

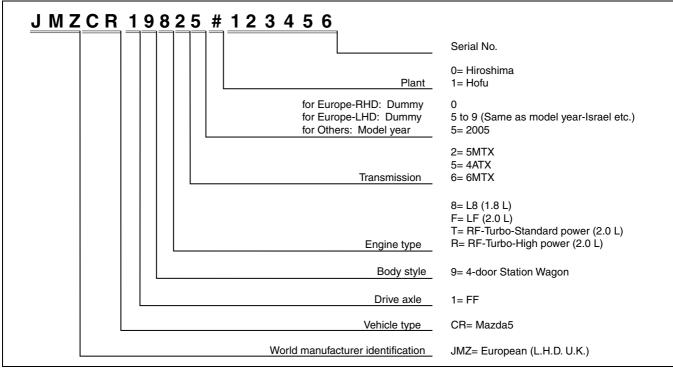
GENERAL INFORMATION ... 00-00

00–00 GENERAL INFORMATION

VEHICLE IDENTIFICATION NUMBER (VIN) CODE	00-00-1
VEHICLE IDENTIFICATION NUMBER	
(VIN)	00-00-2
HOW TO USE THIS MANUAL	00-00-2
SERVICE PRECAUTIONS	00-00-8

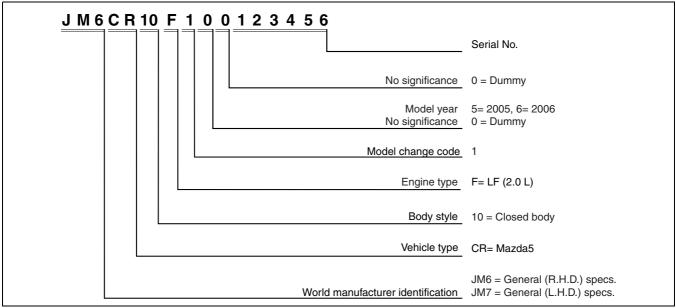
VEHICLE IDENTIFICATION NUMBER (VIN) CODE European (L.H.D. U.K.) specs.

DPE000000000B08



DPE000ZW1005

General (L.H.D. R.H.D.) specs.



DPE000ZW1006

DPE000000000B09

VEHICLE IDENTIFICATION NUMBER (VIN)

European (L.H.D.) specs.

JMZ CR1982*# 100001—

JMZ CR19F2*# 100001—

JMZ CR19F5*# 100001—

JMZ CR19R6*# 100001—

JMZ CR19T6*# 100001—

U.K. specs.

JMZ CR19820# 100001—

JMZ CR19F20# 100001—

JMZ CR19R60# 100001—

JMZ CR19T60# 100001—

General (L.H.D.) specs.

JM7 CR10F1*0 100001—

JM7 CR10F100 100001-

General (R.H.D.) specs.

JM6 CR10F100 100001-

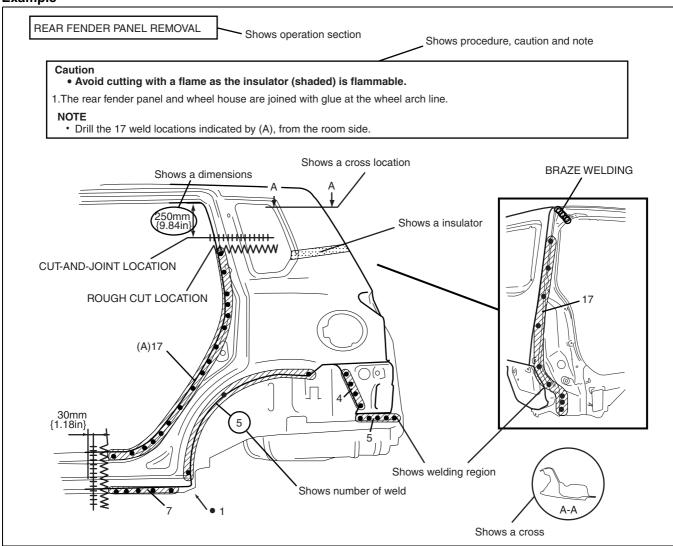
HOW TO USE THIS MANUAL

DPE000000000B01

Efficient Replacement of Body Panels

- This section contains information on the body panels in regard to the welding types, number of spot welds, and cut-and-join locations that are necessary for panel removal and installation.
- The type of weld and position are indicated by symbols.
- Some sections have notes concerning the operation being performed. Thoroughly read and understand the notes before carrying out any procedures.

Example



DPE2010B001

Symbols of Panel Replacement

• The following 6 symbols are used to indicate the type of weld that is used when replacing body panels.

0)/14001	MEANING
SYMBOL	MEANING
	Spot welding
	CO ² arc welding (plug welding)
+	CO ² spot welding

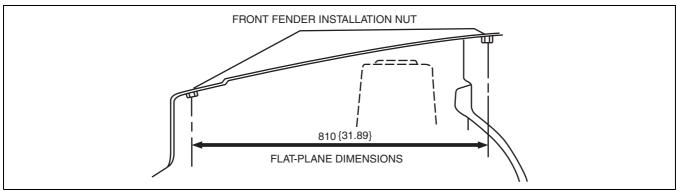
SYMBOL	MEANING
+++++++++++++++++++++++++++++++++++++++	Continuous MIG welding (Cut-and-join location)
	Braze welding
\\\	Rough cut location

MZZ2010B002

Body Dimensions (Flat-plane Dimensions)

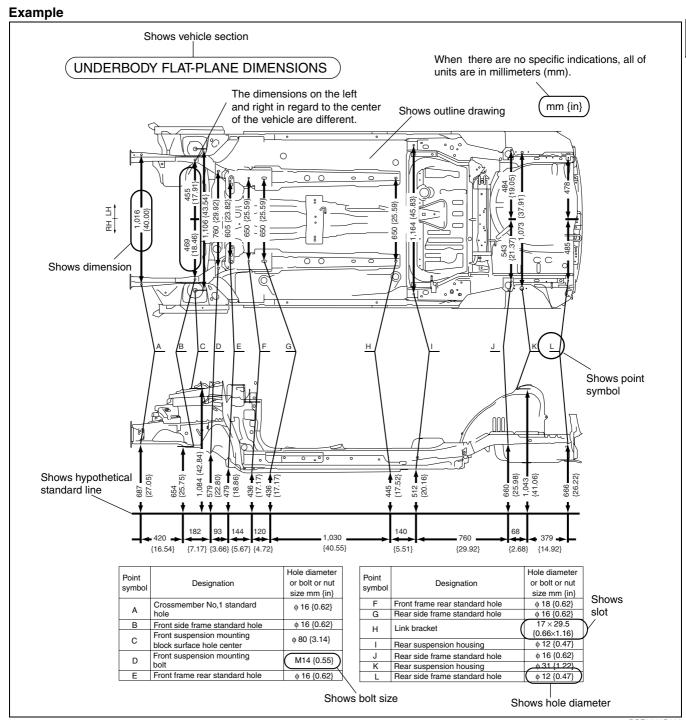
• Flat-plane dimensions are the dimensions measured by projecting certain reference points onto a plane

surface.



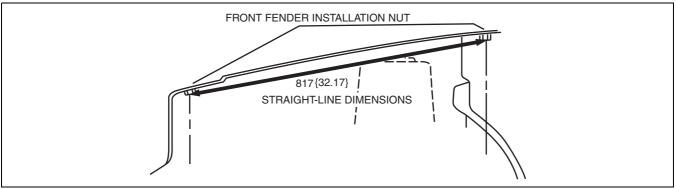
DPE2010B010

- When there are no specific indications, the standard points and dimensions are symmetrical in regard to the center of the vehicle.
- The hypothetical lines may differ according to the vehicle model.
- The schematic diagram shows the vehicle as it is projected from the underbody.



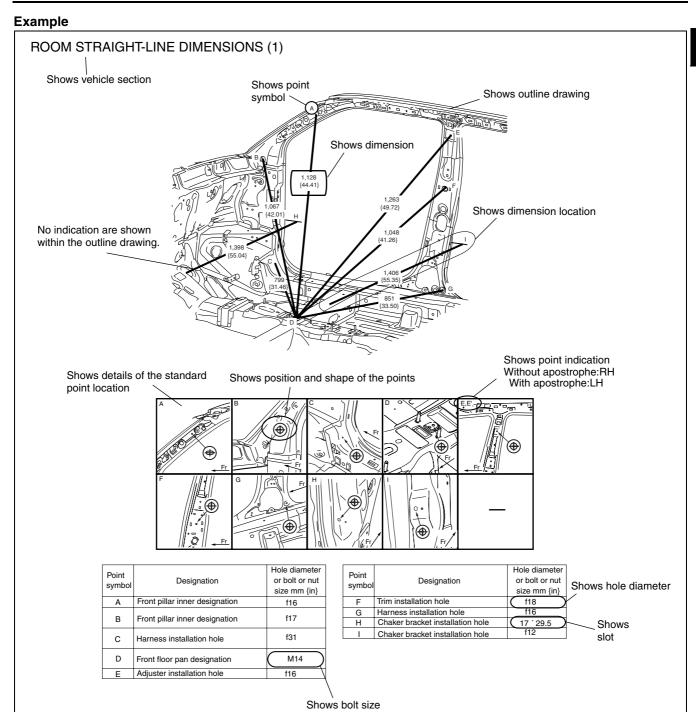
DPE2010B003

Body Dimensions (Straight-line Dimensions)
Straight-line dimensions are the actual dimensions between two standard points.



DPE2010B011

• When there are no specific indications, the standard points and dimensions are symmetrical in regard to the center of the vehicle.



DPE2010B004

Symbols of Body Dimensions

• The following 8 symbols are used to indicate the standard points.

SYMBOL	MEANING
(Center of circular hole
(Center elliptical hole
(Notch
•	Panel seam, bead, etc.

SYMBOL	MEANING
(arrow only)	Bolt tip
\oplus	Center of rectangular-shaped hole
	Edge of rectangular-shaped hole

MZZ2010B016

SERVICE PRECAUTIONS

Arrangement of Workshop

Arrangement of the workshop is important for safe and efficient work.

DPE000000000B02

Safety Precautions

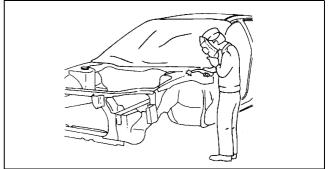
• Protective head covering and safety shoes should always be worn. Depending upon the nature of the work, gloves, safety glasses, ear protectors, face shield, etc., should also be used.



MZZ2036B001

Vehicle Protection

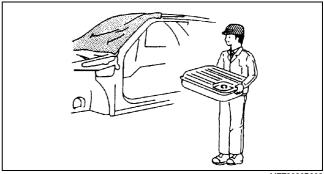
- · Use seat covers and floor covers.
- Use heat-resistant protective covers to protect glass areas and seats from heat or sparks during welding.
- · Protect items such as moldings, garnishes, and ornaments with tape when welding.



MZZ2036B002

Remove Dangerous Articles

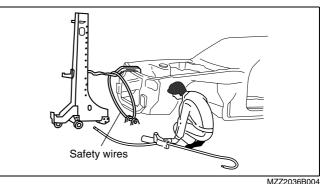
• Remove the fuel tank before using an open flame in that area. Plug connection piping to prevent fuel leakage.



MZZ2036B003

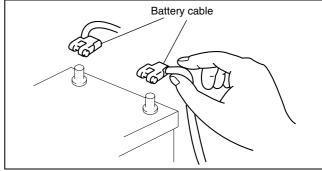
Use of Pulling Equipment

• When using pulling equipment, keep away from the pulling area and use safety wires to prevent accidents.



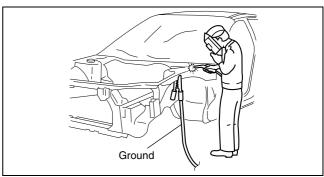
Prevent Short Circuits

- Turn the ignition switch to the LOCK position.
- · Disconnect the battery cables.



MZZ2036B005

Securely connect the welding machine ground near the welding area.



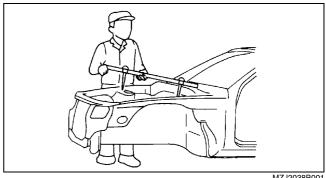
MZZ2036B006

DPE000000000B03

EFFICIENT REMOVAL OF BODY PANELS

Body Measurements

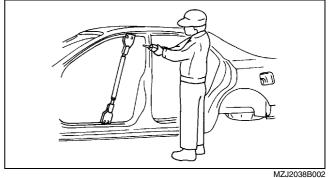
 Before removal or rough-cutting, first measure the body at and around the damaged area against the standard reference dimension specifications. If there is deformation, use frame repair equipment to make a rough correction.



MZJ2038B001

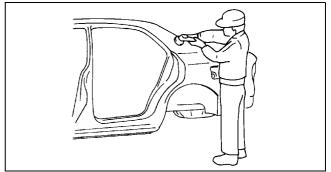
Prevention of Body Deformation

• Use a clamp or a jack for removal and reinforce at and around the rough-cutting location to prevent deforming of the body.



Selection of Cut-and-join Locations

 For parts where complete replacement is not feasible, careful cutting and joining operations should be followed. If the location to be cut is a flat area where there is no reinforcement, the selected cutting location should be where the welding distortion will be minimal.



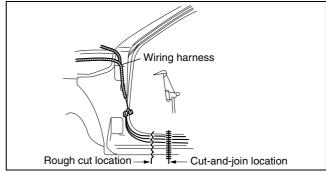
MZJ2038B003

Removal of Associated Parts

• Protect moldings, garnishes, and ornaments with tape when removing associated parts.

Rough Cutting of Damaged Panel

- Verify that there are no parts (such as pipes, hoses, and wiring harness) nearby or on the opposite side of a panel which could be damaged by heat.
- For cut-and-join areas, allow for an overlap of 30—50 mm {1.18—1.97 in} and then rough-cut the damaged panel.



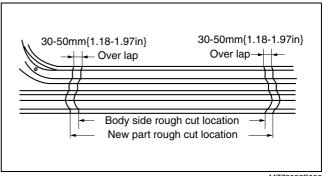
MZZ2038B001

DPE000000000B04

INSTALLATION PREPARATIONS

Rough Cutting of New Parts

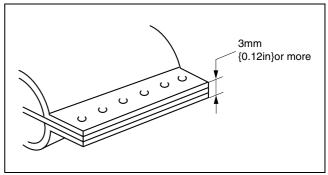
• For cut-and-join areas, allow for an overlap of 30—50 mm {1.18—1.97 in} with the remaining area on the body side and then rough-cut the new parts.



MZZ2038B002

Determination of Welding Method

 If the total thickness at the area to be welded is 3 mm {0.12 in} or more, use a CO₂ gas shielded-arc welder to make the plug welds.



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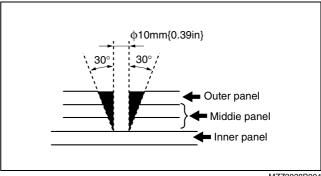
Making Holes for CO₂ Arc Welding

• For places that cannot be spot welded, make a hole for CO₂ arc welding using a punch or drill as follows.

(mm {in})

Panel thickness (ø)	Hole diameter (ø)
0.60—0.90 {0.02—0.03}	5 {0.19}
0.91—1.20 {0.04—0.05}	6 {0.23}
1.21—1.80 {0.051—0.07}	8 {0.31}
1.81—4.50 {0.071—0.17}	10 (0.39)

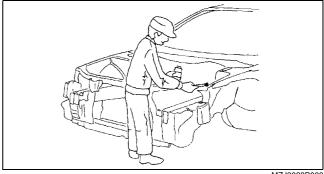
• Grind the shaded section indicated in the diagram below and create a hole in the part where the 3—4 plates are put together. Also, weld the plates together tightly so that gaps do not develop.



MZZ2038B004

Application of Weld-through Primer

• For treatment against corrosion, remove the paint grease, and other material from the portion of new part and body to be welded, and apply weld-through primer.



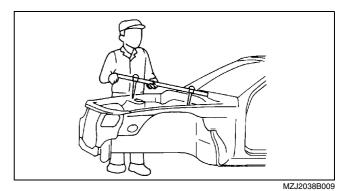
MZJ2038B008

EFFICIENT INSTALLATION OF BODY PANELS

Checking Preweld Measurements And Watching

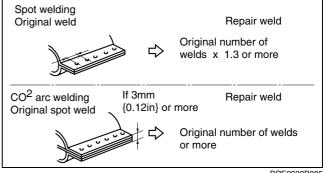
• Align to the standard reference dimensions, based upon the body dimensions illustration, so that new parts are installed in the correct position.





Welding Notes

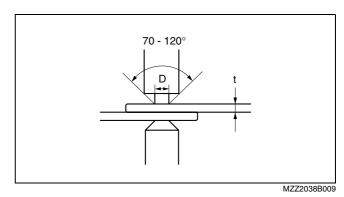
• For the number of weld points, welding should be performed in accordance with the following reference standards.



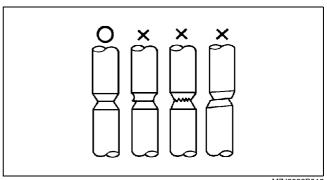
DPE2038B005

Spot Welding Notes

• The shape of the spot welder tip is $D=(2\times t)+3$. If the upper panel thickness is different from that of the under panel, adjust to the thinner one.

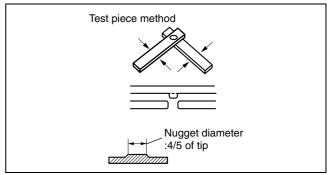


- Because the weld strength is affected by the shape of the spot welder tip, the optimum condition of the tip should always be maintained.
- Spot welds should be made at points other than the originally welded points.



MZJ2038B012

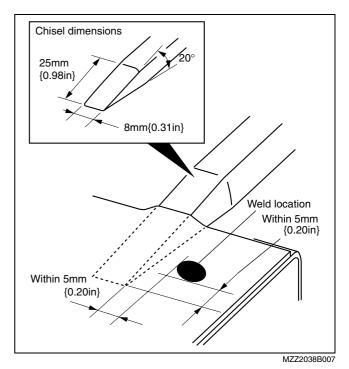
 Before spot welding, make a trial weld using the same material as the body panel to check the weld strength.



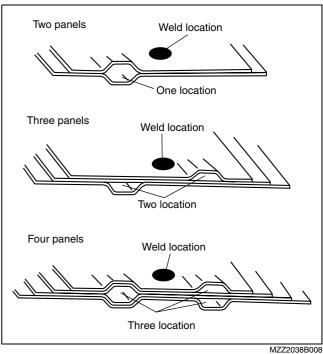
MZZ2038B006

Checking Weld Strength

 Installation locations of the engine, chassis, and seat belts are designated as important safety locations for weld strength. Check weld strength by driving a chisel between the panels at every fourth or fifth weld spot, and every tenth regular weld location.



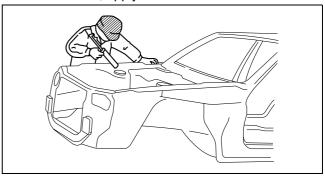
- Drive the chisel between the panels according to the number of panels as shown below.
- To determine weld strength, drive the chisel between the panel and check whether the panels come apart. If the panels come apart, make another weld near the original weld.
- Restore the shape of the checked area.



00-00-13

ANTICORROSION, SOUND INSULATION, AND VIBRATION INSULATION

- Body Sealing
 Apply body sealer where necessary.
 For locations where application of body sealer is difficult after installation, apply it before installation.

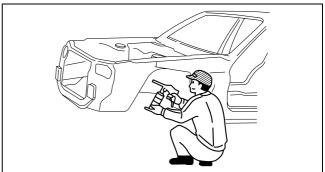


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Application of Undercoating

Apply an undercoat to the required location of the body.



CJJ2038B017

Application of Rust Inhibitor

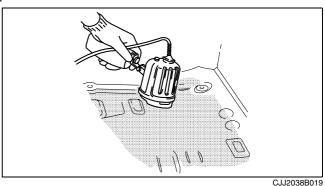
• Apply rust inhibitor (wax, oil, etc.) to the back of the welded areas.



CJJ2038B018

Application of Floor Silencer

Apply floor silencer by heating with an infrared ray lamp.



ABBREVIATION

DPE000000000B07

CM	Control module
Ctr	Center
DSC	Dynamic stability control
Fr	Front
HU	Hydraulic unit
LH	Left
М	Metallic
MC	Mica
RH	Right
Rr	Rear

BODY & ACCESSORIES



BODY STRUCTURE	BODY STRUCTURE
[CONSTRUCTION] 09-80A	[DIMENSIONS]09-80D
BODY STRUCTURE	BODY STRUCTURE
[PANEL REPLACEMENT] 09-80B	[PLASTIC BODY PARTS] 09-80E
BODY STRUCTURE	BODY STRUCTURE
[WATER-PROOF AND	[PRIMARY COLOR MIXTURE
RUST PREVENTIVE] 09-80C	CHART FOR BODY COLOS] . 09-80F

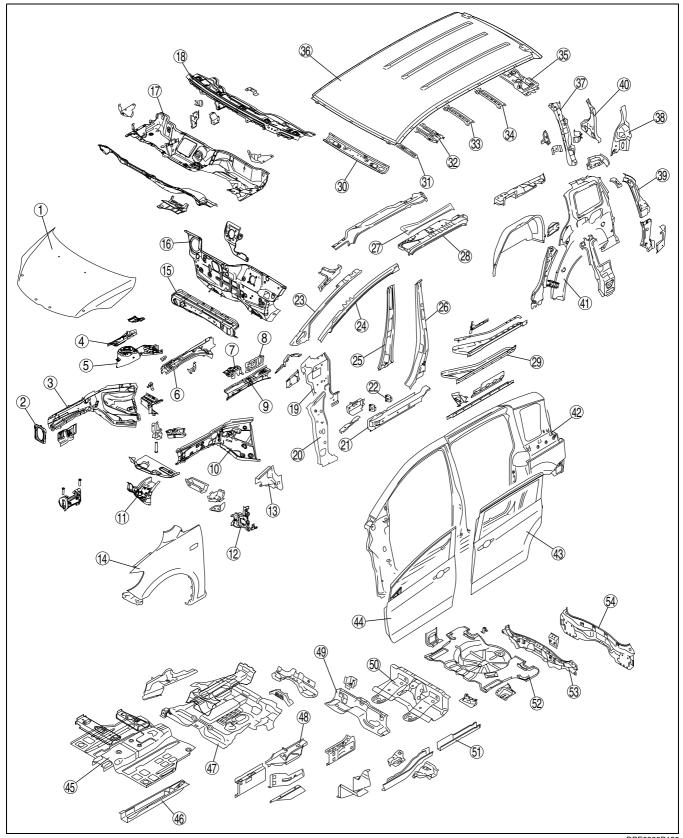
09-80A BODY STRUCTURE [CONSTRUCTION]

BODY COMPONENTS		ULTRA HIGH-TENSION STEEL	09-80A-7
CONSTRUCTION	09-804-2		

BODY COMPONENTS CONSTRUCTION

L.H.D. models

DPE098007000B01



DPE0980B133

x:Applied

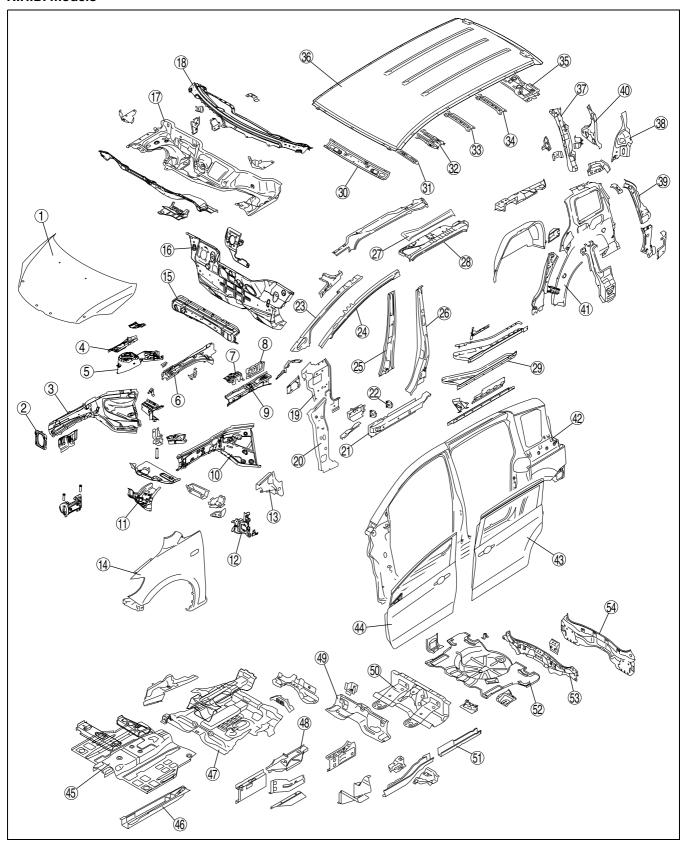
No.	Part Name		Ultra high- tension	High- tension	Rust proof steel		ot applied kness {in}
1	Bonnet		steel	steel	V		{0.026}
2	Front bumper bracket		-	X	X	2.90	
3	Front side frame (inner)		-	X	X	2.90	{0.114}
4	Wheel apron panel front			X	X	1.00	· ·
5	Suspension housing (lower)			-	X	2.60	{0.009}
6	Apron reinforcement (upper)		<u> </u>		X	1.00	{0.039}
7	Shroud upper reinforcement			<u> </u>	X	2.00	· ·
8	Front fender bracket				X	1.00	• •
9	Apron reinforcement (lower)				X	0.70	{0.028}
10	Front side frame (outer)			X	X	2.00	{0.020}
11	Front frame (rear)			X	X	2.00	{0.079}
12	Shroud side panel			X	X	1.00	
13	Cowl side reinforcement			-	X	1.20	{0.039}
14	Front fender panel		<u> </u>		X		{0.028}
15	Dash lower member		×		X	1.40	· ·
16	Dash lower panel				X	0.80	{0.033}
17	Dash upper panel					0.85	{0.033}
18	Cowl panel		<u> </u>	-	X		{0.033}
19	Hinge pillar (inner)			-	X	1.60	
20	Hinge pillar reinforcement			- X	- X	1.60	· ·
21	Side sill reinforcement		- X	X	-	1.40	•
22	Side sill reinforcement gusset			^	-		{0.033}
23	Front pillar (inner)			-	-	1.40	
24	Front pillar (illifer) Front pillar reinforcement		X		-	1.40	{0.033}
25	Center pillar (inner)		X	-	-	1.20	{0.047}
	Certier pinar (inner)	Upper	X	-	-	1.60	{0.047}
26	Center pillar reinforcement	Center	X		-	1.80	{0.003}
20	Center pinar remorcement	Lower	×		-	1.40	• •
27	Roof rail (outer, rear)	LOWEI			X		{0.035}
28	Roof rail (outer)			X	X	1.00	
29	Step panel				X		{0.047}
30	Front header		-	-	-		{0.026}
31	Roof reinforcement			_	-		{0.022}
32	Roof reinforcement		_	X	_		{0.055}
33	Roof reinforcement		 -	-	_		{0.022}
34	Roof reinforcement		_	-	_		{0.022}
	Tion remore ment	Upper		_	-		{0.020}
35	Rear header	Lower	-	-	_		{0.030}
36	Roof panel	LOWEI	_	-	-		{0.030}
37	Rear pillar reinforcement			_	-		{0.028}
38	C-pillar reinforcement		_	Х	-		{0.047}
39	Rear pillar (outer)		_				{0.028}
40	Corner junction		-		- X		{0.026}
41	Rear pillar (inner)			_	X		{0.026}
42	Side frame (outer)		<u>-</u>	_	X	0.70	
43	Rear door panel		<u>-</u>	X	X	0.70	{0.028}
44	Front door panel			X	X	0.70	
45	Front floor pan		<u> </u>	-	X		{0.026}
46	Front B frame			X	X	1.20	
47	Center floor pan			-	X		{0.028}
		Front	X	_	X		{0.020}
48	Side sill (inner)	Rear	X		^		{0.071}
49	Crossmember No.3	i ioai	-	X	X		{0.071}
+3	OTOSSITICITIDEL INO.O		1 -	^	^	1.00	{€∪.∪J

No.	Part Name		Ultra high- tension steel	High- tension steel	Rust proof steel	Thickness (mm) {in}
50	Crossmember No.4		-	х	х	1.20 {0.047}
51 Rear side frame	Poor side frame	Front	х	-	х	2.60 {0.102}
	near side frame	Rear	х	-	х	1.80 {0.071}
52	Trunk floor pan	•	-	-	х	0.70 {0.028}
53	Rear end member		-	-	-	1.20 {0.047}
54	Rear end panel		-	-	х	1.40 {0.055}

09

BODY STRUCTURE [CONSTRUCTION]

R.H.D. models



DPE0980B130

x:Applied

-: Not applied

			ultra high-	High-	Durat		ot appli cness
No.	Part Name		tension steel	tension steel	Rust proof steel	(mm)	
1	Bonnet		-	х	х	0.65	{0.026}
2	Front bumper bracket		-	х	-	2.90	{0.114}
3	Front frame (inner)		-	х	х	2.00	{0.079}
4	Wheel apron panel front		-	х	х	1.00	{0.039}
5	Suspension housing (lower)		-	-	Х	2.60	{0.102}
6	Apron reinforcement (upper)		-	•	x	1.00	
7	Shroud upper reinforcement		-	-	х	2.00	{0.079}
8	Front fender bracket		-	1	Х	1.00	{0.039}
9	Apron reinforcement (lower)		-	-	х	0.70	{0.028}
10	Front frame (outer)		-	х	x	2.00	{0.079}
11	Front frame (rear)		-	х	х	2.00	{0.079}
12	Shroud side panel		-	х	х	1.00	{0.039}
13	Cowl side reinforcement		-	-	х	1.20	{0.047}
14	Front fender panel		-	-	х	0.70	{0.028}
15	Dash lower member		х	-	х	1.40	{0.055}
16	Dash lower panel		-	-	-	0.80	{0.031}
17	Dash upper panel		-	-	-	0.85	{0.033}
18	Cowl panel		-	-	-	0.80	{0.031}
19	Hinge pillar (inner)		-	х	-	1.60	{0.063}
20	Hinge pillar reinforcement		х	-	-	1.60	{0.063}
21	Side sill reinforcement		-	х	-	1.40	{0.055}
22	Side sill reinforcement gusset		-	-	-	1.20	{0.047}
23	Front pillar (inner)		х	-	-	1.40	{0.055}
24	Front pillar reinforcement		х	-	-	1.80	{0.071}
25	Center pillar (inner)		х	-	-	1.20	{0.047}
		Upper	х	-	-	1.60	{0.063}
26	Center pillar reinforcement	Center	Х	-	-	1.80	{0.071}
		Lower	Х	-	-	1.40	{0.055}
27	Roof rail (outer, rear)	<u>.</u>	-	-	х	0.90	{0.035}
28	Roof rail (outer)		-	х	Х	1.00	{0.039}
29	Step panel		-	-	Х	1.20	{0.047}
30	Front header		-	-	-	0.65	{0.026}
31	Roof reinforcement		-	-	-	0.55	{0.022}
32	Roof reinforcement		-	х	-	1.40	{0.055}
33	Roof reinforcement		-	-	-	0.55	{0.022}
34	Roof reinforcement		-	-	-	0.55	{0.022}
٥٢	Descharder	Upper	-	-	-	0.50	{0.020}
35	Rear header	Lower	-	-	-	0.75	{0.030}
36	Roof panel	<u>.</u>	-	-	-	0.75	{0.030}
37	Rear pillar reinforcement		-	-	-	0.70	{0.028}
38	C-pillar reinforcement		-	х	-	1.20	{0.047}
39	Rear pillar (outer)		-	-	х	0.70	{0.028}
40	Corner junction		-	-	-	1.40	{0.055}
41	Rear pillar (inner)		-	-	х	0.65	{0.026}
42	Side frame (outer)		-	-	Х	0.70	{0.028}
43	Rear door panel		-	Х	х	0.70	
44	Front door panel		-	Х	х		{0.028}
45	Front floor pan		-	-	х		{0.026}
46	Front B frame		-	Х	х	1.20	
47	Center floor pan		-	-	x		{0.028}
		Front	х	-	x		{0.071}
48	Side sill (inner)	Rear	X	-	-	1.80	
49	Crossmember No.3	1	-	Х	х	1.00	• •

No.	Part Name		ultra high- tension steel	High- tension steel	Rust proof steel	Thickness (mm) {in}
50	Crossmember No.4		-	x	x	1.20 {0.047}
51	Rear side frame	Front	х	-	x	2.60 {0.102}
	near side frame	Rear	х	-	х	1.80 {0.071}
52	Trunk floor pan		-	-	х	0.70 {0.028}
53	Rear end member		-	-	-	1.20 {0.047}
54	Rear end panel		-	-	х	1.40 {0.055}

ULTRA HIGH-TENSION STEEL

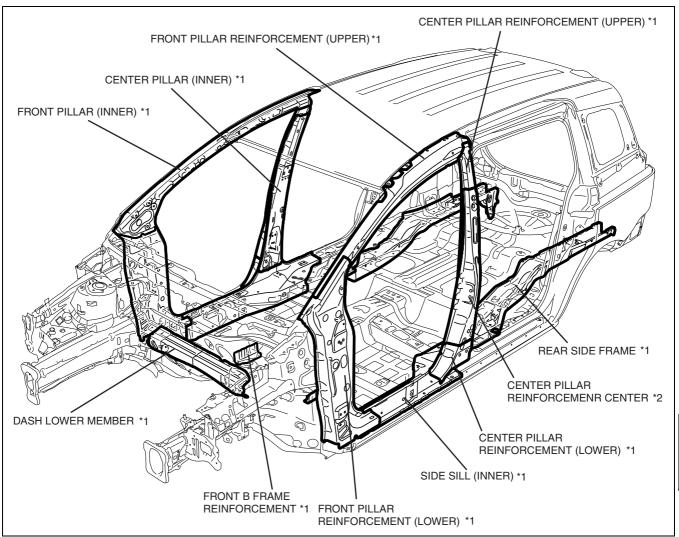
DPF098007000B06

Characteristics of Ultra High-Tensile Steel Plates

- Ultra high-tensile steel plates have enhanced tensile strength compared to previous high-tensile steel plates.
- Because the strength is maintained even though the plates are thin-walled, the ultra high-tensile steel plates are used for the frames and the main frame parts which form the cabin, reducing the weight of the vehicle.
- Enhanced shock absorption has improved the safety.

Range of Use and Cautions for Service

- Because the ultra high-tensile steel is hard and it may be difficult to reform, when extracting the damaged part using a frame repair machine, perform the work verifying that other parts are not affected.
- · When drilling welded parts, use a well-ground drill bit.
- After welding, inspect the weld strength. If adhesion is poor, perform CO2 arc welding (plug welding).



DPE0980B131

- *1 : Indicates tensile strength of 590 MPa.
- *2: Indicates tensile strength of 780 MPa.

09-80B BODY STRUCTURE [PANEL REPLACEMENT] FRONT BUMPER BRACKET REMOVAL 09-80B-1 FRONT FRAME (REAR) REMOVAL09-80B-28 FRONT FRAME (REAR) INSTALLATION 09-80B-29 FRONT BUMPER BRACKET FRONT PILLAR INSTALLATION 09-80B-33 SHROUD PANEL REMOVAL/INSTALLATION......... 09-80B-3 CENTER PILLAR (OUTER) REMOVAL..09-80B-36 **CENTER PILLAR (OUTER)** SHROUD SIDE PANEL REMOVAL.... 09-80B-3 SHROUD SIDE PANEL INSTALLATION. 09-80B-4 **CENTER PILLAR REINFORCEMENT AND INNER** COWL SIDE REINFORCEMENT REMOVAL.....09-80B-39 **CENTER PILLAR REINFORCEMENT AND INNER COWL SIDE REINFORCEMENT** INSTALLATION......09-80B-40 SHROUD UPPER REINFORCEMENT SIDE SILL PANEL (OUTER) REMOVAL . 09-80B-42 SIDE SILL PANEL (OUTER) SHROUD UPPER REINFORCEMENT INSTALLATION......09-80B-43 SIDE SILL REINFORCEMENT **APRON REINFORCEMENT** REMOVAL......09-80B-44 SIDE SILL REINFORCEMENT APRON REINFORCEMENT (LOWER) REAR FENDER PANEL REMOVAL.....09-80B-44 APRON REINFORCEMENT (PARTIAL **REAR FENDER PANEL INSTALLATION. 09-80B-45 C-PILLAR REINFORCEMENT APRON REINFORCEMENT (PARTIAL CUTTING)** REMOVAL.....09-80B-46 **C-PILLAR REINFORCEMENT** WHEEL APRON PANEL (FRONT) INSTALLATION......09-80B-47 REAR END PANEL REMOVAL09-80B-48 WHEEL APRON PANEL (FRONT) REAR END PANEL INSTALLATION09-80B-49 REAR PILLAR (OUTER) REMOVAL 09-80B-50 REAR PILLAR (OUTER) INSTALLATION 09-80B-51 WHEEL APRON COMPONENT REAR PILLAR REINFORCEMENT WHEEL APRON COMPONENT REMOVAL......09-80B-52 **REAR PILLAR REINFORCEMENT** FRONT SIDE FRAME COMPONENT INSTALLATION......09-80B-53 REAR FLOOR PAN REMOVAL09-80B-54 FRONT SIDE FRAME COMPONENT REAR FLOOR PAN INSTALLATION 09-80B-56 REAR SIDE FRAME (PARTIAL CUTTING) FRONT SIDE FRAME (PARTIAL CUTTING) REMOVAL......09-80B-58 **REAR SIDE FRAME (PARTIAL CUTTING)** FRONT SIDE FRAME (PARTIAL CUTTING) ROOF PANEL REMOVAL.....09-80B-60 TORQUE BOX REMOVAL.......... 09-80B-26 ROOF PANEL INSTALLATION09-80B-61 TORQUE BOX INSTALLATION...... 09-80B-27

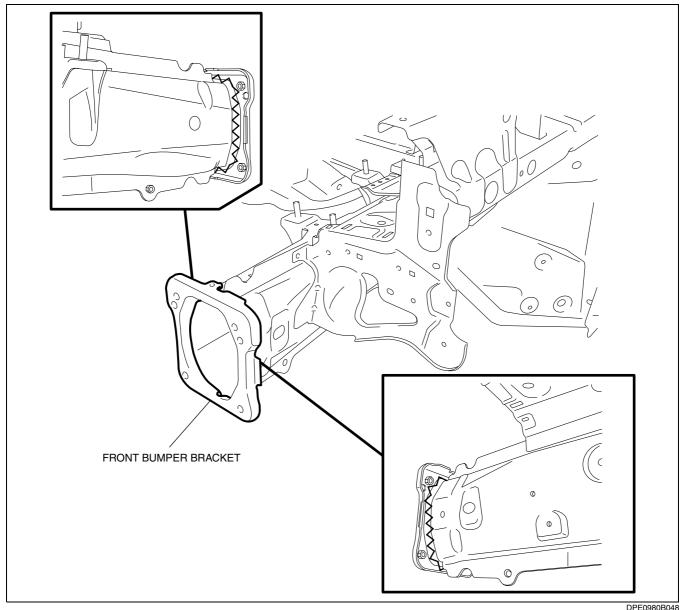
FRONT BUMPER BRACKET REMOVAL

1. Remove the front bumper bracket.

Caution

• Only the procedure for the left side is described, the shape of the right side differs.

DPE098053896B01

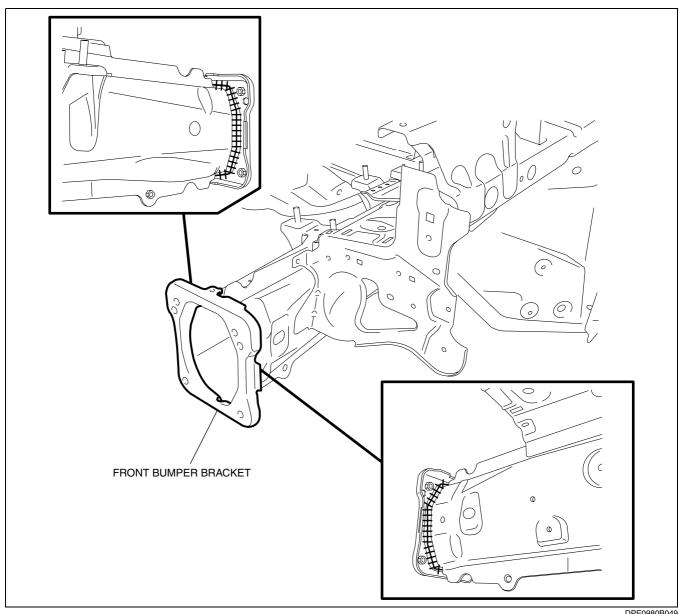


DPE0980B048

FRONT BUMPER BRACKET INSTALLATION

- 1. When installing new parts, measure and adjust the body as necessary to conform with standard dimensions.

 2. After temporarily installing new parts, make sure the related parts fit properly.



DPE0980B049

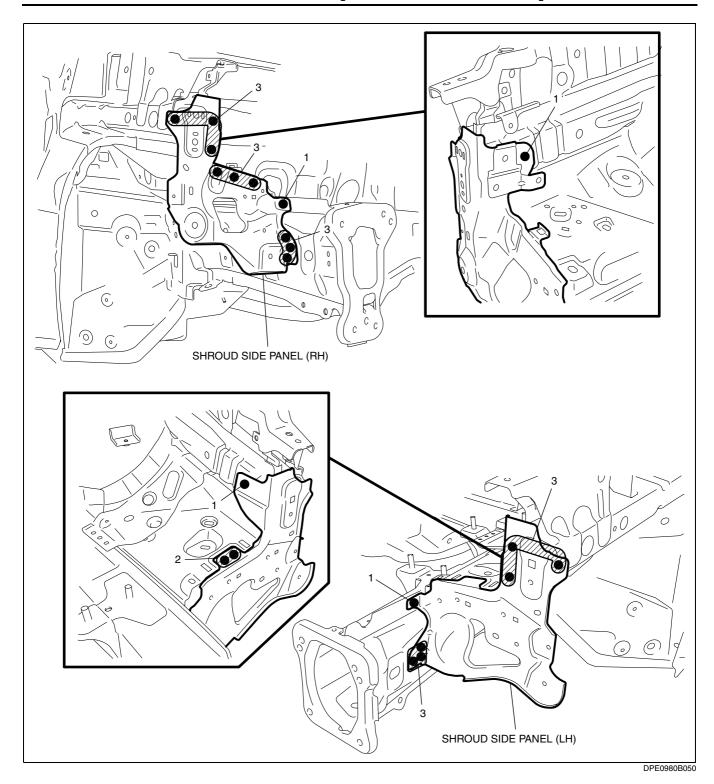
SHROUD PANEL REMOVAL/INSTALLATION

For shroud panel removal/installation and replacement procedures, refer to the MAZDA5 Workshop Manual.

SHROUD SIDE PANEL REMOVAL

1. Remove the shroud side panel.

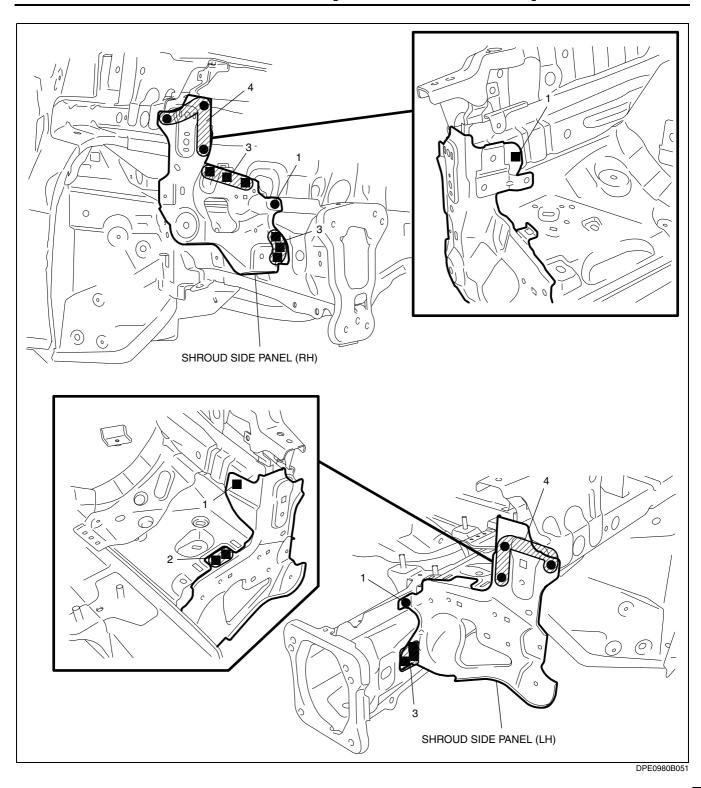
DPE098053140B01



SHROUD SIDE PANEL INSTALLATION

- 1. When installing new parts, measure and adjust the body as necessary to conform with standard dimensions.

 2. Drill holes for plug welds before installing new parts.
- 2. Drill holes for plug welds before installing new parts.
- 3. After temporarily installing new parts, make sure the related parts fit properly.



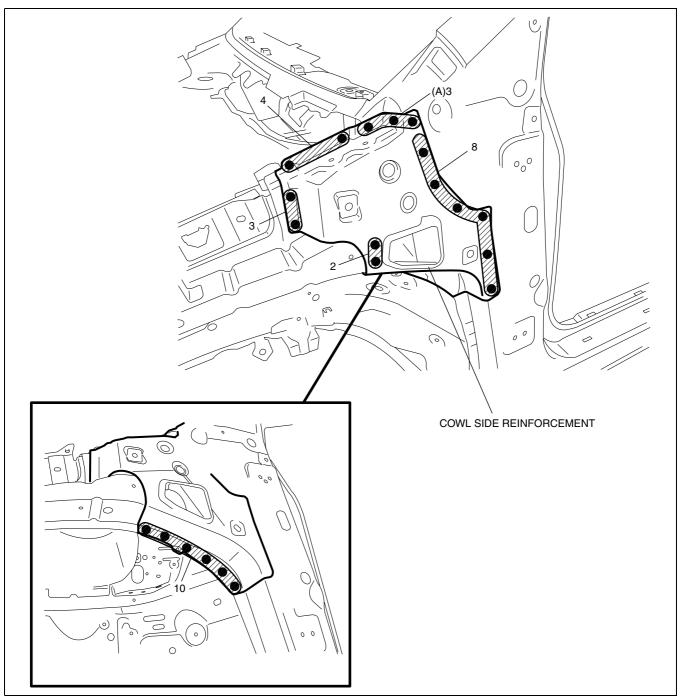
COWL SIDE REINFORCEMENT REMOVAL

1. Remove the cowl side reinforcement.

Caution

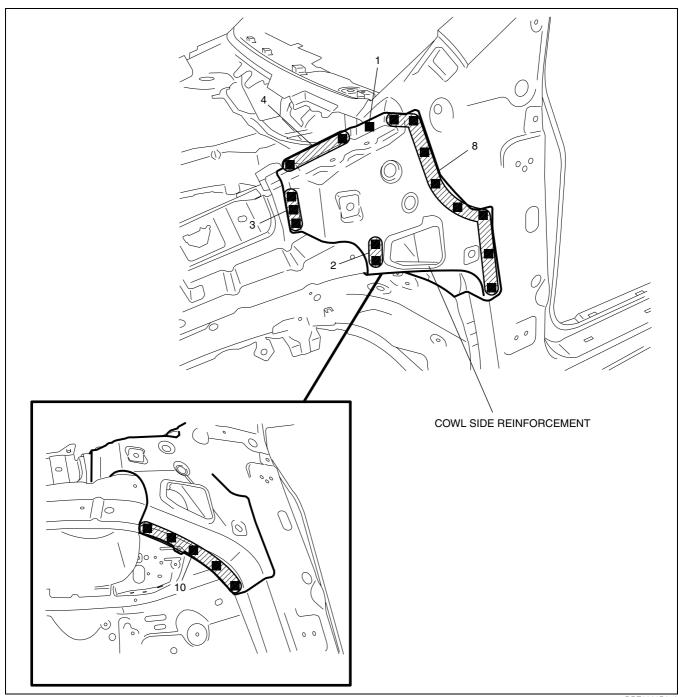
• Be careful not to damage the windshield when drilling the 3 locations indicated by (A).

DPE098053290B01



COWL SIDE REINFORCEMENT INSTALLATION

- 1. When installing new parts, measure and adjust the body as necessary to conform with standard dimensions.
- Drill holes for plug welds before installing new parts.
 After temporarily installing new parts, make sure the related parts fit properly.



DPE0980B053

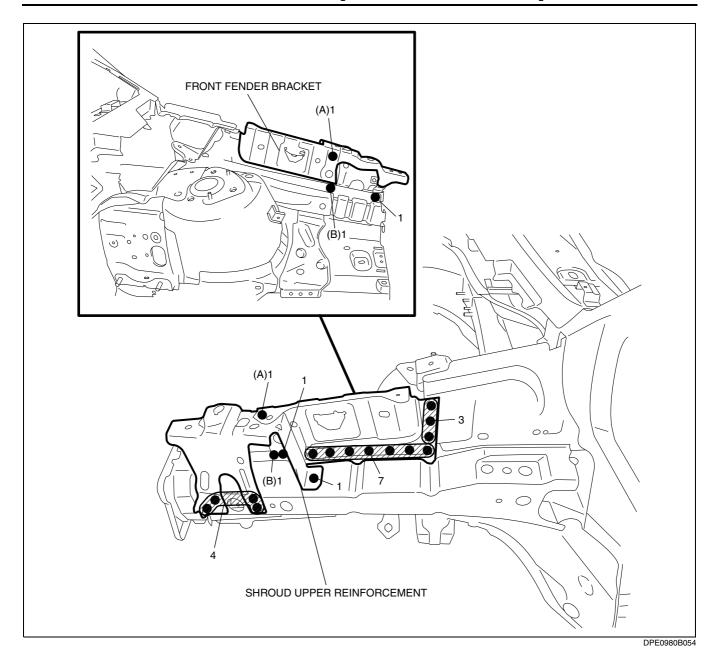
DPE098053152B01

SHROUD UPPER REINFORCEMENT REMOVAL

1. Remove the shroud upper reinforcement.

Note

- When removing the shroud upper reinforcement and the front fender bracket separately, drill the 2 locations indicated by (A).
- Weld locations (B) in the figure indicate the same locations.

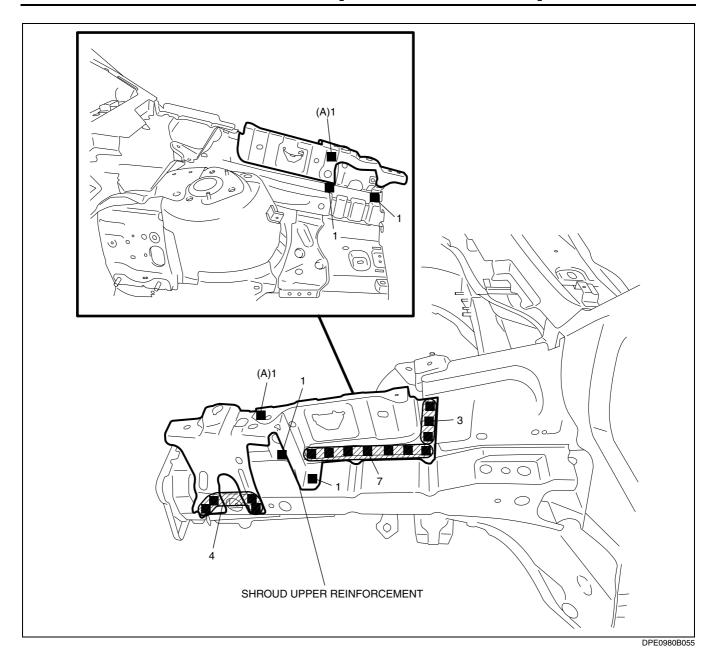


SHROUD UPPER REINFORCEMENT INSTALLATION

DPE098053152B02

- When installing new parts, measure and adjust the body as necessary to conform with standard dimensions.
 Drill holes for plug welds before installing new parts.
- 3. After temporarily installing new parts, make sure the related parts fit properly.

• When replacing the shroud upper reinforcement and the front fender bracket separately, weld the 2 locations indicated by (A).

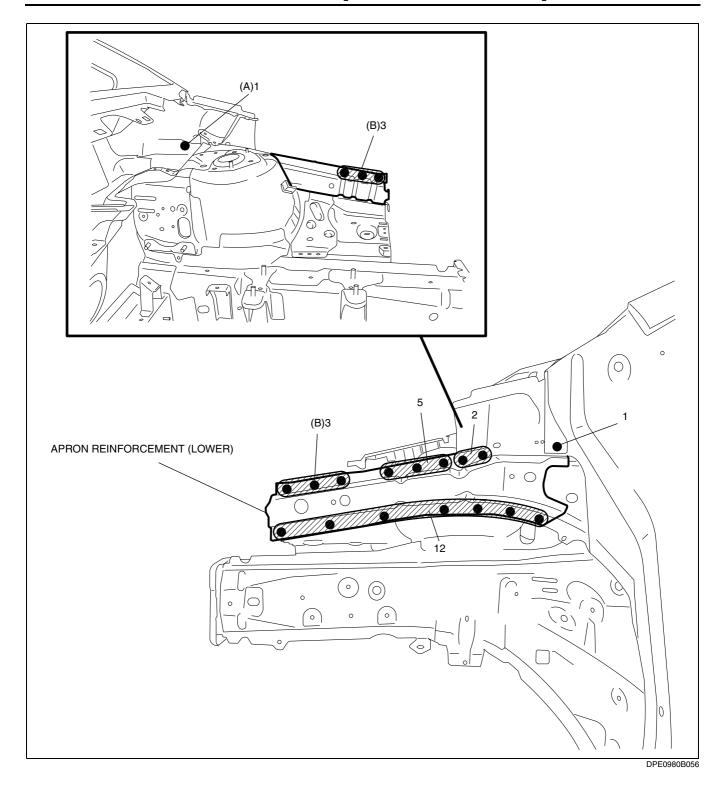


APRON REINFORCEMENT (LOWER) REMOVAL

- 1. Drill the 1 location indicated by (A) from the engine compartment, as they cannot be seen from the outer side.
- 2. Remove the apron reinforcement (lower).

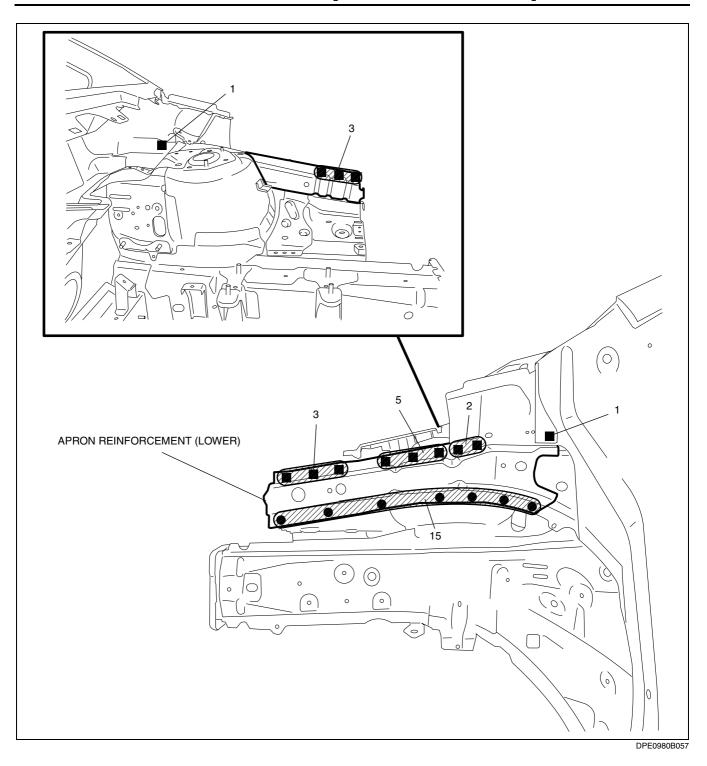
Note

• Weld locations (B) in the figure indicate the same locations.



APRON REINFORCEMENT (LOWER) INSTALLATION

- 1. When installing new parts, measure and adjust the body as necessary to conform with standard dimensions.
- 2. Drill holes for plug welds before installing new parts.
- 3. After temporarily installing new parts, make sure the related parts fit properly.

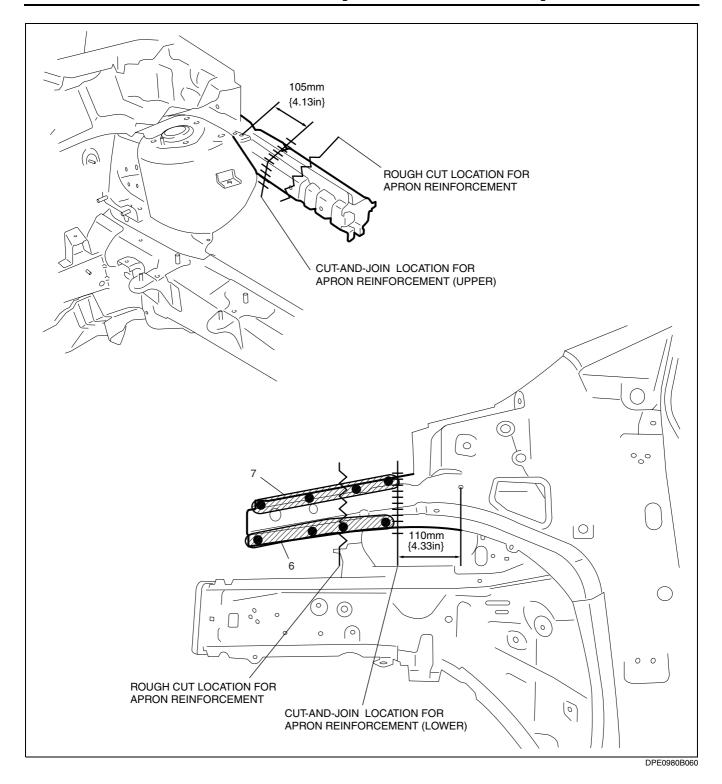


APRON REINFORCEMENT (PARTIAL CUTTING) REMOVAL

1. Rough cut at the locations shown in the figure to remove damaged parts.

2. Remove the apron reinforcement.

DPE098053260B03



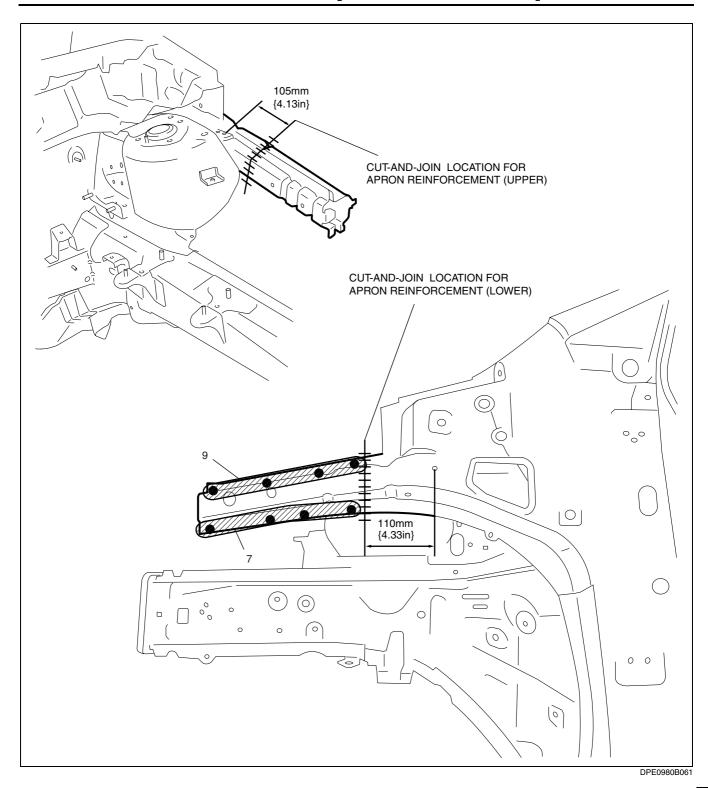
APRON REINFORCEMENT (PARTIAL CUTTING) INSTALLATION

DPE098053260B04

- 1. When joining and cutting the new and existing parts, trial fit the new part in position, and then measure and adjust the body as necessary to conform with standard dimensions.
- 2. Drill holes for plug welds before installing new parts.
- 3. After temporarily installing new parts, make sure the related parts fit properly.

09

BODY STRUCTURE [PANEL REPLACEMENT]



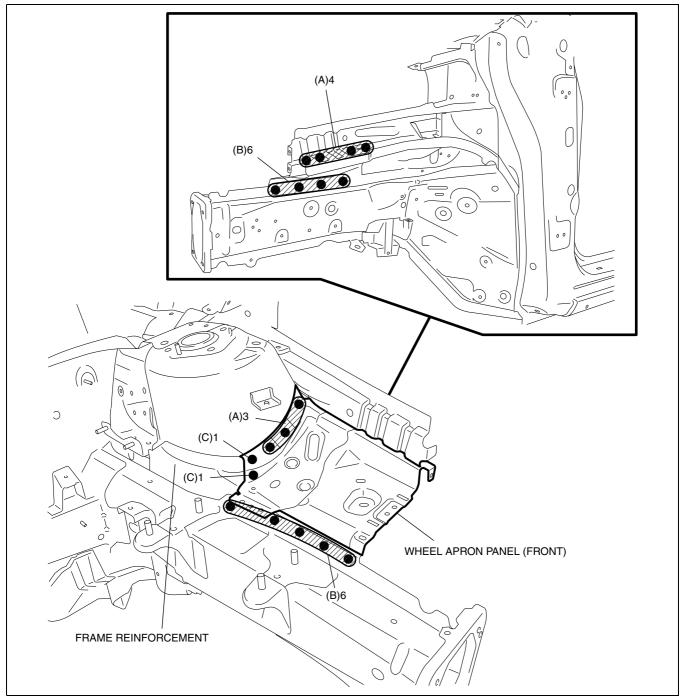
WHEEL APRON PANEL (FRONT) REMOVAL

1. Drill the 7 locations indicated by (A), and 6 locations indicated by (B).

DPE098053210B01

Note

- Weld locations (B) in the figure indicate the same locations.
- 2. When removing the wheel apron panel (front), the frame reinforcement may interfere and make removal difficult. Therefore, drill the 2 locations indicated by (C) and then open the frame reinforcement outward.



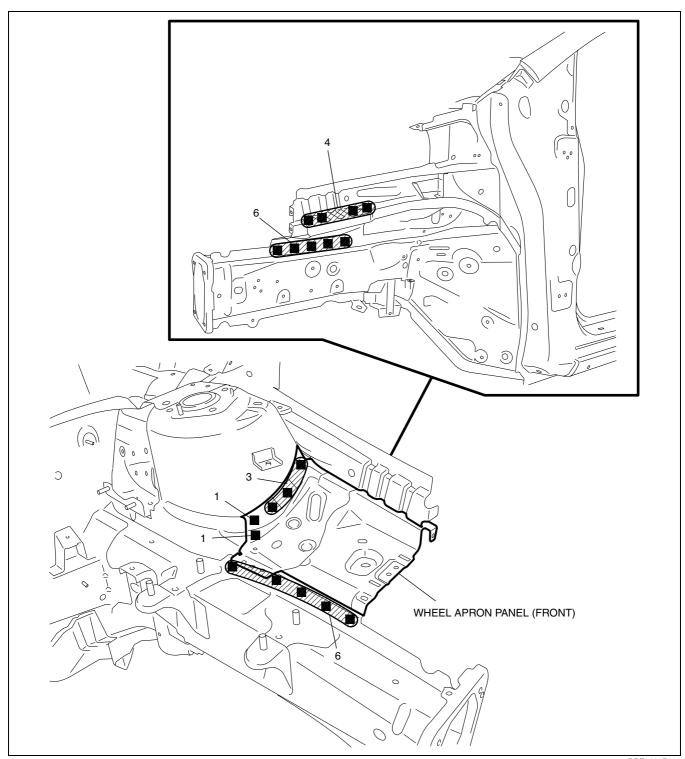
DPE0980B058

WHEEL APRON PANEL (FRONT) INSTALLATION

- 1. When installing new parts, measure and adjust the body as necessary to conform with standard dimensions.
- 2. Drill holes for plug welds before installing new parts.
- 3. After temporarily installing new parts, make sure the related parts fit properly.

09

BODY STRUCTURE [PANEL REPLACEMENT]



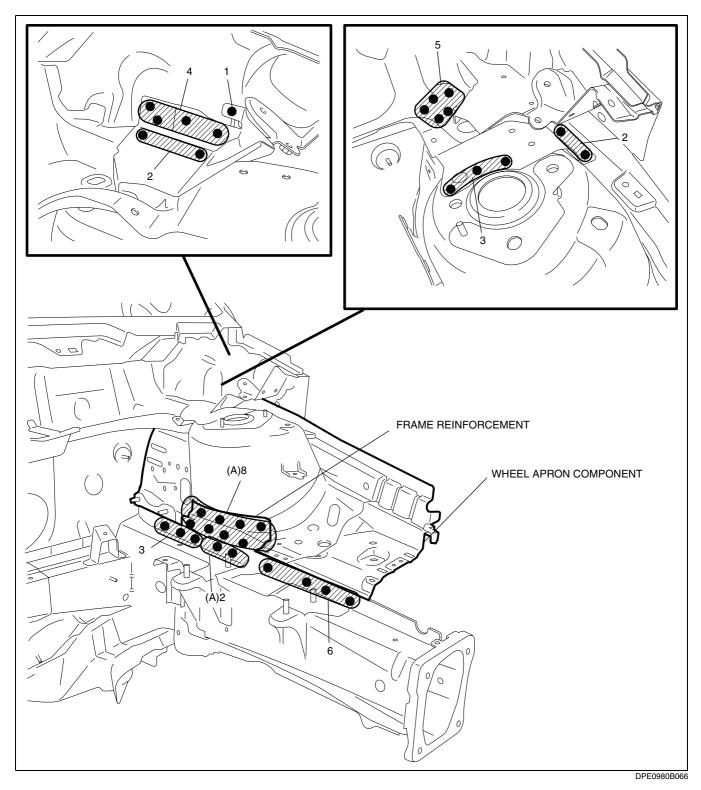
DPE0980B059

WHEEL APRON COMPONENT REMOVAL

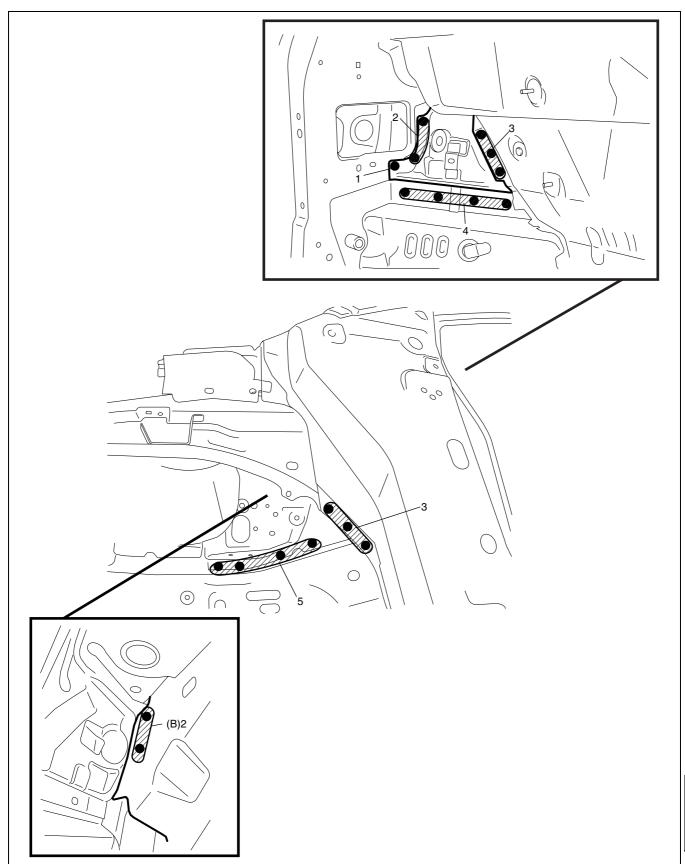
1. When removing the wheel apron component, the frame reinforcement may interfere and make removal difficult. Therefore, drill 10 locations indicated by (A), then remove the frame reinforcement.

Note

• If the frame reinforcement is not damaged, do not dispose of it, as it can be reinstalled. If it is damaged considerably, replace it with a new one.



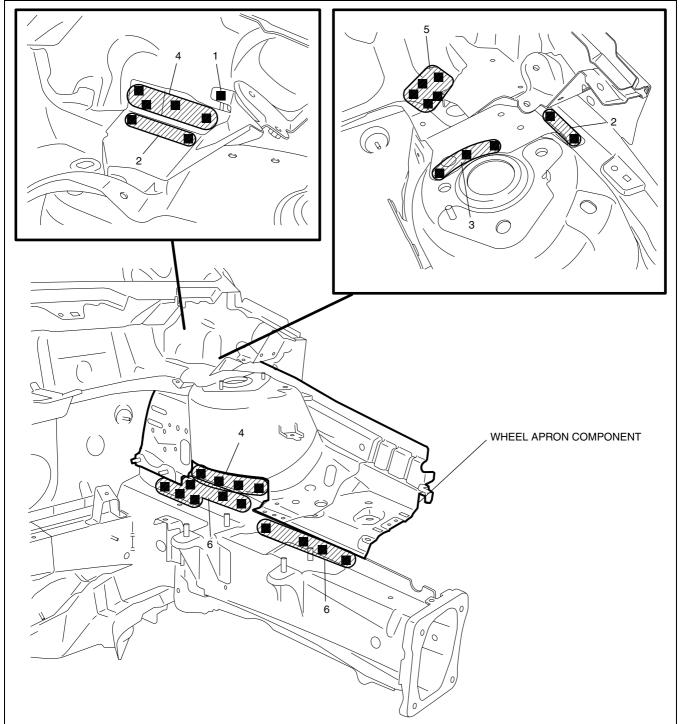
- 2. Grind the 2 locations indicated by (B) using a belt grinder from the inner side of the inner wheel housing.3. Drill the remaining locations, then remove the wheel apron component.



DPE0980B068

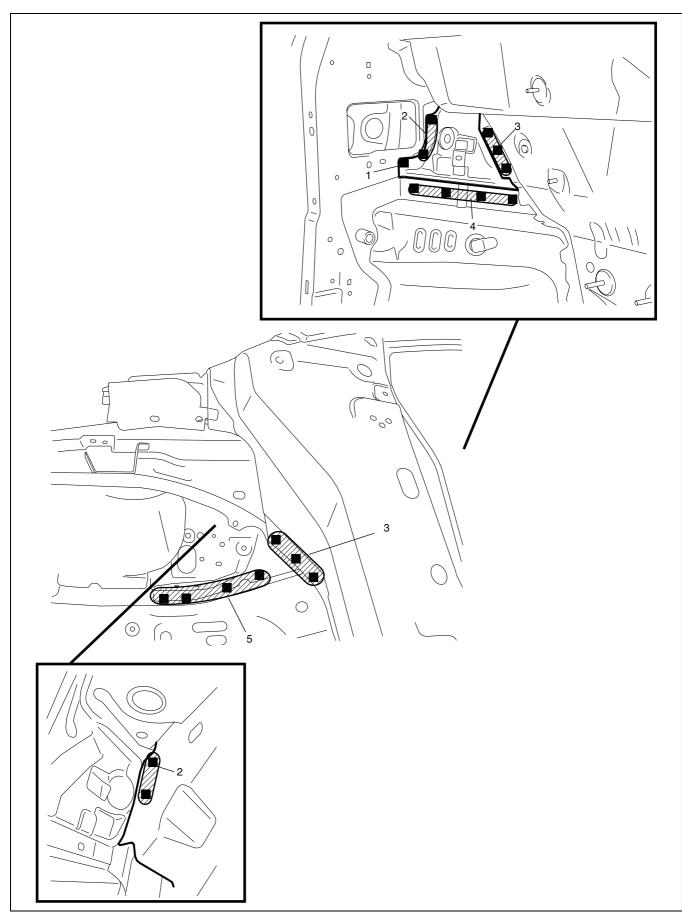
WHEEL APRON COMPONENT INSTALLATION

- When installing new parts, measure and adjust the body as necessary to conform with standard dimensions.
 Drill holes for plug welds before installing new parts.
 After temporarily installing new parts, make sure the related parts fit properly.



09

BODY STRUCTURE [PANEL REPLACEMENT]

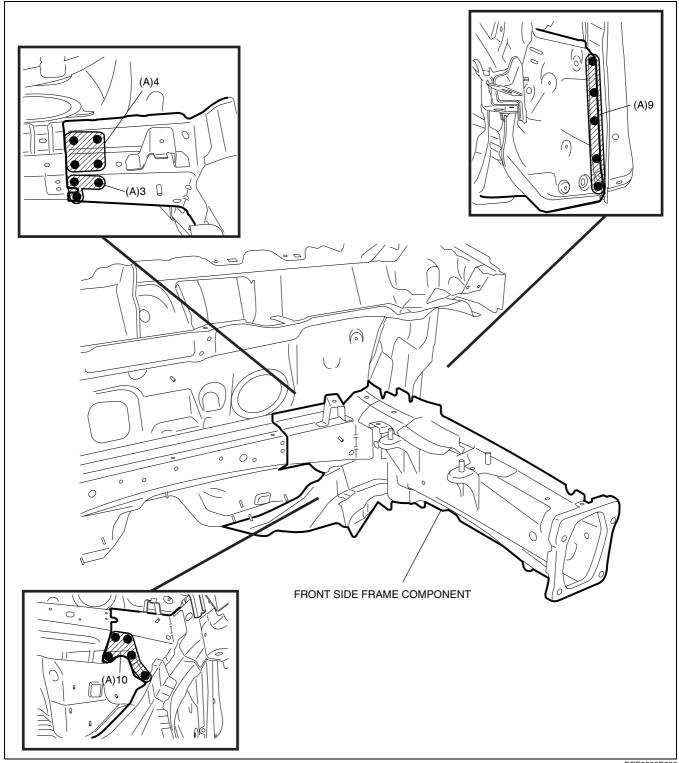


DPE0980B069

FRONT SIDE FRAME COMPONENT REMOVAL

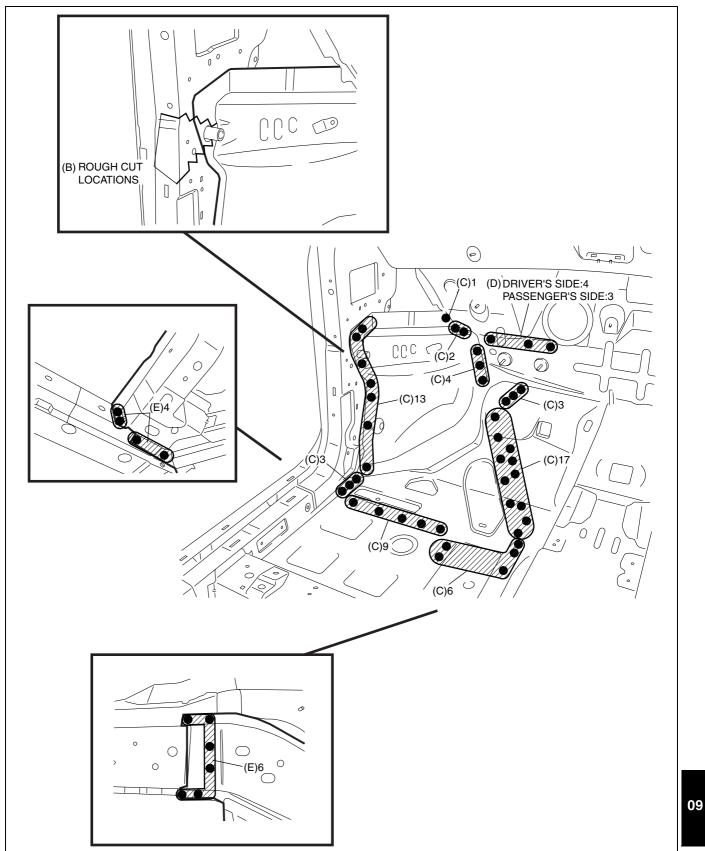
1. Drill the 26 locations indicated by (A).

DPE098053300B01



DPE0980B062

- 2. Rough cut area (B) and drill the 58 locations indicated by (C), 4 locations on the driver's side and 3 locations on the passenger's side indicated by (D).3. Drill the 10 locations indicated by (E) from the bottom.



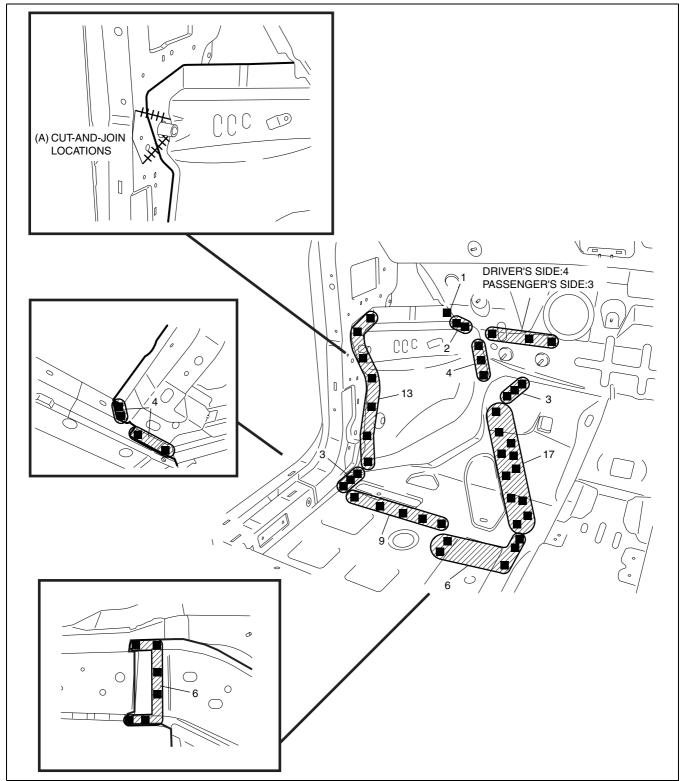
DPE0980B064

FRONT SIDE FRAME COMPONENT INSTALLATION

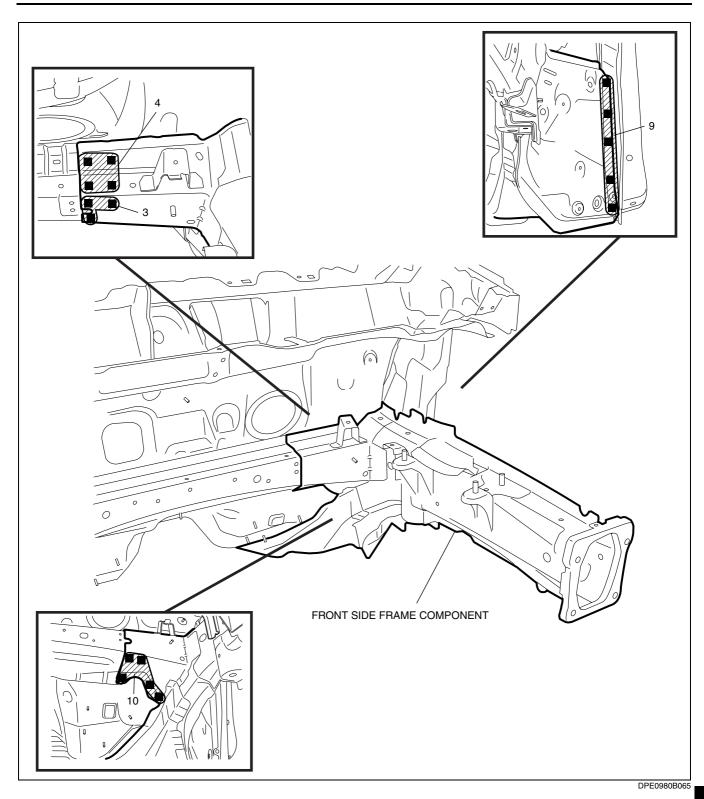
DPE098053300B02

- 1. To prepare for installation, cut area (A) on the new front side frame component.
- 2. When installing new parts, measure and adjust the body as necessary to conform with standard dimensions.
- 3. Drill holes for plug welds before installing new parts.

- 4. After temporarily installing new parts, make sure the related parts fit properly.5. Install the part cut in Step 1.
- 6. Grind the area where the part cut in Step 1 is butt welded with a disc grinder to finish the surface.
 7. Weld the remaining weld locations and install the front side frame component.



DPE0980B063

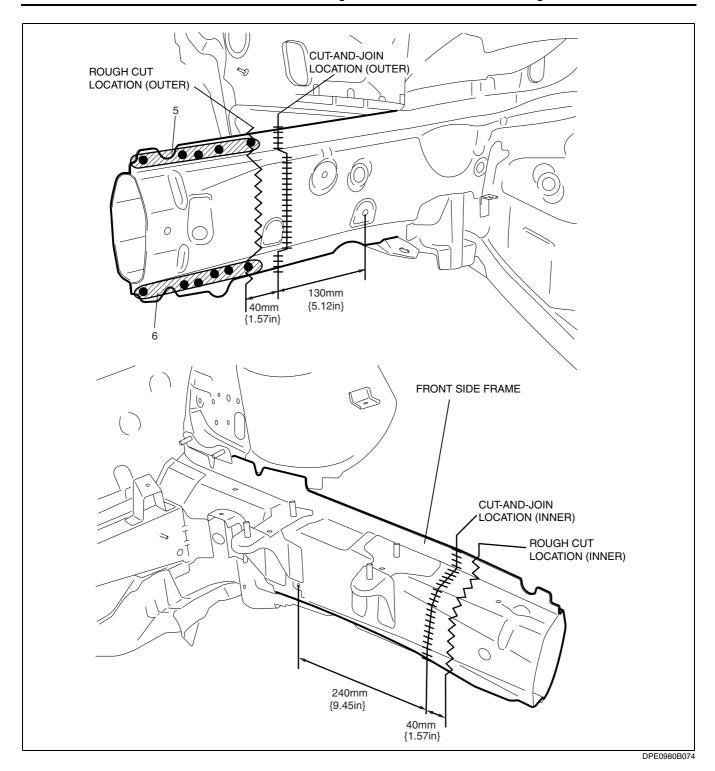


FRONT SIDE FRAME (PARTIAL CUTTING) REMOVAL

1. Rough cut and remove the damaged part of the front side frame.

DPE098053300B03

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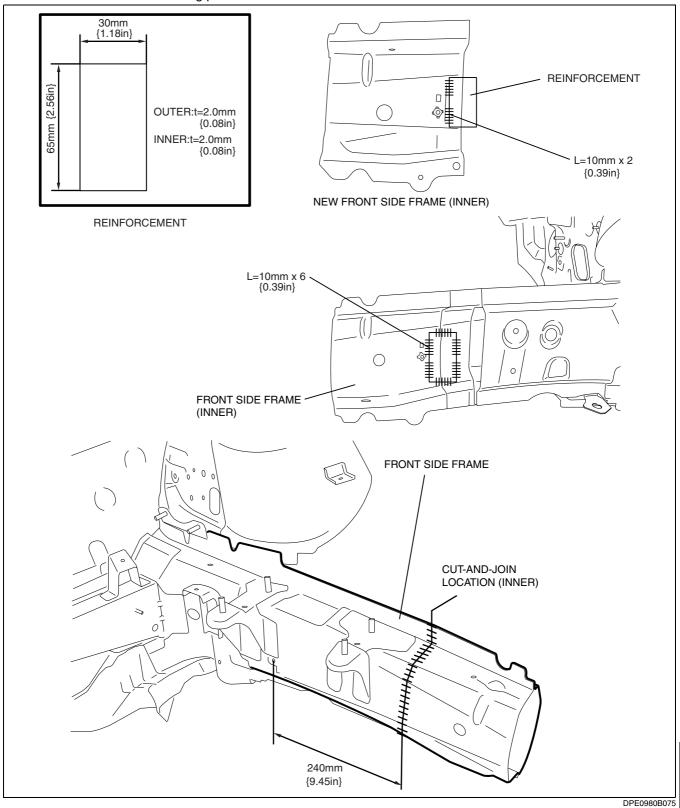
FRONT SIDE FRAME (PARTIAL CUTTING) INSTALLATION

DPE098053300B04

Caution

- The cut-and-joint area indicates the maximum size range of the installation position.
- 1. Make a reinforcement panel using the material from the front side frame.
- 2. To cut and join the new and existing parts, cut the new part at the specified location shown in the figure, and chamfer the joint surfaces of the new and existing parts.
- 3. When installing the new parts, trial-fit new and existing parts, and then measure and adjust the body to conform with standard dimensions.

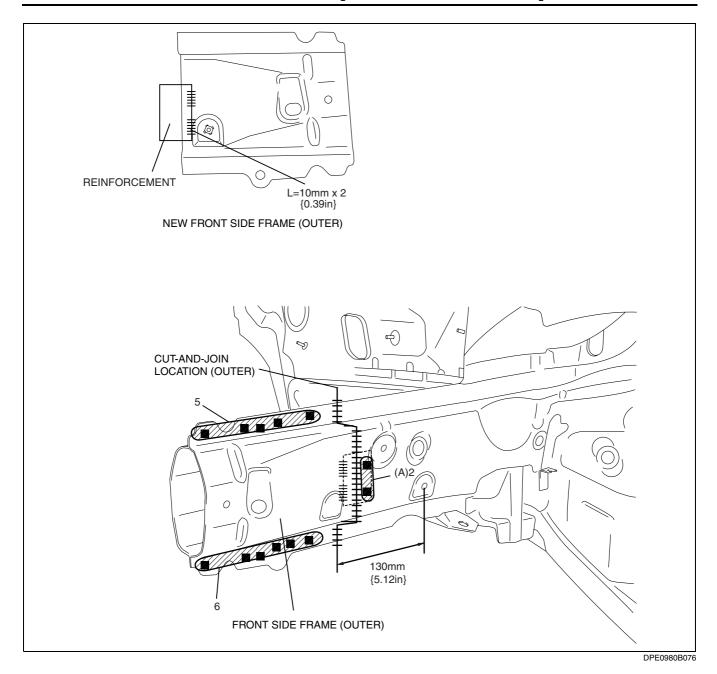
4. To install the inner, trial-fit the new and existing parts, weld the existing parts and the reinforcement, and then butt weld the new and existing parts.



5. Because the outer cannot be welded to the existing parts from the inside of the frame, drill 2 plug weld holes at the locations indicated by (A) on the existing parts. Install the reinforcement and the existing parts by plug welding from the outside of the frame, then butt weld the new and existing parts.

Caution

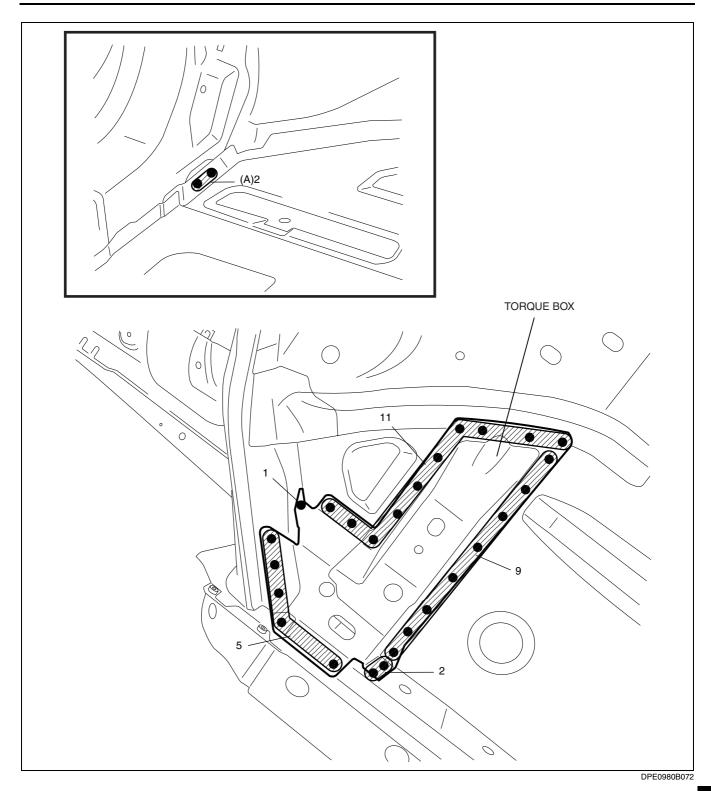
- Press fit the reinforcement panel and the body side material, and then plug weld them.
- 6. Grind the area where the inner and outer are butt welded with a disc grinder to finish the surface.



TORQUE BOX REMOVAL

DPE098053381B01

- 1. Drill the 2 locations indicated by (A) from the interior.
- 2. Remove the torque box.

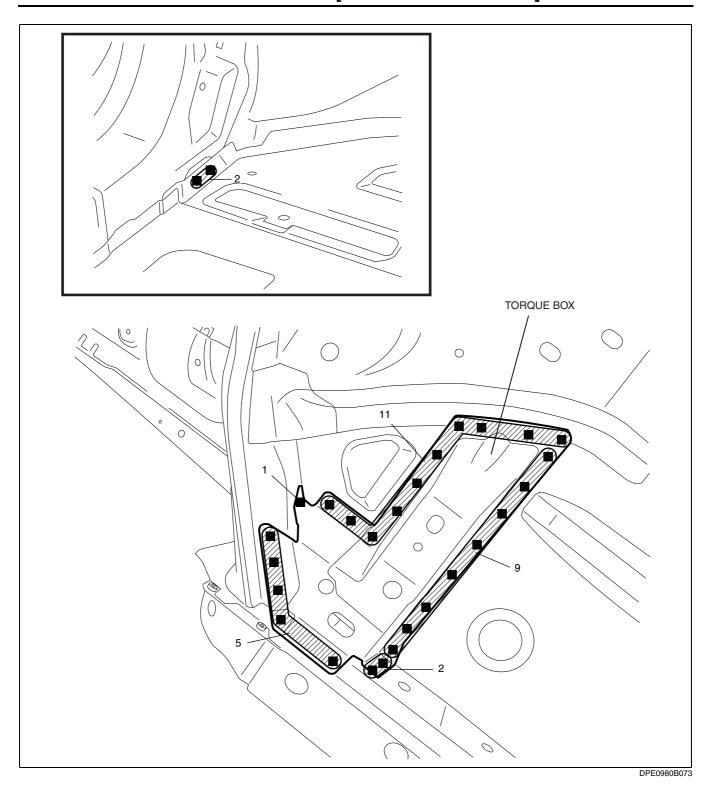


TORQUE BOX INSTALLATION

- 1. When installing new parts, measure and adjust the body as necessary to conform with standard dimensions.

 2. Drill holes for plug welds before installing new parts.
- 3. After temporarily installing new parts, make sure the related parts fit properly.

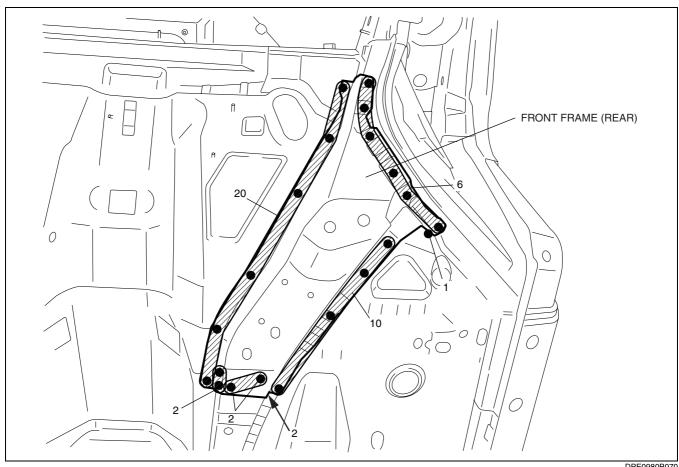
09-80B-27



FRONT FRAME (REAR) REMOVAL

1. Remove the front frame (rear).

DPE098053390B01



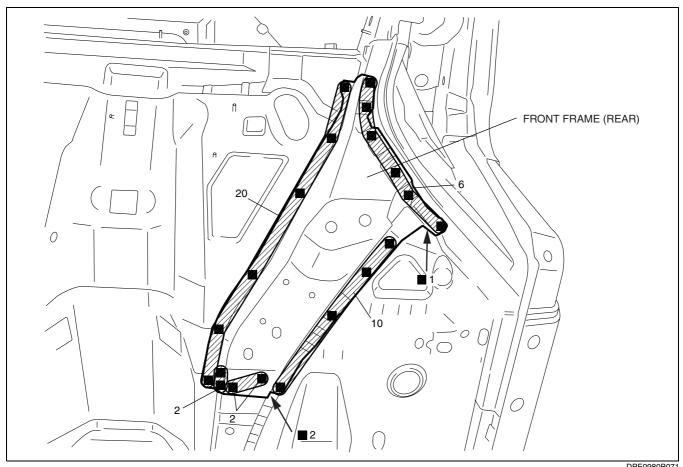
DPE0980B070

FRONT FRAME (REAR) INSTALLATION

- 1. When installing new parts, measure and adjust the body as necessary to conform with standard dimensions.

 2. Drill holes for plug welds before installing pays parts.
- 2. Drill holes for plug welds before installing new parts.3. After temporarily installing new parts, make sure the related parts fit properly.

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DPE0980B071

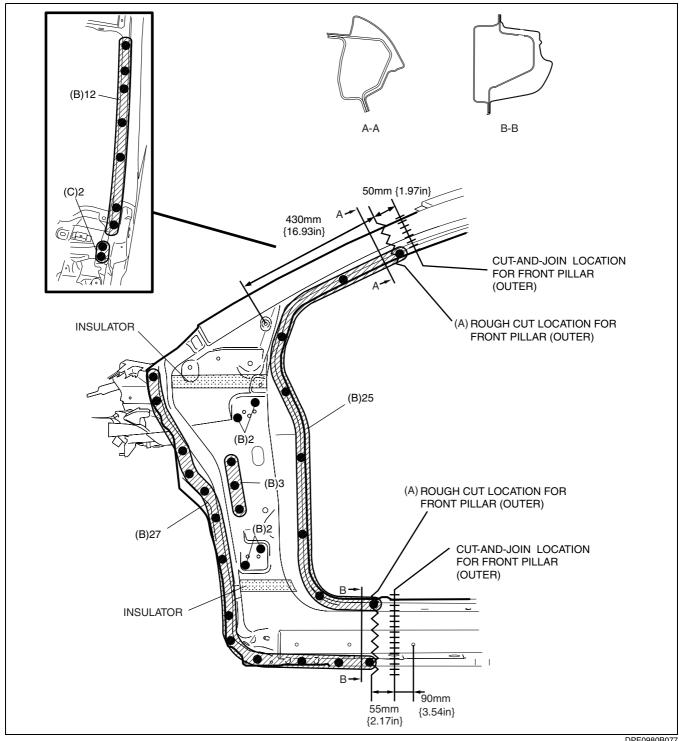
DPE098074090B01

FRONT PILLAR REMOVAL

1. Rough cut area (A), drill the 71 locations indicated by (B).

- Avoid cutting with a blow torch or similar tools as the insulator (shaded area) is flammable.
- 2. When the front pillar (outer) is being removed, the cowl panel may interfere with the front pillar (outer) and make removal difficult. Therefore, drill the 2 locations indicated by (C) and then open the cowl panel outward.

3. Remove the front pillar (outer).

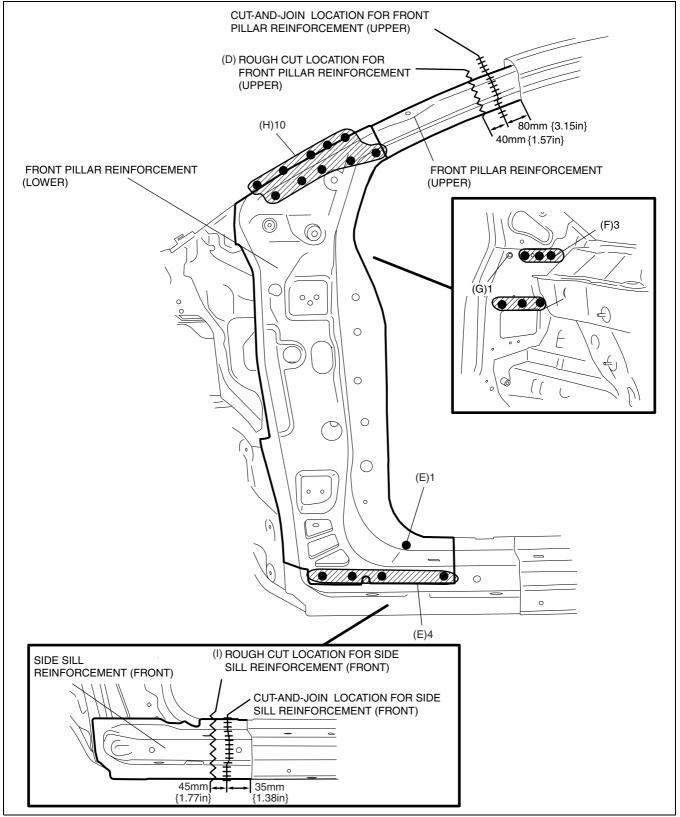


DPE0980B077

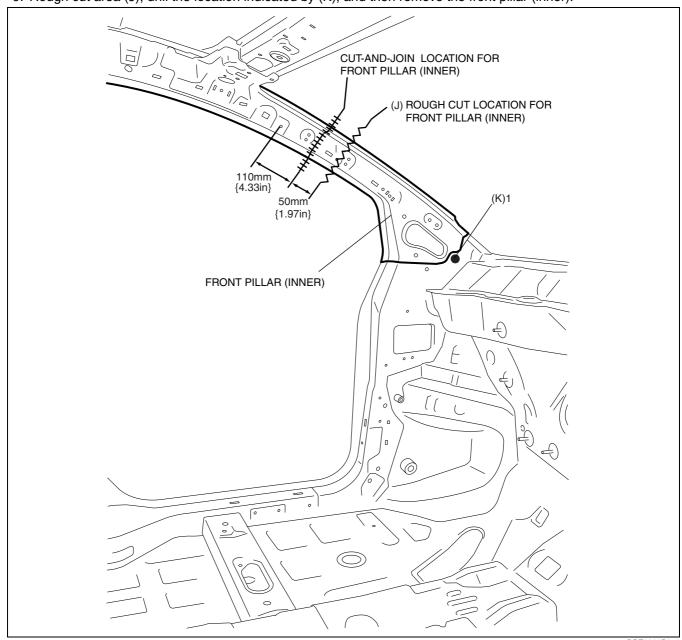
- 4. Rough cut area (D) and drill the 5 locations indicated by (E).
- 5. Drill the 6 locations indicated by (F) from the interior.
- 6. Remove the bolt from the locations indicated by (A).
- 7. Remove the front pillar reinforcement.

• When removing the front pillar reinforcement (upper) and the front pillar reinforcement (rear) separately, drill the 10 locations indicated by (H).

8. Rough cut area (I) and remove the side sill reinforcement (front).



9. Rough cut area (J), drill the location indicated by (K), and then remove the front pillar (inner).



DPE0980B079

FRONT PILLAR INSTALLATION

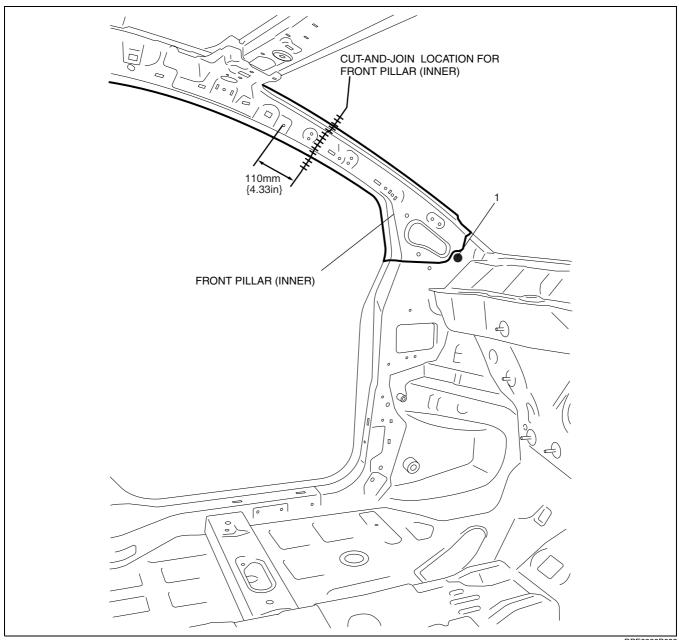
DPE098074090B02

- 1. When joining and cutting the new and existing parts, trial fit the new part in position, and then measure and adjust the body as necessary to conform with standard dimensions.
- 2. Drill holes for plug welds before installing new parts.

Note

• The shape for the right side is different. In areas where the outer, reinforcement, inner, and other parts are in 3-4 layers, drill holes for plug welds in all but the innermost panel.

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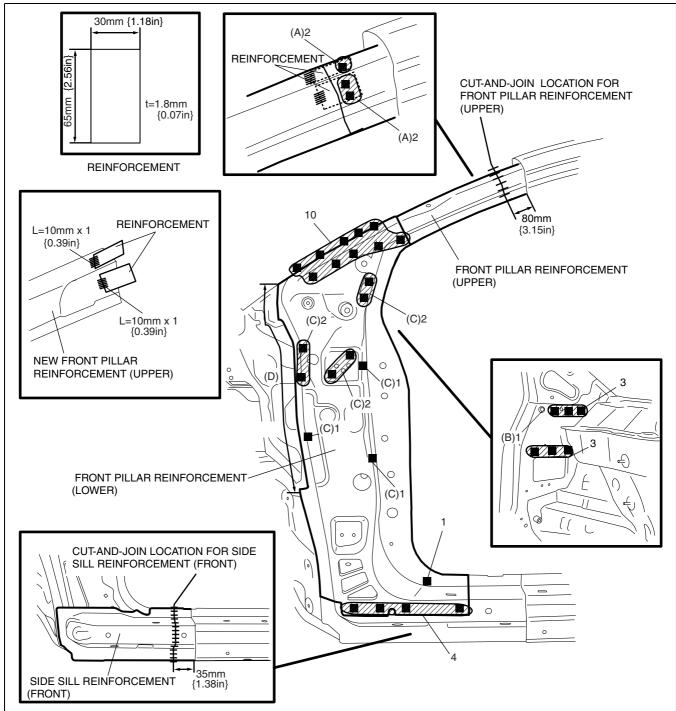
DPE0980B082

- 3. Make a reinforcement panel using the material from the front pillar reinforcement.
- 4. To cut and join the new and existing parts, cut the new part at the specified location shown in the figure, and chamfer the joint surfaces of the new and existing parts.
- 5. Because the front pillar reinforcement cannot be welded to the existing parts from the inside of the inner, drill 4 plug weld holes at the locations indicated by (A) on the existing parts. Install the reinforcement and the existing parts by plug welding from the outside, then butt weld the new and existing parts.

Caution

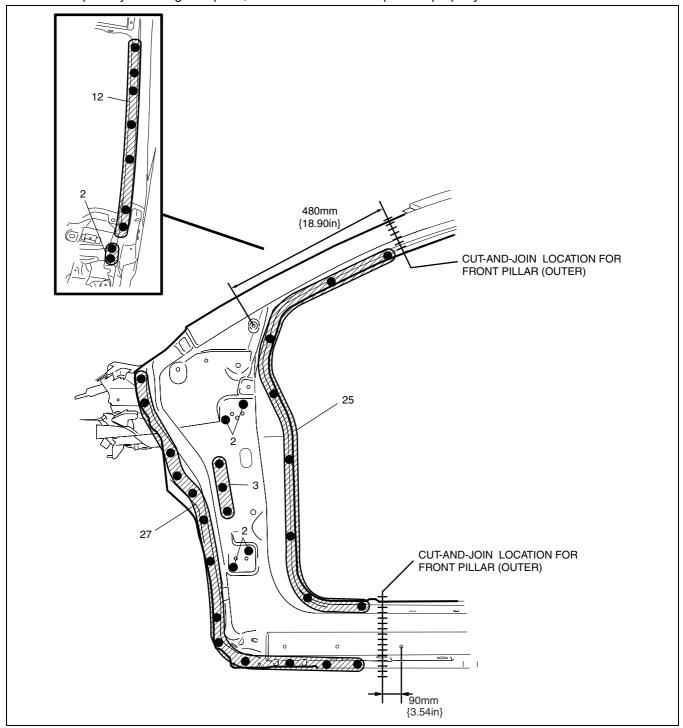
- Press fit the reinforcement panel and the body side material, and then plug weld them.
- 6. Grind the butt welded area with a disc grinder to finish the surface.
- 7. Install the bolt to the locations indicated by (B).
- 8. Weld the 9 locations indicated by (C) and install the front pillar reinforcement.

9. Apply spot weld sealer to the area indicated by (D).



DPE0980B081

10. After temporarily installing new parts, make sure the related parts fit properly.



DPE0980B080

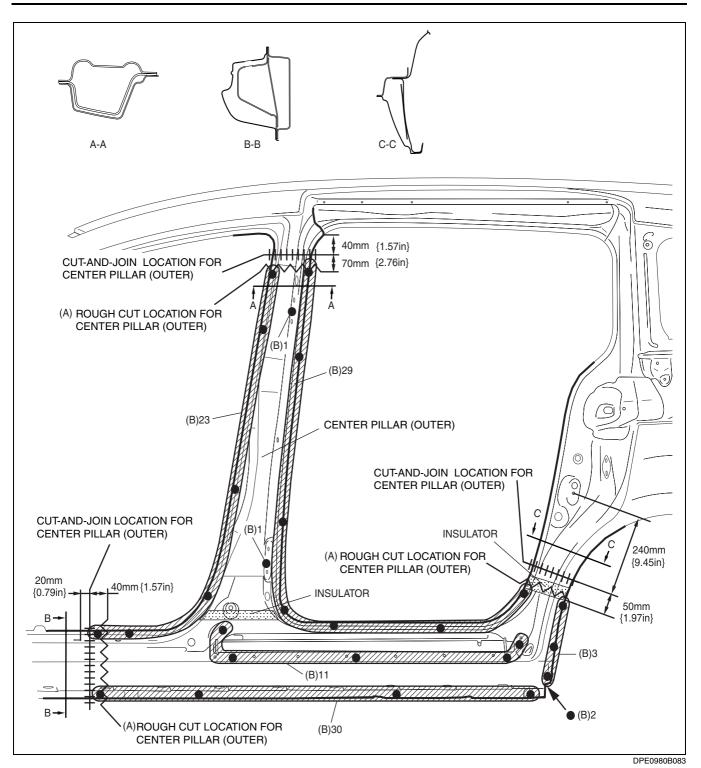
CENTER PILLAR (OUTER) REMOVAL

DPE098070350B01

1. Rough cut area (A), drill the 100 locations indicated by (B), then remove the center pillar (outer).

Caution

- Avoid cutting with a blow torch or similar tools as the insulator (shaded area) is flammable.
- 2. Remove the spot weld sealer using a disc grinder.



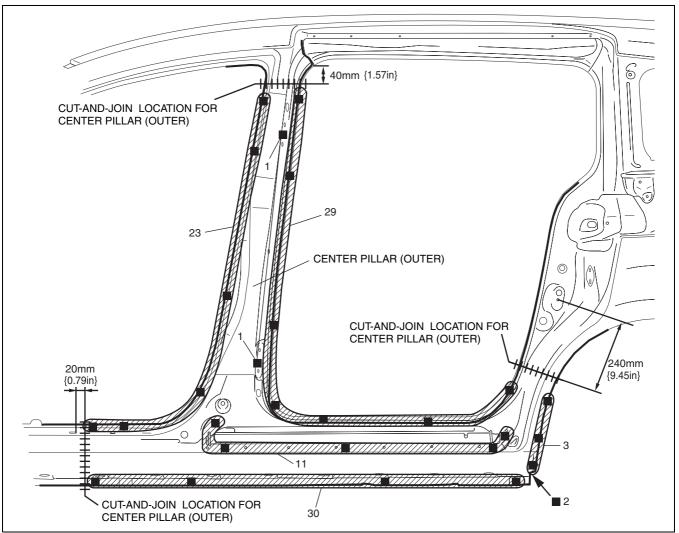
CENTER PILLAR (OUTER) INSTALLATION

DPE098070350B02

- 1. When joining and cutting the new and existing parts, trial fit the new part in position, and then measure and adjust the body as necessary to conform with standard dimensions.
- 2. Drill holes for plug welds before installing new parts.

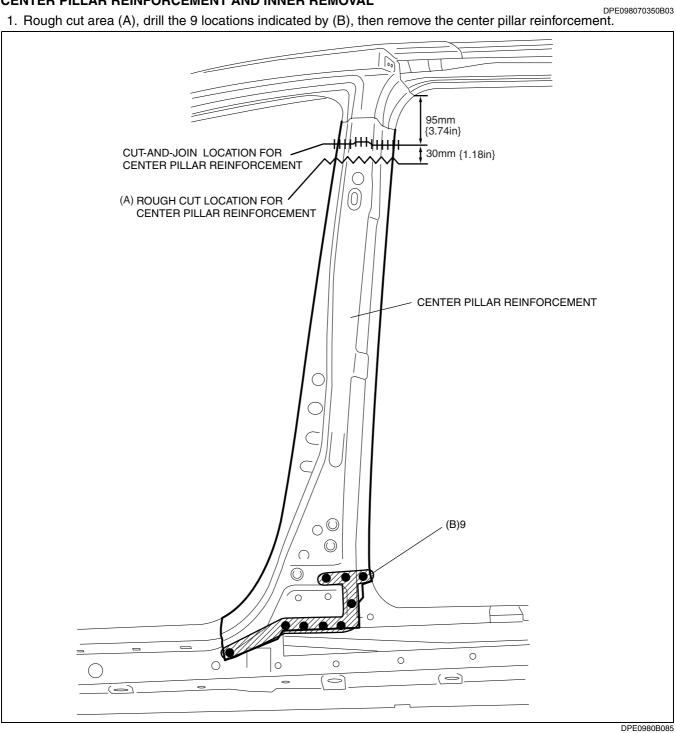
Note

- The shape for the right side is different. In areas where the outer, reinforcement, inner, and other parts are in 3-4 layers, drill holes for plug welds in all but the innermost panel.
- 3. Before installing new parts, apply spot weld sealer to the tire arch line.
- 4. After temporarily installing new parts, make sure the related parts fit properly.



DPE0980B084

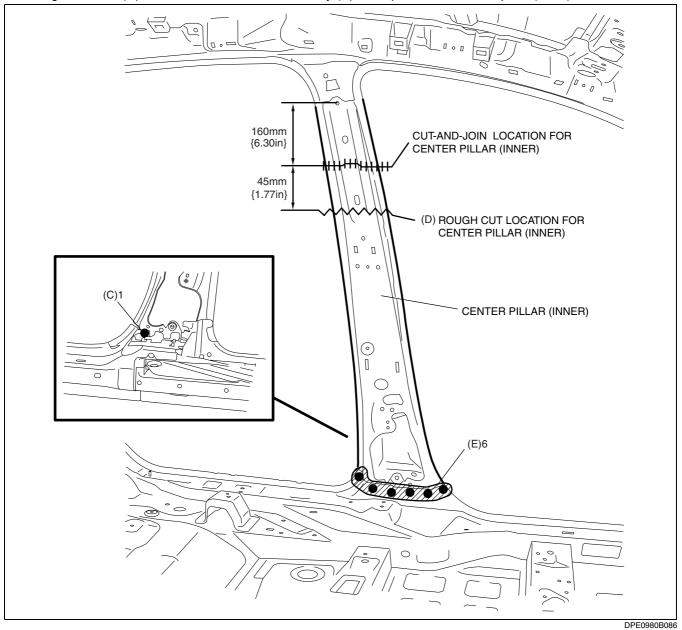
CENTER PILLAR REINFORCEMENT AND INNER REMOVAL



2. Drill the location indicated by (C) from the bottom, as it cannot be seen from the interior.

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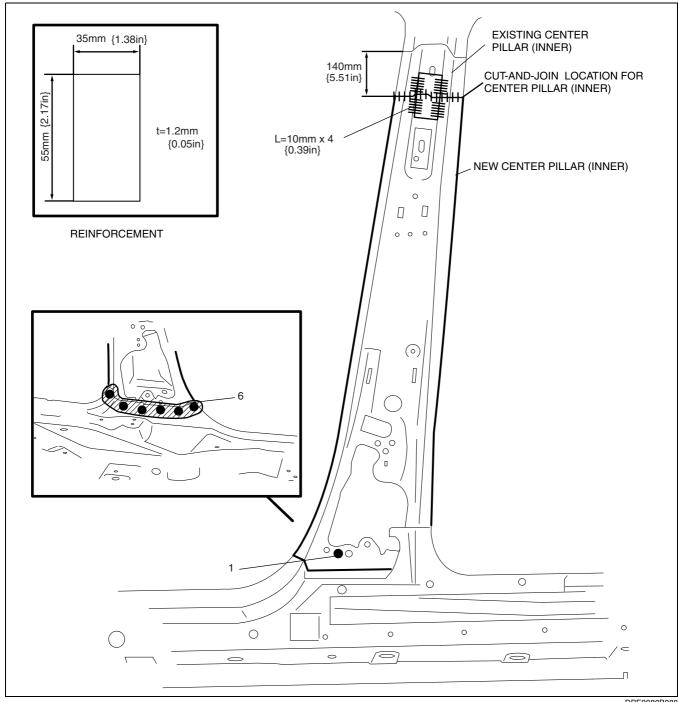
3. Rough cut area (D), drill the 6 locations indicated by (B), then pull out the center pillar (inner).



CENTER PILLAR REINFORCEMENT AND INNER INSTALLATION

- 1. Make a reinforcement panel using the material from the center pillar (inner) and the center pillar reinforcement.
- 2. To cut and join the new and existing parts, cut the new part at the specified location shown in the figure, and chamfer the joint surfaces of the new and existing parts.
- 3. When installing the new parts, trial-fit new and existing parts, and then measure and adjust the body to conform with standard dimensions.

4. To install the center pillar (inner), trial-fit the new and existing parts, weld the existing parts and the reinforcement, and then butt weld the new and existing parts.

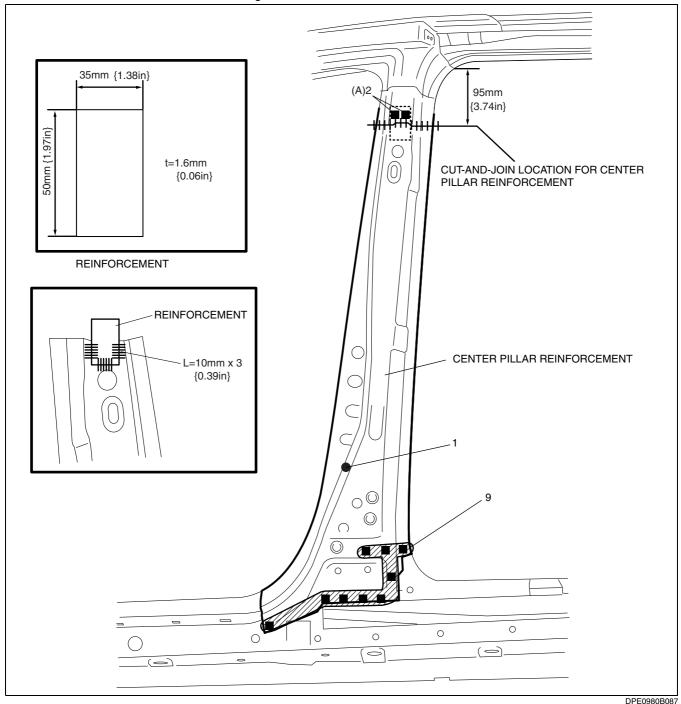


5. Because the center pillar reinforcement cannot be welded to the existing parts from the inside of the inner, drill 2 plug weld holes at the locations indicated by (A) on the existing parts. Install the reinforcement and the existing parts by plug welding from the outside, then butt weld the new and existing parts.

Caution

· Press fit the reinforcement panal and the body side material, and then plug weld them.

6. Grind the butt welded area with a disc grinder to finish the surface.



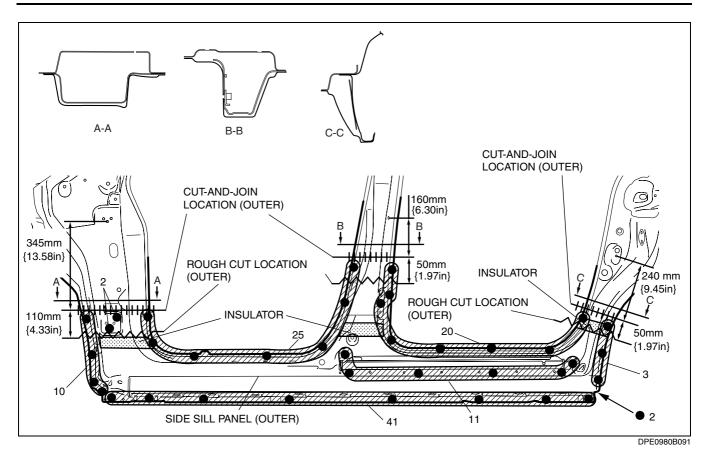
SIDE SILL PANEL (OUTER) REMOVAL

1. Remove the side sill panel (outer).

DPE098070270B01

Caution

- Avoid cutting with a blow torch or similar tools as the insulator (shaded area) is flammable.
- 2. Remove the spot weld sealer using a disc grinder.



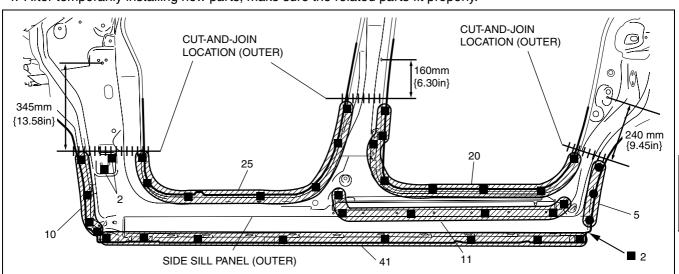
SIDE SILL PANEL (OUTER) INSTALLATION

DPE098070270B02

- 1. When joining and cutting the new and existing parts, trial fit the new part in position, and then measure and adjust the body as necessary to conform with standard dimensions.
- 2. Drill holes for plug welds before installing new parts.

Note

- The shape for the right side is different. In areas where the outer, reinforcement, inner, and other parts are in 3-4 layers, drill holes for plug welds in all but the innermost panel.
- 3. Before installing new parts, apply spot weld sealer to the tire arch line.
- 4. After temporarily installing new parts, make sure the related parts fit properly.



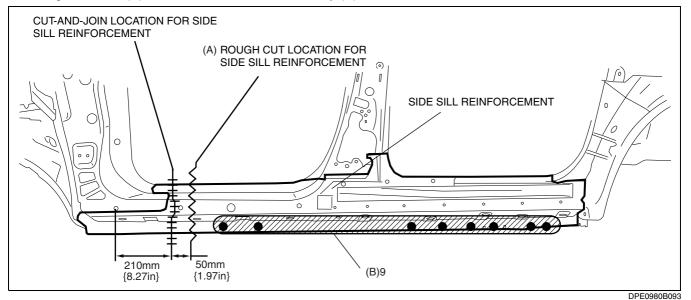
DPE0980B092

SIDE SILL REINFORCEMENT REMOVAL

DPE098070270B03

Caution

- The side sill reinforcement removal procedure is based on the condition that the center pillar (outer) and the center pillar reinforcement have been removed.
- 1. Rough cut area (A), drill the 9 locations indicated by (B), and then remove the side sill reinforcement.

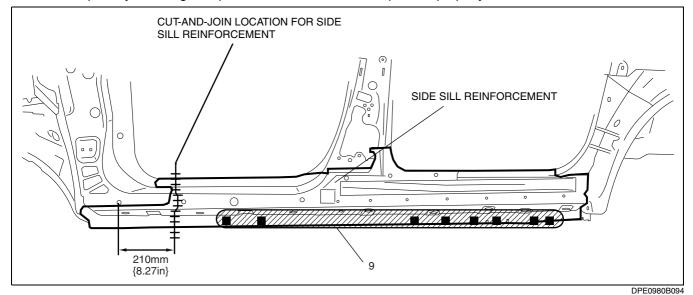


SIDE SILL REINFORCEMENT INSTALLATION

DPE098070270B04

Caution

- The side sill reinforcement removal procedure is based on the condition that the center pillar (outer) and the center pillar reinforcement have been removed.
- 1. When joining and cutting the new and existing parts, trial fit the new part in position, and then measure and adjust the body as necessary to conform with standard dimensions.
- 2. Drill holes for plug welds before installing new parts.
- 3. After temporarily installing new parts, make sure the related parts fit properly.



REAR FENDER PANEL REMOVAL

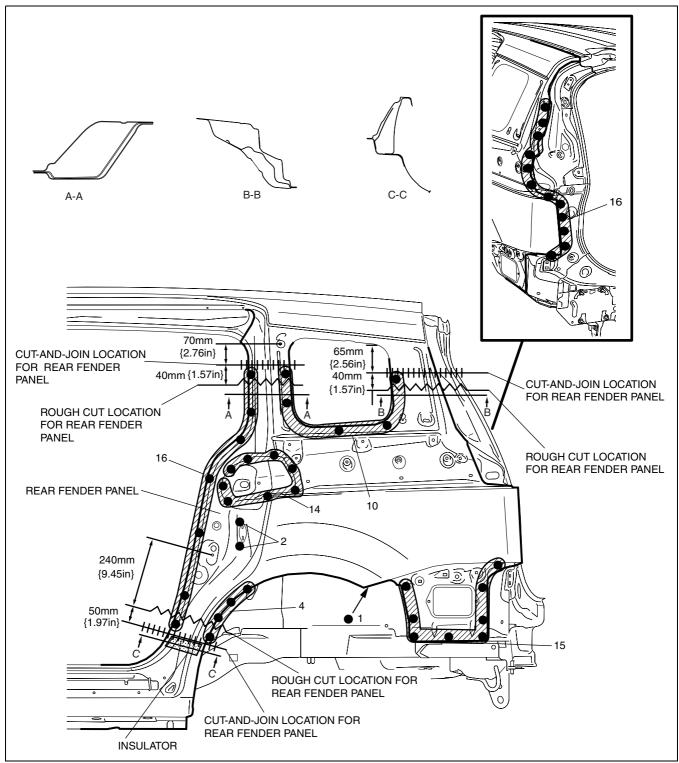
DPE098074100B01

Caution

• Avoid cutting with a blow torch or similar tools as the insulator (shaded area) is flammable.

09-80B-44

- 1. The rear fender panel and the rear pillar (inner) are joined with spot weld sealer at the tire arch line. Use a chisel or similar tool to separate the rear fender panel from the rear pillar (inner), then remove the rear fender panel.
- 2. Remove the spot weld sealer using a disc grinder.

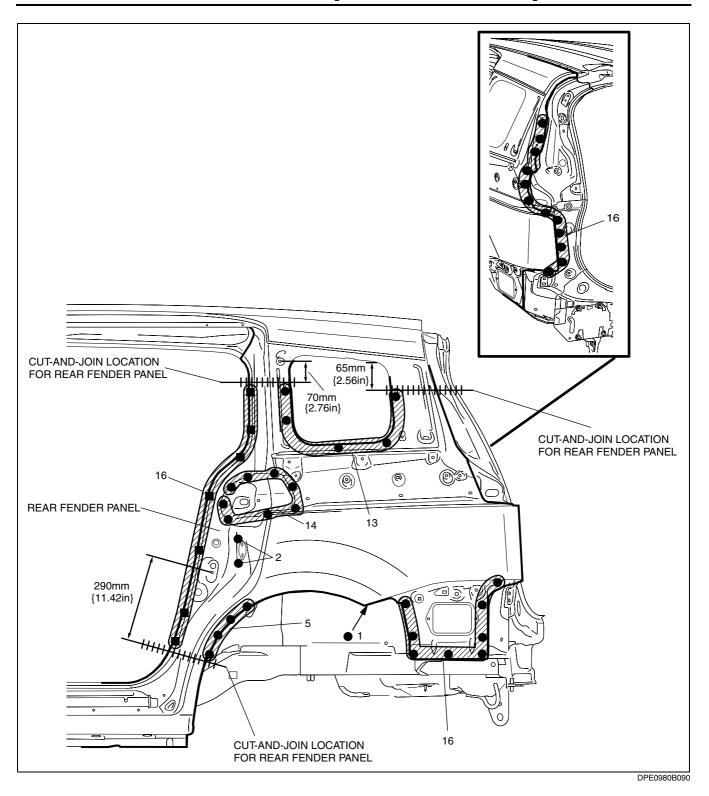


DPE0980B089

REAR FENDER PANEL INSTALLATION

DPE098074100B02

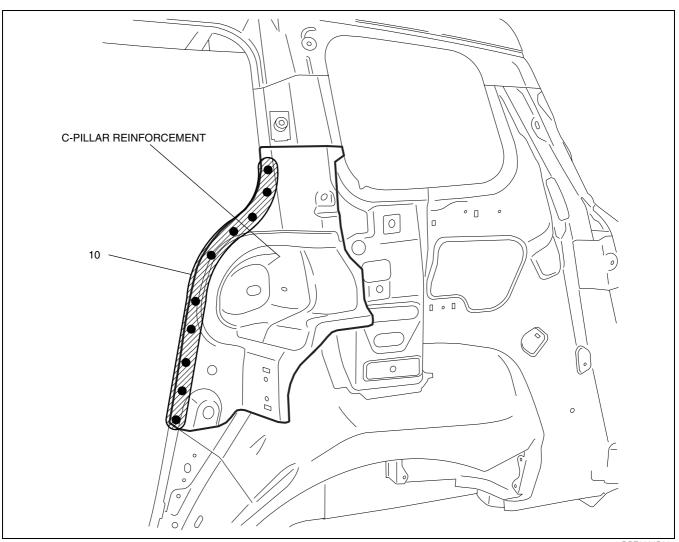
- 1. When joining and cutting the new and existing parts, trial fit the new part in position, and then measure and adjust the body as necessary to conform with standard dimensions.
- 2. Drill holes for plug welds before installing new parts.
- 3. Before installing new parts, apply spot weld sealer to the tire arch line.
- 4. After temporarily installing new parts, make sure the related parts fit properly.



C-PILLAR REINFORCEMENT REMOVAL

1. Remove the C-pillar reinforcement.

DPE098074100B03



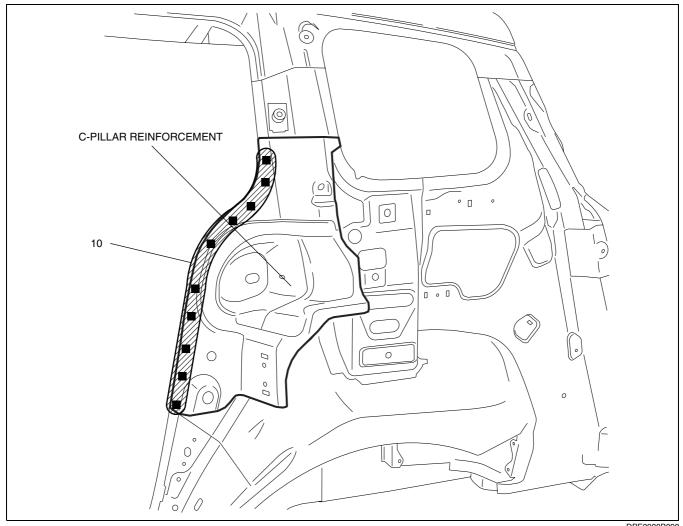
DPE0980B097

C-PILLAR REINFORCEMENT INSTALLATION

DPE098074100B04

- When installing new parts, measure and adjust the body as necessary to conform with standard dimensions.
 Drill holes for plug welds before installing new parts.
- 3. After temporarily installing new parts, make sure the related parts fit properly.

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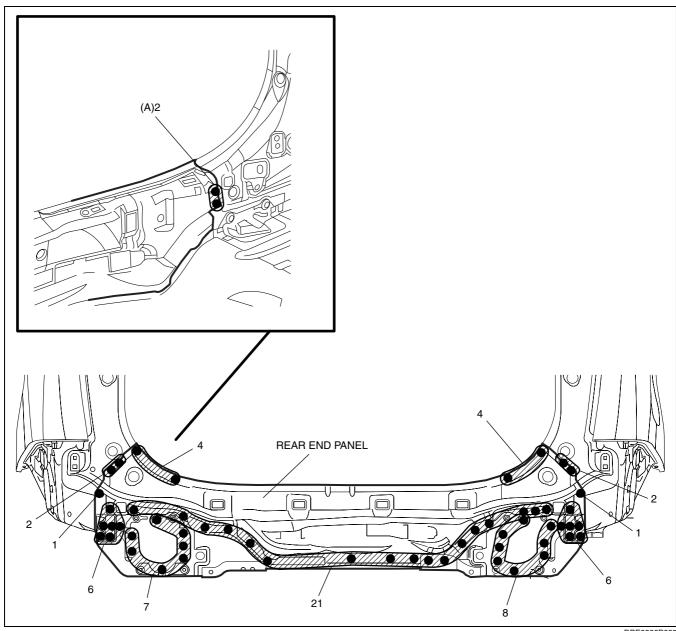


DPE0980B098

REAR END PANEL REMOVAL

- Drill the 2 locations indicated by (A) from the interior.
 Remove the rear end panel.

DPE098070750B01

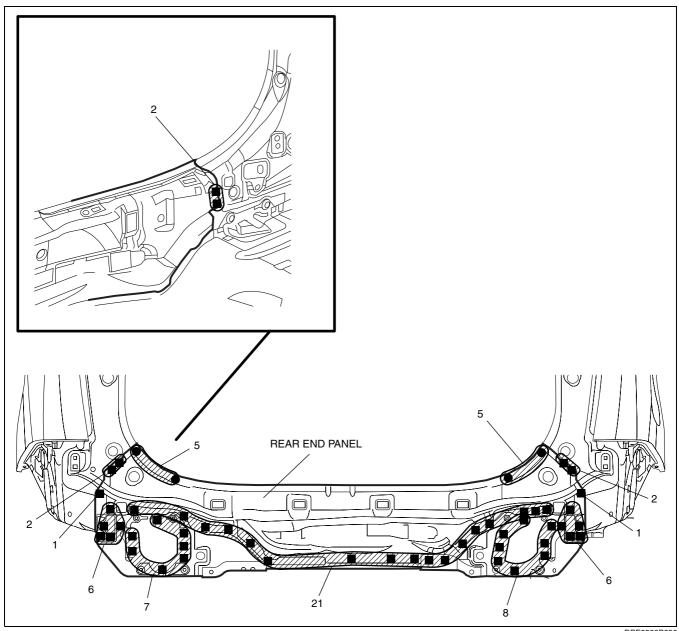


DPE0980B095

REAR END PANEL INSTALLATION

- 1. When installing new parts, measure and adjust the body as necessary to conform with standard dimensions.
- 2. Drill holes for plug welds before installing new parts.
- 3. After temporarily installing new parts, make sure the related parts fit properly.

09



DPE0980B096

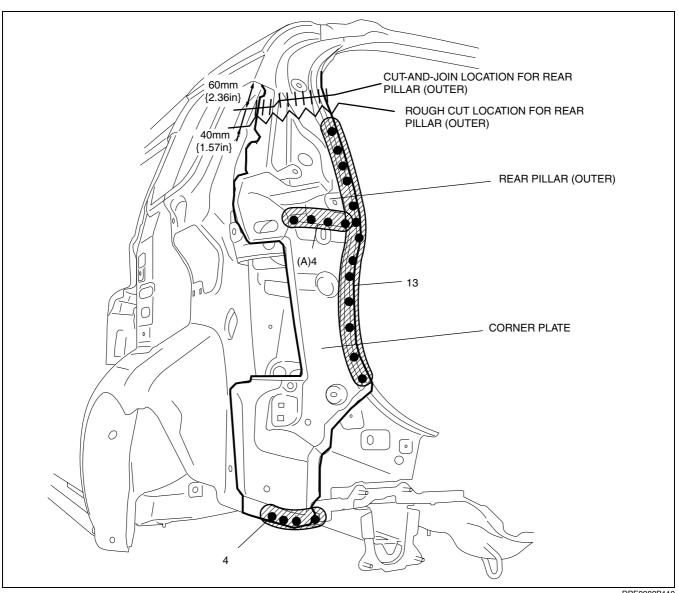
DPE098070442B01

REAR PILLAR (OUTER) REMOVAL

1. Remove the rear pillar (outer).

Note

• When removing the rear pillar (outer) and the corner plate separately, drill the 4 locations indicated by (A).



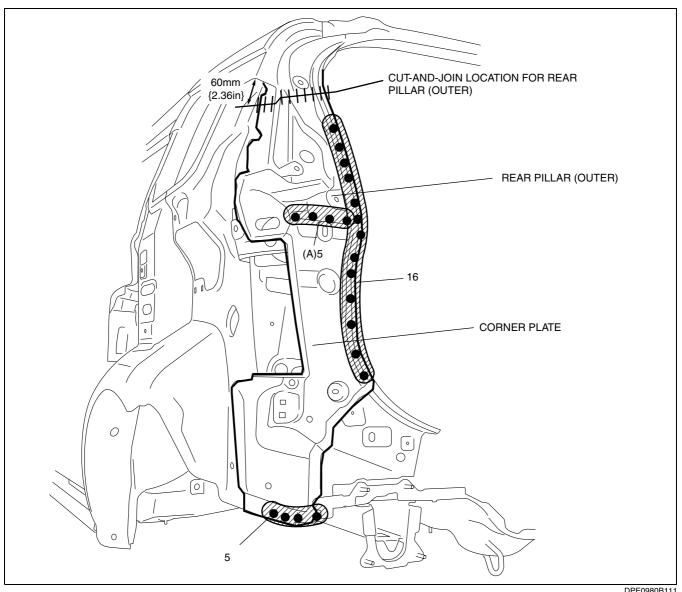
DPE0980B110

REAR PILLAR (OUTER) INSTALLATION

- 1. When joining and cutting the new and existing parts, trial fit the new part in position, and then measure and adjust the body as necessary to conform with standard dimensions.
- 2. Drill holes for plug welds before installing new parts.
- 3. After temporarily installing new parts, make sure the related parts fit properly.

Note

• When replacing the rear pillar (outer) and corner plate separately, weld the 5 locations indicated by (A).

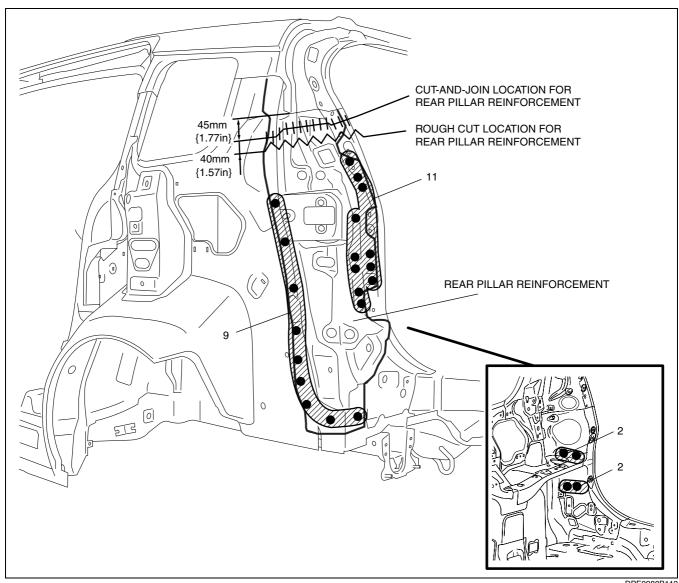


DPE0980B111

REAR PILLAR REINFORCEMENT REMOVAL

1. Remove the rear pillar reinforcement.

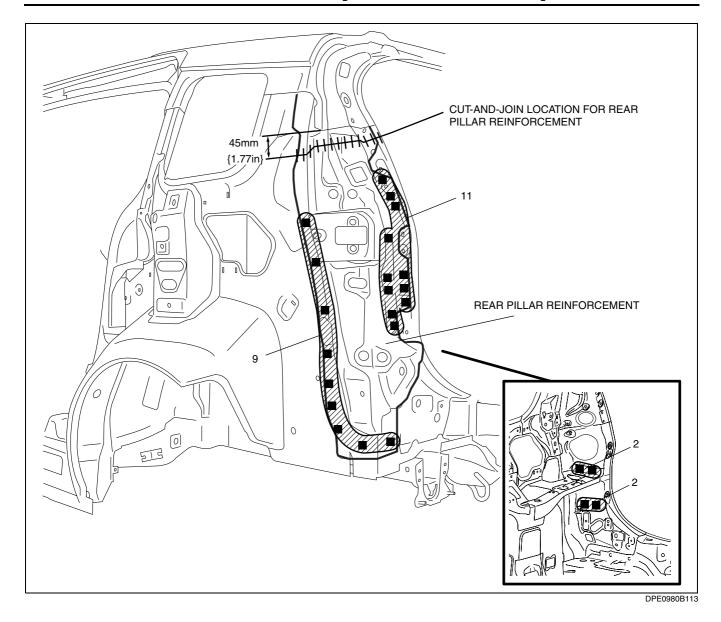
DPE098070442B03



DPE0980B112

REAR PILLAR REINFORCEMENT INSTALLATION

- 1. When joining and cutting the new and existing parts, trial fit the new part in position, and then measure and adjust the body as necessary to conform with standard dimensions.
- 2. Drill holes for plug welds before installing new parts.
- 3. After temporarily installing new parts, make sure the related parts fit properly.

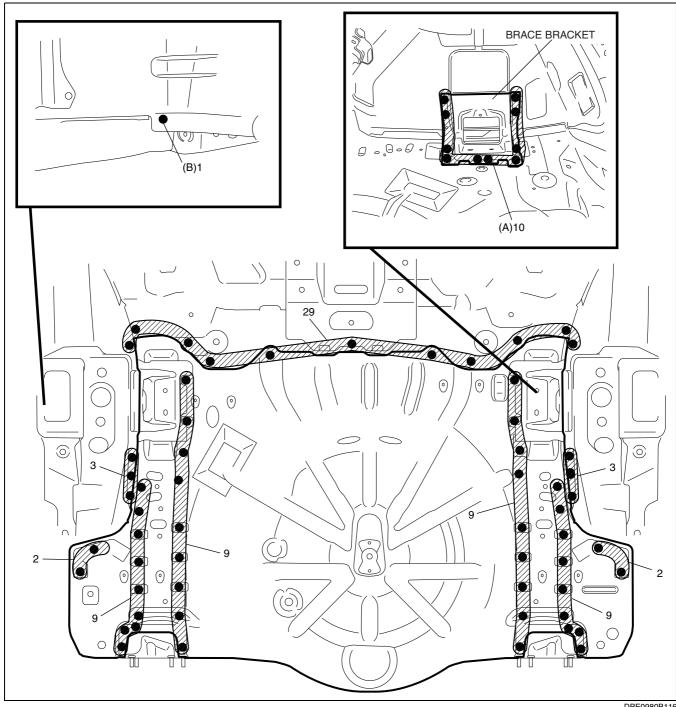


REAR FLOOR PAN REMOVAL

1. Drill the 10 locations indicated by (A), then remove the brace bracket.

DPE098053750B01

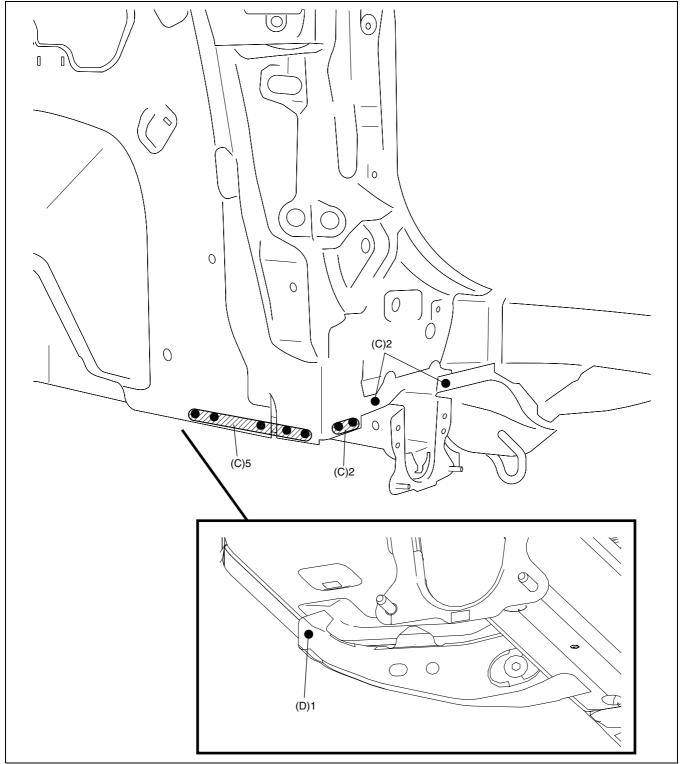
2. Drill the location indicated by (B) from the inner side of the wheel housing, as it cannot be seen from the interior.



DPE0980B116

- 3. Drill the 9 locations indicated by (A).4. Drill the location indicated by (D) from the bottom, as it cannot be seen from the interior.

5. Drill the remaining locations, then remove the trunk floor pan.



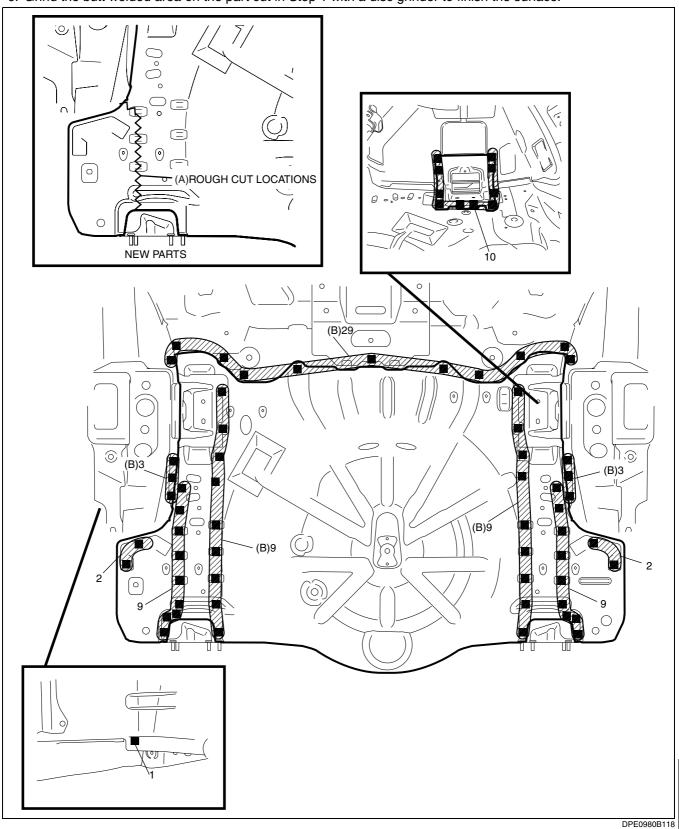
DPE0980B117

REAR FLOOR PAN INSTALLATION

DPE098053750B02

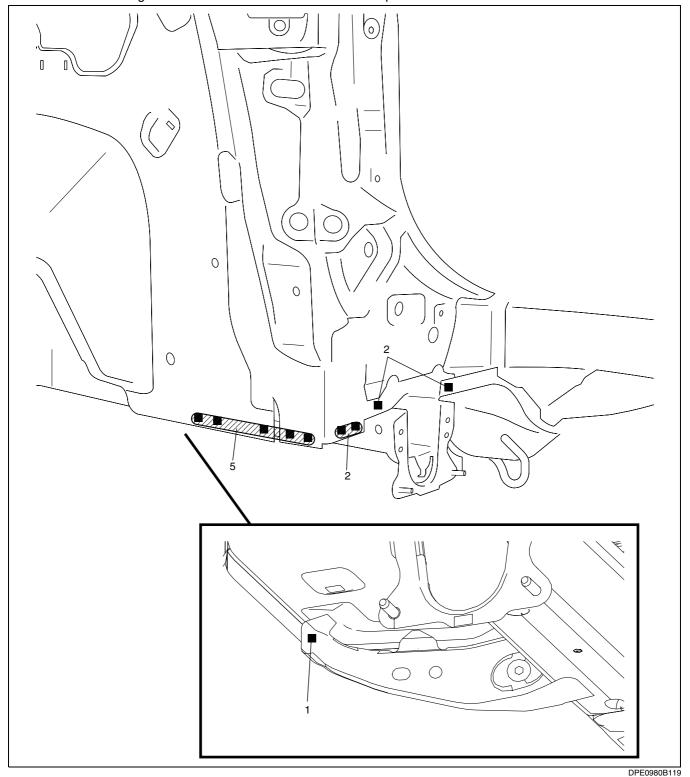
- 1. To prepare for installation, cut area (A) on the trunk floor pan.
- 2. When installing new parts, measure and adjust the body as necessary to conform with standard dimensions.
- 3. Drill holes for plug welds before installing new parts.
- 4. Weld the 53 locations indicated by (B) and temporarily install the trunk floor pan.
- 5. Install the part cut in Step 1.

6. Grind the butt welded area on the part cut in Step 1 with a disc grinder to finish the surface.



7. After temporarily installing new parts, make sure the related parts fit properly.

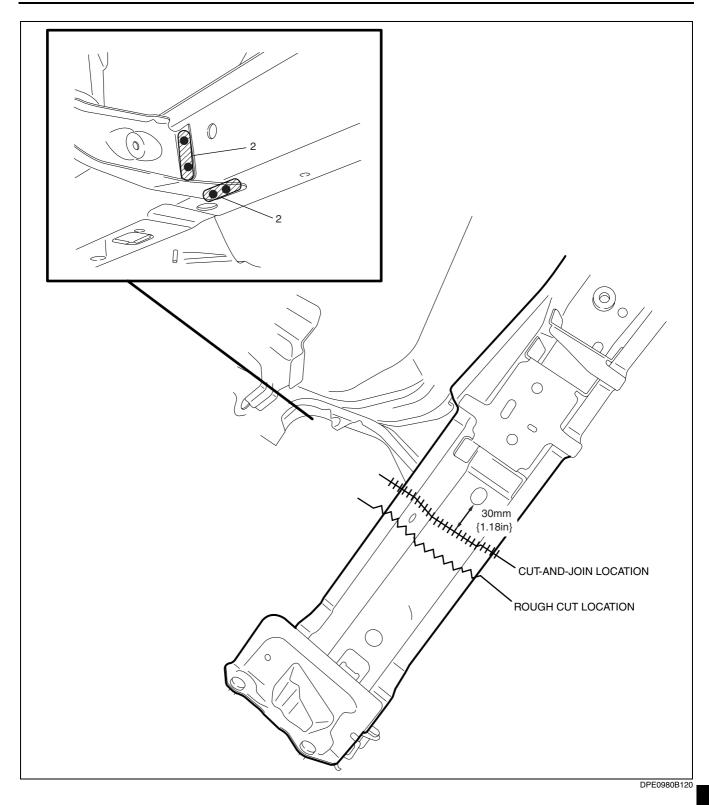
8. Weld the remaining weld locations and install the trunk floor pan.



REAR SIDE FRAME (PARTIAL CUTTING) REMOVAL

1. Rough cut and remove the damaged part of the rear side frame.

DPE098053810B01



REAR SIDE FRAME (PARTIAL CUTTING) INSTALLATION

DPE098053810B02

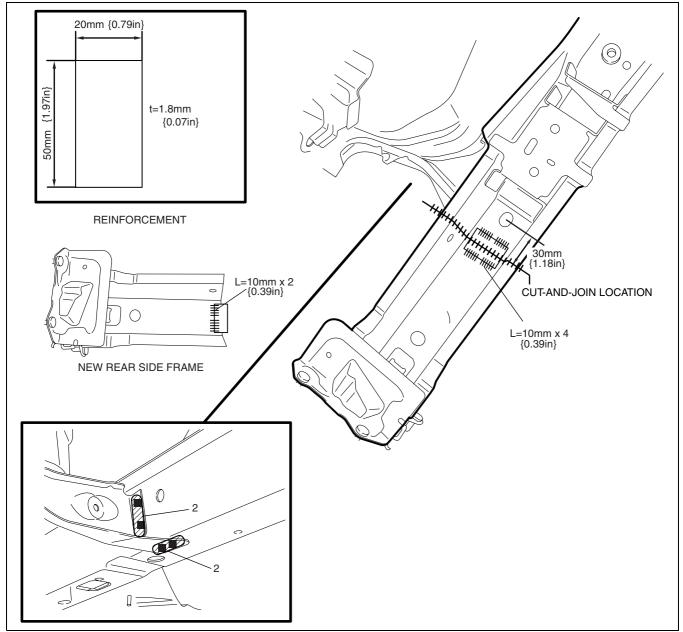
Caution

- The cut-and-joint area indicates the maximum size range of the installation position.
- 1. Make a reinforcement panel using the material from the rear side frame.
- 2. To cut and join the new and existing parts, cut the new part at the specified location shown in the figure, and chamfer the joint surfaces of the new and existing parts.
- 3. When installing the new parts, trial-fit new and existing parts, and then measure and adjust the body to conform with standard dimensions.
- 4. After temporarily installing new parts, make sure the related parts fit properly.

5. Trial-fit the new and existing parts, weld the existing parts and the reinforcement, and then butt weld the new and existing parts.

Caution

• Press fit the reinforcement panel and the body side material, and then plug weld them.



DPE0980B121

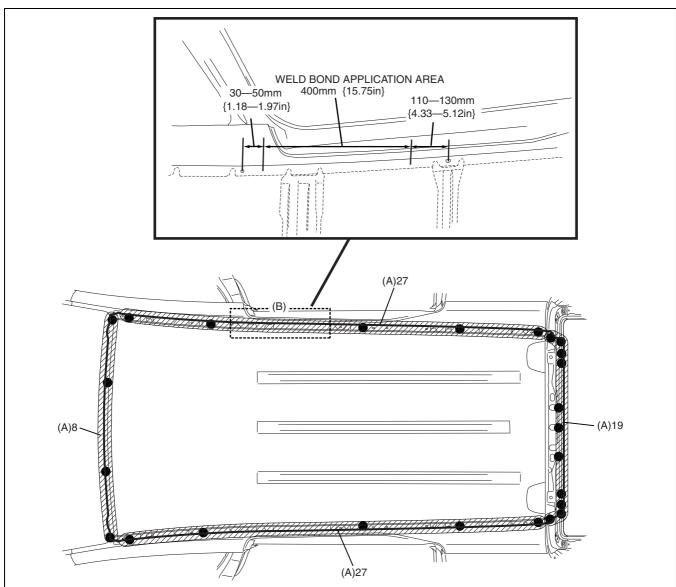
ROOF PANEL REMOVAL

DPE098070600B01

- 1. Drill the 81 locations indicated by (A).
- 2. The side frame (outer) and the roof panel are joined with weld bond at area (B). Use a chisel or similar tool to separate them, then remove the roof panel.

Caution

- Only the procedure for the right side is described, however, the procedure for the left side is the same.
- 3. Remove the weld bond using a disc grinder.



DPE0980B114

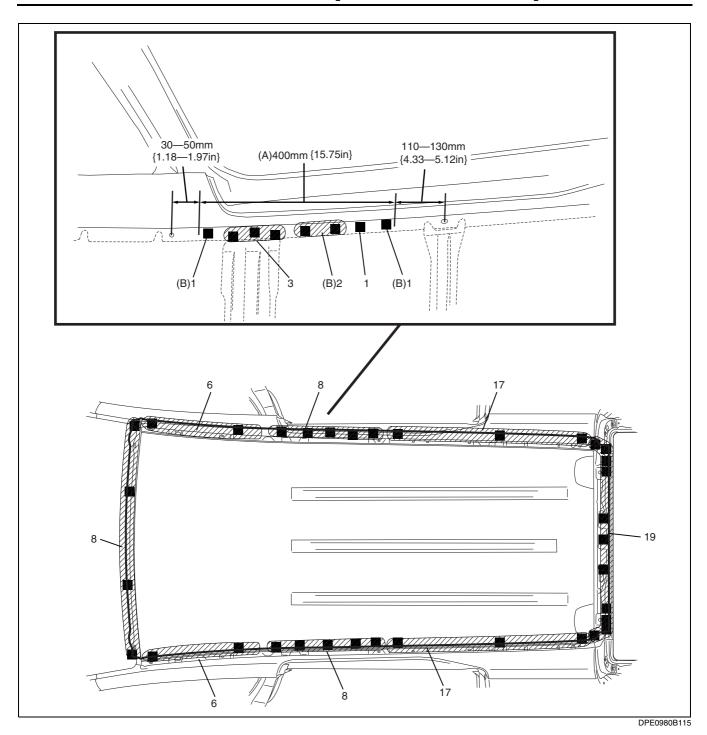
ROOF PANEL INSTALLATION

DPE098070600B02

- 1. When installing new parts, measure and adjust the body as necessary to conform with standard dimensions.
- 2. Drill holes for plug welds before installing new parts.

Caution

- Area (A) was joined with the weld bond. When installing the roof panel, plug weld the 4 locations indicated by (B).
- Only the procedure for the right side is described, however, the procedure for the left side is the same.
- 3. After temporarily installing new parts, make sure the related parts fit properly.



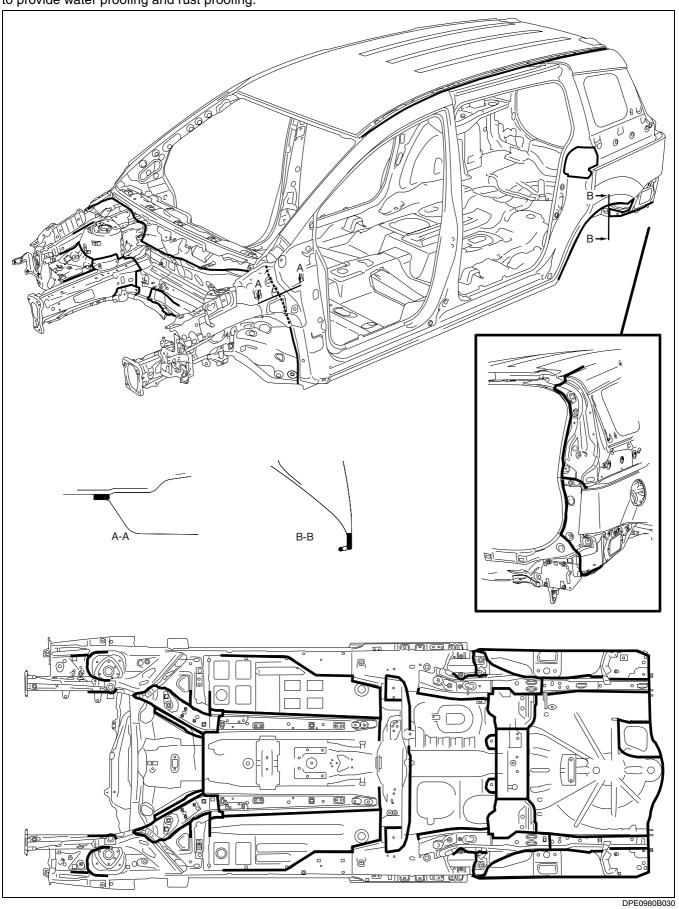
09-80C BODY STRUCTURE [WATER-PROOF **AND RUST PREVENTIVE]**

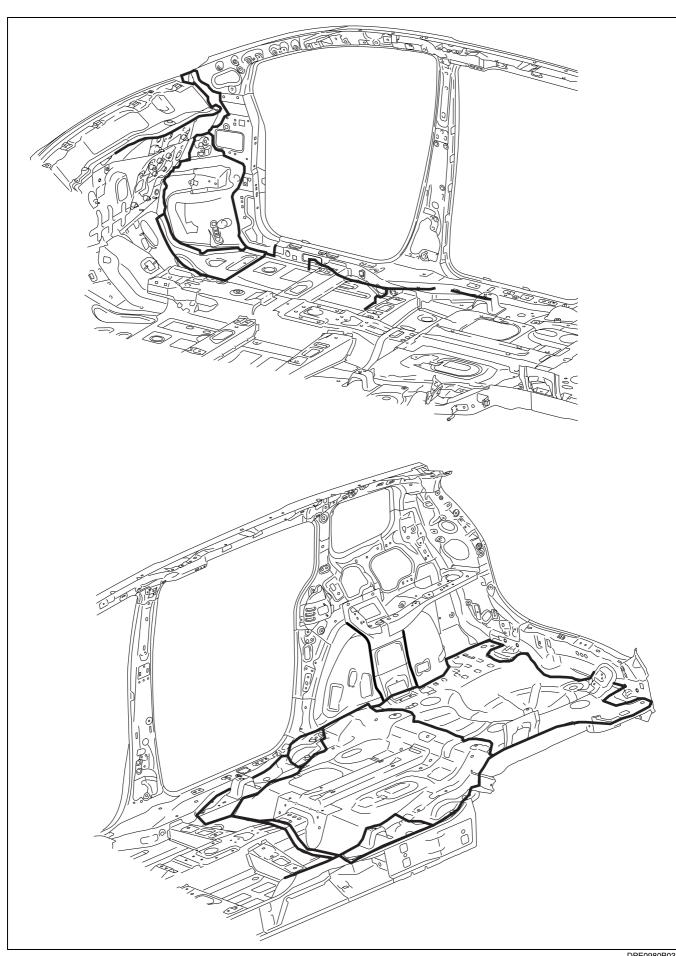
DODY OF ALINO	00 000 1	DUOT DDEVENTIVE TOPATMENT 00 000 0
BODY SEALING	09-80C-1	RUST PREVENTIVE TREATMENT 09–80C–9
UNDER COATING	09-80C-4	DUMPING SHEET REPLACEMENT09-80C-9
CHIDDING-DESISTANT COATING	00_ <u>80</u> C_6	

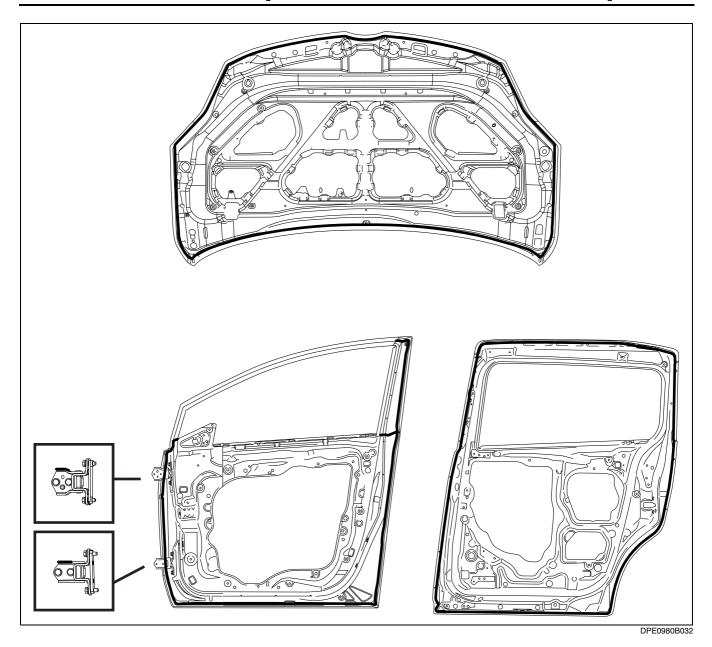
BODY SEALING

Sealant is applied to the parts where the panels meet and to the hemmed parts of the door panel and bonnet panel

to provide water proofing and rust proofing.





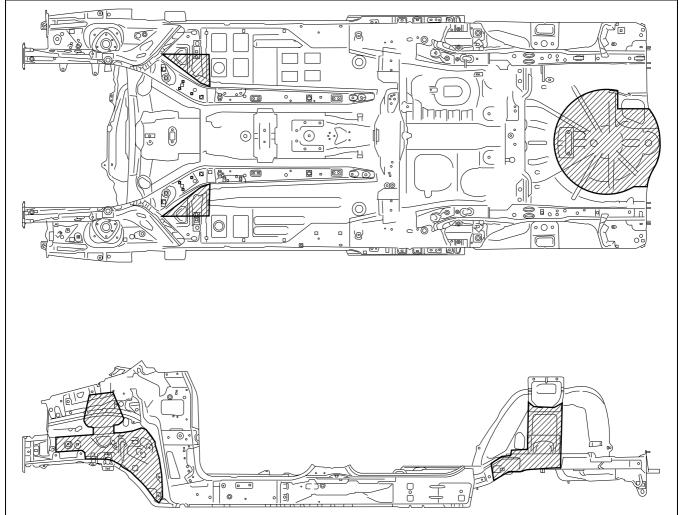


UNDER COATING

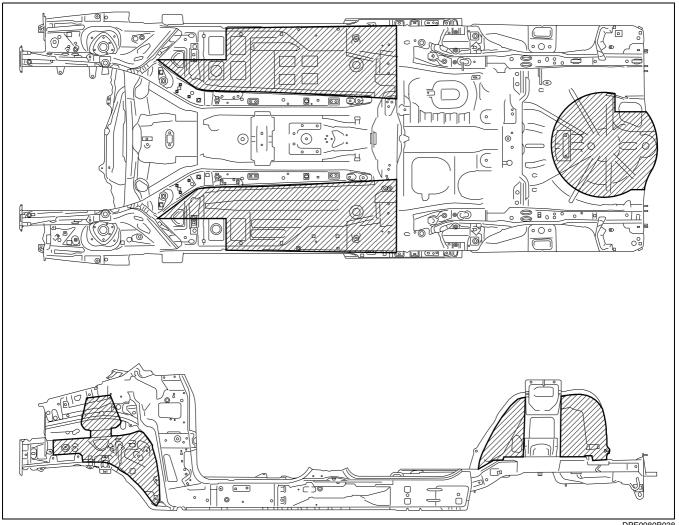
The shaded areas indicated under body locations that are undercoated to prevent noise and rusting.

DPE098007000B03

European (L.H.D. U.K.) specs



General (L.H.D. R.H.D.) specs



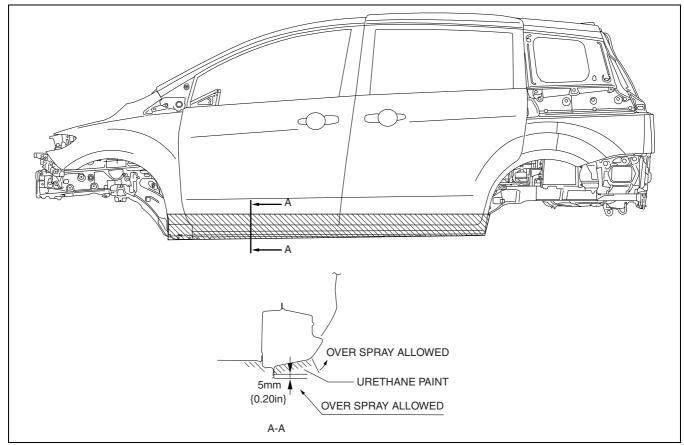
DPE0980B038

CHIPPING-RESISTANT COATING

The coating locations are indicated by the shaded areas.

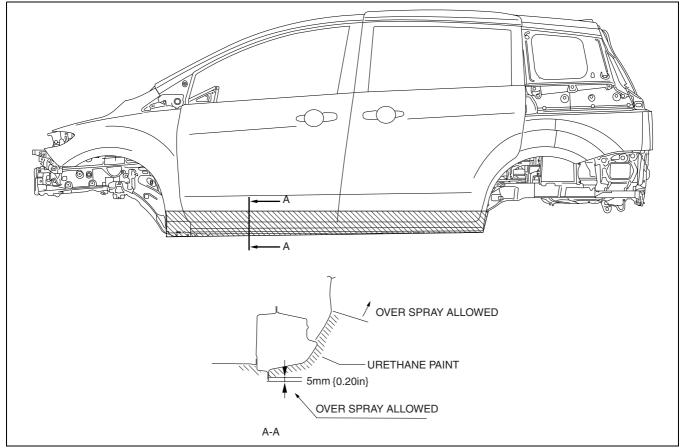
DPE098007000B04

With Side Step Molding

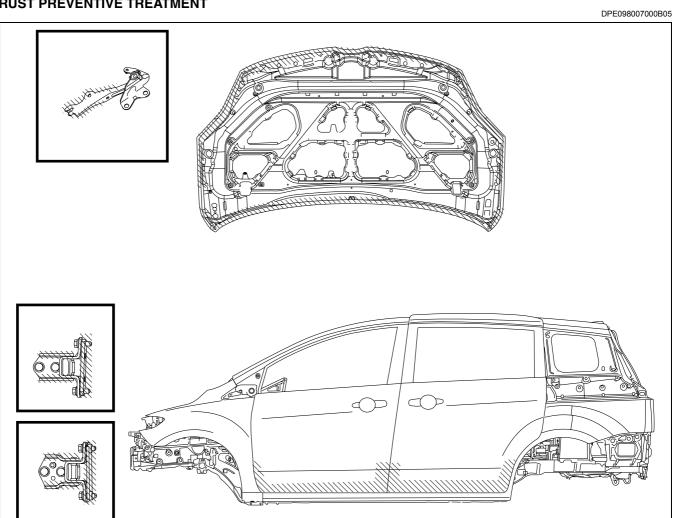


DPE0980B034

Without Side Step Molding



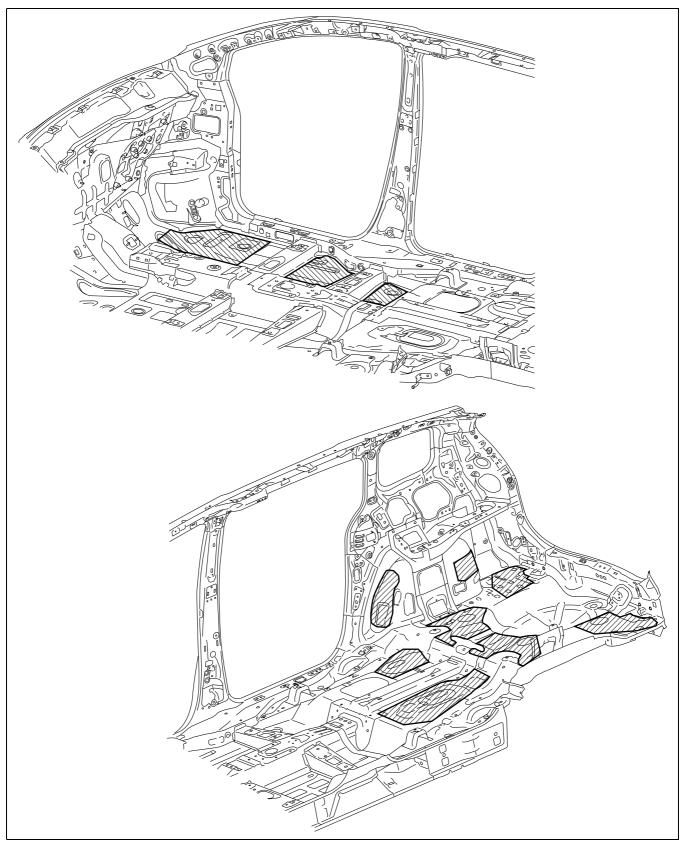
RUST PREVENTIVE TREATMENT



DPE0980B035

DUMPING SHEET REPLACEMENT

• After repairing the body, attach the dumping sheet to the location shown in the figure for noise insulation.



09

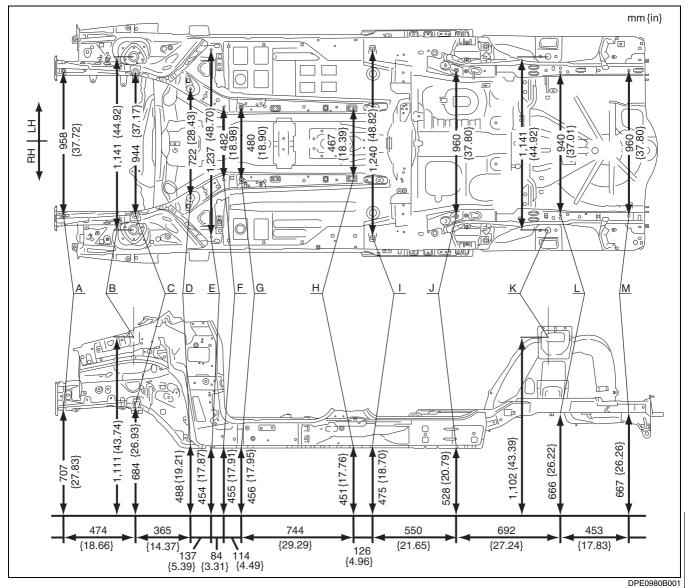
09-80D BODY STRUCTURE [DIMENSIONS]

-	-
UNDERBODY FLAT-PLANE	CABIN SIDE FRAME STRAIGHT-LINE
DIMENSIONS 09-80D-1	DIMENSIONS
UNDERBODY STRAIGHT-LINE	ROOM STRAIGHT-LINE
DIMENSIONS 09-80D-2	DIMENSIONS (1)
FRONT BODY STRAIGHT-LINE	ROOM STRAIGHT-LINE
DIMENSIONS (1)	DIMENSIONS (2)
FRONT BODY STRAIGHT-LINE	ROOM STRAIGHT-LINE
DIMENSIONS (2)	DIMENSIONS (3)
FRONT BODY STRAIGHT-LINE	REAR BODY STRAIGHT-LINE
DIMENSIONS (3)	DIMENSIONS

UNDERBODY FLAT-PLANE DIMENSIONS

• The following figures are bottom and side views.

DPE098053010B01



Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
Α	Front side frame datum hole	ø16 {0.63}
В	Front suspension mounting block	ø46 {1.81}

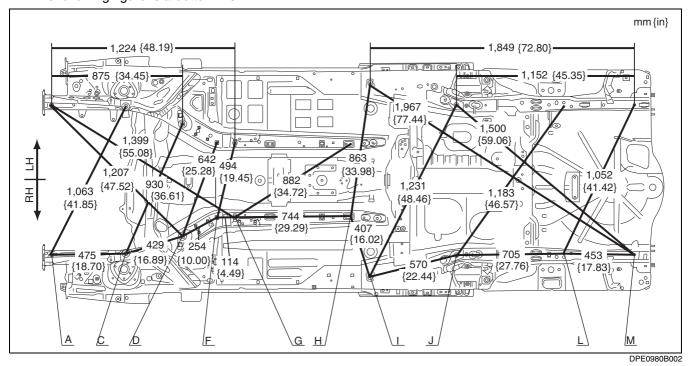
Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
С	Front suspension mounting bracket	ø18 {0.71}
D	Front frame rear datum hole	ø20 {0.79}

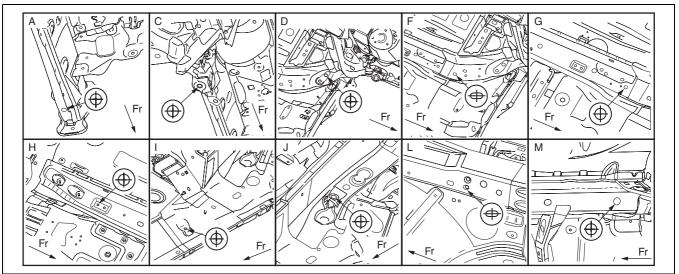
Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
Е	Torque box datum hole	ø16 {0.63}
F	Front frame rear datum slot	ø16 x 22
,	From frame real datum slot	{0.63 x 0.87}
G	Front B frame datum hole	ø16 {0.63}
Н	Front B frame datum hole	ø14 {0.55}
I	Crossmember No.3 datum hole	ø12 {0.47}
J	Rear side frame datum hole	ø16 {0.63}
K	Rear suspension mounting block	ø40 {1.57}
ı	Rear side frame datum slot	ø14 x 20
_		{0.55 x 0.79}
М	Rear side frame datum hole	ø20 {0.79}

UNDERBODY STRAIGHT-LINE DIMENSIONS

• The following figure is a bottom view.

DPE098053010B02



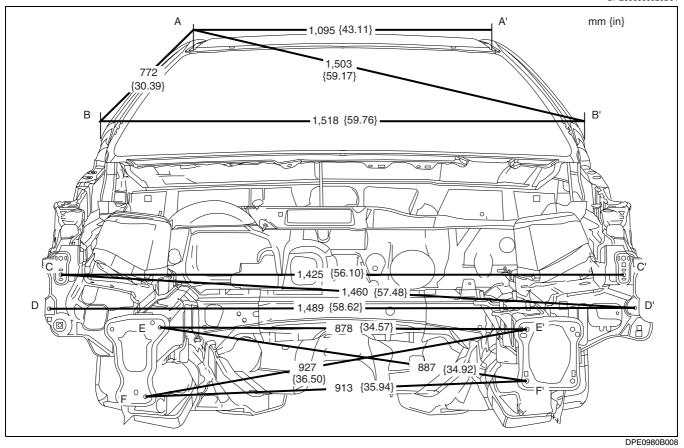


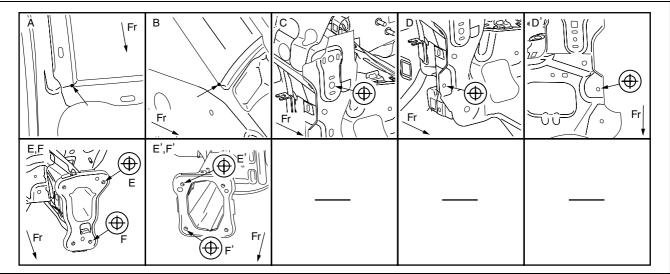
Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
Α	Front side frame datum hole	ø16 {0.63}
С	Front suspension mounting bracket	ø18 {0.71}
D	Front frame rear datum hole	ø20 {0.79}
F	Front frame rear datum slot	ø16 x 22
'	Tront hame real datum slot	{0.63 x 0.87}
G	Front B frame datum hole	ø16 {0.63}
Н	Front B frame datum hole	ø14 {0.55}

Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
I	Crossmember No.3 datum hole	ø12 {0.47}
J	Rear side frame datum hole	ø16 {0.63}
L	Rear side frame datum slot	ø14 x 20
		{0.55 x 0.79}
M	Rear side frame datum hole	ø20 {0.79}

FRONT BODY STRAIGHT-LINE DIMENSIONS (1)

DPE098053020B01



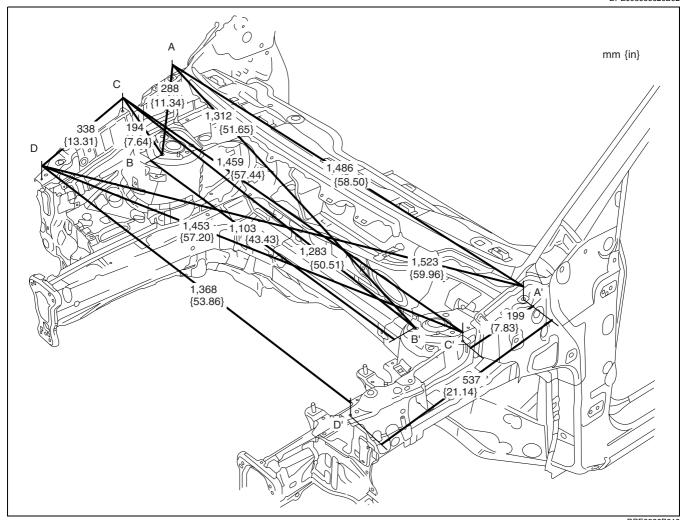


Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
Α	Roof seamless location	-
В	Front pillar projection location	-
С	Shroud side panel datum hole	RH:ø10 {0.39}
	Silloud side pariel datum noie	LH:ø7 {0.28}
D	Shroud side panel datum hole	ø7 {0.28}
D'	Shroud side panel datum hole	ø7 {0.28}

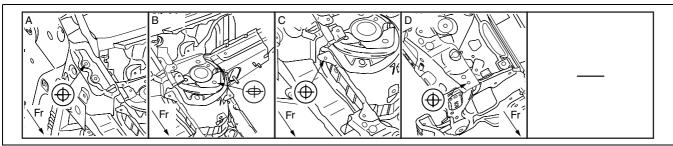
Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
Е	Front bumper bracket datum hole	ø10 {0.39}
E'	Front bumper bracket datum hole	ø10 {0.39}
F	Front bumper bracket datum hole	ø10 {0.39}
F'	Front bumper bracket datum hole	ø10 {0.39}

FRONT BODY STRAIGHT-LINE DIMENSIONS (2)

DPE098053020B02



DPE0980B010



DPE0980B011

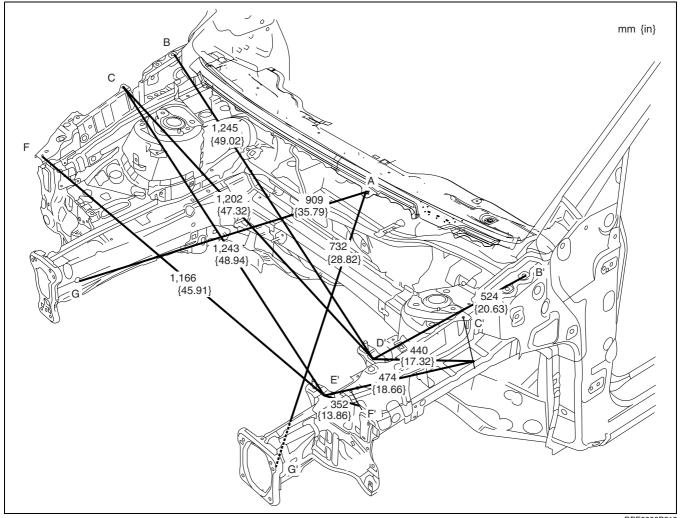
Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
Α	Bonnet hinge installation hole	ø10 {0.39}
В	Suspension housing upper	ø12 x 14
Б	datum slot	{0.47 x 0.55}

Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
С	Front fender installation hole	ø7 {0.28}
D	Shroud upper reinforcement datum hole	ø7 {0.28}

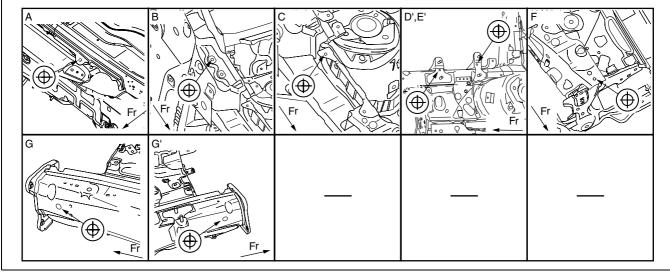
FRONT BODY STRAIGHT-LINE DIMENSIONS (3)

L.H.D. models

DPE098053020B03



DPE0980B212

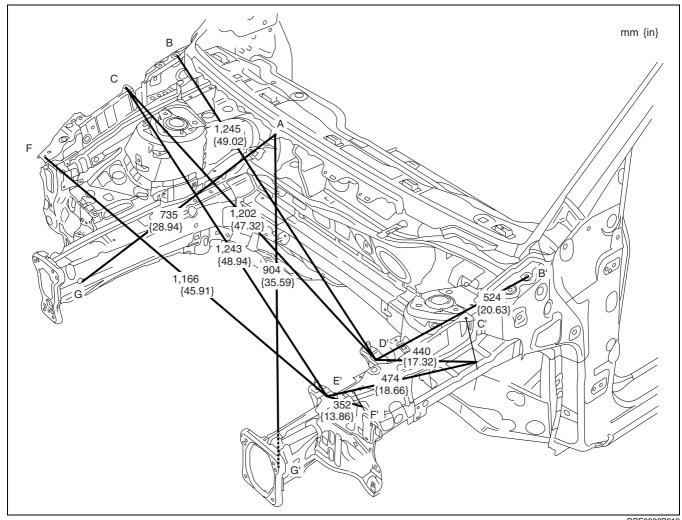


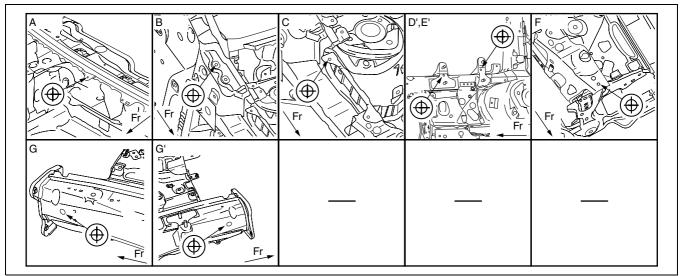
Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
Α	Wiper motor installation hole	ø10 {0.39}
В	Bonnet hinge installation hole	ø10 {0.39}

Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
С	Front fender installation hole	ø7 {0.28}
D'	Frame reinforcement datum hole	ø8 {0.31}

Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
E'	Frame reinforcement datum hole	ø8 {0.31}
F	Shroud upper reinforcement datum hole	ø7 {0.28}
G	Front side reinforcement datum hole	ø19 {0.75}
G'	Front side reinforcement datum hole	ø19 {0.75}

R.H.D. models





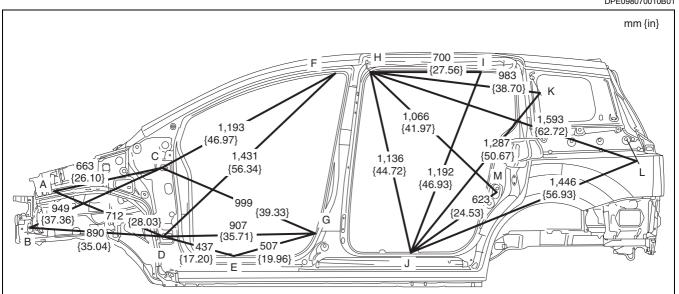
DPE0980B013

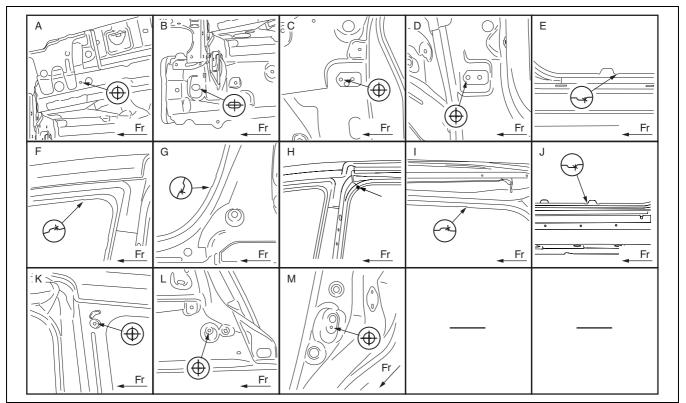
Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
Α	Wiper motor installation hole	ø10 {0.39}
В	Bonnet hinge installation hole	ø10 {0.39}
С	Front fender installation hole	ø7 {0.28}
D'	Frame reinforcement datum hole	ø8 {0.31}
E'	Frame reinforcement datum hole	ø8 {0.31}

Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
F	Shroud upper reinforcement datum hole	ø7 {0.28}
G	Front side reinforcement datum hole	ø19 {0.75}
G'	Front side reinforcement datum hole	ø19 {0.75}

CABIN SIDE FRAME STRAIGHT-LINE DIMENSIONS

DPE098070010B01



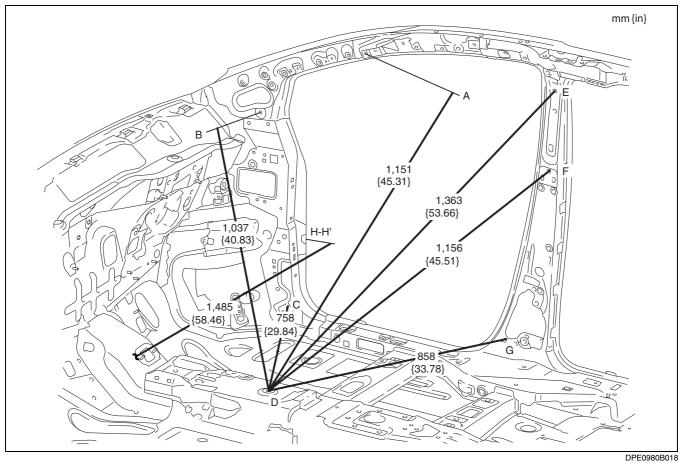


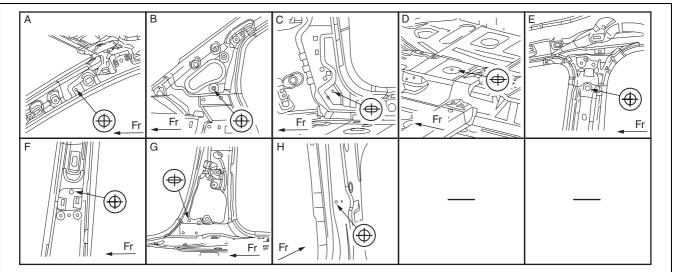
DPE0980B017

Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
А	Apron reinforcement lower datum hole	ø7 {0.28}
В	Front frame outer datum slot	ø16 x 22 {0.63 x 0.87}
С	Front door hinge installation hole	ø12 {0.47}
D	Front door hinge installation hole	ø12 {0.47}
Е	Side sill notch	-
F	Center pillar notch	-
G	Center pillar notch	-
Н	Center pillar notch	-
I	Roof rail notch	-
J	Center pillar notch	-
K	Quarter window glass installation hole	ø8.2 {0.32}
L	Center guide rail cover installation hole	ø8.5 {0.33}
М	Door switch installation hole	ø9 {0.35}

ROOM STRAIGHT-LINE DIMENSIONS (1)

DPE098070001B01



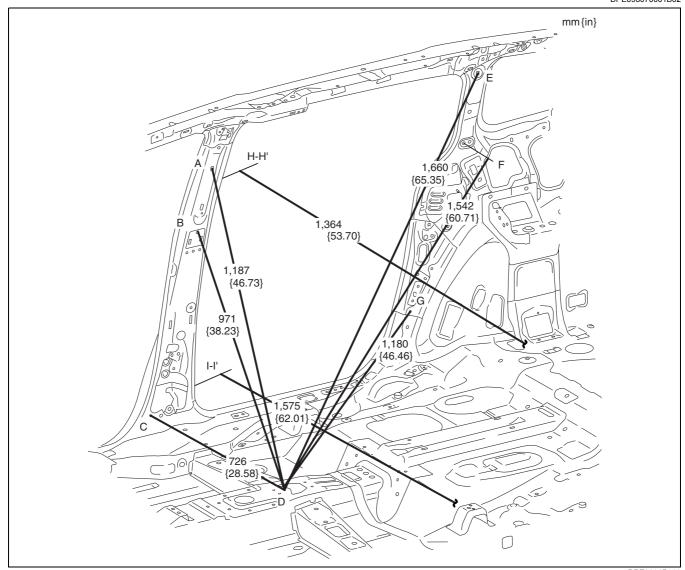


Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
Α	Front pillar inner datum hole	ø13 {0.51}
В	Front pillar inner datum hole	ø12.5 {0.49}
С	Hinge pillar inner datum slot	ø7.2 x 3
	I linge piliai liniei datum siot	{0.28 x 0.12}
D	Front floor pan datum slot	ø12 x 6
	Front noor pair datum siot	{0.47 x 0.24}

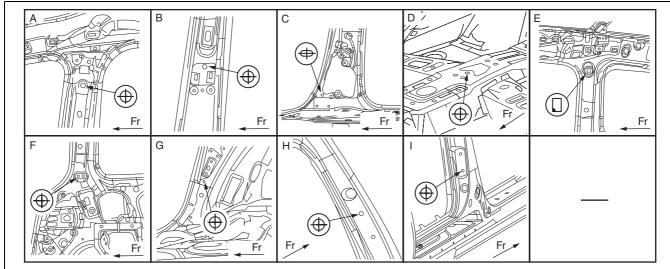
Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
Е	Adjuster installation hole	ø16 {0.63}
F	Trim installation hole	ø10.2 {0.40}
G	Harness installation slot	ø7 x 10
"	Tiarriess iristaliation siot	{0.28 x 0.39}
Н	Checker bracket installation hole	ø10 {0.39}

ROOM STRAIGHT-LINE DIMENSIONS (2)

DPE098070001B02



DPE0980B020

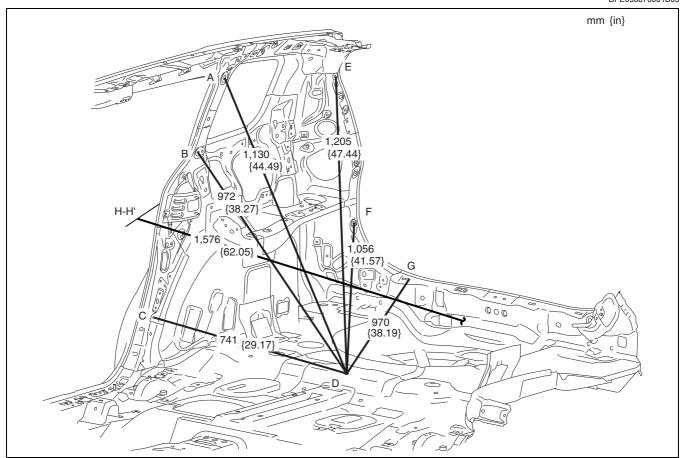


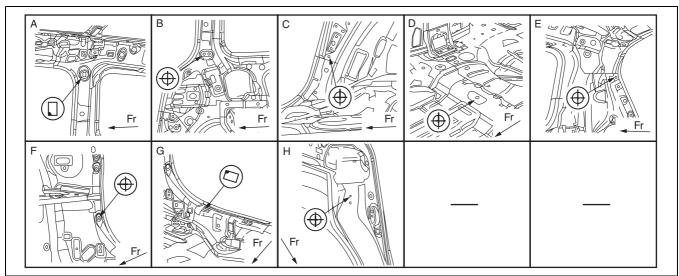
Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
Α	Adjuster installation hole	ø16 {0.63}
В	Trim installation hole	ø10.2 {0.40}
С	Harness installation slot	ø7 x 10 {0.28 x 0.39}
	Trainess installation slot	
D	Center floor pan datum hole	ø11 {0.43}
E	Trim installation square hole	10 x 15
	ITIIT ITISTATIATION SQUARE HOTE	{0.39 x 0.59}

Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
F	Trim installation hole	ø8.6 {0.34}
G	Harness installation hole	ø7 {0.28}
Н	Female wedge installation hole	ø10 {0.39}
I	Female wedge installation hole	ø10 {0.39}

ROOM STRAIGHT-LINE DIMENSIONS (3)

DPE098070001B03





DPE0980B023

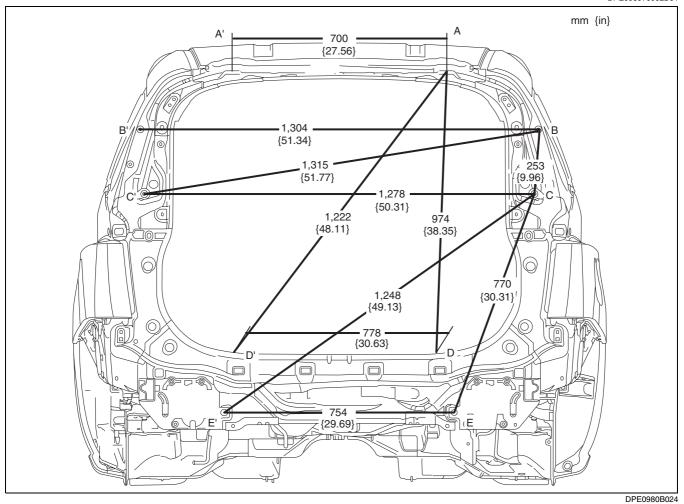
Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
Α	Trim installation square hole	10 x 15
_ ^	min installation square note	{0.39 x 0.59}
В	Trim installation hole	ø8.6 {0.34}
С	Harness installation hole	ø7 {0.28}
D	Rear floor pan datum hole	ø16 {0.63}

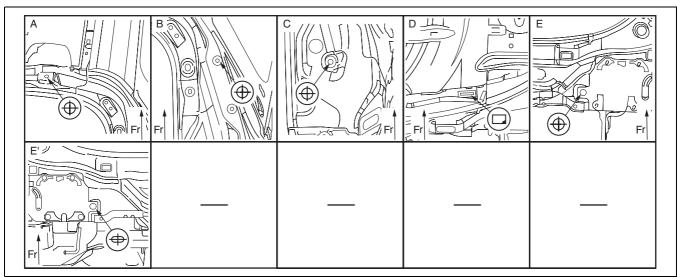
Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
Е	Trim installation hole	ø8.6 {0.34}
F	Trim installation hole	ø8.6 {0.34}
G	Trim installation square hole	8 x 28
G	Tilli ilistaliation square noie	{0.31 x 1.10}
Н	Striker installation hole	ø8.2 {0.32}

BODY STRUCTURE [DIMENSIONS]

REAR BODY STRAIGHT-LINE DIMENSIONS

DPE098070002B01





DPE0980B025

Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
Α	Liftgate installation hole	ø14 {0.55}
В	Rear combination light installation hole	ø8.5 {0.33}
С	Rear pillar outer datum hole	ø12 {0.47}

Point symbol	Designation	Hole diameter or bolt or nut size mm {in}
D	Trim installation square hole	8 x 23
		{0.31 x 0.91}
Е	Rear end panel datum hole	ø20 {0.79}
E'	Rear end panel datum hole	ø20 x 24
		{0.79 x 0.94}

09-80E BODY STRUCTURE [PLASTIC BODY PARTS]

PLASTIC PARTS HEAT RESISTING	PLASTIC LIFTGATE09-80E-8
TEMPERATURE 09–80E–1	REPAIRABLE RANGE OF POLYCARBONATE;
REPAIRABLE RANGE OF POLYPROPYLENE	ABS-RESIN LIFTGATE09-80E-9
BUMPERS	REPAIR OF POLYCARBONATE;
POLYPROPYLENE BUMPER REPAIR 09-80E-3	ABS-RESIN LIFTGATE09-80E-11
PROCEDURE 09–80E–3	

PLASTIC PARTS HEAT RESISTING TEMPERATURE

DPF098050000B01

Part Name		Code	Material Name	Heat resisting Temperature°C{°F}
WINDSHIELD MOULDING		PVC	POLYVINYLCHLORIDE	95 {203}
COWL GRILLE		PP	POLYPROPYLENE	95 {203}
FRONT COMBINATION	LENS	PC	POLYCARBONATE	130 {266}
LIGHT	HOUSING	PP	POLYPROPYLENE	90 {194}
RADIATOR GRILLE		PP	POLYPROPYLENE	95 {203}
FRONT BUMPER		PP	POLYPROPYLENE	100 {212}
SIDE TURN LIGHT	LENS	PMMA	ACRYLIC	75 {167}
SIDE TORN LIGHT	HOUSING	PC-PBT	POLYCARBONATE-PBT	80 {176}
OUTSIDE MIRROR		ABS	ABS	100 {212}
SIDE STEP MOLDING		PP	POLYPROPYLENE	75 {167}
ROOF MOULDING		PVC	PVC	95 {203}
REAR BUMPER		PP	POLYPROPYLENE	100 {212}
REAR COMBINATION	LENS	PMMA	ACRYLIC	80 {176}
LIGHT	HOUSING	AAS	AAS	70 {158}
OUTER HANDLE	LEVER	PC-PBT	POLYCARBONATE-PBT	80 {176}
OUTEN HANDLE	BASE	PC-PET	POLYCARBONATE-PET	80 {176}
HIGH-MOUNT BRAKE	LENS	PMMA	ACRYLIC	80 {176}
LIGHT	HOUSING	ABS	ABS	100 {212}
REAR SPOILER		PP	POLYPROPYLENE	90 {194}
PILLAR GARNISH		AES	AES	90 {194}
DOOR GARNISH		AES	AES	90 {194}
SHROUD PANEL		PP	POLYPROPYLENE	100 {212}
LIFTGATE	OUTER	PC-ABS	POLYCARBONATE-ABS	100 {212}
LIFIGALE	INNER	PP(GF40%)	POLYPROPYLENE-GLASS FIBER	100 {212}

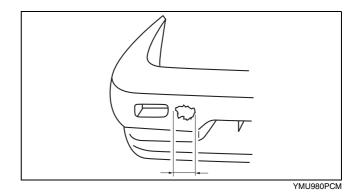
• The application of temperatures higher than heat resisting temperatures may result in part deformation.

REPAIRABLE RANGE OF POLYPROPYLENE BUMPERS

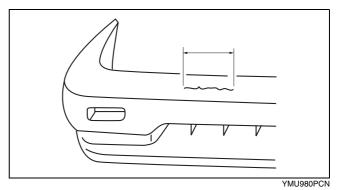
The three types of damaged bumpers shown below are considered repairable. Although a bumper which has been damaged greater than this could also be repaired, it should be replaced with a new one because such repair would detract from the looks and quality of the bumper. In addition, such repair is not considered reasonable in terms of work time.

Repairable Bumpers

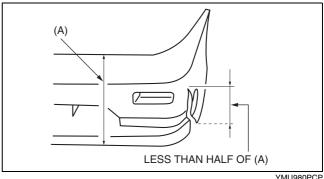
1. A bumper with a hole less than 50 mm {1.97 in} in diameter.



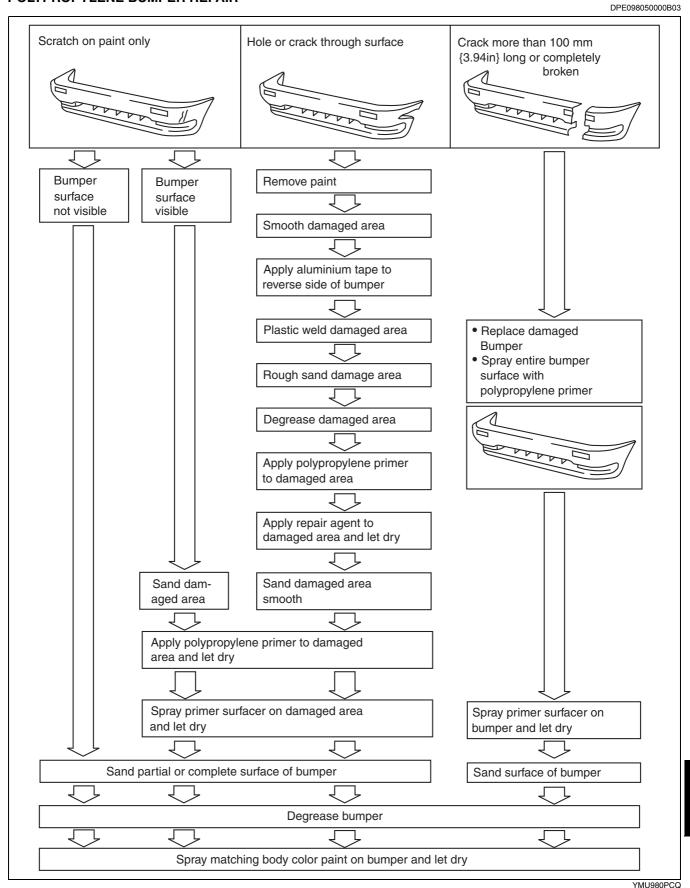
2. A bumper with a crack less than 100 mm {3.94 in} in length.



3. A bumper with a crack less than 100 mm $\{3.94 \text{ in}\}$ in length that is less than half of the width of the bumper.



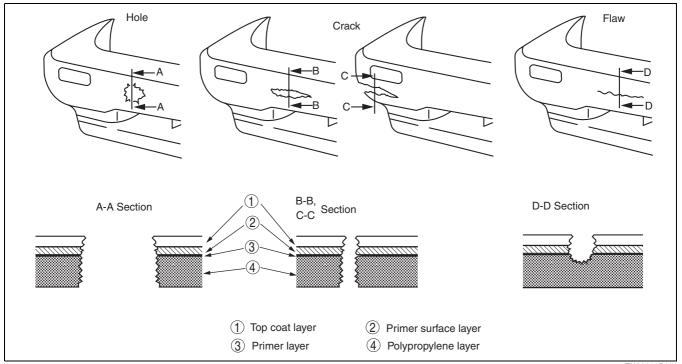
POLYPROPYLENE BUMPER REPAIR



PROCEDURE

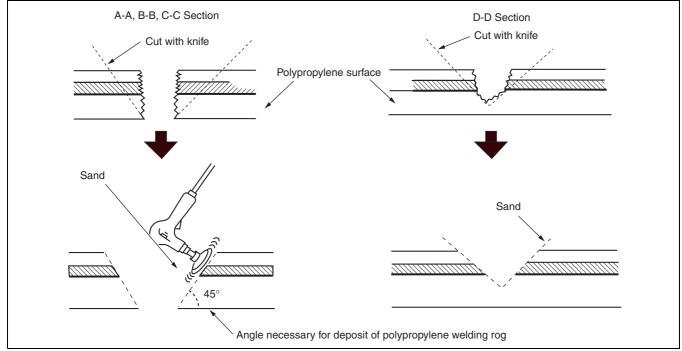
-00005000000

serious to be restored by painting only.



ZUA9818B001

1. Cut the rough edges around the damage with a knife to make it smooth. Sand the area with a sander to make an angle of about 45°.

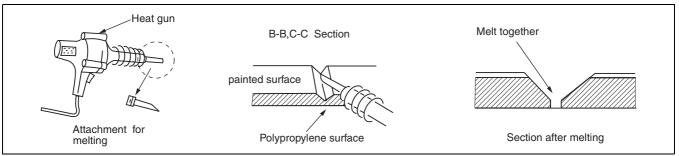


ZUA9818B010

- 2. Weld the damaged area.
 - For repair of a cracked area, melt the crack together with a heat gun and a melting attachment.

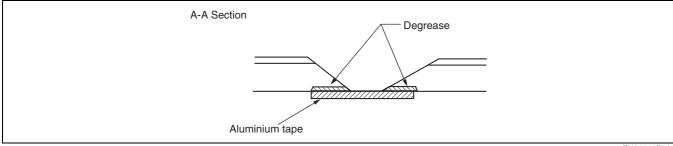
09

BODY STRUCTURE [PLASTIC BODY PARTS]



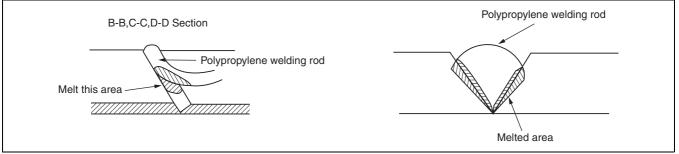
ZUA9818B003

• For repair of a hole, degrease the area on both sides of the bumper and apply aluminium tape on the reverse side of the damage area.



ZUA9818B005

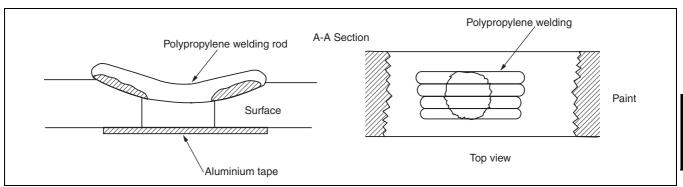
3. Melt the polypropylene welding rod with a heat gun and deposit it the cracked area.



ZUA9818B004

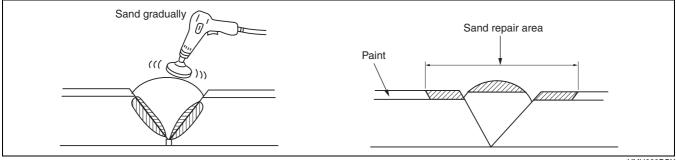
Note

- Heat the shaded area to melt it.
- Take care not to overly melt welding rod. If the part is welded with the welding rod melted like jelly, the welding strength will be reduced.
- Hold the heat gun 10-20 mm {0.39-0.79 in} from the part being welded.
- Do not move the welding rod until the welded parts cool.



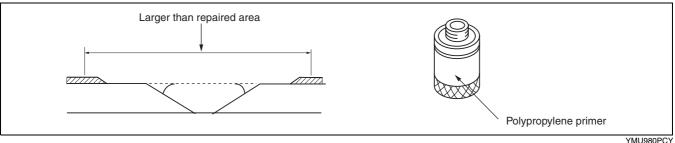
ZUA9818B006

4. Sand the surface of the polypropylene gradually as it is easily melted by the abrasion heat. Sand the area to which repair agent will be applied.



YMU980PCX

5. Uniformly apply polypropylene primer with a brush to an area larger than the repaired area. Allow to dry about 10 minutes at 20 °C {68 °F}.

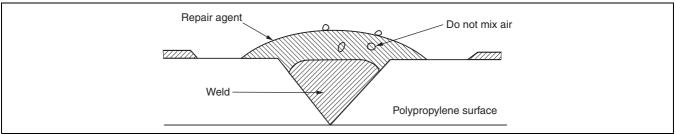


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6. Mix the main agent and the stiffening agent in a ratio of one to one. Apply the mixed repair agent to the damaged area.

Note

- When mixing the main and stiffening agents, take care not to allow bubbles to form.
- The repair agent hardens quickly (about 5 minutes); proceed with the work immediately after mixing the agents.
- Allow about 30 minutes to dry (20 °C {68 °F}) before sanding.



YMU980PCZ

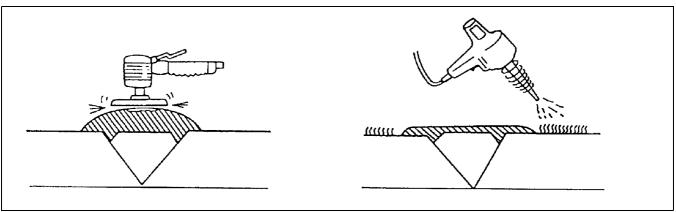
The repair agent is a two part epoxy adhesive.

When the repair agent hardens, it will provide a good finish with the same flexibility as the polypropylens. The repair agent for a **urethane** bumper is also a two part adhesive compound. However, this is different from that for a polypropylene bumper. If the incorrect repair agent is used, the repair will be faulty.

7. Sand the area with #180—240 sandpaper.

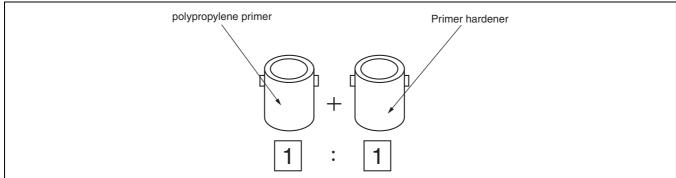
Note

- If excessive force is applied to the area when sanding, the surface will be damaged.
- If fuzz remains around the repaired area, melt it with a heat gun.



YMU980PD0

- 8. Degrease the painted surface.
- 9. Mix the primer and the hardener at a ratio of one to one. Apply the primer to the repaired area and the surface of the bumper with a brush or spray.



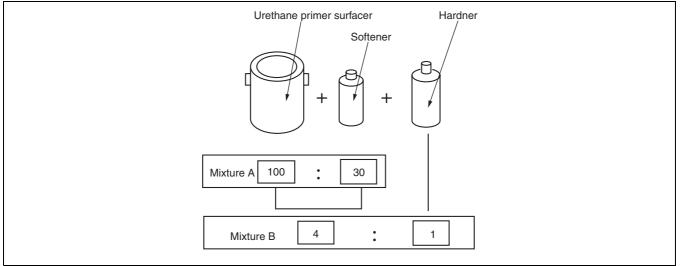
YMU980PD1

Use the primer within 16 hours after it is mixed.

Note

- Polypropylene primer will dissolve even after drying if it is wiped with solvent. Use only water to clean around the primer.
- 10. Allow the part to dry.
- 11. Add the softener to the urethane primer surfacer and spray it on the repaired area.
 - a. Mixing method
 Urethane primer surfacer + Softener Mixture A
 Mixture A + hardener Mixture B
 Dilute mixture B with thinner to spray on bumper
 - b. Viscosity

14—16 seconds/viscosimeter 20 °C {68 °F}



YMU980PD2

Note

- Mix the solutions at the specified ratio.
- c. Spray pressure

300-400 kPa {3-4 kg/cm², 43-57 psi}

- d. Standard film thickness
 - 30—40 μ
- e. Spray method

Spot-spray primer surfacer on bumper three of four times

12. Air drying 20 °C {68 °F} — 8 hours minimum.

Forced drying 60 °C {140 °F} — 1 hour

- 13. Lightly sand the complete surface of the bumper with #400—#600 sandpaper. Do not expose the surface of the polypropylene. (Wet or dry sanding is acceptable.)
- 14. Wipe the complete surface of the bumper with degreasing agent. Quickly wipe the surface with a clean rag to degrease it.
- 15. Apply a matching coat of body color to the polypropylene bumper.

Note

- Be sure to use only urethane primer for a urethane bumper and polypropylene primer for a polypropylene bumper. Other paints for repairing a polypropylene bumper are the same as those for the urethane bumper.
- 16. Air drying 20 °C {68 °F} 8 hours minimum. Forced drying 60 °C {140 °F} 1 hour

Note

Let the part air dry when possible as forced drying could cause bubbles in the top coat.

PLASTIC LIFTGATE

DPE098062010B01

Characteristics of Plastic Liftgate

- The material for the outer panel of the liftgate is polycarbonate; acrylonitrile-butadience styrene resin (ABS-resin), and the material for the inner panel is glass fiber; polypropylene.
- The liftgate has a bonded structure of outer and inner panels.

Configuration of Shipped Parts

- The liftgate is shipped with the rear No.2 wiring harness and the complex antenna assembled and bonded.
- The outer panel surface of the liftgate is not painted. However, it is coated with primer like a bumper.
- A hole cover is affixed to the back monitor camera installation hole on the outer panel with double-sided adhesive tape. A waterproof pad is affixed to the back monitor camera installation hole on the inner panel.

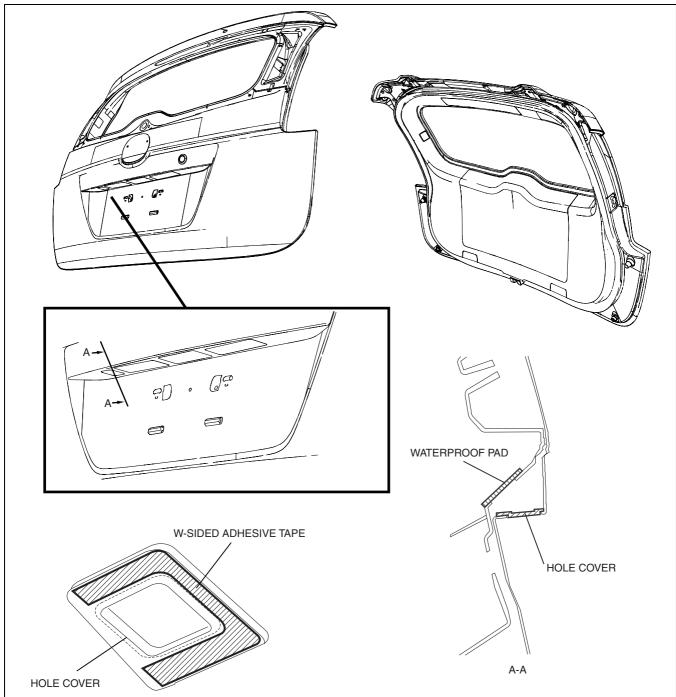
Repair Points

• Scratches are repairable. Holes and cracks are not repairable.

09-80E-8

Caution

- Because the outer and inner panels are bonded, damage to the inner frame is not repairable.
- To install the back monitor camera, perform the following procedure:
 - Remove the hole cover installed to the new liftgate using a flathead screwdriver.
 - Remove the waterproof pad.



DPE0980B132

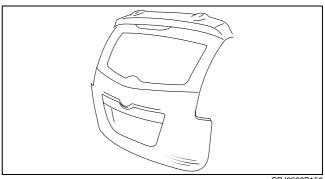
DPE098062010B02

REPAIRABLE RANGE OF POLYCARBONATE; ABS-RESIN LIFTGATE

Repairable damage on the liftgate is as follows:

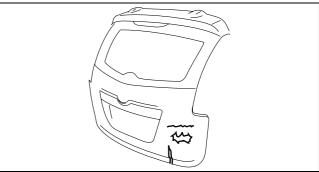
Repairable Liftgate

1. Scratches on the liftgate



CPJ0980B150

Unrepairable Liftgate1. Damages other than scratches (cracks, holes, cuts) on the liftgate



CPJ0980B151

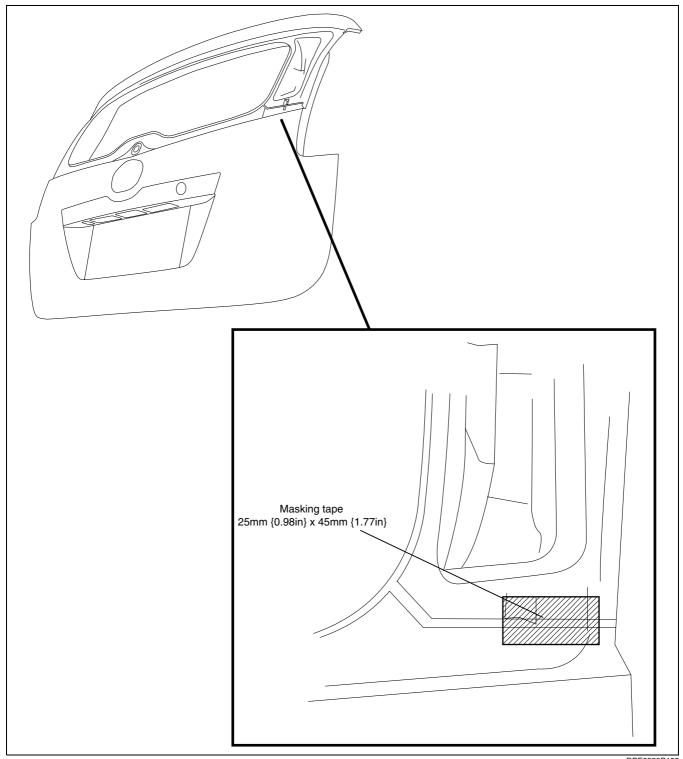
REPAIR OF POLYCARBONATE; ABS-RESIN LIFTGATE DPE098062010B03 Crack, hole, cut, or completely damaged Scratch on painted surface Smooth and feather damaged area Replace the damaged liftgate Clean and degrease (Apply primer and let dry) (May be necessary depending on paint manufacturer) Apply putty (applicable to resin) Let dry and smooth putty Procedures vary depending on paint manufacturer Follow paint manufacturer's instructions Sand surface for urethane primer surfacer Sand surface Clean and degrease Apply primer Apply urethane surfacer, let it dry, grind, and sand surface for top coating Clean and degrease liftgate Top-coat liftgate and let dry Finish Caution

- · For materials used for repair (such as putty, primer surfacer, and top coating paint), follow manufacturer's instructions
- · Because the liftgate has a bonded structure of outer and inner panels, mask the inner panel securely.

DPE0980B152

Caution

 Masking tape has been affixed to the adhesive application area. Paint the body color without removing the masking tape.



BODY STRUCTURE [PRIMARY COLOR MIXTURE CHART FOR BODY COLOS]

09-80F BODY STRUCTURE [PRIMARY COLOR MIXTURE CHART FOR BODY COLOS]

PRIMARY COLOR MIXTURE CHART

FOR BODY COLORS 09-80F-1

PRIMARY COLOR MIXTURE CHART FOR BODY COLORS

DPE098089000B01

Paint Maker URL

• Please confirm the newest formula at the following URL.

AKZO

http://www.sikkenscr.com/sikkens/corporate/index.htm#

E.I.du pont de nemours &Co.(Inc.)

• http://www.dupont.com/finishes/eu

STANDOX

• http://www.standox.com

SPIES HECKER

http://www.spieshecker.com

Nexa Autocolor

• http://www.iciautocolor.com

PPG INDUSTRIES

http://www.ppg.com/gridppg/

DIAMONT

http://www.rmpaint.net/

GLASURIT

• http://www.glasurit.com/

Body Color

COLOR CODE	COLOR NAME
A3E	CLASSIC RED CLE
A3F	BRILLIANT BLACK CLE
A4D	ARCTIC WHITE CLE
22R	PLATINUM SILVER M
22V	SUNLIGHT SILVER M
25D	SNOWFLAKE WHITE PEAR
25E	STRATO BLUE MC
28B	CARBON GRAY MC
30P	CARDINAL RED MC
32B	STELLAR SILVER M
32C	PHANTOM BLUE MC