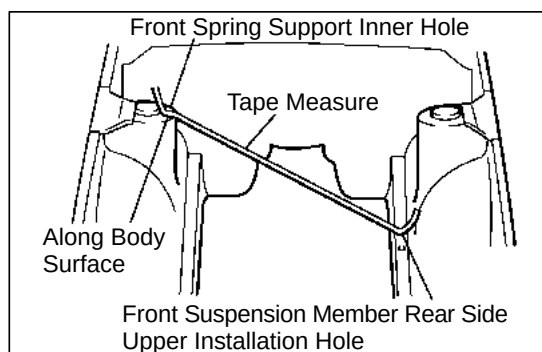
2. MEASURING

- (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.



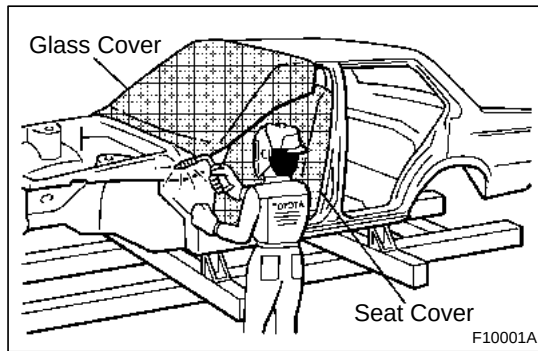
- (c) When using a tape measure, avoid twists and bends in the tape.
- (d) When tracking a diagonal measurement from the front spring support inner hole to the suspension member upper rear installation hole, measure along the front spring support panel surface.

GENERAL REPAIR INSTRUCTIONS

1. WORK PRECAUTIONS

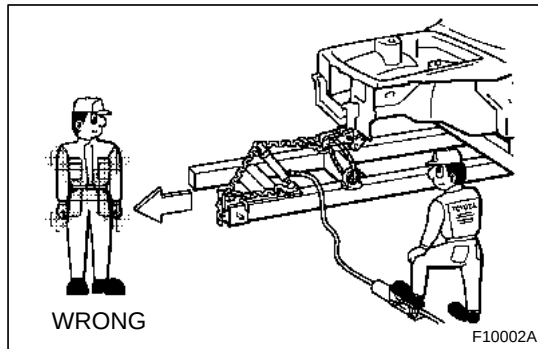
(a) VEHICLE PROTECTION

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

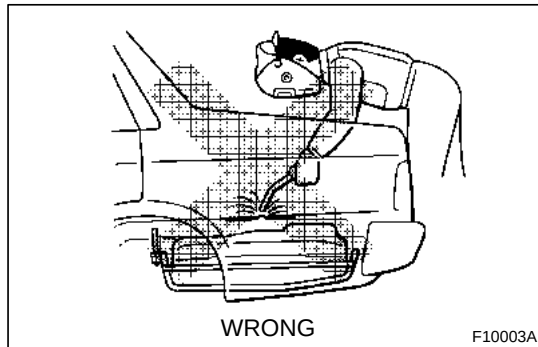


(b) SAFETY

- (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.

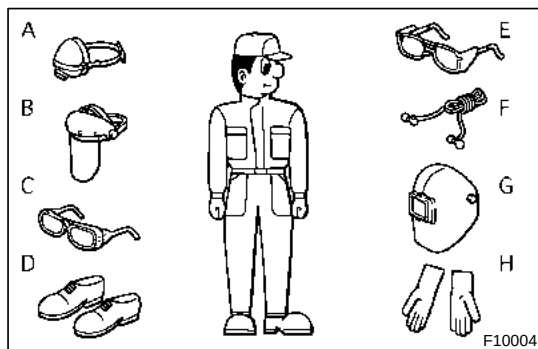


- (2) Before performing repair work, check for fuel leaks. If a leak is found, be sure to close the opening totally.
- (3) If it is necessary to use a flame in the area of the fuel tank, first remove the tank and plug the fuel line.



(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 applied 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.
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	TSOP
Front Bumper Cover	TSOP
Front Bumper Hole Cover	TSOP
Cowl Top Ventilator Louver	PP
Headlight	PC/PP/PET
Fog light	PC
Outer Rear View Mirror	PA/ABS/ASA
Front Fender Garnish	ASA
Front Door Outside Moulding	PP
Slide Door Outside Moulding	PP
Front Door Outside Handle	PA
Side Door Outside Handle	PA•PC
Roof Rack	PC/ASA
Rear Spoiler	ABS
High Mount Stop Light (w/ Rear Spoiler)	PMMA/ASA
High Mount Stop Light (w/o Rear Spoiler)	PC/PMMA/ABS
Back Door Outside Garnish	ABS
Rear Combination Light	PMMA/ABS
Back Door Light	PC
Rear Bumper Cover	PC
License Plate Light	PC

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

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
Propeller Shaft	Propeller Shaft (30) 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.

HOW TO USE THIS MANUAL

1. BODY PANEL REPLACEMENT THIS MANUAL

BP-34		BODY PANEL REPLACEMENT	
(A)	QUARTER PANEL (CUT)		(C)
	REPLACEMENT		
(B)	REMOVAL		
(D)		(I)	(K)
(E)	POINT 1 Remove the [A] at the same time. PART NAME [A] Fuel Filler Opening Lid	(J)	

(A) : REPLACEMENT PART AND METHOD
QUARTER PANEL (CUT)

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)

Replacement part

(B) : REMOVAL CONDITIONS

(C) : PART LOCATION

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

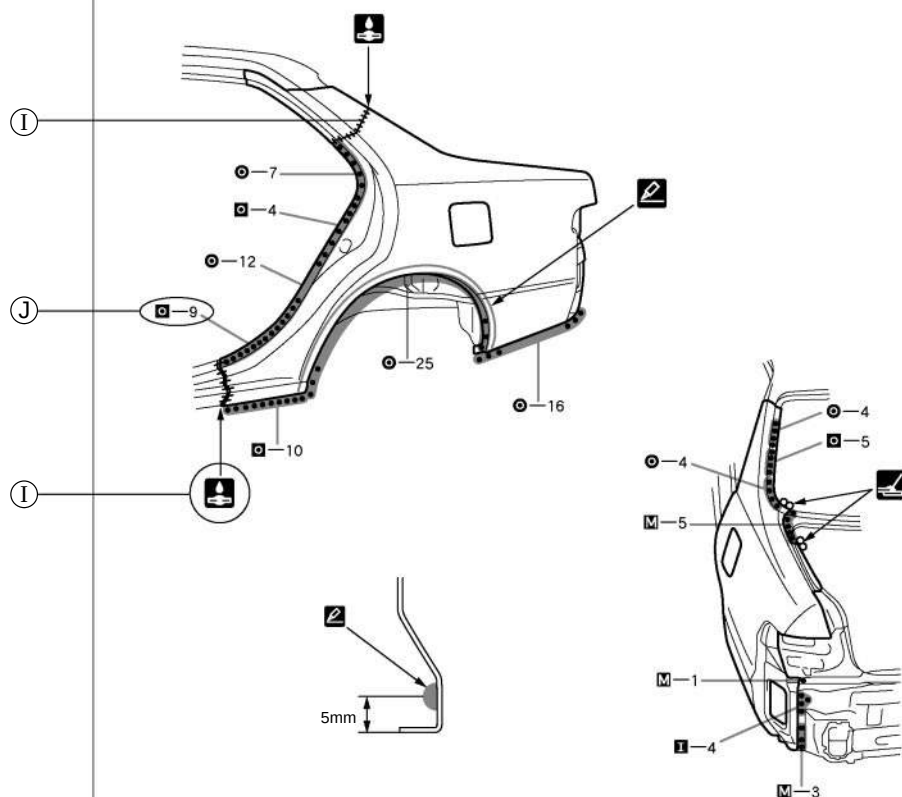
(E) : REMOVAL GUIDE
 Provides additional information to more efficiently help you perform the removal.

BODY PANEL REPLACEMENT

BP-35

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

PART NAME

[A] Fuel Filler Opening Lid [B] Waterproof Rivet

(F) : INSTALLATION CONDITIONS

G : INSTALLATION DIAGRAM

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

(H) : INSTALLATION GUIDE

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

① : SYMBOLS

(See page IN-7)

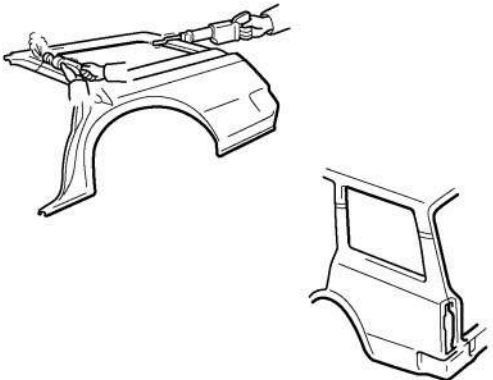
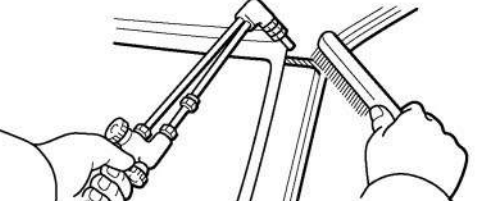
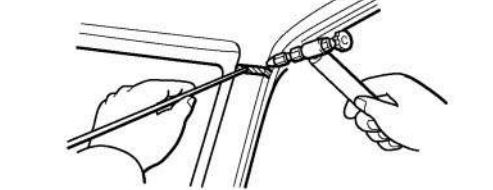
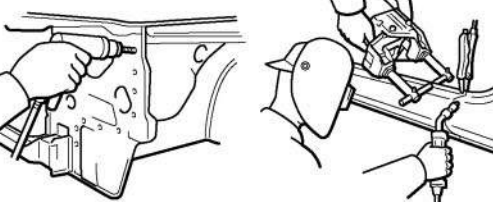
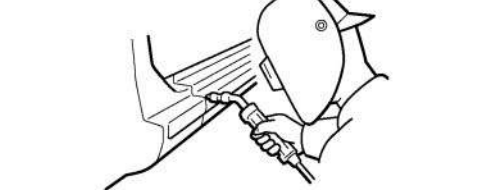
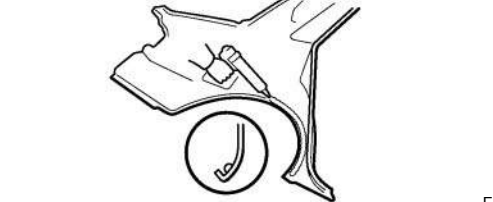
(J) : ILLUSTRATION OF WELD POINTS

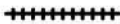
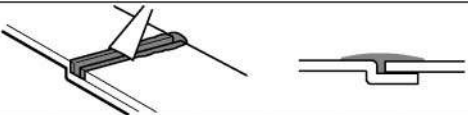
Weld method and panel position symbols (See page IN-9)

Ⓚ : PART NAME

2. SYMBOLS

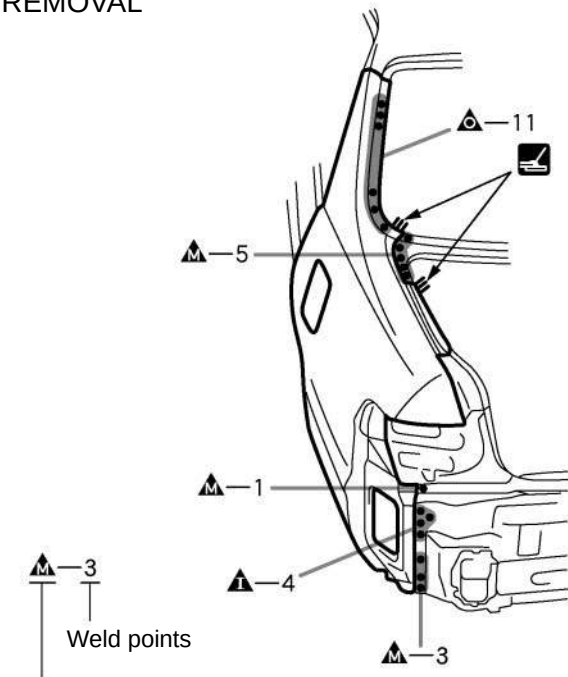
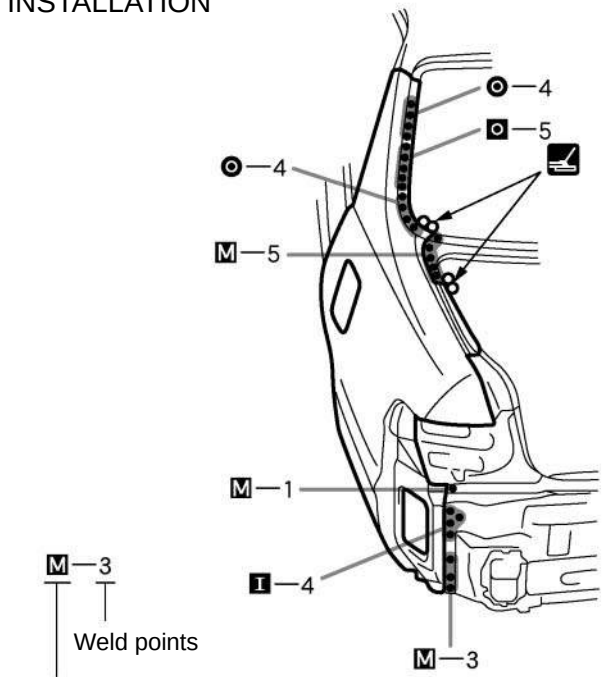
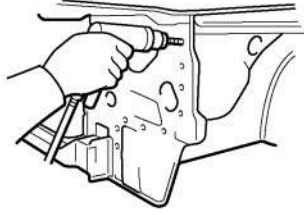
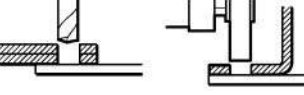
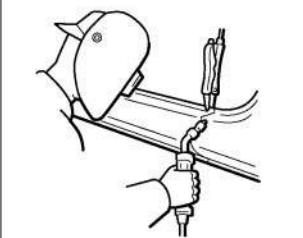
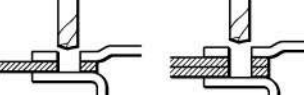
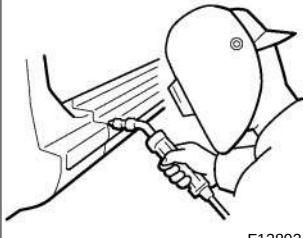
The following symbols are used in the welding diagrams in section BP of this manual to indicate cutting areas and the types of weld required.

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)	
oooo		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	

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

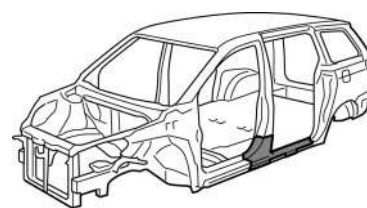
3. ILLUSTRATION OF WELD POINT SYMBOLS

EXAMPLE:

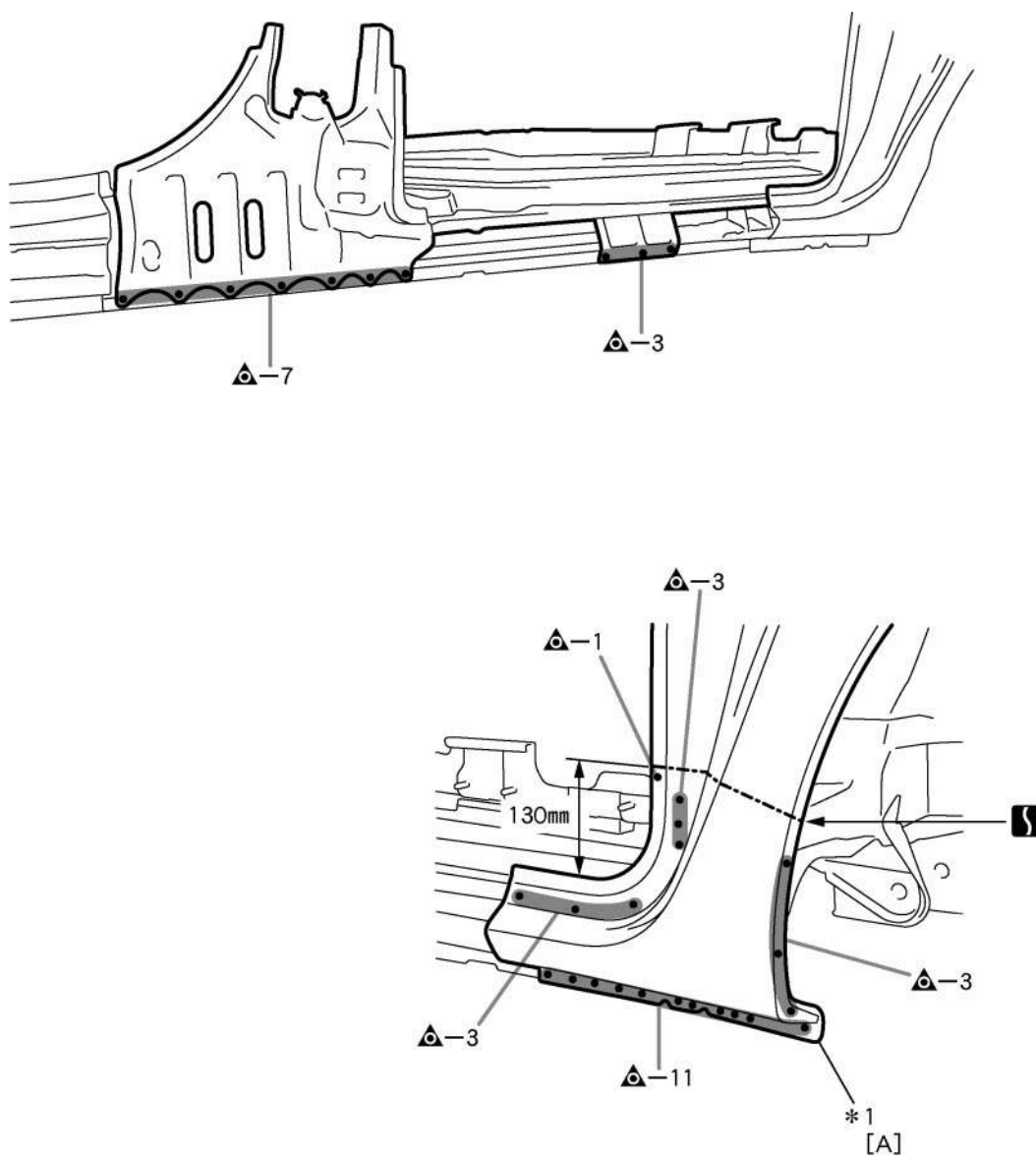
REMOVAL			INSTALLATION		
 Remove weld point and panel position			 Weld method and panel position		
SYMBOLS	MEANING	ILLUSTRATION	SYMBOLS	MEANING	ILLUSTRATION
  	Remove Weld Points		  	Spot Weld	
	(Outside)		  	MIG Plug Weld	
	(Middle)		 Spot MIG Weld 		
	(Inside)				
<i>HINT: Panel position symbols are as seen from the working posture.</i>			F13892A		

NO.1 LOWER OUTER RAIL (ASSY)**REPLACEMENT**

With the center body pillar and rocker outer panel removed.



F14993-A

REMOVAL

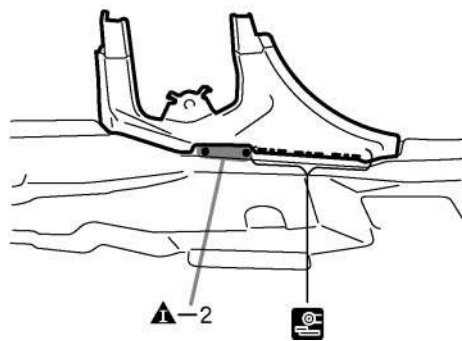
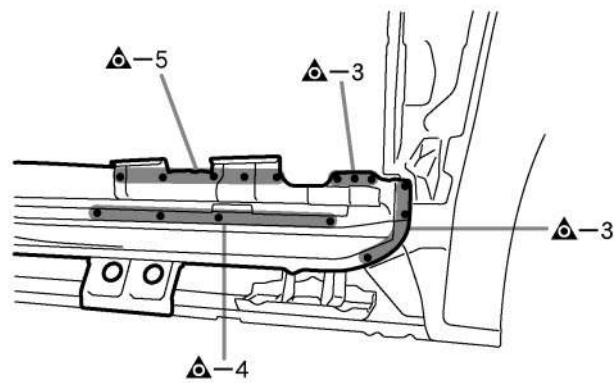
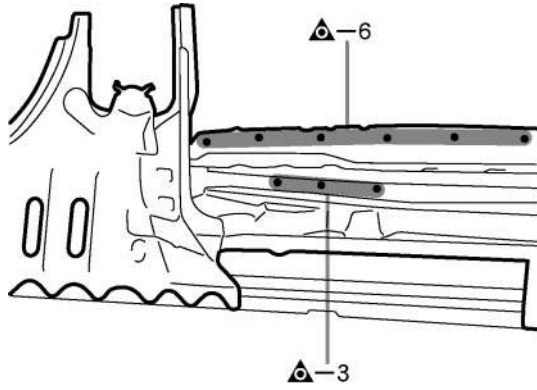
F14993

POINT

1 *1 [A] is reuse.

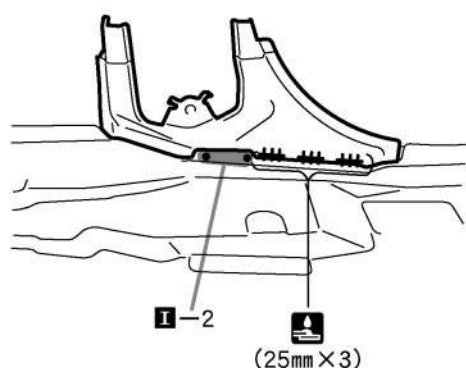
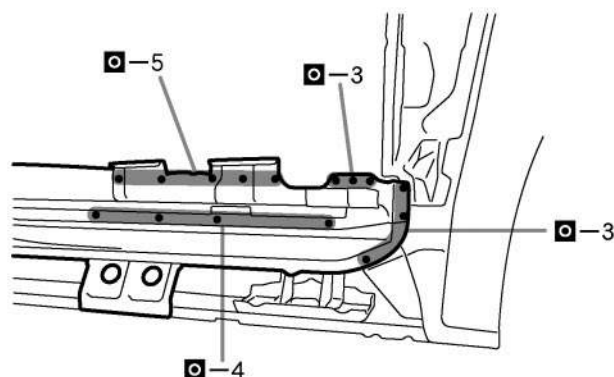
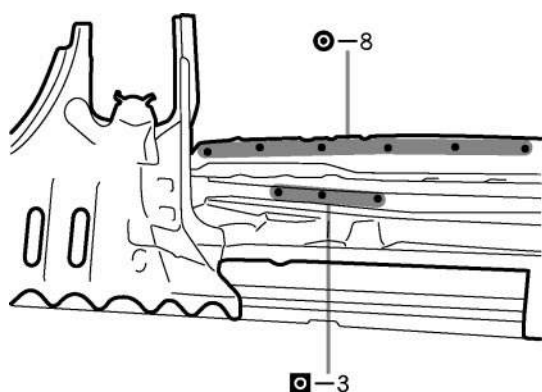
PART NAME

[A] Quarter Panel
130mm (5.12in.)



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.

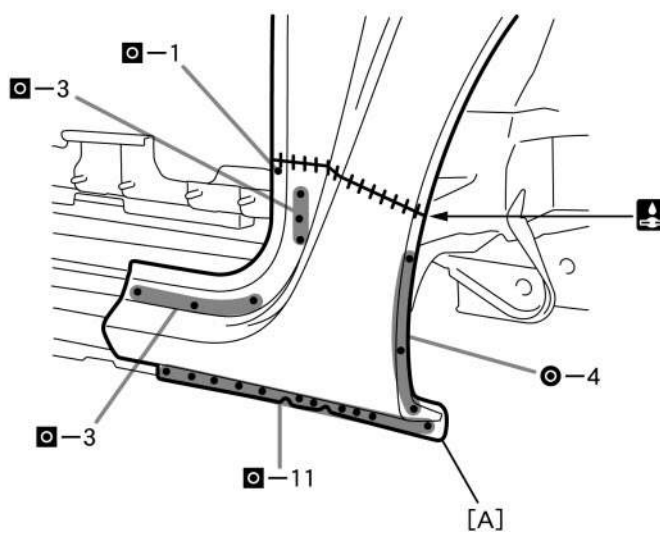
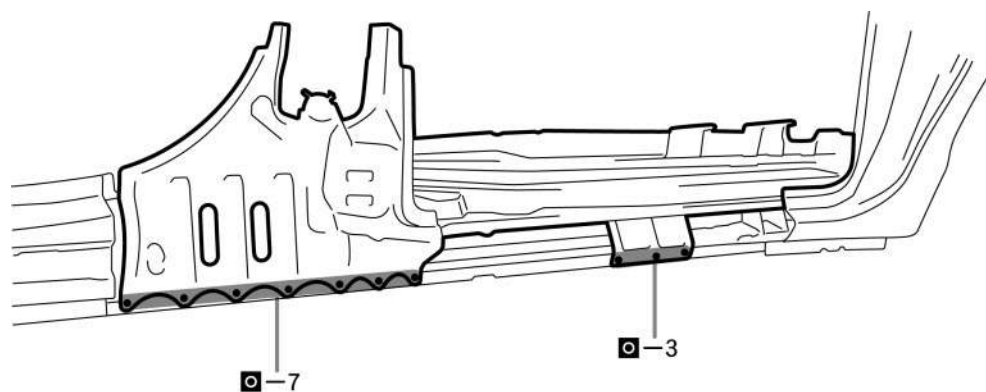


F14995

POINT

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

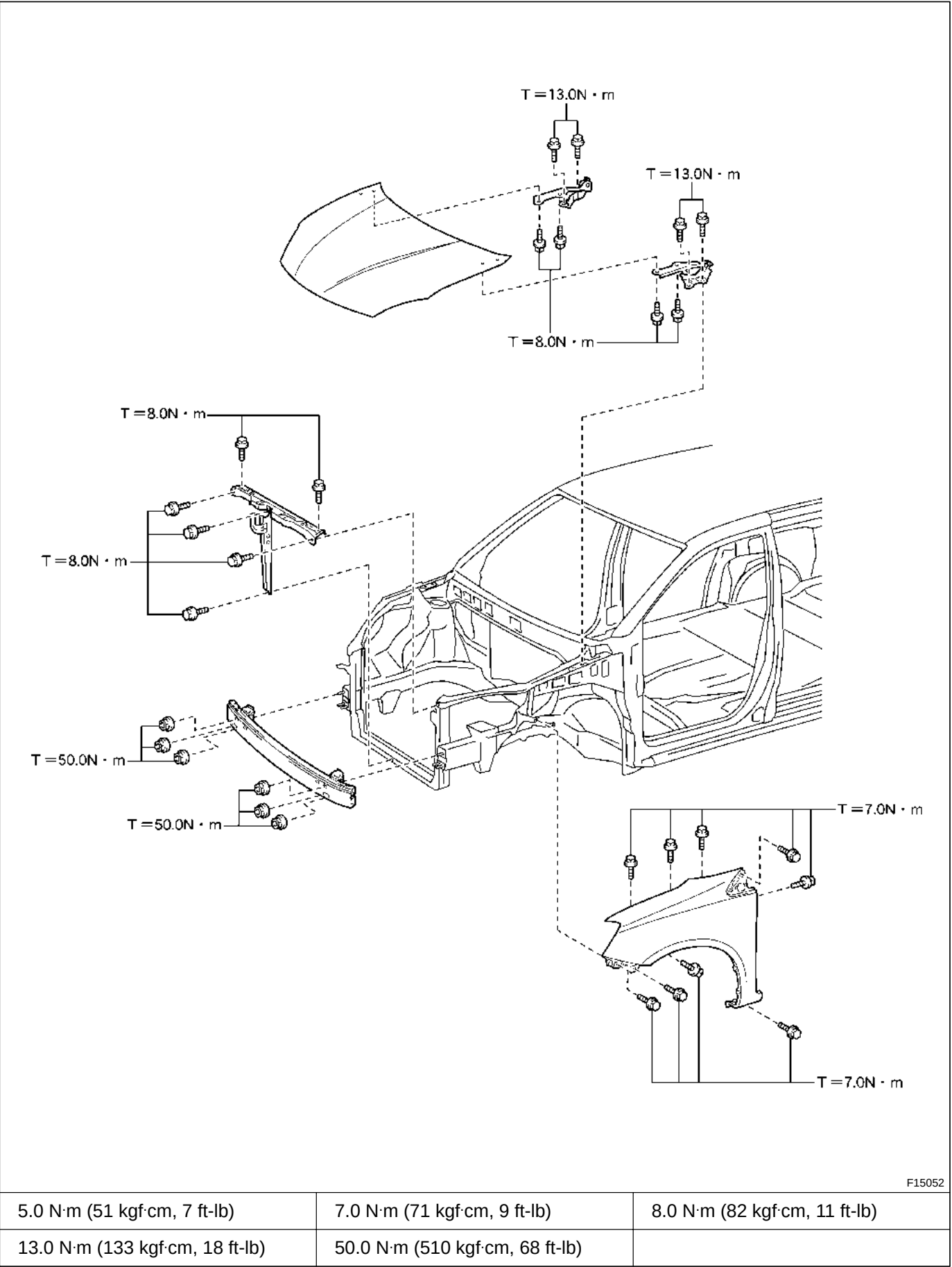
25mm (0.98in.)

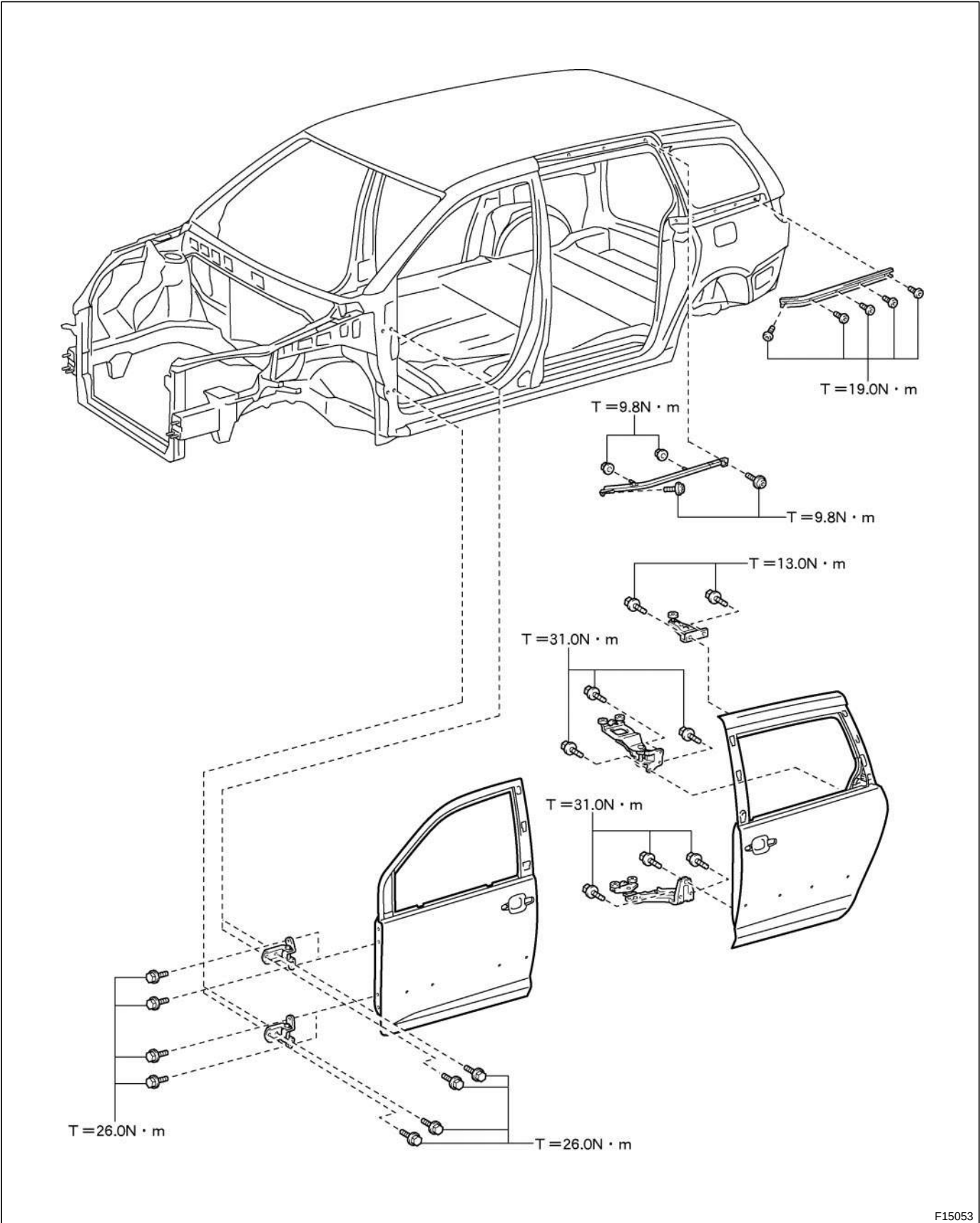


F14996

PART NAME
[A] Quarter Panel

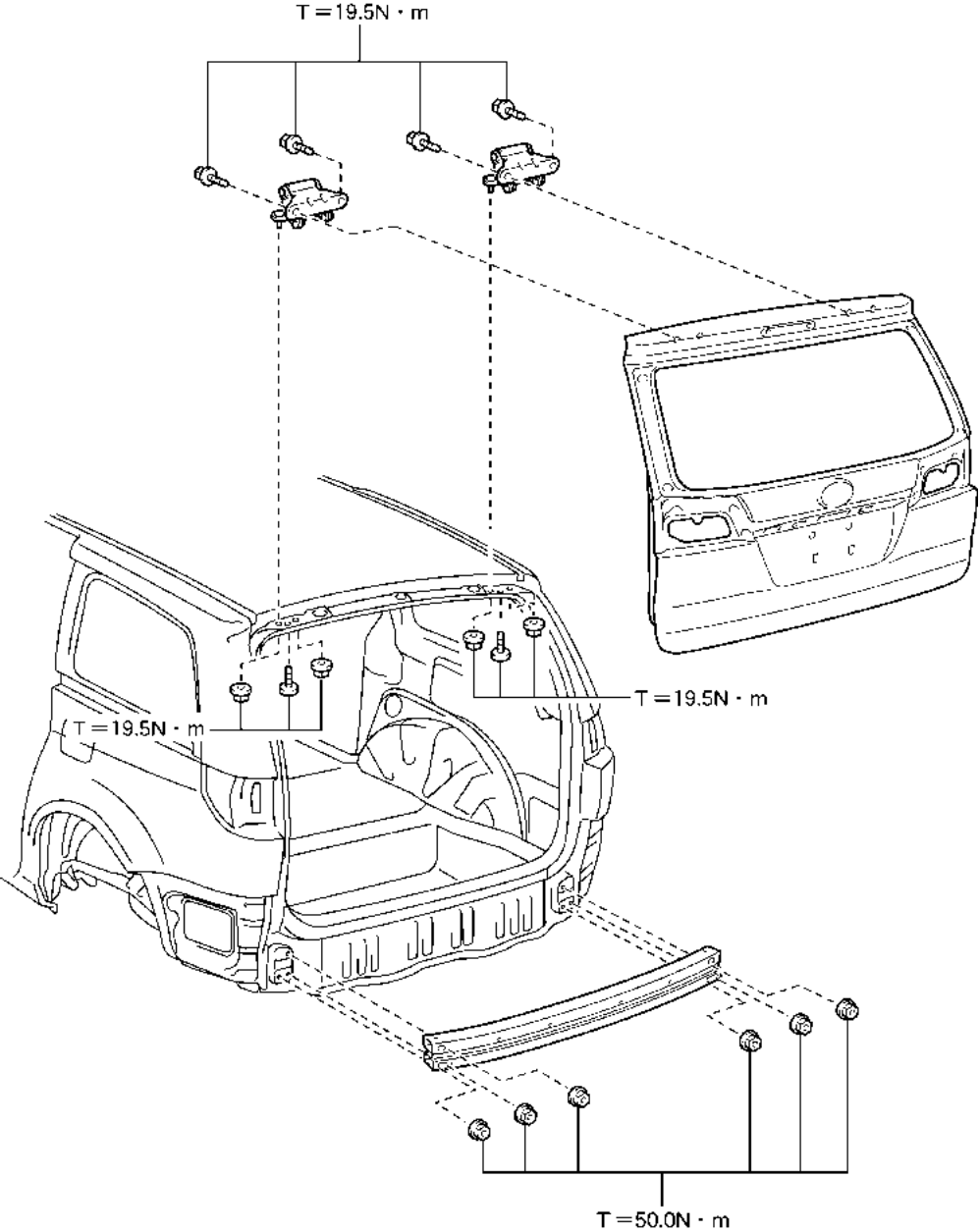
OUTER PANEL INSTALLATION TORQUE





F15053

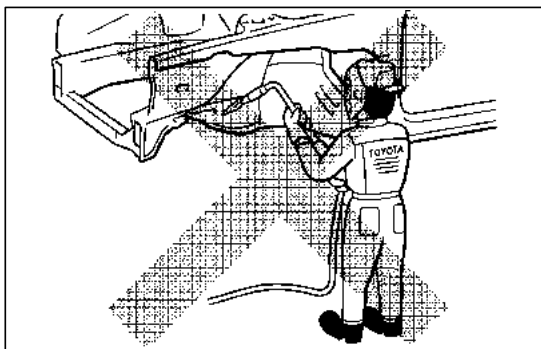
9.8 N·m (100 kgf·cm, 13 ft·lb)	13.0 N·m (133 kgf·cm, 18 ft·lb)	19.0 N·m (194 kgf·cm, 26 ft·lb)
26.0 N·m (265 kgf·cm, 35 ft·lb)	31.0 N·m (316 kgf·cm, 42 ft·lb)	



F15054

19.5 N·m (199 kgf·cm, 26 ft·lb)	50.0 N·m (510 kgf·cm, 68 ft·lb)	
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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.

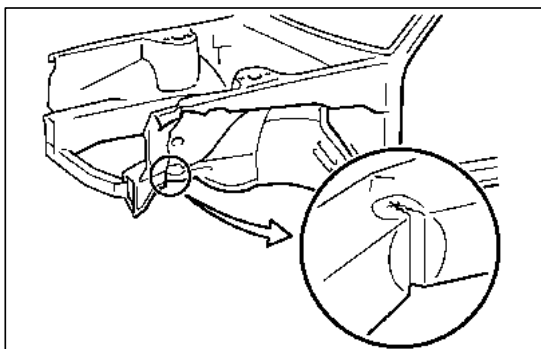
At Toyota, in order to fulfill these requirements, we use high tensile strength steel sheets and rust preventive steel sheets on the body.

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 part is 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.

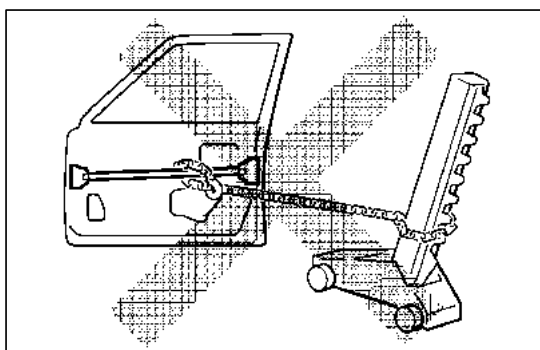
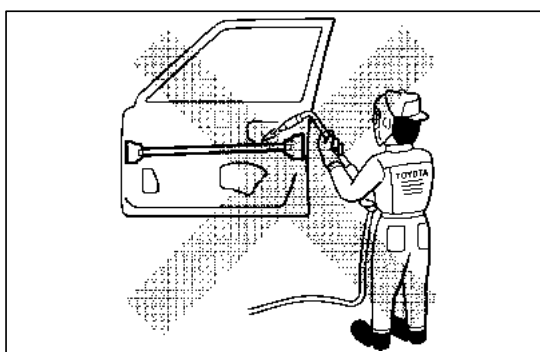


2. STRUCTURE PANEL KINKS

A sharp deformation angle on the panel that cannot be returned to its original shape by pulling or hammering is called a kink.

Since structure parts were designed to exhibit a 100% performance when they were in their original shape, if they are deformed in an accident, or if the deformed parts are repaired and reused, they 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 in maintaining a survival space for passengers in a side collision.

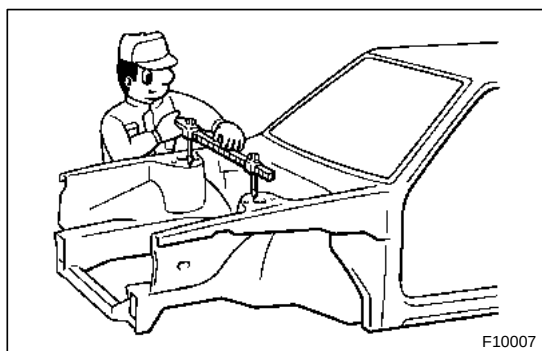
For impact beam, we use special high tensile strength steel.

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

Since these parts were designed to exhibit a 100% performance when they were in their original shape, if they are deformed in an accident, or if the deformed parts are repaired and reused, they become unable to exhibit the same performance as intended in the design.

It is necessary to replace the door assembly when impact beam or bracket is damaged.

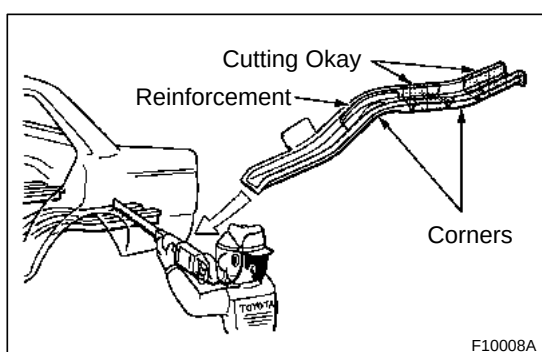
PROPER AND EFFICIENT WORK PROCEDURES



1. REMOVAL

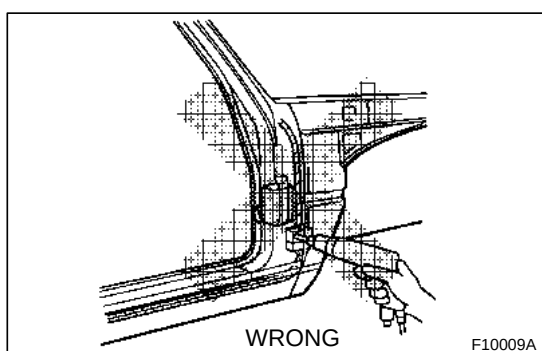
(a) PRE-REMOVAL MEASURING

- (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

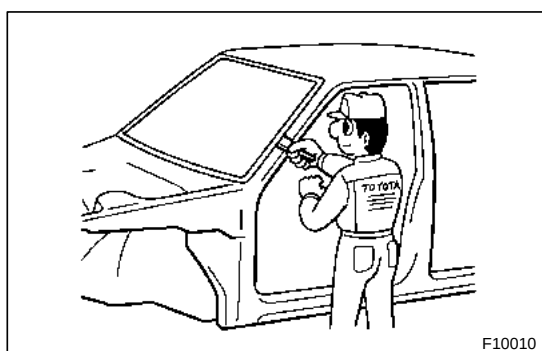
- (1) Always cut in a straight line and avoid reinforced area.



(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.

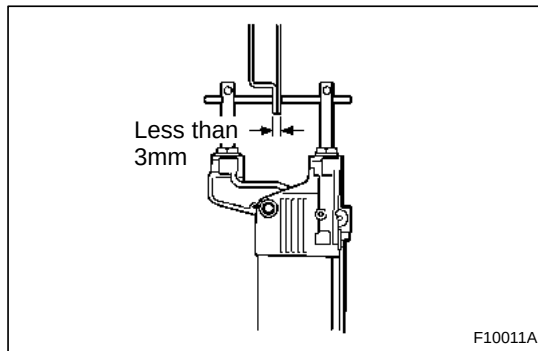
HINT: See "Handling Precautions on Related Components" on page IN-15.



(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.

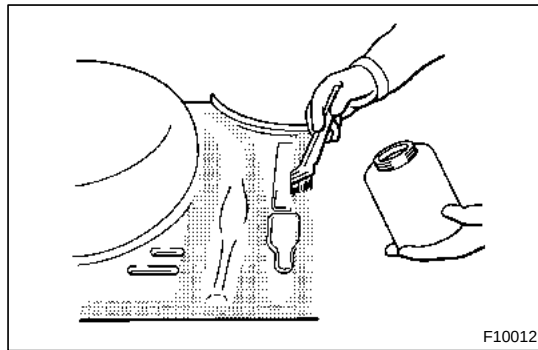


2. PREPARATION FOR INSTALLATION

(a) SPOT WELD POINTS

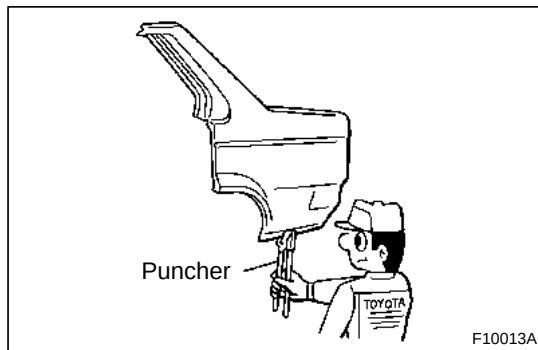
- (1) When welding panels with a combined thickness of over 3mm (0.12in.), use a MIG (Metal Inert Gas) welder for plug welding.

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

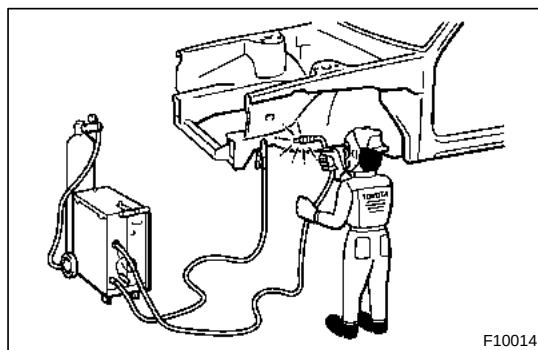


(c) MAKING HOLES FOR PLUG WELDING

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

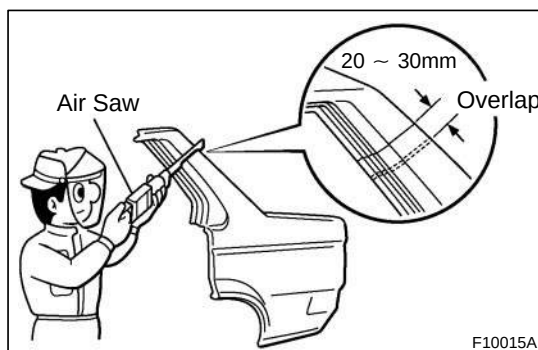
REFERENCE: mm (in.)

Thickness of welded portion	Size of plug hole
1.0 (0.04) under	5 (0.20) ø over
1.0 (0.04) - 1.5 (0.06)	6.4 (0.26) ø over
1.5 (0.06) over	8 (0.31) ø over



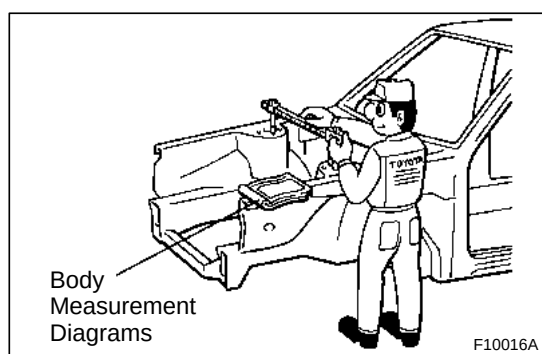
(d) SAFETY PRECAUTIONS FOR ELECTRICAL COMPONENTS

- (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

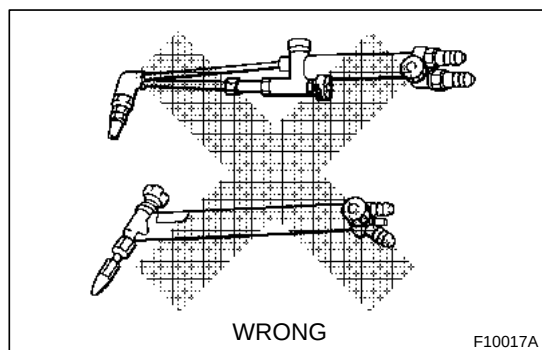
- (1) For joint areas, rough cut the new parts, leaving 20 - 30mm (0.79 - 1.18in.) overlap.



3. INSTALLATION

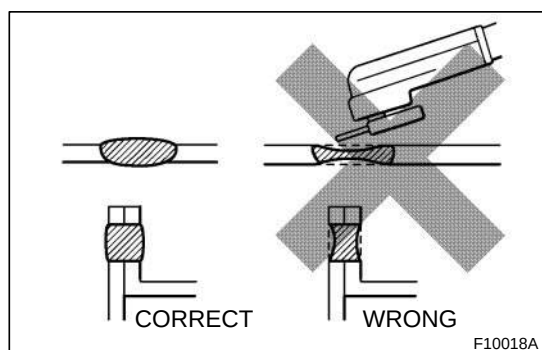
(a) PRE-WELDING MEASUREMENTS

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



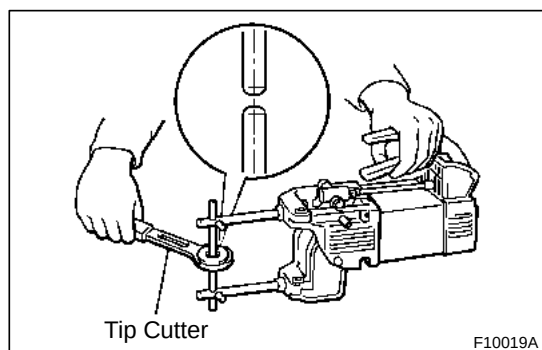
(b) WELDING PRECAUTIONS

- (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.



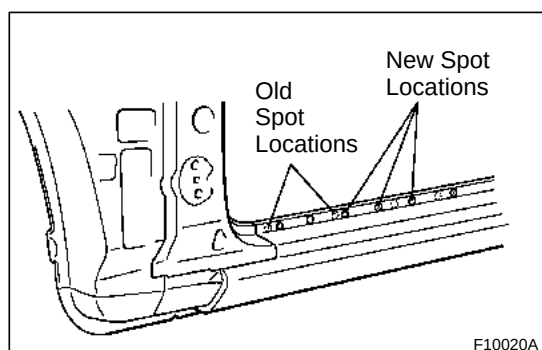
(c) POST-WELDING REFINISHING

- (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.



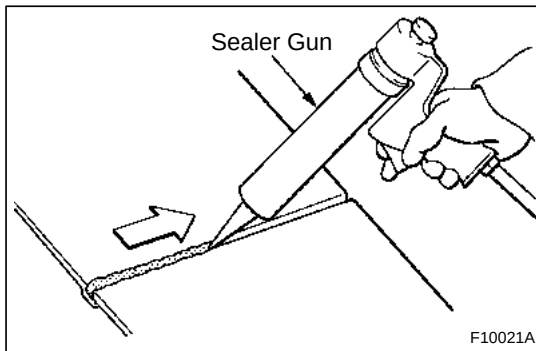
(d) SPOT WELD LOCATIONS

- (1) Try to avoid welding over previous spots.



(e) SPOT WELDING PRECAUTIONS

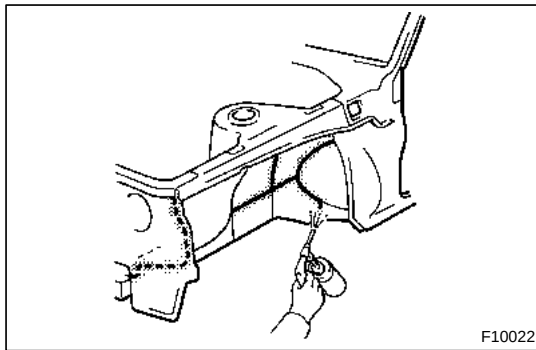
- (1) The shape of the welding tip point has an effect on the strength of the weld.
- (2) Always insure that the seams and welding tip are free of paint.



4. ANTI-RUST TREATMENT

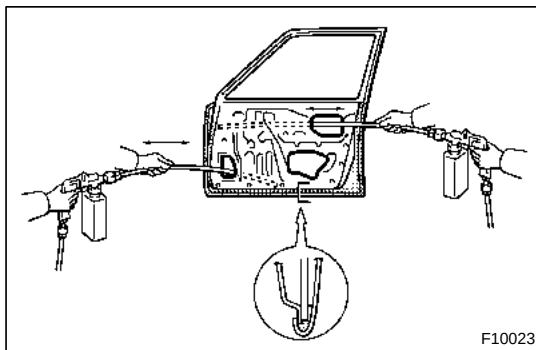
(a) BODY SEALER APPLICATION

- (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:

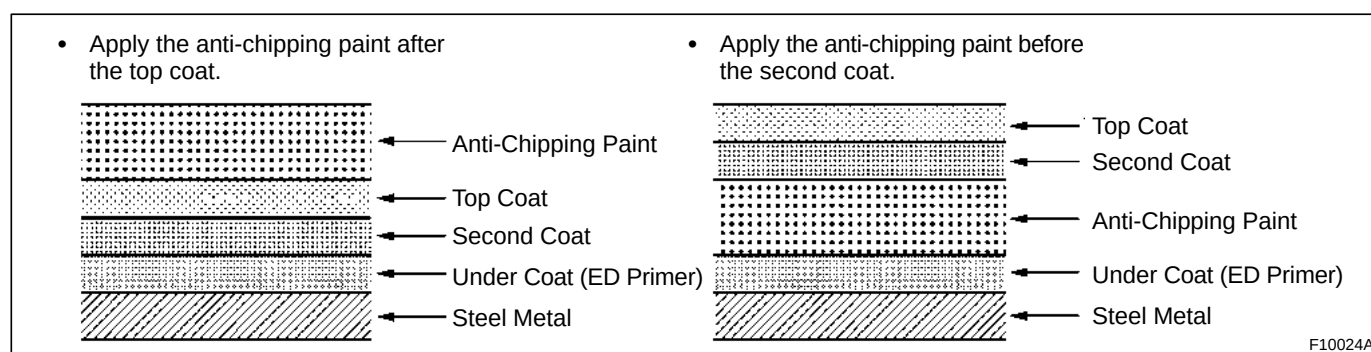
Painting prevents corrosion and protect the sheet metal from damage. In this section, anti-chipping paint only for anti-corrosion purpose is described.

(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.

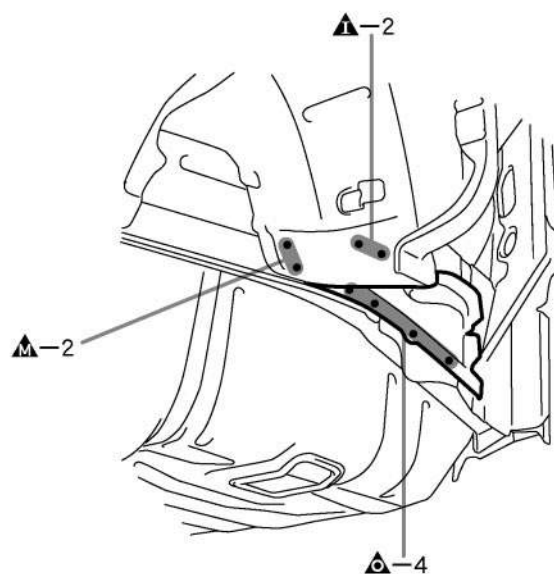
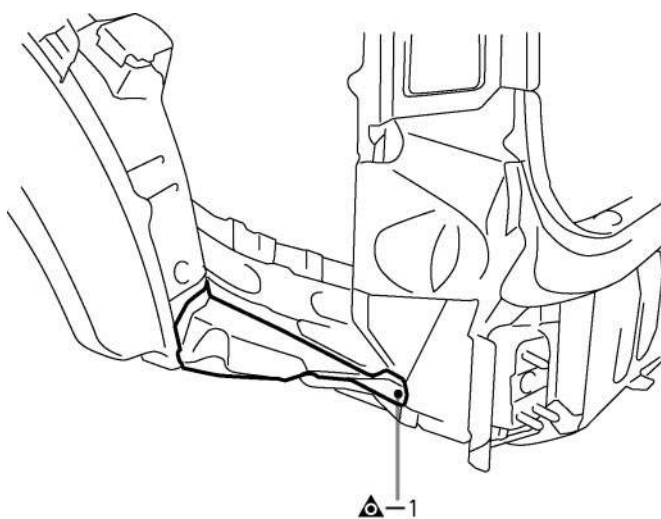


**QUARTER PANEL UPPER REAR
EXTENSION (ASSY)****REPLACEMENT**

With the back door opening side reinforcement removed.



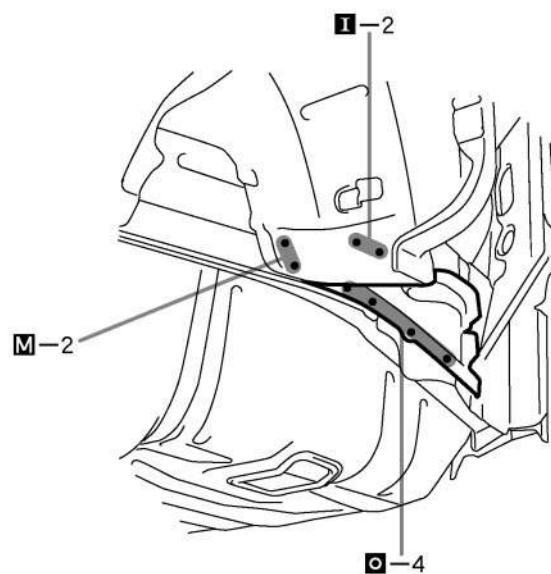
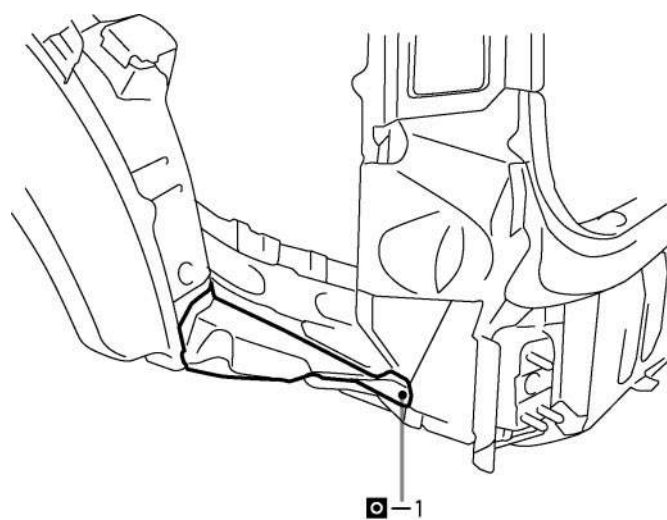
F15015-A

REMOVAL

F15015

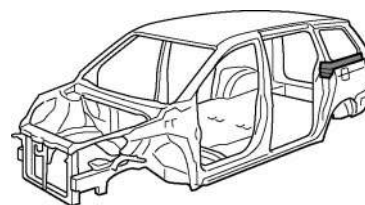
INSTALLATION

- 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.

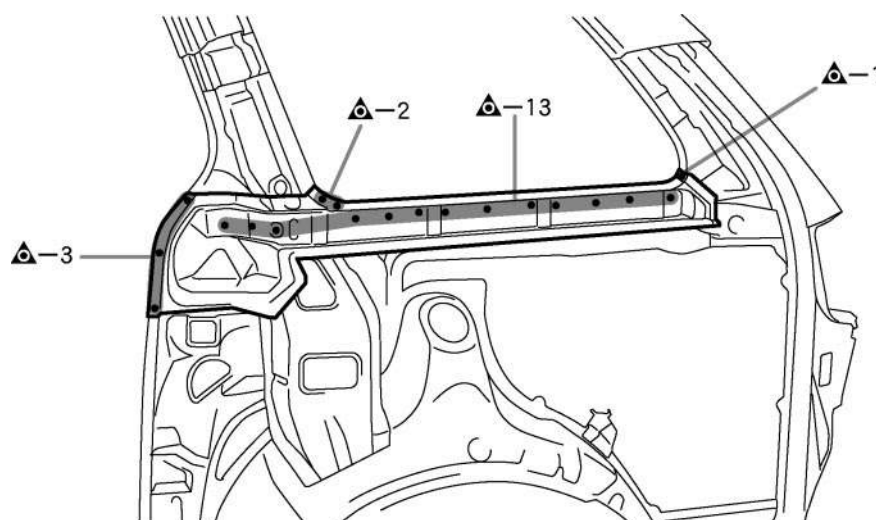


**QUARTER LOCK PILLAR EXTENSION
(ASSY)****REPLACEMENT**

With the quarter panel removed.



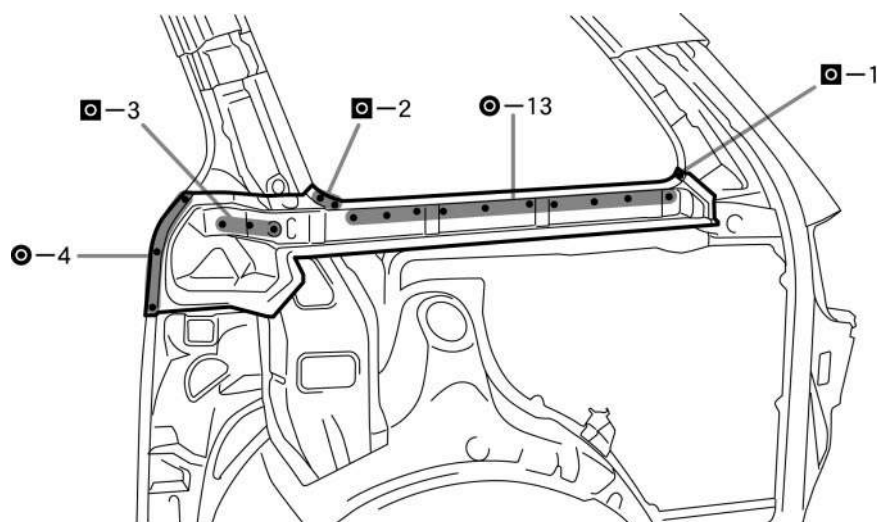
F15001-A

REMOVAL

F15001

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.



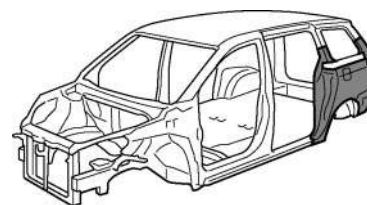
F15002

POINT

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

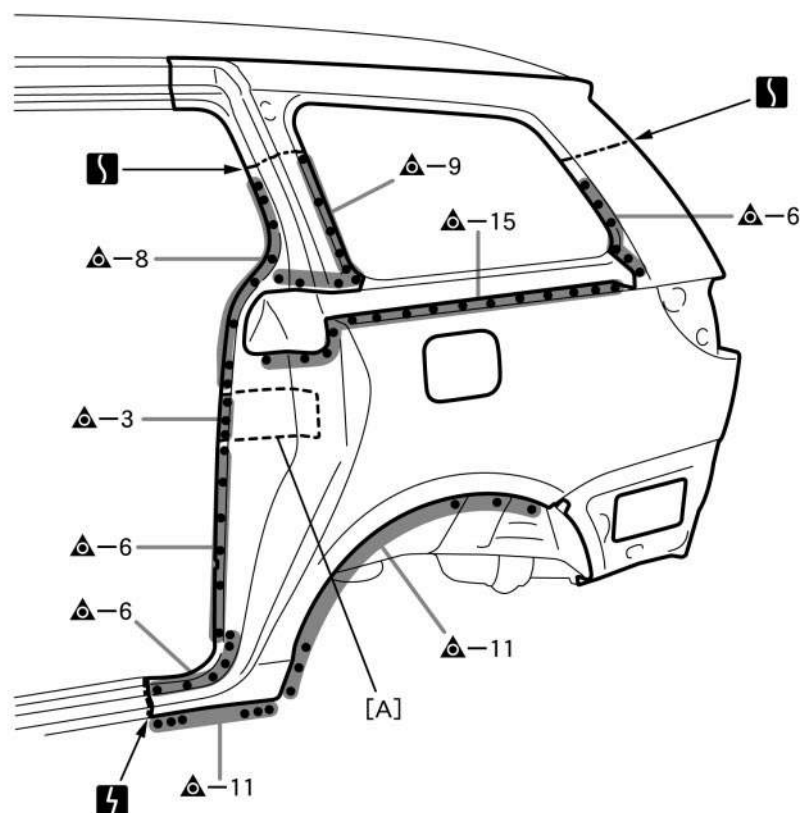
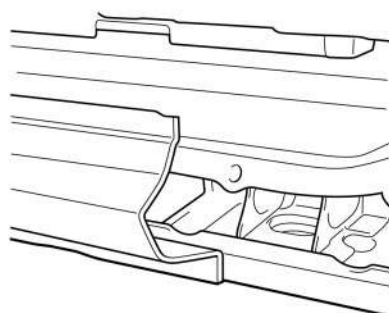
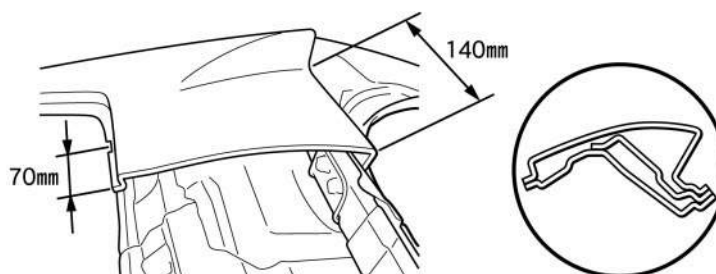
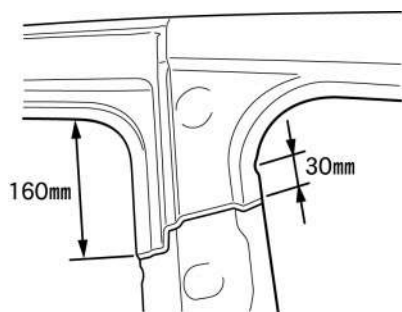
QUARTER PANEL (CUT)

REPLACEMENT



F14997-A

REMOVAL



F14997

POINT

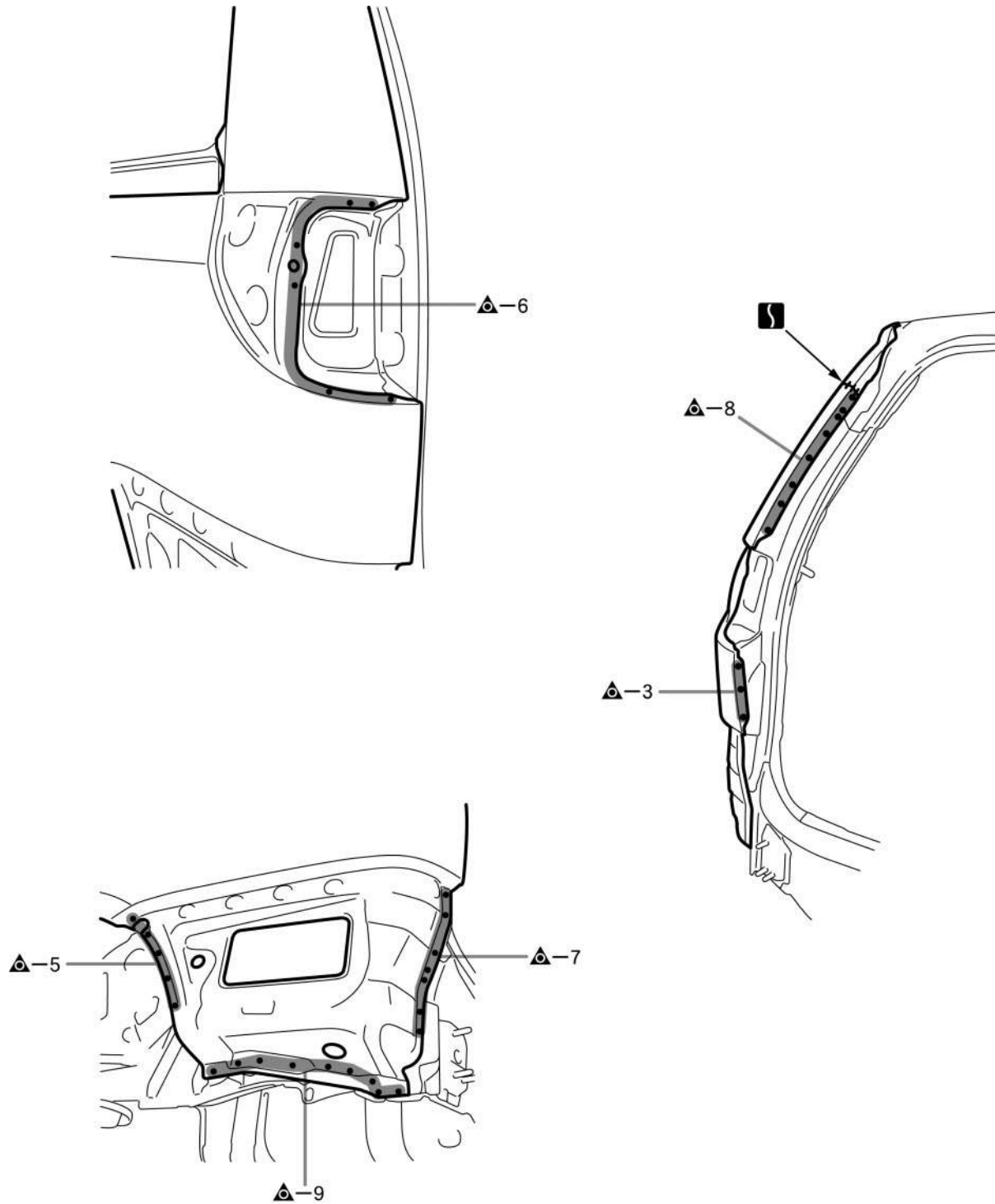
- 1 Remove the [A] at the same time.

PART NAME

[A] Quarter Lock Pillar Reinforcement
30mm (1.18in.) 70mm (2.76in.)

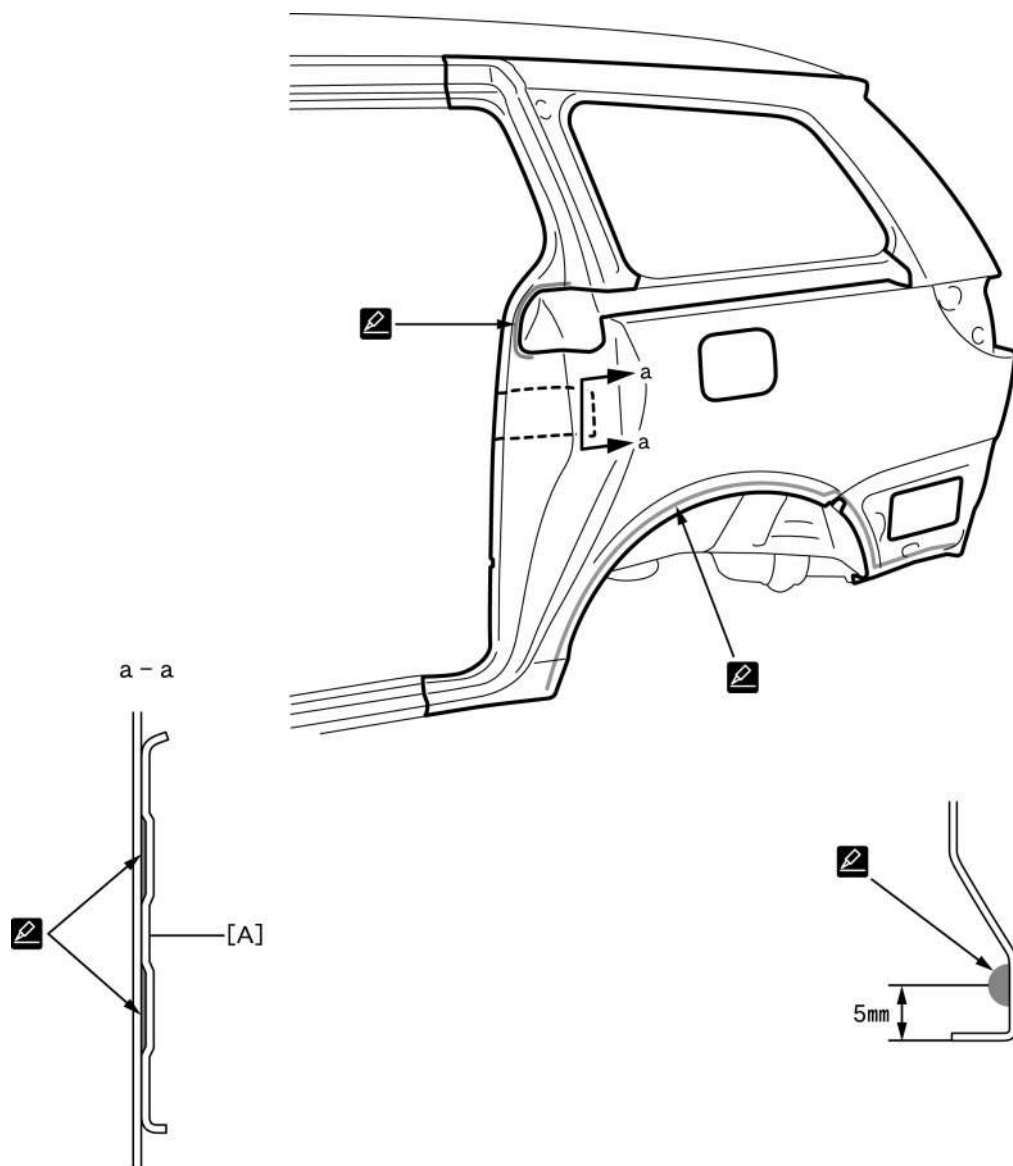
140mm (5.51in.)

160mm (6.30in.)



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.



F15055

POINT

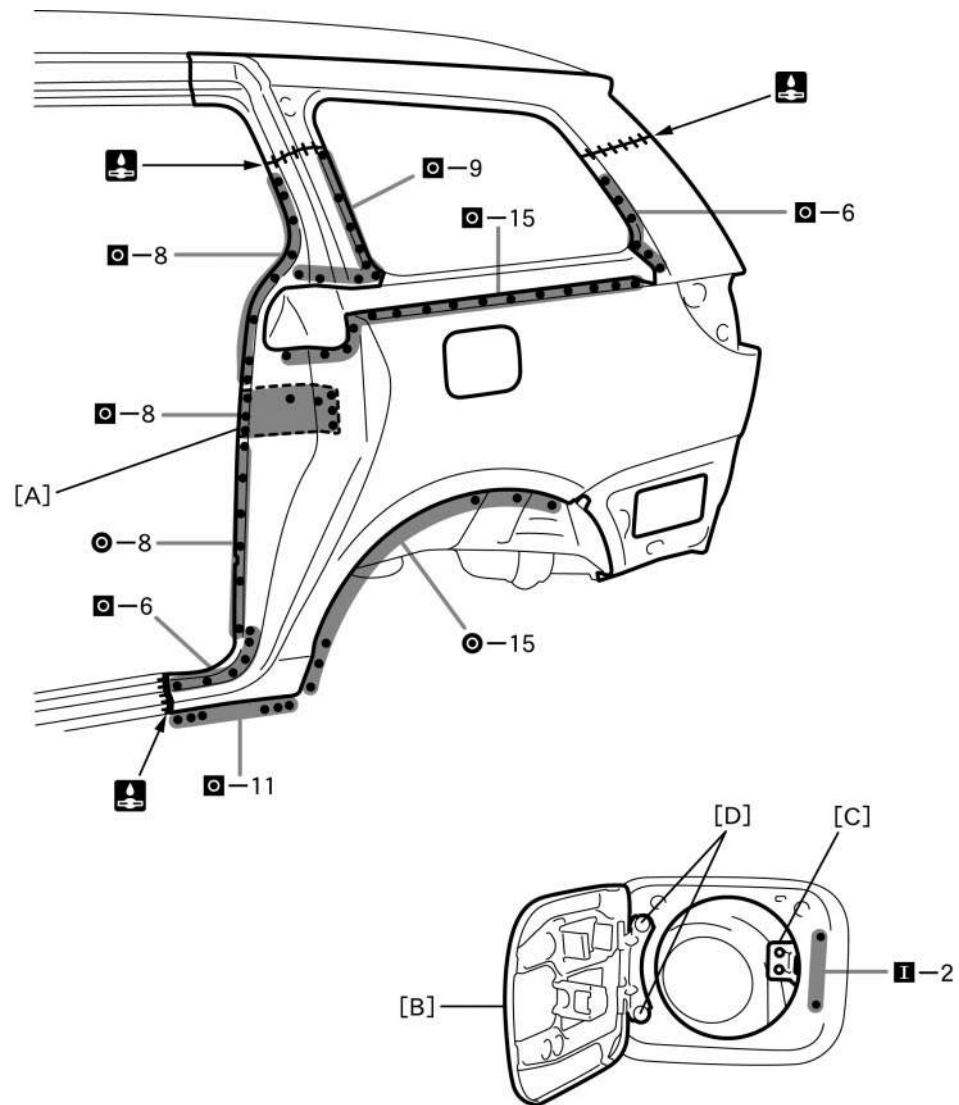
- 1 Before temporarily installing the new parts, apply sealer to the wheel arch.

HINT:

- 1) Apply body sealer about 5mm (0.20in.) from the flange, avoiding any oozing.
- 2) Apply sealer evenly, about 3 - 4mm (0.12 - 0.16in.) in diameter.

PART NAME

[A] Quarter Lock Pillar Reinforcement



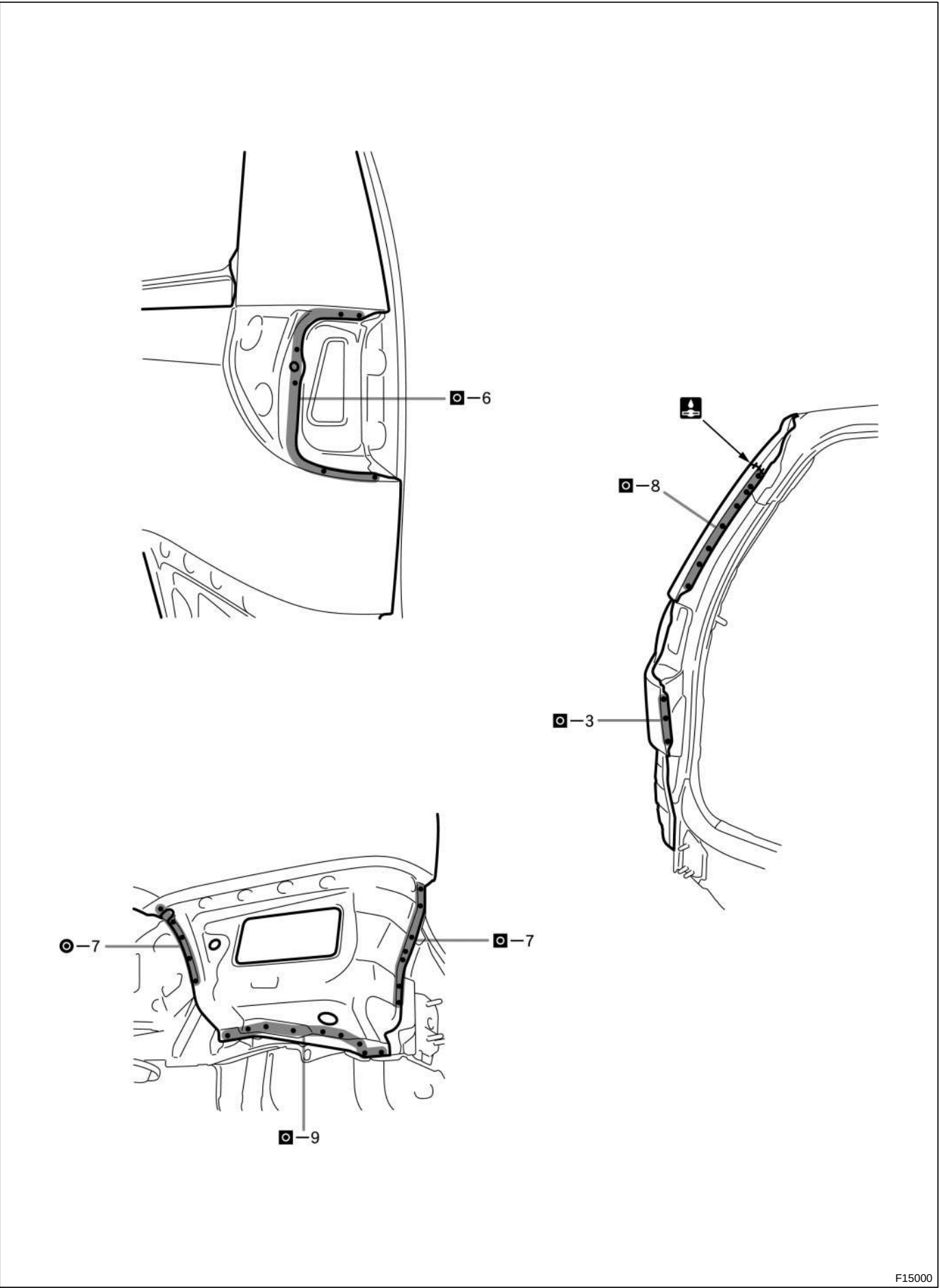
F14999

POINT

- 1 Inspect the fitting of the slide door, back door and rear combination light, etc., before welding, since this affects the appearance of the finish.
- 2 Use waterproof rivets for the [B] installation.

PART NAME

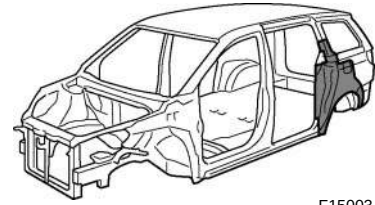
- | | | |
|---------------------------------------|-----------------------------|---------------------------------|
| [A] Quarter Lock Pillar Reinforcement | [B] Fuel Filler Opening Lid | [C] Quarter Panel Reinforcement |
| [D] Waterproof Rivets | | |



QUARTER WHEEL HOUSING OUTER PANEL (ASSY)

REPLACEMENT

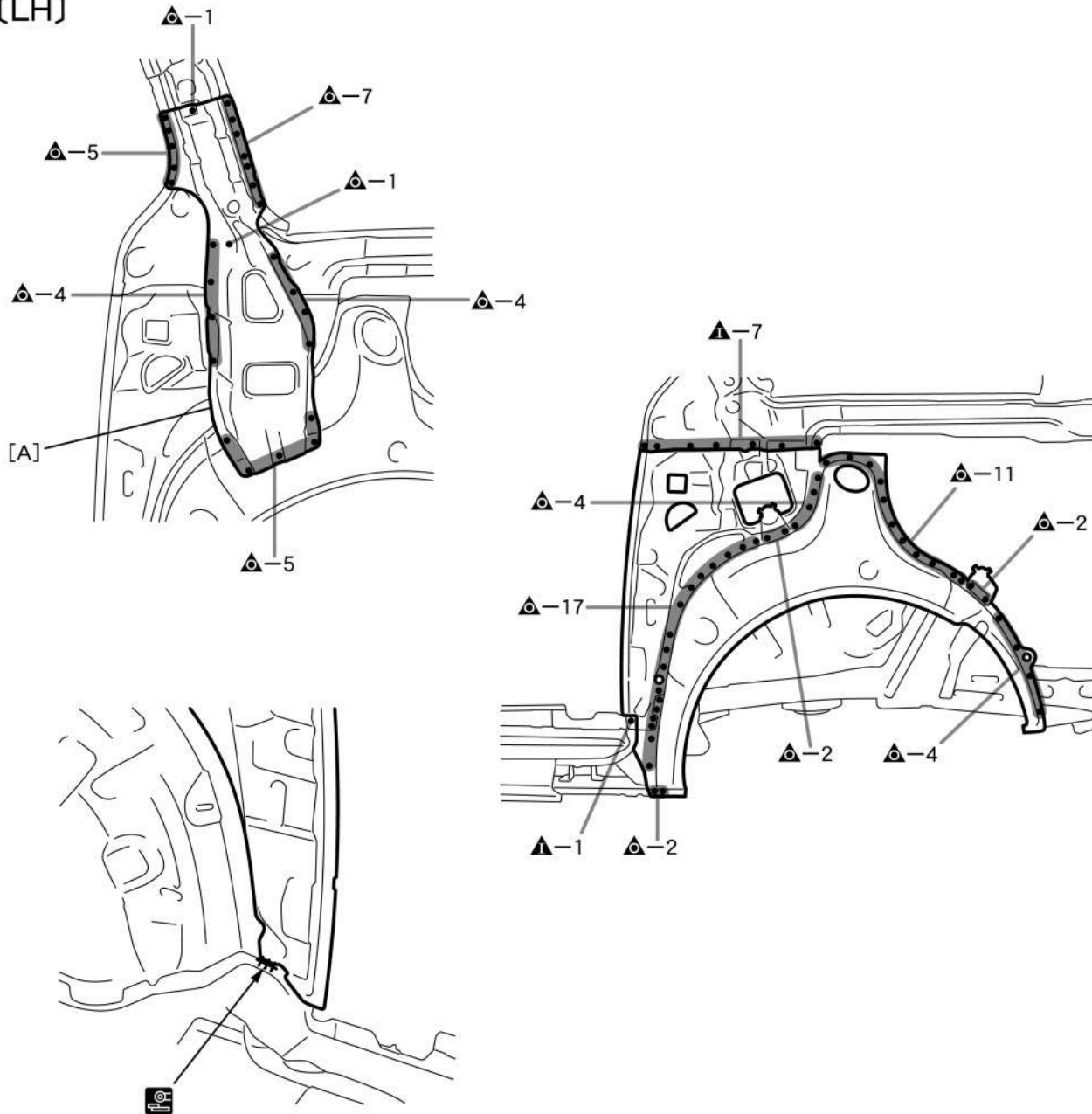
With the quarter panel and quarter lock pillar extension removed.



F15003-A

REMOVAL

[LH]



F15003

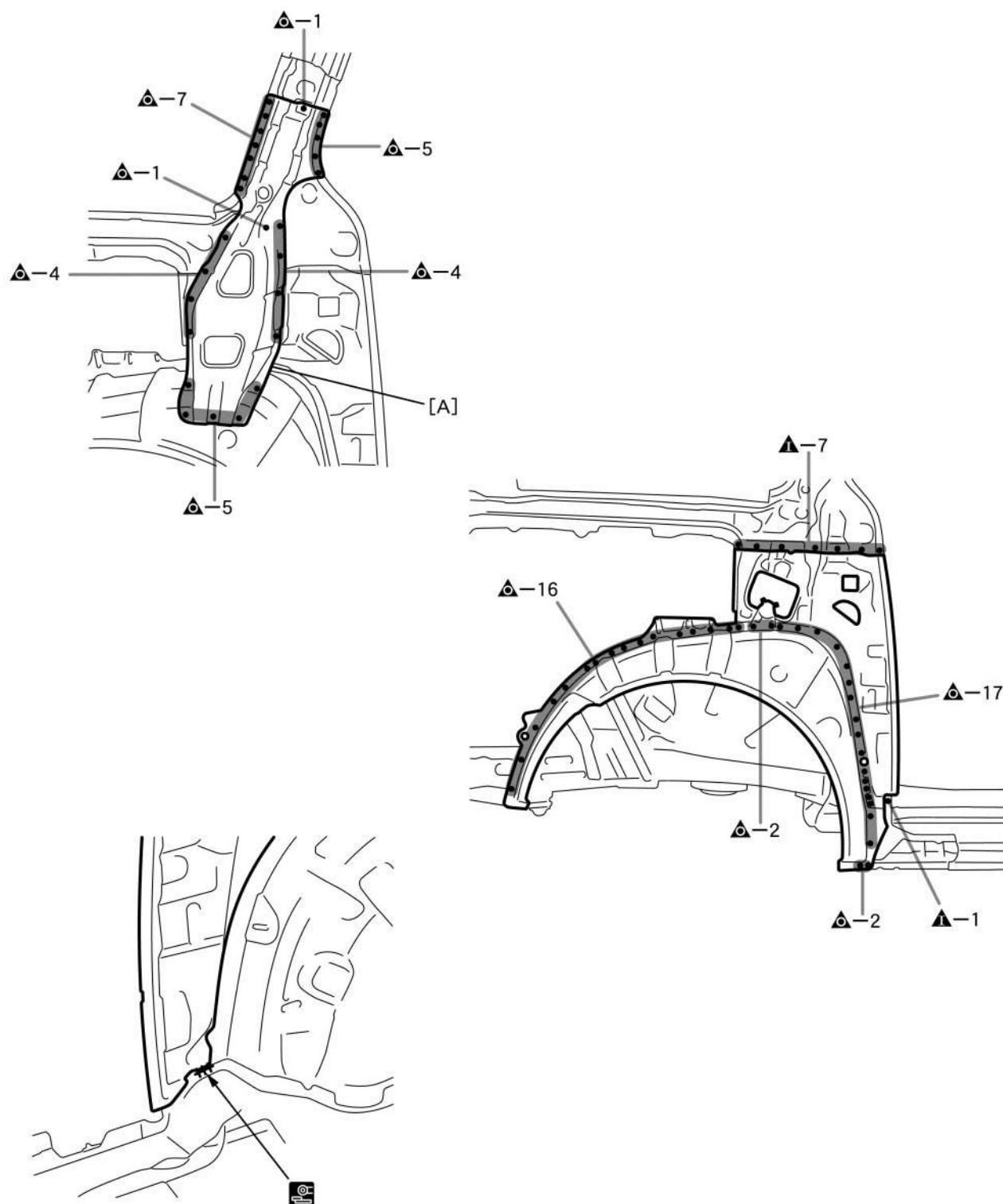
POINT

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

PART NAME

[A] Roof Side Inner To Wheel Housing Brace

[RH]



F15004

POINT

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

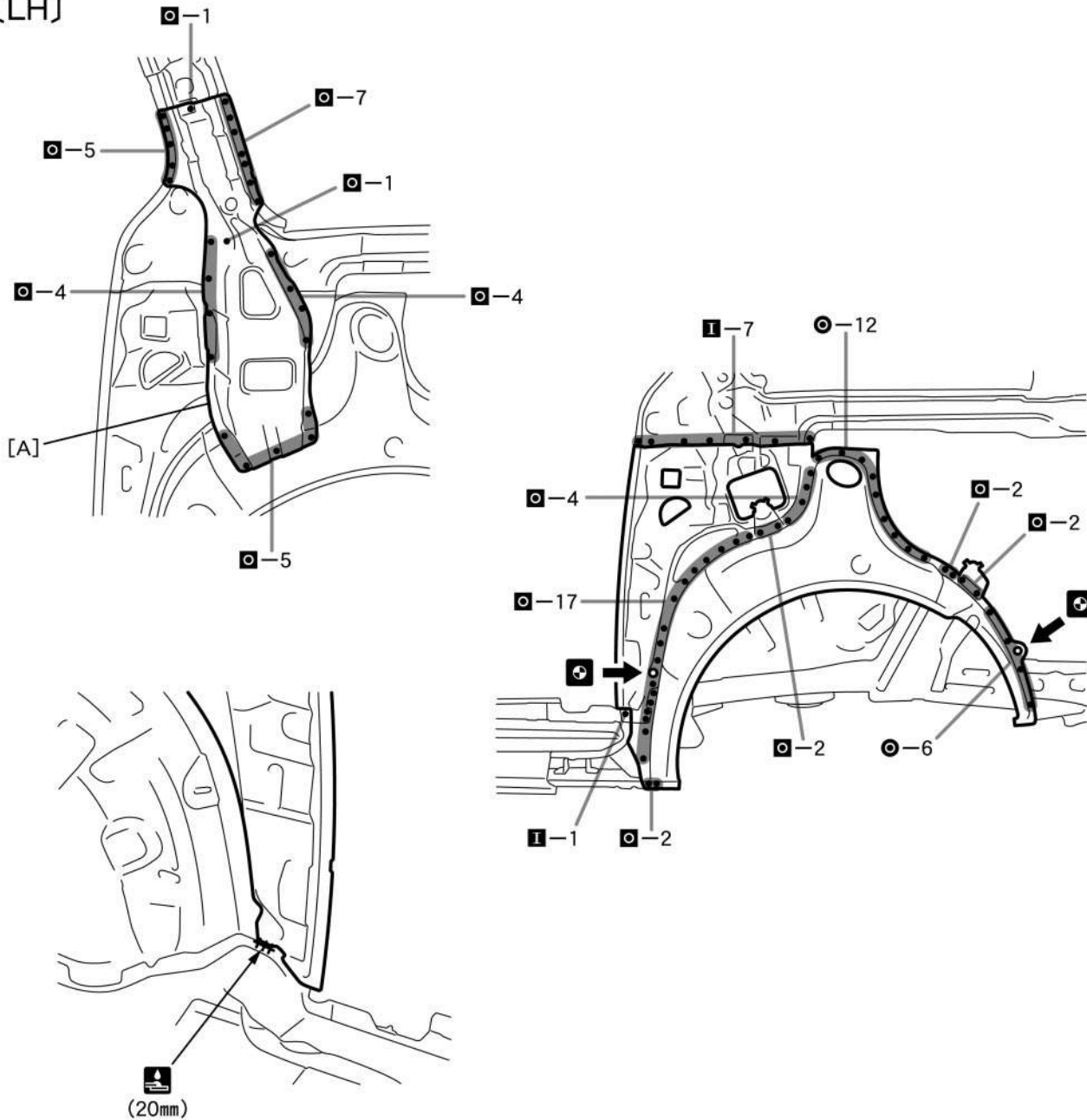
PART NAME

[A] Roof Side Inner To Wheel Housing 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.

[LH]



F15005

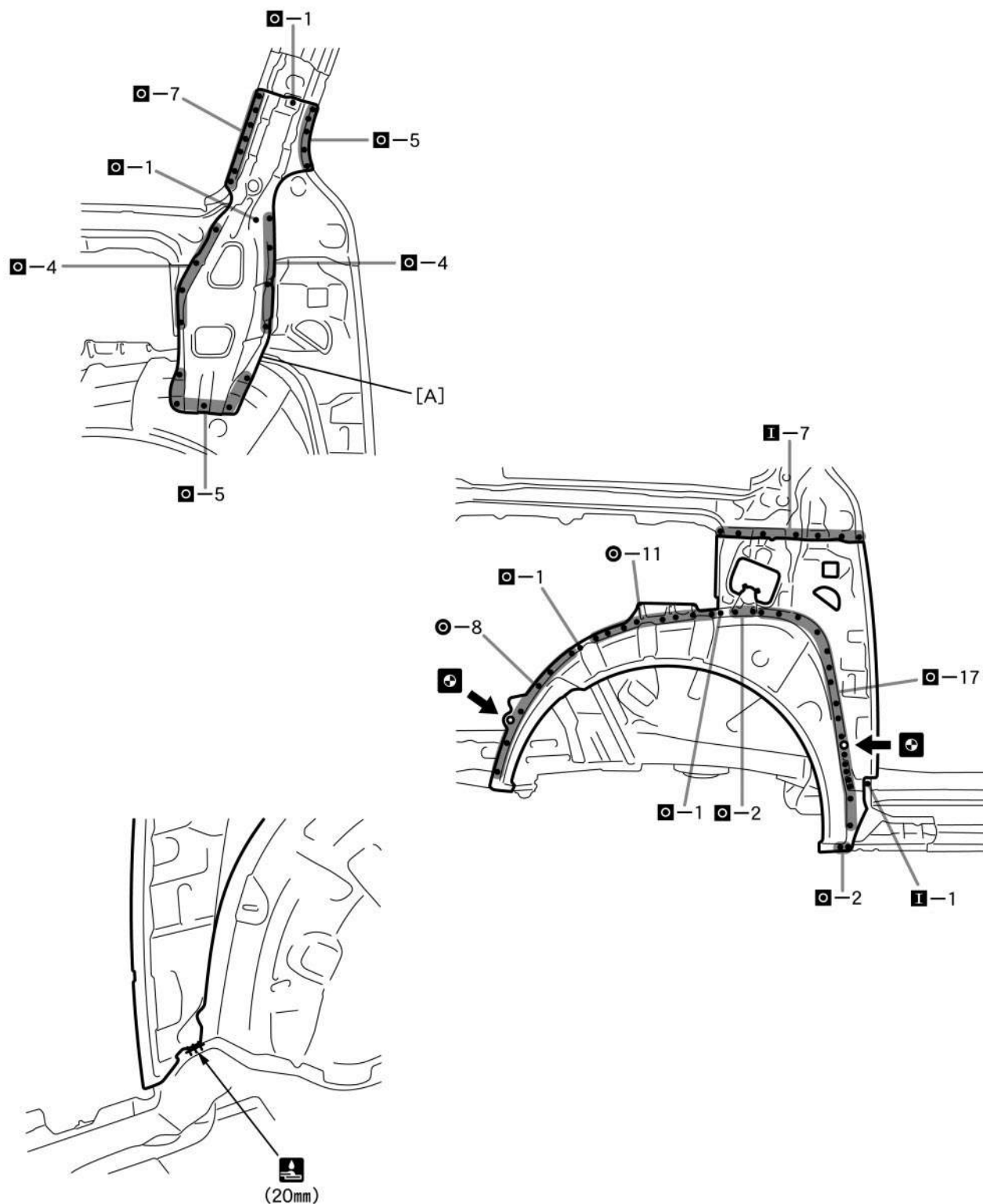
POINT

- 1 Determine the position of the new parts by assembly marks of the inner and outer panels.

PART NAME

[A] Roof Side Inner To Wheel Housing Brace
20mm (0.79in.)

[RH]



F15006

POINT

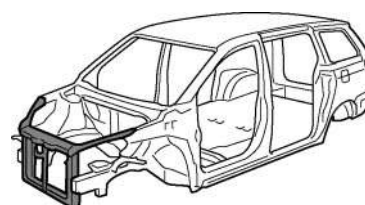
1 Determine the position of the new parts by assembly marks of the inner and outer panels.

PART NAME

[A] Roof Side Inner To Wheel Housing Brace
20mm (0.79in.)

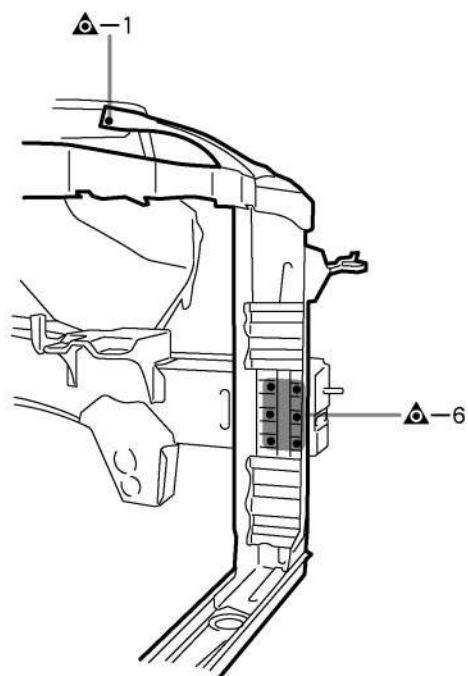
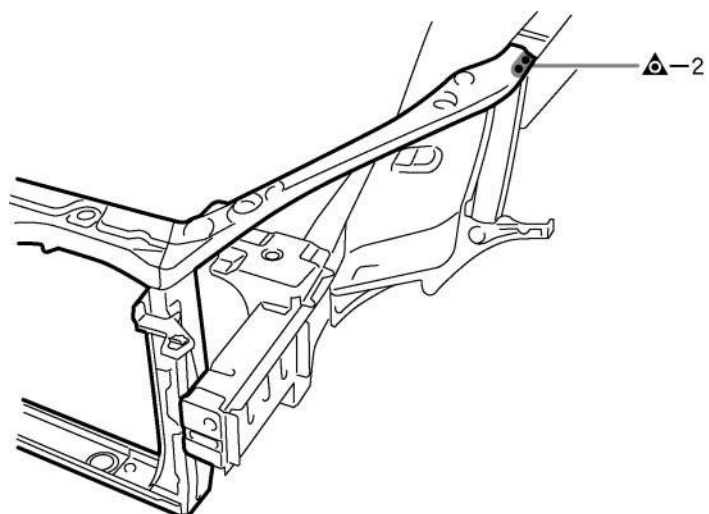
RADIATOR SUPPORT (ASSY)

REPLACEMENT



F14955-A

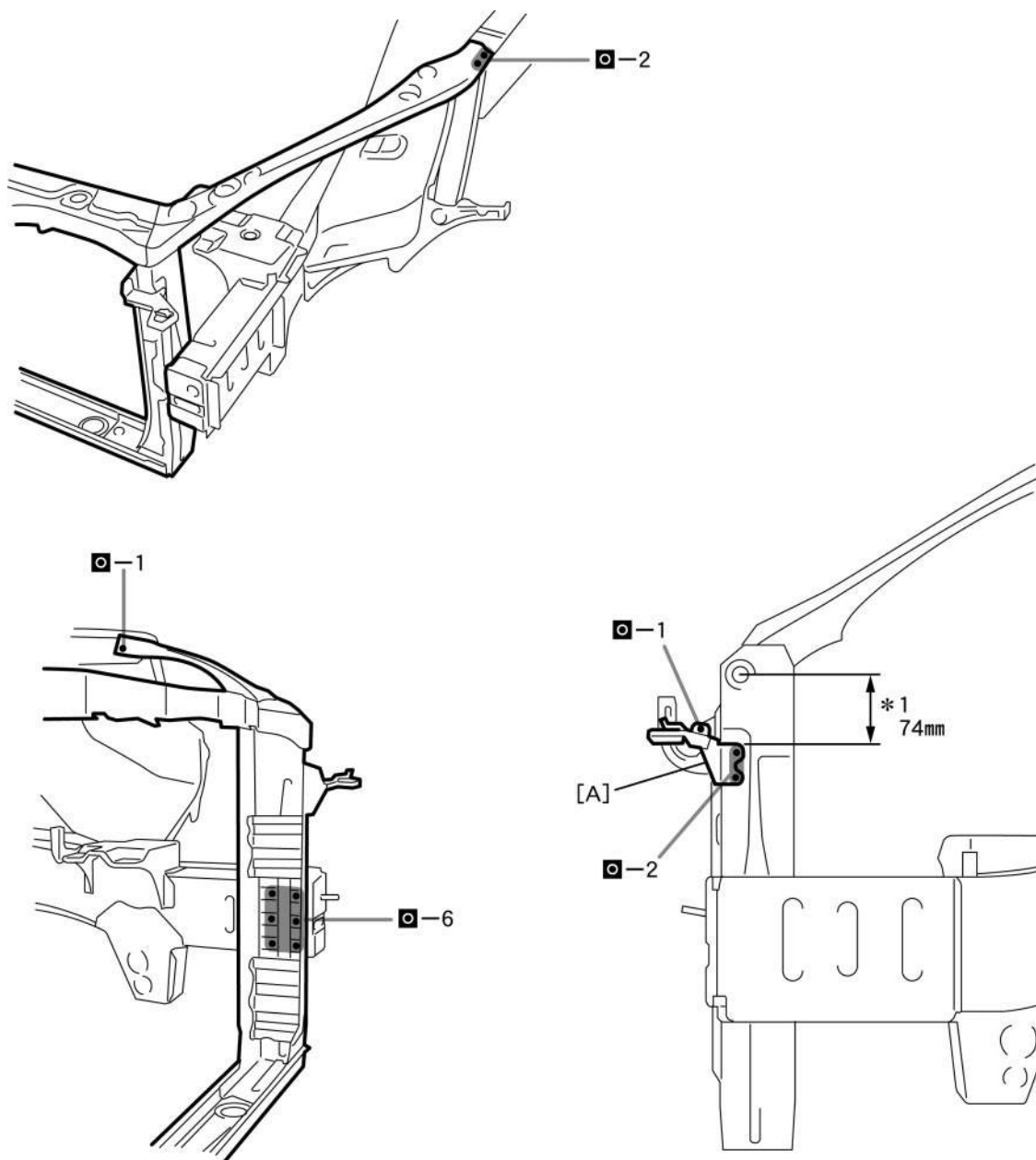
REMOVAL



F14955

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.



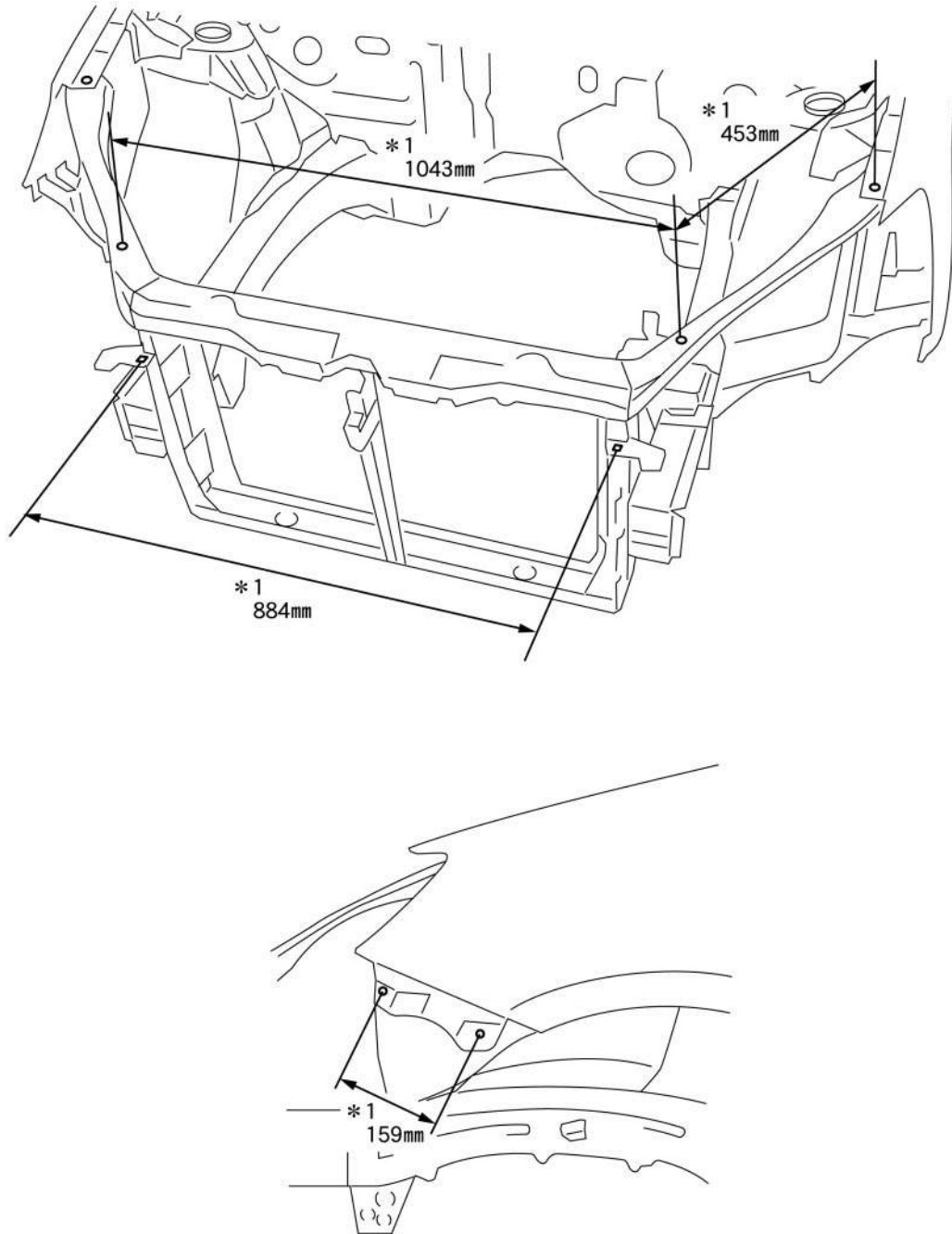
F14956

POINT

1 *1: The value is reference value.

PART NAME

[A] Headlight Bracket (RH), Headlight Mounting Upper Bracket (LH)
74mm (2.91in.)



F14957

POINT

- 1 *1: The value is reference value.
- 2 Measure the dimensions before installing headlights.

159mm (6.26in.)

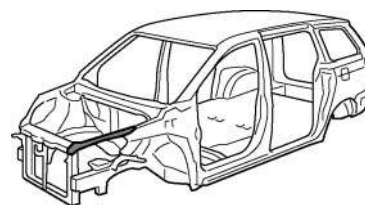
453mm (17.83in.)

884mm (34.80in.)

1043mm (41.06in.)

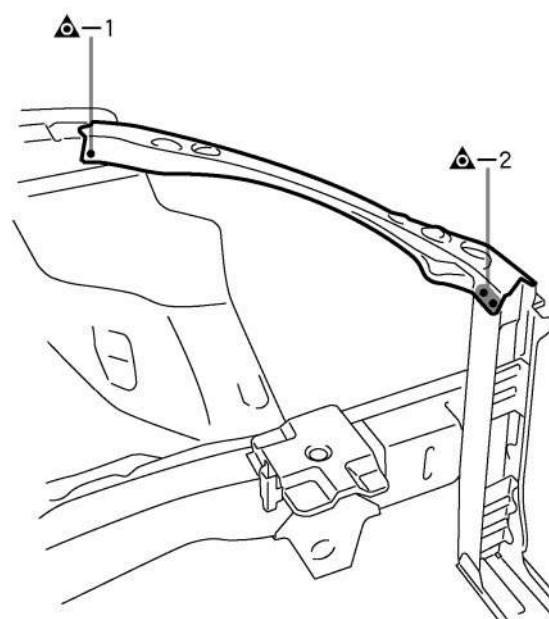
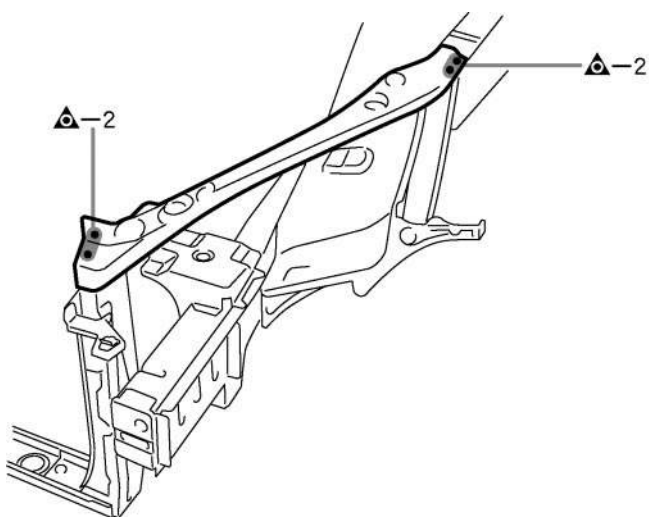
RADIATOR UPPER SUPPORT (ASSY)

REPLACEMENT



F14951-A

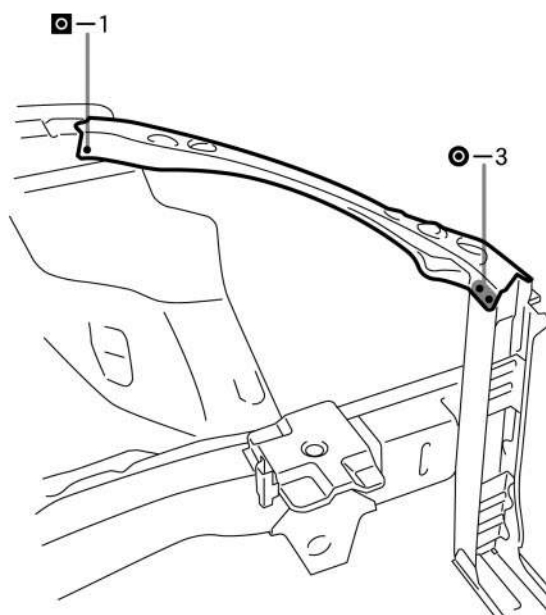
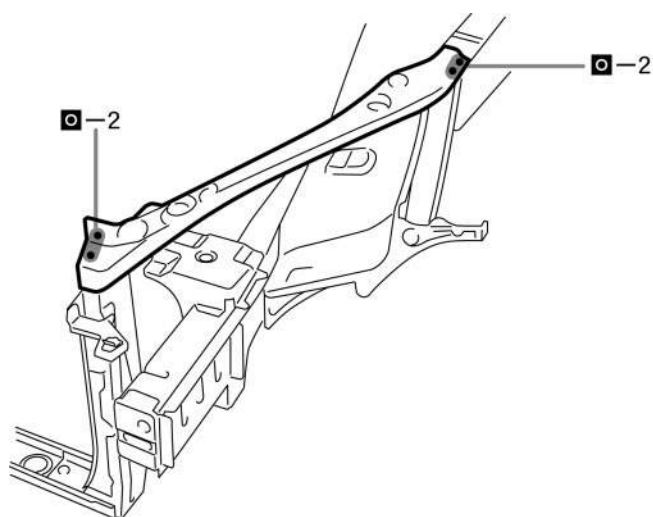
REMOVAL

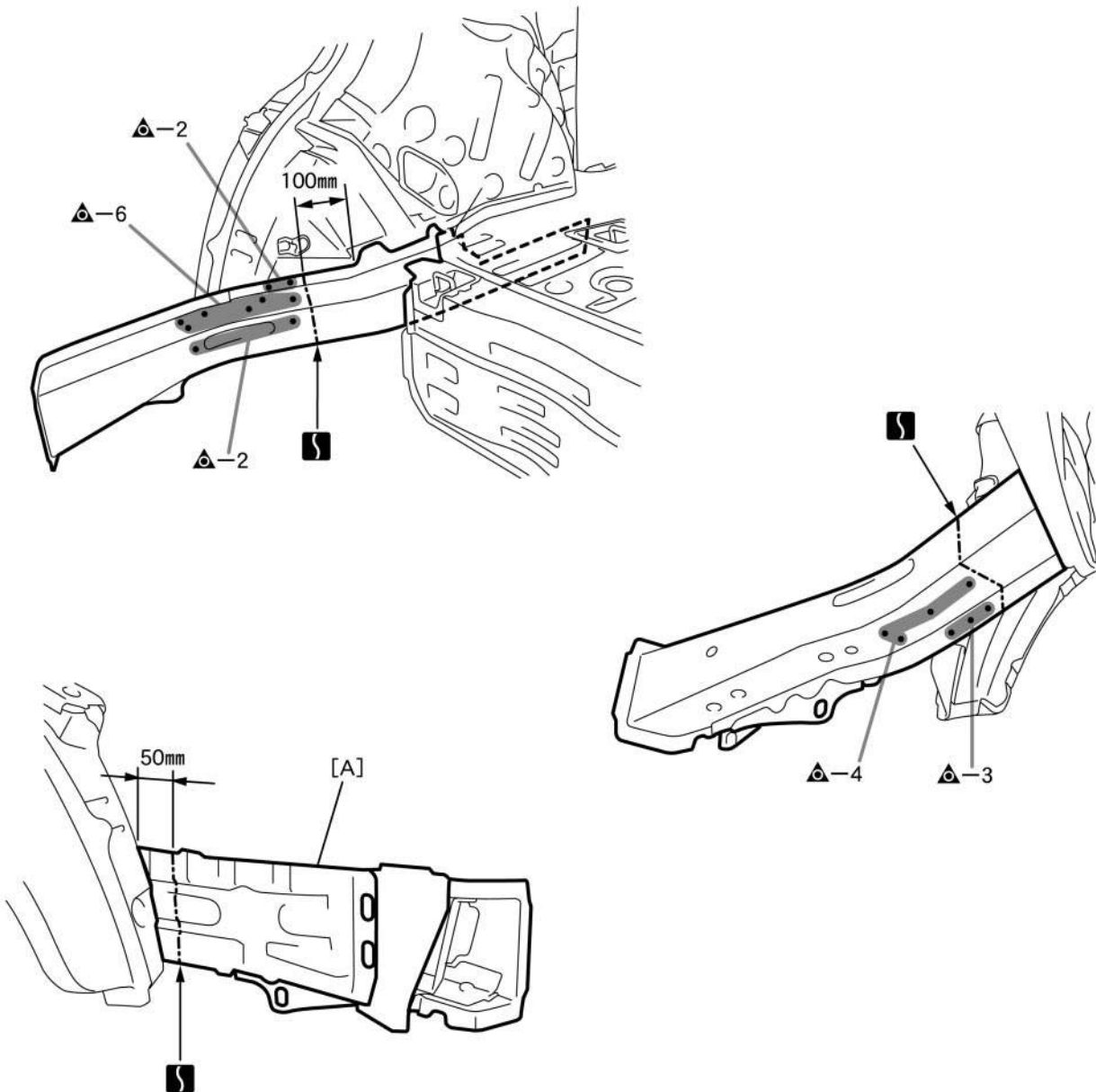


F14951

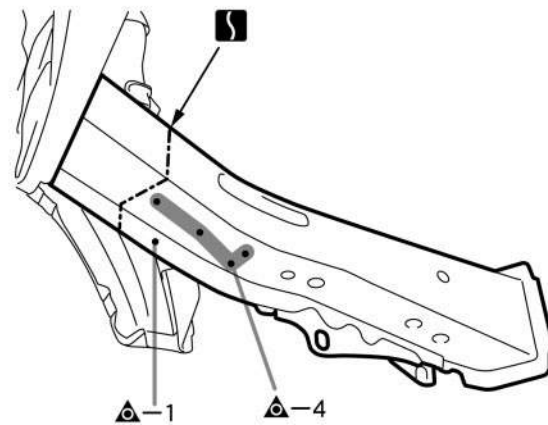
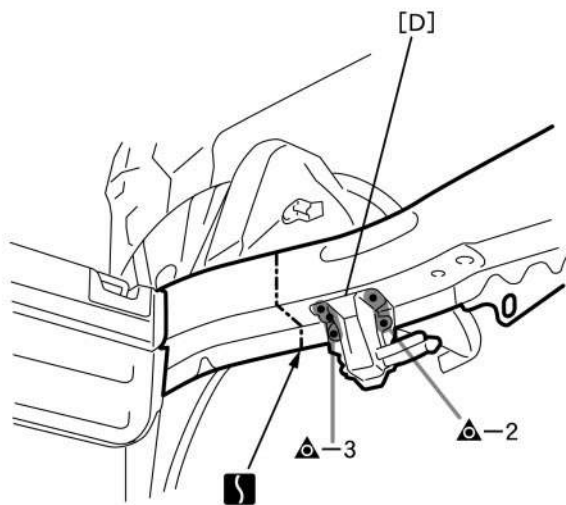
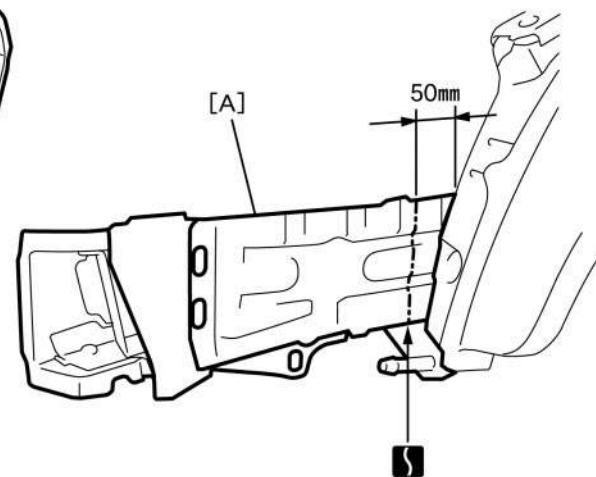
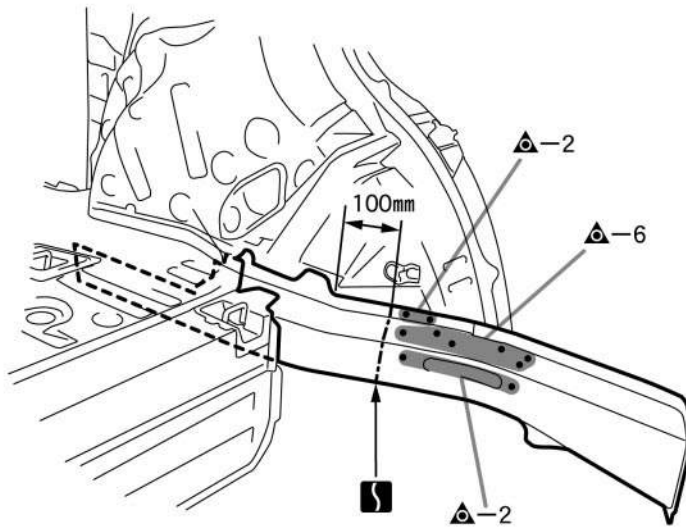
INSTALLATION

- 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.



REAR FLOOR SIDE REAR MEMBER (CUT)		
REPLACEMENT With the body lower back panel reinforcement, quarter panel upper rear extension and rear floor pan removed.		F15024-A
REMOVAL		
[LH]		
		
F15024		
POINT 1 Take care not to damage the internal reinforcement. 2 Remove the [A] at the same time.		
PART NAME [A] Rear Floor Side Member Cover 50mm (1.97in.) 100mm (3.94in.)		

[RH]



F15025

POINT

- 1 Take care not to damage the internal reinforcement.
- 2 Remove the [A] at the same time.

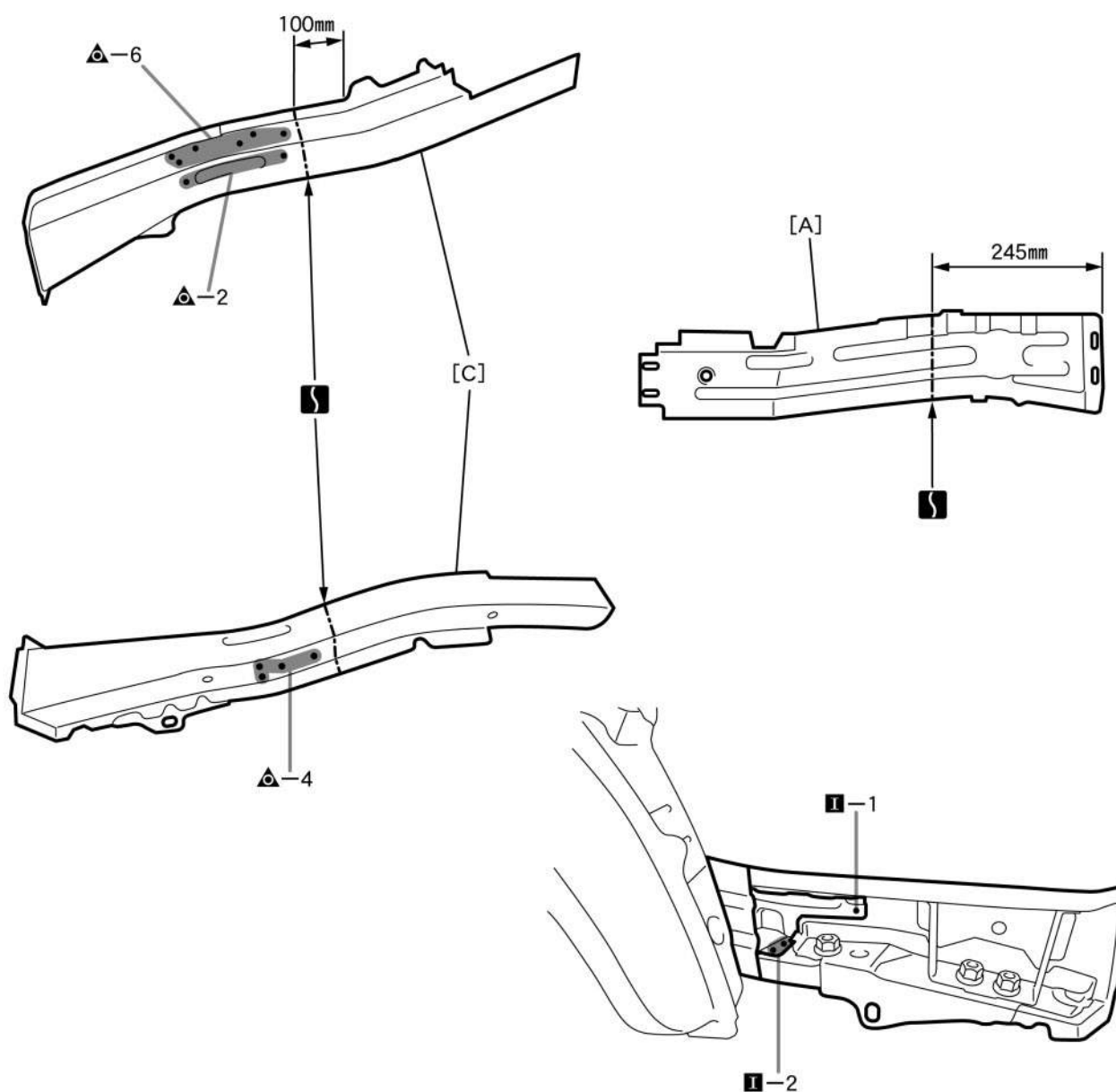
PART NAME

[A] Rear Floor Side Member Cover [D] Exhaust Pipe No.6 Hanger
 50mm (1.97in.) 100mm (3.94in.)

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]



F15026

PART NAME

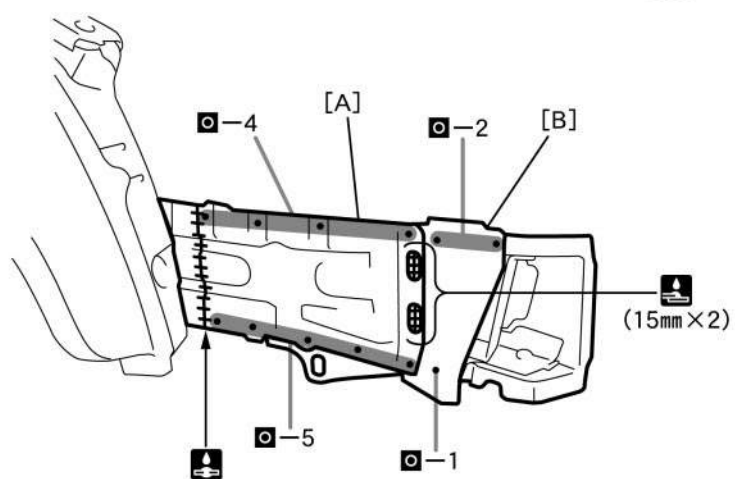
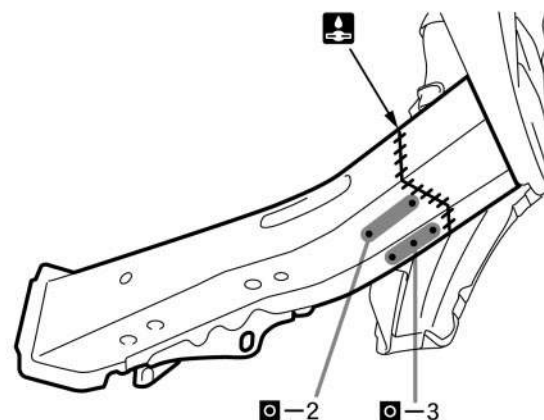
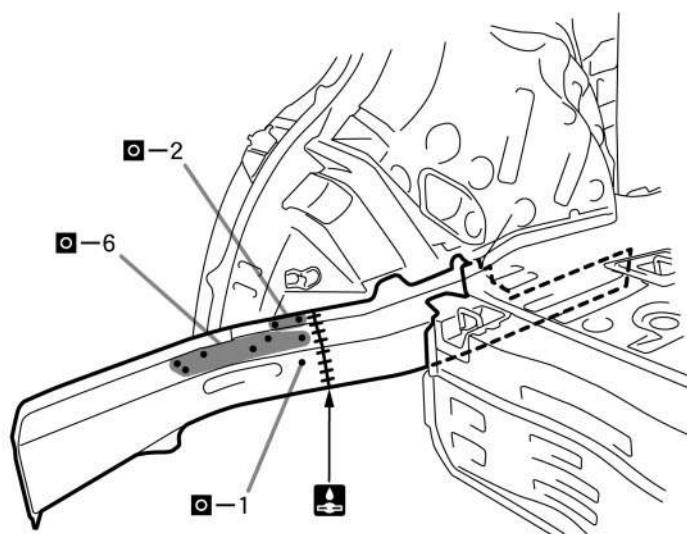
[A] Rear Floor Side Member Cover

[C] Rear Floor Side Rear Member

100mm (3.94in.)

245mm (9.65in.)

[LH]



F15027

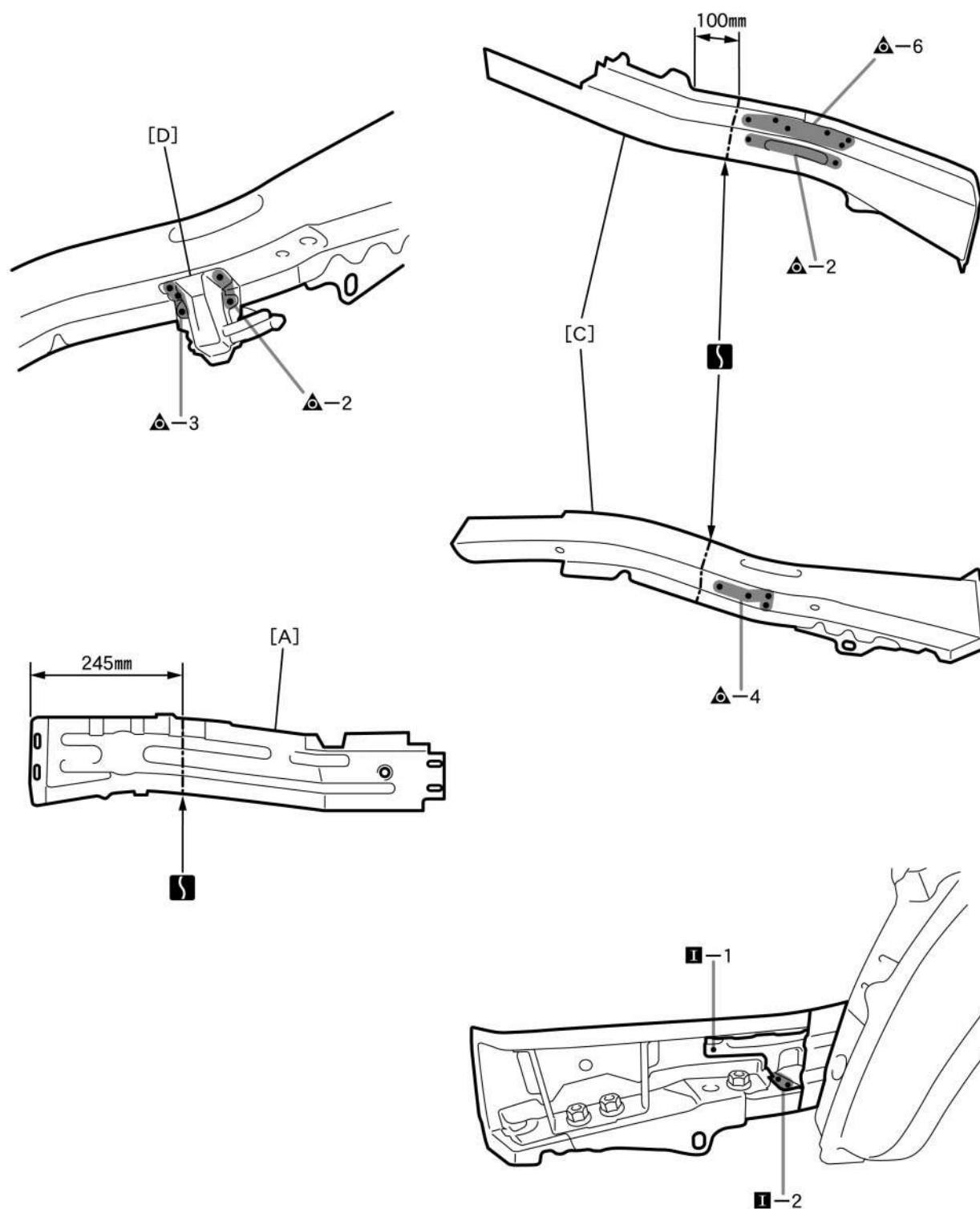
PART NAME

[A] Rear Floor Side Member Cover

[B] Rear Side Member Reinforcement

15mm (0.59in.)

[RH]



F15028

PART NAME

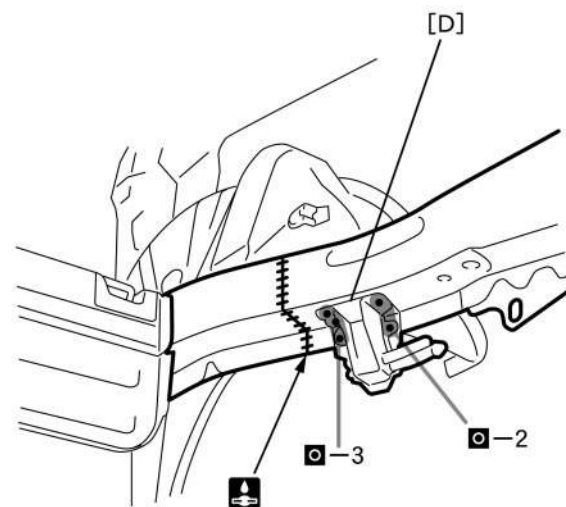
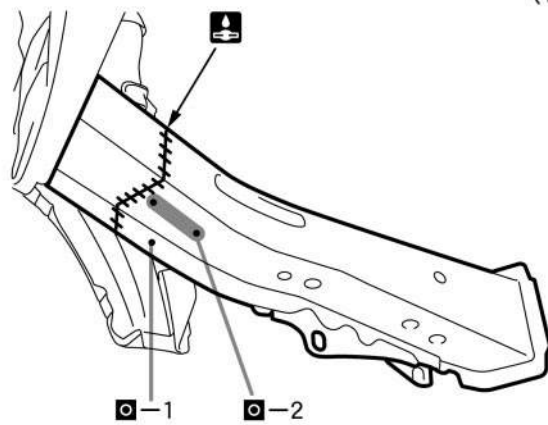
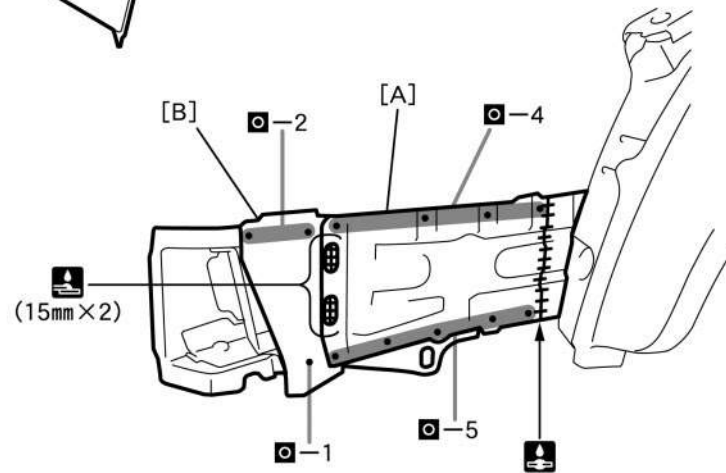
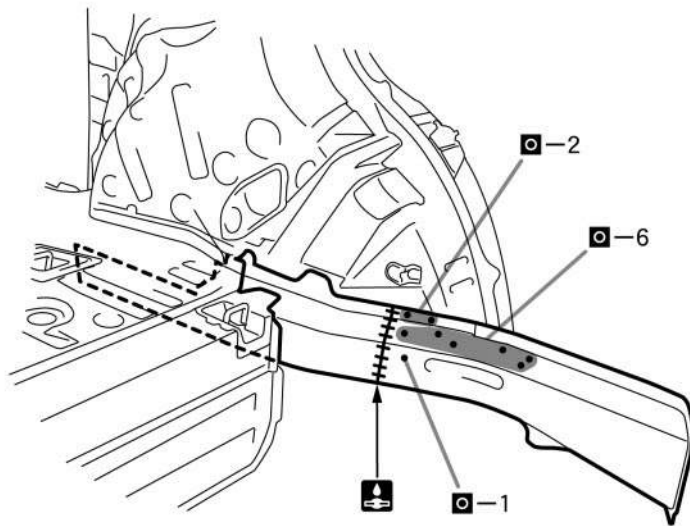
[A] Rear Floor Side Member Cover
 [C] Rear Floor Side Rear Member

[D] Exhaust Pipe No.6 Hanger

100mm (3.94in.)

245mm (9.65in.)

[RH]



F15029

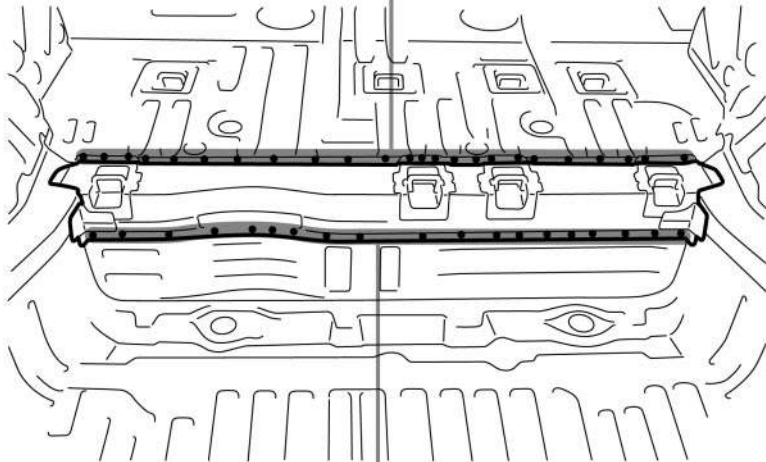
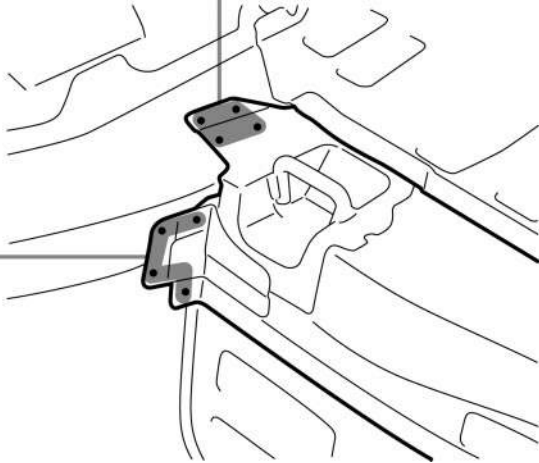
PART NAME

[A] Rear Floor Side Member Cover

[B] Rear Side Member Reinforcement

[D] Exhaust Pipe No.6 Hanger

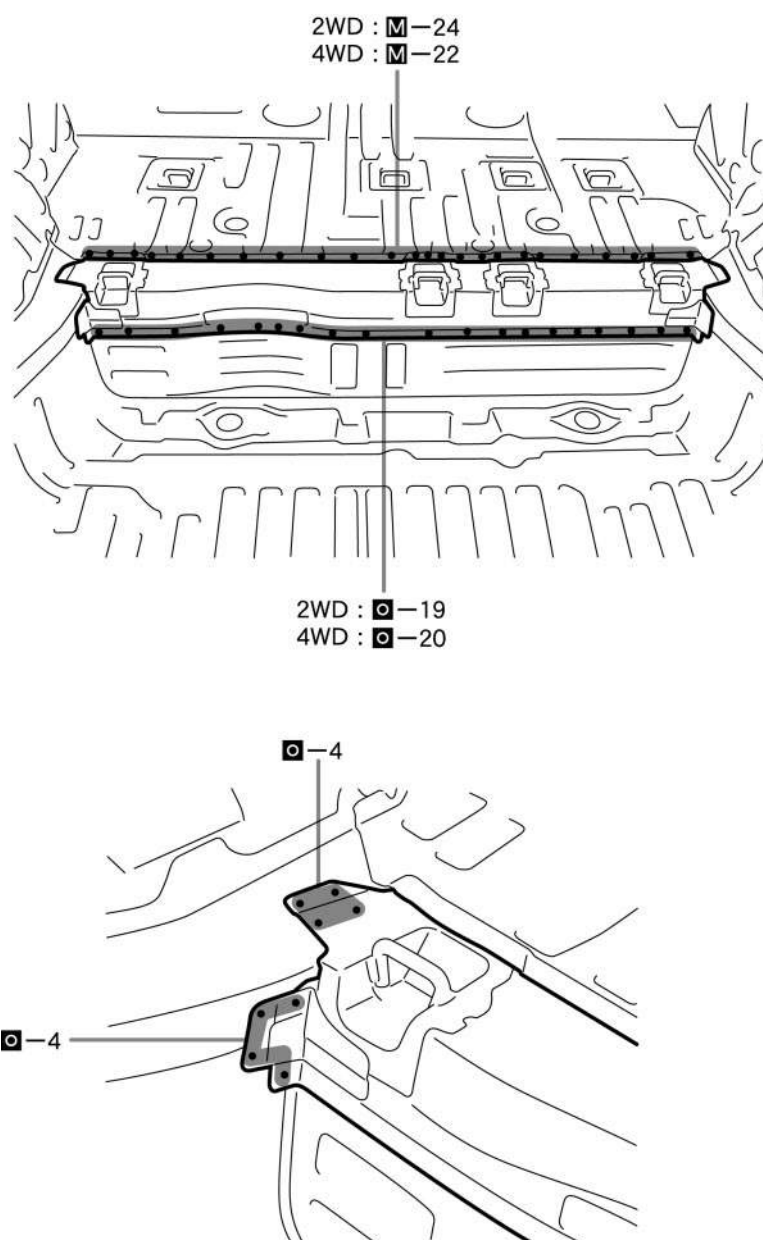
15mm (0.59in.)

REAR FLOOR NO.5 CROSSMEMBER (ASSY)		 F15030-A
REPLACEMENT		
REMOVAL		
2WD : ▲-24 4WD : ▲-22  2WD : ▲-19 4WD : ▲-20 ▲-4  ▲-4		

F15030

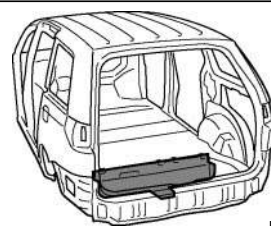
INSTALLATION

- 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.

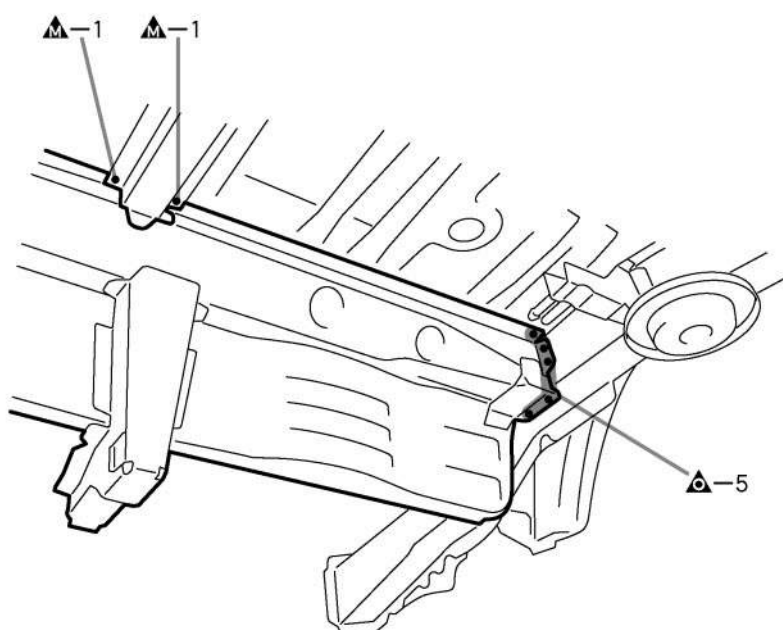
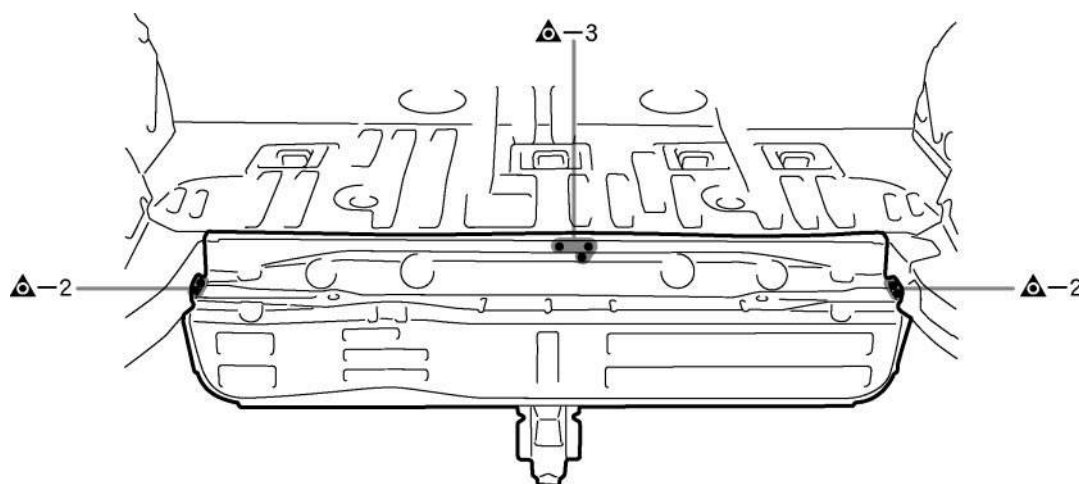


REAR FLOOR NO.4 CROSSMEMBER (ASSY)**REPLACEMENT**

With the rear floor pan and rear floor No.5 crossmember removed.



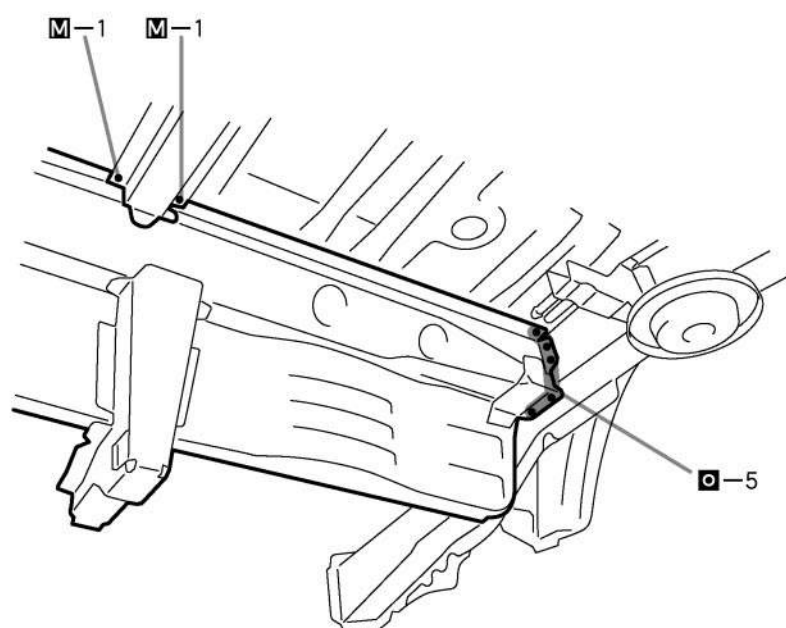
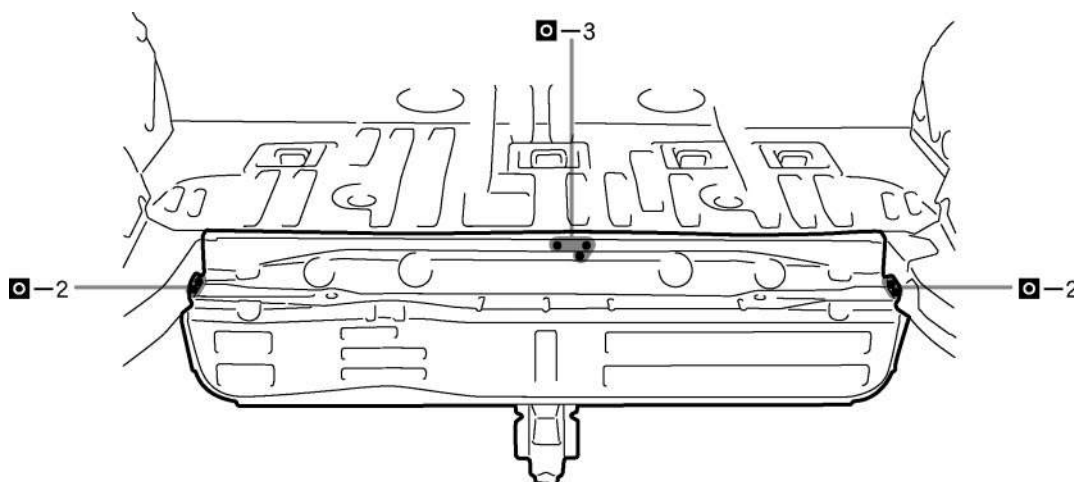
F15032-A

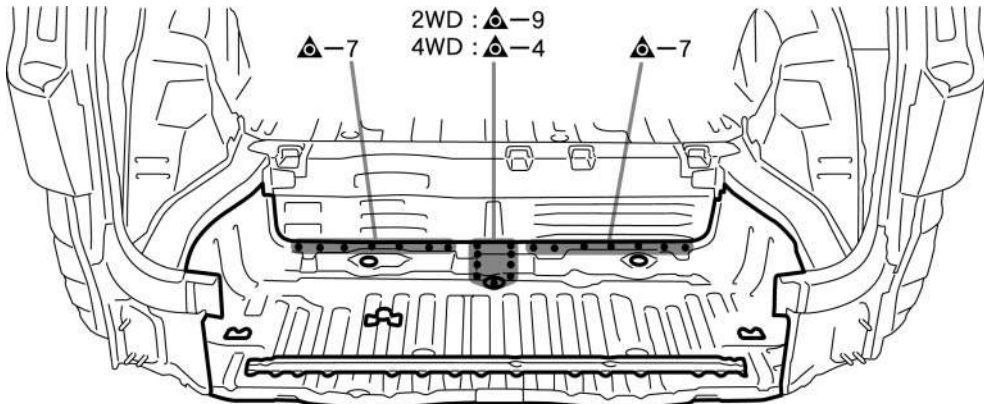
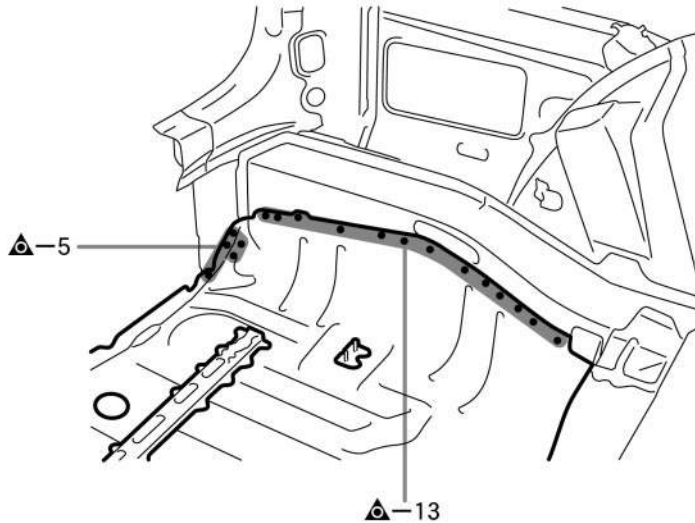
REMOVAL

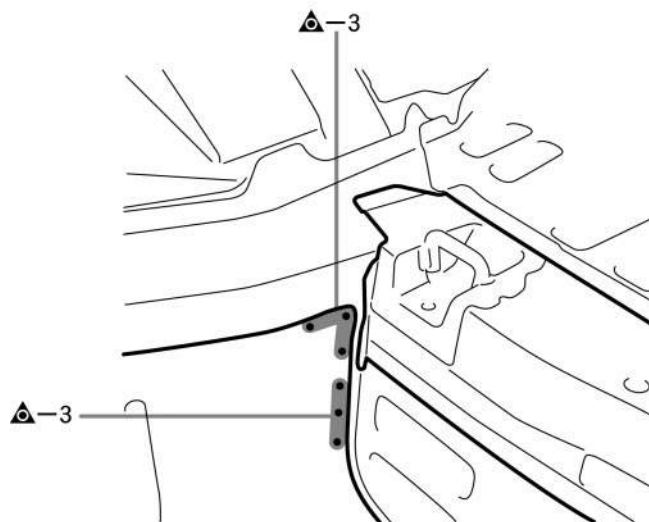
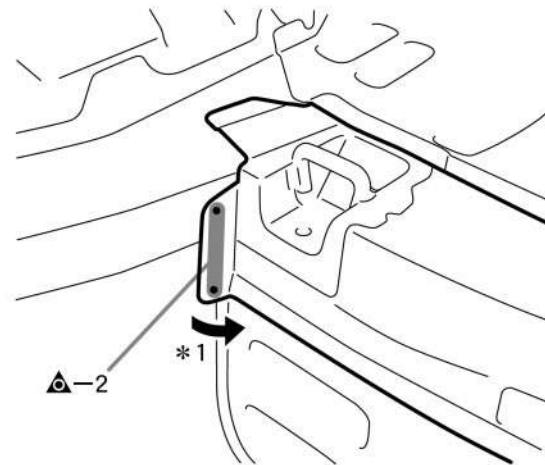
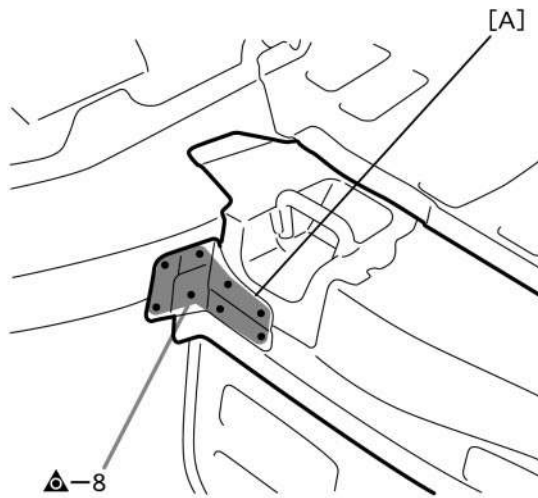
F15032

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.



REAR FLOOR PAN (ASSY)		 F15020-A
REPLACEMENT With the body lower back outer panel removed.		
REMOVAL		
 2WD : ▲-9 4WD : ▲-4 ▲-7  ▲-5 ▲-13		



F15021

POINT

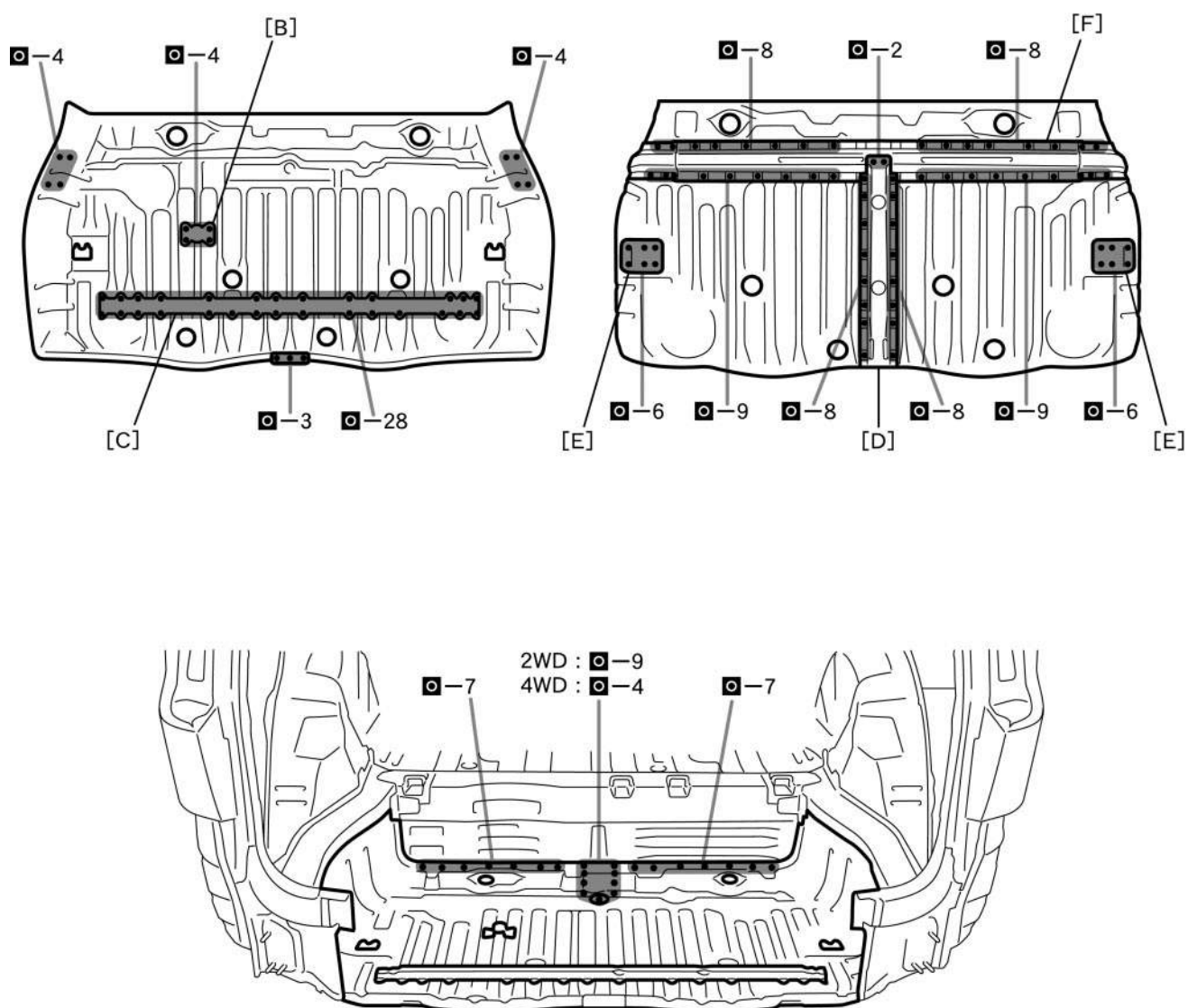
- 1 [A] is reuse.
- 2 *1: Turn Over

PART NAME

[A] Rear Floor Side Member Rear Plate

INSTALLATION

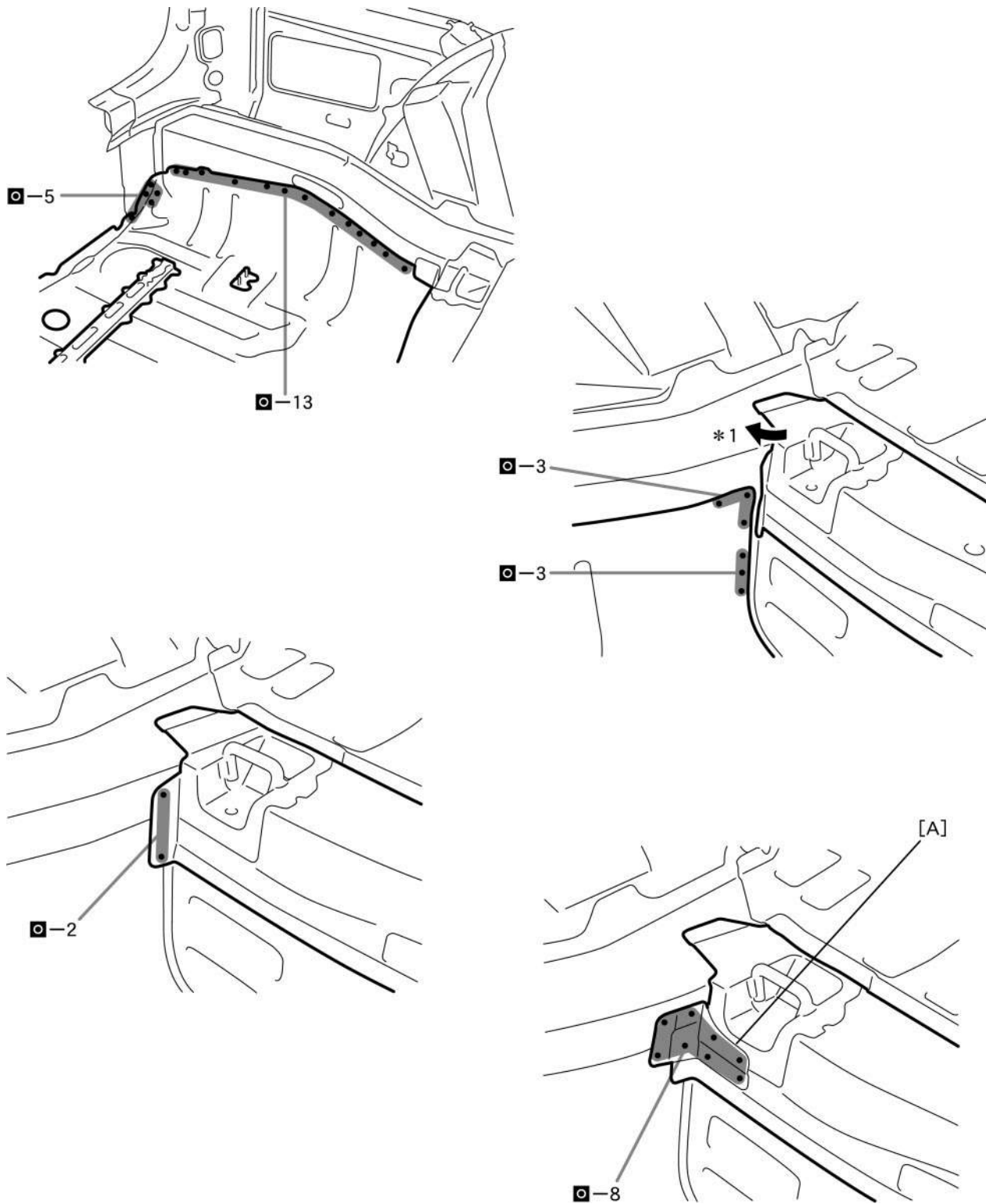
- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply 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.



F15022

PART NAME

- | | |
|---------------------------------------|---|
| [B] Spare Wheel Carrier Bracket | [C] Rear Floor Panel No.1 Reinforcement |
| [D] Rear Floor Pan No.2 Reinforcement | [E] Rear Floor Panel No.4 Reinforcement |
| [F] Rear Seat Mounting Reinforcement | |



F15023

POINT

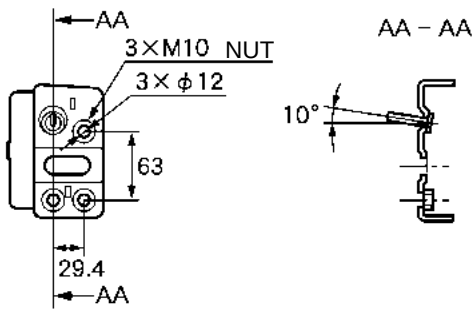
1 *1: Turn Over

PART NAME**[A]** Rear Floor Side Member Rear Plate

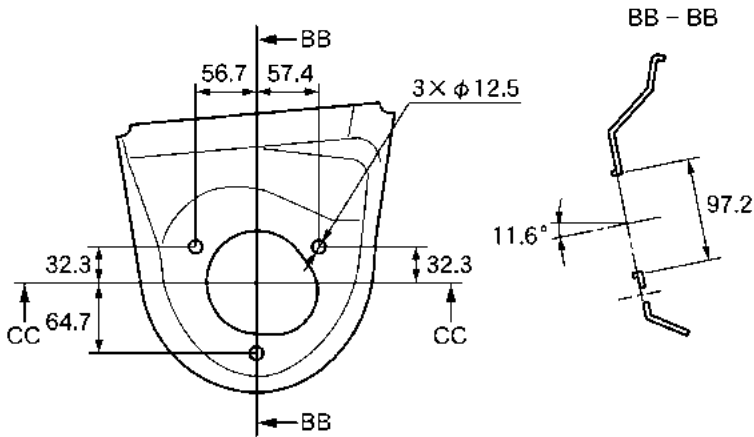
UNDER BODY

(Two-Dimensional Distance)

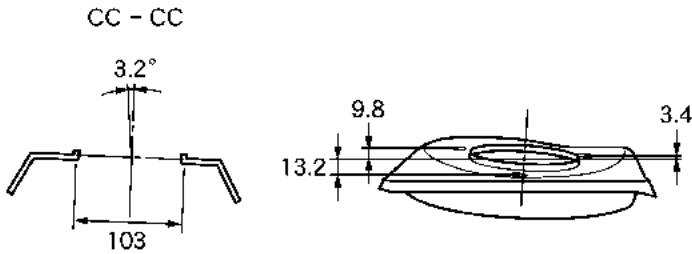
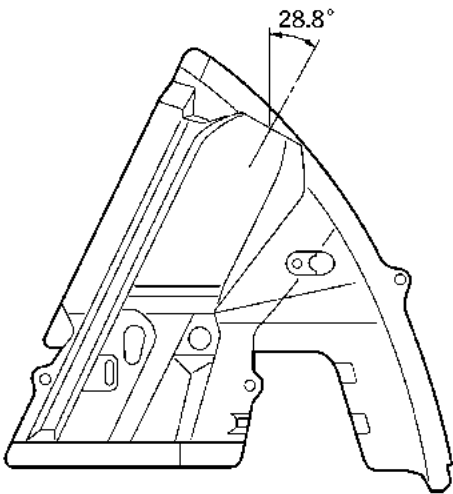
Front bumper reinforcement



Front spring support



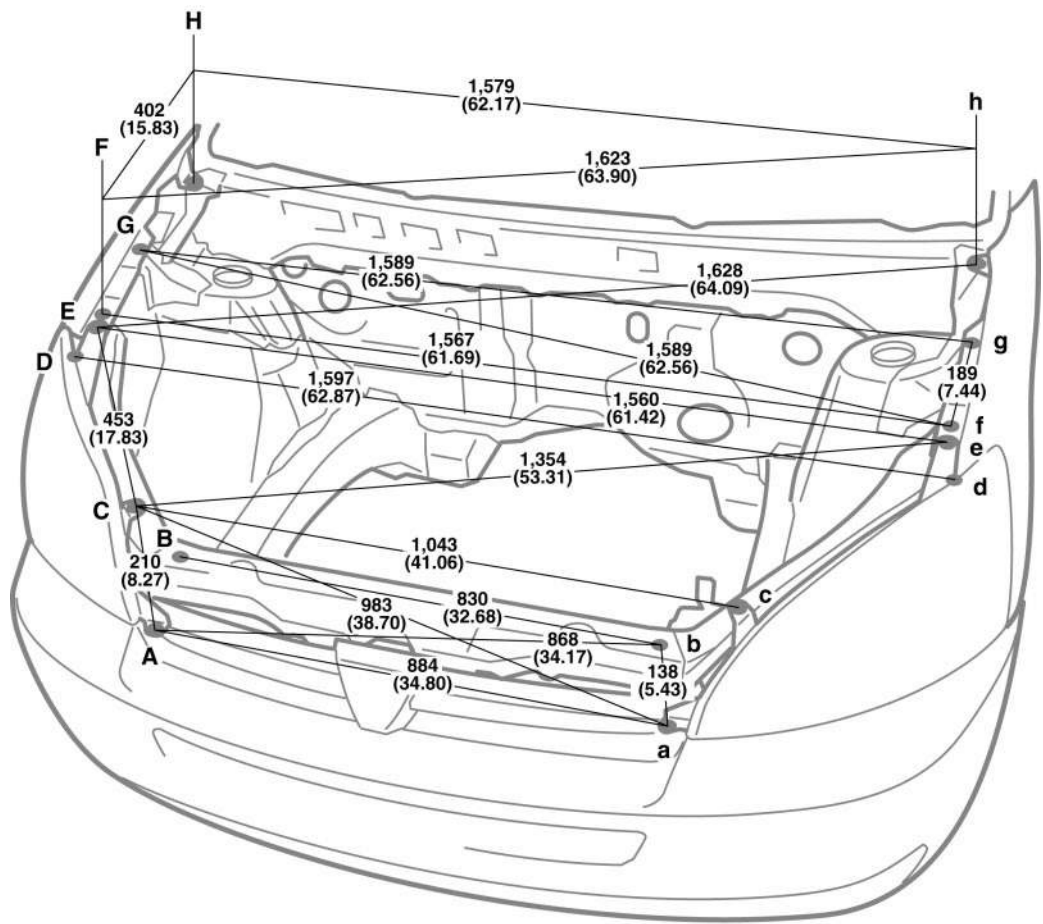
Quarter wheel house



MEMO

REFERENCE VALUE
ENGINE COMPARTMENT

(Three-Dimensional Distance)

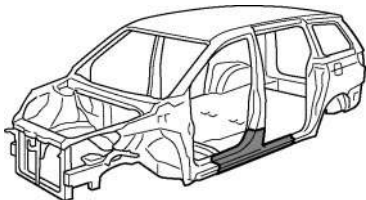
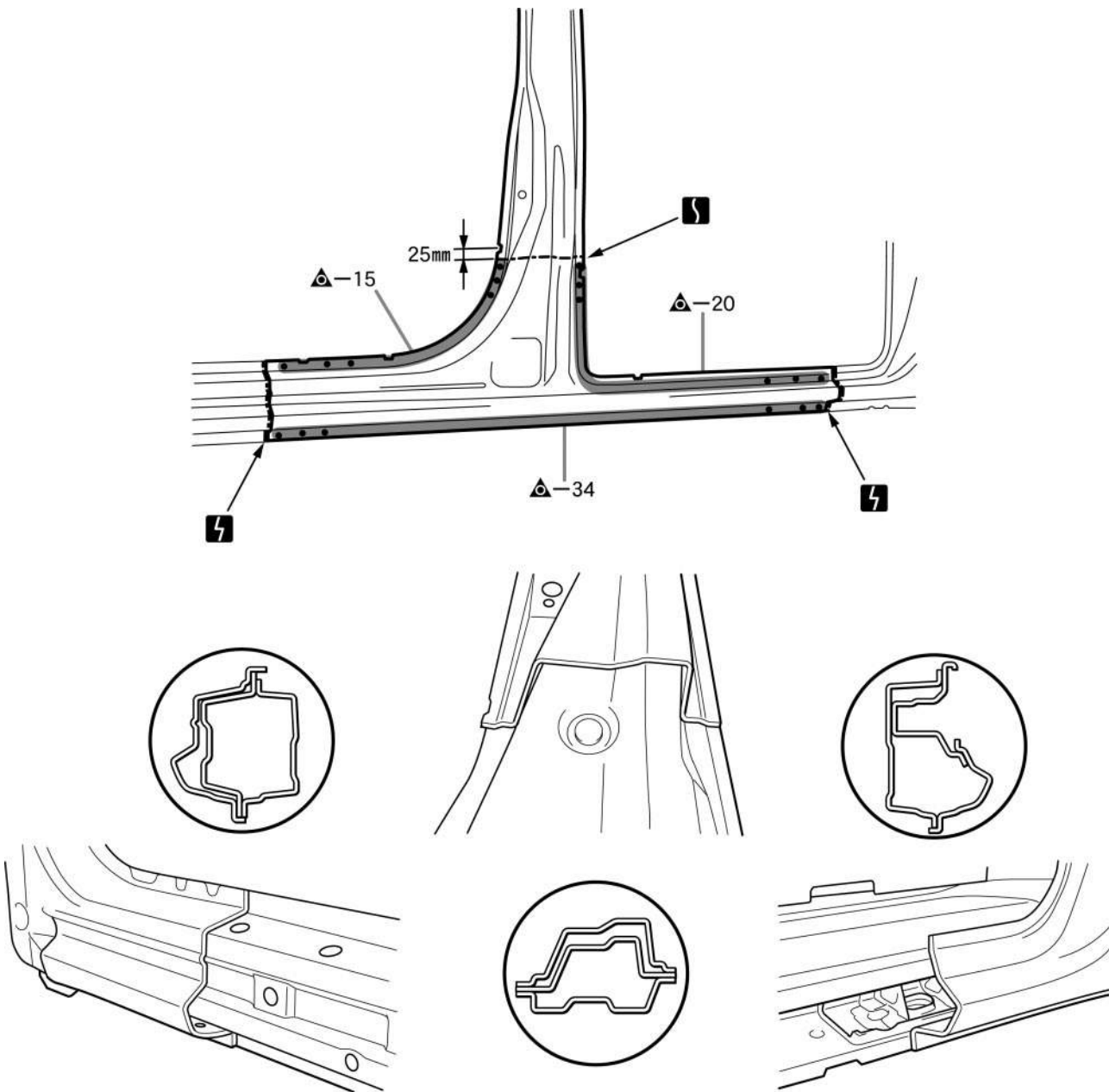


Vehicle Dimensions

B-h or b-H	B-H or b-h	E-H or e-h
1,480 (58.27)	937 (36.89)	431 (16.97)

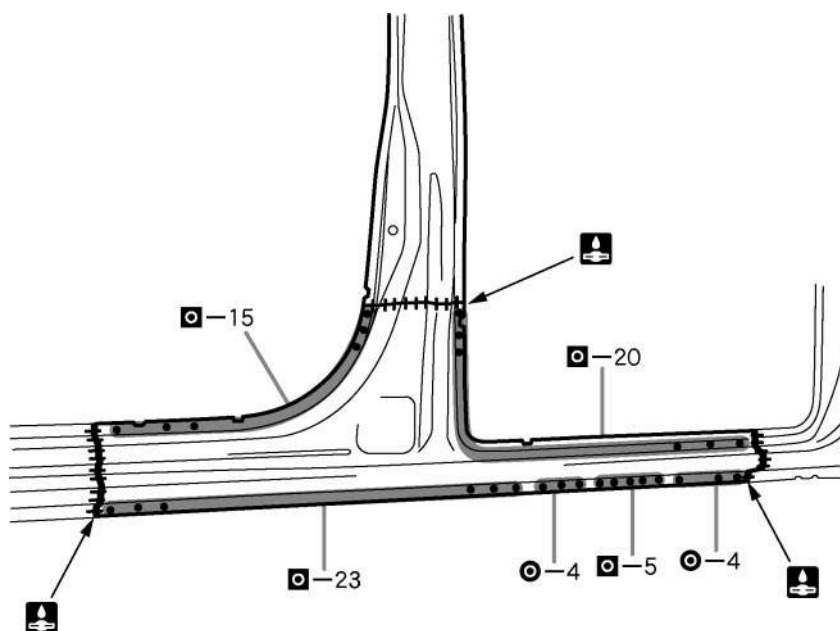
mm (in.)

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

ROCKER OUTER PANEL (CUT)		 F14989-A
REPLACEMENT		
REMOVAL		
 F14989		
25mm (0.98in.)		

INSTALLATION

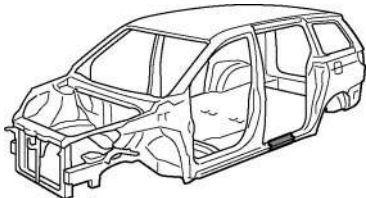
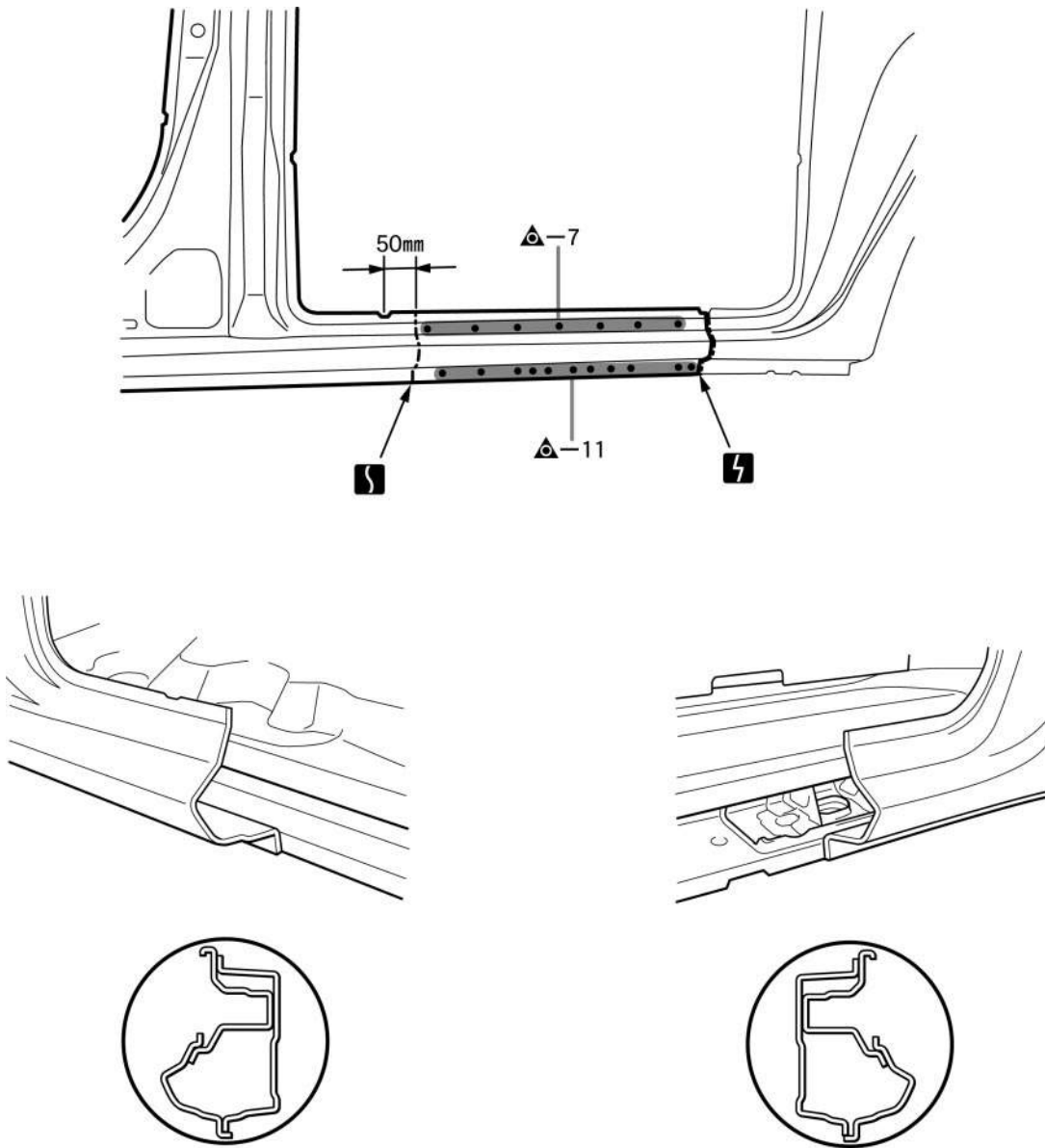
- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply 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.



F14990

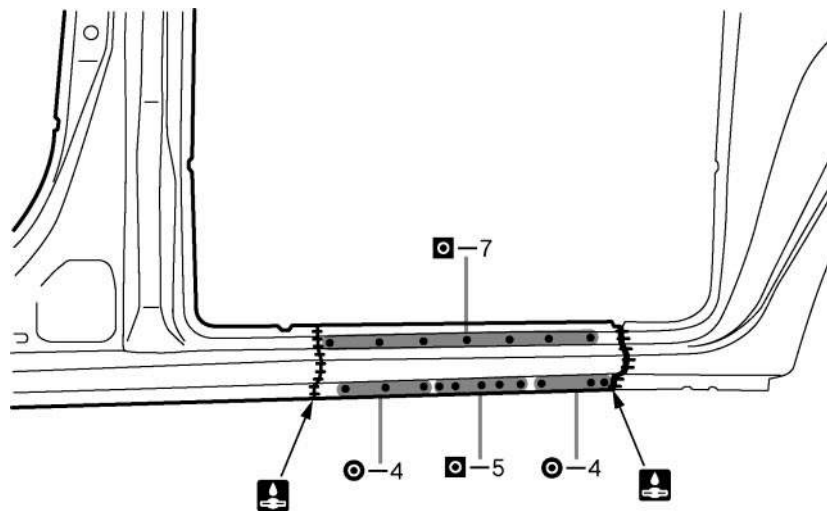
POINT

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

ROCKER OUTER PANEL (CUT-H)		 F14991-A
REPLACEMENT		
REMOVAL		
 F14991		
50mm (1.97in.)		

INSTALLATION

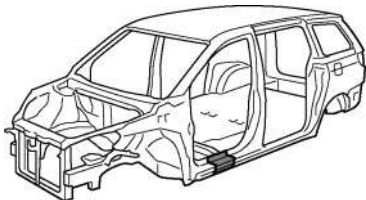
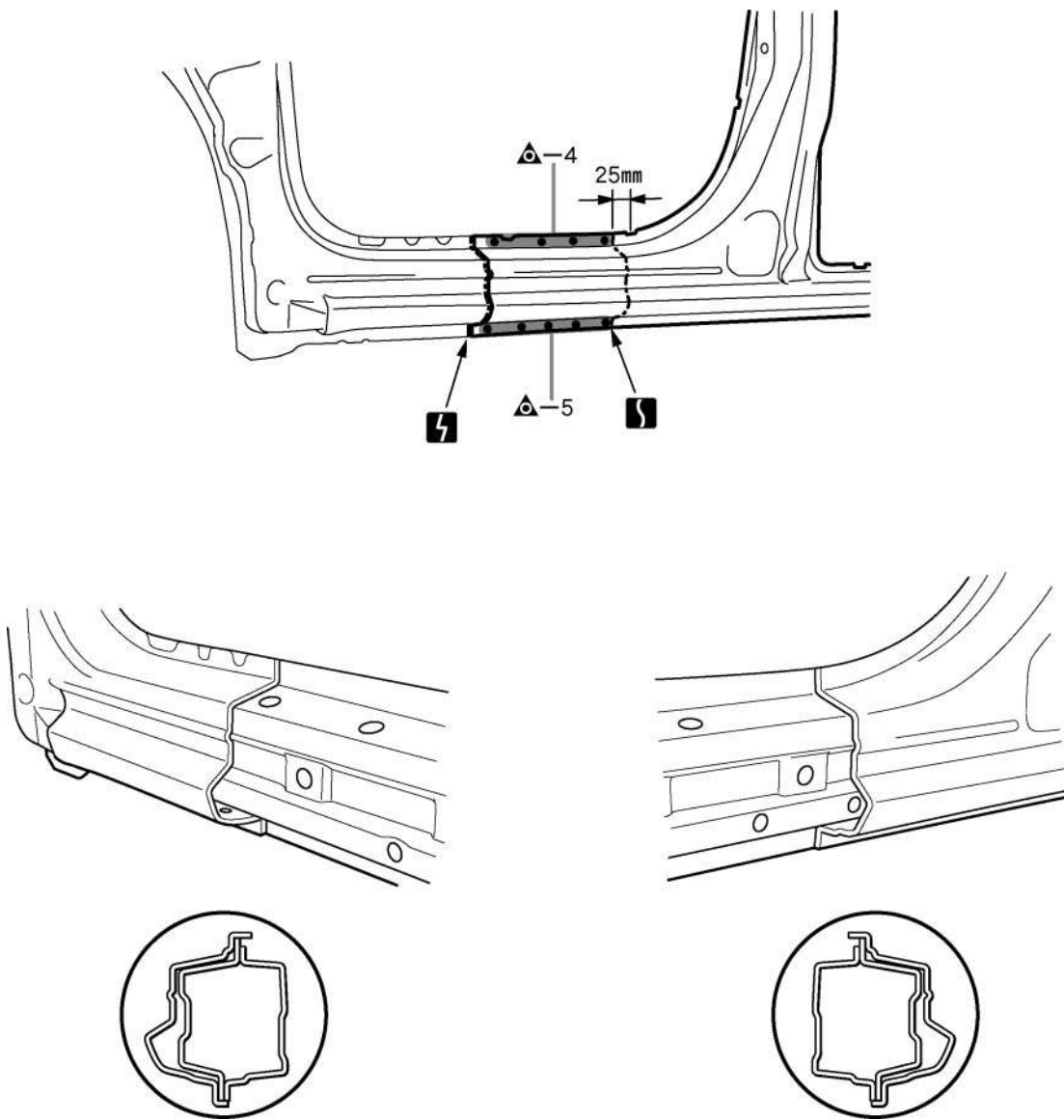
- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply 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.



F14992

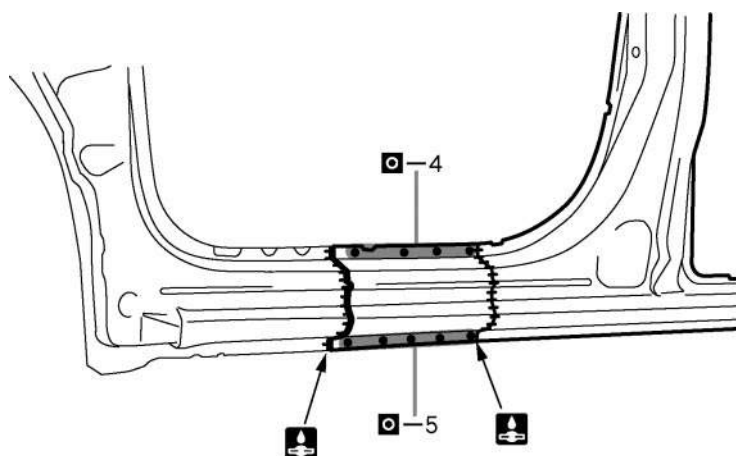
POINT

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

ROCKER OUTER PANEL (CUT-P)		 F14987-A
REPLACEMENT		
REMOVAL		
 F14987		
25mm (0.98in.)		

INSTALLATION

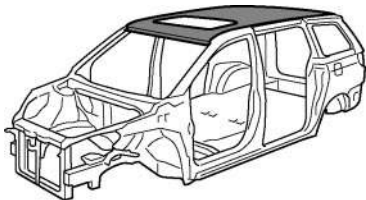
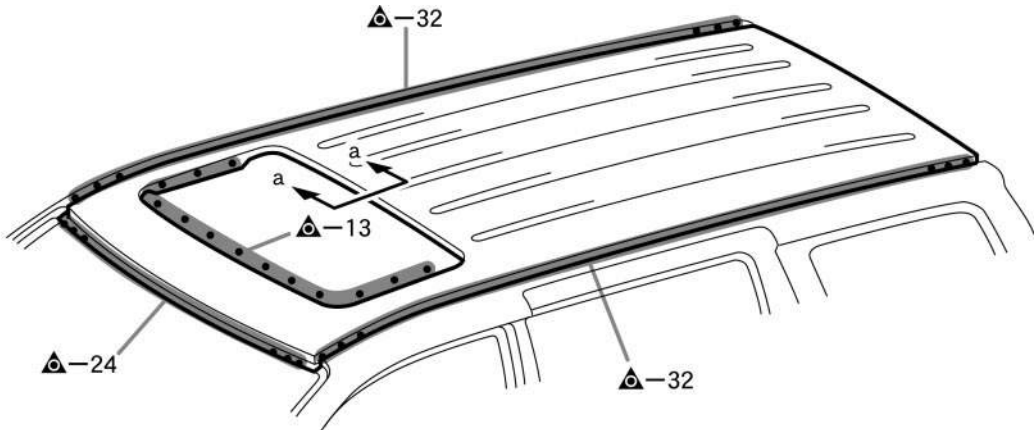
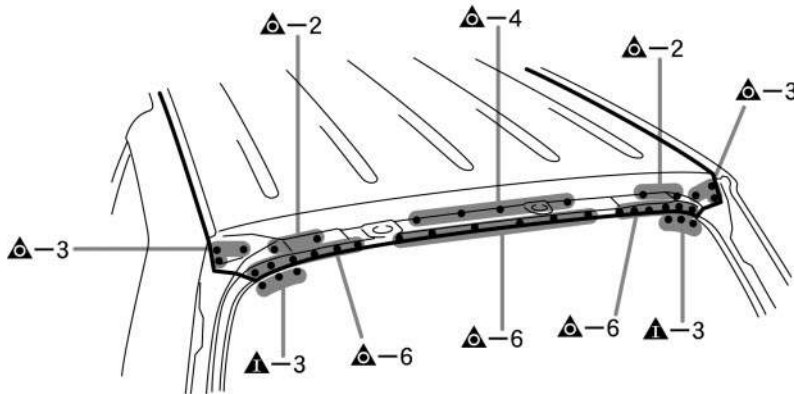
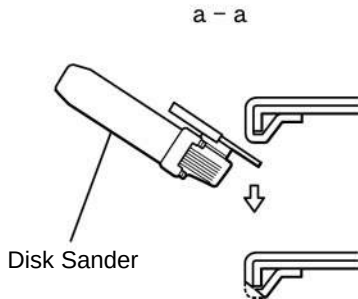
- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply 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.



F14988

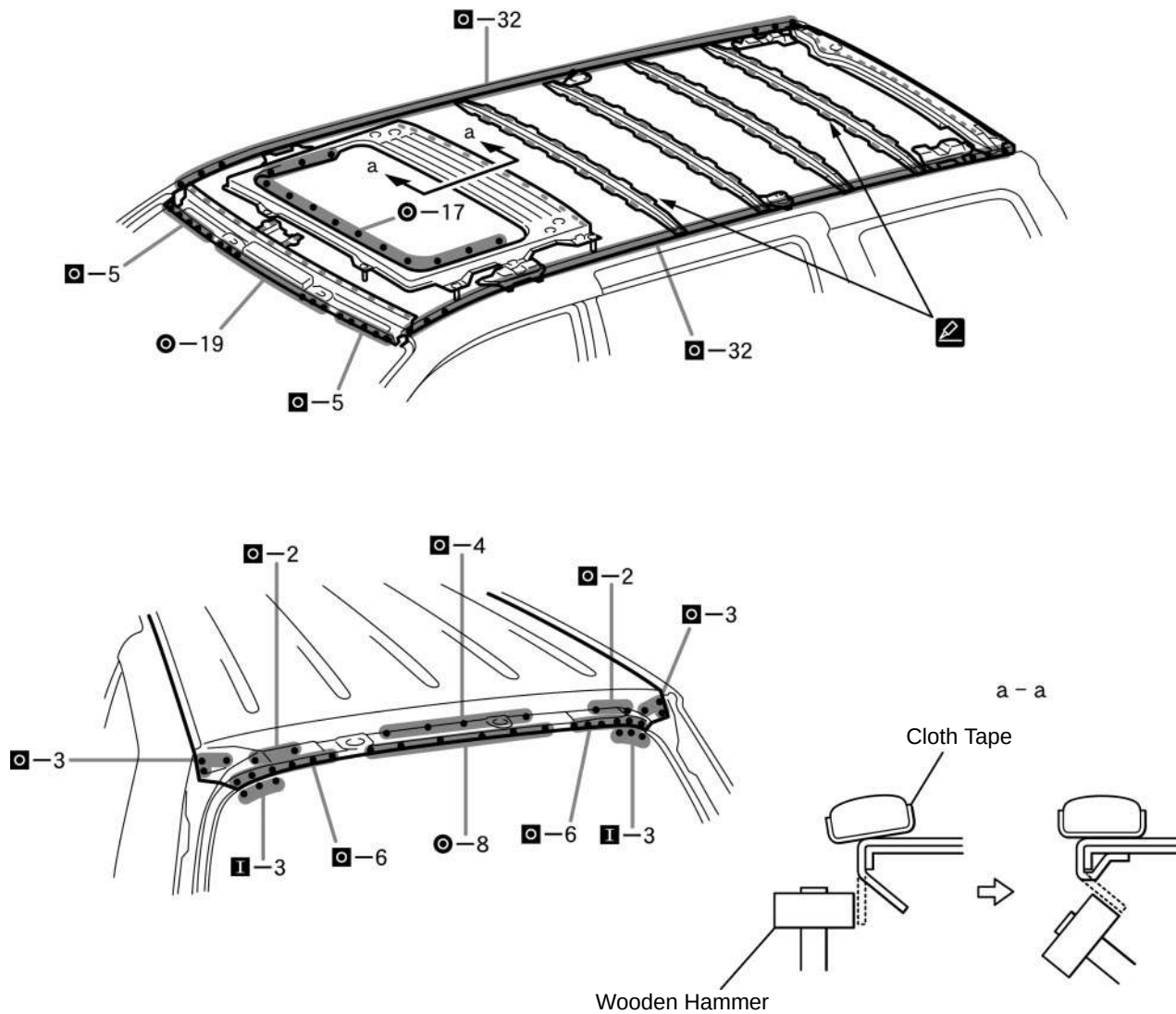
POINT

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

ROOF PANEL (ASSY): w/ sun roof		 F15036-A
REPLACEMENT		
REMOVAL		
  		
POINT 1 If reusing the roof panel reinforcement, trim the hemming location using a disc sander, etc.		

INSTALLATION

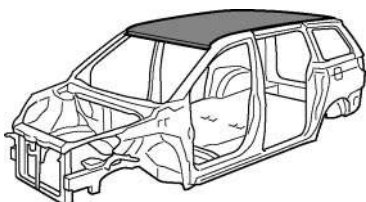
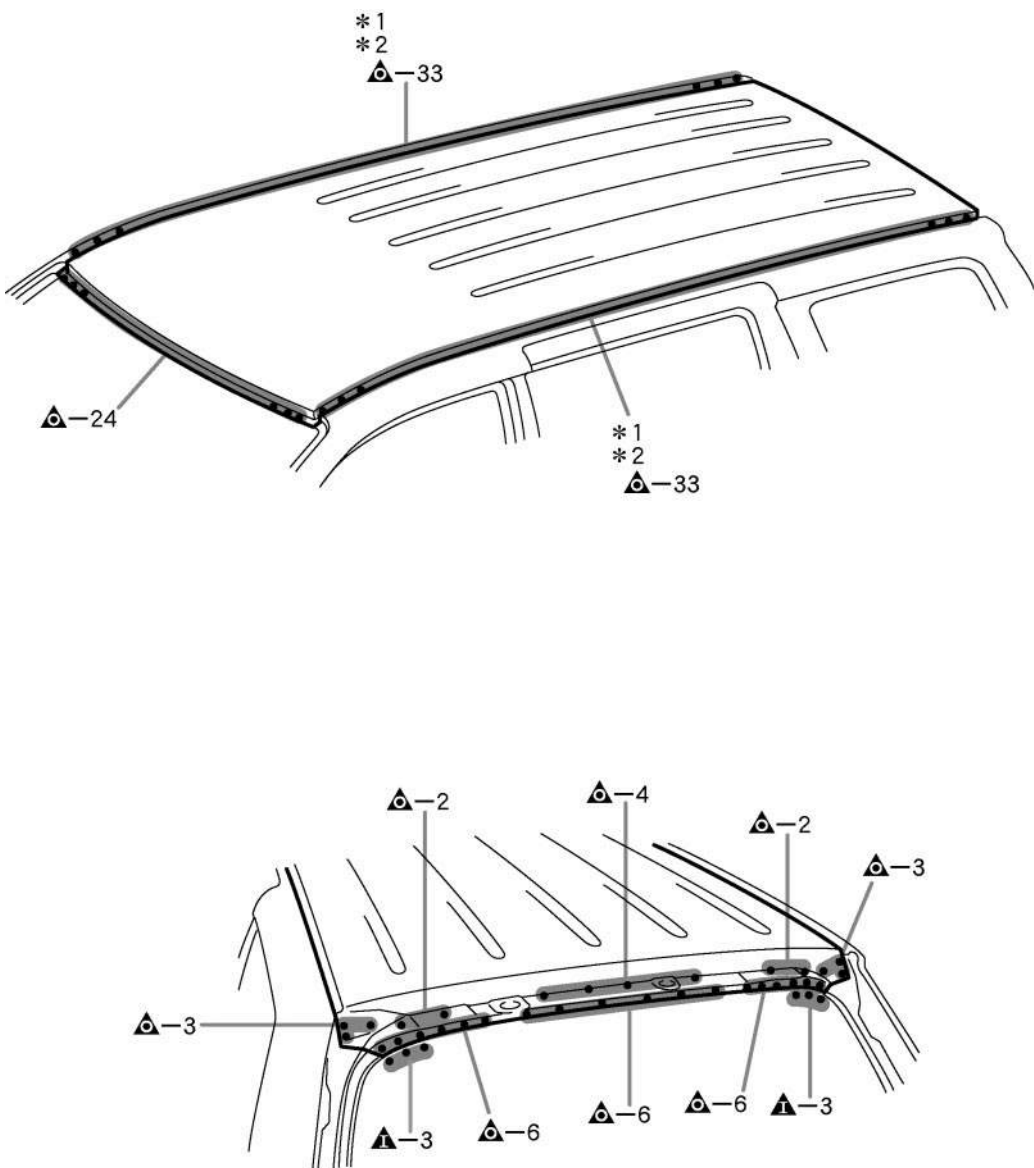
- Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
- Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
- After welding, apply 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.



F15037

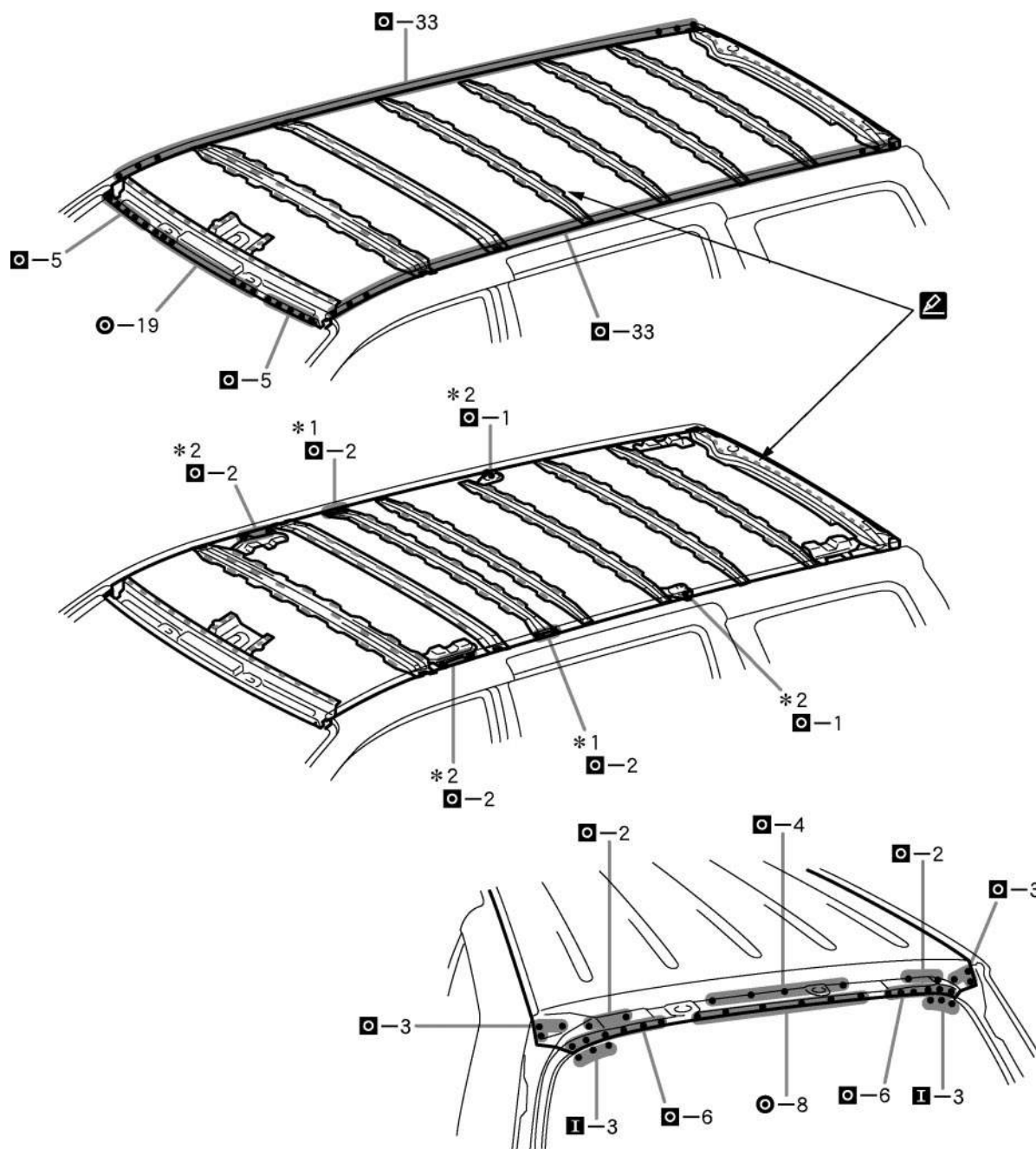
POINT

- 1 Before temporarily installing the new parts, apply body sealer to the windshield header panel, roof panel reinforcement and back window frame.
HINT:
1) Apply just enough sealer for the new parts to make contact.
- 2 Bend the flange hem with a wooden hammer and dolly.
HINT:
1) Perform hemming three steps, being careful not to warp the panel.

ROOF PANEL (ASSY): w/o sun roof		 F15034-A
REPLACEMENT		
REMOVAL		
		
F15034 POINT 1 *1: w/ Rear Display +2 *2: w/ Roof Rack +3		

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.



F15035

POINT

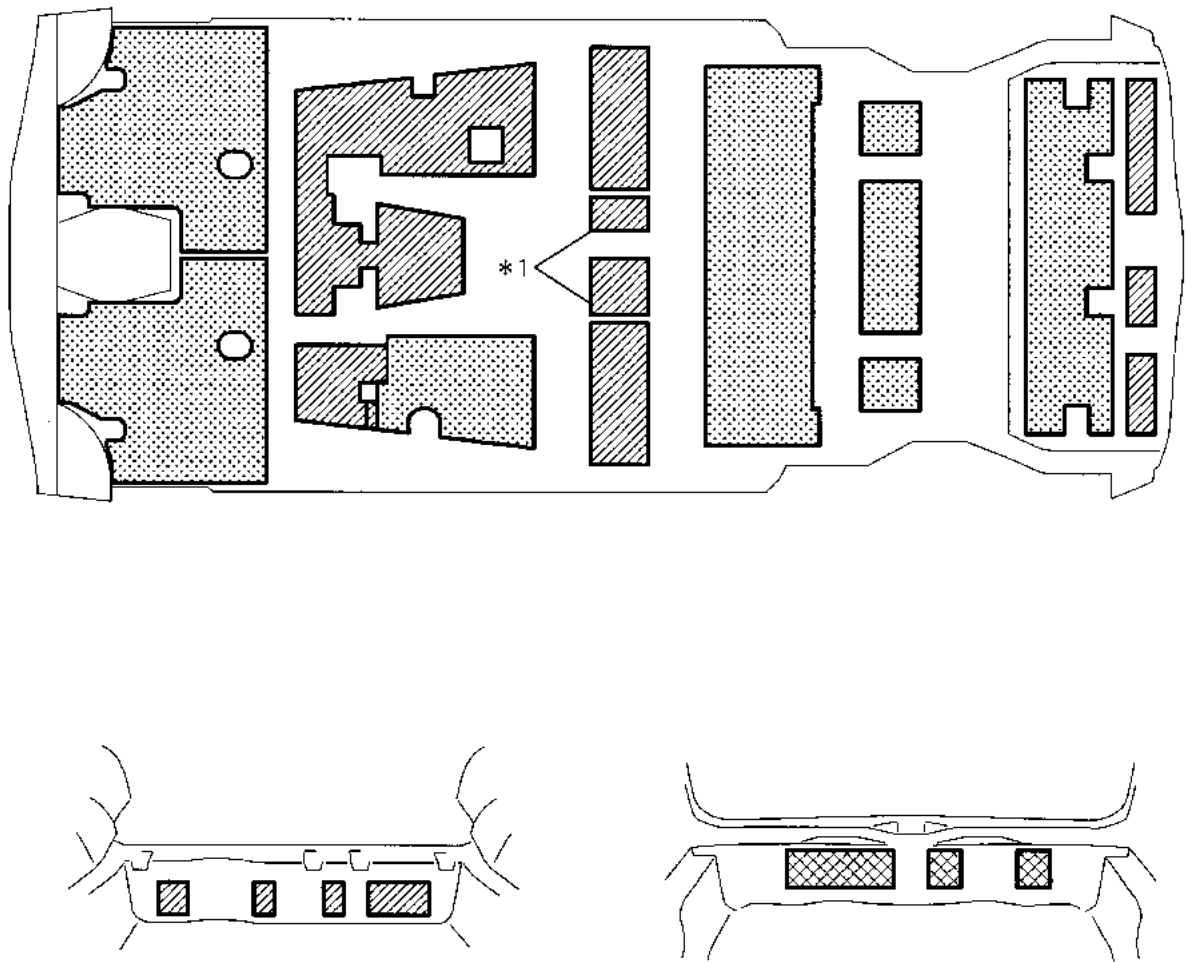
- 1 Before temporarily installing the new parts, apply body sealer to the windshield header panel, roof panel reinforcement and back window frame.

HINT:

- 1) Apply just enough sealer for the new parts to make contact.
- 2 *1: w/ Rear Display Only *2: w/ Roof Rack Only

SILENCER SHEET INSTALLATION AREAS

HINT:
1) Use a silencer seat as a replacement of damping coat in the area where damping coat is applied.

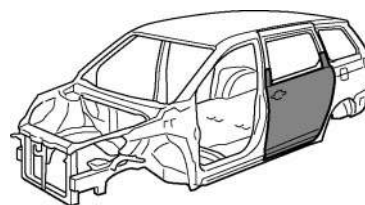


F15048

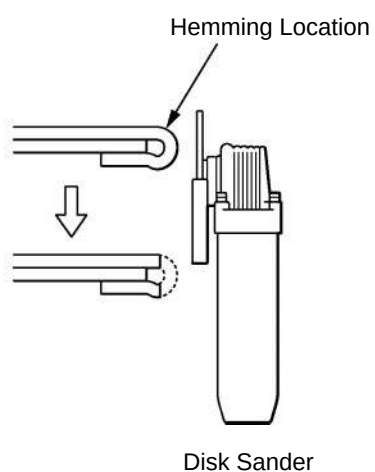
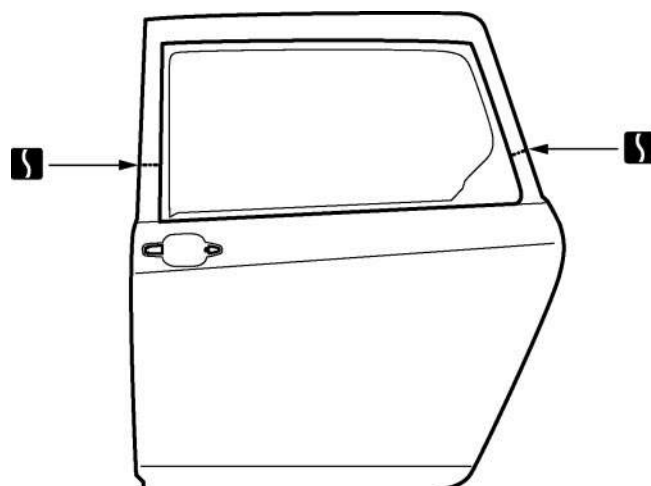
Thickness of Silencer Sheet

	2.0mm (0.079in.)		2.4mm (0.094in.)		3.7mm (0.146in.)
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*1 7 Passengers Vehicle Only

SLIDE DOOR OUTER PANEL (ASSY)**REPLACEMENT**

F14985-A

REMOVAL

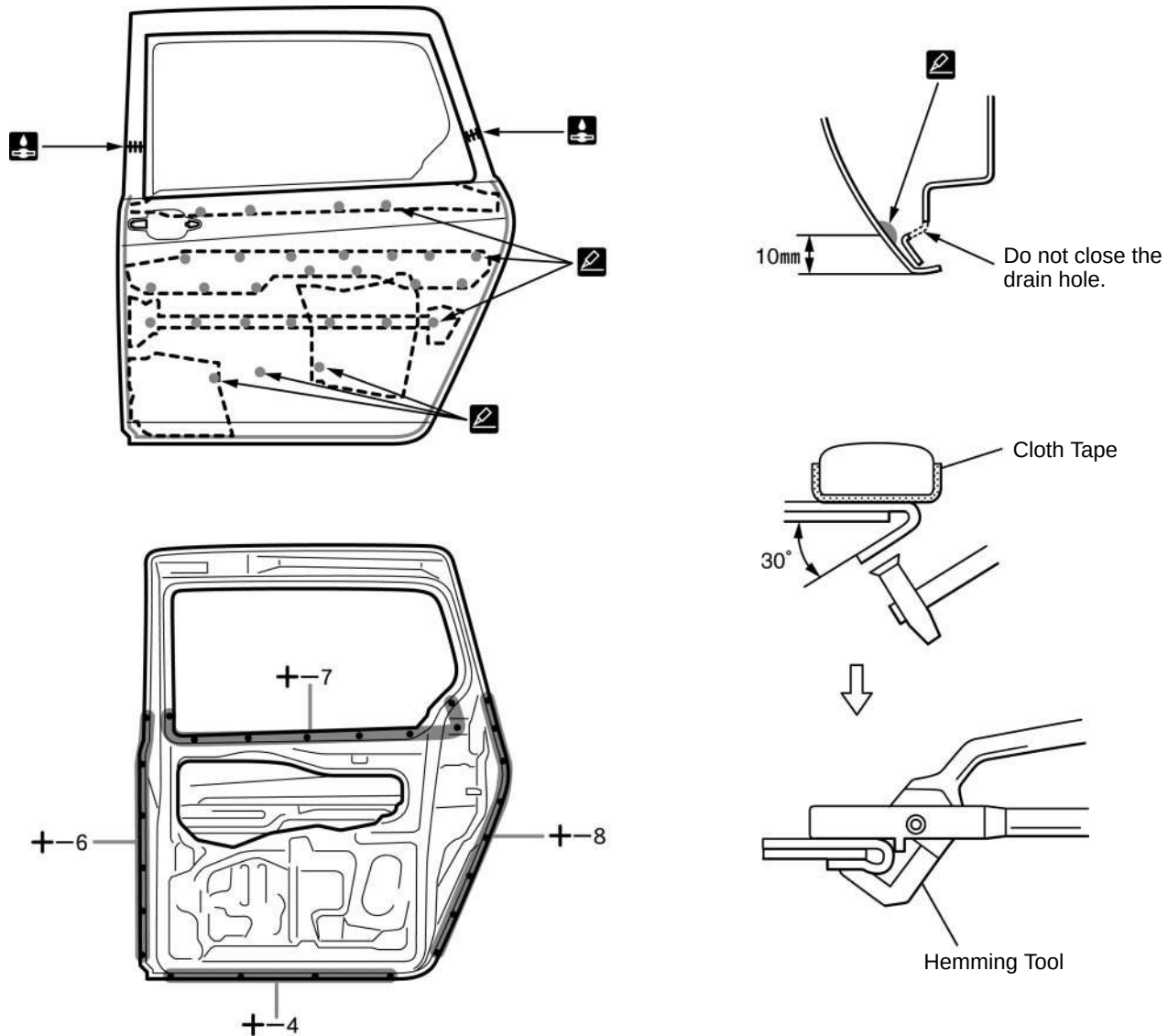
F14985

POINT

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

INSTALLATION

- 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.

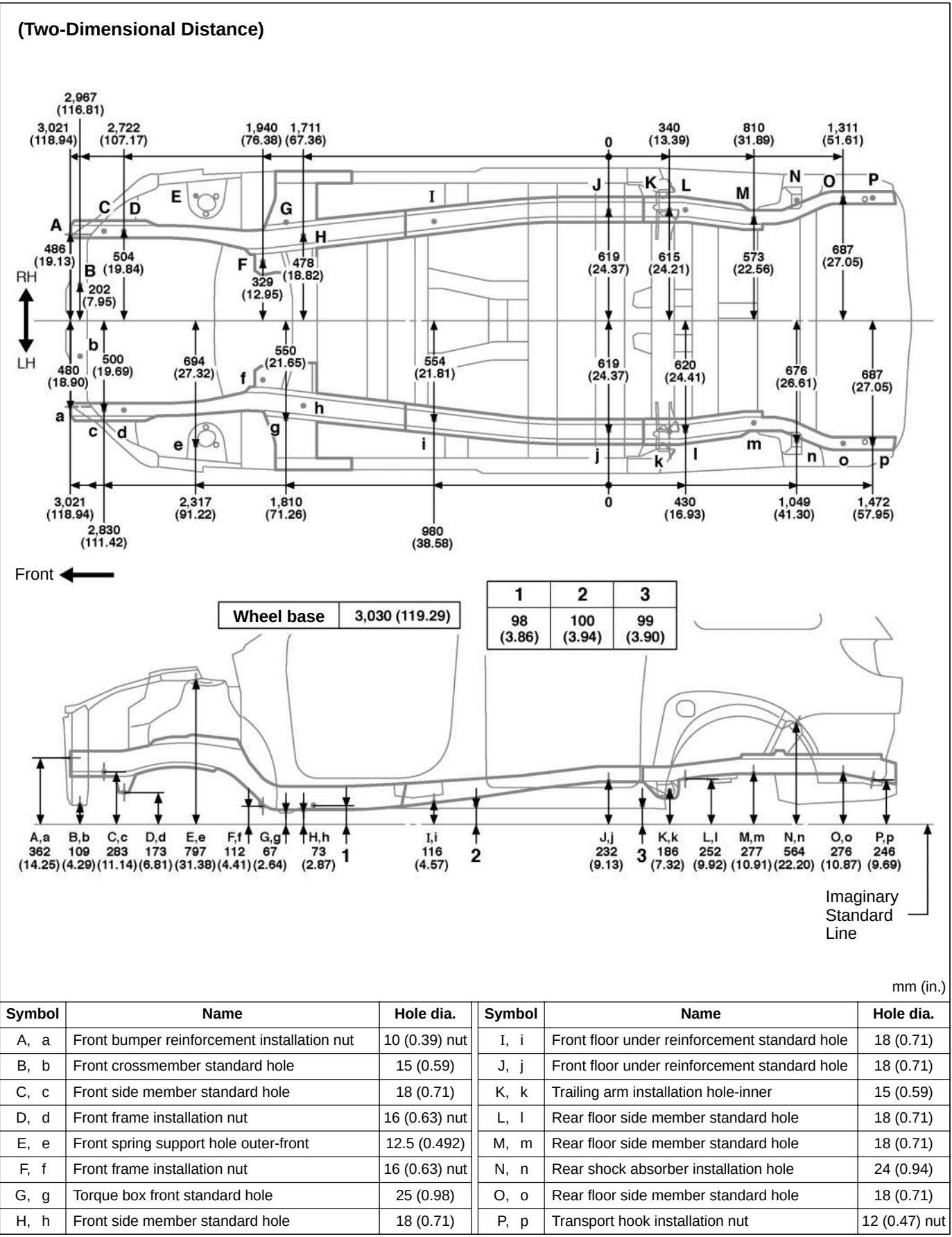


F14986

POINT

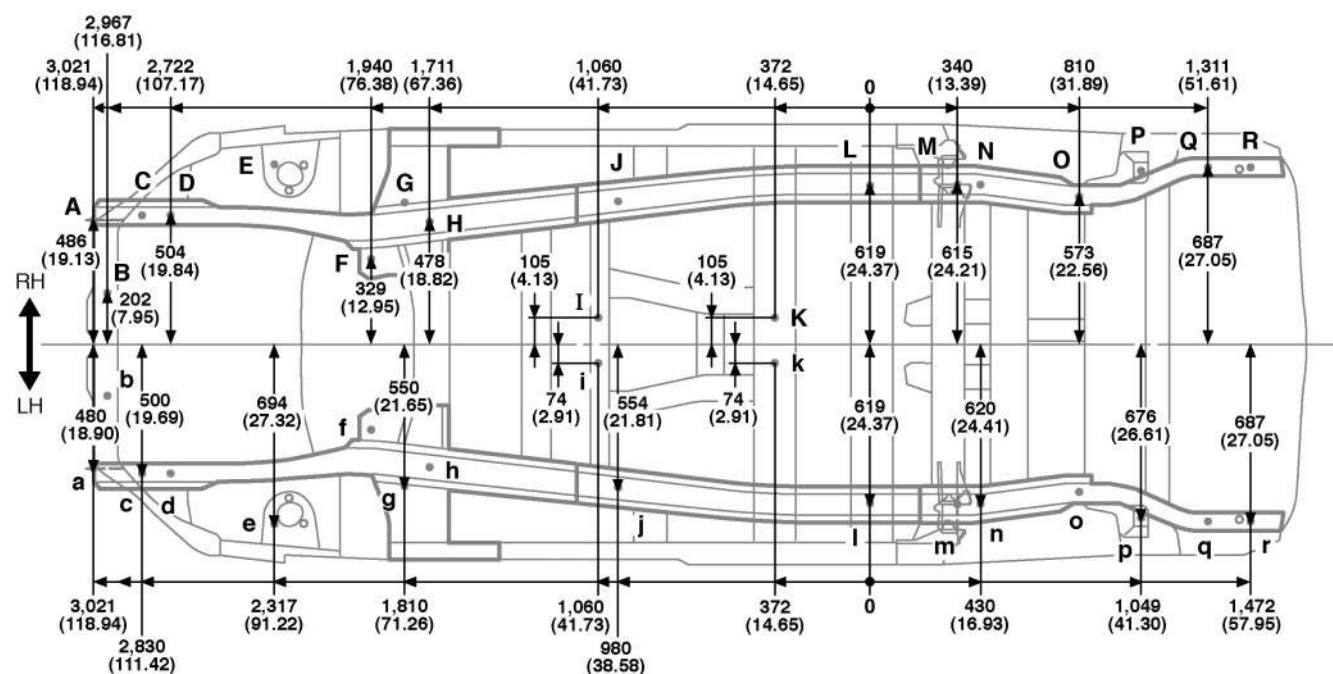
- 1 Before temporarily installing the new parts, apply body sealer to the reinforcement, side impact protection beam and back side of the new parts.
HINT:
 - 1) Apply sealer evenly about 10mm (0.39in.) from the flange and 3mm (0.12in.) in diameter to the outer panel and apply just enough sealer for the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

UNDER BODY
2WD

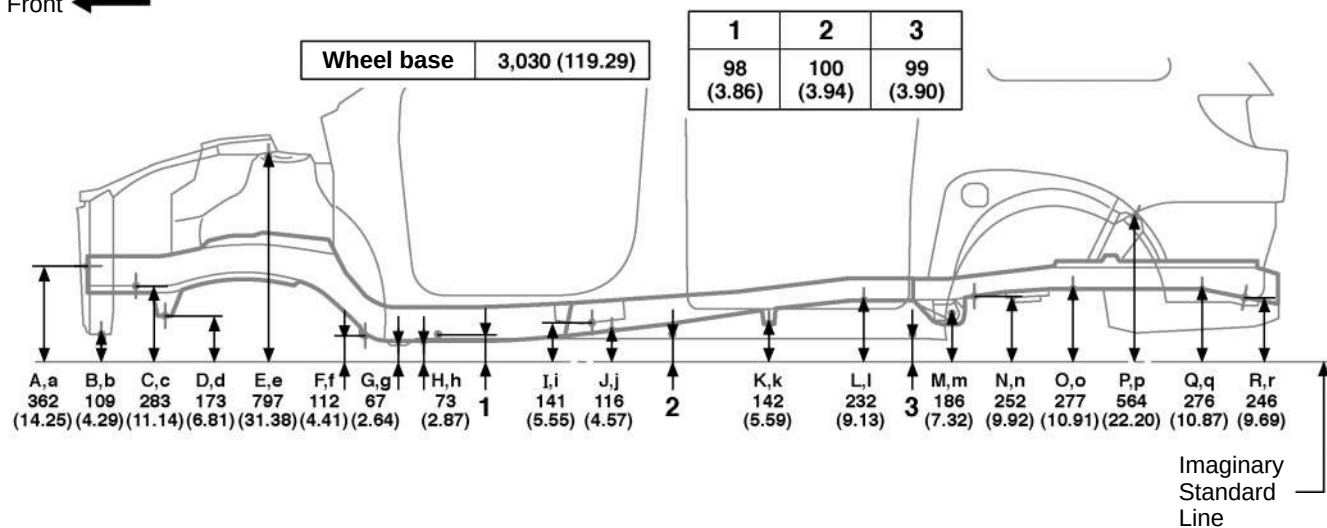


UNDER BODY 4WD

(Two-Dimensional Distance)



Front



mm (in.)

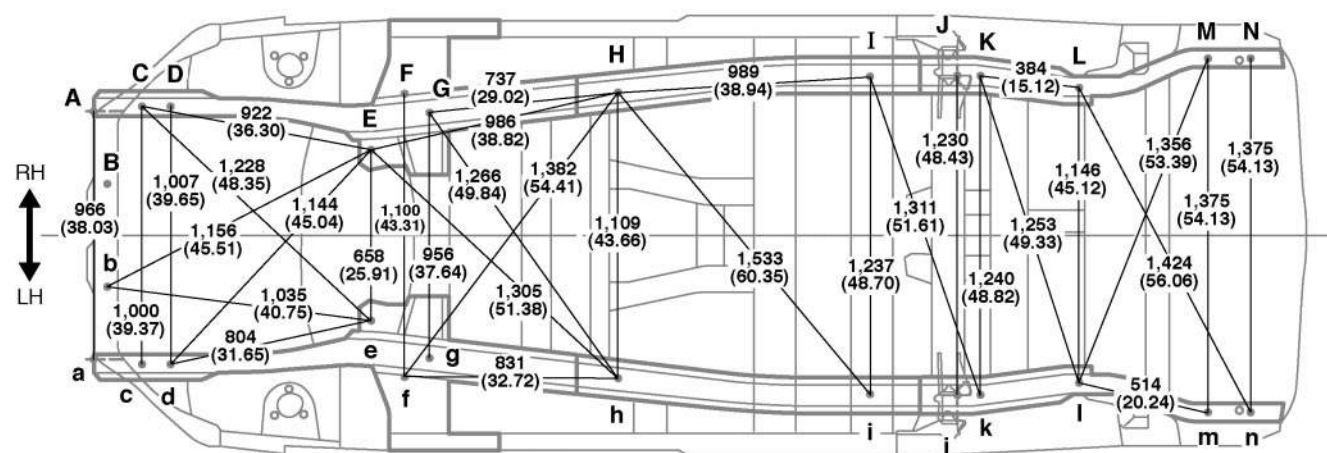
Symbol	Name	Hole dia.	Symbol	Name	Hole dia.
A, a	Front bumper reinforcement installation nut	10 (0.39) nut	J, j	Front floor under reinforcement standard hole	18 (0.71)
B, b	Front crossmember standard hole	15 (0.59)	K, k	Propeller shaft center support bearing installation nut	10 (0.39) nut
C, c	Front side member standard hole	18 (0.71)	L, l	Front floor under reinforcement standard hole	18 (0.71)
D, d	Front frame installation nut	16 (0.63) nut	M, m	Trailing arm installation hole-inner	15 (0.59)
E, e	Front spring support hole outer-front	12.5 (0.492)	N, n	Rear floor side member standard hole	18 (0.71)
F, f	Front frame installation nut	16 (0.63) nut	O, o	Rear floor side member standard hole	18 (0.71)
G, g	Torque box front standard hole	25 (0.98)	P, p	Rear shock absorber installation hole	24 (0.94)
H, h	Front side member standard hole	18 (0.71)	Q, q	Rear floor side member standard hole	18 (0.71)
I, i	Propeller shaft center support bearing installation nut	10 (0.39) nut	R, r	Transport hook installation nut	12 (0.47) nut

UNDER BODY

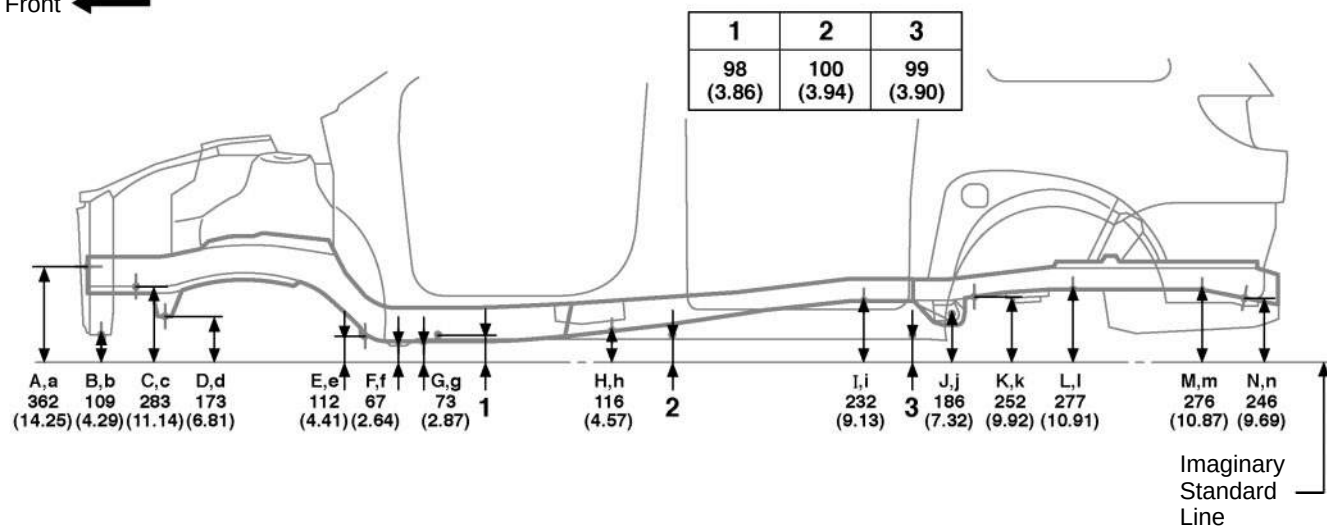
(Three-Dimensional Distance)

Vehicle Dimensions

I-K or i-k	L-N or l-n	M-n or m-N	M-N or m-n
431 (16.97)	673 (26.50)	1,385 (54.53)	165 (6.50)



Front ←

Imaginary
Standard
Line

mm (in.)

Symbol	Name	Hole dia.	Symbol	Name	Hole dia.
A, a	Front bumper reinforcement installation nut	10 (0.39) nut	H, h	Front floor under reinforcement standard hole	18 (0.71)
B, b	Front crossmember standard hole	15 (0.59)	I, i	Front floor under reinforcement standard hole	18 (0.71)
C, c	Front side member standard hole	18 (0.71)	J, j	Trailing arm installation hole-inner	15 (0.59)
D, d	Front frame installation nut	16 (0.63) nut	K, k	Rear floor side member standard hole	18 (0.71)
E, e	Front frame installation nut	16 (0.63) nut	L, l	Rear floor side member standard hole	18 (0.71)
F, f	Torque box front standard hole	25 (0.98)	M, m	Rear floor side member standard hole	18 (0.71)
G, g	Front side member standard hole	18 (0.71)	N, n	Transport hook installation nut	12 (0.47) nut

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.

