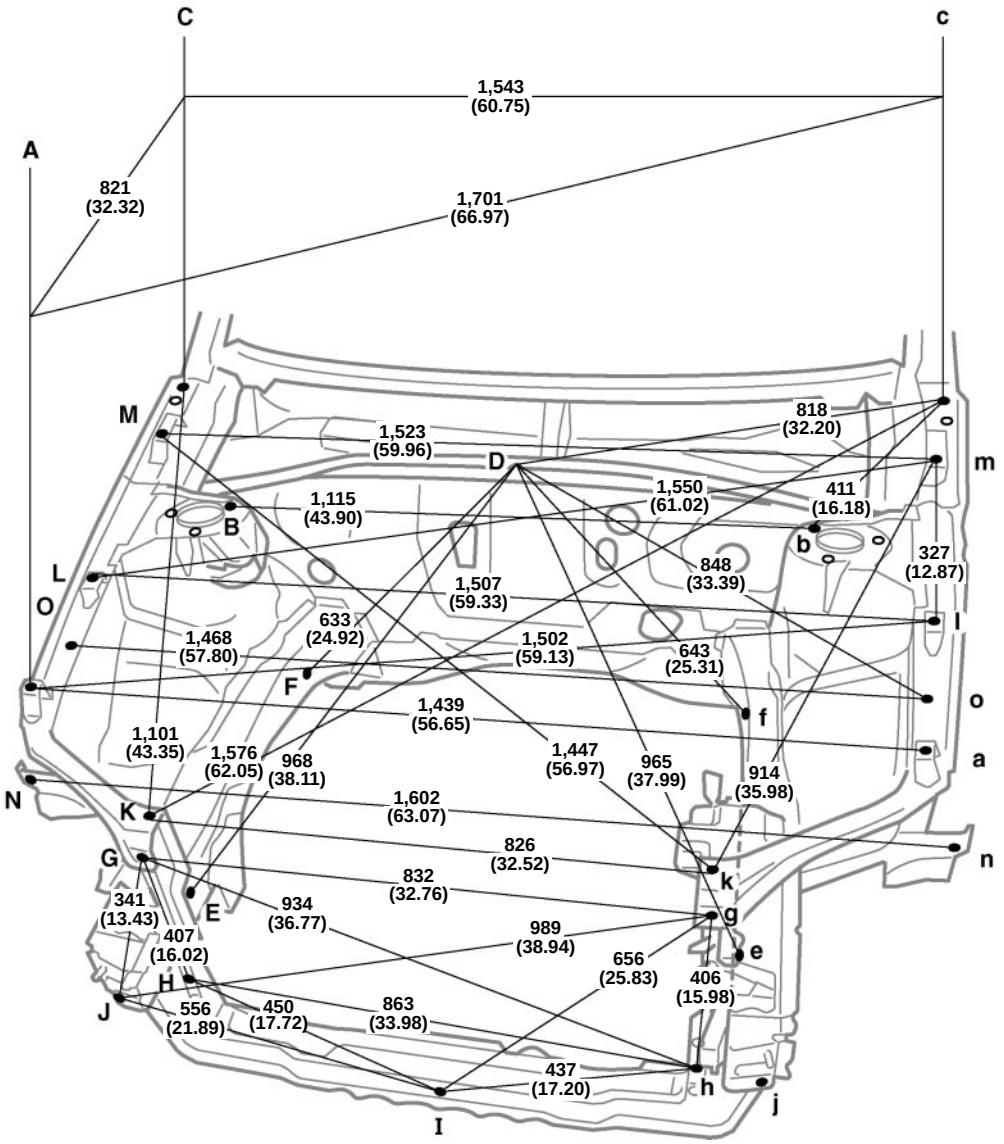
BODY DIMENSION DRAWINGS

ENGINE COMPARTMENT

(Three-Dimensional Distance)



Vehicle Dimensions

A-L or a-l	A-M or a-m	A-m or a-M	B-c or b-C	B-f	b-F	g-H	J-j
298 (11.73)	624 (24.57)	1,607 (63.27)	1,374 (54.09)	1,078 (42.44)	1,075 (42.32)	946 (37.24)	1,037 (40.83)

Height from Imaginary Standard Line

A,a	C,c	K,k
706 (27.80)	823 (32.40)	639 (25.16)

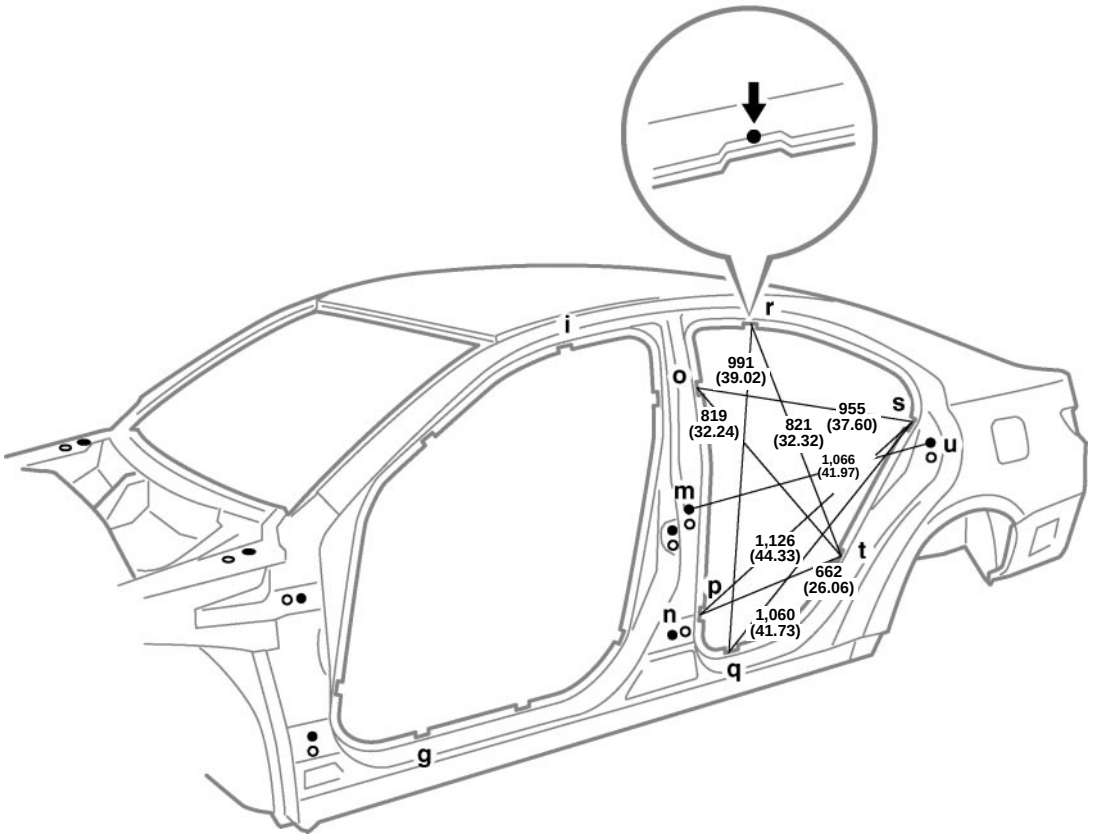
HINT: For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).

mm (in.)

Symbol	Name	Hole dia.	Symbol	Name	Hole dia.
A, a	Front fender installation nut	M6 (0.24)	H, h	Radiator support standard hole	ø10 (0.39)
B, b	Front spring support hole-inner	ø12.5 (0.492)	I, i	Hood lock support installation nut	M6 (0.24)
C, c	Hood hinge installation nut	M8 (0.31)	J, j	Front bumper reinforcement installation nut	M10 (0.39)
D, d	Cowl panel center mark	—	K, k	Radiator upper support installation nut	M6 (0.24)
E, e	Front side member standard hole	ø18 (0.71)	L, l	Front fender installation nut	M6 (0.24)
F, f	Front side member standard hole	RH: ø16 (0.63) LH: ø13 (0.51)	M, m	Front fender installation nut	M6 (0.24)
G, g	Radiator upper support installation nut	M6 (0.24)	N, n	Front wheel opening No.1 extension installation nut	M6 (0.24)
			O, o	Front fender apron standard hole	ø10 (0.39)

BODY OPENING AREAS (Side View: Rear)

(Three-Dimensional Distance)



Vehicle Dimensions

O-o	P-p	Q-q	R-r	S-s	T-t
1,397 (55.00)	1,491 (58.70)	1,491 (58.70)	1,191 (46.89)	1,418 (55.83)	1,494 (58.82)

G-q or g-Q	I-r or i-R	N-U or n-u	O-s or o-S	O-t or o-T	P-t or p-T	Q-r or q-R	S-t or s-T
1,795 (70.67)	1,366 (53.78)	1,181 (46.50)	1,701 (66.97)	1,660 (65.35)	1,633 (64.29)	1,661 (65.39)	1,511 (59.49)

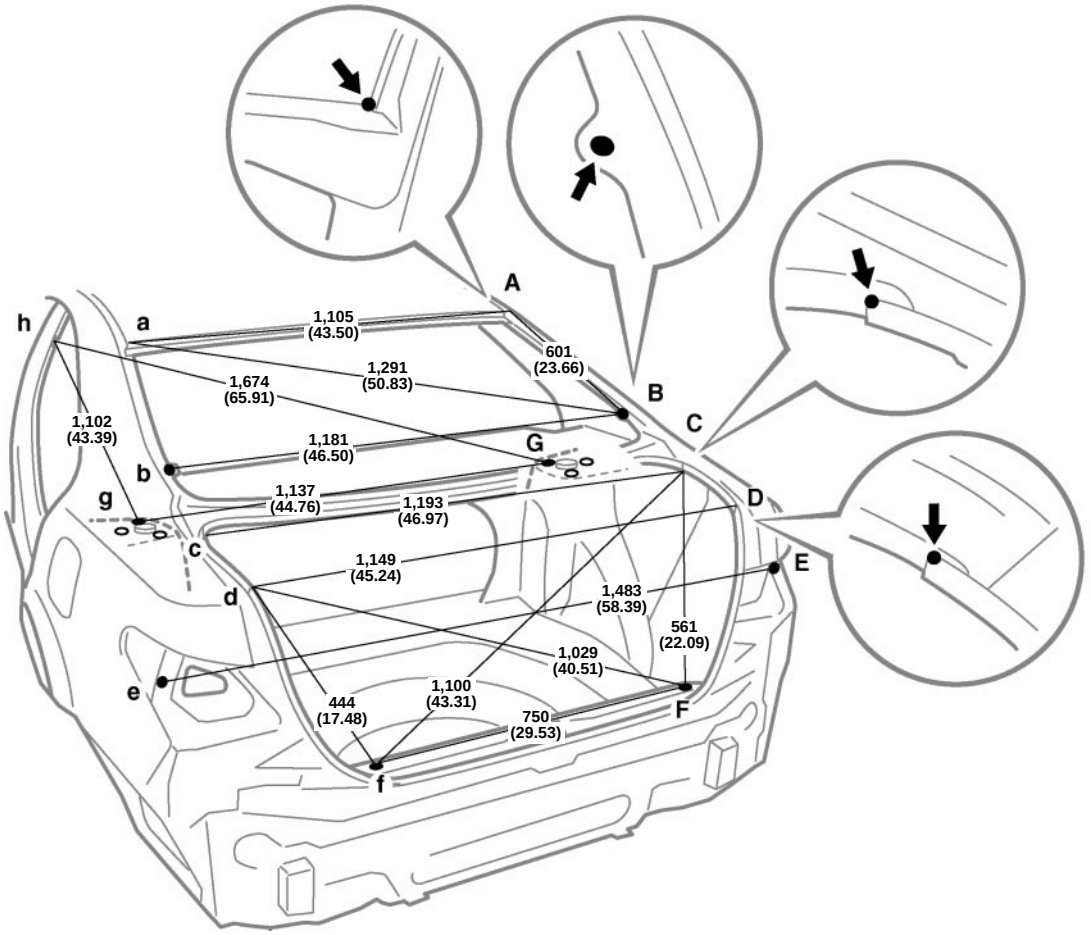
HINT: For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).

mm (in.)

Symbol	Name	Hole dia.			
G, g	Rocker panel assembly mark	—	P, p	Center body pillar assembly mark	—
I, i	Roof side rail assembly mark	—	Q, q	Rocker panel assembly mark	—
M, m	Rear door hinge installation nut	M8 (0.31)	R, r	Roof side rail assembly mark	—
N, n	Rear door hinge installation nut	M8 (0.31)	S, s	Quarter panel assembly mark	—
O, o	Center body pillar assembly mark	—	T, t	Quarter panel assembly mark	—
			U, u	Rear door lock striker installation nut	M8 (0.31)

BODY OPENING AREAS (Rear View)

(Three-Dimensional Distance)



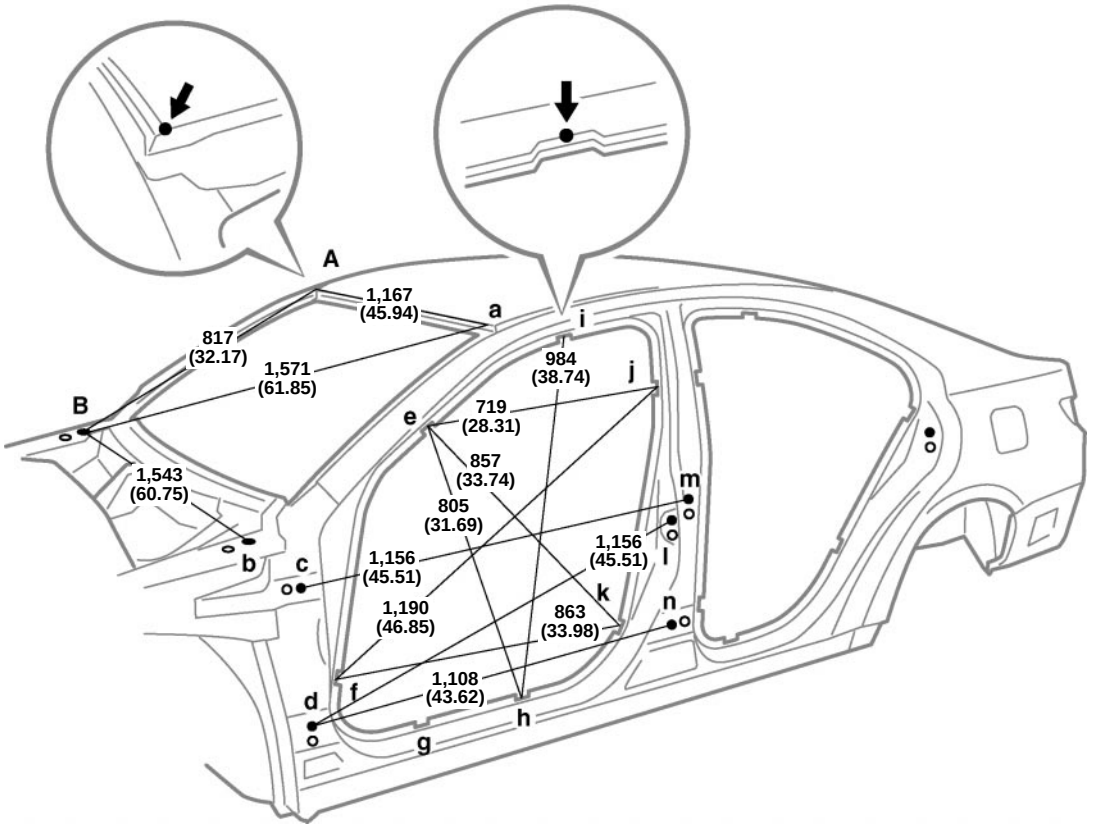
HINT: For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).

mm (in.)

Symbol	Name	Hole dia.			
A, a	Roof panel corner	—	E, e	Quarter panel standard hole	ø10 (0.39)
B, b	Quarter panel standard hole	ø10 (0.39)	F, f	Luggage trim installation hole	ø10 (0.39)
C, c	Quarter panel corner	—	G, g	Rear spring support hole inner-front	ø9.5 (0.374)
D, d	Luggage opening trough corner	—	H, h	Center body pillar assembly mark	—
			—	—	—

BODY OPENING AREAS (Side View: Front)

(Three-Dimensional Distance)



Vehicle Dimensions

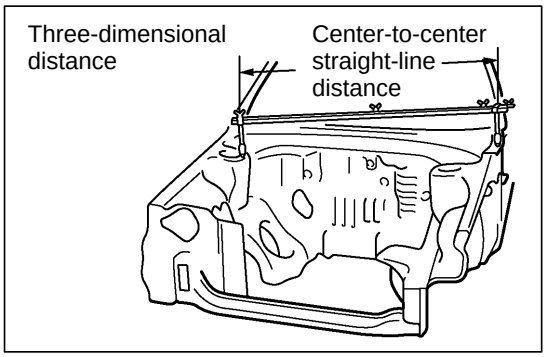
E-e	F-f	G-g	H-h	I-i	J-j	K-k
1,380 (54.33)	1,493 (58.78)	1,491 (58.70)	1,491 (58.70)	1,218 (47.95)	1,395 (54.92)	1,491 (58.70)

C-L or c-l	E-f or e-F	E-h or e-H	E-j or e-J	F-j or f-J	F-k or f-K	H-i or h-I	J-k or j-K
1,113 (43.82)	1,581 (62.24)	1,645 (64.76)	1,563 (61.54)	1,871 (73.66)	1,723 (67.83)	1,668 (65.67)	1,599 (62.95)

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

mm (in.)

Symbol	Name	Hole dia.			
A, a	Roof panel corner	—	H, h	Rocker panel assembly mark	—
B, b	Hood hinge installation nut	M8 (0.31)	I, i	Roof side rail assembly mark	—
C, c	Front door hinge installation nut	M8 (0.31)	J, j	Center body pillar assembly mark	—
D, d	Front door hinge installation nut	M8 (0.31)	K, k	Center body pillar assembly mark	—
E, e	Front body pillar assembly mark	—	L, l	Front door lock striker installation nut	M8 (0.31)
F, f	Front body pillar assembly mark	—	M, m	Rear door hinge installation nut	M8 (0.31)
G, g	Rocker panel assembly mark	—	N, n	Rear door hinge installation nut	M8 (0.31)
—	—	—	—	—	—



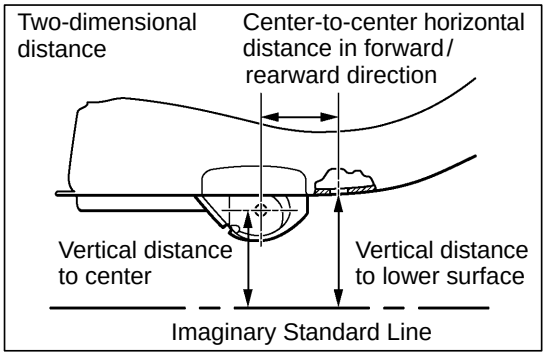
GENERAL INFORMATION

1. BASIC DIMENSIONS

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

(1) (Three-dimensional distance)

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

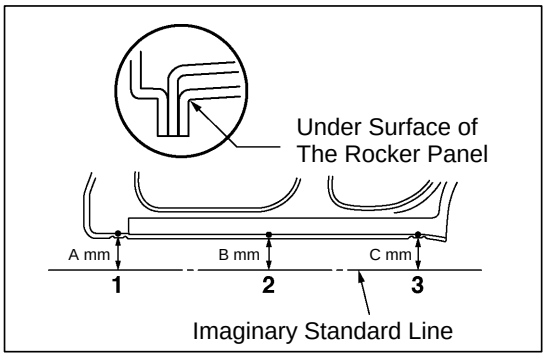


(2) (Two-dimensional distance)

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

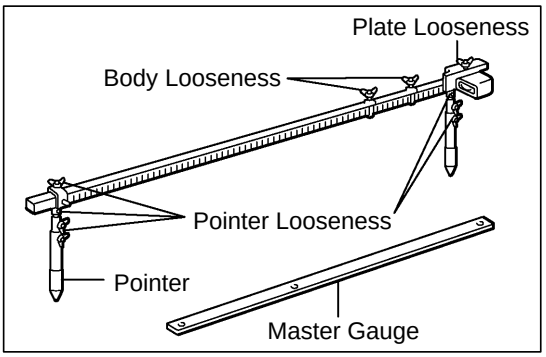
(b) In cases in which only one dimension is given, left and right are symmetrical.

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



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

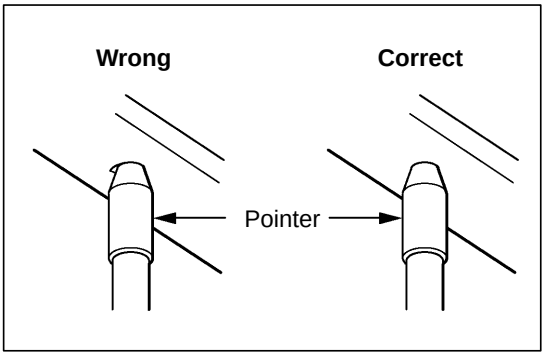
SYMBOL	Name
1	The place that was lowered A mm from the under surface of the rocker panel centered on the front jack up point.
2	The place that was lowered B mm from the under surface of the rocker panel centered between 1 and 3.
3	The place that was lowered C mm from the under surface of the rocker panel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



2. MEASURING

(a) Basically, all measurements are to be done with a tracking gauge. For portions where it is not possible to use a tracking gauge, a tape measure should be used.

(b) Use only a tracking gauge that has no looseness in the body, measuring plate, or pointers.



HINT:

1) The height of the left and right pointers must be equal.

2) Always calibrate the tracking gauge before measuring or after adjusting the pointer height.

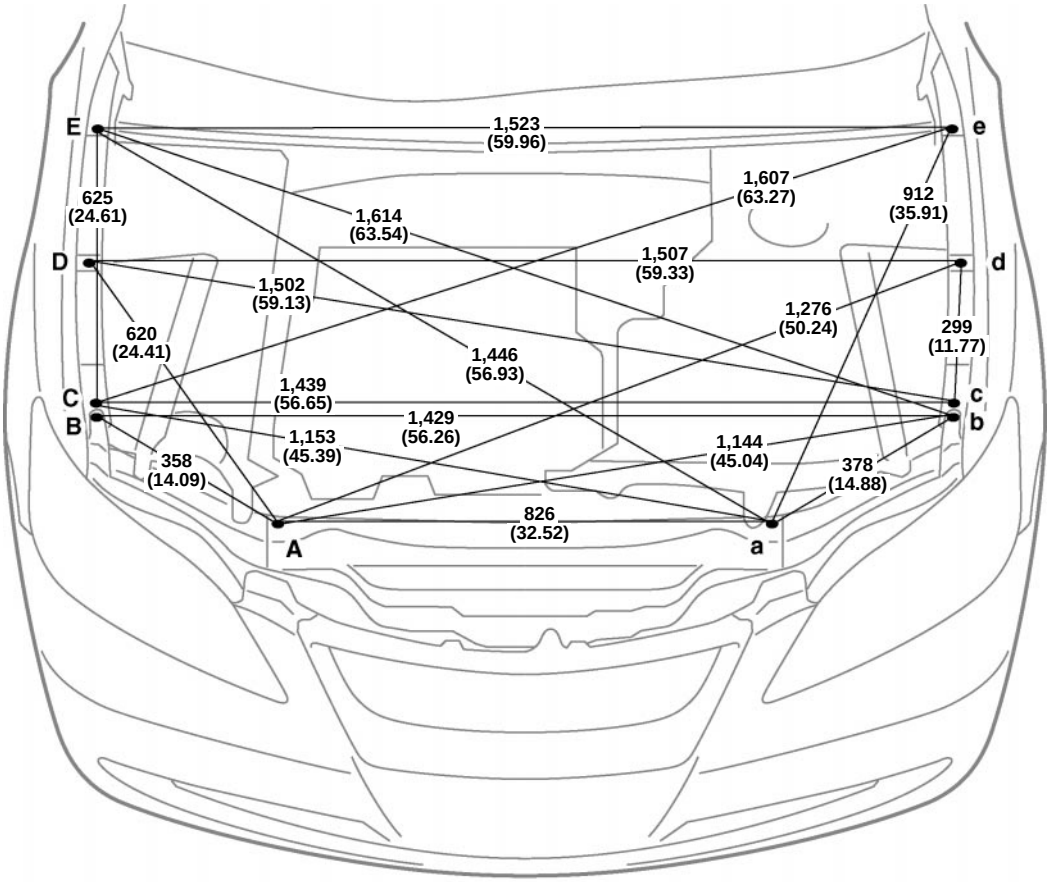
3) Take care not to drop the tracking gauge or otherwise shock it.

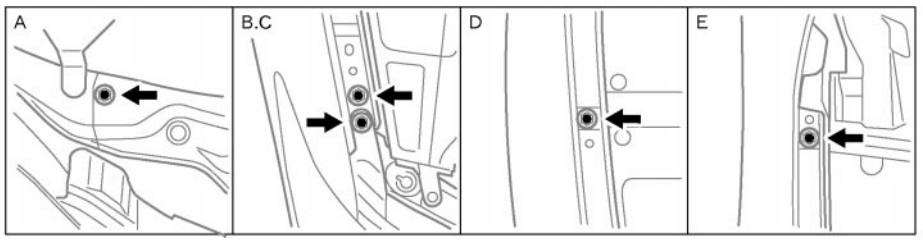
4) Confirm that the pointers are securely in the holes.

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

REFERENCE VALUE
ENGINE COMPARTMENT

(Three-Dimensional Distance)





Vehicle Dimensions

B-E or b-e
654 (25.75)

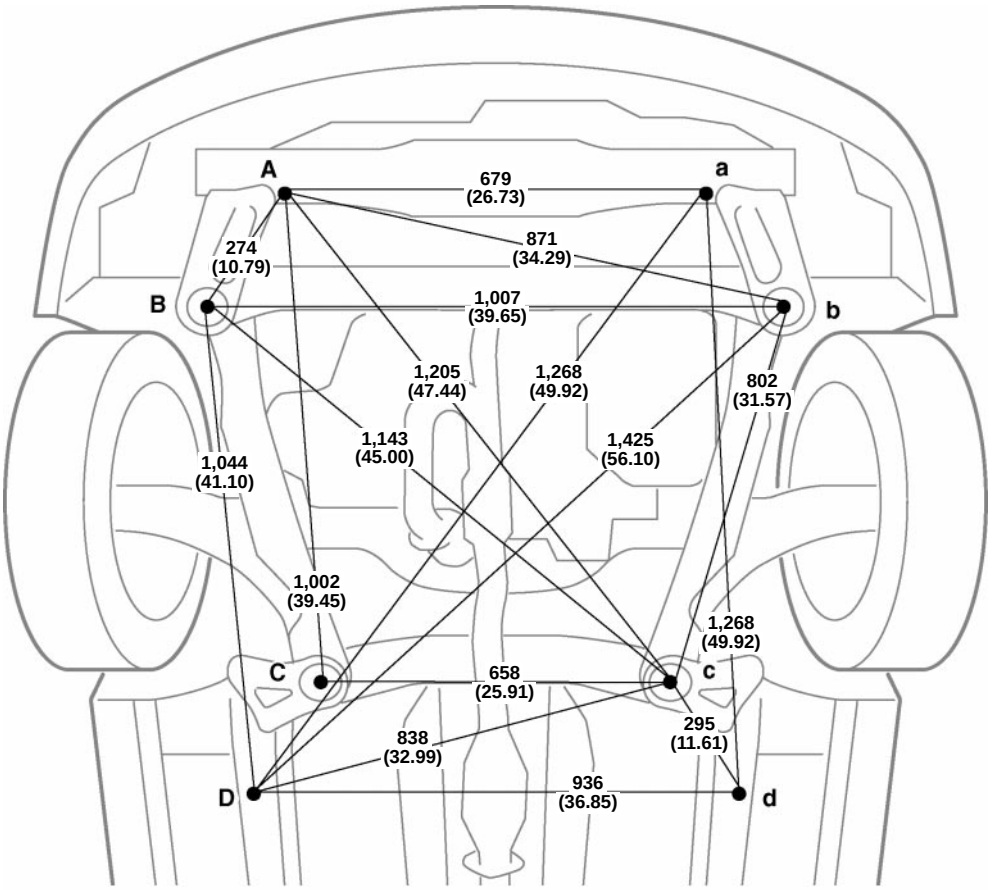
HINT:
1) For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).
2) These values are actual measurements made on model.
   Use these reference values.
3) Measure point “A, a” with the Cool air intake duct seal removed.
4) Measure point “B, b C, c D, d E, e” with the Hood to front fender seal removed.

mm (in.)

Symbol	Name	Hole dia.			
A, a	Radiator upper support installation bolt	—	C, c	Front fender installation bolt	—
B, b	Headlight installation bolt	—	D, d	Front fender installation bolt	—
			E, e	Front fender installation bolt	—

UNDER BODY

(Three-Dimensional Distance)



HINT:
1) For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).
2) These values are actual measurements made on model.
Use these reference values.
3) Measure point “A, a” with the Engine under cover removed.

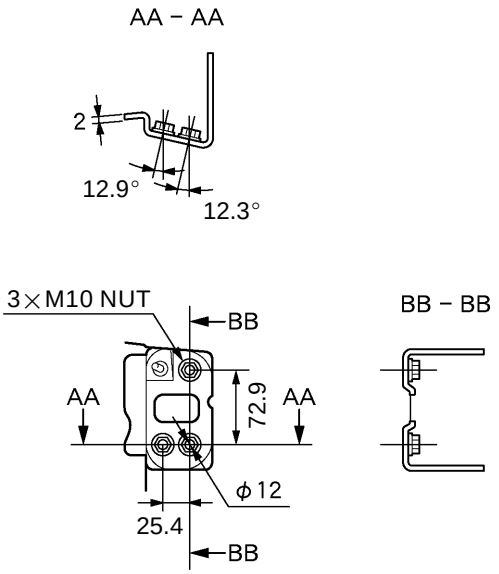
mm (in.)

Symbol	Name	Hole dia.			
A, a	Front crossmember No.2 reinforcement standard hole	ø10 (0.39)	C, c	Front suspension member installation bolt	—
B, b	Front suspension member reinforcement installation bolt	—	D, d	Front side member standard hole	ø18 (0.71)
			—	—	—

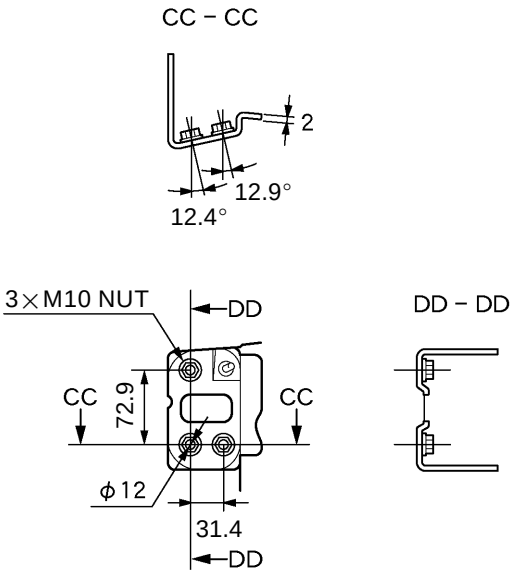
(Two-Dimensional Distance)

Front bumper reinforcement

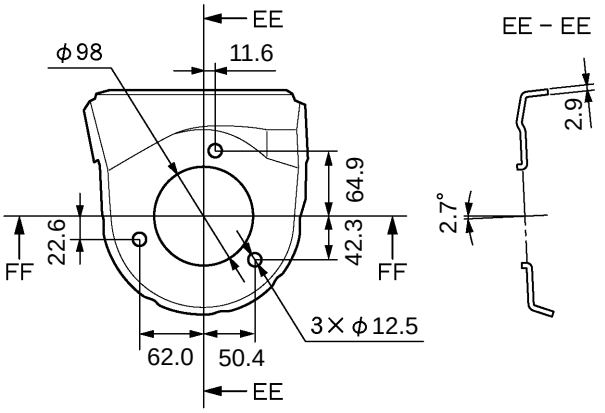
〔RH〕



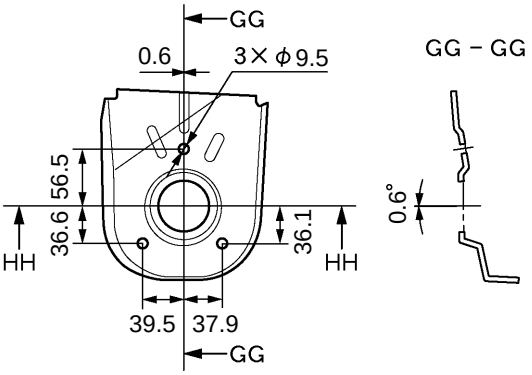
〔LH〕

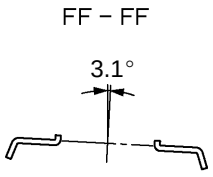


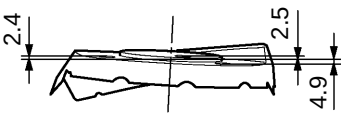
Front spring support

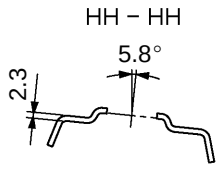


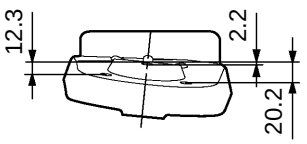
Rear spring support







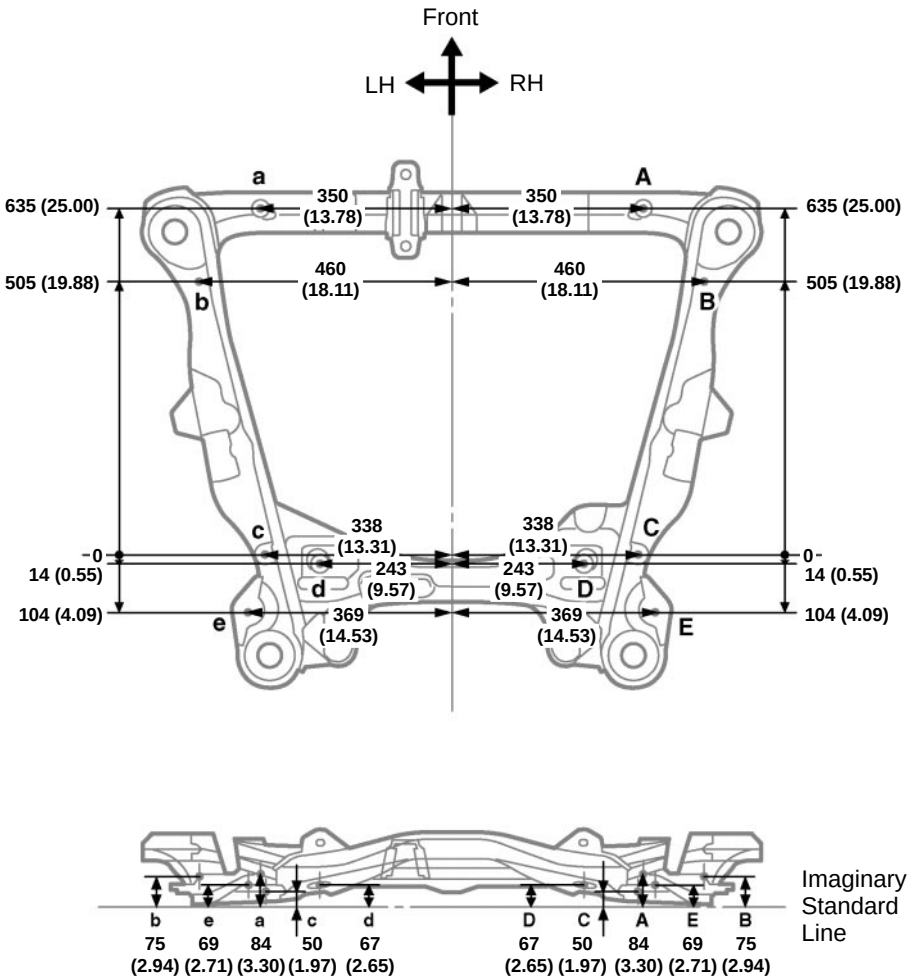




mm

SUSPENSION CROSSMEMBER

(Two-Dimensional Distance)



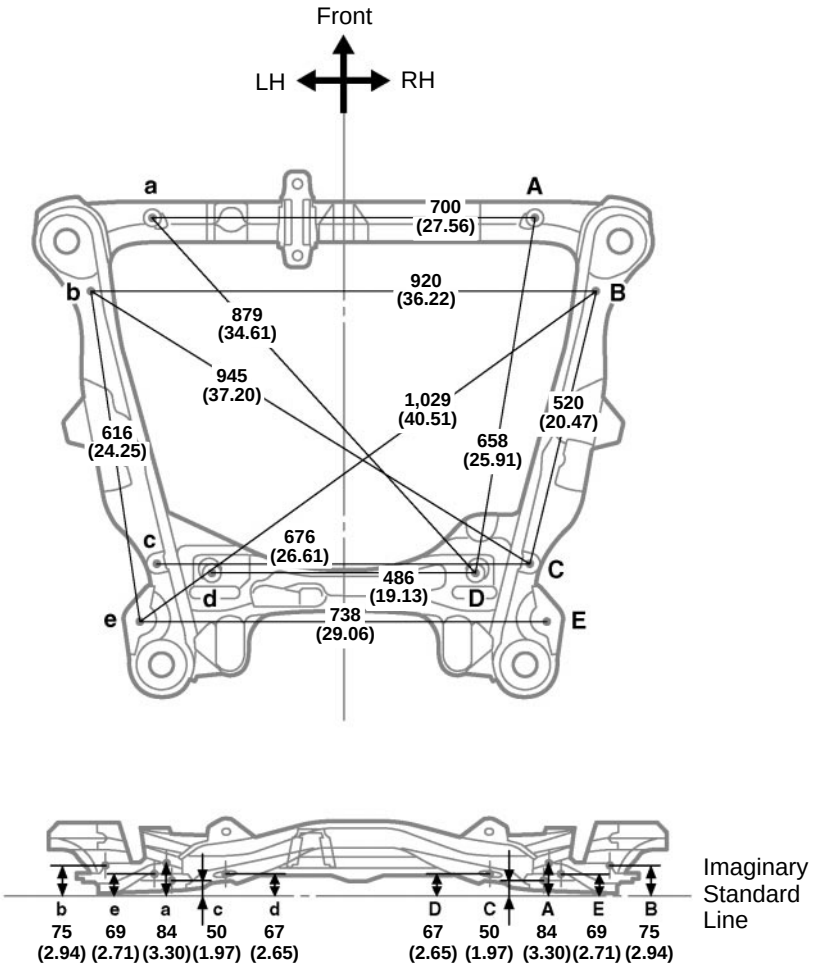
HINT: For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).

mm (in.)

Symbol	Name	Hole dia.			
A, a	Front frame standard hole	ø13 (0.51)	C, c	Front frame standard hole	ø13 (0.51)
B, b	Front frame standard hole	ø13 (0.51)	D, d	Front frame standard hole	ø13 (0.51)
			E, e	Lower arm installation hole-lower	ø15 (0.59)

SUSPENSION CROSSMEMBER

(Three-Dimensional Distance)



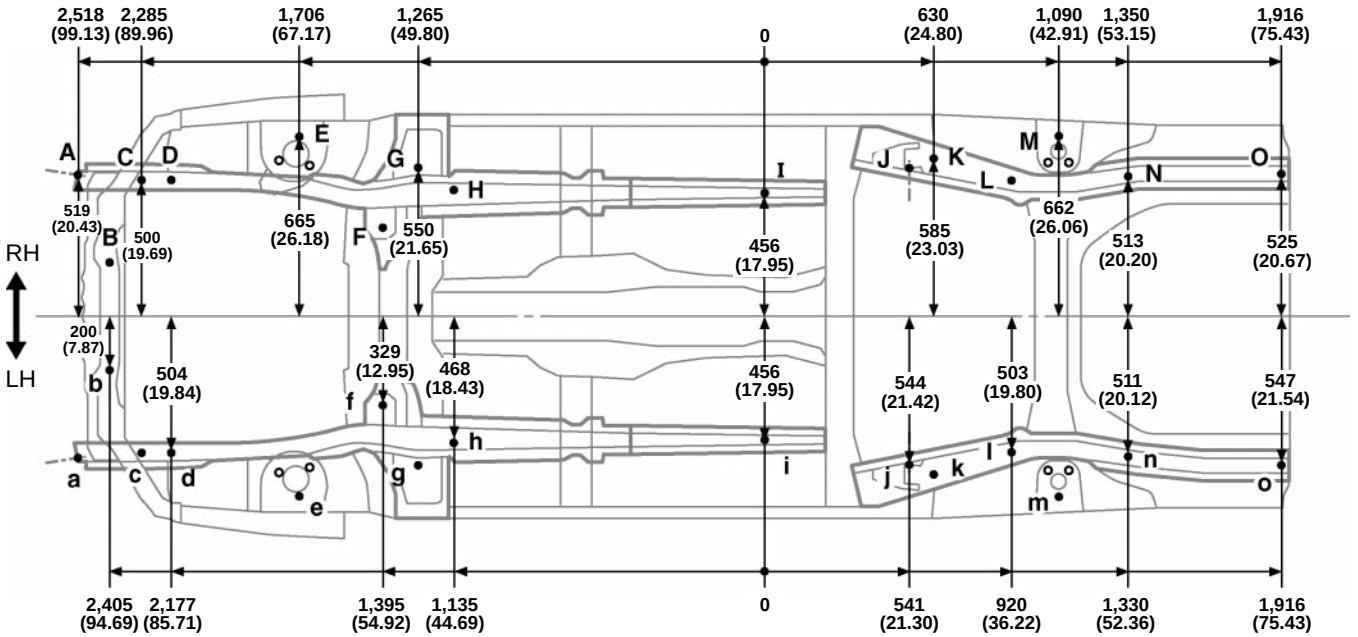
HINT: For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).

mm (in.)

Symbol	Name	Hole dia.				
A, a	Front frame standard hole	ø13 (0.51)		C, c	Front frame standard hole	ø13 (0.51)
B, b	Front frame standard hole	ø13 (0.51)		D, d	Front frame standard hole	ø13 (0.51)
				E, e	Lower arm installation hole-lower	ø15 (0.59)

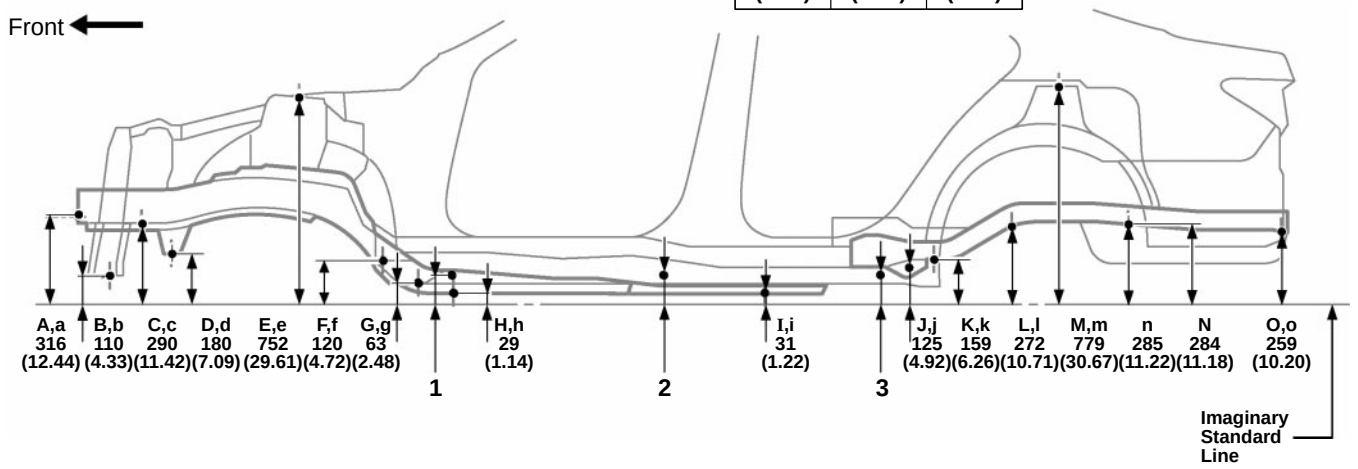
UNDER BODY

(Two-Dimensional Distance)



Wheel base	2,775 (109.25)

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



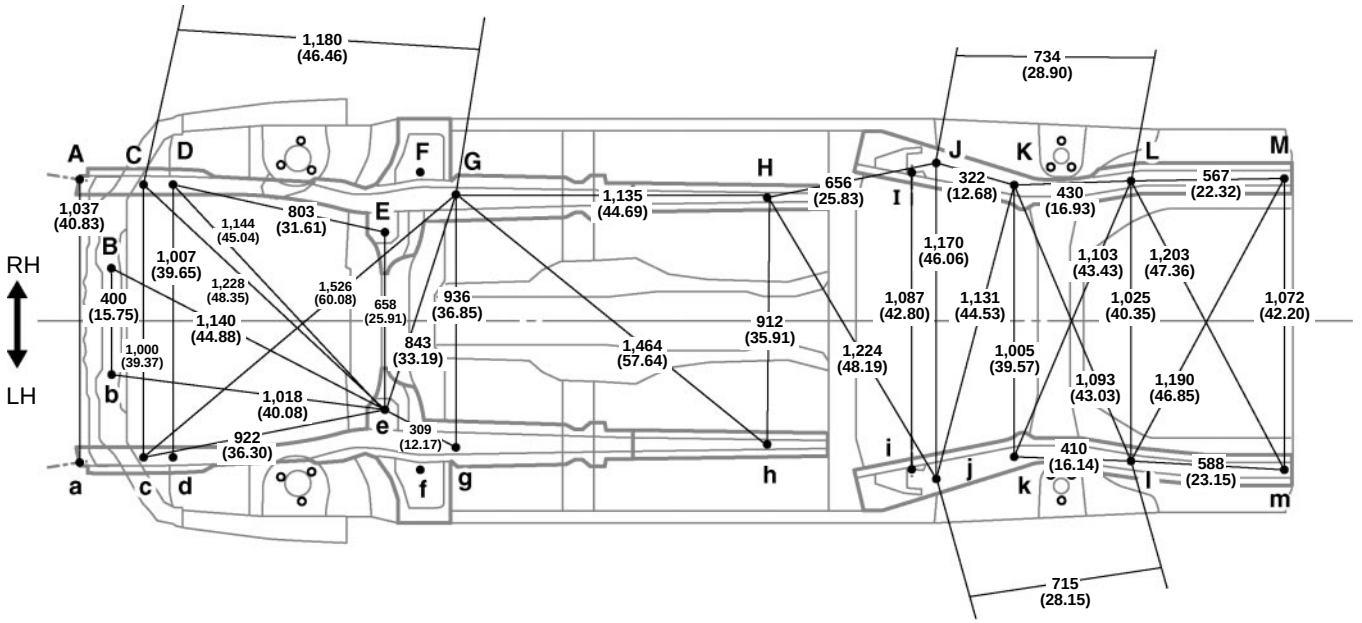
HINT:
1) For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).
2) Point N, n, O, o on the vehicle are asymmetrical.

mm (in.)

Symbol	Name	Hole dia.			
A, a	Front bumper reinforcement installation nut	M10 (0.39)	H, h	Front side member standard hole	ø18 (0.71)
B, b	Front crossmember standard hole	ø15 (0.59)	I, i	Front floor under reinforcement standard hole	ø15 (0.59)
C, c	Front side member standard hole	ø18 (0.71)	J, j	Strut bar installation hole-inner	ø12 (0.47)
D, d	Front suspension member installation nut-front	M16 (0.63)	K, k	Rear floor side member standard hole	ø18 (0.71)
E, e	Front spring support hole-outer	ø12.5 (0.492)	L, l	Rear suspension member installation nut	M12 (0.47)
F, f	Front suspension member installation nut-rear	M16 (0.63)	M, m	Rear spring support hole-outer	ø9.5 (0.374)
G, g	Torque box front standard hole	ø25 (0.98)	N, n	Rear floor side member standard hole	ø18 (0.71)
			O, o	Rear floor side member standard hole	ø18 (0.71)

UNDER BODY

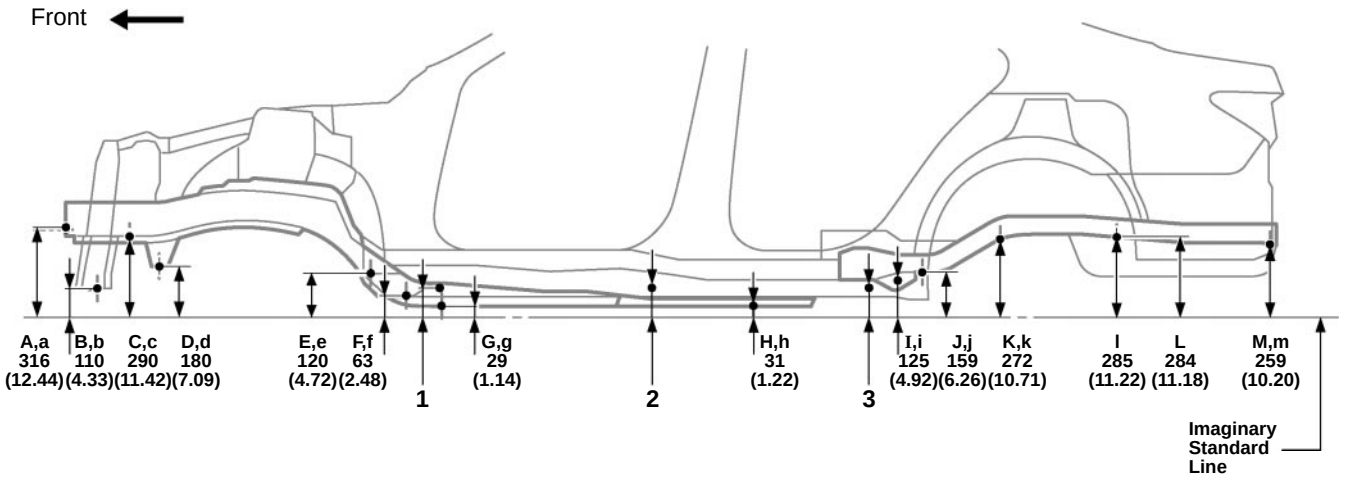
(Three-Dimensional Distance)



Vehicle Dimensions

F-f	F-G or f-g	F-g or f-G
1,100 (43.31)	158 (6.22)	1,027 (40.43)

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

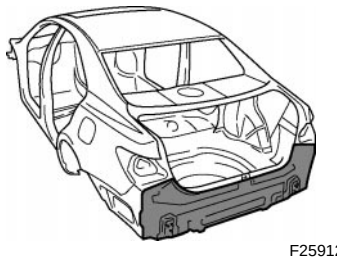


HINT:
1) For symbols, capital letters indicate right side of vehicle, small letters indicate left side of vehicle (seen from rear).
2) Point L, l, M, m on the vehicle are asymmetrical.

mm (in.)

Symbol	Name	Hole dia.			
A, a	Front bumper reinforcement installation nut	M10 (0.39)	G, g	Front side member standard hole	ø18 (0.71)
B, b	Front crossmember standard hole	ø15 (0.59)	H, h	Front floor under reinforcement standard hole	ø15 (0.59)
C, c	Front side member standard hole	ø18 (0.71)	I, i	Strut bar installation hole-inner	ø12 (0.47)
D, d	Front suspension member installation nut-front	M16 (0.63)	J, j	Rear floor side member standard hole	ø18 (0.71)
E, e	Front suspension member installation nut-rear	M16 (0.63)	K, k	Rear suspension member installation nut	M12 (0.47)
F, f	Torque box front standard hole	ø25 (0.98)	L, l	Rear floor side member standard hole	ø18 (0.71)
			M, m	Rear floor side member standard hole	ø18 (0.71)

BODY LOWER BACK PANEL (ASSY)



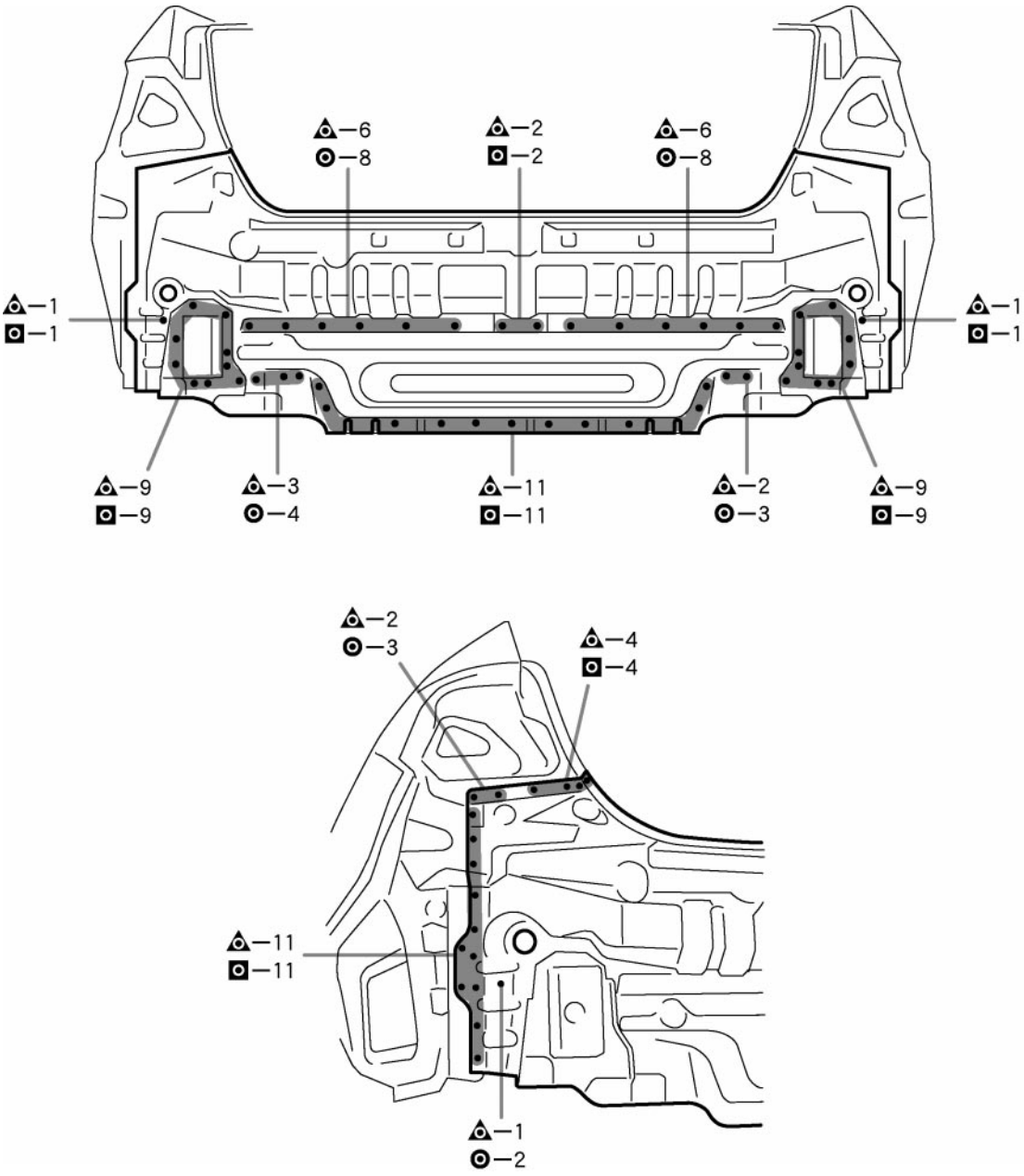
F25912A

Symbol meaning

REMOVAL	: Remove Weld Points	
INSTALLATION	: Spot Weld	: MIG Plug Weld

F25912B

REMOVAL·INSTALLATION



F25912

INSTALLATION POINT

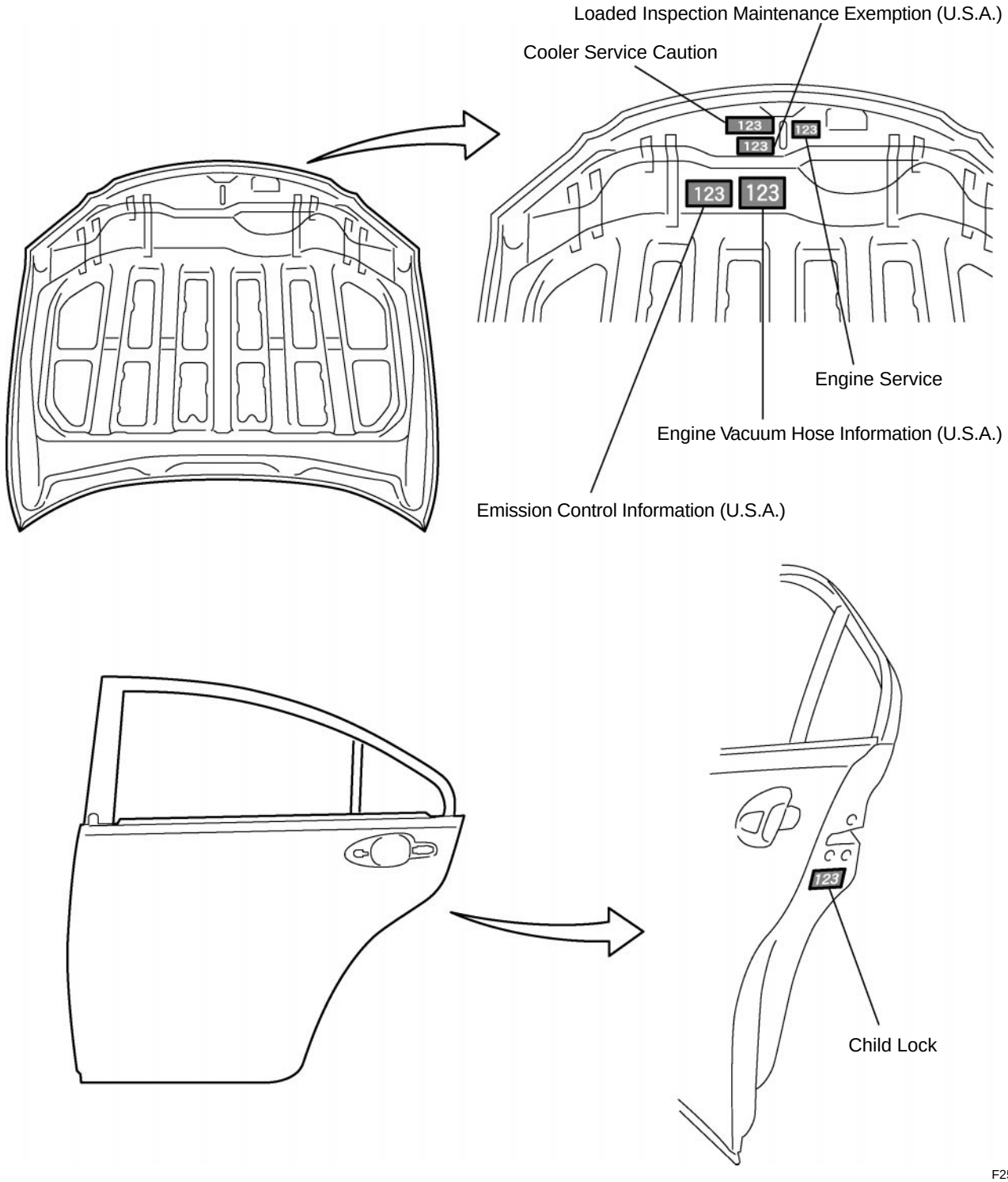
1 Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
2 After welding, apply body sealer and undercoating to the corresponding parts. (See the paint·coating)
3 After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

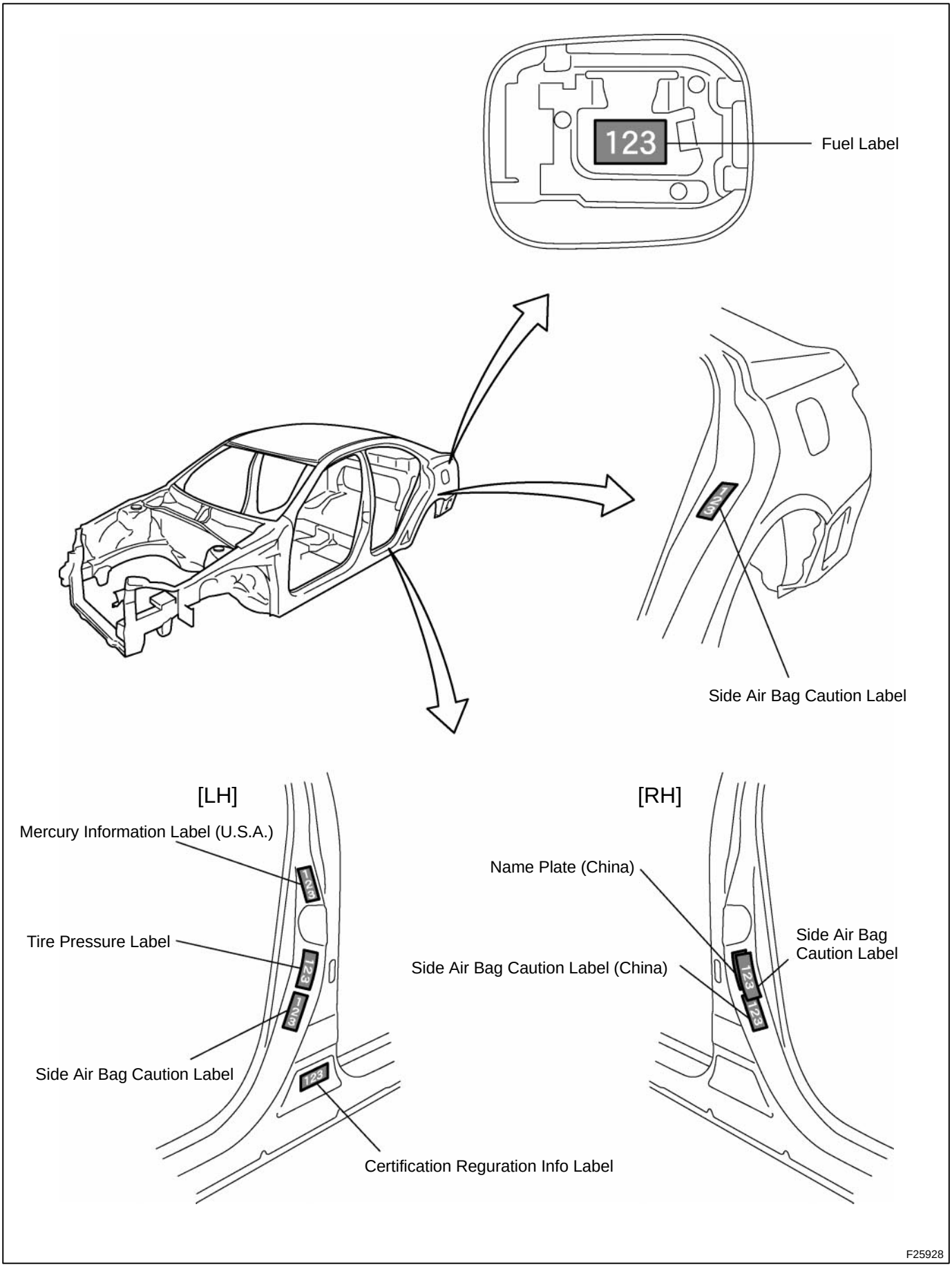
CAUTION LABEL ATTACHMENT POSITION

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.

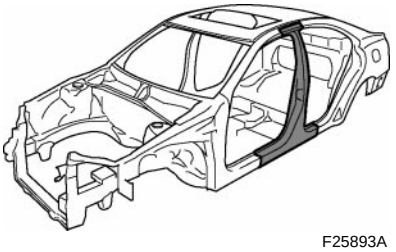
HINT:

1) Attach each caution label with its orientation the same as the numbers shown in the illustration.
2) Make sure the caution label is not attached over a spot weld.
3) When attaching the caution label, make sure not to touch the label's adhesive surface.
4) To prevent the edges of the caution label from peeling, apply extra pressure to the label's periphery.
5) 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.




123
Fuel Label
Side Air Bag Caution Label
[LH]
Mercury Information Label (U.S.A.)
Tire Pressure Label
Side Air Bag Caution Label
Certification Reguration Info Label
[RH]
Name Plate (China)
Side Air Bag Caution Label (China)
Side Air Bag Caution Label
F25928

CENTER BODY PILLAR (CUT)



F25893A

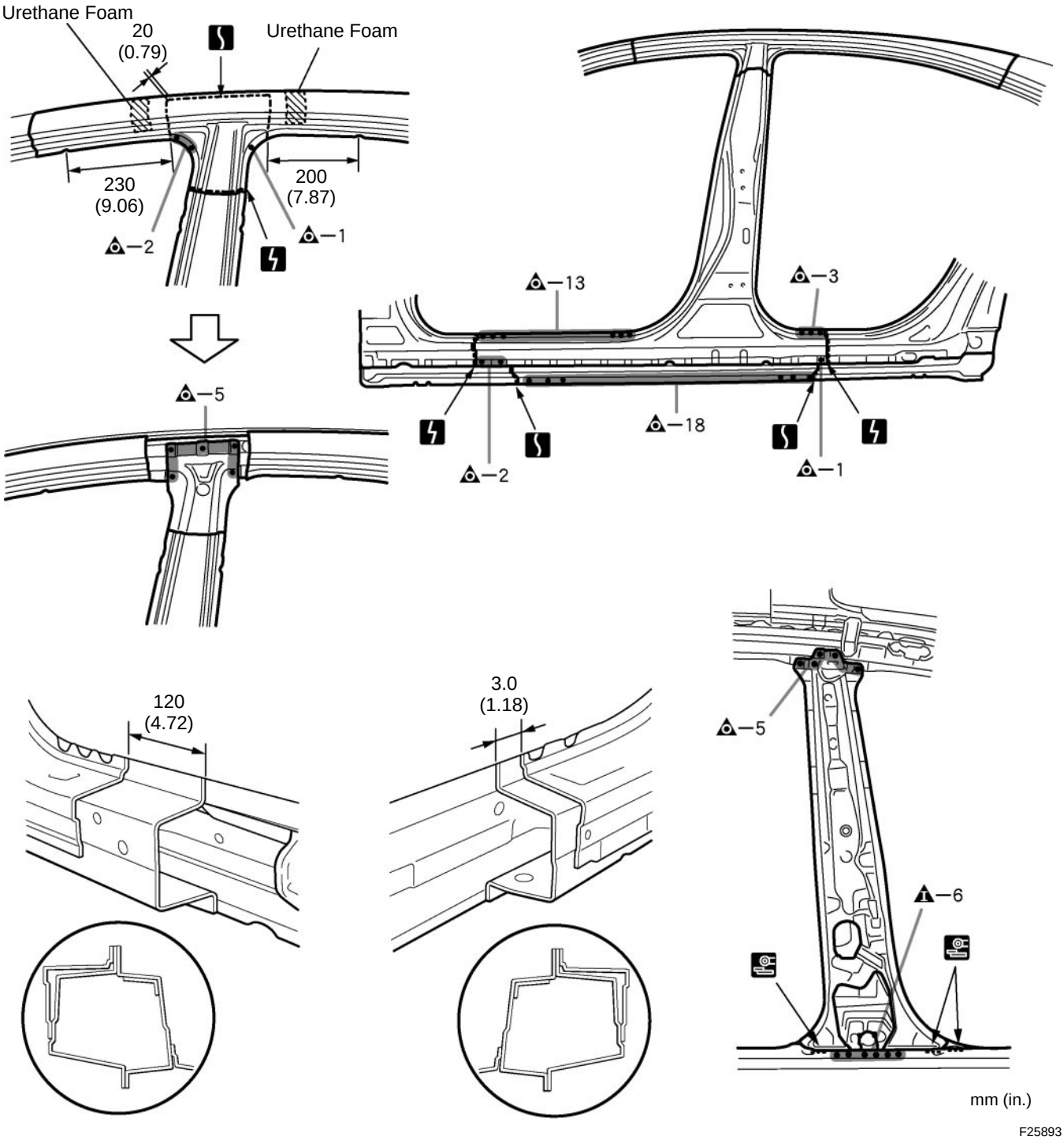
Symbol meaning

: Remove Weld Points : Cut with disc sander, etc.

: Cut and Join Location : Cut Location for Supply Parts

F25893B

REMOVAL



F25893

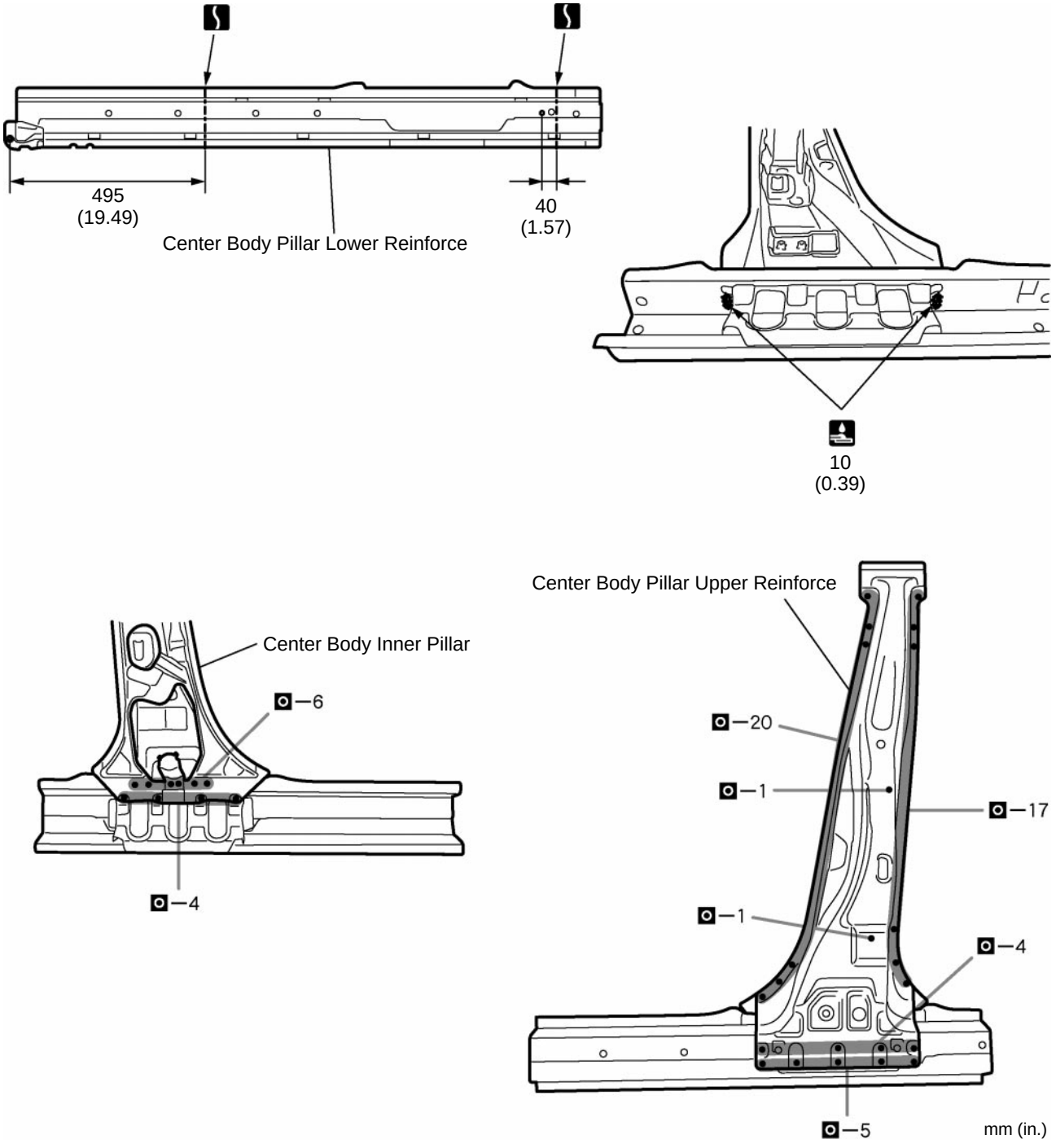
Symbol meaning

: Cut and Join Location : MIG Plug Weld

: Tack Weld : Butt Weld

F25894B

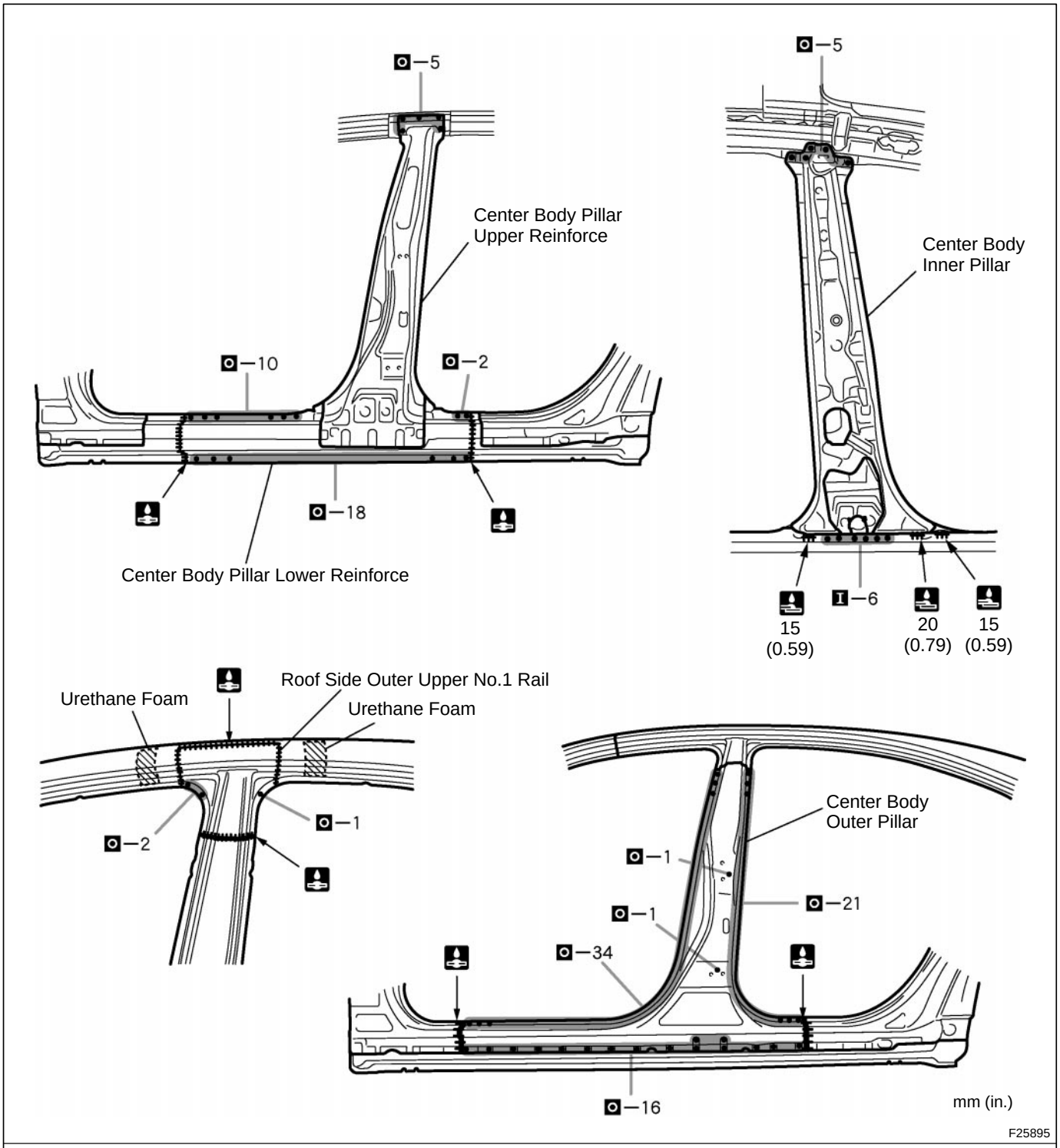
INSTALLATION



F25894

INSTALLATION POINT

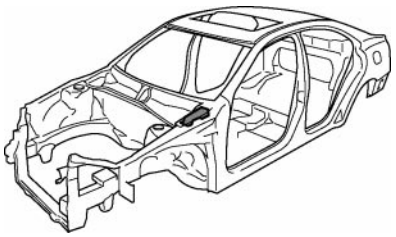
1 Before temporarily installing the new parts, weld the center body pillar lower reinforce, center body pillar upper reinforce and center body inner pillar with the standard number of welding points.



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 After welding the center body pillar lower reinforce, center body pillar upper reinforce and center body inner pillar to the vehicle side, install the center body outer pillar and roof side outer upper No.1 rail.
4 After welding, apply the polyurethane foam to the corresponding parts. (See the paint·coating)
5 After welding, apply body sealer and undercoating to the corresponding parts. (See the paint·coating)
6 After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

COWL TOP SIDE PANEL (ASSY)



F25886A

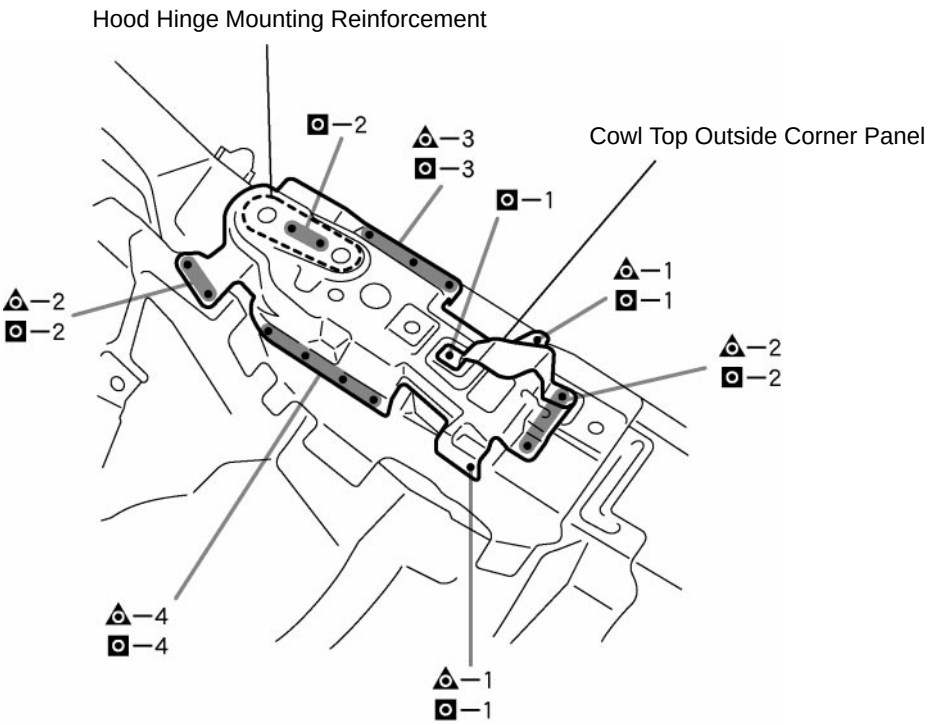
With the cowl top side reinforcement removed.

Symbol meaning

REMOVAL	: Remove Weld Points
INSTALLATION	: MIG Plug Weld

F25886B

REMOVAL·INSTALLATION



F25886

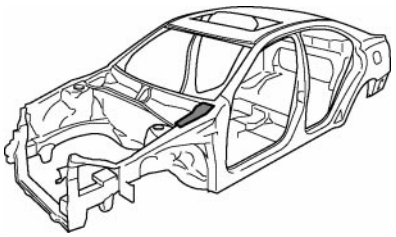
REMOVAL POINT

1 Remove the cowl top outside corner panel at the same time.

INSTALLATION POINT

1 Before temporarily installing the new parts, weld the hood hinge mounting reinforcement with the standard number of welding points.
2 After welding, apply body sealer to the corresponding parts. (See the paint·coating)
3 After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

COWL TOP SIDE REINFORCEMENT (ASSY)



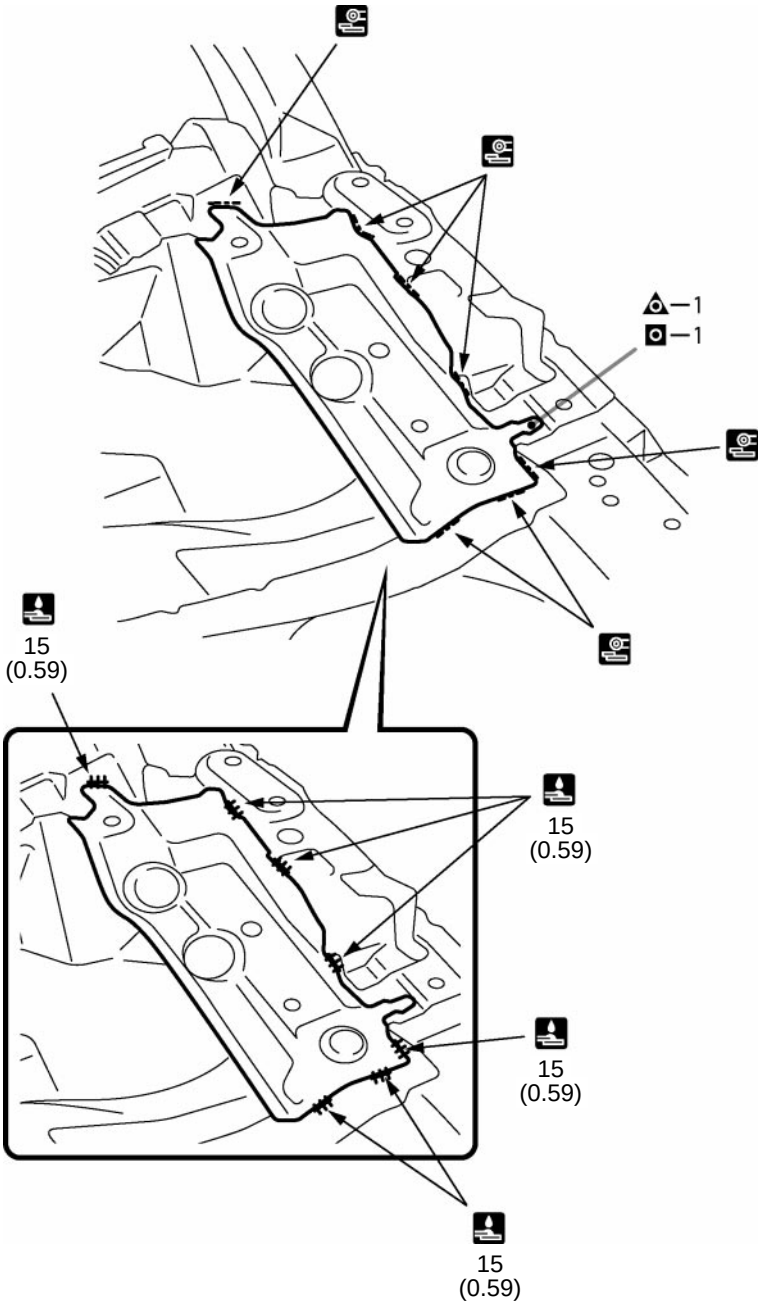
F25884A

Symbol meaning

REMOVAL	: Remove Weld Points	: Cut with disc sander, etc.
INSTALLATION	: MIG Plug Weld	: Tack Weld

F25884B

REMOVAL·INSTALLATION



mm (in.)

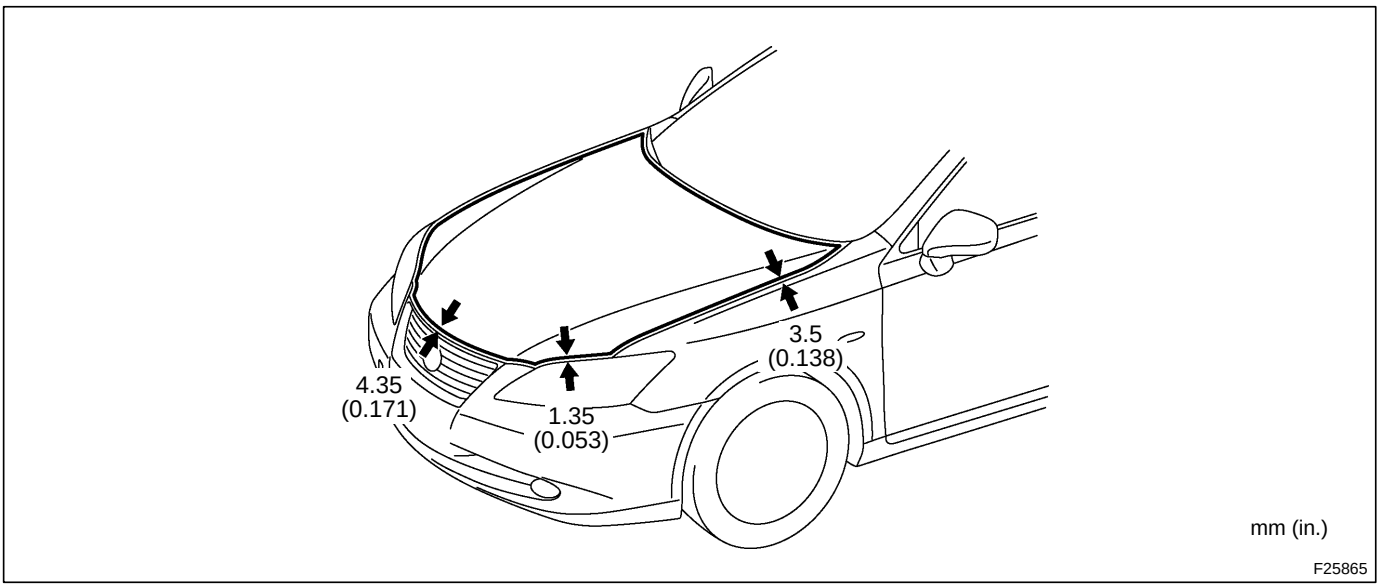
F25884

INSTALLATION POINT

1 After welding, apply body sealer to the corresponding parts. (See the paint·coating)
2 After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

FIT STANDARD/ADJUSTMENT METHOD/TORQUE SPECIFICATION

HOOD SUB-ASSEMBLY



1. ADJUST HOOD SUB-ASSEMBLY

HINT:

- *Centering bolts are used to mount the hood hinge and hood lock. The hood and hood lock cannot be adjusted with the centering bolts on. Substitute the centering bolts with standard bolts (with washers) when making adjustments.*

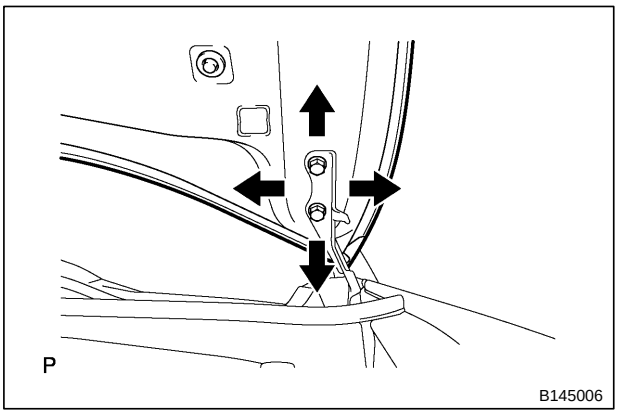
a. Horizontally and vertically adjust the hood.

i. Loosen the 4 hinge bolts of the hood.

ii. Adjust the clearance between the hood and front fender by moving the hood.

iii. Tighten the 4 hinge bolts after the adjustment.

Torque:
13 N·m (133 kgf·cm, 10 ft.·lbf)

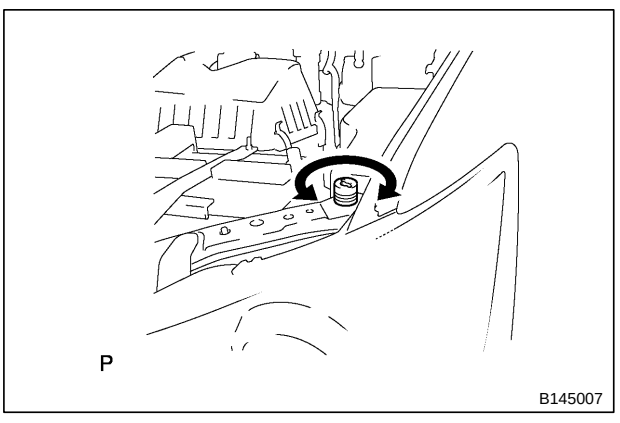


b. Adjust the height of the front end of the hood using the cushion rubber.

i. Adjust the cushion rubber so that the height of the hood and fender are aligned.

HINT:

Raise or lower the front end of the hood by turning the cushion rubber.

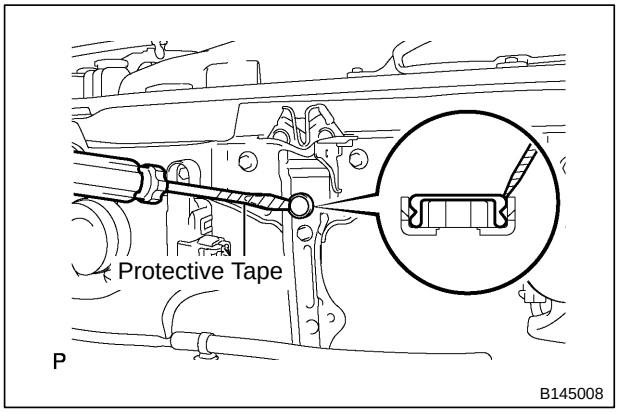


c. Adjust the hood lock.

i. Using a screwdriver, remove the hood lock nut cap as shown in the illustration.

HINT:

Tape the screwdriver tip before use.



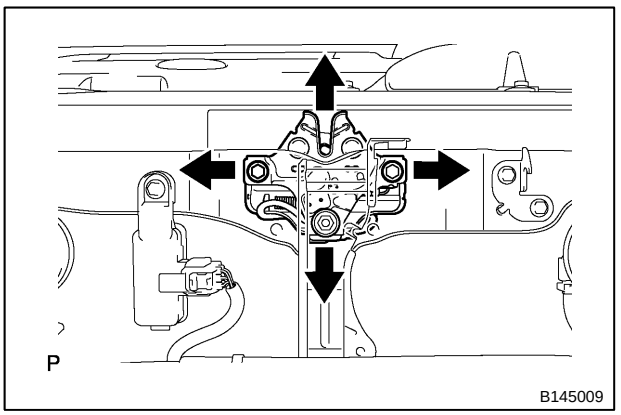
ii. Loosen the 2 bolts and hood lock nut.

iii. Tighten the bolts and nut after the adjustment.

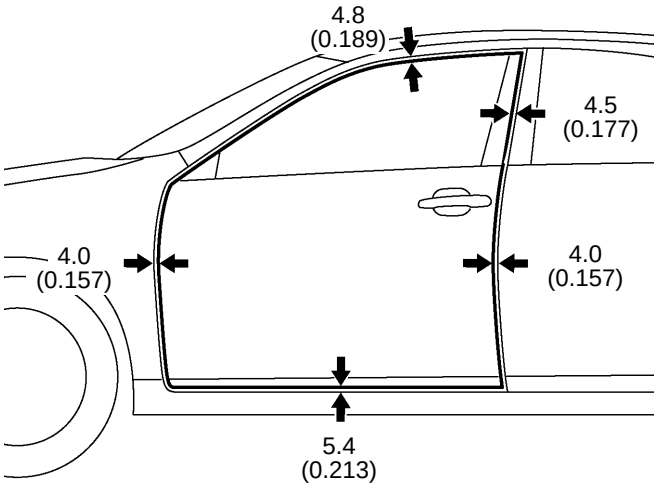
Torque:
8.0 N·m (82 kgf·cm, 71 in.·lbf)

iv. Check that the striker can engage with the hood lock smoothly.

v. Install a new cap.



FRONT DOOR

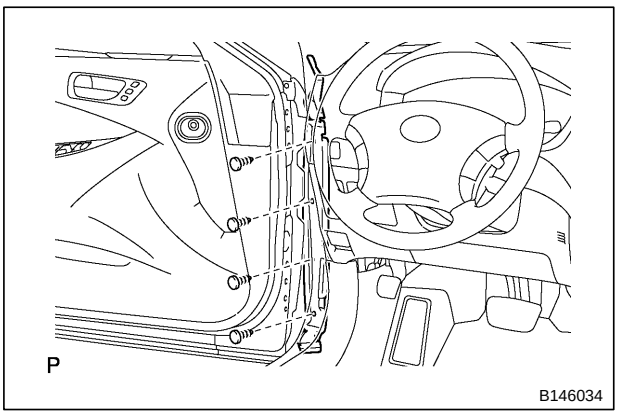


1. ADJUST FRONT DOOR

HINT:

- *Before adjusting the door position for vehicles equipped with side airbags and curtain shield airbags, be sure to disconnect the battery. After adjustment, inspect the SRS warning light, the side airbag system, and the curtain shield airbag system for normal operation. Then initialize both airbag systems.*
- *Use the same procedures for the RH side and LH side.*
- *The procedures listed below are for the LH side.*
- *Centering bolts are used to mount the door hinge to the vehicle body and door. The door cannot be adjusted with the centering bolts on. Substitute the centering bolts with standard bolts (with washers) when making adjustment.*

a. Using a clip remover, disengage the 4 clips and remove the front fender side panel protector.



b. Using SST, loosen the hinge bolts on the vehicle body and adjust the door position.

SST
09812-00010

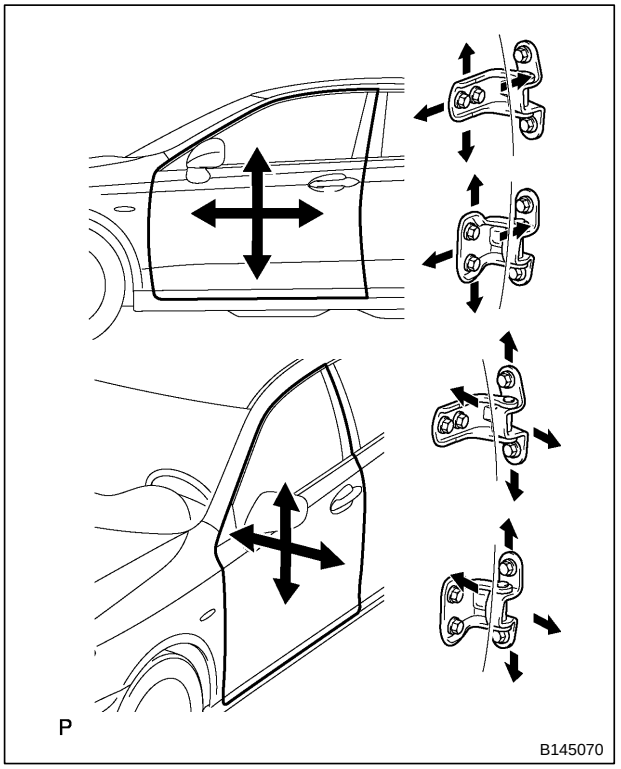
c. Tighten the hinge bolts on the vehicle body after the adjustment.

Torque:
26 N·m (265 kgf·cm, 19 ft.·lbf)

d. Loosen the hinge bolts on the door and adjust the door position.

e. Tighten the hinge bolts on the door after the adjustment.

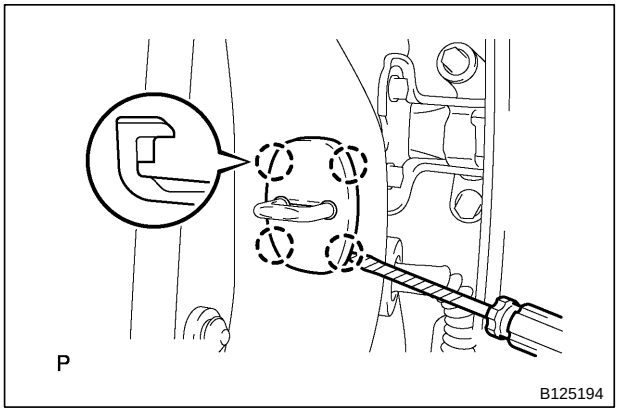
Torque:
43 N·m (439 kgf·cm, 32 ft.·lbf)



f. Using a screwdriver, detach the 4 claws and remove the cover.

HINT:

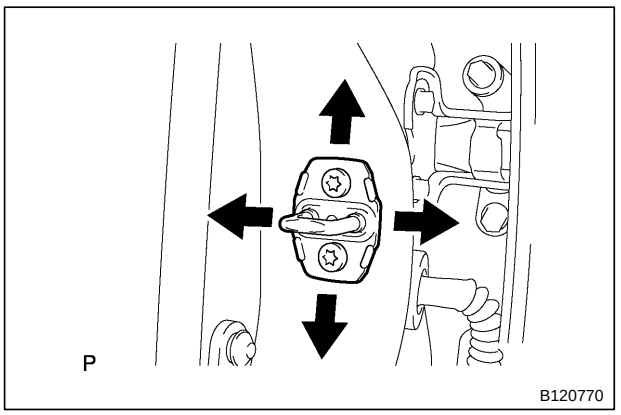
Tape the screwdriver tip before use.



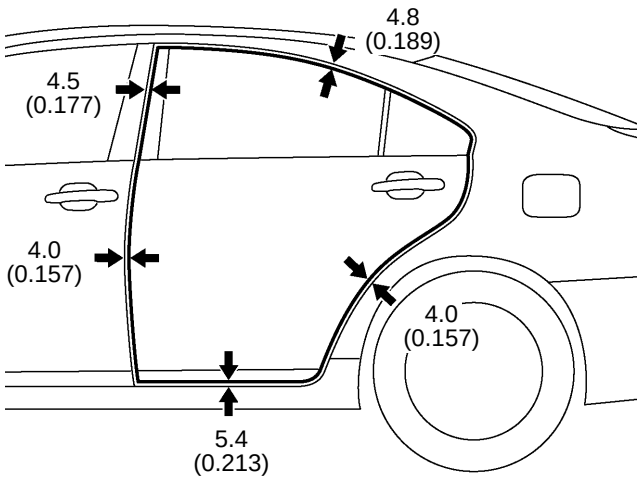
g. Adjust the striker position by slightly loosening the striker mounting screws with a “TORX” socket wrench (T40) and hitting the striker with a plastic hammer.

h. Using a “TORX” socket wrench (T40), tighten the striker mounting screws after the adjustment.

Torque:
23 N·m (235 kgf·cm, 17 ft.·lbf)



REAR DOOR



1. ADJUST REAR DOOR

HINT:

- *Before adjusting the door position for vehicles equipped with side airbags and curtain shield airbags, be sure to disconnect the battery. After adjustment, inspect the SRS warning light, the side airbag system, and the curtain shield airbag system for normal operation. Then initialize both airbag systems.*
- *Use the same procedures for the RH side and LH side.*
- *The procedures listed below are for the LH side.*
- *Centering bolts are used to mount the door hinge to the vehicle body and door. The door cannot be adjusted with the centering bolts on. Substitute the centering bolts with standard bolts (with washers) when making adjustments.*

a. Loosen the hinge bolts on the vehicle body and adjust the door position.

SST
09812-00010

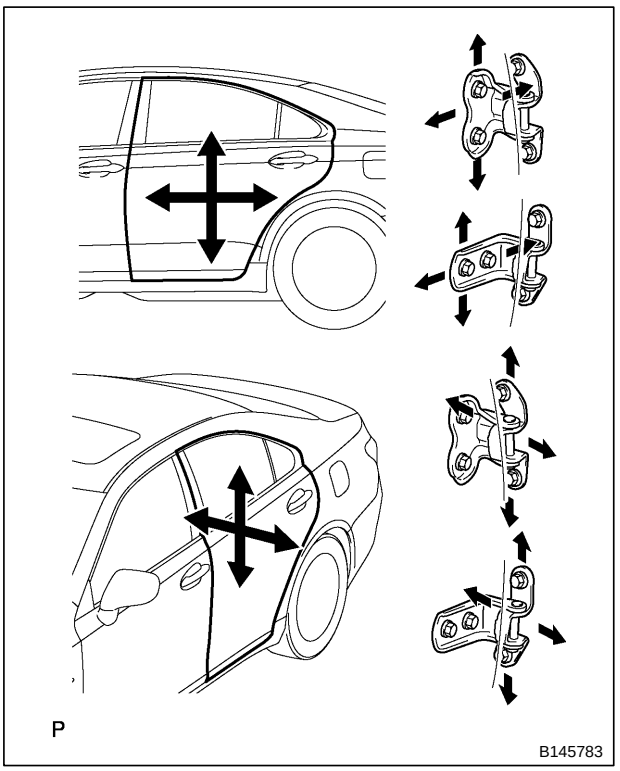
b. Tighten the hinge bolts on the vehicle body after the adjustment.

Torque:
26 N·m (265 kgf·cm, 19 ft.·lbf)

c. Loosen the hinge bolts on the door and adjust the door position.

d. Tighten the hinge bolts on the door after the adjustment.

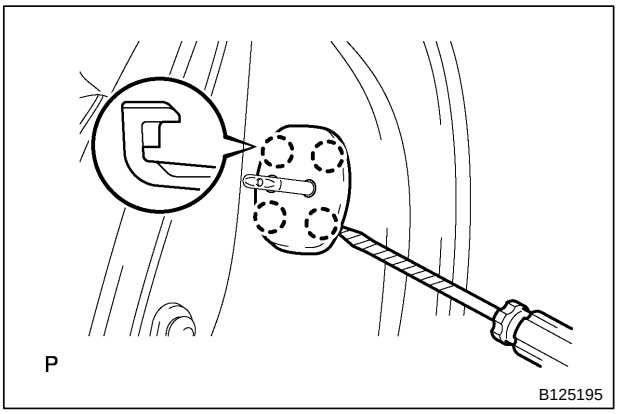
Torque:
43 N·m (439 kgf·cm, 32 ft.·lbf)



e. Using a screwdriver, detach the 4 claws and remove the cover.

HINT:

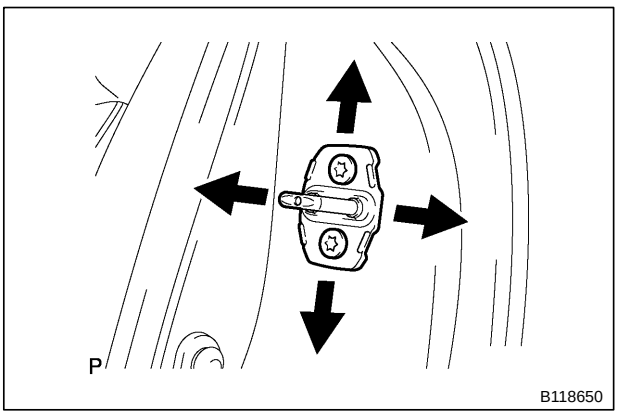
Tape the screwdriver tip before use.



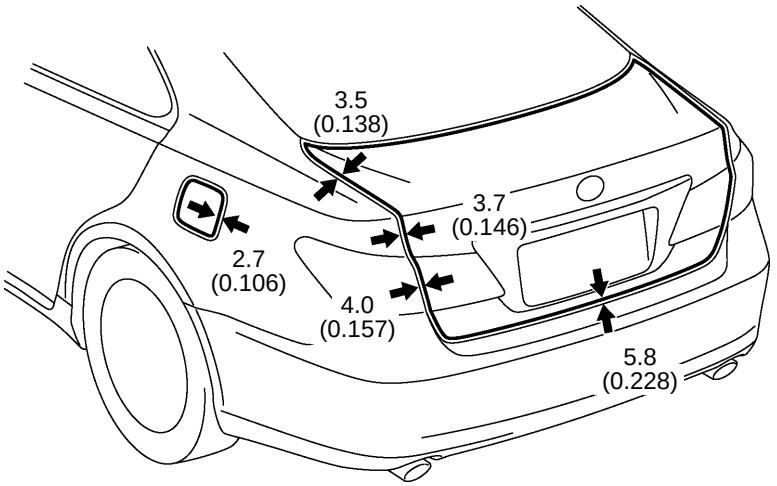
f. Adjust the striker position by slightly loosening the striker mounting screws with a “TORX” socket wrench (T40) and hitting the striker with a plastic hammer.

g. Using a “TORX” socket wrench (T40), tighten the striker mounting screws after the adjustment.

Torque:
23 N·m (235 kgf·cm, 17 ft.·lbf)



LUGGAGE COMPARTMENT DOOR



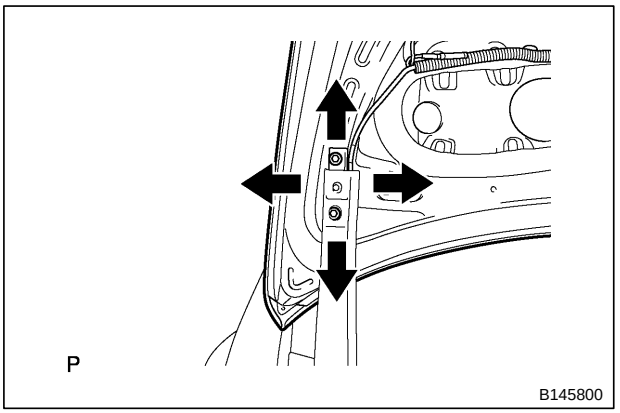
1. ADJUST LUGGAGE COMPARTMENT DOOR

HINT:

- *Centering bolts are used to mount the door hinge to the door. The door cannot be adjusted with the centering bolts on. Substitute the centering bolts with standard bolts (with washers) when making adjustments.*

a. Loosen the door side hinge bolts to adjust the door horizontally and vertically.

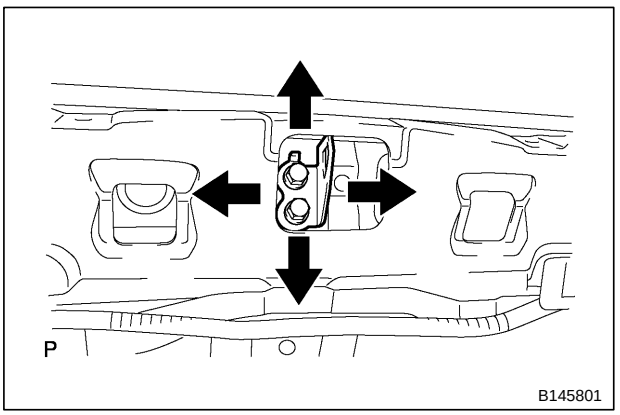
Torque:
8.0 N·m (82 kgf·cm, 71 in.·lbf)



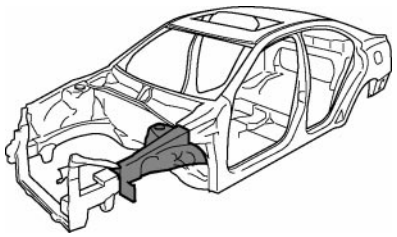
b. Adjust the striker position by slightly loosening the striker mounting screws and hitting the striker with a plastic hammer.

c. Tighten the striker mounting screws after the adjustment.

Torque:
5.5 N·m (56 kgf·cm, 49 in.·lbf)



FRONT FENDER APRON (ASSY)



F25877A

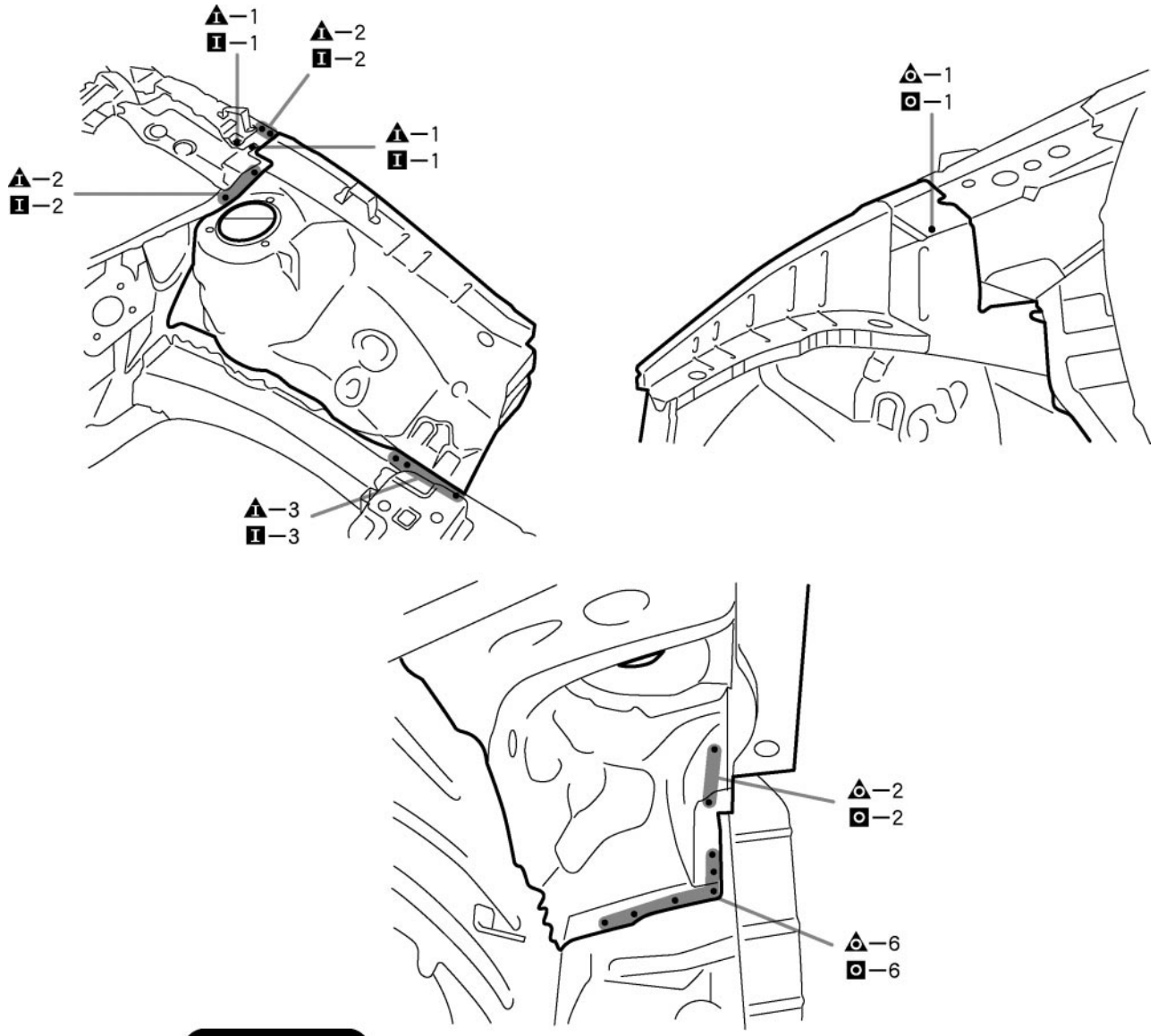
With the radiator upper support, cowl top side reinforcement and front body pillar lower gusset removed.

Symbol meaning

REMOVAL	A M A : Remove Weld Points	: Cut with disc sander, etc.
INSTALLATION	O M I : MIG Plug Weld	: Tack Weld

F25877B

REMOVAL·INSTALLATION



CAUTION

Make sure to attach correctry in accordance with the body dimention diagram as this parts affects the front wheel alignment.

F25877

INSTALLATION POINT

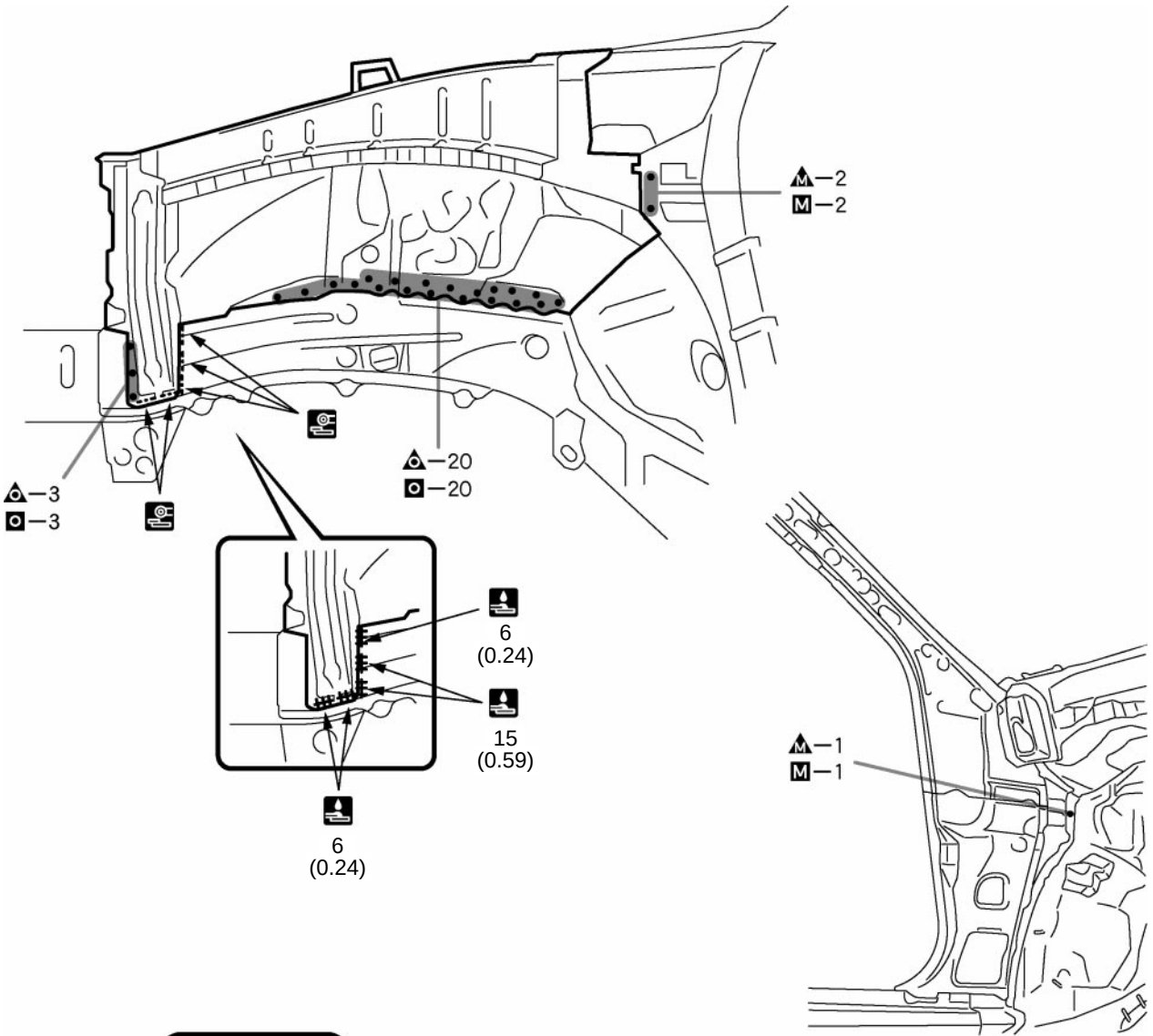
1 Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.

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)

Symbol meaning

REMOVAL	A M I : Remove Weld Points	: Cut with disc sander, etc.
INSTALLATION	O M I : MIG Plug Weld	: Tack Weld

F25877B



CAUTION

Make sure to attach correctry in accordance with the body dimention diagram as this parts affects the front wheel alignment.

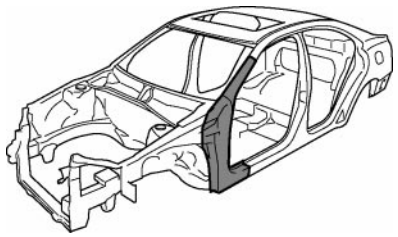
mm (in.)

F25878

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 After welding, apply body sealer and undercoating to the corresponding parts. (See the paint·coating)
4 After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

FRONT BODY PILLAR (CUT)



F25887A

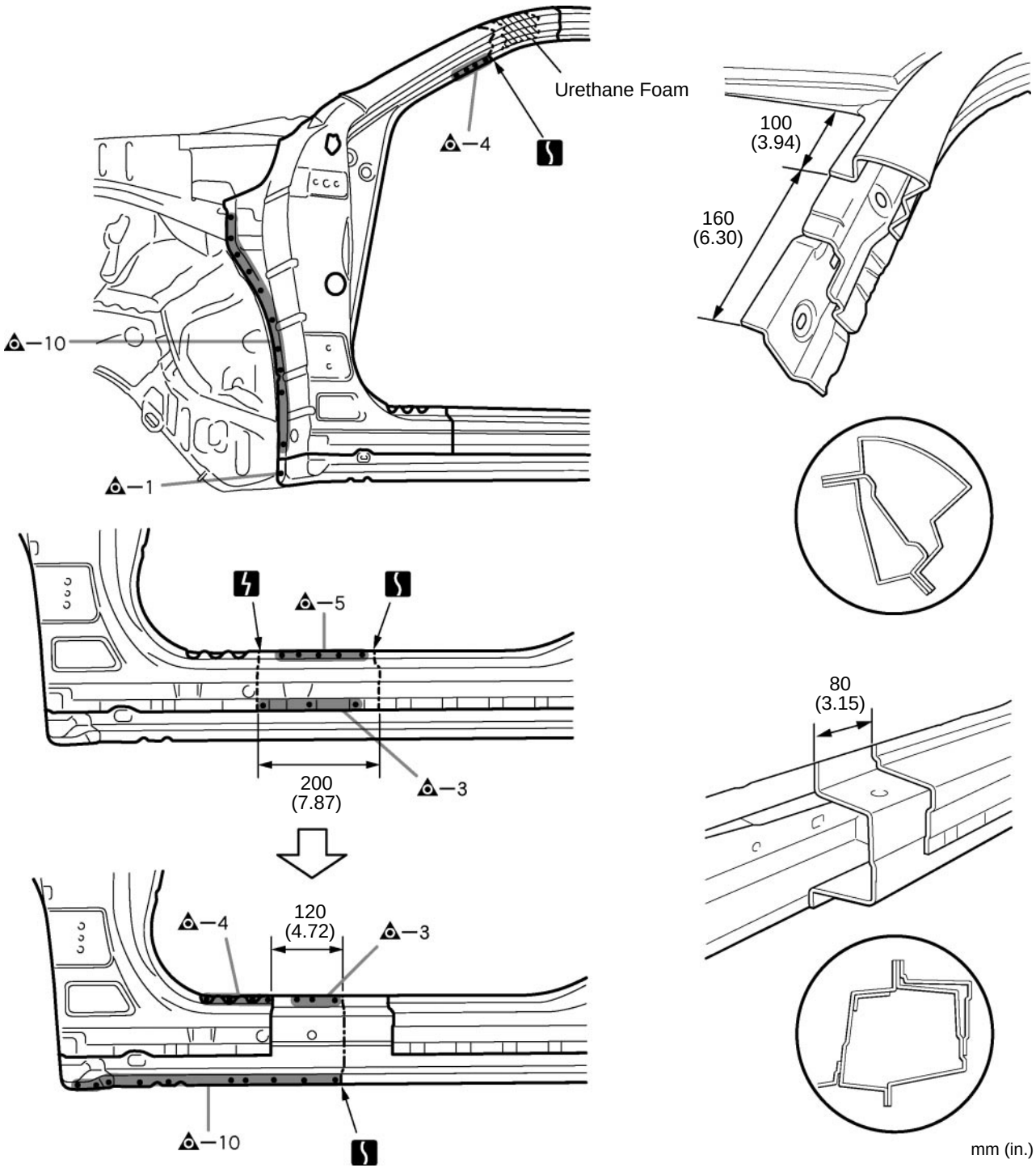
With the front body pillar lower gusset and cowl top side panel removed.

Symbol meaning

: Remove Weld Points
: Cut and Join Location
: Cut Location for Supply Parts
: Cut with disc sander, etc.

F25887B

REMOVAL

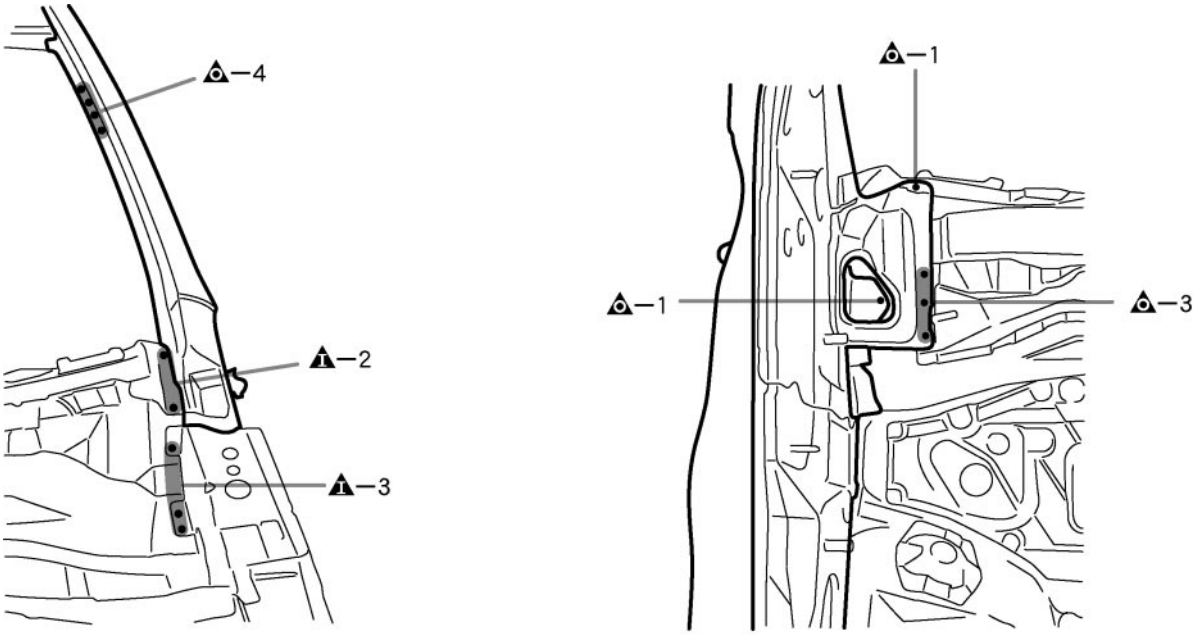


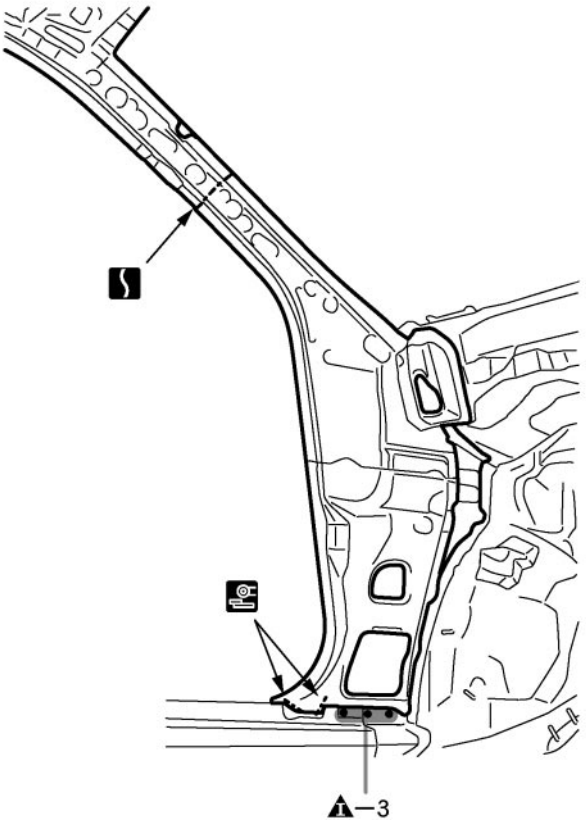
F25887

Symbol meaning

: Remove Weld Points
: Cut and Join Location
: Cut Location for Supply Parts
: Cut with disc sander, etc.

F25887B





F25888

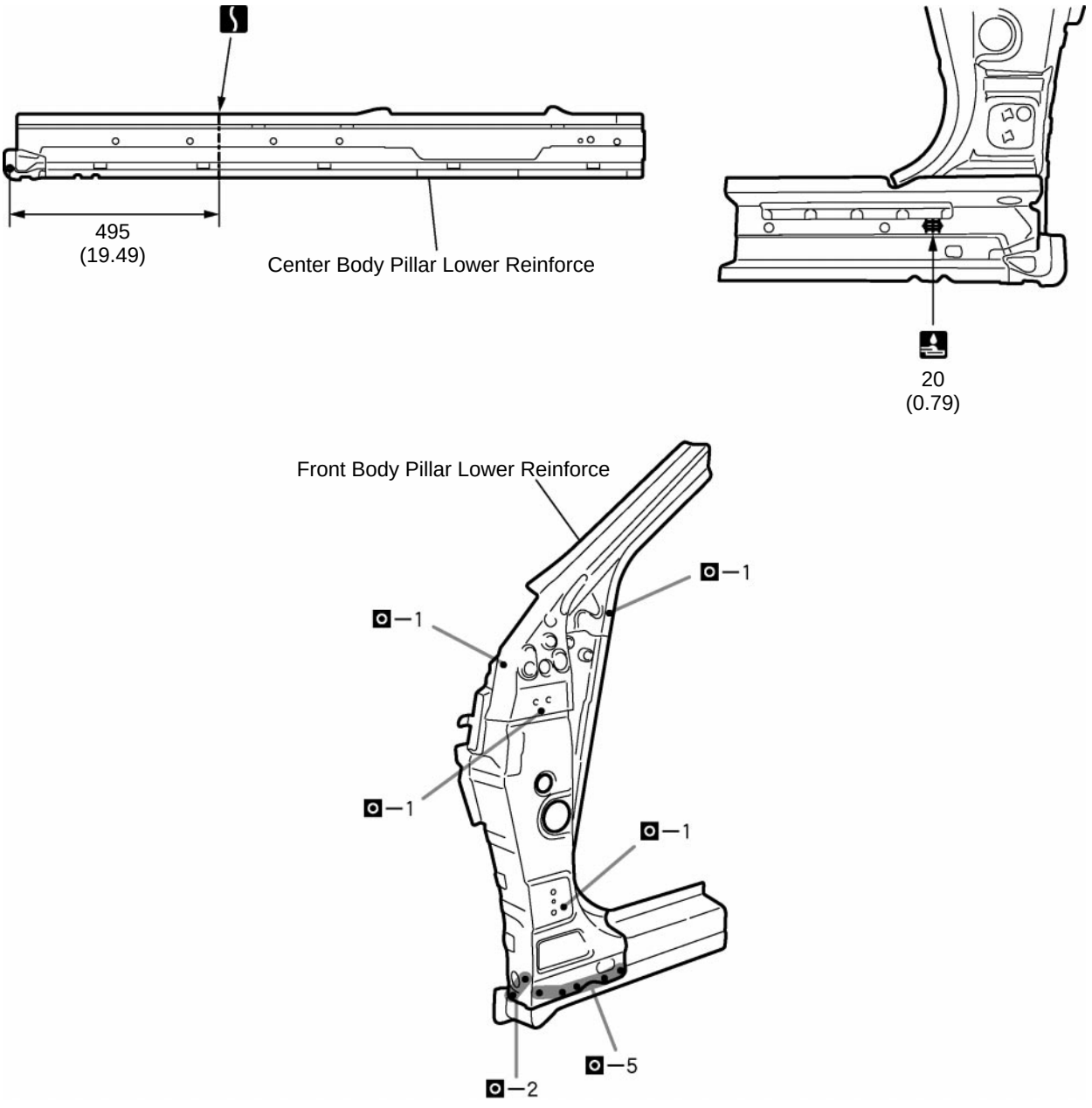
Symbol meaning

: Cut and Join Location : MIG Plug Weld

: Tack Weld : Butt Weld : Body Sealer

F25889B

INSTALLATION



mm (in.)

F25889

INSTALLATION POINT

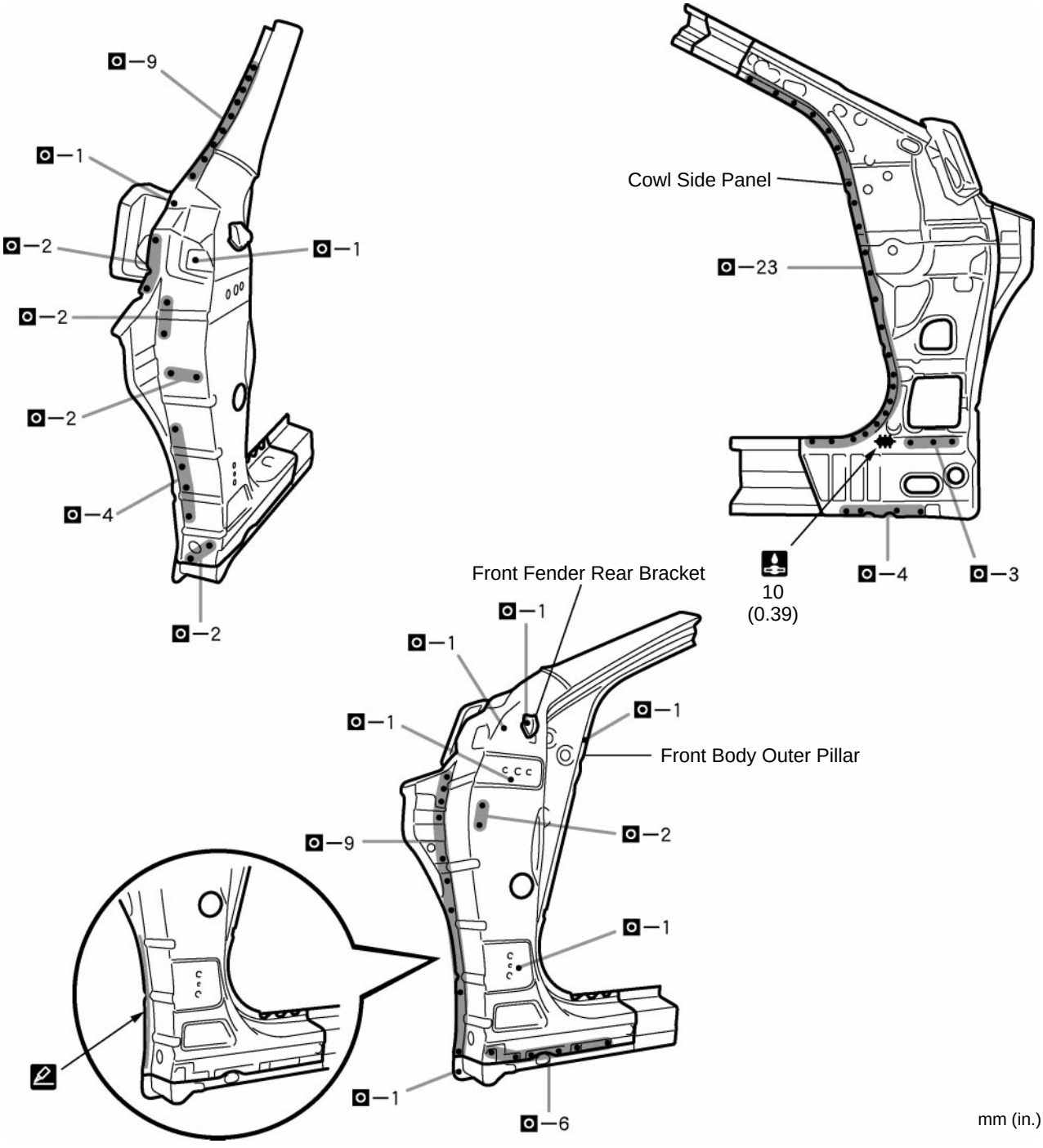
1 Before temporarily installing the new parts, weld the center body pillar lower reinforce and front body pillar lower reinforce with the standard number of welding points.

Symbol meaning

: Cut and Join Location : MIG Plug Weld

: Tack Weld : Butt Weld : Body Sealer

F25889B

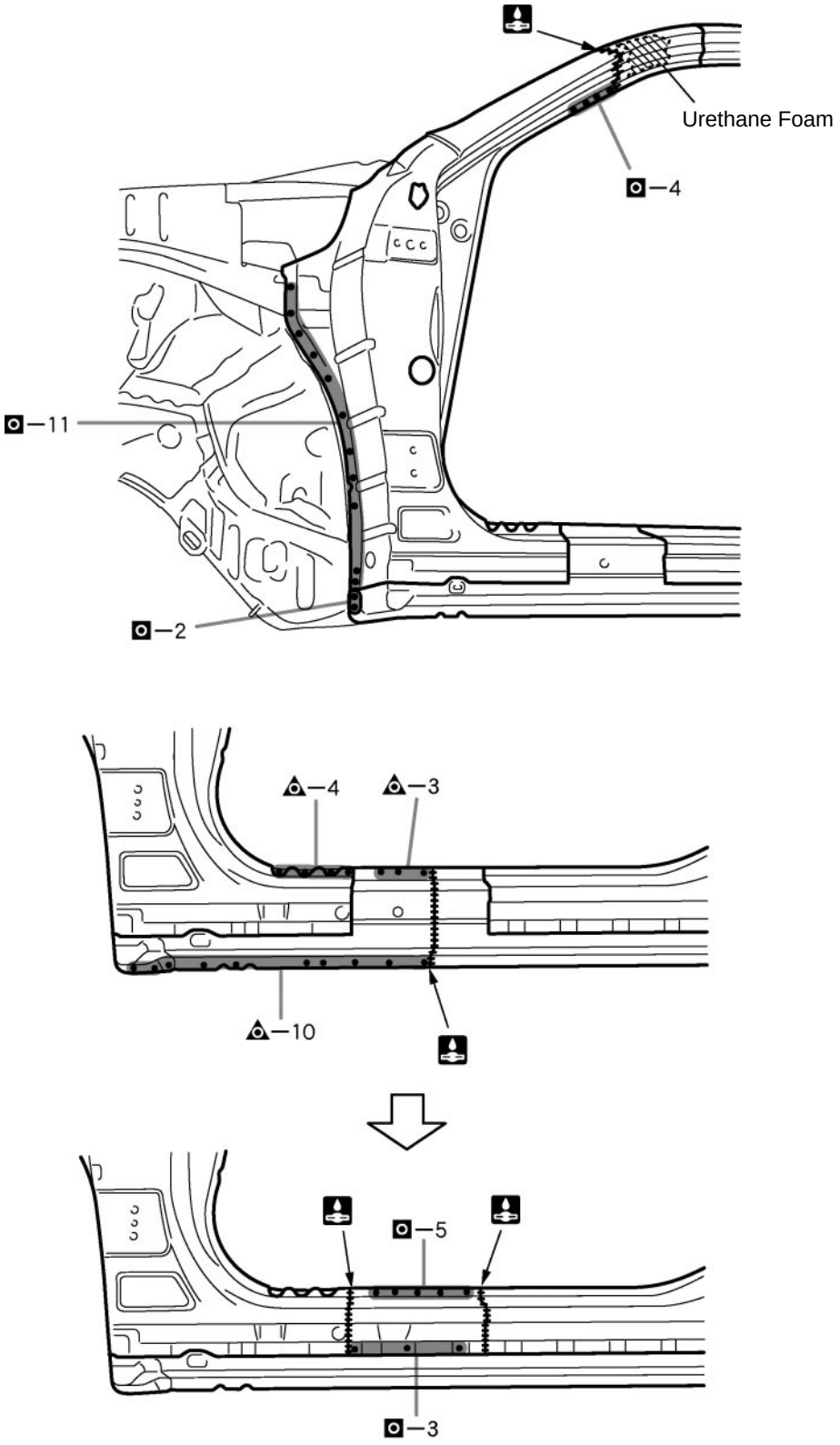


F25890

INSTALLATION POINT

1 Before temporarily installing the new parts, weld the cowl side panel, front body outer pillar and front fender rear bracket with the standard number of welding points.

2 Before installing a new part, apply body sealer.
HINT:
1) Apply sealer in an even, continuous bead.



INSTALLATION POINT

1 Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.

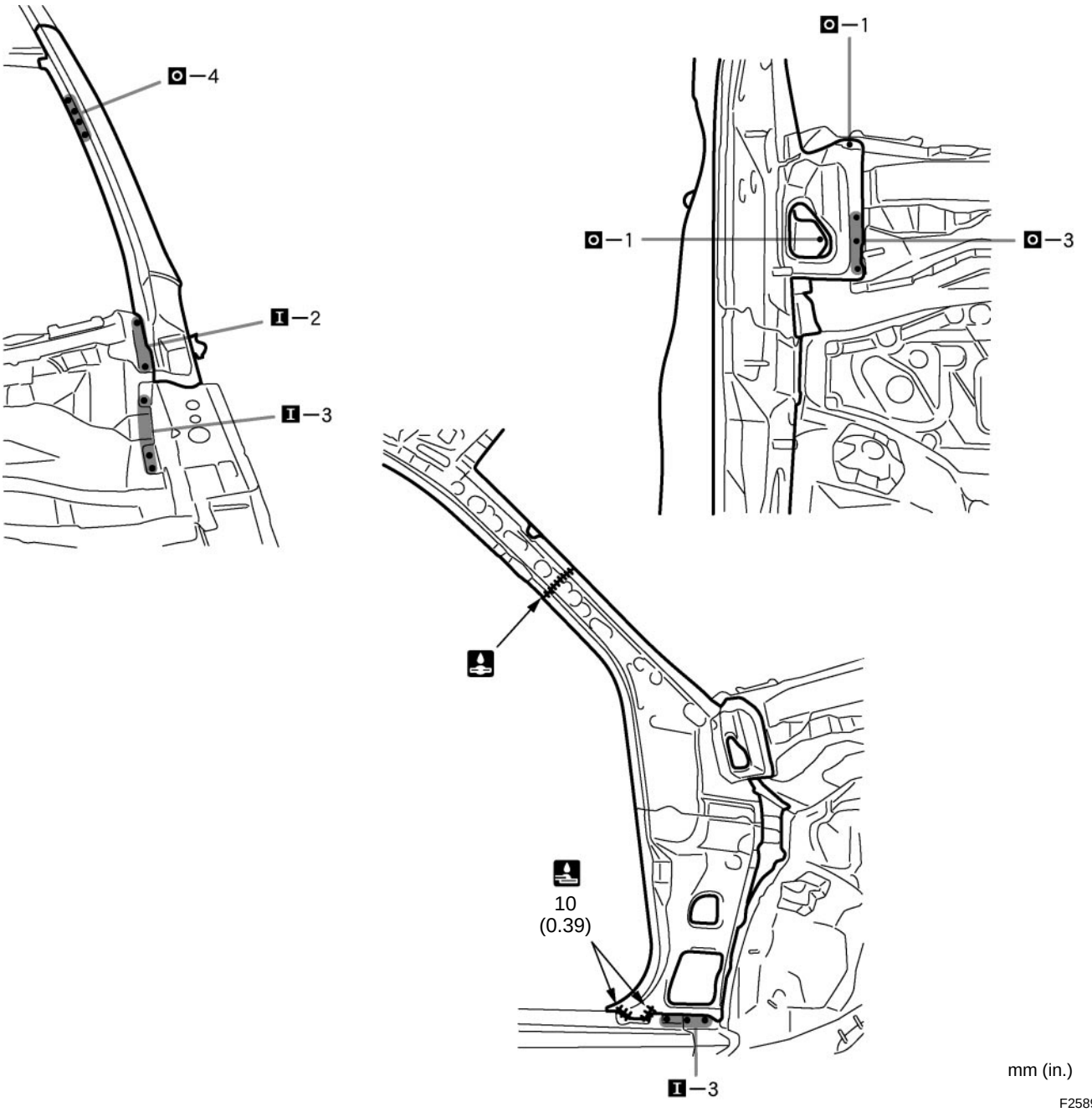
2 Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)

Symbol meaning

: Cut and Join Location : MIG Plug Weld

: Tack Weld : Butt Weld : Body Sealer

F25889B



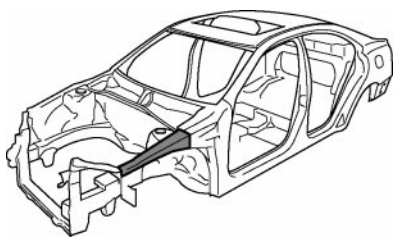
mm (in.)

F25892

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 After welding, apply the polyurethane foam to the corresponding parts. (See the paint·coating)
4 After welding, apply body sealer and undercoating to the corresponding parts. (See the paint·coating)
5 After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

FRONT APRON TO COWL SIDE UPPER MEMBER (ASSY)



F25875A

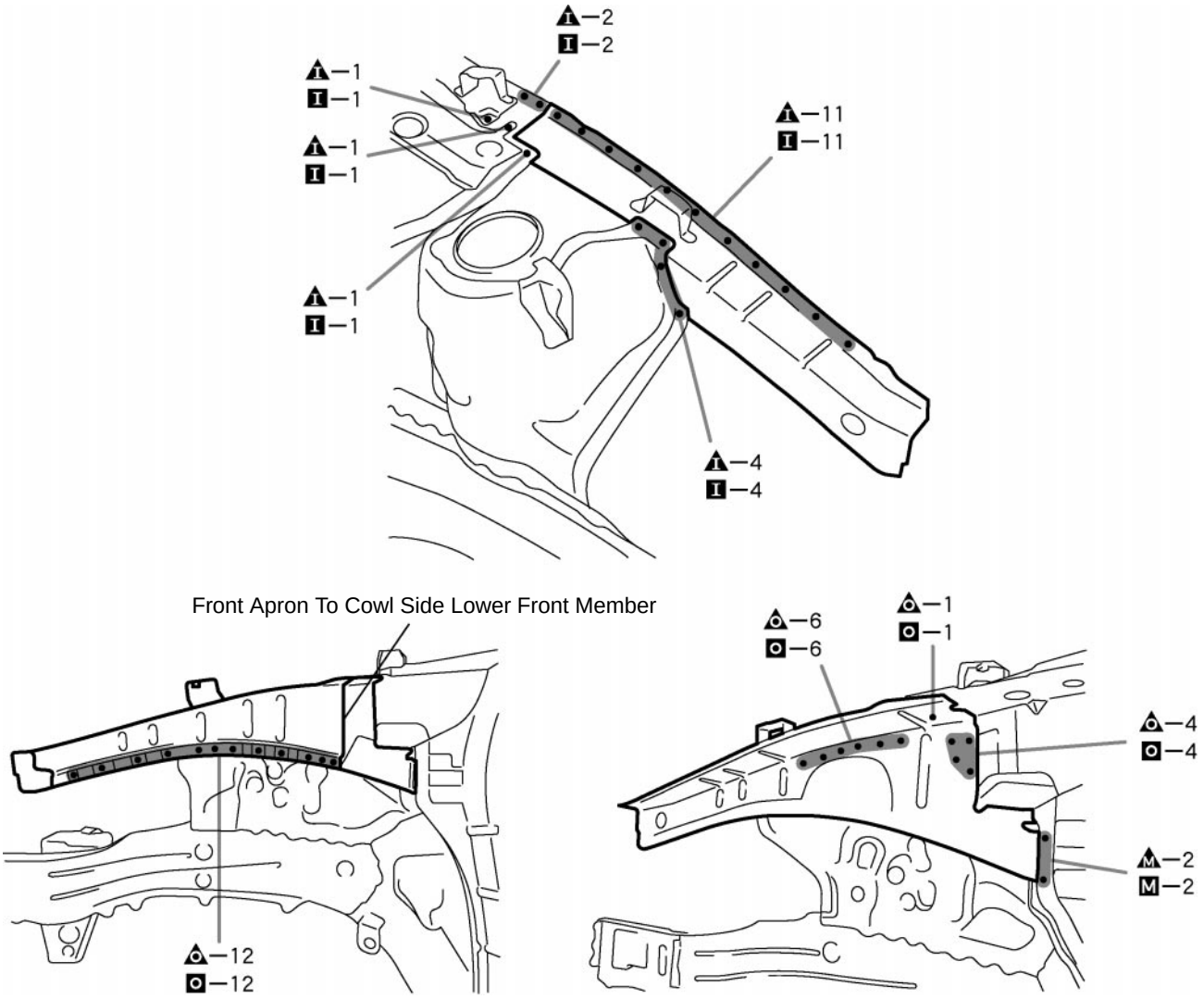
With the front fender front apron and front body pillar lower gusset removed.

Symbol meaning

REMOVAL	: Remove Weld Points
INSTALLATION	: MIG Plug Weld

F25875B

REMOVAL·INSTALLATION



F25875

REMOVAL POINT

1 After removing the front apron to cowl side lower front member, remove the front apron to cowl side upper member.

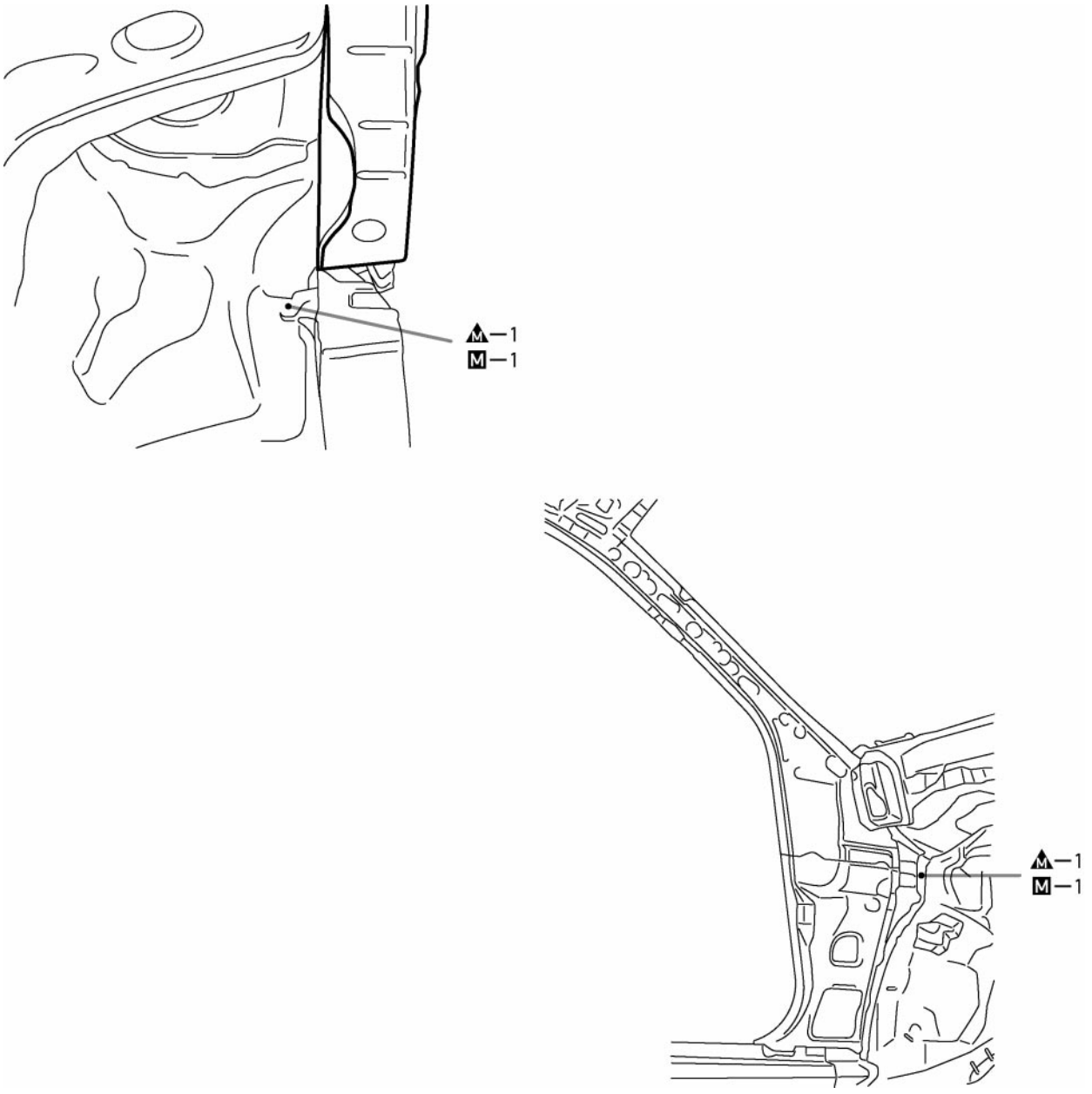
INSTALLATION POINT

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 After welding the to the front apron to cowl side upper member vehicle side, install the front apron to cowl side lower front member.

Symbol meaning

REMOVAL	ⓞ Ⓜ Ⓘ : Remove Weld Points
INSTALLATION	O M I : MIG Plug Weld

F25875B

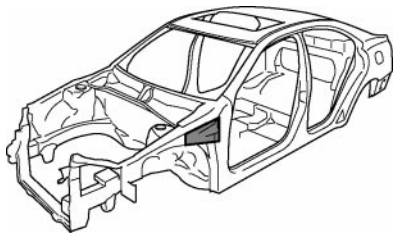


F25876

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 After welding, apply body sealer to the corresponding parts. (See the paint·coating)
4 After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

FRONT BODY PILLAR LOWER GUSSET (ASSY)



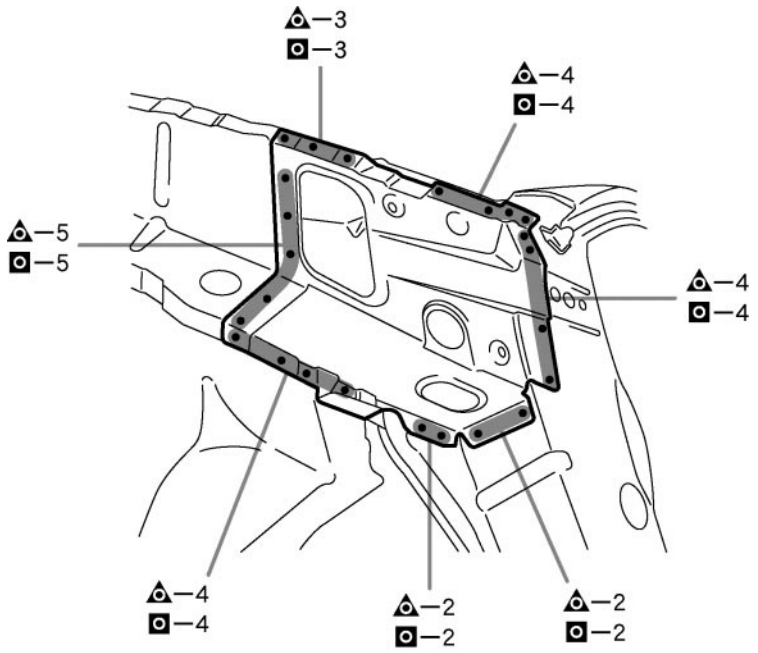
F25885A

Symbol meaning

REMOVAL	: Remove Weld Points
INSTALLATION	: MIG Plug Weld

F25885B

REMOVAL·INSTALLATION

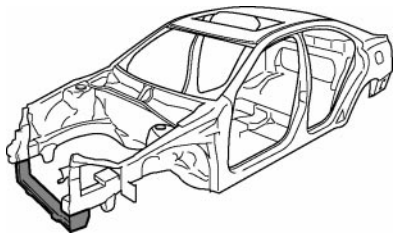


F25885

INSTALLATION POINT

1 After welding, apply body sealer to the corresponding parts. (See the paint·coating)
2 After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

FRONT CROSSMEMBER (ASSY)



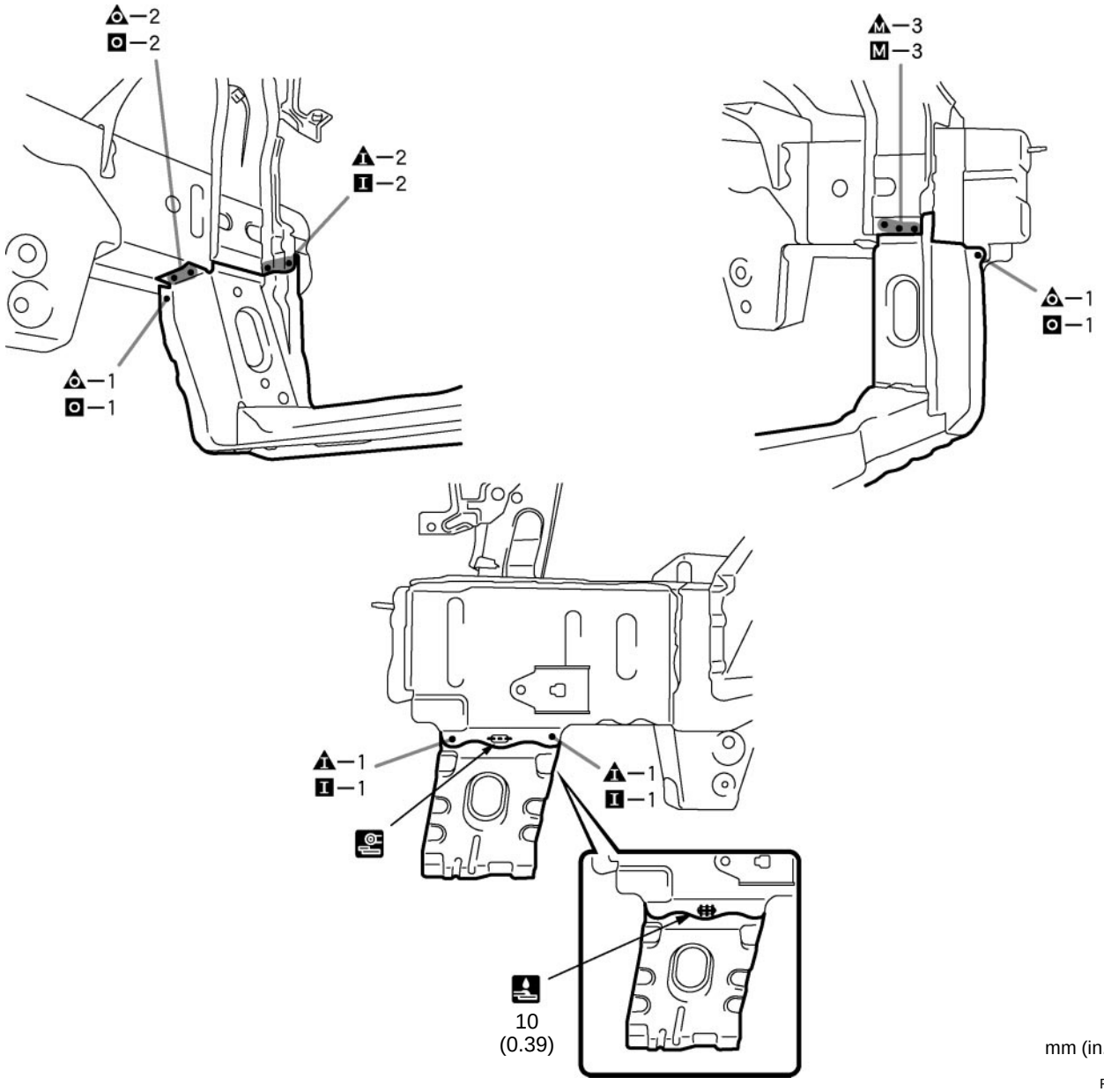
F25871A

Symbol meaning

REMOVAL	A M A : Remove Weld Points	: Cut with disc sander, etc.
INSTALLATION	O M I : MIG Plug Weld	: Tack Weld

F25871B

REMOVAL·INSTALLATION



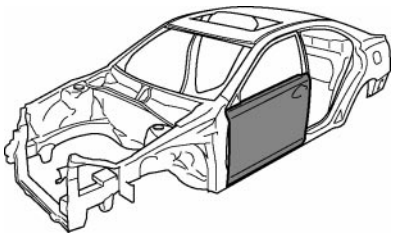
mm (in.)

F25871

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

FRONT DOOR OUTER PANEL (ASSY)



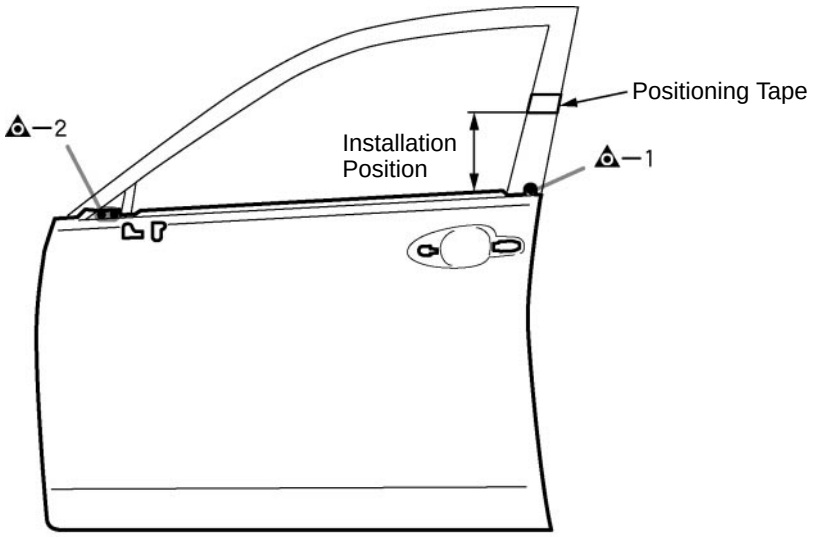
F25896A

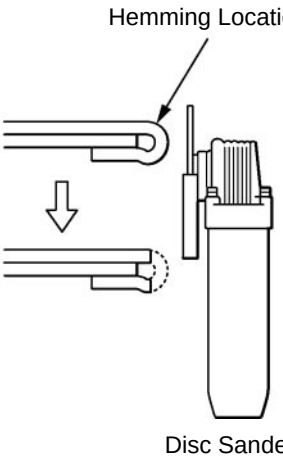
Symbol meaning

: Remove Weld Points

F25896B

REMOVAL





F25896

INSTALLATION POINT

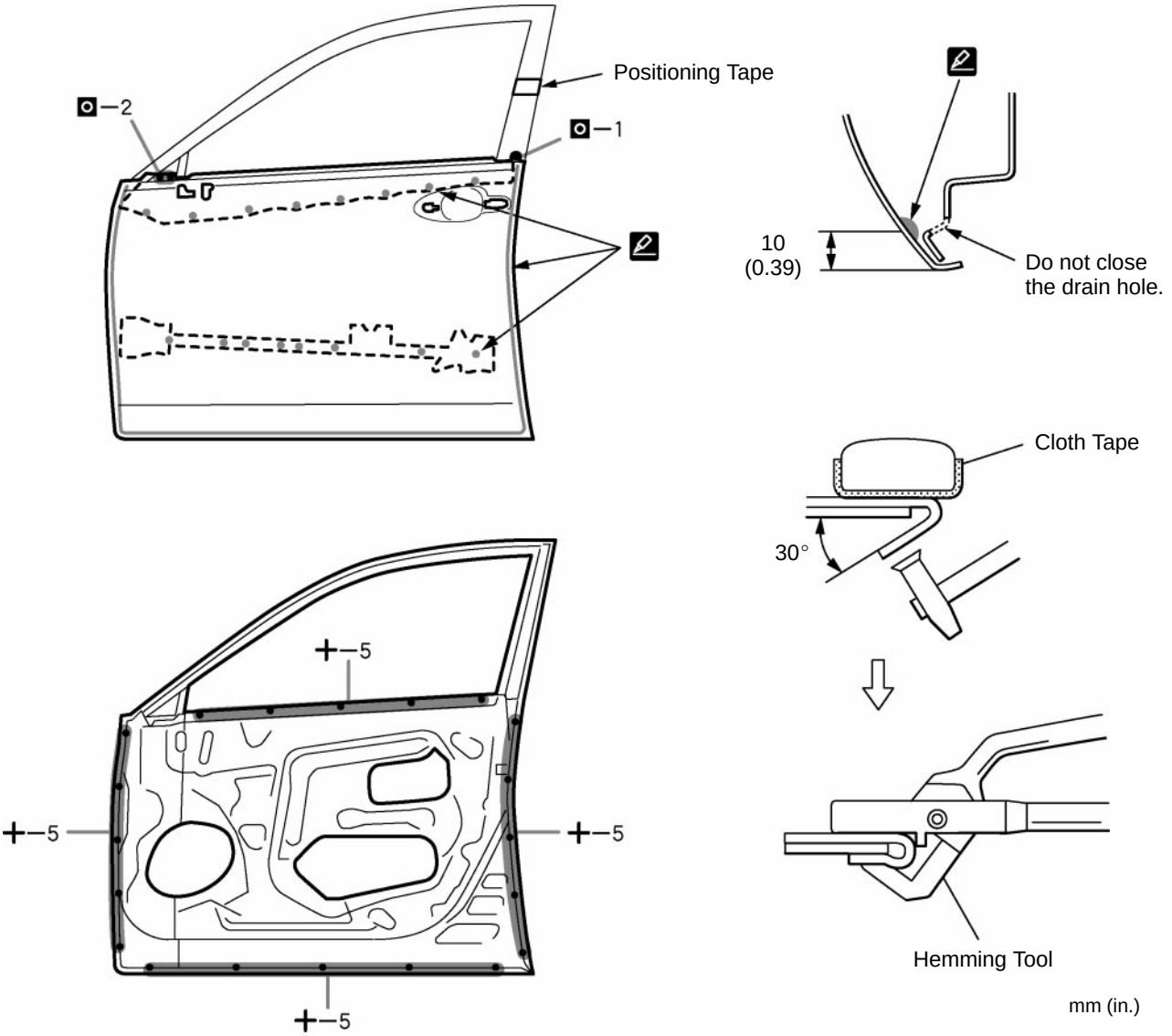
1 Before removing the outer panel, mark the installation position with tape.
2 Before removing the outer panel, establish its exact position in relation to the window frame using a reference marker, etc.
3 After grinding off the hemming location, remove the outer panel.

Symbol meaning

: MIG Plug Weld : Spot MIG Weld : Body Sealer

F25897B

INSTALLATION



F25897

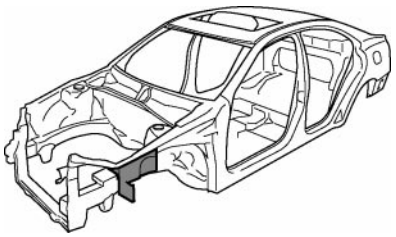
INSTALLATION POINT

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

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

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

FRONT FENDER FRONT APRON (ASSY)



F25874A

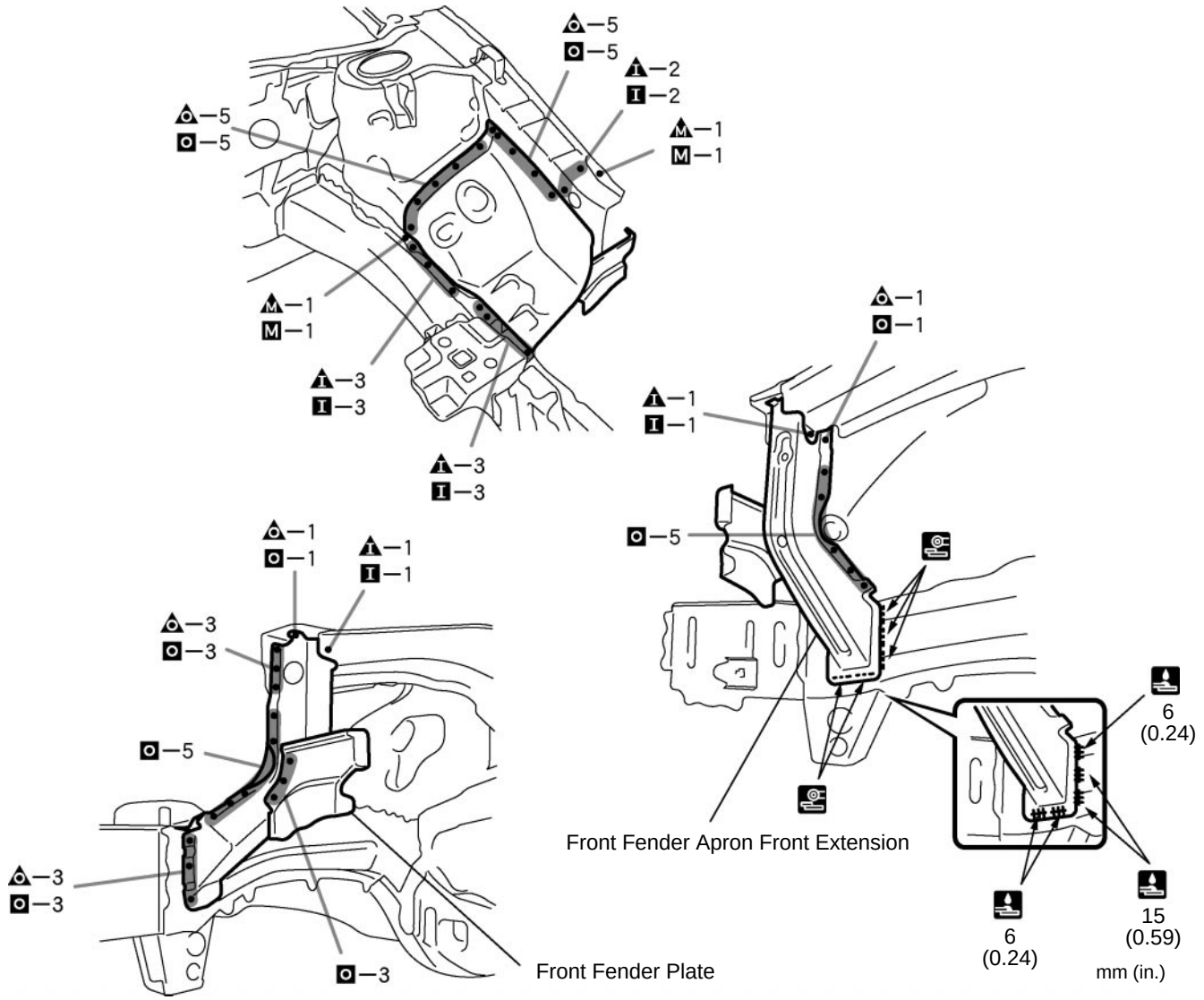
With the radiator upper support removed.

Symbol meaning

REMOVAL	A M I : Remove Weld Points	: Cut with disc sander, etc.
INSTALLATION	O M I : MIG Plug Weld	: Tack Weld

F25874B

REMOVAL·INSTALLATION



F25874

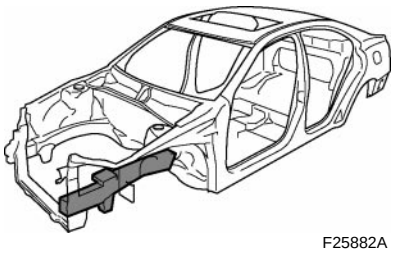
REMOVAL POINT

1 Remove the front fender apron front extension at the same time.

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 After welding, apply body sealer and undercoating to the corresponding parts. (See the paint·coating)
4 After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

FRONT SIDE MEMBER (CUT-H)



F25882A

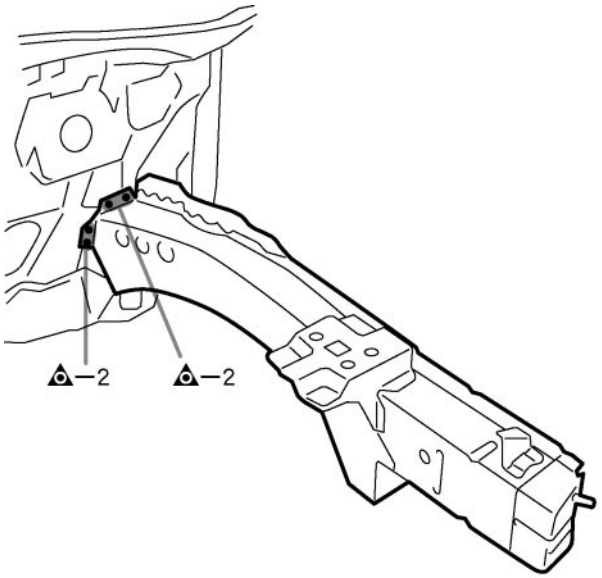
With the front fender apron and cowl top side reinforcement removed.

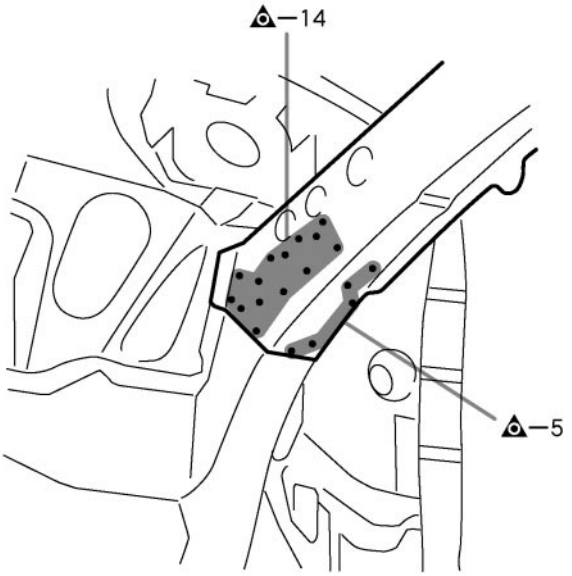
Symbol meaning

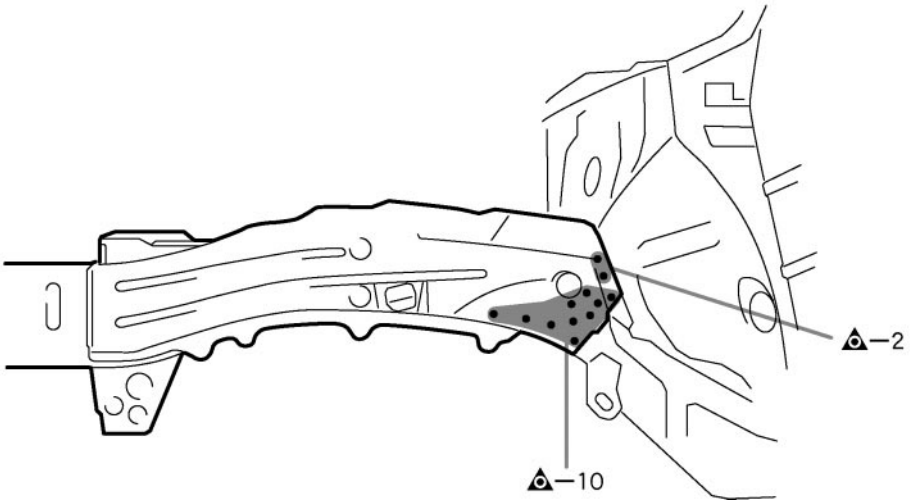
: Remove Weld Points

F25882B

REMOVAL







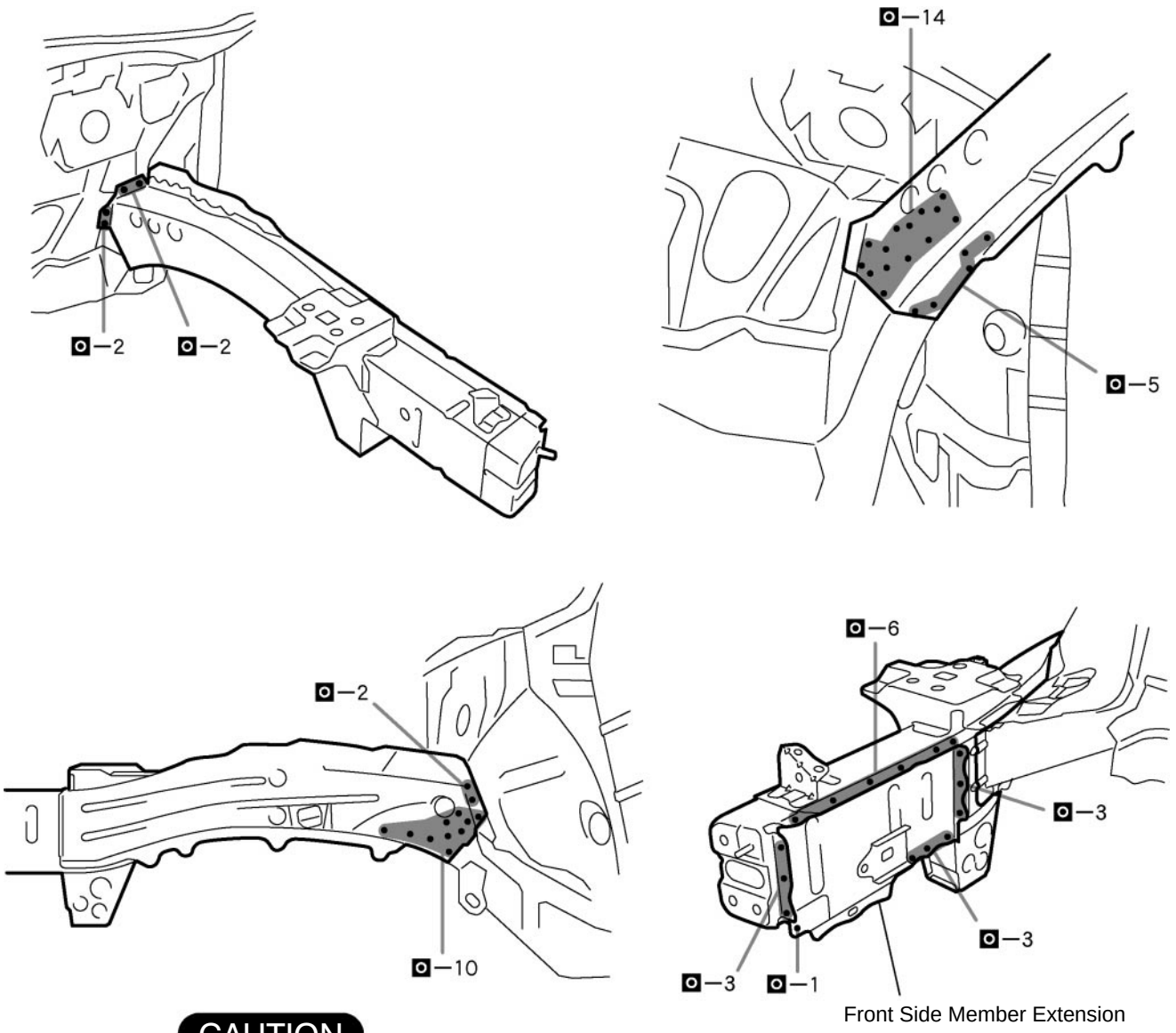
F25882

Symbol meaning

: MIG Plug Weld

F25883B

INSTALLATION



Front Side Member Extension

CAUTION

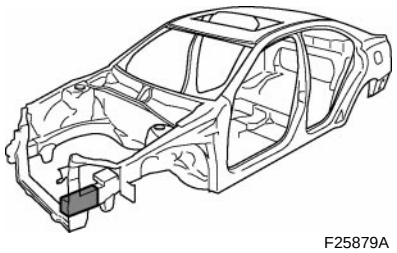
Make sure to attach correctry in accordance with the body dimention diagram as this parts affects the front wheel alignment.

F25883

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 dimension diagram)
2 After welding, apply body sealer and undercoating to the corresponding parts. (See the paint·coating)
3 After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

FRONT SIDE MEMBER (CUT-P)



F25879A

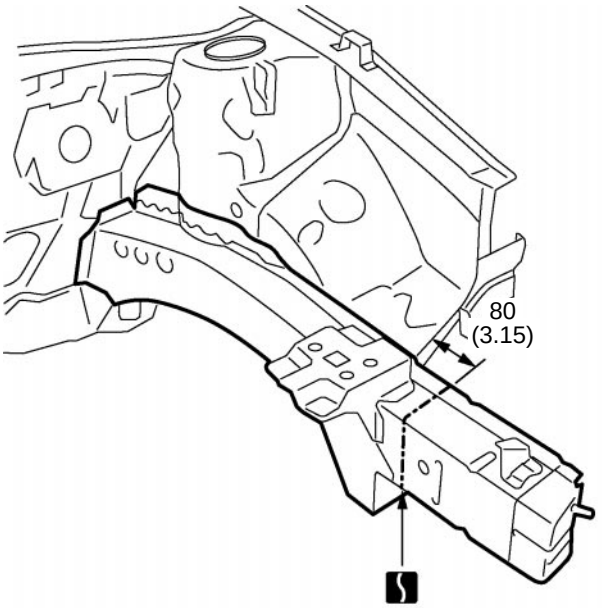
With the radiator support removed.

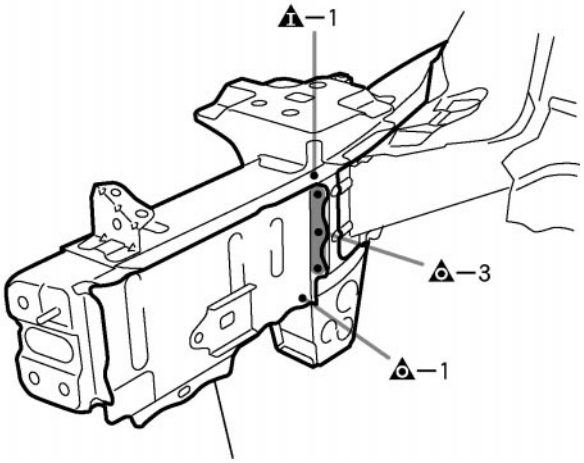
Symbol meaning

: Remove Weld Points : Cut and Join Location

F25879B

REMOVAL



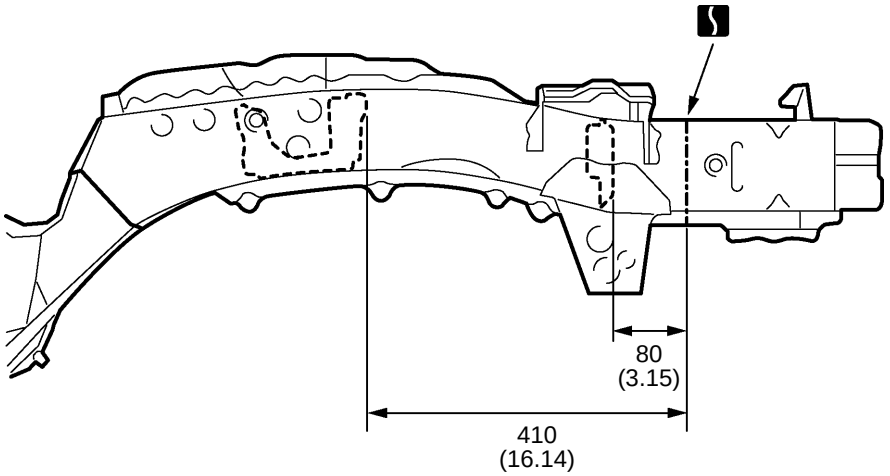


Front Side Member Extension

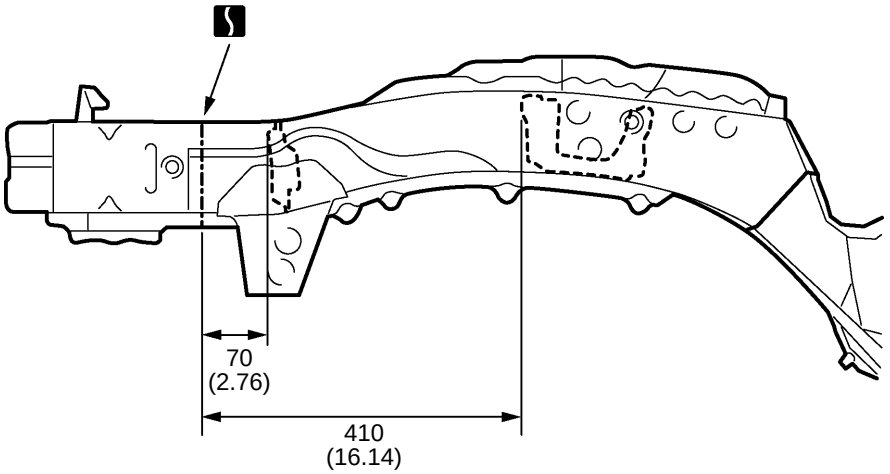
mm (in.)

F25879

[LH]



[RH]



mm (in.)

F25880

REMOVAL POINT

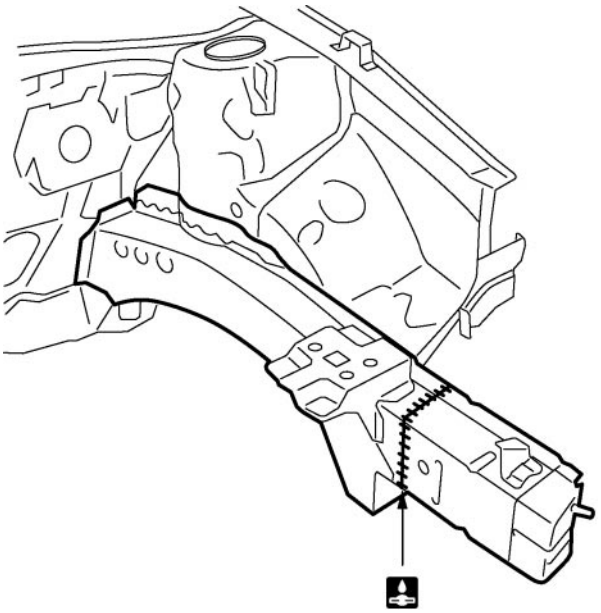
1 These values are reference values.

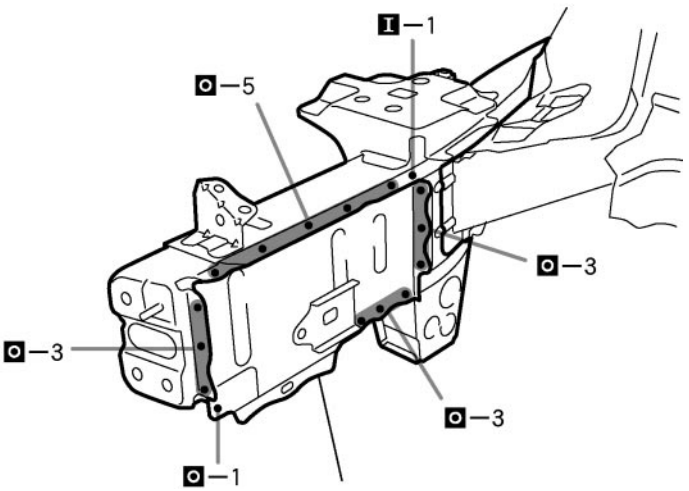
Symbol meaning

: MIG Plug Weld : Butt Weld

F25881B

INSTALLATION





Front Side Member Extension

mm (in.)

F25881

INSTALLATION POINT

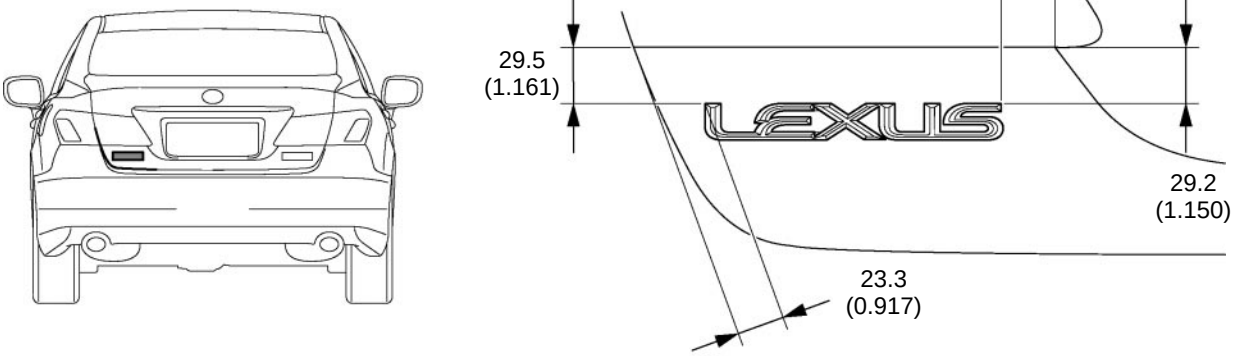
1 Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
2 After welding, apply undercoating to the corresponding parts. (See the paint·coating)
3 After applying the top coat, apply anti-rust agent to the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

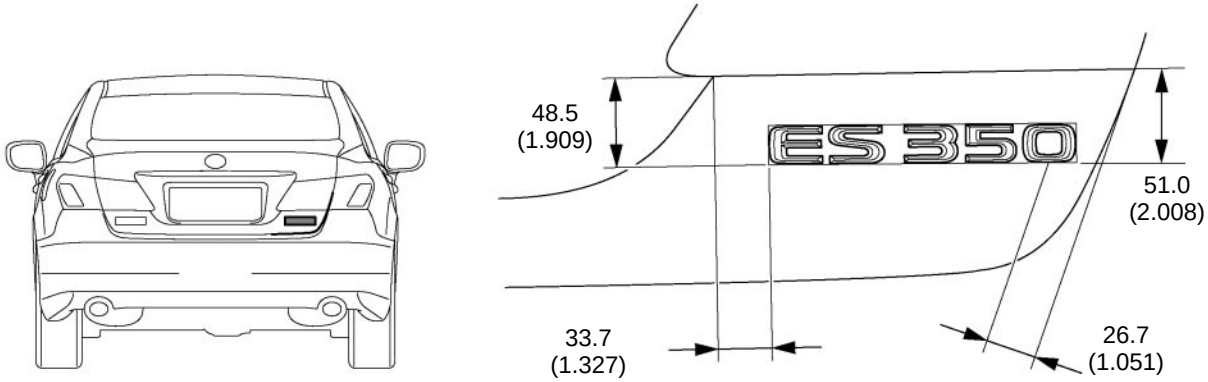
NAME PLATE APPLICATION PROCEDURE

(a) Heat the double-sided tape remaining on the body with an infrared lamp or equivalent.
HINT:
Heat the tape to 40 to 60°C for approximately 1 to 2 minutes.

(b) Wipe off the remaining double-sided tape using a clean cloth or equivalent.
HINT:
If a name plate is installed without thoroughly removing the remaining double-sided tape from the body, the name plate will not adhere properly. Make sure to thoroughly wipe off the double-sided tape.

(c) After cleaning the installation area of the body with degreasing agent, attach the name plate to the position shown in the illustration.
HINT:
The working environment should be 20°C when installing the name plate. If the working environment is below 20°C, heat the installation area of the body to 20 to 30°C and then install the name plate.

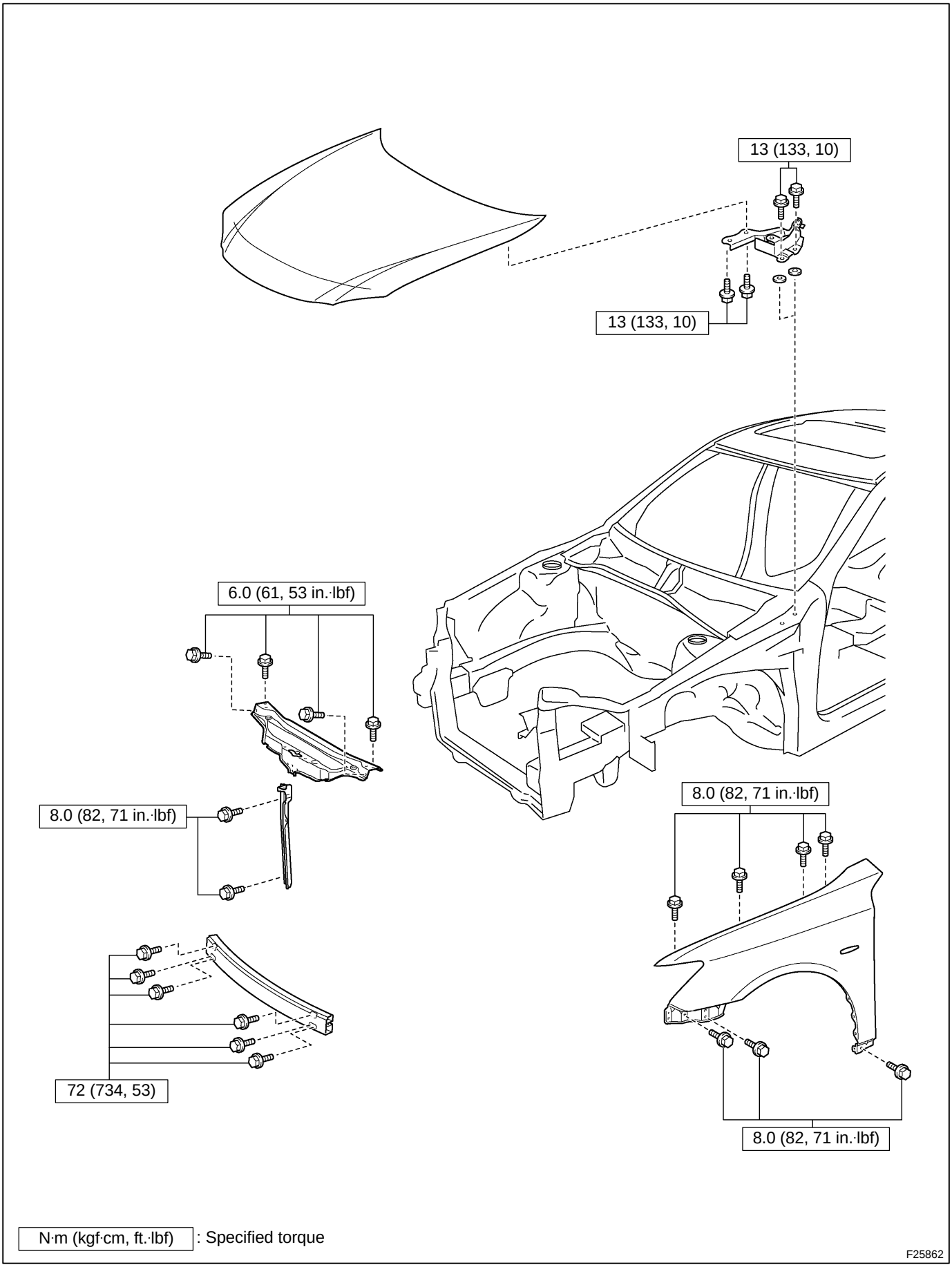




mm (in.)

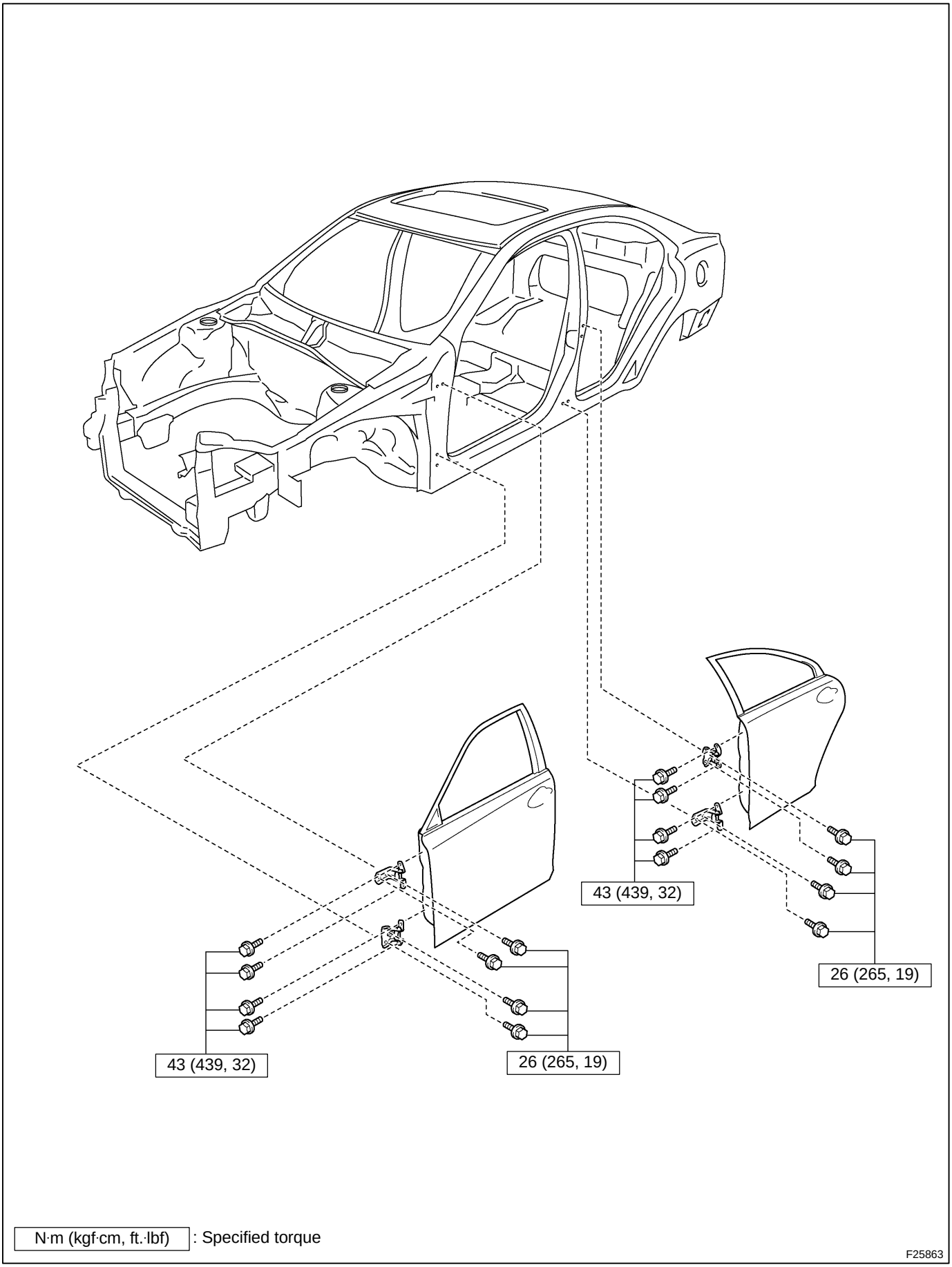
F25926

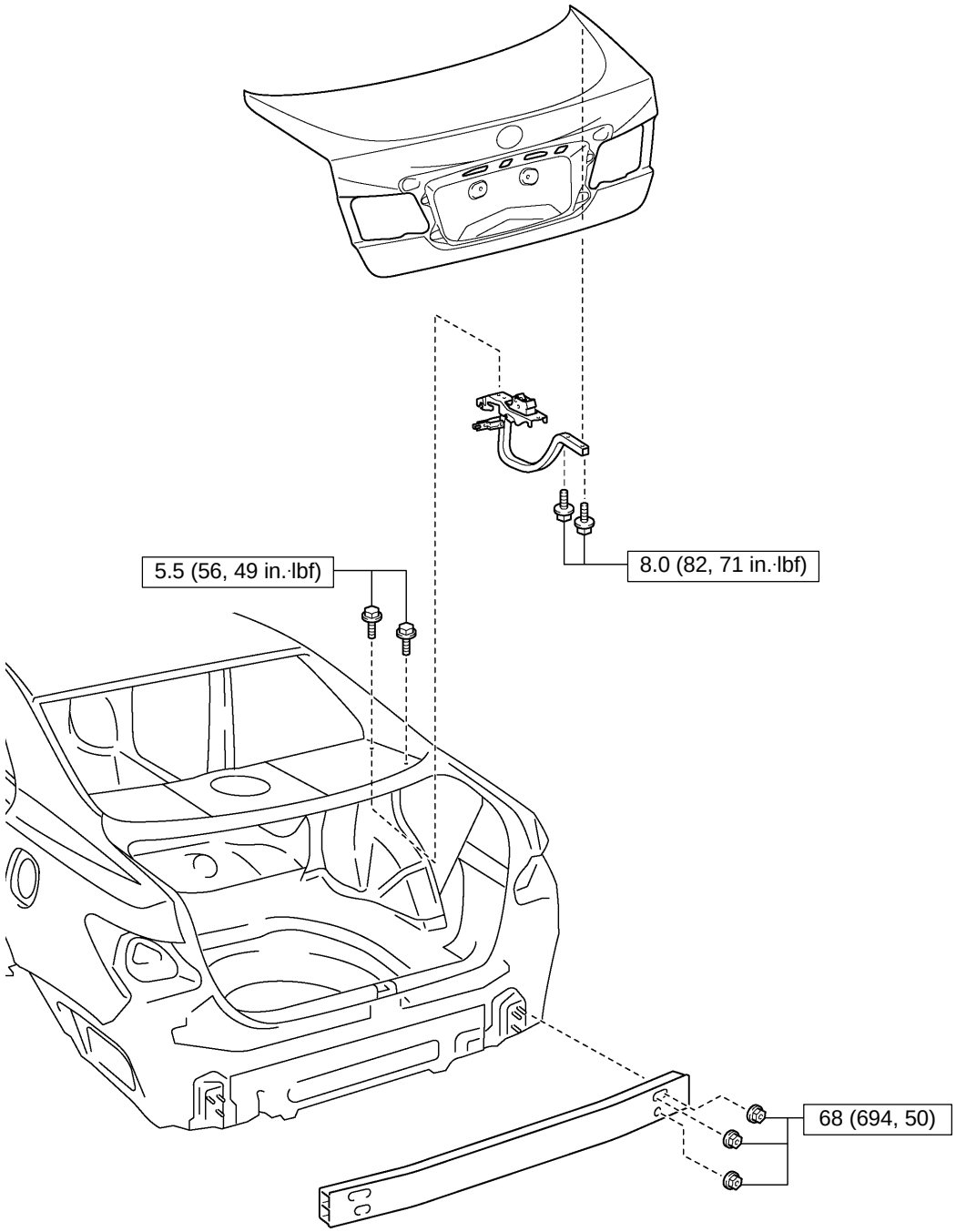
OUTER PANEL INSTALLATION TORQUE



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

F25862

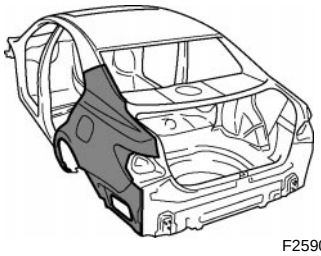

43 (439, 32)
26 (265, 19)
43 (439, 32)
26 (265, 19)
N·m (kgf·cm, ft.·lbf) : Specified torque
F25863



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

F25864

QUARTER PANEL (CUT)


F25904A

Quarter Panel Replacement Using Adhesive

Work Procedure		Precaution	
1	Cut the wheel arch portion.		
2	Heat the quarter panel adhesive area and remove the quarter panel.	(1)	Using an industrial dryer or oxygen acetylene 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.	(1)	Using a gas burner, heat the adhesive to 110 to 140°C.
		(2)	Using a scraper, scrape away the adhesive.
		(3)	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.	(1)	Scuff at a width of approximately 10 mm 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 #60-240 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 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.	(1)	Hardening Time Estimation With dryer or equivalent (60°C) : 60 minutes (complete hardening: 90 minutes) Ambient temperature (25°C) : 12 hours (complete hardening: 24 hours)

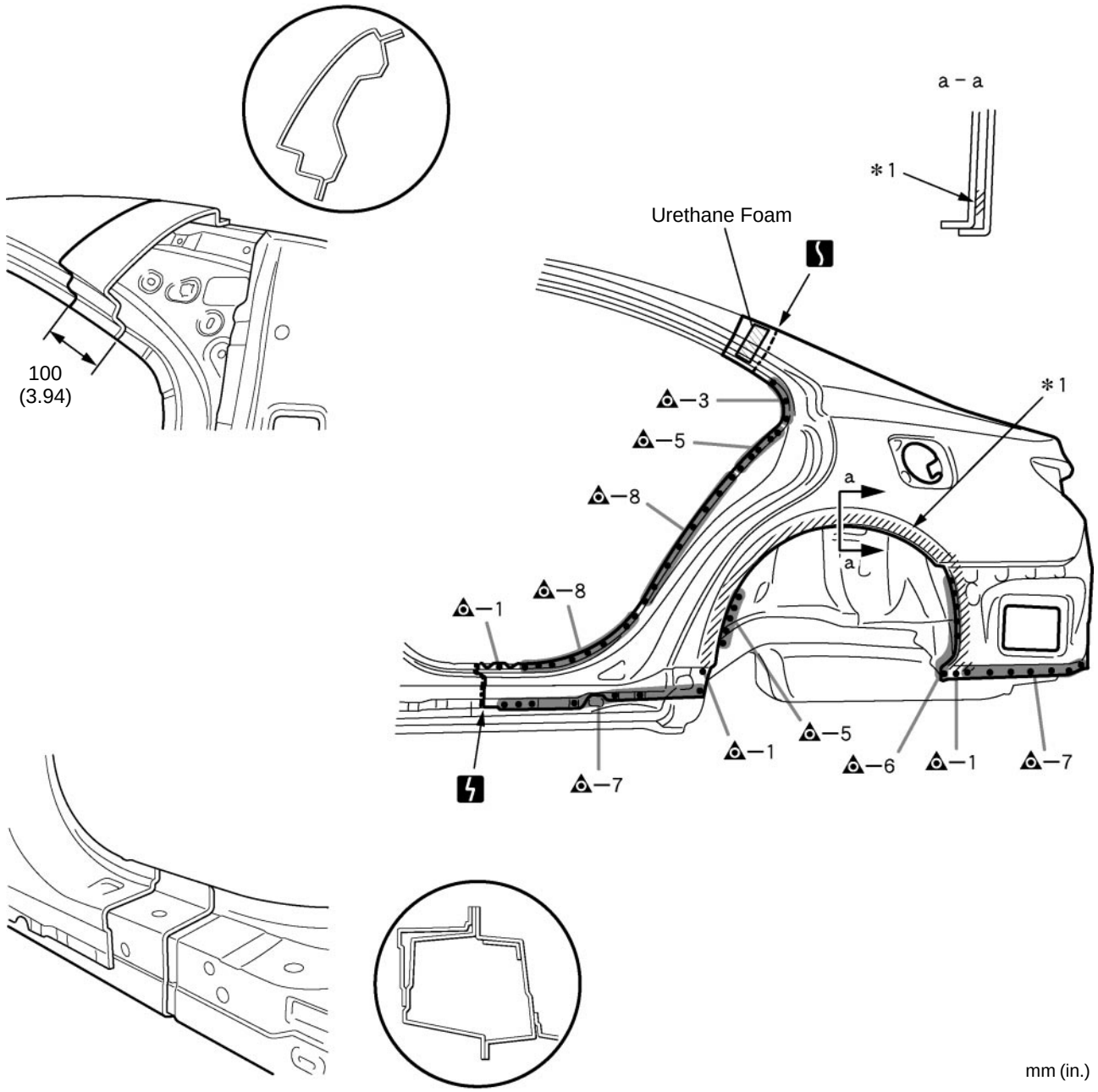
Symbol meaning

: Remove Weld Points : Cut with disc sander, etc. : Cut and Join Location

: Cut Location for Supply Parts : Braze

F25904B

REMOVAL



F25904

REMOVAL POINT

1 *1 in illustration above indicates where the adhesive is.

2 Roughly cut open the wheel arch of the panel so that the adhesive can be reached. Cut through the adhesive with a cut chisel to remove the panel.

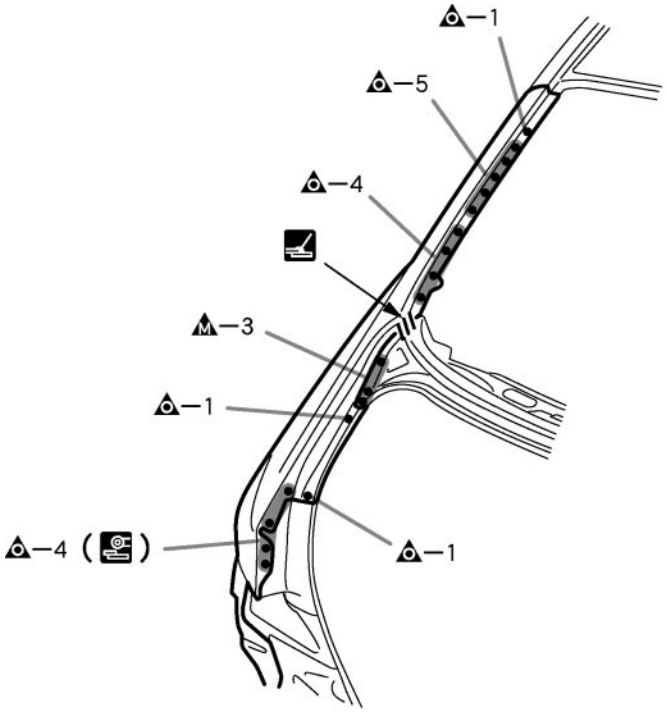
HINT:

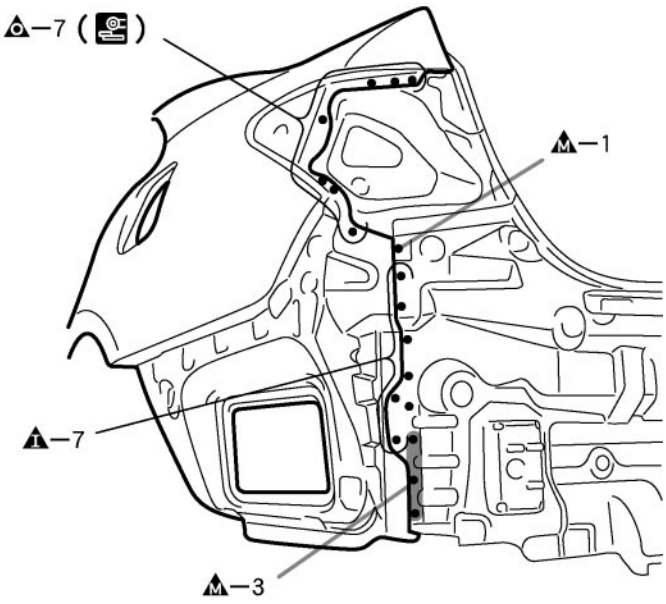
1) If the cut chisel cannot reach the adhesive, heat the adhesive with a heat gun, oxygen-acetylene burner. When heating, do not deform the quarter housing outer panel.

Symbol meaning

: Remove Weld Points : Cut with disc sander, etc. : Cut and Join Location
: Cut Location for Supply Parts : Braze

F25904B





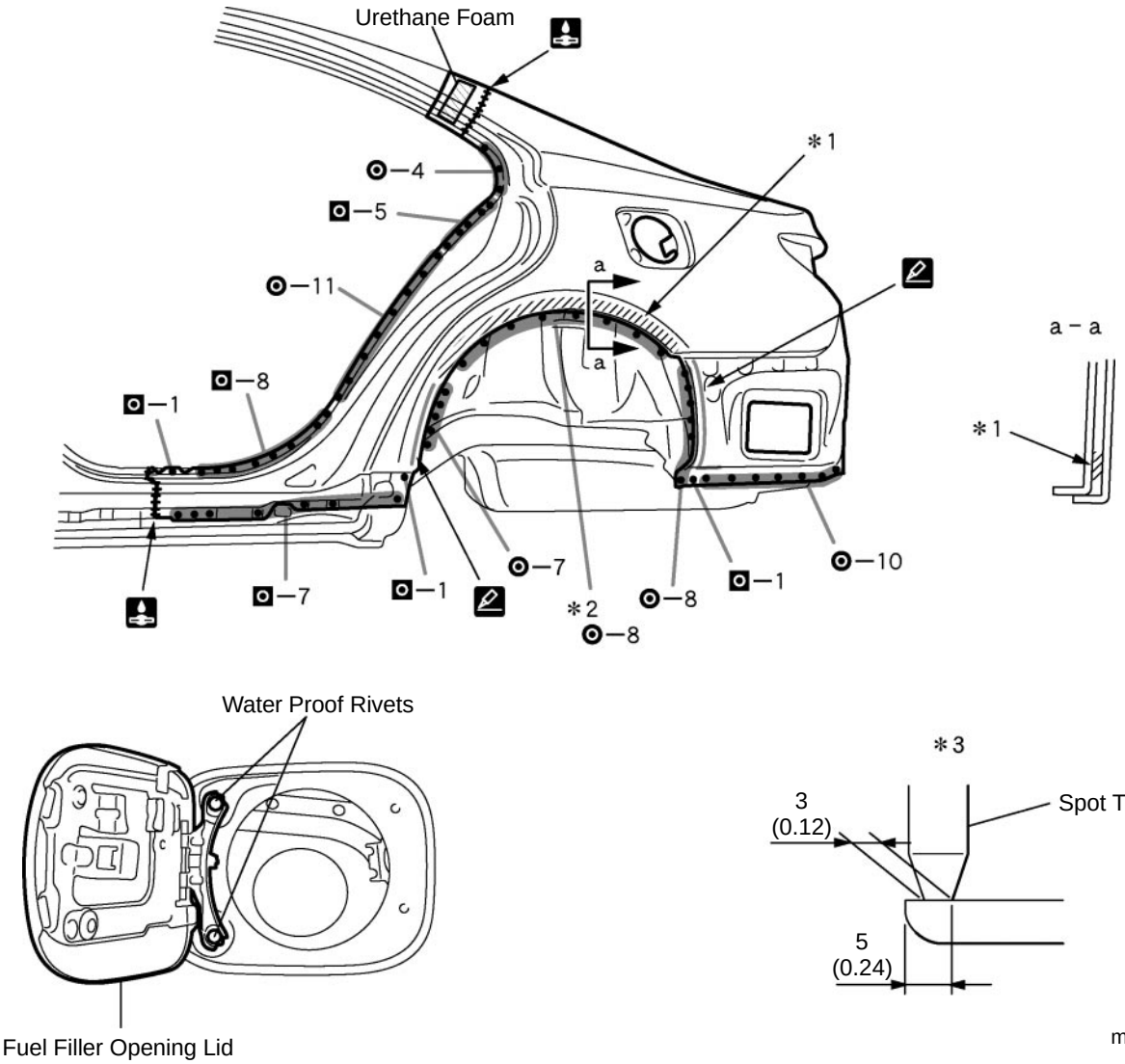
F25905

Symbol meaning

: Spot Weld : MIG Plug Weld : But Weld : Body Sealer : Braze

F25906B

INSTALLATION



F25906

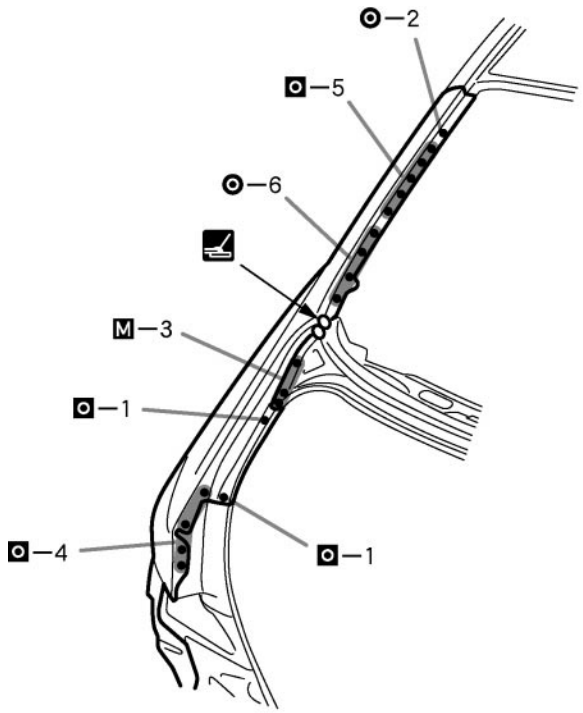
INSTALLATION POINT

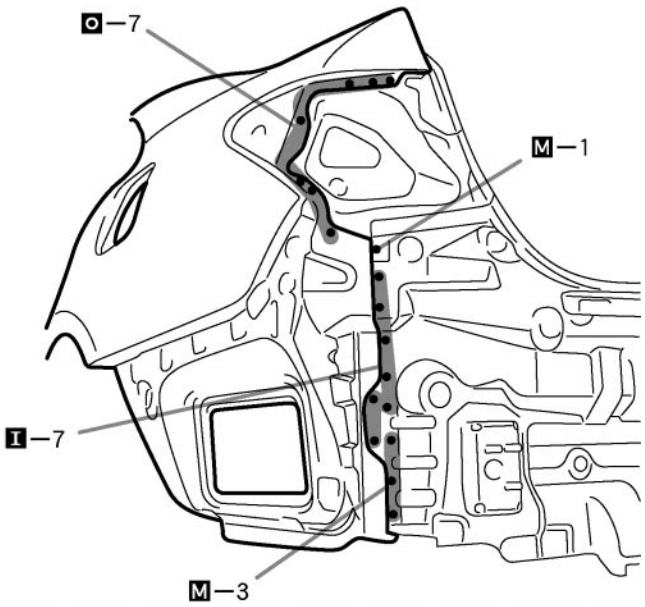
1 Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
2 Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
3 Apply adhesive (3M™ Automix™ Panel Bonding Adhesive #8115) to the area indicated by *1 in illustration.
HINT:
1) Apply enough adhesive for the panels to sick to each other.
4 Perform spot-welding on the flange indicated by *2 in the illustration. Modify/cut the spot tip as shown in the illustration (*3) so that it can fit in to the narrow flange.
5 Before installing a new part, apply body sealer.
HINT:
1) Apply sealer in an even, continuous bead.

Symbol meaning

: Spot Weld : MIG Plug Weld : But Weld : Body Sealer : Braze

F25906B



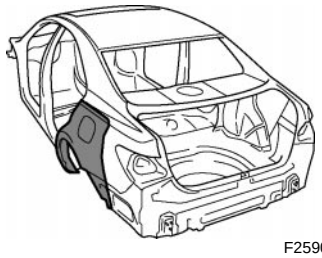


F25907

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 After welding, apply body sealer and undercoating to the corresponding parts. (See the paint·coating)
4 After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

QUARTER WHEEL HOUSING OUTER PANEL (ASSY)



F25908A

With the quarter panel removed.

Symbol meaning

: Cut with disc sander, etc.

REMOVAL : Remove Weld Points : Cut and Join Location

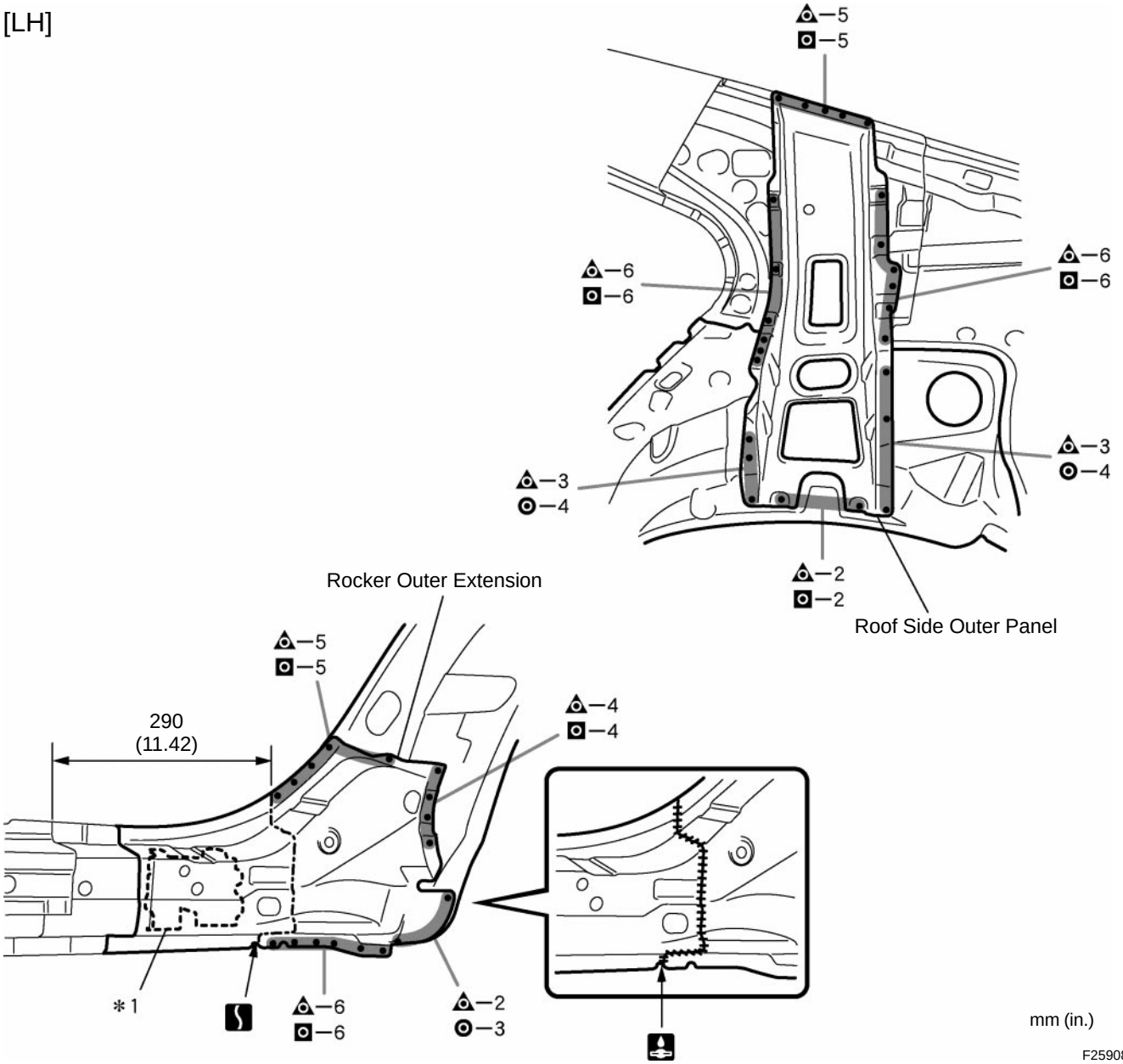
INSTALLATION : Spot Weld : MIG Plug Weld : Tack Weld

: Butt Weld

F25908B

REMOVAL·INSTALLATION

[LH]



F25908

REMOVAL POINT

1 *1: Take care not to damage the internal reinforcement.

2 After removing the rocker outer extension and roof side outer panel, remove the quarter wheel housing outer panel.

INSTALLATION POINT

1 After welding the quarter wheel housing outer panel to the vehicle side, install the rocker outer extension and roof side outer panel.

Symbol meaning

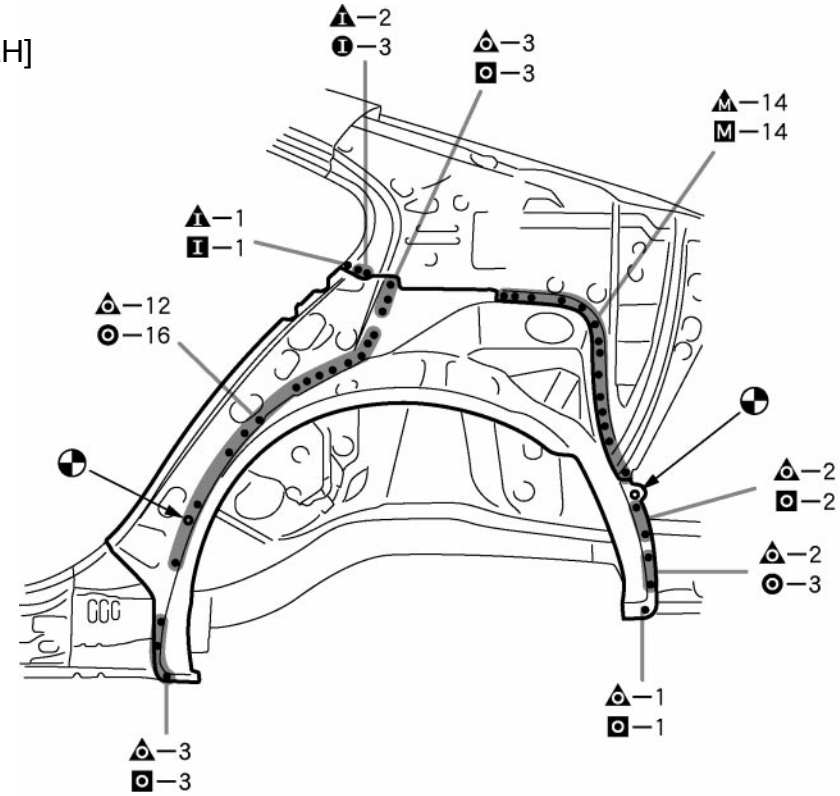
: Cut with disc sander, etc.

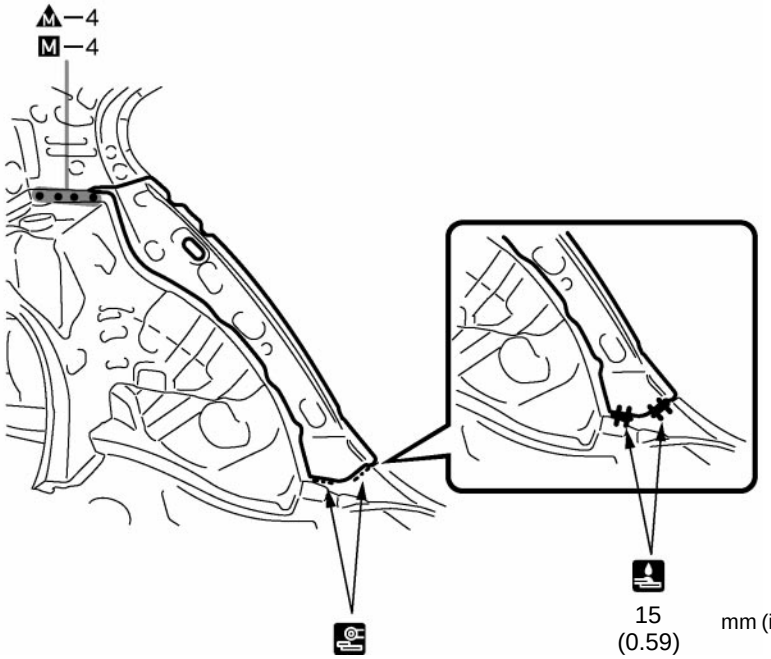
REMOVAL : Remove Weld Points : Cut and Join Location

INSTALLATION : Spot Weld : MIG Plug Weld : Tack Weld : Butt Weld

F25908B

[LH]





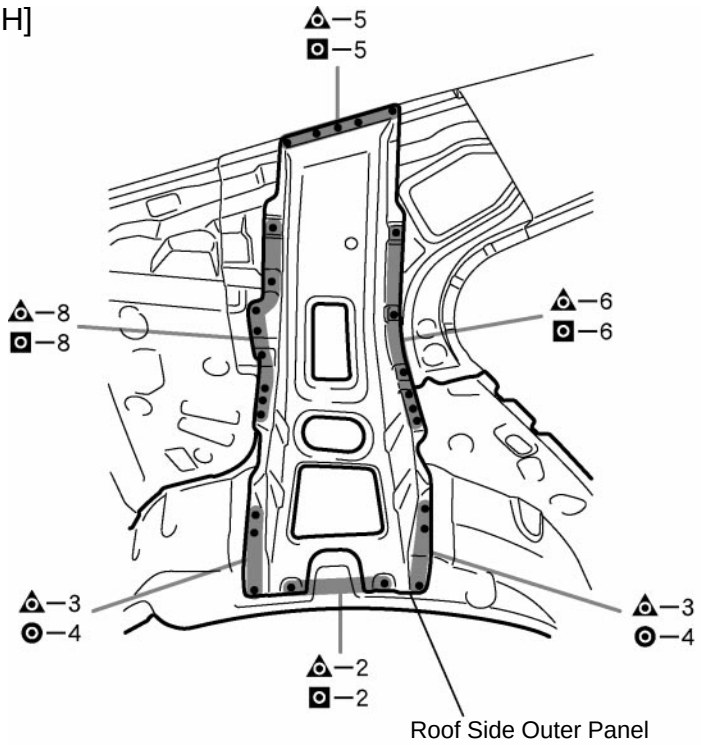
F25909

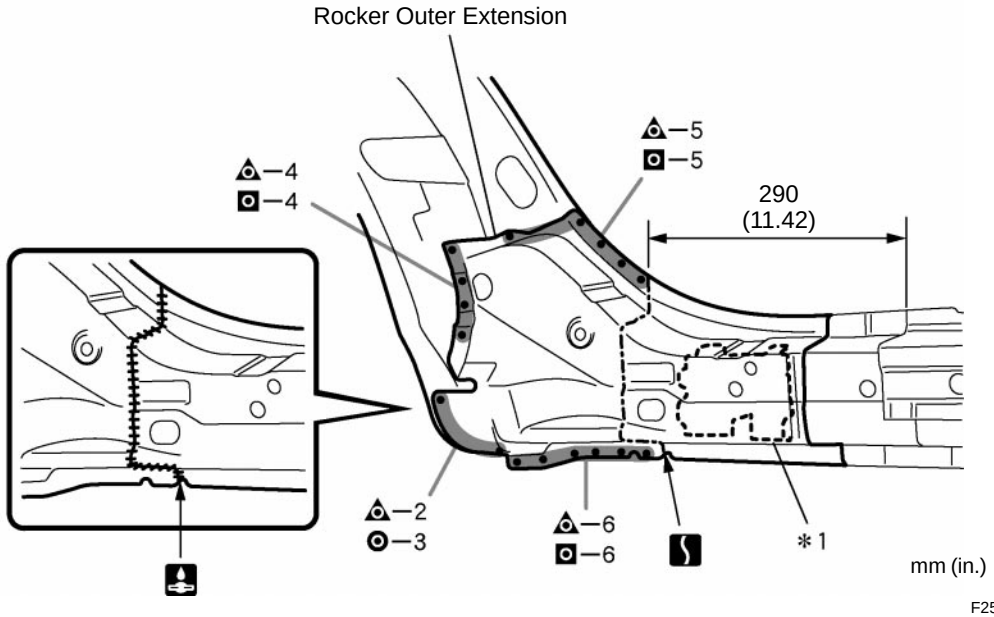
INSTALLATION POINT

1 After welding, apply body sealer and undercoating to the corresponding parts. (See the paint·coating)

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

[RH]





F25910

REMOVAL POINT

1 *1: Take care not to damage the internal reinforcement.
2 After removing the rocker outer extension and roof side outer panel, remove the quarter wheel housing outer panel.

INSTALLATION POINT

1 After welding the quarter wheel housing outer panel to the vehicle side, install the rocker outer extension and roof side outer panel.

Symbol meaning

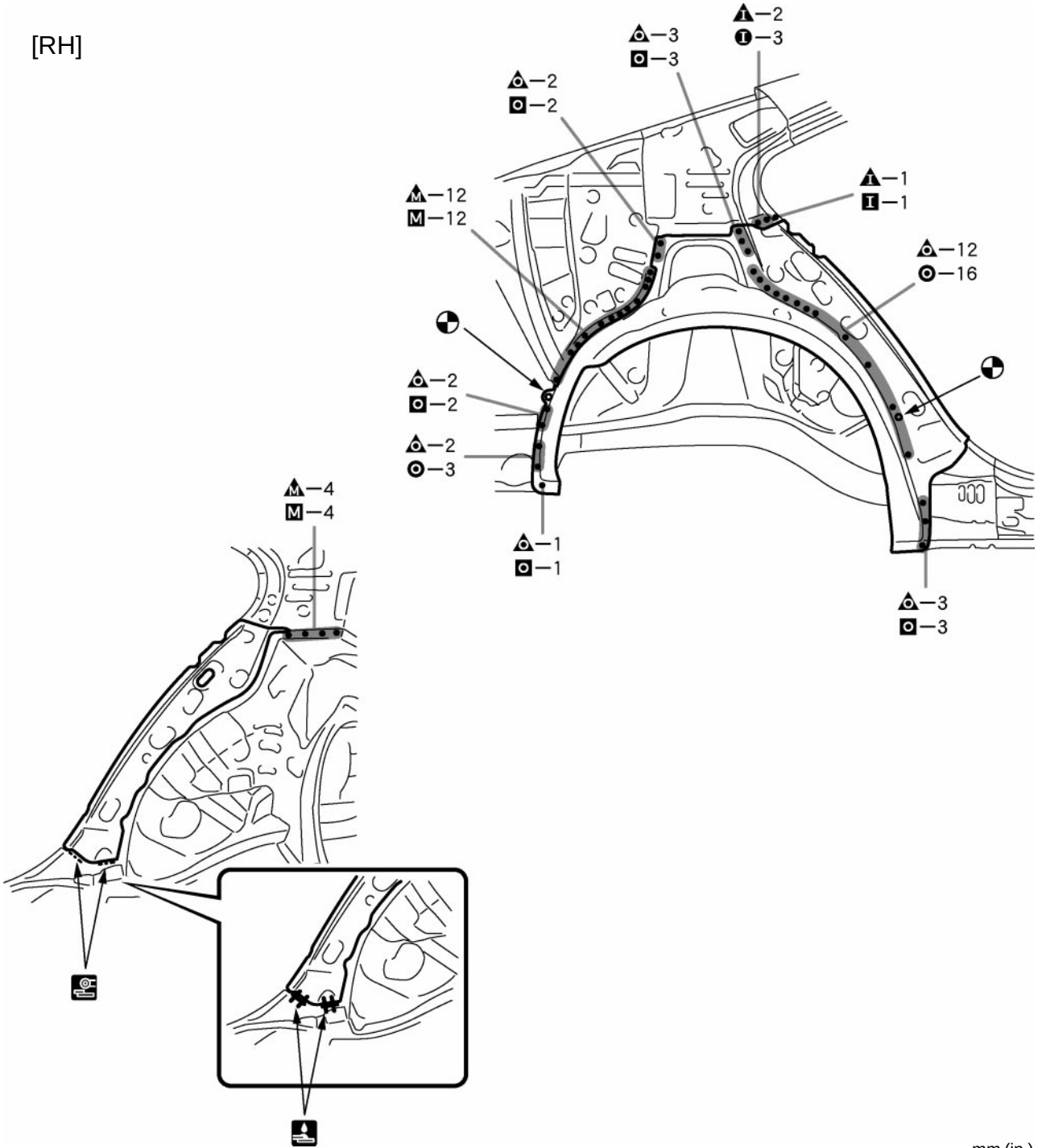
: Cut with disc sander, etc.

REMOVAL : Remove Weld Points : Cut and Join Location

INSTALLATION : Spot Weld : MIG Plug Weld : Tack Weld : Butt Weld

F25908B

[RH]



mm (in.)

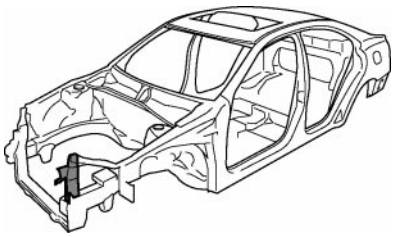
F25911

INSTALLATION POINT

1 After welding, apply body sealer and undercoating to the corresponding parts. (See the paint·coating)

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

RADIATOR SUPPORT UPPER BRACE (ASSY)



F25870A

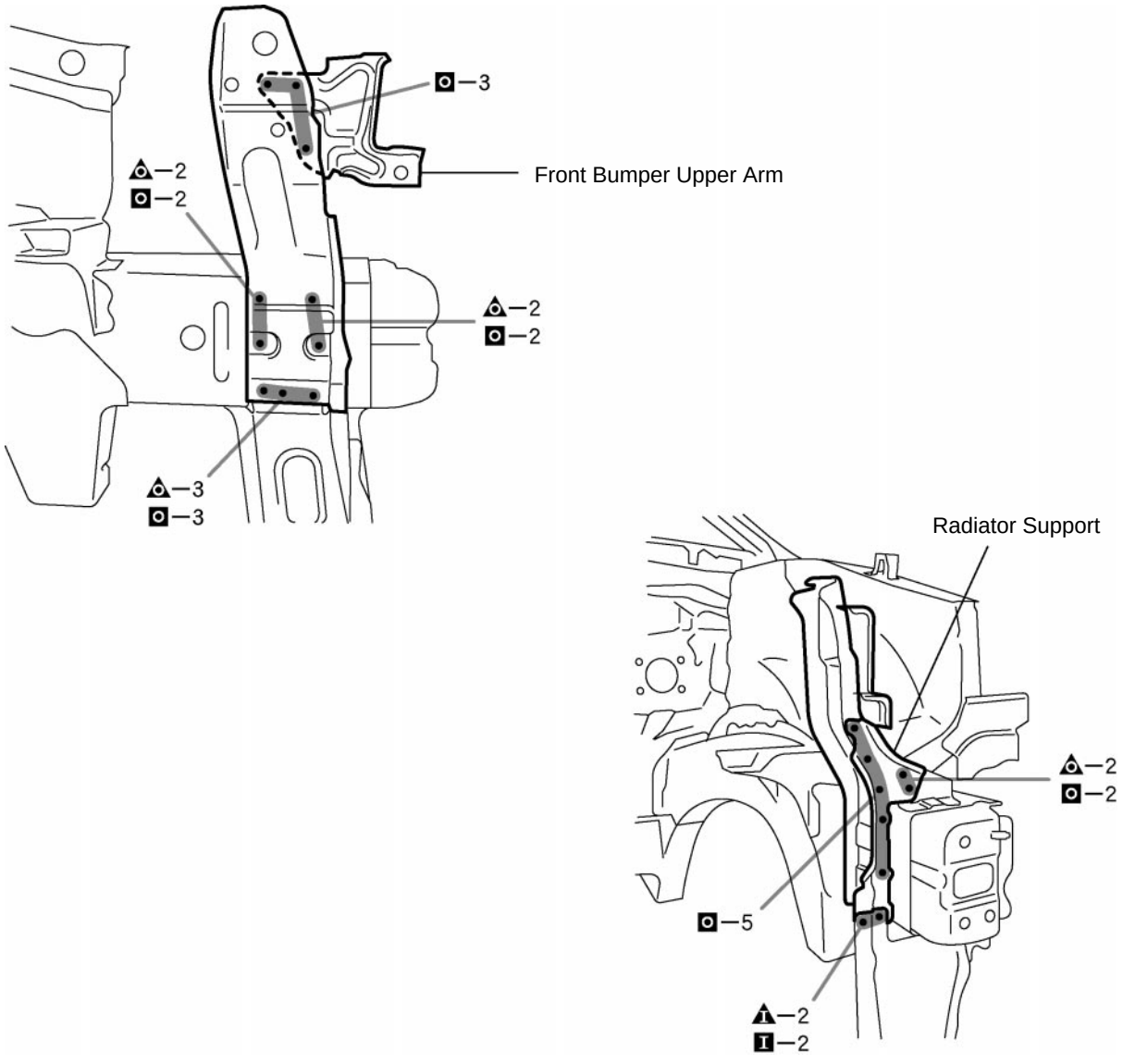
With the radiator upper support removed.

Symbol meaning

REMOVAL	▲ ▲ : Remove Weld Points
INSTALLATION	● I : MIG Plug Weld

F25870B

REMOVAL·INSTALLATION



F25870

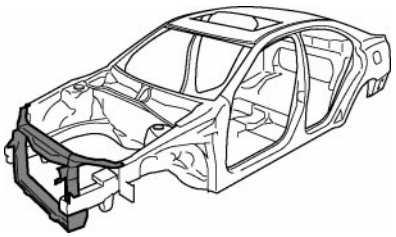
REMOVAL POINT

1 Remove the radiator support at the same time.

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

RADIATOR SUPPORT (ASSY)



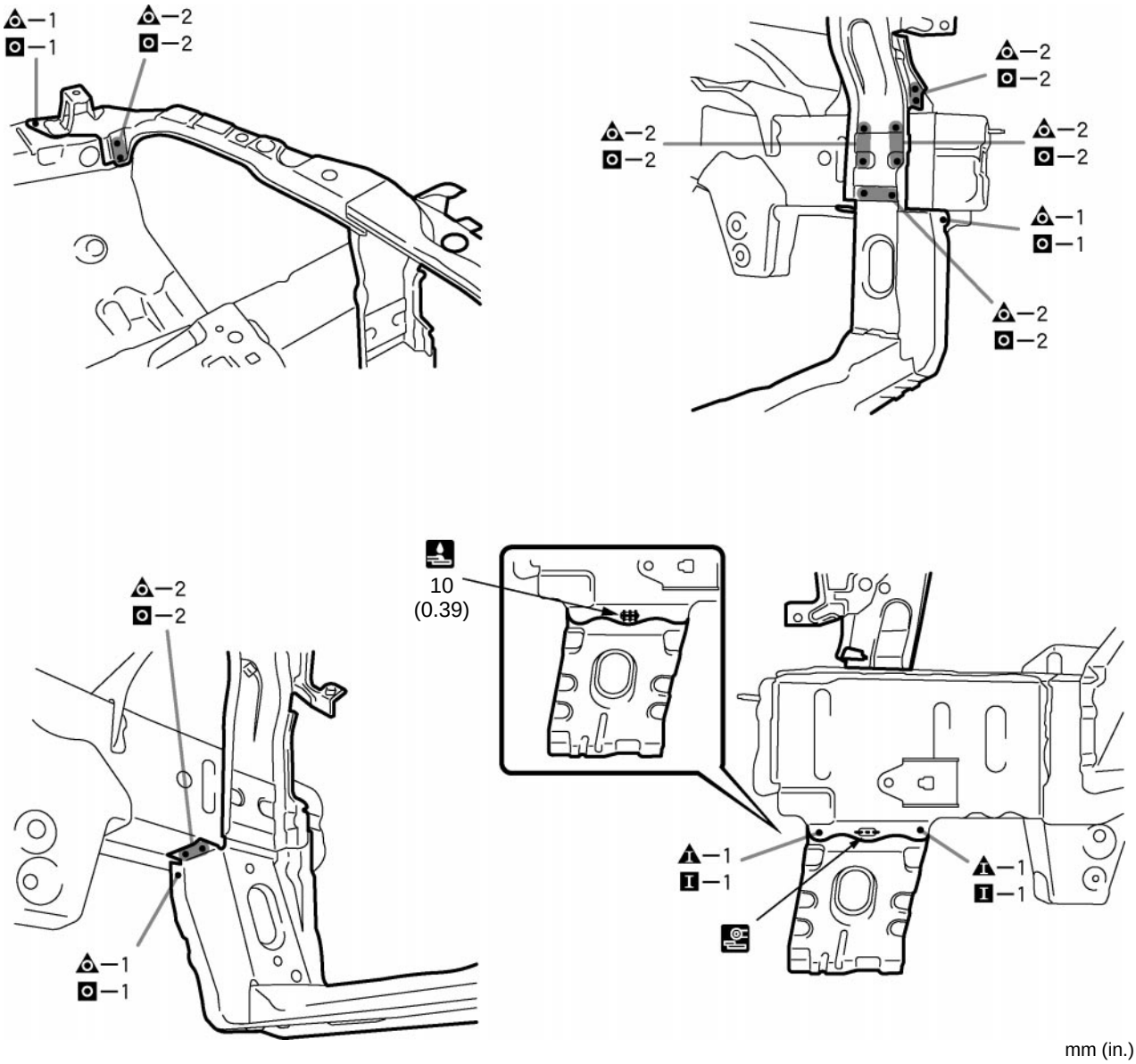
F25872A

Symbol meaning

REMOVAL	▲ ▲ : Remove Weld Points	: Cut with disc sander, etc.
INSTALLATION	● I : MIG Plug Weld	: Tack Weld

F25872B

REMOVAL·INSTALLATION

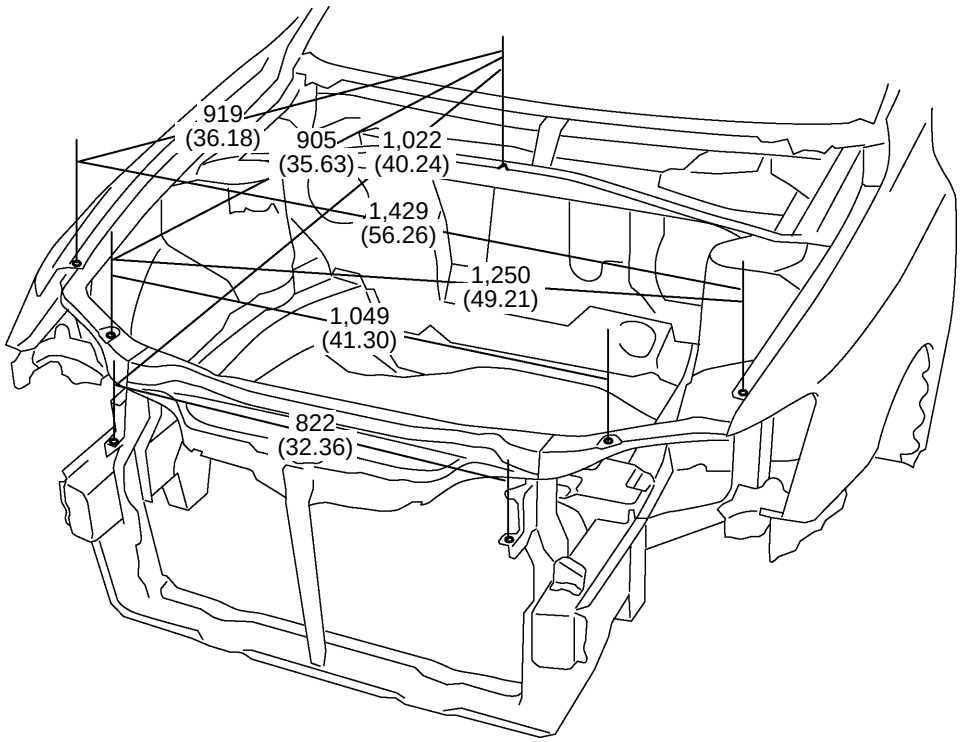


mm (in.)

F25872

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



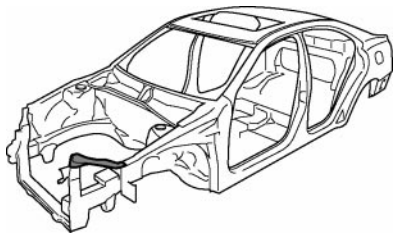
mm (in.)

F25873

INSTALLATION POINT

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

RADIATOR UPPER SUPPORT (ASSY)



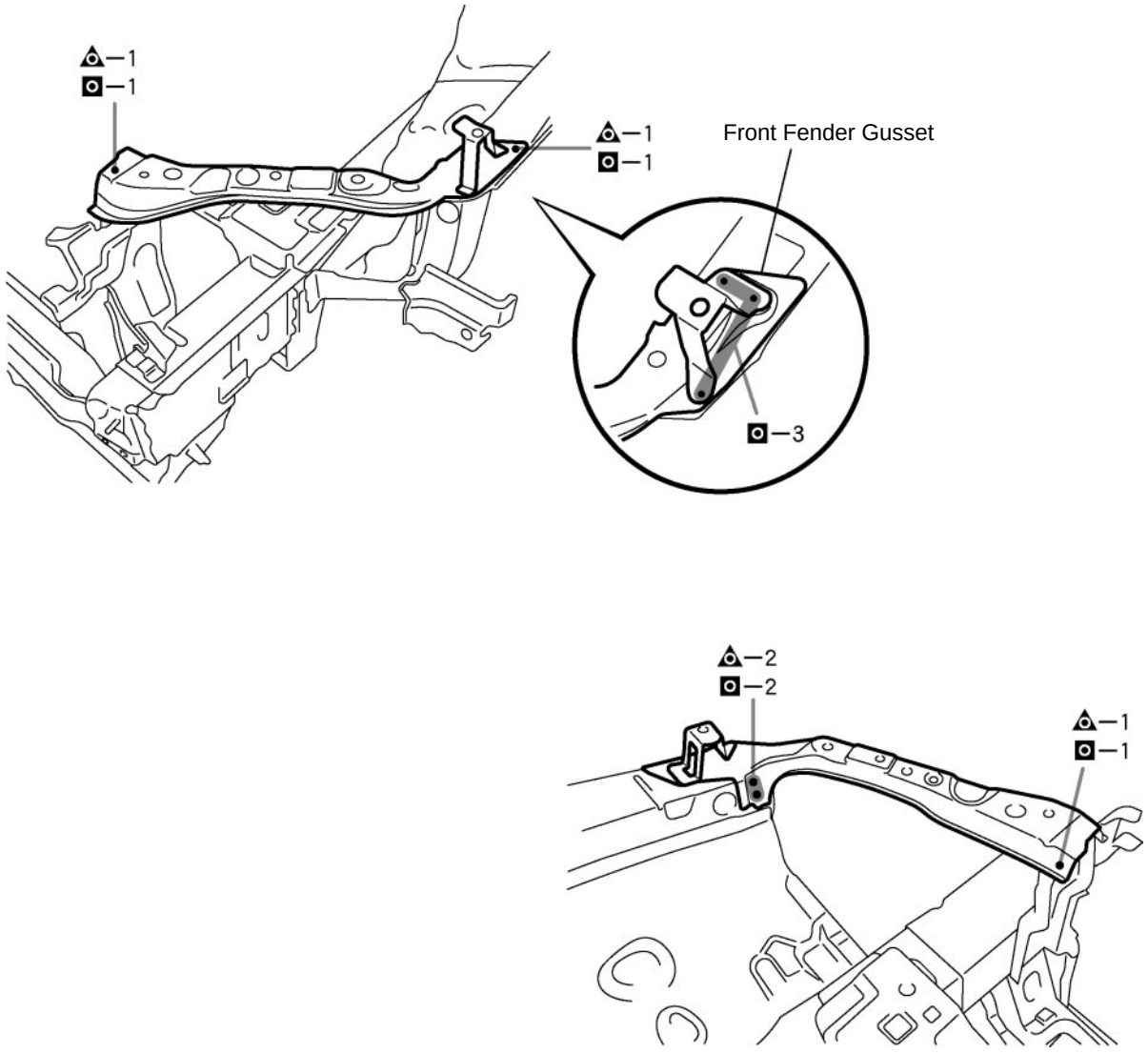
F25869A

Symbol meaning

REMOVAL	: Remove Weld Points
INSTALLATION	: MIG Plug Weld

F25869B

REMOVAL·INSTALLATION

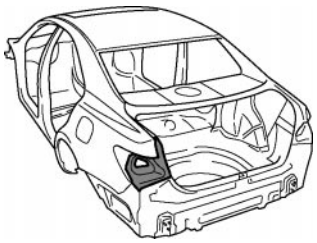


F25869

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

REAR BODY REAR SIDE CORNER PANEL (ASSY)



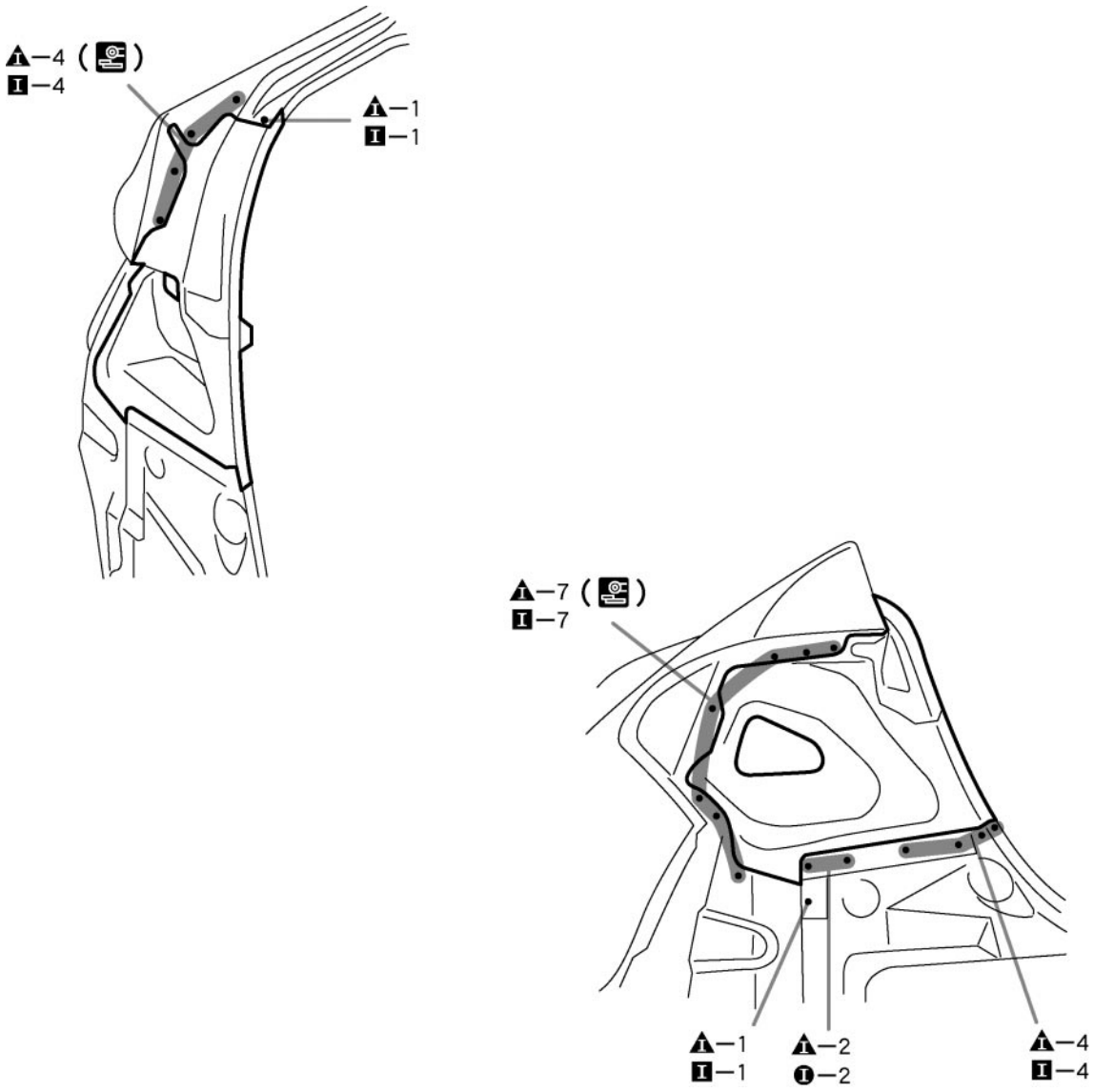
F25913A

Symbol meaning

REMOVAL	▲ : Remove Weld Points	: Cut with disc sander, etc.
INSTALLATION	● : Spot Weld	■ : MIG Plug Weld

F25913B

REMOVAL·INSTALLATION

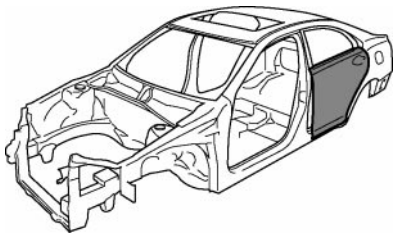


F25913

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 After welding, apply body sealer to the corresponding parts. (See the paint·coating)
4 After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

REAR DOOR OUTER PANEL (ASSY)



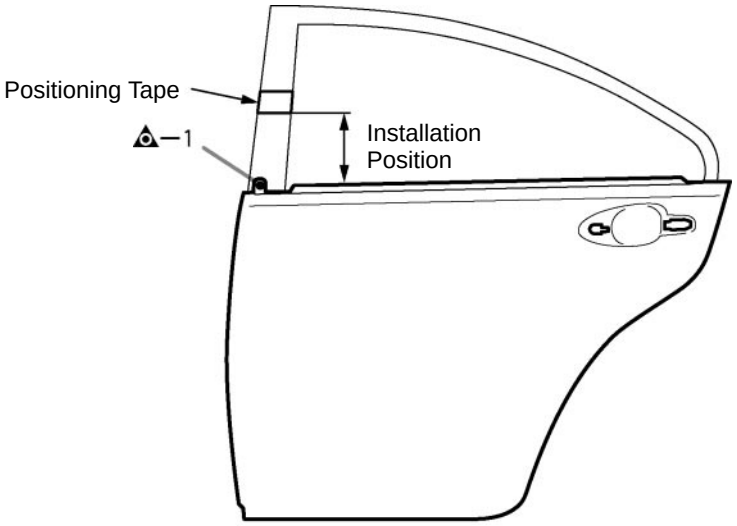
F25898A

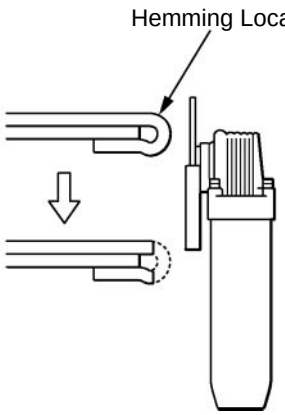
Symbol meaning

: Remove Weld Points

F25898B

REMOVAL





F25898

REMOVAL POINT

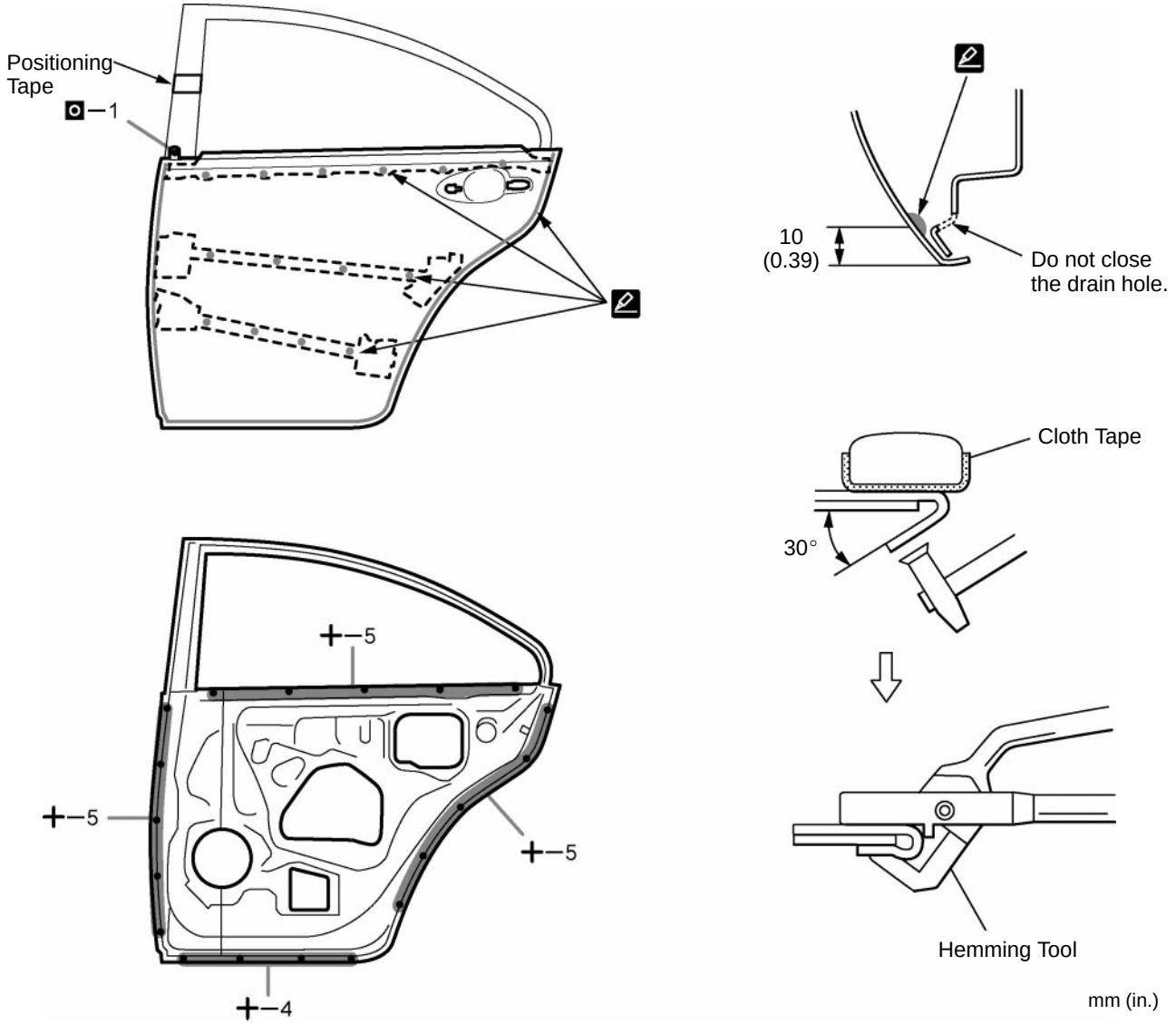
1 Before removing the outer panel, mark the installation position with tape.
2 Before removing the outer panel, establish its exact position in relation to the window frame using a reference marker, etc.
3 After grinding off the hemming location, remove the outer panel.

Symbol meaning

: MIG Plug Weld : Spot MIG Weld : Body Sealer

F25899B

INSTALLATION



F25899

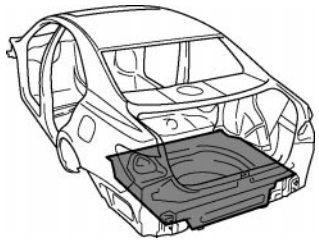
INSTALLATION POINT

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

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

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

REAR FLOOR PAN (ASSY)



F25915A

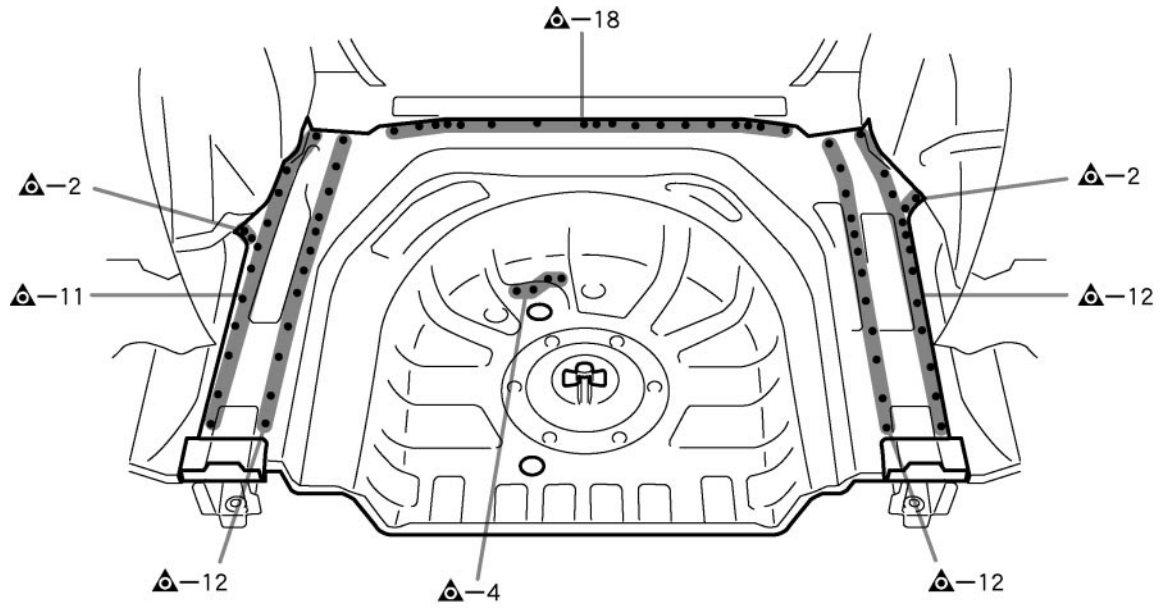
With the rear floor No.3 crossmember removed.

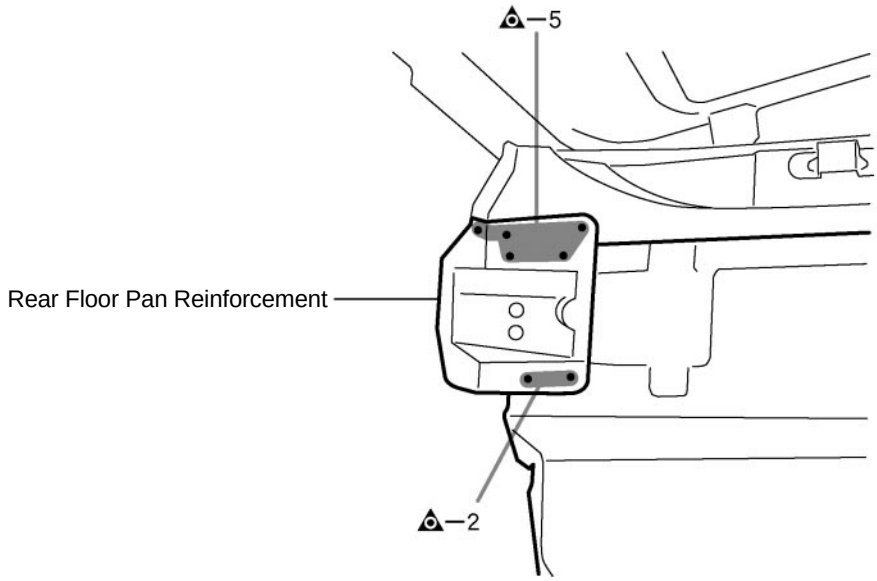
Symbol meaning

: Remove Weld Points

F25915B

REMOVAL

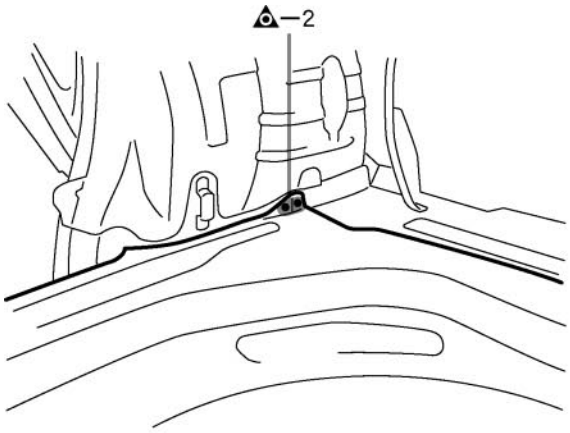


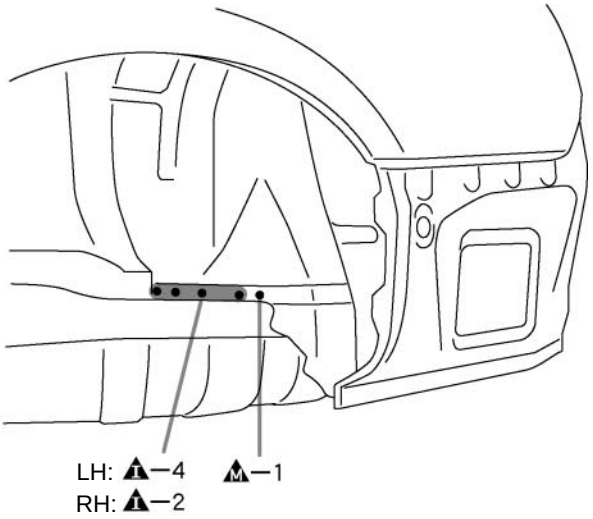


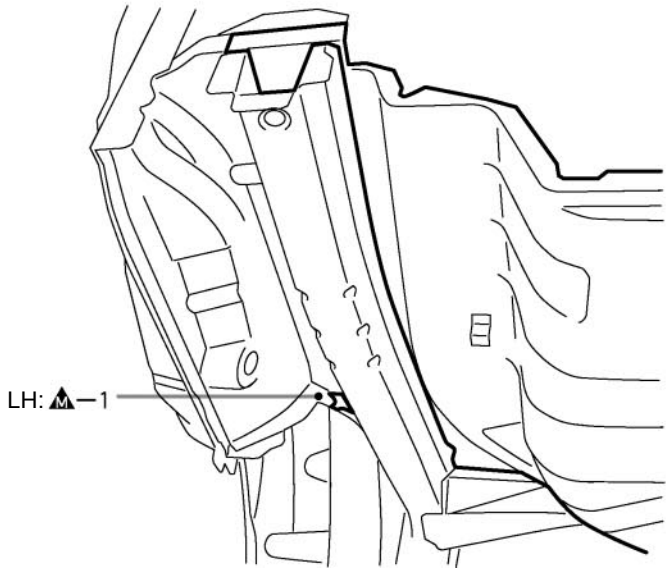
F25915

REMOVAL POINT

1 Remove the rear floor pan reinforcement at the same time.







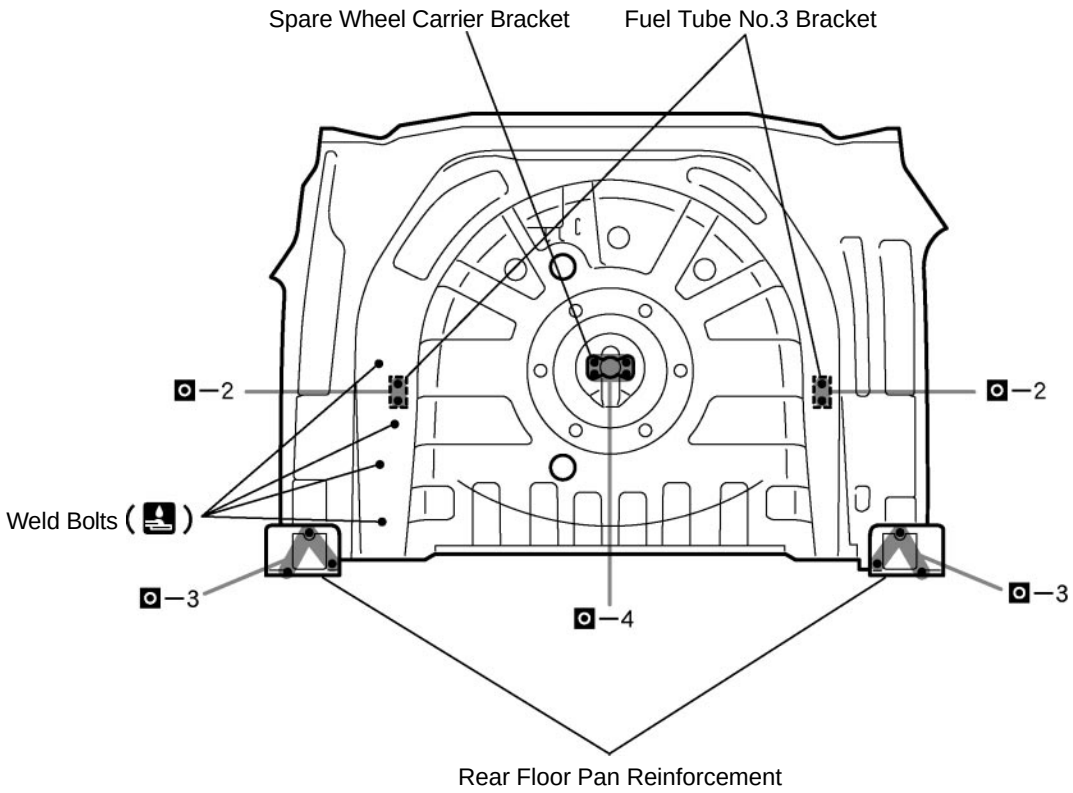
F25916

Symbol meaning

O M I : MIG Plug Weld : Tack Weld

F25917B

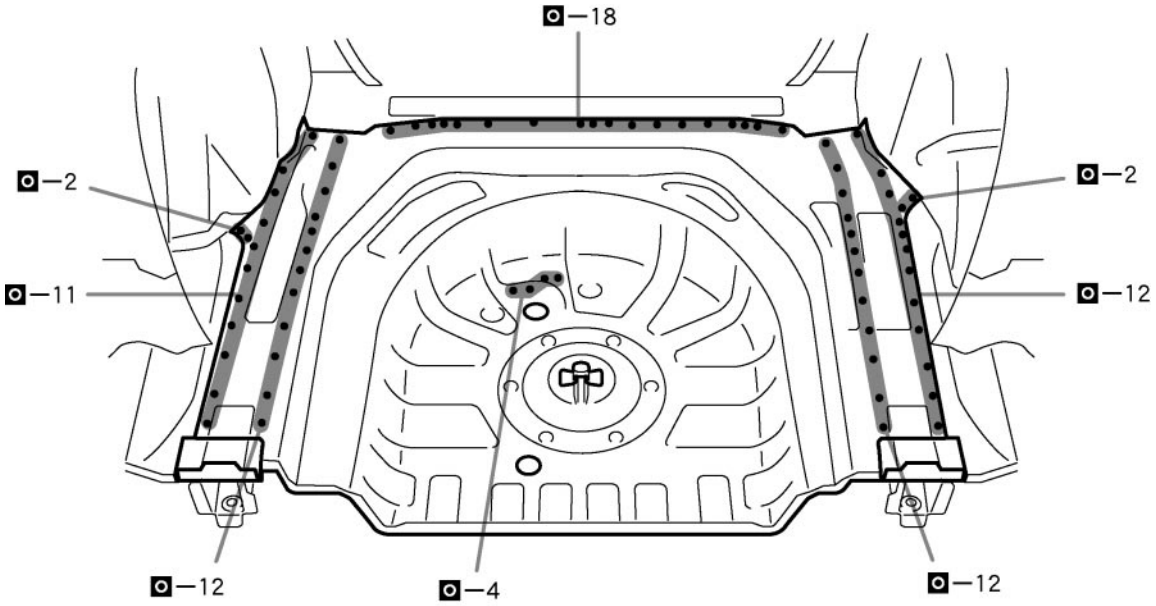
INSTALLATION

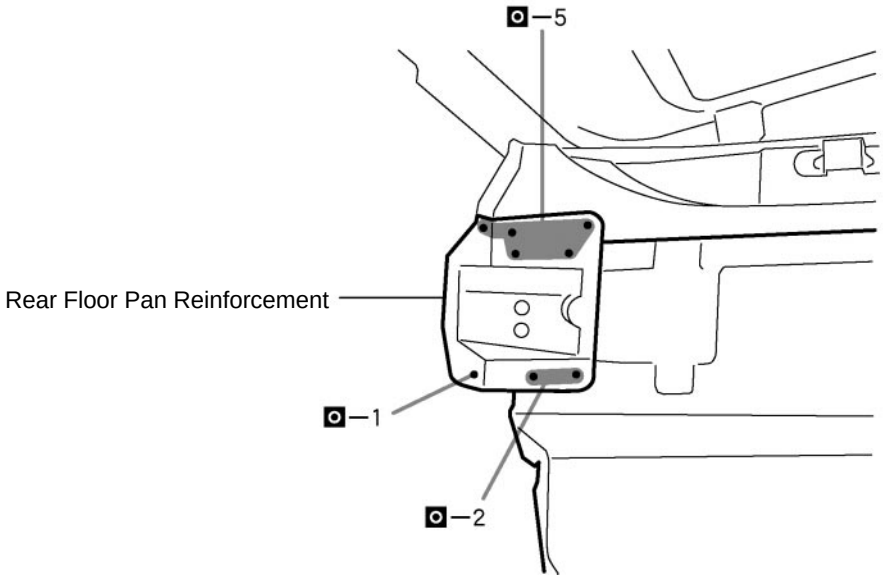


F25917

INSTALLATION POINT

1 Before temporarily installing the new parts, weld the spare wheel carrier bracket, fuel tube No.3 bracket, rear floor pan reinforcement and weld bolts with the standard number of welding points.



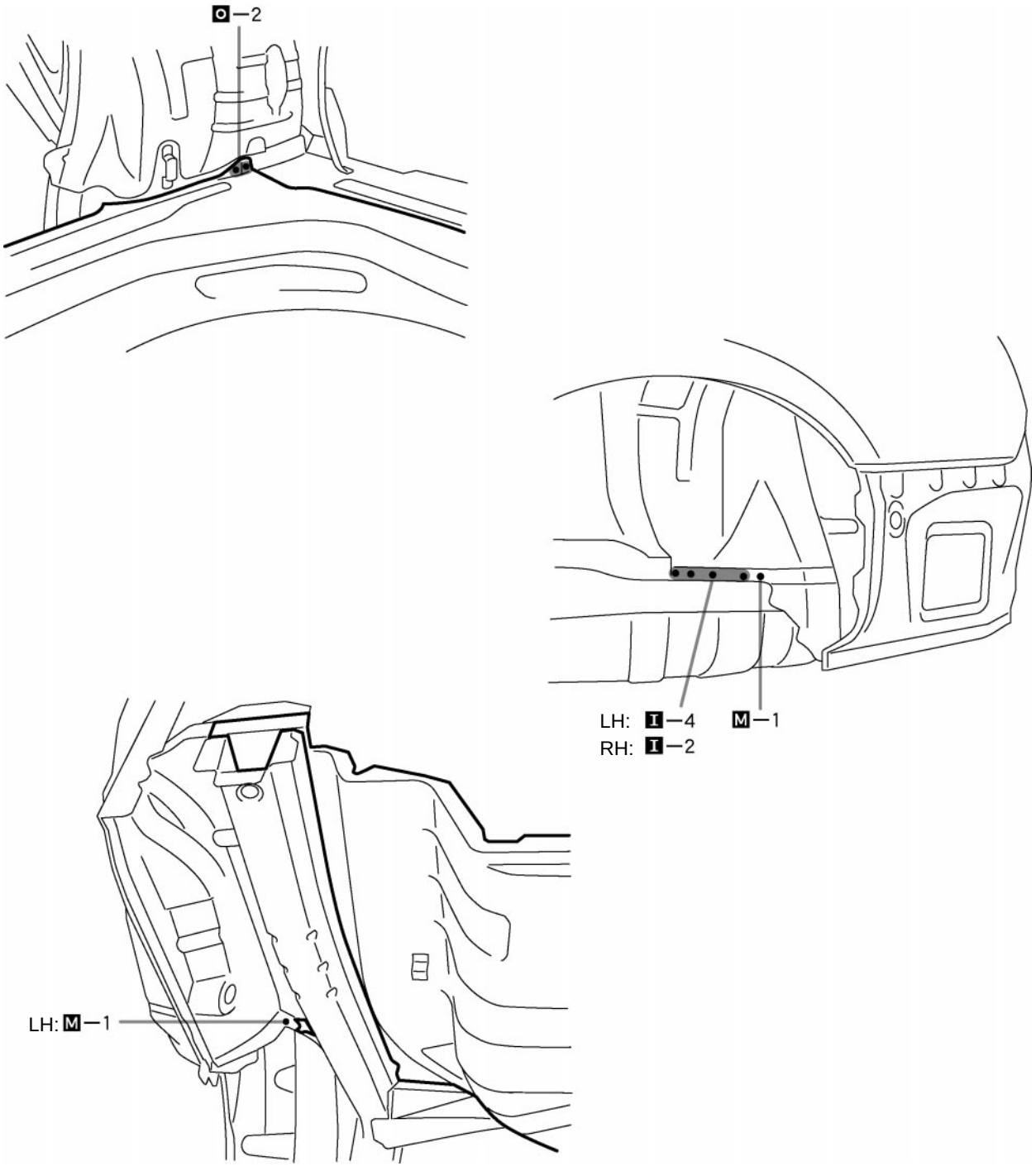


F25918

Symbol meaning

O M I : MIG Plug Weld : Tack Weld

F25917B



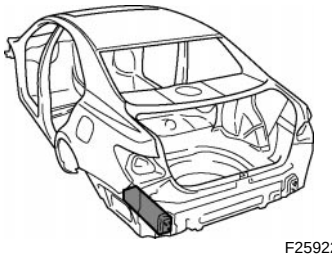
F25919

INSTALLATION POINT

1 After welding, apply body sealer and undercoating to the corresponding parts. (See the paint·coating)

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

REAR FLOOR SIDE REAR MEMBER (ASSY)



F25922A

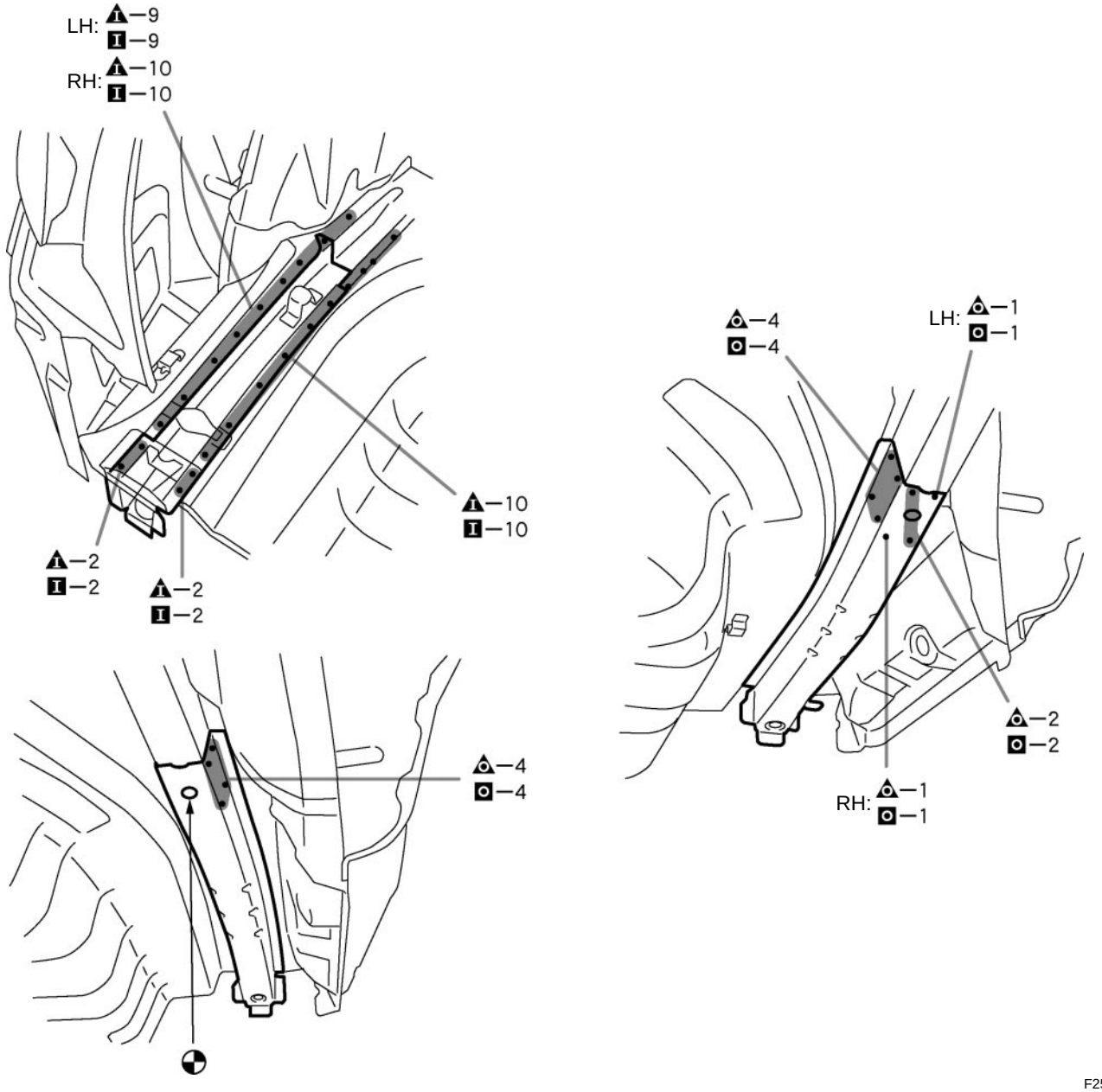
With the rear floor No.3 crossmember removed.

Symbol meaning

REMOVAL	▲ ▲ : Remove Weld Points
INSTALLATION	● ■ : MIG Plug Weld

F25922B

REMOVAL·INSTALLATION

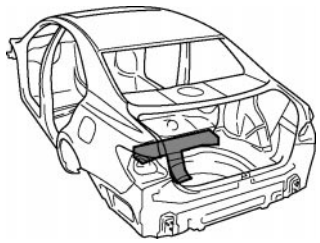


F25922

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 dimension diagram)
2 After welding, apply undercoating to the corresponding parts. (See the paint·coating)
3 After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

REAR FLOOR NO. 2 CROSSMEMBER (ASSY)



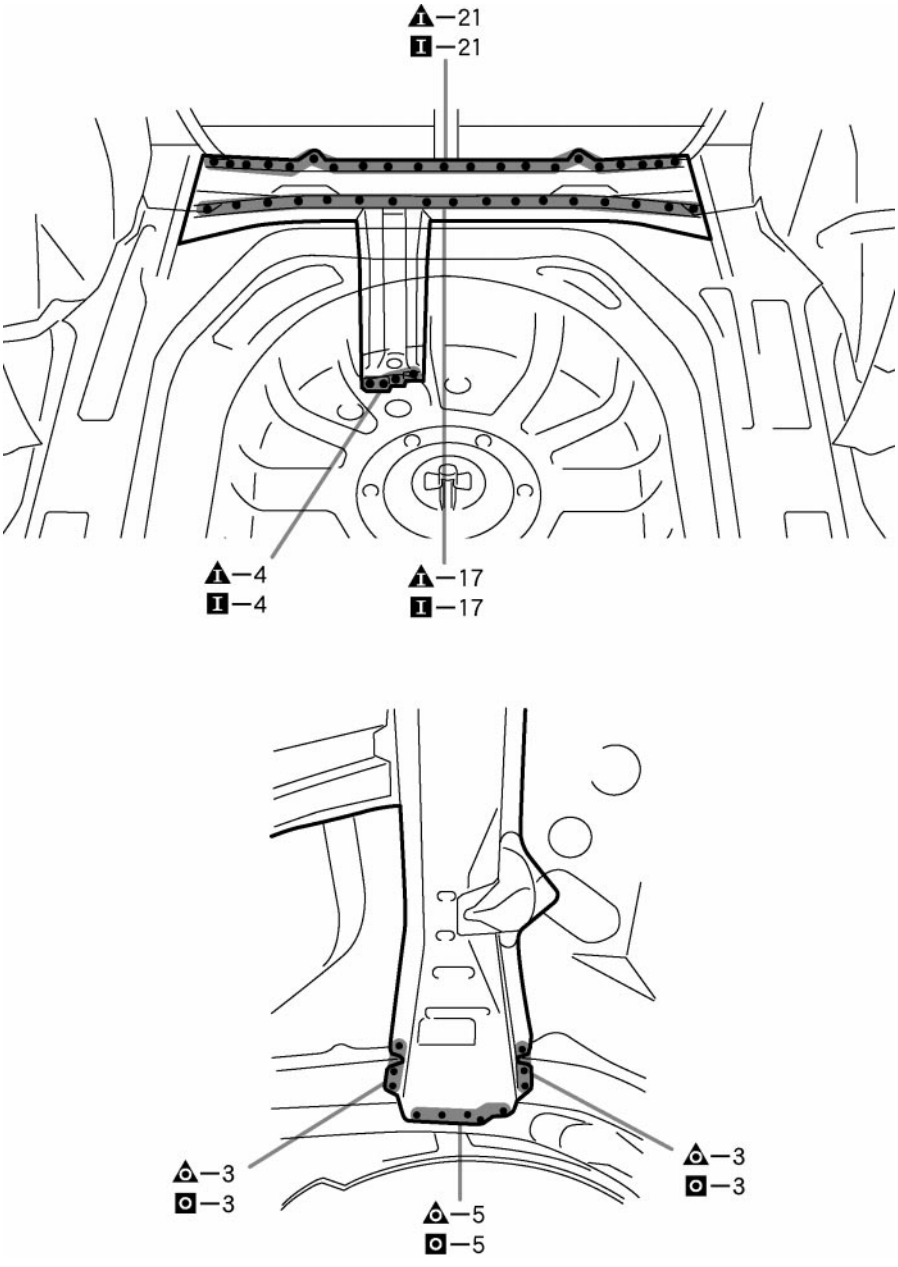
F25923A

Symbol meaning

REMOVAL	: Remove Weld Points
INSTALLATION	: MIG Plug Weld

F25923B

REMOVAL·INSTALLATION

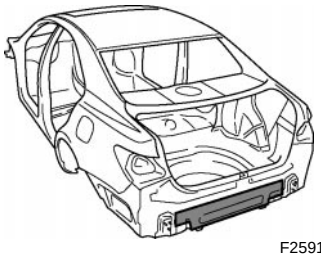


F25923

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 dimension diagram)
2 After welding, apply undercoating to the corresponding parts. (See the paint·coating)
3 After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

REAR FLOOR NO. 3 CROSSMEMBER (ASSY)



F25914A

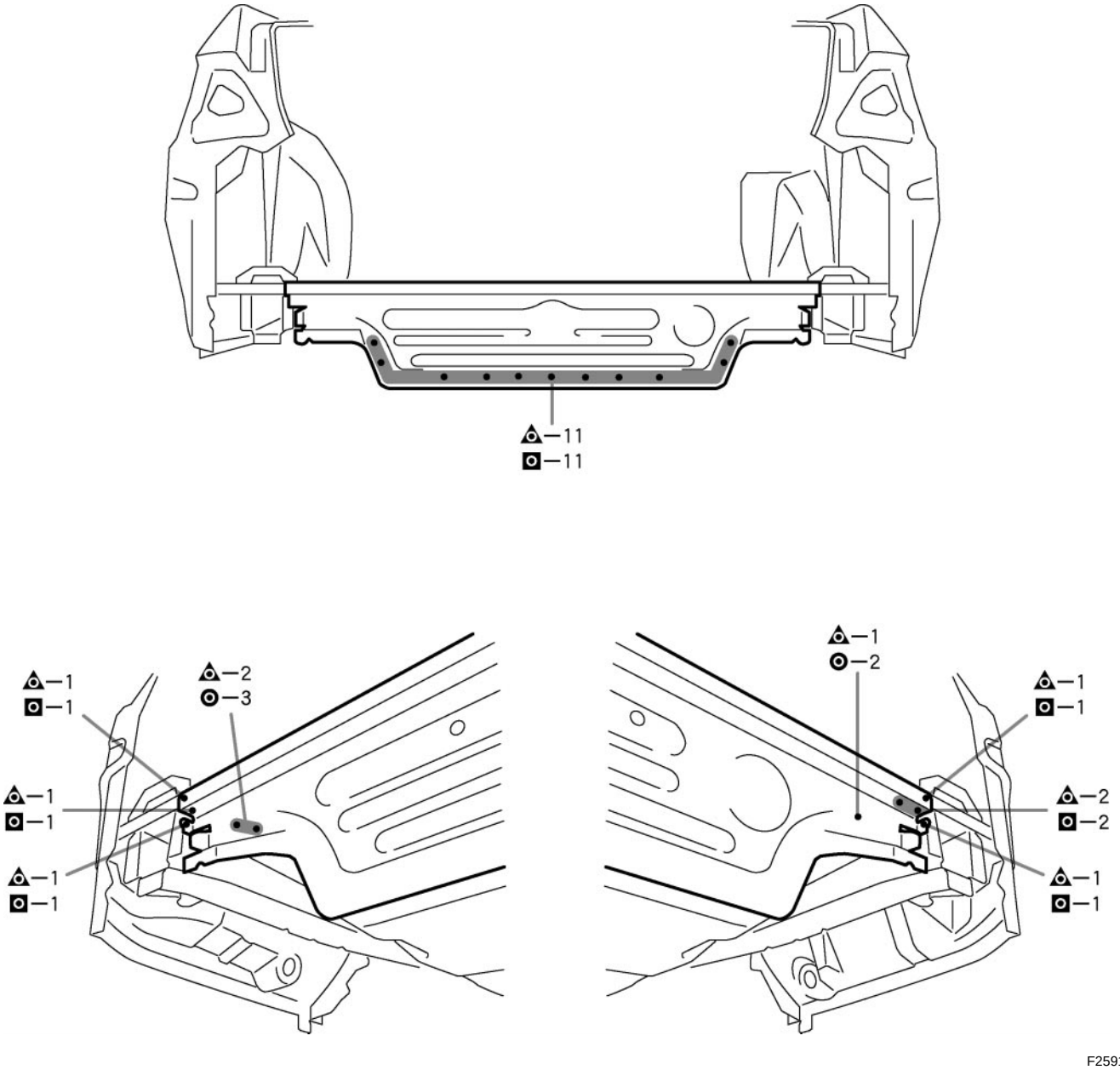
With the body lower back panel removed.

Symbol meaning

REMOVAL	◬ : Remove Weld Points	
INSTALLATION	⊙ : Spot Weld	◘ : MIG Plug Weld

F25914B

REMOVAL·INSTALLATION

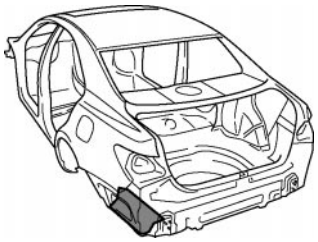


F25914

INSTALLATION POINT

1 Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
2 After welding, apply body sealer and undercoating to the corresponding parts. (See the paint·coating)
3 After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

REAR FLOOR SIDE PANEL (ASSY)



F25920A

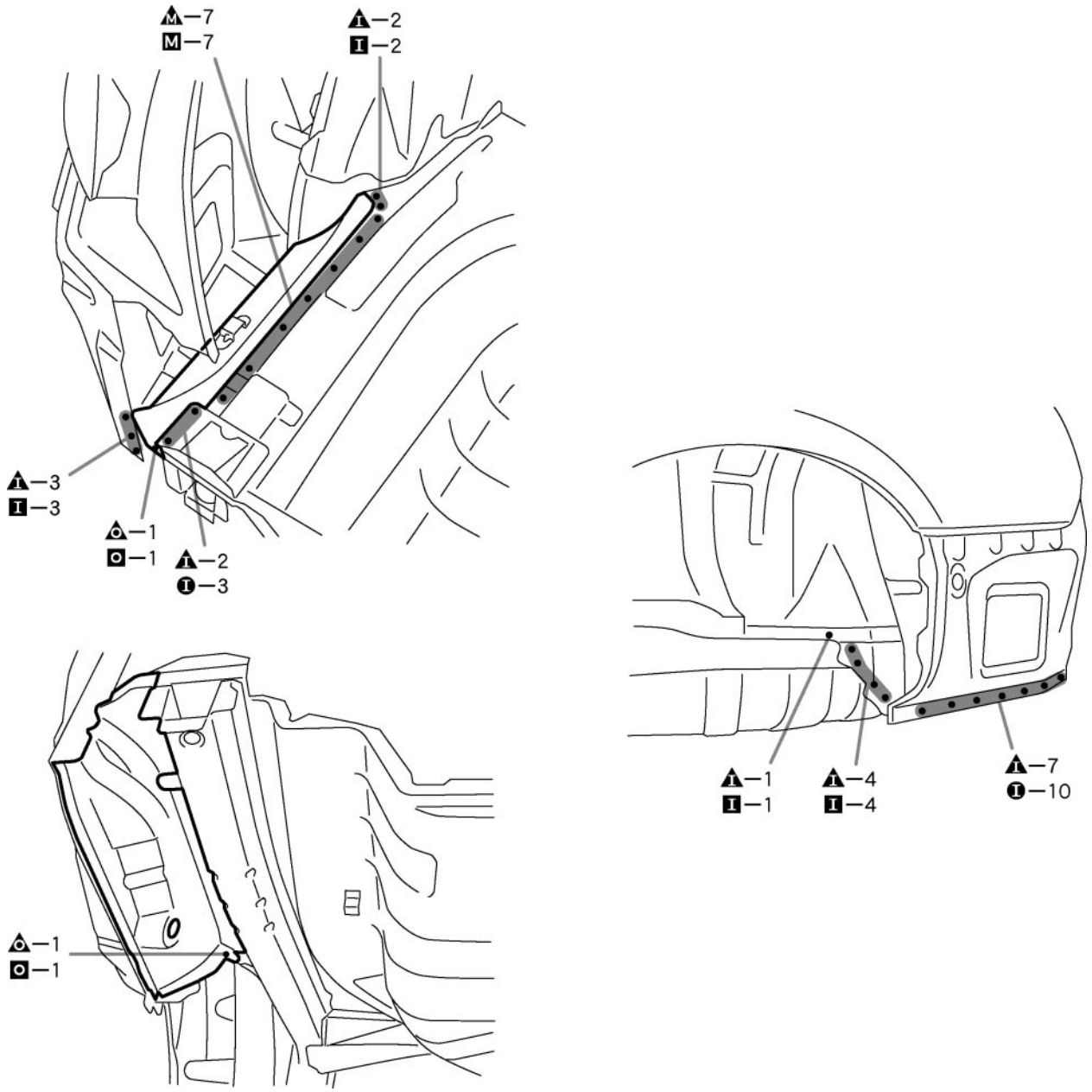
With the body lower back panel removed.

Symbol meaning

REMOVAL	▲O ▲M ▲I : Remove Weld Points
INSTALLATION	●I : Spot Weld ○O M I : MIG Plug Weld

F25920B

REMOVAL·INSTALLATION



F25920

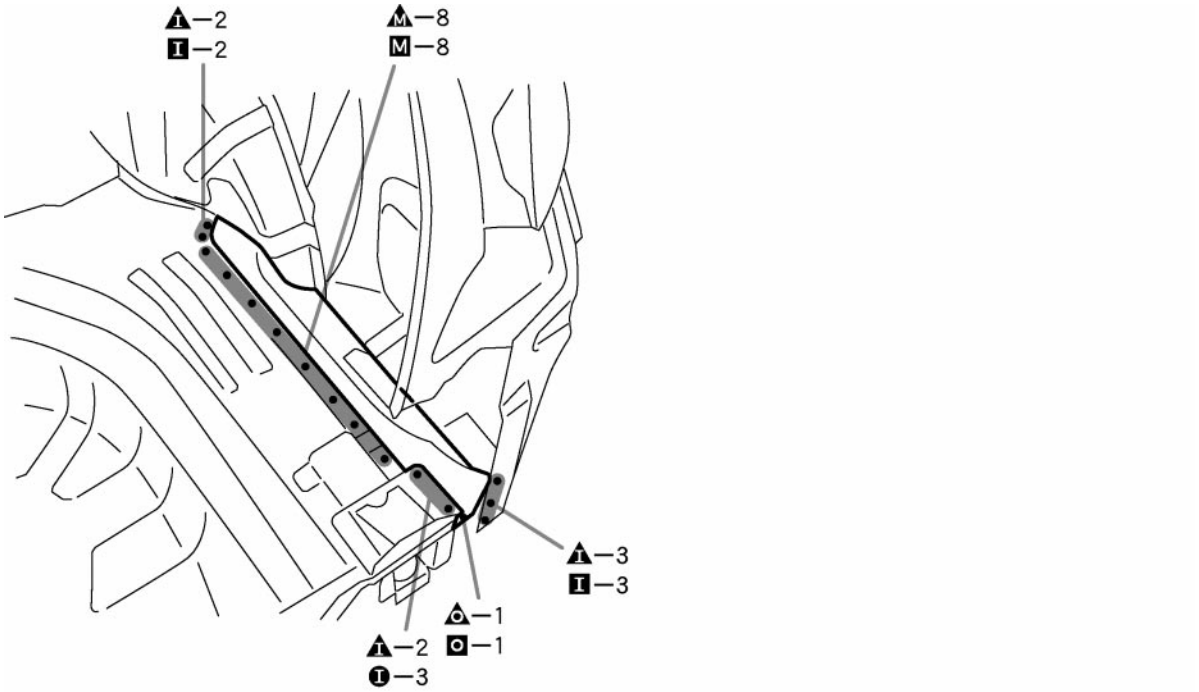
INSTALLATION POINT

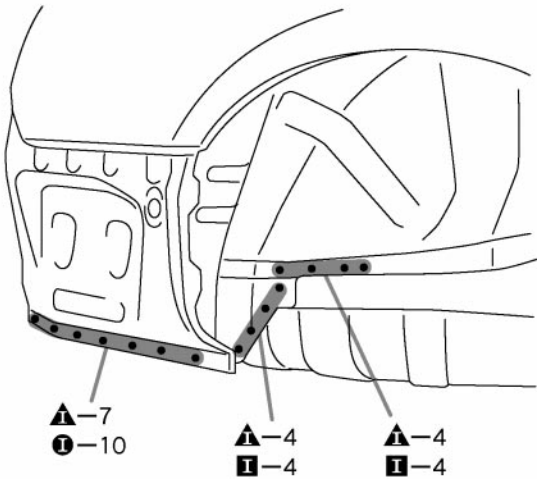
1 After welding, apply body sealer and undercoating to the corresponding parts. (See the paint·coating)
2 After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

Symbol meaning

REMOVAL	A M A : Remove Weld Points
INSTALLATION	I : Spot Weld O M I : MIG Plug Weld

F25920B





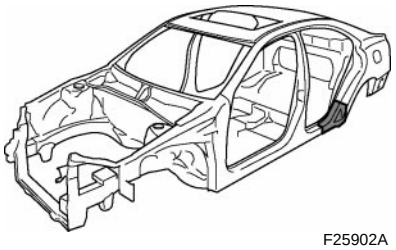
F25921

INSTALLATION POINT

1 After welding, apply body sealer and undercoating to the corresponding parts. (See the paint·coating)

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

ROCKER OUTER EXTENSION (ASSY)



F25902A

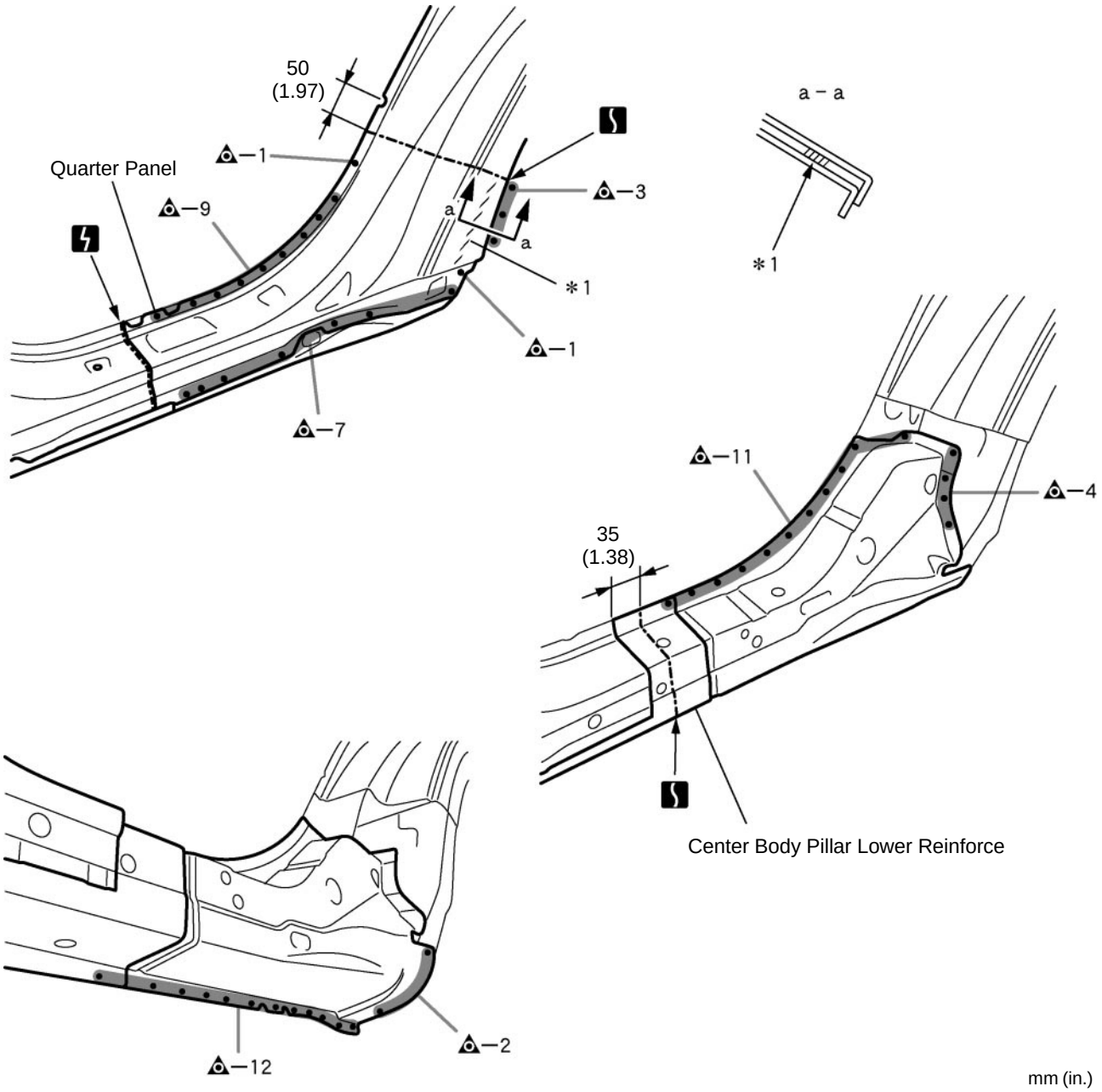
Symbol meaning

: Remove Weld Points : Cut and Join Location

: Cut Location for Supply Parts

F25902B

REMOVAL



F25902

REMOVAL POINT

1 *1 in illustration above indicates where the adhesive is.

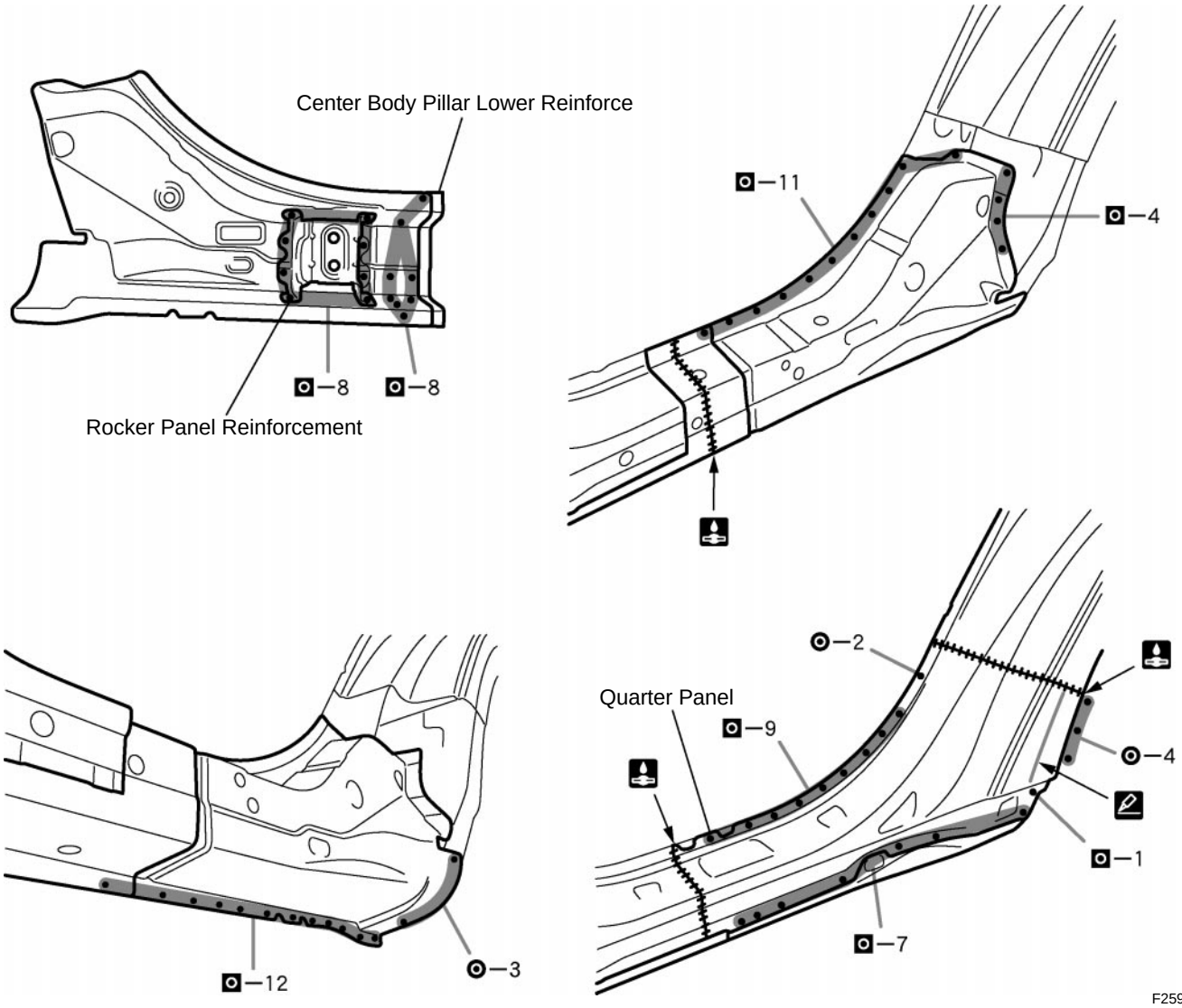
2 After removing the quarter panel, remove the rocker outer extension and center body pillar lower reinforce.

Symbol meaning

: Spot Weld : MIG Plug Weld : Butt Weld : Body Sealer

F25903B

INSTALLATION

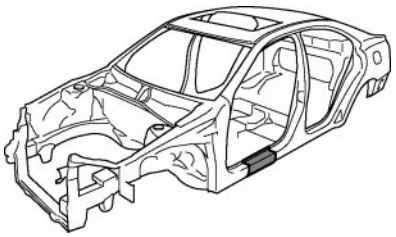


F25903

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 Before temporarily installing the new parts, weld the rocker outer extension, rocker panel reinforcement and center body pillar lower reinforce with the standard number of welding points.
4 Before installing a new part, apply body sealer.
HINT:
1) Apply sealer in an even, continuous bead.
5 After welding the rocker outer extension, rocker panel reinforcement and center body pillar lower reinforce to the vehicle side, install the quarter panel.
6 After welding, apply body sealer and undercoating to the corresponding parts. (See the paint·coating)
7 After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

ROCKER OUTER PANEL (CUT-P)



F25900A

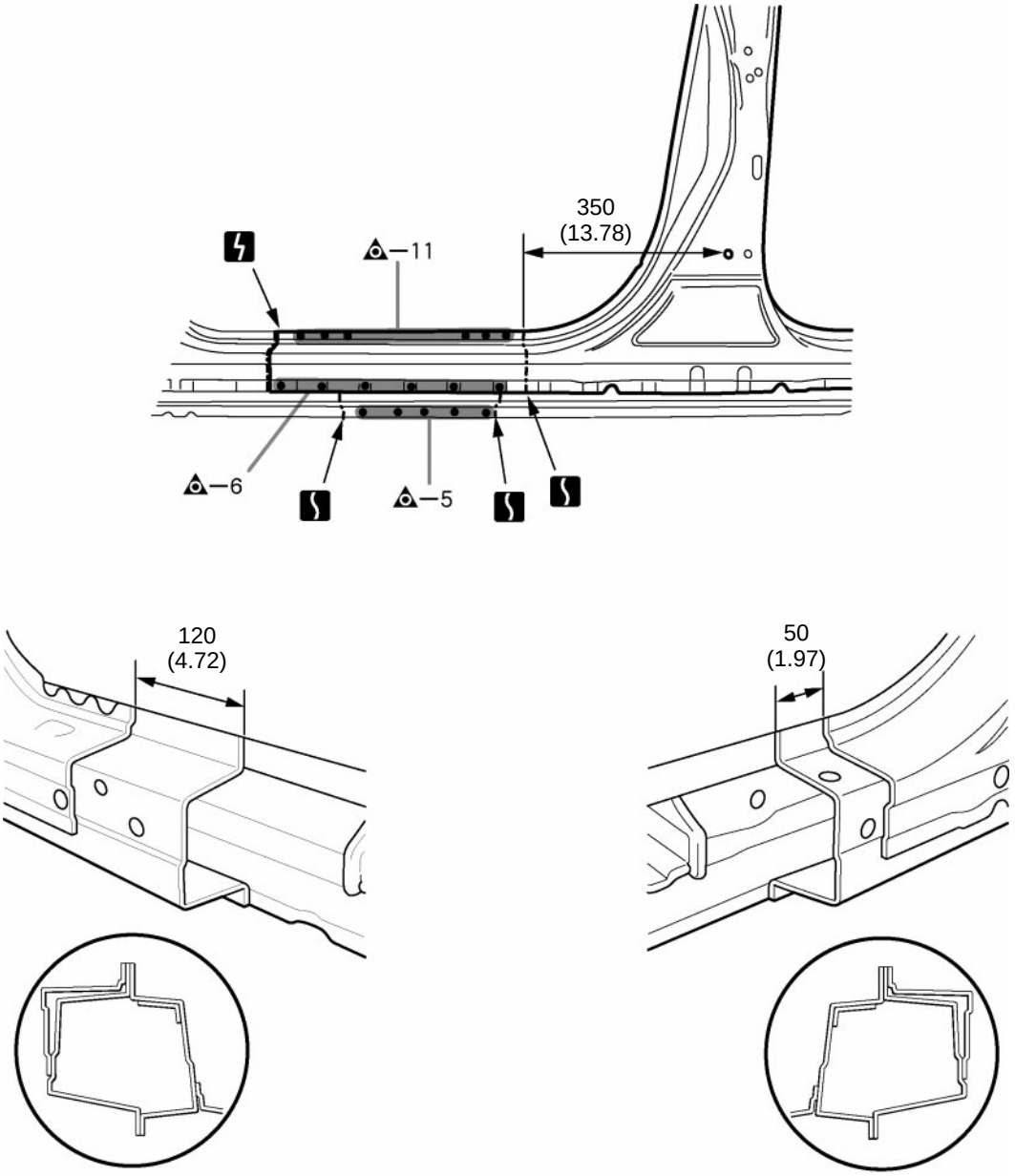
Symbol meaning

: Remove Weld Points : Cut and Join Location

: Cut Location for Supply Parts

F25900B

REMOVAL



mm (in.)

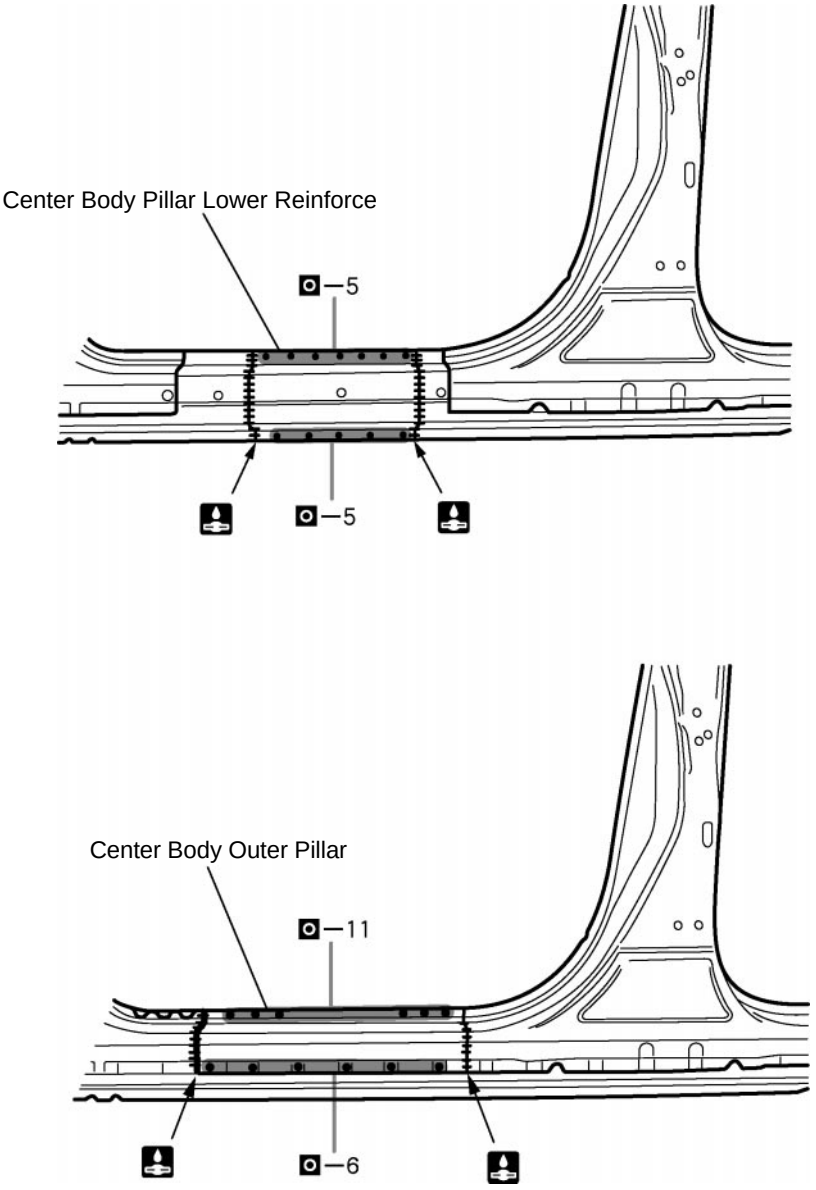
F25900

Symbol meaning

: MIG Plug Weld : Butt Weld

F25901B

INSTALLATION

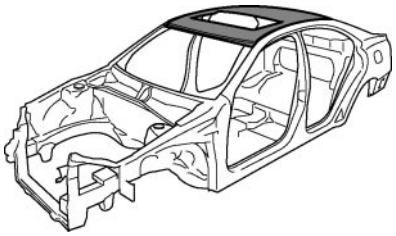


F25901

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 After welding, apply body sealer to the corresponding parts. (See the paint·coating)
4 After welding the center body pillar lower reinforce to the vehicle side, install the center body outer pillar.
5 After applying the top coat, apply anti-rust agent to the internal panel portion of the closed section structural weld points.

ROOF PANEL (ASSY) : Moon Roof



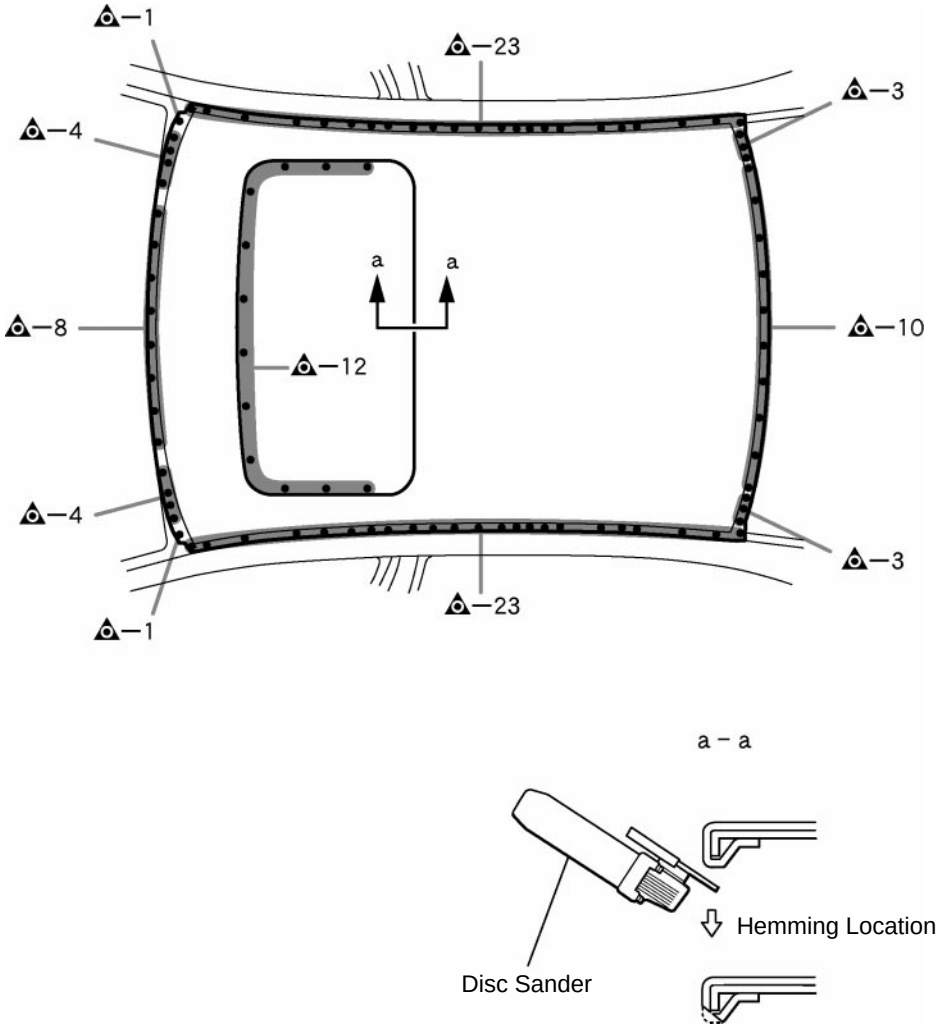
F25924A

Symbol meaning

: Remove Weld Points

F25924B

REMOVAL



F25924

INSTALLATION POINT

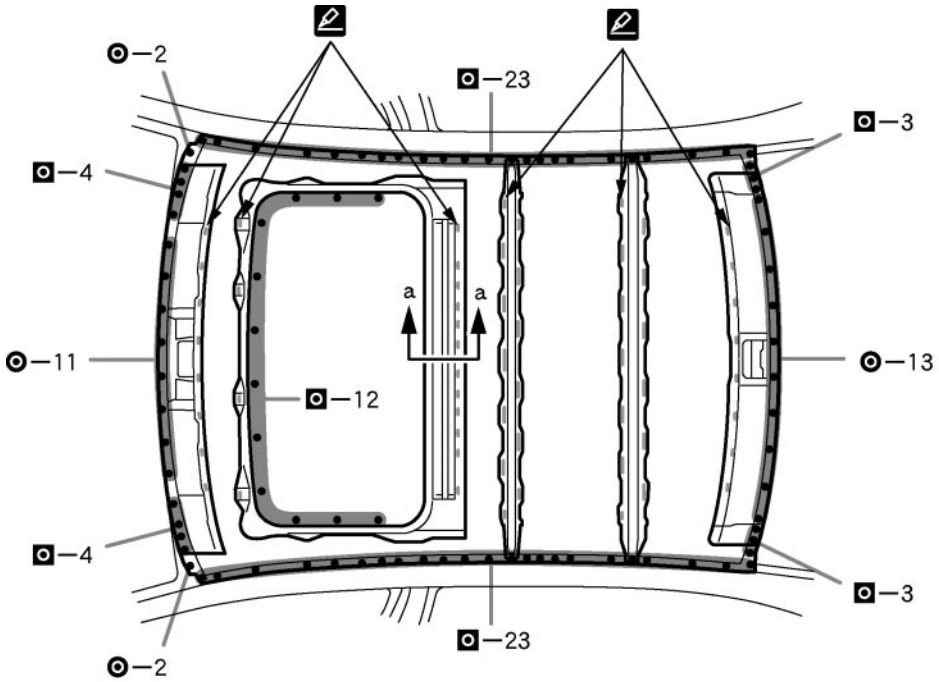
1 Inspect the fitting of the related parts around the new parts before welding. This affects the appearance of the finish.
2 Temporarily install the new parts and measure each part of the new parts in accordance with the body dimension diagram. (See the body dimension diagram)
3 After welding, apply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

Symbol meaning

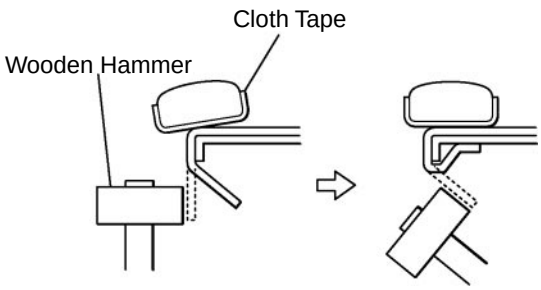
: Spot Weld : MIG Plug Weld : Body Sealer

F25925B

INSTALLATION



a - a



F25925

INSTALLATION POINT

1 Before temporarily installing the new parts, apply body sealer to the windshield header panel, roof panel reinforcement and back door opening frame.
HINT:
1) Apply just enough sealer for the new parts to make contact.

FOREWORD

This repair manual has been prepared to provide essential information on body panel repair methods (including cutting and welding operations, but excluding painting) for the LEXUS ES350.

Applicable models: GSV 40 series

This manual consists of body repair methods, exploded diagrams and illustrations of the body components and other information relating to body panel replacement such as handling precautions, etc. However, it should be noted that the front fenders of this LEXUS model are bolted on and require no welding.

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

Body construction will sometimes differ depending on specifications and country of destination. Therefore, please keep in mind that the information contained herein is based on vehicles for general destinations.

For the repair procedures and specifications other than collision-damaged body components of the LEXUS ES350 refer to the repair manuals.

If you require the above manuals, please contact your LEXUS dealer.

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

TOYOTA MOTOR CORPORATION

ABBREVIATIONS USED IN THIS MANUAL

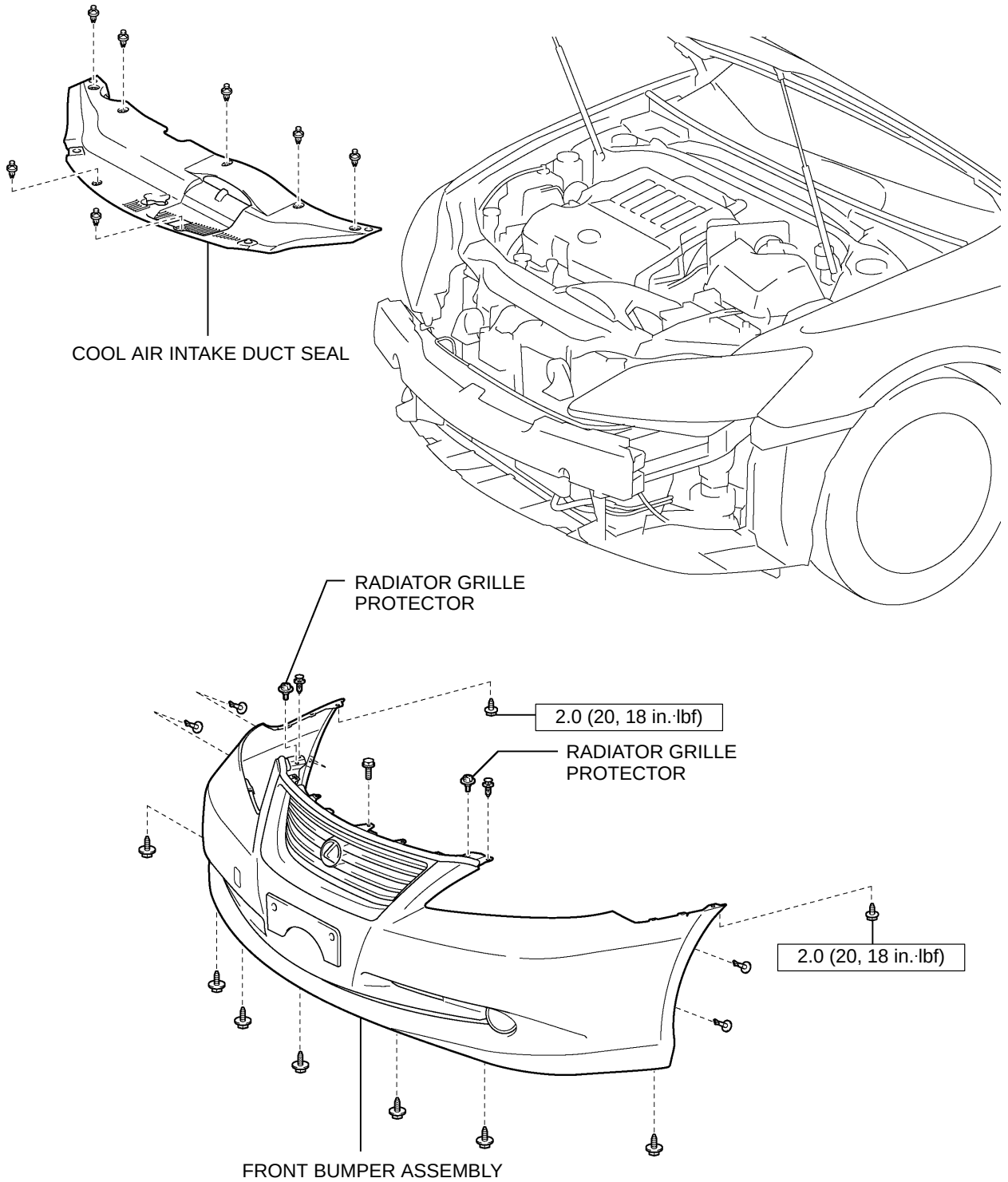
For convenience, the following abbreviations are used in this manual.

ABS	Antilock Brake System
A/C	Air Conditioner
assy	assembly
ECT	Electronic Controlled Transmission
ECU	Electronic Control Unit
e.g.	Exempli Gratia (for Example)
Ex.	Except
FWD	Front Wheel Drive Vehicles
2WD	Two Wheel Drive Vehicles
4WD	Four Wheel Drive Vehicles
in.	inch
LH	Left-hand
LHD	Left-hand Drive
MIG	Metal Inert Gas
M/Y	Model Year
PPS	Progressive Power Steering
RH	Right-hand
RHD	Right-hand Drive
SRS	Supplemental Restraint System
SSM	Special Service Materials
w/	with
w/o	without

MEMO

COMPONENTS

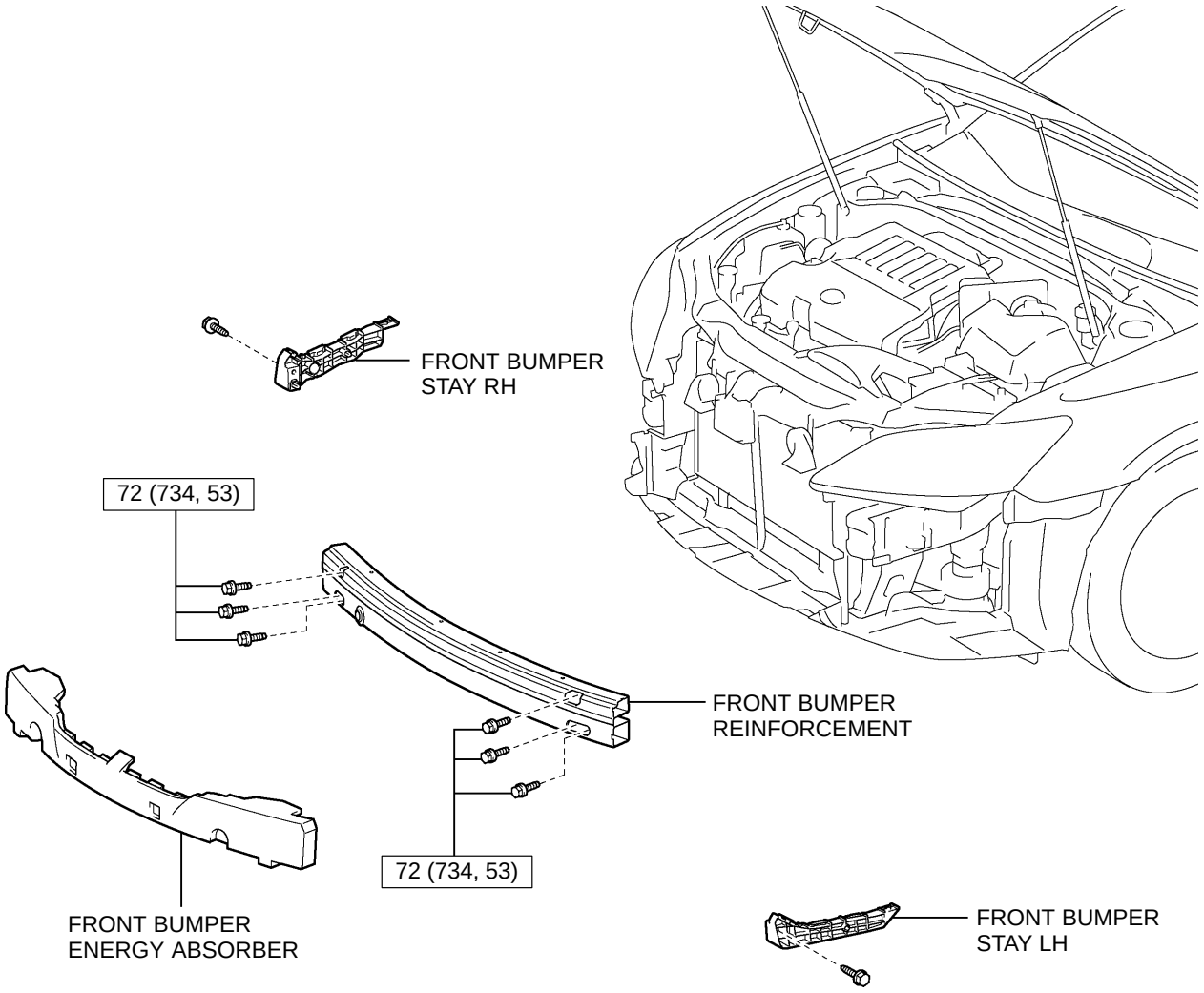
1. Front bumper



CAUTION:
The bolts and nuts must be tightened to the torque specification, as they are related to vehicle safety during a collision.

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

B146197

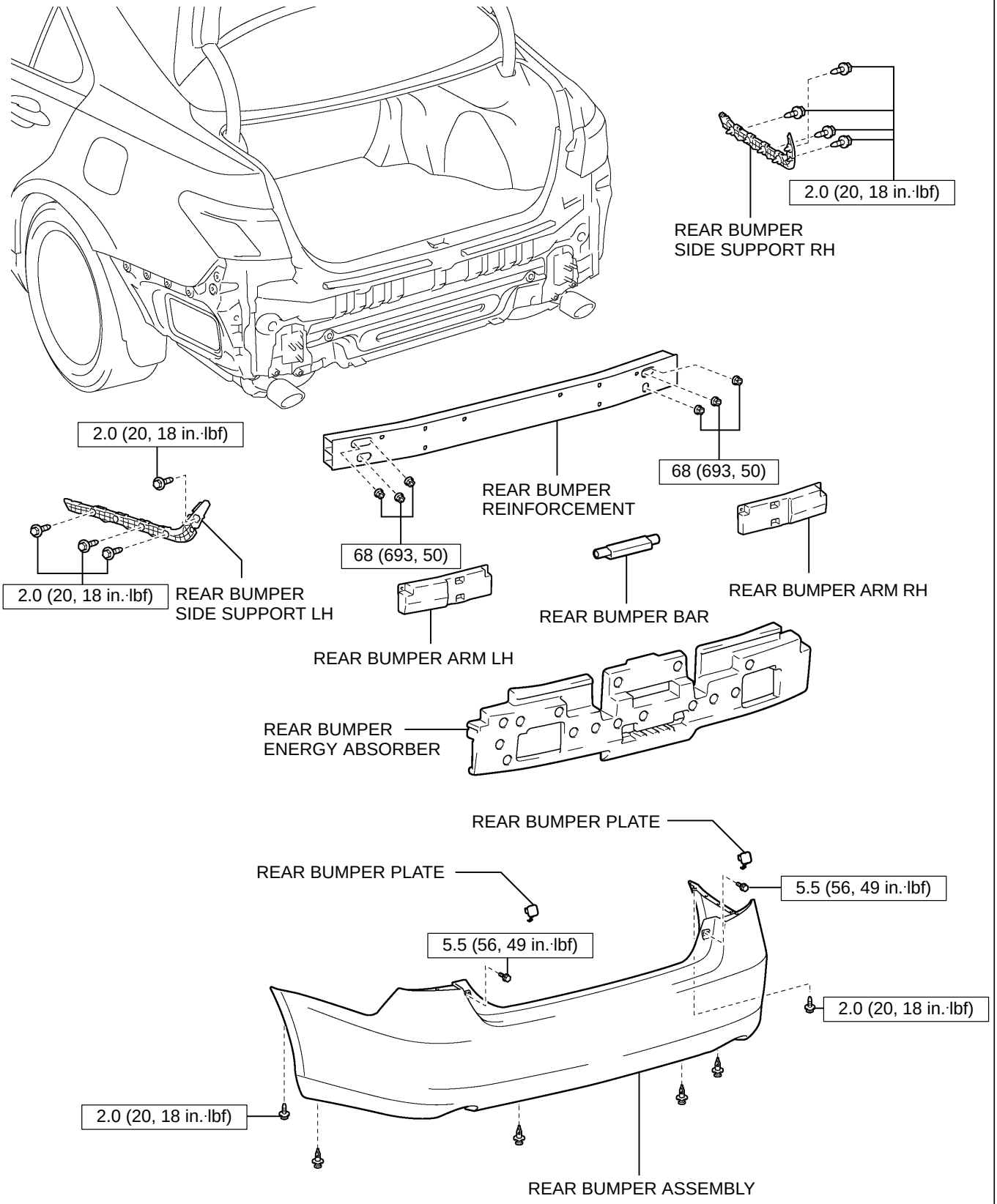


CAUTION:
The bolts and nuts must be tightened to the torque specification, as they are related to vehicle safety during a collision.

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

B146200

2. Rear bumper

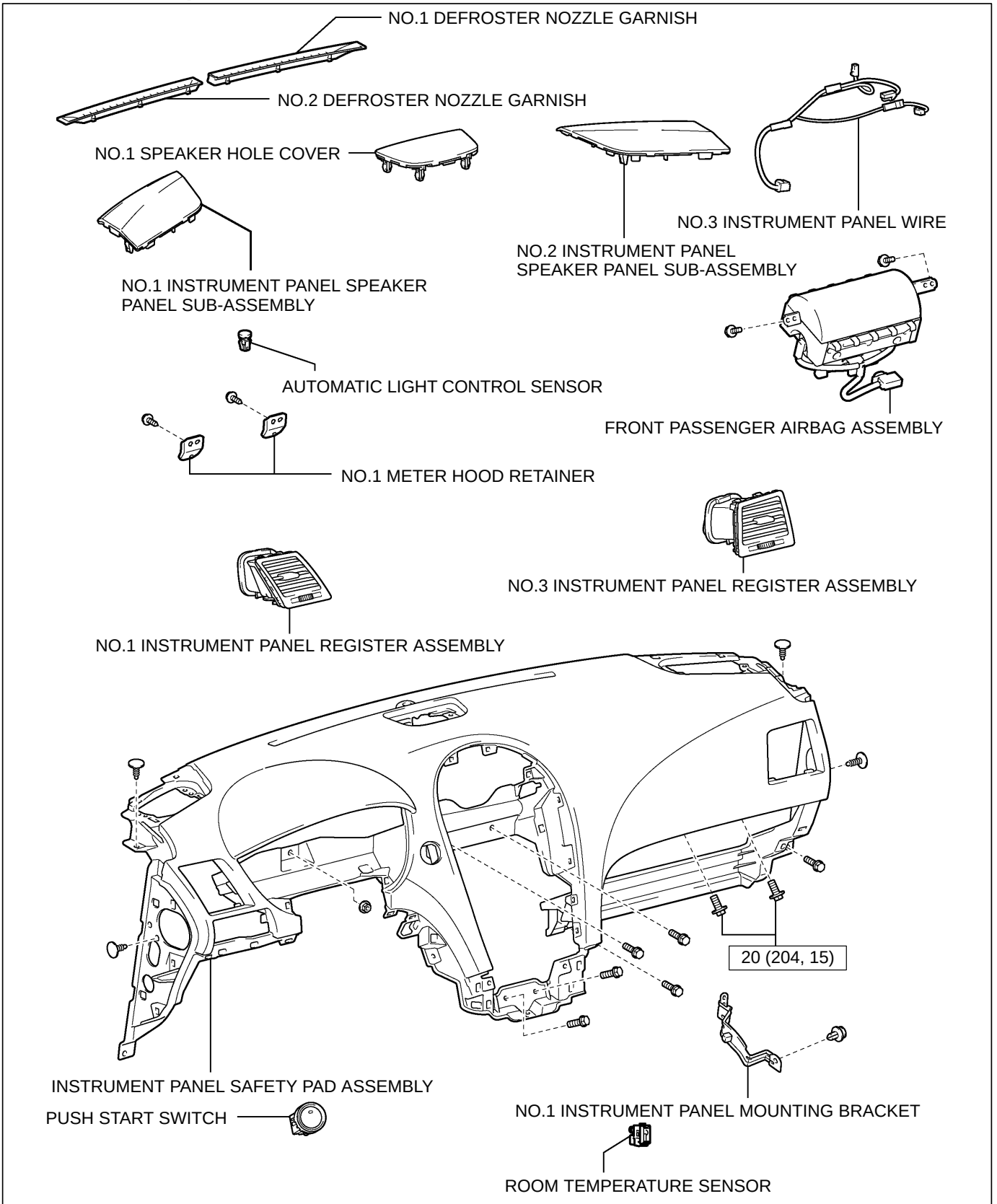


CAUTION:
The bolts and nuts must be tightened to the torque specification, as they are related to vehicle safety during a collision.

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

B145728

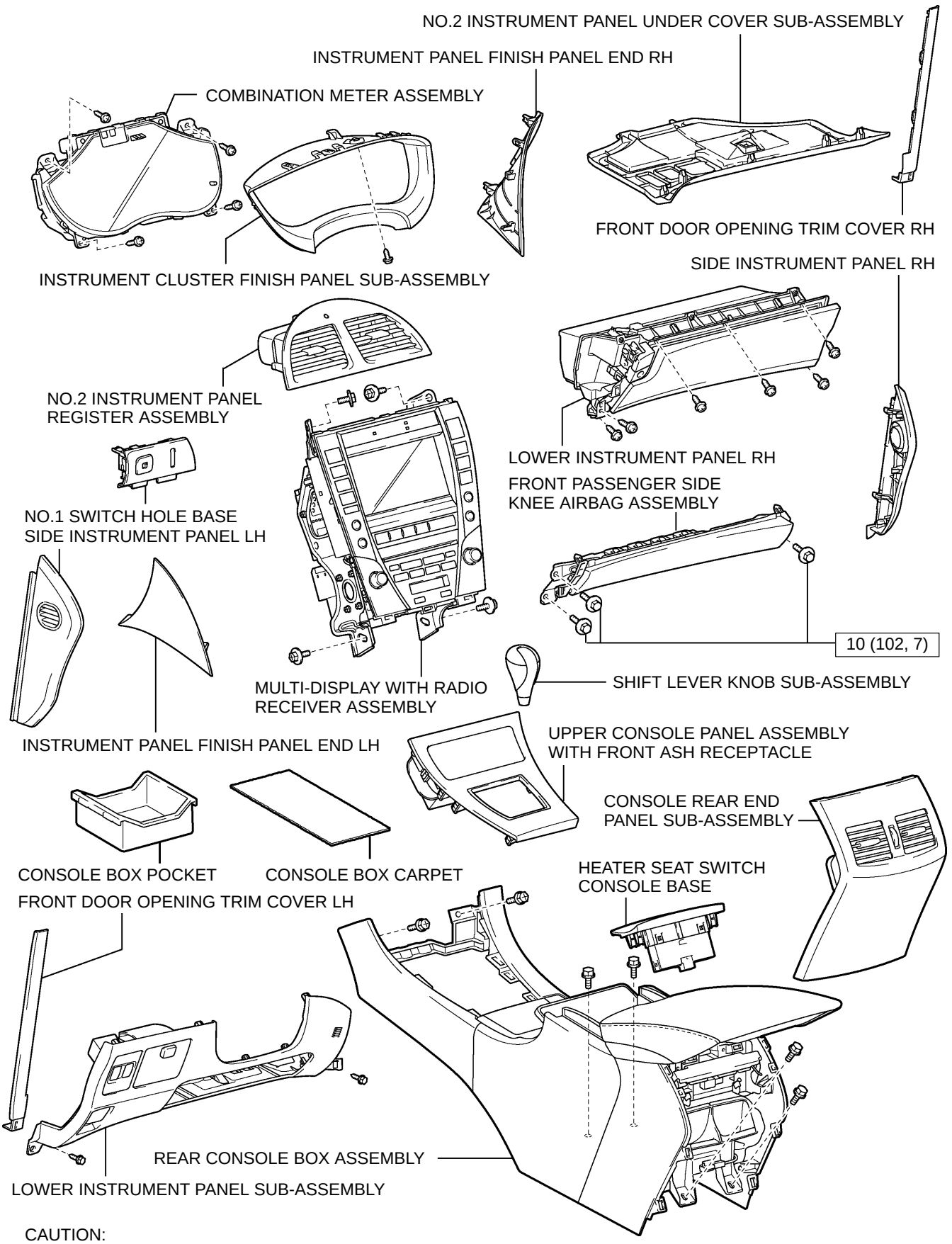
3. Instrument panel



CAUTION:
The bolts and nuts must be tightened to the torque specification, as they are related to vehicle safety during a collision.

N·m (kgf·cm, ft.·lbf) : Specified torque ● Non-reusable part

B145859

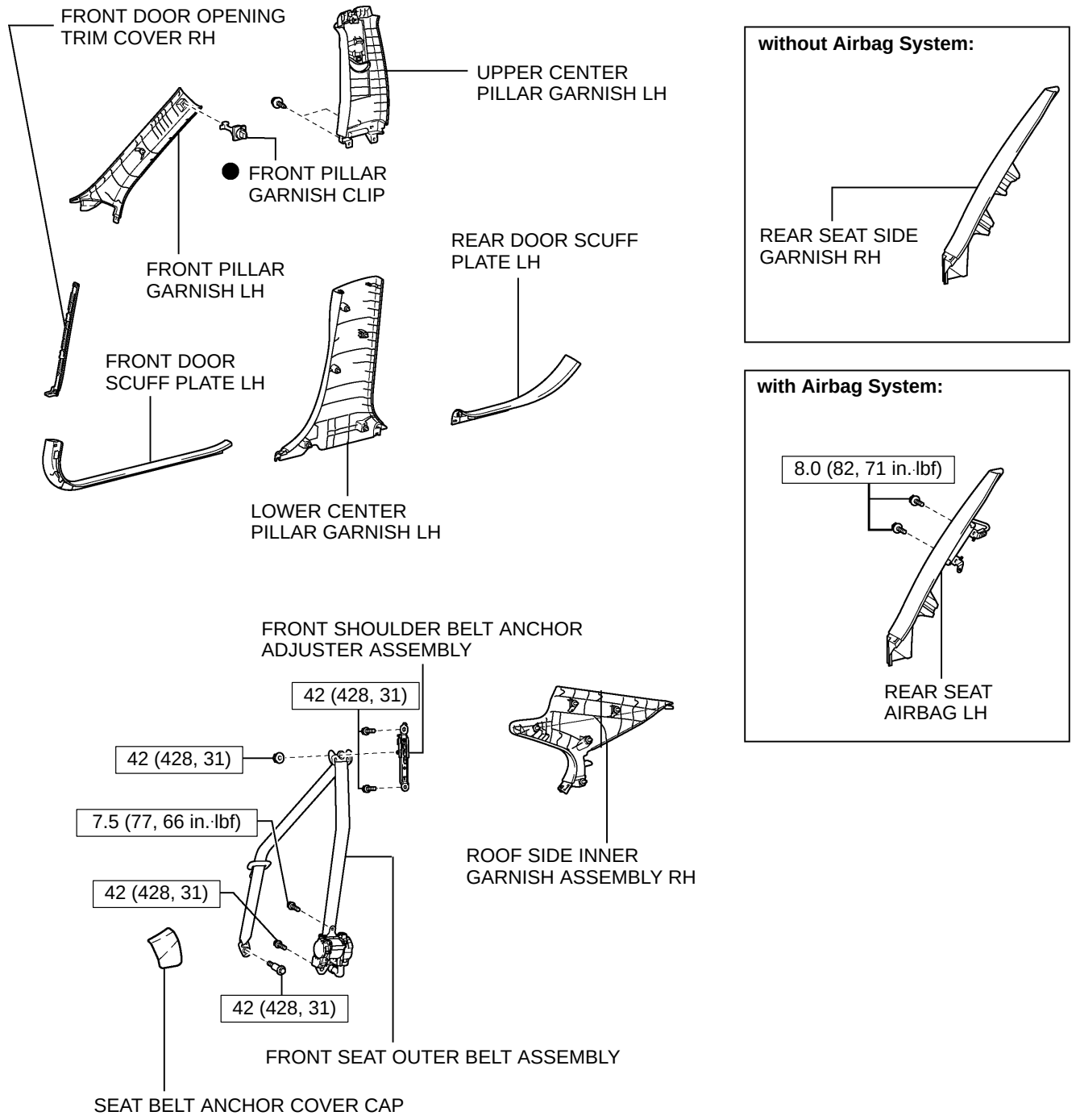


CAUTION:
The bolts and nuts must be tightened to the torque specification, as they are related to vehicle safety during a collision.

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

B145856

4. Interior trim

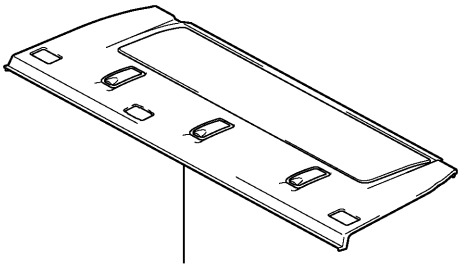


CAUTION:
The bolts and nuts must be tightened to the torque specification, as they are related to vehicle safety during a collision.

N·m (kgf·cm, ft.·lbf) : Specified torque ● Non-reusable part

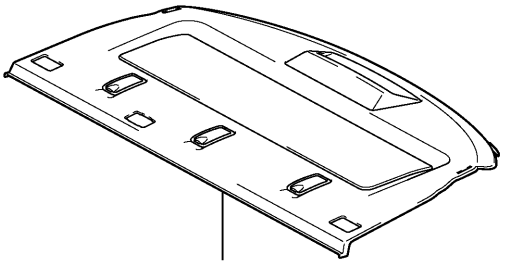
B141006

with Rear Sunshade:

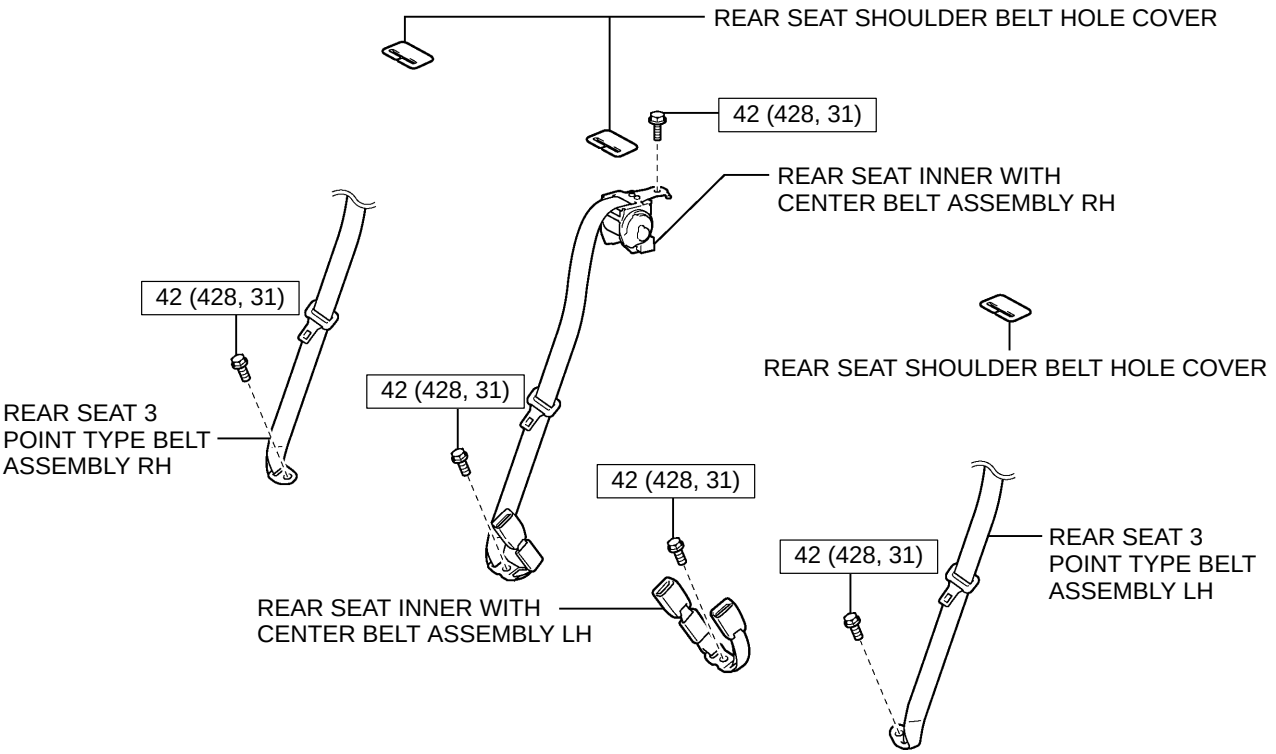


PACKAGE TRAY TRIM PANEL ASSEMBLY

without Rear Sunshade:



PACKAGE TRAY TRIM PANEL ASSEMBLY



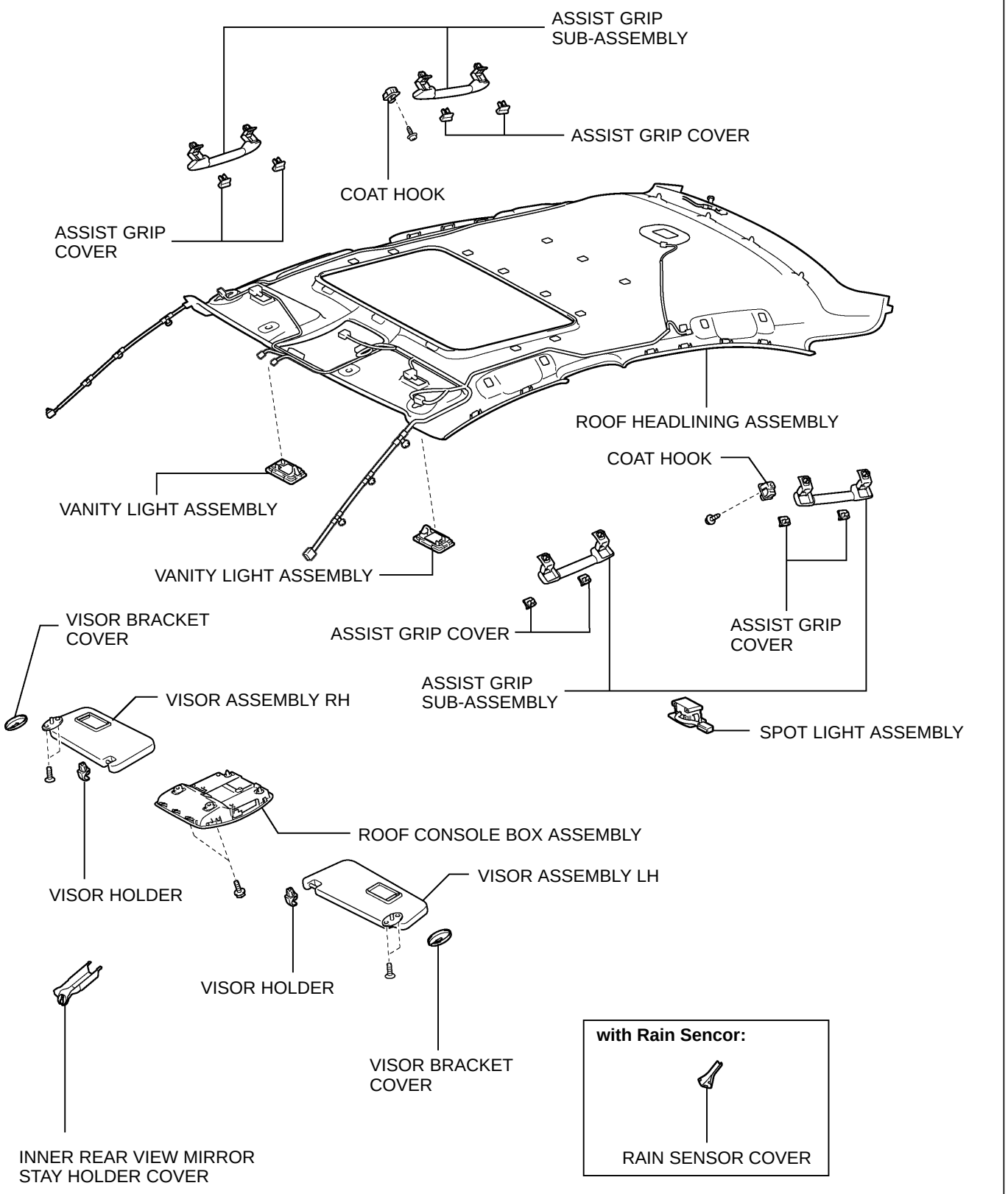
CAUTION:
The bolts and nuts must be tightened to the torque specification, as they are related to vehicle safety during a collision.

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

H

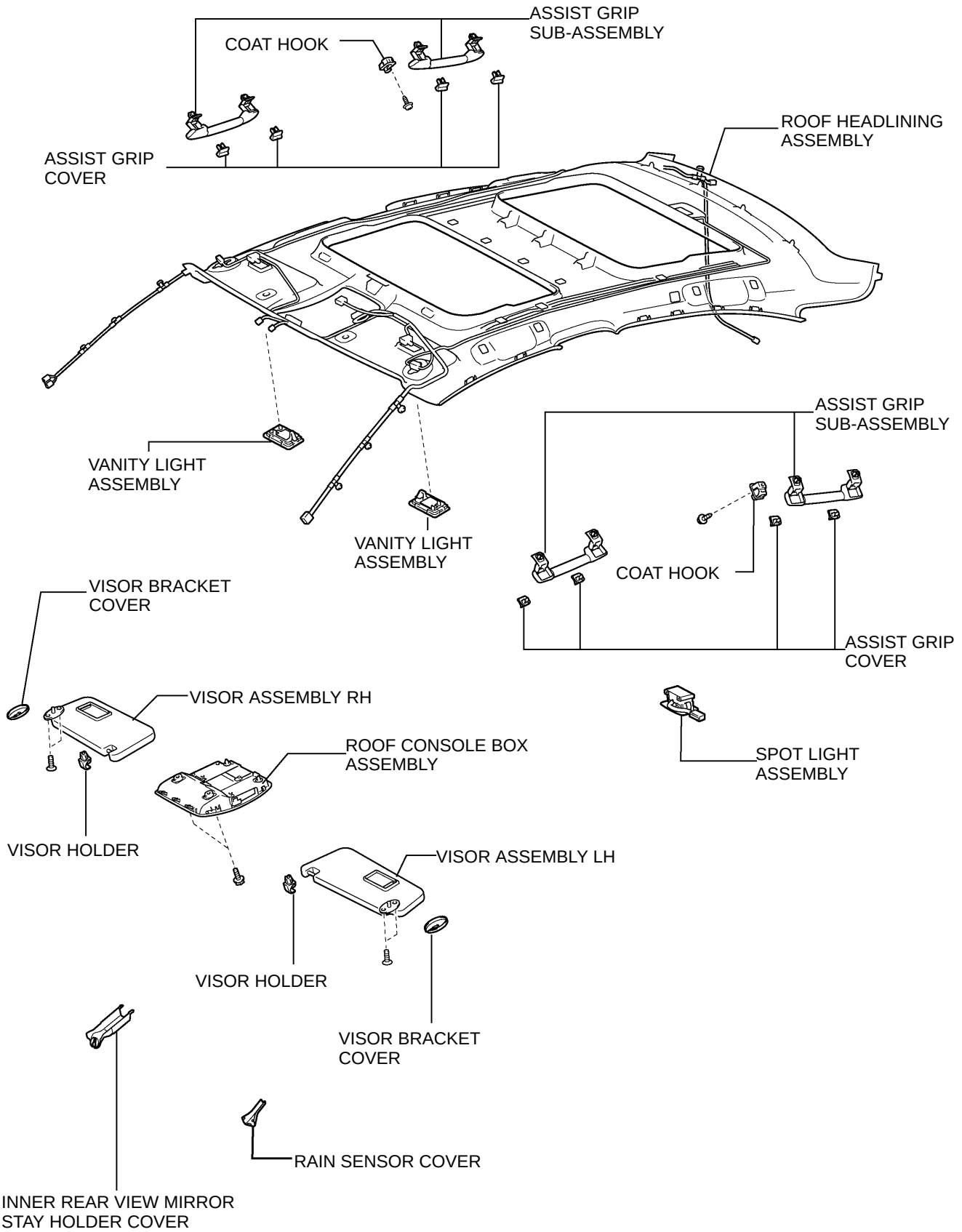
B142776

for Standard:



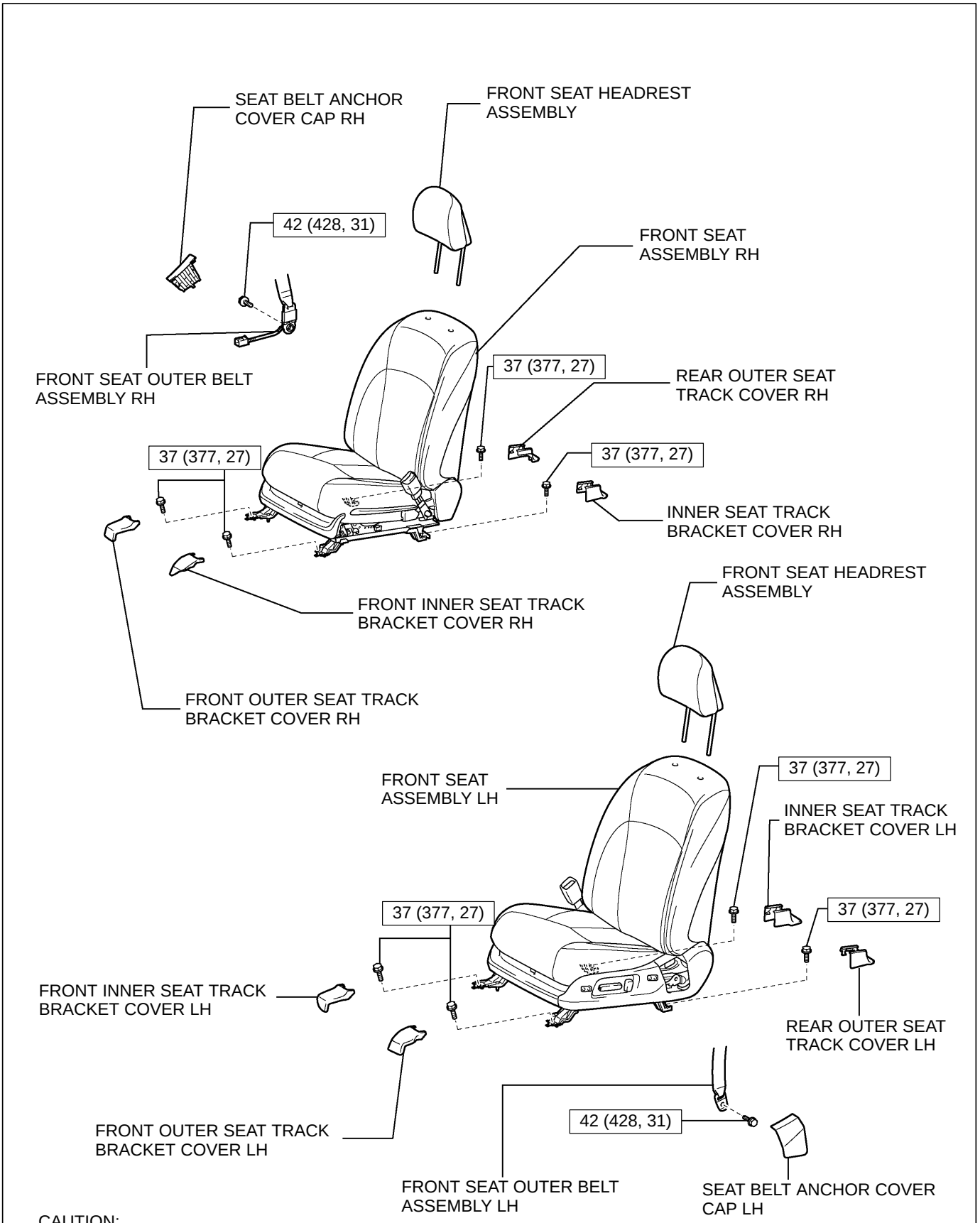
B140934

for Glass Roof:



B140973

5. Front seat

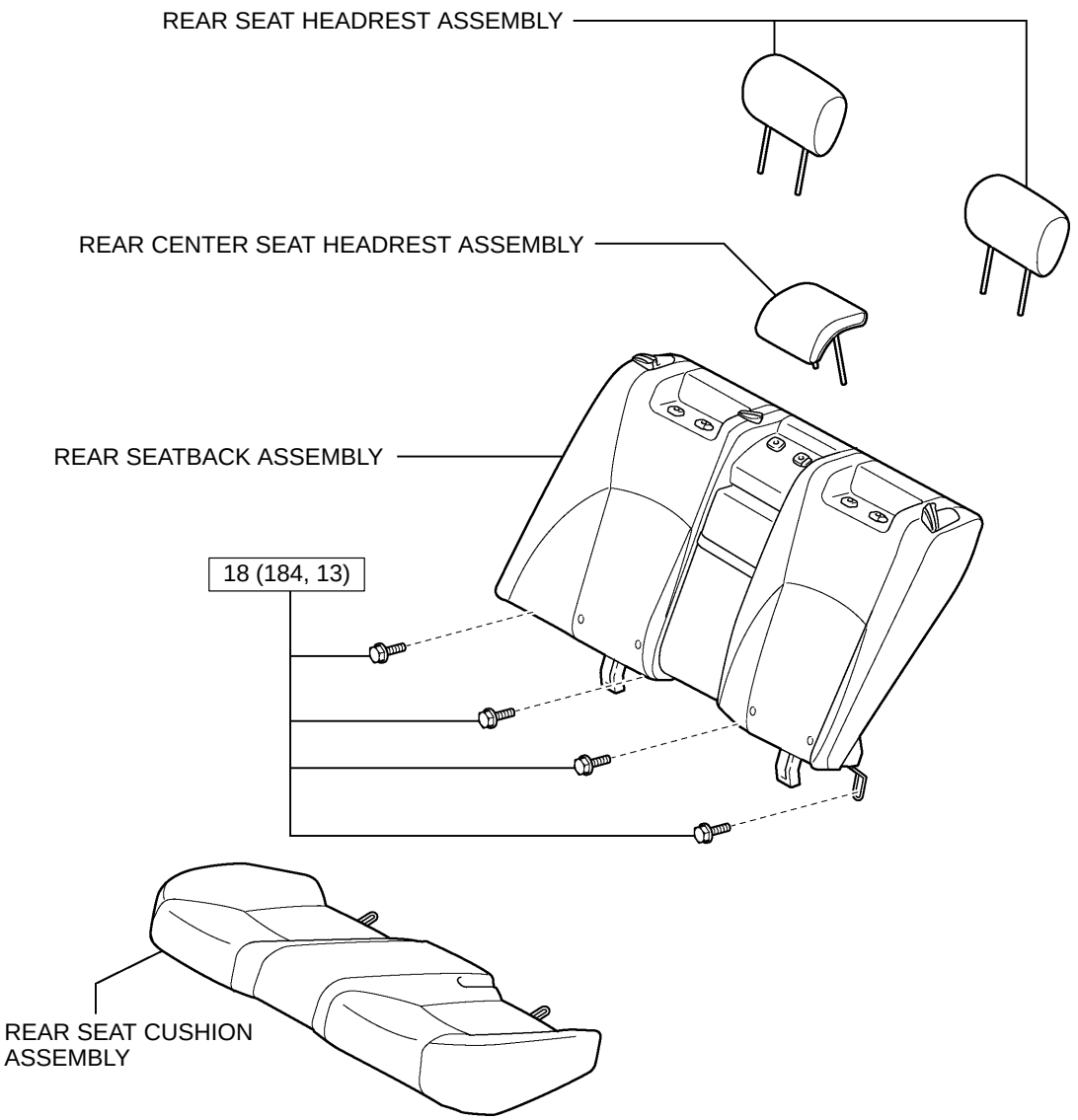


CAUTION:
The bolts and nuts must be tightened to the torque specification, as they are related to vehicle safety during a collision.

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

B141005

6. Rear seat

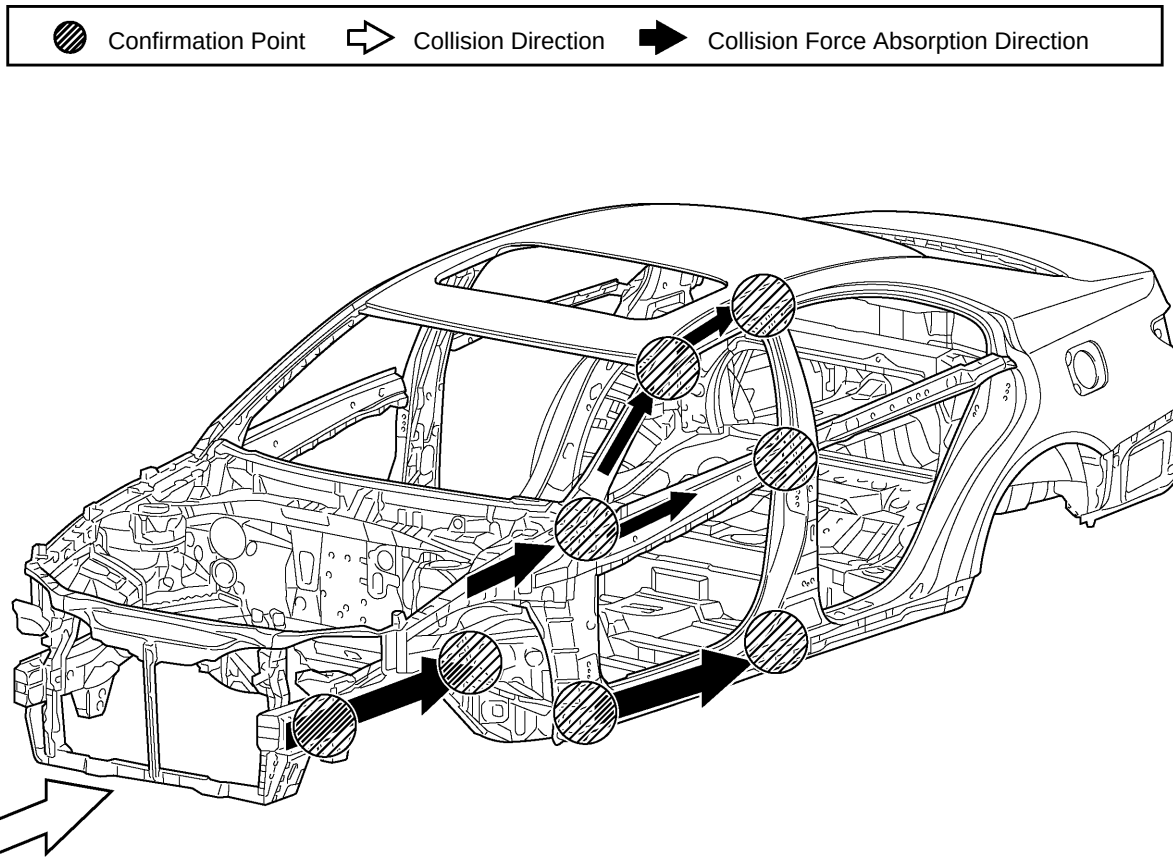


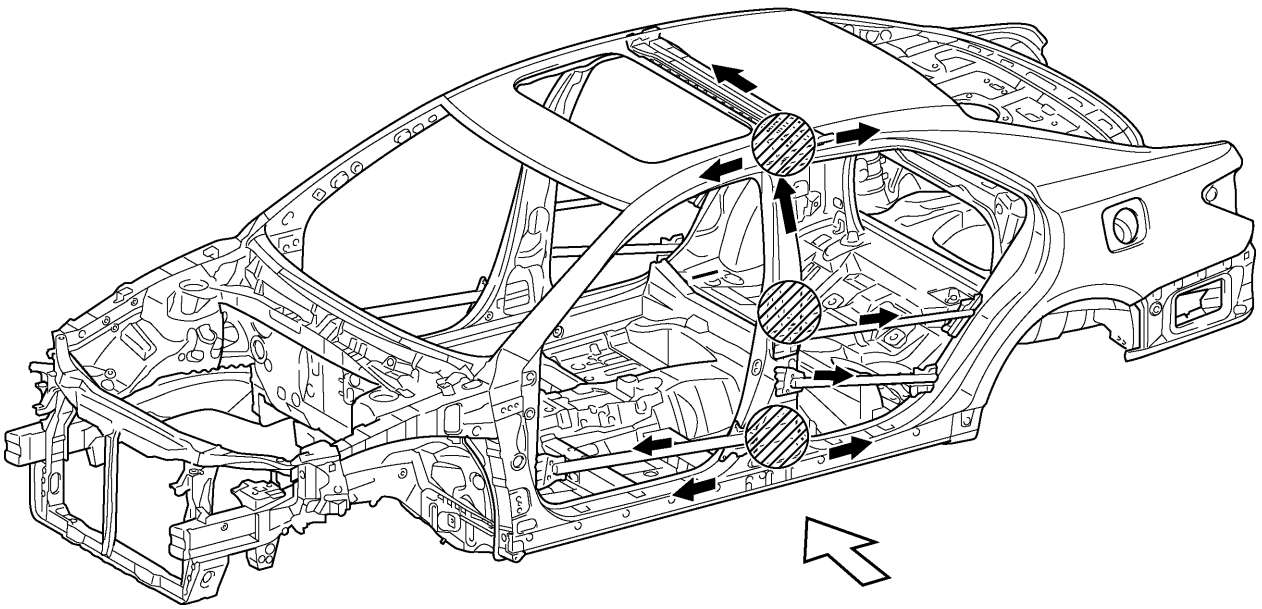
CAUTION:
The bolts and nuts must be tightened to the torque specification, as they are related to vehicle safety during a collision.

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

B142786

DAMAGE DIAGNOSIS





F30276

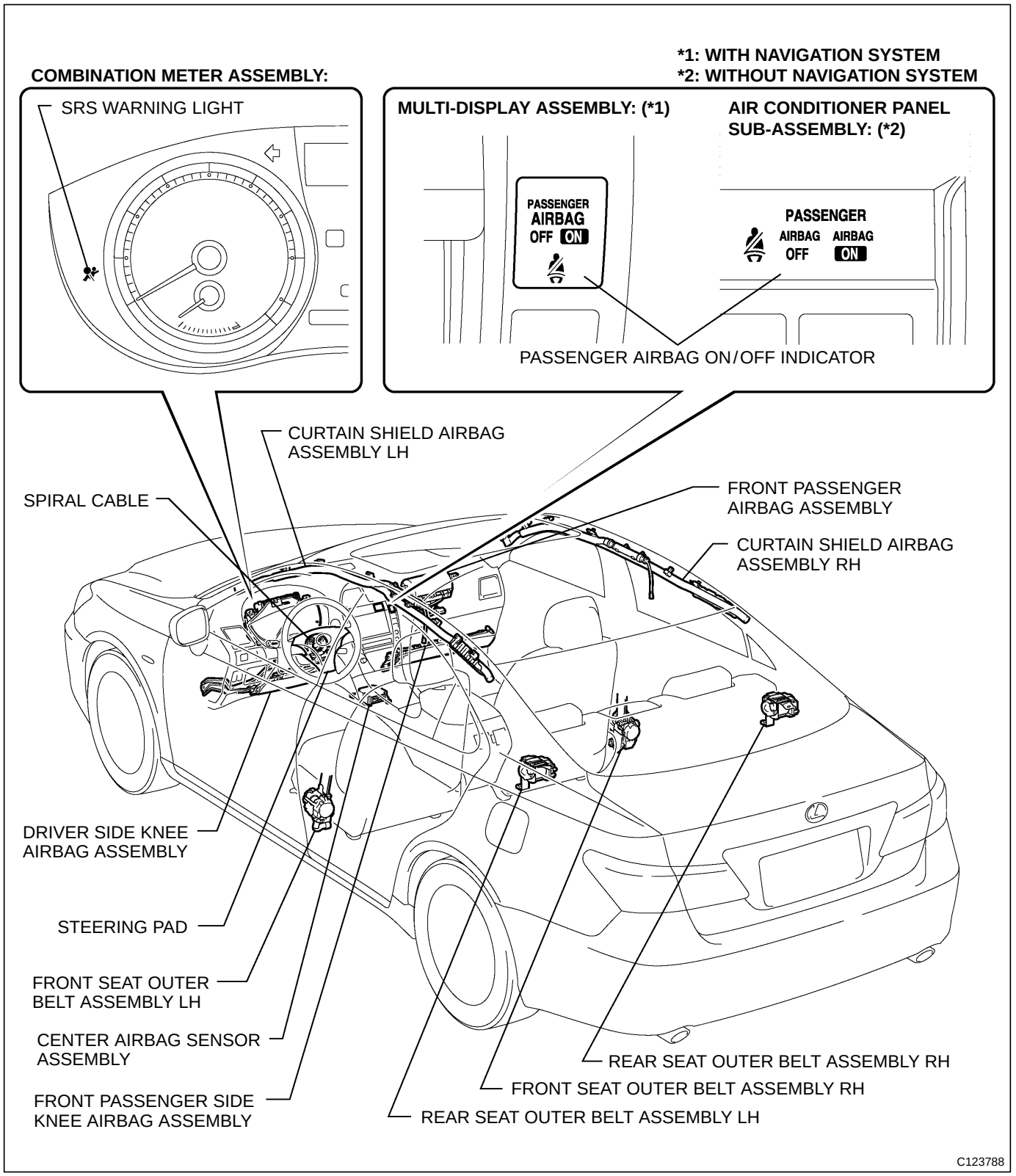
DAMAGED VEHICLE DISPOSAL PRECAUTION (SRS AIRBAG SYSTEM)

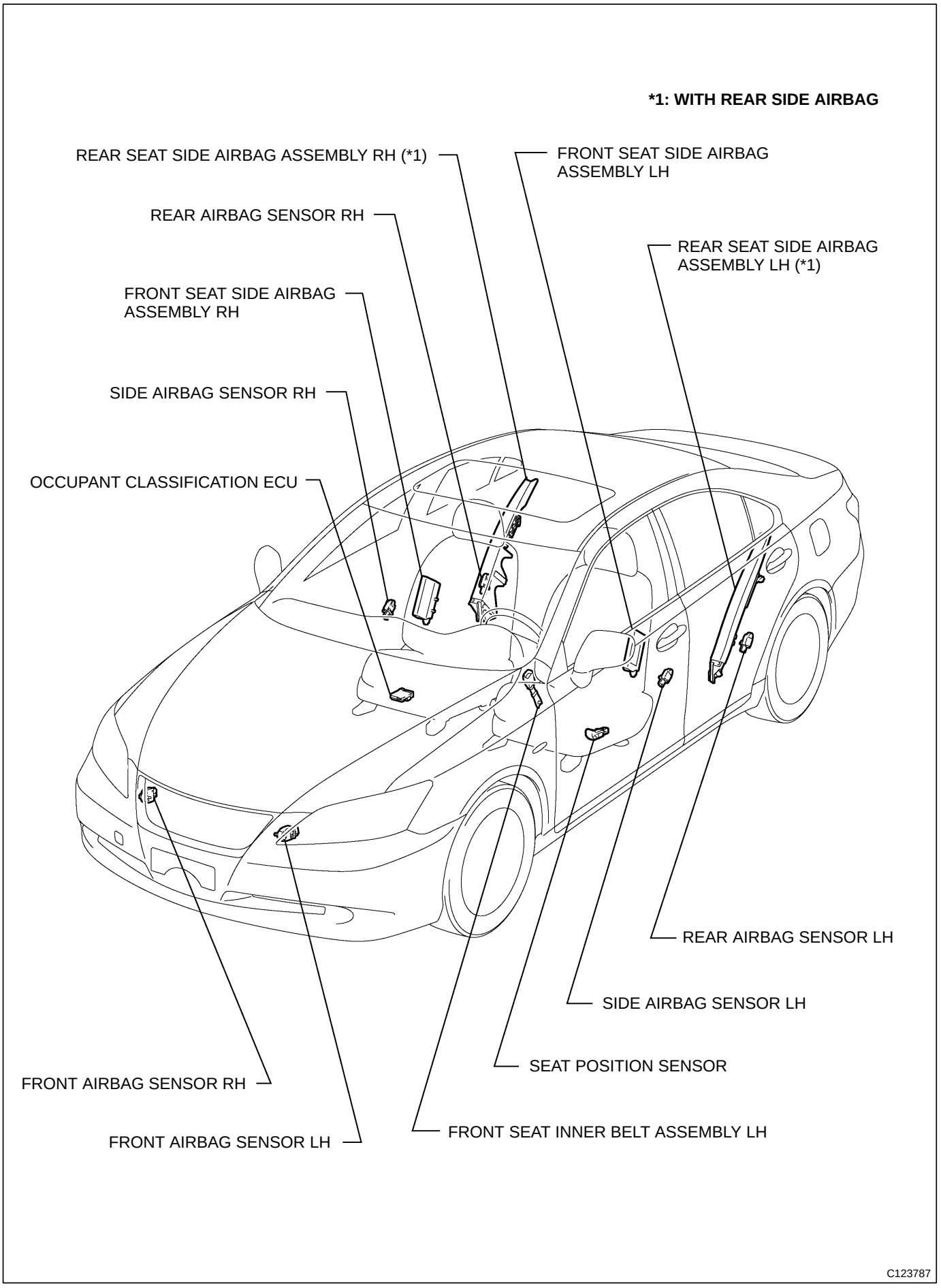
For SRS airbag system adjustment methods, refer to the LEXUS Repair Manual.

(1) When using an electric welder, first remove all airbags and the seat belt pretensioner.

(2) If impacts are likely to occur to the front airbag sensor, side airbag sensor, rear airbag sensor or seat position sensor, remove each sensor as necessary beforehand.

(3) Do not allow the front airbag sensor, side airbag sensor, rear airbag sensor or seat position sensor to become heated to high temperatures.

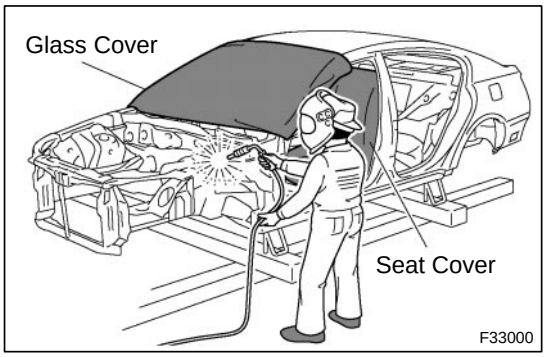



*1: WITH REAR SIDE AIRBAG
REAR SEAT SIDE AIRBAG ASSEMBLY RH (*1)
FRONT SEAT SIDE AIRBAG ASSEMBLY LH
REAR AIRBAG SENSOR RH
REAR SEAT SIDE AIRBAG ASSEMBLY LH (*1)
FRONT SEAT SIDE AIRBAG ASSEMBLY RH
SIDE AIRBAG SENSOR RH
OCCUPANT CLASSIFICATION ECU
REAR AIRBAG SENSOR LH
SIDE AIRBAG SENSOR LH
SEAT POSITION SENSOR
FRONT AIRBAG SENSOR RH
FRONT SEAT INNER BELT ASSEMBLY LH
FRONT AIRBAG SENSOR LH
C123787

PRECAUTION

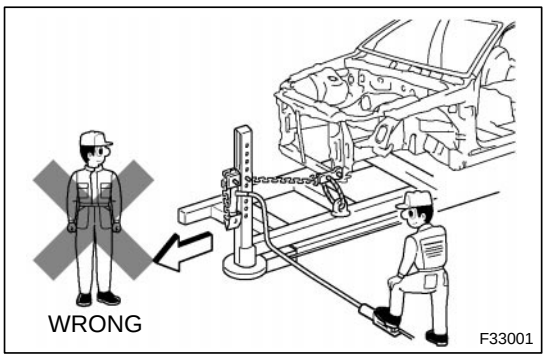
GENERAL REPAIR INSTRUCTIONS

1. WORK PRECAUTIONS



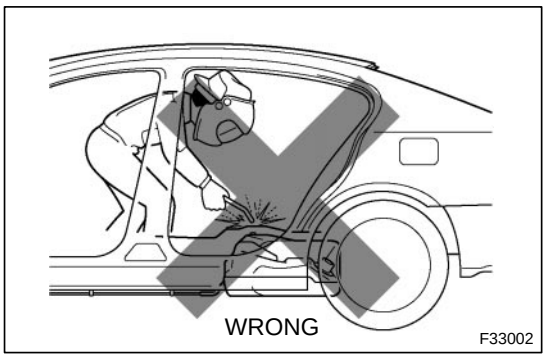
(a) VEHICLE PROTECTION

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



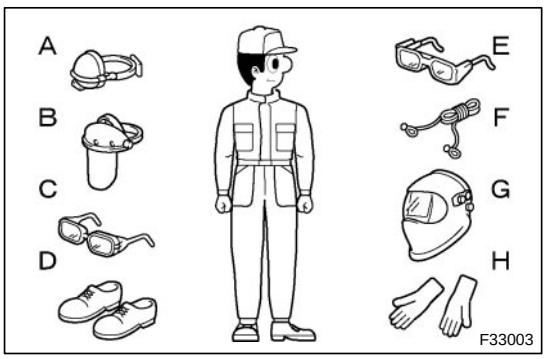
(b) SAFETY

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



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

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



(c) SAFETY WORK CLOTHES

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

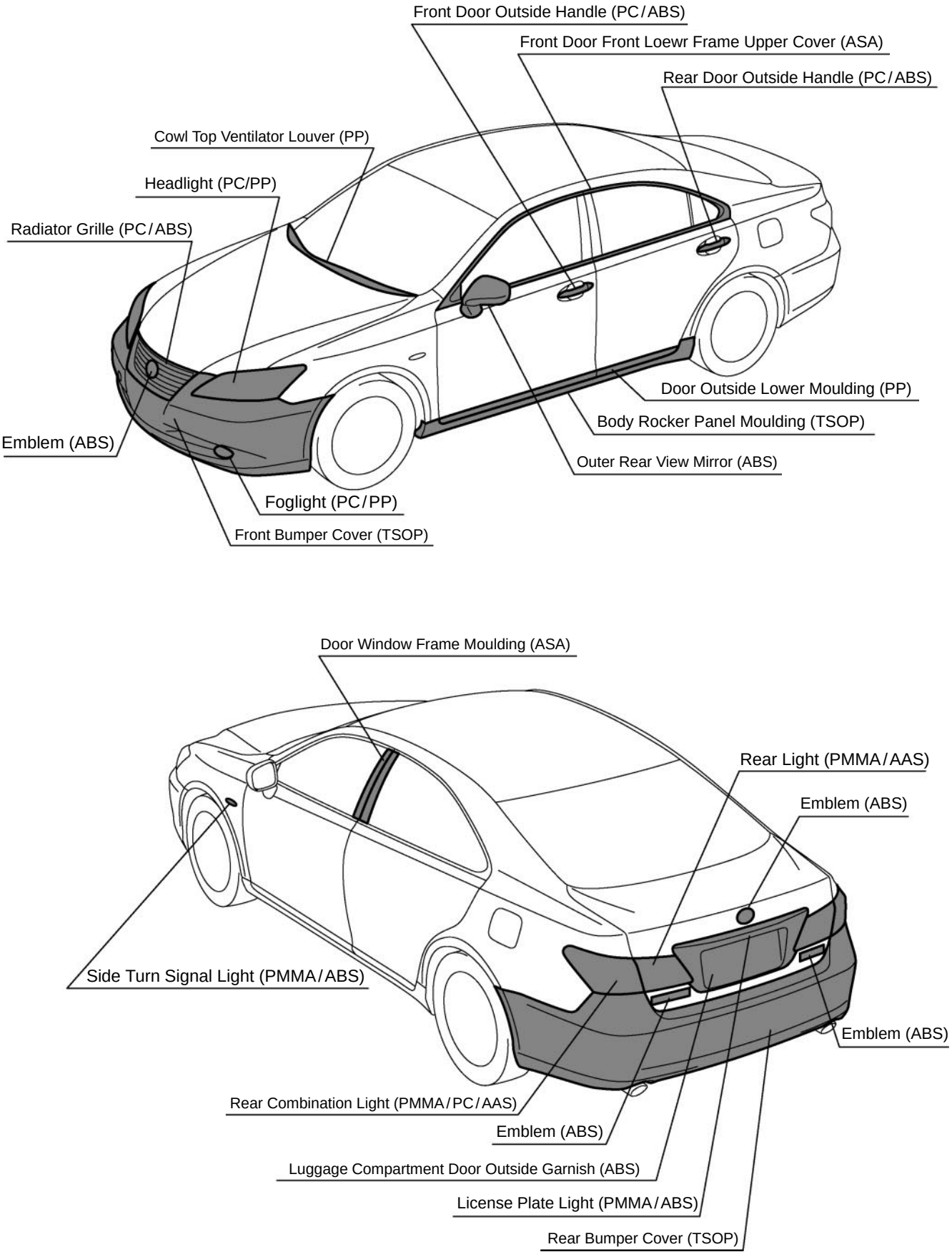
Code	Name
A	Dust-Prevention Mask
B	Face Protector
C	Eye Protector
D	Safety Shoes
E	Welder's Glasses
F	Ear Plugs
G	Head Protector
H	Welder's Gloves

HANDLING PRECAUTIONS OF PLASTIC BODY PARTS

1. The repair procedure for plastic body parts must conform with the type of plastic material.
2. Plastic body parts are identified by the codes in the following table.
3. When repairing metal body parts adjoining plastic body parts (by brazing, frame cutting, welding, painting etc.), consideration must be given to the properties of the plastic.

Code	Material name	Heat* resistant temperature limit °C (°F)	Resistance to alcohol or gasoline	Notes
AAS	Acrylonitrile Acrylic Styrene	80 (176)	Alcohol is harmless if applied only for short time in small amounts (e.g., quick wiping to remove grease).	Avoid gasoline and organic or aromatic solvents.
ABS	Acrylonitrile Butadiene Styrene	80 (176)	Alcohol is harmless if applied only for short time in small amounts (e.g., quick wiping to remove grease).	Avoid gasoline and organic or aromatic solvents.
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.
PC	Polycarbonate	120 (248)	Alcohol is harmless.	Avoid gasoline, brake fluid, wax, wax removers and organic solvents. Avoid alkali.
PP	Polypropylene	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.	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.

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


Front Door Outside Handle (PC/ABS)
Front Door Front Loewr Frame Upper Cover (ASA)
Rear Door Outside Handle (PC/ABS)
Cowl Top Ventilator Louver (PP)
Headlight (PC/PP)
Radiator Grille (PC/ABS)
Door Outside Lower Moulding (PP)
Body Rocker Panel Moulding (TSOP)
Emblem (ABS)
Outer Rear View Mirror (ABS)
Foglight (PC/PP)
Front Bumper Cover (TSOP)
Door Window Frame Moulding (ASA)
Rear Light (PMMA/AAS)
Emblem (ABS)
Side Turn Signal Light (PMMA/ABS)
Emblem (ABS)
Rear Combination Light (PMMA/PC/AAS)
Emblem (ABS)
Luggage Compartment Door Outside Garnish (ABS)
License Plate Light (PMMA/ABS)
Rear Bumper Cover (TSOP)
F30275

HANDLING PRECAUTIONS ON RELATED COMPONENTS

1. BRAKE SYSTEM

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

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

2. DRIVE TRAIN AND CHASSIS

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

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

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

3. COMPONENTS ADJACENT TO THE BODY PANELS

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

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

  HINT: Apply touch-up paint to any damaged paint surfaces.
- Before drilling or cutting sections, make sure that there are no wires, etc., on the reverse side.

4. ECU (ELECTRONIC CONTROL UNIT)

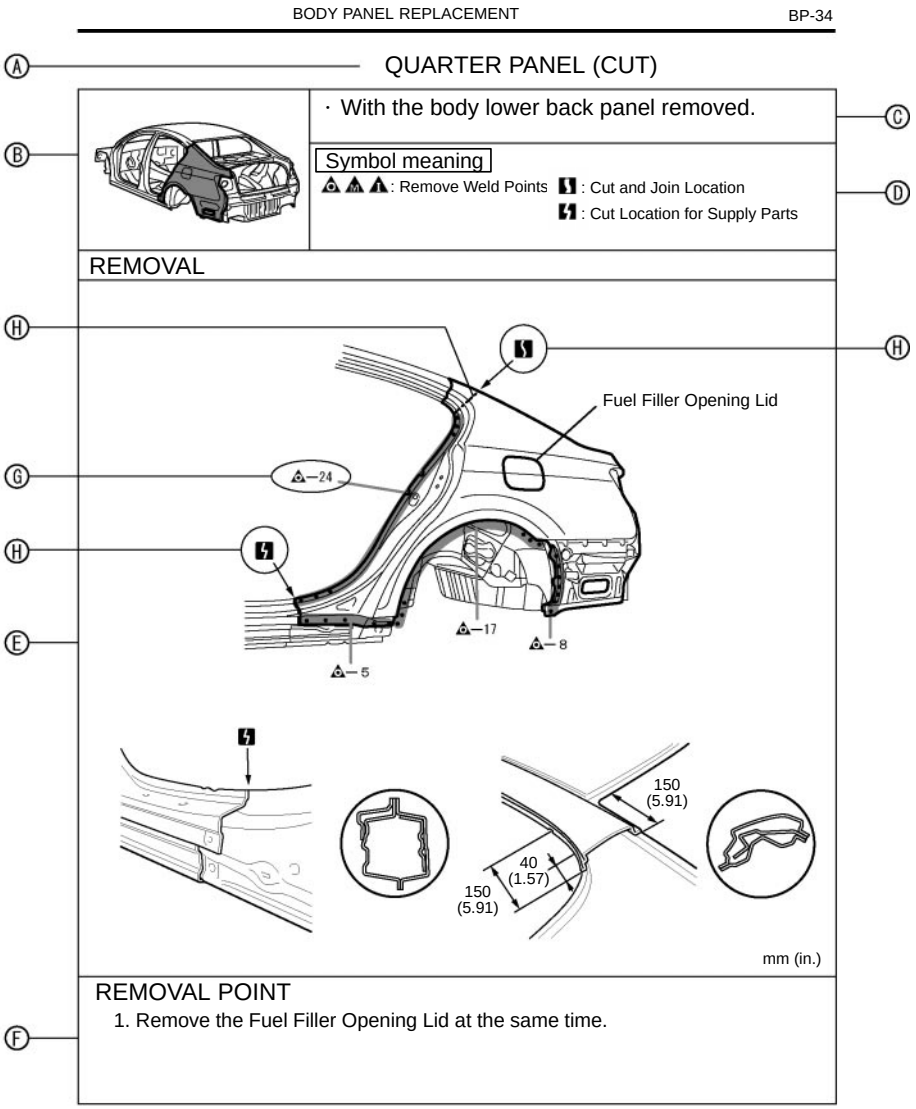
Many ECUs are mounted in this vehicle.
Take the following precautions during body repair to prevent damage to the ECUs.

- Before starting electric welding operations, disconnect the negative (-) terminal cable from the battery.
  When the negative (-) terminal cable is disconnected from the battery, the memory of the clock and audio systems will be erased. So, before starting work, make a record of the contents memorized by each memory system. Then when work is finished, reset the clock and audio systems as before.
  When the vehicle has tilt and telescopic steering, power seats and outside rear view mirrors, which are all equipped with a memory function, it is not possible to make a record of the memory contents. When the operation is finished, it will be necessary to explain this fact to the customer, and request the customer to adjust the features and reset the memory.
- Do not expose the ECUs to ambient temperatures above 80°C (176°F).

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

HOW TO USE THIS MANUAL

1. BODY PANEL REPLACEMENT THIS MANUAL



Ⓐ REPLACEMENT PART AND METHOD

QUARTER PANEL (CUT)

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

Ⓑ PART LOCATION

Ⓒ REMOVAL CONDITIONS

Ⓓ SYMBOL MEANING

Ⓔ REMOVAL DIAGRAM

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

Ⓕ REMOVAL GUIDE

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

Ⓖ INSTALLATION OF WELD POINTS

Weld method and panel position symbols (See page IN-36)

Ⓗ SYMBOLS (See page IN-34)

F33027

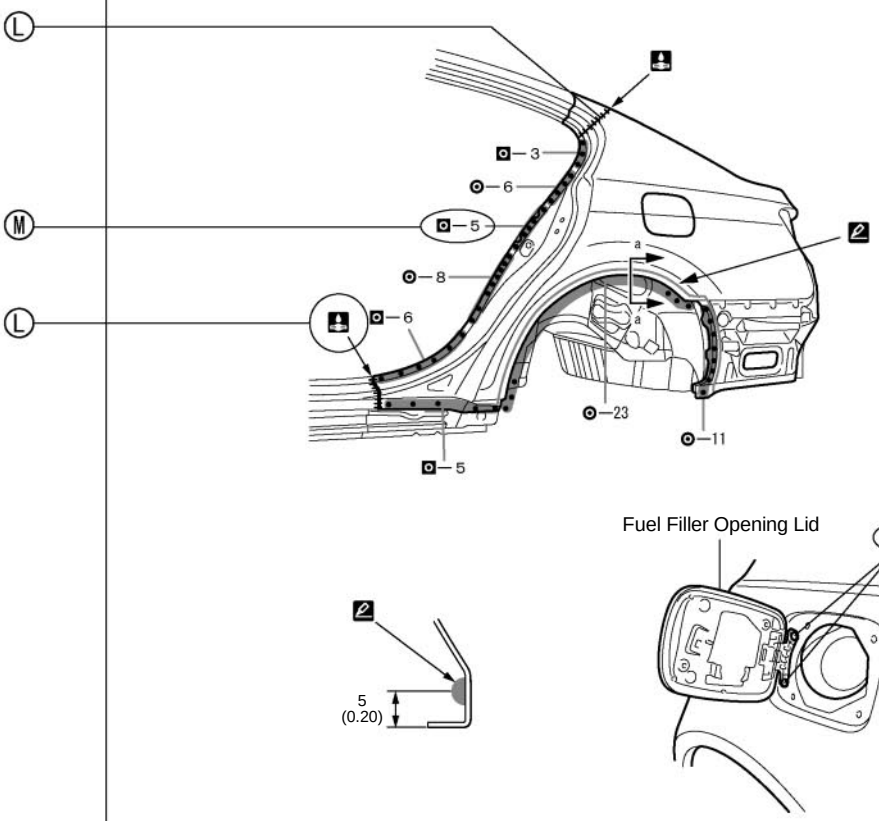
BP-36 BODY PANEL REPLACEMENT

Symbol meaning

: Mig Plug Weld : Spot Weld

: Body Sealer : Butt Weld

INSTALLATION



mm (in.)

POINT

1.Before temporarily installing the new parts, apply body sealer to the wheel arch.
HINT
1) Apply body sealer evenly about 5 mm (0.20 in.) from the flange, avoiding any oozing.
2) Apply sealer evenly, about 3 - 4 mm (0.12 - 0.16 in.) in diameter.
2.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.After welding, apply body sealer and undercoating to the corresponding parts.

Ⓘ SYMBOLS

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

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

Ⓛ SYMBOLS (See page IN-34)

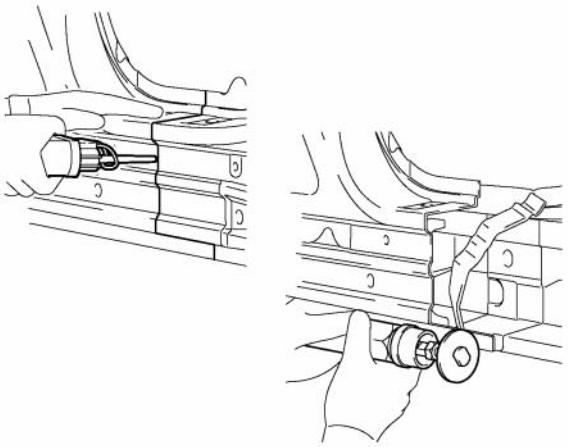
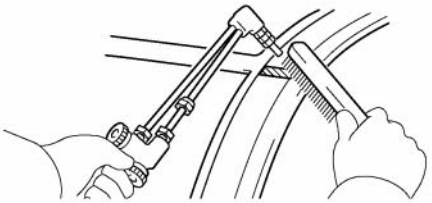
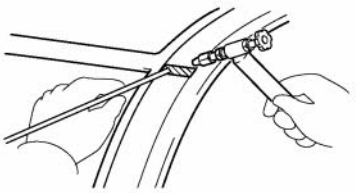
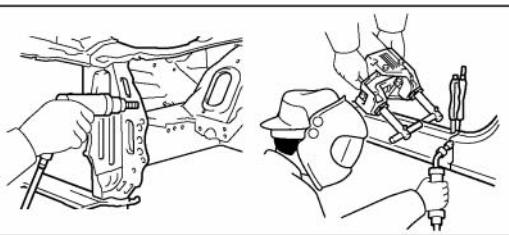
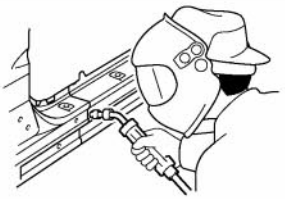
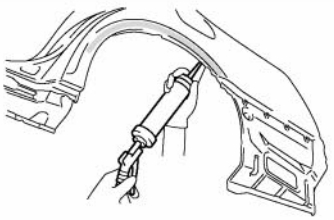
Ⓜ INSTALLATION OF WELD POINTS (See page IN-36)
Weld method and panel position symbols

Ⓝ PART NAME

F33026

2. SYMBOLS

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

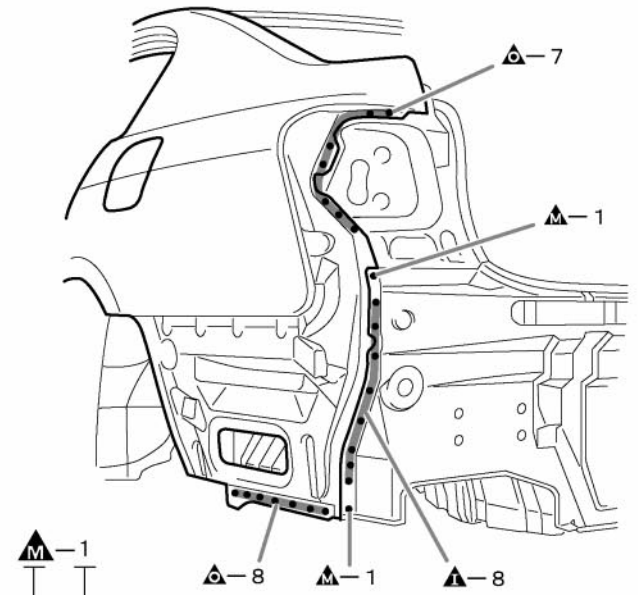
SYMBOLS	MEANING	SYMBOLS	MEANING	ILLUSTRATION
	CUT		CUT AND JOIN LOCATION (Saw Cut)	
			CUT AND JOIN LOCATION (Cut Location for Supply Parts)	
			CUT LOCATION	
			CUT WITH DISC SANDER ETC.	
	BRAZE		BRAZE (Removal)	
	BRAZE		BRAZE (Installation)	
M I I M I	WELD POINTS	—	SPOT WELD OR MIG PLUG WELD	
	WELDING		CONTINUOUS MIG WELD (BUTT WELD)	
			CONTINUOUS MIG WELD (TACK WELD)	
	SEALER		BODY SEALER	 F33004

SYMBOLS	MEANING	SYMBOLS	MEANING	ILLUSTRATION
—			Assembly Mark	—
	—	—	BODY SEALER (Flat Finishing)	
	—		BODY SEALER (Flat Finishing)	F33005

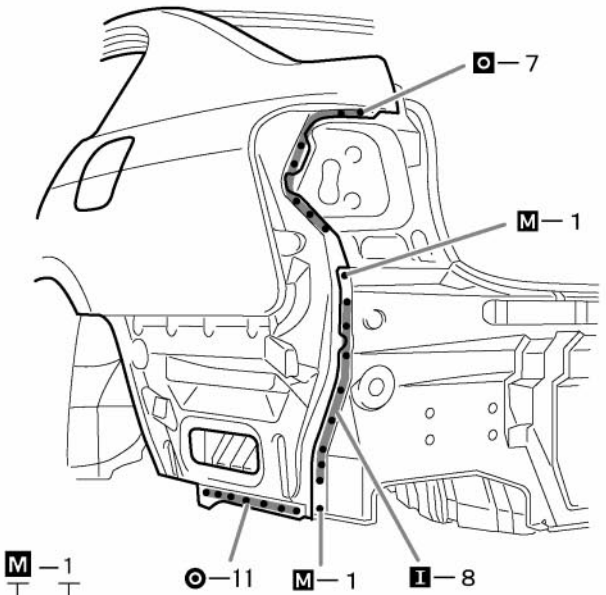
3. ILLUSTRATION OF WELD POINT SYMBOLS

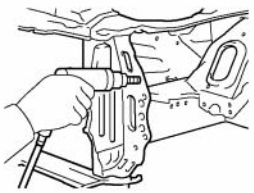
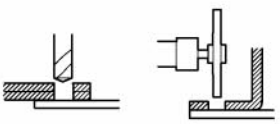
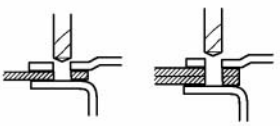
EXAMPLE:

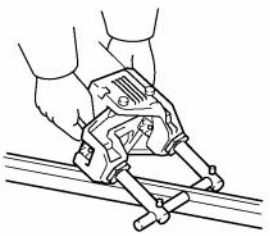
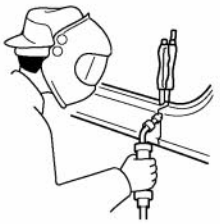
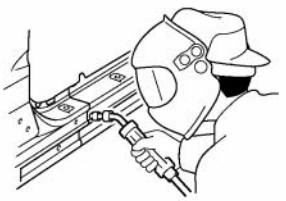
REMOVAL



INSTALLATION



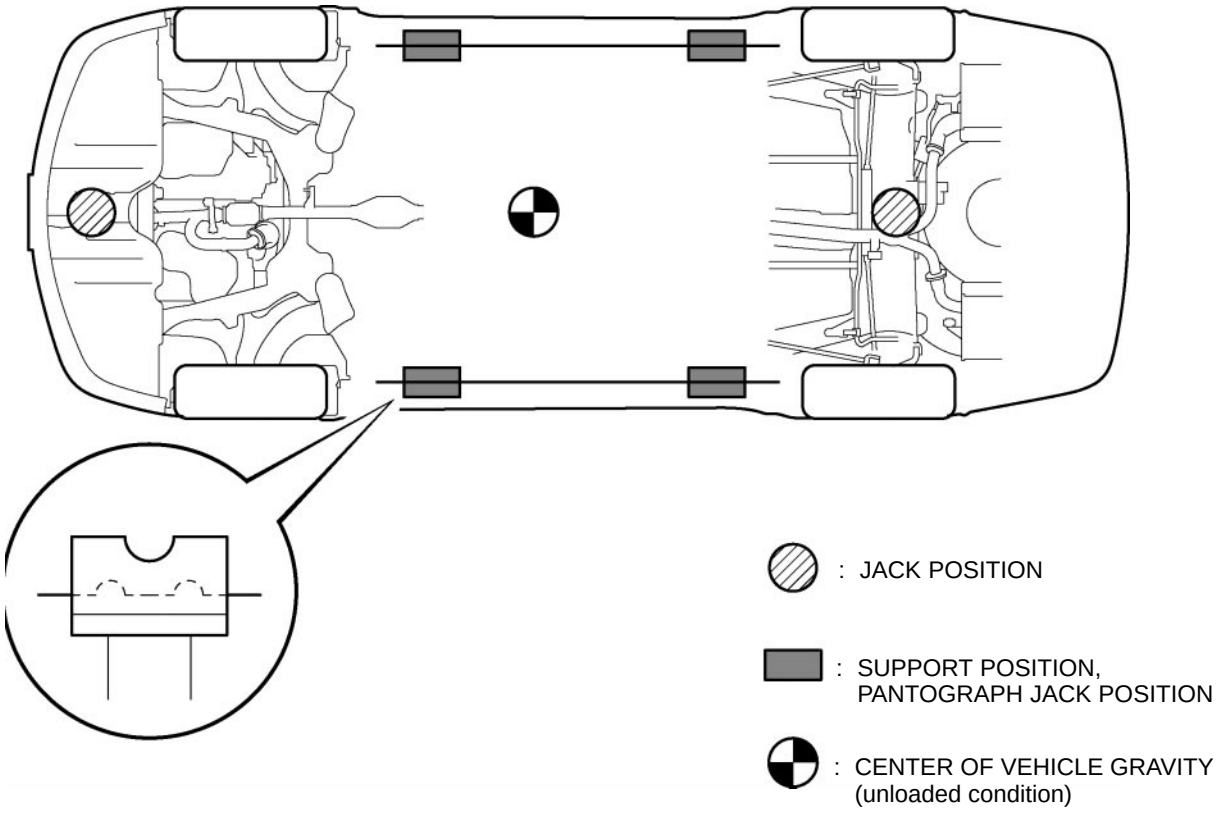
SYMBOLS	MEANING	ILLUSTRATION
▲	Remove Weld Points	
O	(Outside)	
M	(Middle)	
I	(Inside)	

SYMBOLS	MEANING	ILLUSTRATION
●	Spot Weld	
■	MIG Plug Weld	
+	Spot MIG Weld	

F33006

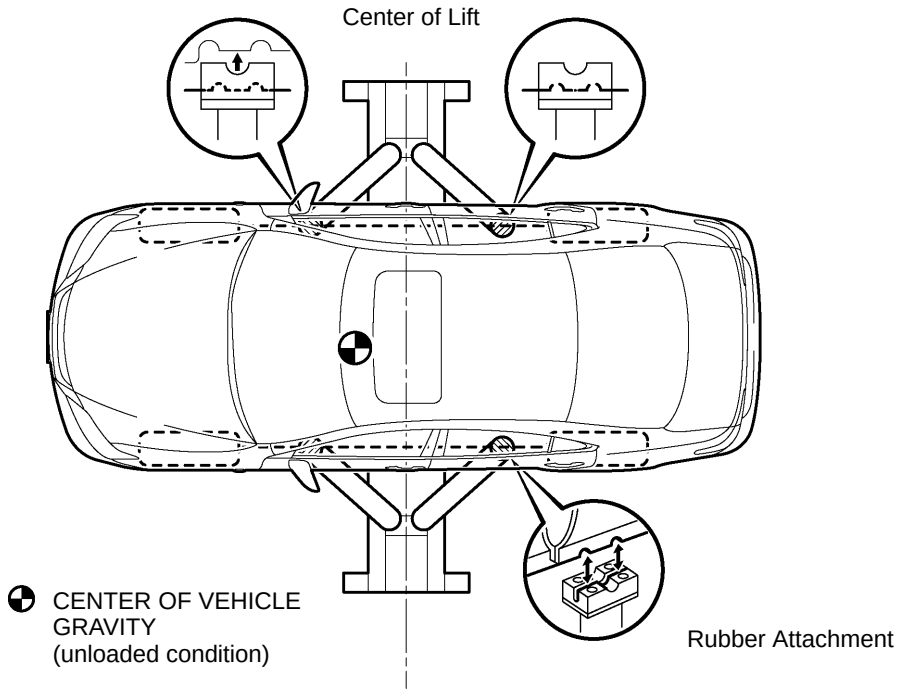
NOTICE ABOUT VEHICLE CONDITION WHEN JACKING UP VEHICLE

1. NOTICE FOR USING JACK AND SAFETY STAND



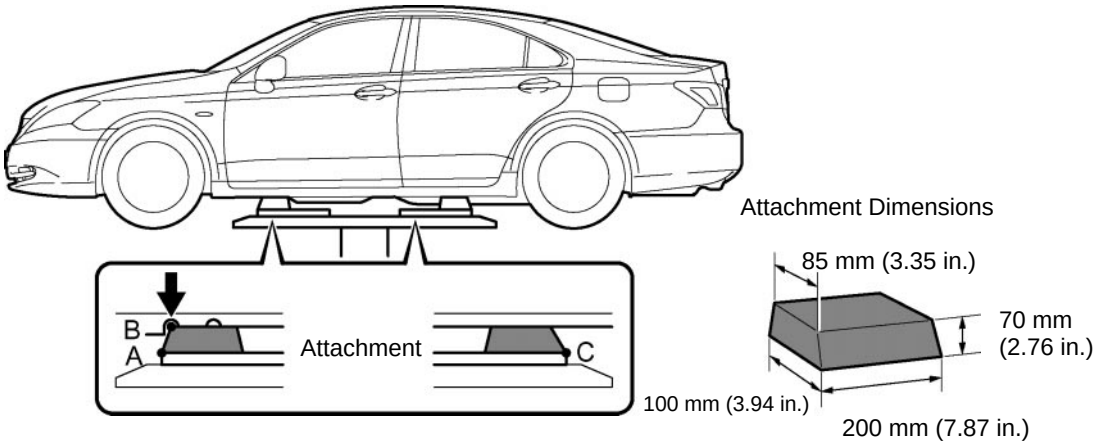
D100375

2. NOTICE FOR USING SWING ARM TYPE LIFT



F30273

3. NOTICE FOR USING PLATE TYPE LIFT

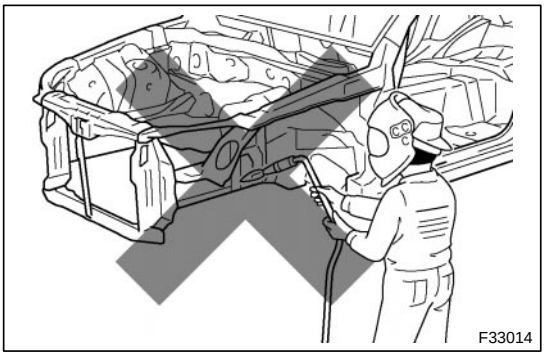


HINT:
Right and left set position
Place the vehicle over the center of the lift.

Front and rear set position
Place the attachments at the ends of the rubber plate surface, under the vehicle lift pad (A and C in the illustration).
Raise the plate slightly and reposition the vehicle so the top of the attachment (B in the illustration) is aligned with the front side notch in the vehicle rocker flange.

F30274

PRECAUTIONS FOR REPAIRING BODY STRUCTURE PANELS



1. HEAT REPAIR FOR BODY STRUCTURE PANELS

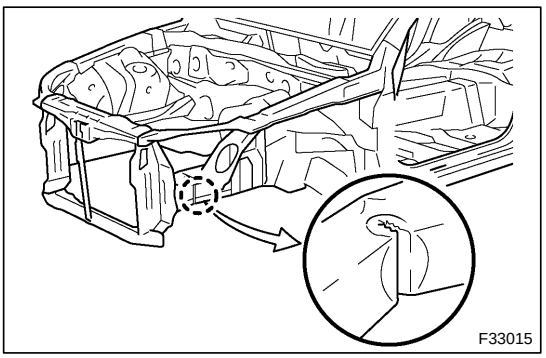
Toyota prohibits the use of the heat repair method on body structure panels when repairing a vehicle damaged in a collision.

Panels that have high strength and rigidity, as well as a long life span for the automobile body are in high demand.

At Toyota, in order to fulfill these requirements, we use high tensile strength steel sheets and rust preventive steel sheets on the body. High tensile steel sheets are made with alloy additives and a special heat treatment in order to improve their strength.

To prevent the occurrence of rust for a long period of time, the surface of the steel is coated with a zinc alloy.

If body structure parts are heat repaired with an acetylene torch or other heating source, the crystalline organization of the steel sheet will change and their strength of the steel sheet will be reduced. The ability of the body to resist rust is significantly lowered as well since the rust resistant zinc coating is destroyed by heat and the steel sheet surface is oxidized.

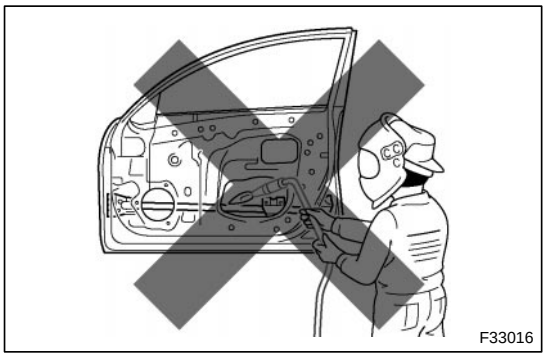


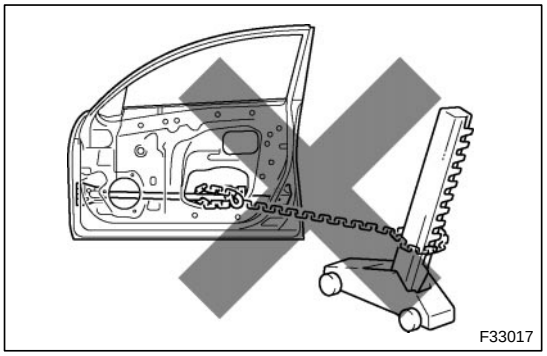
2. STRUCTURE PANEL KINKS

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

Structural parts are designed to perform in their original shape. If parts are deformed in an accident, or if the deformed parts are repaired and reused, the parts may be unable to perform as intended.

It is necessary to replace the part where the kink has occurred.

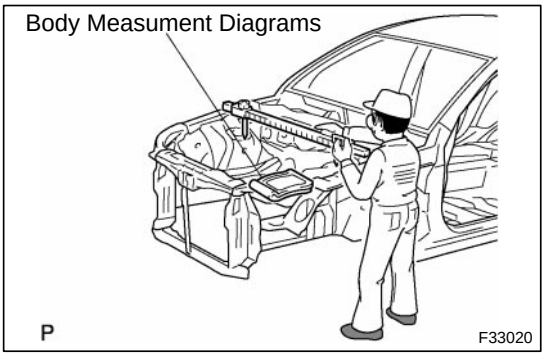

F33016


F33017

3. IMPACT BEAM REPAIR

The impact beam and bracket are necessary and important parts that help reduce the probability of injury to passengers in side collisions.
For impact beams, we use special high tensile strength steel.
The high tensile strength steel maintains its special crystalline organization by heat treatment or alloy additives.
Structural parts are designed to perform in their original shape. If parts are deformed in an accident, or if the deformed parts are repaired and reused, the parts may be unable to perform as intended.
If the impact beam or bracket is damaged, replace the door assembly that has the damaged beam.
Also, the bumper reinforcement is a necessary and important part that helps reduce the probability of injury to passengers in front collisions, and for the same reasons explained above, should be replaced if damaged.

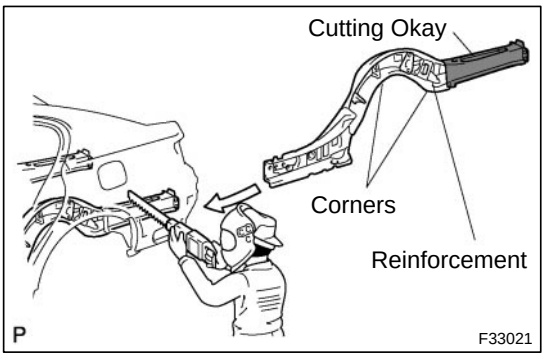
PROPER AND EFFICIENT WORK PROCEDURES



1. REMOVAL

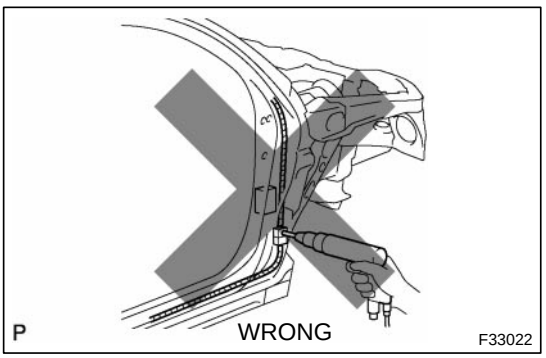
(a) PRE-REMOVAL MEASURING

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



(b) CUTTING AREA

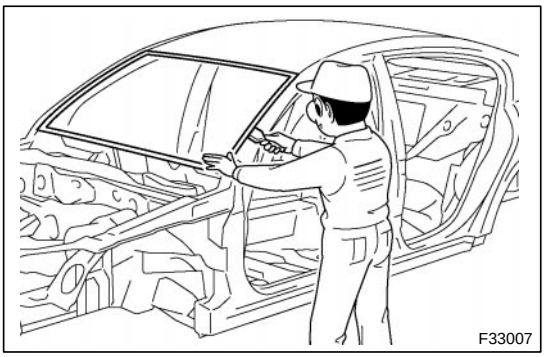
(1) Always cut in a straight line and avoid cutting reinforced areas.



(c) PRECAUTIONS FOR DRILLING OR CUTTING

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

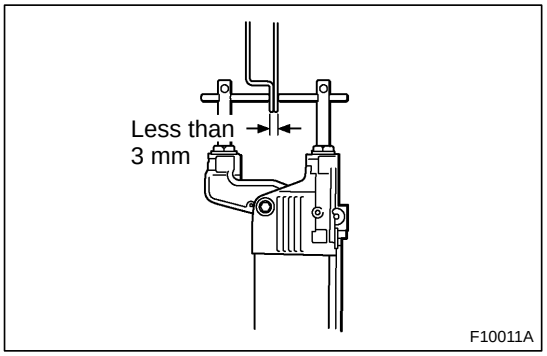
HINT: See “Handling Precautions on Related Components” on page IN-9.



(d) REMOVAL OF ADJACENT COMPONENTS

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

HINT: See “Handling Precautions on Related Components” on page IN-9.

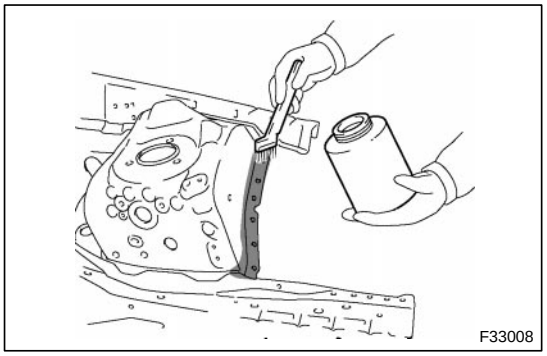


2. PREPARATION FOR INSTALLATION

(a) SPOT WELD POINTS

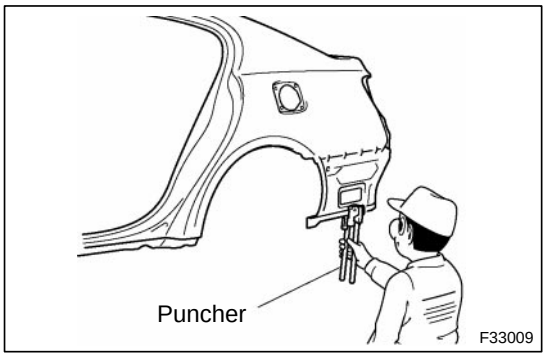
(1) When welding panels with a combined thickness of over 3 mm (0.12 in.), use a MIG (Metal Inert Gas) welder for plug welding.

HINT: Spot welding does not provide sufficient durability for panels with a combined thickness of over 3 mm (0.12 in.)



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

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

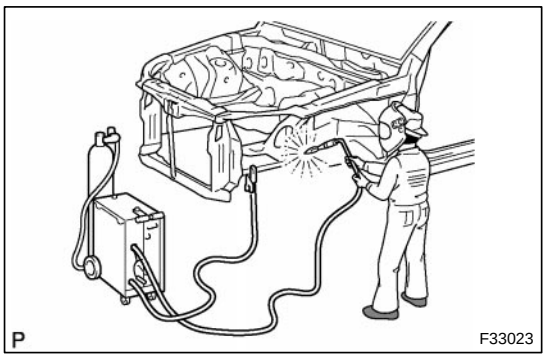


(c) MAKING HOLES FOR PLUG WELDING

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

REFERENCE: mm (in.)

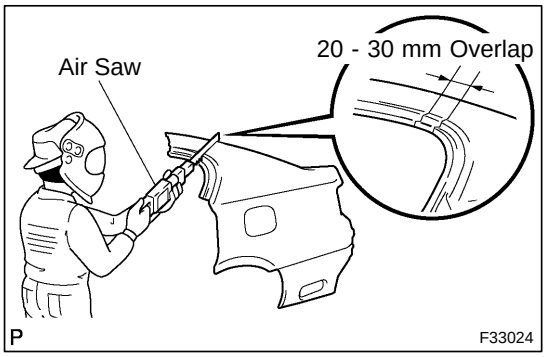
Thickness of welded portion	Size of plug hole
1.0 (0.04) under	ø 5 (0.20) over
1.0 (0.04) - 1.6 (0.06)	ø 6.5 (0.26) over
1.7 (0.07) - 2.3 (0.09)	ø 8 (0.31) over
2.4 (0.09) over	ø 10 (0.39) over



(d) SAFETY PRECAUTIONS FOR ELECTRICAL COMPONENTS

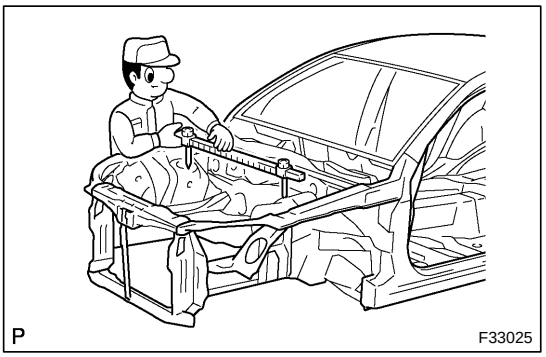
(1) When welding, there is a danger that electrical components will be damaged by the electrical current flowing through the body.

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



(e) ROUGH CUTTING OF JOINTS

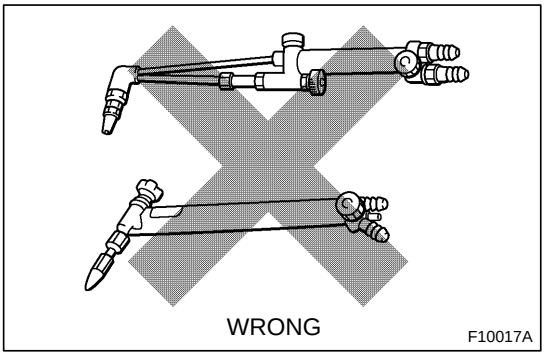
(1) For joint areas, rough cut the new parts, leaving 20 - 30 mm (0.79 - 1.18 in.) of overlap.



3. INSTALLATION

(a) PRE-WELDING MEASUREMENTS

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

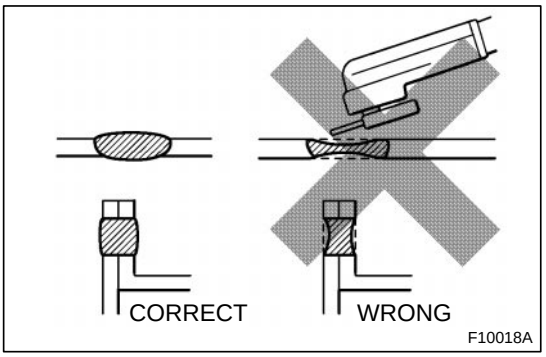


(b) WELDING PRECAUTIONS

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

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

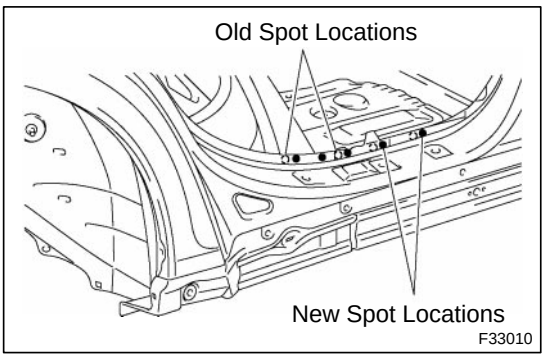
(2) Plug welding should be done with a MIG (Metal Inert Gas) welder. Do not gas weld or braze panels at areas other than where specified.



(c) POST-WELDING REFINISHING

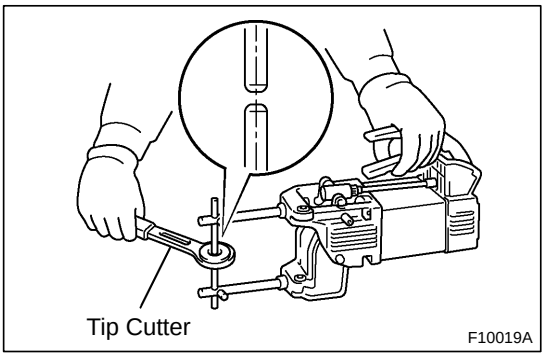
(1) Always check the welded spots to ensure that they are secure.

(2) When smoothing out the weld spots with a disc grinder, be careful not to grind off too much as this will weaken the weld.



(d) SPOT WELD LOCATIONS

(1) Avoid welding over previously welded areas.

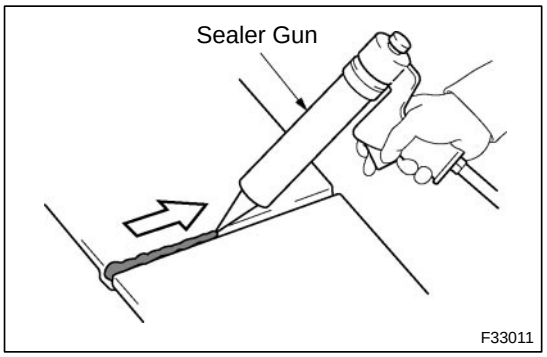


(e) SPOT WELDING PRECAUTIONS

(1) The shape of the tip point of the spot welder significantly affects the strength of the weld. Therefore, maintain the tip point in the proper shape, and allow it to cool after every five or six spots.

(2) Completely remove the paint from the areas to be spot welded, including the seams and the surfaces that come in contact with the welding tip.

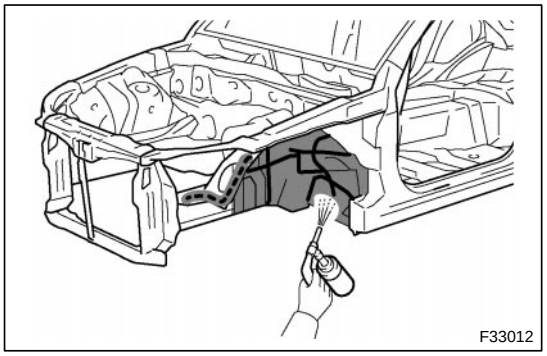
(3) Use a sander to remove any burrs that are created during spot welding.



4. ANTI-RUST TREATMENT AFTER INSTALLATION (BEFORE PAINTING PROCESS)

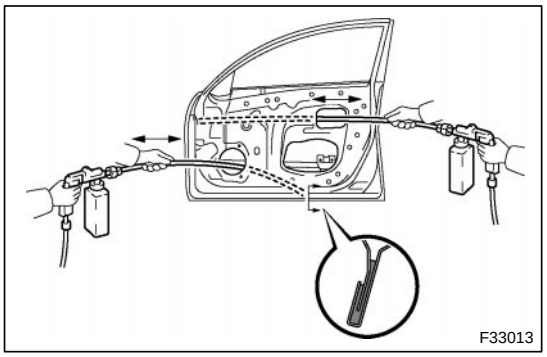
(a) BODY SEALER APPLICATION

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



(b) UNDERCOAT APPLICATION

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



5. ANTI-RUST TREATMENT AFTER INSTALLATION (AFTER PAINTING PROCESS)

(a) ANTI-RUST AGENT (WAX) APPLICATION

(1) To preserve impossible to paint areas from corrosion, always apply sufficient anti-rust agent (wax) to the inside of the hemming areas of the doors and hood, and around the hinges, or the welded surfaces inside the box-shaped cross sections of the side members, body pillars, etc.

6. ANTI-RUST TREATMENT BY PAINTING

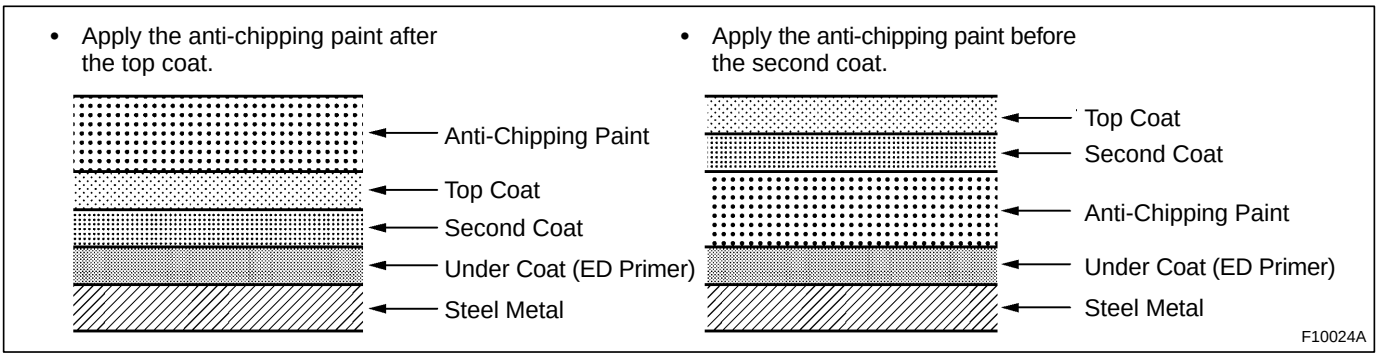
REFERENCE:

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

(a) ANTI-CHIPPING PAINT

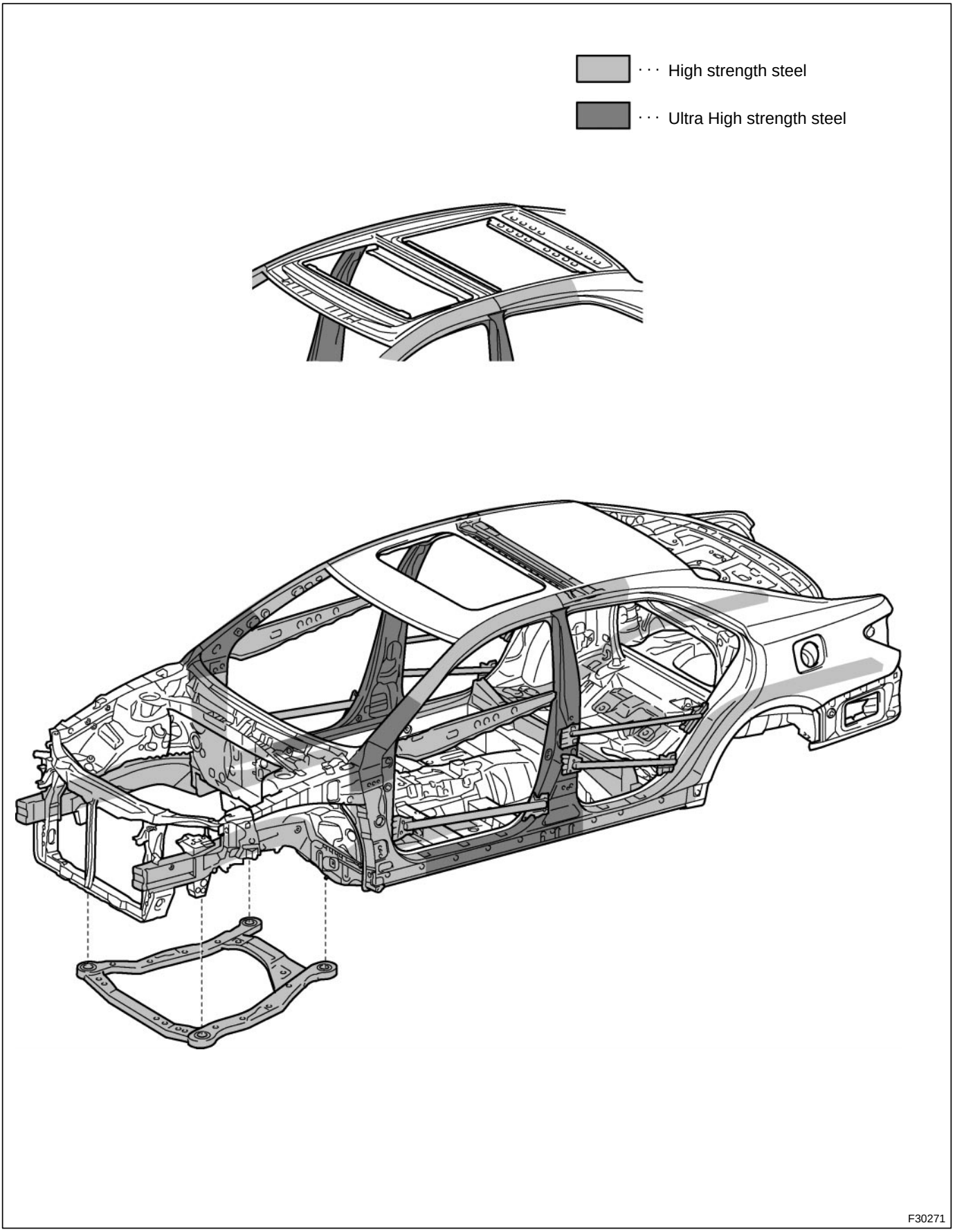
(1) To prevent corrosion and protect the body from damage by flying stones, etc., apply anti-chipping paint to the rocker panel, wheel arch areas, balance panel, etc.

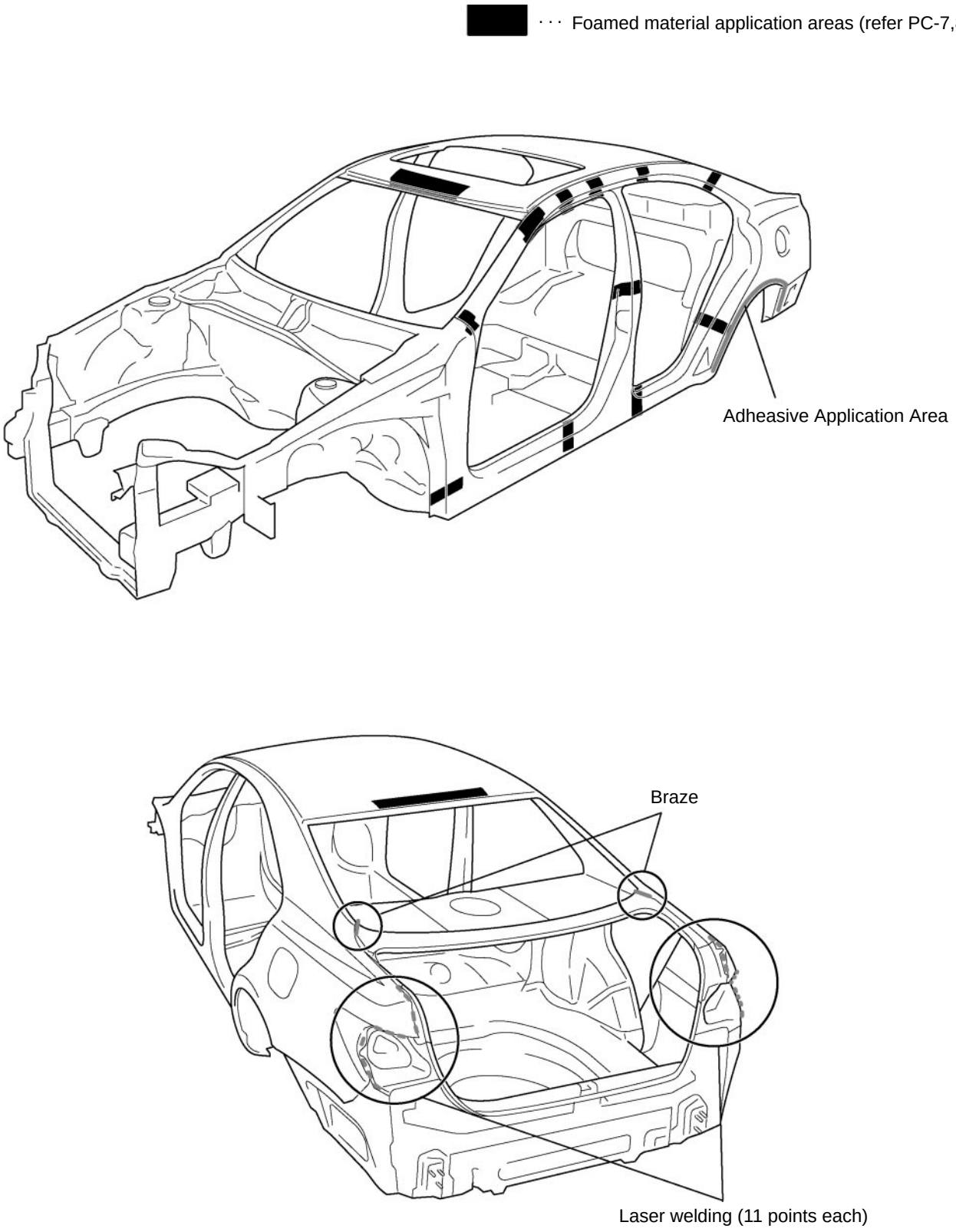
HINT:
Depending on the model or the application area, there are cases where the application of anti-chipping paint is necessary before the second coat or after the top coat.



ABOUT THIS VEHICLE

STRUCTUAL OUTLINE




· · · Foamed material application areas (refer PC-7,8)
Adheasive Application Area
Braze
Laser welding (11 points each)
F30272

ABOUT THIS MANUAL

Scope of the repair work explanation

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

Section categories

- This manual has been divided as shown below.

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

Contents omitted in this manual.

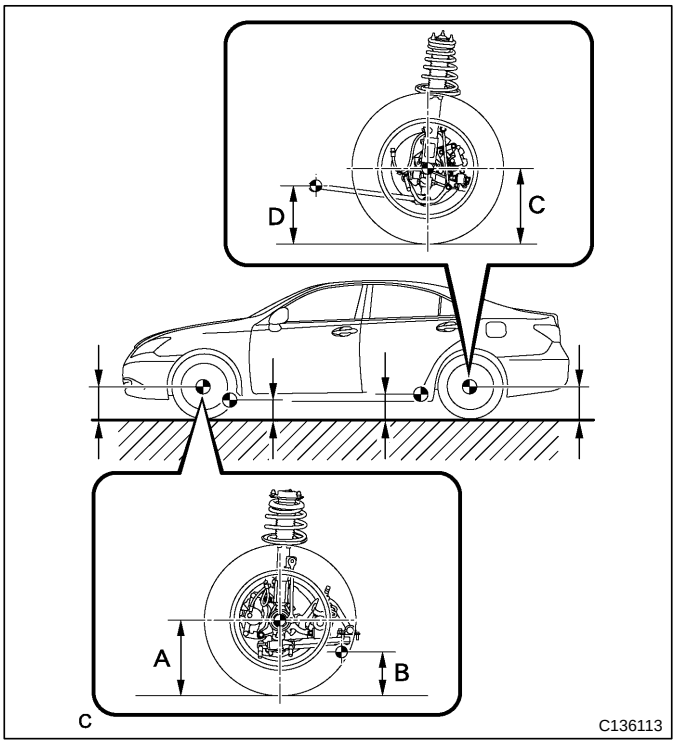
- Make sure to perform the following essential procedures, although they are omitted in this manual.
  (1) Clean and wash removed parts, if necessary.
  (2) Visual inspection.

WHEEL ALIGNMENT STANDARD

1. FRONT WHEEL ALIGNMENT

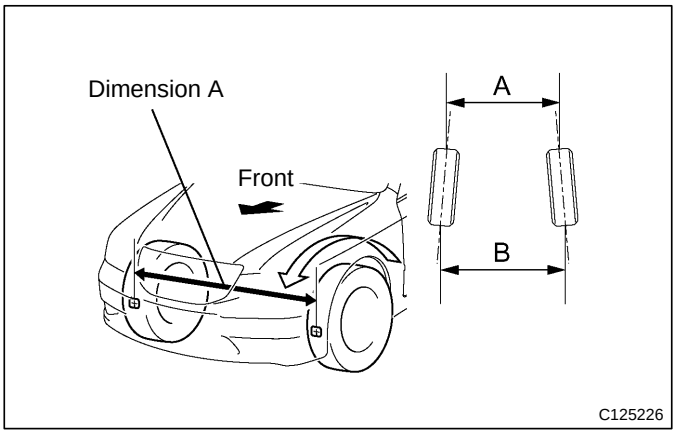
Standard vehicle height:

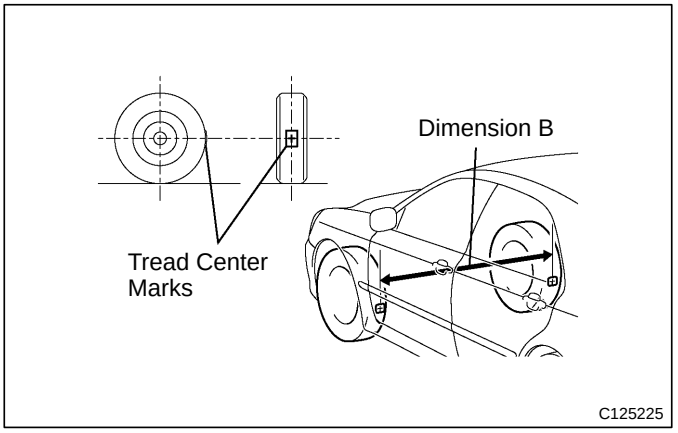
Front A - B	Rear C - D
126 mm (4.96 in.)	57 mm (2.24 in.)



Standard toe-in (total):

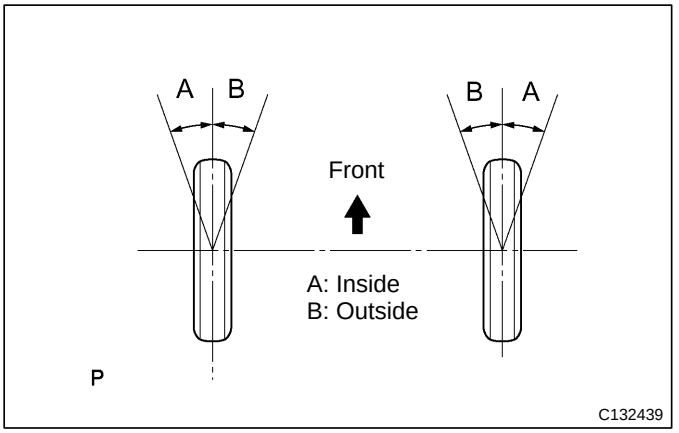
Toe-in (total)	—
A - B:	0 + -2 mm (0 + -0.08 in.)





Standard wheel angle:

Inside wheel	Outside wheel (reference)
38°31’ + - 2° (38°52’ + - 2°)	33°43’ (33.72°)



Standard camber inclination:

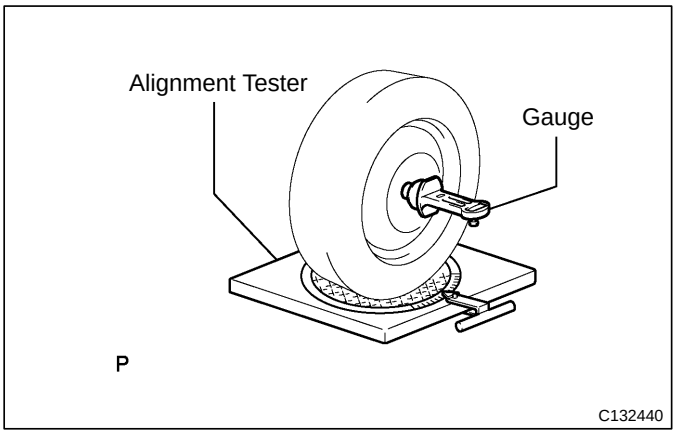
Camber	Right-left difference
- 0°43’ + -45’ (-0.72° + -0.75°)	45’ (0.75°) or less

Standard caster inclination:

Caster	Right-left difference
2°57’ + -45’ (-2.95° + -0.75°)	45’ (0.75°) or less

Steering axis inclination:

Steering axis inclination
12°20’ (12.33°)



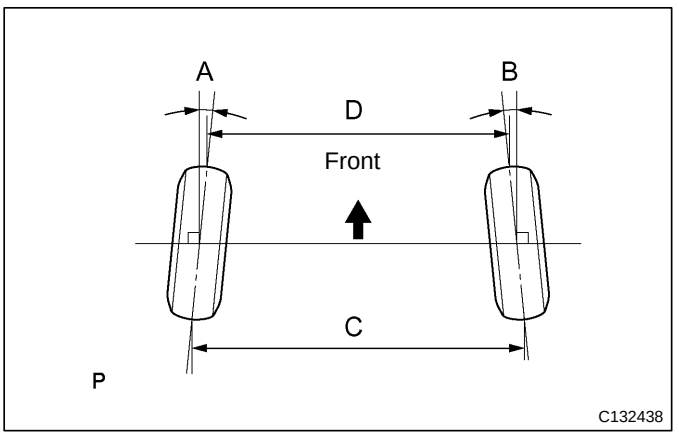
2. REAR WHEEL ALIGNMENT

Standard toe-in:

Toe-in (total)	—
A + B: C - D:	0° + - 24’ (0° + - 0.4°) 4 + - 2 mm (0.16 + - 0.08 in.)

Standard camber inclination:

Camber	Right-left difference
- 1°21’ + -45’ (-1.35° + -0.75°)	45’ (0.75°) or less



BODY PANEL UNDERCOATING AREAS

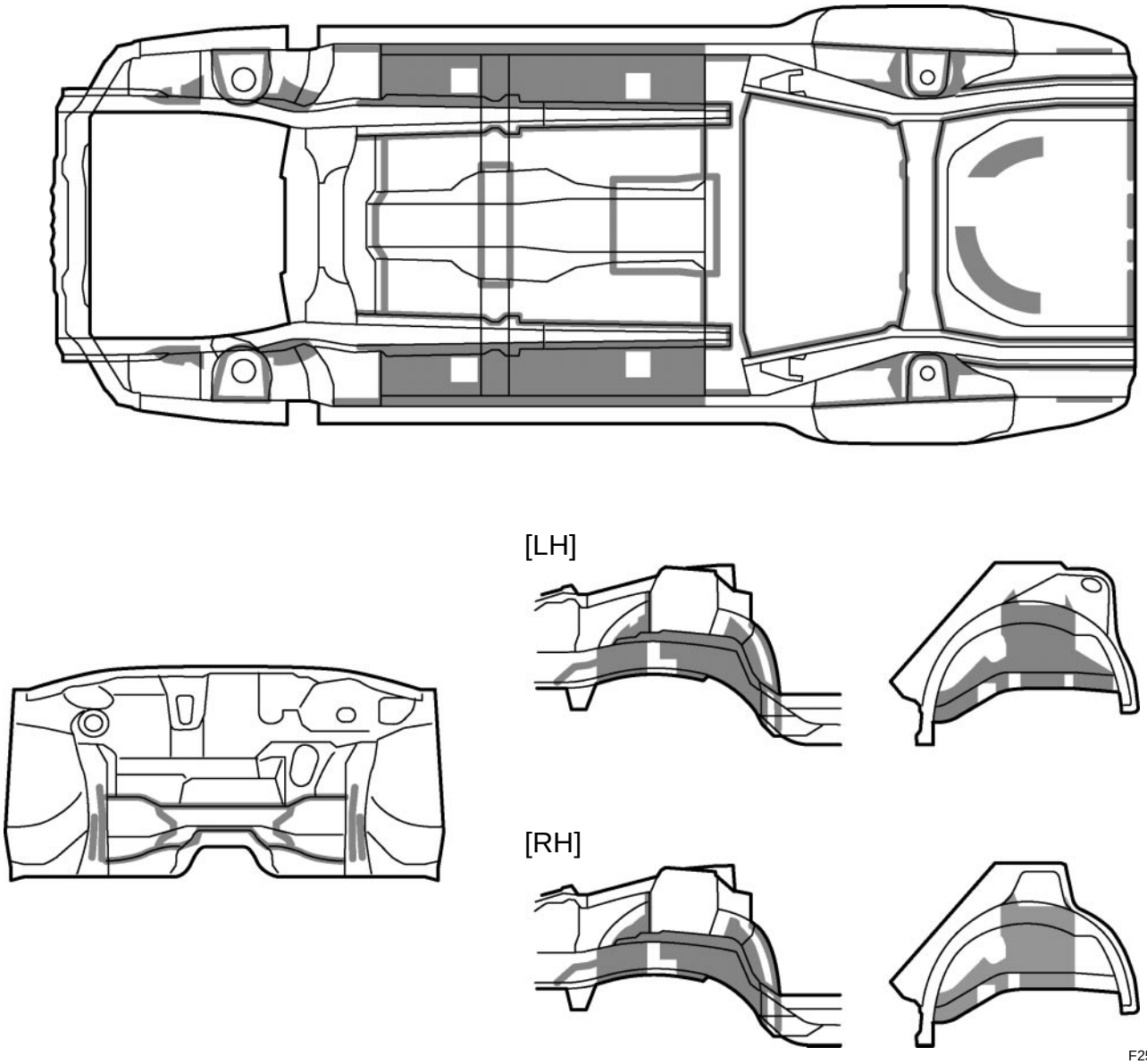
Apply PASTAR UWE or PASTAR UC to the chassis, floor underside, sheet metal fitting weld points of the body, and inside of the wheel house to prevent rust and noise, as well protect the body from flying rocks.

HINT:

1) Work must be performed while wearing the appropriate protective gear and in a well-ventilated area.
2) Apply degreasing agent to a clean cloth and clean any dirt and oil from the application areas.
3) Cover the surrounding areas of the application areas with masking paper to avoid coating unnecessary areas.
4) Do not coat high temperature areas, such as the tailpipe, or moving parts, such as the driveshaft.
5) Do not leave any gaps between the panel joints.
6) Apply sealer to the panel joints in advance.

HINT:

1) Parts coated using the PASTAR UWE should be left until dry to the touch in a 25° C environment for 60 to 75 minutes. Parts coated using PASTAR UC should be left until dry to the touch in a 25° C environment for 15 to 30 minutes.
2) If using a PASTAR gun, one spray applies a 0.5 mm thick coating.
3) PASTAR UWE: Part number V9240-0025 PASTAR UC: Spray type: Part number V9240-0008
Aerosol type: Part number V9240-0021



REFERENCE

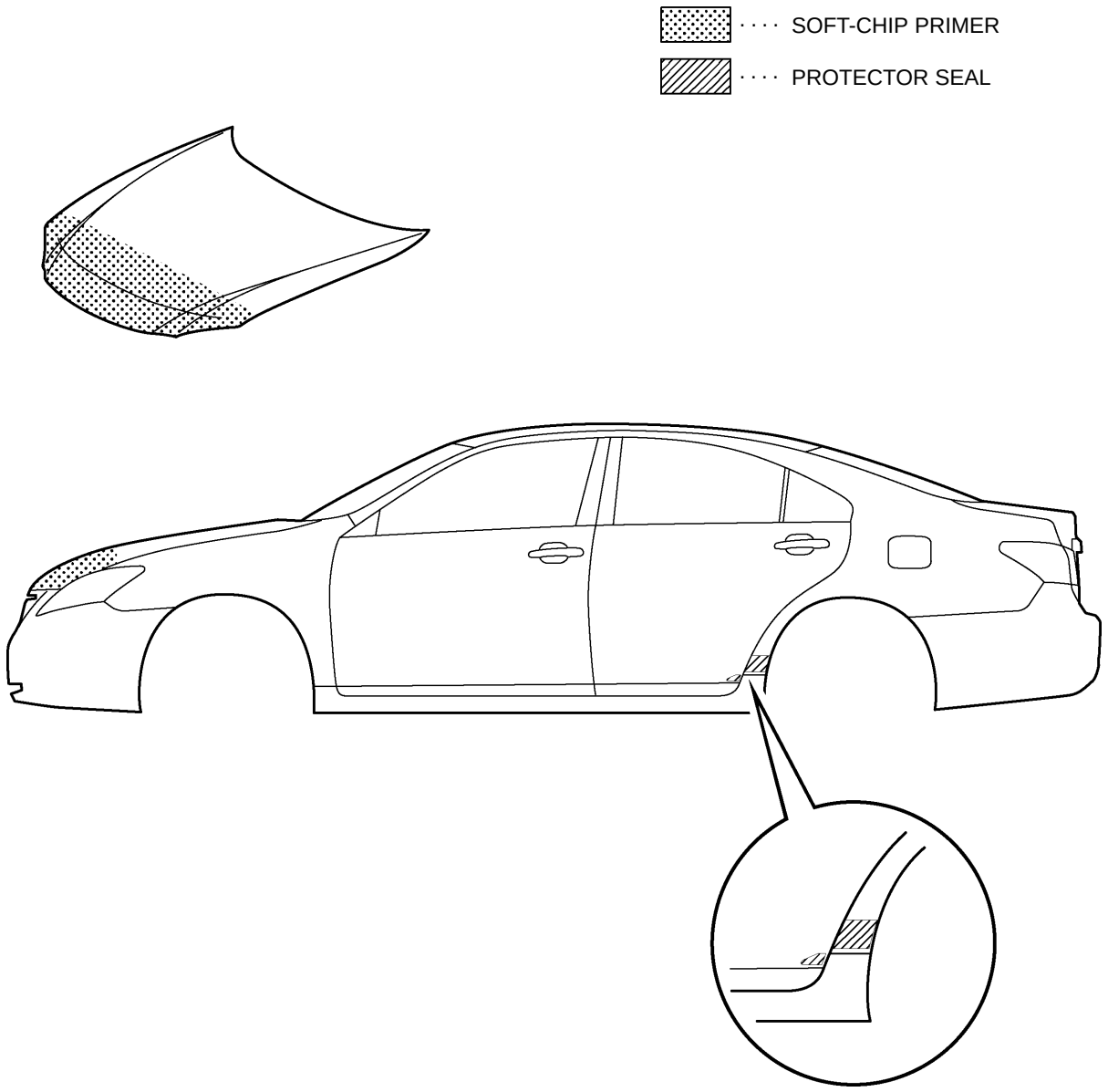
The undercoating should be applied according to the specifications for your country while referring to the notes above.

BODY PANEL ANTI-CHIPPING PAINT APPLICATION AREAS

To protect the body from damage due to flying rocks, apply the anti-chipping paint to the rocker panels, wheel arches, and lower parts of the doors.

HINT:

1) Work must be performed while wearing the appropriate protective gear and in a well-ventilated area.
2) Apply anti-chipping paint to the indicated areas first, before applying the top coat.
3) If anti-chipping paint is unnecessarily applied to an area, apply degreasing agent to a clean cloth and clean the paint off immediately.



MEMO

MEMO

BODY PANEL SEALING AREAS

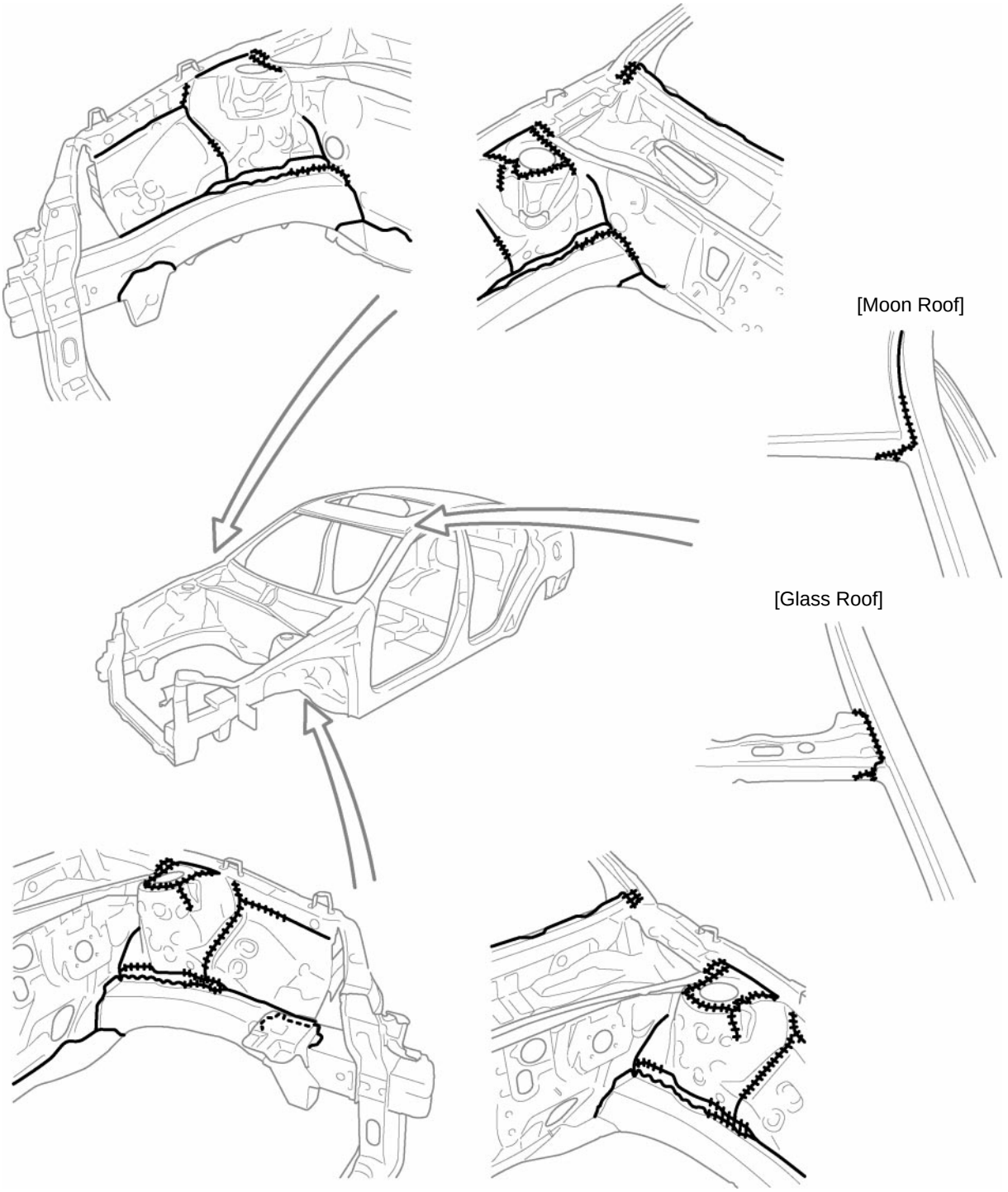
Be sure to apply body sealer to the body panel joints and door edges (tip of outer panel folded part), etc., to waterproof and rustproof them.

HINT:

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

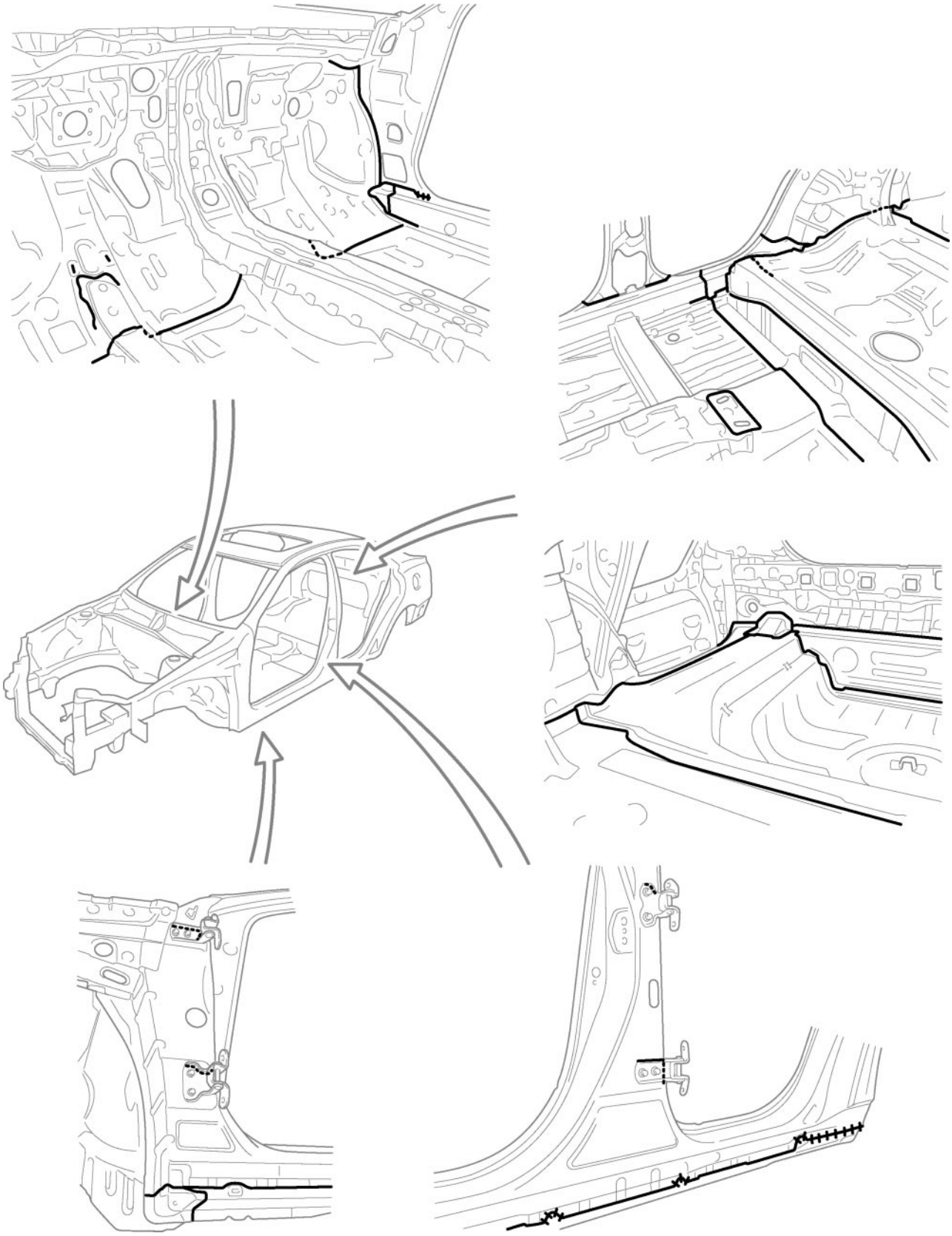
++++++++++	Flat Finishing	————	No Flat Finishing

1. ENGINE COMPARTMENT



F25851

2. OUTSIDE

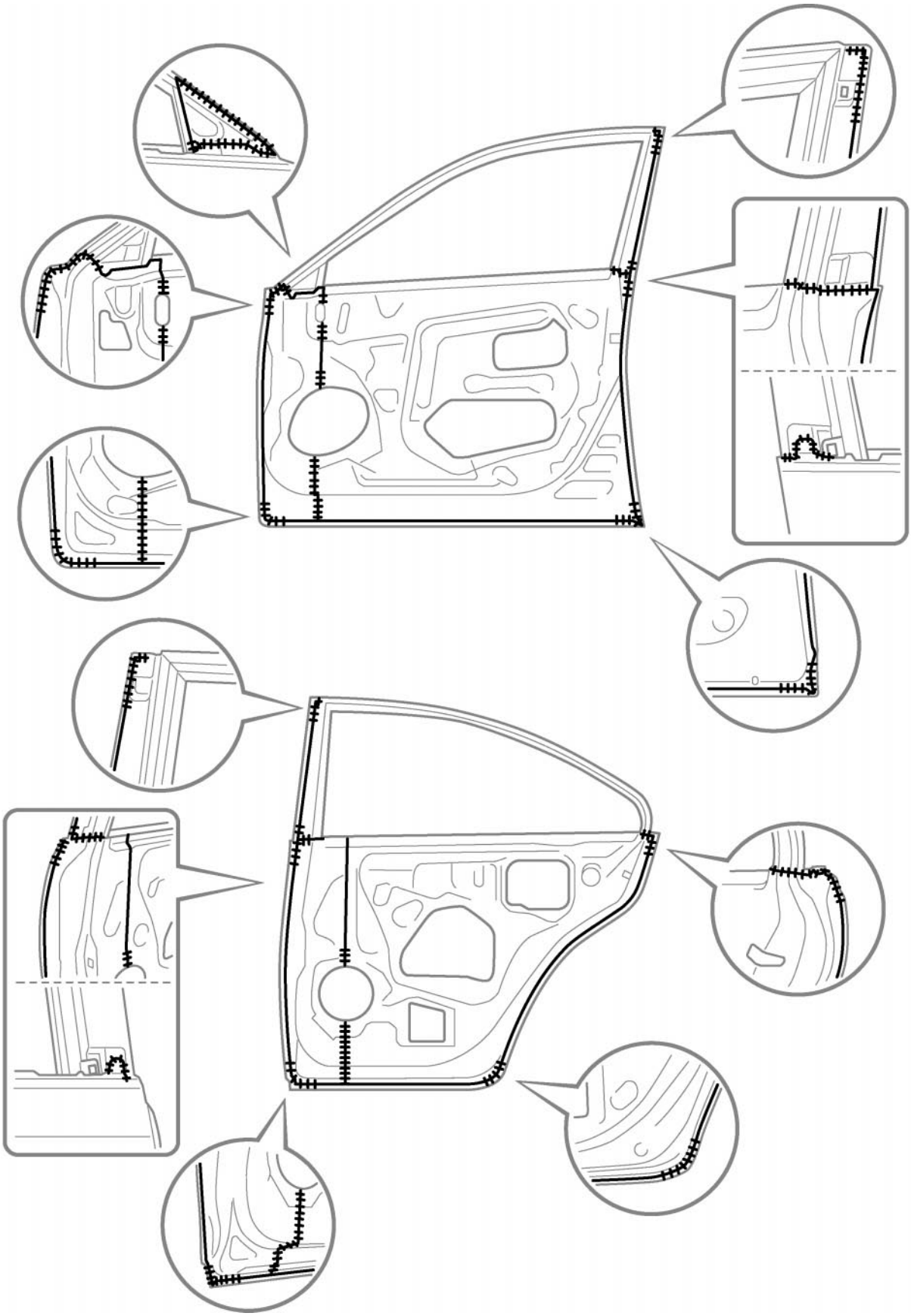


F25852

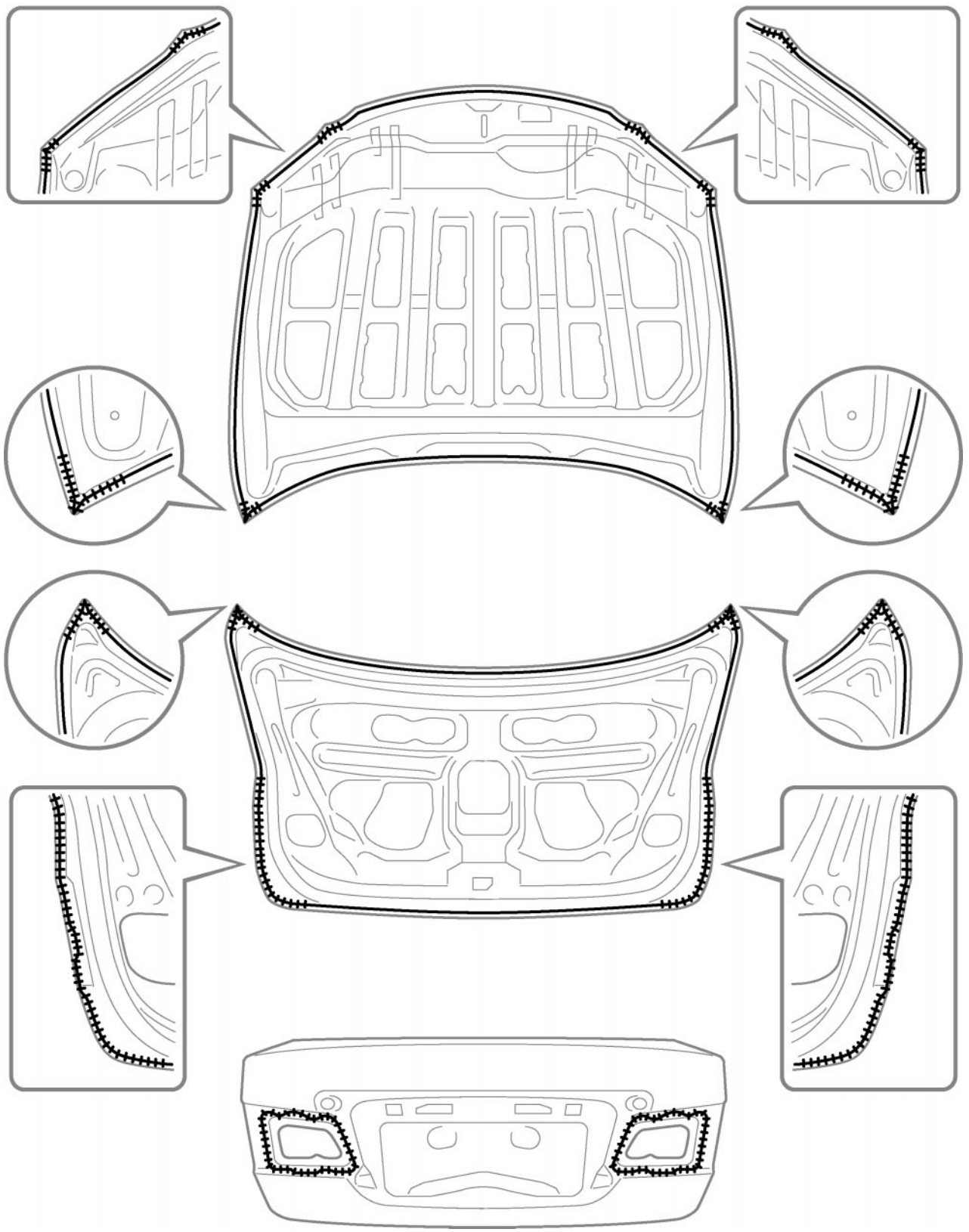
3. INSIDE

F25853

4. DOOR PARTS



F25854



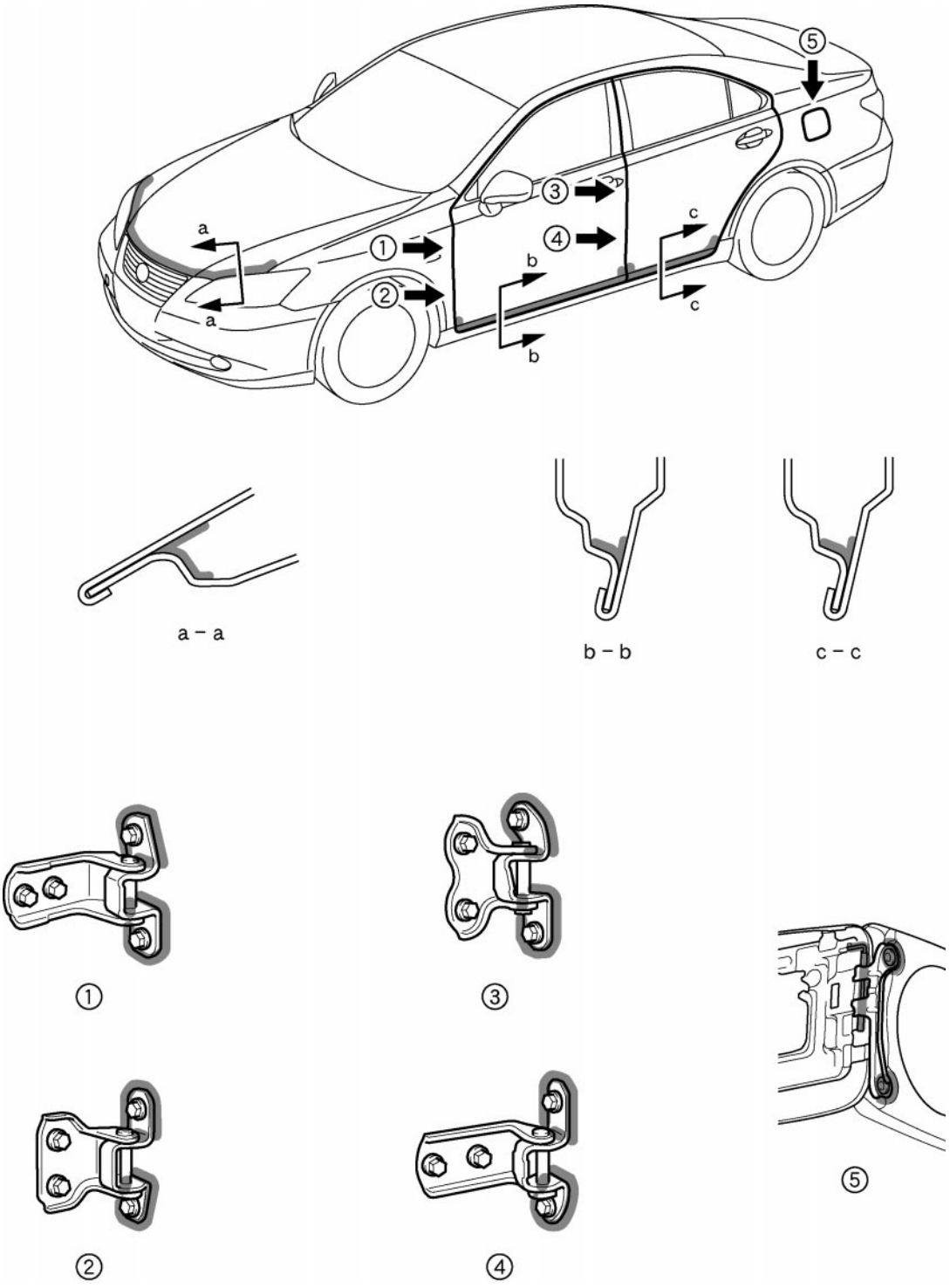
F25855

BODY PANEL ANTI-RUST AGENT (WAX) APPLICATION AREAS

Apply RUSTOP W 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:

1) If RUSTOP is unnecessarily applied to an area, apply degreasing agent to a clean cloth and clean off the RUSTOP immediately.



F25859

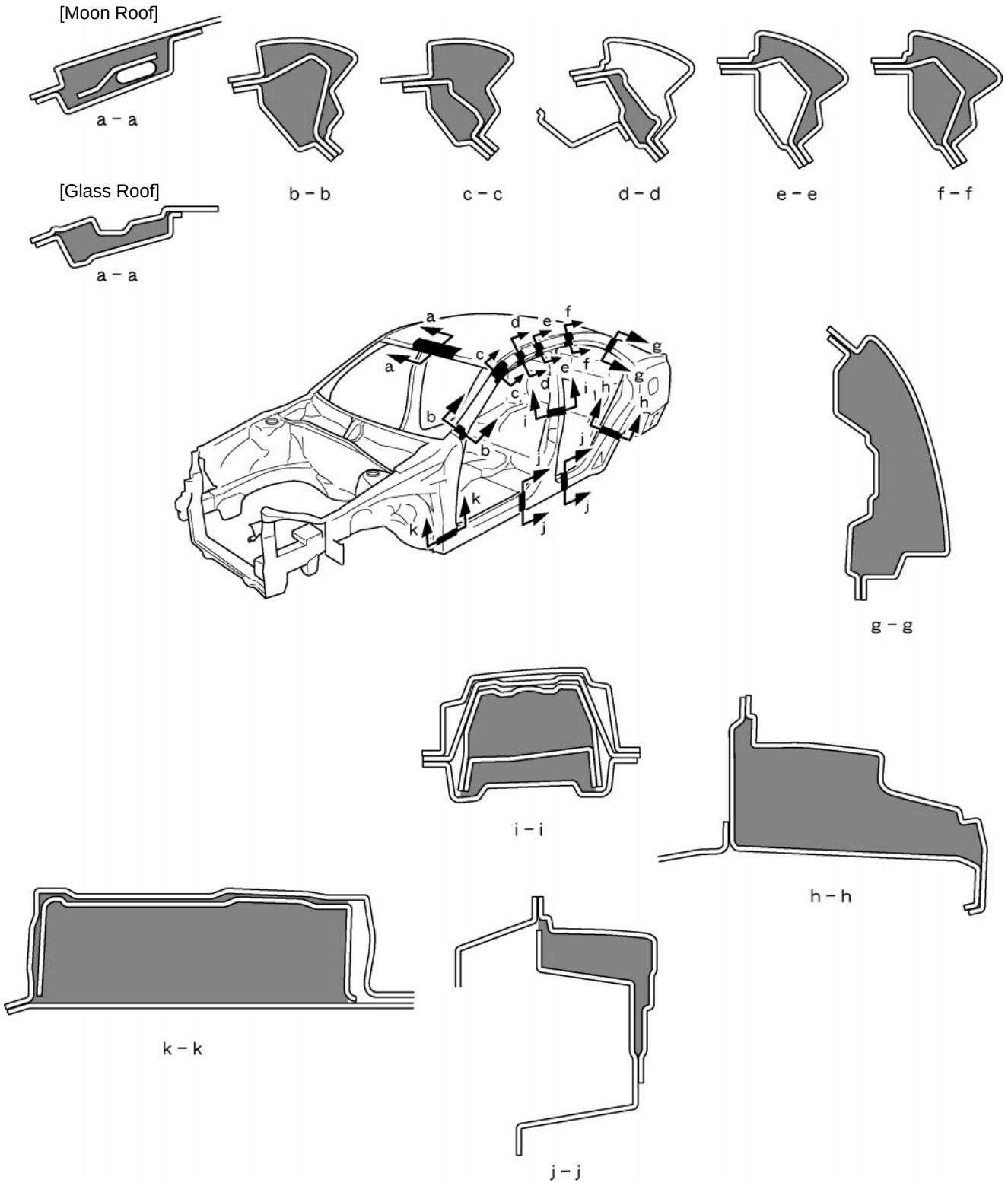
FOAMED MATERIAL APPLICATION AREAS

If an increase in temperature or other condition damages the foamed material when repairing or replacing the panel, fill in the insufficient areas with urethane foam. The following illustration shows the areas for one side, but the foamed material must be applied equally to both the left and right sides.

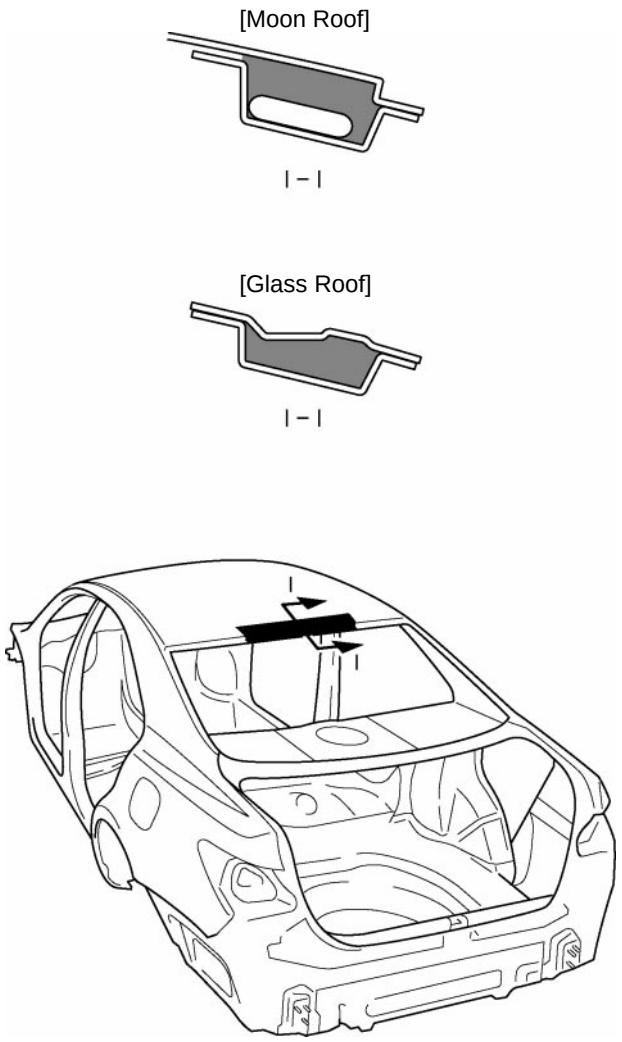
HINT:

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

2) Apply tape or equivalent to any holes, nuts, etc., near the areas to be filled.



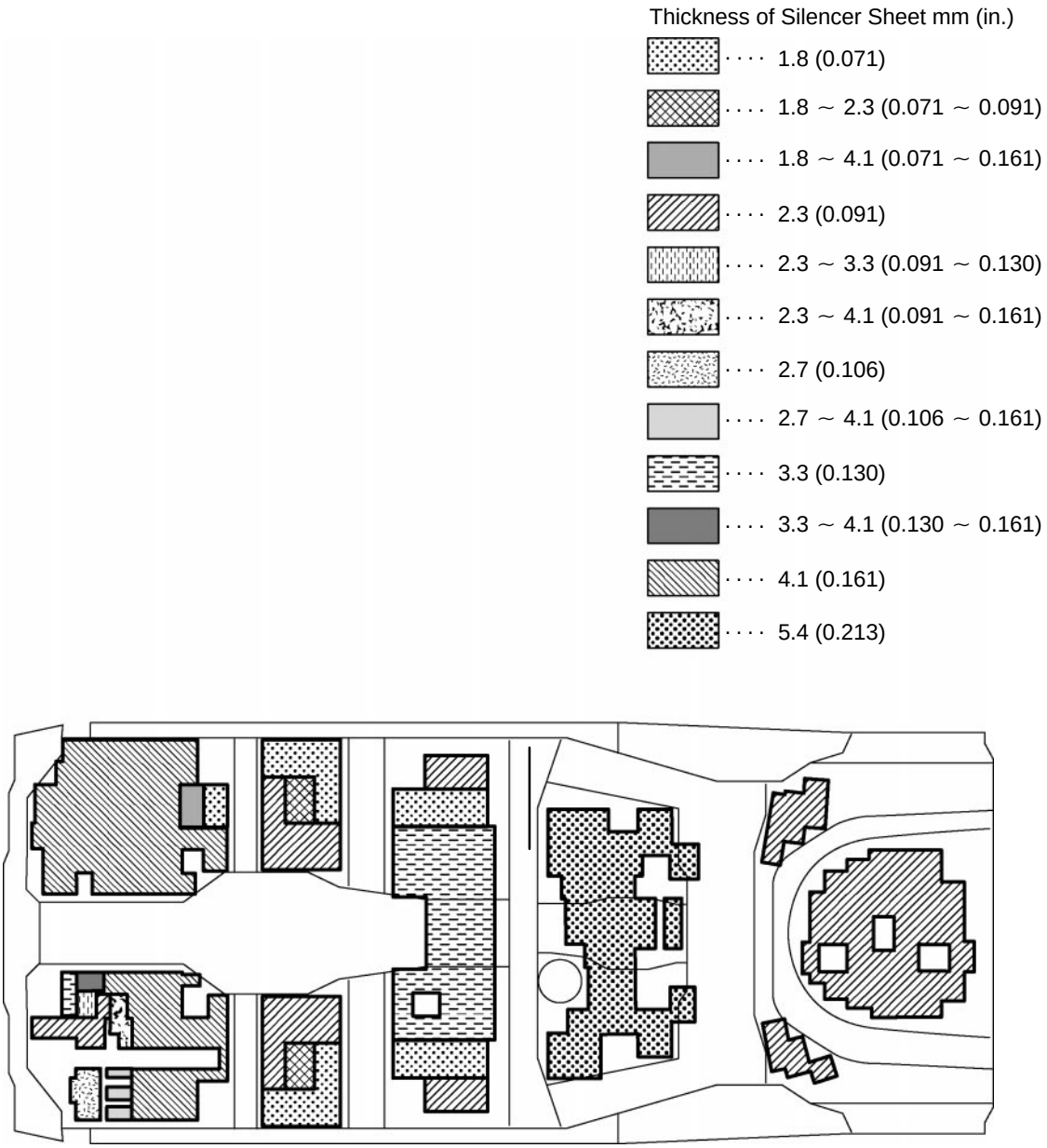
F25857



F25858

SILENCER SHEET INSTALLATION AREAS

Substitute silencer sheets for the laminate coat application areas.



F25860