

INTRODUCTION	IN
BODY WELD POINT	WP
BODY DIMENSIONS	BD
PAINTING / COATING	PC



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# INTRODUCTION

## HOW TO USE THIS MANUAL

GENERAL INFORMATION .....	IN-1
SYMBOLS .....	IN-2
ILLUSTRATION OF WELD POINT SYMBOLS .....	IN-4

## WORK NOTICES AND PRECAUTIONS

WHEN REPAIRING THE VEHICLE BODY .....	IN-5
PRECAUTIONS FOR REPAIRING BODY STRUCTURE (INCLUDING CRUSH BOXES) .....	IN-6
PRECAUTIONS FOR WELDING .....	IN-7
ANTI-RUST TREATMENT AFTER INSTALLATION OF BODY STRUCTURE PARTS OR OUTER PANELS .....	IN-9
PRECAUTIONS FOR SRS AIRBAG SYSTEM .....	IN-10
NOTICE ABOUT VEHICLE CONDITION WHEN JACKING UP VEHICLE .....	IN-15

## WHEN REMOVING,INSTALLING,REPAIRING OR REPLACING PARTS

COMPONENTS .....	IN-19
PROCEDURES NECESSARY WHEN ECU OR OTHER PARTS ARE REPLACED .....	IN-38
WHEEL ALIGNMENT STANDARD .....	IN-39

## ABOUT THIS VEHICLE

STRUCTURAL OUTLINE .....	IN-44
DAMAGE DIAGNOSIS .....	IN-50
EXTERIOR RESIN PARTS AND RESIN CHARACTERISTICS .....	IN-54

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IN



# HOW TO USE THIS MANUAL

## GENERAL INFORMATION

### 1. Scope of the repair work explanation

- (a) 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.
- (b) When repairing, do not cut and join areas that are not shown in this manual. Only work on the specified contents to maintain body strength.
- (c) Make sure to perform the following essential procedures, although they are omitted in this manual.
  - (1) Clean and wash removed parts, if necessary.
  - (2) Visual inspection.
- (d) This manual has references to the Repair Manual.
  - (1) vehicle interior section
  - (2) vehicle exterior section

### 2. Section categories

- (a) This manual has been divided as shown below.

Section Title	Contents	Examples
INTRODUCTION	Explanation of general body repair.	SYMBOLS PRECAUTIONS FOR WELDING
BODY WELD POINT	Instructions for replacing the weld panels from the white body condition, from which bolted parts have been removed, with individual supply parts.	CUT AND JOIN REPLACEMENT SECTION ASSEMBLY REPLACEMENT
BODY DIMENSIONS	Body aligning measurements.	THREE-DIMENSIONAL DISTANCE TWO-DIMENSIONAL DISTANCE
PAINTING / COATING	Scope and type of anti-rust treatment, etc. together with weld panel replacement.	APPLICATION AREAS INSTALLATION AREAS

### 3. REPAIR PROCEDURES

- (a) Illustrations of similar vehicle models are sometimes used. In these cases, minor details may be different from the actual vehicle.
- (b) About a symmetrical part, only one side is described.

### 4. TERM DEFINITIONS

CAUTION	Possibility of injury to you or other people.
NOTICE	Possibility of damage to components being repaired.
HINT	Provides additional information to help you perform repairs.



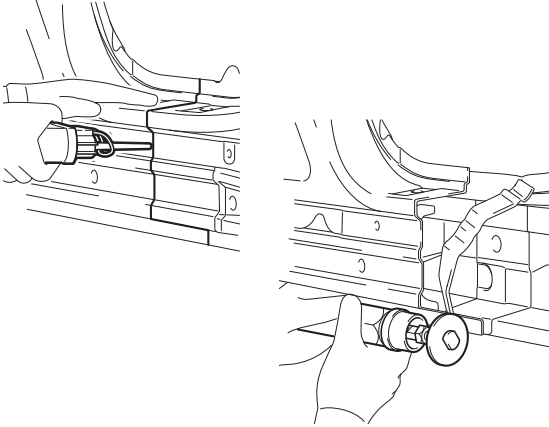





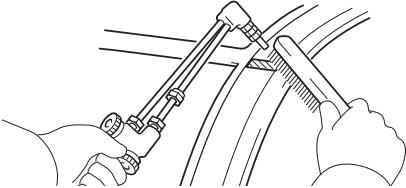


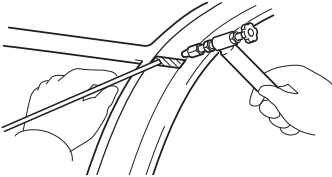
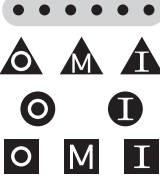
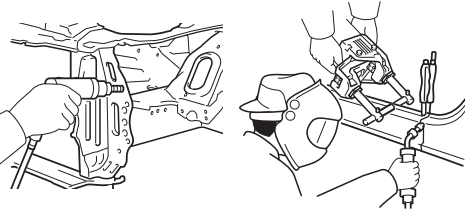


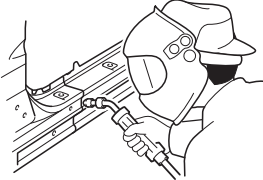

### 5. INTERNATIONAL SYSTEM OF UNITS

- (a) The units used in this manual comply with the International System of Units (SI UNIT) standard. Other units from the metric system and the English systems are also provided.

Example:

**Torque: 30 N\*m (310 kgf\*cm, 22 ft.\*lbf)**

SYMBOLS

REPAIR AREA INDICATOR SYMBOLS		REPAIR METHOD INDICATOR SYMBOLS		ILLUSTRATION
	CUT		CUT AND JOIN LOCATION (Saw Cut)	
			CUT AND JOIN LOCATION (Cut Location for Supply Parts)	
			CUT LOCATION	
			CUT WITH DISC SANDER, ETC.	
	BRAZE		BRAZING OR ARC BRAZING FOR REMOVAL	
	BRAZE		BRAZE	
	WELD POINTS	-	SPOT WELD OR PLUG WELD (See the ILLUSTRATION OF WELD POINT SYMBOLS)	
	WELDING		BUTT WELD	
			FILLET WELD	



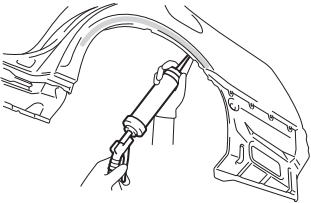


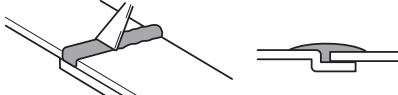

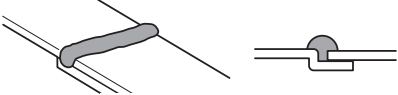
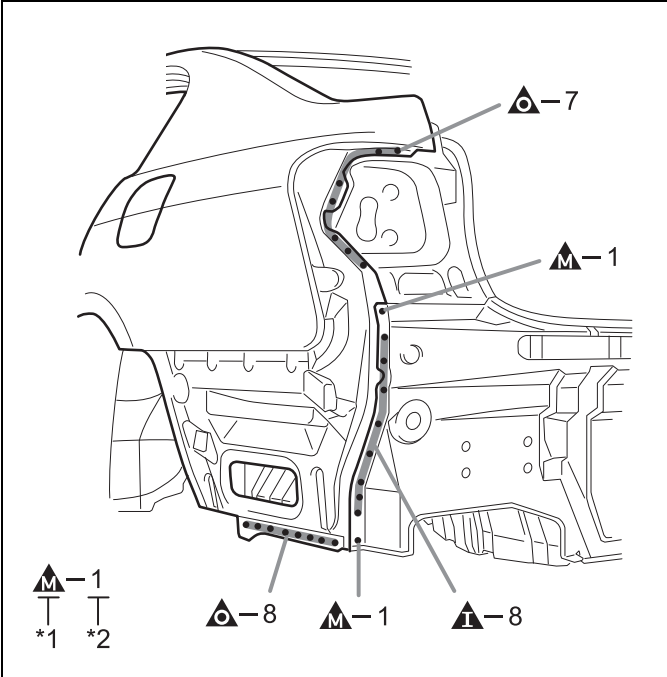
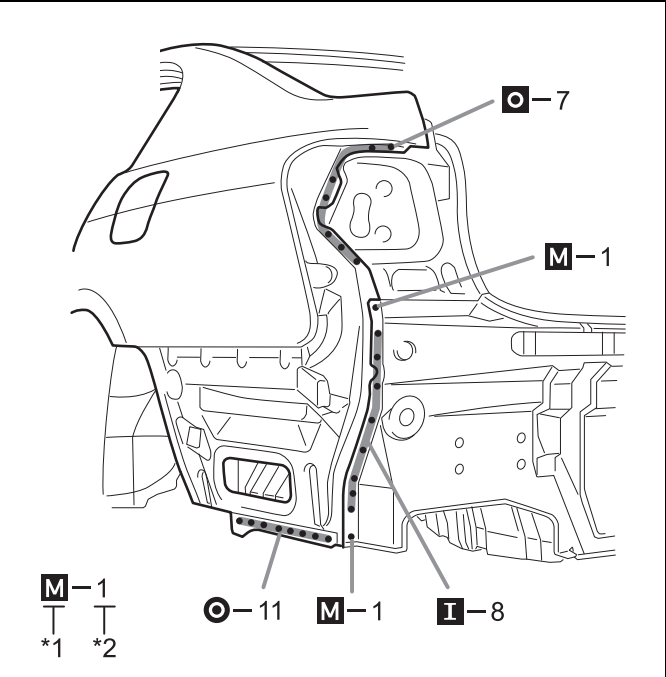
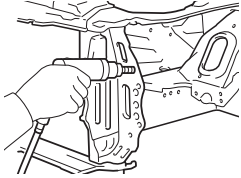
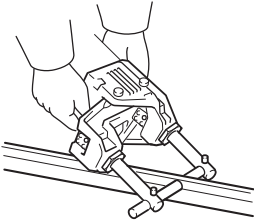
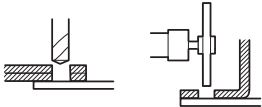
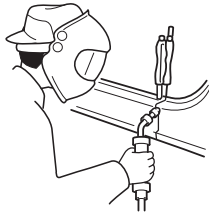
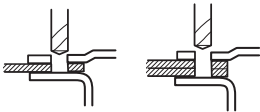
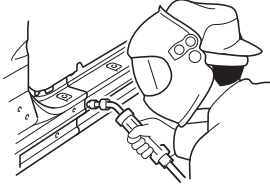

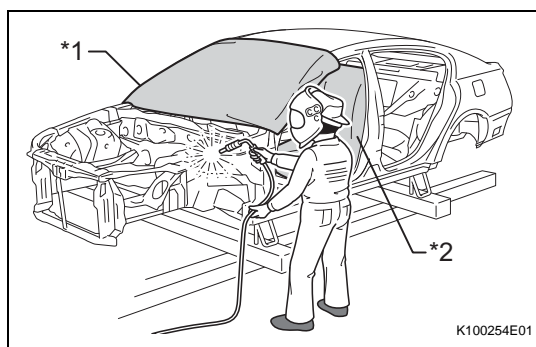
REPAIR AREA INDICATOR SYMBOLS		REPAIR METHOD INDICATOR SYMBOLS		ILLUSTRATION
	BODY SEALER		BODY SEALER	
-	ASSEMBLY MARK		STANDARD HOLE FOR INSTALLATION	-
	BODY SEALER	-	FLAT FINISHING	
			NO FLAT FINISHING	

ILLUSTRATION OF WELD POINT SYMBOLS

REMOVAL			INSTALLATION		
					
*1	Position of panels that are removed		*1	Welding method and panel position	
*2	Weld points		*2	Weld points	
SYMBOLS	MEANING	ILLUSTRATION	SYMBOLS	MEANING	ILLUSTRATION
▲	Remove Weld Points		●	Spot Welding	
○	Position of Panel Being Replaced is on Outside		■	Plug Welding	
M	Position of Panel Being Replaced is in Center		+	Spot MIG Welding	
I	Position of Panel Being Replaced is on Inside				

# WORK NOTICES AND PRECAUTIONS

## WHEN REPAIRING THE VEHICLE BODY

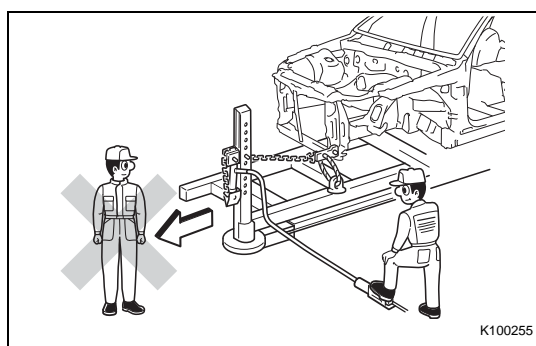


### 1. VEHICLE PROTECTION

- (a) When welding, cover glass, seats, carpets, etc. with heat resistant fireproof covers to protect them.

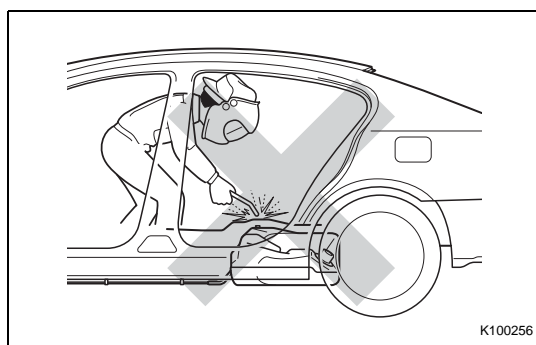
#### Text in Illustration

*1	Glass Cover
*2	Seat Cover

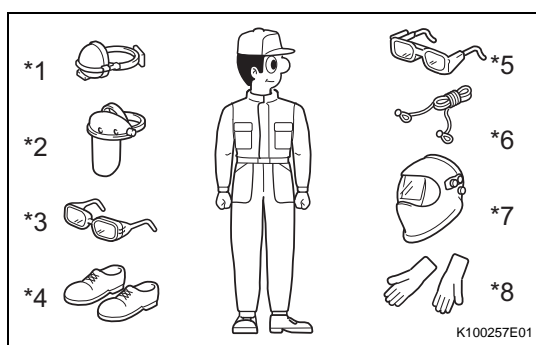


### 2. SAFETY

- (a) Never stand in the path of the chain when using a puller on the body of frame, and be sure to attach a safety cable.



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



### 3. SAFETY WORK CLOTHES

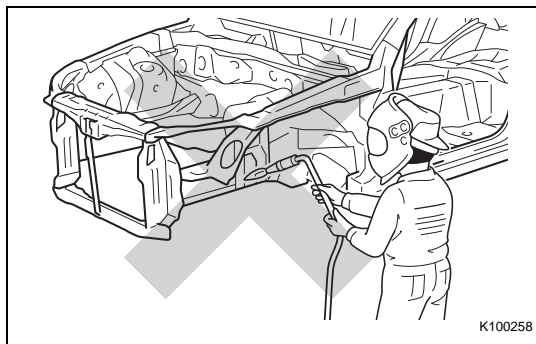
- (a) In addition to the usual mechanic's wear, cap and safety shoes, the appropriate gloves, head protector, welder's glasses, ear plugs, face protector, dust mask, etc. should be worn as the situation demands.

#### Text in Illustration

*1	Dust mask
*2	Face protector
*3	Safety glasses
*4	Safety shoes
*5	Welder's glasses
*6	Ear plugs
*7	Head protector
*8	Welder's gloves

## PRECAUTIONS FOR REPAIRING BODY STRUCTURE (INCLUDING CRUSH BOXES)

IN



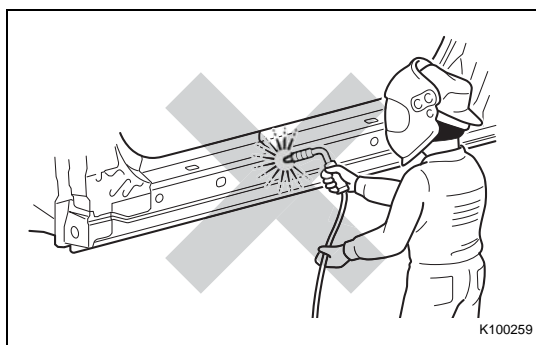
K100258

### 1. PROHIBITION OF HEAT REPAIR FOR BODY FRAME PARTS

- (a) Rustproof high strength steel sheets are used for the body frame. Therefore, if these parts are heat repaired using an acetylene torch or equivalent, the crystalline structure changes, causing the strength of the steel sheets to decrease. Also, the zinc coating which is used to protect the body from rust will be damaged. This causes the surface of the steel sheets to become oxidized, which reduces their ability to resist rust.

### 2. NOTES ON ULTRA HIGH STRENGTH STEEL PANEL REPAIR

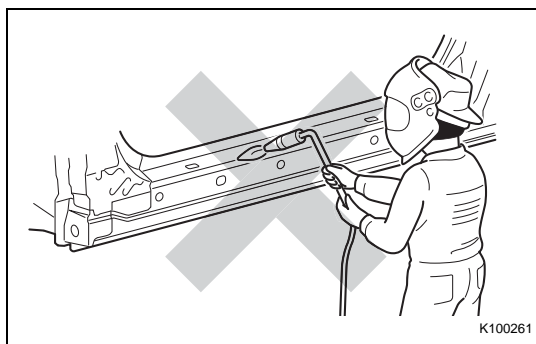
- (a) Make sure that the frame aligning machine does not affect undamaged areas when aligning the frame.



K100259

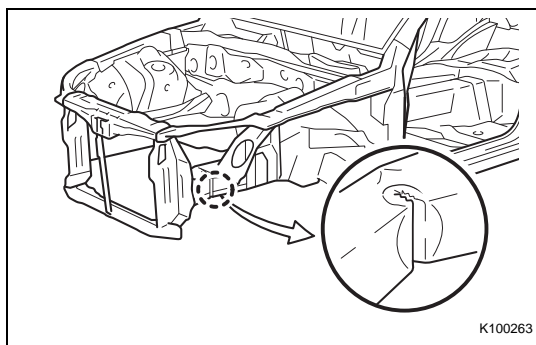
- (b) Do not butt weld because the heat decreases the strength of the steel.

- (c) Use a spot cutter suitable for high strength steel when removing spot welds. The cutter should be able to cut welding nuggets smoothly.  
 (d) Always follow the welding instructions when welding. (Refer to the PRECAUTIONS FOR WELDING)



K100261

- (e) Do not heat the panel when repairing.



K100263

### 3. WHEN TO REPLACE FRAME PARTS

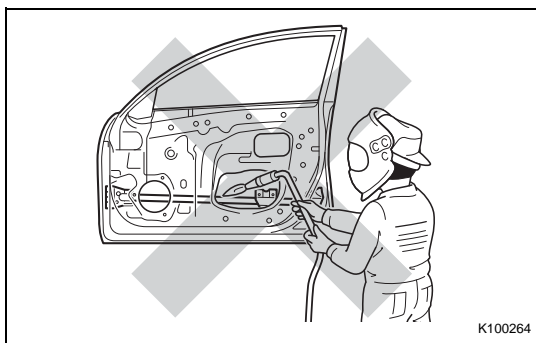
#### NOTICE:

Replace the sections of the frame where kinks have occurred.

#### HINT:

What is kink?

A deformation on a steel sheet that cannot be returned to its original shape by pulling or hammering due to the deformation angle being sharp.

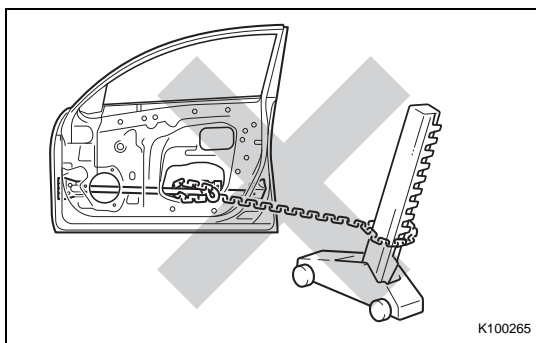


#### 4. REPAIR OF DOOR SIDE IMPACT BEAM IS PROHIBITED

- (a) The impact beam is designed so that it performs at 100% in its original shape. However, if the impact beam is repaired, its performance may not be the same as before the accident.

##### **PARTS WHICH ARE PROHIBITED TO BE REPAIRED:**

Door side impact beam

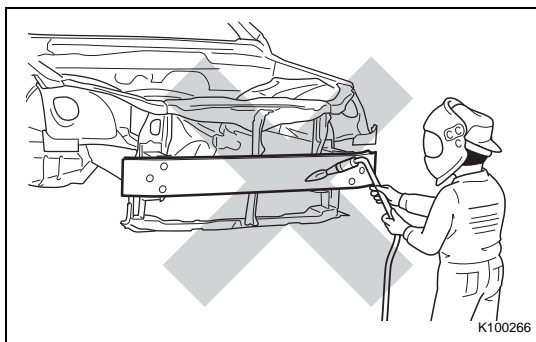


#### 5. REPAIR OF BUMPER REINFORCEMENT IS PROHIBITED

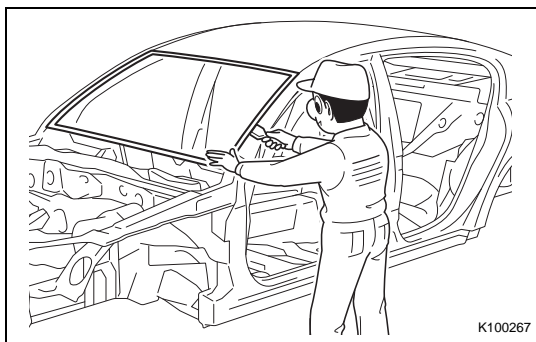
- (a) The bumper reinforcement is designed so that it performs at 100% in its original shape. However, if the bumper reinforcement is repaired, its performance may not be the same as before the accident.

##### **PARTS WHICH ARE PROHIBITED TO BE REPAIRED:**

Bumper reinforcement



## PRECAUTIONS FOR WELDING

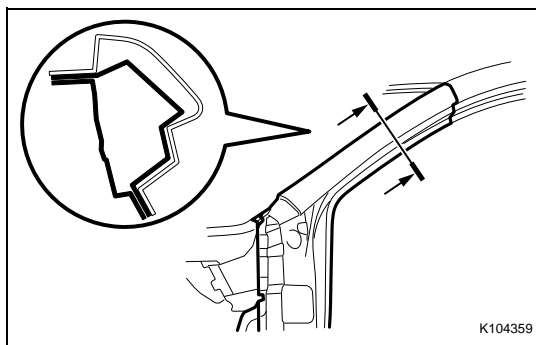


#### 1. REMOVAL OF ADJACENT COMPONENTS

- (a) To prevent damage to the body and parts, apply protective tape to the body and tools before removing the parts.

##### **NOTICE:**

**If the paint film is damaged, make sure to refinish the paint.**

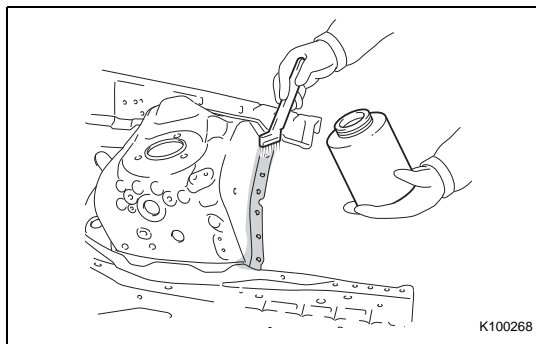


## 2. CUTTING WORK

- (a) When cutting a panel, be careful not to damage the surrounding panels or any panels underneath.

### NOTICE:

**If any panels are damaged, be sure to repair them.**



## 3. ANTI-RUST TREATMENT BEFORE WELDING

- (a) Apply welding primer to the contact surfaces of the welding areas to protect them from rust.

### NOTICE:

**Do not apply welding primer outside of the contact surfaces.**

## 4. WELDING WORK

- (a) To assure sufficient weld strength, it is recommended to follow the welding conditions below when welding ultra high strength steel.

- It is recommended to perform spot welding according to board thickness and number of overlapping sheets under the following conditions (\*1 - \*4).
- When conditions can't be met, it is recommended to perform the plug welding following \*5.

### Weld work for 1500 MPa ultra high strength steel

Plug welding	Plug diameter	8.5 mm (0.33 in)	Total number of 2 or 3 overlapping sheets
	Wire	AWS A5.18 ER70S	
	Gas	CO <sub>2</sub>	
	Plug diameter	8.5 mm (0.33 in)	
	Wire	AWS A5.18 ER70S-3	
	Gas	Gas mixture (argon: 80%, CO <sub>2</sub> : 20%)	

### Weld work for 980 MPa ultra high strength steel

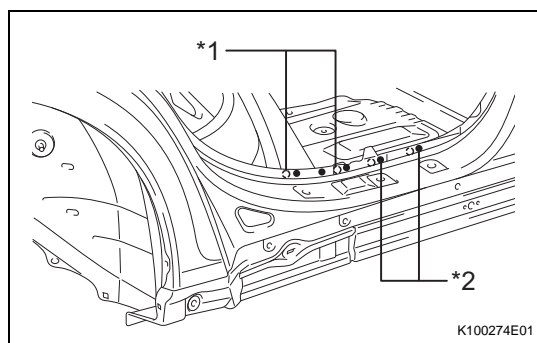
Spot welding	*1	Compression	2.6 kN	Total number of 2 overlapping sheets
		Current	6.0 kA	
		Welding time	10 Cyc.	
	*2	Compression	4.0 kN	Total number of 2 overlapping sheets
		Current	7.0 kA	
		Welding time	15 Cyc.	
	*3	Compression	3.5 kN	Total number of 3 overlapping sheets
		Current	7.0 kA	
		Welding time	25 Cyc.	
	*4	Compression	4.4 kN	Total number of 3 overlapping sheets
		Current	7.5 kA	
		Welding time	20 Cyc.	



Plug welding	*5	Plug diameter	8 mm (0.31 in) or more	Total number of 2 or 3 overlapping sheets
		Wire	AWS A5.18 ER70S	
		Gas	CO <sub>2</sub>	
		Plug diameter	8 mm (0.31 in) or more	
		Wire	AWS A5.18 ER70S-3	
		Gas	Gas mixture (argon: 80%, CO <sub>2</sub> : 20%)	

**NOTICE:**

Inspect the welds after spot welding. For points with insufficient weld strength join the panels using plug welds.

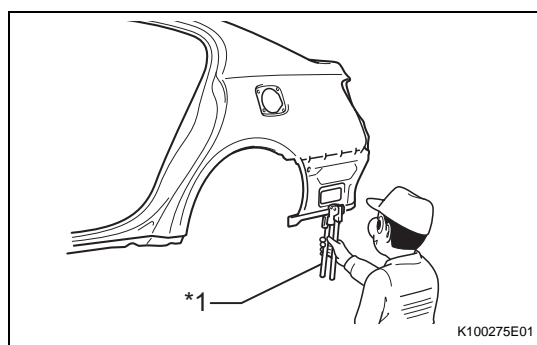


## (b) Spot weld locations

**Text in Illustration**

*1	Old Spot Locations
*2	New Spot Locations

Avoid welding over previously welded areas.

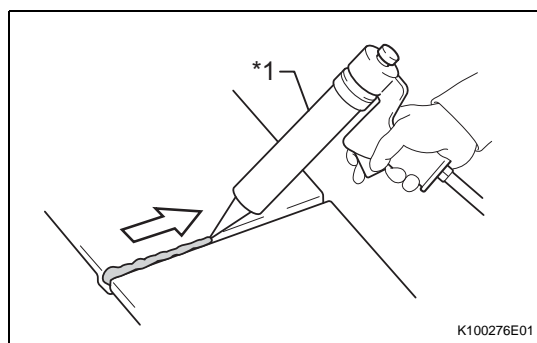
**5. MAKING HOLES FOR PLUG WELDING****Text in Illustration**

*1	Puncher
----	---------

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

Thickness of welded portion	Diameter of plug hole
Under 1.0 mm (0.04 in.)	Over 5.0 mm (0.20 in.)
1.0 to 1.6 mm (0.04 to 0.06 in.)	Over 6.5 mm (0.26 in.)
1.7 to 2.3 mm (0.07 to 0.09 in.)	Over 8.0 mm (0.31 in.)
Over 2.4 mm (0.09 in.)	Over 10 mm (0.39 in.)

## ANTI-RUST TREATMENT AFTER INSTALLATION OF BODY STRUCTURE PARTS OR OUTER PANELS

**1. BODY SEALER APPLICATION****Text in Illustration**

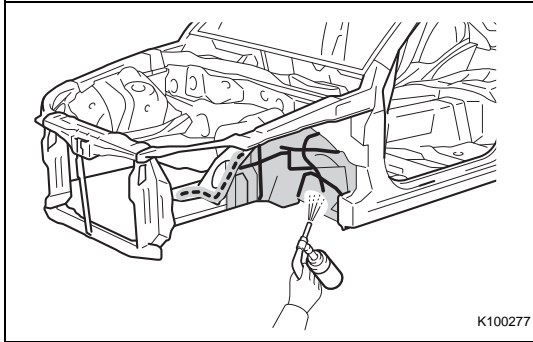
*1	Sealer Gun
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**PURPOSE:**

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

**NOTICE:**

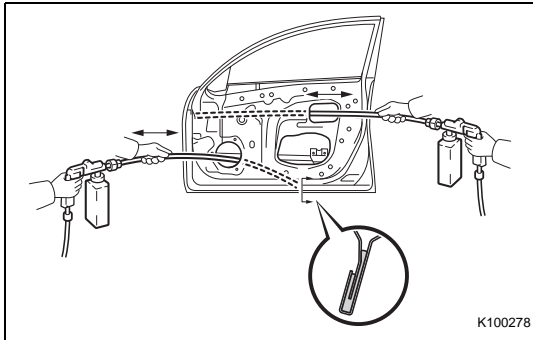
Apply body sealer neatly to parts that require a high quality appearance.



## 2. UNDERCOAT APPLICATION

### PURPOSE:

To prevent corrosion and protect the body from gravel, always apply a sufficient undercoating to the areas indicated.



## 3. VEHICLE BODY ANTI-RUST AGENT APPLICATION

### PURPOSE:

The purpose is to protect areas from rust which are difficult to paint such as the backside of the box-shaped cross section frame parts.

### METHOD:

Apply anti-rust agent through the service holes and/or installation holes of the parts.

## PRECAUTIONS FOR SRS AIRBAG SYSTEM

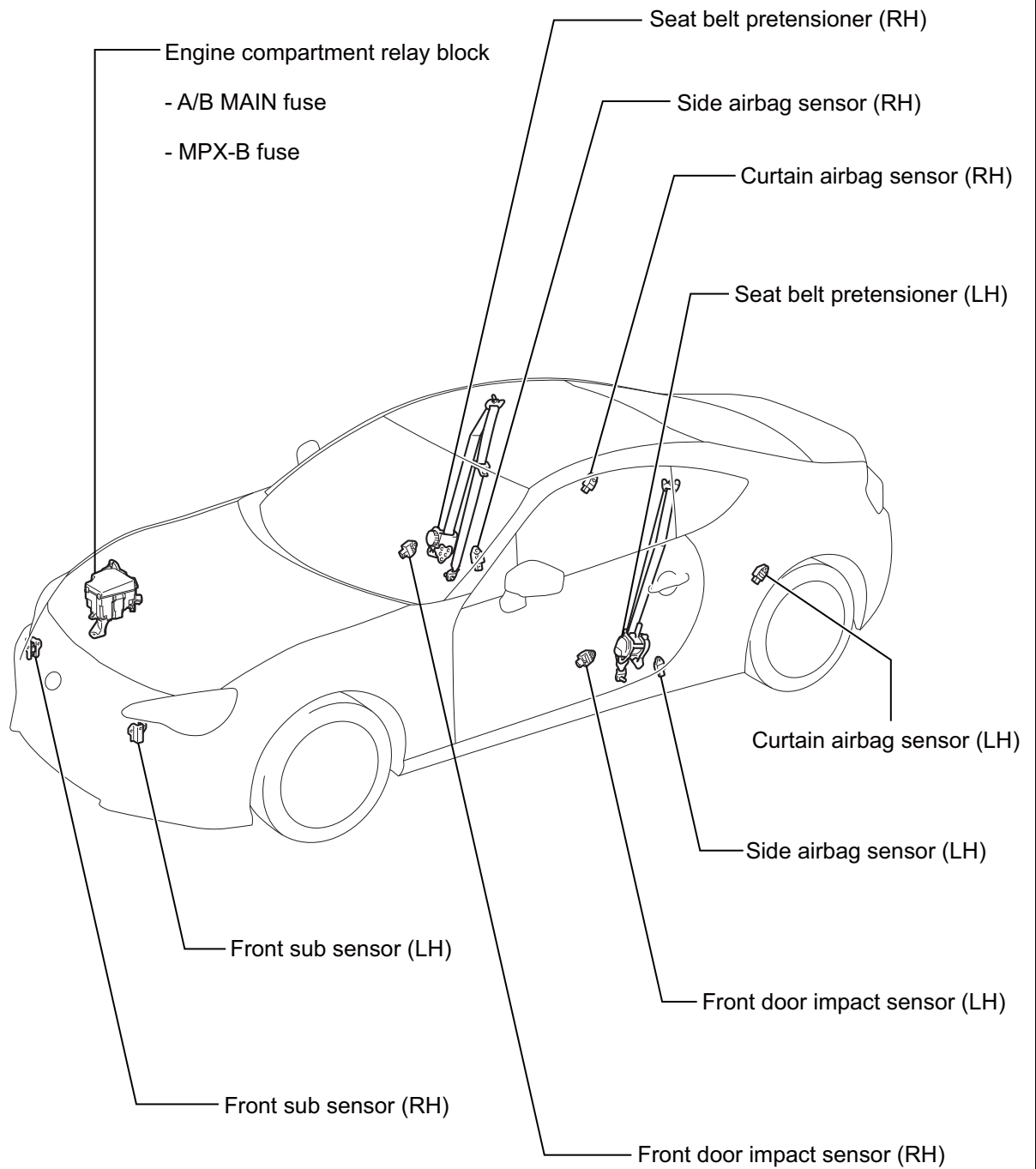
### 1. HANDLING OF A VEHICLE THAT HAS BEEN DAMAGED IN A COLLISION

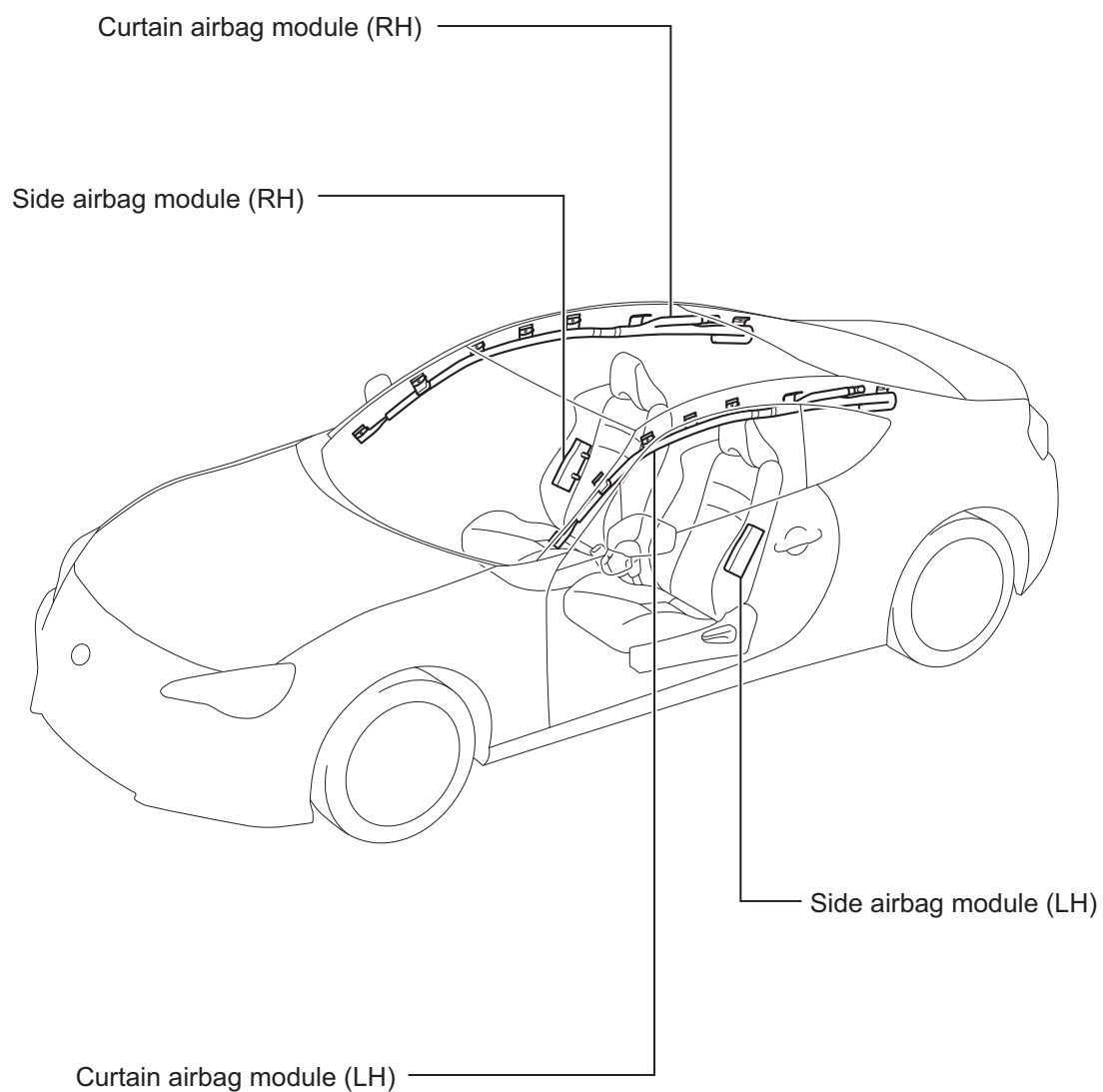
- (a) Refer to the SUBARU Repair Manual for the SRS airbag system inspection procedures.
- (b) If impacts are likely to occur to the front sub sensors, front door impact sensors, side airbag sensors, curtain airbag sensors, satellite safing sensor or airbag control module remove each sensor as necessary beforehand.
- (c) Do not allow the front sub sensors, front door impact sensors, side airbag sensors, curtain airbag sensors, satellite safing sensor or airbag control module to become heated to high temperatures.
- (d) Check the wire harnesses and connectors for damage and/or melting, as some areas of the airbags and seat belt pretensioners may heat up to several hundred degrees when they operate.

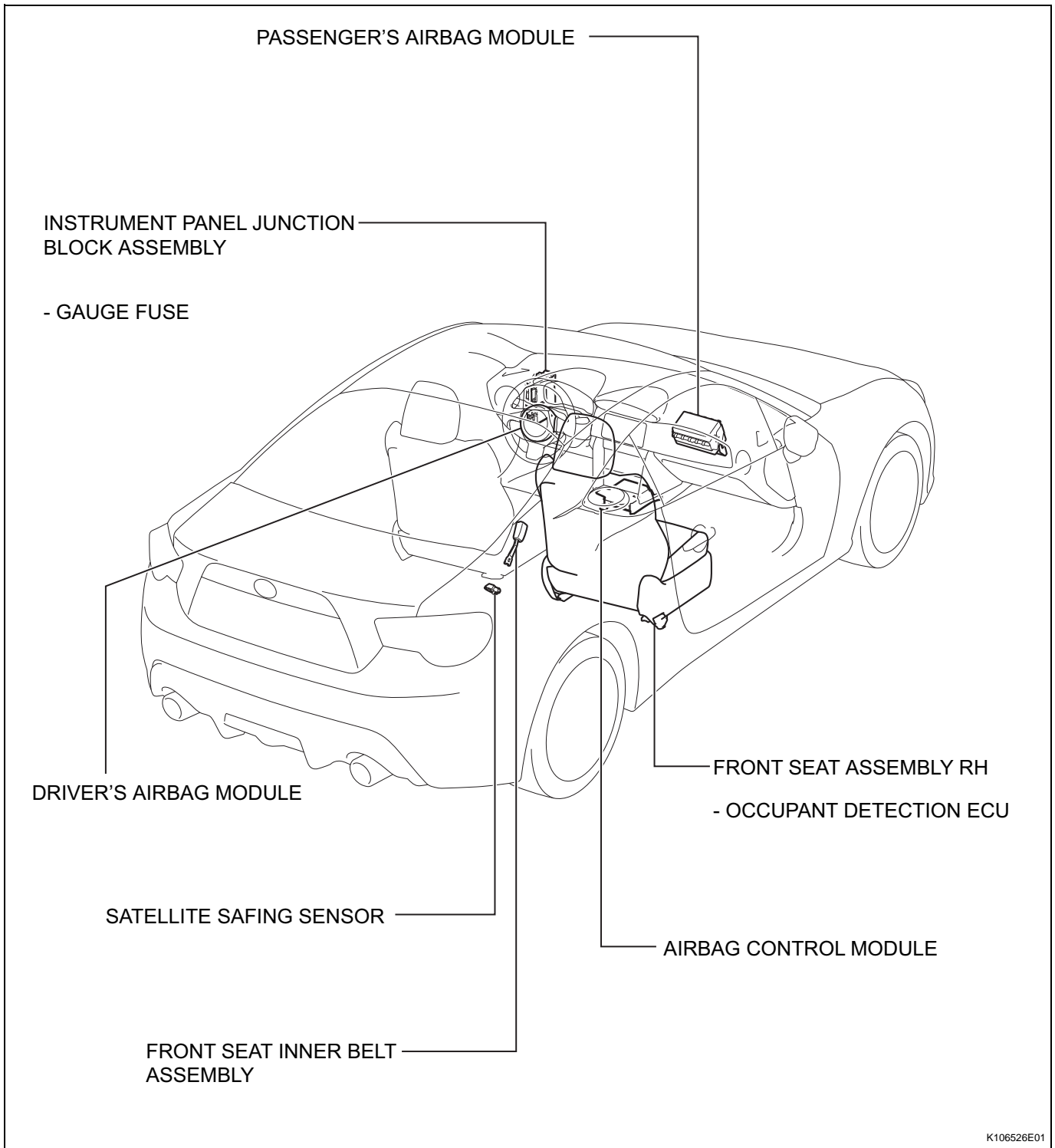
### 2. PRECAUTIONS FOR USING ELECTRIC WELDER

- (a) Check the Diagnostic Trouble Codes (DTCs).
  - (1) If one or more DTCs are displayed:
    - Disconnect the negative (-) terminal cable from the battery.
    - Disconnect all the malfunctioning circuit connectors.
    - Disconnect the airbag control module connector.
  - (2) If DTCs are NOT displayed:
    - Inspect for damage to the electric wiring harnesses and connectors.
    - Disconnect the negative (-) terminal cable from the battery.
    - Disconnect the airbag control module connector.

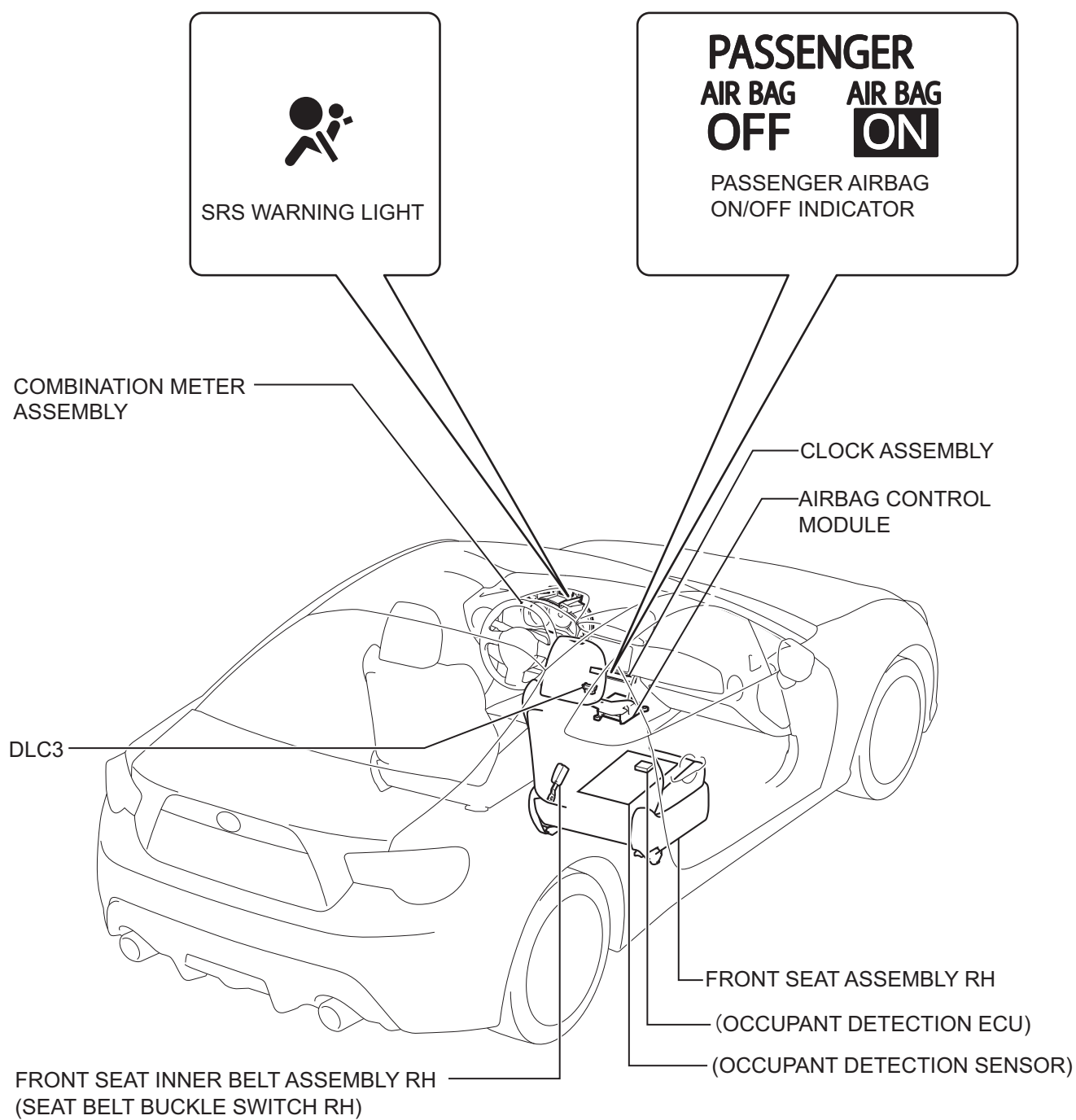
### 3. PARTS LOCATION







IN



## NOTICE ABOUT VEHICLE CONDITION WHEN JACKING UP VEHICLE

### 1. LIFT AND JACK

When using a lift or shop jack to raise a vehicle or using rigid rack to support a vehicle, always follow instructions concerning jack-up points and weight limits to prevent the vehicle from falling, which could result in injury. Be especially careful that the vehicle is balanced before raising it. Be sure to set the wheel stoppers when jacking-up only the front or rear side of the vehicle.

#### CAUTION:

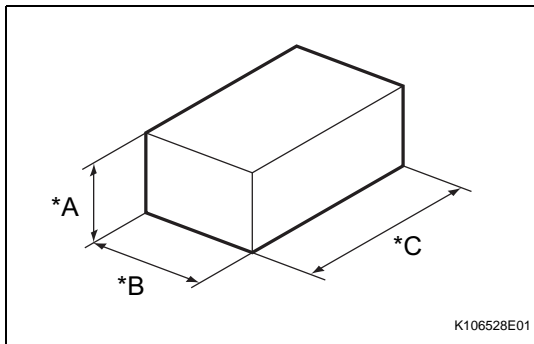
Select the lift attachment so that the side sill does not contact the lift arm.

#### NOTICE:

- When using a lift, follow its operation manual.
- When the side sill cover contacts the lift arm, use a lift attachment.
- Do not work or leave unattended while the vehicle is supported with jack, support it with rigid racks.
- Be sure to use the rigid racks with rubber attached to cradle to support the vehicle.
- When using a lift, use an attachment or something similar.
- When using a plate lift, use a rubber attachment. Place the attachment to the specified position of the vehicle, by adjusting front/rear and left/right sides accordingly.

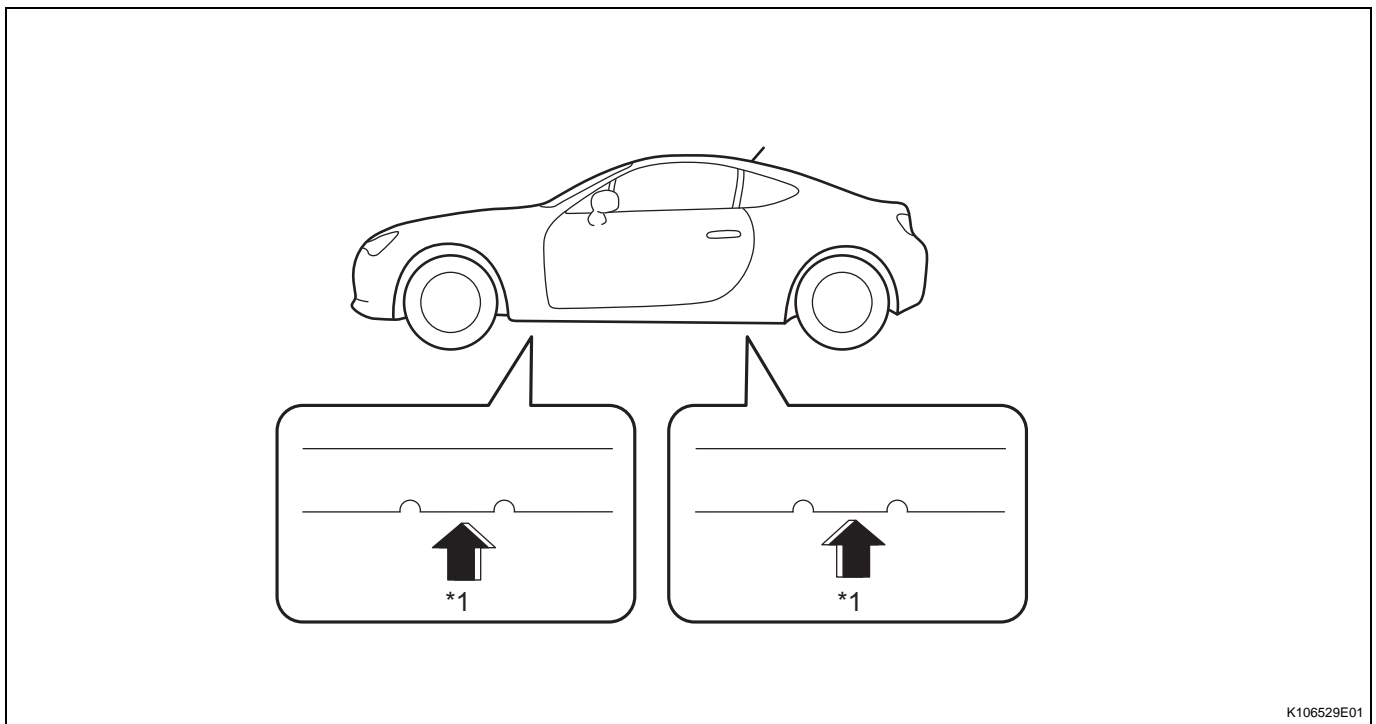
#### Text in Illustration

*A	80 mm (3.1 in) or more
*B	80 - 100 mm (3.15 - 3.94 in)
*C	120 - 200 mm (4.72 - 7.87 in)



- Align the cushion rubber center part of plate lift with the center part of rubber attachment.
- Do not use the plate lift whose attachment does not reach the supporting locations.

(a) Support locations



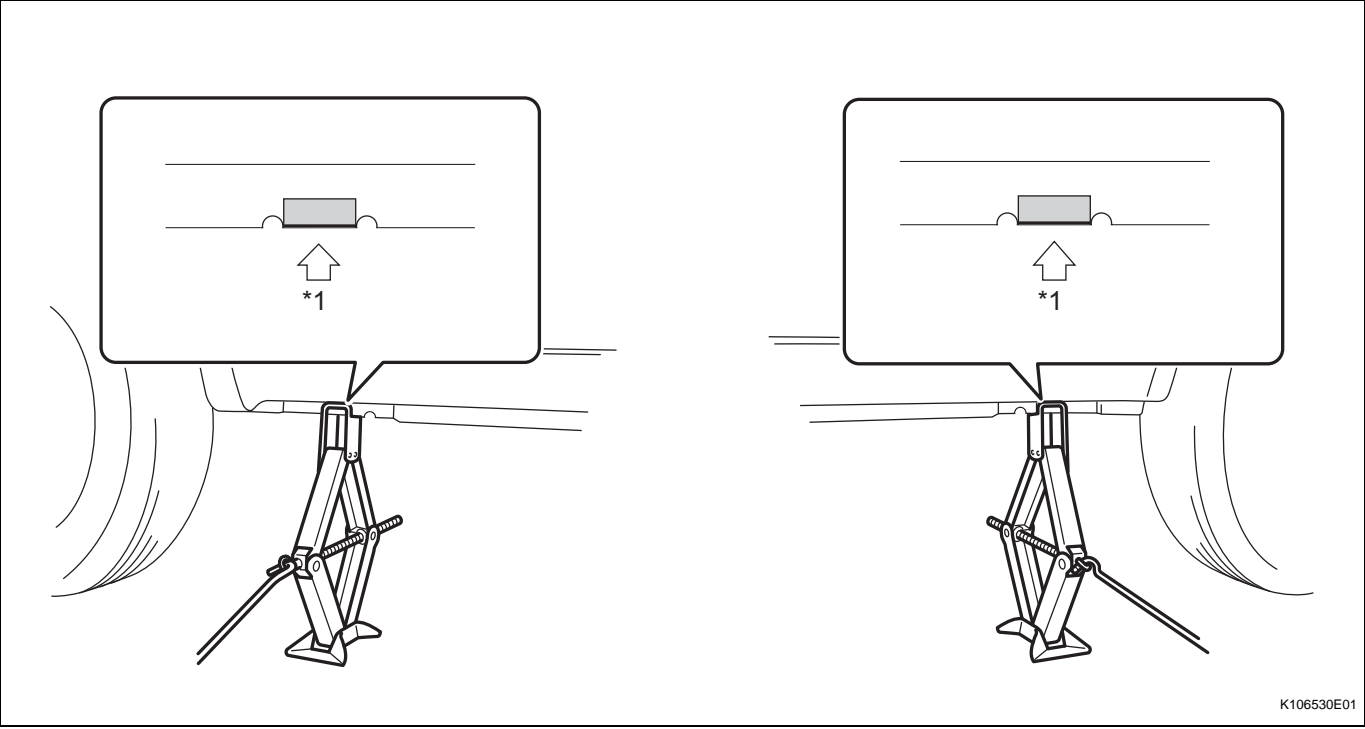
Text in Illustration

*1	Jack-up point
----	---------------

(b) Pantograph jack

CAUTION:

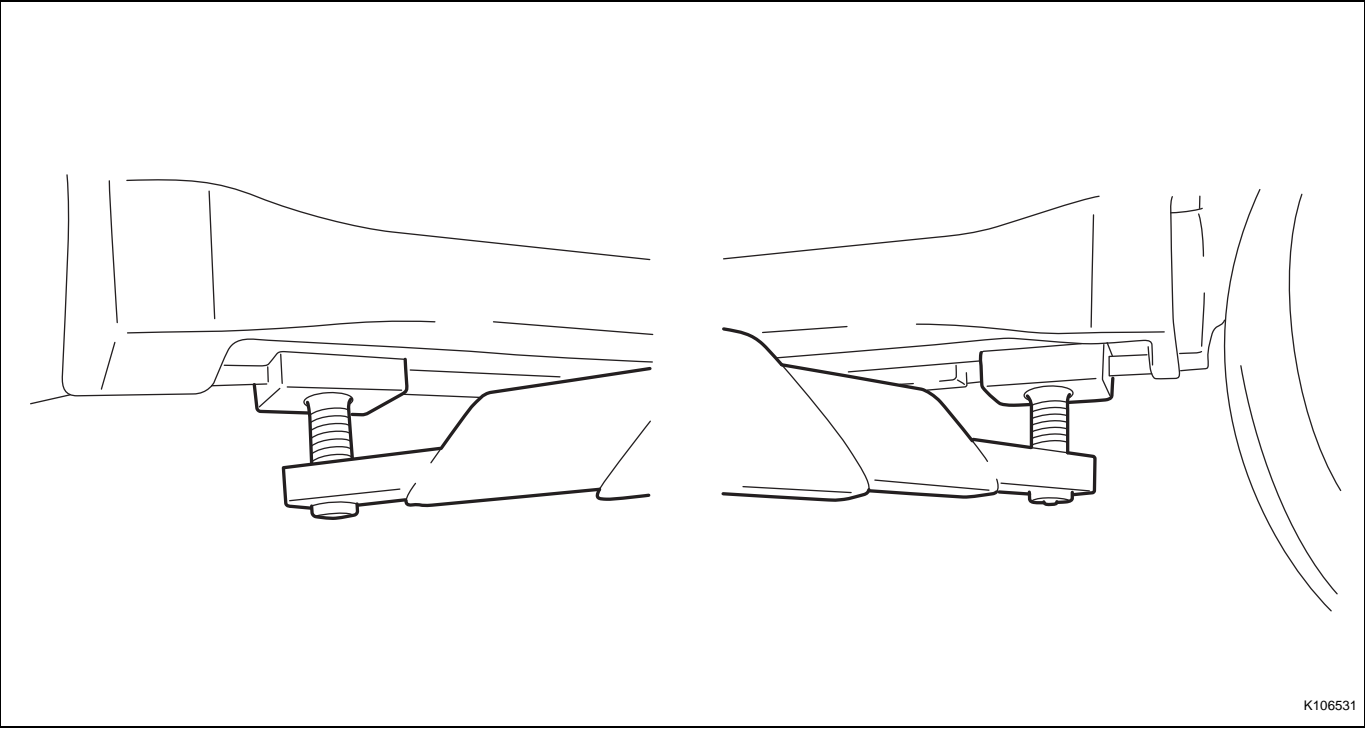
When storing the jack holder after use, store with the jack handle mount of the jack facing the inside of the trunk.



Text in Illustration

*1	Jack-up point
----	---------------

(c) Lift

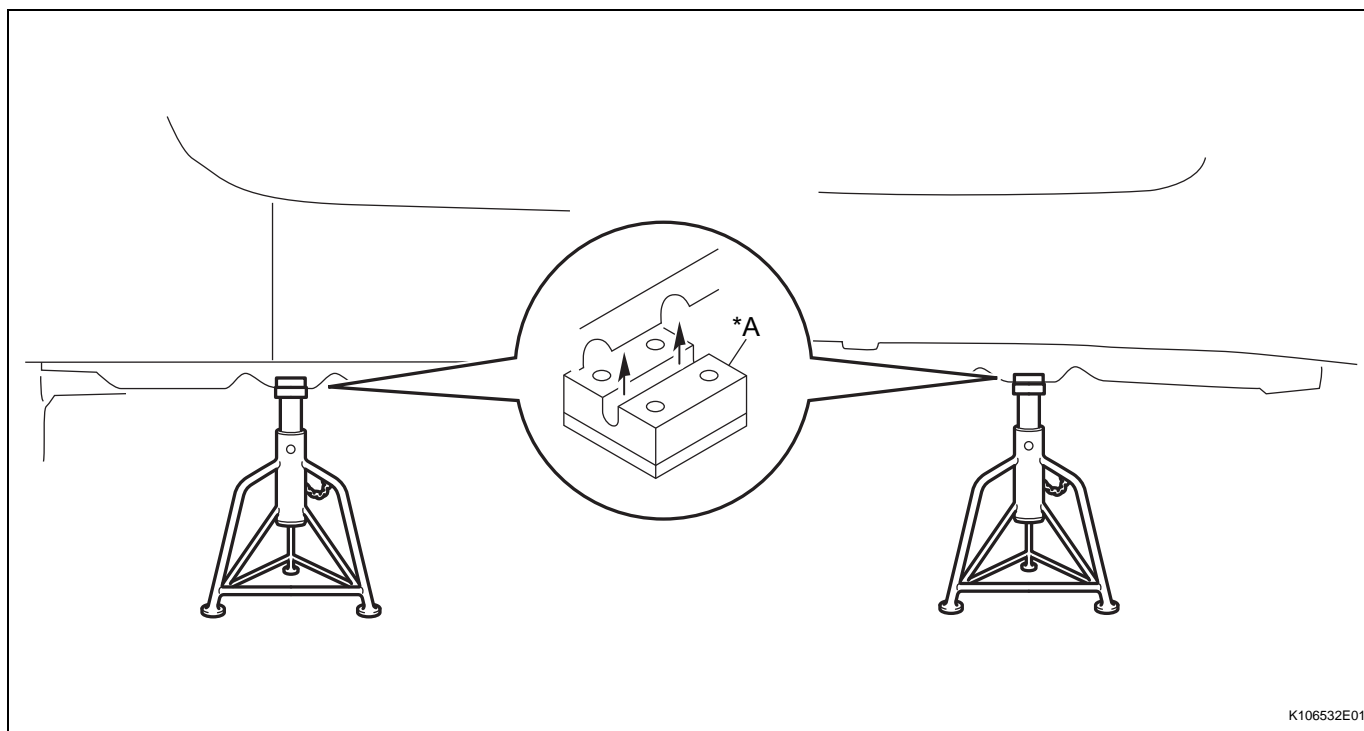




**CAUTION:**

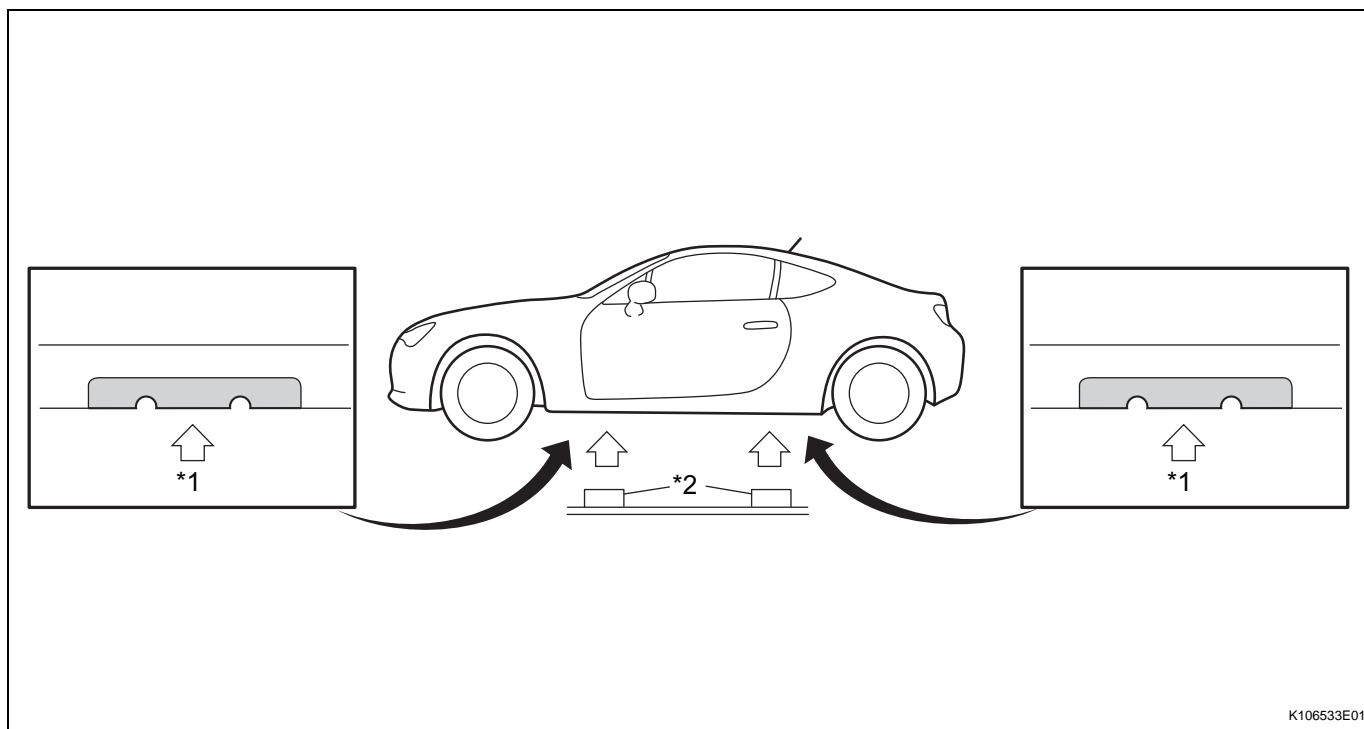
For models with side under skirt, use a spacer or an attachment to lift up the vehicle securely at jack up point, without contact of side under skirt and lift.

(d) Rigid rack

**Text in Illustration**

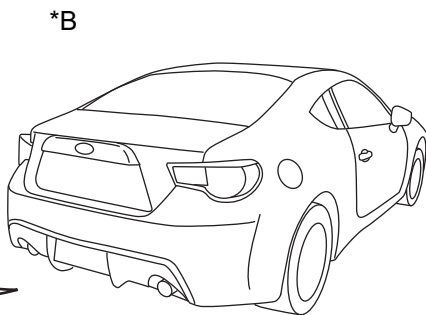
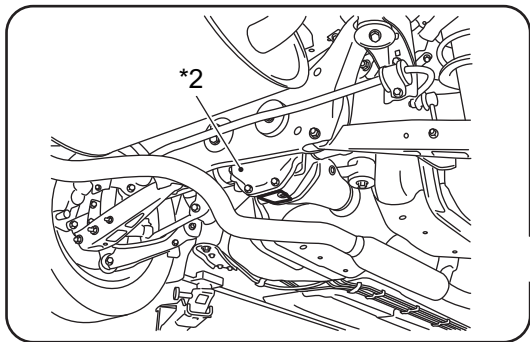
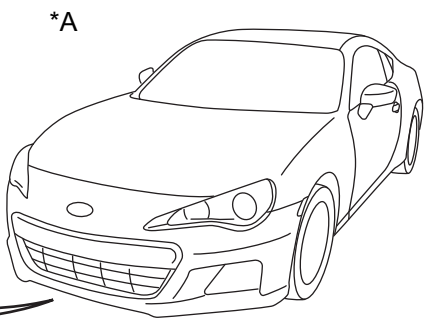
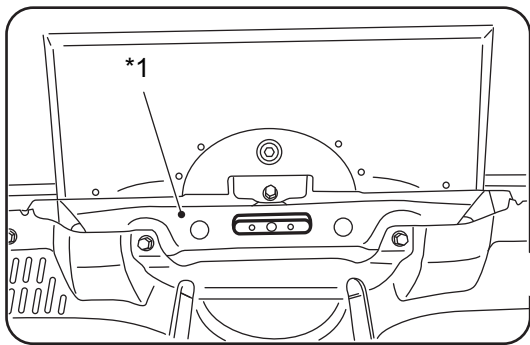
*A	Attachment
----	------------

(e) Plate lift

**Text in Illustration**

*1	Jack-up point
*2	Attachment

(f) Jack-up point (When using a garage jack)



K106534E01

Text in Illustration

*A	Front
*B	Rear
*1	Frame
*2	Rear differential

**CAUTION:**  
If jacking up the front side of the vehicle, make sure that the jack is attached at the center of the jack-up plate not at the sides.

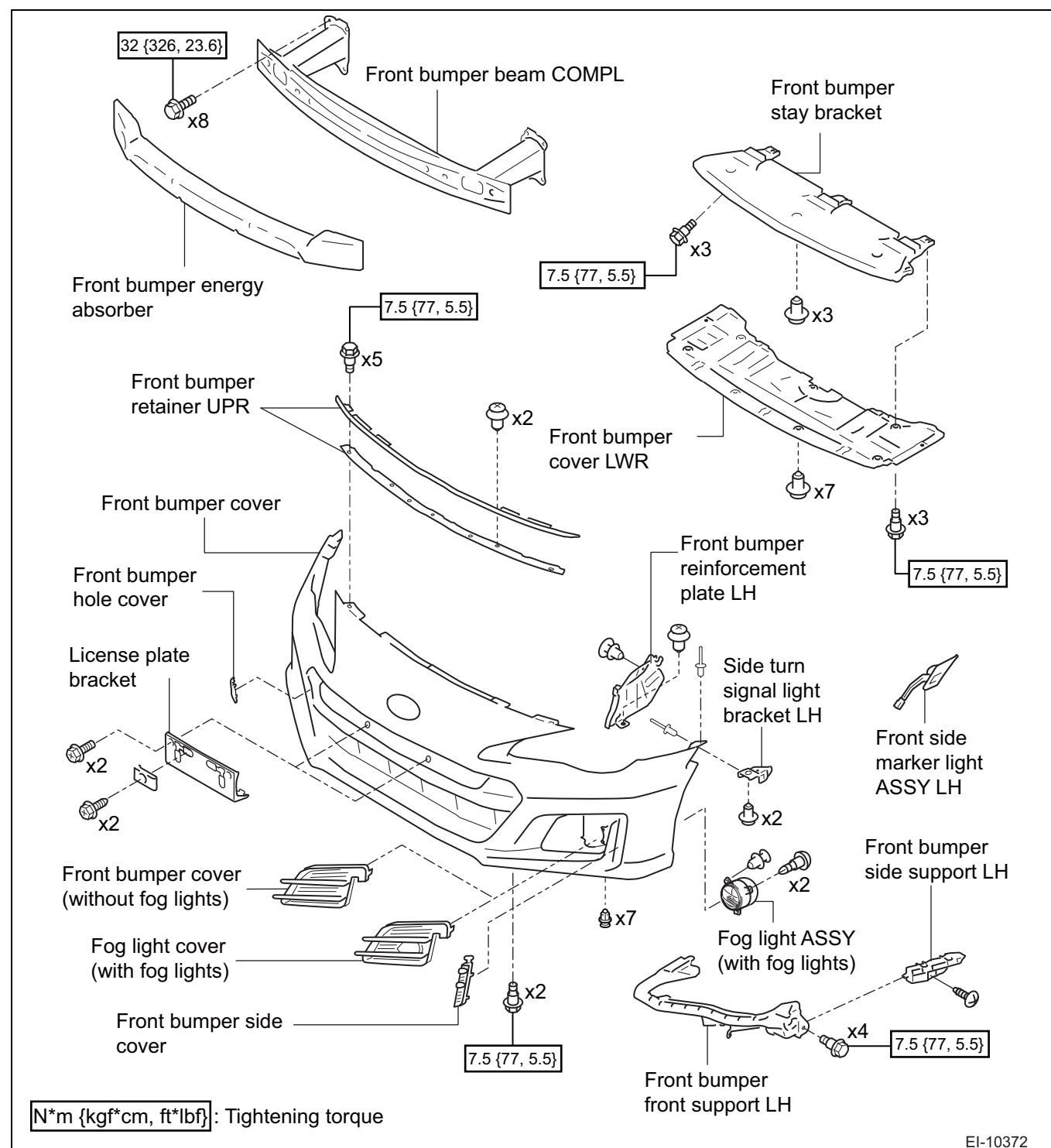
## WHEN REMOVING,INSTALLING,REPAIRING OR REPLACING PARTS

## COMPONENTS

HINT:

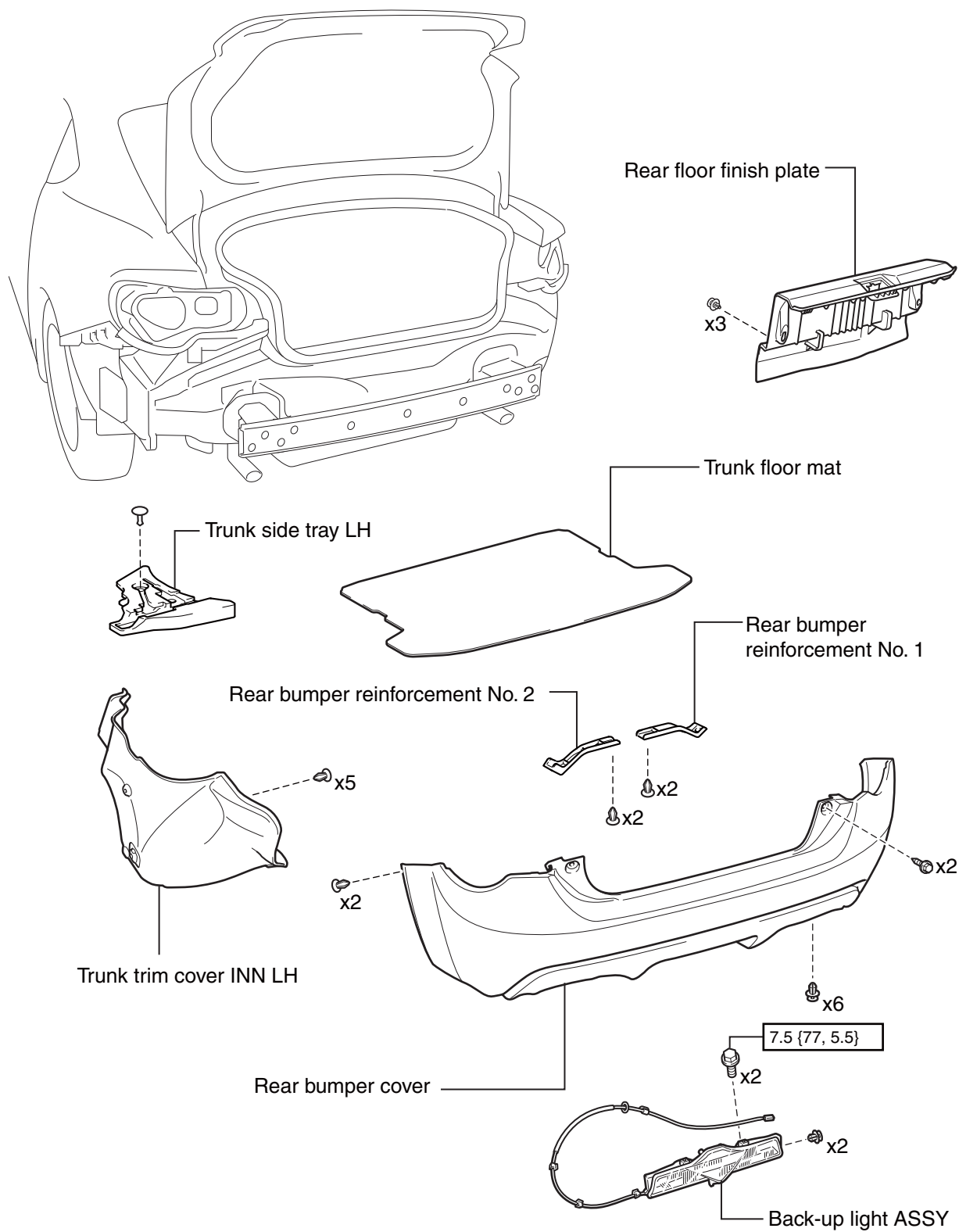
The shapes and names of parts and the general layout may differ depending on the vehicle grade and options.

## 1. FRONT BUMPER

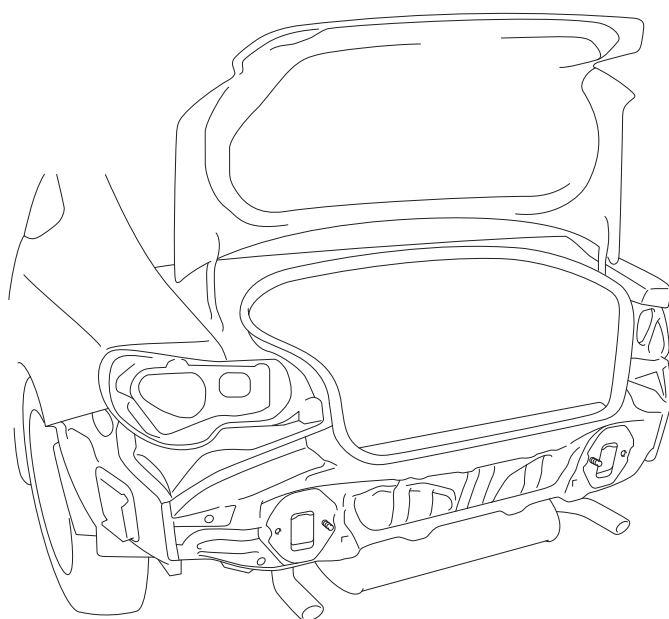


## 2. REAR BUMPER

IN



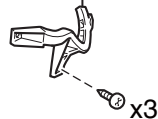
**N\*m {kgf\*cm, ft\*lb}** : Tightening torque



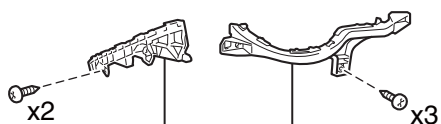
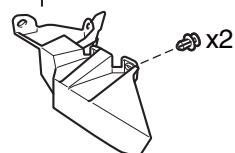
Rear bumper side retainer RH



Rear bumper side bracket RH



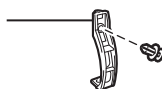
Rear bumper side seal RH



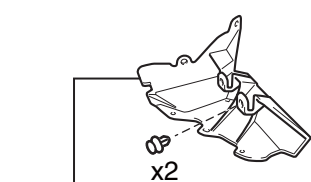
Rear bumper side bracket LH

Rear bumper side retainer LH

Rear bumper bracket CTR

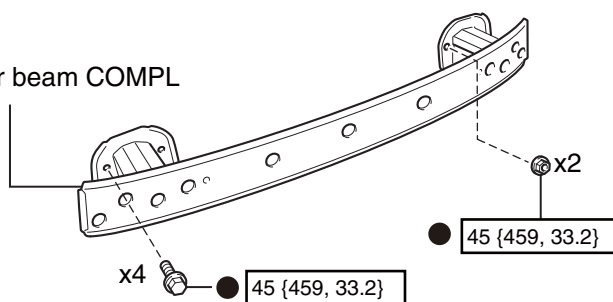


Rear bumper bracket CTR



Rear bumper side seal LH

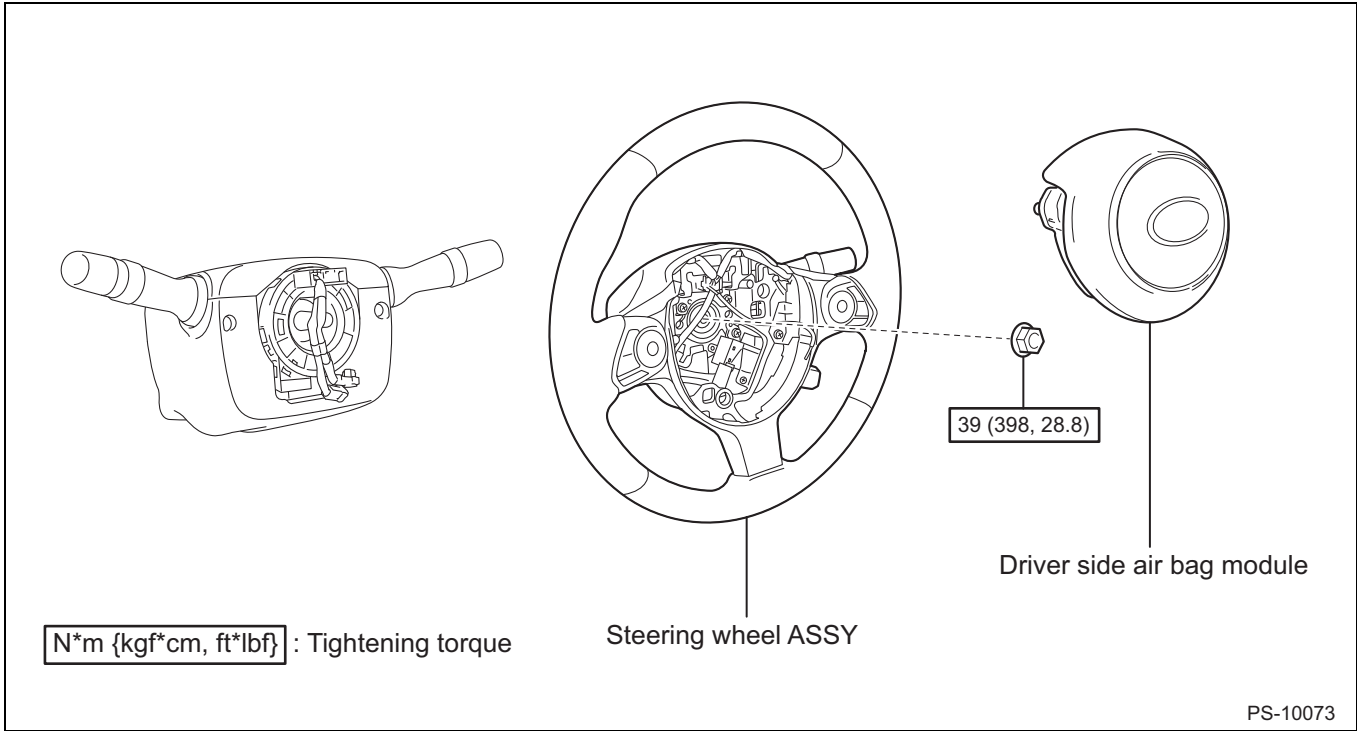
Rear bumper beam COMPL

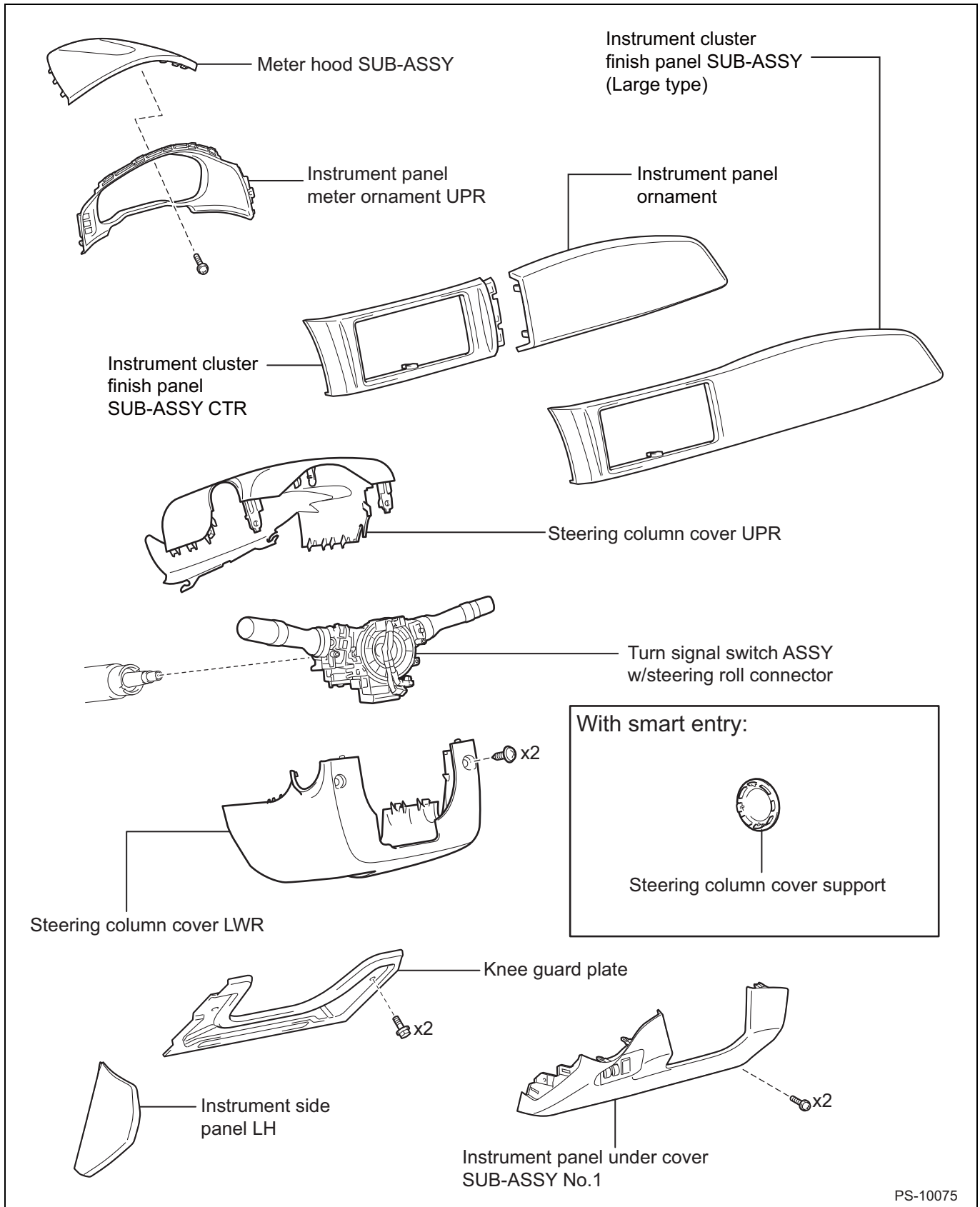


**N•m {kgf•cm, ft•lbf}:** Tightening torque

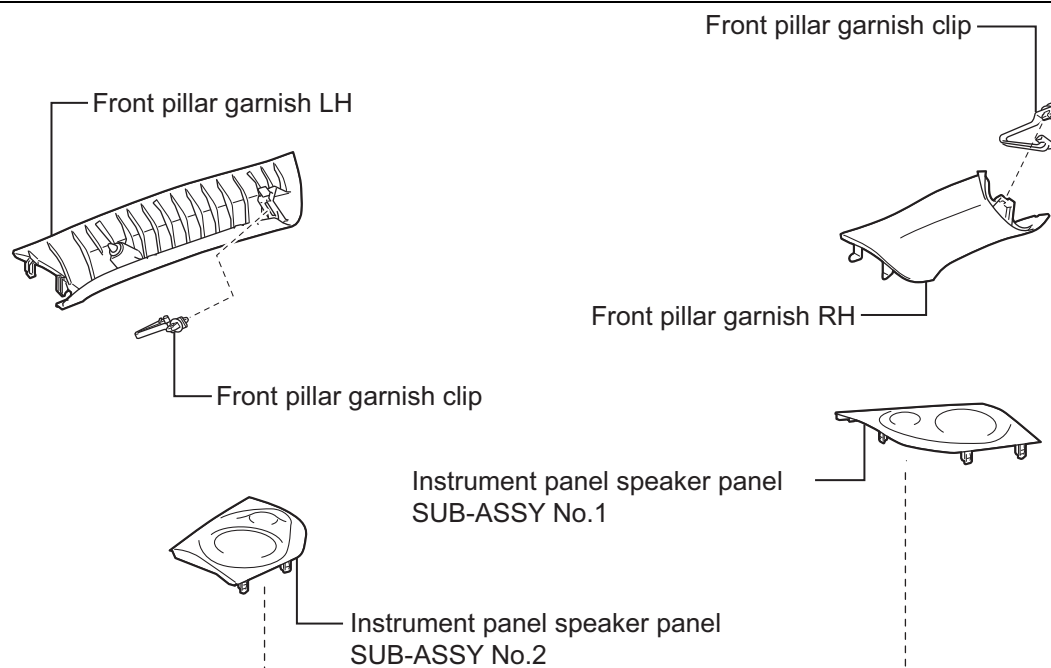
● Non-reusable parts

3. INSTRUMENT PANEL





IN



For 8 speakers :

For 6 speakers :

Speaker ASSY FR No.2

Speaker ASSY FR No.2

7.5 {77, 5.5}

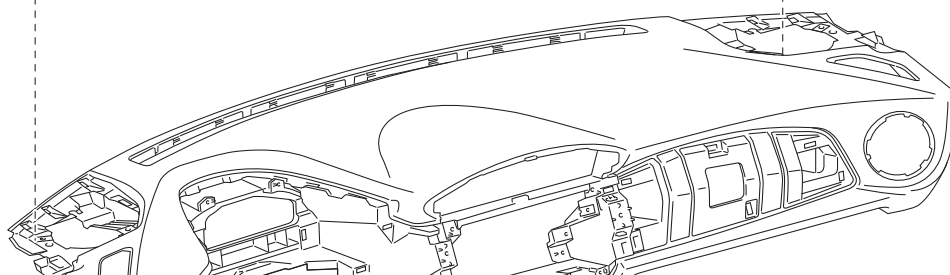
x2

Speaker ASSY FR No.3

Speaker ASSY FR No.3

7.5 {77, 5.5}

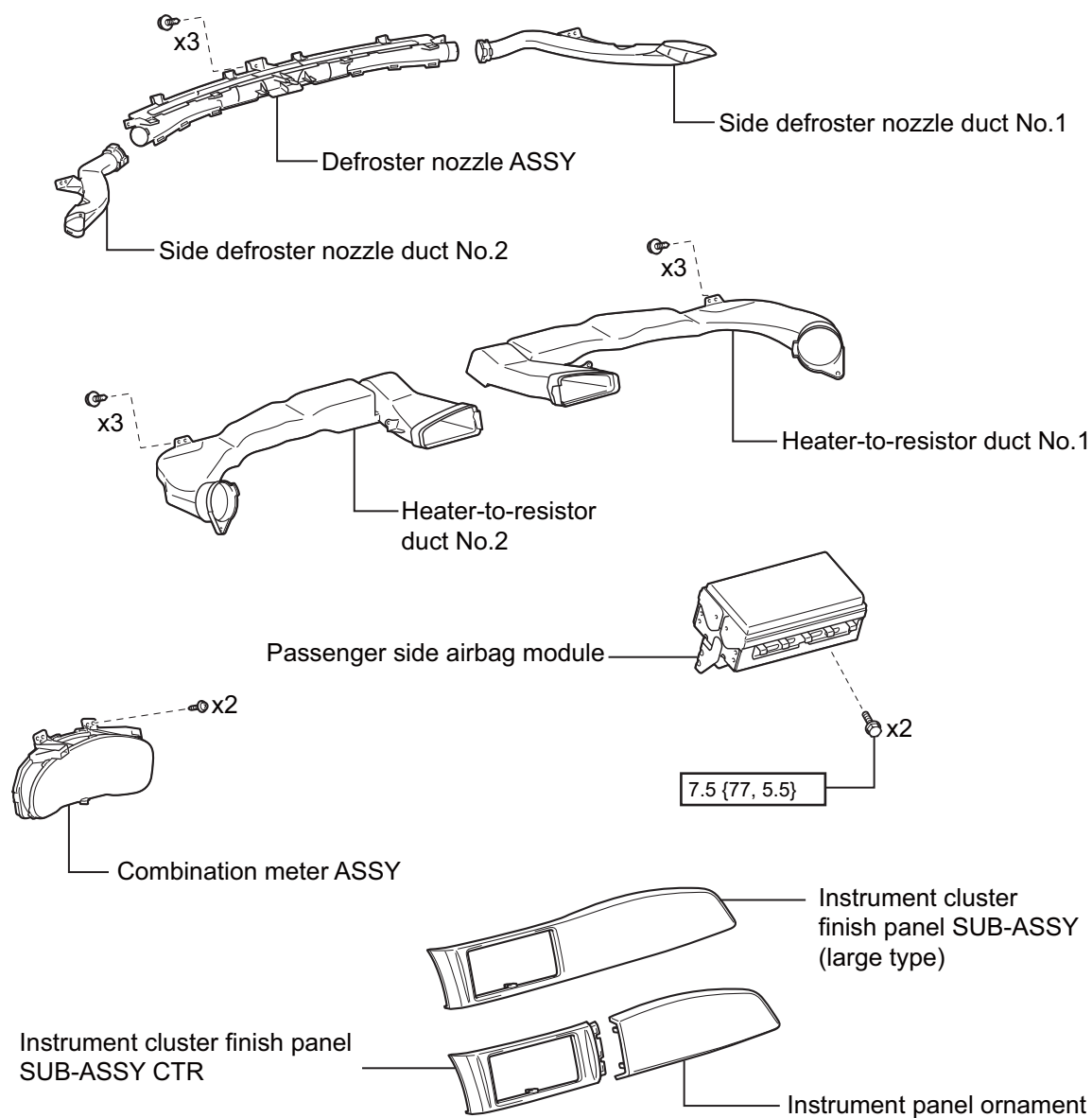
x2



N\*m {kgf\*cm, ft\*lb}: Tightening torque

EI-10392





$\text{N}\cdot\text{m}$  { $\text{kgf}\cdot\text{cm}$ ,  $\text{ft}\cdot\text{lbf}$ } : Tightening torque

## Automatic light control sensor system specifications

Automatic light control sensor

Defroster nozzle garnish NO.1

Defroster nozzle garnish NO.2

Defroster nozzle garnish NO.3

● Instrument panel cushion

Instrument panel SUB-ASSY

⌀x2

7.5 {77, 5.5}

⌀x6

Instrument panel resistor SUB-ASSY NO.1

Instrument panel resistor SUB-ASSY NO.2

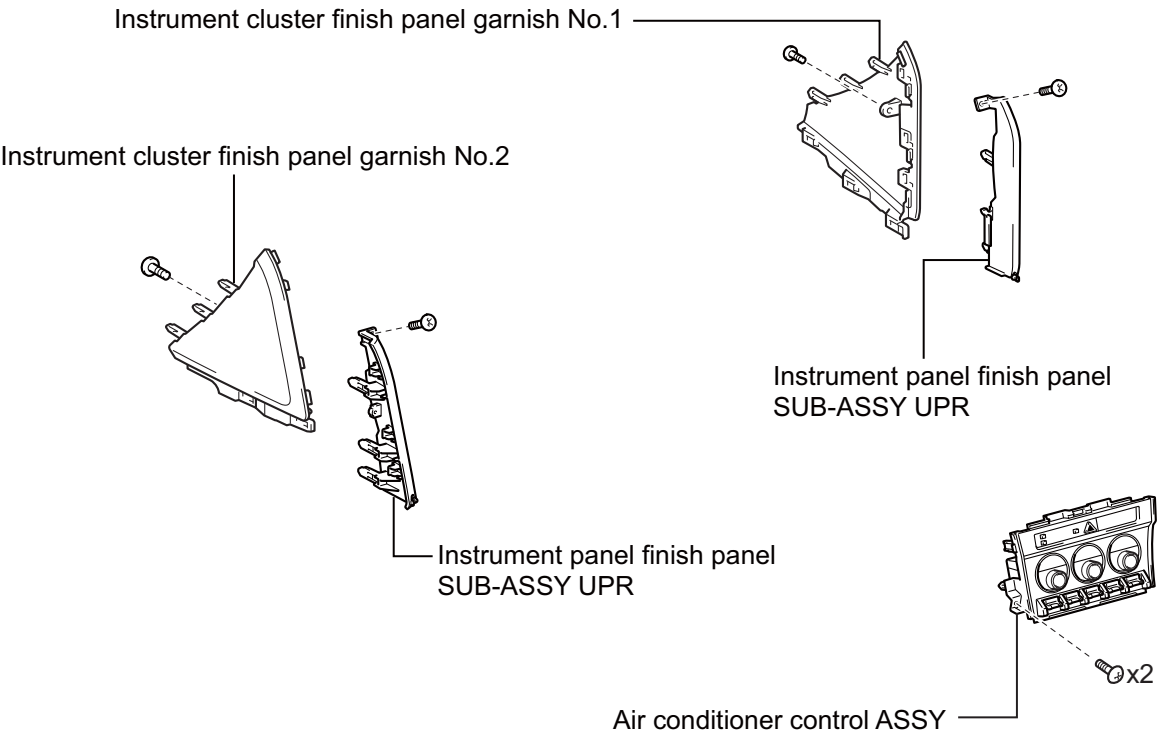
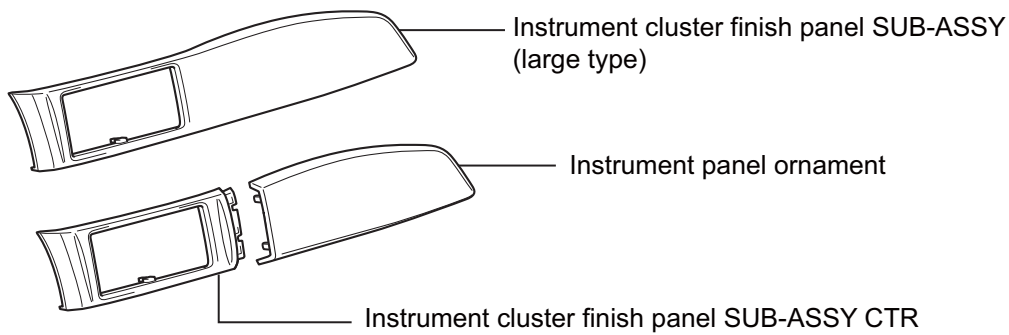
Instrument panel resistor bezel

Instrument panel resistor bezel

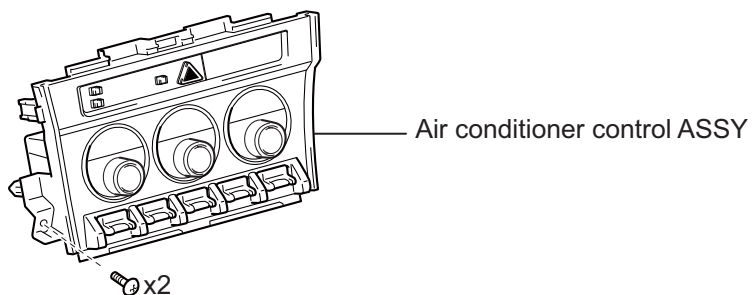
Instrument panel resistor SUB-ASSY CTR

N\*m (kgf\*cm, ft\*lb) : Tightening torque

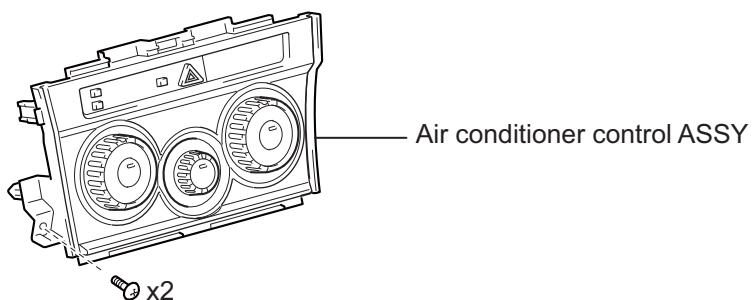
● Non-reusable parts

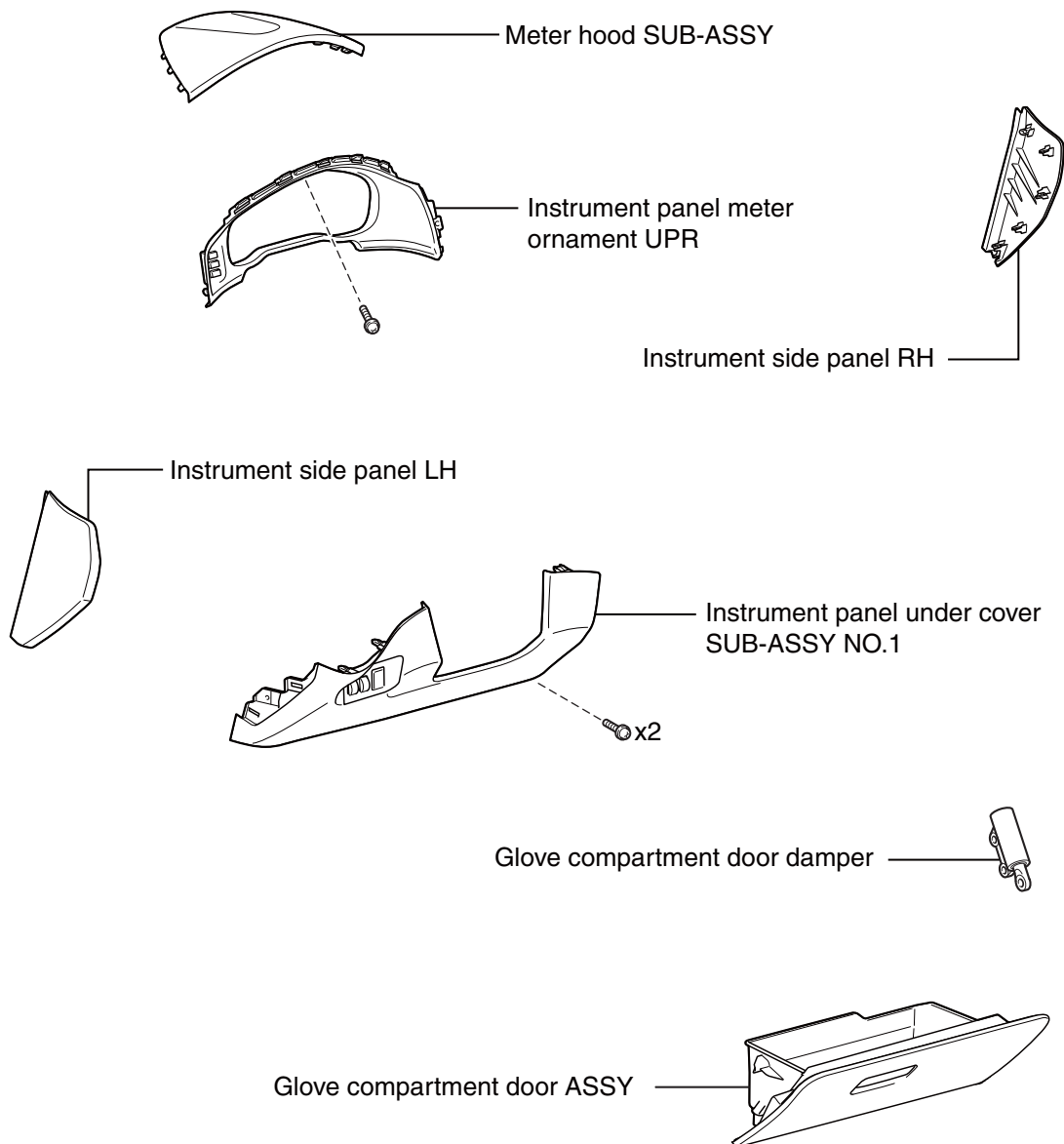


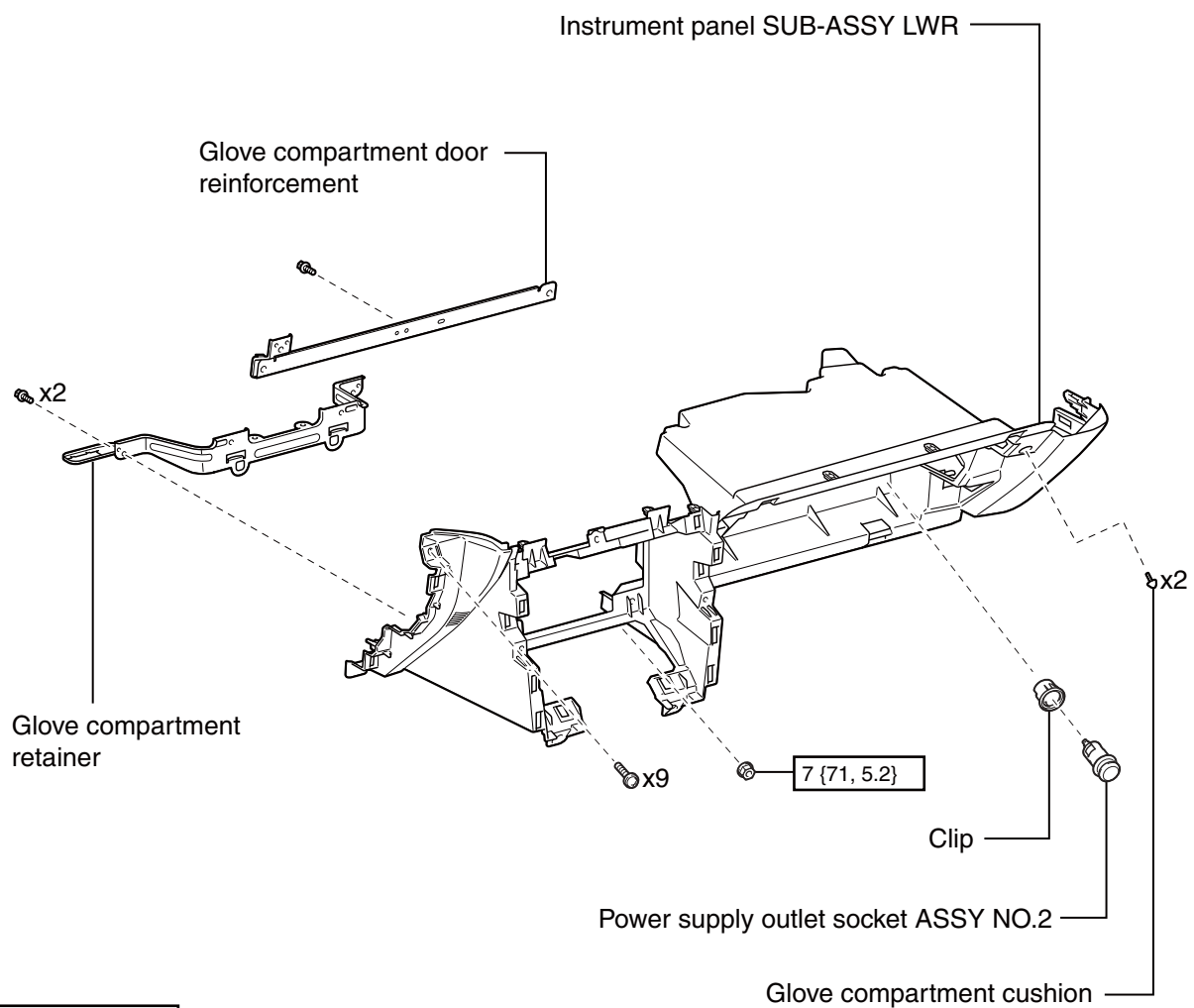
For automatic air conditioning system :



For manual air conditioning system :



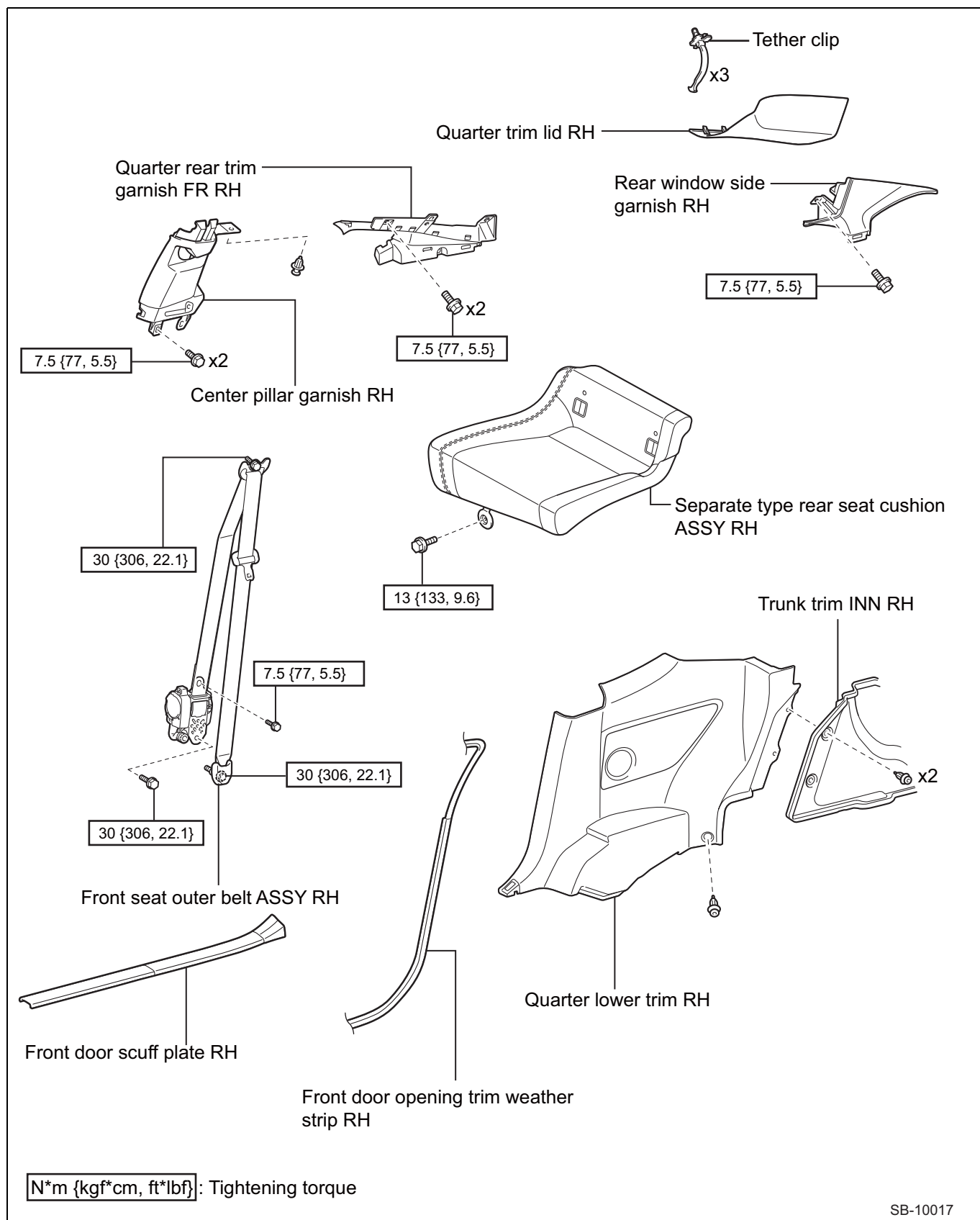




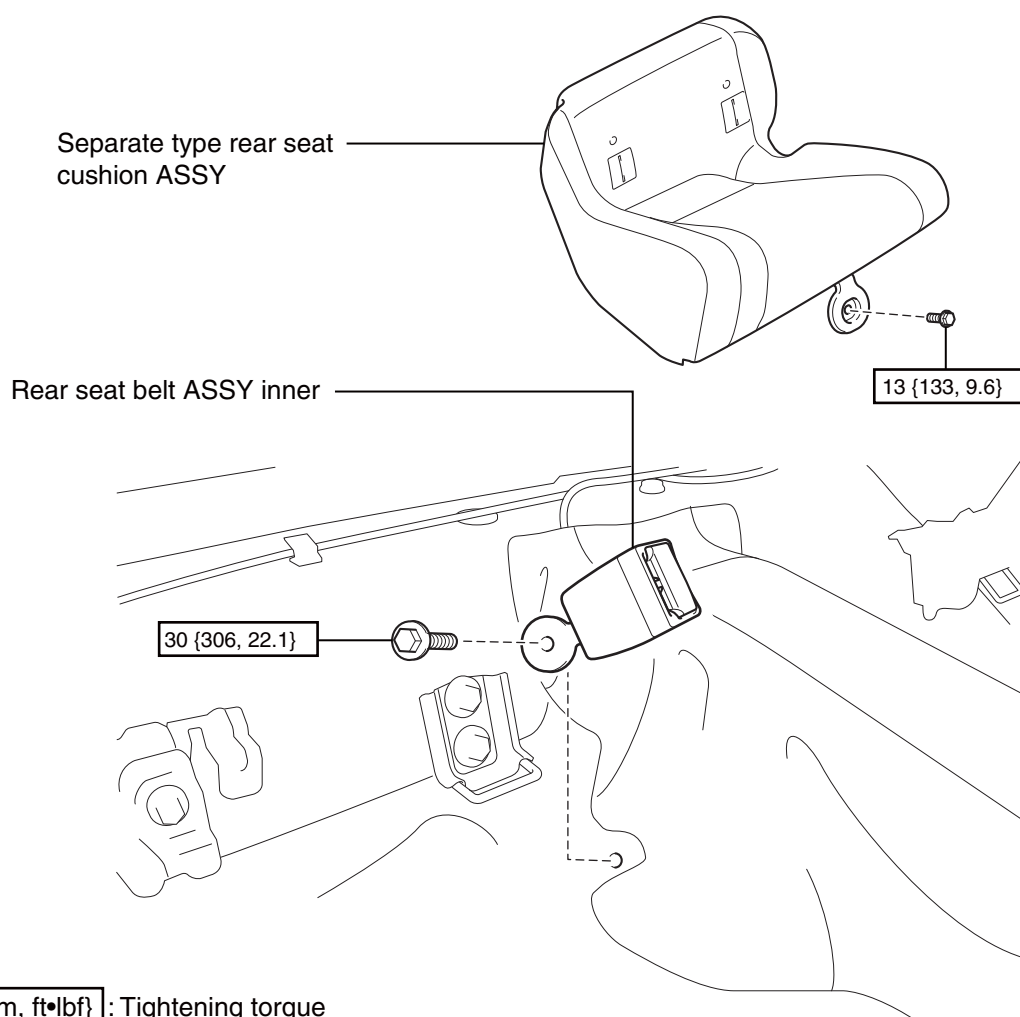
N\*m (kgf\*cm, ft\*lbf) : Tightening torque

EI-04509

## 4. INTERIOR TRIM

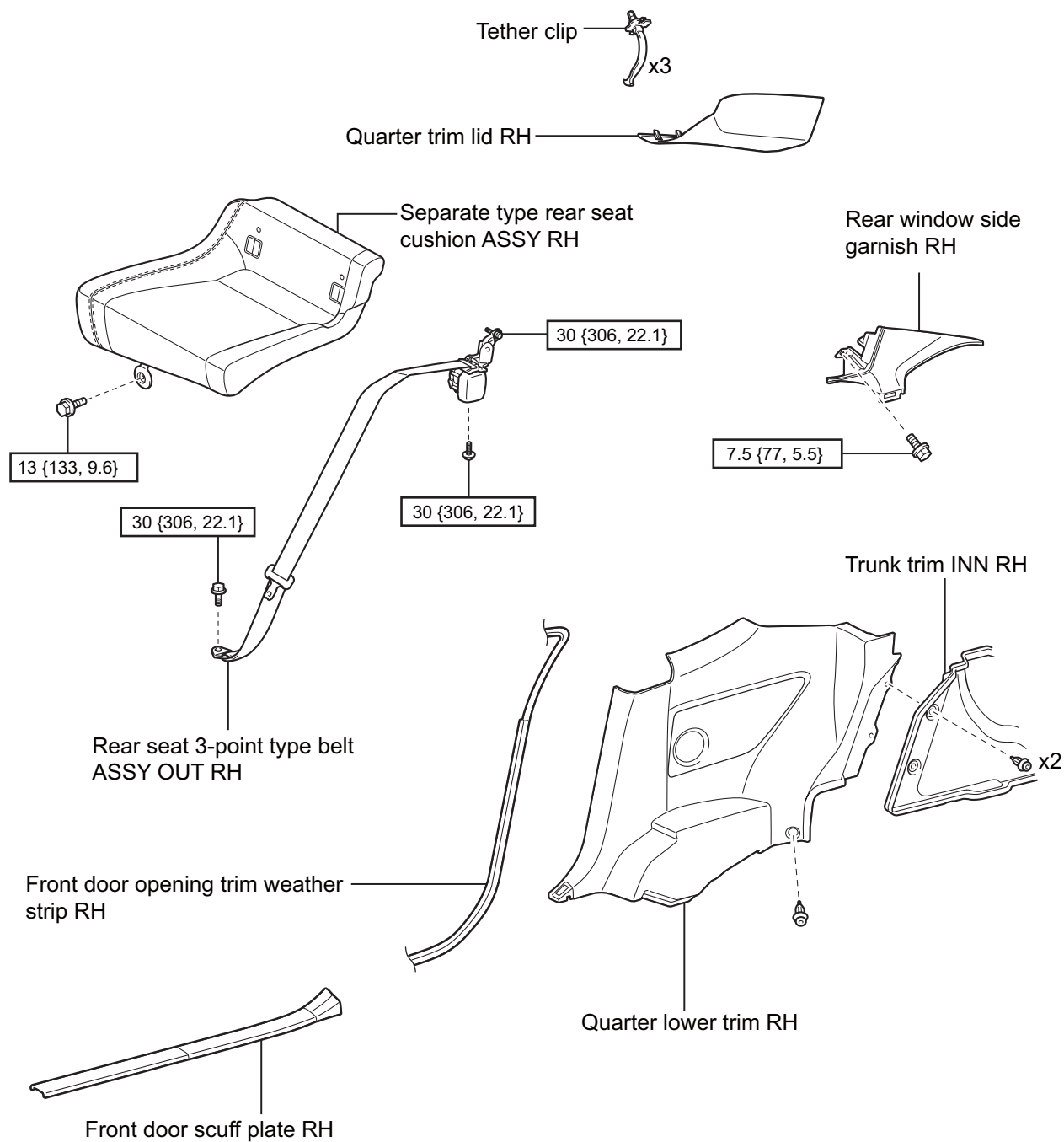


IN



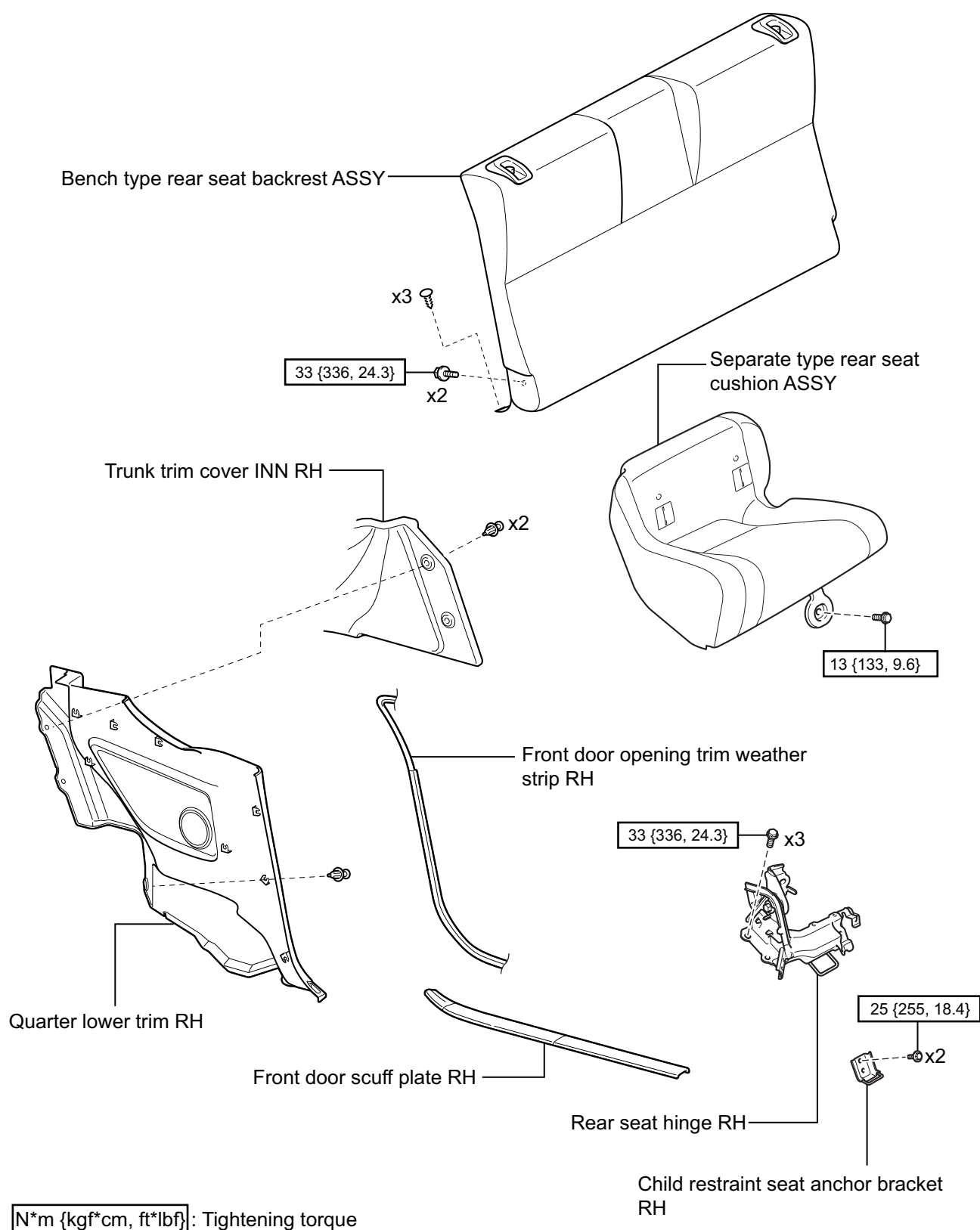
SB-00712

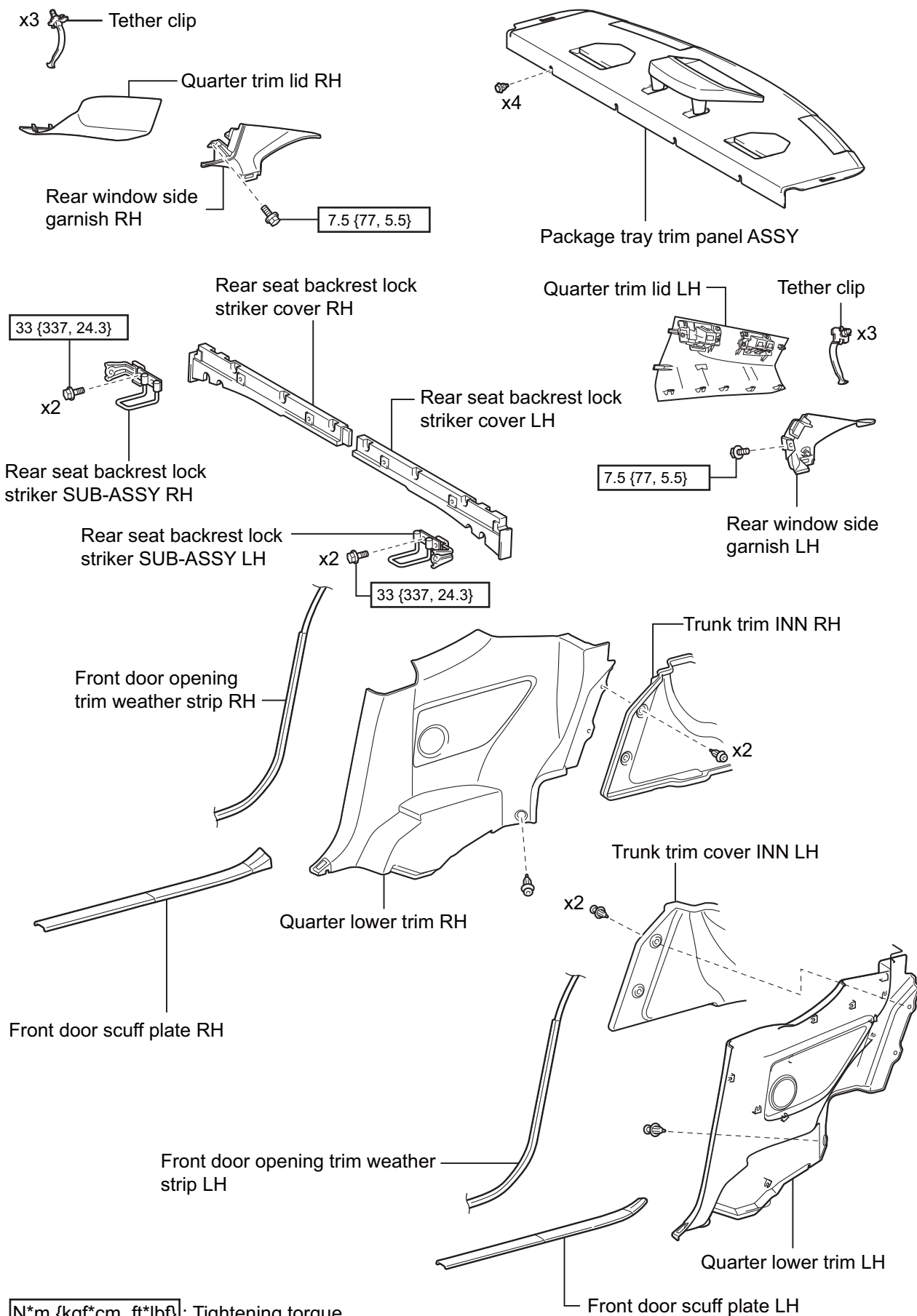




N\*m {kgf\*cm, ft\*lb}: Tightening torque

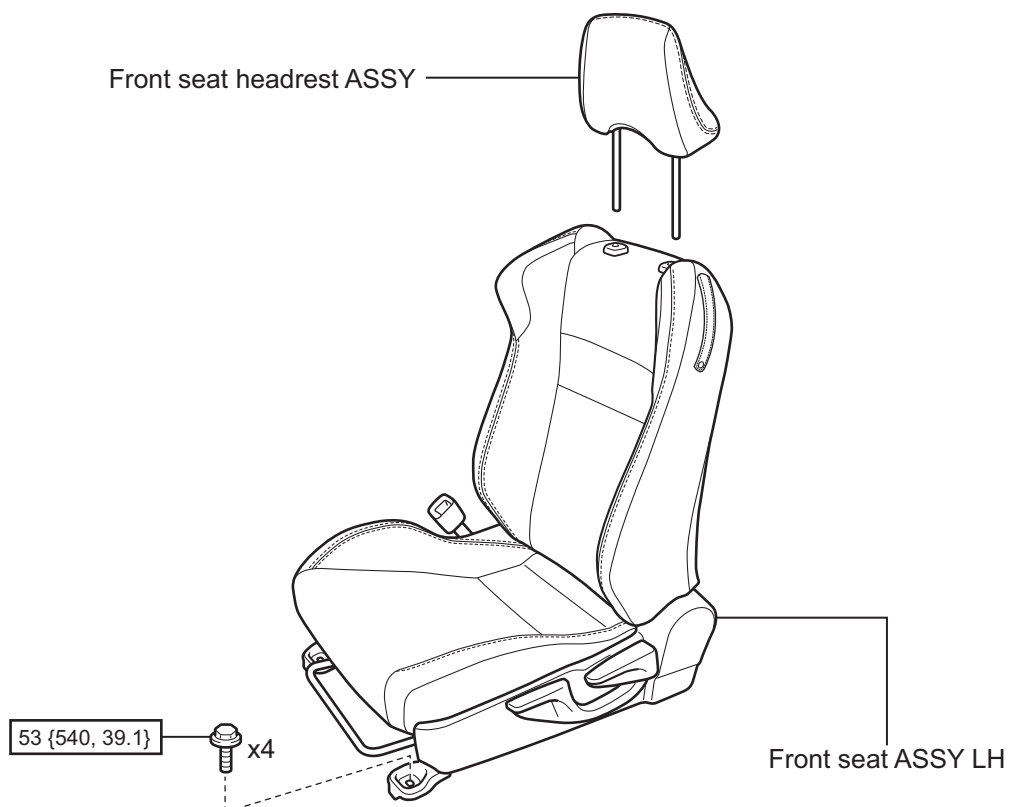
IN



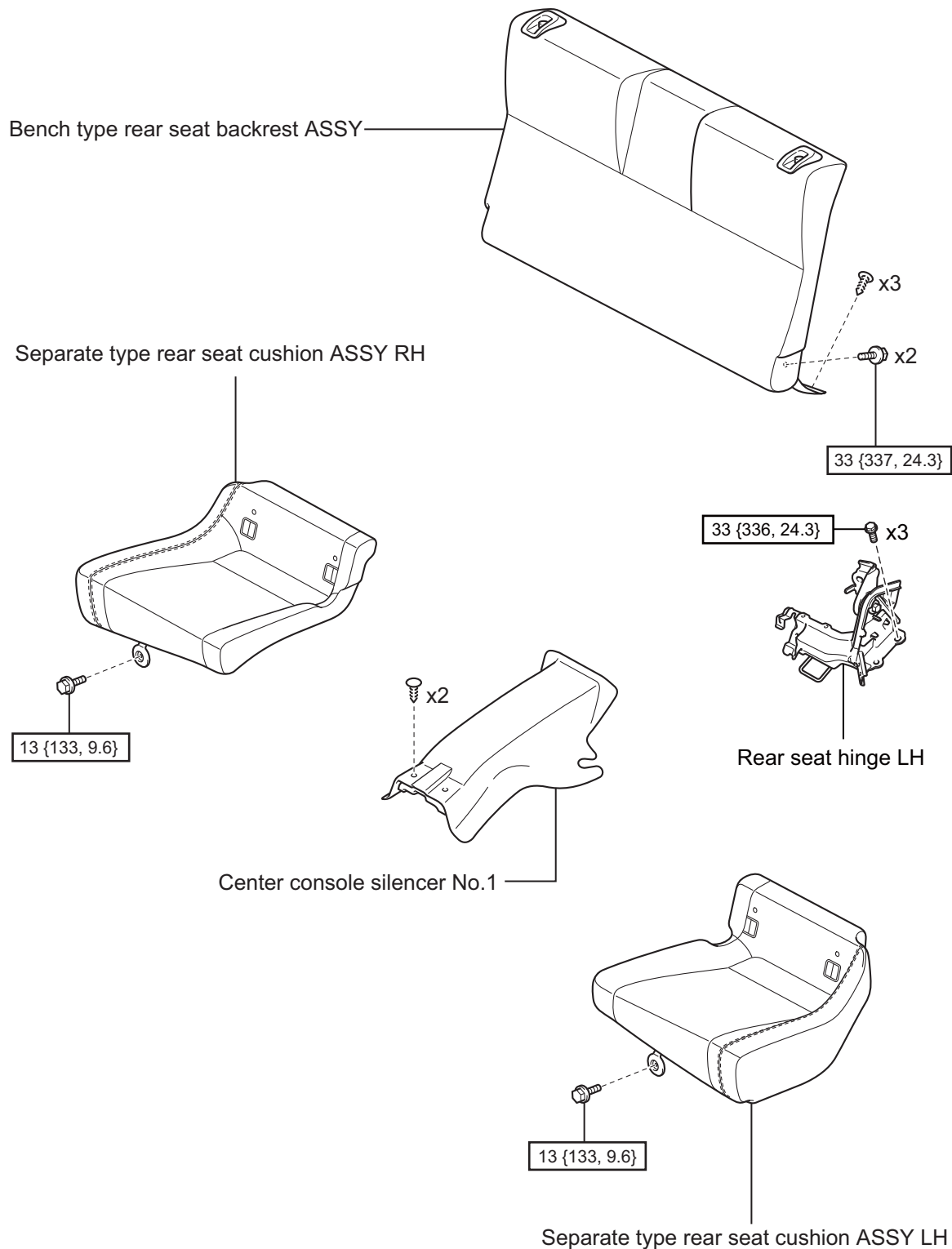


N\*m {kgf\*cm, ft\*lbft}: Tightening torque

## 5. SEAT



N\*m {kgf\*cm, ft\*lb}: Tightening torque



**N\*m {kgf\*cm, ft\*lb}**: Tightening torque

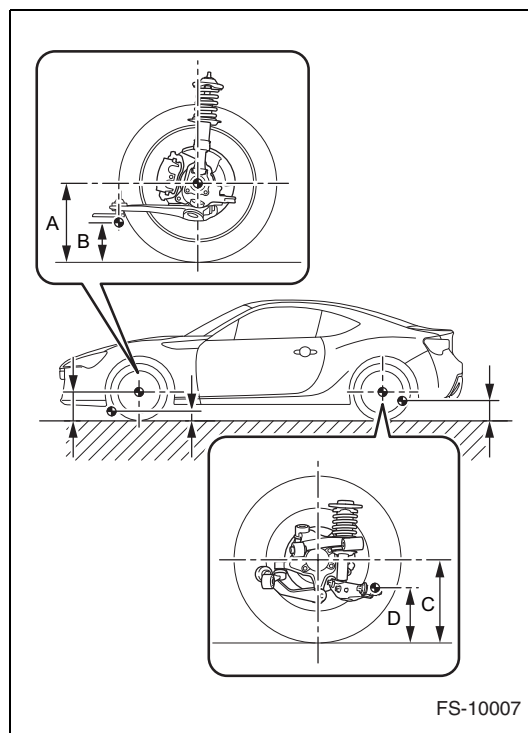
## PROCEDURES NECESSARY WHEN ECU OR OTHER PARTS ARE REPLACED

Each inspection procedure refers to the SUBARU Repair Manual.

### 1. List of replacement procedures

Replaced parts and procedures	Required procedures	Possible phenomena/unavailable functions (unless required procedure is performed)
Engine control computer	1. ID code registration	Engine start inoperable
<ul style="list-style-type: none"> <li>Transmission control computer ASSY</li> <li>Automatic transmission ASSY</li> <li>Transmission valve body ASSY</li> <li>Transmission wire</li> <li>Each solenoid</li> <li>Engine ASSY</li> </ul>	1. AT learning values initialization	<ul style="list-style-type: none"> <li>High revving of engine</li> <li>Large shift shock</li> </ul>
<ul style="list-style-type: none"> <li>Brake actuator ASSY</li> <li>Steering sensor</li> <li>Steering column ASSY</li> <li>Rack &amp; pinion power steering gear ASSY</li> <li>Front wheel alignment adjustment</li> </ul>	1. VSC sensor mid point setting	<ul style="list-style-type: none"> <li>VSC system does not operate normally (warning light is illuminated)</li> </ul>
Power steering computer ASSY	1. Steering zero point correction	<ul style="list-style-type: none"> <li>P/S warning light illumination</li> <li>EPS control</li> </ul>
Steering column ASSY	1. Steering zero point correction	<ul style="list-style-type: none"> <li>Different left/right steering control force</li> </ul>
<b>With smart entry</b> <ul style="list-style-type: none"> <li>Electrical key transmitter SUB-ASSY</li> <li>ID CODE BOX (Immobilizer CODE ECU)</li> <li>Smart key computer ASSY (collation ECM)</li> <li>Steering lock actuator ASSY (steering lock ECM)</li> </ul>	1. ID code registration	<ul style="list-style-type: none"> <li>Wireless function</li> <li>Smart function</li> <li>Engine start inoperable</li> </ul>
<b>No smart entry</b> <ul style="list-style-type: none"> <li>Key</li> <li>Main body ECM (network gateway computer)</li> <li>TRANSPONDER KEY ECM</li> <li>Combination meter assembly</li> </ul>	1. ID code registration	<ul style="list-style-type: none"> <li>Engine start inoperable</li> </ul>
<ul style="list-style-type: none"> <li>Power window regulator motor ASSY (RH, LH)</li> <li>Front door window regulator SUB-ASSY RH (RH, LH)</li> <li>Front door glass SUB-ASSY (RH, LH), front door frame SUB-ASSY RR LWR (RH, LH) or front door sash (RH, LH)</li> <li>Front door opening trim weather strip (RH, LH)</li> </ul>	1. Power window system initialization	<ul style="list-style-type: none"> <li>Door glass automatic opening/closing function</li> <li>Anti-pinch function</li> <li>Operating functions after key OFF (IG OFF)</li> <li>Seat remote operation using driver's seat switch</li> </ul>
<ul style="list-style-type: none"> <li>Main body ECM (network gateway computer)</li> </ul>	1. Customize	<ul style="list-style-type: none"> <li>Functions are inoperable</li> </ul>

## WHEEL ALIGNMENT STANDARD



### 1. Vehicle height inspection

- (a) Perform vehicle height inspection after bouncing the vehicle at the corners by large amounts to stabilize the suspension.

#### Standard value

Dimension A - Dimension B [mm (in)]	Dimension C - Dimension D [mm (in)]
146 (5.75)	110 (4.33)

#### CAUTION:

- Perform the inspection while the vehicle is at curb weight (with the spare tire, jack, and service tools loaded and with a full fuel tank).
- These values are for adjusting the wheel alignment and do not indicate the actual vehicle height.

#### NOTE:

- Dimension A: Center of front wheel
- Dimension B: Center of the tip of the front arm ASSY front side bushing mounting bolt
- Dimension C: Center of the rear wheel
- Dimension D: center of the rear end of the rear lower arm No.2 bushing mounting bolt threaded portion

### 2. Inspection of camber, caster, and kingpin angle (FRONT)

#### CAUTION:

Perform the inspection while the vehicle is at curb weight (with the spare tire, jack, and service tools loaded and with a full fuel tank).

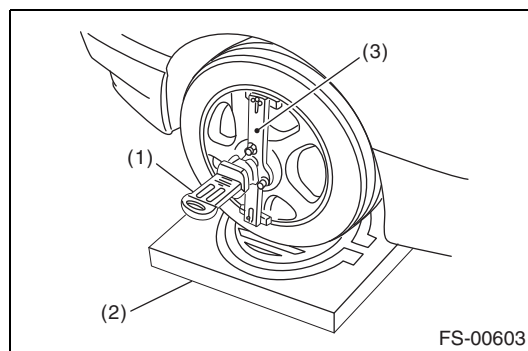
- (a) Place the front wheel on the turning radius gauge.

#### Standard value

Tire Size	Camber	Caster	Kingpin angle
215/45R17	0°00±0°45	5°55' (Reference)	15°30' (Reference)

#### NOTE:

Make sure the ground contact surfaces of the front and rear wheels are at the same height.



- (b) Set the adapter into the center of wheel, and then set the wheel alignment gauge.

#### Captions in illustration

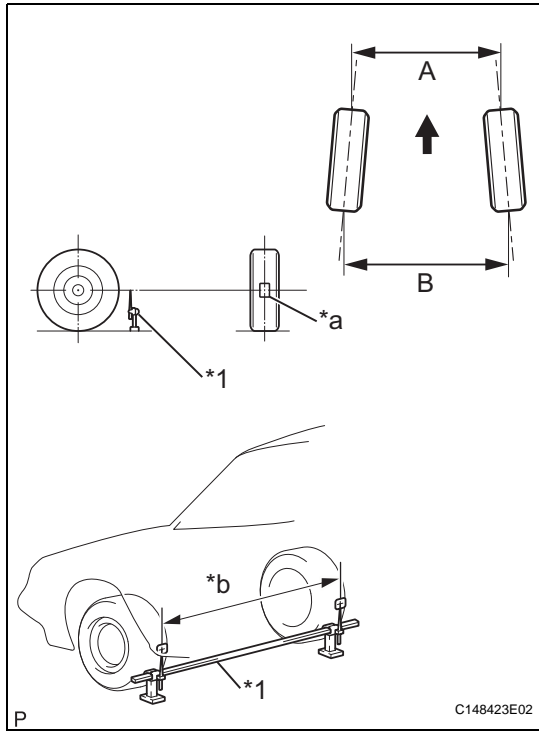
*1	Wheel alignment gauge
*2	Turning radius gauge
*3	Adapter

- (c) Measure the camber angle in accordance with the operation manual for wheel alignment gauge.  
 (d) Check whether the measured value is within standard value.  
 (e) Measure the caster angle in accordance with the operation manual for wheel alignment gauge.  
 (f) Check whether the measured value is within standard value.

3. Toe-in inspection (FRONT)

- (a) Bounce the vehicle to stabilize the suspension.
- (b) Move the vehicle straight 5 m (16.4 ft.) forward by manually pushing it.

**CAUTION:**  
If the vehicle has been moved backward, be sure to move it forward by the same distance.



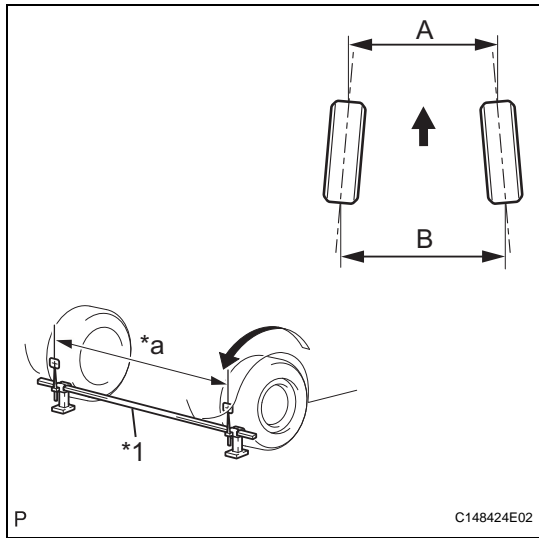
- (c) Adjust the height of the toe-in gauge pointer so that it is at the same height as the center of the front wheel axis, and set it behind the tire.

Captions in illustration

*1	Toe-in gauge
*a	Tread center
*b	Dimension B
➡	Front of vehicle

- (d) Place a tread center mark on the back of both front tires, and measure the distance between the marks (dimension B).
- (e) Move the vehicle forward by pushing it slowly to rotate the front wheels 180°.

**CAUTION:**  
Be sure not to rotate more than 180°, and if the wheels have been over-rotated, repeat from the setting up of the toe-in gauge.



- (f) Measure the distance between the marks at the front of the vehicle (dimension A).

Captions in illustration

*1	Toe-in gauge
*a	Dimension A
➡	Front side of vehicle

- (g) Calculate the toe-in.

Standard value

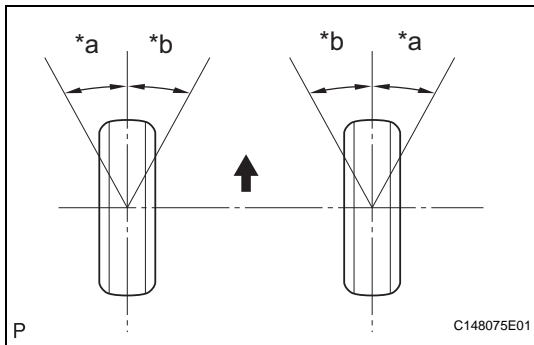
Toe-in [mm (in)]
0±3 {0±0.12} (at curb weight)

**NOTE:**  
Toe-in = Dimension B - Dimension A



**4. Wheel turning angle inspection**

- (a) Set the turning radius gauge.
- (b) Check the wheel turning angle.

**Captions in illustration**

*a	Inside
*b	Outside
➡	Front

**Standard value**

Inside	Outside
36°54' (Reference)	31°12' (Reference)

**CAUTION:**

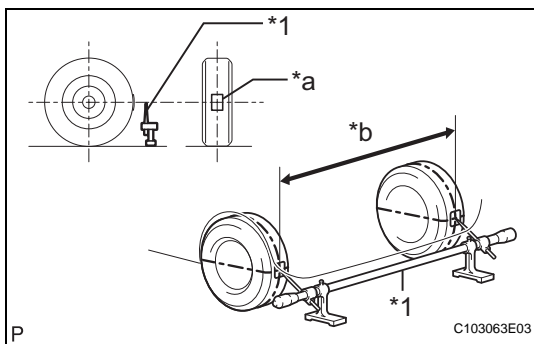
- Perform the inspection while the vehicle is at curb weight (with the spare tire, jack, and service tools loaded and with a full fuel tank).
- While the vehicle is at curb weight, apply the foot brake using a brake pedal depressor, etc. to prevent the front wheels from rotating during the inspection.
- Remove the stop light fuse to prevent the stop light from illuminating during the inspection.

**5. Toe-in inspection (REAR)**

- (a) Bounce the vehicle to stabilize it.
- (b) Move the vehicle straight 5 m (16.4 ft.) forward by manually pushing it.

**CAUTION:**

If the vehicle has been moved backward, be sure to move it forward by the same distance.



- (c) Adjust the height of the toe-in gauge pointer so that it is at the same height as the center of the rear wheel axis, and set it behind the tire.

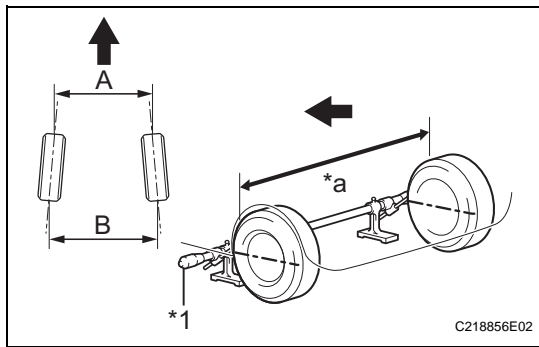
**Captions in illustration**

*1	Toe-in gauge
*a	Tread Center
*b	Dimension B
➡	Front of vehicle

- (d) Place a tread center mark on the back of both rear tires, and measure the distance between the marks (dimension B).
- (e) Move the vehicle forward by pushing it slowly to rotate the rear wheels 180°.

**CAUTION:**

Be sure not to rotate the tires more than 180°. If the wheels have been over-rotated, repeat from the setting up of the toe-in gauge.



- (f) Measure the distance between the marks at the front of the tires (dimension A).

Captions in illustration

*1	Toe-in gauge
*a	Dimension A
	Front of vehicle

- (g) Calculate the toe-in.

**Standard value:**

**2±3mm {0.08±0.12in}**

**NOTE:**

Toe-in = Dimension B - Dimension A

6. Camber inspection (REAR)

- (a) Lift up the vehicle on a level surface.  
(b) Set the wheel alignment gauge.  
(c) Calibrate the wheel alignment gauge.  
(d) Lower the vehicle and Check the camber.

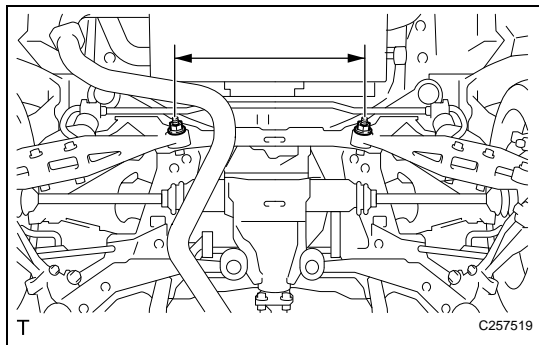
Standard value

Camber
-1°10' ±45'

CAUTION:

- Perform the inspection while the vehicle is at curb weight (with the spare tire, jack, and service tools loaded and with a full fuel tank).
- The limit of difference between the left and right camber values is 45'.
- Remove foreign matter from the axle hub end surface before performing the inspection.

- (e) Remove the wheel alignment gauge.



7. Rear suspension inspection

- (a) Inspection of rear suspension member

- (1) Check the distance between the center of rear suspension arm ASSY No. 2 LH and RH mounting bolts.

**Standard value:**

**457.5±3mm {18.01±0.12in}**

**NOTE:**

If it is out of standard value, replace with a new rear suspension member.

- (b) Inspection of rear suspension arm ASSY No. 2

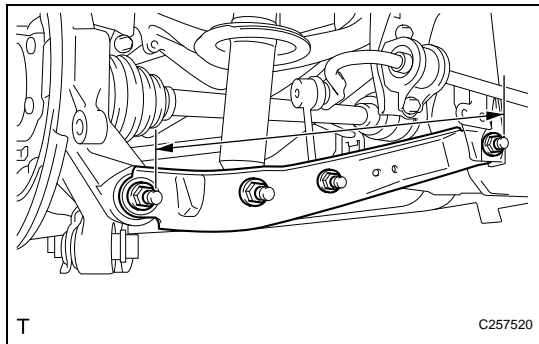
- (1) Check the distance between the center of rear suspension arm ASSY No. 2 mounting bolts.

**Standard value:**

**450.9±2 mm {17.75±0.08 in}**

**NOTE:**

If it is out of standard value, replace with a new rear suspension arm ASSY No. 2.



## (c) Inspection and adjustment of toe-in and camber

## (1) Inspect the toe-in and camber.

Check the toe-in and camber, and if they are out of standard value, adjust them with the play in the mounting portion of the rear suspension member or that of the upper control arm and rear suspension arm.

ABOUT THIS VEHICLE

STRUCTURAL OUTLINE

1. MODEL CODE AND LINE-UP

(a) MODEL CODE

IN

Z

C

6

-

E

Y

B

8

\*1

\*2

\*3

\*4

\*5

\*6

\*7

B1607051003

*1	MODEL NAME	Z: BRZ
*2	BODY TYPE	C: COUPE
*3	DISPLACEMENT, DRIVE TYPE, SUSPENSION	6: 2.0L FR
*4	MODEL YEAR	E: 2017MY
*5	DESTINATION	Y: U.S.A.*
*6	GRADE	B: Premium E: Limited
*7	GEAR SHIFT TYPE, ENGINE SPECIFICATION	7: DOHC MPI+DI 6AT 8: DOHC MPI+DI 6MT

\*: Destination packages for Canada is included.


(b) MODEL LINE-UP

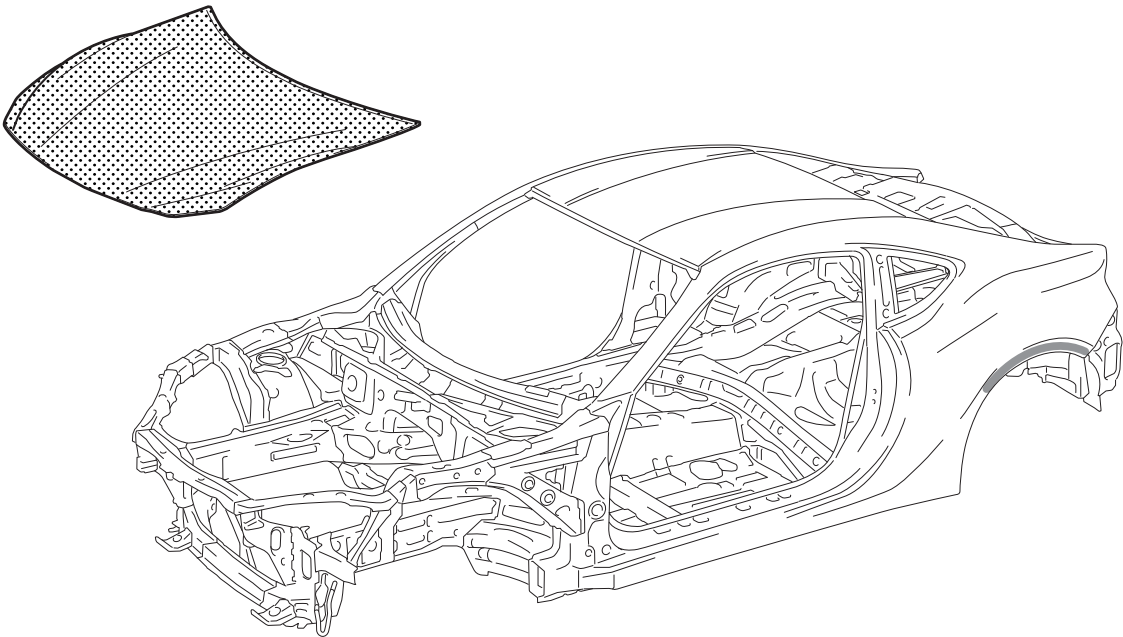
DESTINATION	ENGINE	TRANSMISSION	GRADE	MODEL CODES
U.S.A.*	FA20	TL70	Premium	ZC6-EYB8
			Limited	ZC6-EYE8
		TX6A	Premium	ZC6-EYB7
			Limited	ZC6-EYE7

\*: Destination packages for Canada is included.





2. STRUCTURAL OUTLINE

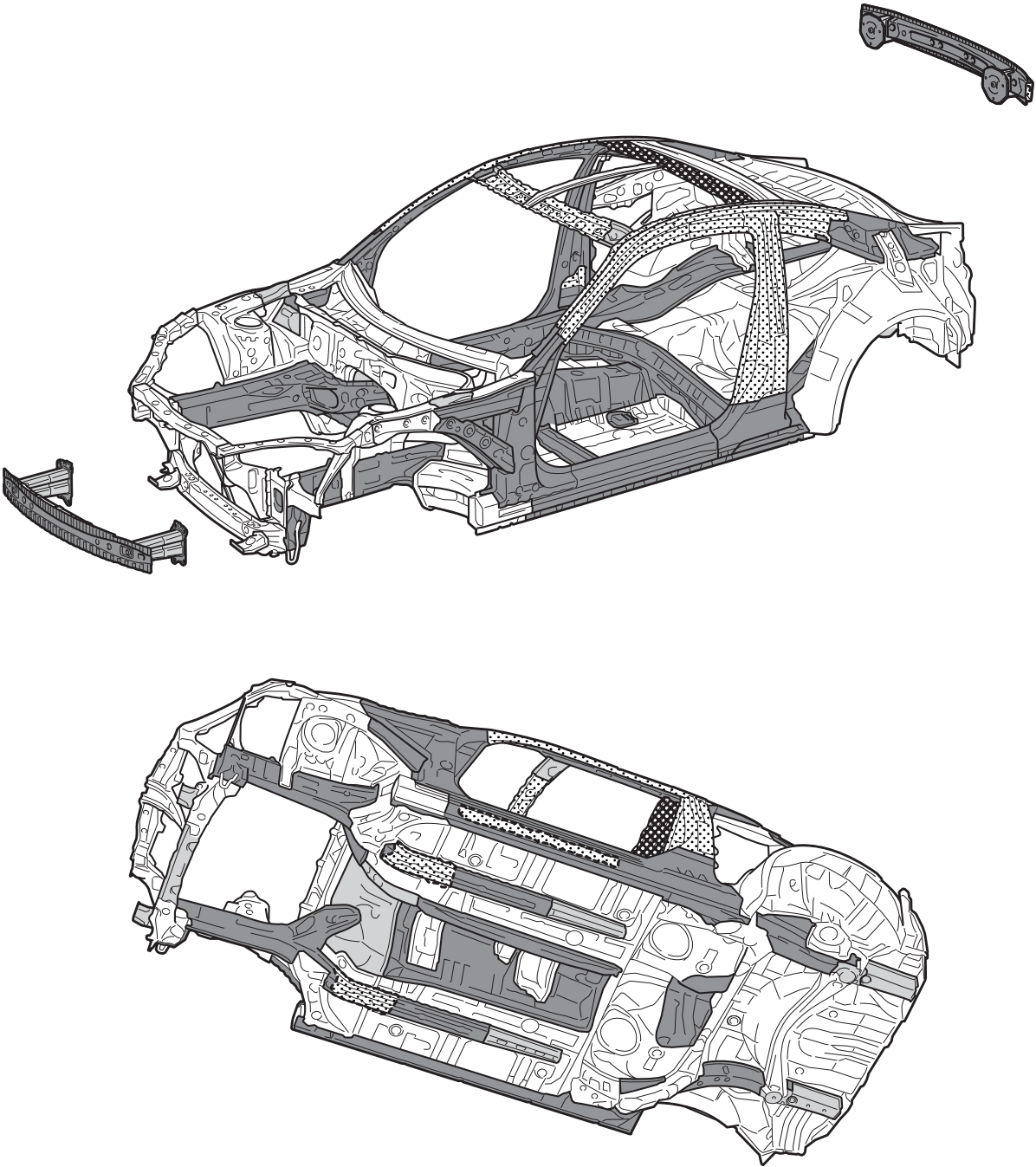
Text in Illustration

	Aluminium		Adhesive Application Area
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Text in Illustration

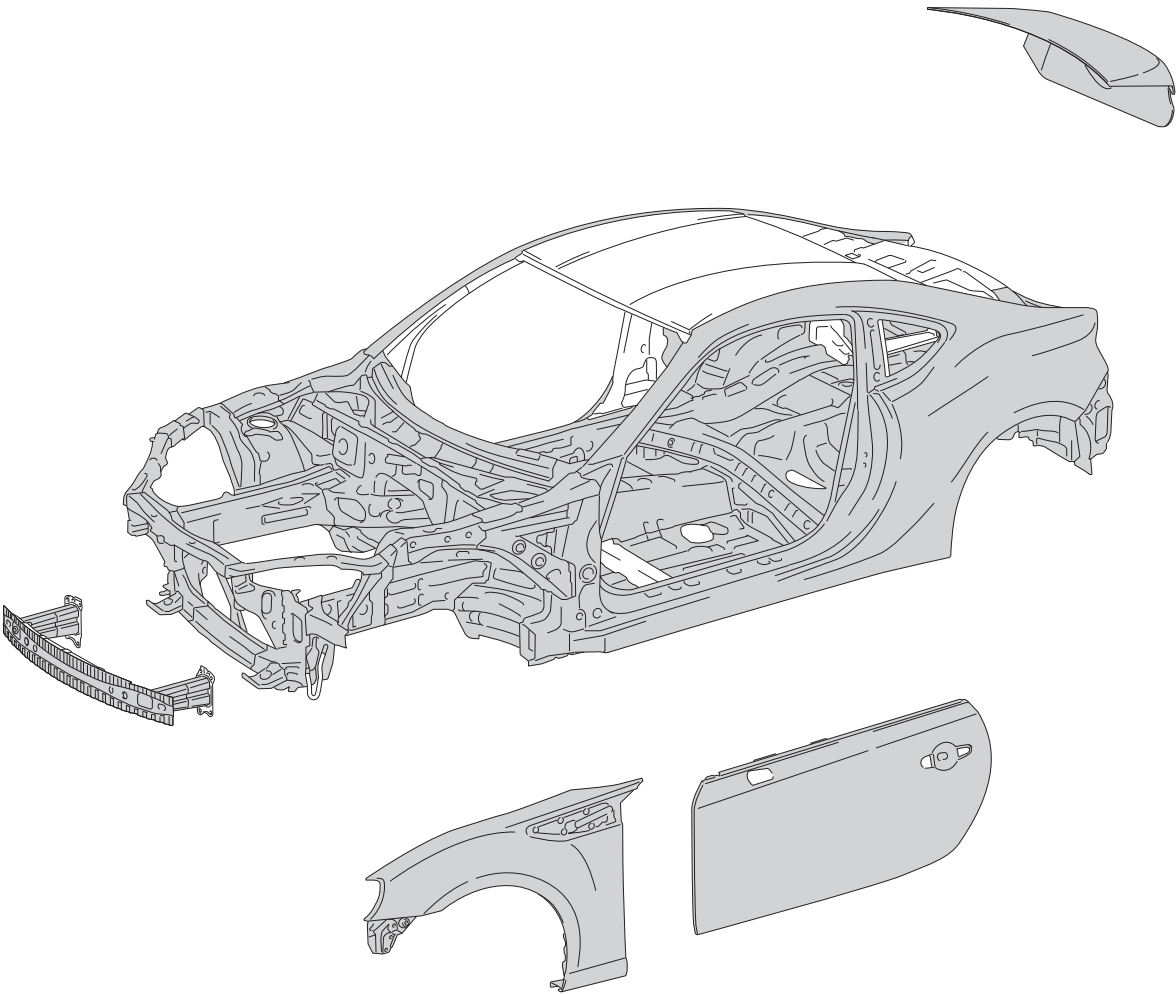
	1500 MPa Ultra High Strength Steel		980 MPa Ultra High Strength Steel
	590 MPa High Strength Steel		440 MPa High Strength Steel



Text in Illustration




	Anti-rust Coating Steel	-	-
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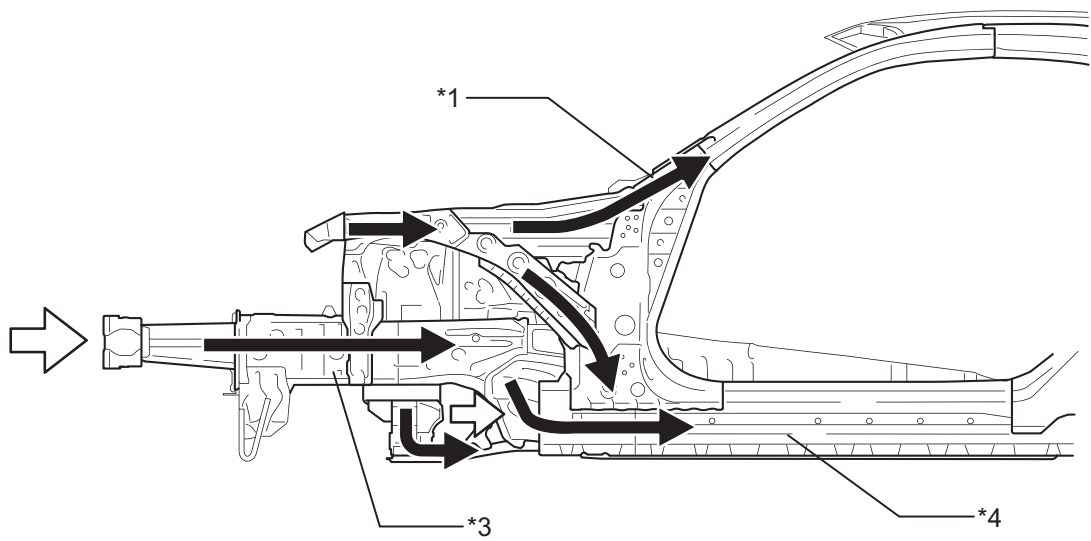
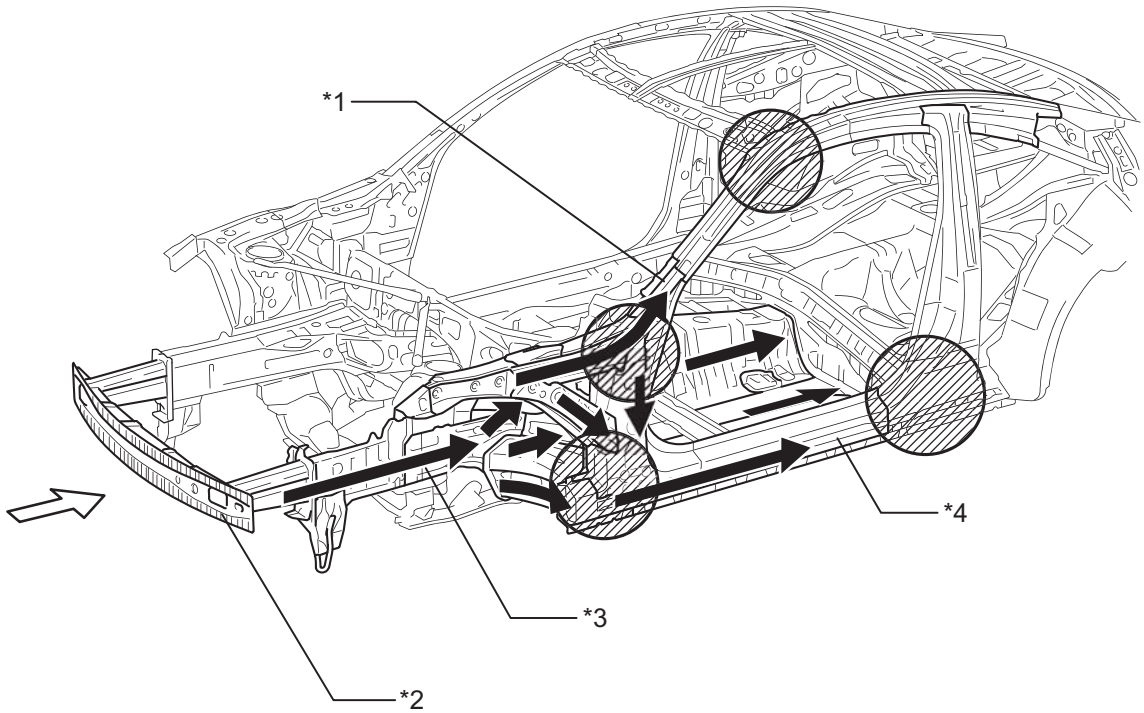




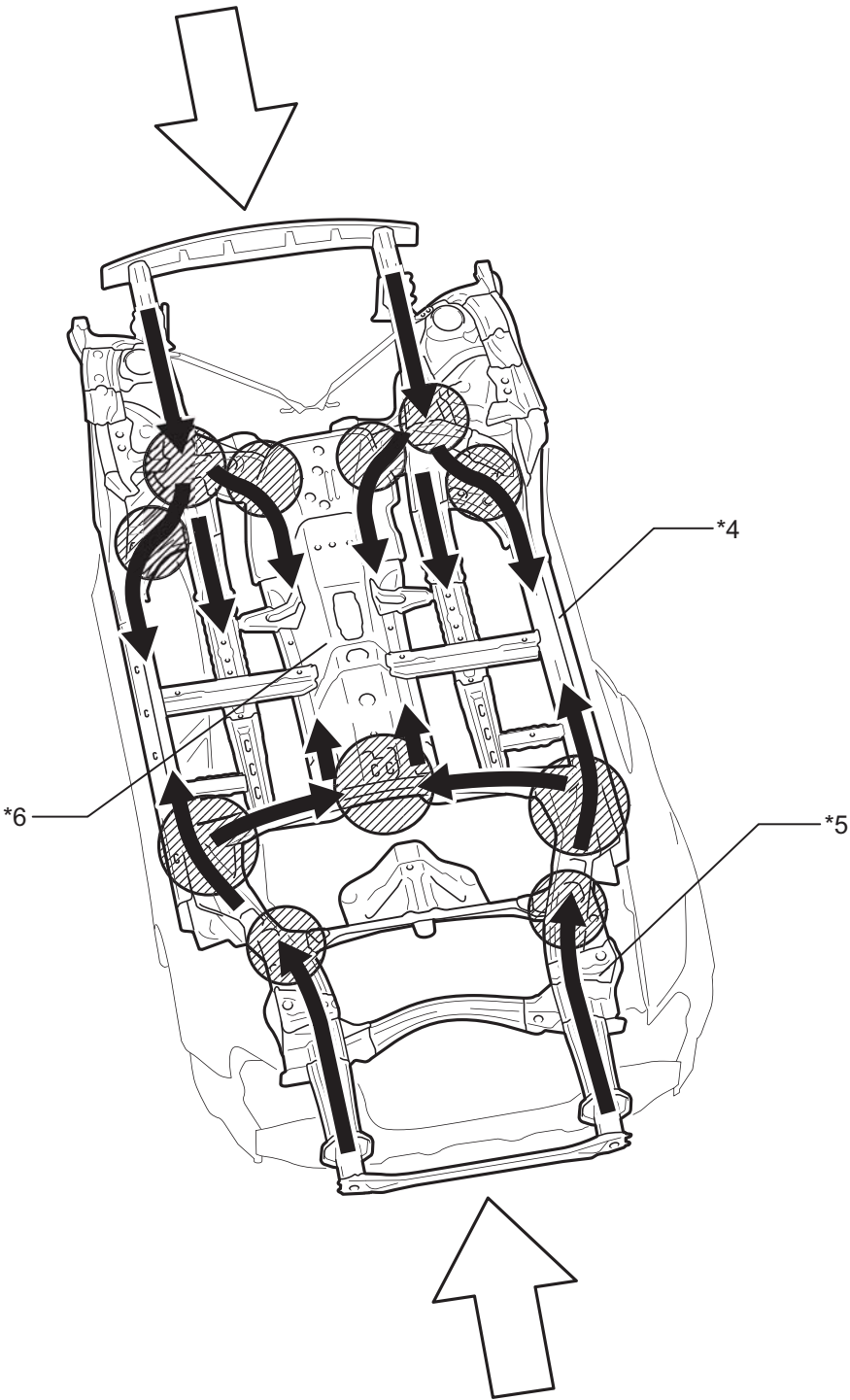
DAMAGE DIAGNOSIS

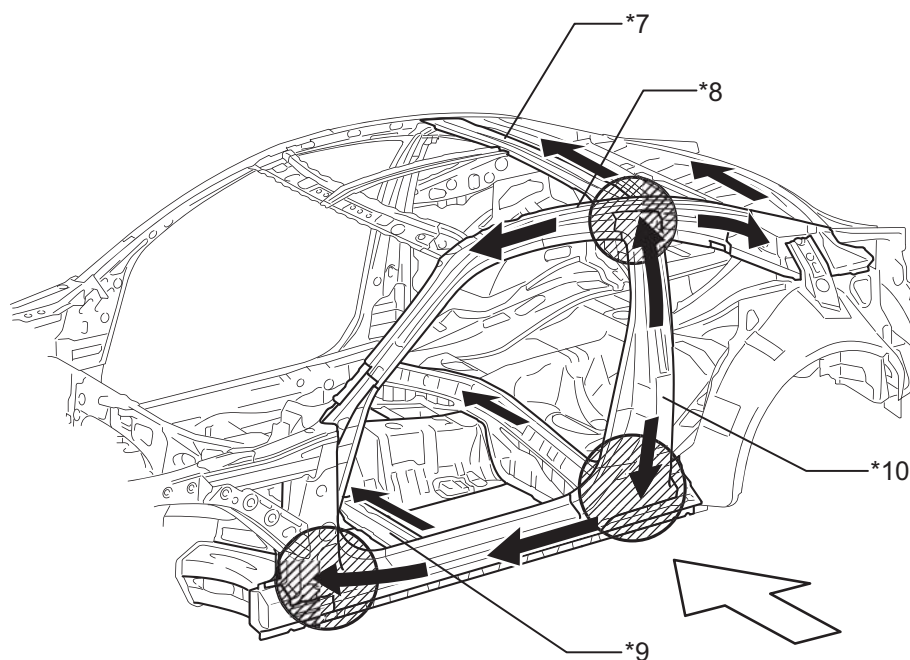
Text in Illustration

*1	Reinforce Pillar Front Lower	*2	Beam Front
*3	Frame Side Front	*4	Reinforce Sill Side Outer
*5	Frame Side Rear	*6	Floor Panel Front Center
*7	Brace Center	*8	Reinforce Rail Side Outer
*9	Cross Member Front Seat Front	*10	Reinforce Pillar Center
	Confirmation Point		Collision Direction
	Collision Force Absorption Direction	-	-



IN





## EXTERIOR RESIN PARTS AND RESIN CHARACTERISTICS

### 1. PLASTIC PROPERTIES CHART

When repairing, some parts may be deformed by the heat. Therefore, confirm the properties of the plastic parts, and remove parts beforehand as necessary.

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.
CFRP	Carbon Fiber Reinforced Plastic	200 (392)	Alcohol is harmless if applied only for short time in small amounts. (e.g., quick wiping to remove grease)	Avoid battery acid
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.
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.
E/VAC	Ethylene/ Vinyl Acetate Copolymer Resin	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.
FRP	Fiber Reinforced Plastics	180 (356)	Alcohol and gasoline are harmless.	Avoid alkali.
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.
PE	Polyethylene	80 (176)	Alcohol and gasoline are harmless.	Most solvents are harmless.
PEI	Polyetherimide	160 (320)	Alcohol and gasoline are harmless.	Most solvents are harmless.
PET	Polyethylene Terephthalate	75 (167)	Alcohol and gasoline are harmless.	Avoid dipping in water.
PGM	Polypropylene Glass Fiber Pulp	80 (176)	Alcohol and gasoline are harmless.	Most solvents are harmless.
PMMA	Polymethyl Methacrylate	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.
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.
PPC	Polyphthlate Carbonate	149 (300)	Alcohol and gasoline are harmless.	Most solvents are harmless.
PPE	Polyphenylene Ether	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.
PPF	Composite Reinforced Polypropylene	80 (176)	Alcohol and gasoline are harmless.	Most solvents are harmless.

Code	Material name	Heat resistant temperature limit* °C (°F)	Resistance to alcohol or gasoline	Notes
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.
SAS	Silicon Acrylonitrile Styrene	80 (176)	Alcohol and gasoline are harmless if applied only for short time in small amounts. (e.g., quick wiping to remove grease)	Avoid gasoline and organic or aromatic solvents.
G-SMC	Sheet Molding Compound	220 (428)	Alcohol and gasoline are harmless.	Most solvents are harmless.
TPE	Thermoplastic Elastomer	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.
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.

\*The heat resistant temperature means a temperature that may cause heat deformation during a procedure.

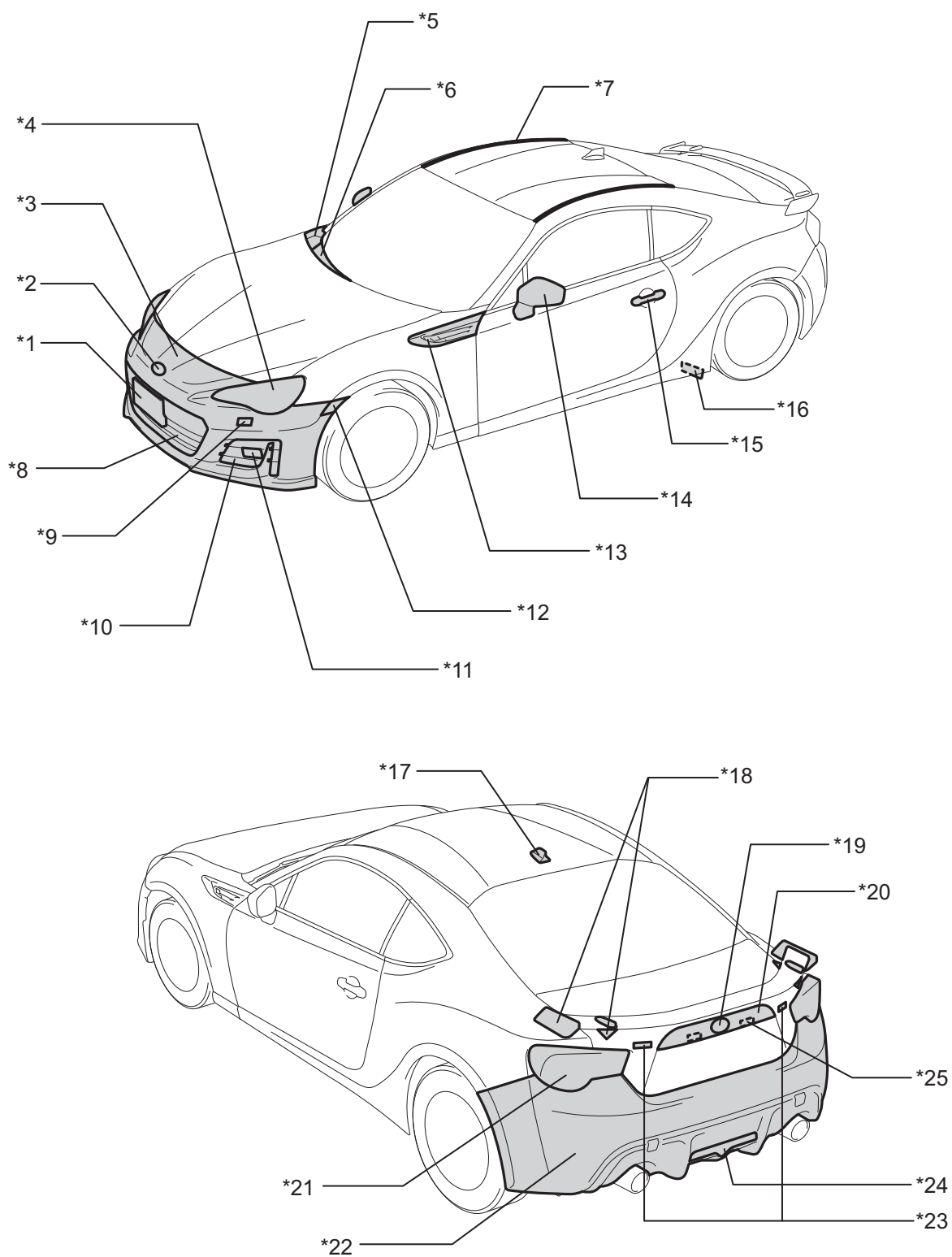
## 2. THE PLASTIC BODY PARTS MATERIAL LIST

### Text in Illustration

*1	License Plate Base (PP)	*2	Ornament (ABS)
*3	Front Bumper (PP)	*4	Headlight (PC/PP)
*5	Cowl Panel Side (PP/TPO)	*6	Cowl Top Ventilator Louver (PP)
*7	Roof Moulding (TPO)	*8	Intake Cover Front (PP)
*9	Nozzle Cover (ABS)	*10	Fog Light Cover (PP)
*11	Fog Light (PC)	*12	Side Turn Light (PMMA/PC)
*13	Fender Garnish (PP/ABS/ASA)	*14	Rear View Mirror (AES/ABS,AES)
*15	Door Outside Handle (PC/PBT,PA)	*16	Air Flap Plate (PP)
*17	Antenna Base (PC/ASA)	*18	Rear Spoiler (ABS/ASA/EPDM)
*19	Ornament (ABS)	*20	Trunk Garnish (ABS)
*21	Rear Combination Light (PMMA/ASA)	*22	Rear Bumper (PP)
*23	Letter mark (ABS)	*24	Back-up Light (PC/PBT/PET)
*25	License Plate Light (PC)	-	-

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

IN





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# BODY WELD POINT

<b>RADIATOR SIDE SUPPORT</b>	
ASSEMBLY REPLACEMENT .....	WP-1
<b>RADIATOR LOWER SUPPORT</b>	
ASSEMBLY REPLACEMENT .....	WP-5
<b>RADIATOR SUPPORT</b>	
ASSEMBLY REPLACEMENT .....	WP-13
<b>FRONT FENDER MOUNTING BRACKET</b>	
ASSEMBLY REPLACEMENT .....	WP-24
<b>FRONT FENDER APRON</b>	
ASSEMBLY REPLACEMENT .....	WP-28
<b>FRONT SIDE MEMBER</b>	
CUT AND JOIN REPLACEMENT SECTIONS (SMALL AREAS) .....	WP-32
ASSEMBLY REPLACEMENT (PATTERN 1) .....	WP-37
ASSEMBLY REPLACEMENT (PATTERN 2) .....	WP-43
<b>COWL TOP TO APRON BRACE</b>	
ASSEMBLY REPLACEMENT .....	WP-49
<b>FRONT BODY PILLAR LOWER GUSSET</b>	
ASSEMBLY REPLACEMENT .....	WP-53
<b>FRONT BODY PILLAR</b>	
CUT AND JOIN REPLACEMENT SECTIONS .....	WP-57
<b>CENTER BODY PILLAR</b>	
CUT AND JOIN REPLACEMENT SECTIONS .....	WP-70
<b>ROCKER OUTER PANEL</b>	
CUT AND JOIN REPLACEMENT SECTIONS (SMALL AREAS) .....	WP-78
<b>QUARTER PANEL</b>	
CUT AND JOIN REPLACEMENT SECTIONS (SMALL AREAS) .....	WP-82
CUT AND JOIN REPLACEMENT SECTIONS .....	WP-86
<b>QUARTER WHEEL HOUSING OUTER PANEL</b>	
ASSEMBLY REPLACEMENT .....	WP-93
<b>QUARTER PANEL END HOUSING</b>	
ASSEMBLY REPLACEMENT .....	WP-103
<b>BODY LOWER BACK PANEL</b>	
ASSEMBLY REPLACEMENT .....	WP-107
<b>REAR FLOOR PAN</b>	
CUT AND JOIN REPLACEMENT SECTIONS .....	WP-111
<b>REAR FLOOR SIDE PANEL</b>	
ASSEMBLY REPLACEMENT .....	WP-119

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**REAR FLOOR SIDE MEMBER**

ASSEMBLY REPLACEMENT ..... WP-129

**ROOF PANEL**

ASSEMBLY REPLACEMENT ..... WP-135

**SPECIFIED TORQUE**

COMPONENTS ..... WP-142

**FIT STANDARD / ADJUSTMENT METHOD**

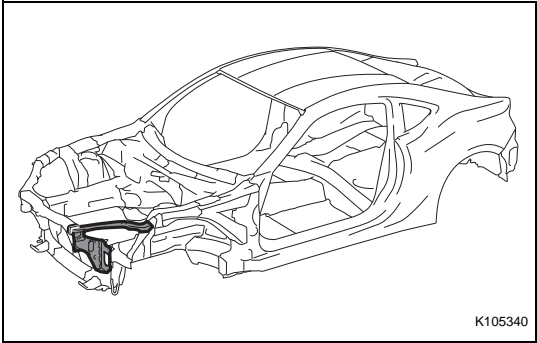
ADJUSTMENT ..... WP-145

**CAUTION LABEL**

ATTACHMENT POSITION ..... WP-153


# RADIATOR SIDE SUPPORT

## ASSEMBLY REPLACEMENT



WP

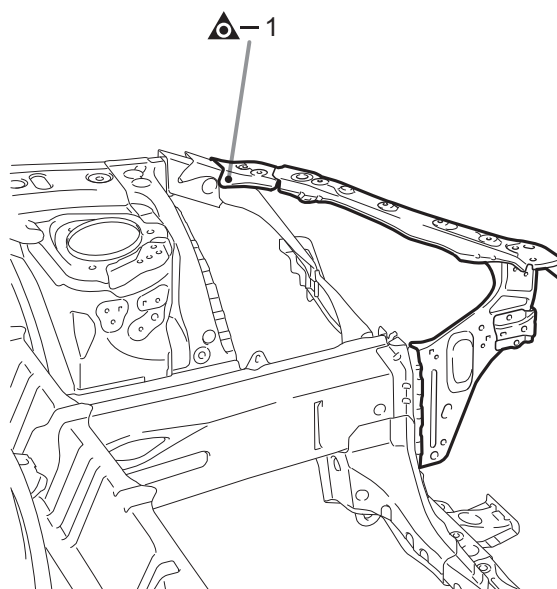
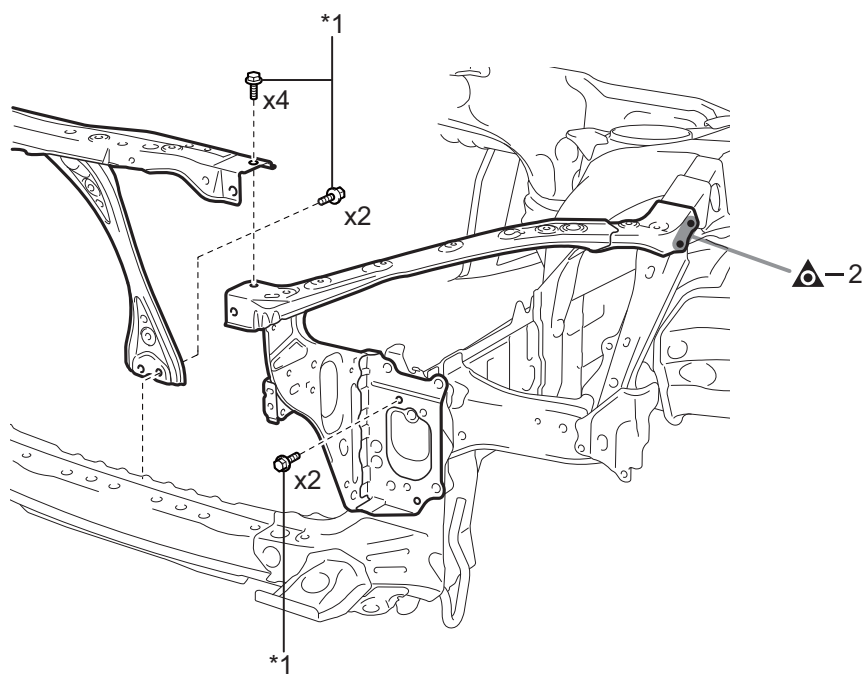
### 1. REMOVAL

Symbol meaning	
	Remove Weld Points


### REMOVAL POINT

- \*1: Bolts.

WP



## 2. INSTALLATION

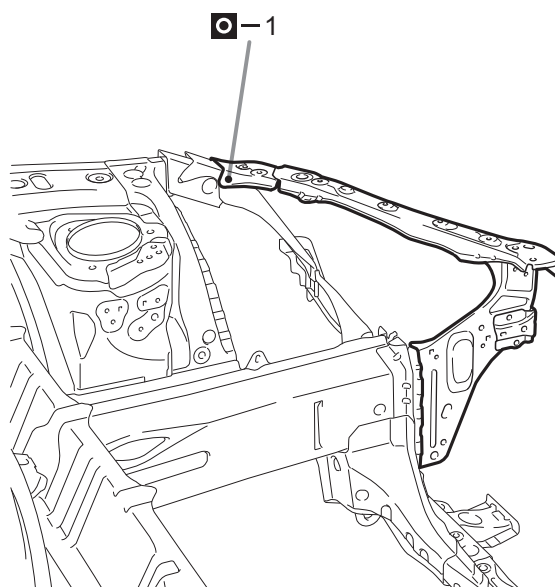
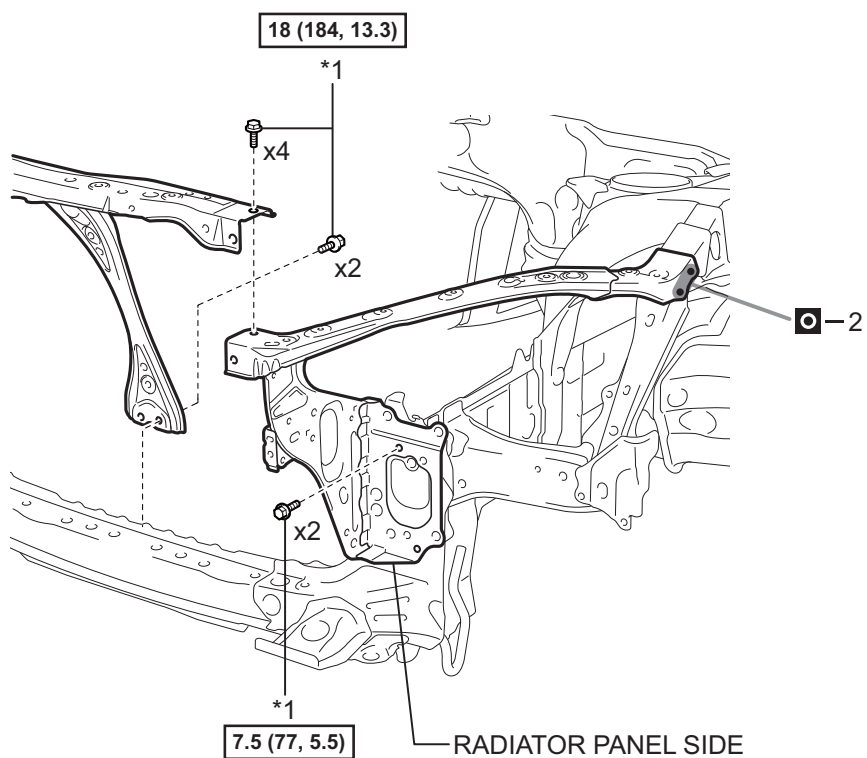
Symbol meaning	
	Plug Weld

### INSTALLATION POINT

1. Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
2. Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimensions)
3. \*1: Bolts.
4. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

WP

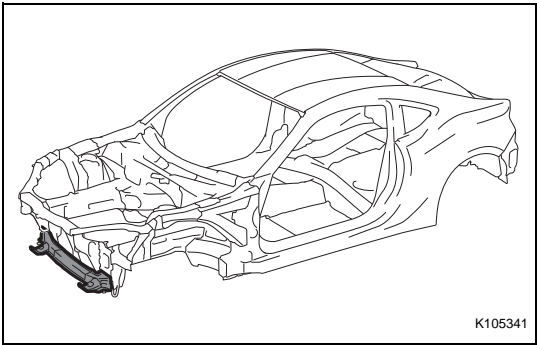
WP



**N\*m (kgf\*cm, ft.\*lbf)**: Specified torque



# RADIATOR LOWER SUPPORT

## ASSEMBLY REPLACEMENT



WP

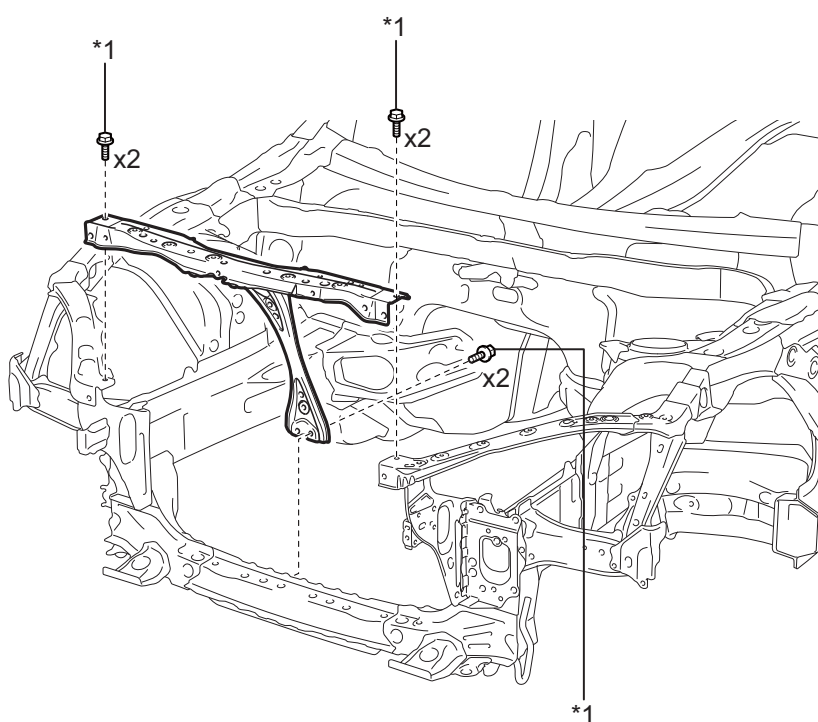
### 1. REMOVAL

Symbol meaning	
	Remove Weld Points
	Remove Weld Points

### REMOVAL POINT

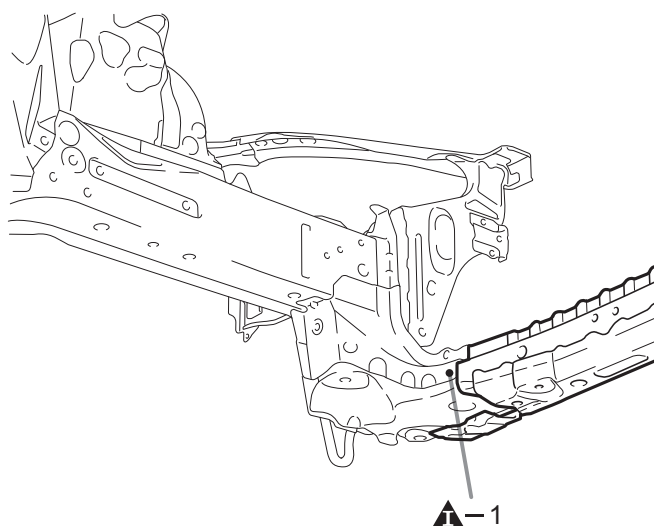
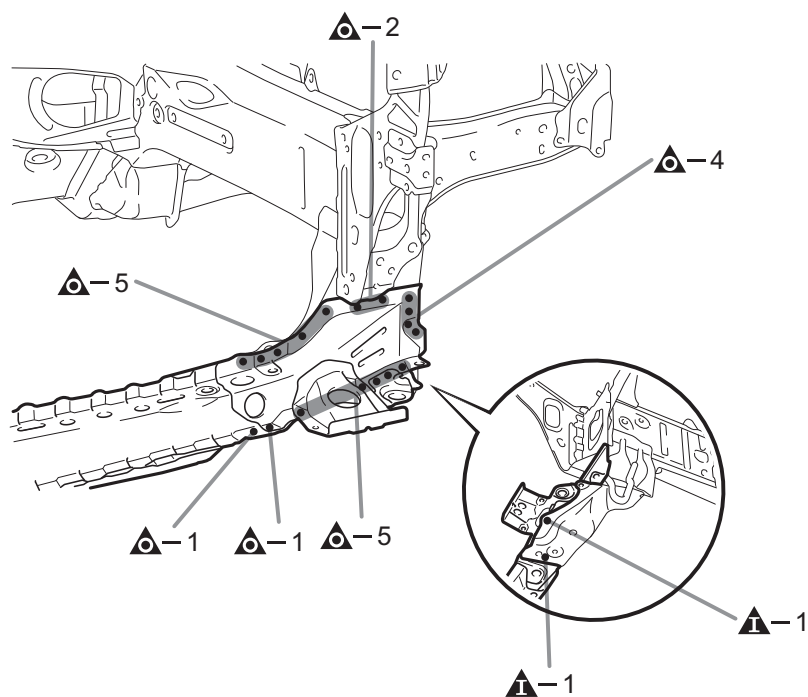
1. \*1: Bolts.

WP

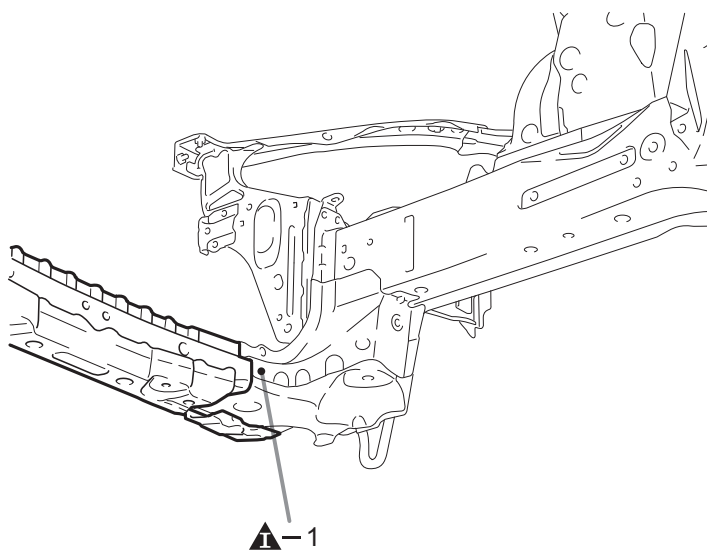
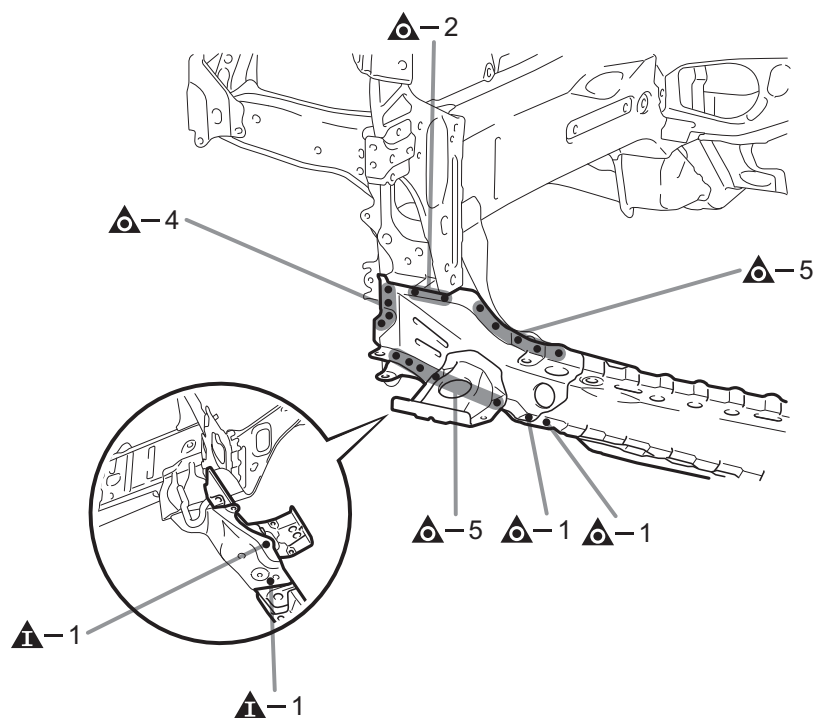







LH Side:



RH Side:



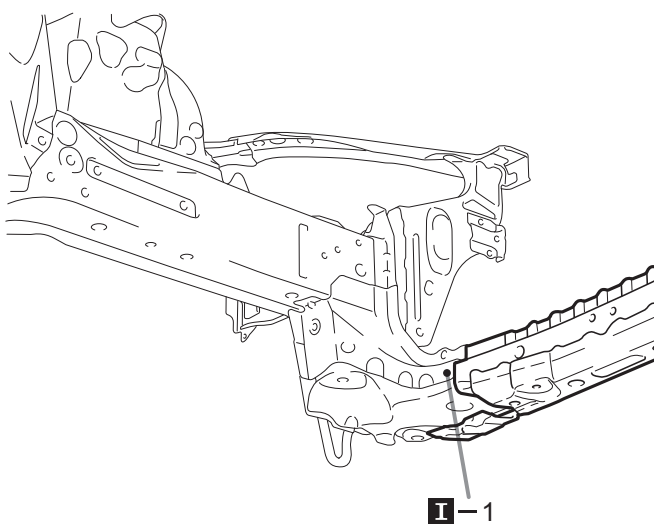
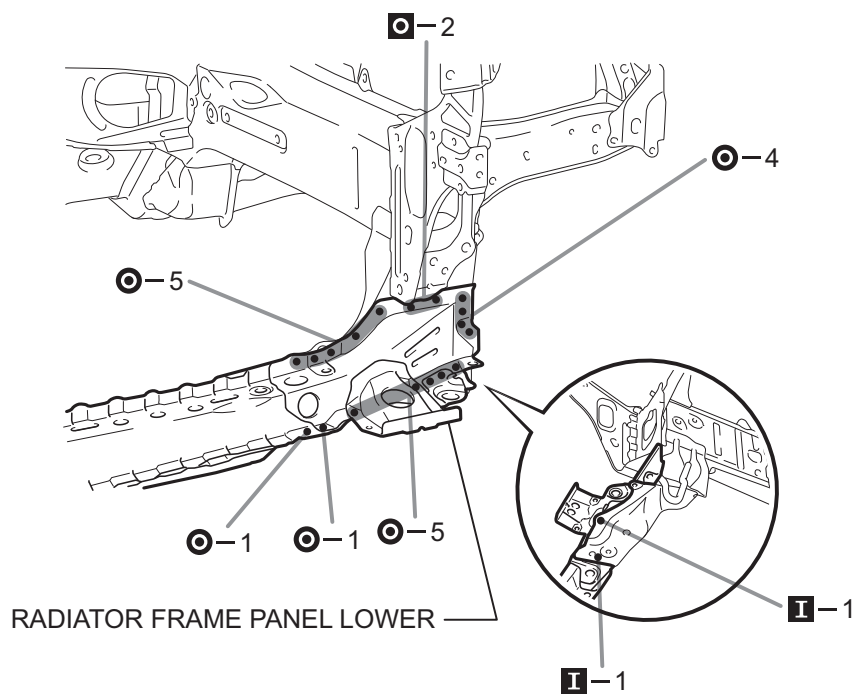
## 2. INSTALLATION

Symbol meaning	
	Spot Weld
	Plug Weld
	Plug Weld

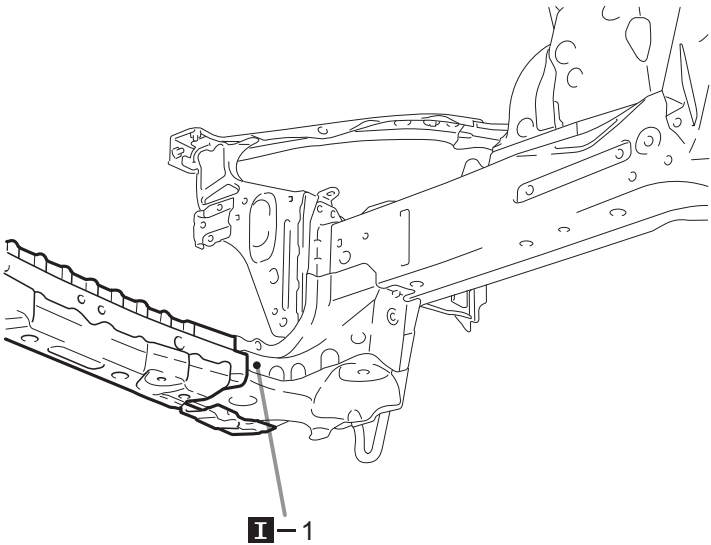
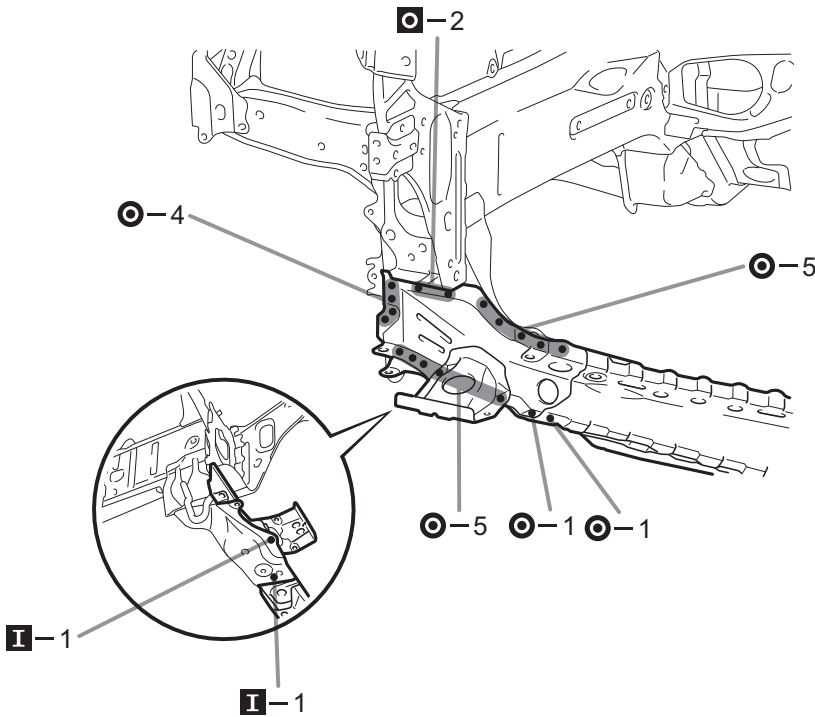
### INSTALLATION POINT

1. Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
2. Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimensions)
3. \*1: Bolts.
4. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

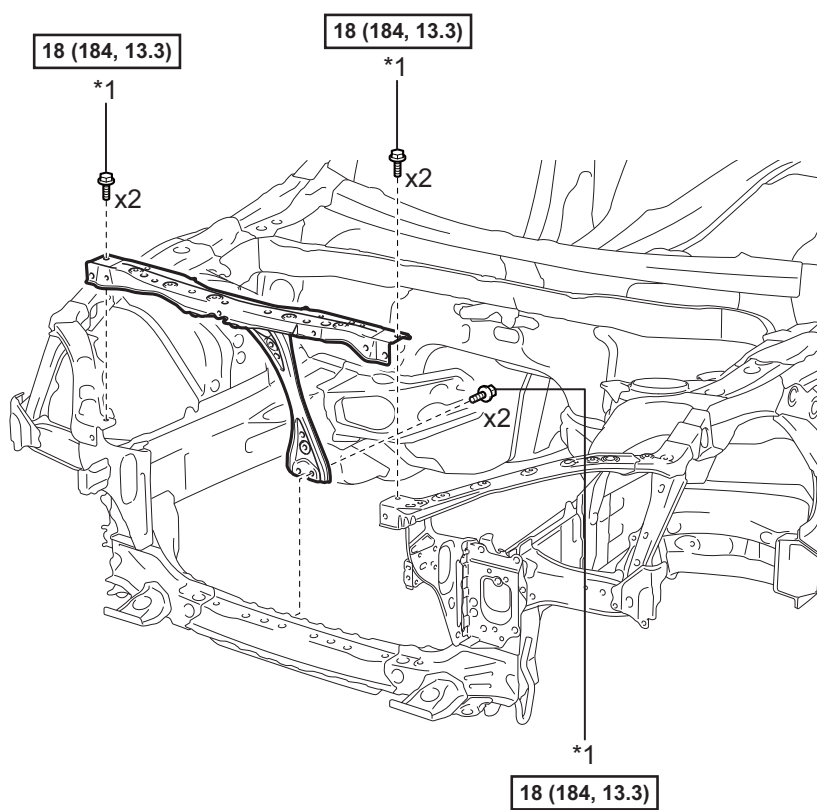
LH Side:



RH Side:



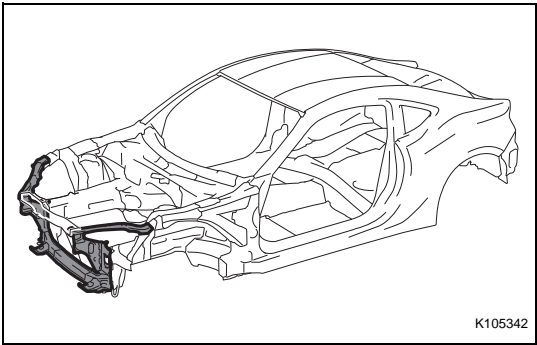
WP



**N\*m (kgf\*cm, ft.\*lbf)**: Specified torque



# RADIATOR SUPPORT

## ASSEMBLY REPLACEMENT

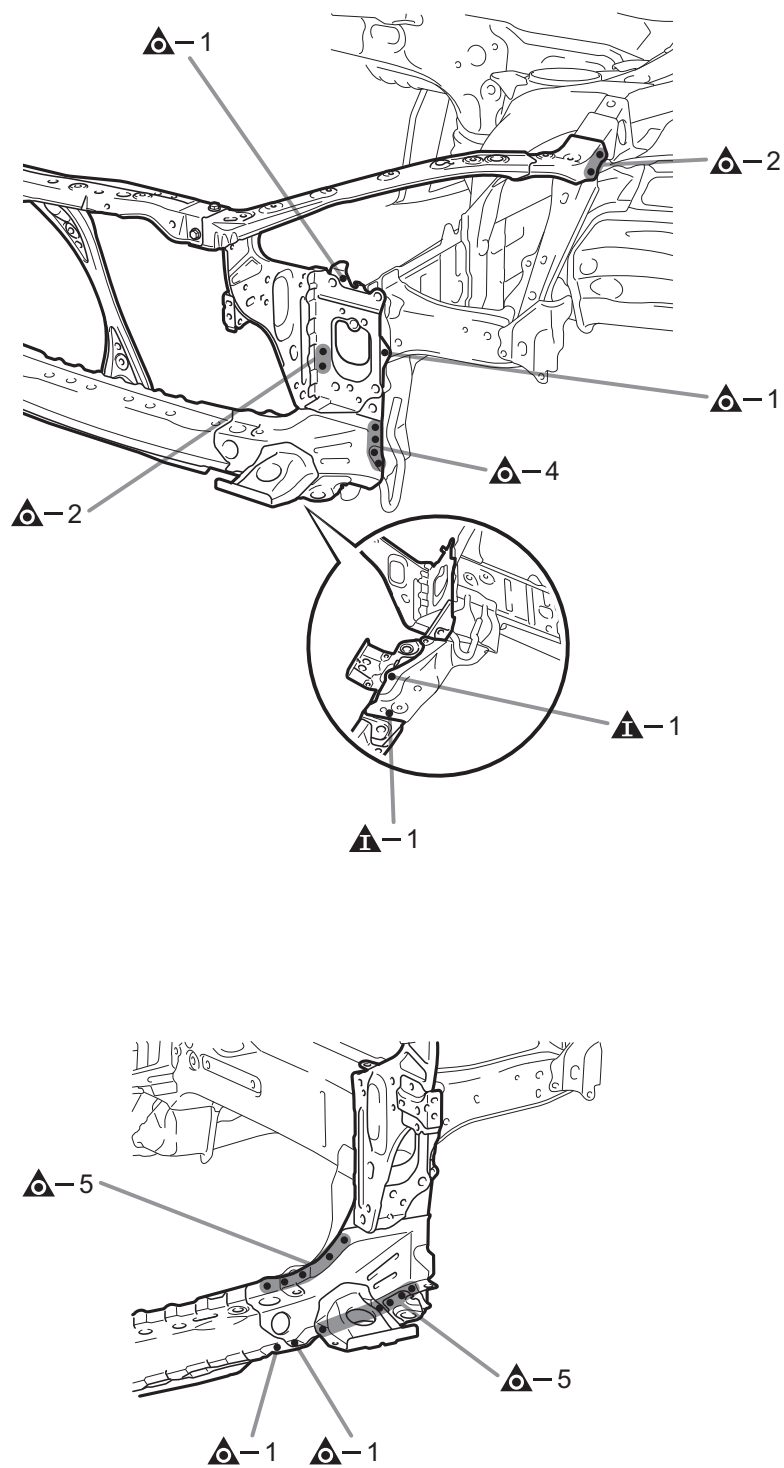


WP

### 1. REMOVAL

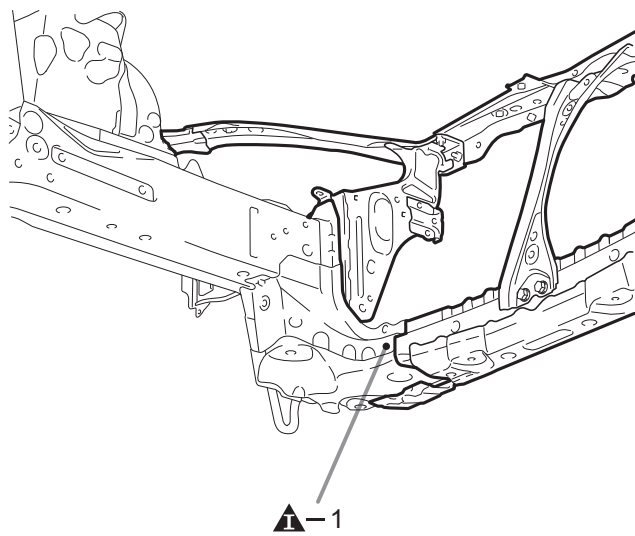
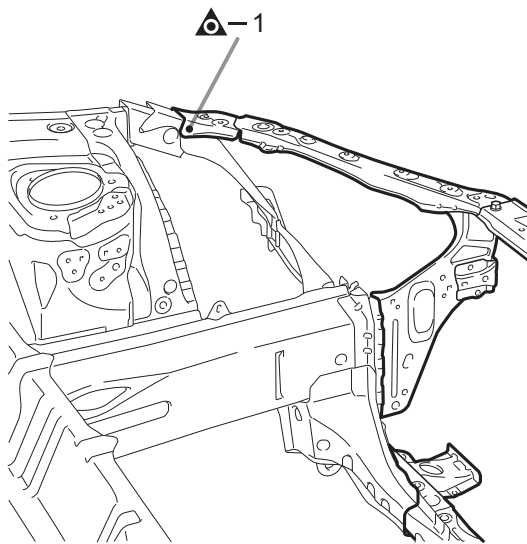
Symbol meaning	
	Remove Weld Points
	Remove Weld Points

LH Side:

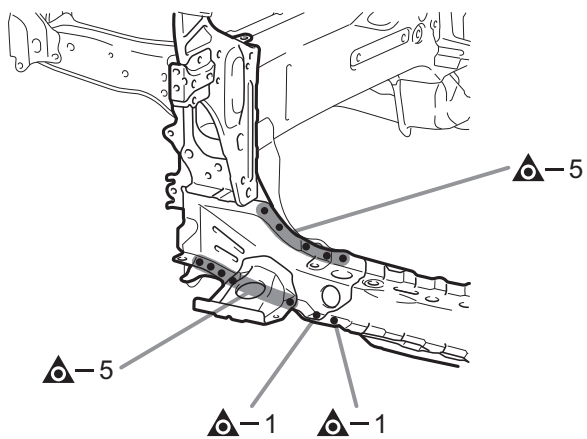
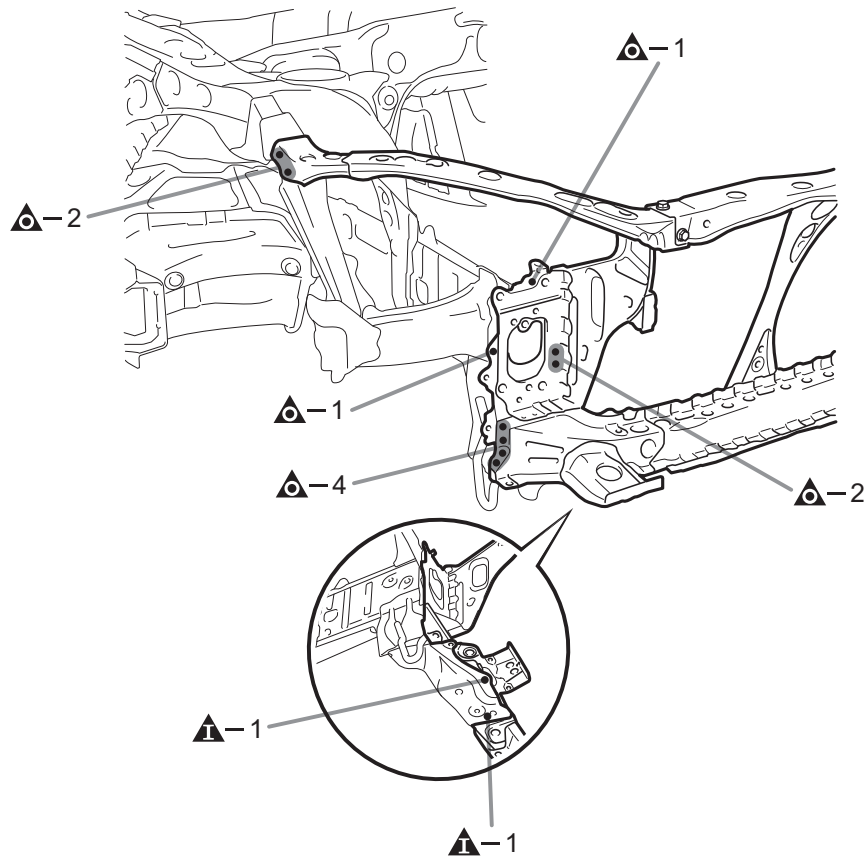




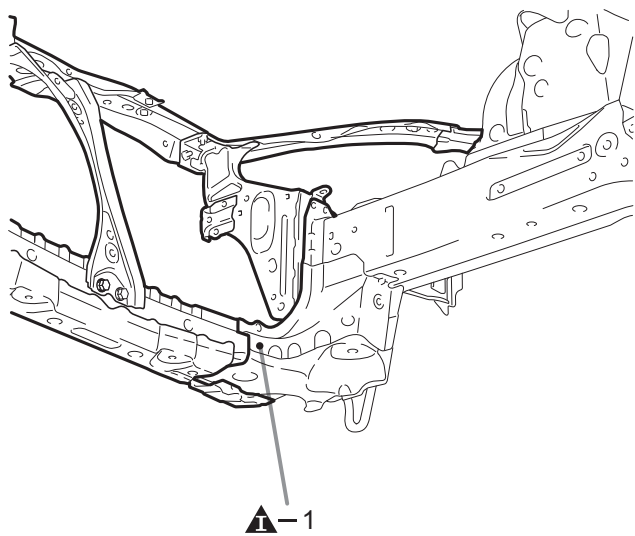
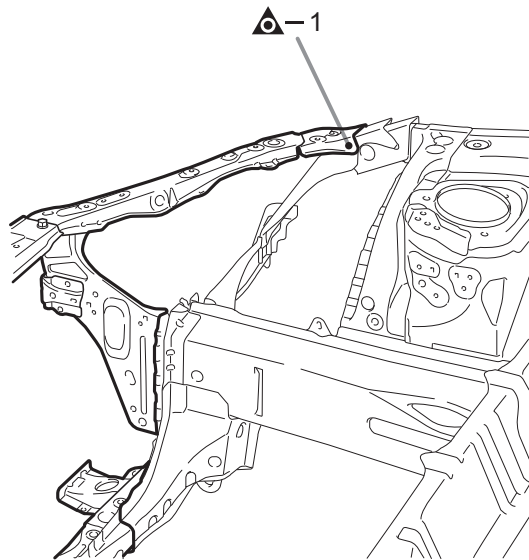
WP






RH Side:



WP



2. INSTALLATION

Symbol meaning	
	Spot Weld
	Plug Weld
	Plug Weld

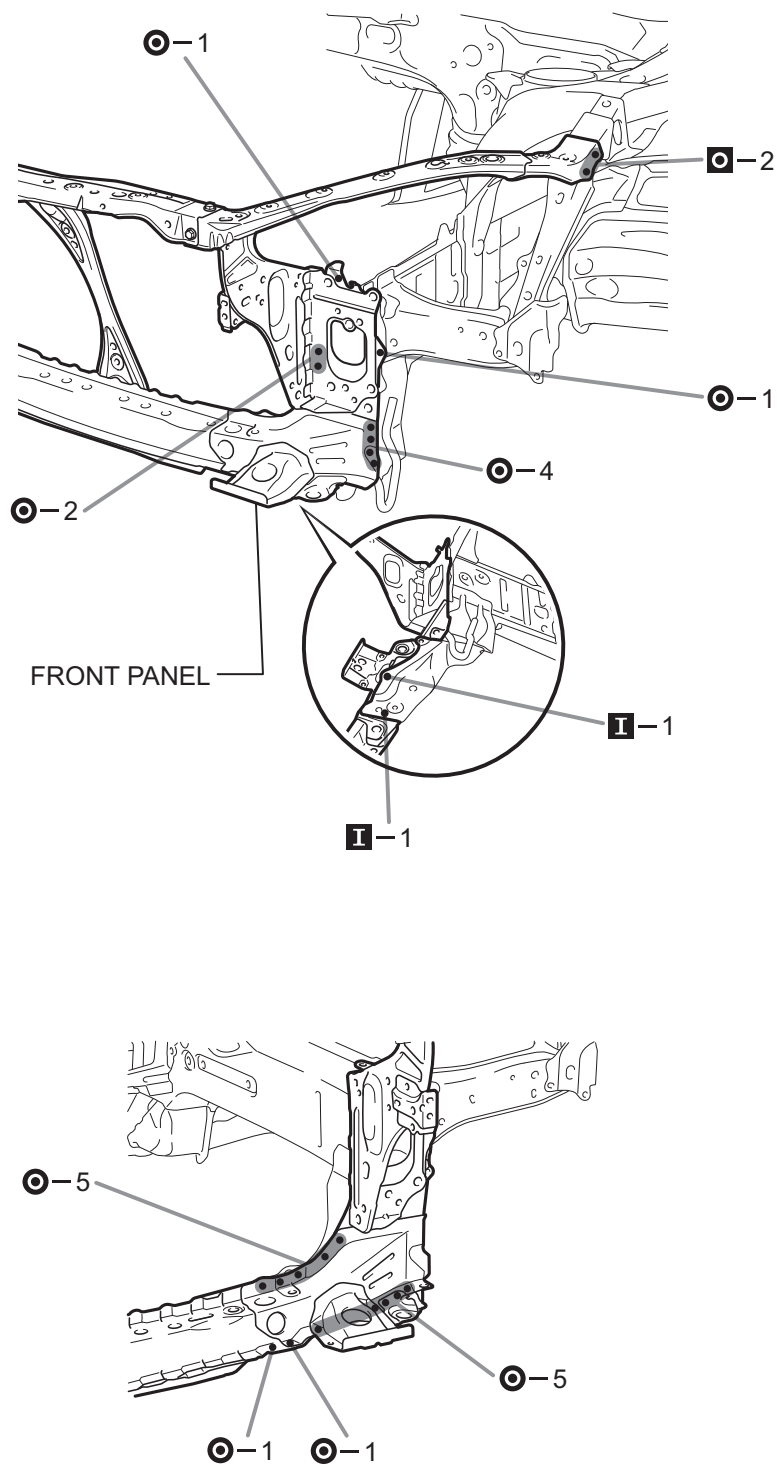
INSTALLATION POINT

1. Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
2. Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimensions)
3. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.
4. Measure the dimensions before installing the headlights.

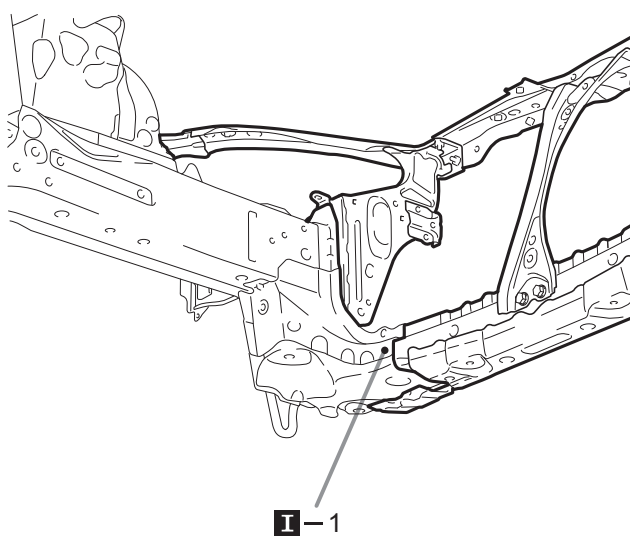
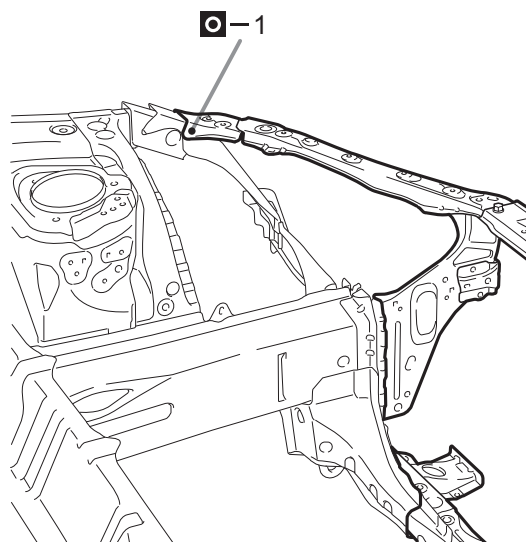
Reference Value

Area	Measurement	Area	Measurement
*a	1360 mm (53.54 in.)	*b	1278 mm (50.31 in.)
*c	1097 mm (43.19 in.)	*d	888 mm (34.96 in.)
*e	881 mm (34.68 in.)	*f	889 mm (35.00 in.)
*g	805 mm (31.69 in.)	-	-

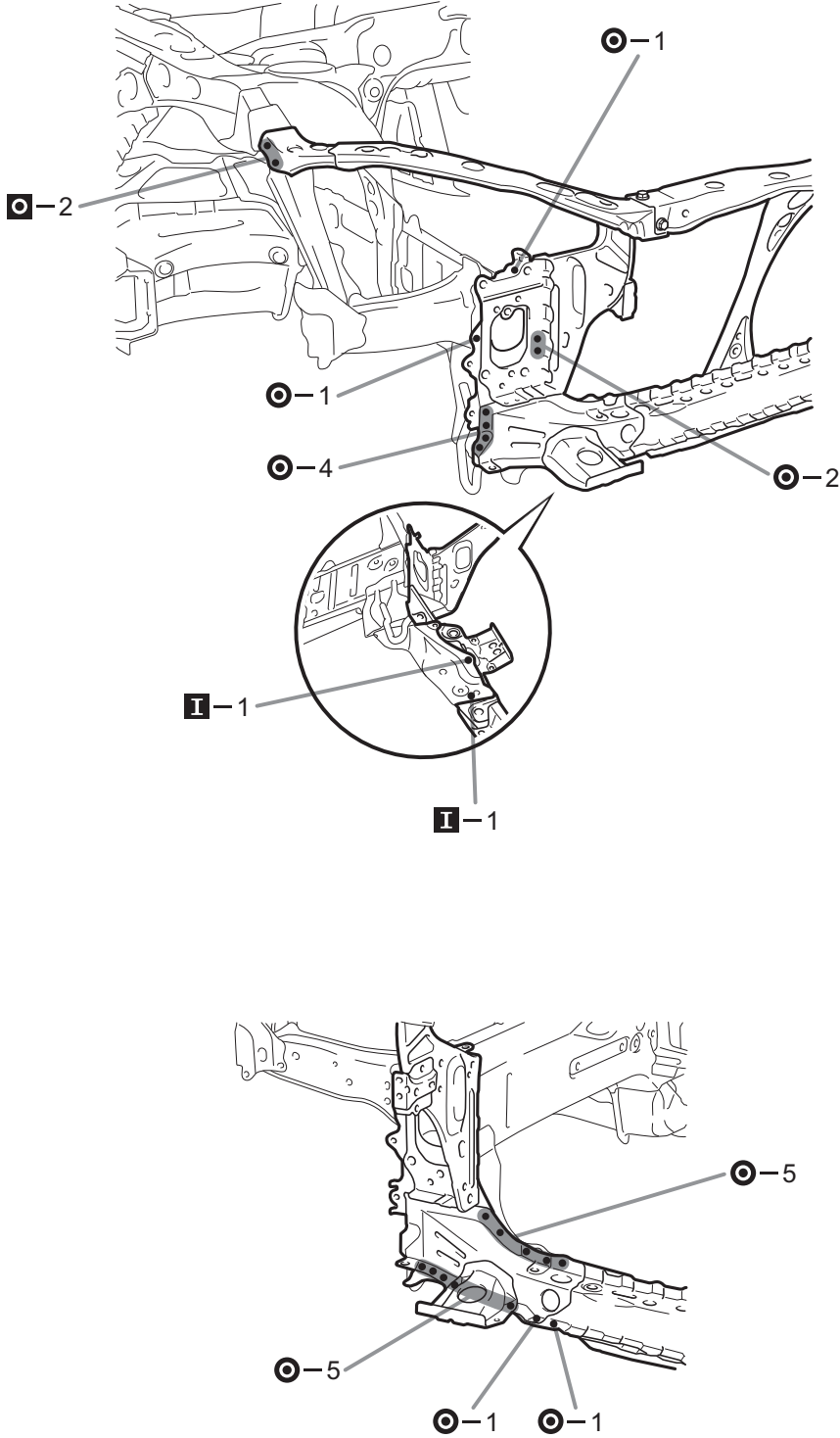
LH Side:



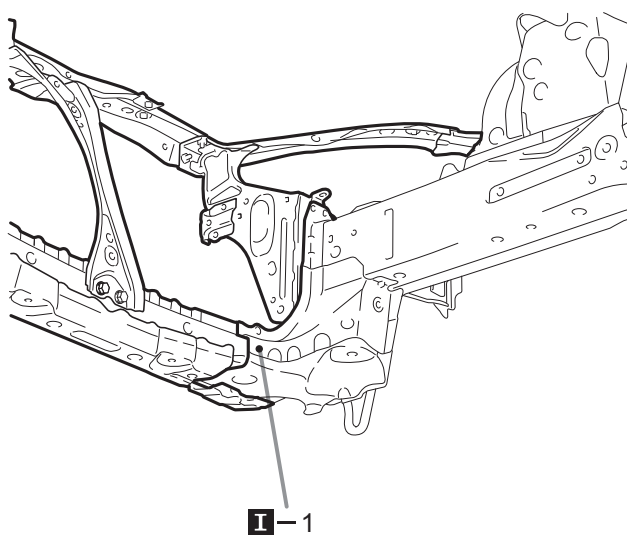
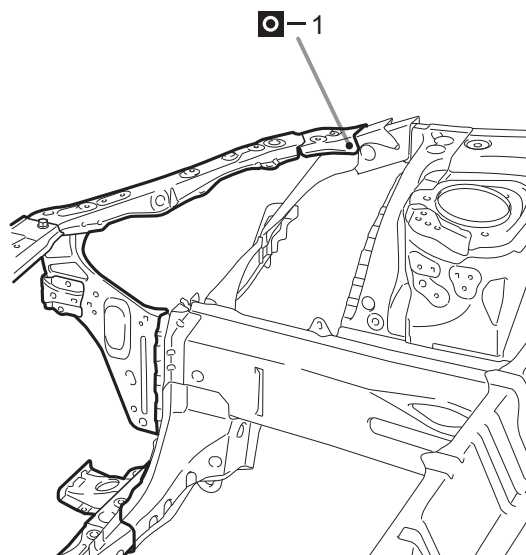
WP



RH Side:

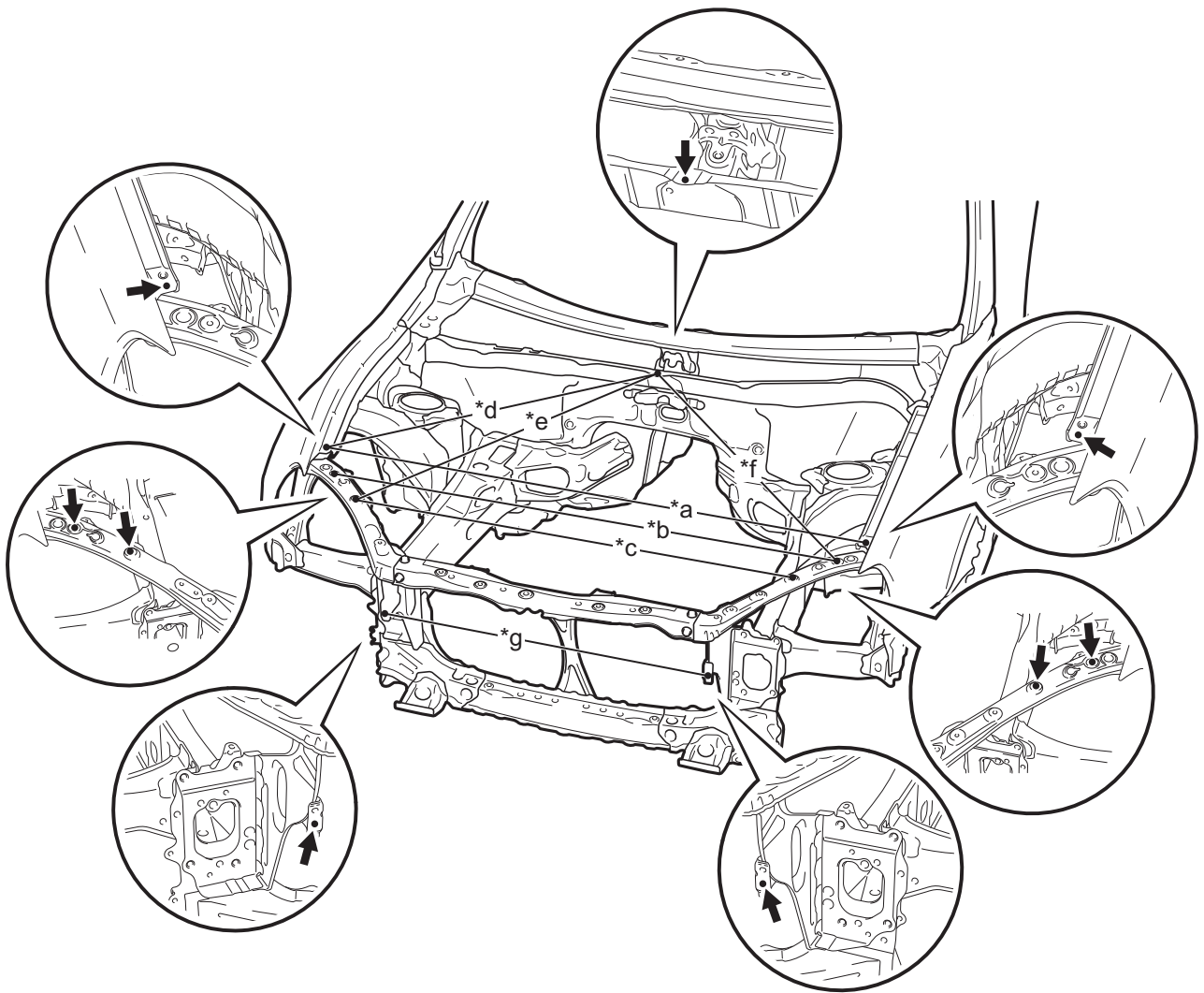


WP



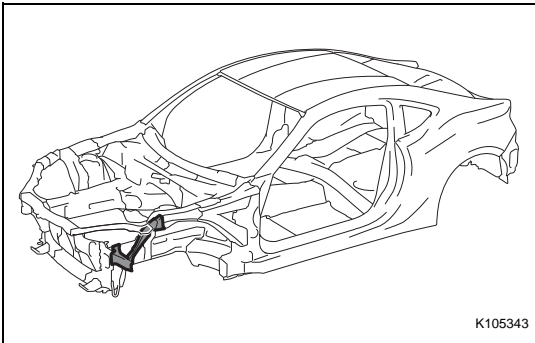


WP





# FRONT FENDER MOUNTING BRACKET

## ASSEMBLY REPLACEMENT



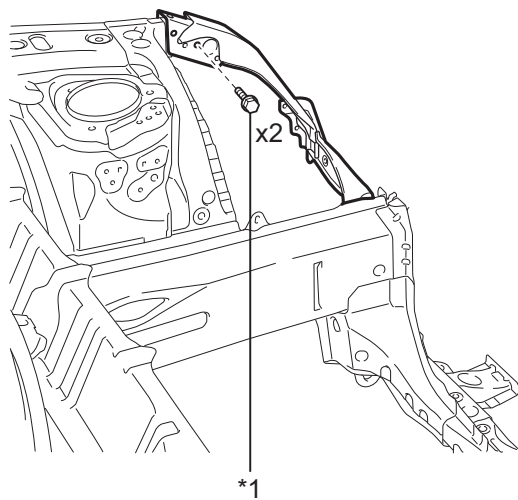
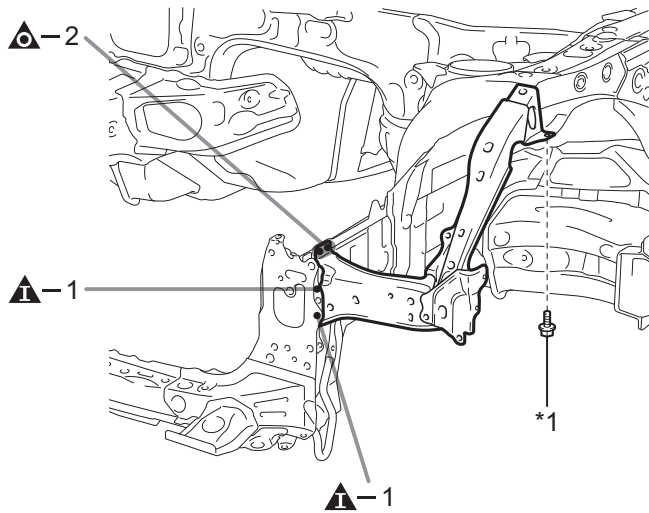
With the radiator side support removed.

### 1. REMOVAL




Symbol meaning	
	Remove Weld Points
	Remove Weld Points

### REMOVAL POINT

1. \*1: Bolts.

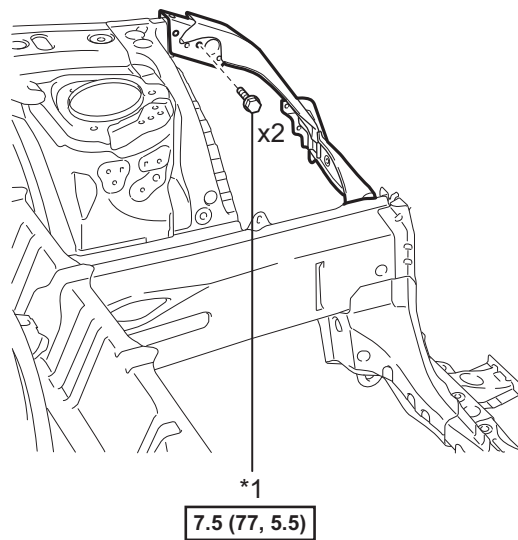
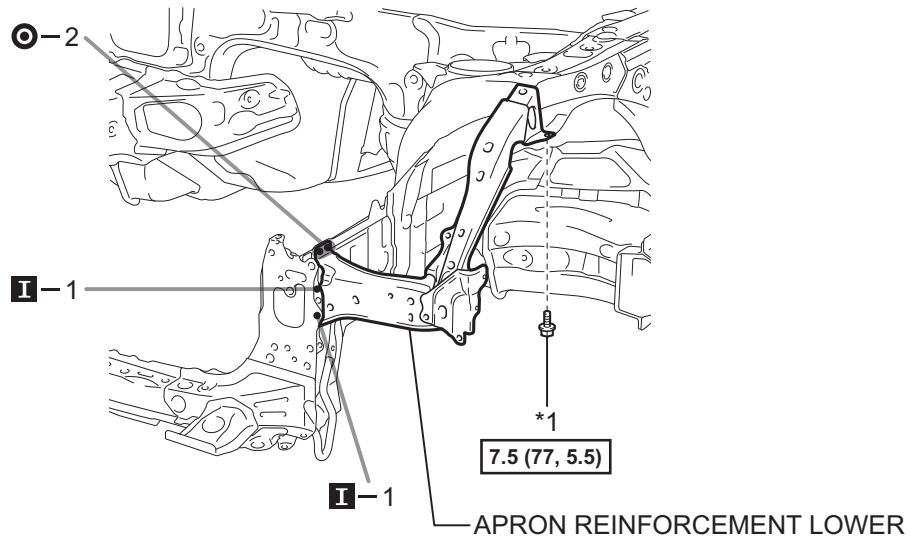


2. INSTALLATION

Symbol meaning	
	Spot Weld
	Plug Weld
	Plug Weld

INSTALLATION POINT

1. Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
2. 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)
3. \*1: Bolts.
4. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

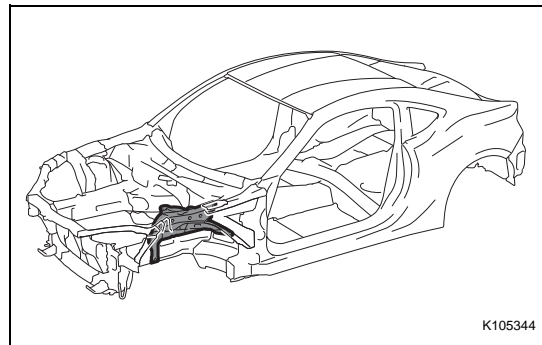


**N\*m (kgf\*cm, ft.\*lbf):** Specified torque

# FRONT FENDER APRON

## ASSEMBLY REPLACEMENT

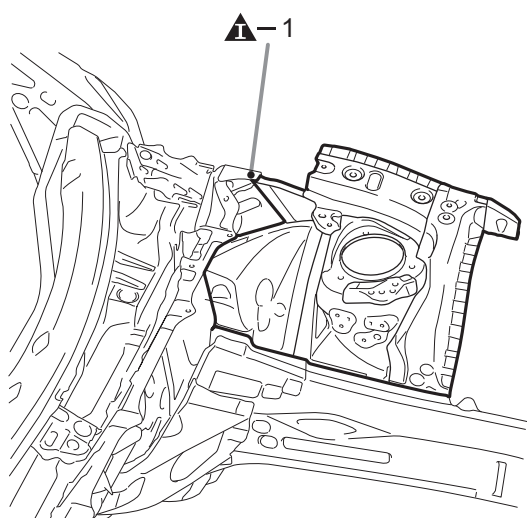
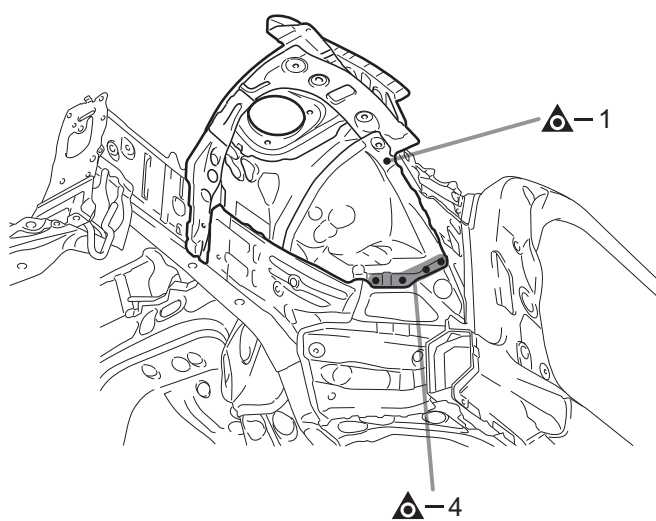
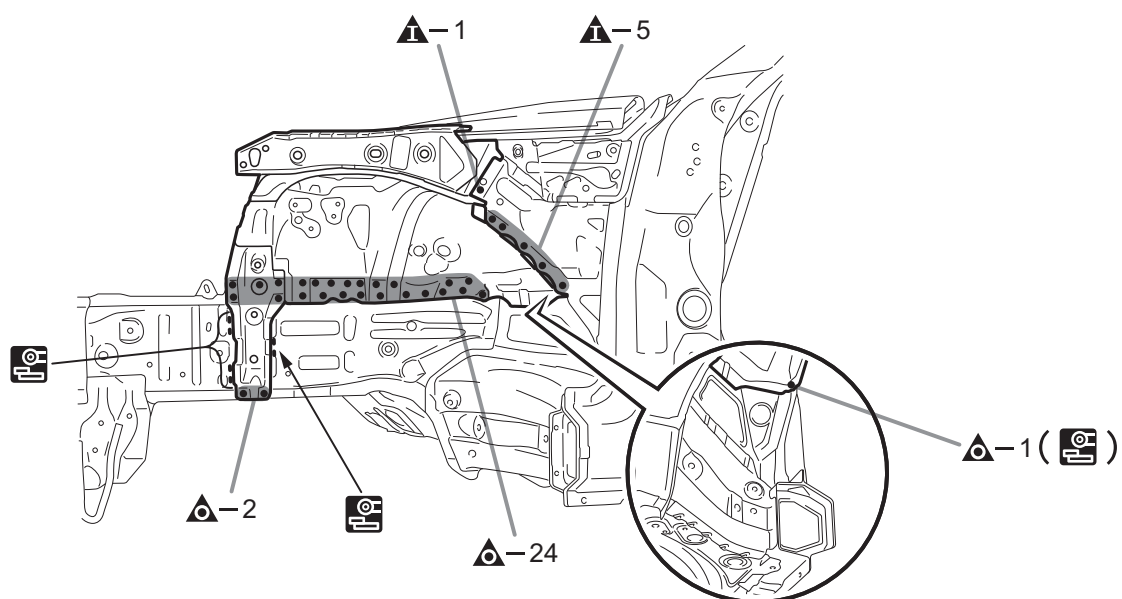
WP







With the front fender mounting bracket and front body pillar lower gusset removed.

### 1. REMOVAL

Symbol meaning	
	Remove Weld Points
	Remove Weld Points
	Cut with Disk Sander etc.



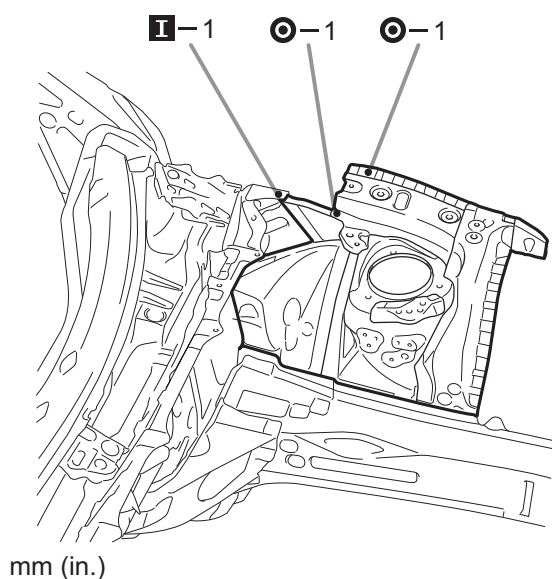
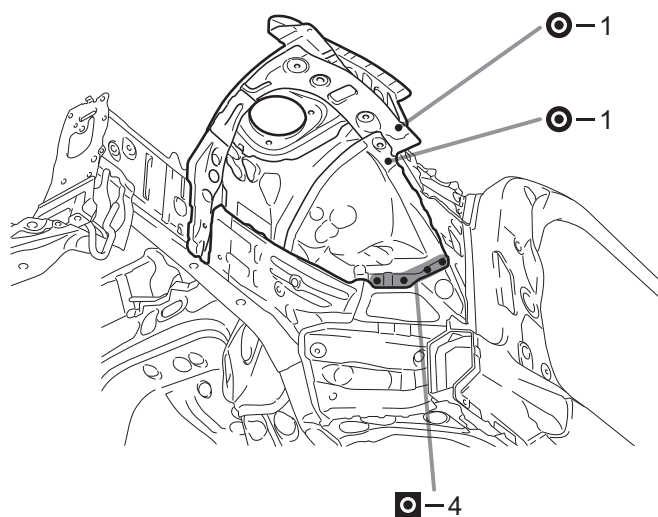
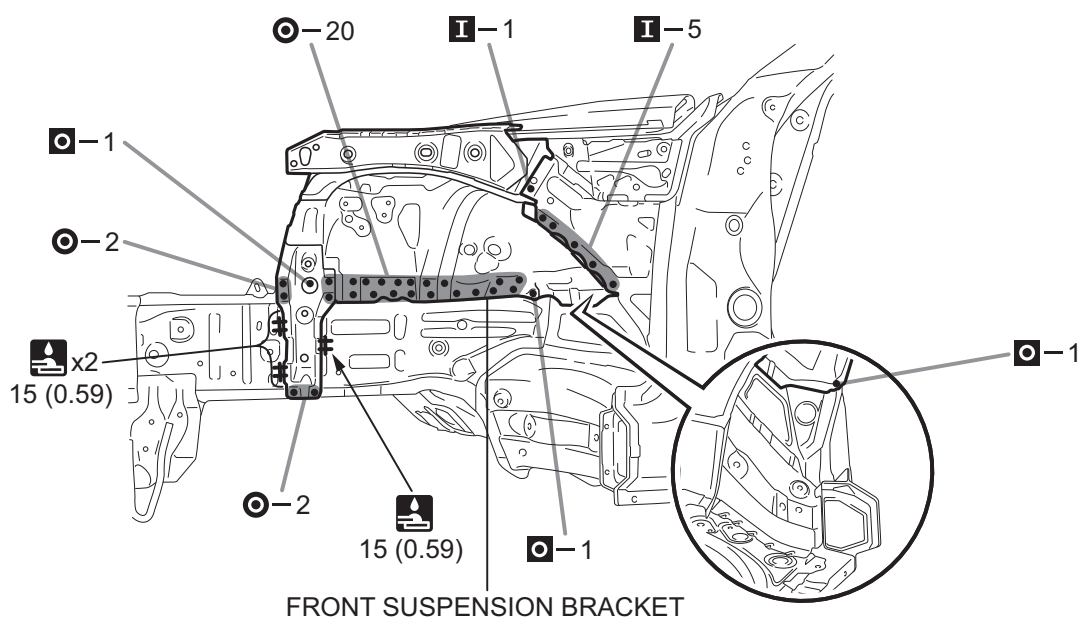
## 2. INSTALLATION

Symbol meaning	
	Spot Weld
	Plug Weld
	Plug Weld
	Fillet Weld

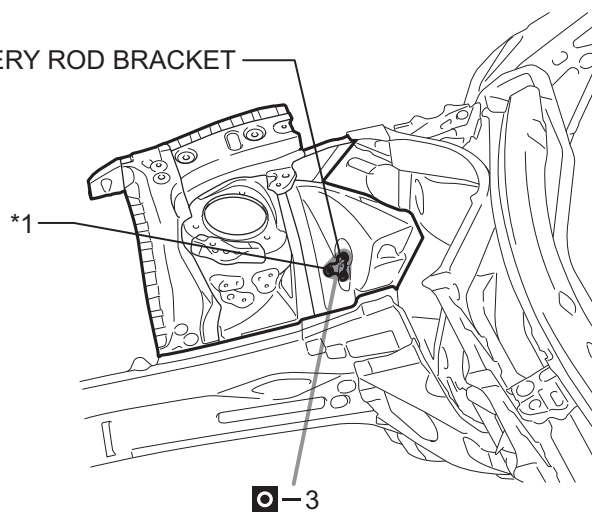
### INSTALLATION POINT

1. Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
2. 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)
3. \*1 is only for RH.
4. Make sure to attach correctly in accordance with the body dimension diagram as this part affects the front wheel alignment.
5. After welding, apply body sealer and undercoating to the corresponding parts. (See the painting / coating)
6. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.





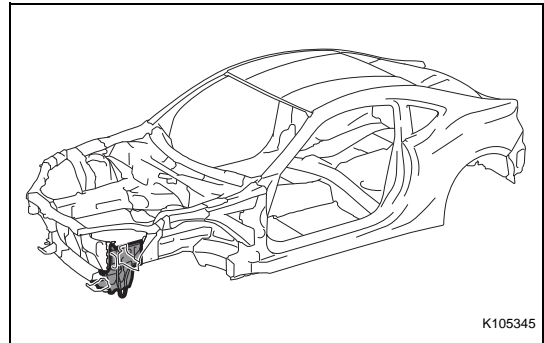
BATTERY ROD BRACKET



mm (in.)



# FRONT SIDE MEMBER

## CUT AND JOIN REPLACEMENT SECTIONS (SMALL AREAS)



With the radiator support and front fender mounting bracket removed.

### 1. REMOVAL

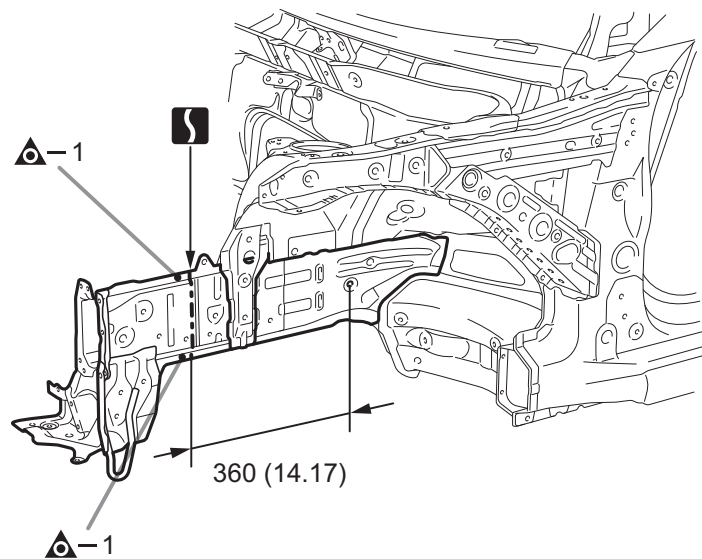
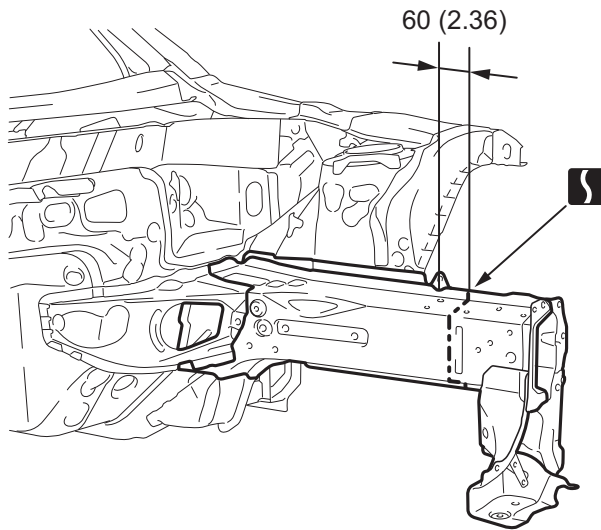
Symbol meaning	
	Remove Weld Points
	Cut and Join Location

### REMOVAL POINT

1. Carefully cut the member so not to damage \*1.

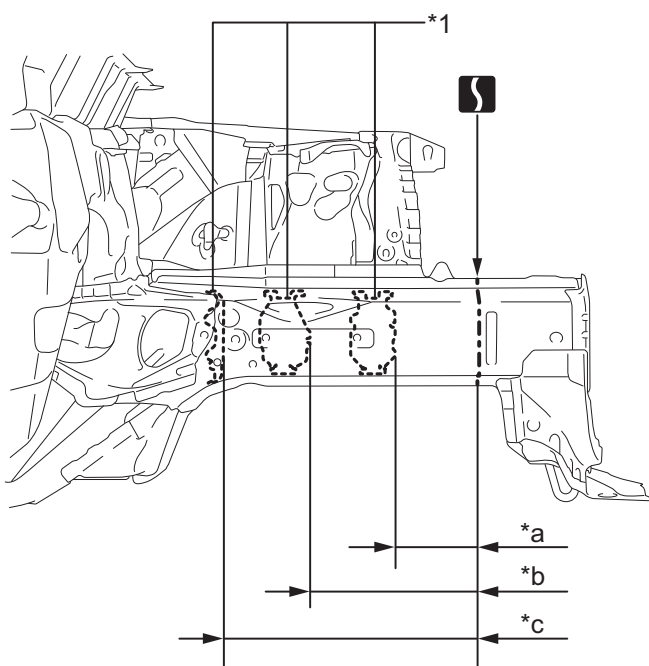
### Reference Value

Area	Measurement	Area	Measurement
*a	135 mm (5.31 in.)	*b	271 mm (10.67 in.)
*c	410 mm (16.14 in.)	*d	135 mm (5.31 in.)
*e	271 mm (10.67 in.)	*f	410 mm (16.14 in.)

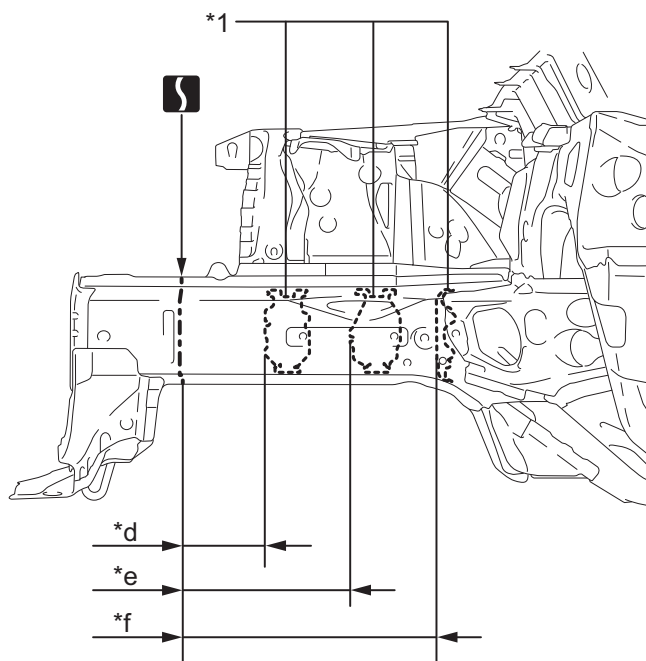


mm (in.)




LH:



RH:



## 2. INSTALLATION

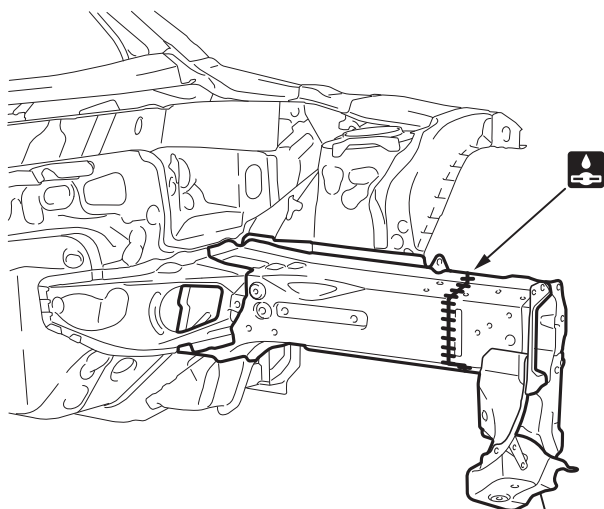
Symbol meaning	
	Spot Weld
	Plug Weld
	Butt Weld

### INSTALLATION POINT

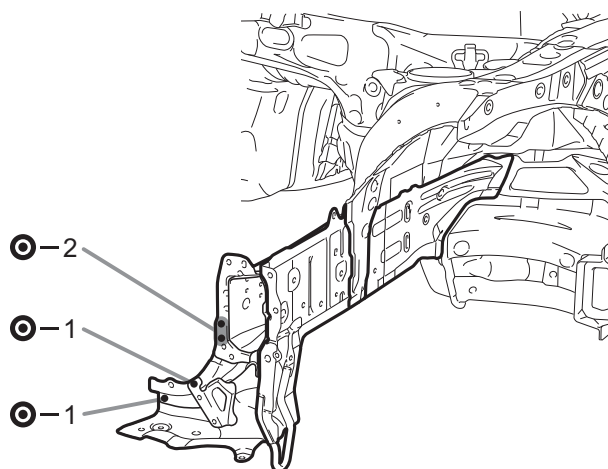
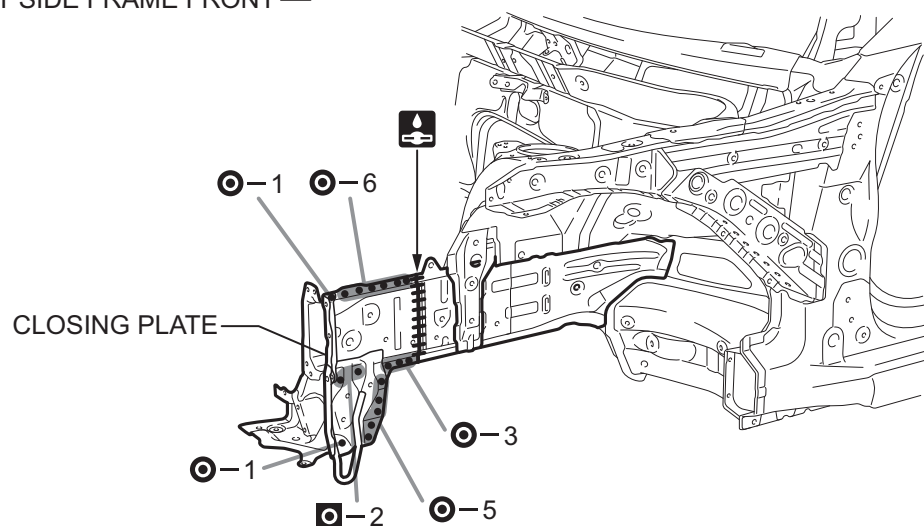
1. Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimensions)
2. After welding, apply body sealer and undercoating to the corresponding parts. (See the painting / coating)
3. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

WP

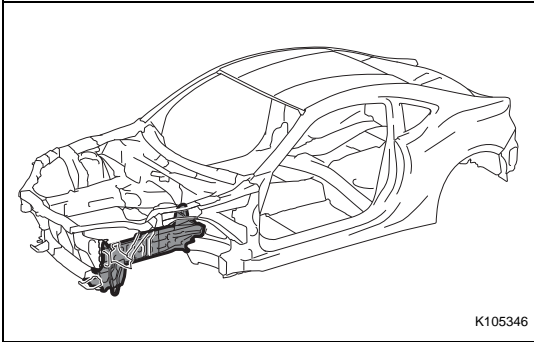
WP



FRONT SIDE FRAME FRONT



# ASSEMBLY REPLACEMENT (PATTERN 1)



With the radiator support and front fender mounting bracket removed.

WP

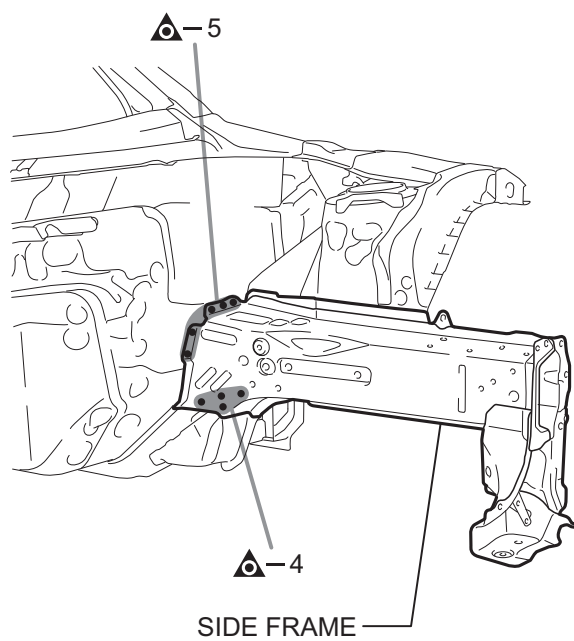
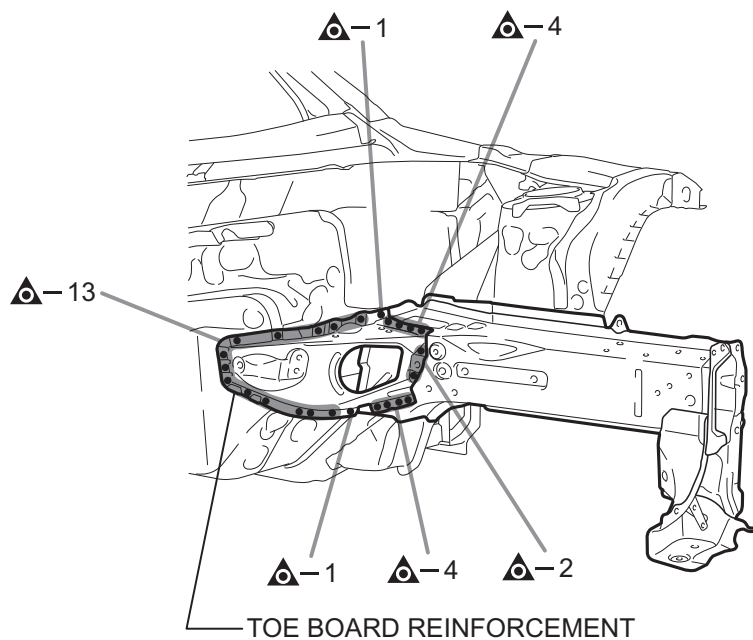
## 1. REMOVAL

Symbol meaning	
	Remove Weld Points
	Remove Weld Points
	Cut with Disk Sander etc.

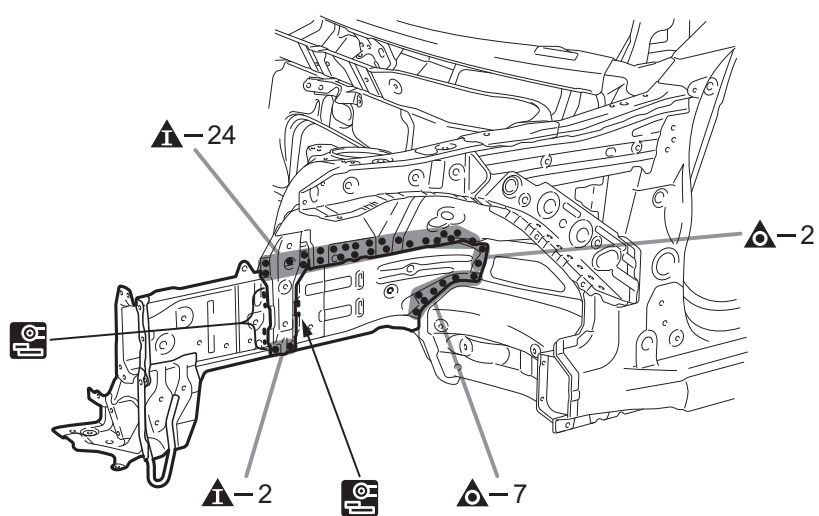
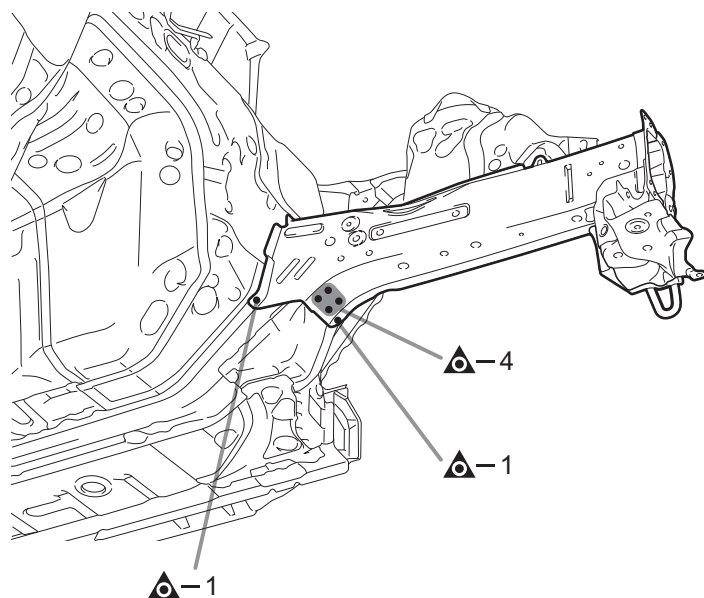
## REMOVAL POINT

1. After removing the toe board reinforcement, remove the side frame.





WP





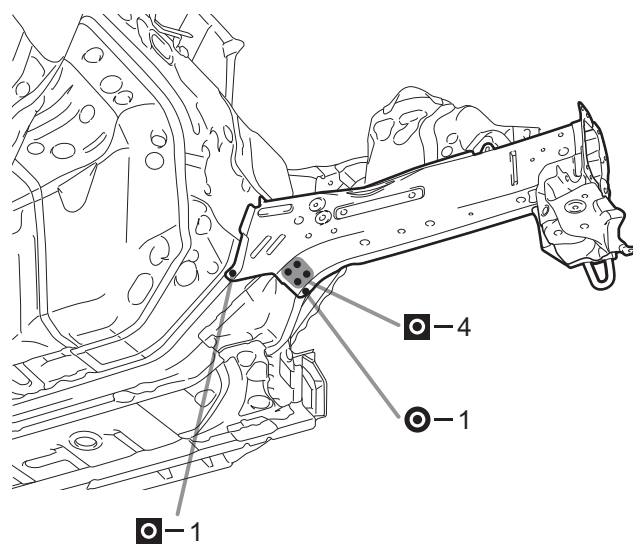
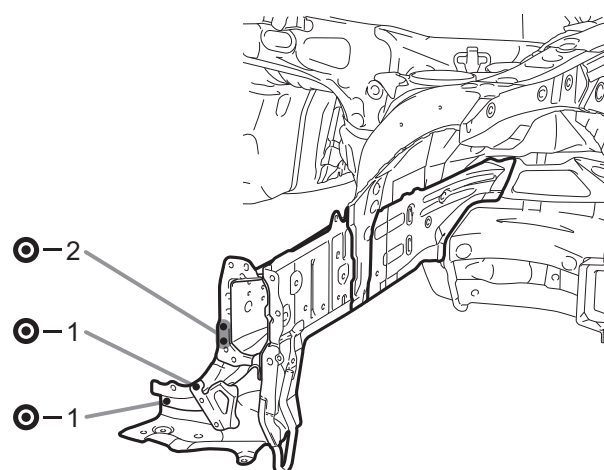
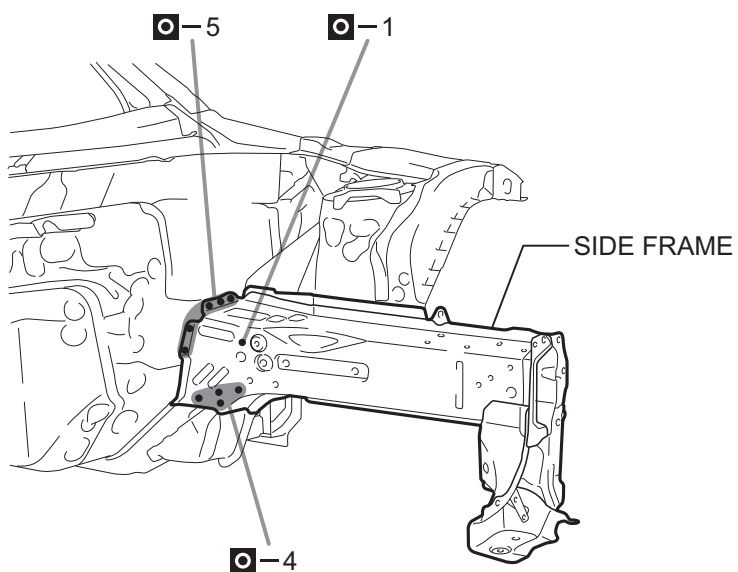


## 2. INSTALLATION

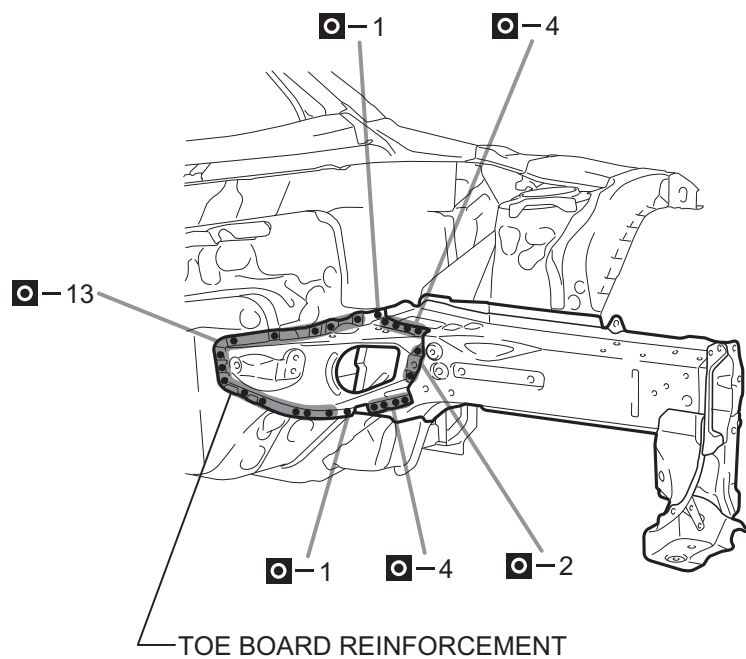
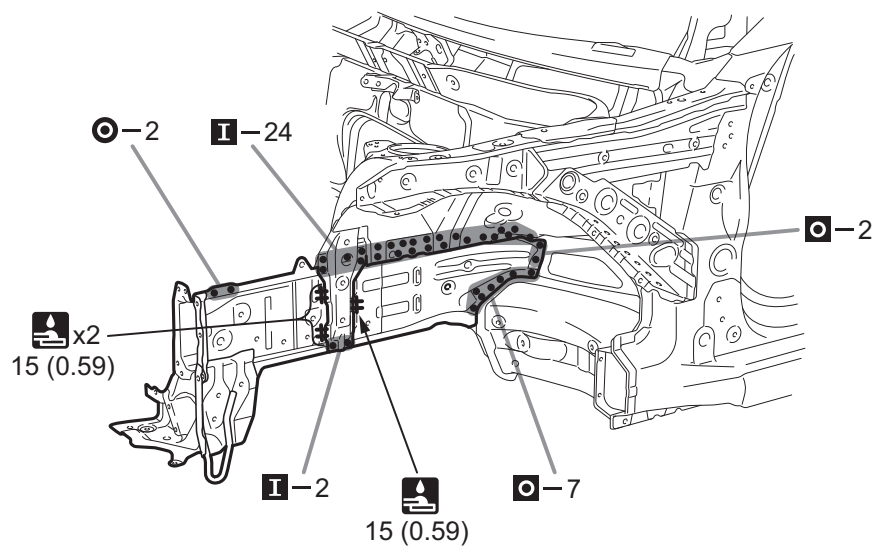
Symbol meaning	
	Spot Weld
	Plug Weld
	Plug Weld
	Fillet Weld

### INSTALLATION POINT

1. Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimensions)
2. After welding the side frame to the vehicle side, install the toe board reinforcement.
3. Make sure to attach correctly in accordance with the body dimension diagram as this part affects the front wheel alignment.
4. After welding, apply body sealer and undercoating to the corresponding parts. (See the painting / coating)
5. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

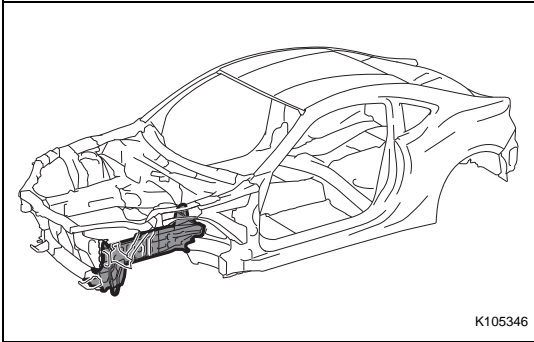


WP



mm (in.)


# ASSEMBLY REPLACEMENT (PATTERN 2)



With the radiator support and front fender apron removed.

WP

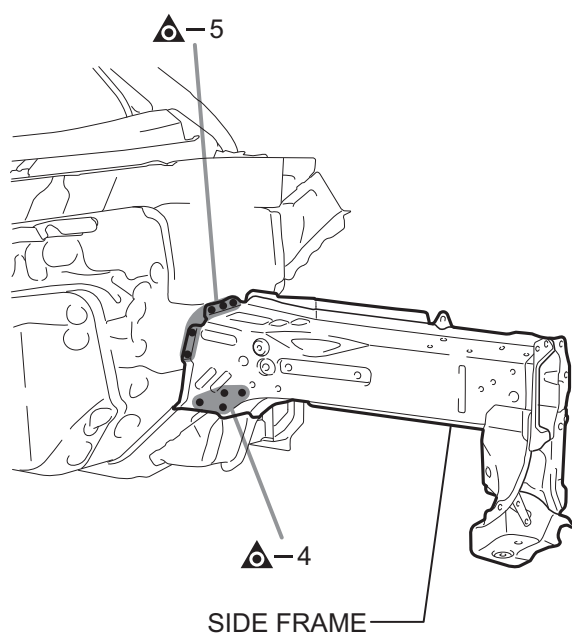
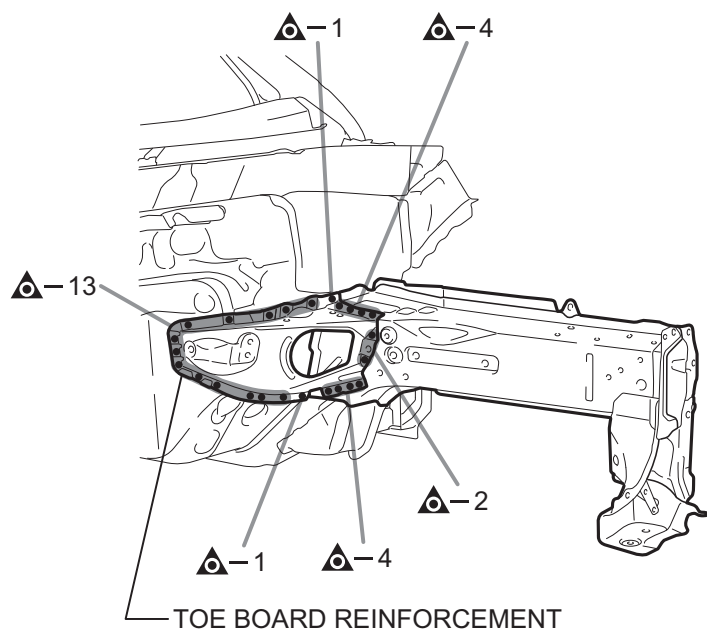
## 1. REMOVAL

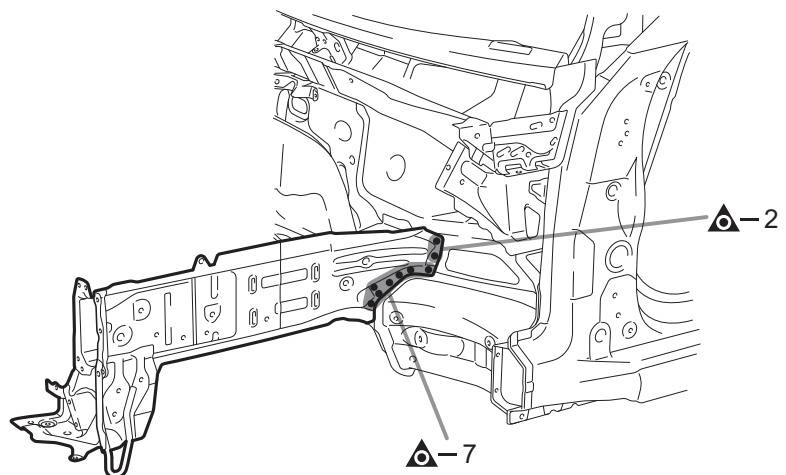
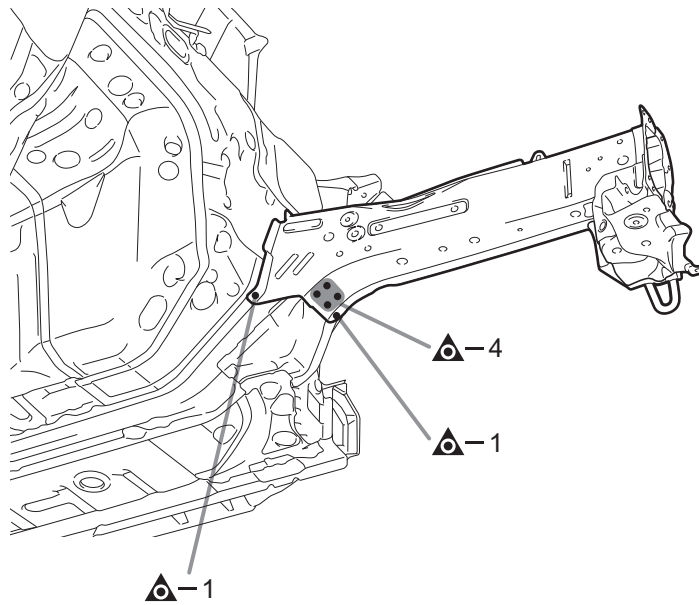
Symbol meaning	
	Remove Weld Points

## REMOVAL POINT



1. After removing the toe board reinforcement, remove the side frame.

WP





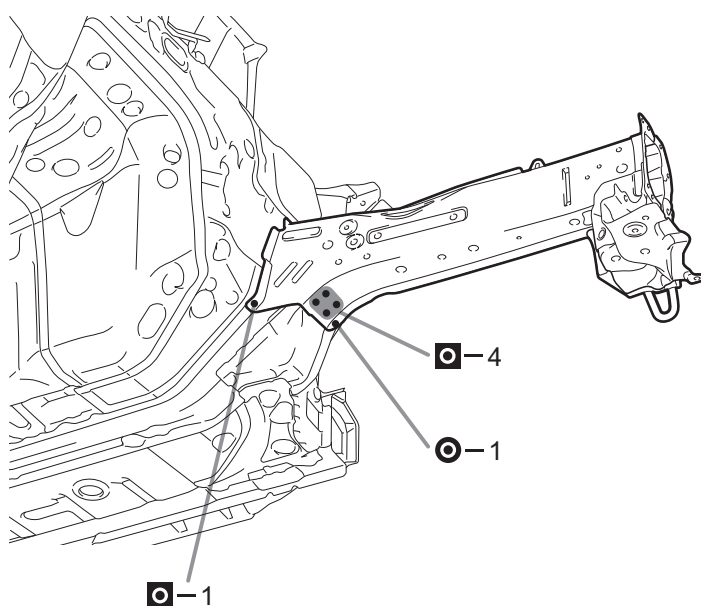
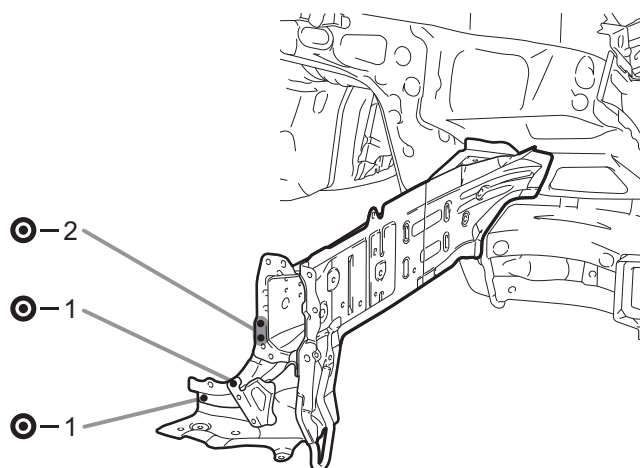
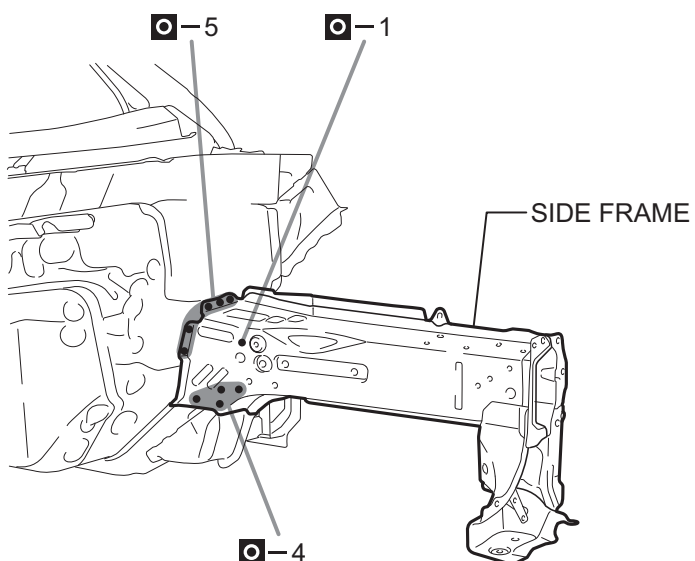
## 2. INSTALLATION

Symbol meaning	
	Spot Weld
	Plug Weld

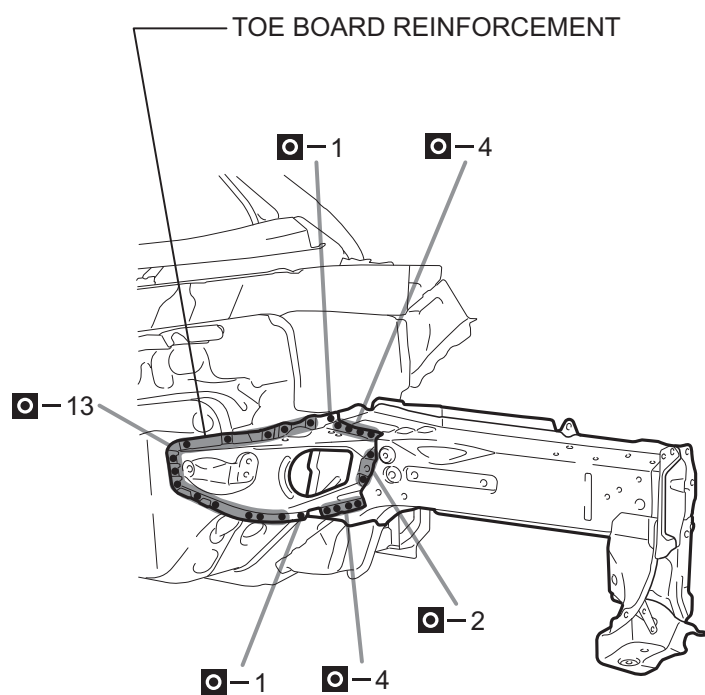
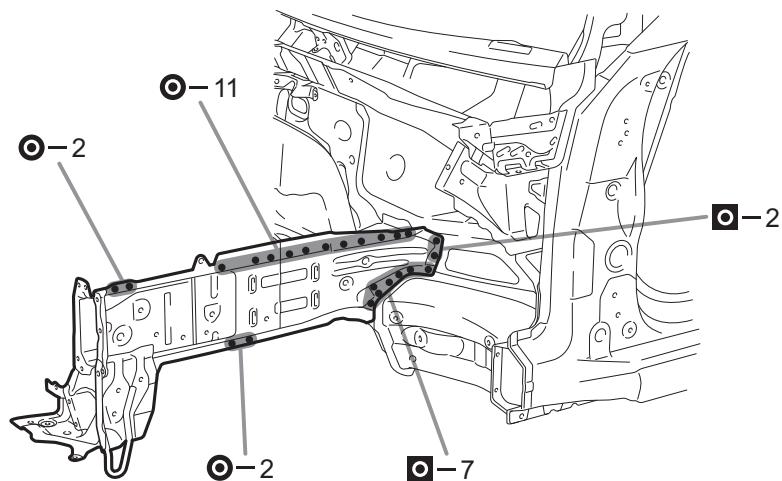
### INSTALLATION POINT

1. Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimensions)
2. After welding the side frame to the vehicle side, install the toe board reinforcement.
3. Make sure to attach correctly in accordance with the body dimension diagram as this part affects the front wheel alignment.
4. After welding, apply body sealer and undercoating to the corresponding parts. (See the painting / coating)
5. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.



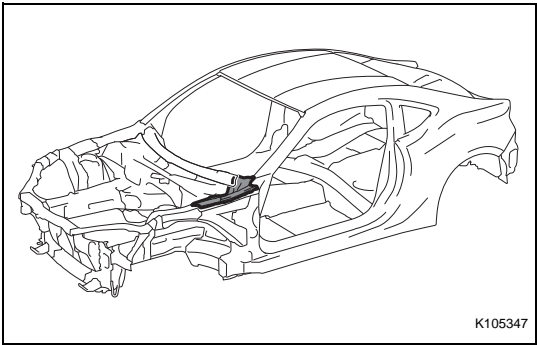


WP






# COWL TOP TO APRON BRACE

## ASSEMBLY REPLACEMENT



WP

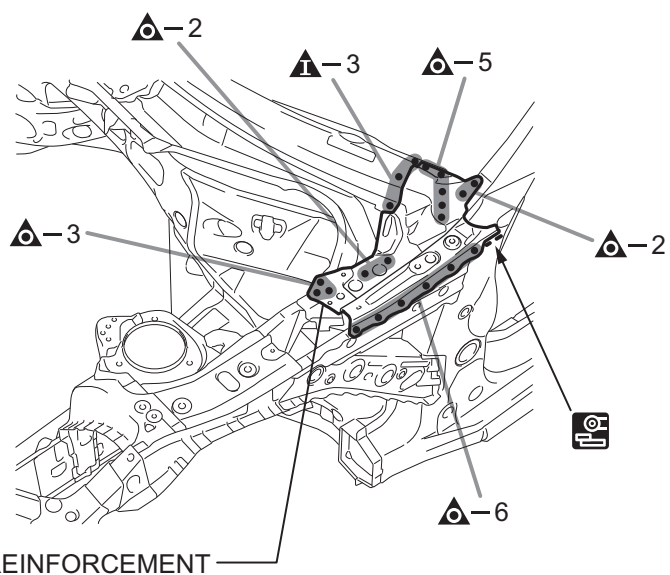
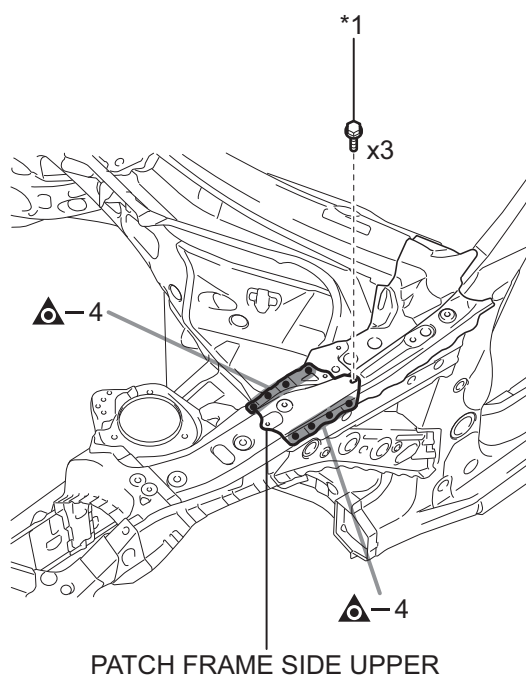
### 1. REMOVAL

Symbol meaning	
	Remove Weld Points
	Remove Weld Points
	Cut with Disk Sander etc.





### REMOVAL POINT

- \*1: Bolts.
- After removing the patch frame side upper, remove the front side panel reinforcement.

WP



**2. INSTALLATION**

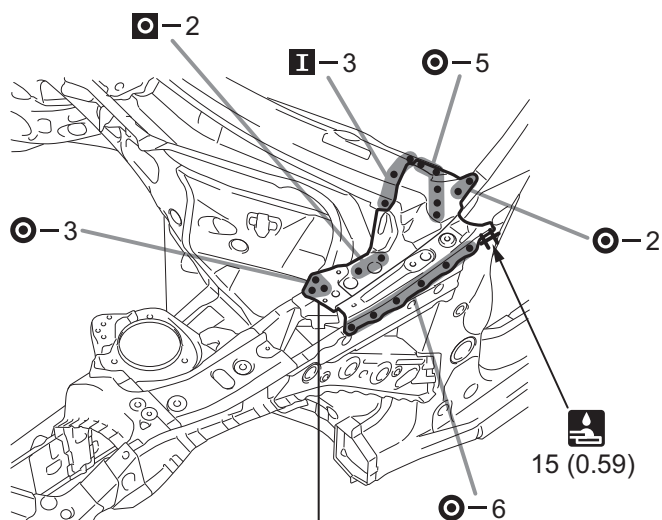
Symbol meaning	
	Spot Weld
	Plug Weld
	Plug Weld
	Fillet Weld

**INSTALLATION POINT**

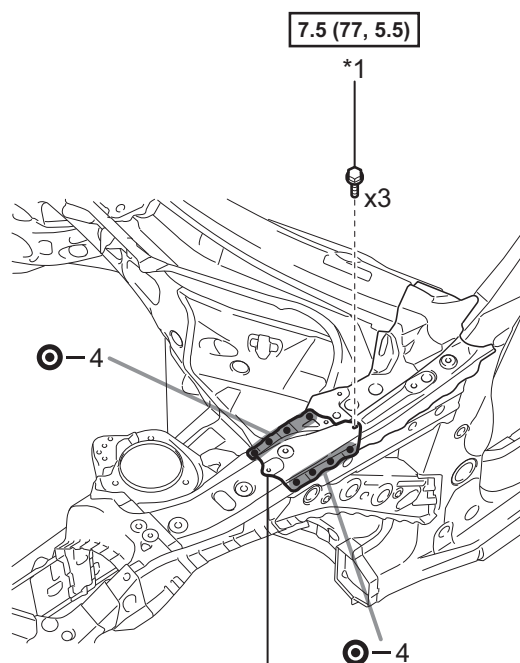
1. Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
2. Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
3. \*1: Bolts.
4. After welding the front side panel reinforcement to the vehicle side, install the patch frame side upper.
5. After welding, apply body sealer to the corresponding parts. (See the painting / coating)
6. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

WP

WP



FRONT SIDE PANEL REINFORCEMENT



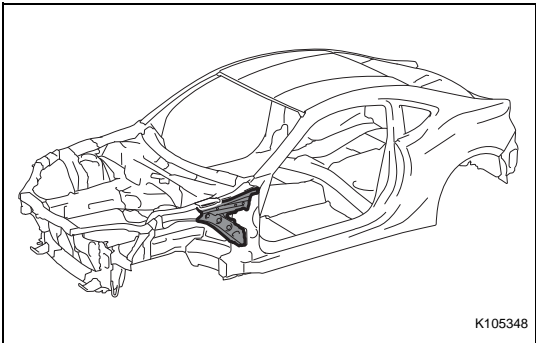
PATCH FRAME SIDE UPPER

$\boxed{\text{N}\cdot\text{m} \text{ (kgf}\cdot\text{cm, ft.}\cdot\text{lbf)}}\text{: Specified torque}$

mm (in.)

# FRONT BODY PILLAR LOWER GUSSET





## ASSEMBLY REPLACEMENT



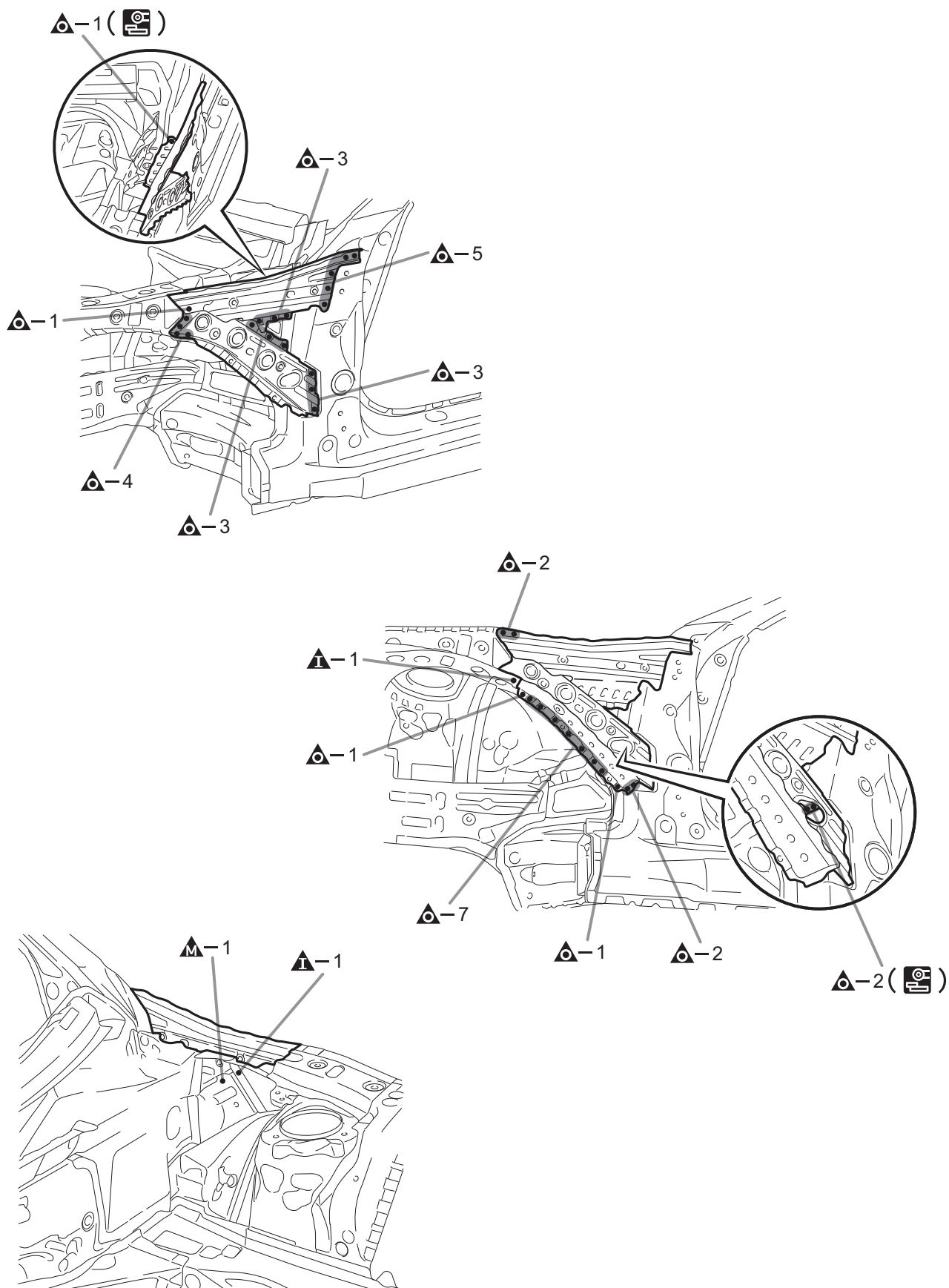
With the cowl top to apron brace removed.

WP

### 1. REMOVAL





Symbol meaning	
	Remove Weld Points
	Remove Weld Points
	Remove Weld Points
	Cut with Disk Sander etc.

WP





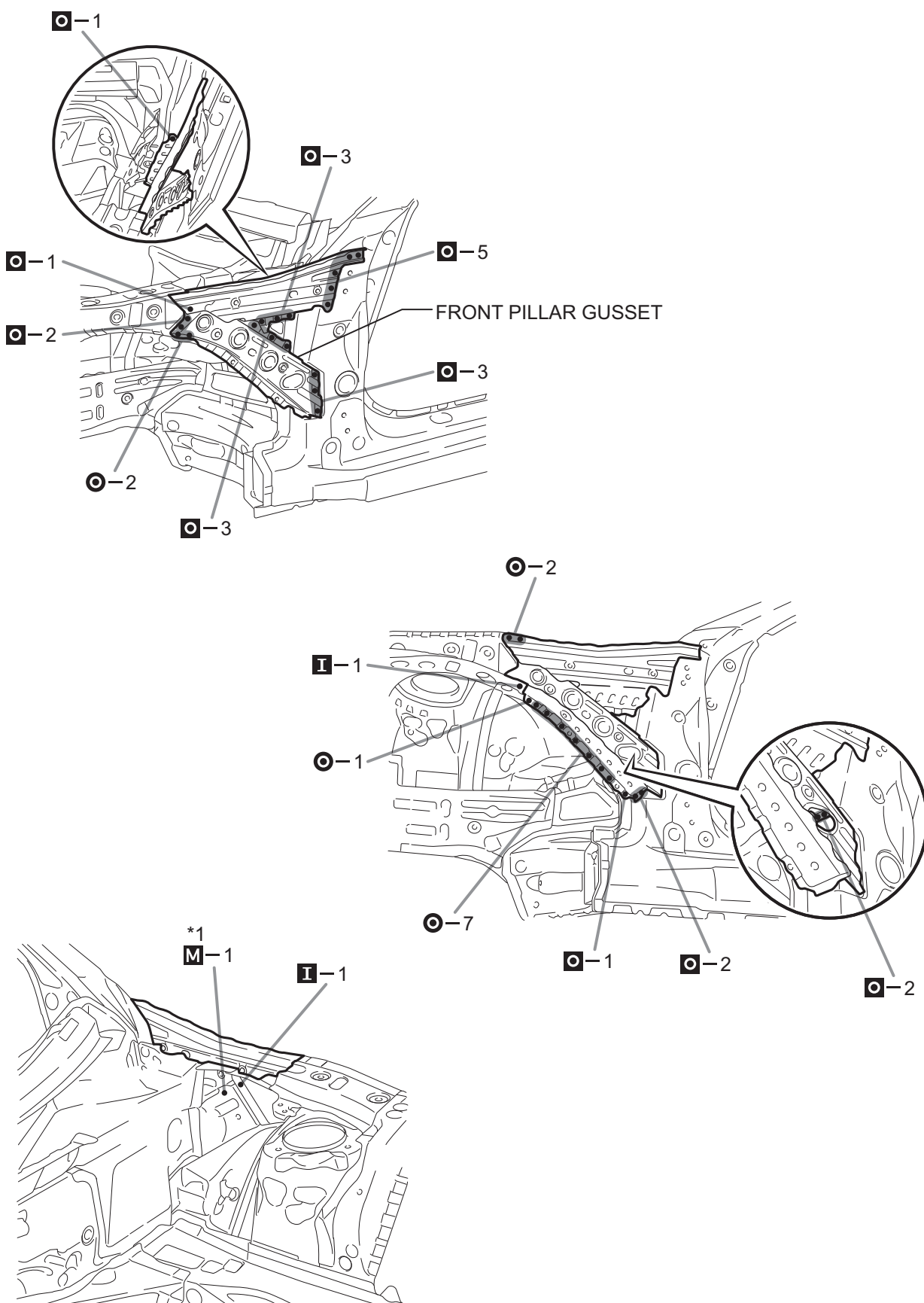
## 2. INSTALLATION

Symbol meaning	
	Spot Weld
	Plug Weld
	Plug Weld
	Plug Weld

### INSTALLATION POINT

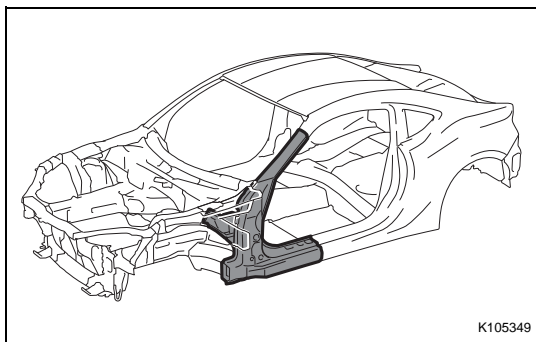
1. Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
2. Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimensions)
3. When welding \*1, make a hole on a new part for plug welding and weld the panel with the panel behind completely.
4. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

WP



# FRONT BODY PILLAR

## CUT AND JOIN REPLACEMENT SECTIONS



With the front body pillar lower gusset removed.

WP

### Weld work for 980 MPa ultra high strength steel


To assure sufficient weld strength, it is recommended to follow the welding conditions below when welding ultra high strength steel.

- It is recommended to perform spot welding according to board thickness and number of overlapping sheets under the following conditions (\*1 - \*3)
- When conditions can't be met, it is recommended to perform the plug welding following \*4.

Spot welding	*1	Compression	4.0 kN	Total number of 2 overlapping sheets
		Current	7.0 kA	
		Welding time	15 Cyc.	
	*2	Compression	3.5 kN	Total number of 3 overlapping sheets
		Current	7.0 kA	
		Welding time	25 Cyc.	
	*3	Compression	4.4 kN	
		Current	7.5 kA	
		Welding time	20 Cyc.	
Plug welding	*4	Plug diameter	8 mm (0.31 in) or more	Total number of 2 or 3 overlapping sheets
		Wire	AWS A5.18 ER70S	
		Gas	CO <sub>2</sub>	
		Plug diameter	8 mm (0.31 in) or more	
		Wire	AWS A5.18 ER70S-3	
		Gas	Gas mixture (argon: 80%, CO <sub>2</sub> : 20%)	

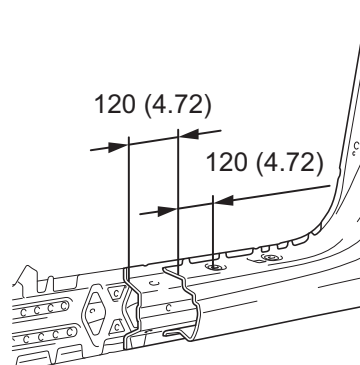
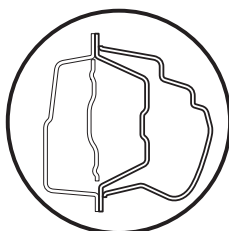
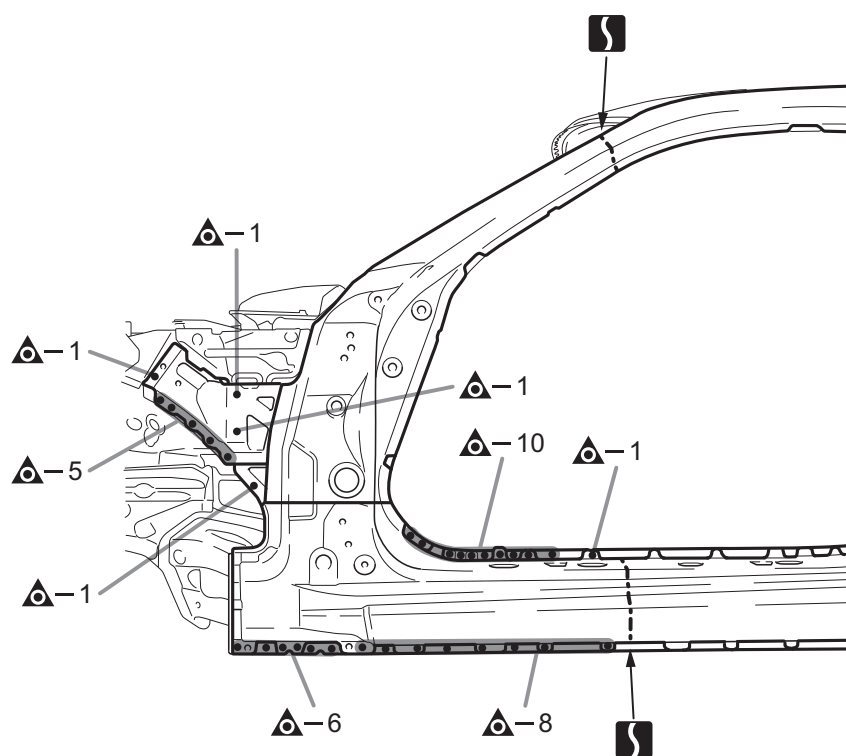
## 1. REMOVAL

Symbol meaning	
	Remove Weld Points
	Remove Weld Points
	Remove Weld Points
	Cut with Disc Sander etc.

Symbol meaning	
	Cut and Join Location

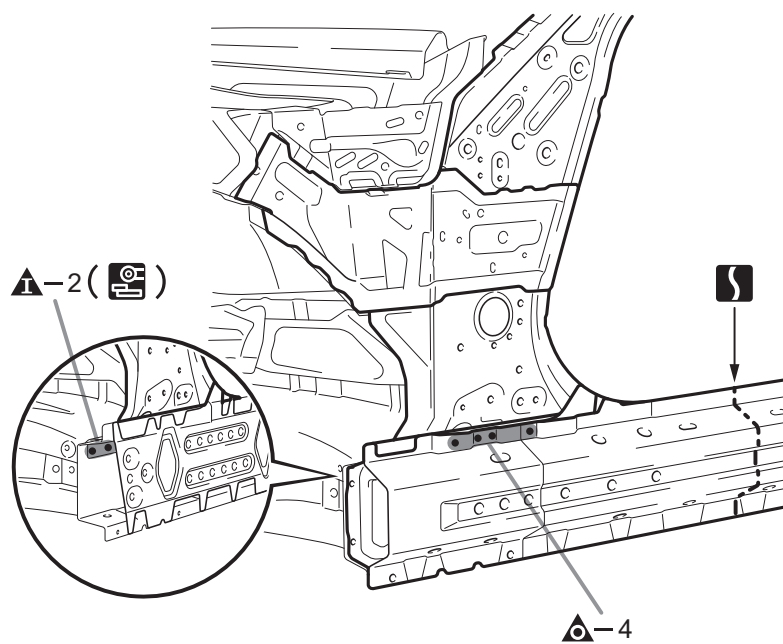
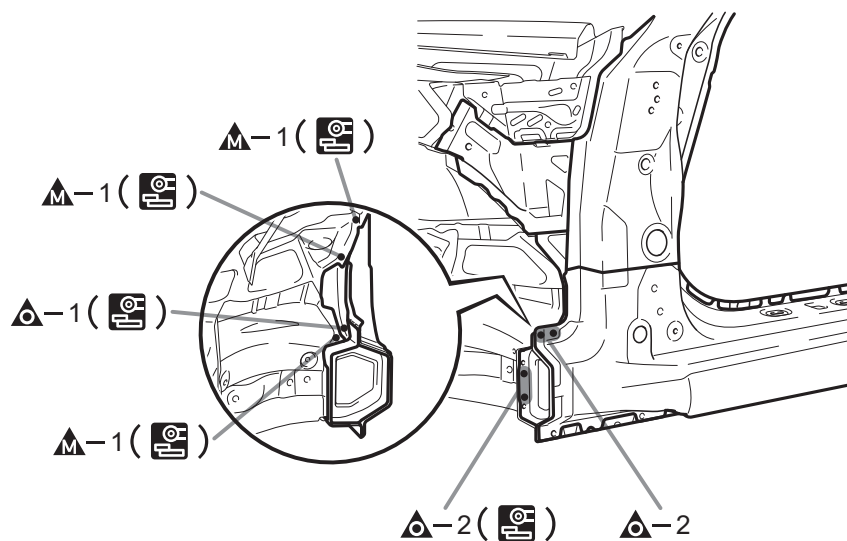
REMOVAL POINT

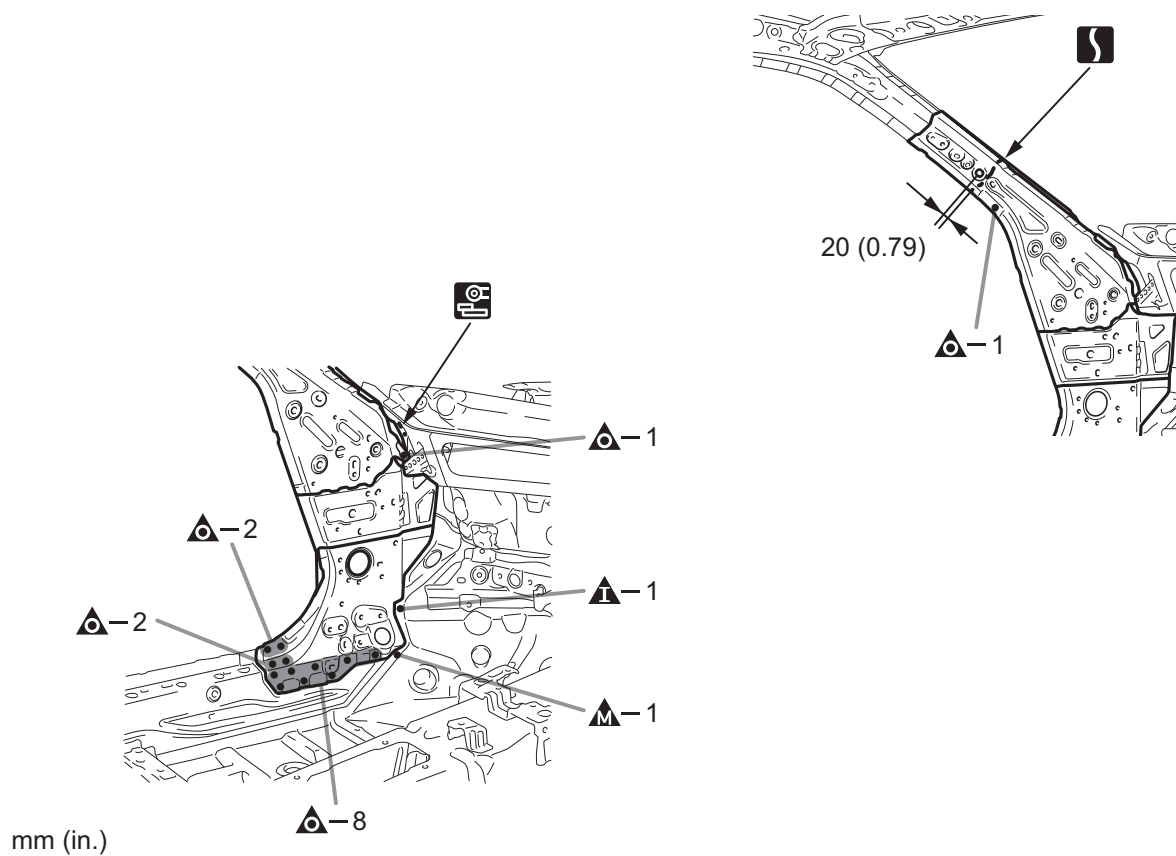
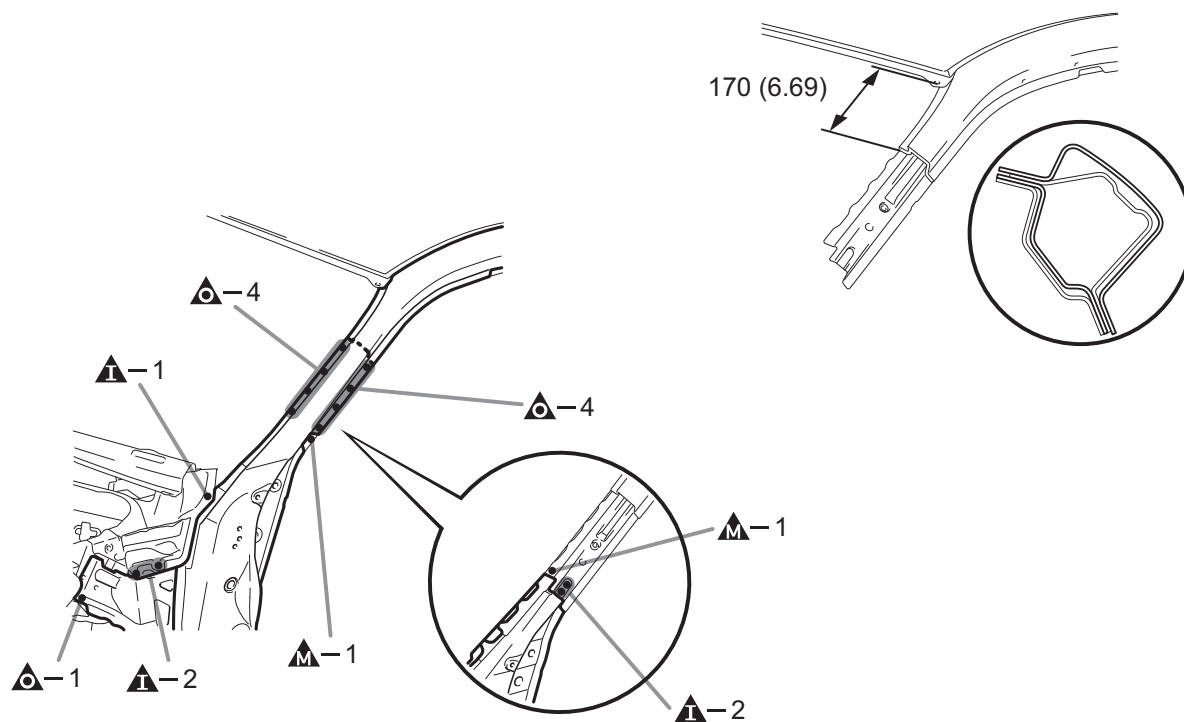
- 1. Do not butt weld or heat repair because the heat decreases the strength of areas where ultra high strength steel is used. (See the introduction)











mm (in.)

WP





## 2. INSTALLATION

Symbol meaning	
	Spot Weld
	Plug Weld
	Plug Weld
	Plug Weld
	Cut and Join Location
	Fillet Weld
	Butt Weld
	Body Sealer

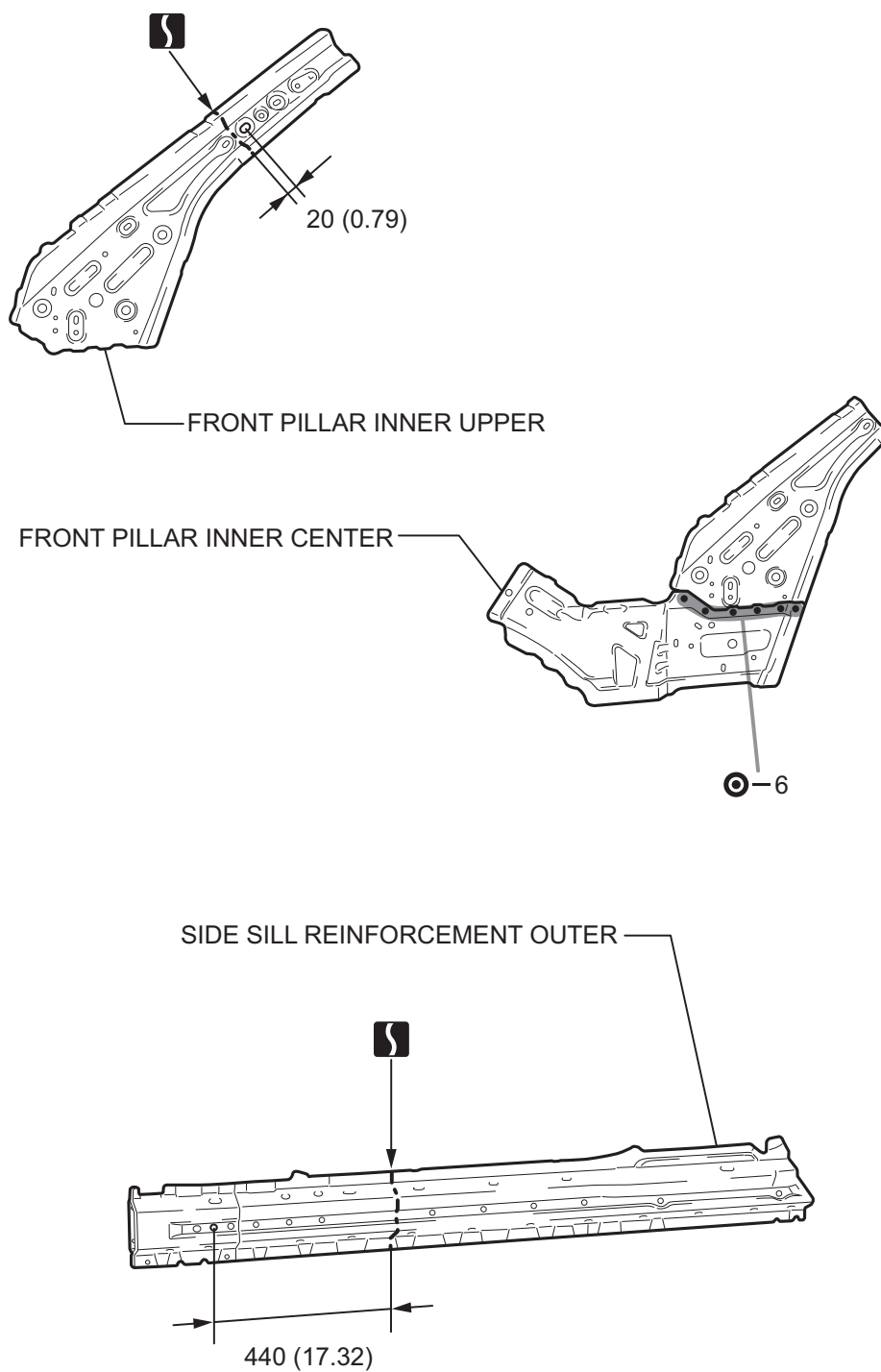
## INSTALLATION POINT

1. Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
2. Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimensions)
3. If the entire supply part is not needed, remove the part of the supply part that is needed.
4. Before installing a new part, apply body sealer.  
HINT:  
Apply body sealer in an even, continuous bead.
5. To assure sufficient weld strength, it is recommended to follow the welding conditions when welding \*1, \*2, \*3 or \*4. (See the introduction)
6. Before temporarily installing the new parts, weld the front pillar inner upper and front pillar inner center with the standard number of welding points.
7. When welding \*5, make a hole on a new part for plug welding and weld the panel with the panel.
8. After welding the front pillar inner lower the vehicle side, install the front pillar inner upper and front pillar inner center.
9. After welding the front pillar inner upper, front pillar inner center and front pillar inner lower the vehicle side, install the side sill reinforcement outer.
10. After welding the front pillar inner upper, front pillar inner center, front pillar inner lower and side sill reinforcement outer the vehicle side, install the front pillar reinforcement lower.
11. After welding the front pillar inner upper, front pillar inner center, front pillar inner lower, side sill reinforcement outer and front pillar reinforcement lower the vehicle side, install the front pillar outer and side sill outer.
12. After welding, apply body sealer to the corresponding parts. (See the painting / coating)

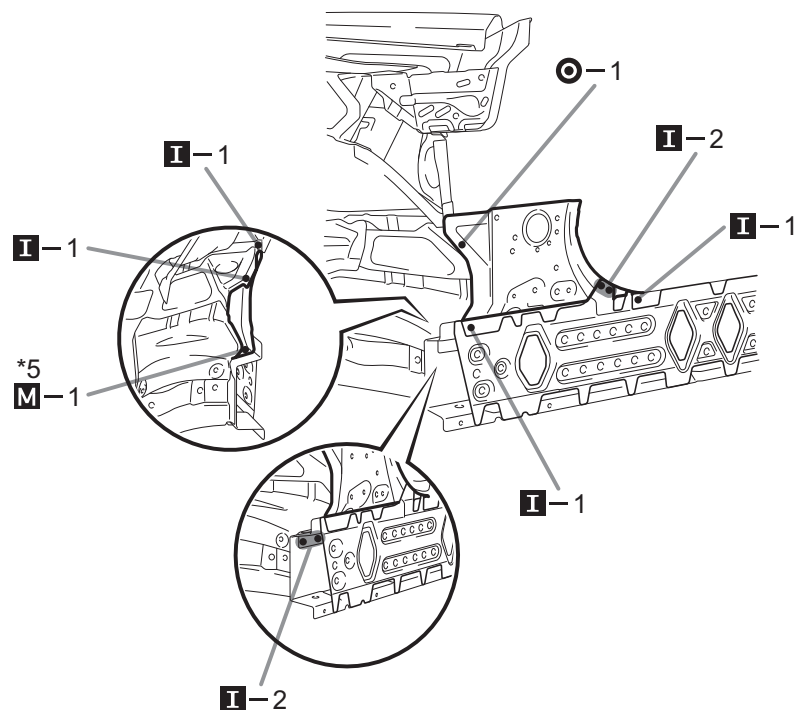


- 
13. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

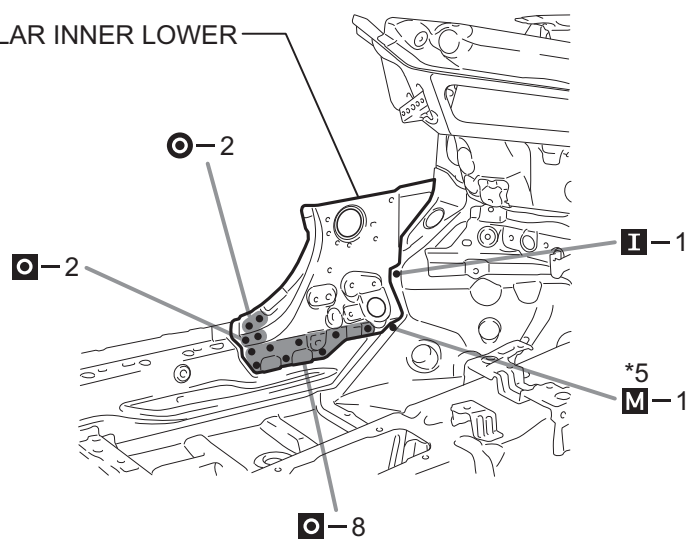
WP



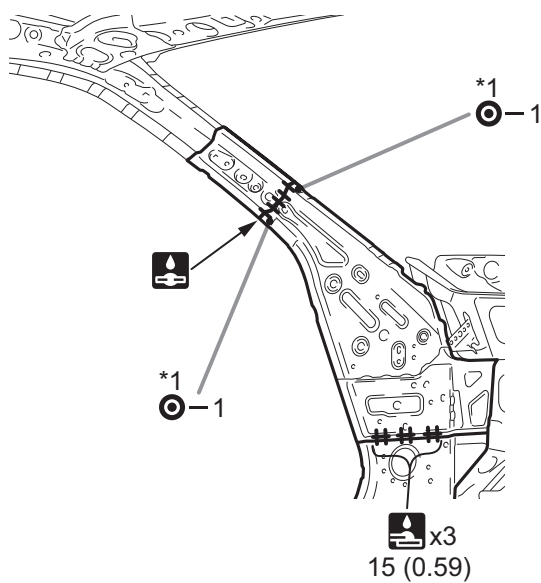
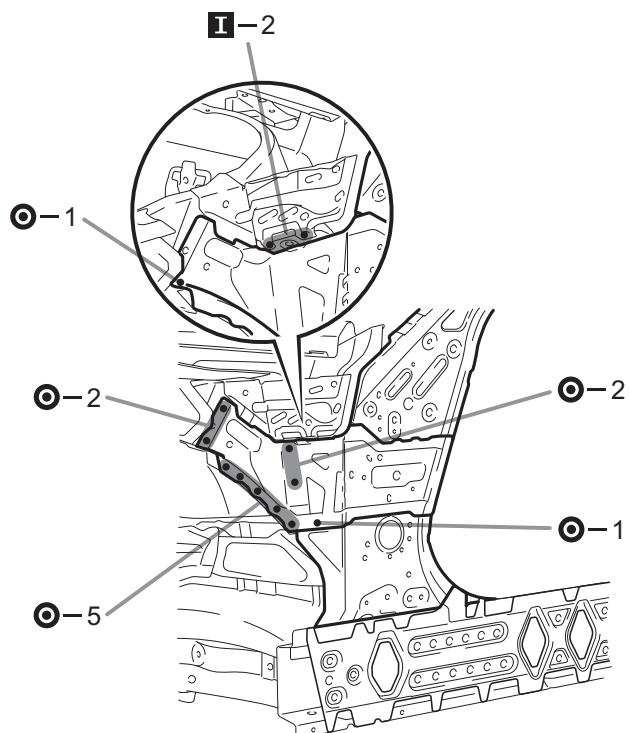
mm (in.)



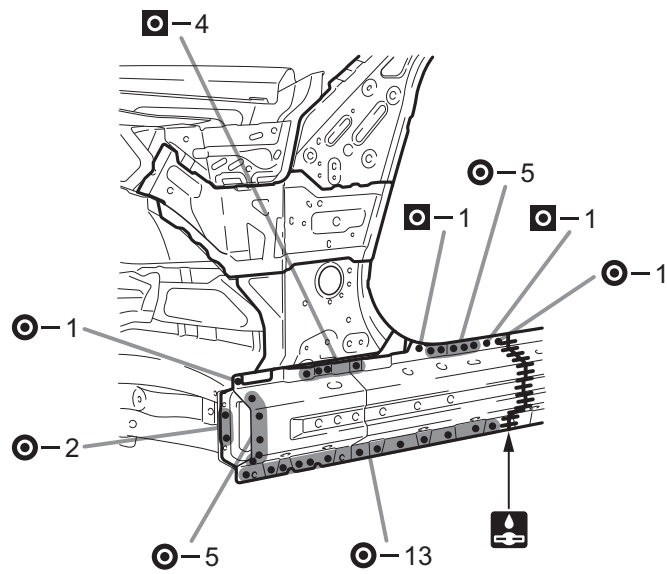
FRONT PILLAR INNER LOWER



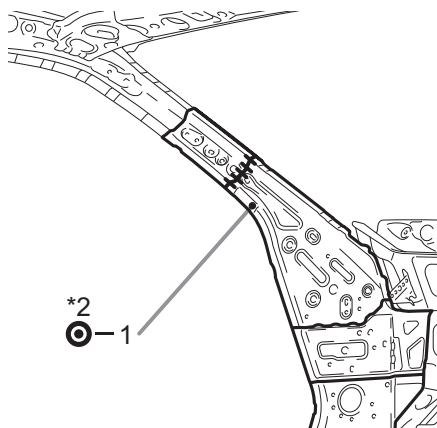
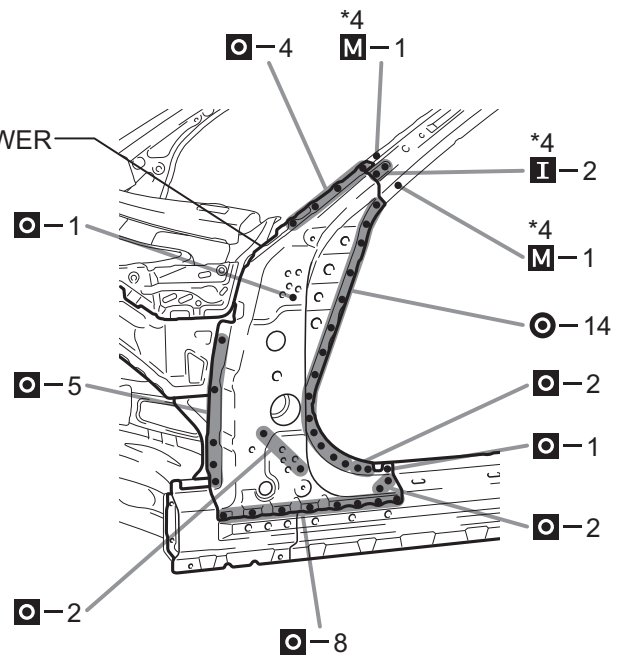
WP



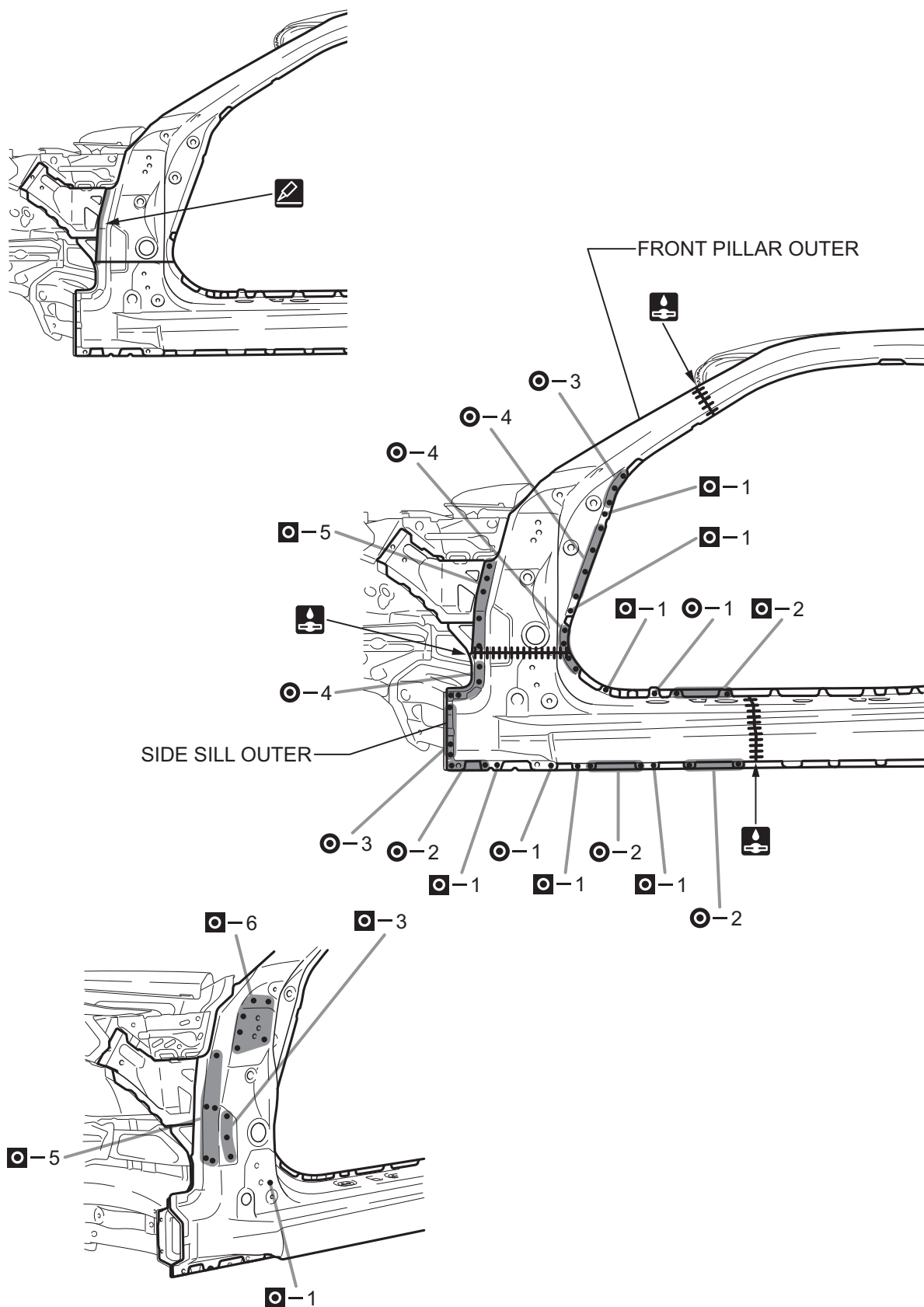
mm (in.)

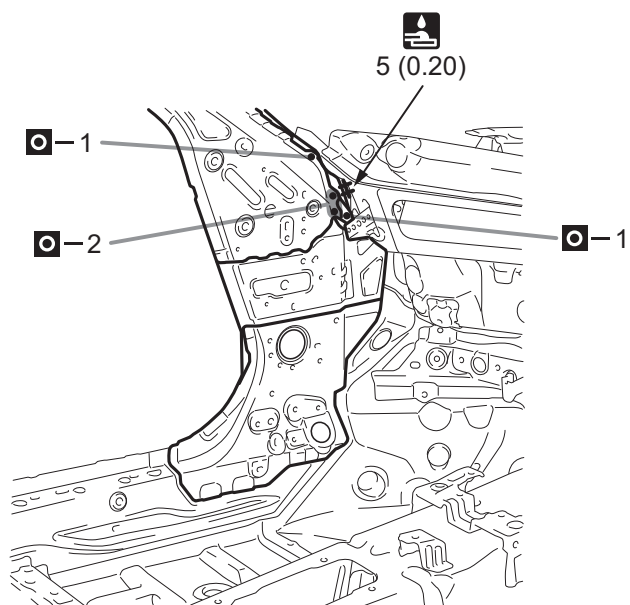
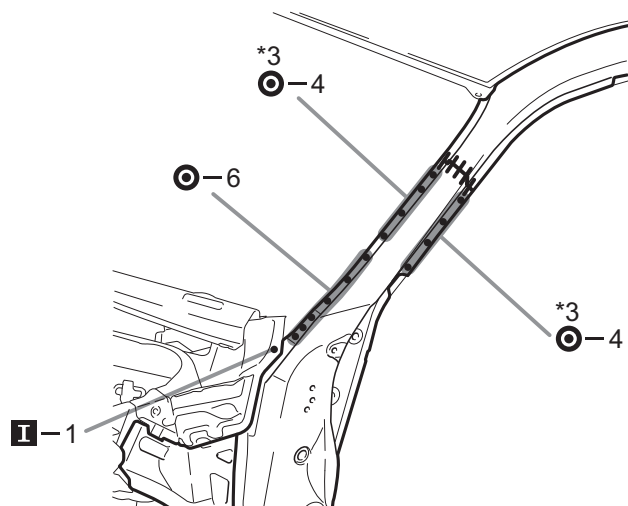


FRONT PILLAR REINFORCEMENT LOWER



WP

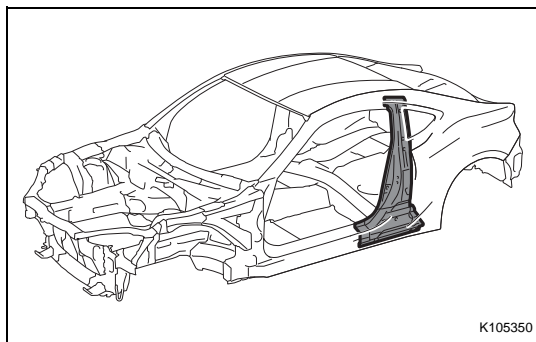




mm (in.)

# CENTER BODY PILLAR

## CUT AND JOIN REPLACEMENT SECTIONS



With the quarter panel removed.

### Weld work for 980 MPa ultra high strength steel

To assure sufficient weld strength, it is recommended to follow the welding conditions below when welding ultra high strength steel.

- It is recommended to perform spot welding according to board thickness and number of overlapping sheets under the following conditions (\*1 - \*3)
- When conditions can't be met, it is recommended to perform the plug welding following \*4.

Spot welding	*1	Compression	4.0 kN	Total number of 2 overlapping sheets
		Current	7.0 kA	
		Welding time	15 Cyc.	
	*2	Compression	3.5 kN	Total number of 3 overlapping sheets
		Current	7.0 kA	
		Welding time	25 Cyc.	
	*3	Compression	4.4 kN	
		Current	7.5 kA	
		Welding time	20 Cyc.	
Plug welding	*4	Plug diameter	8 mm (0.31 in) or more	Total number of 2 or 3 overlapping sheets
		Wire	AWS A5.18 ER70S	
		Gas	CO <sub>2</sub>	
		Plug diameter	8 mm (0.31 in) or more	
		Wire	AWS A5.18 ER70S-3	
		Gas	Gas mixture (argon: 80%, CO <sub>2</sub> : 20%)	

## 1. REMOVAL

Symbol meaning	
	Remove Weld Points
	Remove Weld Points
	Cut with Disc Sander etc.
	Cut and Join Location

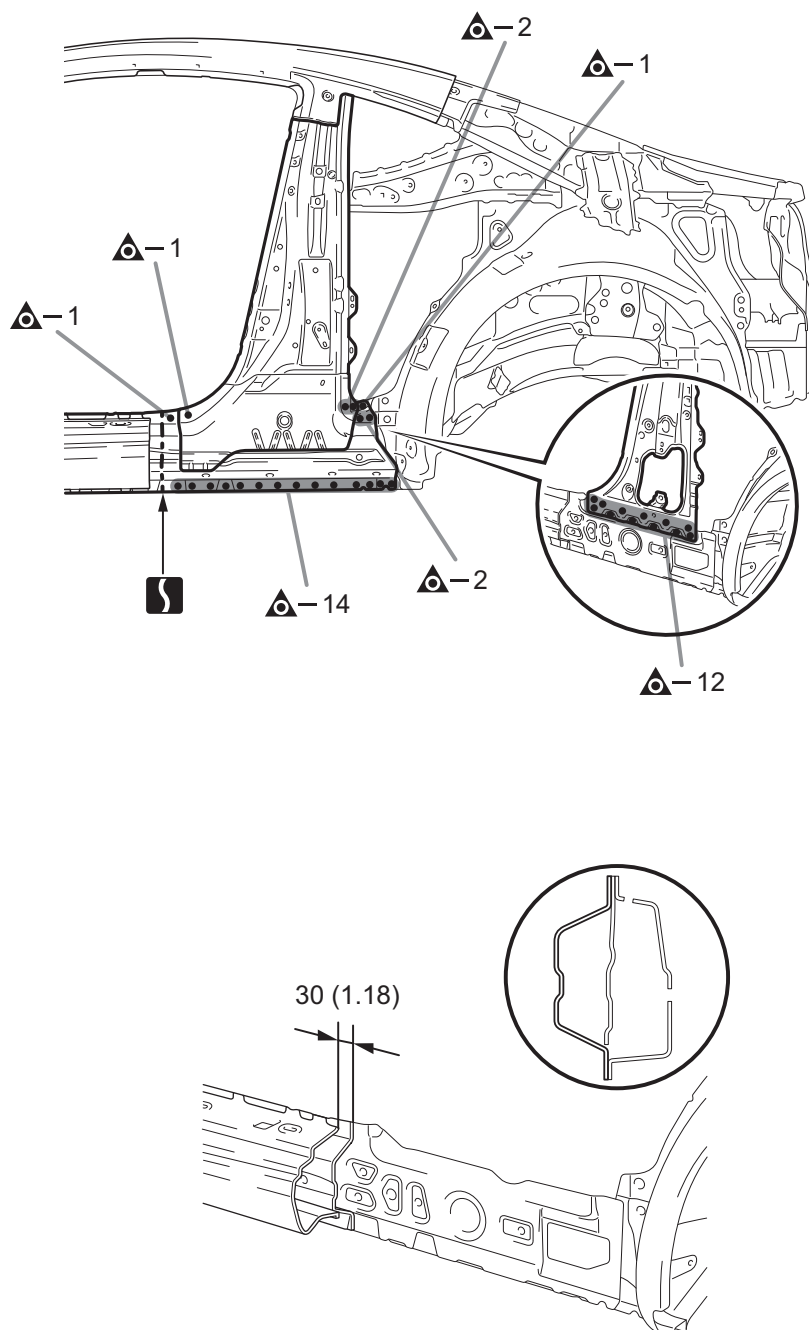


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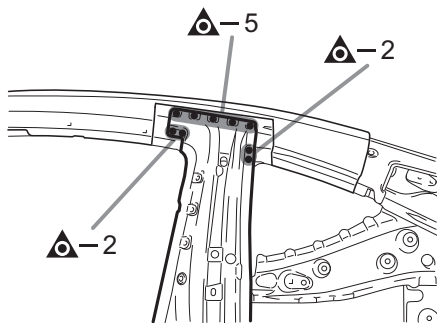
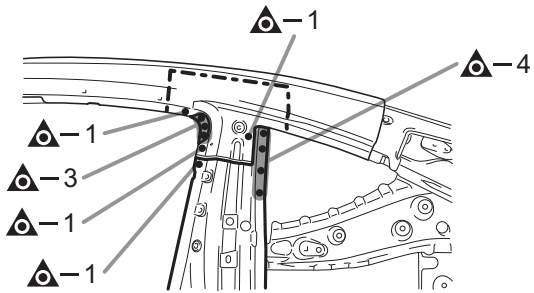
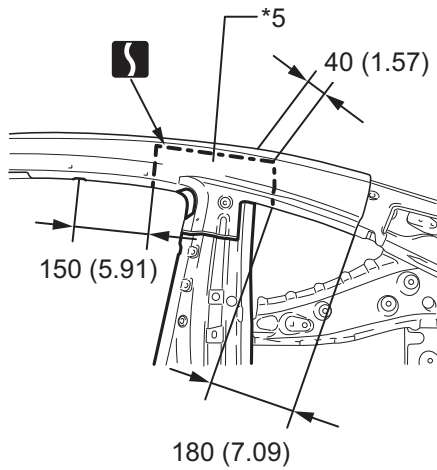
**REMOVAL POINT**

1. Do not butt weld or heat repair because the heat decreases the strength of areas where ultra high strength steel is used. (See the introduction)
2. \*5 is reused.

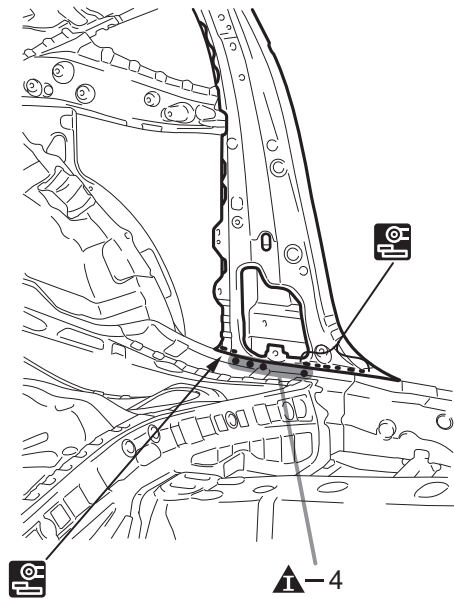
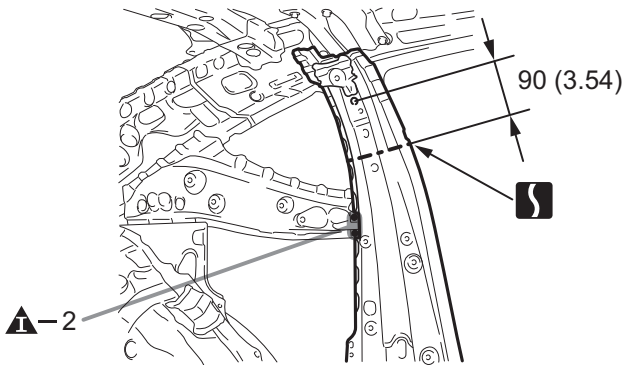
WP









mm (in.)



mm (in.)

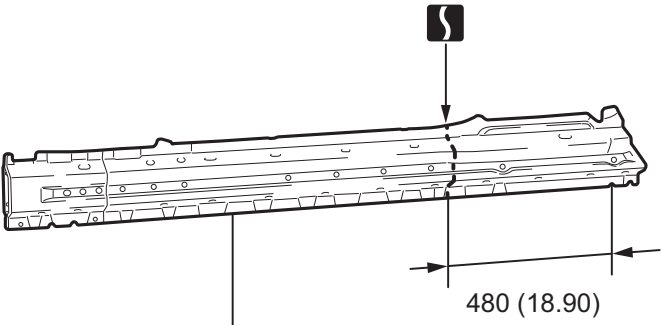


## 2. INSTALLATION

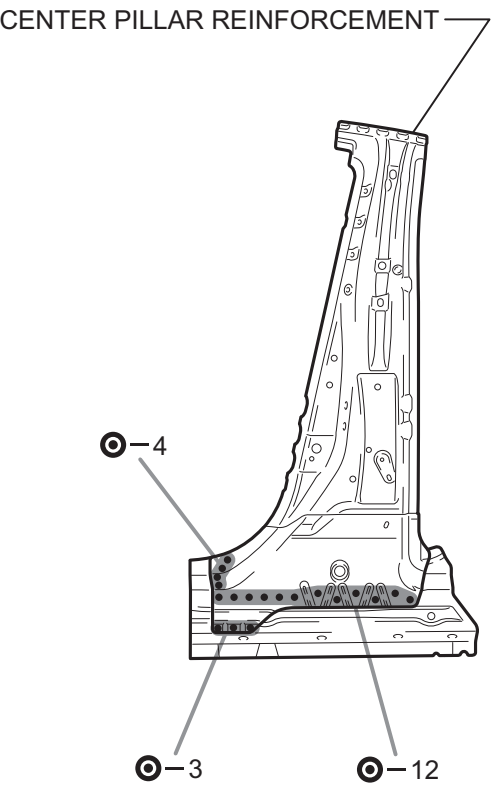
Symbol meaning	
	Spot Weld
	Plug Weld
	Plug Weld
	Cut and Join Location
	Fillet Weld
	Butt Weld

### INSTALLATION POINT

1. Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
2. Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimensions)
3. If the entire supply part is not needed, remove the part of the supply part that is needed.
4. To assure sufficient weld strength, it is recommended to follow the welding conditions when welding \*1, \*2, \*3 or \*4. (See the introduction)
5. Before temporarily installing the new parts, weld the center pillar reinforcement and side sill reinforcement outer with the standard number of welding points.
6. After welding the center pillar inner the vehicle side, install the center pillar reinforcement and side sill reinforcement outer.
7. After welding the center pillar inner, center pillar reinforcement and side sill reinforcement outer the vehicle side, install the \*5.
8. After welding, apply body sealer to the corresponding parts. (See the painting / coating)
9. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.



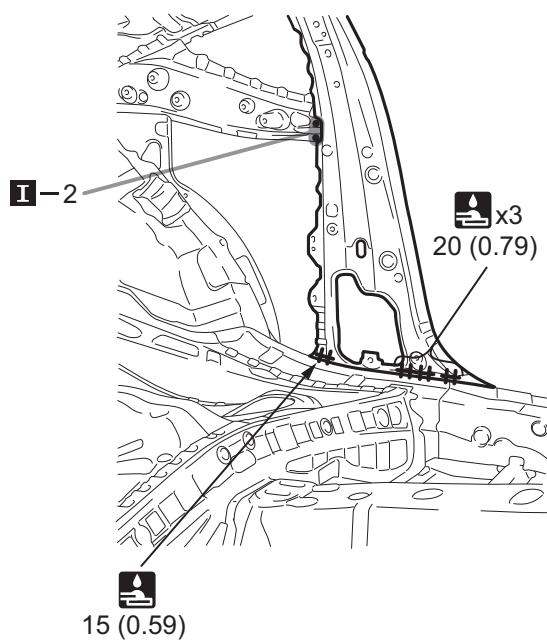
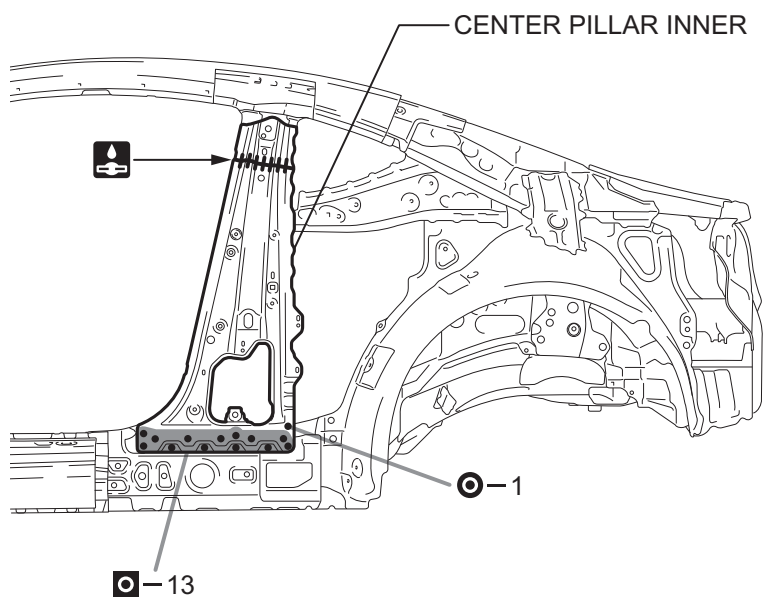
SIDE SILL REINFORCEMENT OUTER



CENTER PILLAR REINFORCEMENT

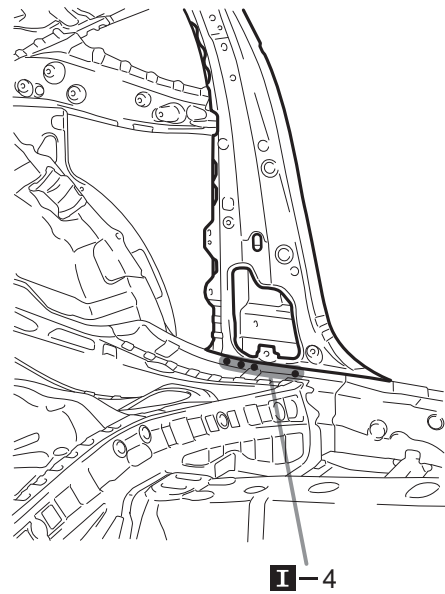
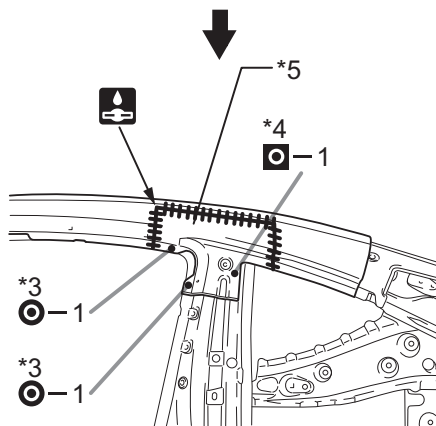
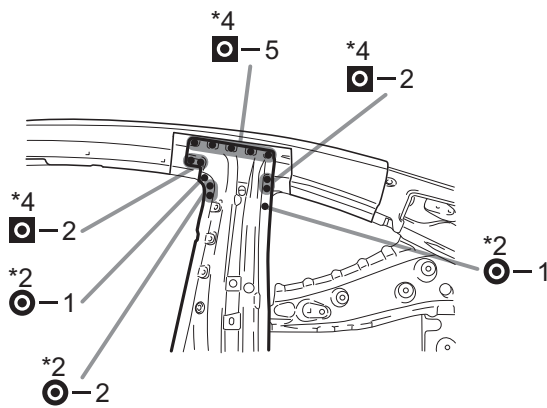
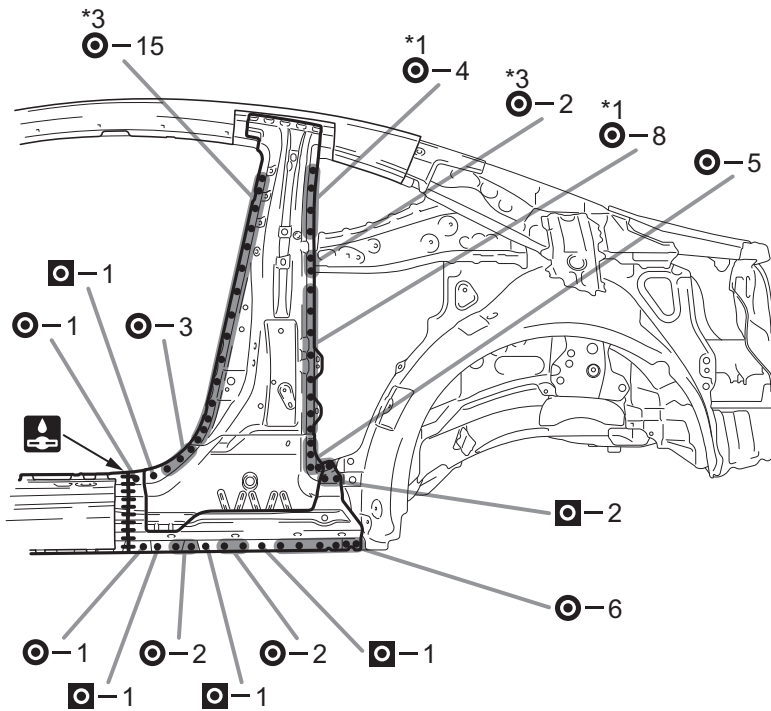
mm (in.)

WP



mm (in.)

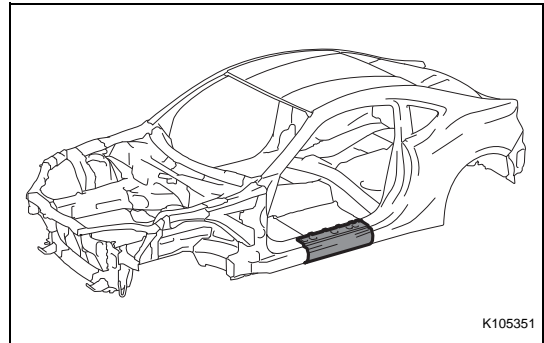
WP



# ROCKER OUTER PANEL

## CUT AND JOIN REPLACEMENT SECTIONS (SMALL AREAS)

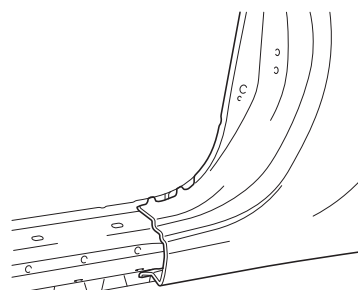
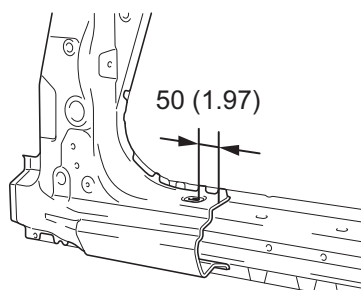
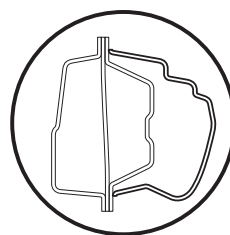
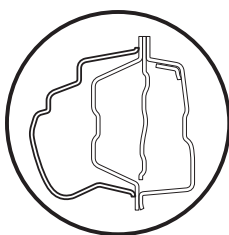
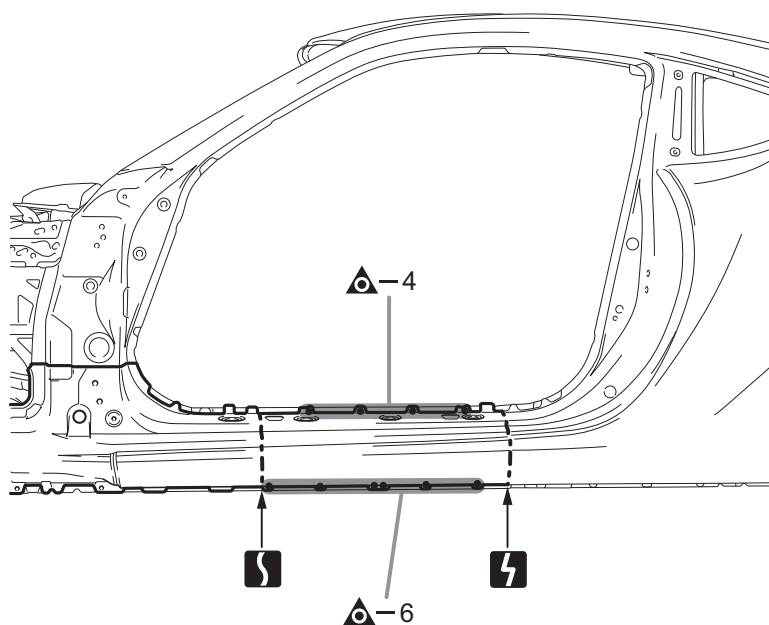
WP



### 1. REMOVAL




Symbol meaning	
	Remove Weld Points
	Cut and Join Location
	Cut Location for Supply Parts





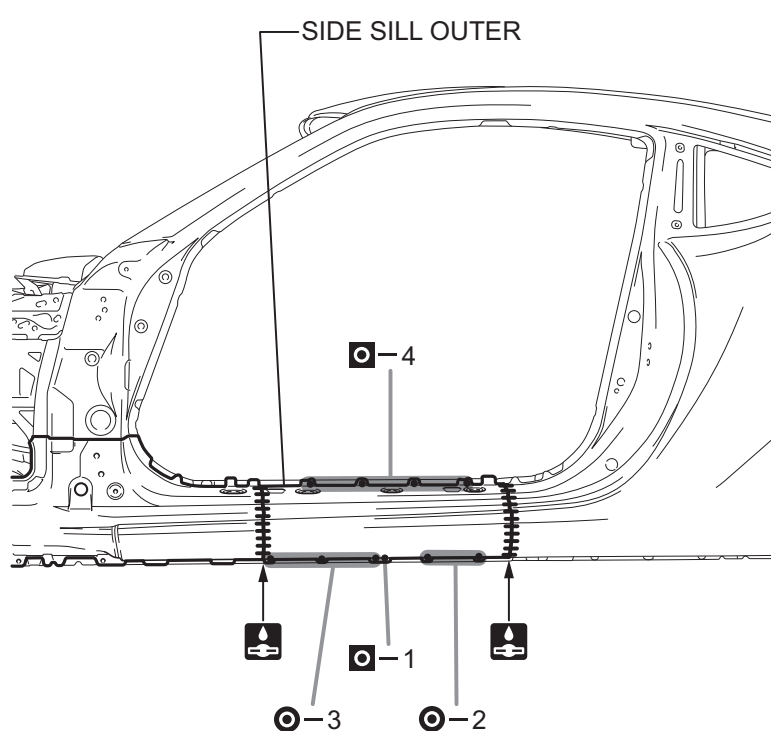
mm (in.)

2. INSTALLATION

Symbol meaning	
	Spot Weld
	Plug Weld
	Butt Weld

INSTALLATION POINT

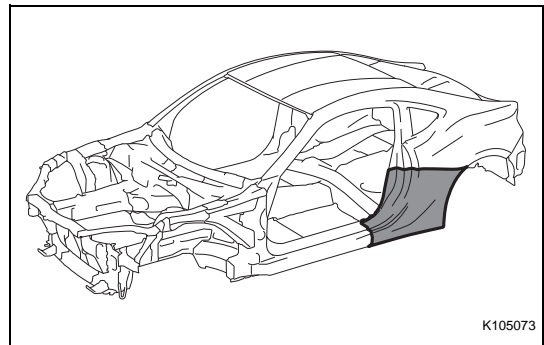
1. Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
2. Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimensions)
3. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.



# QUARTER PANEL

## CUT AND JOIN REPLACEMENT SECTIONS (SMALL AREAS)

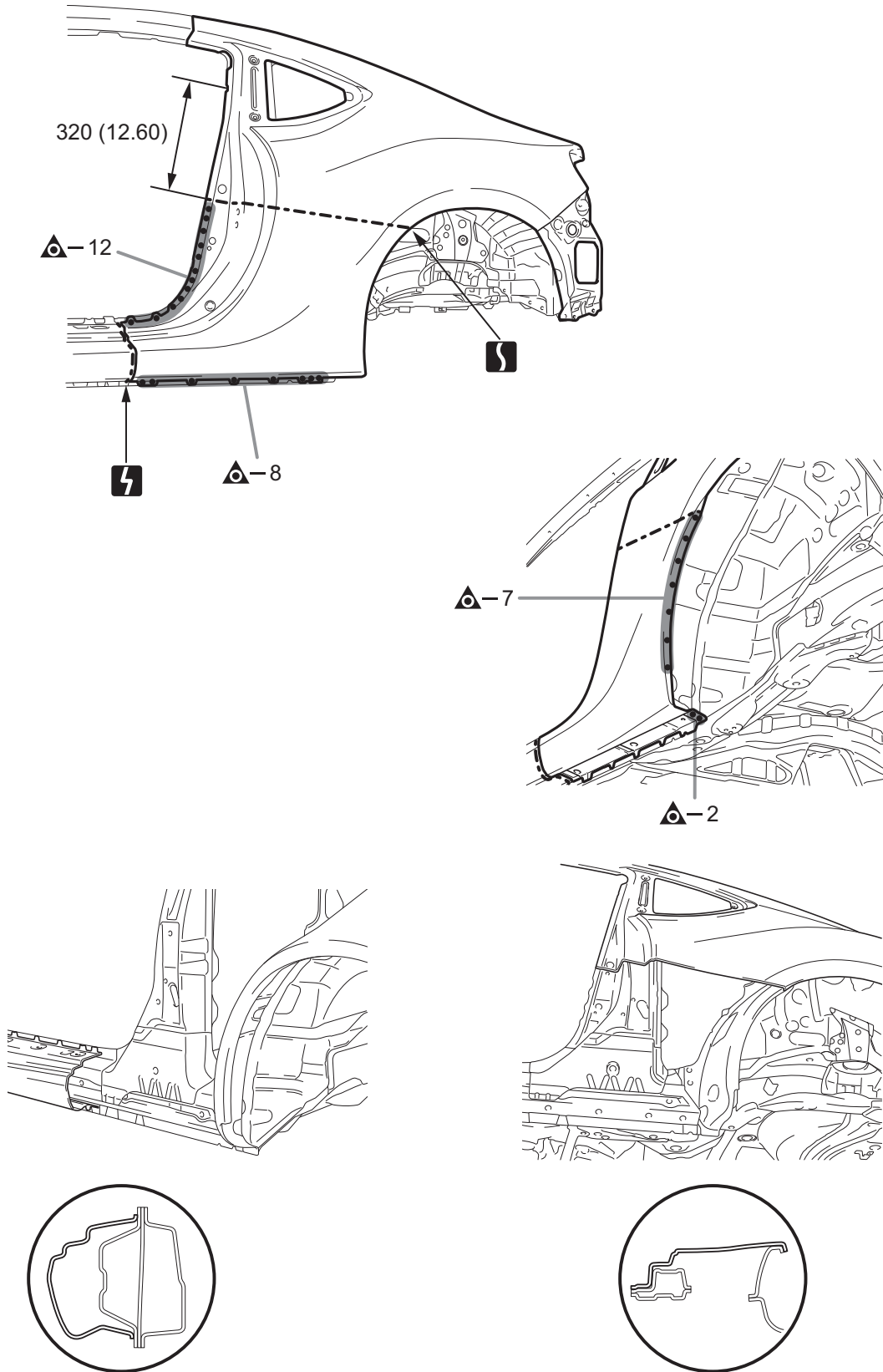
WP



### 1. REMOVAL




Symbol meaning	
	Remove Weld Points
	Cut and Join Location
	Cut Location for Supply Parts

WP



mm (in.)

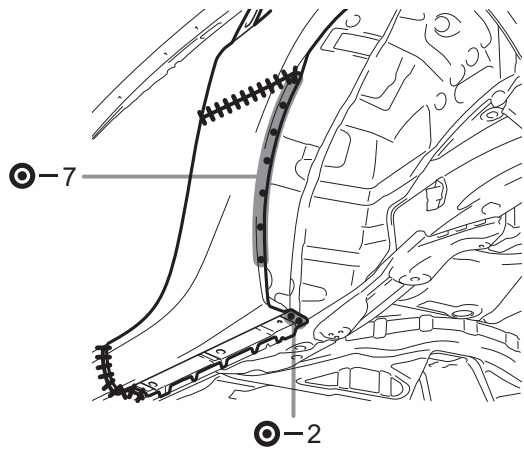
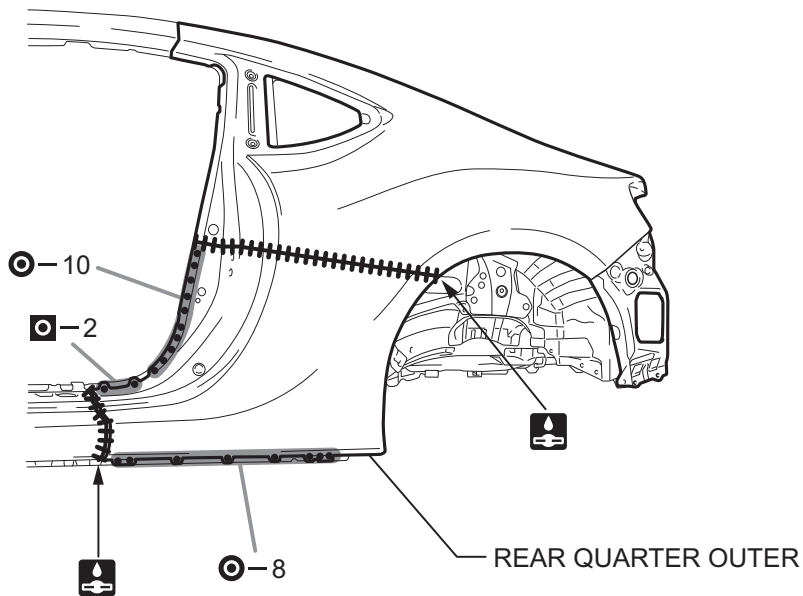
2. INSTALLATION

Symbol meaning	
	Spot Weld
	Plug Weld
	Butt Weld

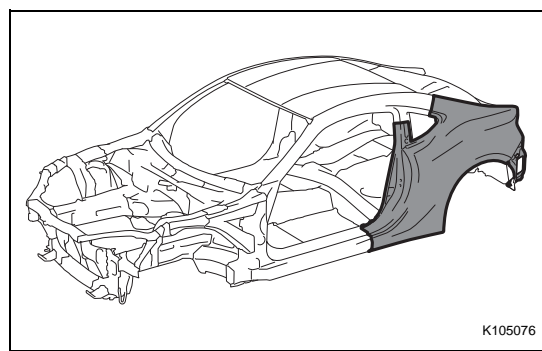
INSTALLATION POINT

1. Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
2. Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimensions)
3. After welding, apply body sealer and undercoating to the corresponding parts. (See the painting / coating)
4. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

WP



CUT AND JOIN REPLACEMENT SECTIONS




Quarter Panel Replacement Using Adhesive  
Work Procedure

1. Cut the wheel arch portion.
2. Heat the quarter panel adhesive area and remove the quarter panel.  
HINT:  
Using an industrial heater gun or gas burner, heat the quarter panel to 110 to 140°C. Make sure the quarter panel does not warp.
3. Clean off any adhesive that remains on the vehicle.  
HINT:
  - Using an industrial heater gun or gas burner, heat the adhesive to 110 to 140°C.
  - Using a scraper, scrape away the adhesive.
  - If adhesive remains, the strength of any subsequently applied adhesive will be weak.
4. Using a disc grinder or belt sander, scuff and sand any adhesive that remains on the vehicle.  
HINT:  
Scuff at a width of approximately 10 mm (0.39 in.) over the previous adhesive coating.
5. Apply adhesive to the exposed metal areas on the vehicle. Using a spatula, spread the adhesive evenly.
6. Apply adhesive to the vehicle again.
7. Using #60-120 grit sandpaper, scuff the adhesive application area on the new quarter panel.
8. Apply adhesive to the new quarter panel. Using a spatula, spread the adhesive evenly.
9. Using a vise grip or the palms of your hands, press the quarter panel so that the thickness of the adhesive is even.
10. Complete installation the new quarter panel.
11. Dry the adhesive areas of the new quarter panel.  
HINT:
  - With dryer or equivalent (60°C): 60 minutes (complete hardening: 90 minutes)
  - Ambient temperature (25°C): 12 hours (complete hardening: 24 hours)

1. REMOVAL

Symbol meaning	
	Remove Weld Points
	Remove Weld Points
	Remove Weld Points
	Cut and Join Location



Symbol meaning	
	Cut Location for Supply Parts

**REMOVAL POINT**

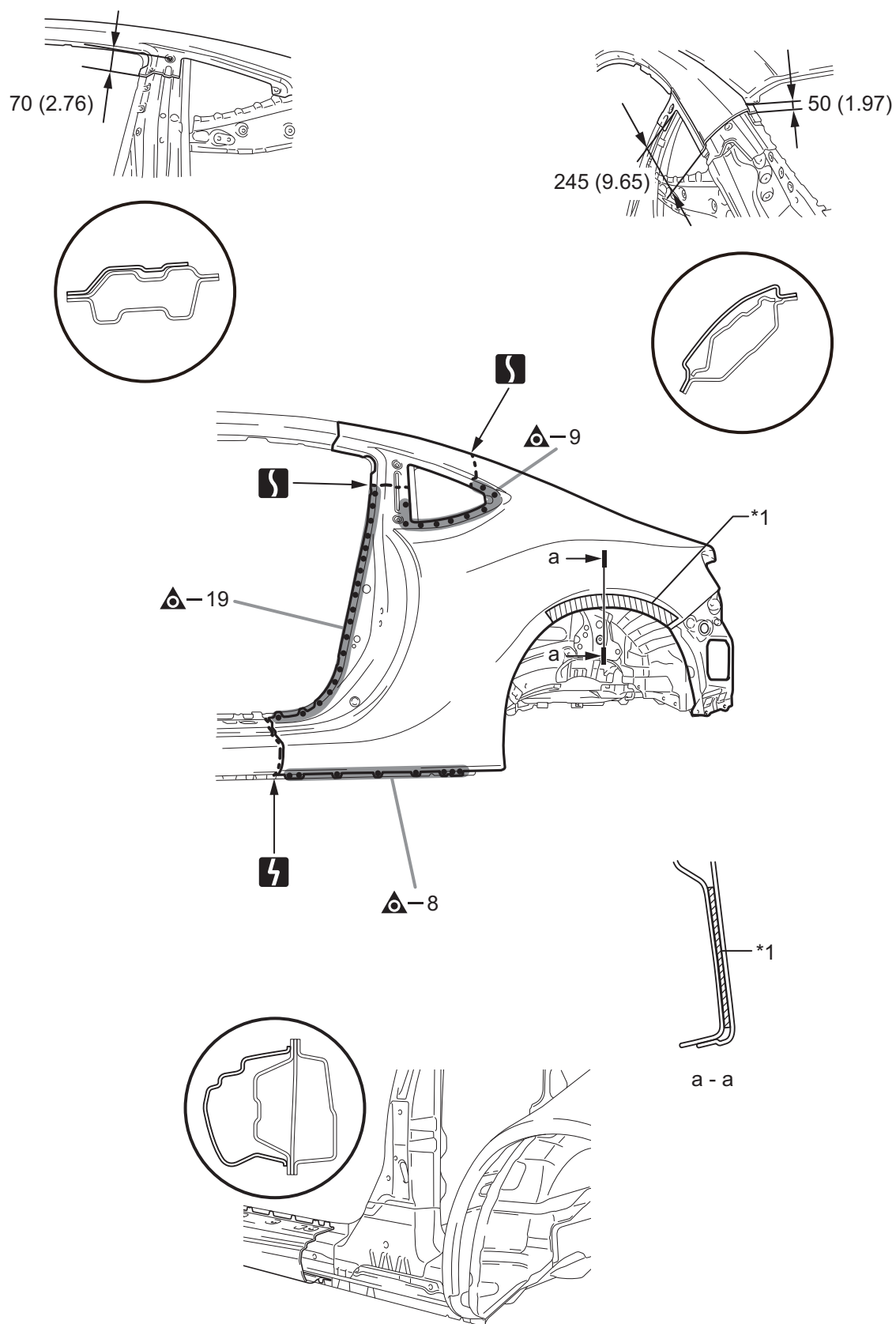
1. \*1 in illustration above indicates where the adhesive is located.
2. Roughly cut open the panel so that the adhesive can be reached. Cut through the adhesive with a cut chisel to remove the panel.

**HINT:**

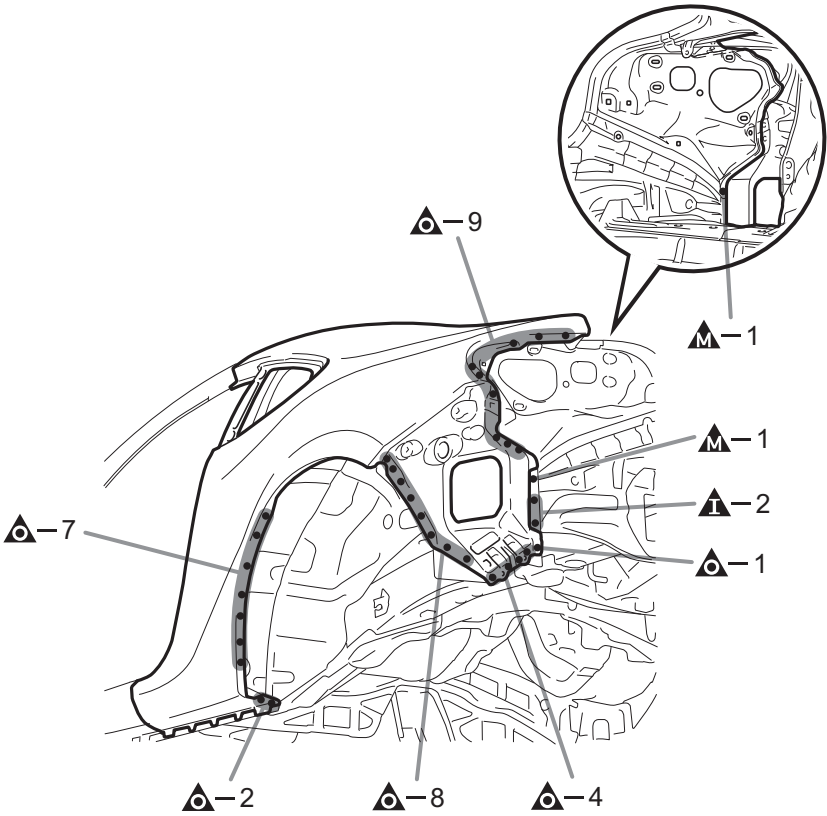
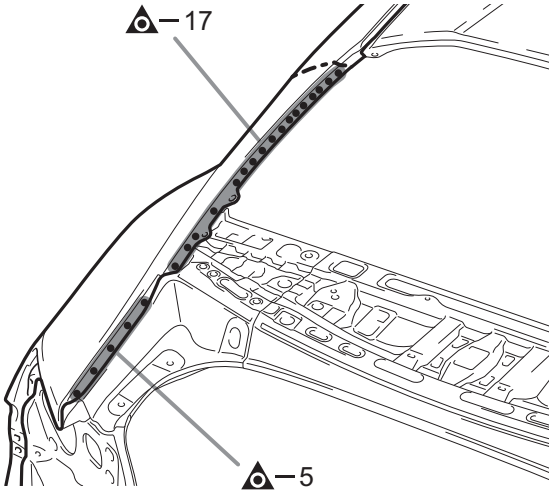
In cases where the adhesive cannot be removed with a cut chisel, heat the adhesive with an industrial heater gun or gas burner taking care not to cause panel deformation by overheating.

WP






WP



WP



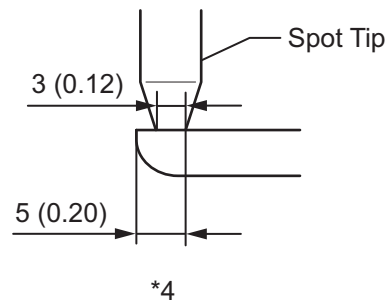
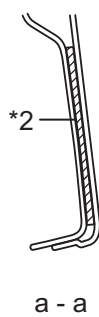
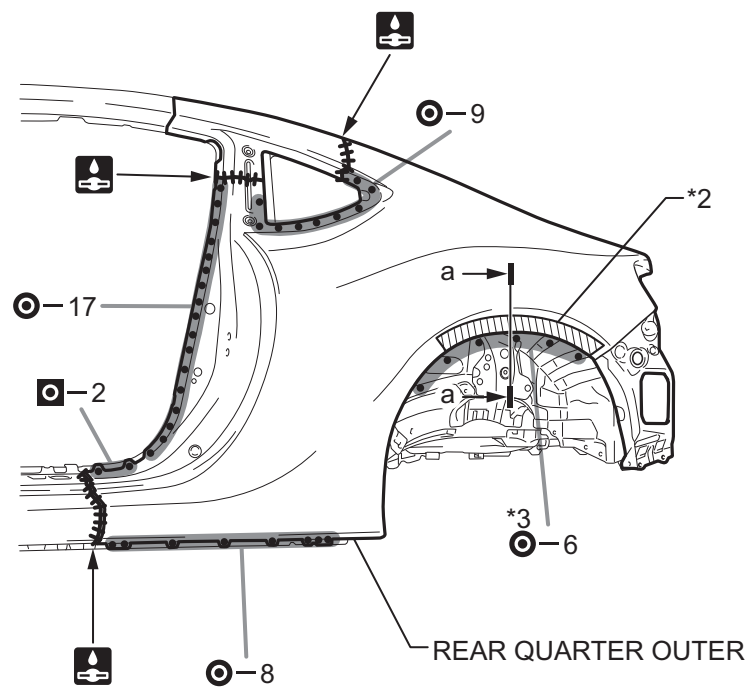
## 2. INSTALLATION

Symbol meaning	
	Spot Weld
	Plug Weld
	Plug Weld
	Plug Weld
	Butt Weld

### INSTALLATION POINT

1. Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
2. Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimensions)
3. When welding \*1, make a hole on a new part for plug welding and weld the panel with the panel behind completely.
4. Apply adhesive (3M<sup>TM</sup> Automix<sup>TM</sup> Panel Bonding Adhesive #8115) to the area indicated by \*2 in the illustration.  
HINT:  
Apply enough adhesive for the panels to stick to each other.
5. Perform spot-welding on the flange indicated by \*3 in the illustration. Modify/cut the spot tip as shown in the illustration\*4 so that it can fit in to the narrow flange.
6. After welding, apply body sealer to the corresponding parts. (See the painting / coating)
7. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

WP

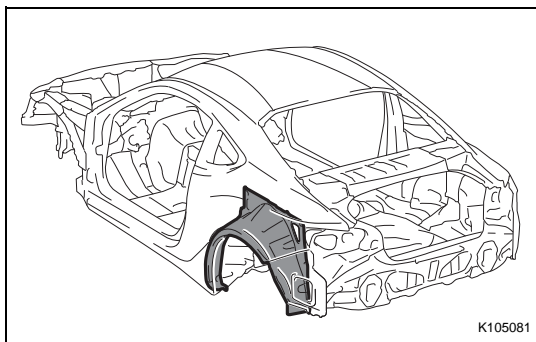


mm (in.)



# QUARTER WHEEL HOUSING OUTER PANEL





## ASSEMBLY REPLACEMENT



With the quarter panel removed.

**WP**

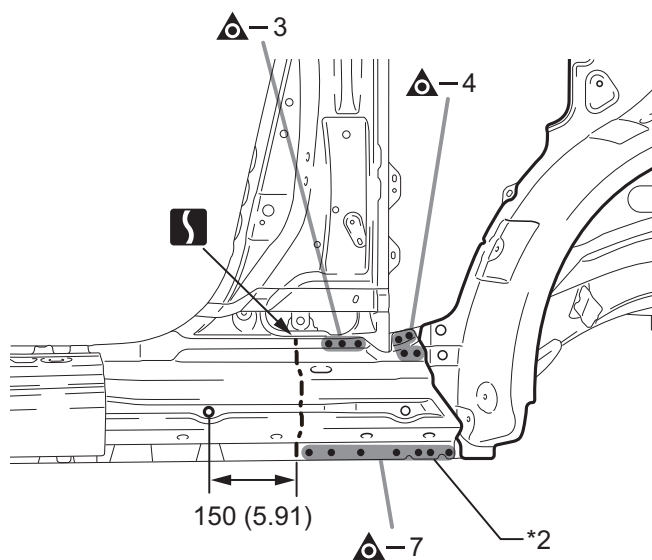
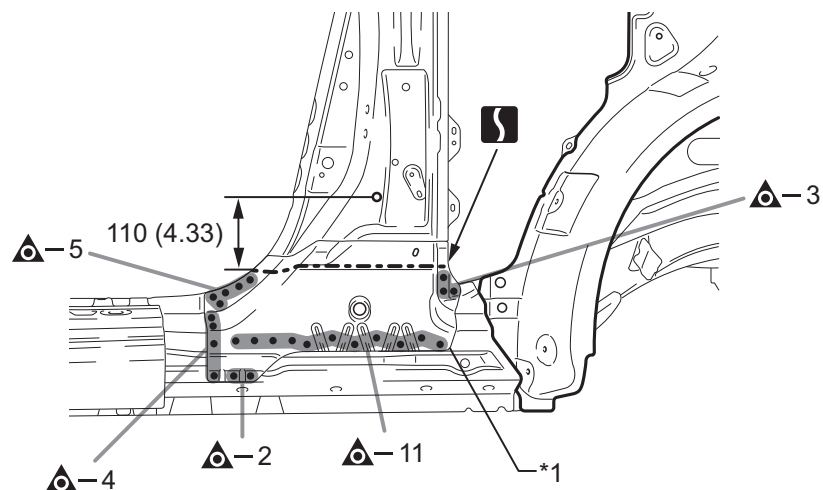
### 1. REMOVAL

Symbol meaning	
	Remove Weld Points
	Remove Weld Points
	Remove Weld Points
	Cut and Join Location

### REMOVAL POINT

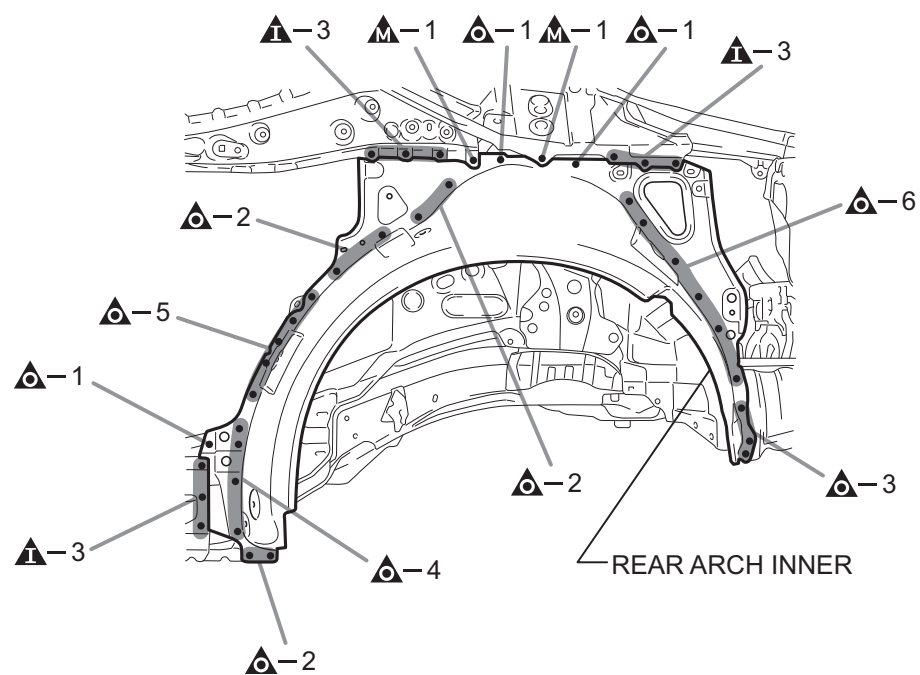
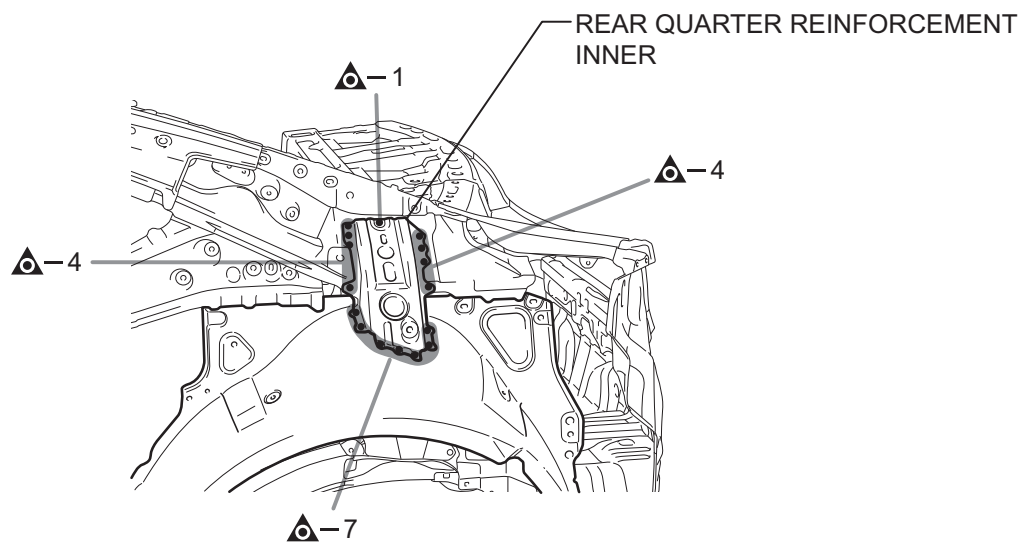
- \*1 and \*2 is reused.
- After removing the \*1, \*2 and rear quarter reinforcement inner, remove the rear arch inner.

LH:

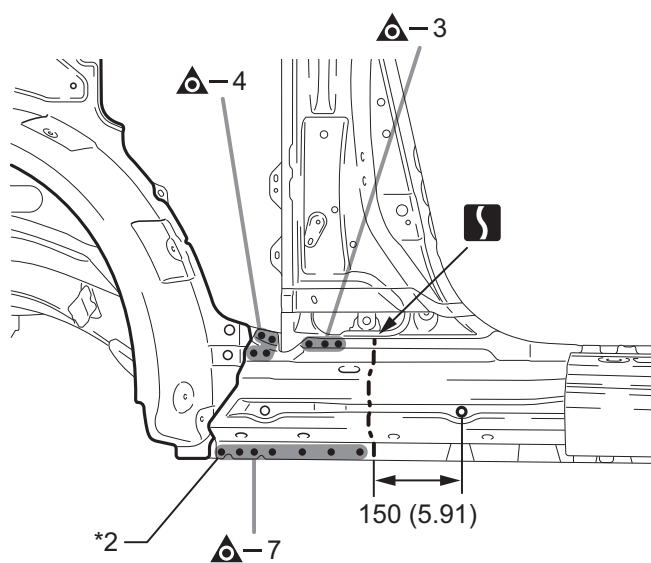
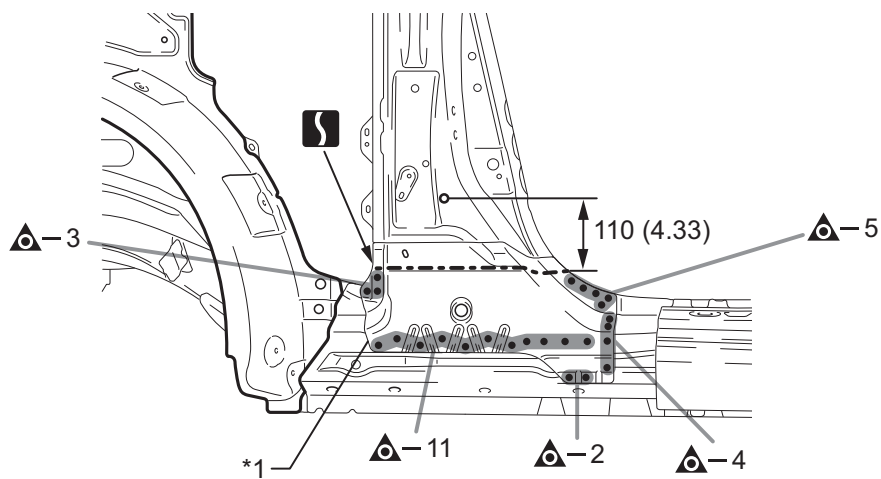


mm (in.)

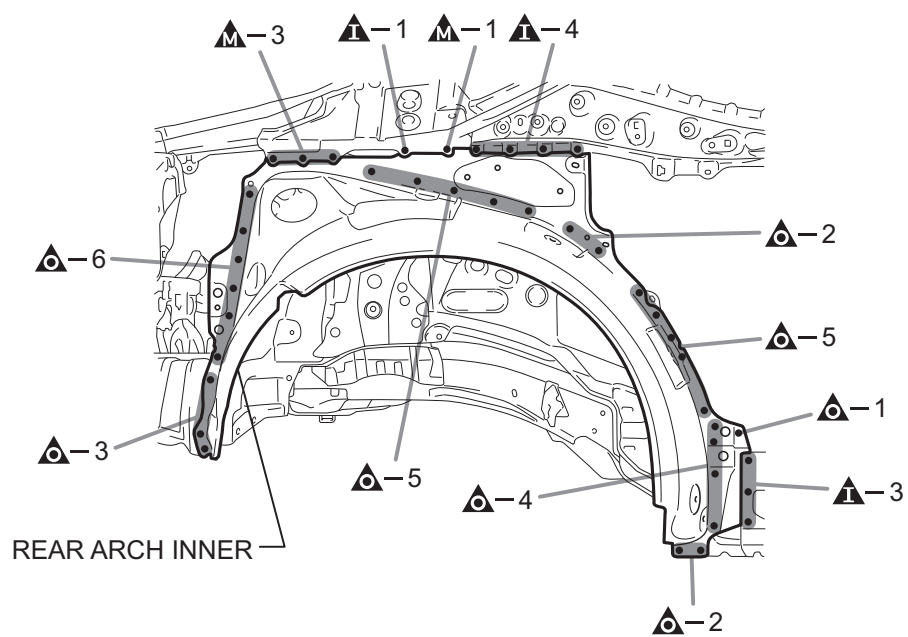
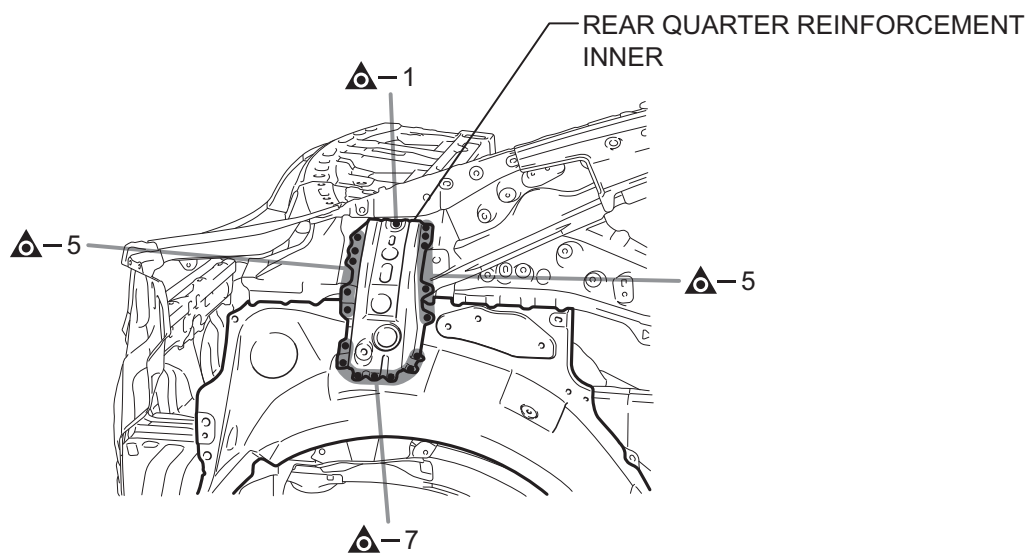










RH:



mm (in.)



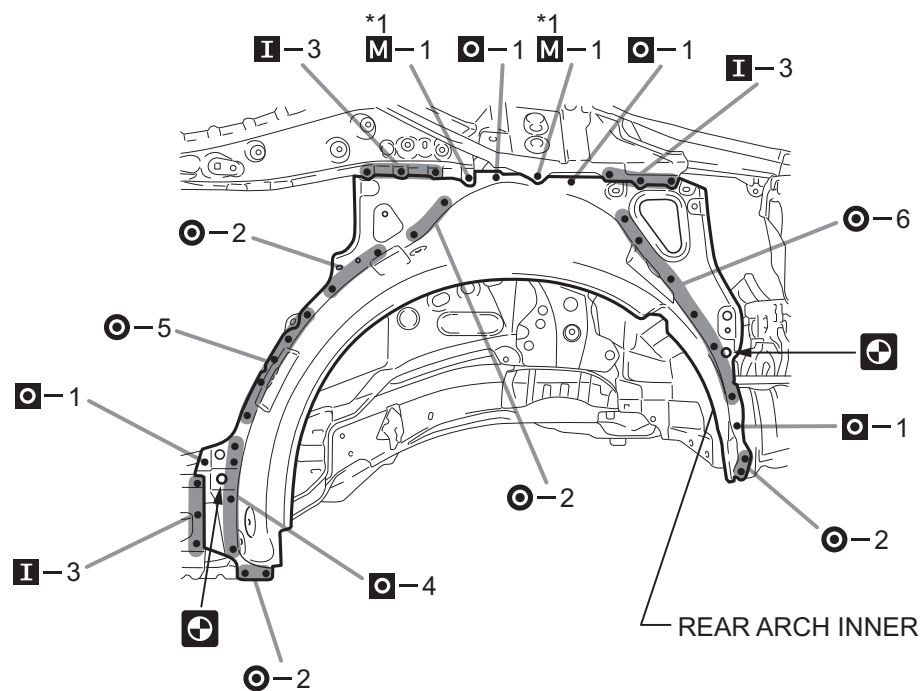
## 2. INSTALLATION

Symbol meaning	
	Spot Weld
	Plug Weld
	Plug Weld
	Plug Weld
	Butt Weld
	Assembly Mark

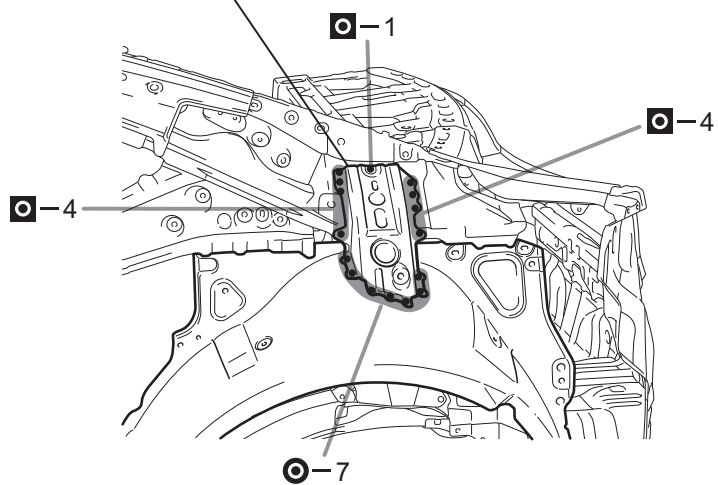
## INSTALLATION POINT

1. When welding \*1, make a hole on a new part for plug welding and weld the panel with the panel behind completely.
2. For positioning of the new parts, align the installation standard holes of the outer panel and the inner panel.
3. After welding the rear arch inner to the vehicle side, install the rear quarter reinforcement inner, \*2 and \*3.
4. After welding, apply body sealer and undercoating to the corresponding parts. (See the painting / coating)
5. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

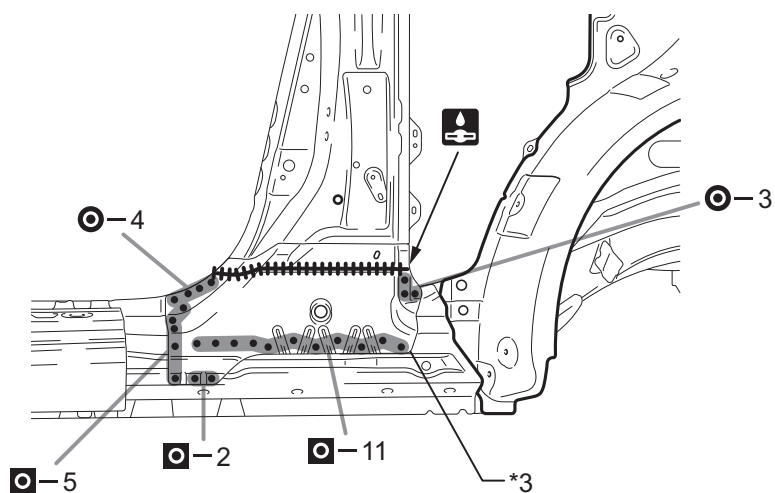
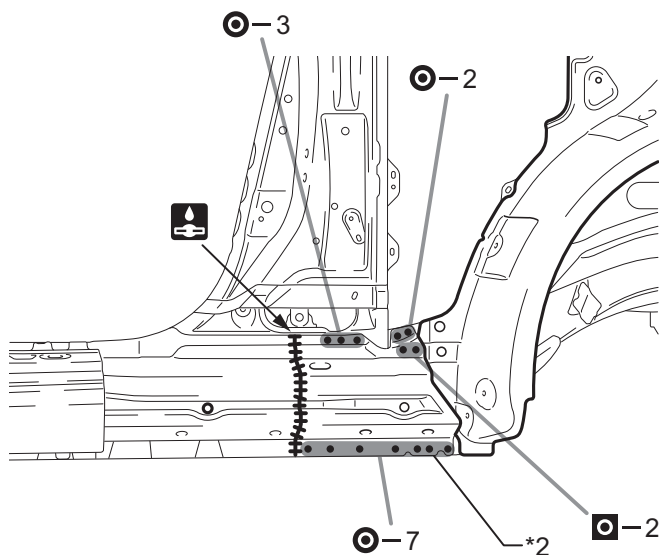
LH:



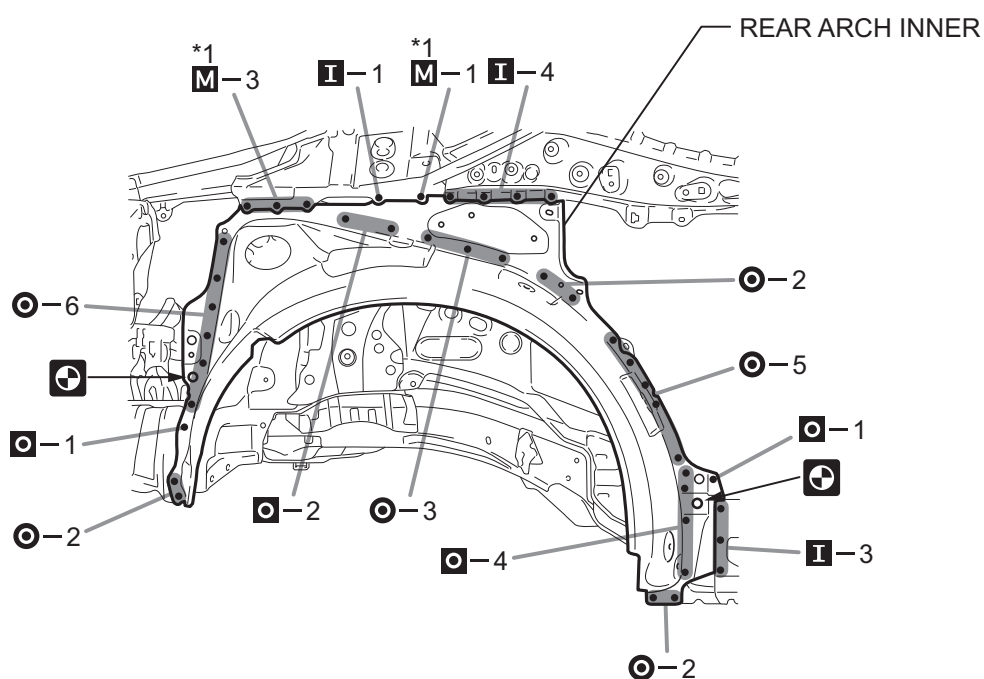
REAR QUARTER REINFORCEMENT  
INNER



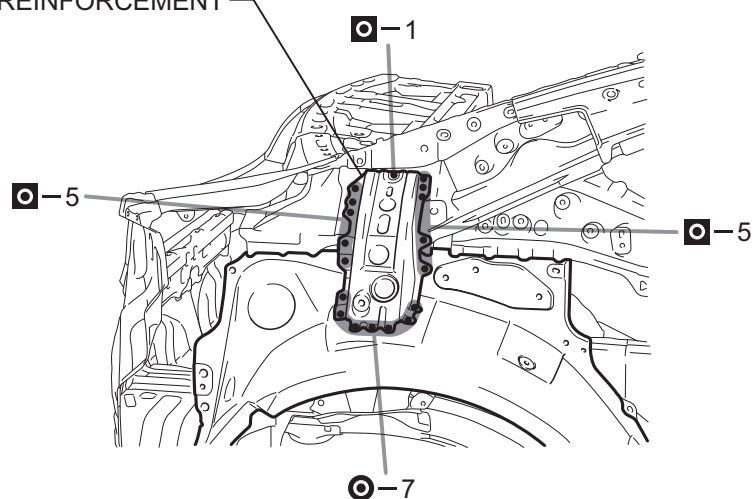
WP



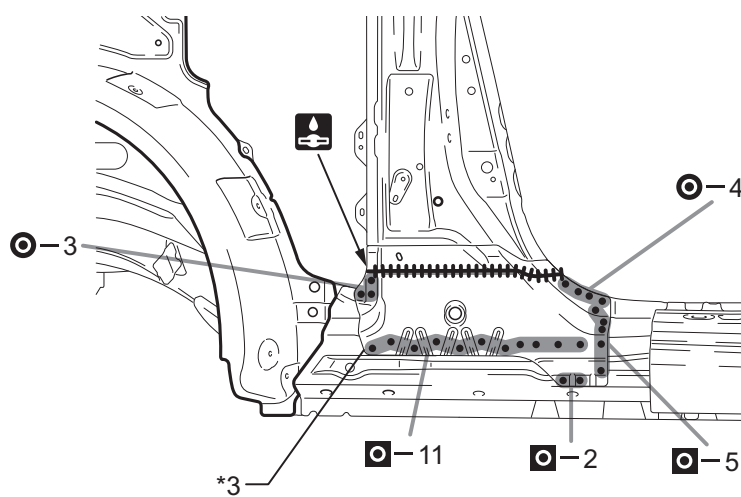
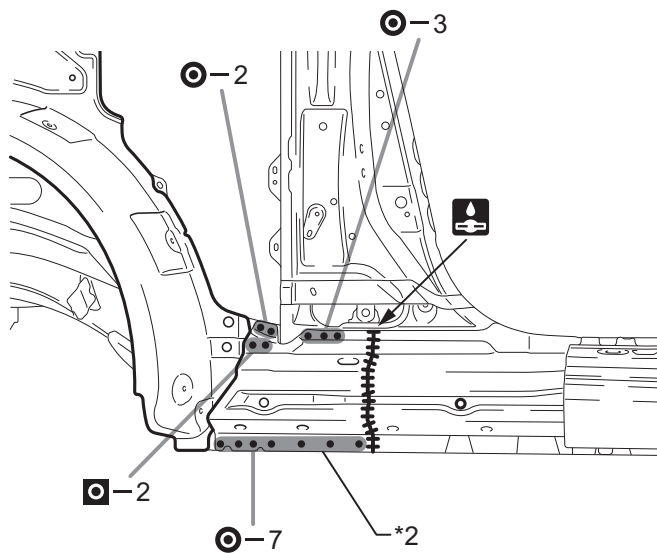
RH:



REAR QUARTER REINFORCEMENT  
INNER



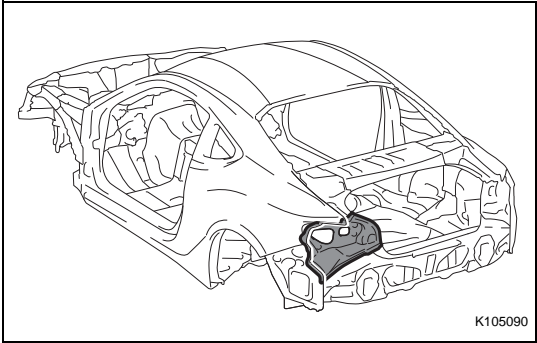
WP








# QUARTER PANEL END HOUSING

## ASSEMBLY REPLACEMENT



WP

### 1. REMOVAL





Symbol meaning	
	Remove Weld Points
	Remove Weld Points
	Cut with Disc Sander etc.

### REMOVAL POINT

1. Cut the rear quarter outer and fold it upward as shown in \*1. Then cut through the welded area of the rear pillar patch, and remove the rear quarter end.



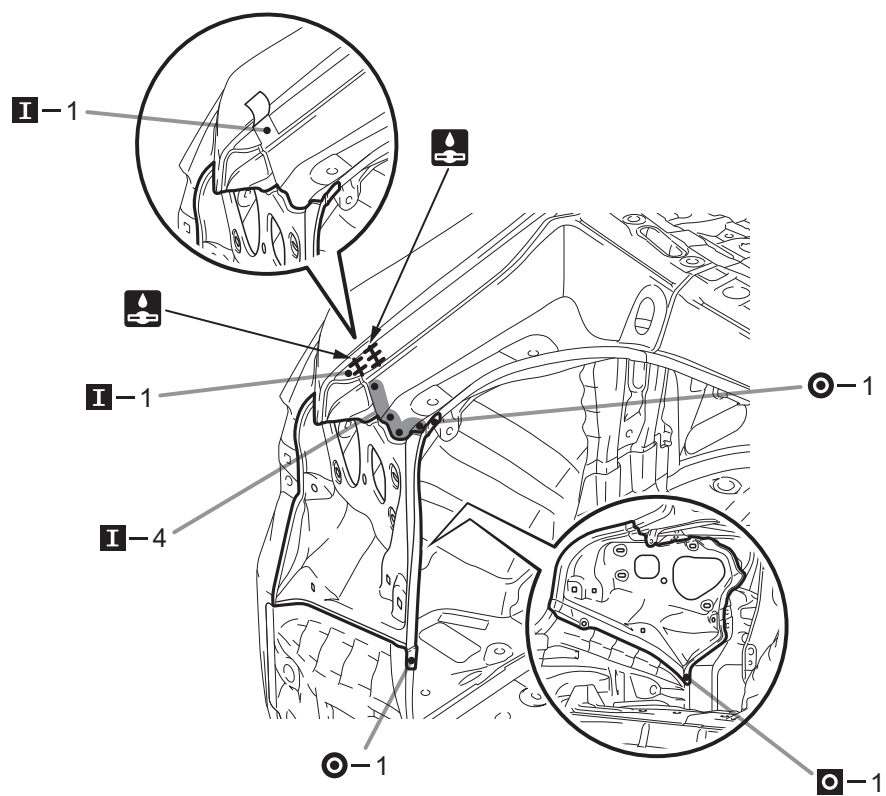
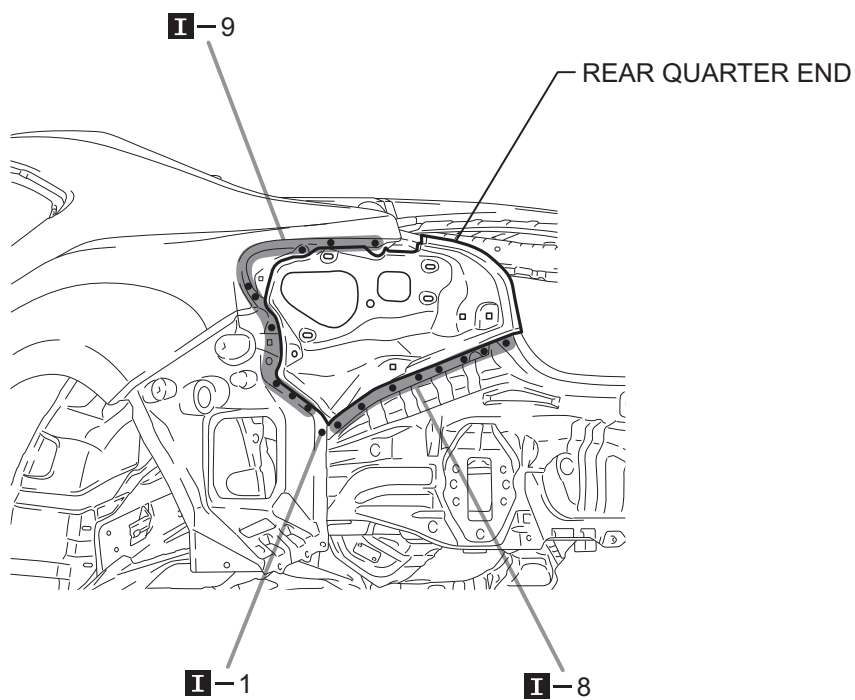
## 2. INSTALLATION

Symbol meaning	
	Spot Weld
	Plug Weld
	Plug Weld
	Butt Weld

### INSTALLATION POINT

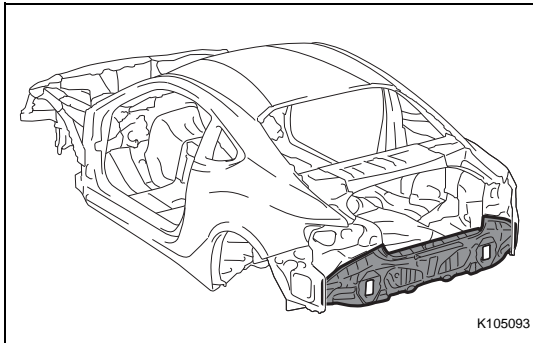
1. Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
2. Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimensions)
3. After welding, apply body sealer to the corresponding parts. (See the painting / coating)
4. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

WP




# BODY LOWER BACK PANEL

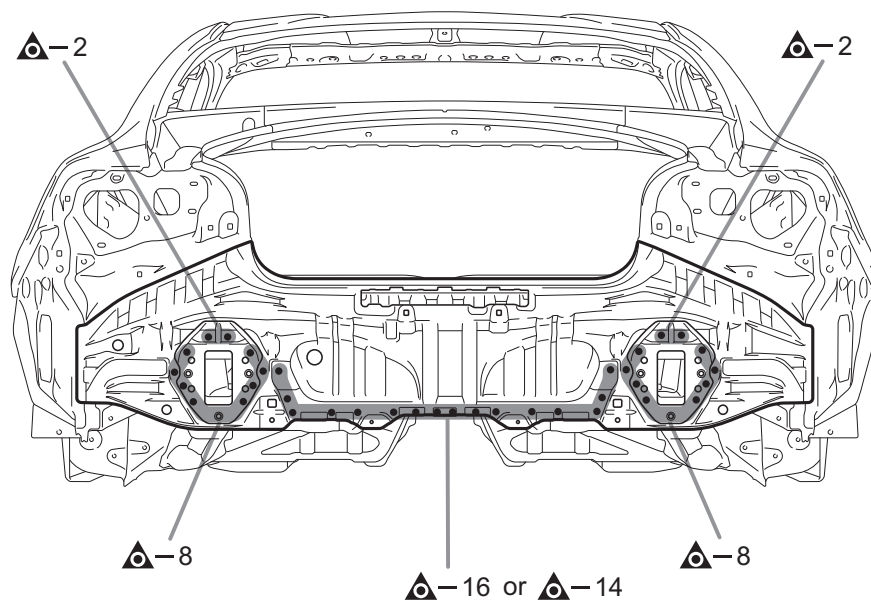
## ASSEMBLY REPLACEMENT



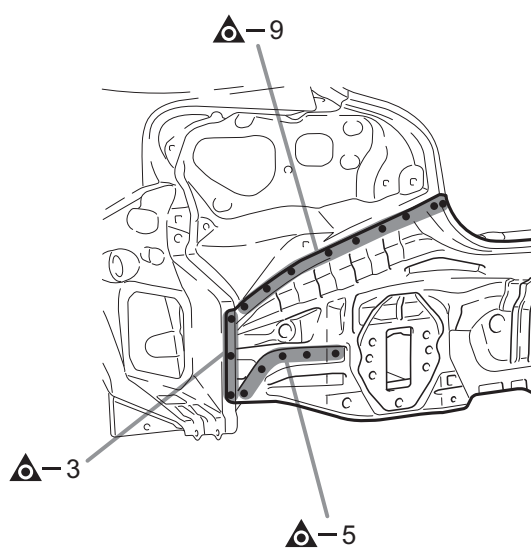
### 1. REMOVAL

Symbol meaning	
	Remove Weld Points

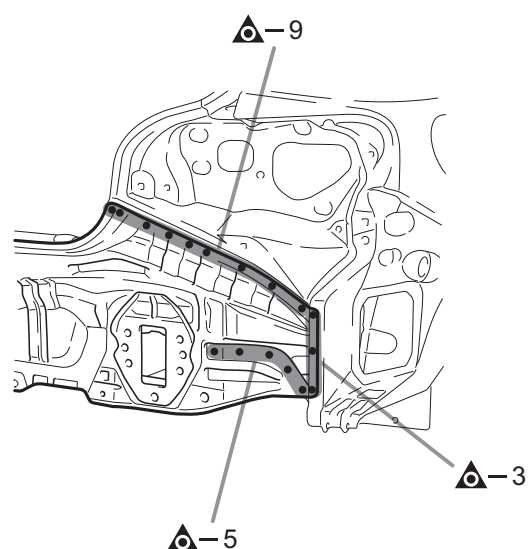
WP




LH Side:



RH Side:



## 2. INSTALLATION

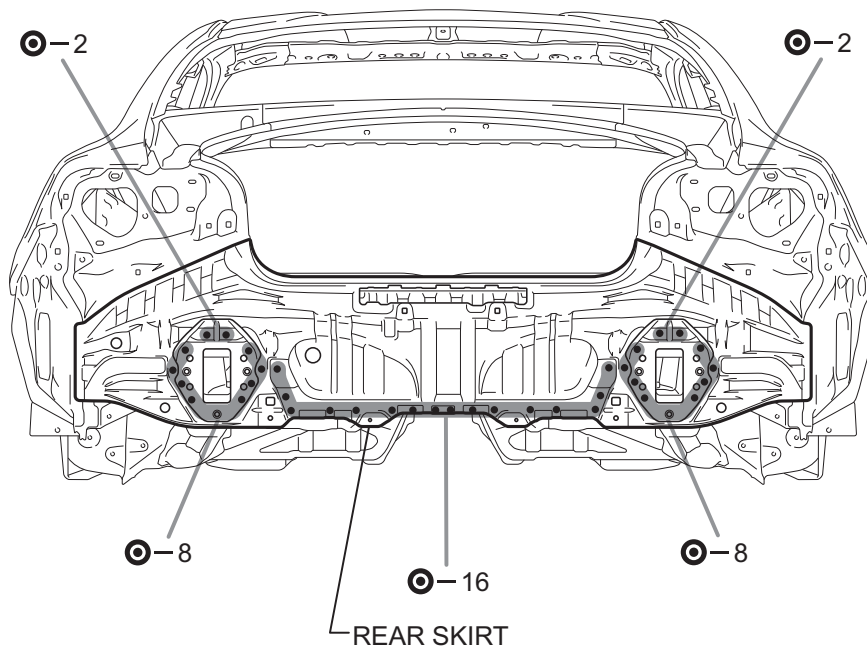
Symbol meaning	
	Spot Weld

### INSTALLATION POINT

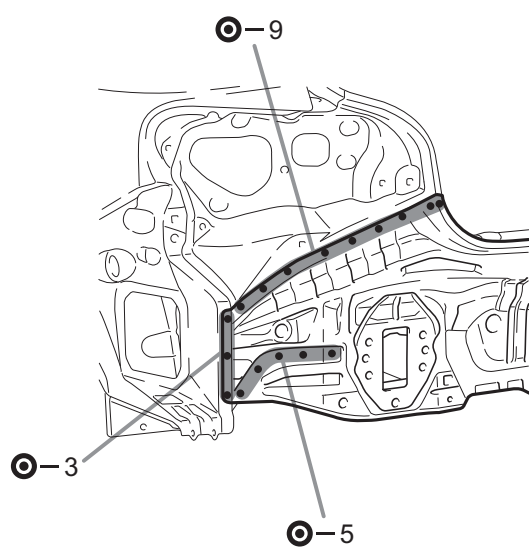
1. Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
2. Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimensions)
3. After welding, apply body sealer to the corresponding parts. (See the painting / coating)
4. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

WP

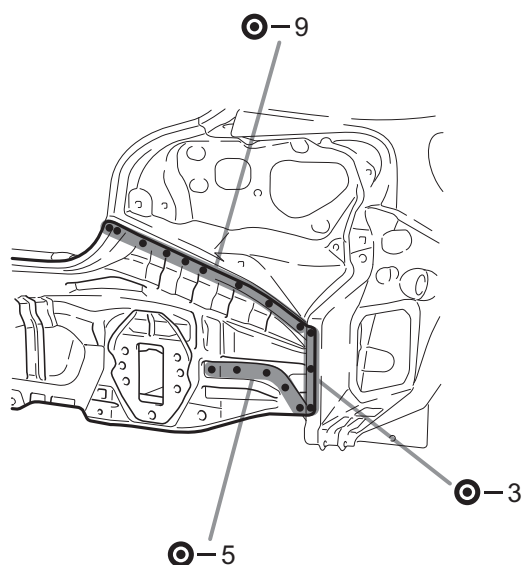
WP



LH Side:



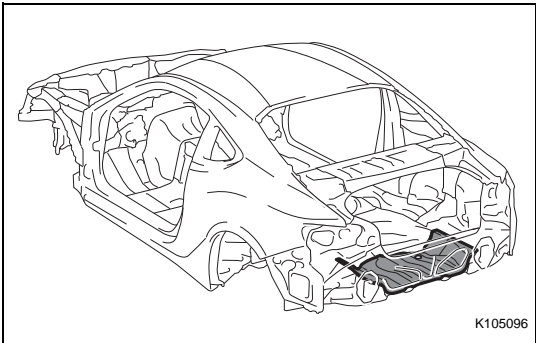
RH Side:





# REAR FLOOR PAN

## CUT AND JOIN REPLACEMENT SECTIONS



With the body lower back panel removed.

WP

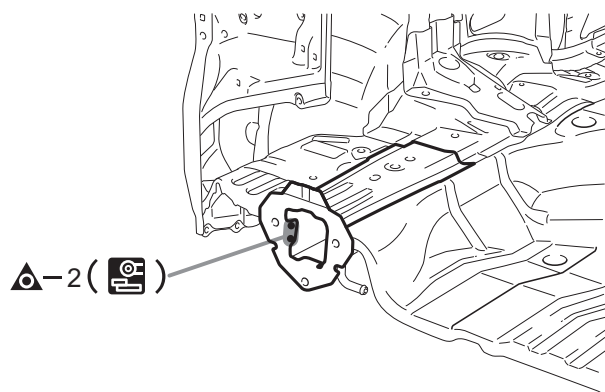
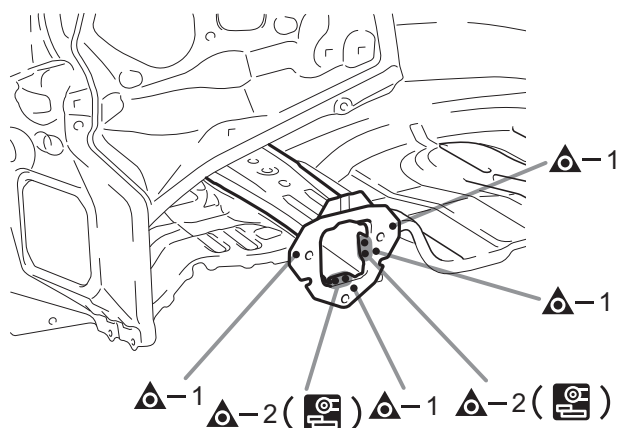
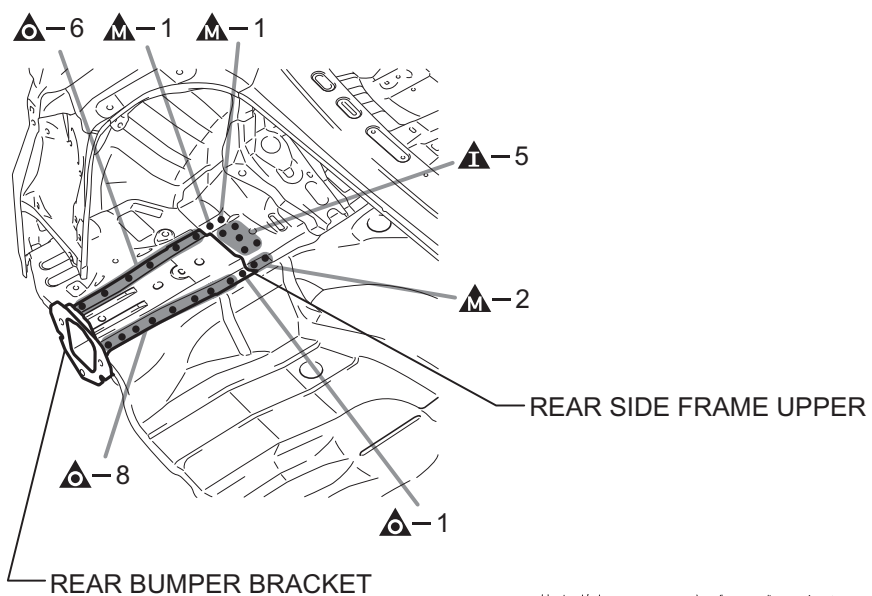
### 1. REMOVAL

Symbol meaning	
	Remove Weld Points
	Remove Weld Points
	Remove Weld Points
	Cut with Disc Sander etc.
	Cut Location

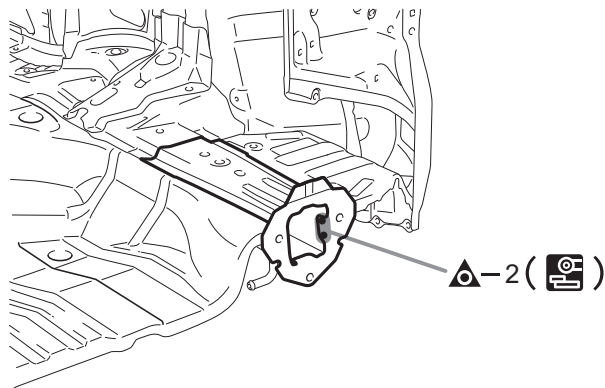
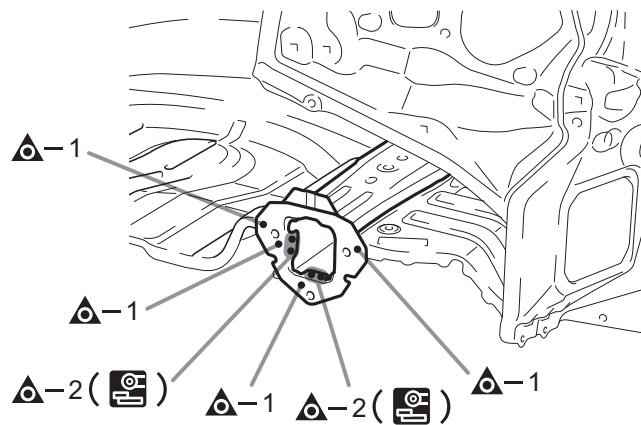
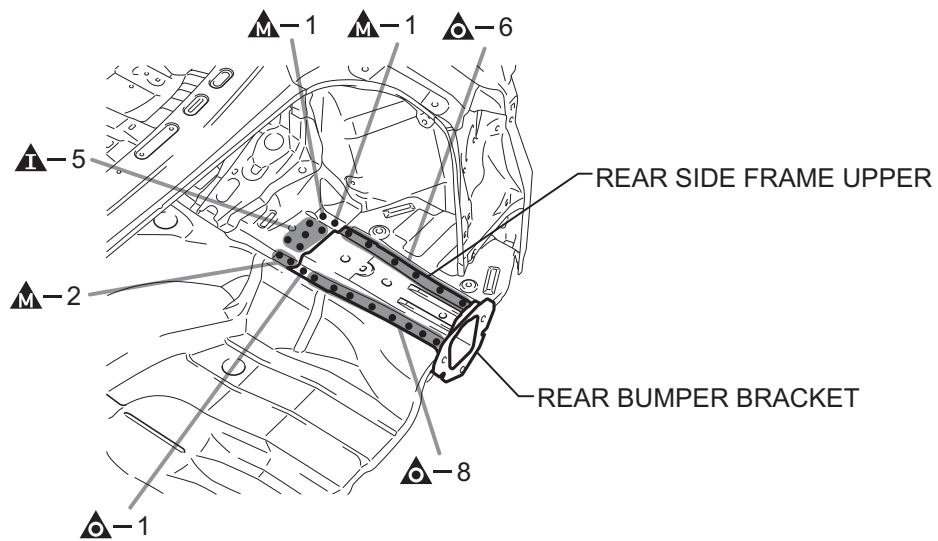
### REMOVAL POINT

1. After removing the rear side frame upper and rear bumper bracket, remove the rear floor pan rear.

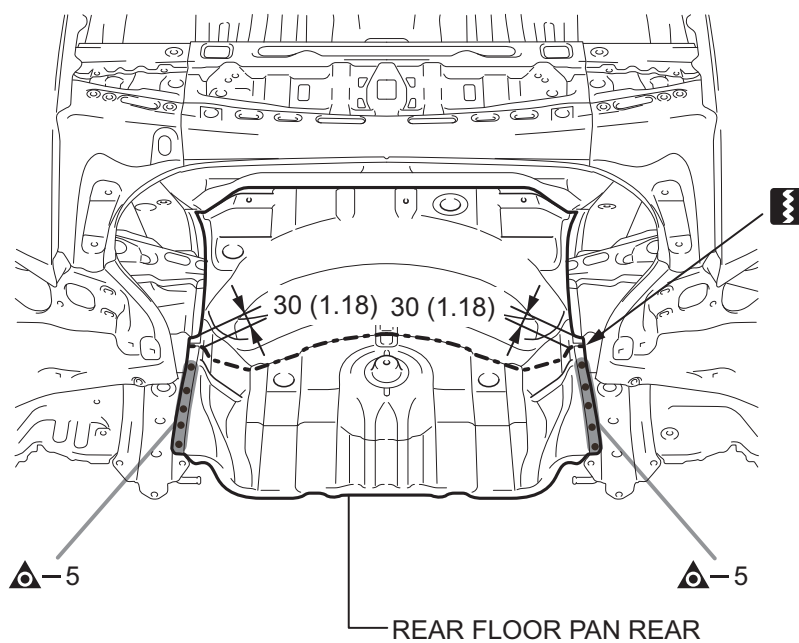
LH:



RH:










WP



mm (in.)

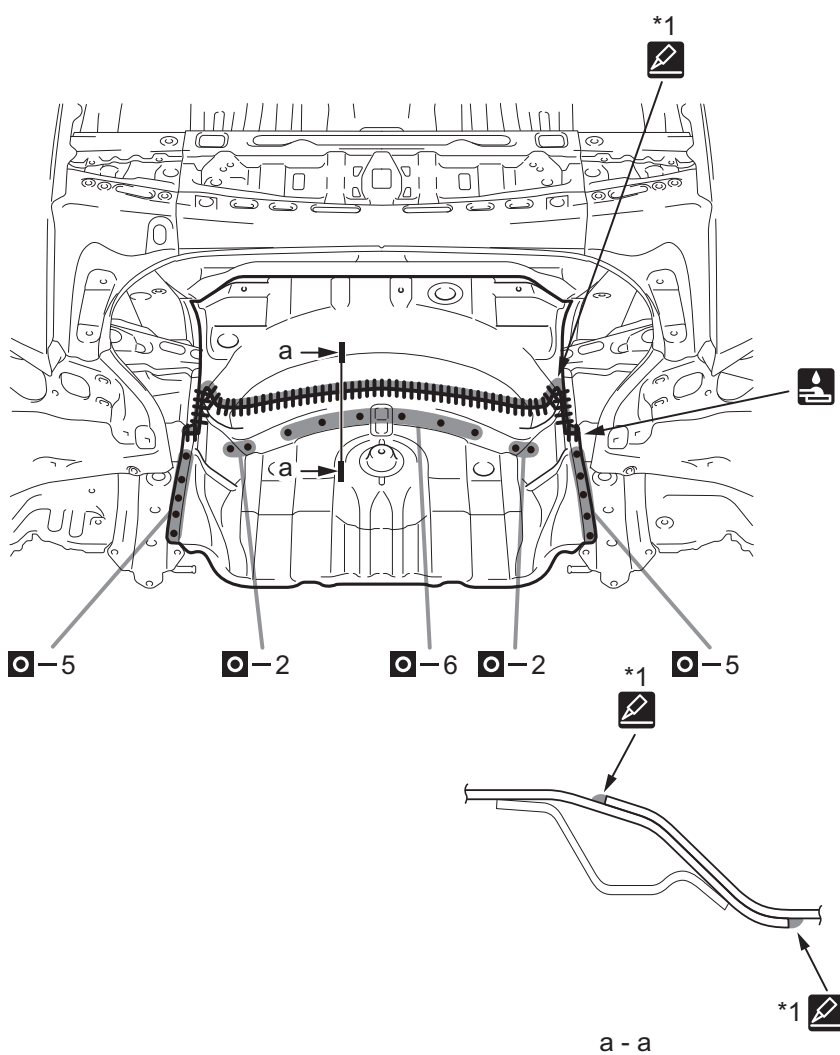
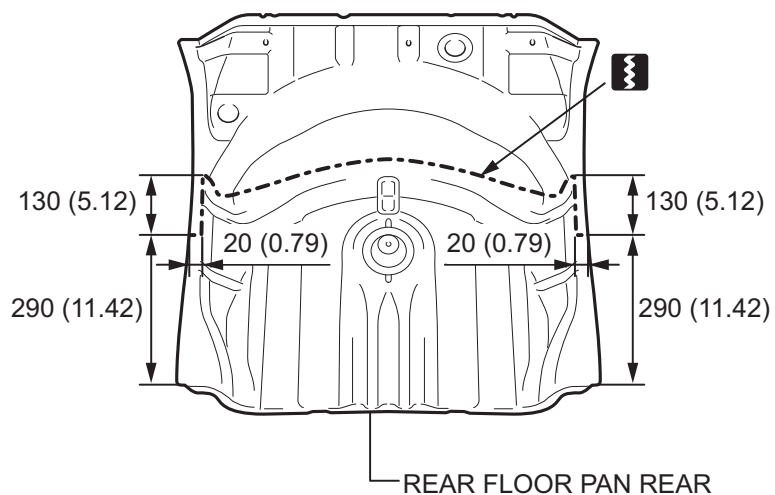
## 2. INSTALLATION

Symbol meaning	
	Spot Weld
	Plug Weld
	Plug Weld
	Plug Weld
	Cut Location
	Fillet Weld
	Body Sealer

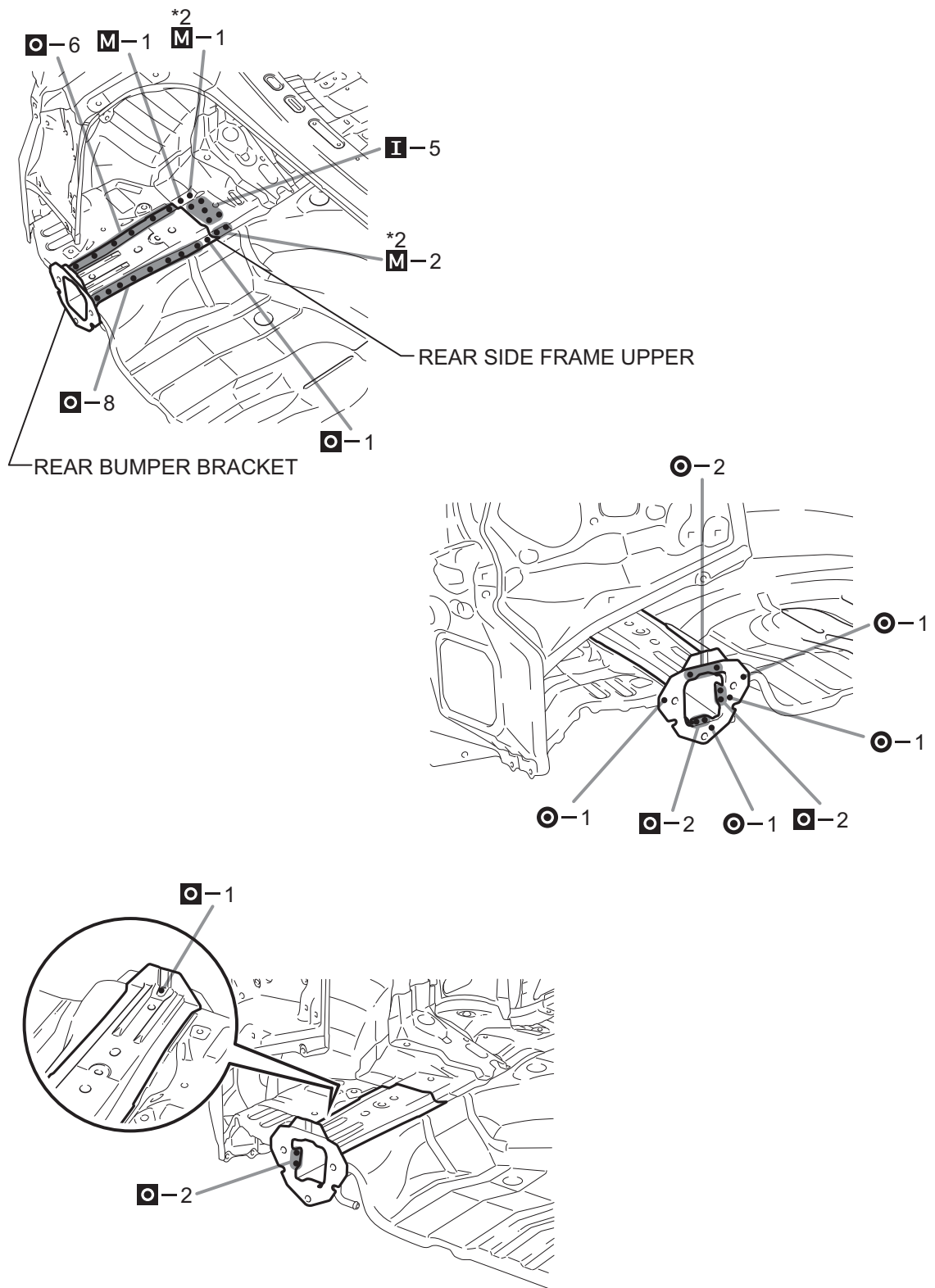
### INSTALLATION POINT

1. Cut the new part so that it overlaps the previous cut location.
2. When welding \*2, make a hole on a new part for plug welding and weld the panel with the panel behind completely.
3. \*1: Perform plug-welding in the area where the panel are overlapped. Apply body sealer to both sides of each panel.  
HINT:
  - Confirm that the panels are securely welded together.
  - Apply body sealer in an even, continuous bead.
4. After welding the rear floor pan rear to the vehicle side, install the rear side frame upper and rear bumper bracket.
5. After welding, apply body sealer and undercoating to the corresponding parts. (See the painting / coating)
6. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

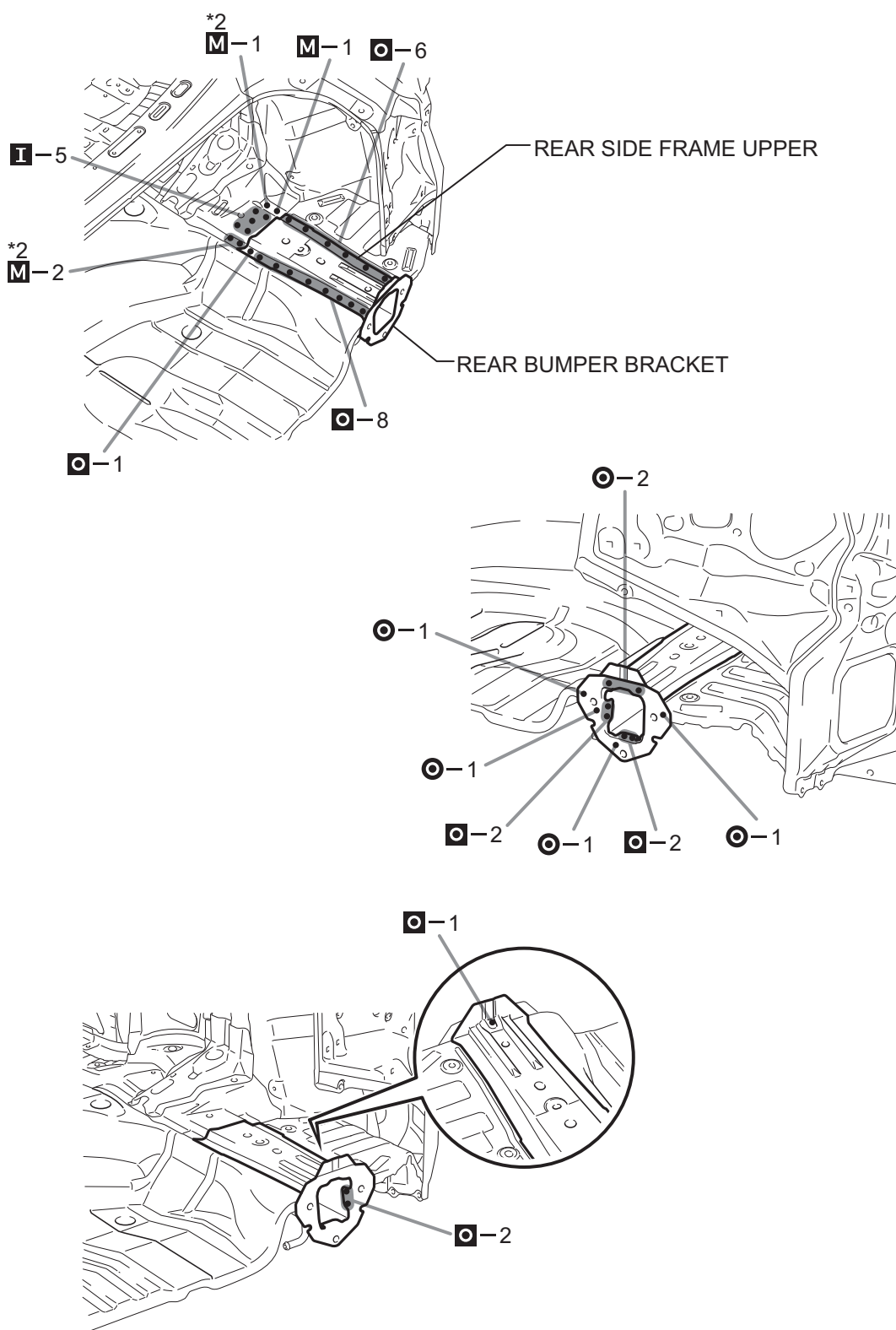
WP



LH:



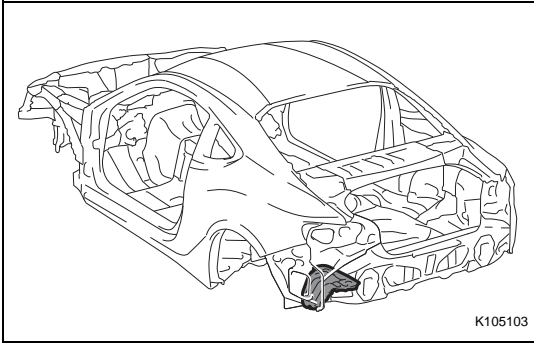
RH:





# REAR FLOOR SIDE PANEL





## ASSEMBLY REPLACEMENT



With the body lower back panel removed.

WP

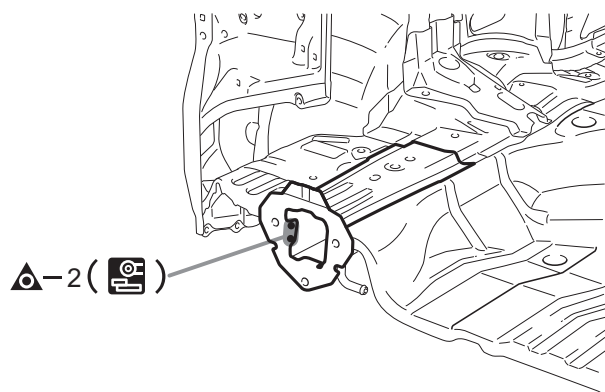
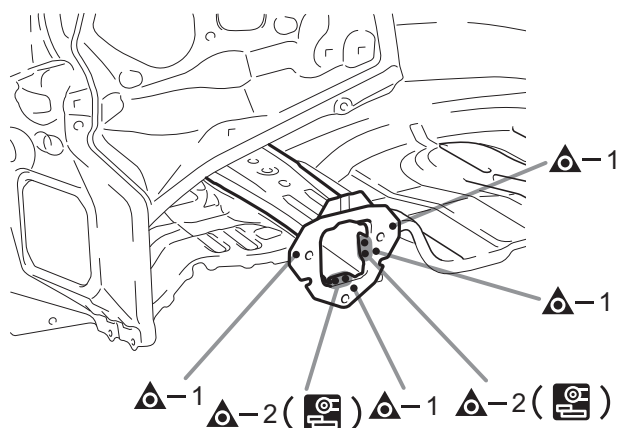
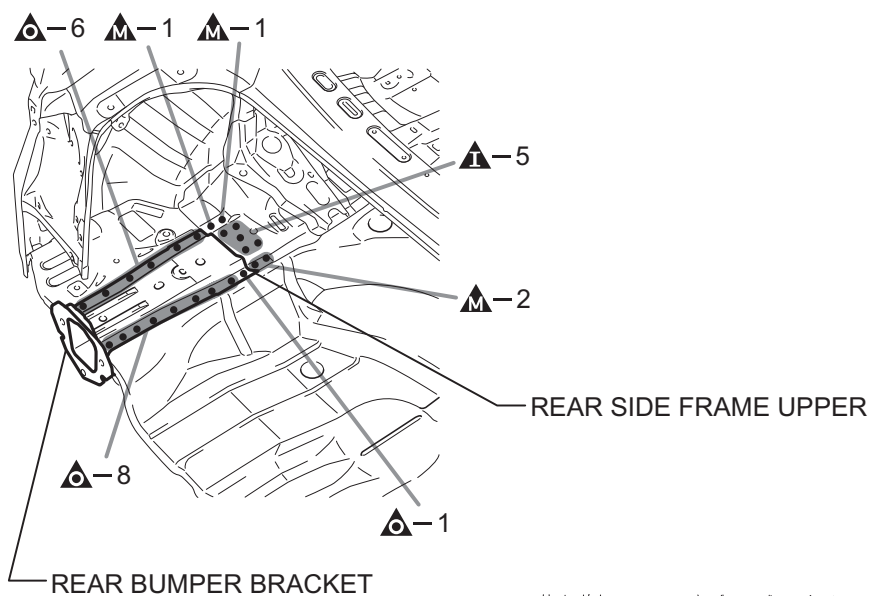
### 1. REMOVAL

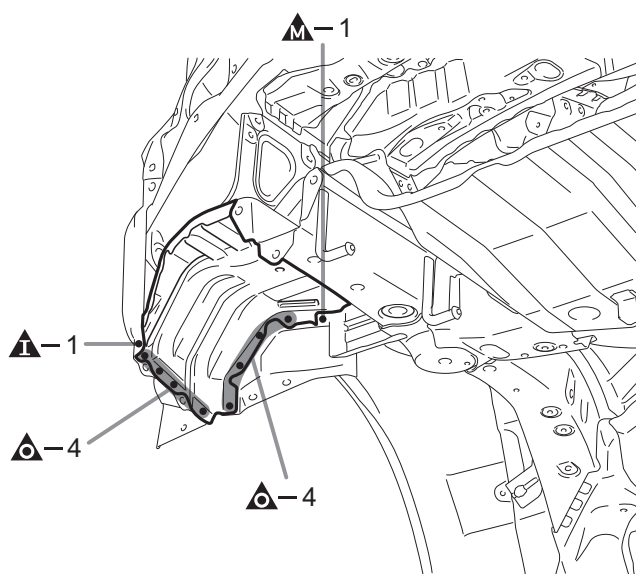
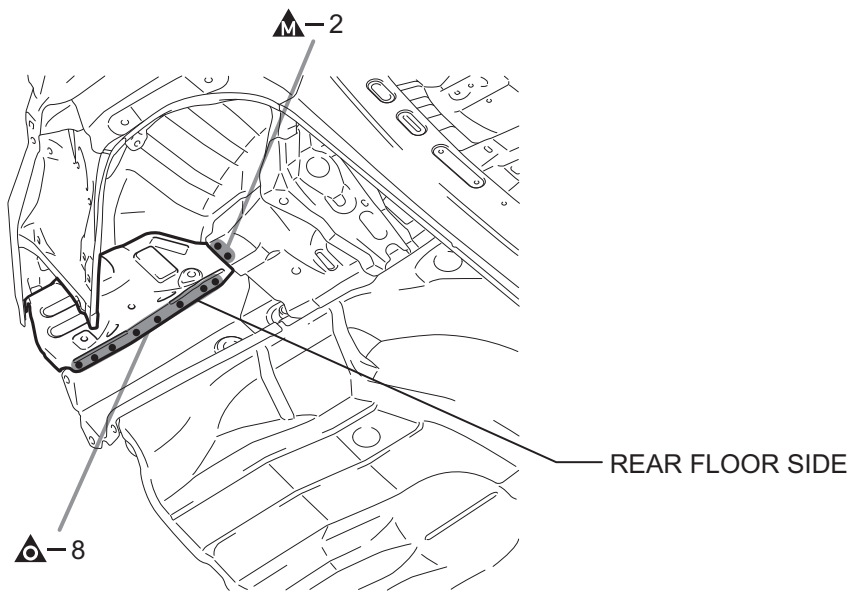
Symbol meaning	
	Remove Weld Points
	Remove Weld Points
	Remove Weld Points
	Cut with Disc Sander etc.

### REMOVAL POINT

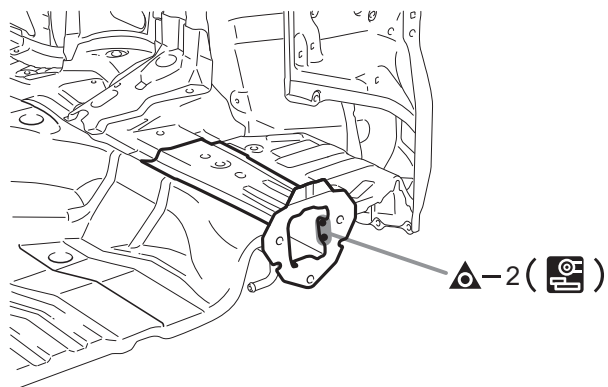
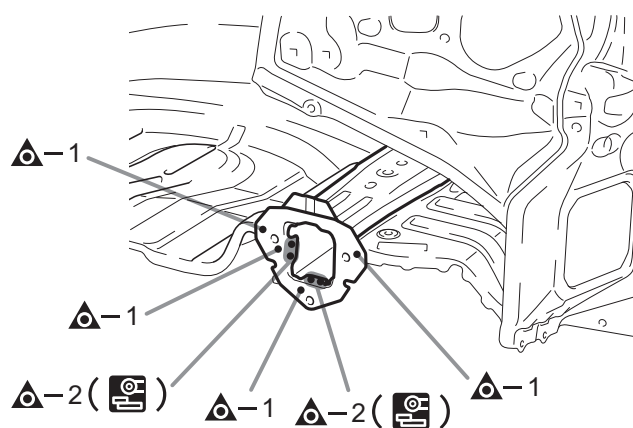
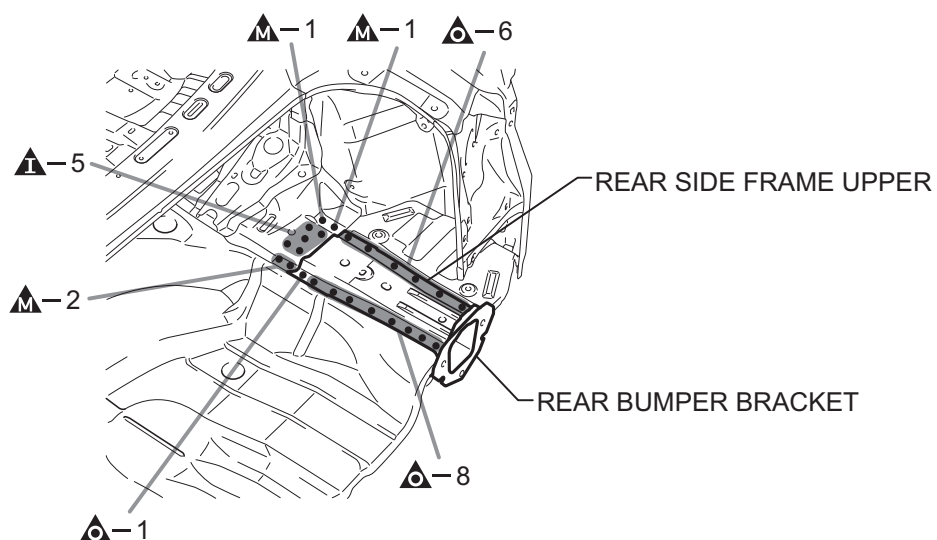
1. After removing the rear side frame upper and rear bumper bracket, remove the rear floor side.

LH:

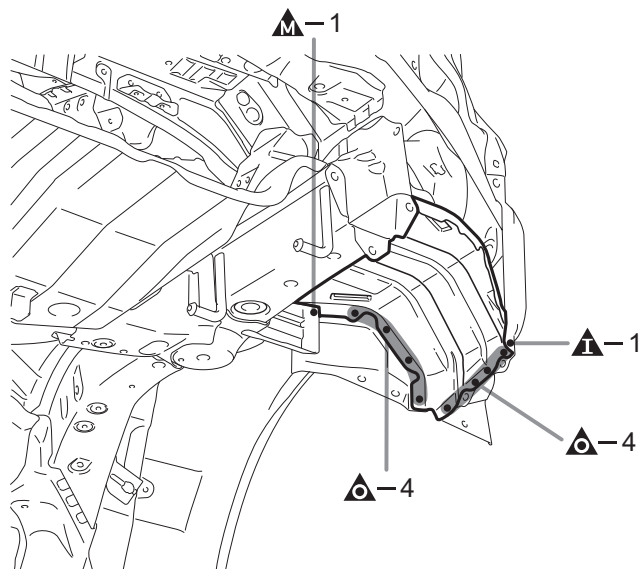
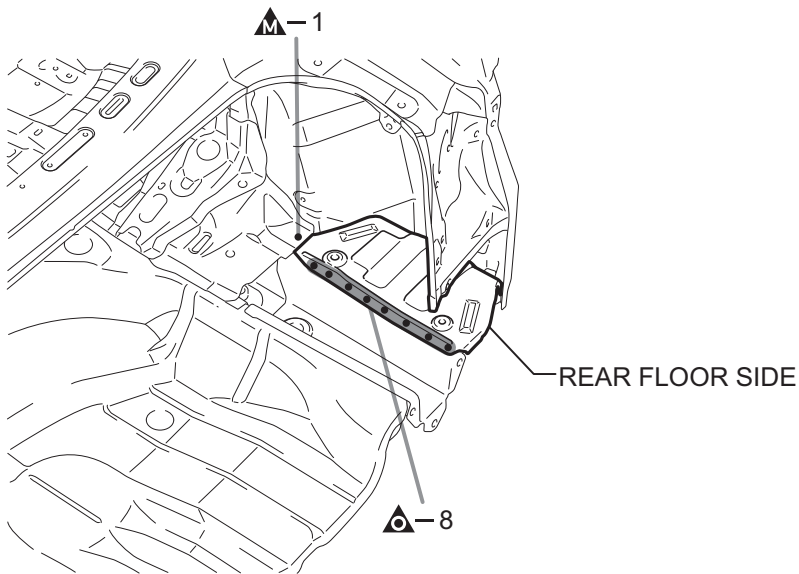








RH:



WP



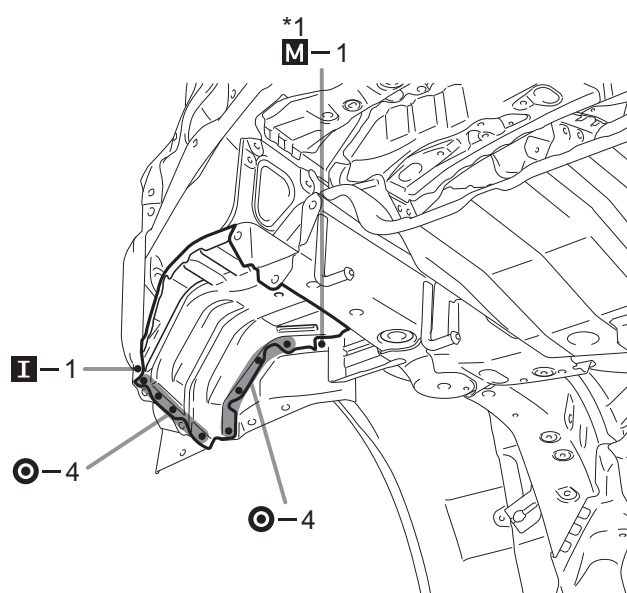
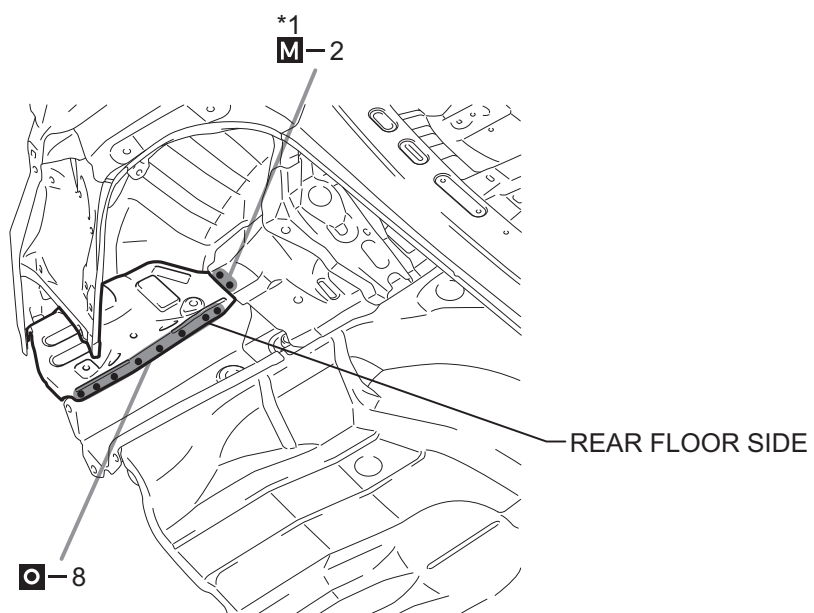
2. INSTALLATION

Symbol meaning	
	Spot Weld
	Plug Weld
	Plug Weld
	Plug Weld

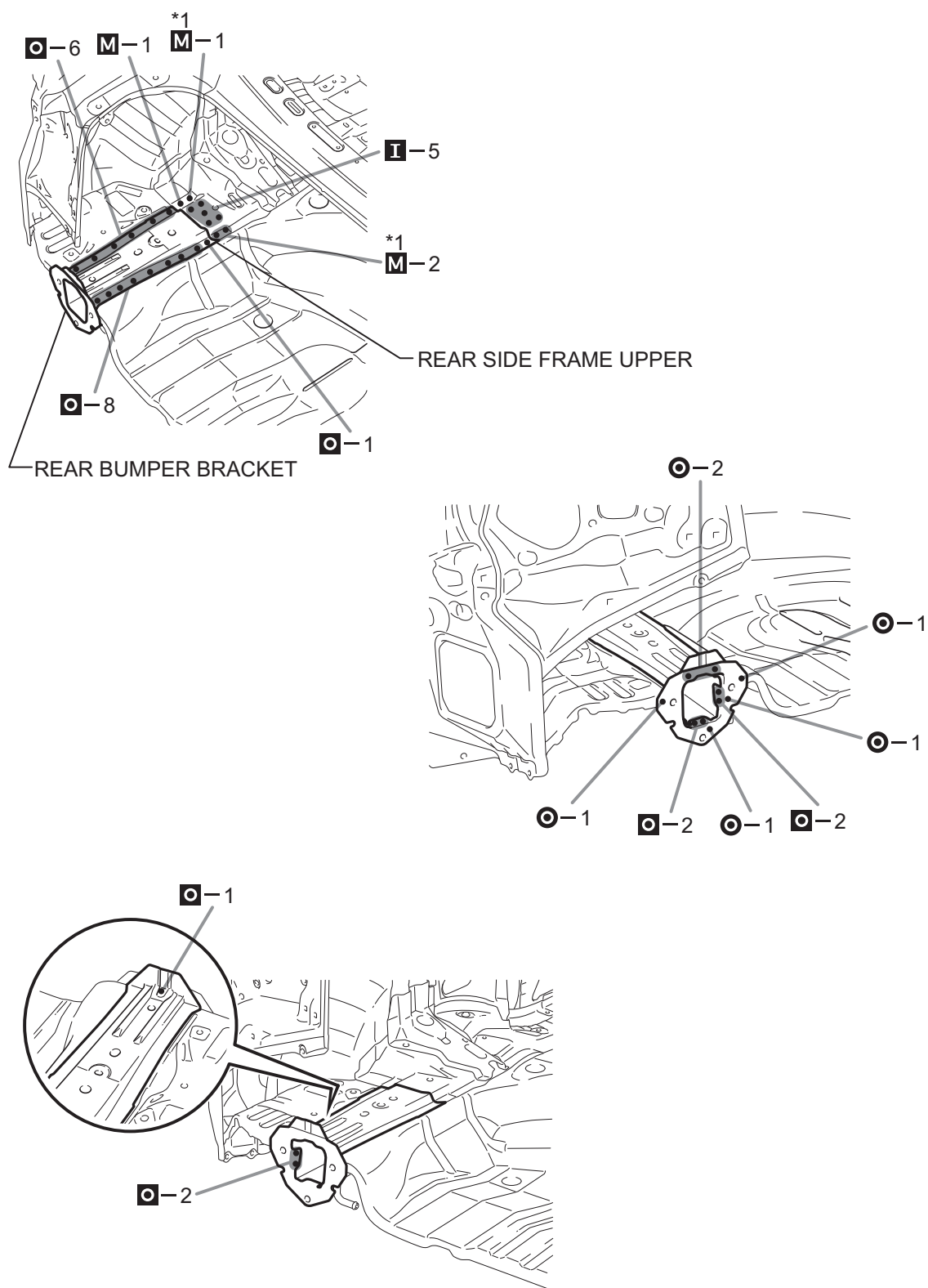
INSTALLATION POINT

1. When welding \*1, make a hole on a new part for plug welding and weld the panel with the panel behind completely.
2. After welding the rear floor side to the vehicle side, install the rear side frame upper and rear bumper bracket.
3. After welding, apply body sealer to the corresponding parts. (See the painting / coating)
4. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

LH:

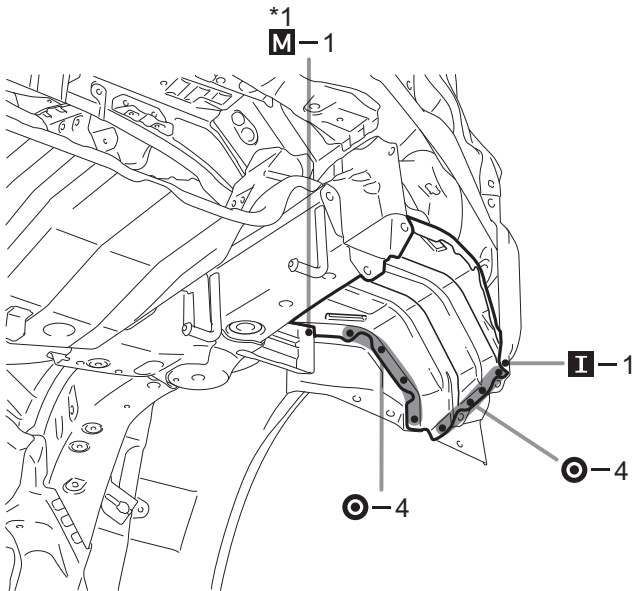
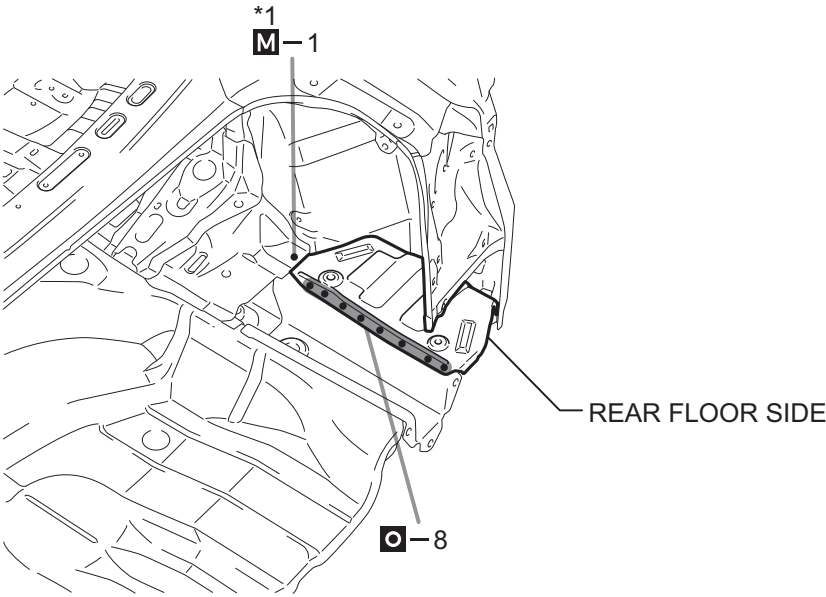


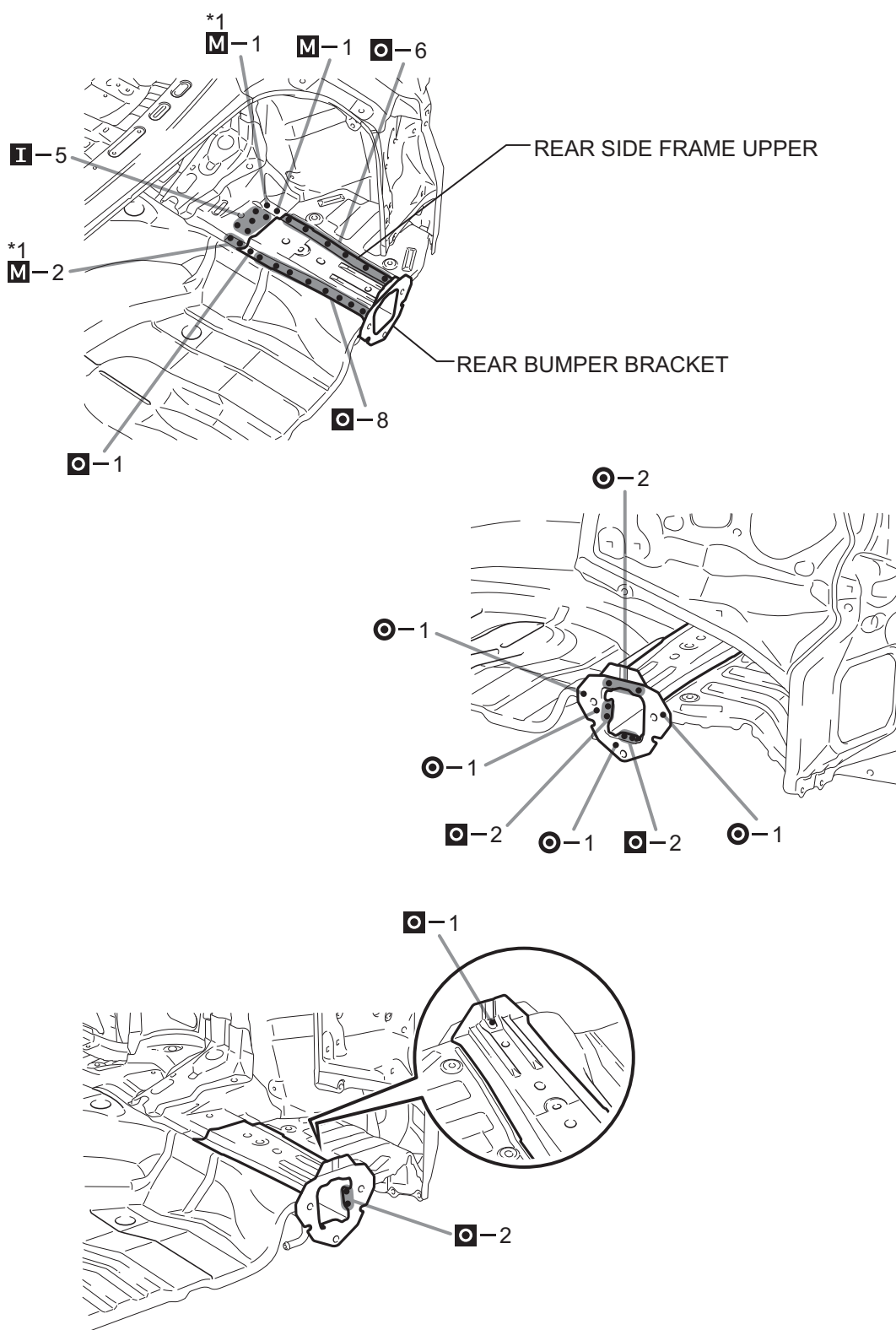
WP





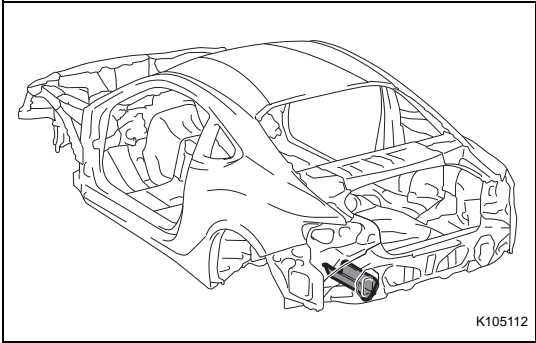
RH:





# REAR FLOOR SIDE MEMBER





## ASSEMBLY REPLACEMENT



With the body lower back panel removed.

WP

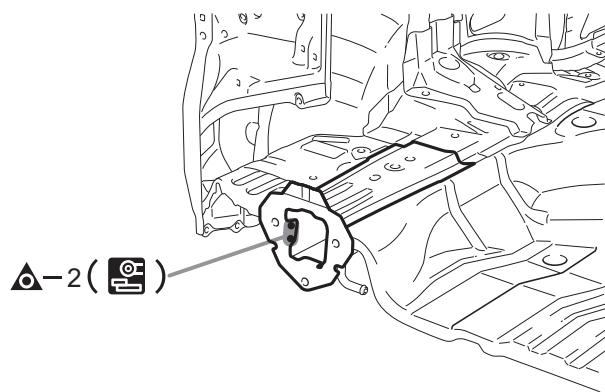
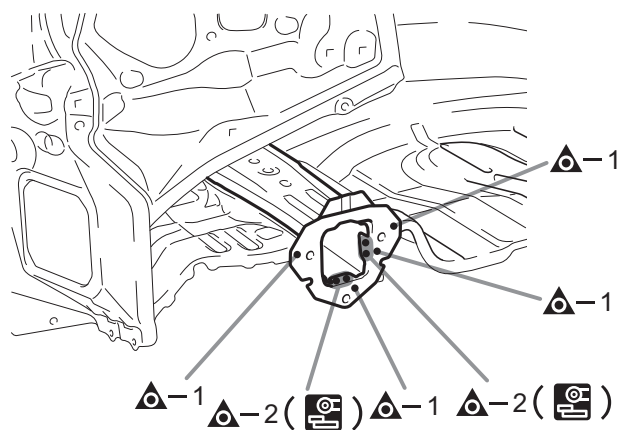
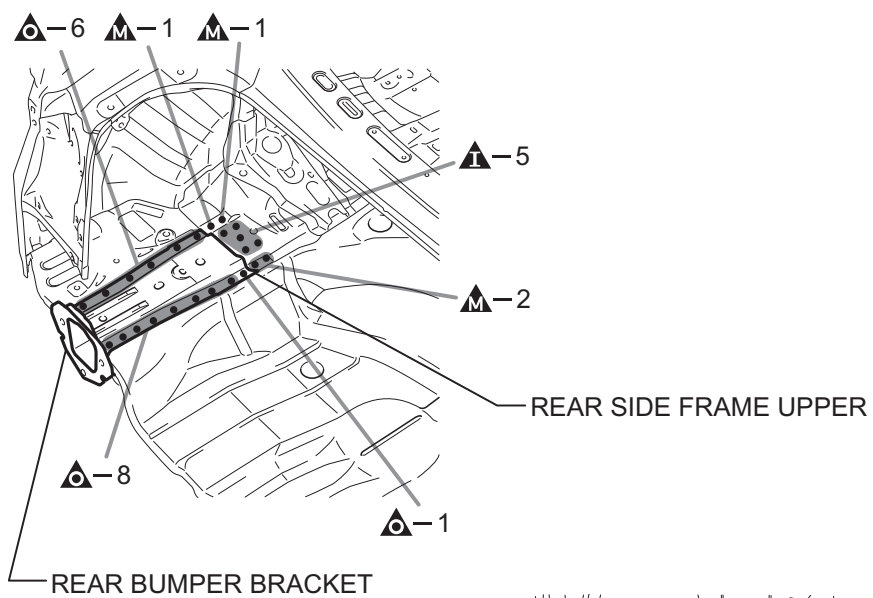
### 1. REMOVAL

Symbol meaning	
	Remove Weld Points
	Remove Weld Points
	Remove Weld Points
	Cut with Disc Sander etc.

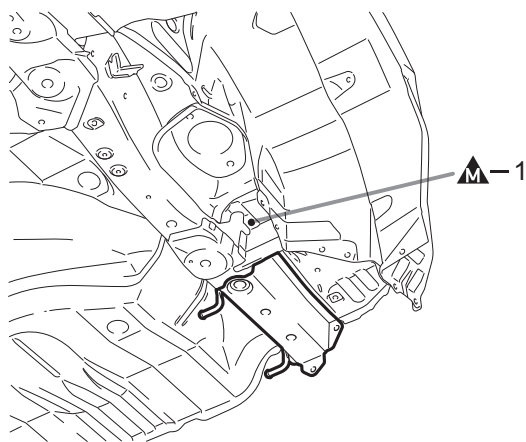
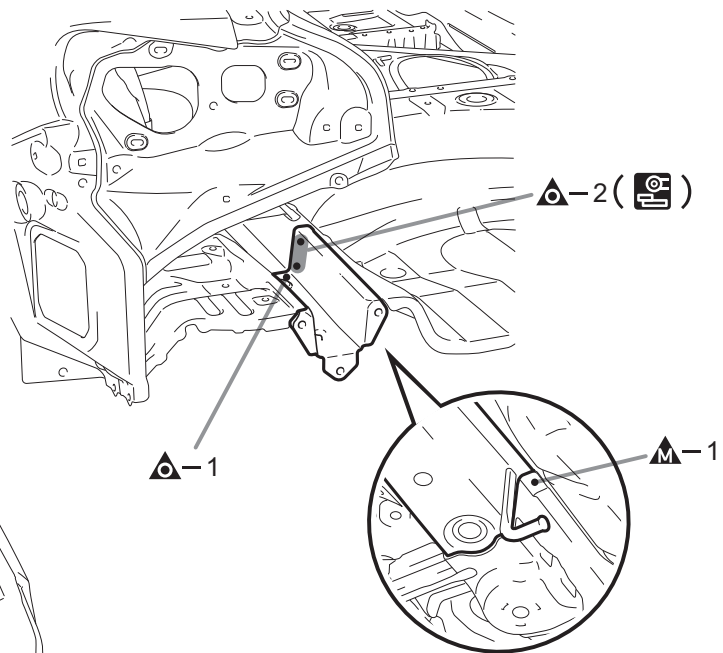
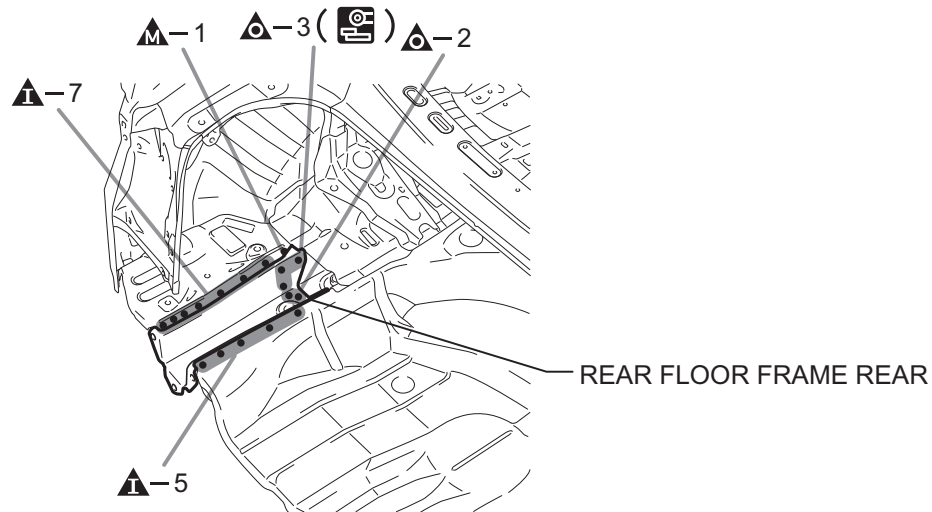
### REMOVAL POINT

1. After removing the rear side frame upper and rear bumper bracket, remove the rear floor frame rear.





WP



WP



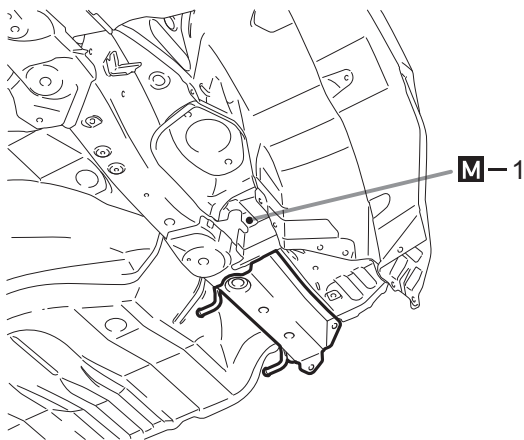
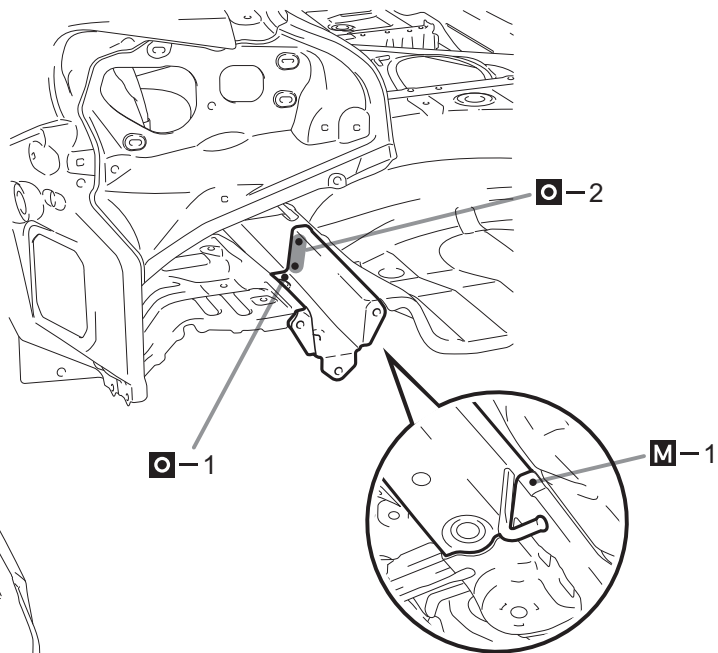
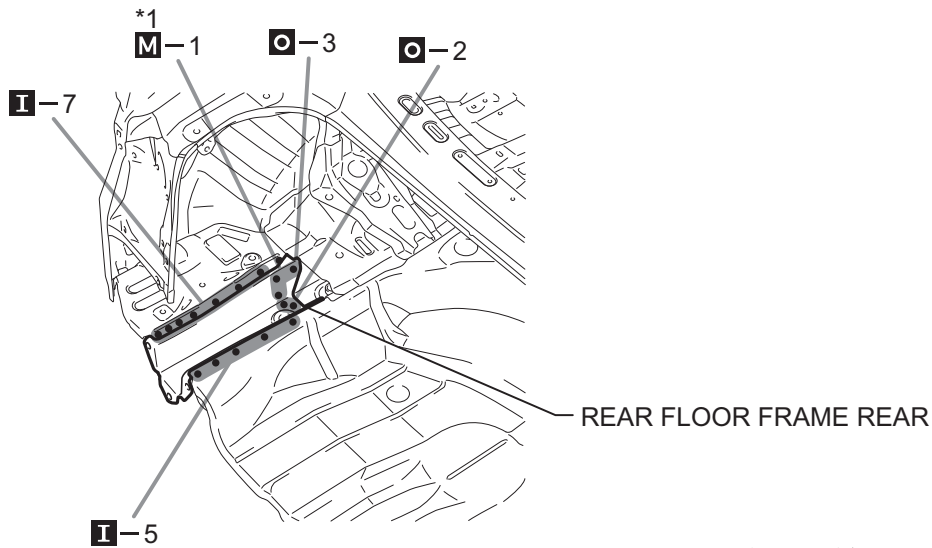
## 2. INSTALLATION

Symbol meaning	
	Spot Weld
	Plug Weld
	Plug Weld
	Plug Weld

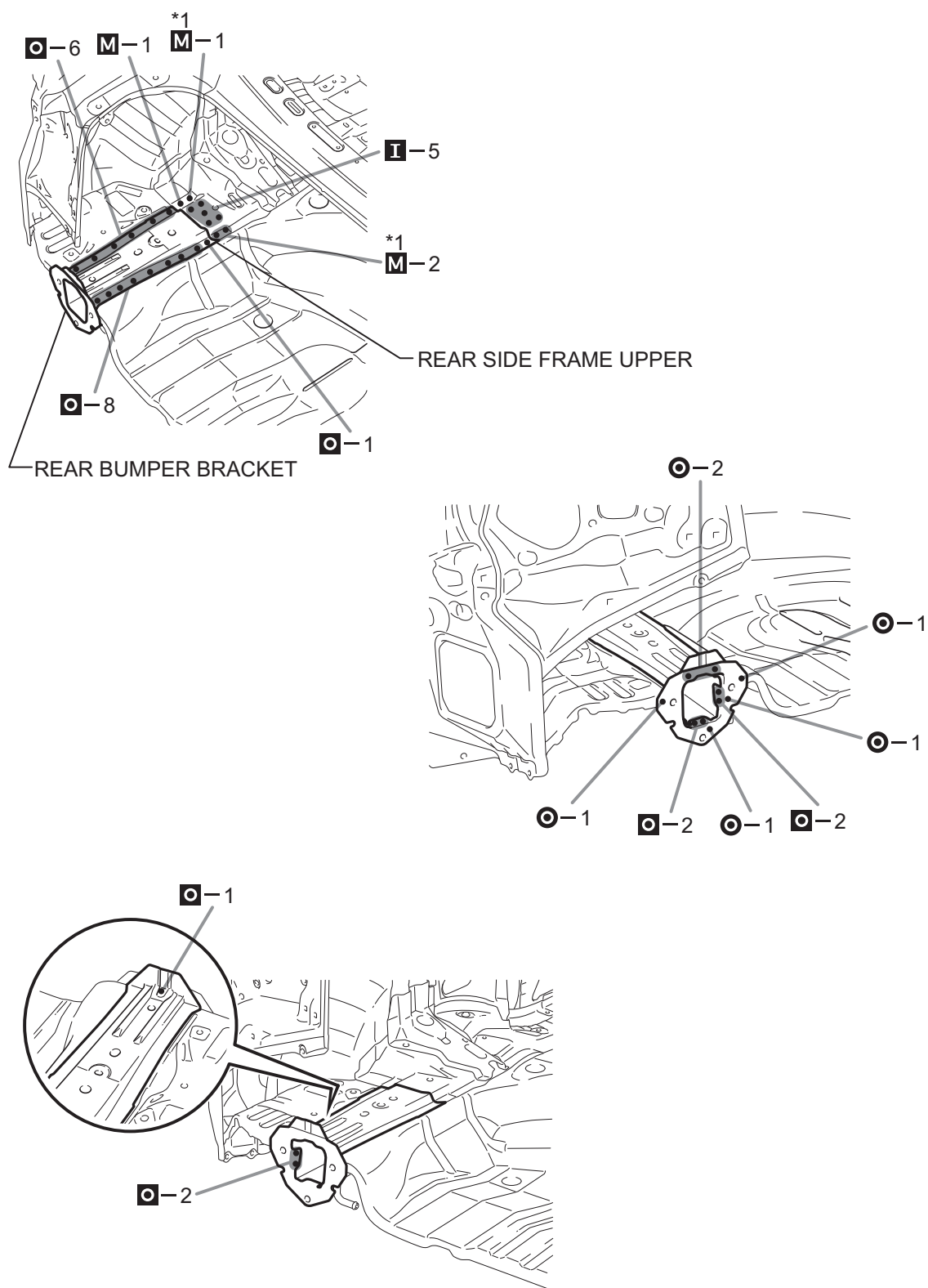
## INSTALLATION POINT

1. When welding \*1, make a hole on a new part for plug welding and weld the panel with the panel behind completely.
2. After welding the rear floor frame rear to the vehicle side, install the rear side frame upper and rear bumper bracket.
3. After welding, apply body sealer and undercoating to the corresponding parts. (See the painting / coating)
4. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

WP



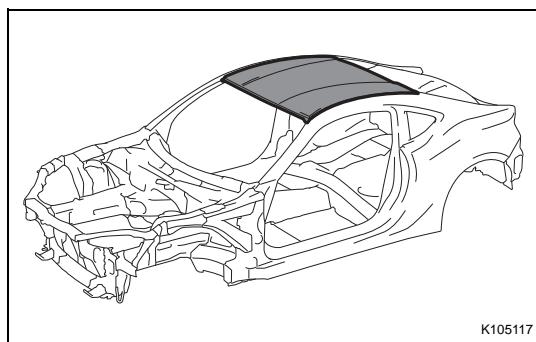
WP





# ROOF PANEL

## ASSEMBLY REPLACEMENT



WP

### Weld work for 980 MPa ultra high strength steel

To assure sufficient weld strength, it is recommended to follow the welding conditions below when welding ultra high strength steel.

- It is recommended to perform spot welding according to board thickness and number of overlapping sheets under the following conditions (\*1 - \*2)
- When conditions can't be met, it is recommended to perform the plug welding following \*3.

Spot welding	*1	Compression	2.6 kN	Total number of 2 overlapping sheets
		Current	6.0 kA	
		Welding time	10 Cyc.	
	*2	Compression	4.4 kN	Total number of 3 overlapping sheets
		Current	7.5 kA	
		Welding time	20 Cyc.	
Plug welding	*3	Plug diameter	8 mm (0.31 in) or more	Total number of 2 or 3 overlapping sheets
		Wire	AWS A5.18 ER70S	
		Gas	CO <sub>2</sub>	
		Plug diameter	8 mm (0.31 in) or more	
		Wire	AWS A5.18 ER70S-3	
		Gas	Gas mixture (argon: 80%, CO <sub>2</sub> : 20%)	


### Weld work for 1500 MPa ultra high strength steel

To assure sufficient weld strength, it is recommended to follow the welding conditions below when welding ultra high strength steel.

When conditions can't be met, it is recommended to perform the plug welding following \*4.

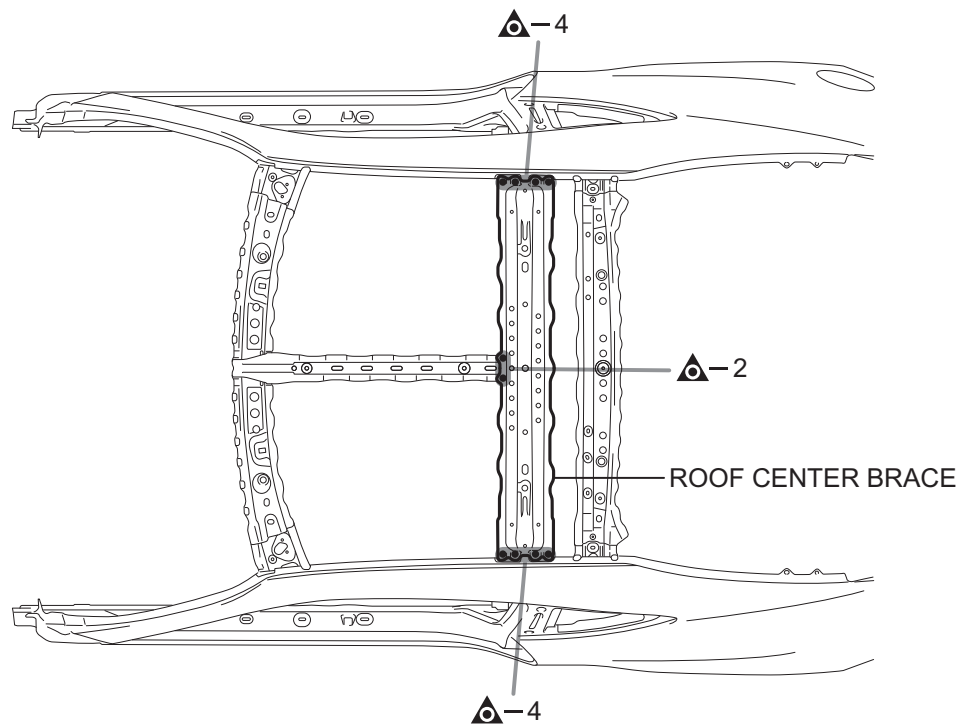
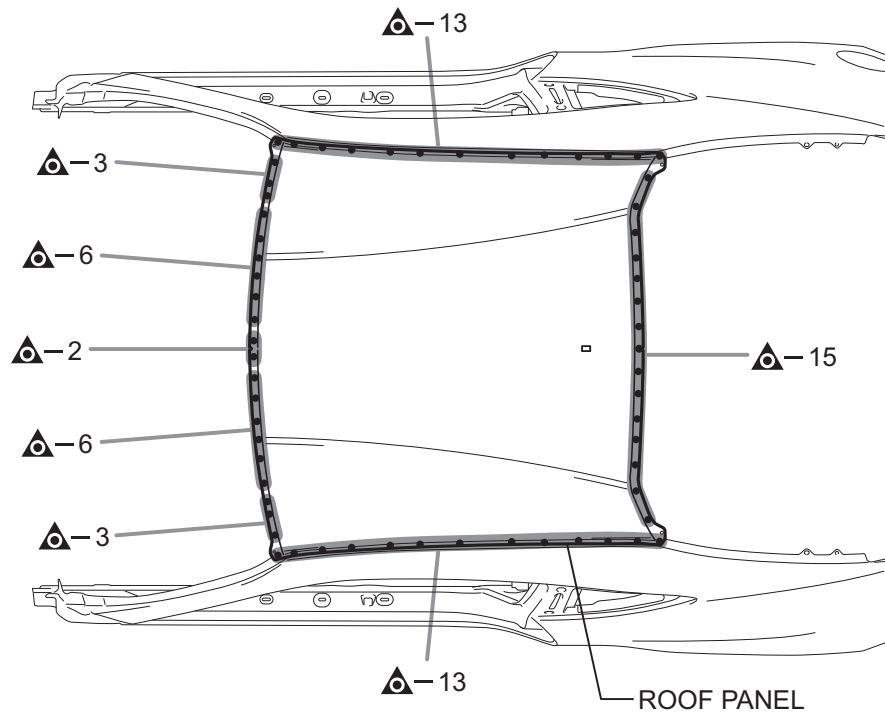
Plug welding	*4	Plug diameter	8.5 mm (0.33 in)	Total number of 2 or 3 overlapping sheets
		Wire	AWS A5.18 ER70S	
		Gas	CO <sub>2</sub>	
		Plug diameter	8.5 mm (0.33 in)	
		Wire	AWS A5.18 ER70S-3	
		Gas	Gas mixture (argon: 80%, CO <sub>2</sub> : 20%)	

## 1. REMOVAL




Symbol meaning	
	Remove Weld Points

- After removing the roof panel, remove the roof center brace.

2. Do not butt weld or heat repair because the heat decreases the strength of areas where ultra high strength steel is used. (See the introduction)



## 2. INSTALLATION

Symbol meaning	
	Spot Weld
	Plug Weld
	Body Sealer

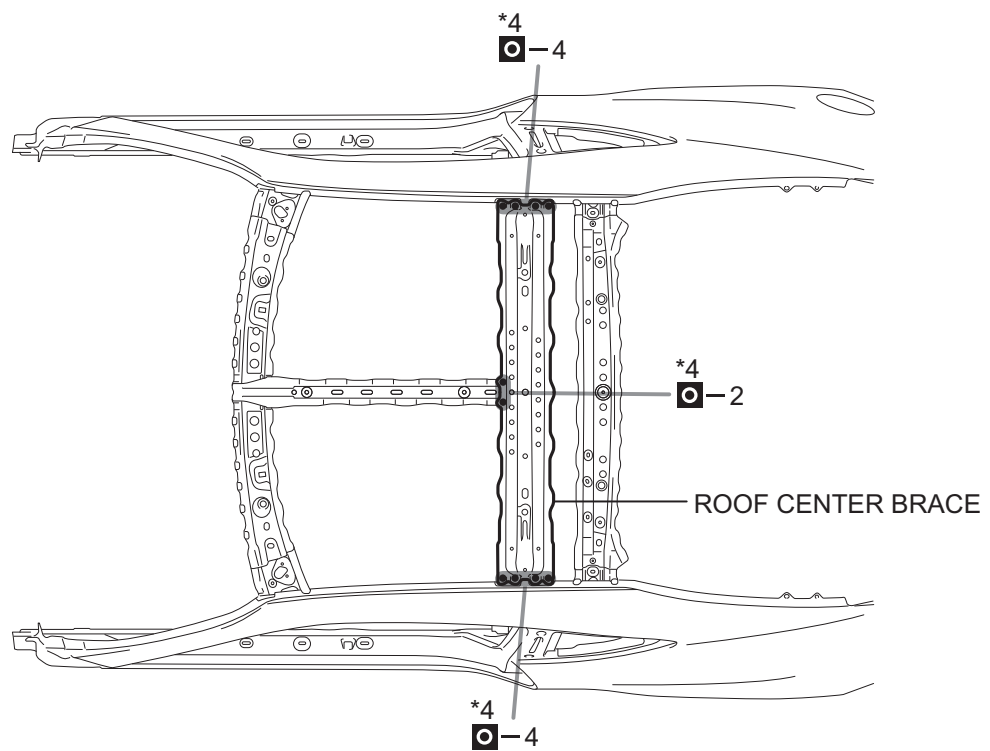
### INSTALLATION POINT

1. Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
2. Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimensions)
3. To assure sufficient weld strength, it is recommended to follow the welding conditions when welding \*1, \*2, \*3 or \*4. (See the introduction)
4. Before temporarily installing the new parts, apply body sealer to the front roof rail, roof brace, center roof brace and rear roof rail.

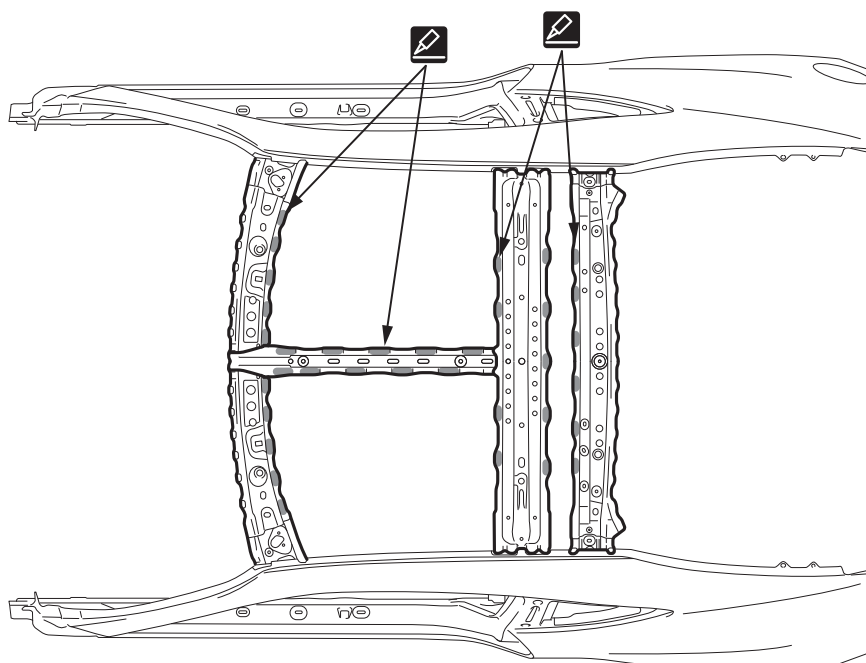
#### HINT:

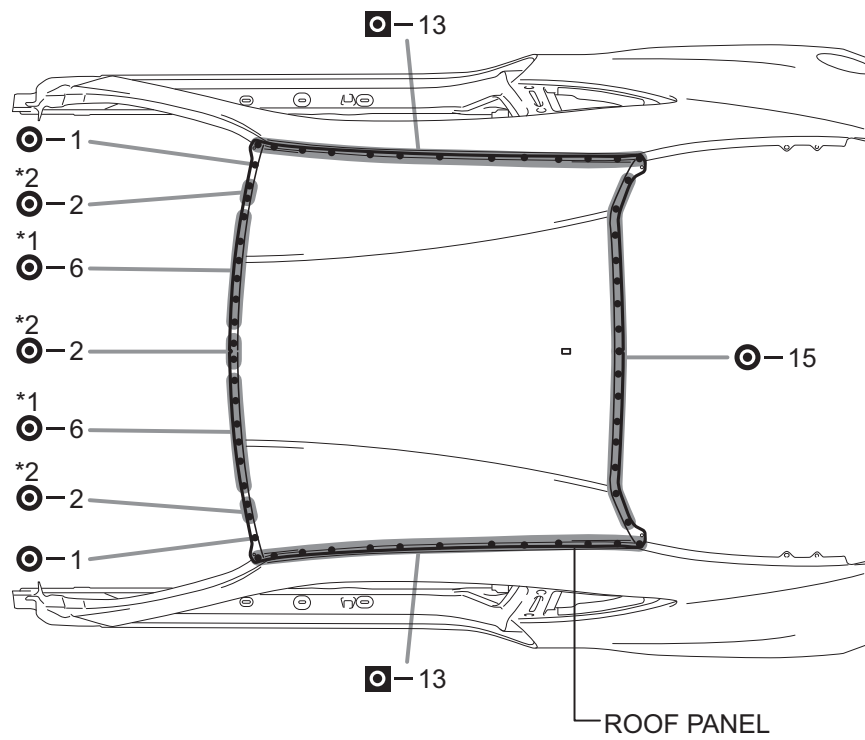
Apply just enough body sealer for the new parts to make contact.

5. After welding the roof center brace to the vehicle side, install the roof panel.
6. After welding, apply body sealer to the corresponding parts. (See the painting / coating)
7. After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.



WP

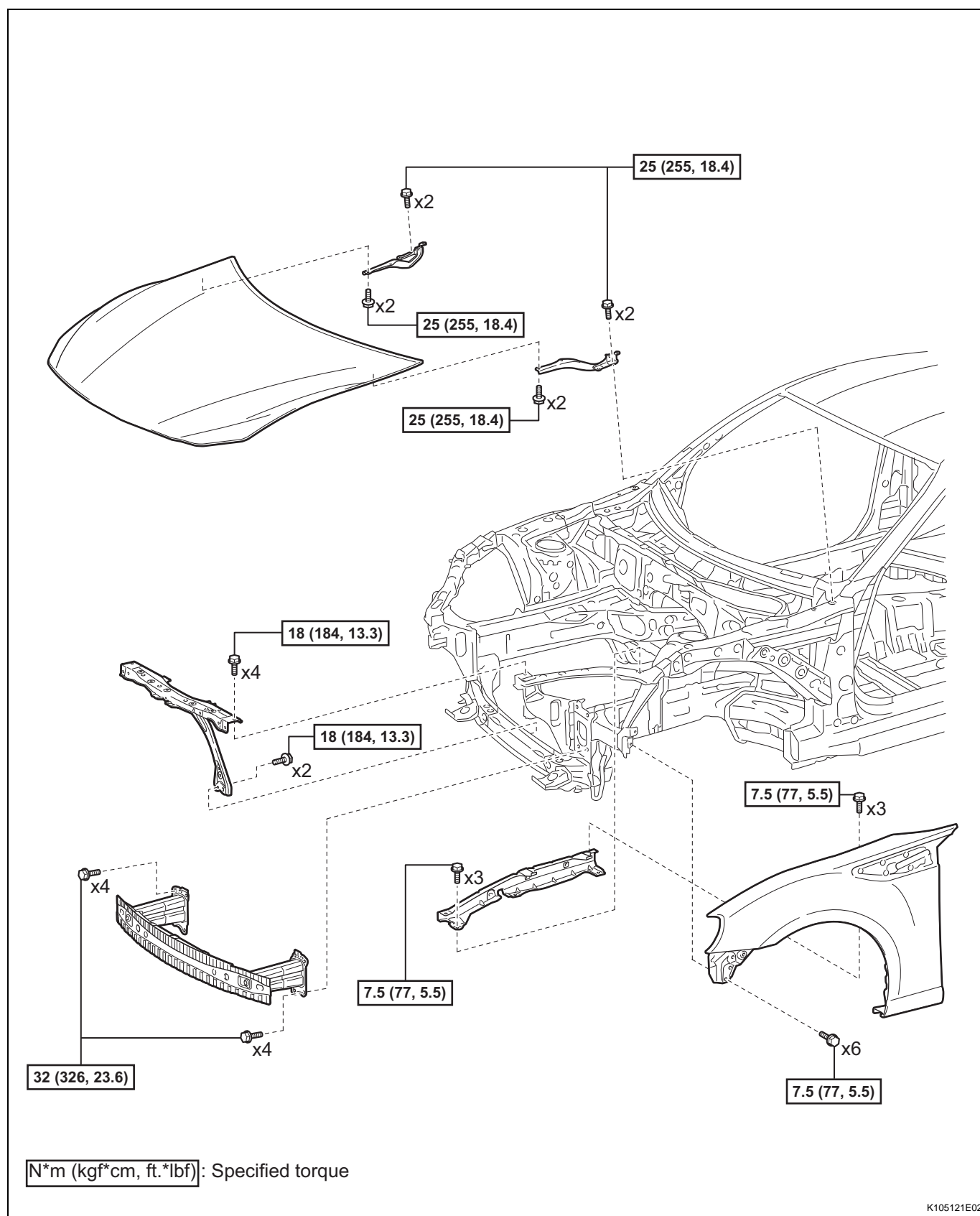




# SPECIFIED TORQUE

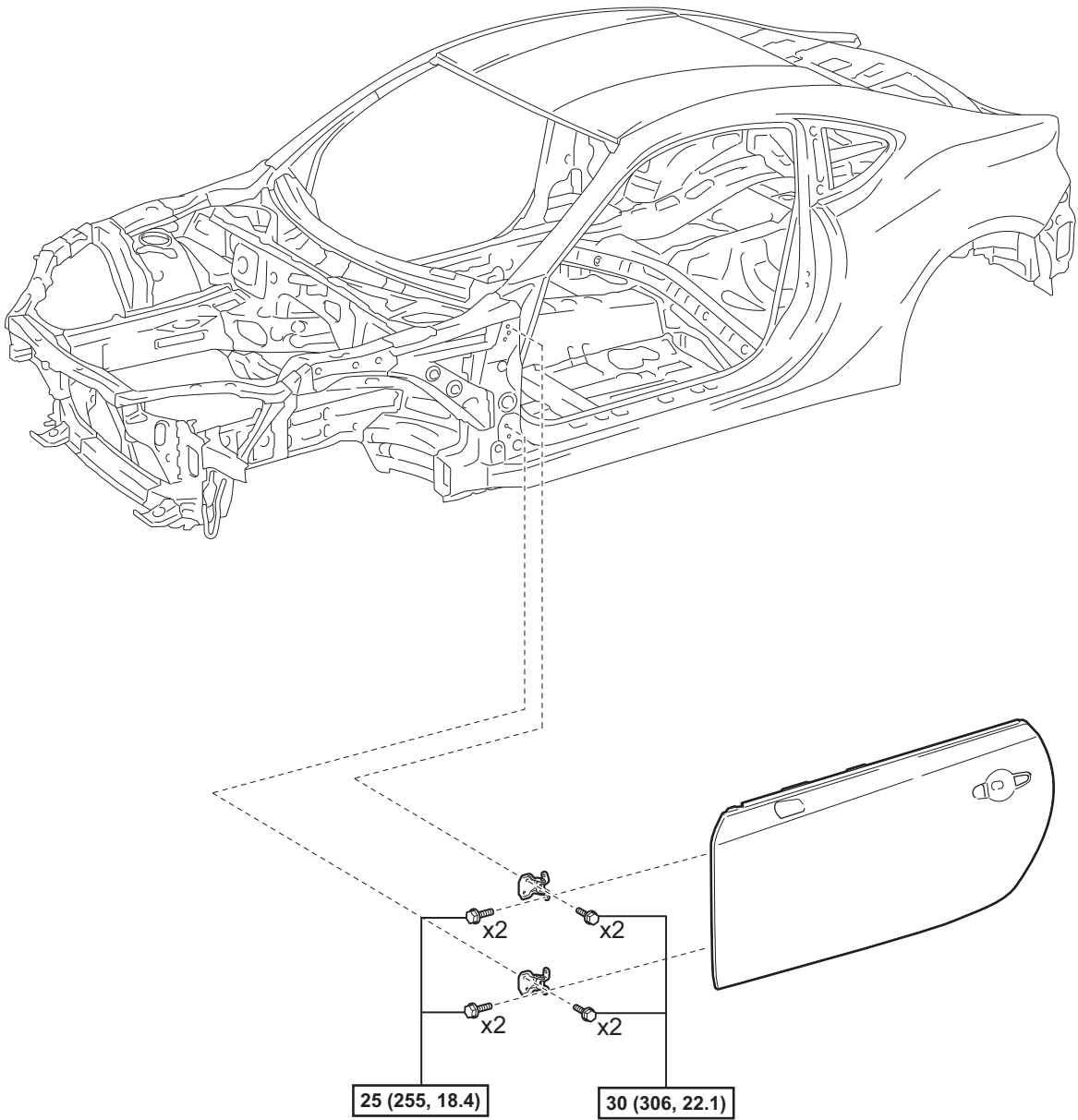
## COMPONENTS

WP



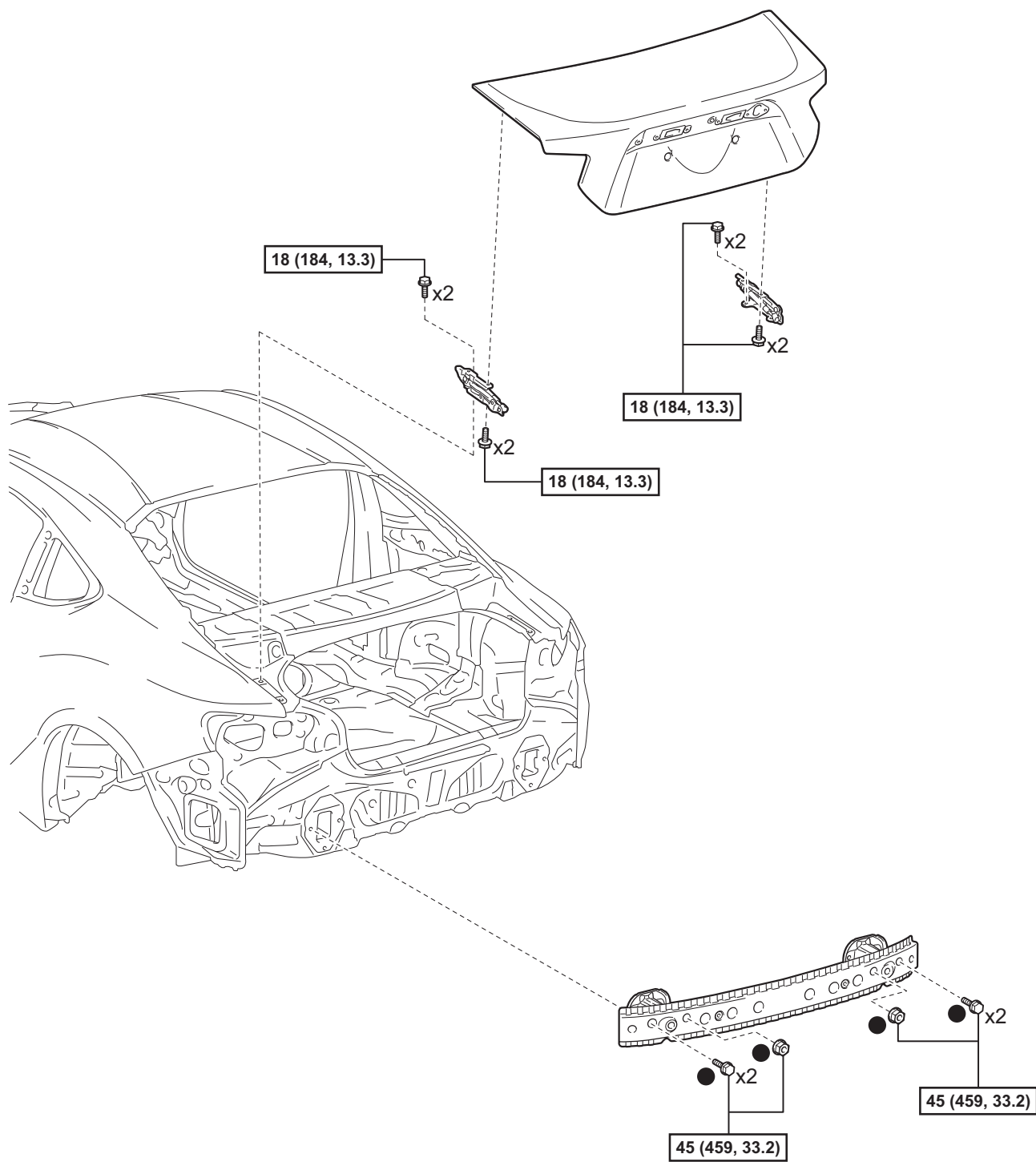


WP



**N\*m (kgf\*cm, ft.\*lbf):** Specified torque

WP



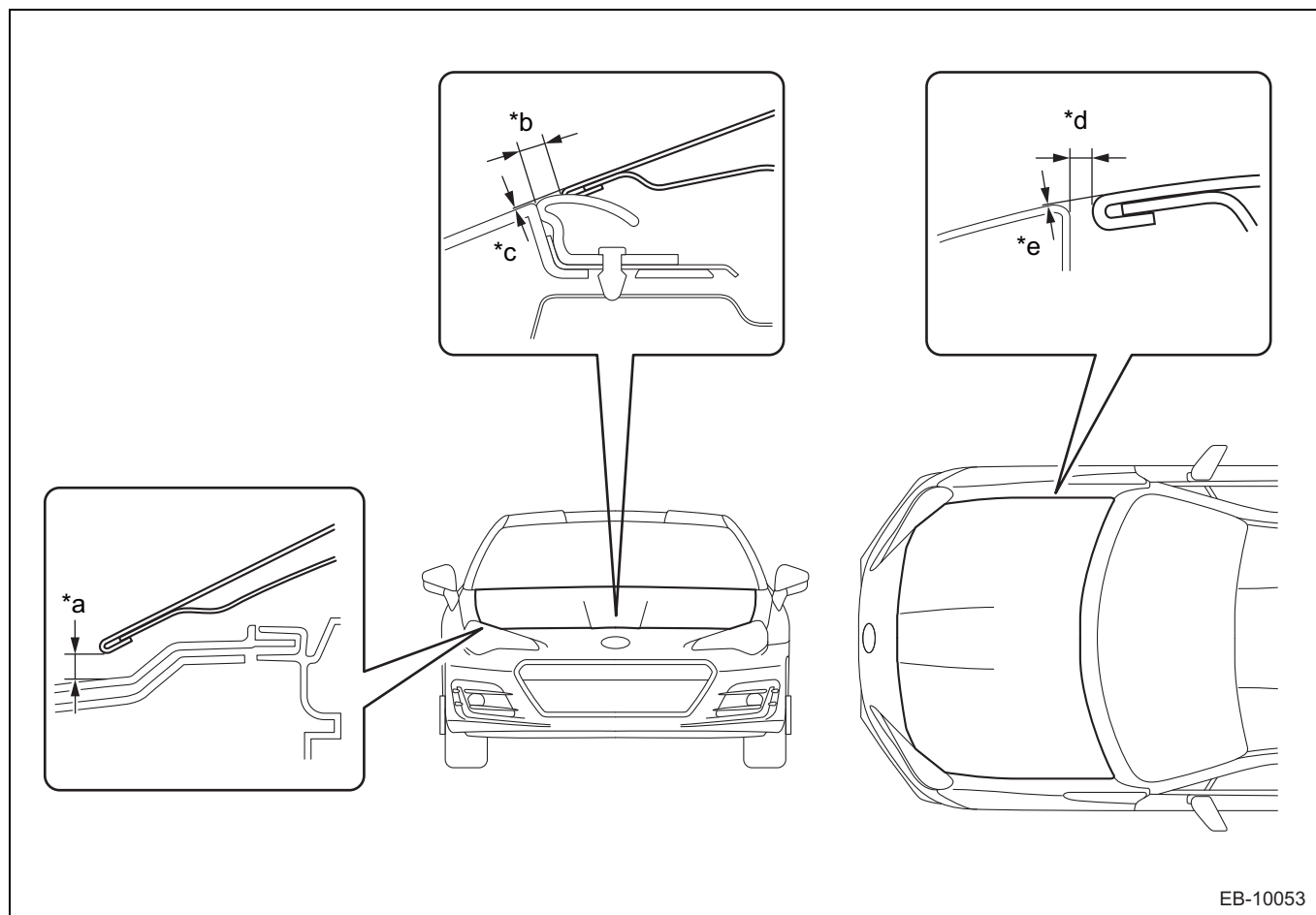
**N\*m (kgf\*cm, ft.\*lbf):** Specified torque

● Non-reusable part

# FIT STANDARD / ADJUSTMENT METHOD

## ADJUSTMENT

### 1. Inspection of the hood ASSY (hood SUB-ASSY)



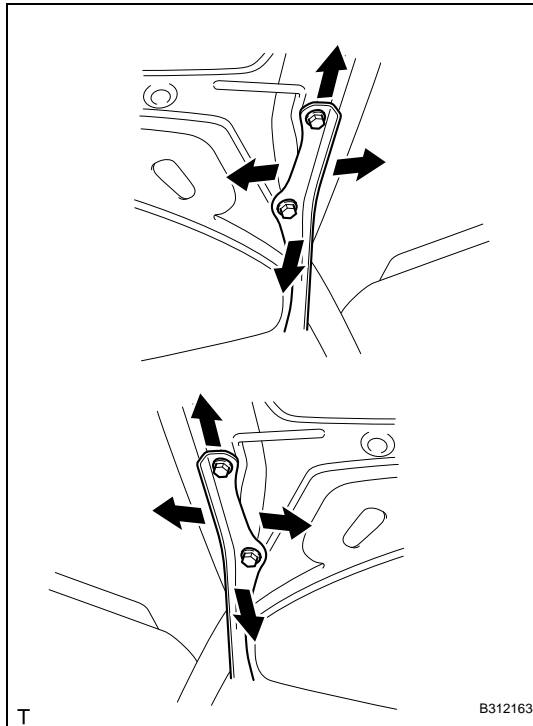
EB-10053

(a) Inspect if each placement dimension is within the reference values.

#### Reference values

*a	5.8 to 9.8 mm {0.2283 to 0.3858 in}	*b	3.0 to 7.0 mm {0.1181 to 0.2756 in}
*c	-2.0 to 2.0 mm {-0.0787 to 0.0787 in}	*d	2.0 to 5.0 mm {0.0787 to 0.1969 in}
*e	-2.0 to 1.0 mm {-0.0787 to 0.0394 in}	-	-

WP



## 2. Adjustment of the hood ASSY (hood SUB-ASSY)

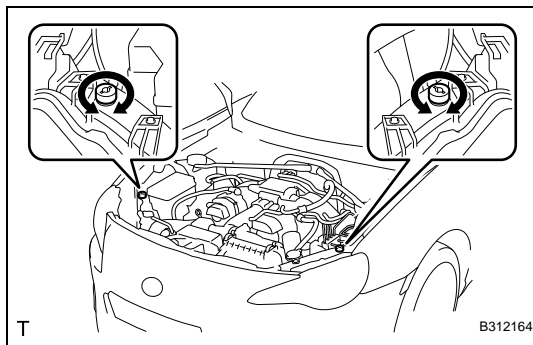
- (a) Adjustment of the forward and backward directions, and the rear left and right directions

- (1) Loosen the bolts of the hood hinge ASSY to adjust.

**Torque: 25N·m {255kgf·cm} {18.4ft·lbf}**

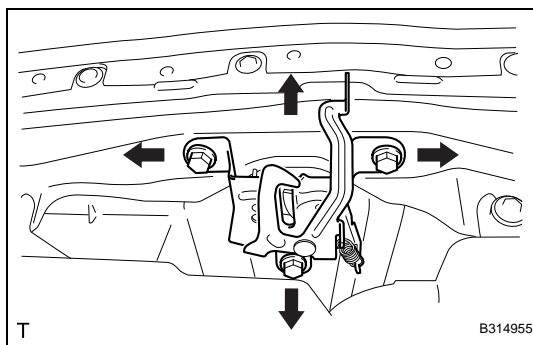
**CAUTION:**

**When adjusting, use the bolt supplied and adjust the placement.**



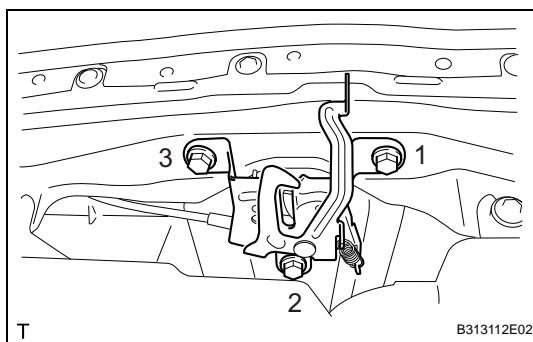
- (b) Adjustment of the vertical direction of both sides of the hood's front end

- (1) Turn the 2 cushions to adjust the height.



- (c) Adjustment of the vertical and left and right directions of the hood's front end.

- (1) Loosen the 3 bolts to adjust.

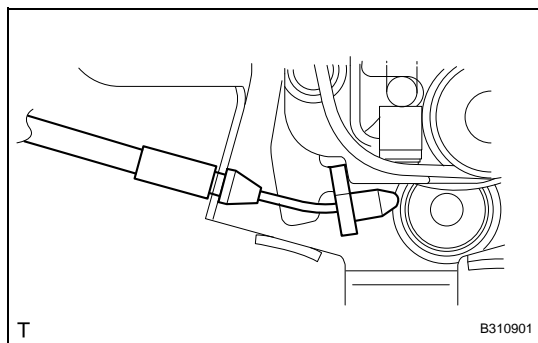


- (2) In the order shown in the figure, tighten the 3 bolts.

**Torque: 33N·m {336kgf·cm} {24.3ft·lbf}**

**CAUTION:**

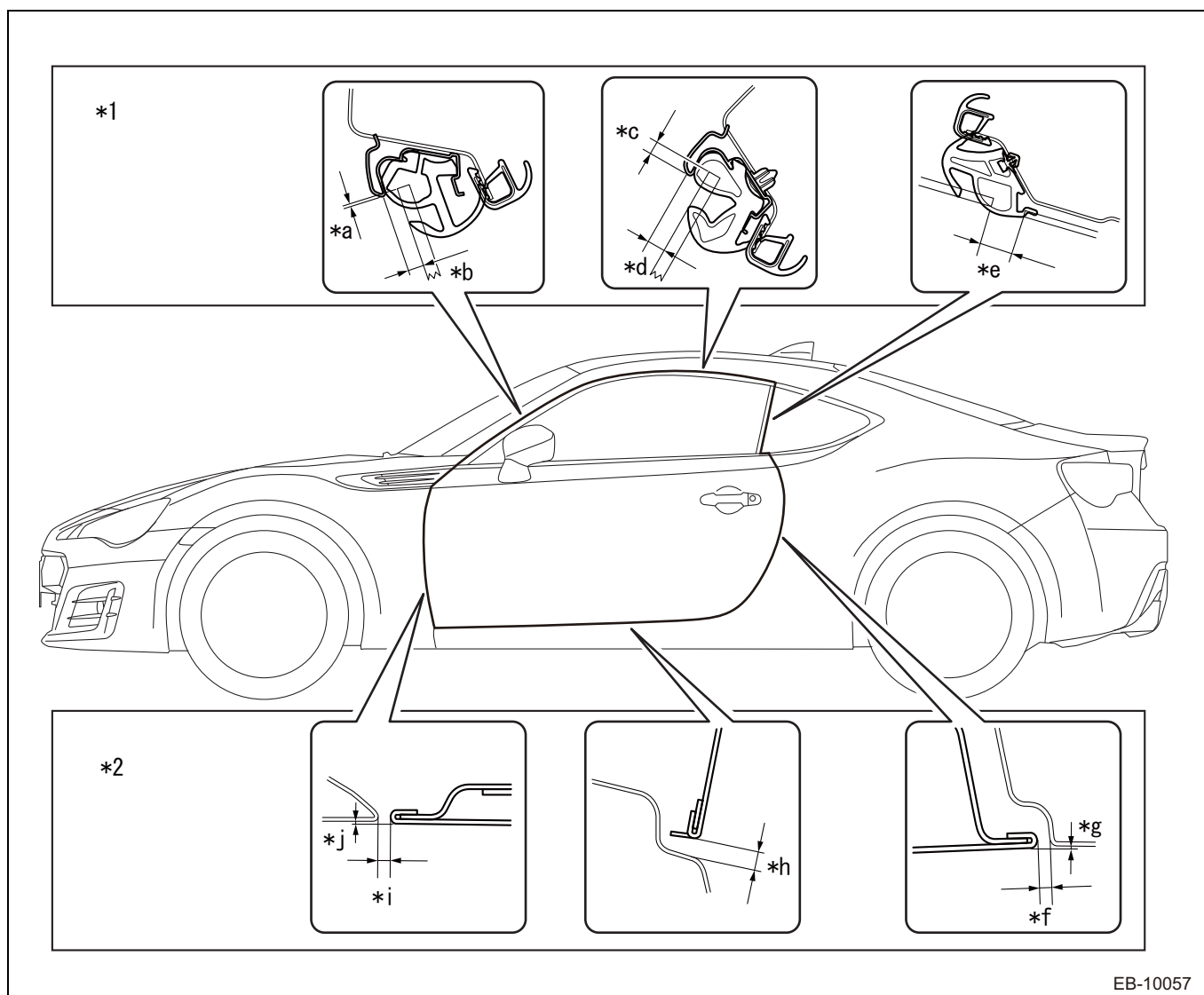
**When adjusting, use the bolt supplied and adjust the placement.**



(3) Connect the cable ASSY front hood (hood lock control cable ASSY).

WP

### 3. Inspection of the front door LH



EB-10057

(a) Inspect if each placement dimension is within the reference values range.

#### Reference values

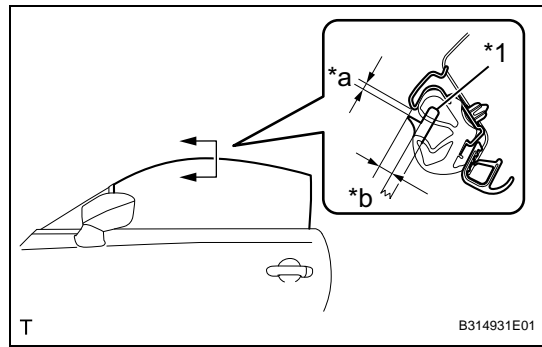
*a	-1.0 to 2.0 mm {-0.039 to 0.079 in}	*b	5.5 to 8.5 mm {0.217 to 0.335 in}
*c	3.5 to 6.5 mm {0.138 to 0.256 in}	*d	5.2 to 8.2 mm {0.205 to 0.323 in}
*e	13.5 to 16.5 mm {0.5315 to 0.6496 in}	*f	2.5 to 5.5 mm {0.0984 to 0.2165 in}
*g	0.0 to 1.5 mm {0.0 to 0.0591 in}	*h	4.8 to 7.8 mm {0.1890 to 0.3071 in}
*i	3.1 to 5.6 mm {0.122 to 0.220 in}	*j	-1.0 to 1.5 mm {-0.0394 to 0.0591 in}

#### Captions in illustration

*1	Front Glass	*2	Front Door
----	-------------	----	------------

HINT:

The procedures described below are for the LH side. The RH side and the LH side follow the same steps.



4. Adjustment of the front door glass

- (a) Insert the SST in the front door glass and measure the placement dimensions.  
**SST 61299CA000**

Captions in illustration

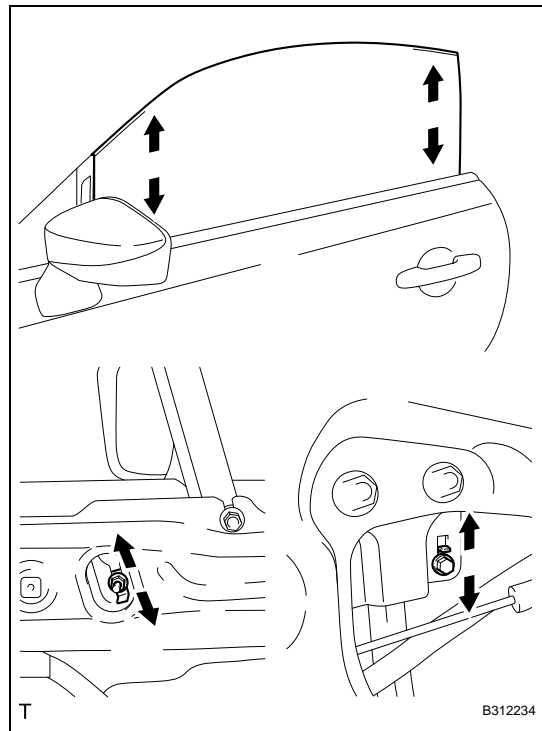
*1	SST
----	-----

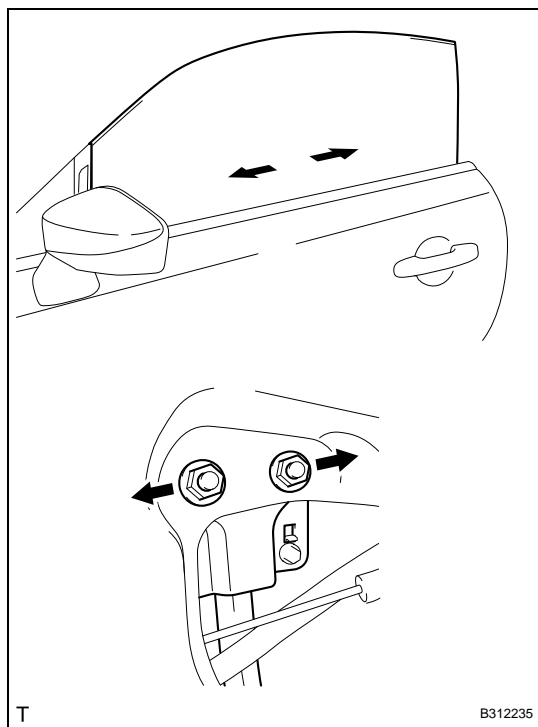
Reference values

*a	3.5 to 6.5 mm {0.138 to 0.256 in}
*b	5.2 to 8.2 mm {0.205 to 0.323 in}

- (b) Adjust the front door glass so that the placement dimensions are within the reference values.
- (c) Loosen the nut of the front door sash stopper and the bolt of the front door frame SUB-ASSY RR LWR RH stopper section, and adjust the vertical direction of the front door glass.

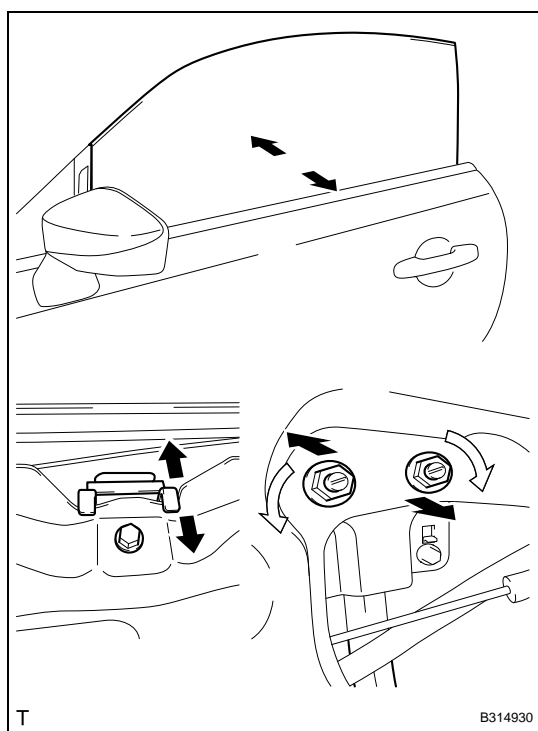
**Torque: 7.5N·m {77kgf·cm} {5.5ft·lbf}**



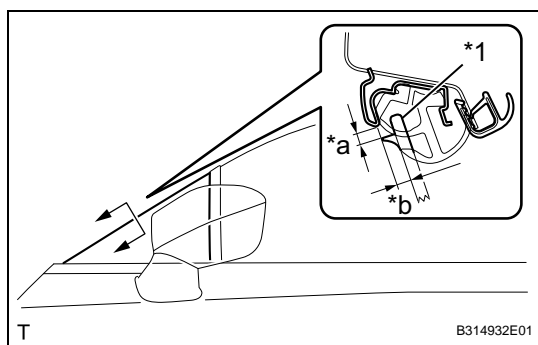


- (d) Loosen the 2 nuts of the front door frame SUB-ASSY RR LWR RH, and adjust the forward and backward direction of the front door glass.  
**Torque: 14N·m {143kgf·cm} {10.3ft·lbf}**

WP



- (e) Loosen the bolt of the door glass stabilizer INN, and adjust the side to side direction of the front door glass.  
**Torque: 7.5N·m {77kgf·cm} {5.5ft·lbf}**
- (f) Loosen the nut of the front door frame SUB-ASSY RR LWR RH, turn the bolt with a flat tip screwdriver, and adjust the side to side direction of the front door glass.  
**Torque: 14N·m {143kgf·cm} {10.3ft·lbf}**



- (g) Insert the SST in the side fix window and measure the placement dimensions.

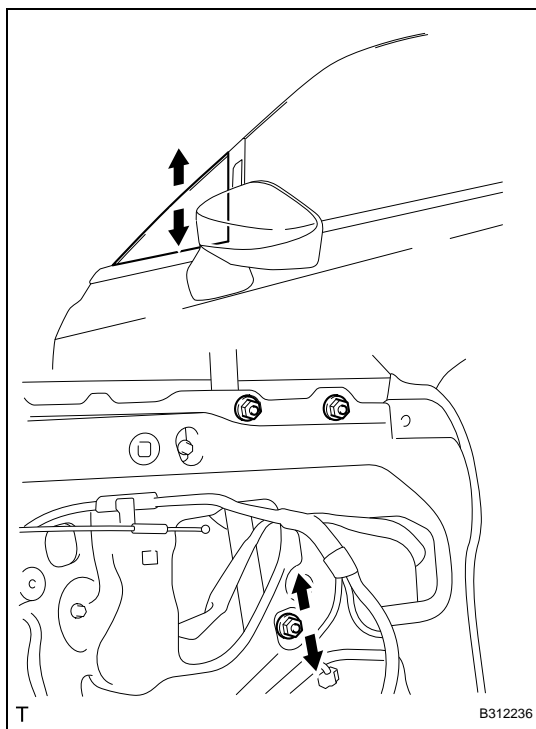
**SST 61299CA010**

#### Captions in illustration

*1	SST
----	-----

#### Reference values

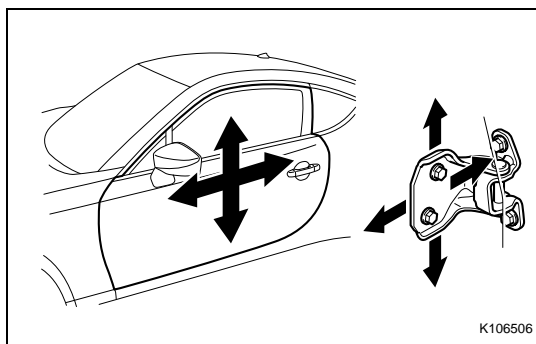
*a	2.5 to 5.5 mm {0.0984 to 0.2165 in}
*b	5.2 to 8.2 mm {0.2047 to 0.3228 in}



- (h) Loosen the 3 nuts of the front door sash and adjust the vertical direction of the front door sash so that the placement dimensions are within the reference values.

**Torque: 14 N·m {143kgf·cm} {10.3ft·lbf} (lower side)**

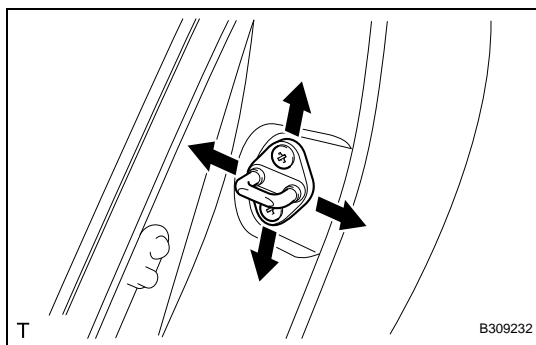
**7.5N·m {77kgf·cm} {5.5ft·lbf} (upper side)**



## 5. Adjustment of the front door LH

- (a) Loosen the bolts on the body side, and adjust the door's front and rear, and vertical directions.

**Torque: 30N·m {306kgf·cm} {22.1ft·lbf}**

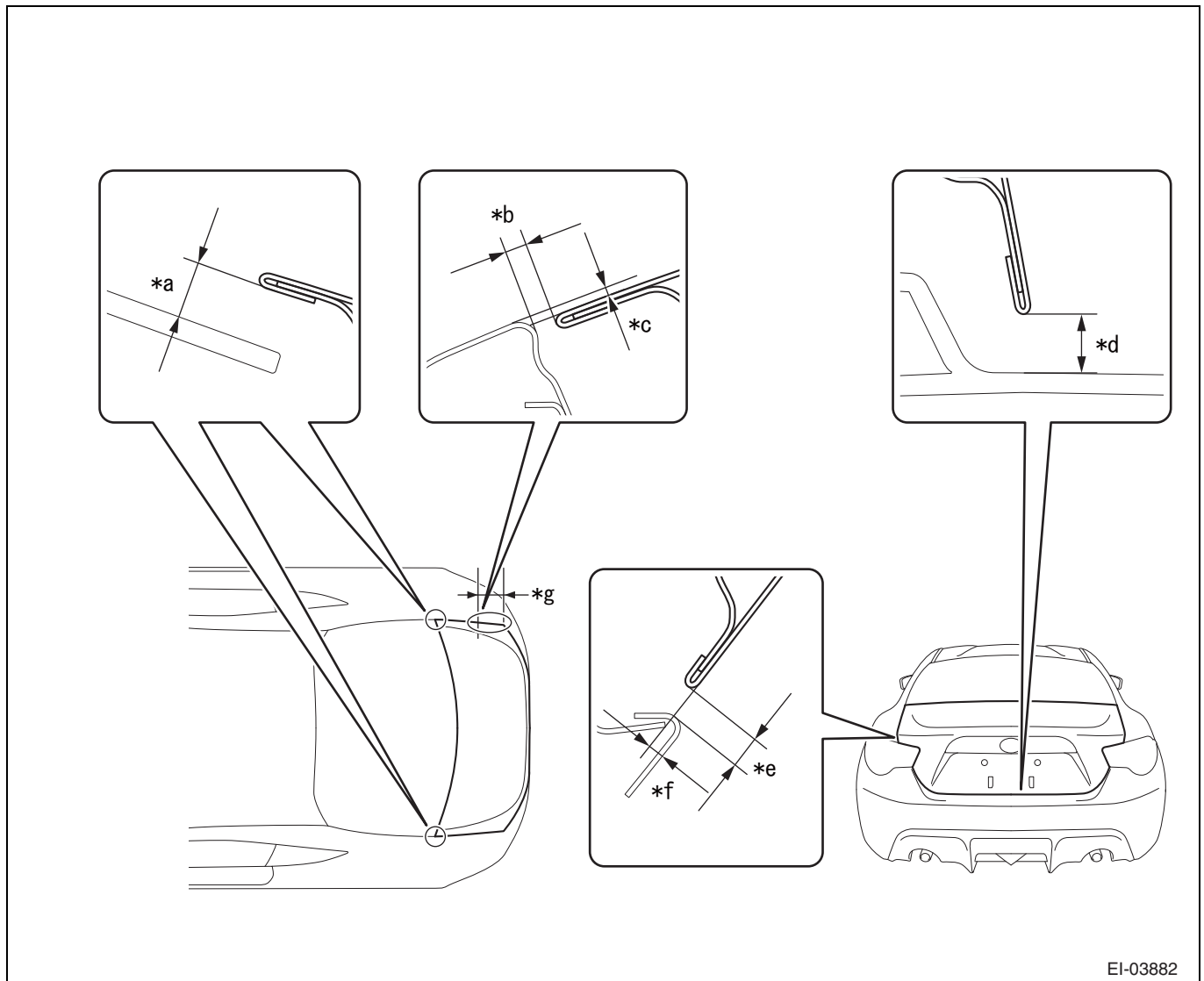


- (b) Loosen the striker installation screws until the striker can move. Using a brass bar, hit the striker lightly and adjust the side to side and vertical directions of the rear end of the door and the front door lock striker plate ASSY.

**Torque: 18N·m {184kgf·cm} {13.3ft·lbf}**



## 6. Inspection of the trunk lid COMPL (luggage compartment door panel SUB-ASSY)



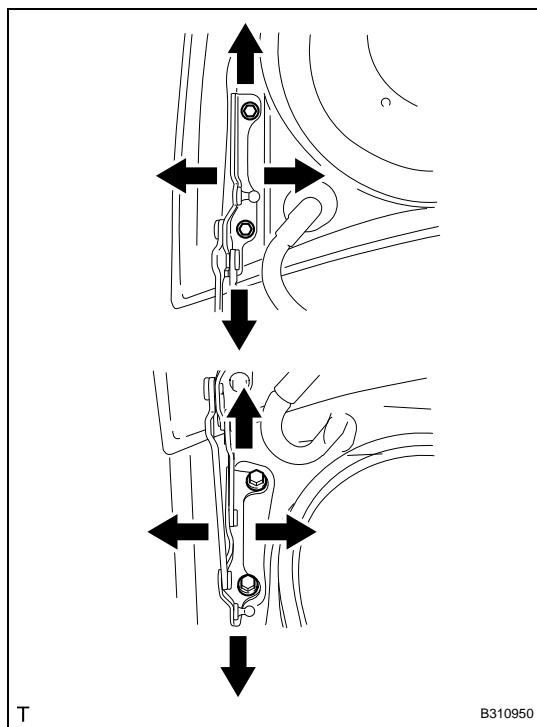
EI-03882

(a) Inspect if placement dimensions are within the reference values.

### Reference values

*a	7.8 mm {0.3071 in}	*b	2.0 to 5.0 mm {0.0787 to 0.1969 in}
*c	0 mm {0 in} (section of 150 mm {5.906 in} from the back end of the trunk)	*d	5.8 to 10.2 mm {0.2283 to 0.4016 in}
*e	4.3 to 7.3 mm {0.1693 to 0.2874 in}	*f	-2.0 to 1.0 mm {-0.0787 to 0.0394 in}
*g	150 mm {5.906 in}	-	-

WP



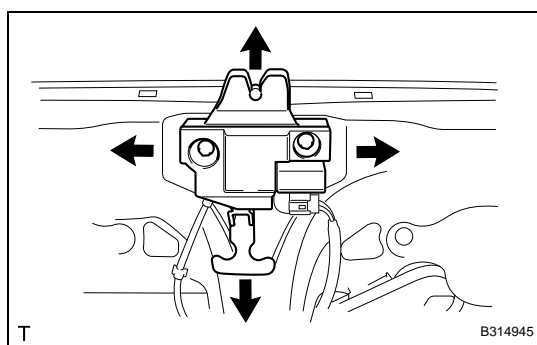
## 7. Adjustment of the trunk lid COMPL (luggage compartment door panel SUB-ASSY)

- (a) Loosen the bolts before adjusting the door's forward and backward direction, and the side to side direction of the door's front end.

**Torque: 18N·m {184kgf·cm} {13.3ft·lbf}**

**CAUTION:**

**When adjusting, use the bolt supplied and adjust the placement.**



- (b) Loosen the bolts before adjusting the side to side direction of the door's rear end and the striker.

**Torque: 7.5N·m {77kgf·cm} {5.5ft·lbf}**

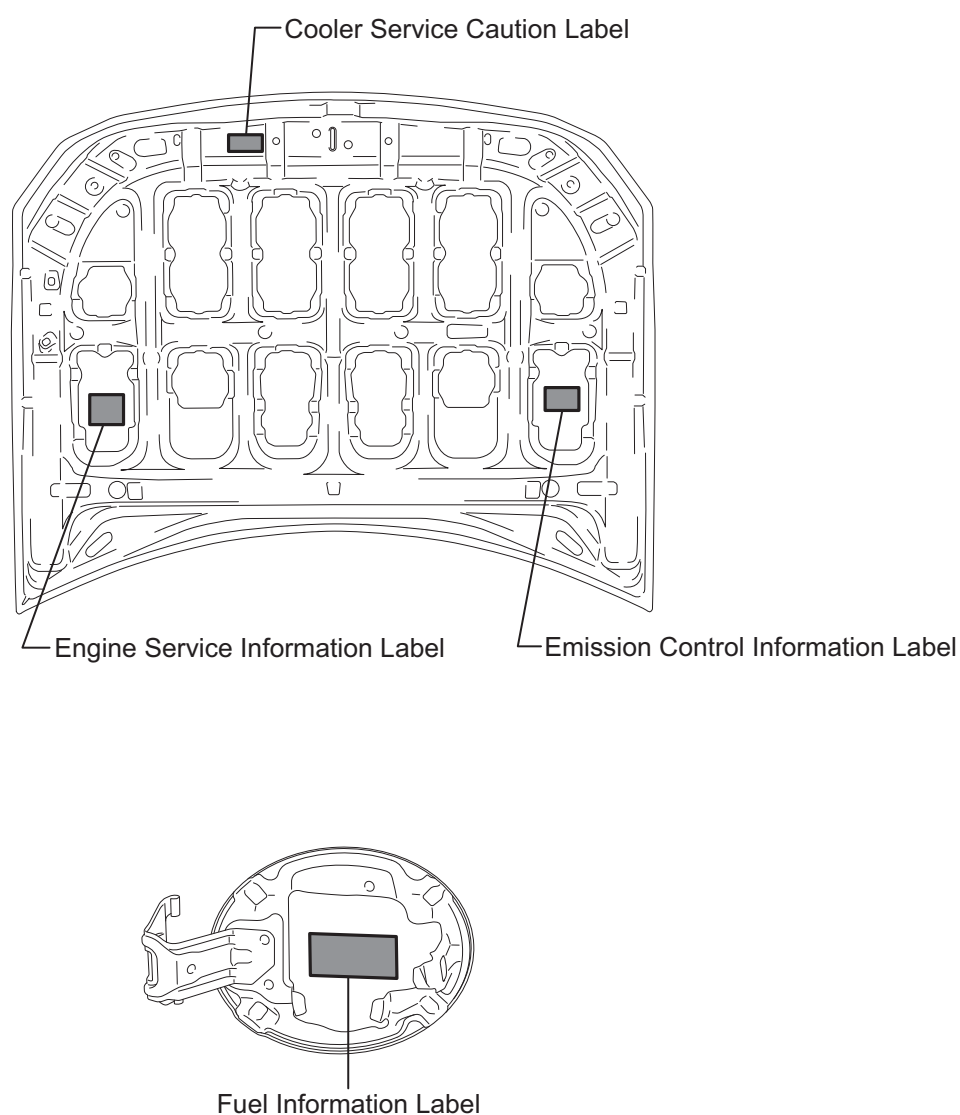
# CAUTION LABEL

## ATTACHMENT POSITION

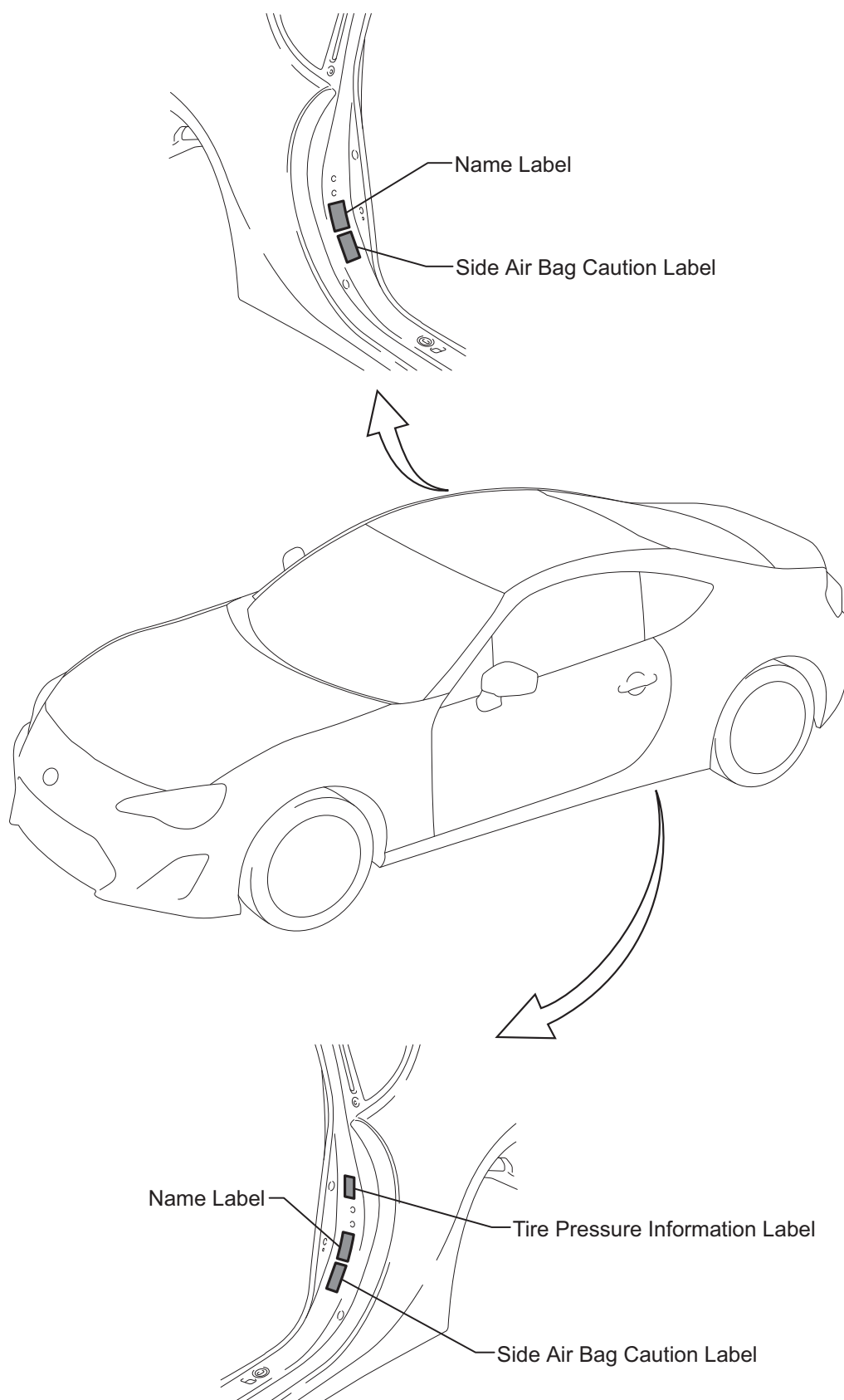
1. After using a degreasing agent to clean the surfaces of the body where the caution labels will be attached, attach the caution labels to the positions shown in the illustration.

**HINT:**

- Make sure the caution label is not attached over a spot weld.
- When attaching the caution label, make sure not to touch the label's adhesive surface.
- To prevent the edges of the caution label from peeling, apply extra pressure to the label's periphery.
- If the work area's temperature is 5°C or less, the caution label's adhesive will deteriorate. It is recommended that you heat the label to 20 to 40°C.

**WP**

WP



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# BODY DIMENSIONS

## MEASURING INFORMATION

DIAGRAM DESCRIPTION..... BD-1

## ENGINE COMPARTMENT

THREE-DIMENSIONAL DISTANCE ..... BD-3

## FRONT DOOR

THREE-DIMENSIONAL DISTANCE ..... BD-5

## LUGGAGE DOOR

THREE-DIMENSIONAL DISTANCE ..... BD-8

## UNDER BODY

THREE-DIMENSIONAL DISTANCE ..... BD-10

TWO-DIMENSIONAL DISTANCE ..... BD-12

## FRONT SUSPENSION CROSSMEMBER

THREE-DIMENSIONAL DISTANCE ..... BD-15

TWO-DIMENSIONAL DISTANCE ..... BD-17

## REAR SUSPENSION CROSSMEMBER

THREE-DIMENSIONAL DISTANCE ..... BD-20

TWO-DIMENSIONAL DISTANCE ..... BD-22

## ENGINE COMPARTMENT REFERENCE VALUES

THREE-DIMENSIONAL DISTANCE ..... BD-25

## UNDER BODY REFERENCE VALUES

THREE-DIMENSIONAL DISTANCE ..... BD-27

## OTHER REFERENCE VALUES

TWO-DIMENSIONAL DISTANCE ..... BD-29

**BD**

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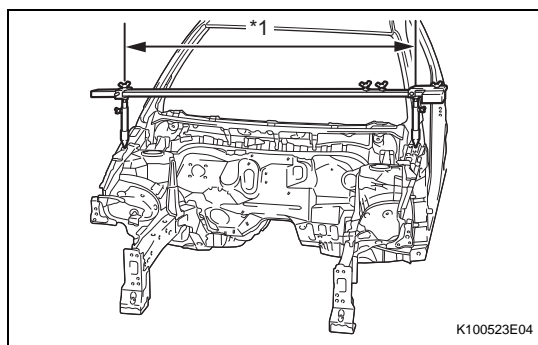
BD

# MEASURING INFORMATION

## DIAGRAM DESCRIPTION

### HINT:

- There are two types of dimensions in the diagram.
- In cases in which only one dimension is given, left and right are symmetrical.
- For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).

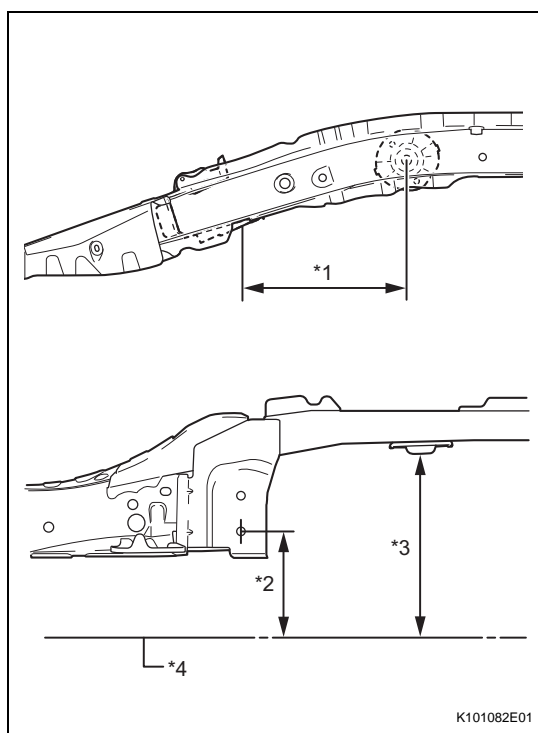


### 1. Three-Dimensional Distance

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

#### Text in Illustration

*1	Distance between the centers of the measuring points
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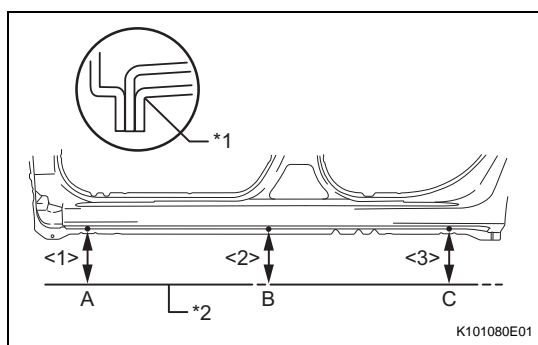


### 2. Two-Dimensional Distance

- (a) Horizontal distance in forward/rearward between the centers of two measuring points.  
 (b) Distance from the Imaginary Datum Line.

#### Text in Illustration

*1	Center-to-center horizontal distance in forward/rearward
*2	Vertical distance to center
*3	Vertical distance to lower surface
*4	Imaginary Datum Line



### 3. Imaginary Datum Line

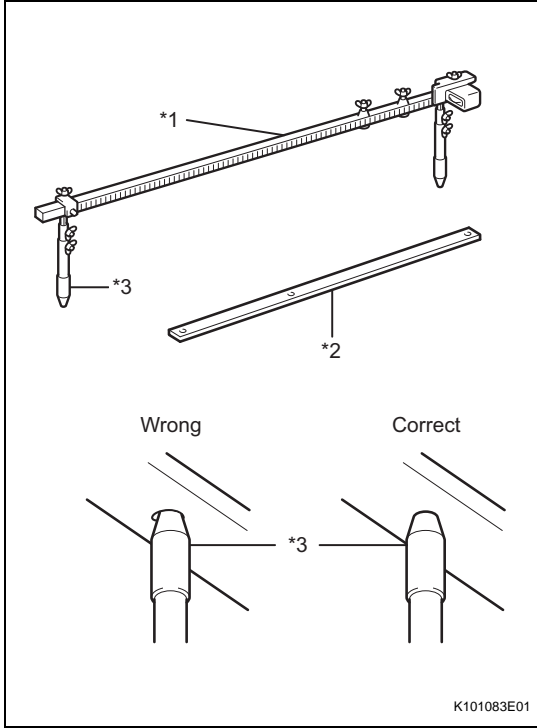
- (a) The imaginary line used to measure height is a line which connects the points described in the following chart (actual dimensions are listed in the next chapter of this manual).

#### Text in Illustration

*1	Under surface of the Rocker Panel
*2	Imaginary Datum Line

Symbol	Measuring Points
A	The place that was lowered <1> mm from the under surface of the rocker panel centered on the front jack up point.

Symbol	Measuring Points
B	The place that was lowered <2> mm from the under surface of the rocker panel centered between A and C.
C	The place that was lowered <3> mm from the under surface of the rocker panel centered on the rear jack up point.



4. Measurement

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

Text in Illustration

*1	Tracking Gauge
*2	Master Gauge
*3	Pointer

HINT:

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



# ENGINE COMPARTMENT

## THREE-DIMENSIONAL DISTANCE

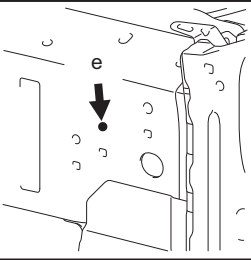
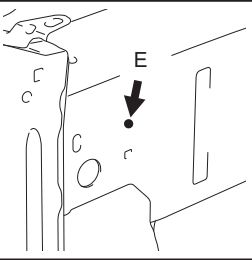
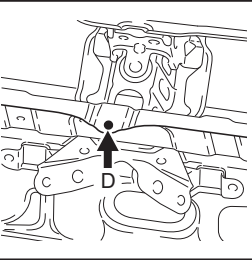
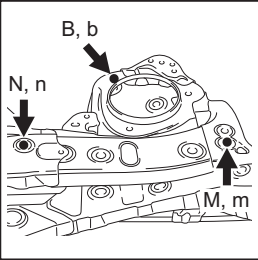
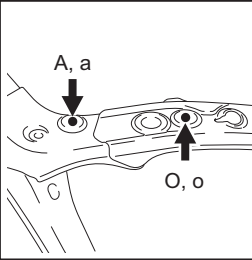
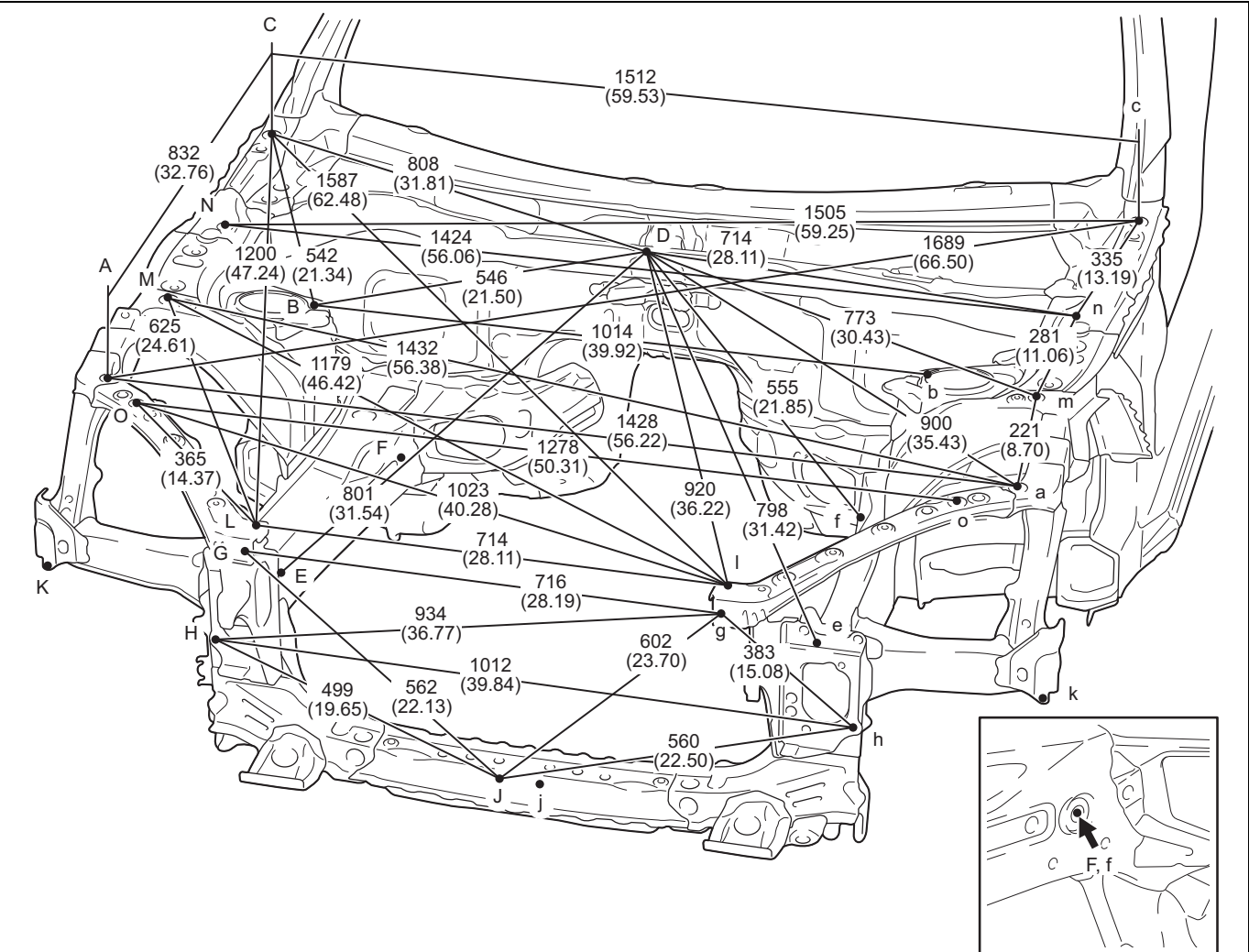
HINT:

- Point E, e on the vehicle are asymmetrical.
- In cases in which only one dimension is given, left and right are symmetrical.
- For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).

### Measuring Point Name

Symbol	Name	Hole Diameter mm (in.)
A, a	Fender Extension Installation Nut	M6 (0.24)
B, b	Front Suspension Installation Hole	φ9.5 (0.37)
C, c	Hood Hinge Installation Nut	M8 (0.31)
D	Cowl Panel Installation Hole	φ7 (0.28)
E, e	Earth Installation Nut	M6 (0.24)
F, f	Side Frame Standard Hole	φ14 (0.55)
G, g	Radiator Upper Frame Center Installation Nut	M8 (0.31)
H, h	Front Beam Installation Nut	M8 (0.31)
J, j	Bumper Lower Center Stay Installation Nut	M6 (0.24)
K, k	Fender Bracket Standard Hole	φ8 (0.31)
L, l	Radiator Upper Frame Center Installation Nut	M8 (0.31)
M, m	Fender Extension Installation nut	M6 (0.24)
N, n	Fender Extension Installation nut	M6 (0.24)
O, o	Headlight Installation Nut	M6 (0.24)

BD



Distance between points other than those above

Height from Imaginary Datum Line

E - e	F - f	K - k	M - m	A - L, a - l
855 (33.66)	780 (30.71)	1568 (61.73)	1401 (55.16)	467 (18.39)
A - N, a - n	A - l, a - L	A - n, a - N	B - L, b - l	B - c, b - C
499 (19.65)	1113 (43.82)	1511 (59.49)	669 (26.34)	1351 (53.19)
B - l, b - L	C - M, c - m	C - O, c - o	C - m, c - M	C - o, c - O
1082 (42.60)	615 (24.21)	910 (35.83)	1580 (62.20)	1661 (65.39)
L - N, l - n	L - n, l - N	M - O, m - o	M - n, m - N	M - o, m - O
875 (34.45)	1335 (52.56)	297 (11.69)	1440 (56.69)	1371 (53.98)

A, a	C, c	H, h
646 (25.43)	745 (29.33)	278 (10.94)
L, l		
580 (22.83)		

mm  
(in.)

# FRONT DOOR

## THREE-DIMENSIONAL DISTANCE

### HINT:

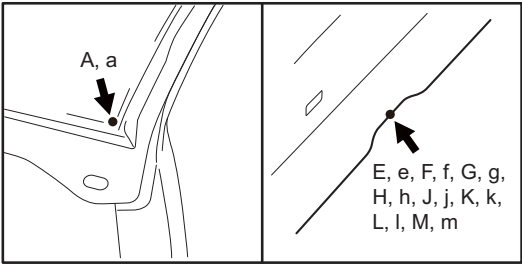
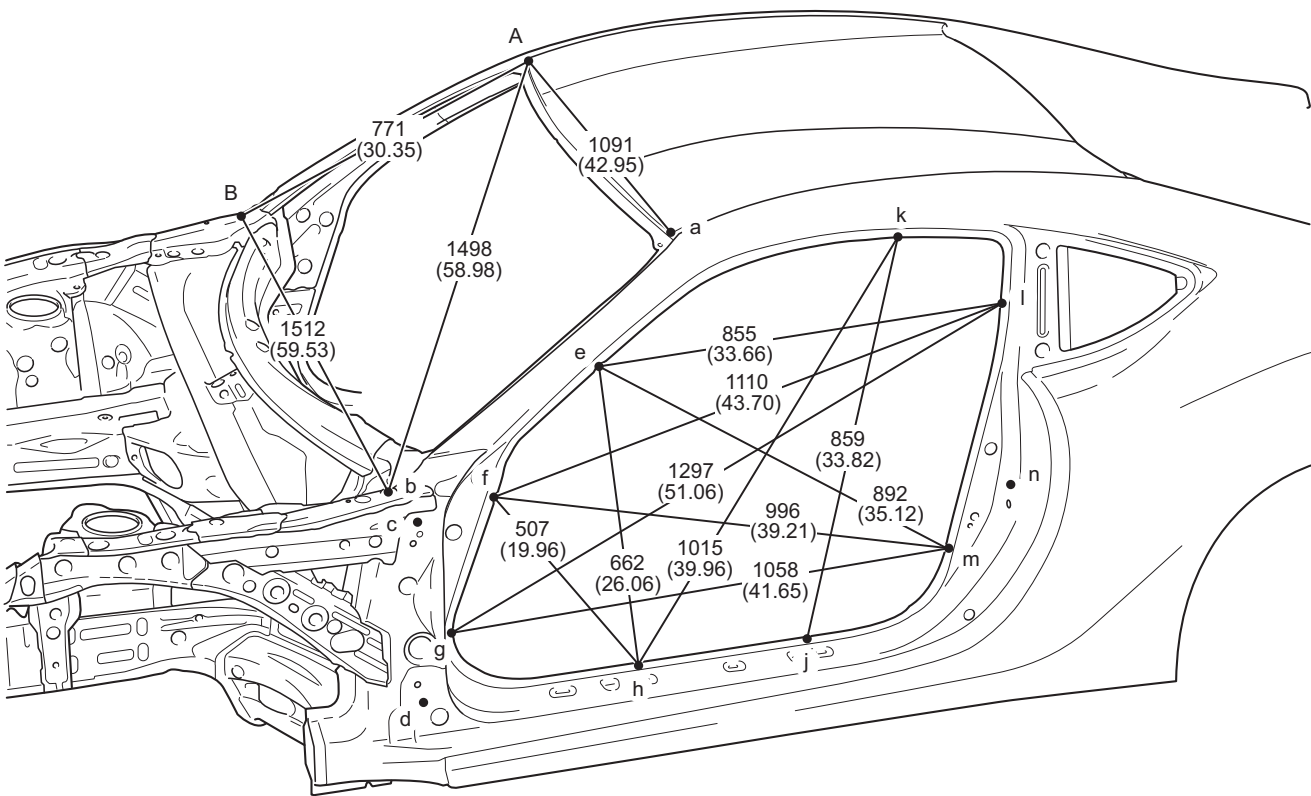
- Use specification \*1 when performing centering measurements for the body dimensions.
- In cases in which only one dimension is given, left and right are symmetrical.
- For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).

### Measuring Point Name

Symbol	Name	Hole Diameter mm (in.)
A, a	Roof Panel Corner	-
B, b	Hood Hinge Installation Nut	M8 (0.31)
C, c	Front Door Hinge Installation Nut	M8 (0.31)
D, d	Front Door Hinge Installation Nut	M8 (0.31)
E, e	Front Outer Body Pillar Assembly Mark	-
F, f	Front Outer Body Pillar Assembly Mark	-
G, g	Front Outer Body Pillar Assembly Mark	-
H, h	Side Sill Outer Assembly Mark	-
J, j	Side Sill Outer Assembly Mark	-
K, k	Front Outer Body Pillar Assembly Mark	-
L, l	Rear Quarter Outer Assembly Mark	-
M, m	Rear Quarter Outer Assembly Mark	-
N, n	Front Door Lock Striker Installation Nut	M8 (0.31)
O, o	Front Filler Crossmember Standard Hole	φ14 (0.55)
*1	Hand Brake Installation Nut	M8 (0.31)

BD

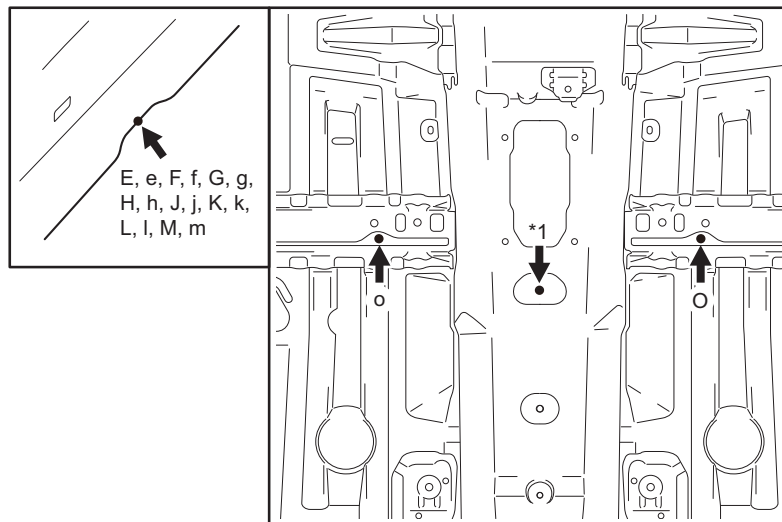
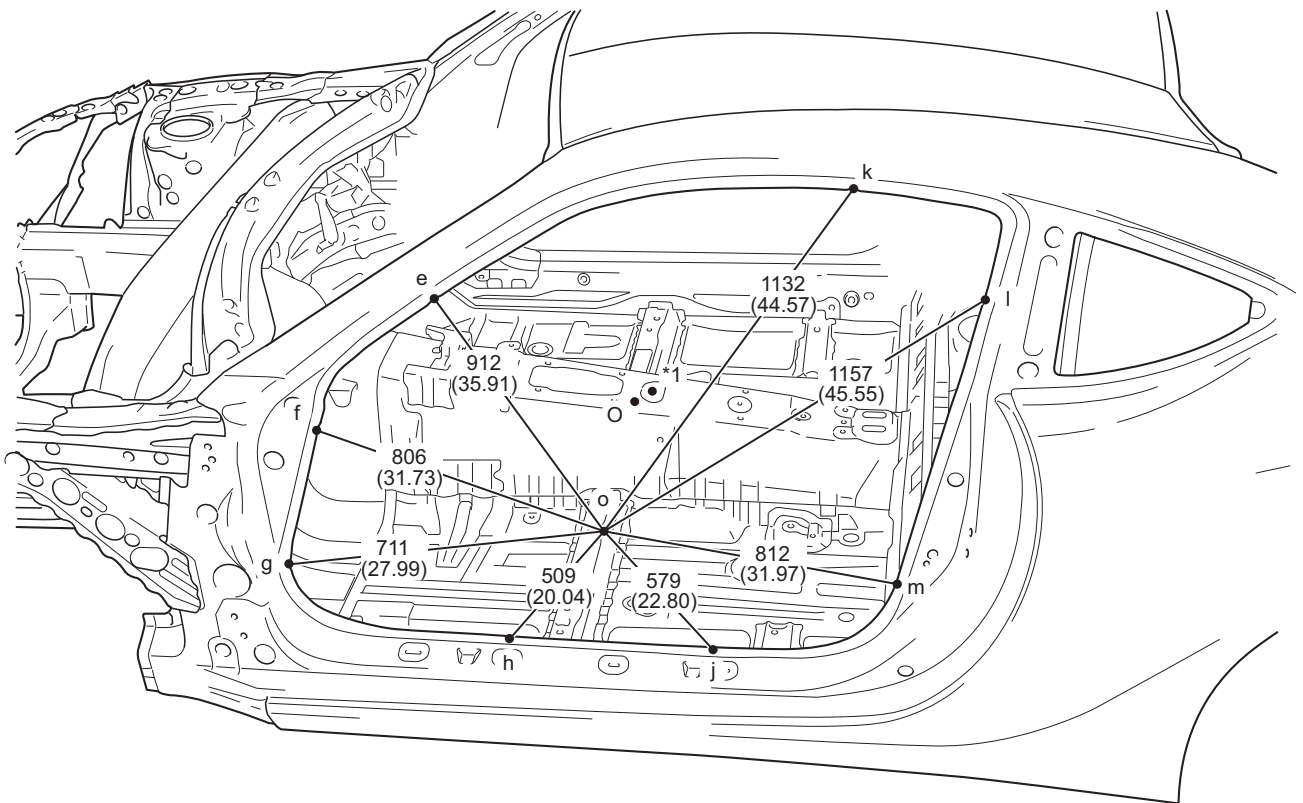
BD



Distance between points other than those above

E - e	F - f	G - g	H - h	J - j	K - k	L - l	M - m
1389 (54.68)	1440 (56.69)	1445 (56.89)	1465 (57.68)	1465 (57.68)	1220 (48.03)	1364 (53.70)	1441 (56.73)
N - n	C - N, c - n	D - N, d - n	E - J, e - j	E - g, e - G	E - h, e - H	E - j, e - J	E - k, e - K
1552 (61.10)	1247 (49.09)	1280 (50.39)	785 (30.91)	1546 (60.87)	1573 (61.93)	1628 (64.09)	1467 (57.76)
E - l, e - L	E - m, e - M	F - J, f - j	F - K, f - k	F - g, f - G	F - h, f - H	F - j, f - J	F - k, f - K
1620 (63.78)	1673 (65.87)	773 (30.43)	970 (38.19)	1474 (58.03)	1539 (60.59)	1645 (64.76)	1643 (64.68)
F - l, f - L	F - m, f - M	G - K, g - k	G - j, g - J	G - k, g - K	G - l, g - L	G - m, g - M	H - L, h - l
1788 (70.39)	1751 (68.94)	1198 (47.17)	1641 (64.61)	1788 (70.39)	1911 (75.24)	1789 (70.43)	1040 (40.94)
H - j, h - J	H - k, h - K	H - l, h - L	J - k, j - K	J - l, j - L	K - M, k - m	K - m, k - M	L - m, l - M
1509 (59.41)	1679 (66.10)	1755 (69.09)	1589 (62.56)	1625 (63.98)	678 (26.69)	1489 (58.62)	1500 (59.06)

mm  
(in.)



Distance between points other than those above

H - o, h - O	J - o, j - O	K - o, k - O
987 (38.86)	1025 (40.35)	1370 (53.94)

mm  
(in.)

# LUGGAGE DOOR

## THREE-DIMENSIONAL DISTANCE

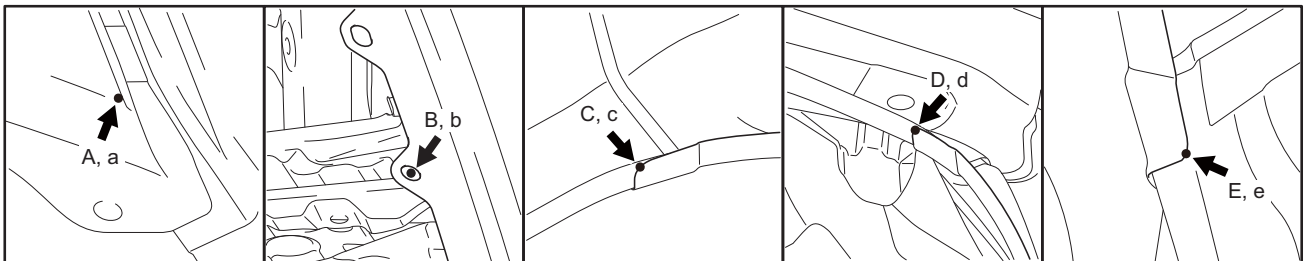
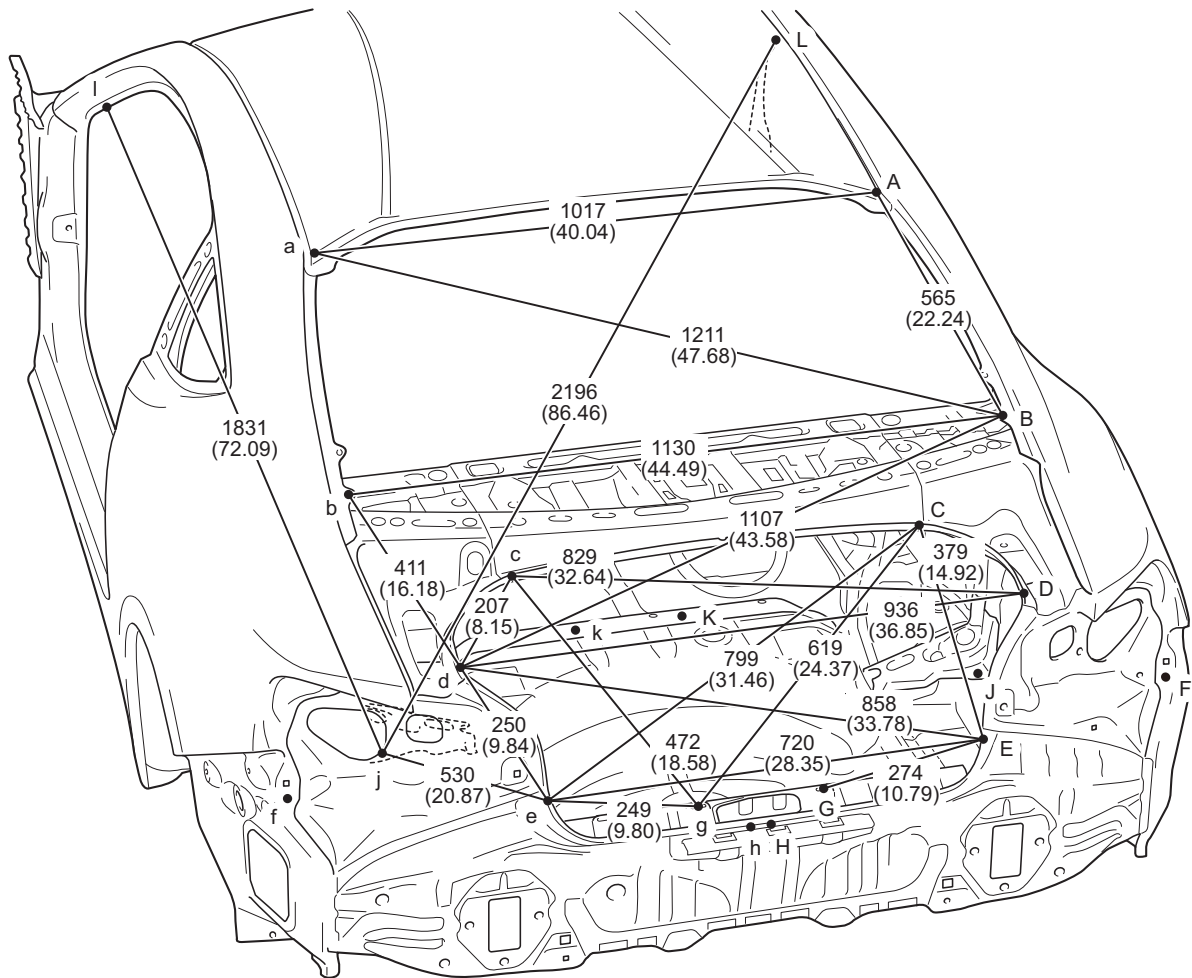
HINT:

- Point G, g and H, h on the vehicle are asymmetrical.
- In cases in which only one dimension is given, left and right are symmetrical.
- For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).

BD

### Measuring Point Name

Symbol	Name	Hole Diameter mm (in.)
A, a	Roof Panel Corner	-
B, b	Rear Quarter Outer Standard Hole	φ10 (0.39)
C, c	Rear Pillar Patch/Panel Rear Center Adjoining Portion	-
D, d	Rear Quarter End/Rear Pillar Patch Adjoining Portion	-
E, e	Rear Quarter End/Rear Skirt Adjoining Portion	-
F, f	Rear Quarter Outer Standard Hole	φ12 (0.47)
G	Trim Installation Hole	8X20 (0.31X0.79)
g	Trim Installation Hole	8X25 (0.31X0.98)
H, h	Striker Installation Nut	M12 (0.47)
J, j	Rear Suspension Installation Hole	φ13 (0.51)
K, k	Rear Floor Pan Standard Hole	φ10 (0.39)
L, l	Front Outer Body Pillar Assembly Mark	-



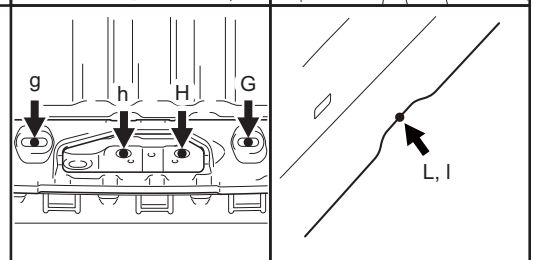
Distance between points other than those above

C - c	F - f	J - j	B - C, b - c	B - c, b - C
688 (27.09)	1495 (58.86)	1059 (41.69)	321 (12.64)	939 (36.97)

C - G	c - G	E - g	E - j, e - J	e - G
485 (19.09)	600 (23.62)	479 (18.86)	1021 (40.20)	454 (17.87)

G - J	G - K	G - j	G - k	g - J	g - K
653 (25.71)	847 (33.35)	787 (30.98)	868 (34.17)	807 (31.77)	874 (34.41)

g - j	g - k	H - K	h - k	J - K, j - k	J - k, j - K
636 (25.04)	847 (33.35)	854 (33.62)	854 (33.62)	564 (22.20)	728 (28.66)



mm  
(in.)

UNDER BODY

THREE-DIMENSIONAL DISTANCE

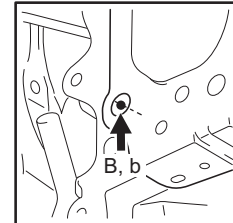
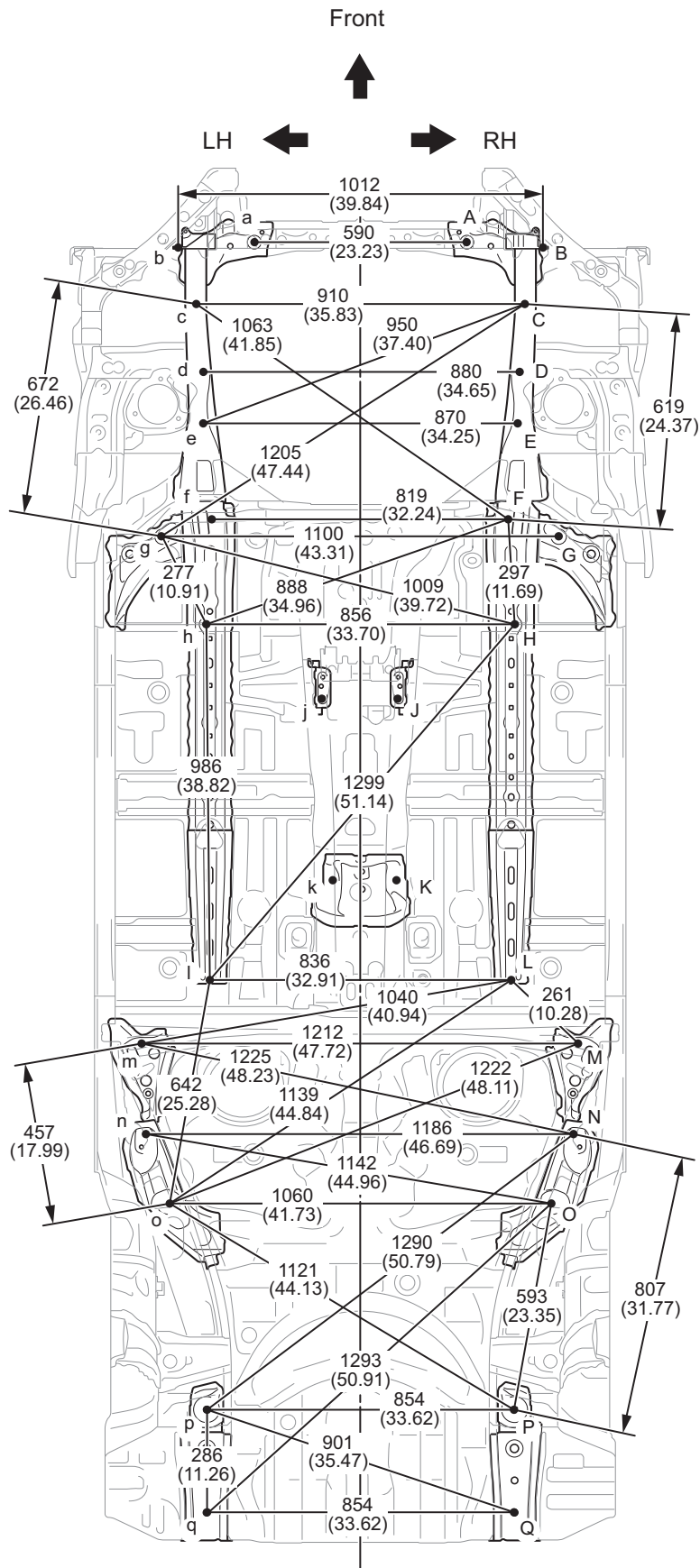
HINT:

- Point J, j and K, k on the vehicle are asymmetrical.
- In cases in which only one dimension is given, left and right are symmetrical.
- For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).

**BD** Measuring Point Name

Symbol	Name	Hole Diameter mm (in.)
A, a	Under Cover Installation Nut	M8 (0.31)
B, b	Front Beam Installation Nut	M8 (0.31)
C, c	Side Frame Standard Hole	φ18 (0.71)
D, d	Front Suspension Member Installation Nut	M12 (0.47)
E, e	Front Suspension Member Installation Nut	M12 (0.47)
F, f	Lower Member Installation Nut	M10 (0.39)
G, g	Toe Board Reinforcement Lower Standard Hole	φ25 (0.98)
H, h	Front Side Frame Rear Standard Hole	φ18 (0.71)
J, j	Transmission Crossmember Installation Nut	M10 (0.39)
K, k	Propeller Shaft Installation Nut	M10 (0.39)
L, l	Front Floor Rear Frame Standard Hole	φ13 (0.51)
M, m	Side Frame Gusset Standard Hole	φ13 (0.51)
N, n	Rear Suspension Support Installation Nut	M10 (0.39)
O, o	Rear Suspension Member Installation Nut	M14 (0.55)
P, p	Rear Suspension Member Installation Nut	M14 (0.55)
Q, q	Rear Floor Frame Rear Standard Hole	φ18 (0.71)





Distance between points other than those to the left

J - j	K - k	A - F, a - f
210 (8.27)	181 (7.13)	776 (30.55)
A - f, a - F	C - D, c - d	C - E, c - e
1042 (41.02)	190 (7.48)	333 (13.11)
C - H, c - h	C - d, c - D	C - h, c - H
914 (35.98)	915 (36.02)	1270 (50.00)
D - E, d - e	D - e, d - E	J - K
143 (5.63)	887 (34.92)	505 (19.88)
J - k	j - K	j - k
538 (21.18)	545 (21.46)	507 (19.96)
M - N, m - n	N - O, n - o	O - Q, o - q
251 (9.88)	218 (8.58)	876 (34.49)

mm  
(in.)

TWO-DIMENSIONAL DISTANCE

HINT:

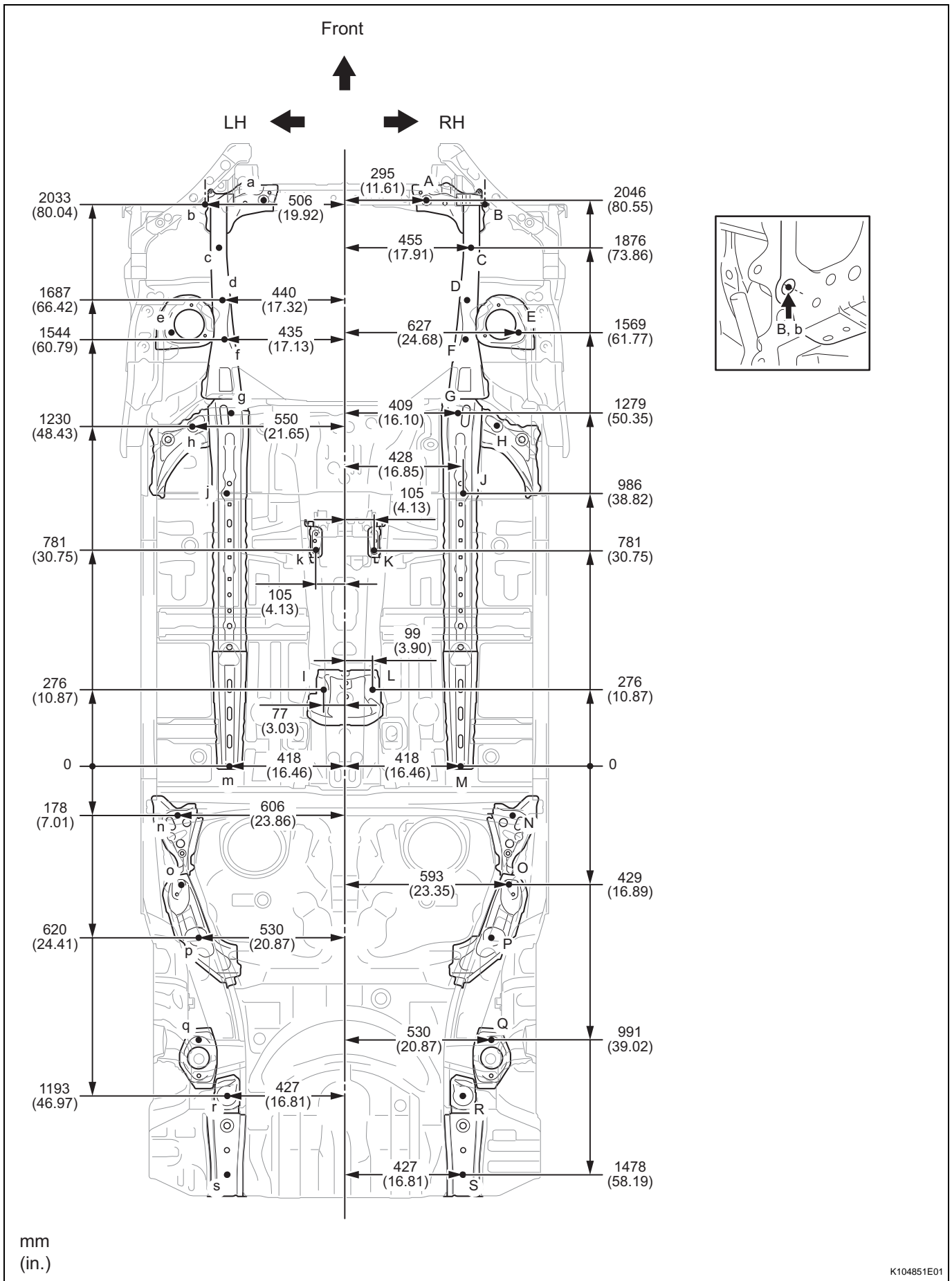
- Length measurements are indicated at the points where the arrows extending from the zero point intersect the lines that extend towards the outside of the illustration from each point.
- Point K, k and L, l on the vehicle are asymmetrical.
- In cases in which only one dimension is given, left and right are symmetrical.
- For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).

Measuring Point Name

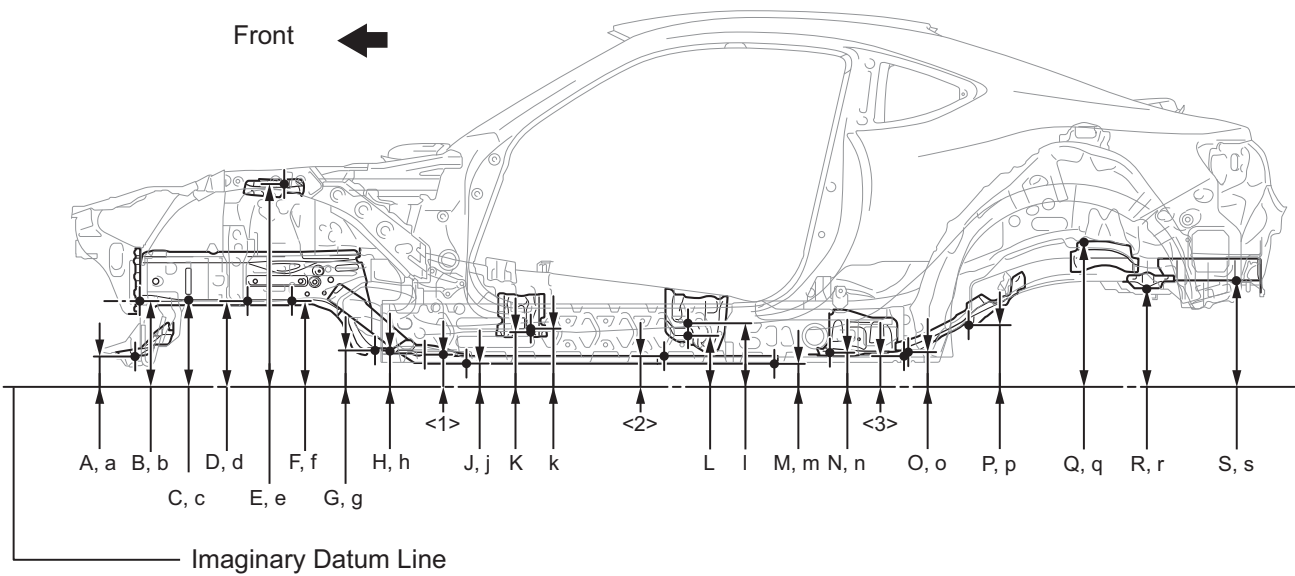
Symbol	Name	Hole Diameter mm (in.)
A, a	Under Cover Installation Nut	M8 (0.31)
B, b	Front Beam Installation Nut	M8 (0.31)
C, c	Side Frame Standard Hole	φ18 (0.71)
D, d	Front Suspension Member Installation Nut	M12 (0.47)
E, e	Front Suspension Installation Hole	φ9.5 (0.37)
F, f	Front Suspension Member Installation Nut	M12 (0.47)
G, g	Lower Member Installation Nut	M10 (0.39)
H, h	Toe Board Reinforcement Lower Standard Hole	φ25 (0.98)
J, j	Front Side Frame Rear Standard Hole	φ18 (0.71)
K, k	Transmission Crossmember Installation Nut	M10 (0.39)
L, l	Propeller Shaft Installation Nut	M10 (0.39)
M, m	Front Floor Rear Frame Standard Hole	φ13 (0.51)
N, n	Side Frame Gusset Standard Hole	φ13 (0.51)
O, o	Rear Suspension Support Installation Nut	M10 (0.39)
P, p	Rear Suspension Member Installation Nut	M14 (0.55)
Q, q	Rear Suspension Installation Hole	φ11 (0.43)
R, r	Rear Suspension Member Installation Nut	M14 (0.55)
S, s	Rear Floor Frame Rear Standard Hole	φ18 (0.71)

Wheel Base

Wheel Base	2570 mm (101.18 in.)
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BD



Height from Imaginary Datum Line

A, a	B, b	C, c	D, d
100 (3.94)	278 (10.94)	277 (10.91)	277 (10.91)
E, e	F, f	G, g	H, h
649 (25.55)	277 (10.91)	118 (4.65)	119 (4.69)
J, j	K, k	L, l	M, m
74 (2.91)	177 (6.97)	177 (6.97)	164 (6.46)
N, n	O, o	P, p	Q, q
208 (8.19)	75 (2.95)	111 (4.37)	113 (4.45)
R, r	S, s		
312 (12.28)	339 (13.35)		

Imaginary Datum Line

<1>	<2>	<3>
105 (4.13)	100 (3.94)	102 (4.02)

mm  
(in.)

## FRONT SUSPENSION CROSSMEMBER

### THREE-DIMENSIONAL DISTANCE

HINT:

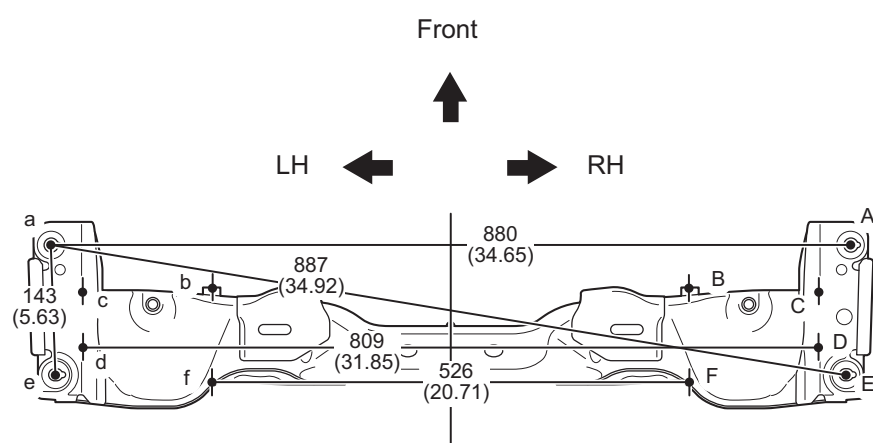
- In cases in which only one dimension is given, left and right are symmetrical.
- For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).

#### Measuring Point Name

Symbol	Name	Hole Diameter mm (in.)
A	Front Suspension Crossmember Installation Hole	15X16 (0.59X0.63)
a	Front Suspension Crossmember Installation Hole	φ16 (0.63)
B, b	Gear Box Installation Hole	φ15 (0.59)
C, c	Front Suspension Lower Arm Installation Hole	φ12.5 (0.49)
D, d	Front Suspension Lower Arm Installation Hole	φ12.5 (0.49)
E	Front Suspension Crossmember Installation Hole	φ13.5 (0.53)
e	Front Suspension Crossmember Installation Hole	12.5X16 (0.49X0.63)
F, f	Gear Box Installation Hole	φ14 (0.55)

**BD**

BD



Distance between points other than those above

B - b	C - c	E - e	
526 (20.71)	809 (31.85)	870 (34.25)	

A - C, a - c	D - E, d - e	D - F, d - f	D - f, d - F
114 (4.49)	104 (4.09)	150 (5.91)	669 (26.34)

mm  
(in.)

## TWO-DIMENSIONAL DISTANCE

### HINT:

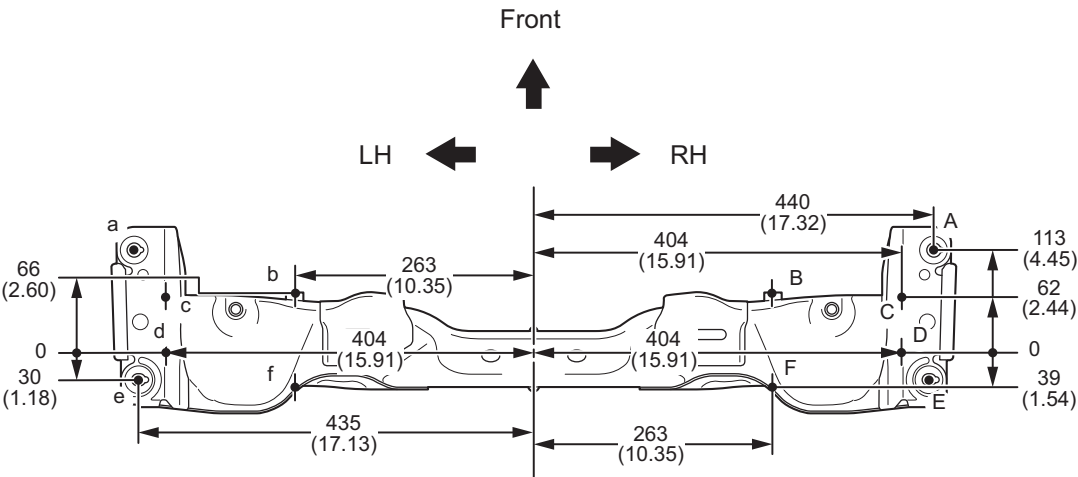
- Length measurements are indicated at the points where the arrows extending from the zero point intersect the lines that extend towards the outside of the illustration from each point.
- In cases in which only one dimension is given, left and right are symmetrical.
- For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).

### Measuring Point Name

Symbol	Name	Hole Diameter mm (in.)
A	Front Suspension Crossmember Installation Hole	15X16 (0.59X0.63)
a	Front Suspension Crossmember Installation Hole	φ16 (0.63)
B, b	Gear Box Installation Hole	φ15 (0.59)
C, c	Front Suspension Lower Arm Installation Hole	φ12.5 (0.49)
D, d	Front Suspension Lower Arm Installation Hole	φ12.5 (0.49)
E	Front Suspension Crossmember Installation Hole	φ13.5 (0.53)
e	Front Suspension Crossmember Installation Hole	12.5X16 (0.49X0.63)
F, f	Gear Box Installation Hole	φ14 (0.55)

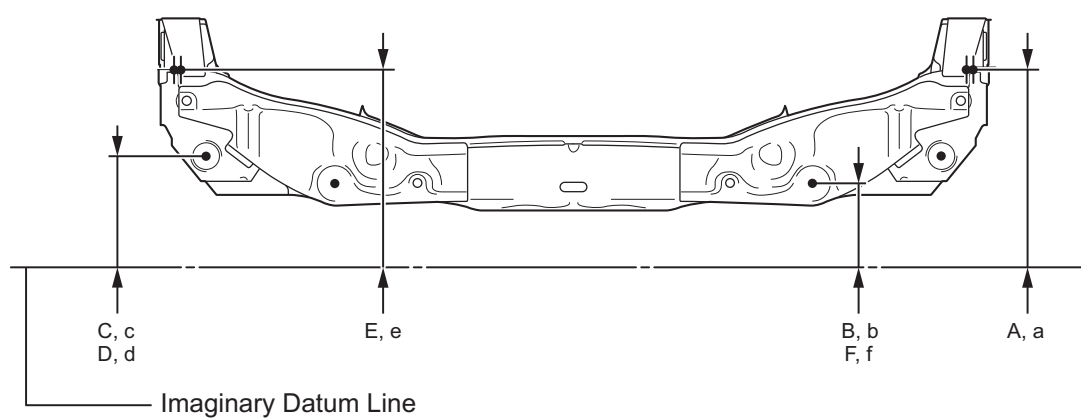
BD

BD



mm  
(in.)





Height from Imaginary Datum Line

A, a	B, b	C, c	D, d	E, e	F, f
219 (8.62)	94 (3.70)	124 (4.88)	124 (4.88)	219 (8.62)	94 (3.70)

mm  
(in.)

# REAR SUSPENSION CROSSMEMBER

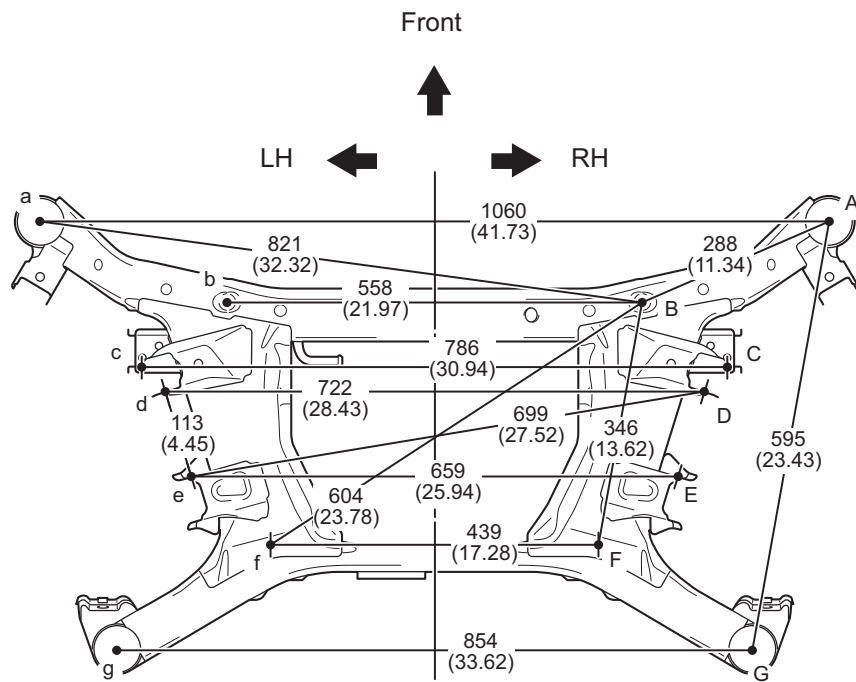
## THREE-DIMENSIONAL DISTANCE

HINT:

- In cases in which only one dimension is given, left and right are symmetrical.
- For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).

### Measuring Point Name

Symbol	Name	Hole Diameter mm (in.)
A, a	Rear Suspension Crossmember Installation Hole	φ60 (2.36)
B, b	Rear Suspension Crossmember Standard Hole	φ10 (0.39)
C, c	Rear Suspension Lower Arm Installation Hole	14.5X25 (0.57X0.98)
D, d	Rear Suspension Upper Arm Installation Hole	φ13.5 (0.53)
E, e	Rear Suspension Upper Arm Installation Hole	φ13.5 (0.53)
F, f	Rear Suspension Lower Arm Installation Hole	φ12.5 (0.49)
G, g	Rear Suspension Crossmember Installation Hole	φ60 (2.36)



Distance between points other than those above

A - F, a - f	A - f, a - F	A - g, a - G	C - F, c - f	C - f, c - F
532 (20.94)	865 (34.06)	1122 (44.17)	295 (11.61)	657 (25.87)

mm  
(in.)

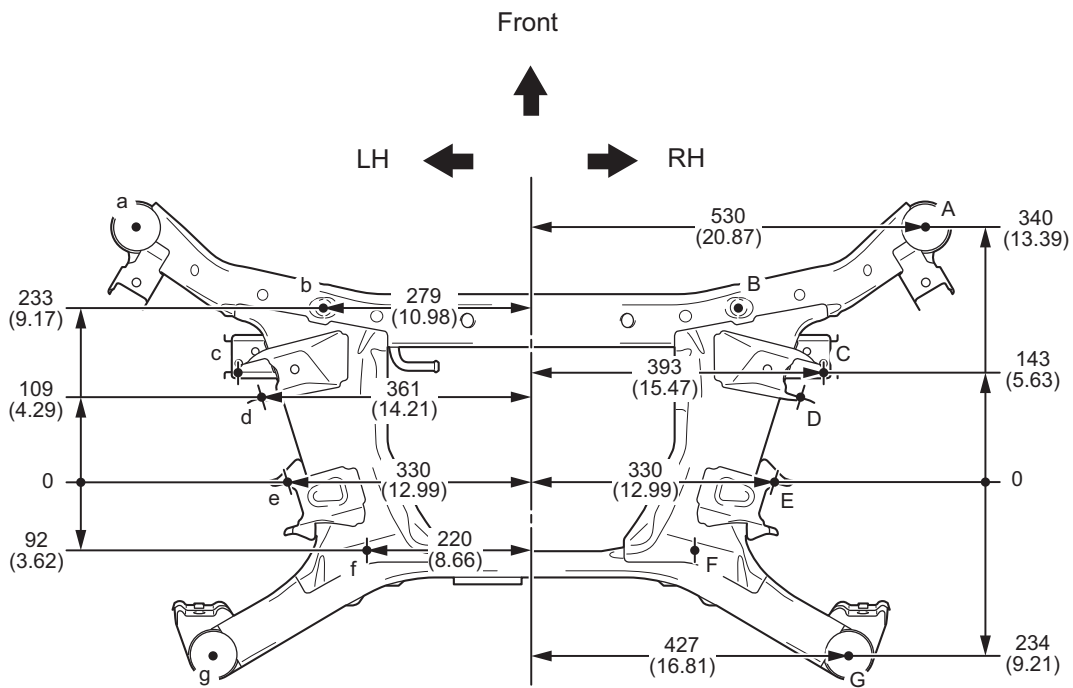
TWO-DIMENSIONAL DISTANCE

HINT:

- Length measurements are indicated at the points where the arrows extending from the zero point intersect the lines that extend towards the outside of the illustration from each point.
- In cases in which only one dimension is given, left and right are symmetrical.
- For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).

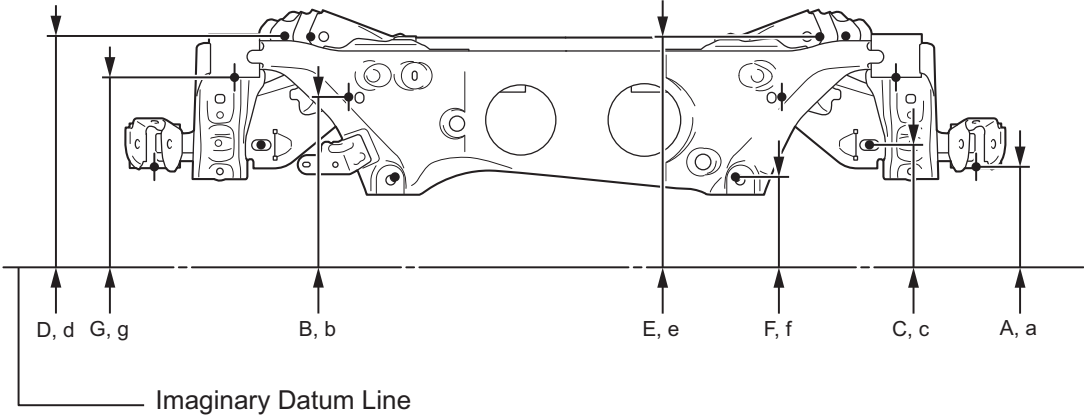
Measuring Point Name

Symbol	Name	Hole Diameter mm (in.)
A, a	Rear Suspension Crossmember Installation Hole	φ60 (2.36)
B, b	Rear Suspension Crossmember Standard Hole	φ10 (0.39)
C, c	Rear Suspension Lower Arm Installation Hole	14.5X25 (0.57X0.98)
D, d	Rear Suspension Upper Arm Installation Hole	φ13.5 (0.53)
E, e	Rear Suspension Upper Arm Installation Hole	φ13.5 (0.53)
F, f	Rear Suspension Lower Arm Installation Hole	φ12.5 (0.49)
G, g	Rear Suspension Crossmember Installation Hole	φ60 (2.36)



mm  
(in.)

BD



Height from Imaginary Datum Line

A, a	B, b	C, c	D, d	E, e	F, f	G, g
130 (5.12)	222 (8.74)	159 (6.26)	301 (11.85)	300 (11.81)	118 (4.65)	247 (9.72)

mm  
(in.)

# ENGINE COMPARTMENT REFERENCE VALUES

## THREE-DIMENSIONAL DISTANCE

HINT:

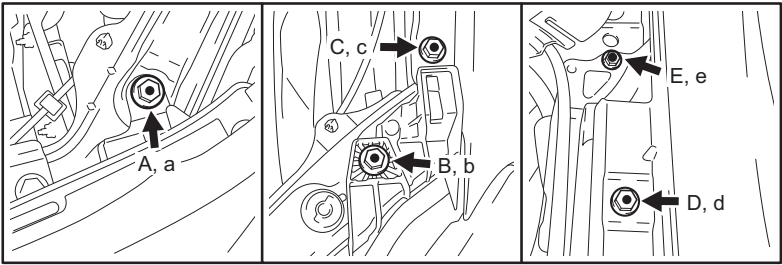
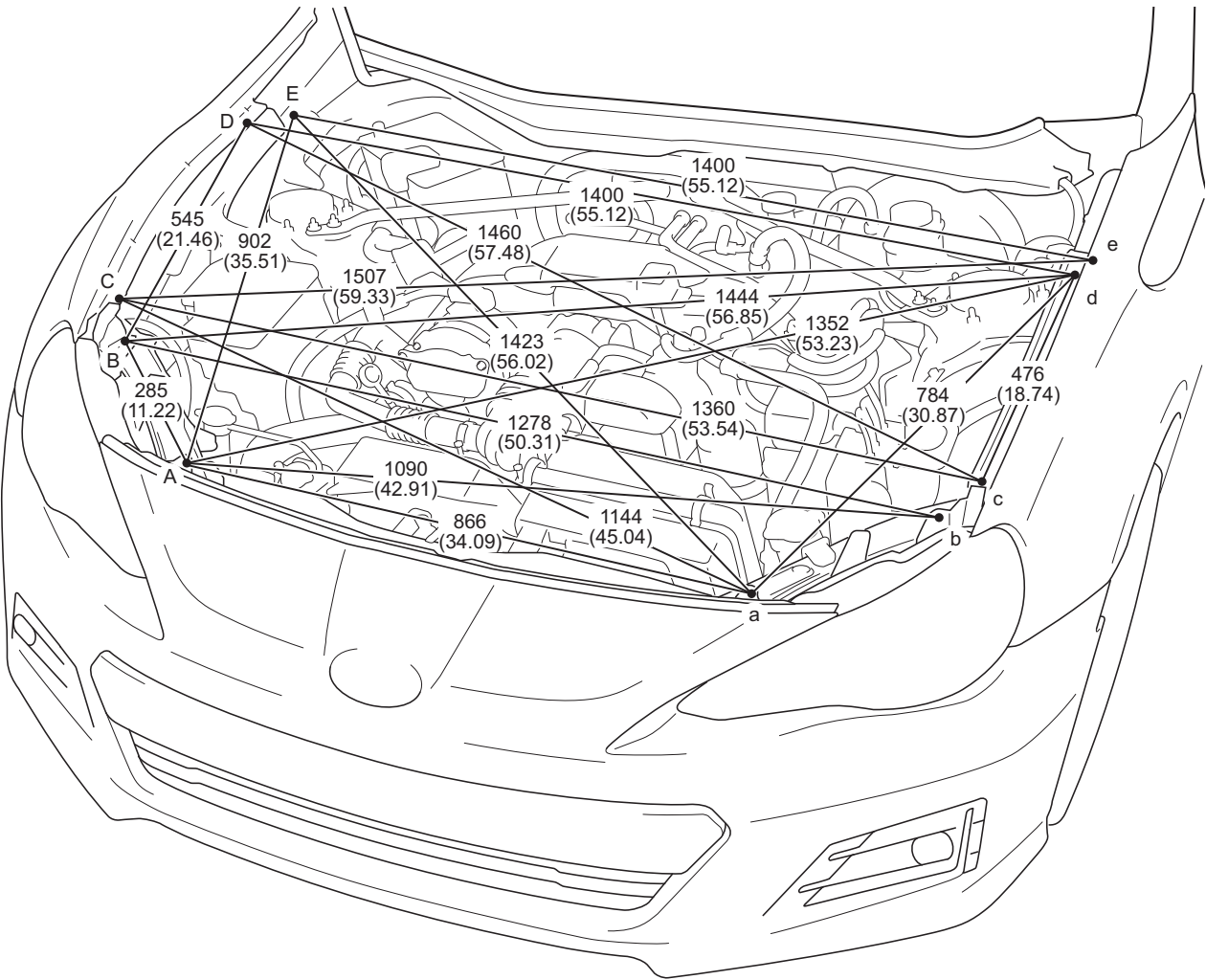
- Measure points with the engine cover removed.
- In cases in which only one dimension is given, left and right are symmetrical.
- For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).

### Measuring Point Name

Symbol	Name	Hole Diameter mm (in.)
A, a	Bracket Corner Installation Bolt	M6 (0.24)
B, b	Headlight Installation Bolt	M6 (0.24)
C, c	Front Fender Installation Bolt	M6 (0.24)
D, d	Front Fender Installation Bolt	M6 (0.24)
E, e	Patch Frame Side Upper Installation Bolt	M6 (0.24)

**BD**

BD



Distance between points other than those above

A - C, a - c	B - C, b - c	B - E, b - e	B - c, b - C	B - e, b - E	C - E, c - e	D - E, d - e	D - e, d - E
361 (14.21)	79 (3.11)	671 (26.42)	1321 (52.01)	1497 (58.94)	606 (23.86)	149 (5.87)	1408 (55.43)

mm  
(in.)



## UNDER BODY REFERENCE VALUES

### THREE-DIMENSIONAL DISTANCE

HINT:

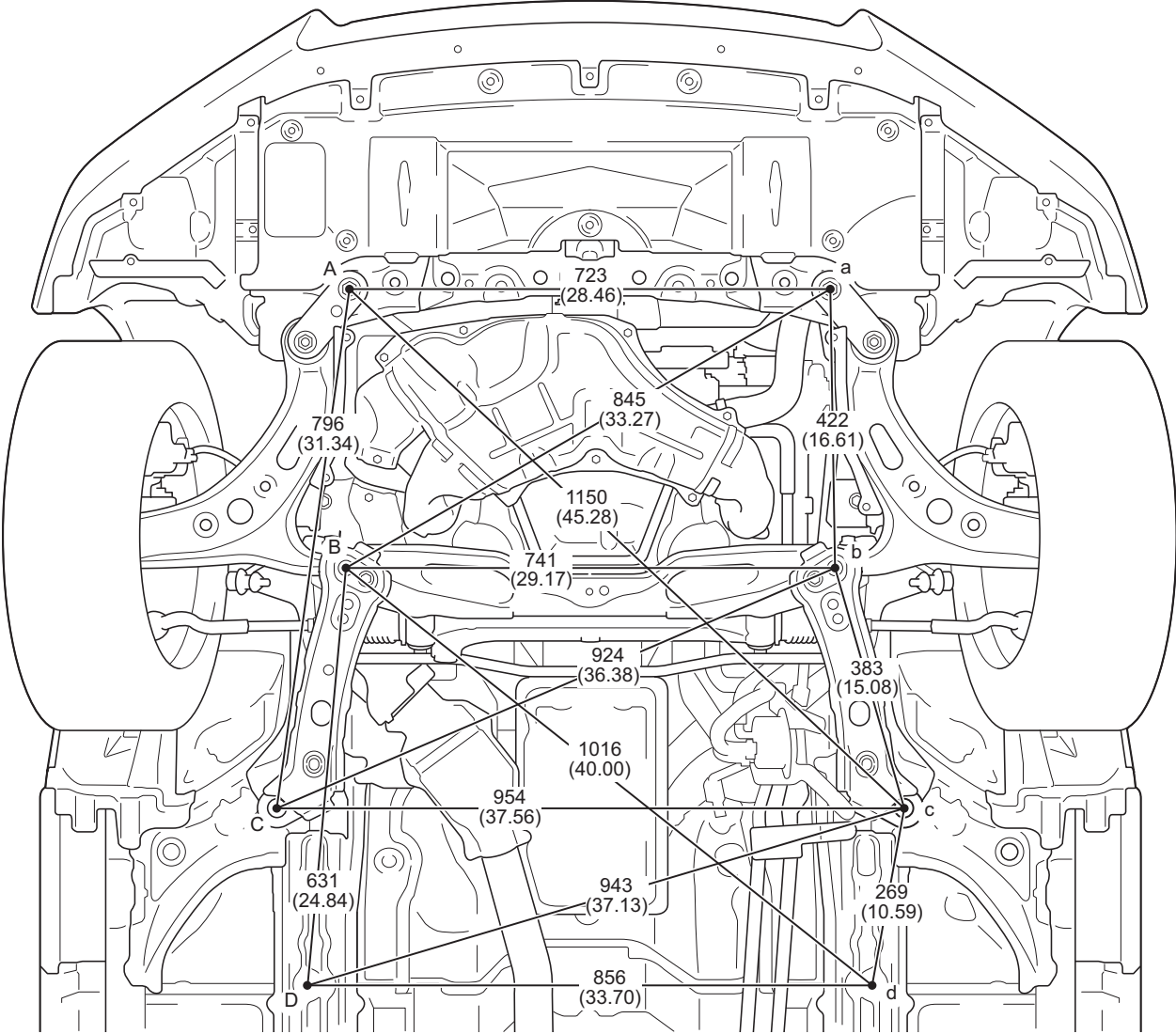
- Measure points with the engine under cover removed.
- In cases in which only one dimension is given, left and right are symmetrical.
- For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).

#### Measuring Point Name

Symbol	Name	Hole Diameter mm (in.)
A, a	Plate Arm Installation Bolt	M14 (0.55)
B, b	Lower Member Installation Bolt	M10 (0.39)
C, c	Lower Member Installation Bolt	M10 (0.39)
D, d	Front Side Frame Rear Standard Hole	φ18 (0.71)

**BD**

BD



Distance between points other than those above

A - D, a - d	A - d, a - D
1052 (41.42)	1314 (51.73)

mm  
(in.)

## TWO-DIMENSIONAL DISTANCE

mm

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BD

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# PAINTING / COATING

## **BODY PANEL SEALING**

APPLICATION AREAS ..... PC-1

## **BODY PANEL UNDERCOATING**

APPLICATION AREAS ..... PC-10

## **BODY PANEL ANTI-RUST AGENT MATERIAL**

APPLICATION AREAS ..... PC-11

## **SILENCER SHEET**

INSTALLATION AREAS ..... PC-14

## **BODY PANEL ANTI-CHIPPING PAINT**

APPLICATION AREAS ..... PC-15

**PC**

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PC

# BODY PANEL SEALING

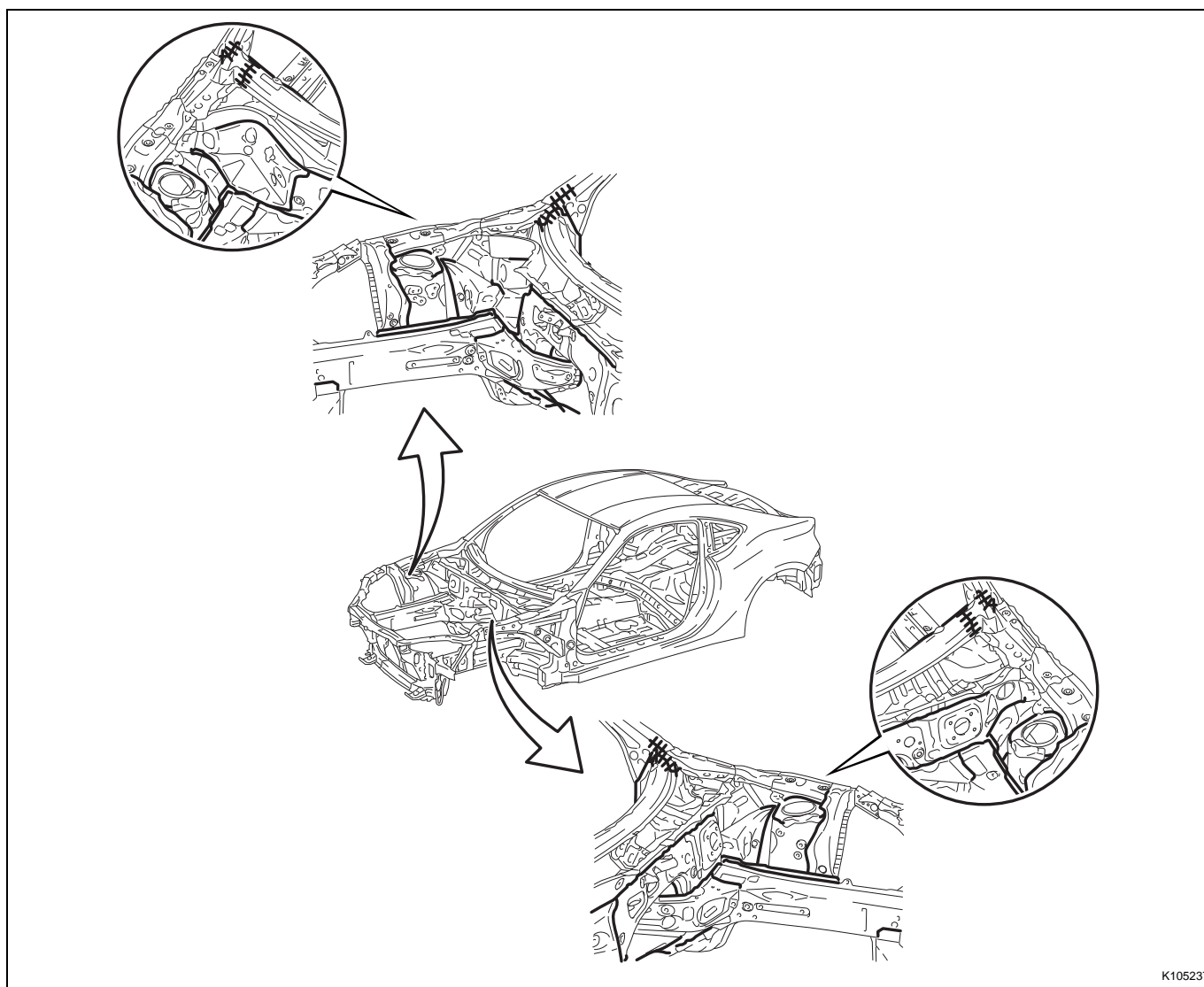
## APPLICATION AREAS

1. Be sure to apply body sealer to the body panel joints and door edges (tip of outer panel folded part), etc., to waterproof and rustproof them.

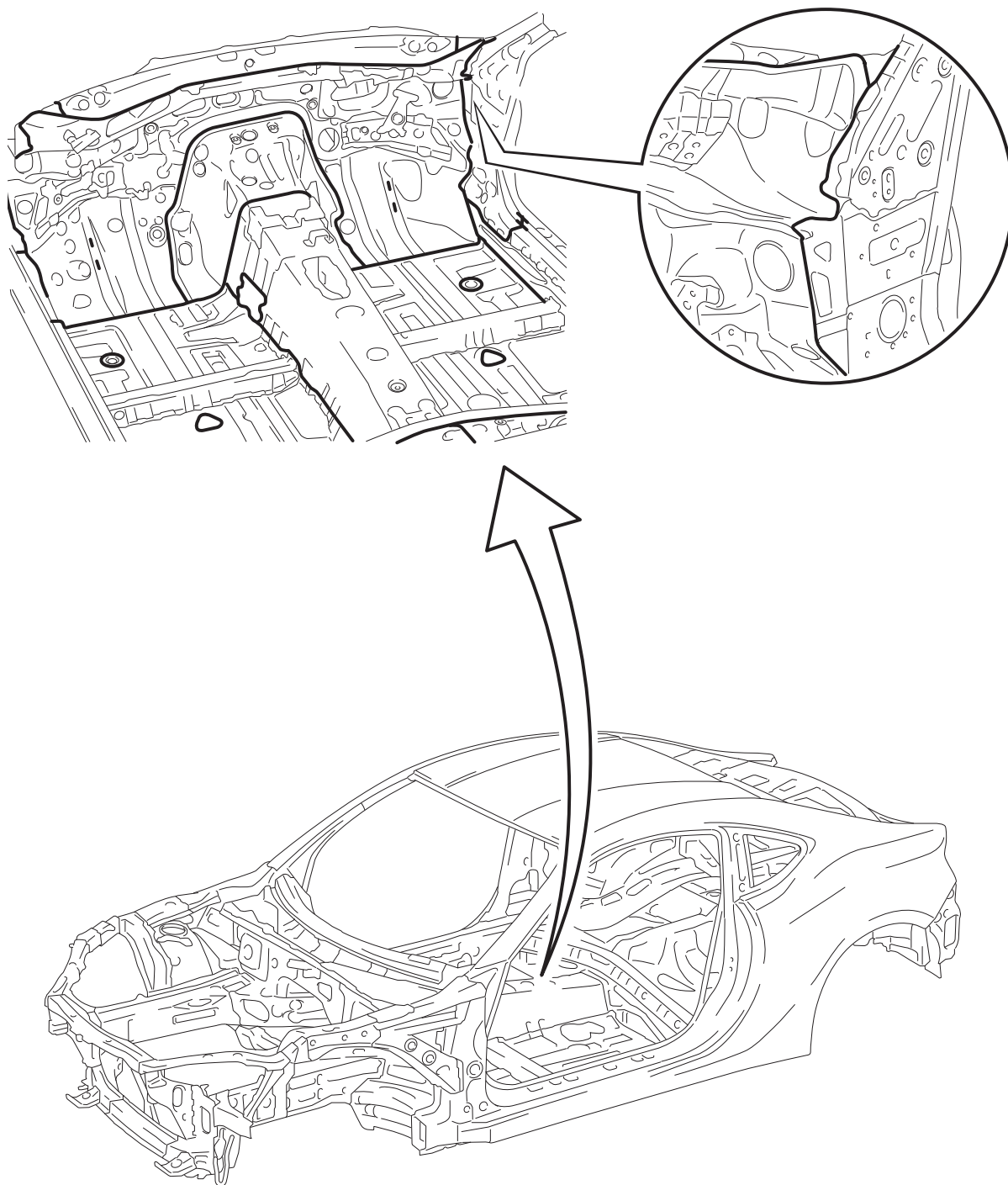
HINT:

- Apply degreasing agent to a clean cloth and clean the sealer application areas.
- After removing the applied spot sealer from the sealer application areas using thinner or equivalent, rust-proof the areas by applying primer or equivalent. Then apply body sealer.
- If sealer is unnecessarily applied to an area, apply degreasing agent to a clean cloth and clean off the body sealer immediately.

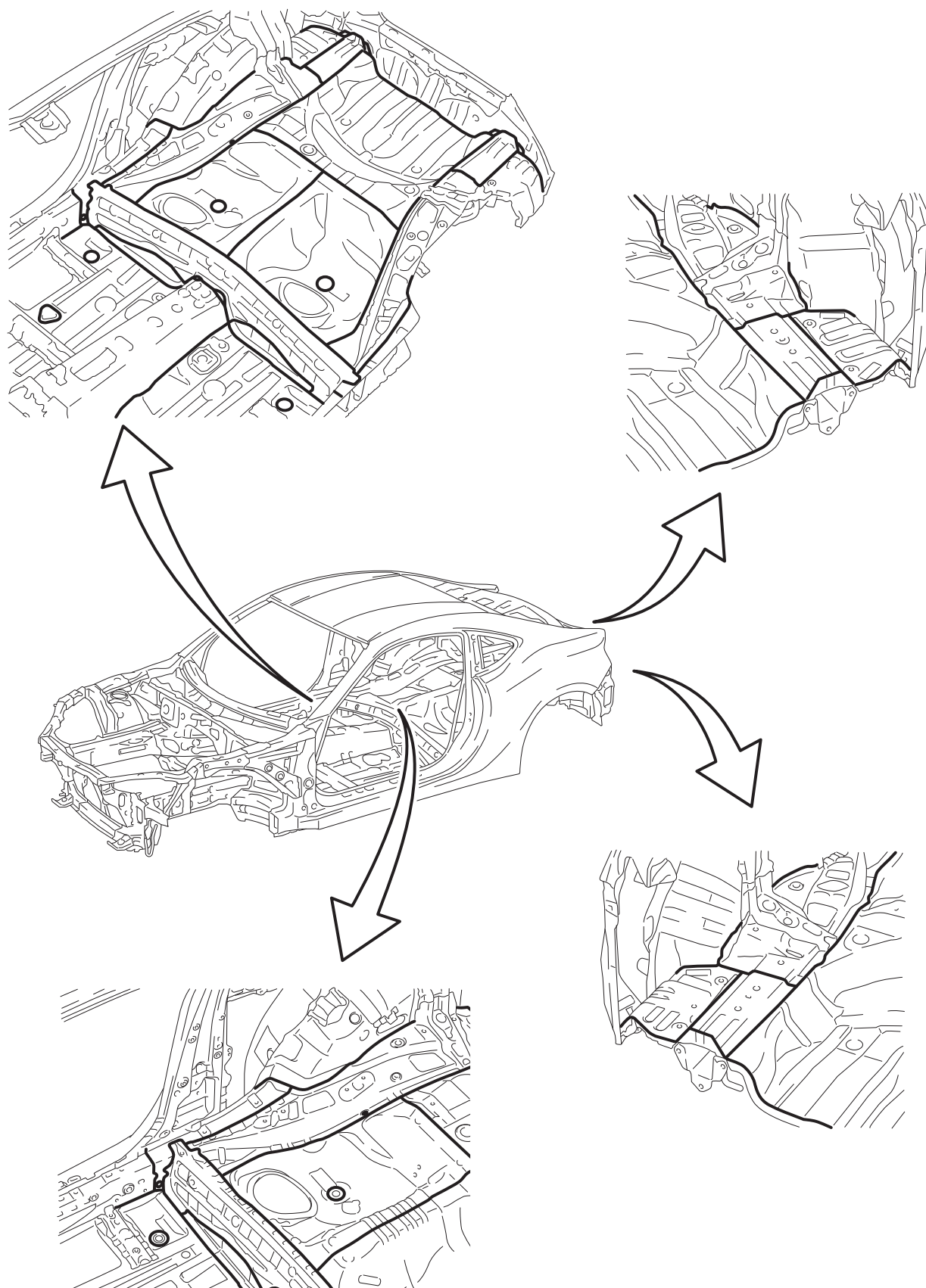
+++++	Flat Finishing	—	No Flat Finishing
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PC

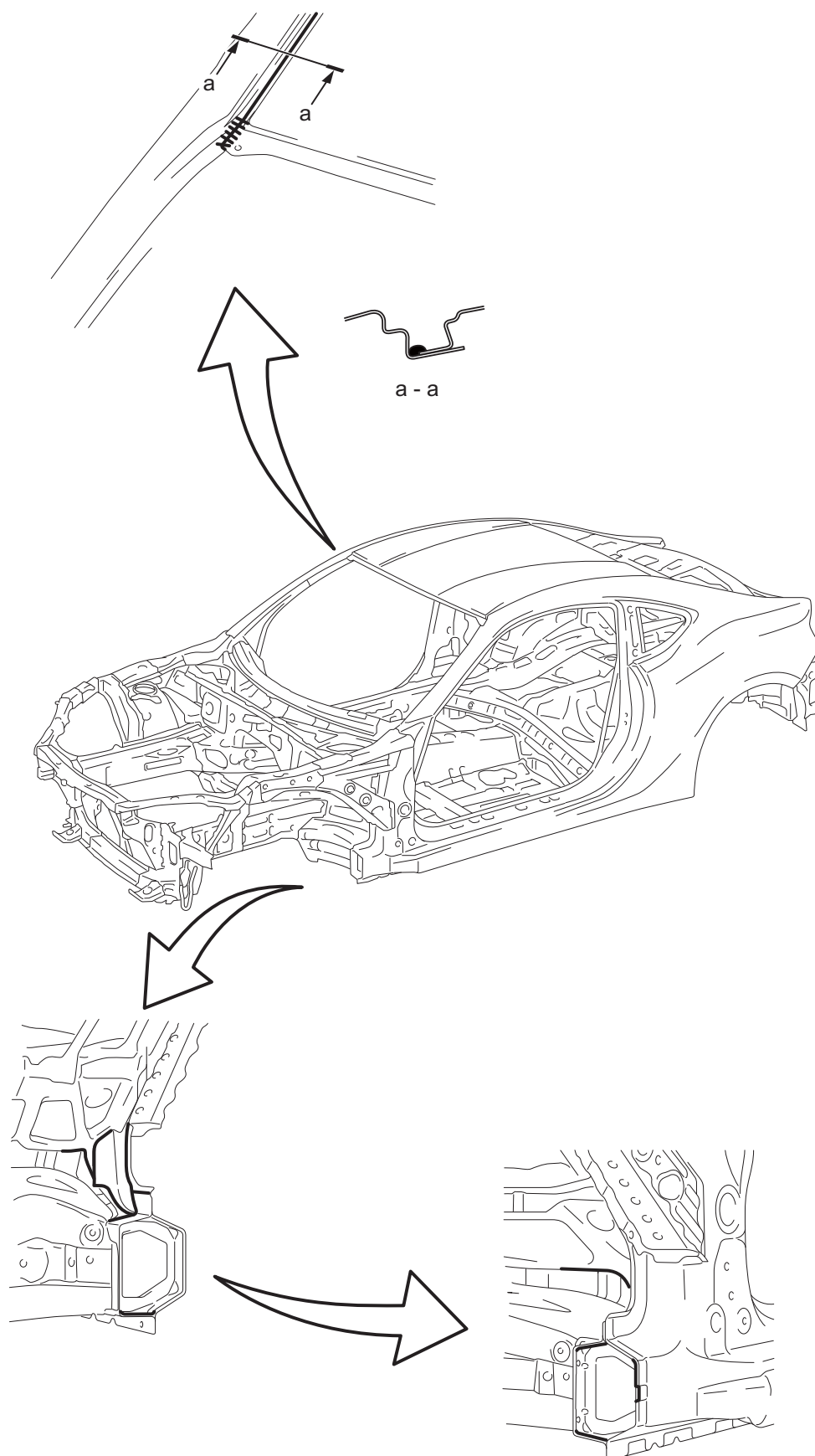


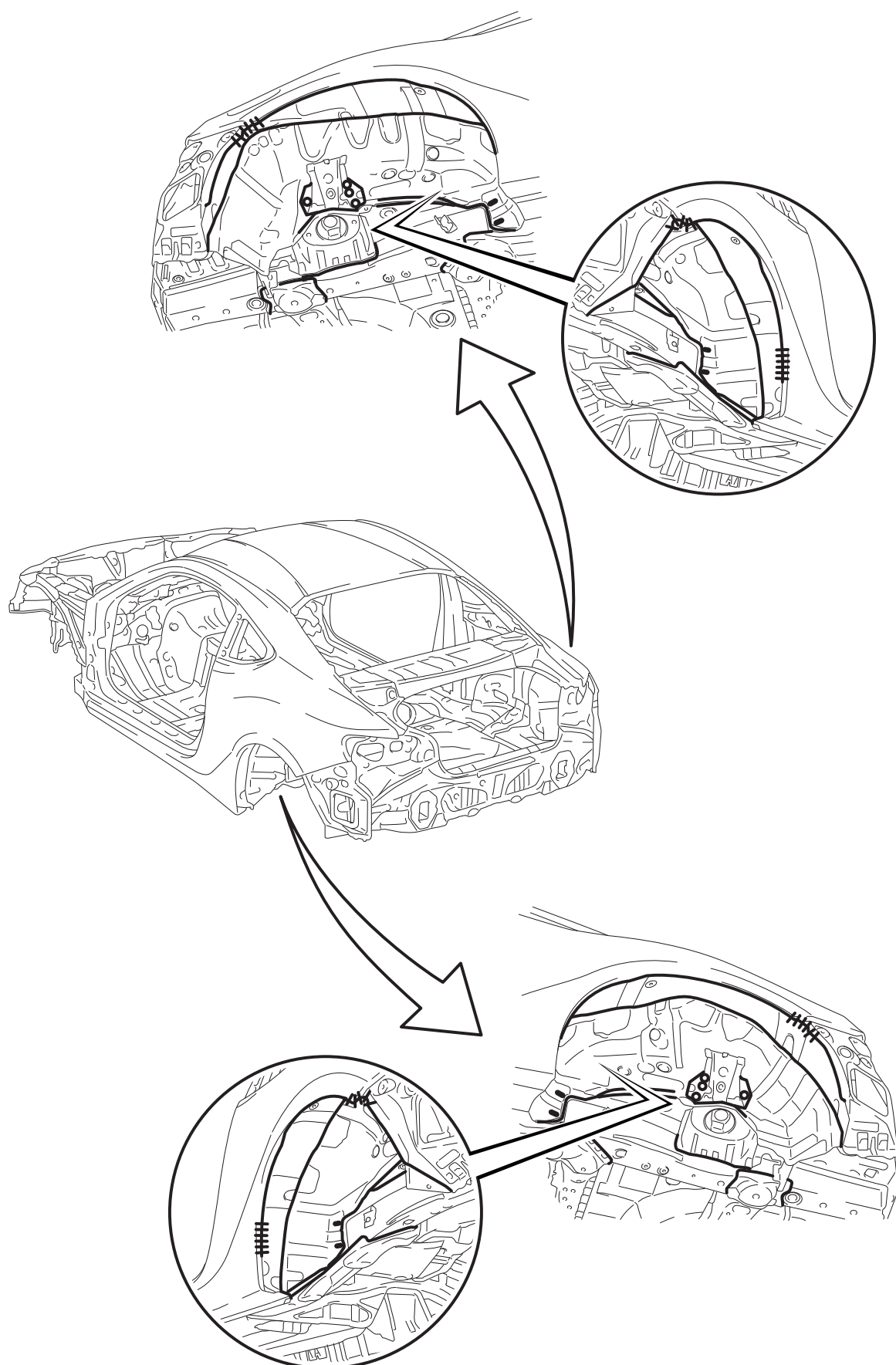




PC

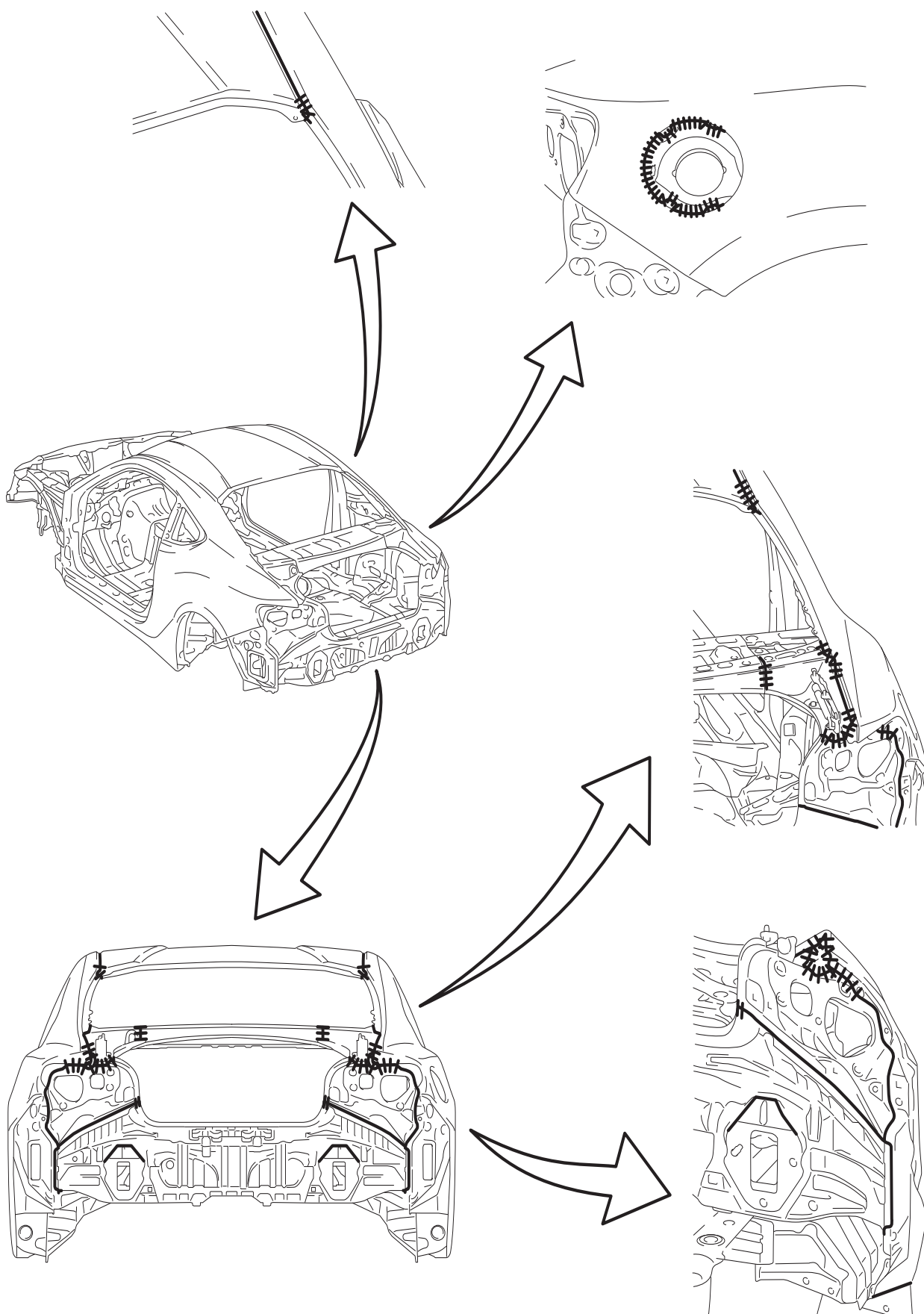
PC

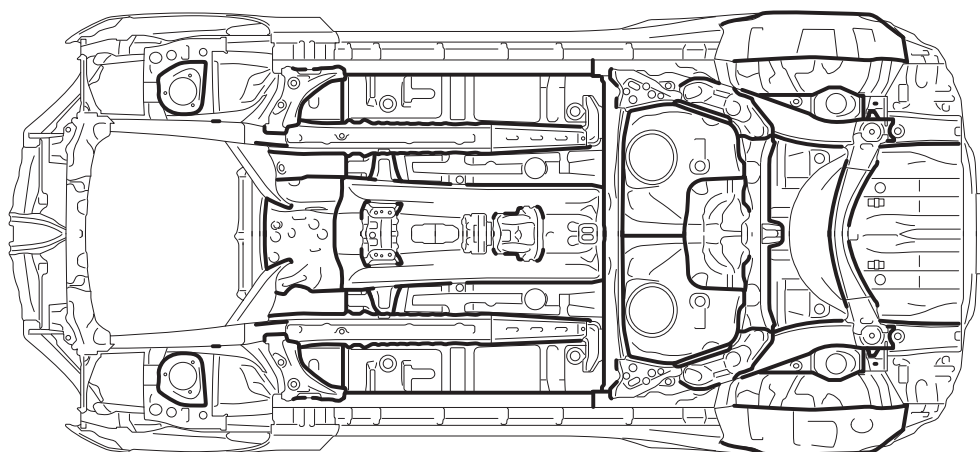




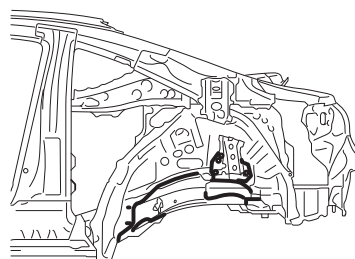
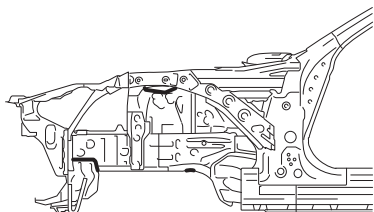
PC

PC

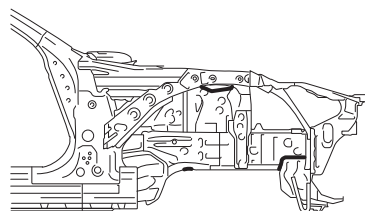
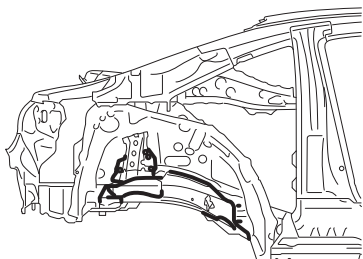




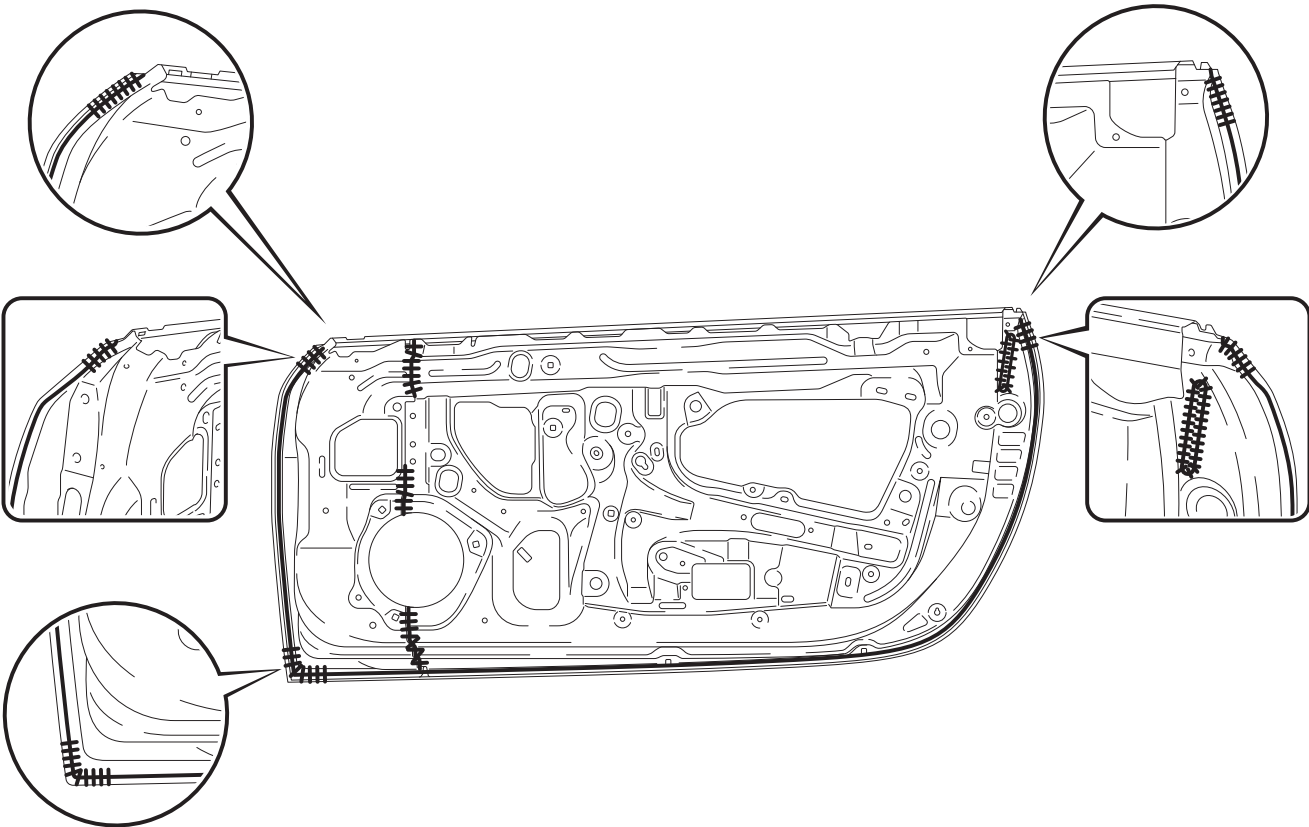
LH:

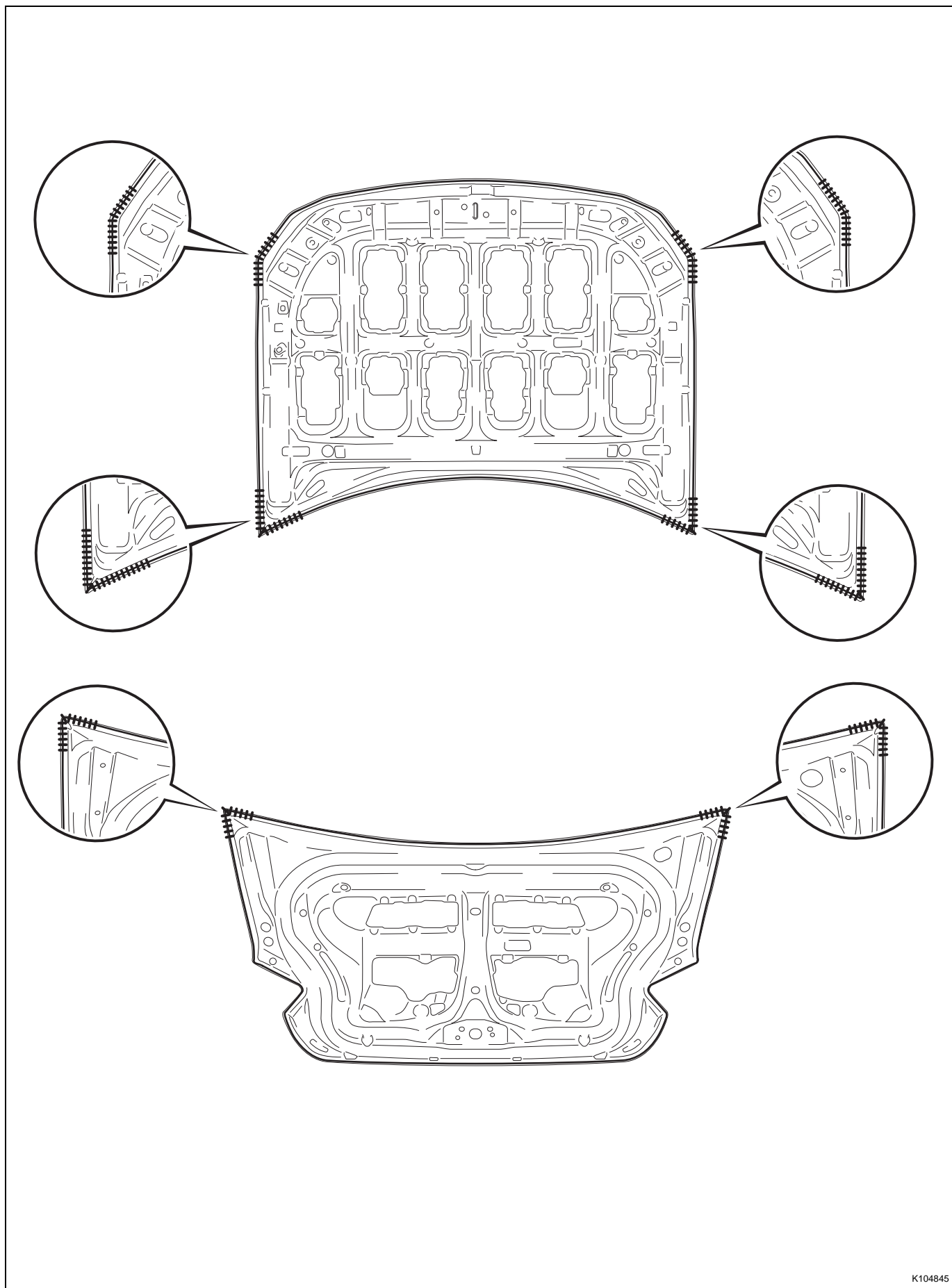


RH:



PC







# BODY PANEL UNDERCOATING

## APPLICATION AREAS

### CAUTION:

Work must be performed while wearing the appropriate protective gear and in a well-ventilated area.

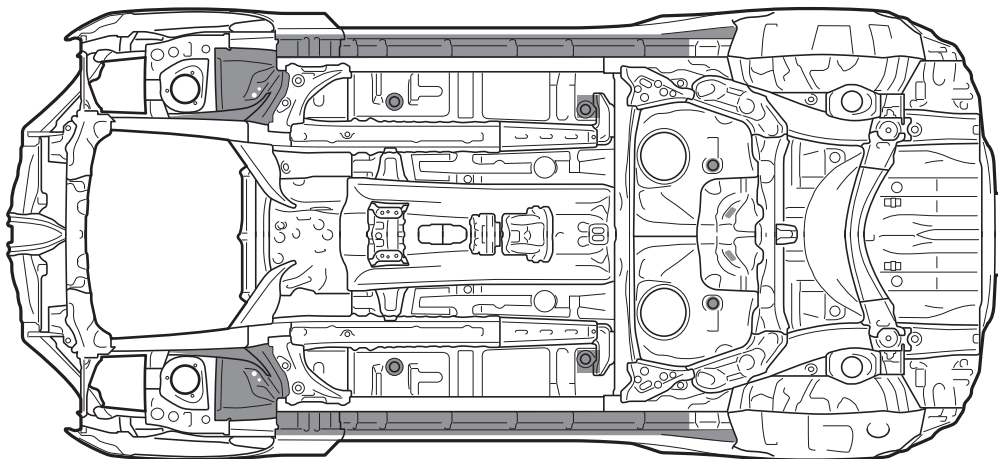
### NOTICE:

Do not coat high temperature areas, such as the tailpipe, or moving parts, such as the drive shaft.

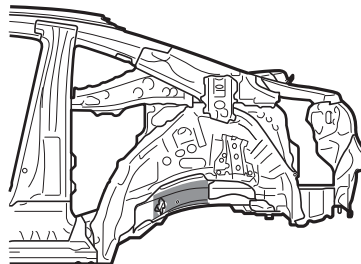
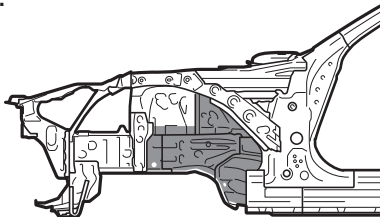
1. Apply undercoating to the chassis, floor underside, sheet metal fitting weld points of the body, and inside of the wheel house to prevent rust and noise, as well as protect the body from gravel.

### HINT:

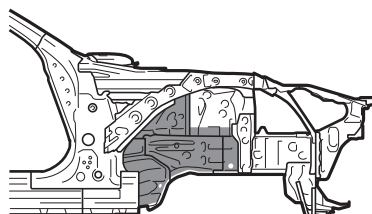
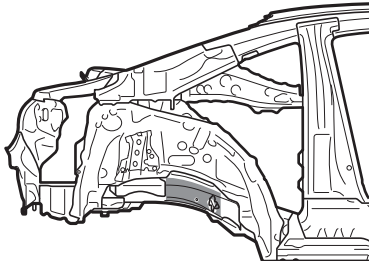
- Apply degreasing agent to a clean cloth and clean any dirt and oil from the application areas.
- Cover the surrounding areas of the application areas with masking paper to avoid coating unnecessary areas.
- Do not leave any gaps between the panel joints.
- Apply body sealer to the panel joints in advance.
- Referring to the notes above, undercoating should be applied according to the specifications for your country.



LH:



RH:





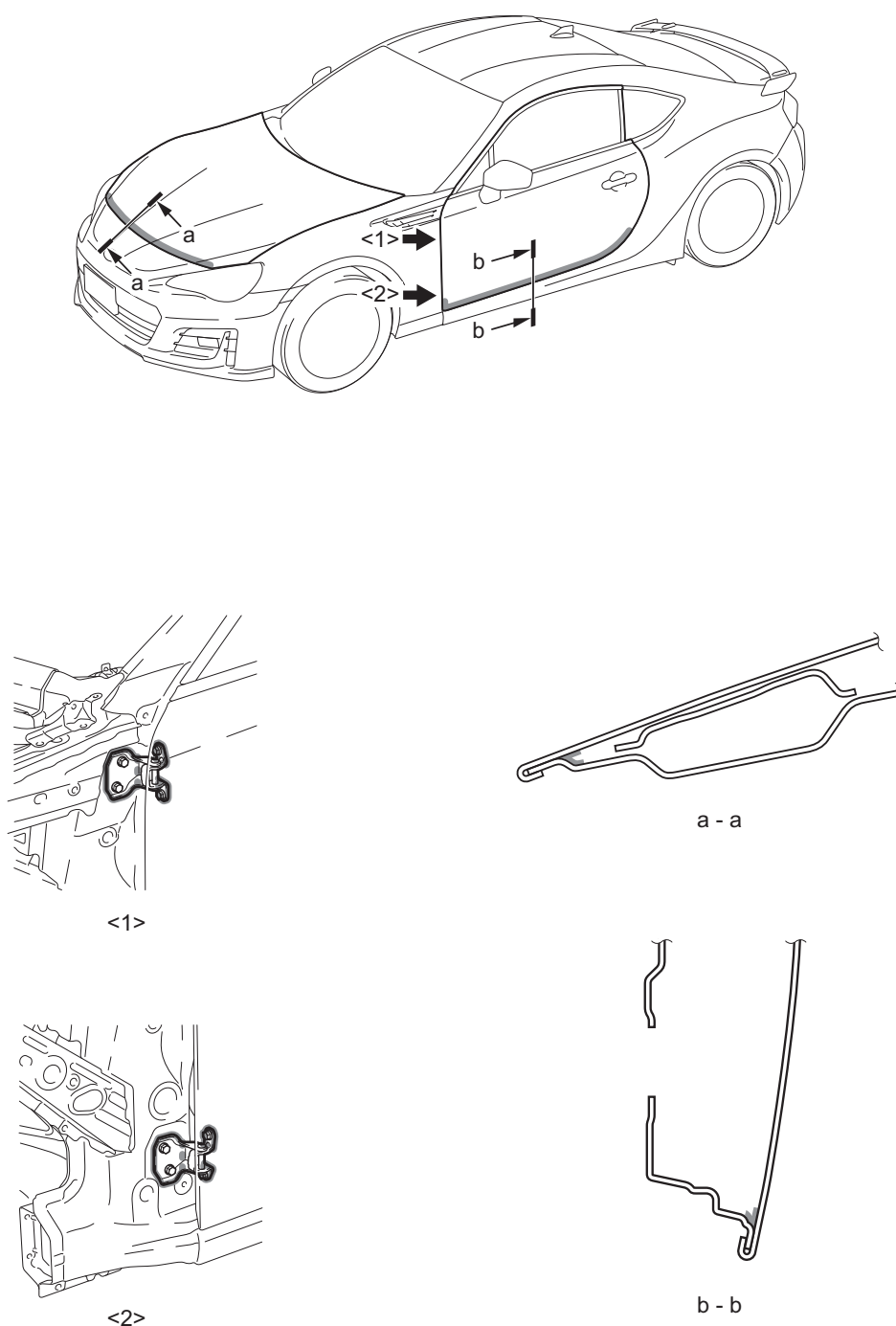
# BODY PANEL ANTI-RUST AGENT MATERIAL

## APPLICATION AREAS

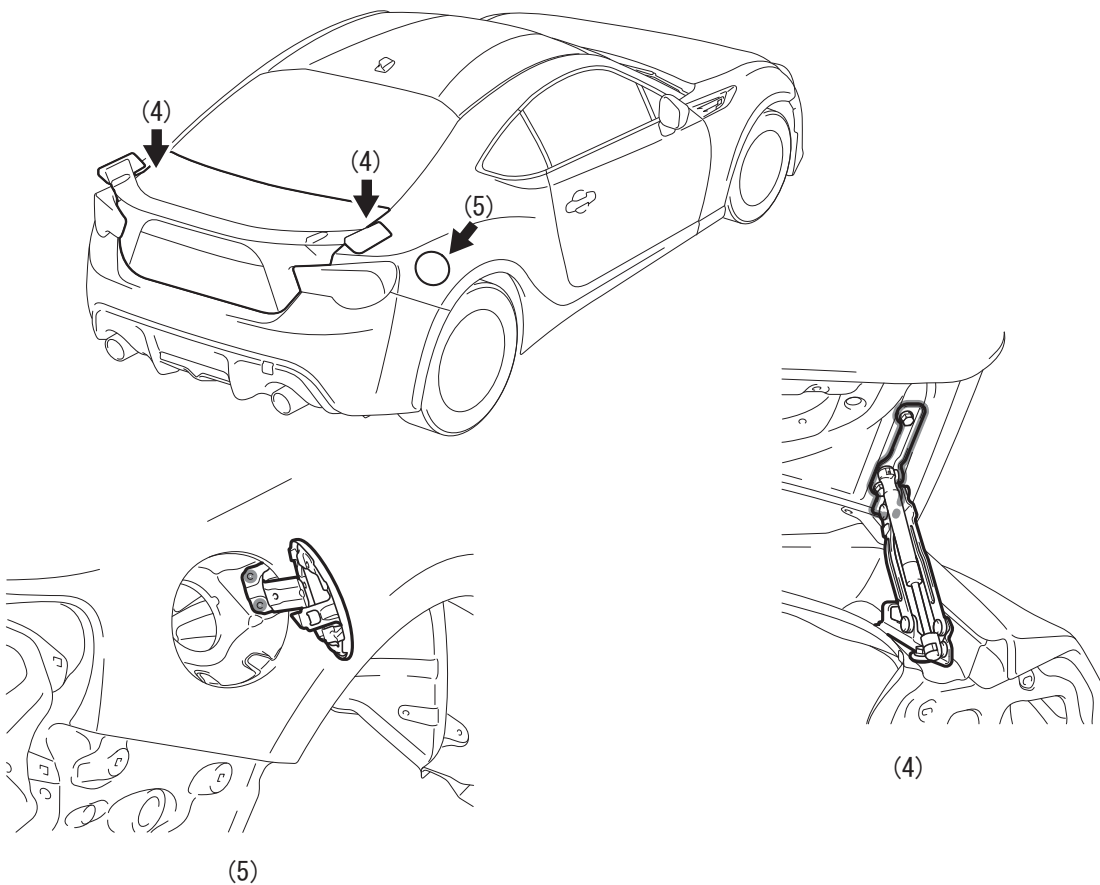
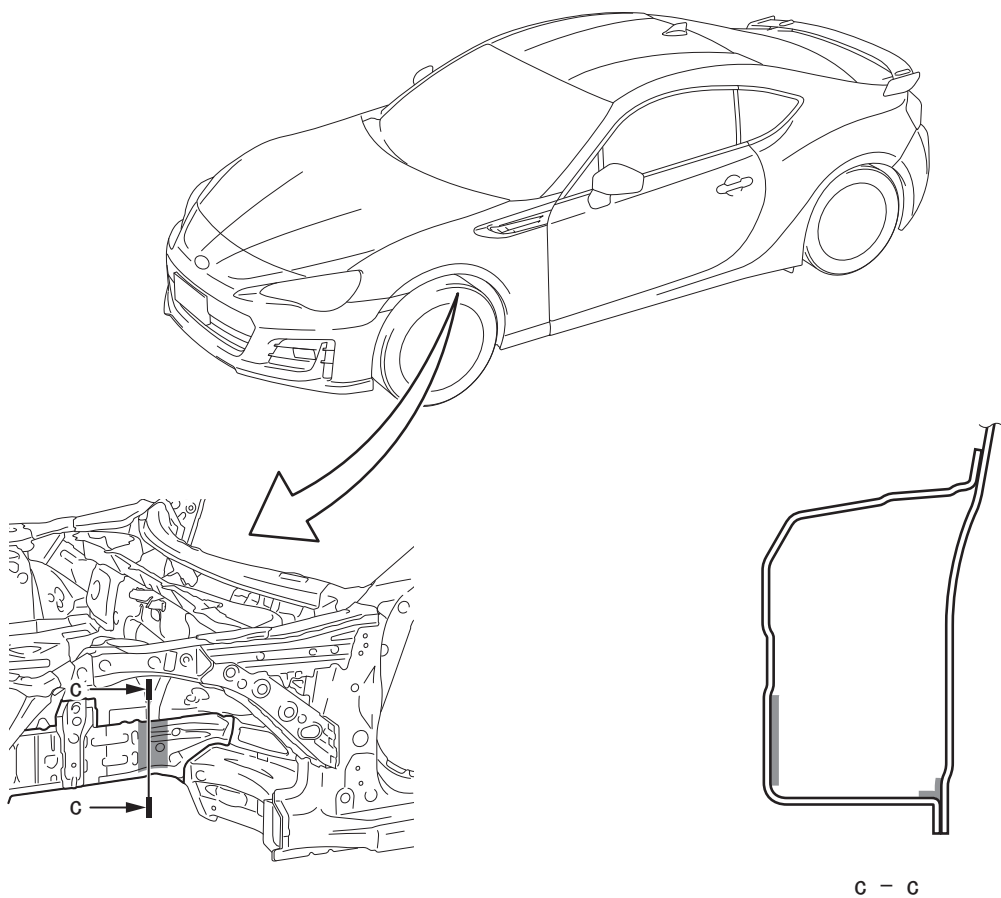
1. Apply anti-rust agent (wax) to the doors and hood edges (tips of outer panel folded parts) and undersides, areas around hinges, etc., to prevent rust. Coat the undersides of the edges using a nozzle and air gun, and coat the areas around the hinges using a brush.

### HINT:

If anti-rust agent (wax) is unnecessarily applied to an area, apply degreasing agent to a clean cloth and clean off the anti-rust agent (wax) immediately.

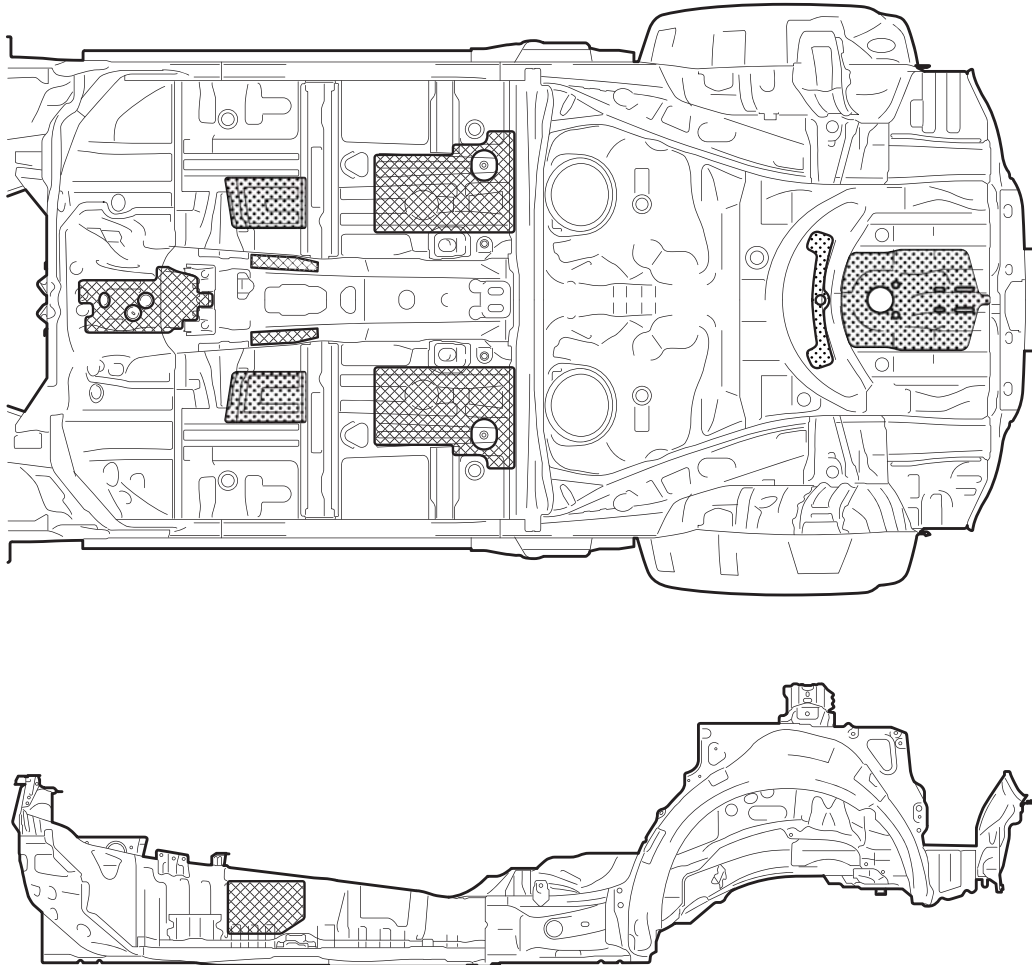


PC



# SILENCER SHEET

## INSTALLATION AREAS



Thickness of Silencer Sheet mm (in.)

• • • 3.0 (0.118)

• • • 4.0 (0.157)

# BODY PANEL ANTI-CHIPPING PAINT

## APPLICATION AREAS

### CAUTION:

Work must be performed while wearing the appropriate protective gear and in a well-ventilated area.

1. To protect the body from damage due to gravel, apply the anti-chipping paint to the rocker panels, roof panel, front body pillar, doors, wheel arches and hood.

### HINT:

- Apply anti-chipping paint to the indicated areas first, before applying the top coat.
- If anti-chipping paint is unnecessarily applied to an area, apply degreasing agent to a clean cloth and clean the paint off immediately.

PC

