CONTENTS

GENERAL INFORMATION

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GENERAL GUIDE LINES AND PRECAUTIONS

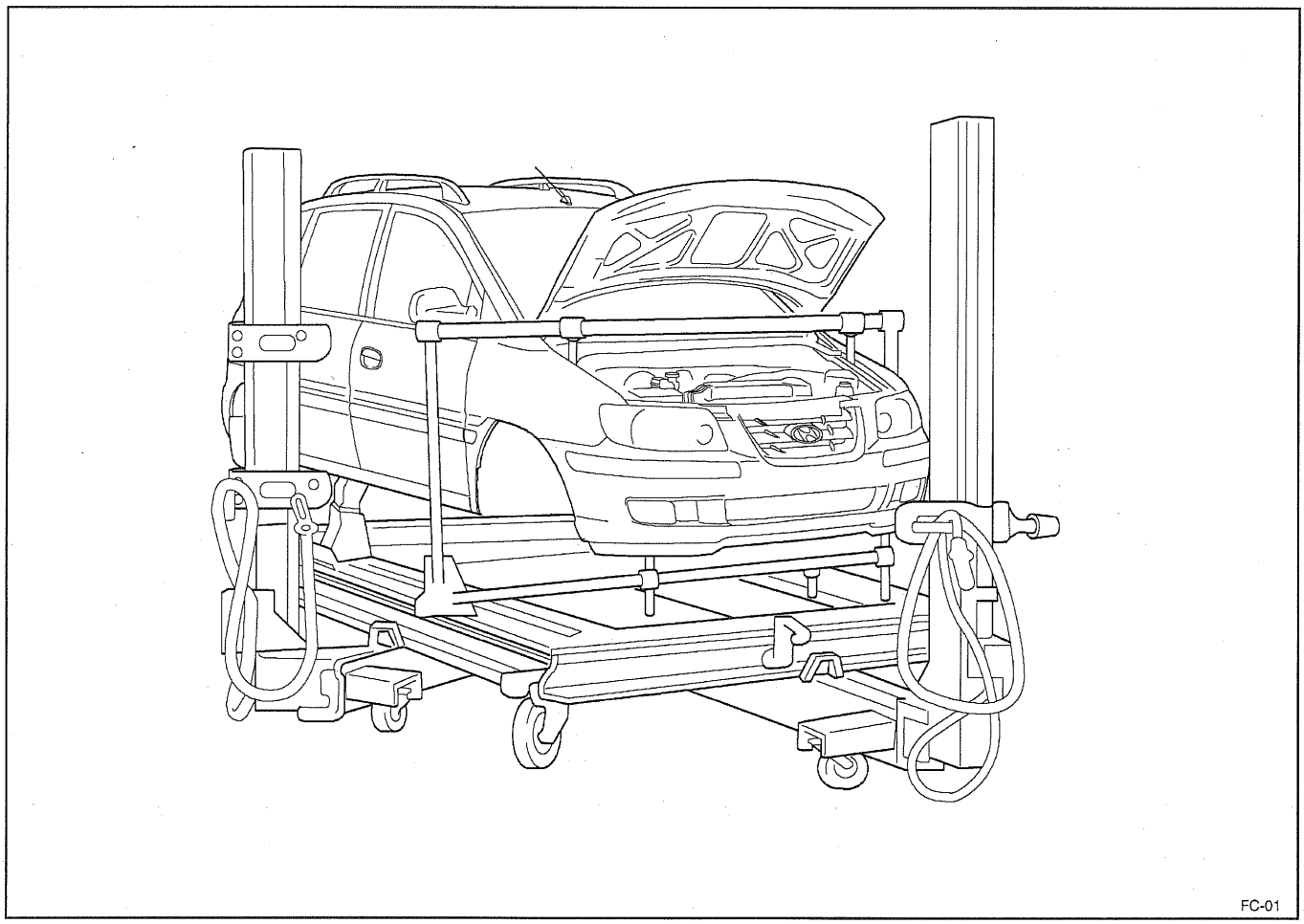
The Hyundai MATRIX is a completely new vehicle design. During its development, close attention has been given to safety, stability, weight and corrosion protection. Typical of unit body design, the Hyundai MATRIX is designed so that the front and rear compartments will absorb much of the collision energy so that the passengers are better protected. During collisions, these front and rear energy absorbing systems may be severely damaged. During repair, these damaged areas must be returned to their original strength and geometry. If this is not properly done, the vehicle will not provide the intended level of protection to its occupants in the event of another collision.

The repairs described in this manual were performed on MATRIX body shells. In some instances special fixtures were welded in place to support the structure. During the repair of an actual vehicle, the interior would be fully disassembled and standard jack screws or portable braces may be used for temporary support.

During the repair of an accident involved vehicle, the vehicle must first be returned to pre-impact dimensions prior to beginning the sectioning repair procedures. The extent of damage that must be repaired should then be evaluated to determine the appropriate repair procedures. This manual provides locations and procedures where structural sectioning may be employed. It is the responsibility of the repair technician, based upon the extent of damage, to determine which location and procedure is suitable for the particular damaged vehicle.

During the repair of a collision damaged automobile, it is impossible to fully duplicate the methods used in the factory during the vehicle manufacture. Therefore, auto body repair techniques have been developed to provide a repair that has strength properties equivalent to those of the original design and manufacture.

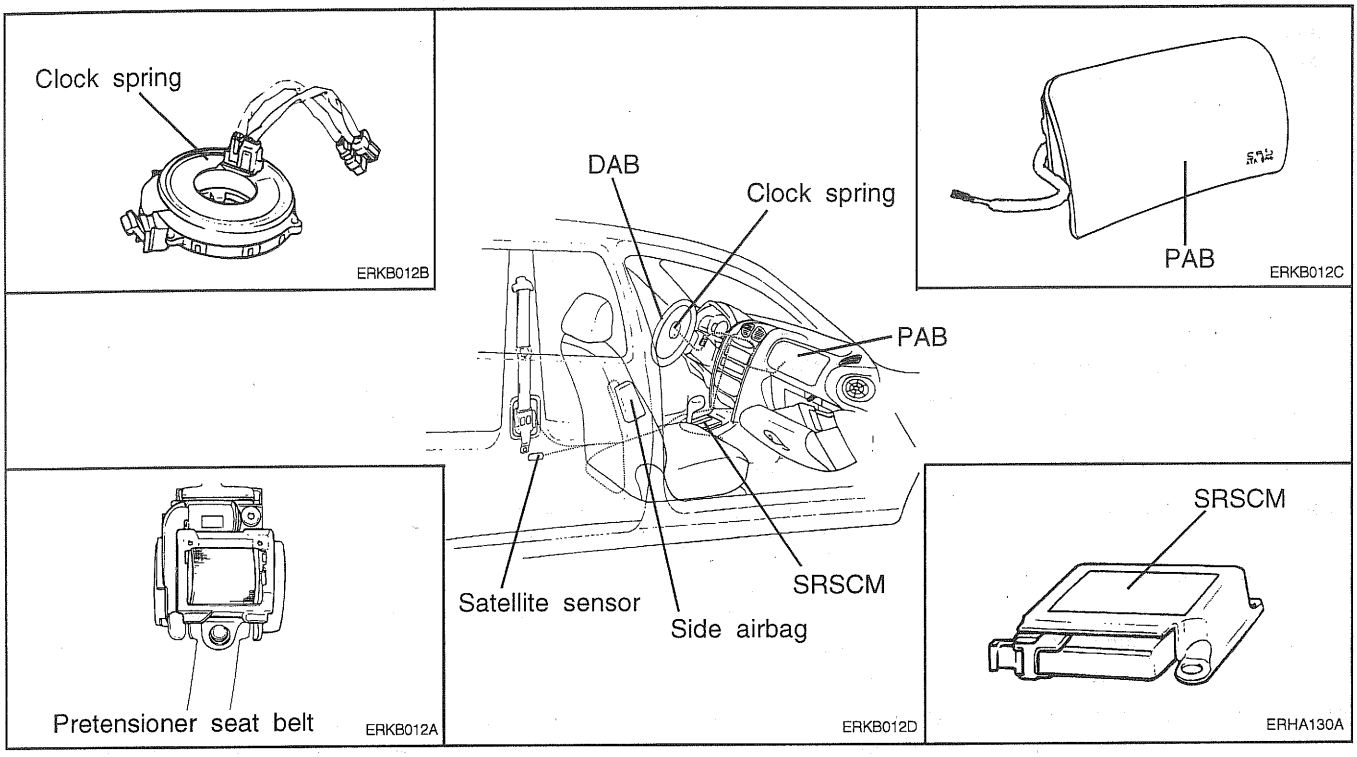
Certain guidelines and precaution are noted as follows.



FC-01

SRS AIRBAG

SYSTEM COMPONENT



The Hyundai MATRIX is equipped with a Supplemental Restraint System (AIRBAG) to provide the vehicle's driver and/or the front passenger with additional protection than that offered by the seat-belt system alone, in case of a frontal or lateral impact of sufficient severity.

When handling airbag components (removal, installation or inspection, etc.), always follow the directions given in the repair manual for the relevant model to prevent the occurrence of accidents and airbag malfunction.

Also take the following precautions when repairing the body:

1. Work must be started after approximately 30 seconds or longer from the time the ignition switch is turned to the LOCK position and the negative (-) terminal cable is disconnected from the battery. (The airbag system is equipped with a back-up power source so that if work is started within 30 seconds of disconnecting the negative (-) terminal cable of the battery, the airbag may be deployed.)
   When the negative(-) terminal cable is disconnected from the battery, memory of the clock and audio systems will be cancelled. So before starting work, make a record of the contents memorized by the audio memory system. Then when work is finished, reset the audio system as before and adjust the clock.
2. When using electric welding, first disconnect the SRSCM connectors under the lower crash pad center.
3. Store the airbag module where the ambient temperature remains below 80°C (176°F), without high humidity and away from electrical noise.
4. WARNING/CAUTION labels are attached to the periphery of the airbag components.
   Refer to the MATRIX SHOP MANUAL.

ELECTRONIC PARTS

Vehicles today include a great many electronic parts and components, and these are in general very susceptible to adverse effects caused by over current, reverse current, electromagnetic waves, high temperature, high humidity impacts, etc..
In particular such electronic components can be damaged if there is a large current flow during welding from the body side.
Therefore, take the following precautions during body repair to prevent damage to the CONTROL MODULES (ECM, TCM, ABS CM, SRS CM, etc.)

1. Before removing and inspecting the electrical parts or before starting electric welding operations, disconnect the negative (-) terminal cable from the battery.
2. Do not expose the CONTROL MODULES to ambient temperatures above 80°C (176°F).

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

CORROSION PROTECTION AND SEALING

Proper corrosion protection and sealing is an important part of any repair. When reviewing these repair procedures, it is important to recognize the need for corrosion restoration to provide for long term strength of the repaired member.

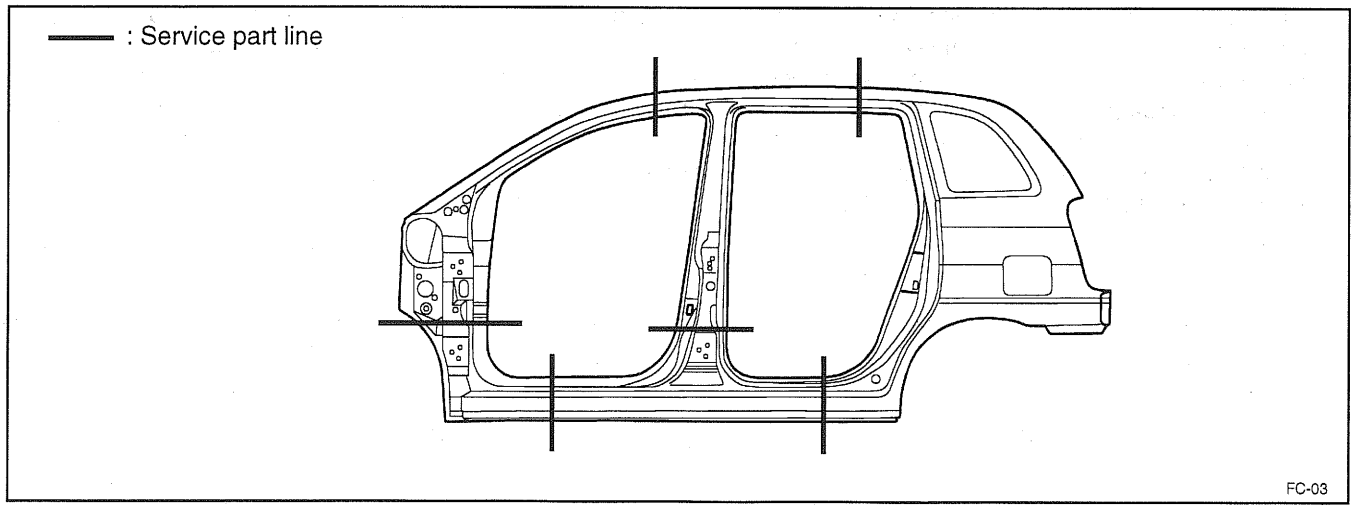
A two part epoxy primer was applied to the metal surfaces during the latter part of the repair. For closed sections, such as front and rear rails, rocker panels and pillars, the primer is applied without applying the metal conditioner and the conversion coating. These steps are omitted to insure that no rinse water is trapped in the closed sections. The primer application is followed by an application of an oil or wax based on rust proofing material.

After the corrosion restoration process for the closed sections are completed, then the process can be applied to all exterior sections. For exterior surfaces, both metal conditioner and conversion coating treatments are applied to the exterior surface prior to application of the epoxy primer. The procedure in applying the corrosion restoration process is important in order to insure that moisture, due to the water rinsing of the metal conditioner and conversion coating is not inadvertently trapped inside any closed section before the epoxy primer and rust proofing materials have been applied.

Appropriate seam sealers are then applied to all joints. Follow manufacturer's recommendations for the appropriate type of seam sealer to be used at each seam or joint.

SIDE BODY PANELS

The side body panel for MATRIX is designed and stamped as single piece of sheet metal in factory as shown in the figure. While the entire side panel is available for service, the partial panels sectioned by several damaged areas are also available. Therefore when repairing side body, select and use the appropriate part.



WELDING

All repairs in this manual require the use of a Metal-Inert Gas (MIG) welder, Gas (oxyacetylene) welding must not be used.
Both high strength steel and mild steel can be welded using the MIG welder. The I-CAR recommendations for welding should be followed. The shielding gas should be 75% Argon and 25% CO_2.
The recommended welding wire size is 0.23" and the wire should satisfy the American Welding Society Standard code AWSER70S-6.

During the repair process, plug welds are used to duplicate original factory spot welds. All plug welds should be done with the MIG welder. An 8 mm (5/16") hole is placed in the top (welding side) sheet metal.

You then begin welding along the edges and the spiral towards the center (see illustration). This is important so that weld penetration between the two metal pieces may take place along the circumference of the circle.

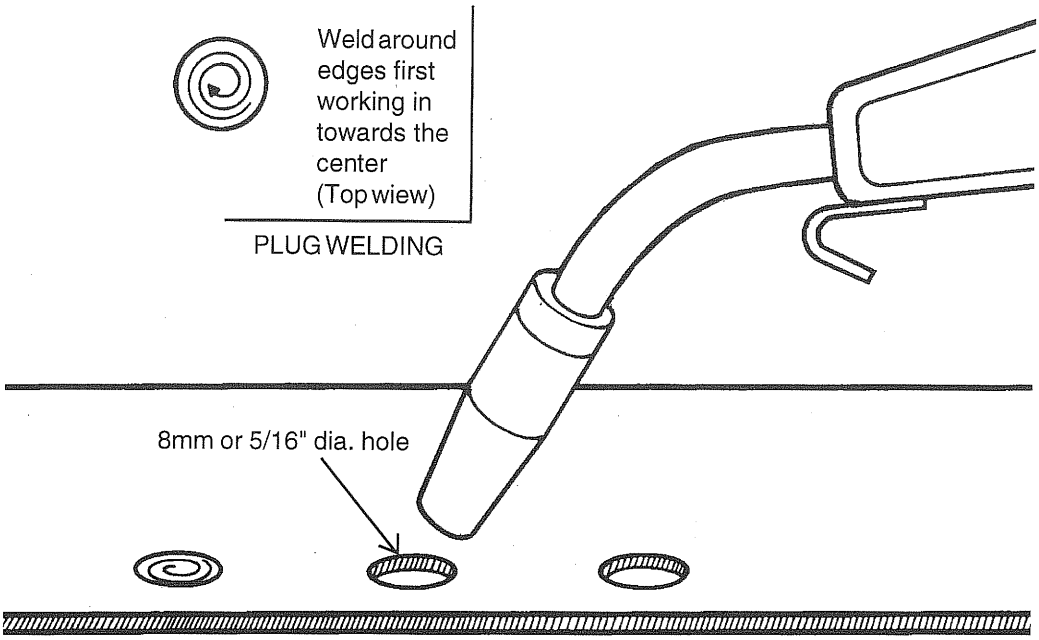


Illustration-Welding in collision Repair

FC-04

SAFETY FACTORS

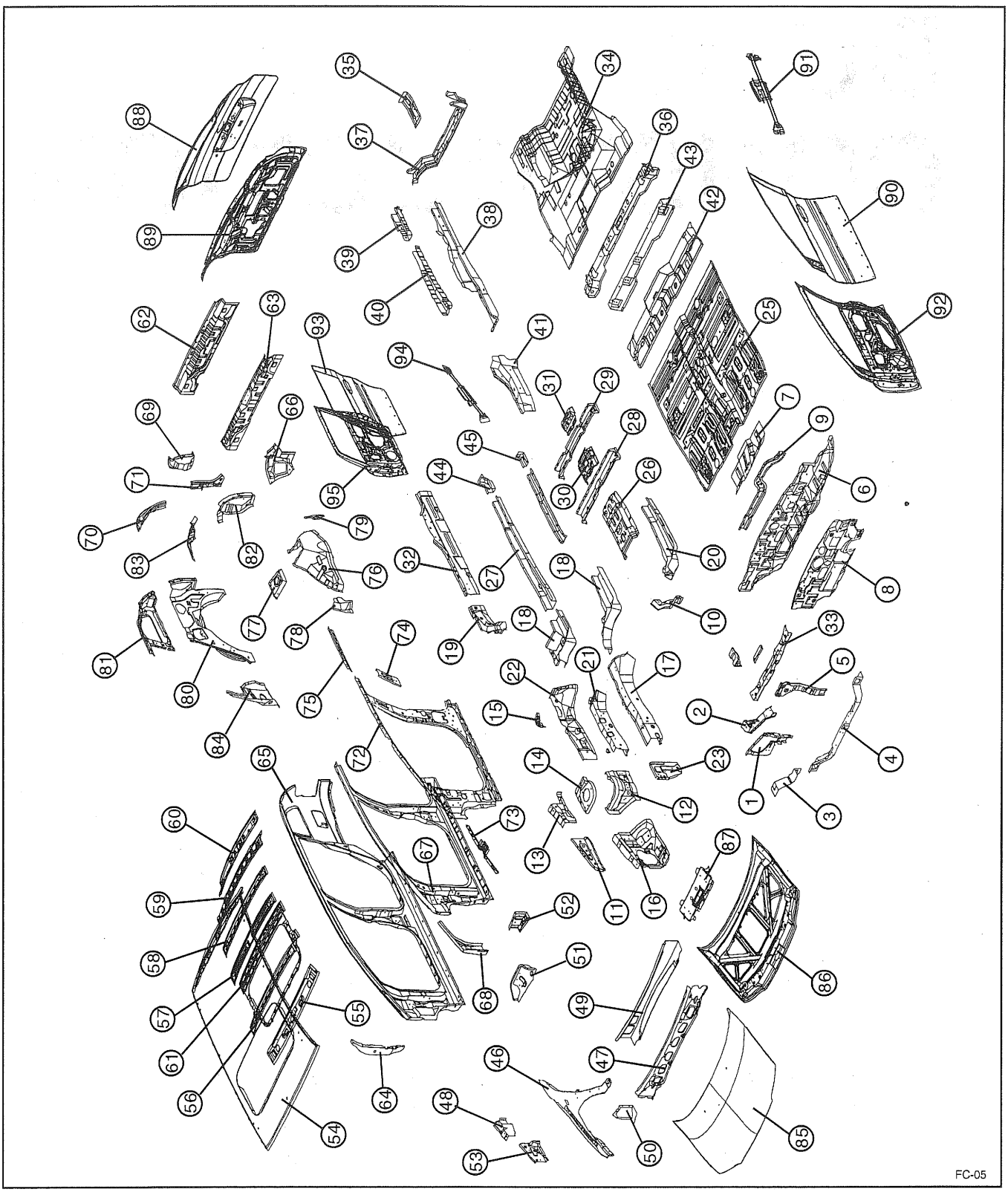
Disconnect the negative(-) battery cable before performing any work on the vehicle.
Protect yourself by wearing goggles, earplugs, respirators, gloves, safety shoes, caps, etc. when working on a vehicle.
Safely support the vehicle before any work is done. Block the front or rear wheels if the vehicle is not lifted off of the ground.
Cap or remove the fuel tank when working on the rear section of the car.
Insure proper ventilation of your working area. Some paint and sealant can generate toxic gases when heated.
Use an air chisel or saw to remove damaged panels instead of a gas torch.
Observe all local and national safety regulations when performing any work.
Cover interior with heat-resistant cover to insure safety when welding.
Take care when using gas or cutting torches so as not to burn body sealer or interior. Extinguish immediately if they should catch fire.

BODY CONSTRUCTION

BC

BODY COMPONENTS

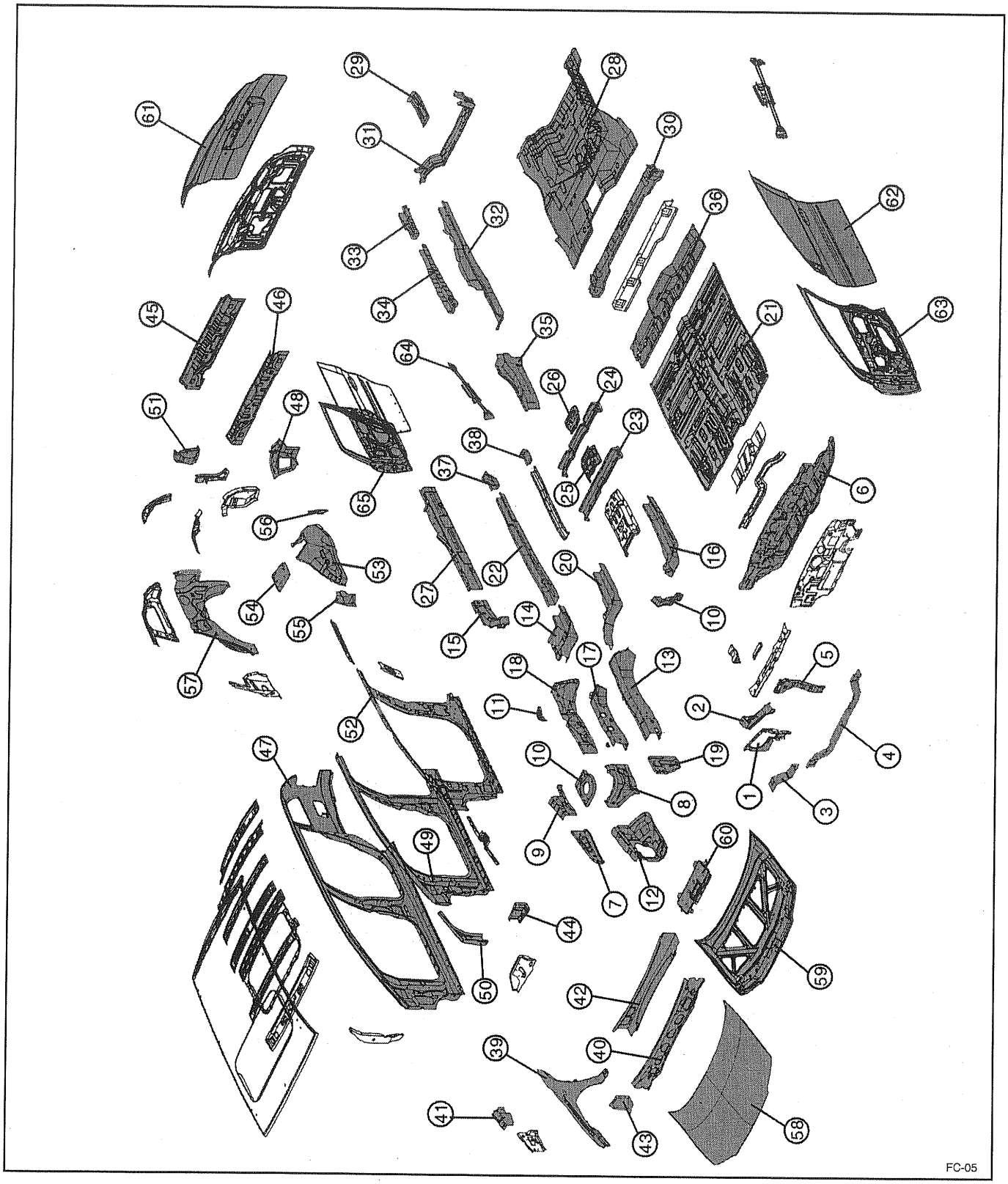
Body construction will sometimes differ depending on specifications and country of destination. Therefore, please keep in mind that the information contained herein is based on vehicles for general destination.



1. Head lamp support panel(LH/RH)
2. Radiator support upper side member(LH/RH)
3. Radiator lower inner extension(LH/RH)
4. Radiator lower outer member
5. Radiator support center member
6. Dash panel
7. Dash to center floor member
8. Dash panel anti pad
9. Dash cross center member
10. Dash cross side member(LH/RH)
11. Fender apron outer member(LH/RH)
12. Fender apron inner panel(LH/RH)
13. Fender apron inner front bracket(LH/RH)
14. Front shock absorber cover panel(LH/RH)
15. Fender apron to cowl gusset(LH/RH)
16. Fender apron outer member(LH/RH)
17. Front side inner member(LH/RH)
18. Front side rear lower member(LH/RH)
19. Front side member inner rear reinforcement(LH/RH)
20. Front side member rear lower extension(LH/RH)
21. Front side member inner front reinforcement(LH/RH)
22. Front side outer member
23. Front side member outer front extension(LH/RH)
24. Front side rear upper member(LH/RH)
25. Center floor panel
26. Transmission gear shift mounting reinforcement
27. Center floor side outer member
28. Center floor front cross center member
29. Center floor rear cross center member
30. Parking brake lever mounting reinforcement
31. Parking brake cable mounting bracket
32. Side sill inner panel(LH/RH)
33. Radiator support upper center member
34. Rear floor panel
35. Rear towing hook bracket
36. Rear seat rear mounting member
37. Rear floor center cross member
38. Rear floor side member(LH/RH)
39. Rear bumper mounting reinforcement
40. Rear side member reinforcement
41. Side sill inner rear panel(LH/RH)
42. Rear floor front extension
43. Rear floor front cross member
44. Center floor side member rear extension(LH/RH)
45. Fuel tank front mounting bracket
46. Fender panel(LH/RH)
47. Cowl front outer panel
48. Cowl side outer panel(LH/RH)
49. Cowl inner lower panel
50. Cowl side inner lower panel(LH/RH)
51. Cowl cross member lower support
52. Cowl inner bulk head
53. Cowl side upper outer member
54. Roof panel
55. Rood front rail
56. Roof center front rail
57. Roor center rail
58. Roof center rear rail
59. Roof rear upper rail
60. Roof rear lower rail
61. Sun roof reinforcement ring
62. Back panel
63. Rear transverse member
64. Fender insulator
65. Side outer panel(LH/RH)
66. Quarter outer rear lower extension(LH/RH)
67. Side outer reinforcement(LH/RH)
68. Front door upper mounting reinforcement(LH/RH)
69. Rear combination lamp housing panel(LH/RH)
70. Quarter outer rear upper extension(LH/RH)
71. Quarter outer rear center extension(LH/RH)
72. Side inner panel(LH/RH)
73. Front inner upper pillar reinforcement(LH/RH)
74. Front seat belt upper mounting bracket(LH/RH)
75. Roof side inner rail(LH/RH)
76. Wheel house inner panel(LH/RH)
77. Rear spring house cover(LH/RH)
78. Wheel house inner front extension(LH/RH)
79. Wheel house inner rear extension(LH/RH)
80. Quarter inner lower panel(LH/RH)
81. Quarter inner upper panel(LH/RH)
82. Rear pillar inner lower reinforcement(LH/RH)
83. Rear pillar inner upper reinforcement(LH/RH)
84. Quarter pillar inner reinforcement(LH/RH)
85. Hood outer panel
86. Hood inner panel
87. Hood outer rail
88. Tail gate outer panel
89. Tail gate inner panel
90. Front door outer panel(LH/RH)
91. Front door lower beam(LH/RH)
92. Front door inner panel(LH/RH)
93. Rear door outer panel(LH/RH)
94. Rear door lower beam(LH/RH)
95. Rear door inner panel(LH/RH)

ZINC-GALVANIZED STEEL PANELS

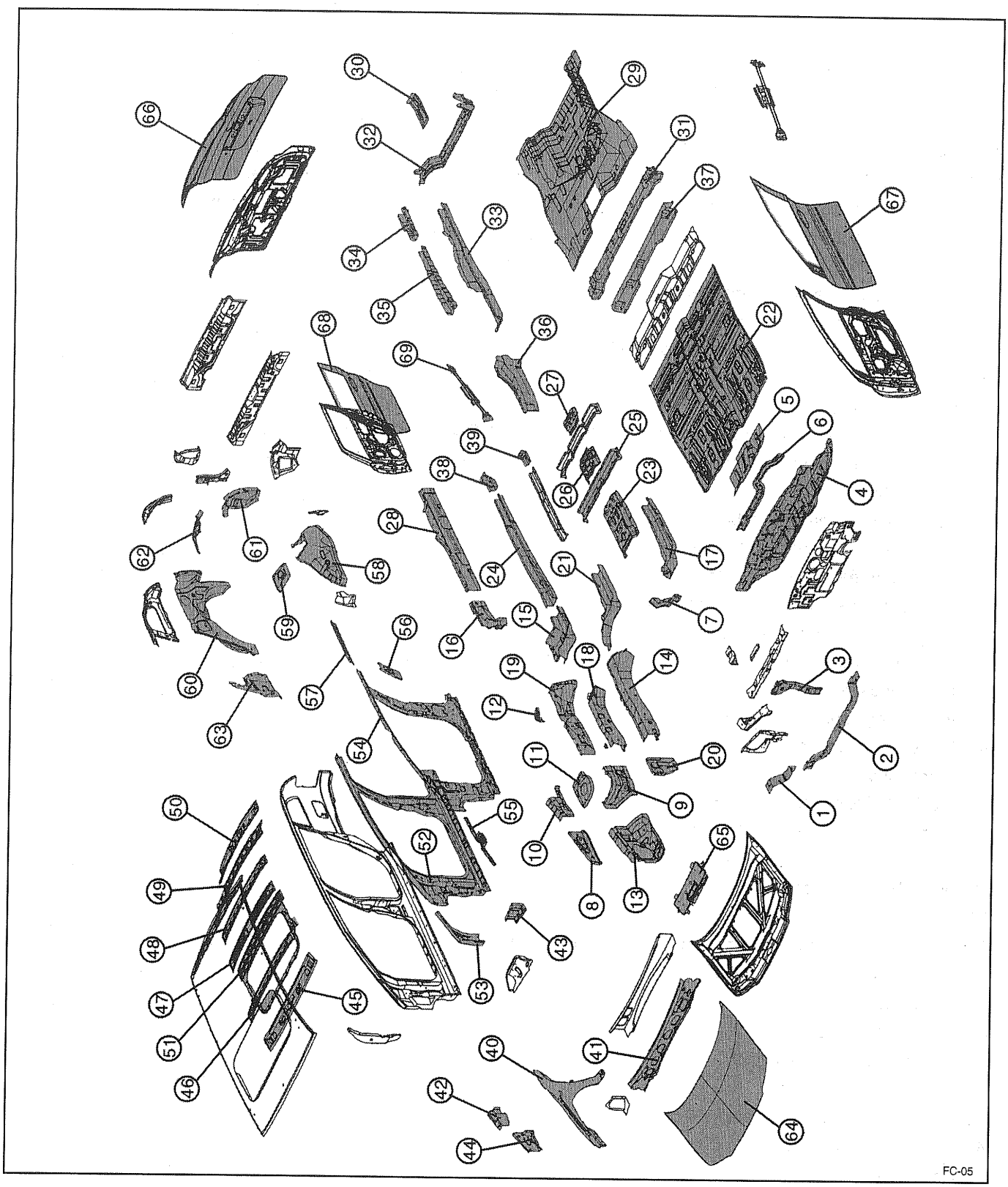
Because galvanized steel panel has excellent resistance, it is used in areas which have a high possibility of painting deficiency below.



1. Head lamp support panel(LH/RH)
2. Radiator support upper side member(LH/RH)
3. Radiator lower inner extension(LH/RH)
4. Radiator lower outer member
5. Radiator support center member
6. Dash panel
7. Fender apron outer member(LH/RH)
8. Fender apron inner panel(LH/RH)
9. Fender apron inner front bracket(LH/RH)
10. Front shock absorber cover panel(LH/RH)
11. Fender apron to cowl gusset(LH/RH)
12. Fender apron outer member(LH/RH)
13. Front side inner member(LH/RH)
14. Front side rear lower member(LH/RH)
15. Front side member inner rear reinforcement(LH/RH)
16. Front side member rear lower extension(LH/RH)
17. Front side member inner front reinforcement(LH/RH)
18. Front side outer member
19. Front side member outer front extension(LH/RH)
20. Front side rear upper member(LH/RH)
21. Center floor panel
22. Center floor side outer member
23. Center floor front cross center member
24. Center floor rear cross center member
25. Parking brake lever mounting reinforcement
26. Parking brake cable mounting bracket
27. Side sill inner panel(LH/RH)
28. Rear floor panel
29. Rear towing hook bracket
30. Rear seat rear mounting member
31. Rear floor center cross member
32. Rear floor side member(LH/RH)
33. Rear bumper mounting reinforcement
34. Rear side member reinforcement
35. Side sill inner rear panel(LH/RH)
36. Rear floor front extension
37. Center floor side member rear extension(LH/RH)
38. Fuel tank front mounting bracket
39. Fender panel(LH/RH)
40. Cowl front outer panel
41. Cowl side outer panel(LH/RH)
42. Cowl inner lower panel
43. Cowl side inner lower panel(LH/RH)
44. Cowl inner bulk head
45. Back panel
46. Rear transverse member
47. Side outer panel(LH/RH)
48. Quarter outer rear lower extension(LH/RH)
49. Side outer reinforcement(LH/RH)
50. Front door upper mounting reinforcement(LH/RH)
51. Rear combination lamp housing panel(LH/RH)
52. Side inner panel(LH/RH)
53. Wheel house inner panel(LH/RH)
54. Rear spring house cover(LH/RH)
55. Wheel house inner front extension(LH/RH)
56. Wheel house inner rear extension(LH/RH)
57. Quarter inner lower panel(LH/RH)
58. Hood outer panel
59. Hood inner panel
60. Hood outer rail
61. Tail gate outer panel
62. Front door outer panel(LH/RH)
63. Front door inner panel(LH/RH)
64. Rear door lower beam(LH/RH)
65. Rear door inner panel(LH/RH)

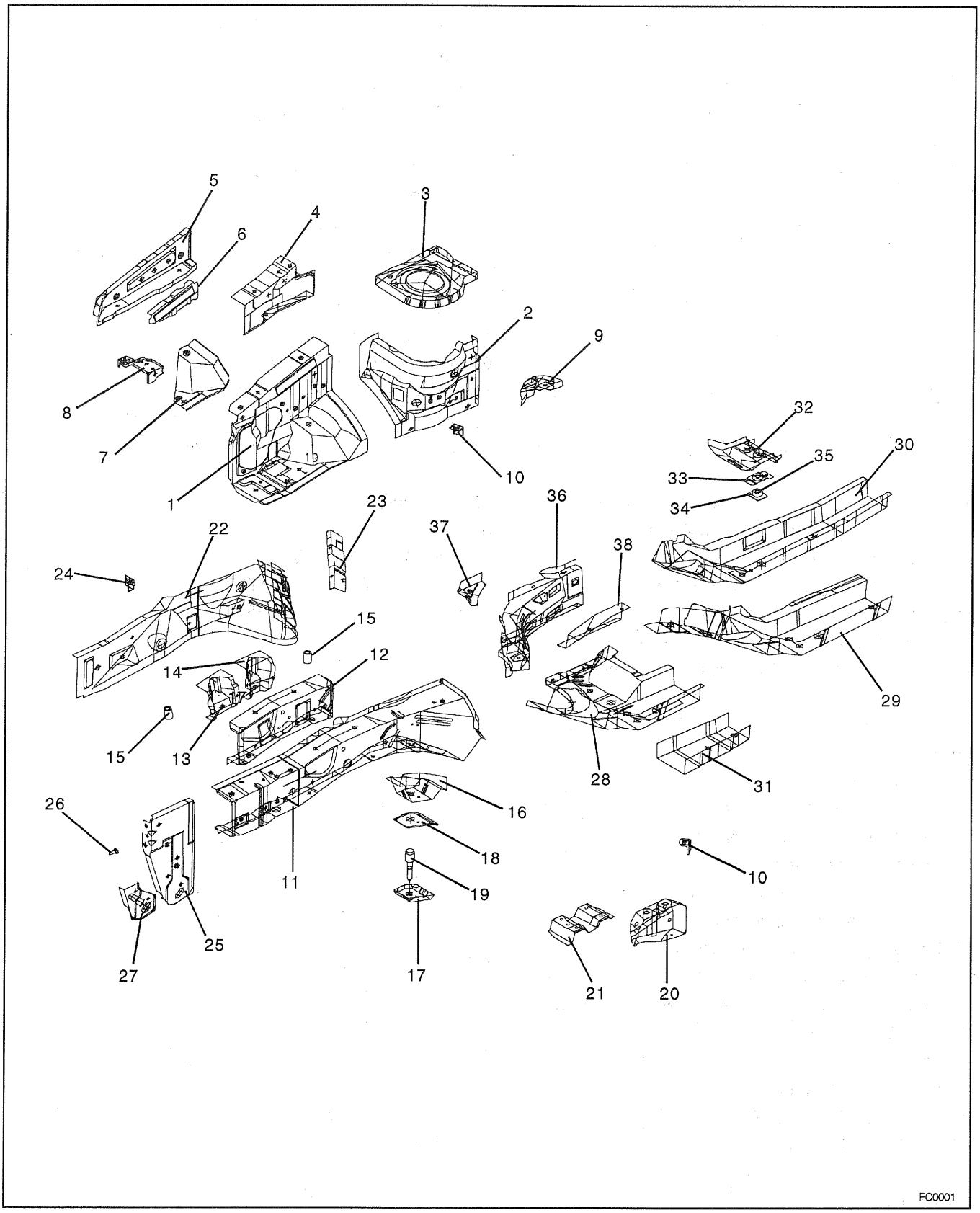
HIGH STRENGTH STEEL PANELS

Because High strength steel panel has excellent resistance, it is used in areas which have a high possibility of painting deficiency below.



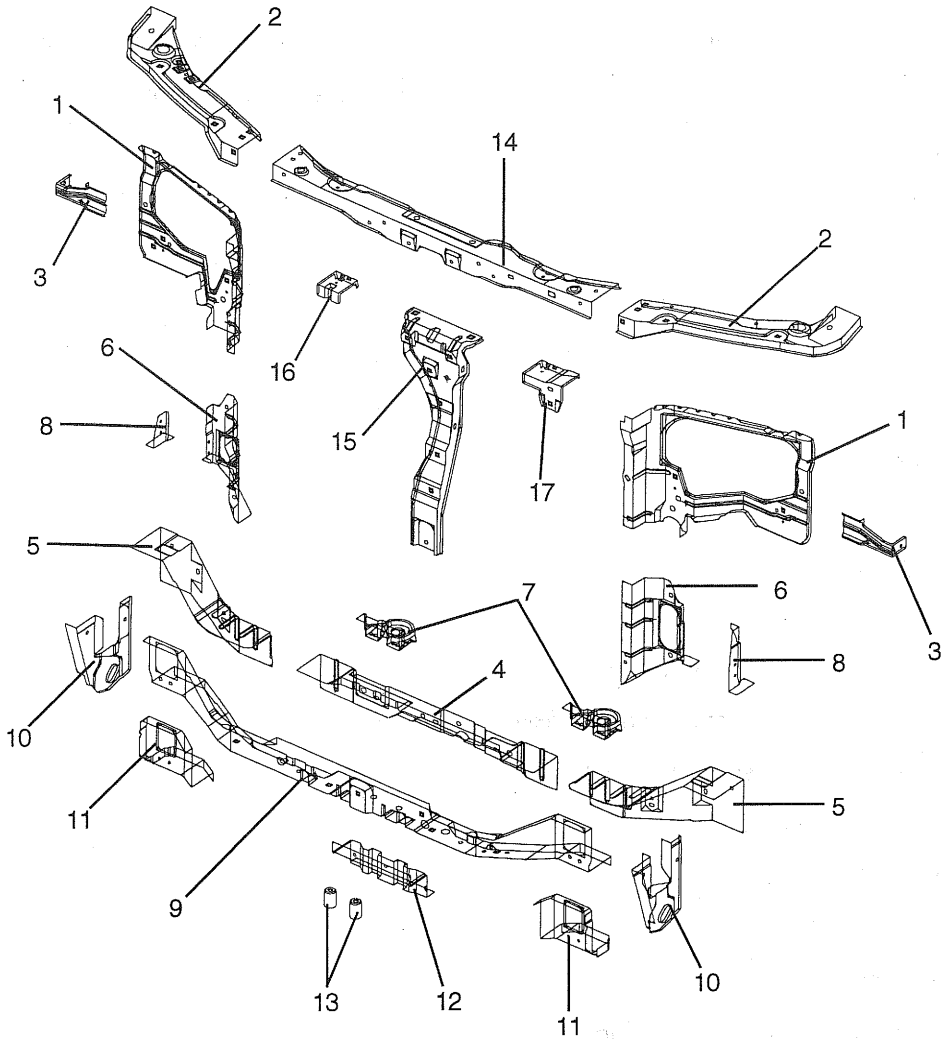
1. Radiator lower inner extension(LH/RH)
2. Radiator lower outer member
3. Radiator support center member
4. Dash panel
5. Dash to center floor member
6. Dash cross center member
7. Dash cross side member
8. Fender apron outer member(LH/RH)
9. Fender apron inner panel(LH/RH)
10. Fender apron inner front bracket(LH/RH)
11. Front shock absorber cover panel(LH/RH)
12. Fender apron to cowl gusset(LH/RH)
13. Fender apron outer member(LH/RH)
14. Front side inner member(LH/RH)
15. Front side rear lower member(LH/RH)
16. Front side member inner rear reinforcement(LH/RH)
17. Front side member rear lower extension(LH/RH)
18. Front side member inner front reinforcement(LH/RH)
19. Front side outer member
20. Front side member outer front extension(LH/RH)
21. Front side rear upper member(LH/RH)
22. Center floor panel
23. Transmission gear shift mounting reinforcement
24. Center floor side outer member
25. Center floor front cross center member
26. Parking brake lever mounting reinforcement
27. Parking brake cable mounting bracket
28. Side sill inner panel(LH/RH)
29. Rear floor panel
30. Rear towing hook bracket
31. Rear seat rear mounting member
32. Rear floor center cross member
33. Rear floor side member(LH/RH)
34. Rear bumper mounting reinforcement
35. Rear side member reinforcement
36. Side sill inner rear panel(LH/RH)
37. Rear floor front cross member
38. Center floor side member rear extension(LH/RH)
39. Fuel tank front mounting bracket
40. Fender panel(LH/RH)
41. Cowl front outer panel
42. Cowl side outer panel(LH/RH)
43. Cowl inner bulk head
44. Cowl side upper outer member
45. Roof front rail
46. Roof center front rail
47. Roof center rail
48. Roof center rear rail
49. Roof rear upper rail
50. Roof rear lower rail
51. Sun roof reinforcement ring
52. Side outer reinforcement(LH/RH)
53. Front door upper mounting reinforcement(LH/RH)
54. Side inner panel(LH/RH)
55. Front inner upper pillar reinforcement(LH/RH)
56. Front seat belt upper mounting bracket(LH/RH)
57. Roof side inner rail(LH/RH)
58. Wheel house inner panel(LH/RH)
59. Rear spring house cover(LH/RH)
60. Quarter inner lower panel(LH/RH)
61. Rear pillar inner lower reinforcement(LH/RH)
62. Rear pillar inner upper reinforcement(LH/RH)
63. Quarter pillar inner reinforcement(LH/RH)
64. Hood outer panel
65. Hood outer rail
66. Tail gate outer panel
67. Front door outer panel(LH/RH)
68. Rear door outer panel(LH/RH)
69. Rear door lower beam(LH/RH)

FRONT END STRUCTURE PANEL ASSEMBLY



1. Fender apron outer panel(LH/RH)
2. Fender apron inner panel(LH/RH)
3. Front shock absorber cover panel(LH/RH)
4. Fender apron inner front bracket(LH/RH)
5. Fender apron outer member(LH/RH)
6. Body no mounting reinforcement
7. Engine side mounting reinforcement
8. Fender mounting bracket(LH/RH)
9. Fender apron to cowl gusset(LH/RH)
10. Air cleaner & relay box bracket
11. Front side inner member(LH/RH)
12. Front side member inner reinforcement(LH/RH)
13. Engine mounting front bracket
14. Enigne mounting rear bracket
15. Sub frame front mounting pipe
16. Cross member mounting front bracket(LH/RH)
17. Cross member mounting front reinforcement(LH/RH)
18. Cross member mounting front support(LH/RH)
19. Cross member mounting stud bolt
20. Transmission mounting front bracket
21. Battery tray bracket
22. Front side outer member(LH/RH)
23. Front side member outer rear bracket(LH/RH)
24. Brake hose mounting bracket
25. Front side member outer front extension(LH/RH)
26. Guide pin
27. Shipping hook mounting bracket(LH/RH)
28. Front side rear lower member(LH/RH)
29. Front side rear upper member(LH/RH)
30. Front side rear lower extension(LH/RH)
31. Front side rear lower reinforcement
32. Cross member mounting rear bracket(LH/RH)
33. Cross member mounting rear support
34. Sub frame mounting front plate
35. Nut(M14)
36. Front side member inner rear reinforcement(LH/RH)
37. Front side member inner rear gusset(LH/RH)
38. Side sill front lower reinforcement(LH/RH)

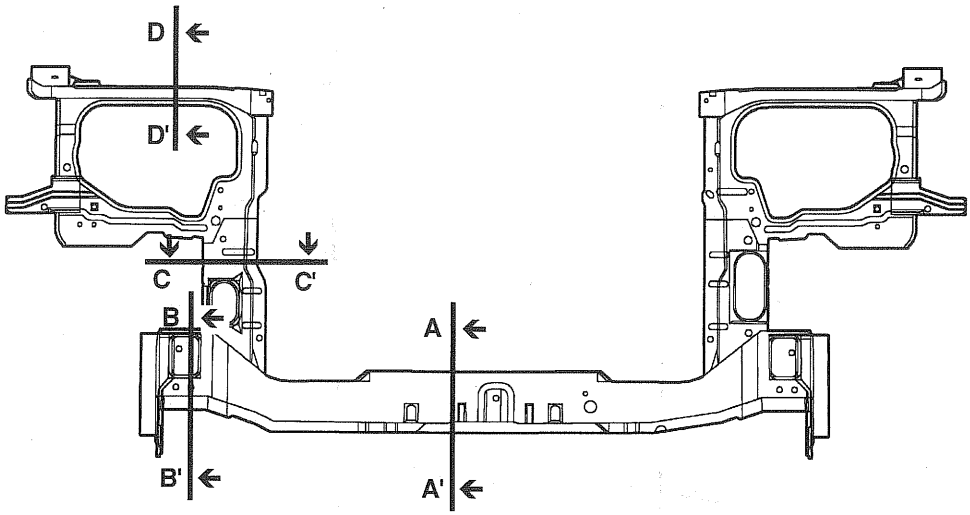
RADIATOR SUPPORT PANEL



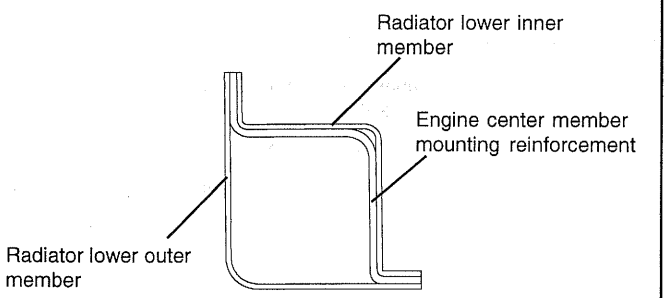
FC0002

No.	PART NAME	No.	PART NAME
1	Head lamp support panel(LH/RH)	12	Engine center member front mounting reinforcement
2	Radiator support upper side member(LH/RH)		
3	Front bumper mounting reinforcement(LH/RH)	13	Sub frame front mounting pipe
4	Radiator lower inner member	14	Radiator support upper center member
5	Radiator lower inner extension(LH/RH)	15	Radiator support center member
6	Head lamp support reinforcement(LH/RH)	16	Radiator upper mounting reinforcement
7	Radiator lower mounting bracket	17	Horn mounting bracket
8	Head lamp support guasset(LH/RH)		
9	Radiator lower outer member		
10	Front shipping hook bracket(LH/RH)		
11	Radiator lower outer reinforcement		

RADIATOR SUPPORT PANEL

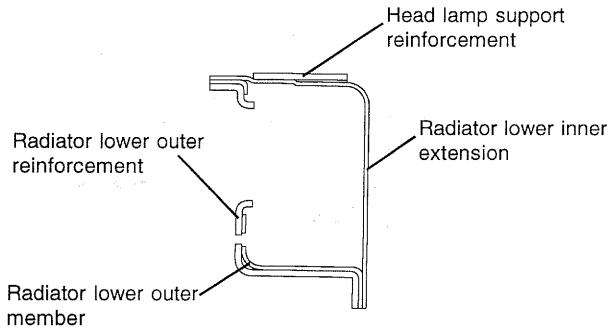


RSP1100



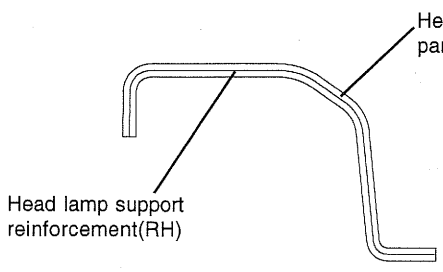
SECTION A-A'

RSP1101



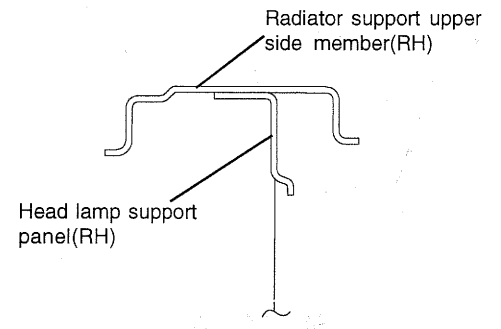
SECTION B-B'

RSP1102



SECTION C-C'

RSP1103

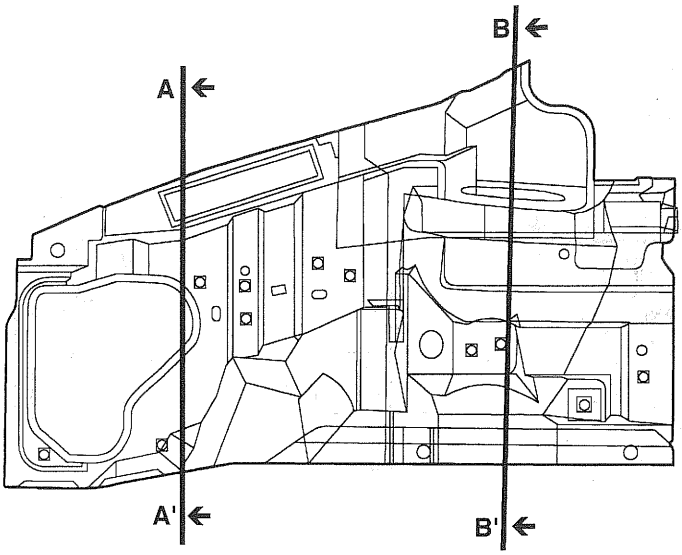


SECTION D-D'

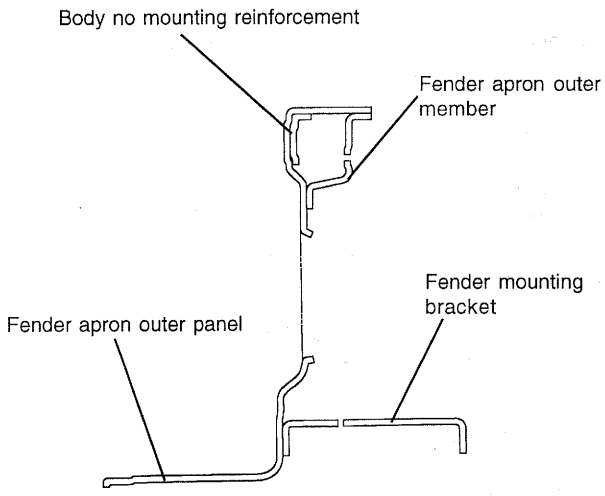
RSP1104

FENDER AND APRON PANEL

<RH>

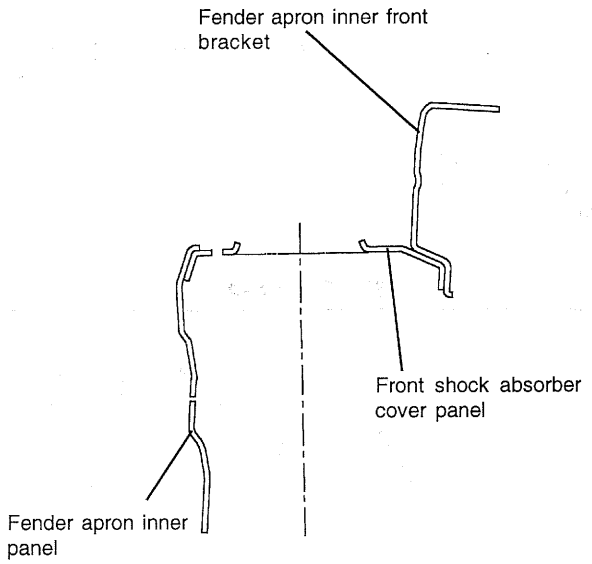


FAP1100



SECTION A-A'

FAP1101



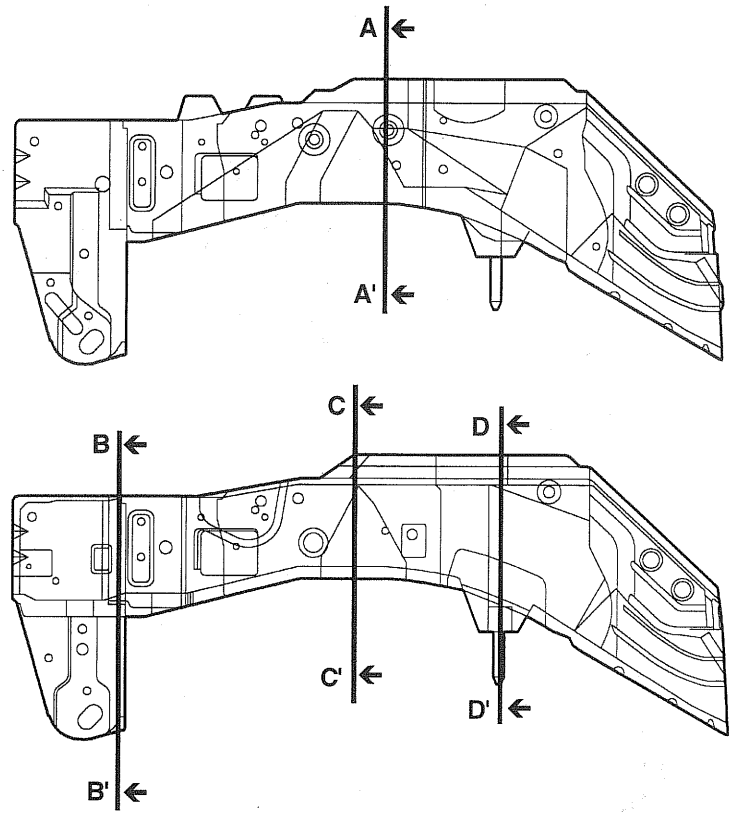
SECTION B-B'

FAP1102

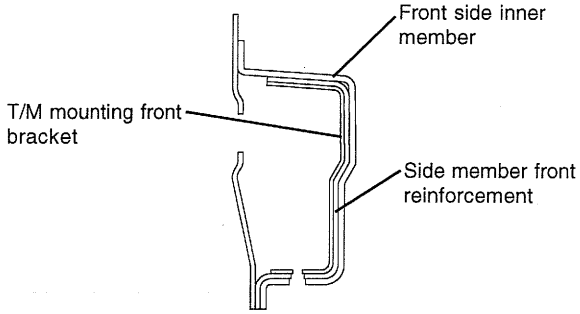
FRONT SIDE MEMBER

<LH>

<RH>

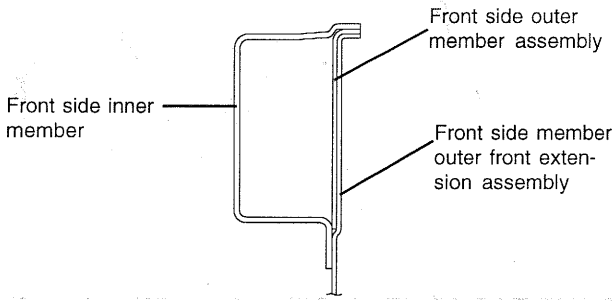


FSM1100/A



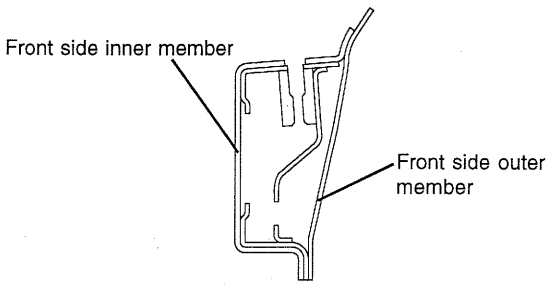
SECTION A-A'

FSM1101



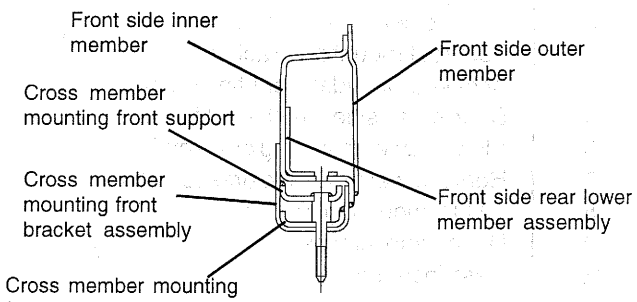
SECTION B-B'

FSM1102



SECTION C-C'

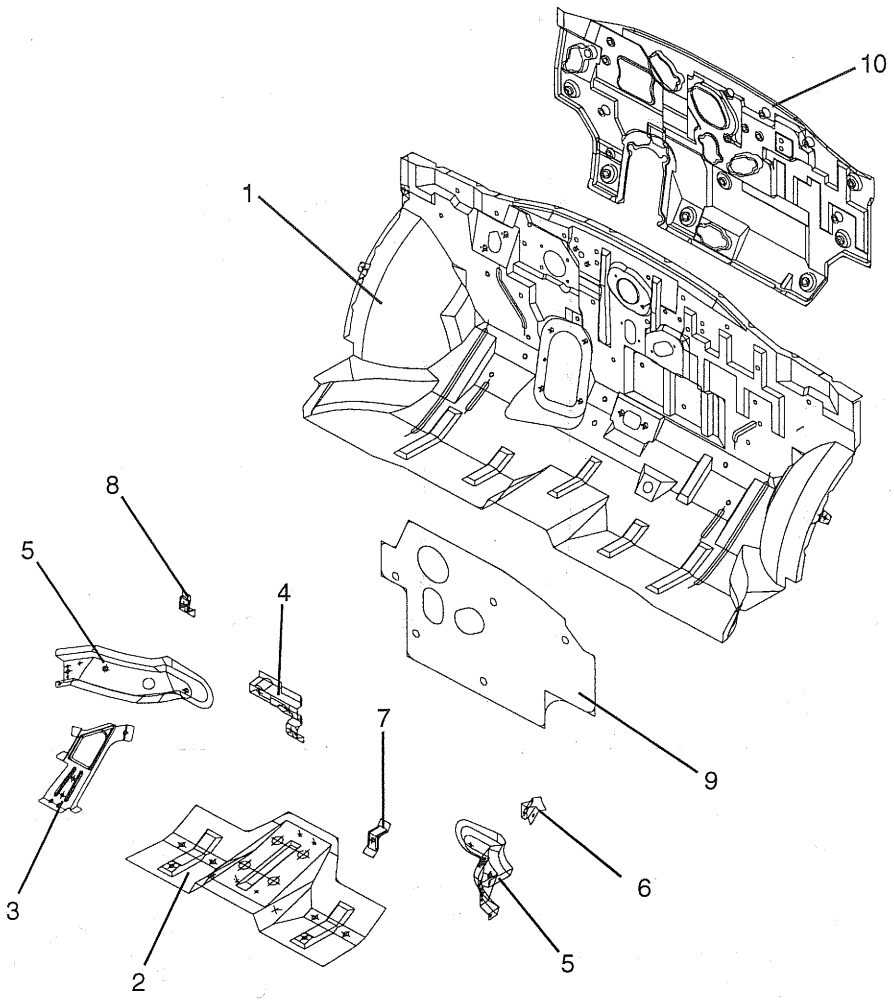
FSM1103



SECTION D-D'

FSM1104

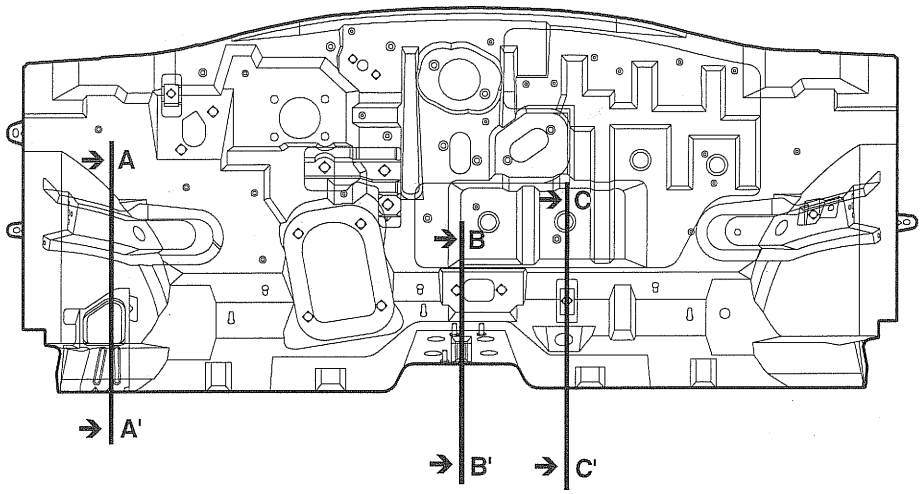
DASH PANEL



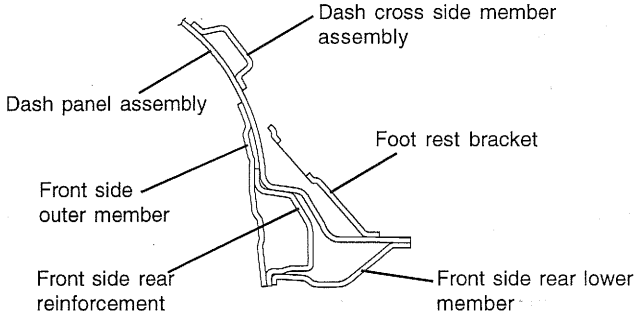
FC0003

No.	PART NAME
1	Dash panel
2	Dash to center floor member
3	Foot rest mounting bracket
4	Accelerator pedal mounting bracket
5	Dash cross side member(LH/RH)
6	Blower lower mounting bracket(RH)
7	Heater lower mounting brakcet(RH)
8	T.C.U. mounting bracket
9	Dash panel anti pad
10	Dash insulator

DASH PANEL

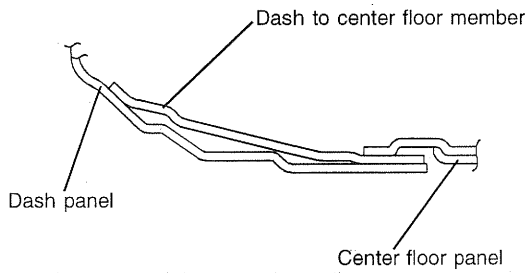


DP1100



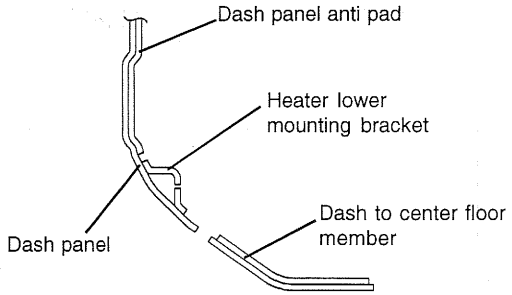
SECTION A-A'

DP1101



SECTION B-B'

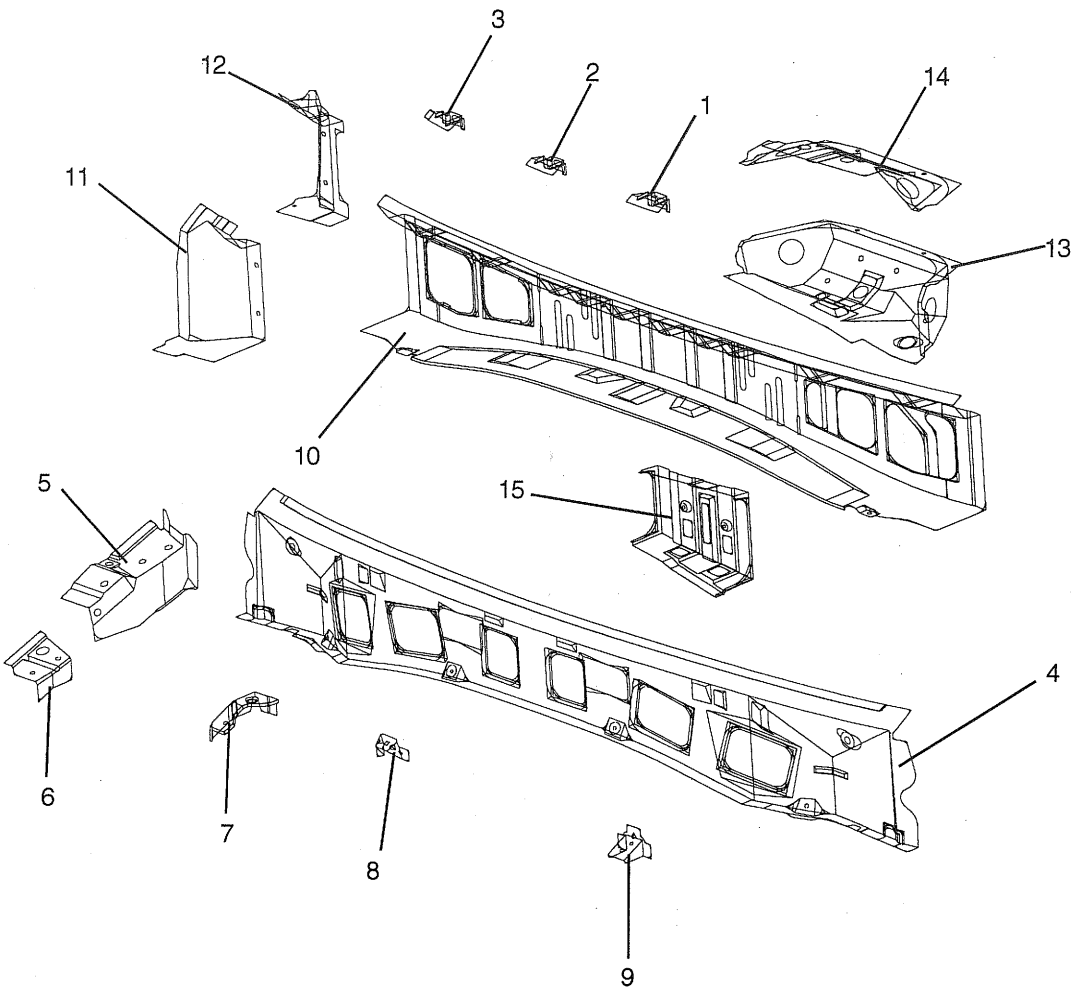
DP1102



SECTION C-C'

DP1103

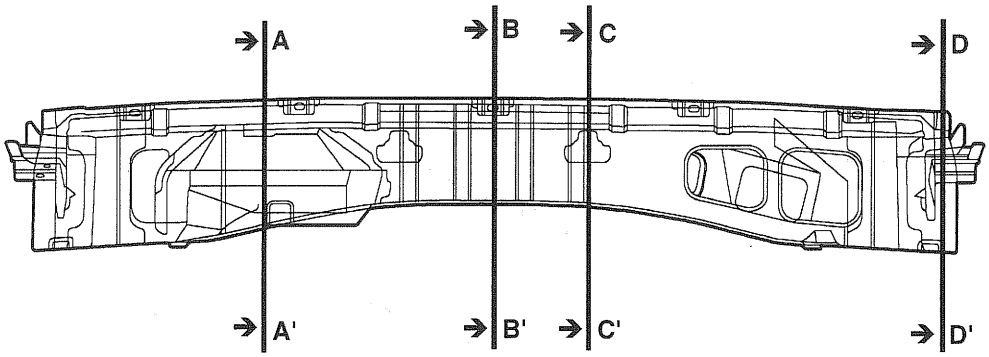
COWL PANEL



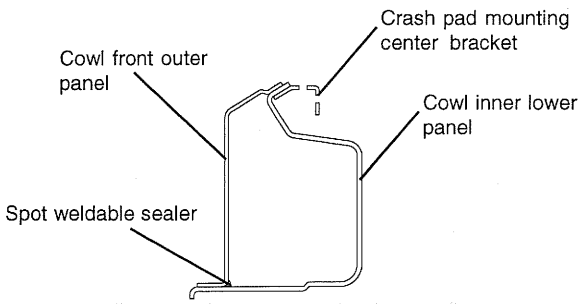
FC0004

No.	PART NAME	No.	PART NAME
1	Crash pad mounting center bracket	13	Cowl cross member lower support
2	Crash pad mounting bracket(LH/RH)	14	Cowl cross member upper support
3	Crash pad mounting bracket(LH/RH)	15	Cowl inner bulk head
4	Cowl front outer panel		
5	Cowl side outer panel(LH/RH)		
6	Hood hinge mounting bracket(LH/RH)		
7	Driver pivot mounting bracket(LH/RH)		
8	Front windshield mounting bracket(LH/RH)		
9	Center pivot mounting bracket		
10	Cowl inner lower panel		
11	Cowl side inner lower panel(LH/RH)		
12	Cowl side inner extension(LH/RH)		

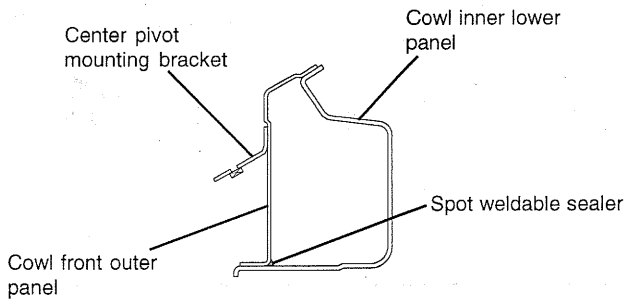
COWL PANEL



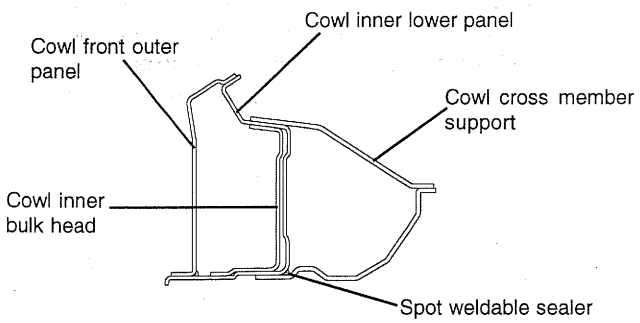
COWL1100



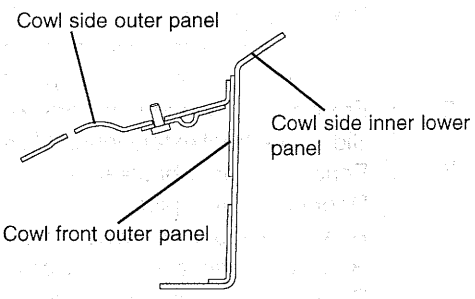
SECTION A-A' COWL1101



SECTION B-B' COWL1102

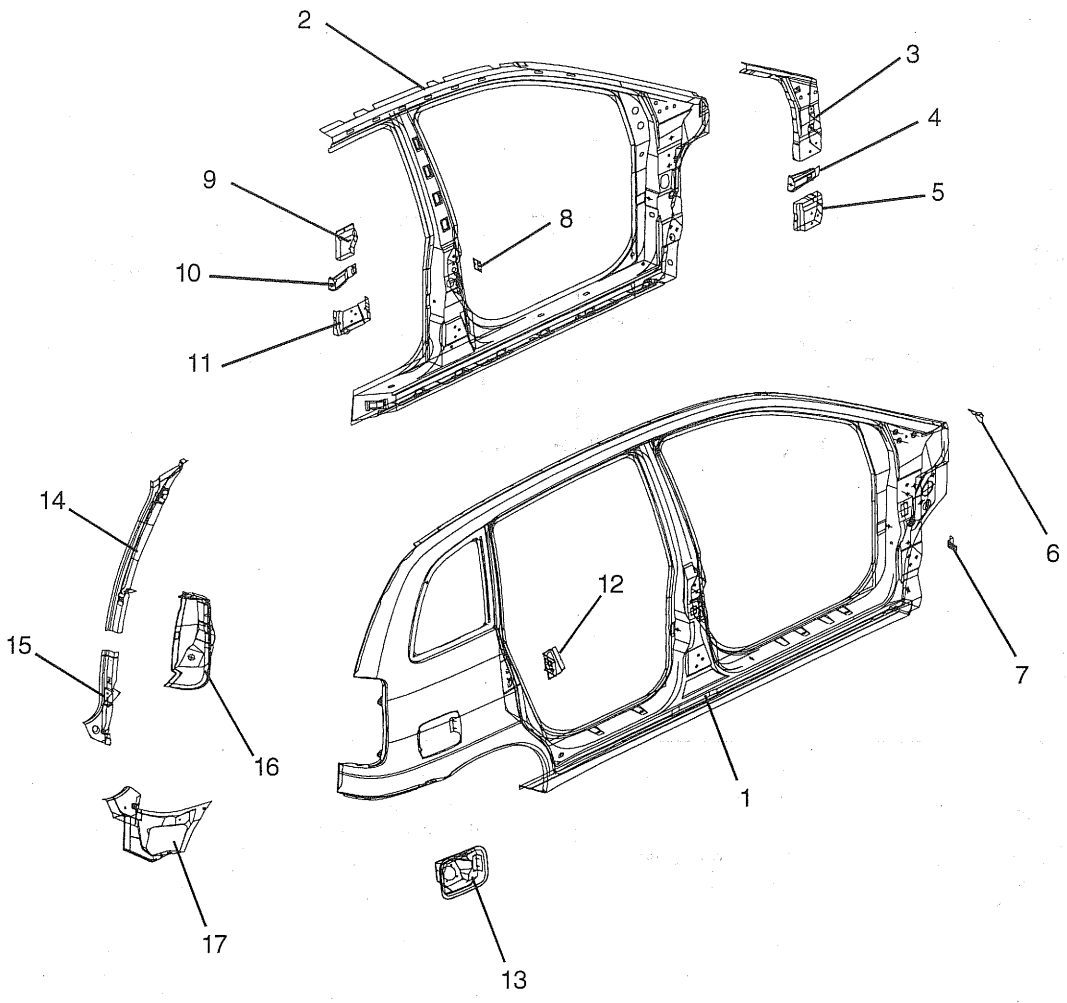


SECTION C-C' COWL1103



SECTION D-D' COWL1104

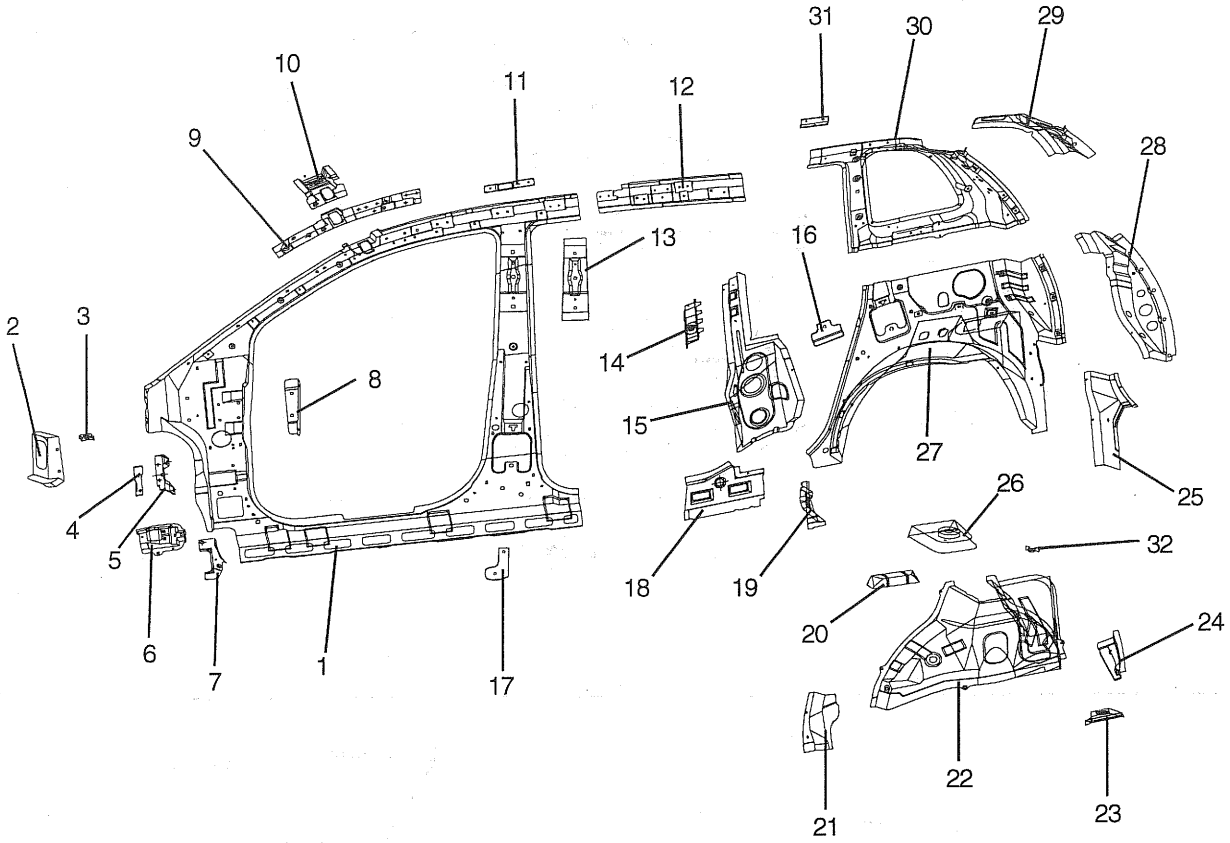
SIDE OUTER COMPLETE PANEL ASSEMBLY



FC0005

No.	PART NAME	No.	PART NAME
1	Side outer panel(LH/RH)	14	Quarter outer rear upper extension(LH/RH)
2	Side outer reinforcement(LH/RH)	15	Quarter outer rear center extension(LH/RH)
3	Front door upper mounting reinforcement(LH/RH)	16	Rear combination lamp housing panel(LH/RH)
4	Front door checker mounting bracket(LH/RH)	17	Quarter outer rear lower extension(LH/RH)
5	Front door lower mounting bracket(LH/RH)		
6	Side outer front extension(LH/RH)		
7	Fender mounting bracket(LH/RH)		
8	Door lock striker plate		
9	Rear door upper mounting bracket(LH/RH)		
10	Rear door checker mounting bracket(LH/RH)		
11	Rear door lower mounting bracket(LH/RH)		
12	Rear door striker retainer(LH/RH)		
13	Fuel filler housing		

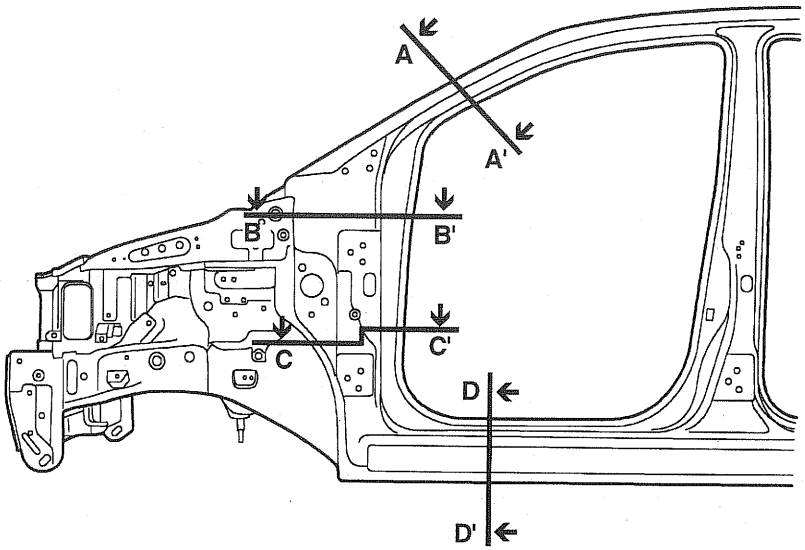
SIDE INNER COMPLETE PANEL ASSEMBLY



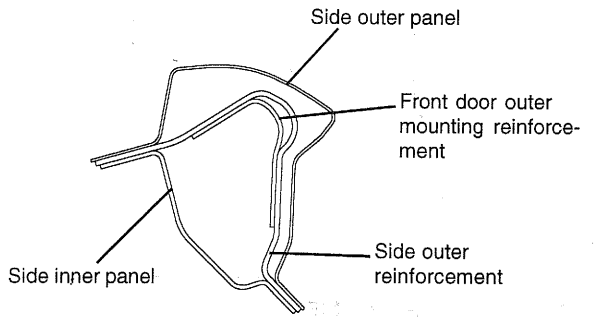
FC0006

No.	PART NAME	No.	PART NAME
1	Side inner panel(LH/RH)	17	Front seat belt lower mounting bracket(LH/RH)
2	Cowl side mounting extension(LH/RH)	18	Quarter inner front extension(LH/RH)
3	Electronic control unit mounting bracket(RH)	19	Quarter inner front side extension(LH/RH)
4	Cowl cross bar mounting front bracket(LH/RH)	20	Rear spring house gusset(LH/RH)
5	Cowl cross bar mounting bracket(LH/RH)	21	Wheel house inner front extension(LH/RH)
6	Dash cross member extension(LH/RH)	22	Wheel house inner panel(LH/RH)
7	Fire extinguisher mounting bracket(LH/RH)	23	Wheel house inner rear gusset(LH/RH)
8	Crash pad upper side mounting bracket(LH/RH)	24	Wheel house inner rear extension(LH/RH)
9	Front pillar inner upper reinforcement(LH/RH)	25	Quarter inner rear extension(LH/RH)
10	Front pillar inner upper extension(LH/RH)	26	Rear spring house cover(LH/RH)
11	Sun roof & assist handle mounting bracket(LH/RH)	27	Quarter inner lower panel(LH/RH)
12	Roof side inner rail(LH/RH)	28	Rear pillar iiner lower reinforcement(LH/RH)
13	Front seat belt upper mounting bracket(LH/RH)	29	Rear pillar inner upper reinforcement(LH/RH)
14	Rear seat belt assist upper reinforcement(LH/RH)	30	Quarter inner upper panel(LH/RH)
15	Quarter pillar inner reinforcement(LH/RH)	31	Roof rack rear mounting bracket(LH/RH)
16	Rear seat belt reel mounting reinforcement(LH/RH)	32	Rear wheel guard mounting bracket

SIDE OUTER PANEL : "A" PILLAR

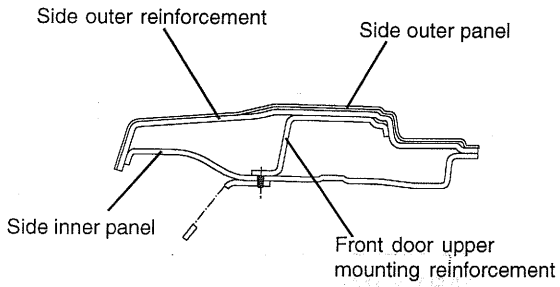


SOP1100



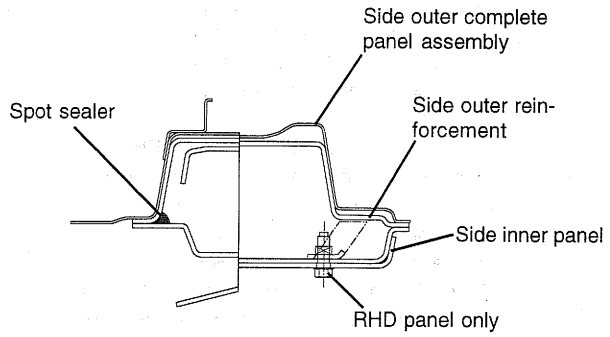
SECTION A-A'

SOP1101



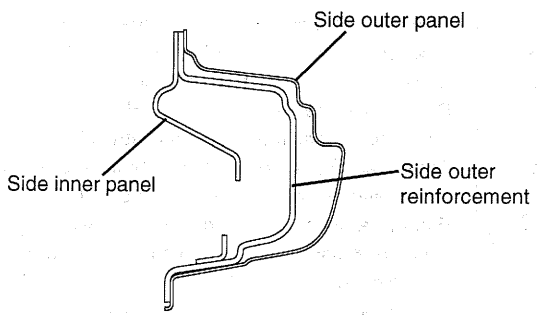
SECTION B-B'

SOP1102



SECTION C-C'

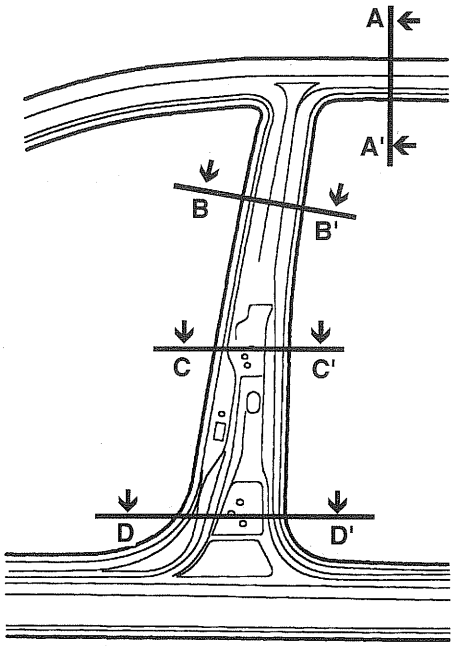
SOP1103



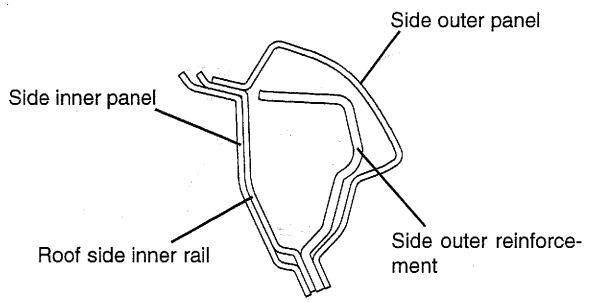
SECTION D-D'

SOP1104

SIDE OUTER PANEL : "B" PILLAR

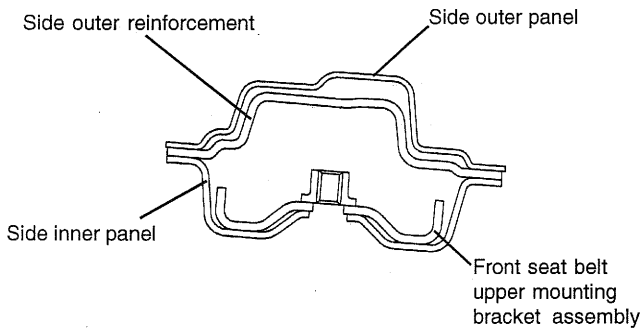


SOP1110



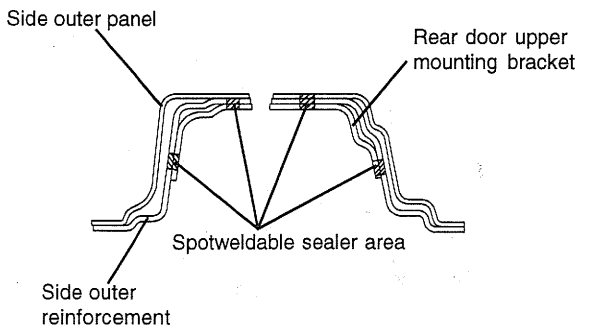
SECTION A-A'

SOP1111



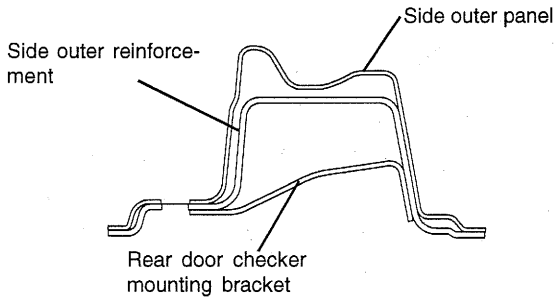
SECTION B-B'

SOP1112



SECTION C-C'

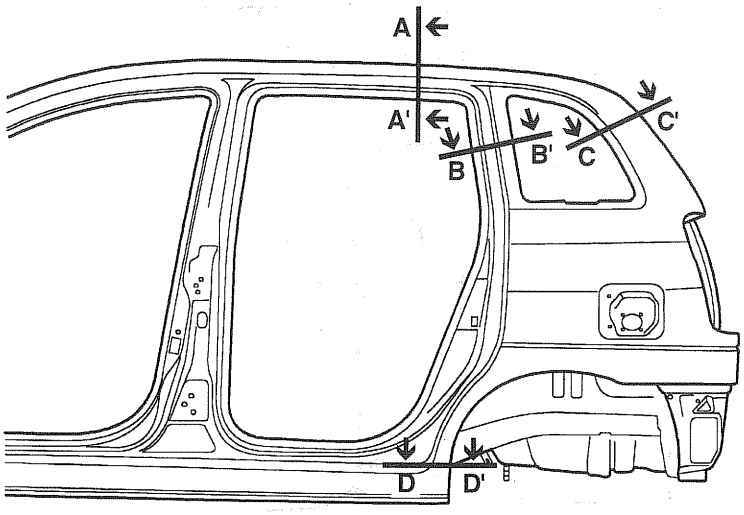
SOP1113



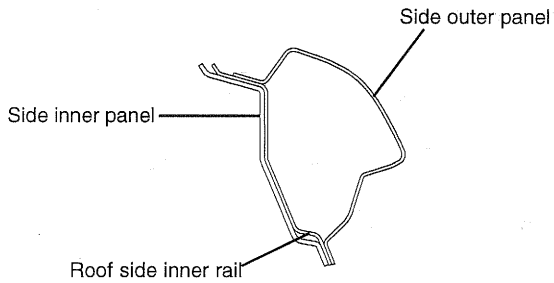
SECTION D-D'

SOP1114

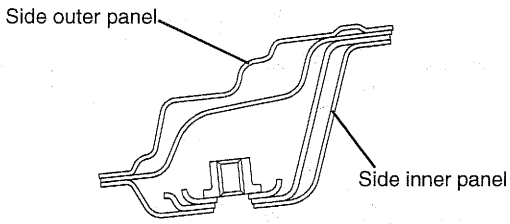
SIDE OUTER PANEL : "C" & "D" PILLAR



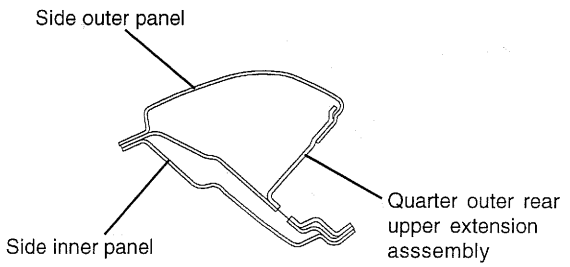
SOP1120



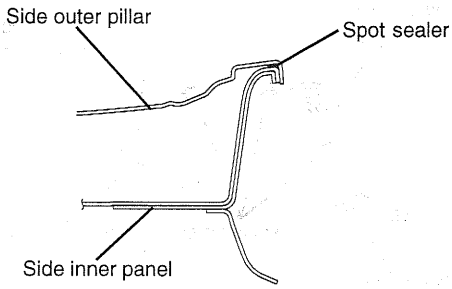
SECTION A-A' SOP1121



SECTION B-B' SOP1122

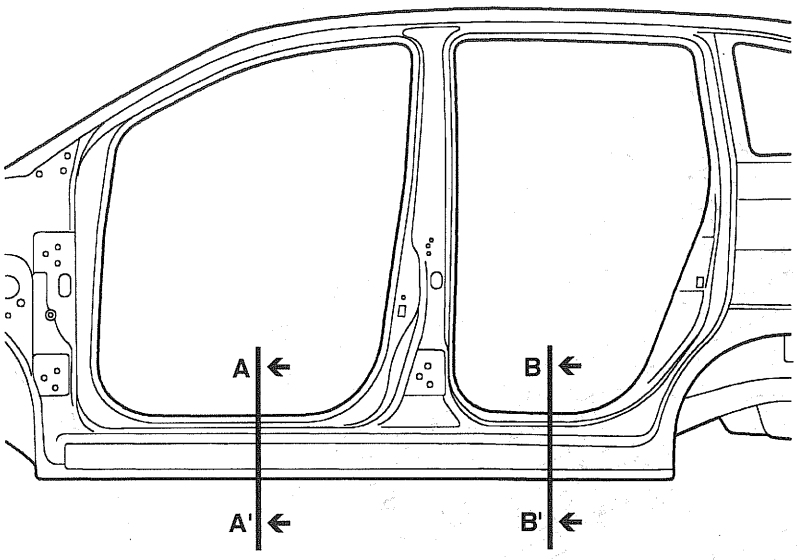


SECTION C-C' SOP1123

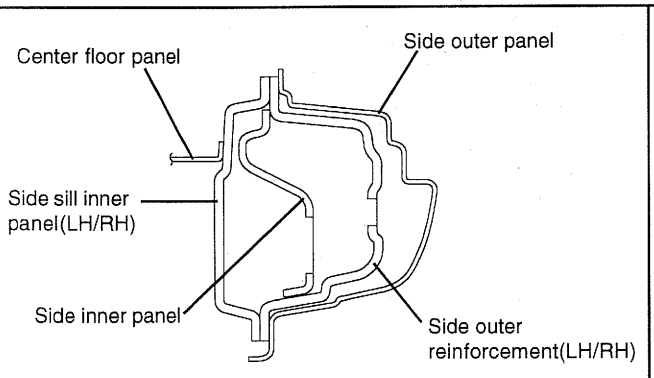


SECTION D-D' SOP1124

SIDE OUTER PANEL : SIDE SILL

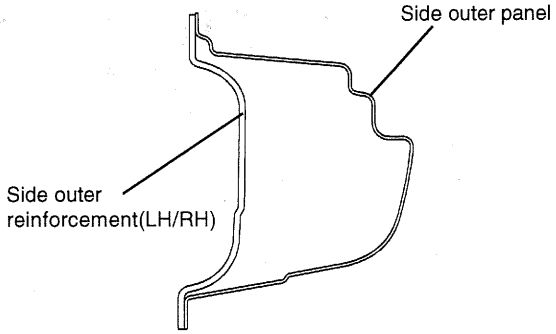


SOP1130



SECTION A-A'

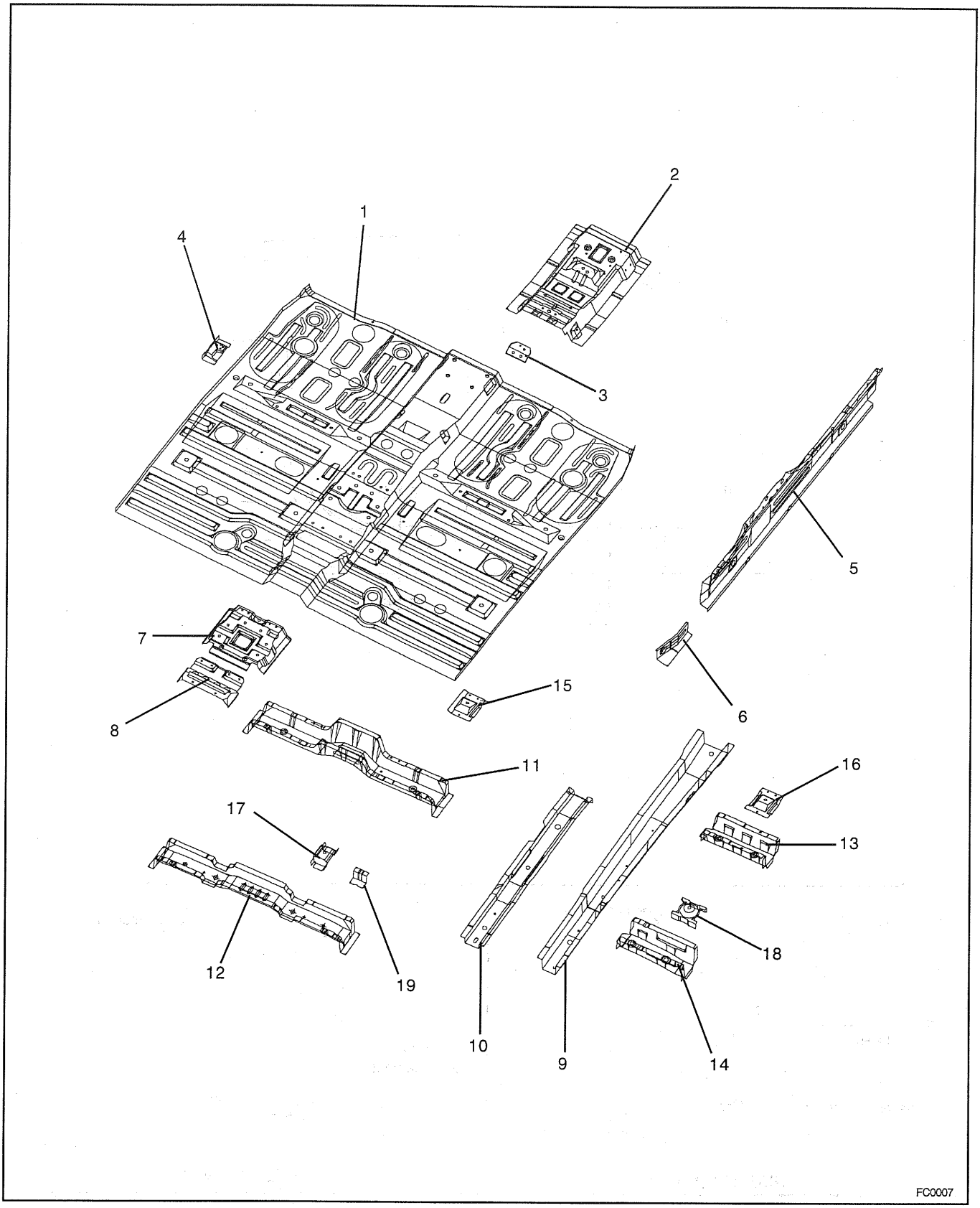
SOP1131



SECTION B-B'

SOP1132

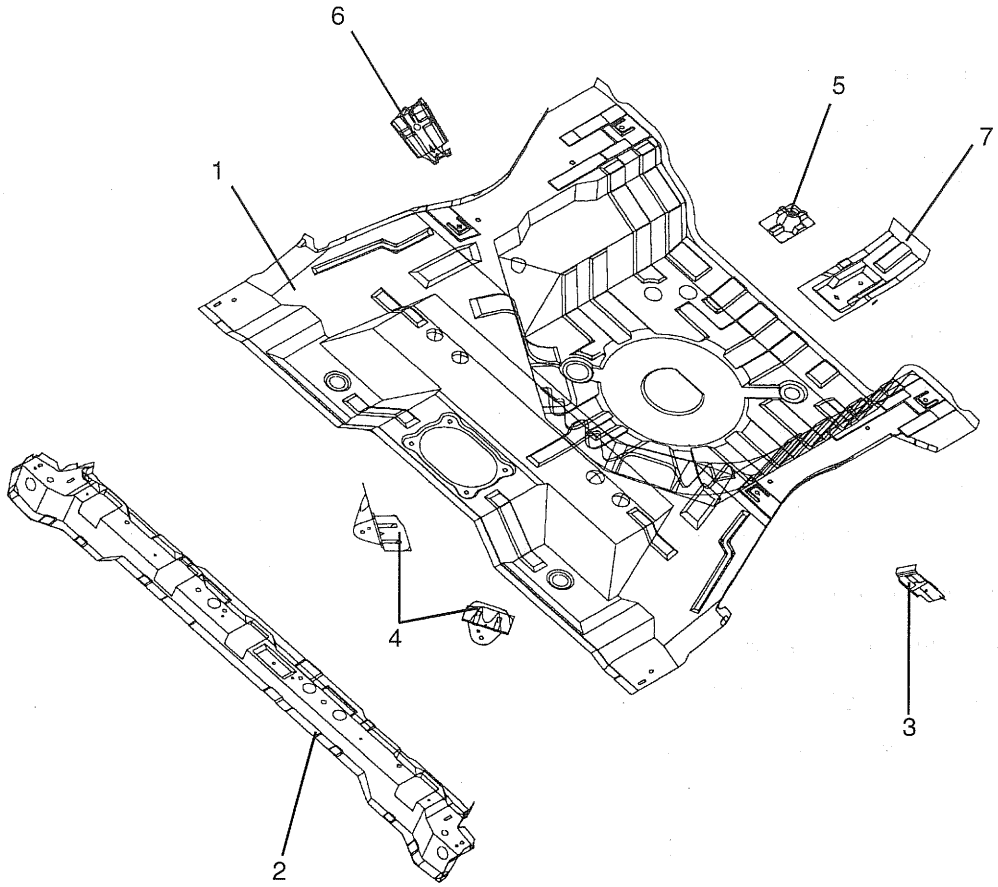
CENTER FLOOR PANEL ASSEMBLY



CENTER FLOOR PANEL ASSEMBLY

1. Center floor panel
2. Transmission gear shift mounting reinforcement
3. Transmission gear shift mounting bracket
4. Fuel filler door switch bracket
5. Side sill inner panel(LH/RH)
6. Side sill inner rear reinforcement(LH/RH)
7. Parking brake lever mounting reinforcement
8. Parking brake cable mounting bracket
9. Center floor side outer member(LH/RH)
10. Center floor side inner member(LH/RH)
11. Center floor front cross center member
12. Center floor rear cross center member
13. Center floor front corss outer member(LH/RH)
14. Center floor rear cross outer member(LH/RH)
15. Front seat inner mounting bracket(LH/RH)
16. Front seat front outer mounting bracket(LH/RH)
17. Front seat rear inner mounting bracket(LH/RH)
18. Front seat rear outer mounting bracket(LH/RH)
19. Muffler hanger mounting bracket(LH/RH)

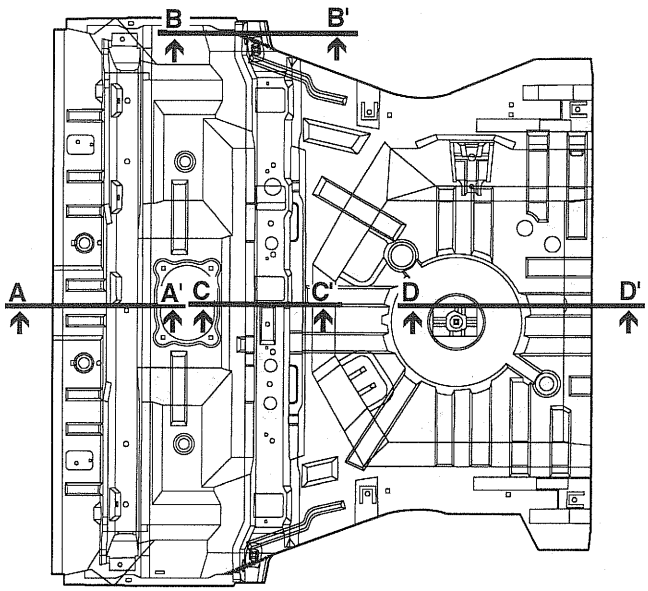
REAR FLOOR PANEL ASSEMBLY



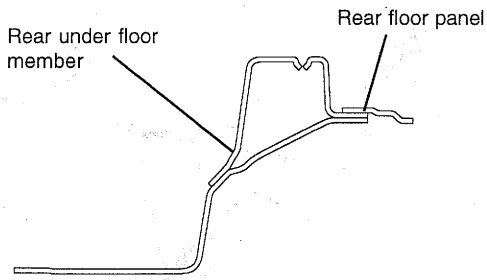
RFP-01

No.	PART NAME
1	Rear floor panel
2	Rear seat rear mounting member assembly
3	Luggage net front mounting bracket assembly
4	Fuel tank rear mounting bracket assembly
5	Spare tire mounting bracket assembly
6	Jack mounting bracket
7	Rear towing hook bracket assembly

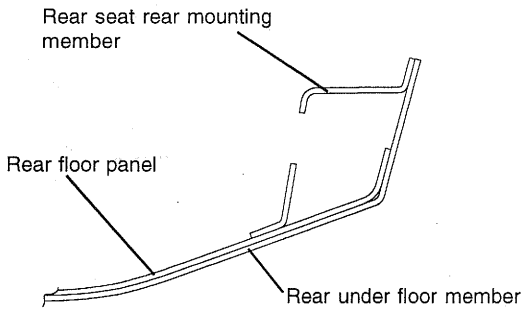
REAR FLOOR PANEL



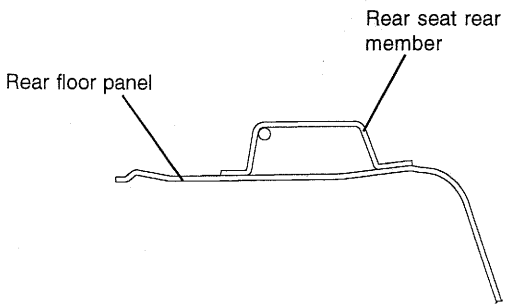
RFP1100



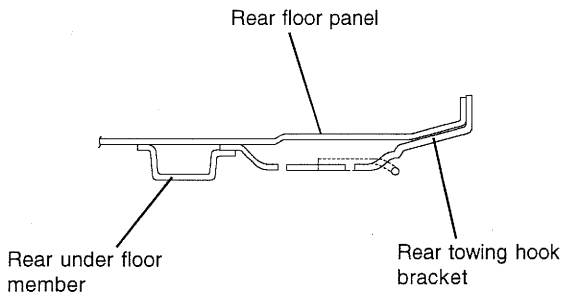
SECTION A-A' RFP1101



SECTION B-B' RFP1102

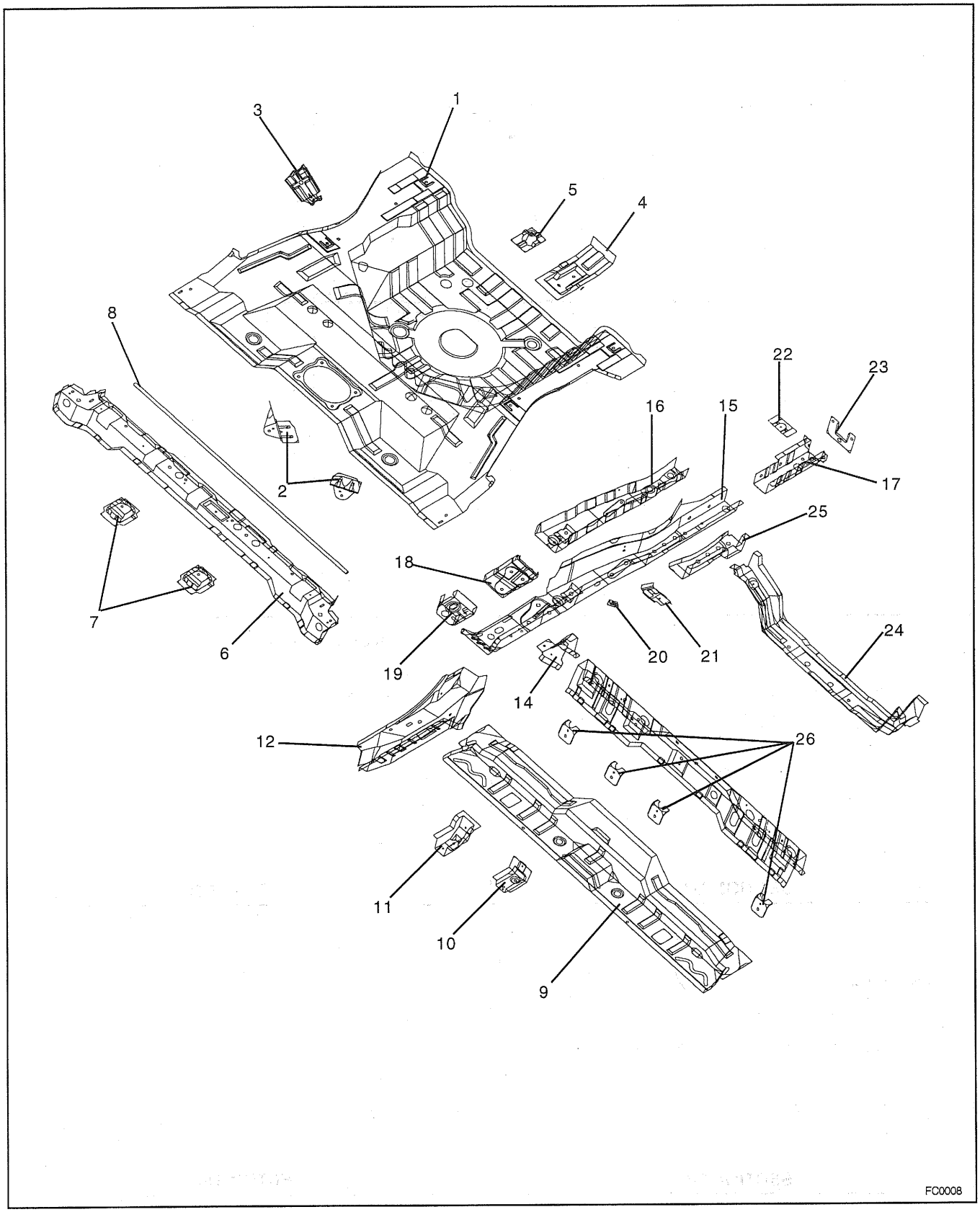


SECTION C-C' RFP1103



SECTION D-D' RFP1104

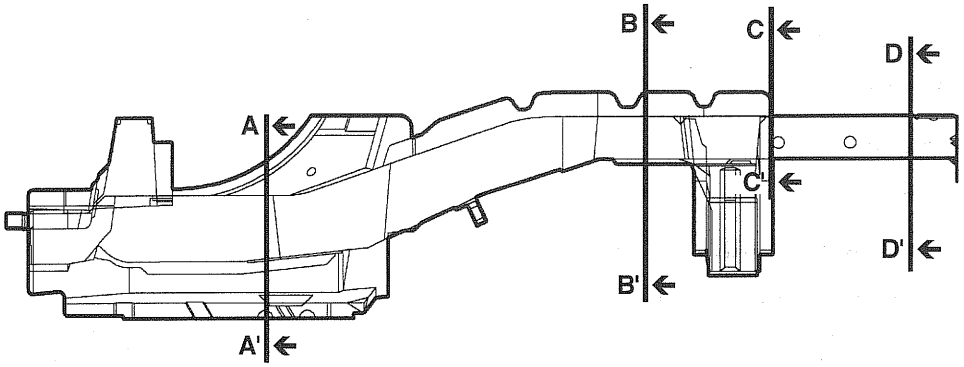
REAR FLOOR & SIDE MEMBER ASSEMBLY



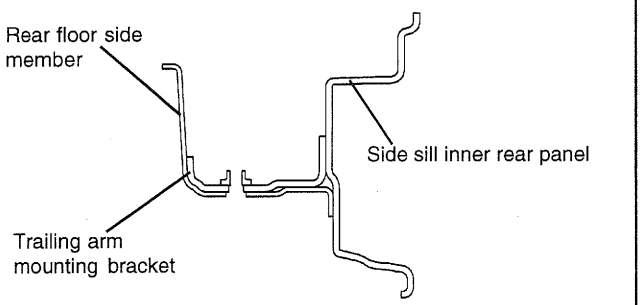
REAR FLOOR & SIDE MEMBER ASSEMBLY

1. Rear floor panel
2. Fuel tank rear mounting bracket
3. Jack mounting bracket
4. Rear towing hook bracket
5. Spare tire mounting bracket
6. Rear seat rear mounting member
7. Rear seat mounting bracket
8. Rear seat rear mounting bar
9. Rear floor front extension
10. Fuel tank front mounting bracket(LH/RH)
11. Center floor side member rear extension(LH/RH)
12. Side sill inner rear panel(LH/RH)
13. Rear floor front cross member
14. Rear floor front member extension(LH/RH)
15. Rear floor side member(LH/RH)
16. Rear side member reinforcement(LH/RH)
17. Rear bumper mounting reinforcement(LH/RH)
18. Trailing arm mounting bracket(LH/RH)
19. Tie down hook reinforcement(LH/RH)
20. Brake tube mounting bracket
21. Luggage net front bracket(LH/RH)
22. Luggage net mounting bracket(LH/RH)
23. Rear bumper mounting plate(LH/RH)
24. Rear floor center cross member
25. Rear floor center cross extension(LH/RH)
26. Rear seat mounting bracket

REAR FLOOR SIDE MEMBER

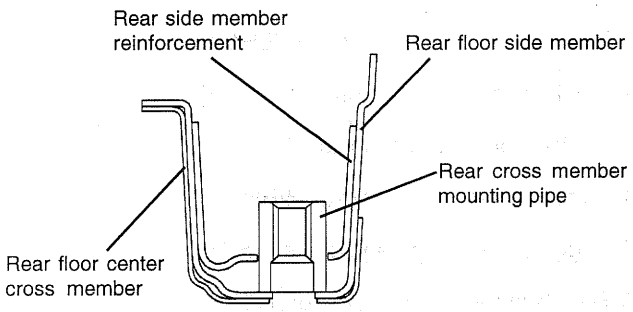


RFM1100



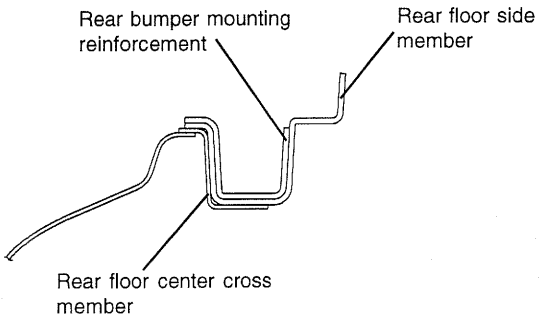
SECTION A-A'

RFM1101



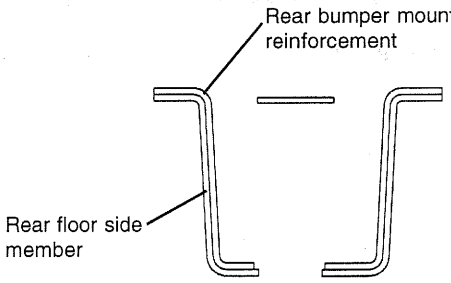
SECTION B-B'

RFM1102



SECTION C-C'

RFM1103

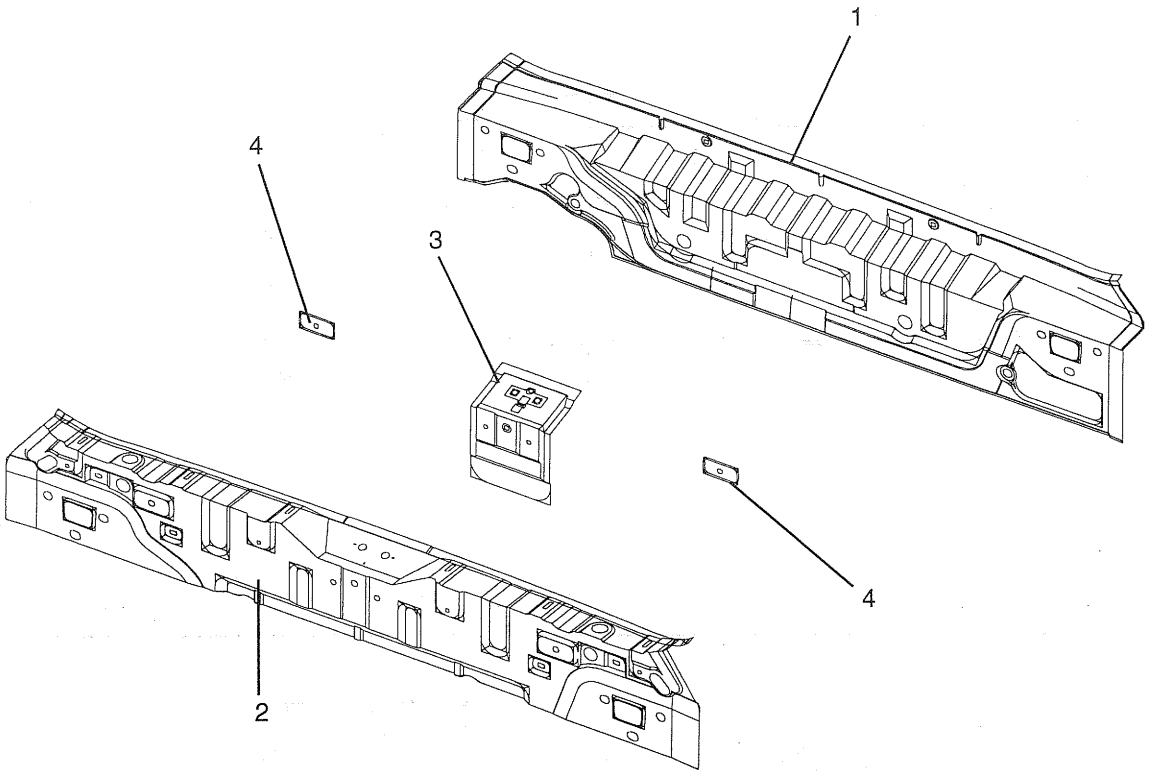


SECTION D-D'

RFM1104

REAR BODY

BACK PANEL

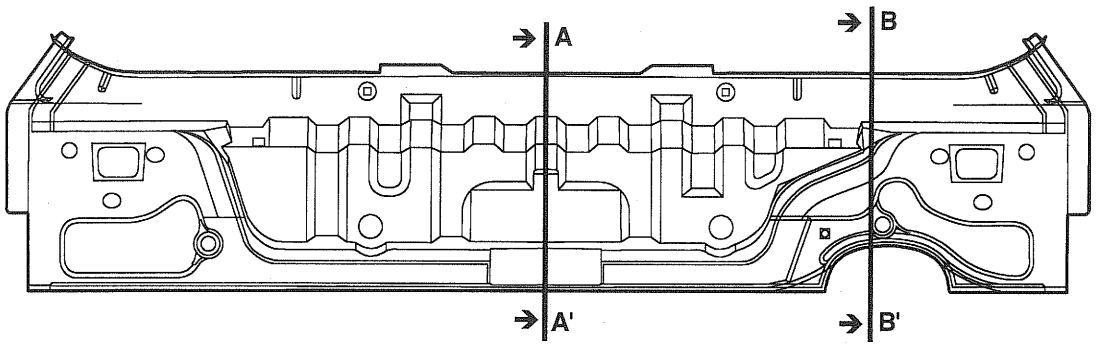


FC0009

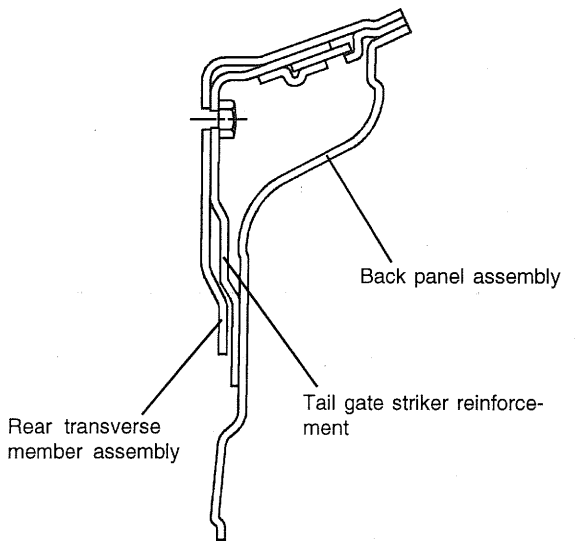
No.	PART NAME
1	Back panel
2	Rear transverse member
3	Tail gate striker reinforcement
4	Child restraint anchor reinforcement

REAR BODY

BACK PANEL

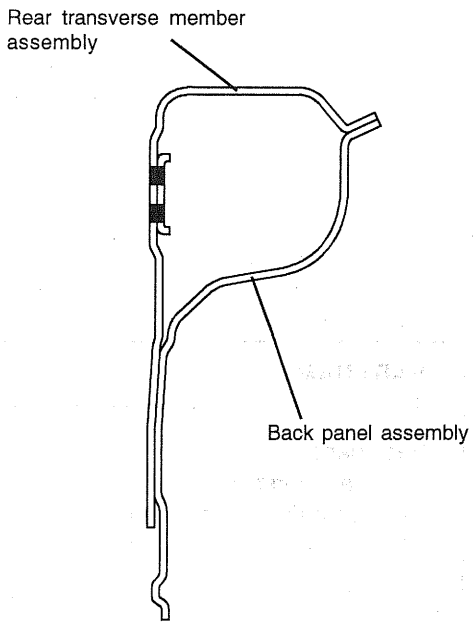


FC0009A



SECTION A-A'

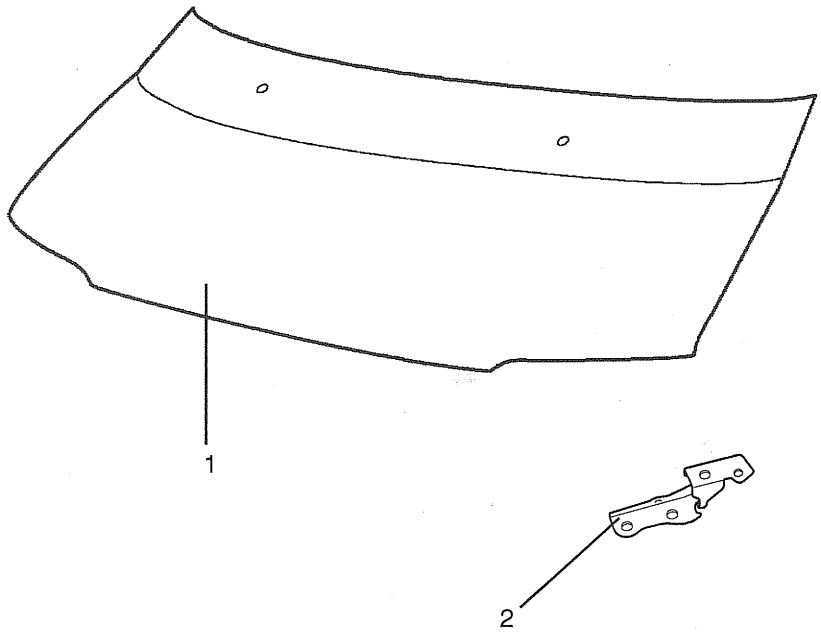
FC0009B

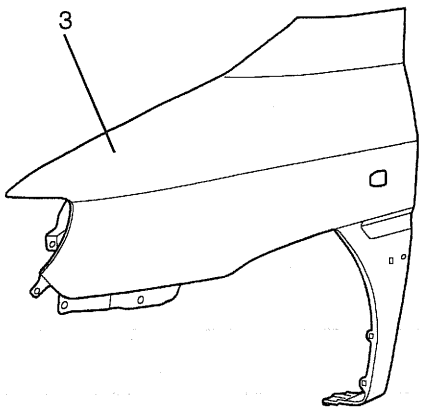


SECTION B-B'

FC0009C

HOOD PANEL & FENDER PANEL

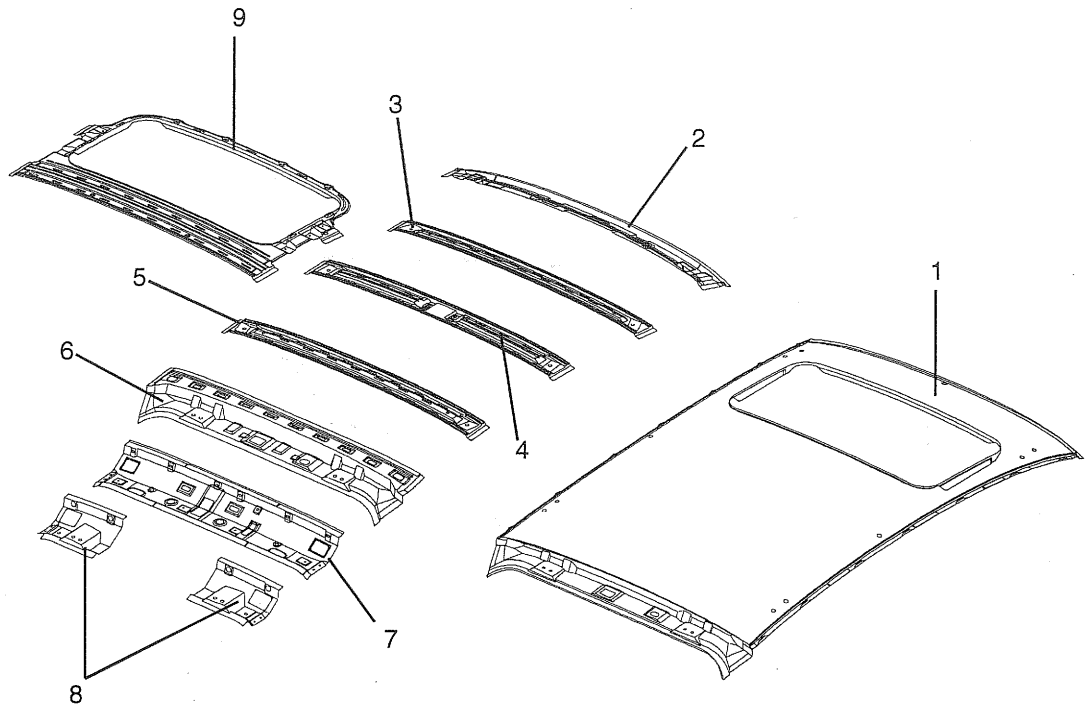




FC0010/A/B

No.	PART NAME
1	Hood panel assembly
2	Hood hinge assembly
3	Fender panel assembly

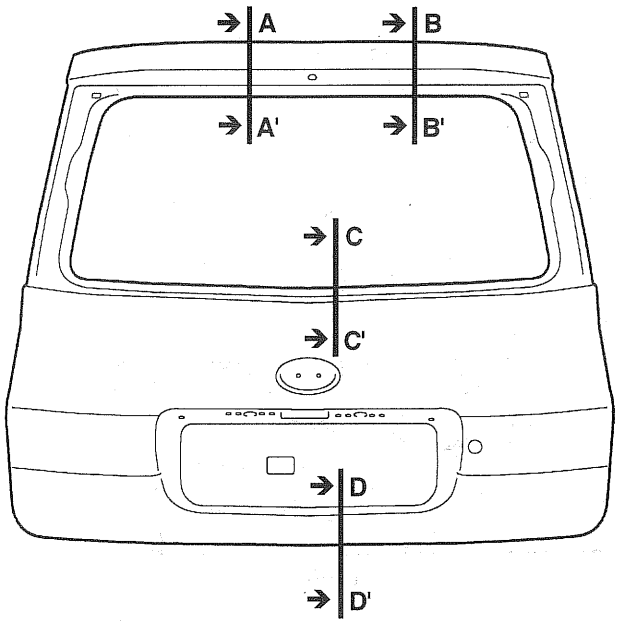
ROOF PANEL ASSEMBLY



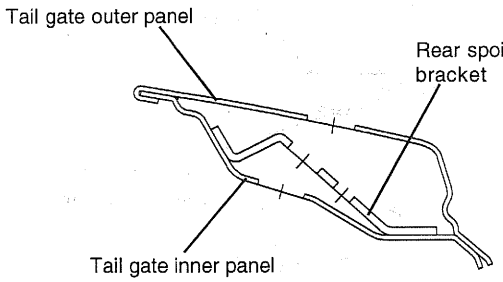
FC0011

No.	PART NAME
1	Roof panel
2	Roof front rail assembly
3	Roof center front rail
4	Roof center rail
5	Roof center rear rail
6	Roof rear upper rail
7	Roof rear lower rail
8	Tail gate hinge mounting reinforcement
9	Sun roof reinforcement ring assembly

TAIL GATE PANEL

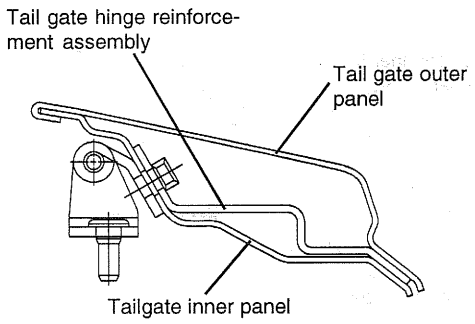


TG1100



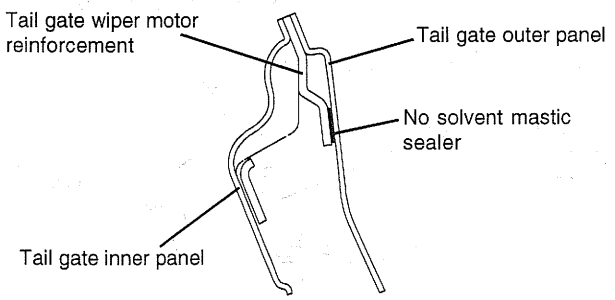
SECTION A-A'

TG1101



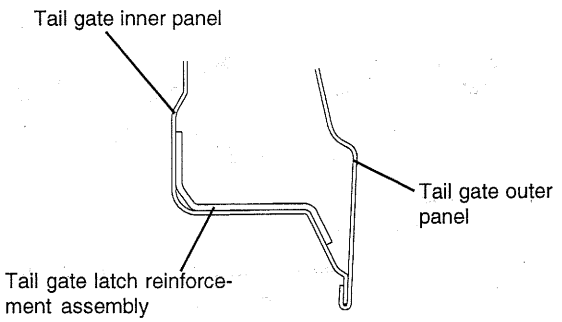
SECTION B-B'

TG1102



SECTION C-C'

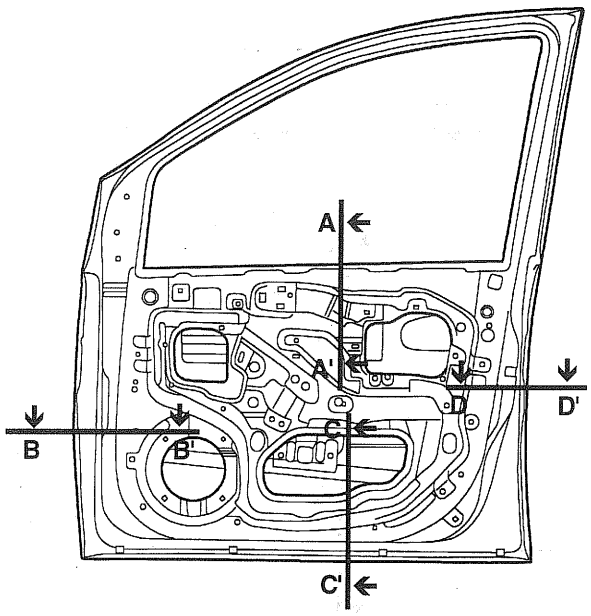
TG1103



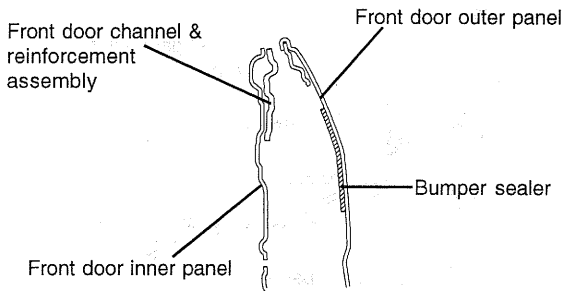
SECTION D-D'

TG1104

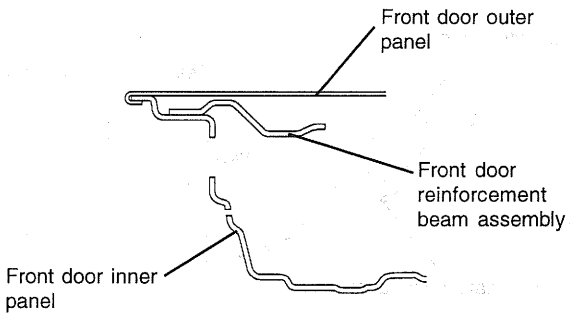
FRONT DOOR PANEL



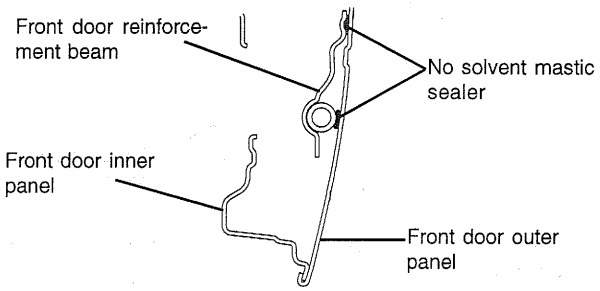
FD1100



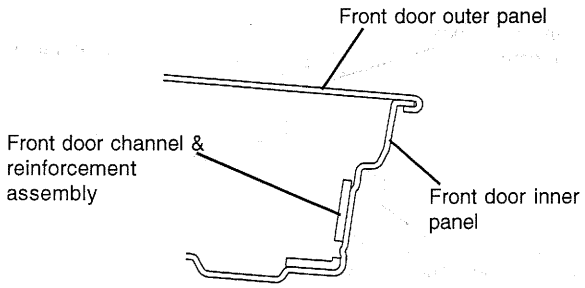
SECTION A-A' FD1101



SECTION B-B' FD1102

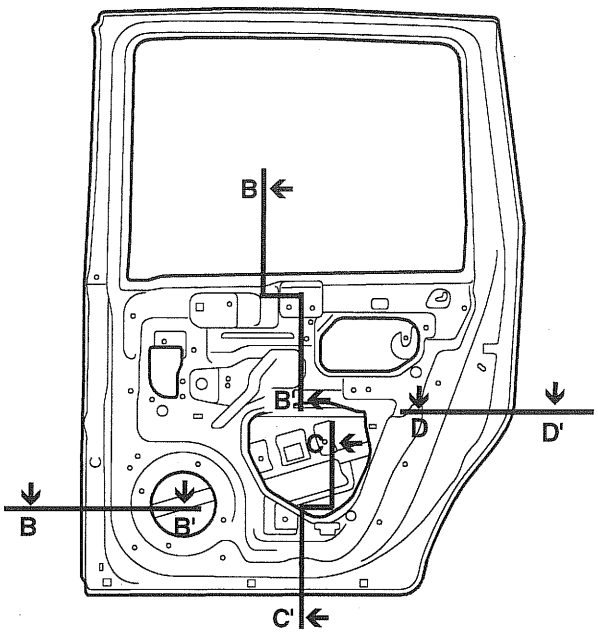


SECTION C-C' FD1103

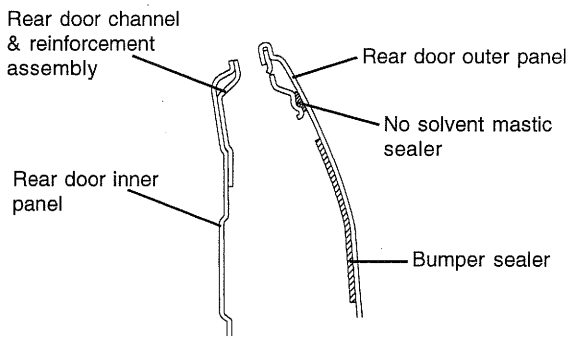


SECTION D-D' FD1104

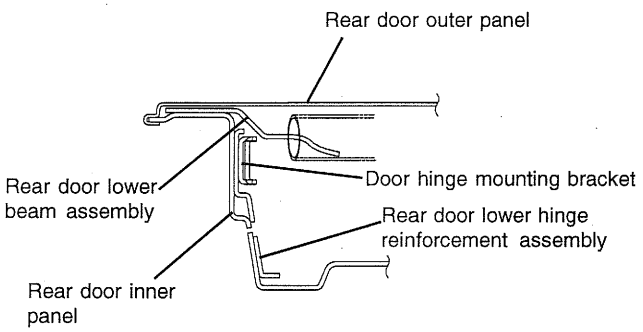
REAR DOOR PANEL



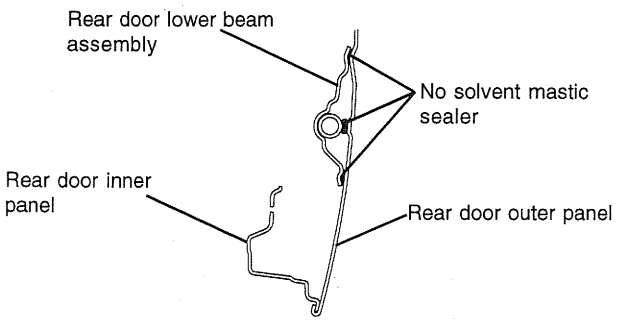
RD1100



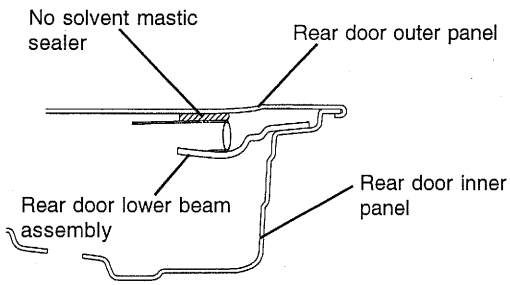
SECTION A-A' RD1101



SECTION B-B' RD1102



SECTION C-C' RD1103



SECTION D-D' RD1104

REPLACEMENT PARTS

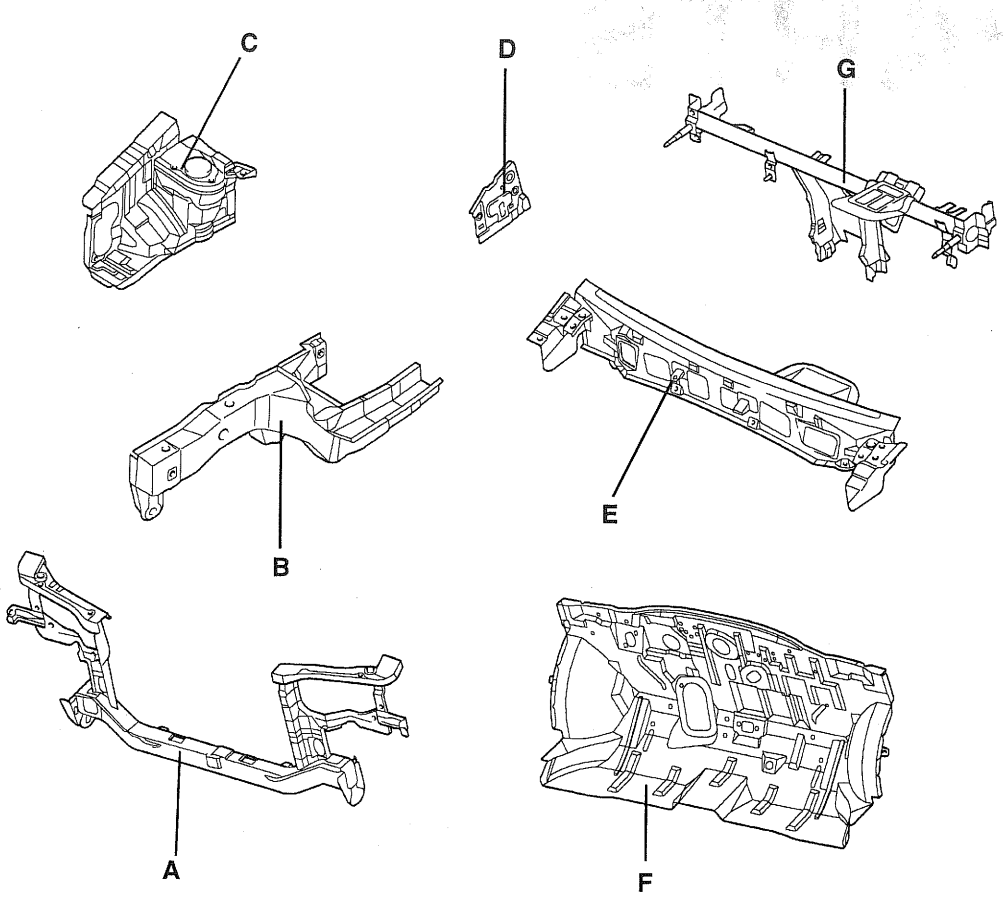
RP

REPLACEMENT PARTS

The following section illustrates replacement parts used in the repairs described in this manual. It is important that only Hyundai replacement parts be used in making these repairs to ensure the repairs are made with the highest possible standards for fit, safety and corrosion protection.

For a more complete listing of service parts, refer to an authorized Hyundai dealership.

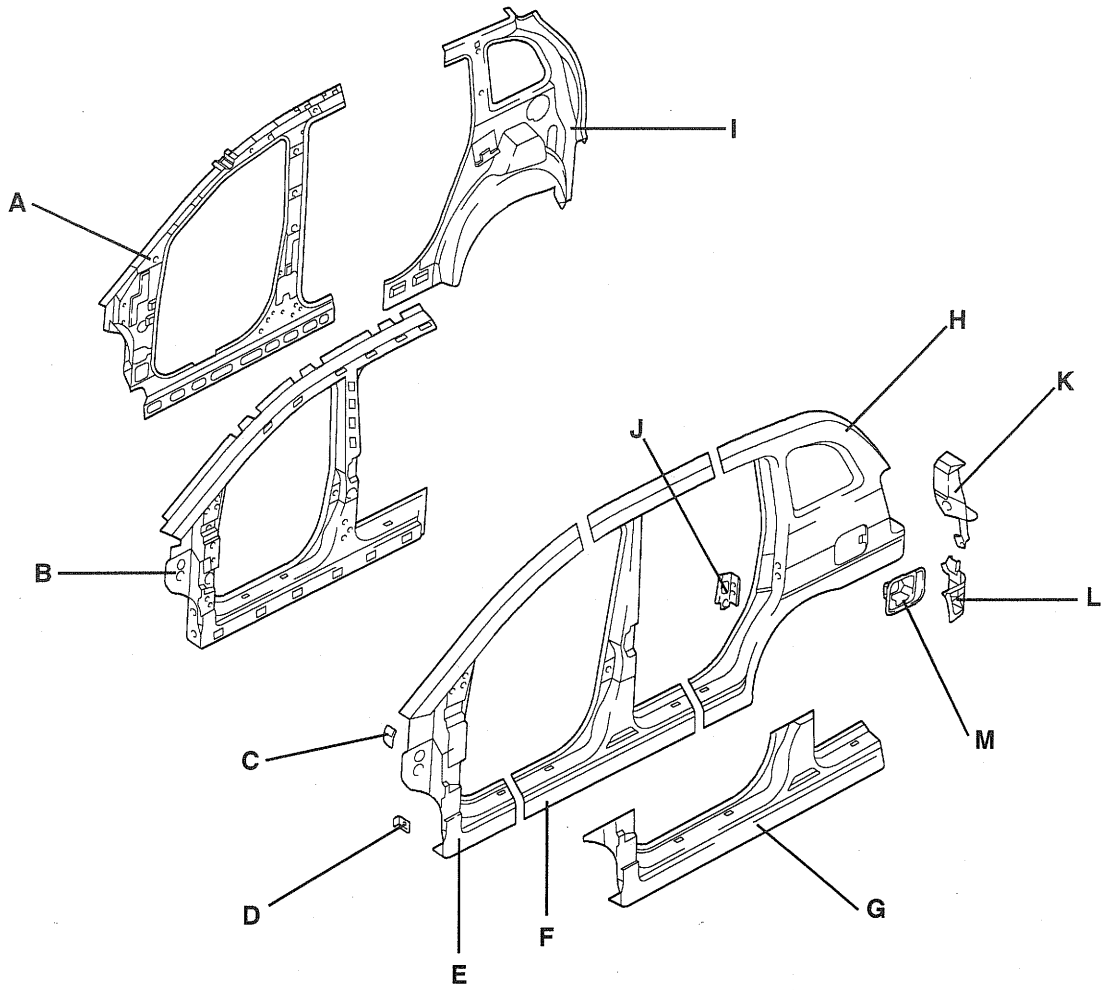
FRONT BODY



CON-0090

	PART NAME	
A	RADIATOR SUPPORT COMPLETE MEMBER ASSEMBLY	
B	FRONT SIDE MEMBER ASSEMBLY,	LH/RH
C	FENDER APRON PANEL ASSEMBLY,	LH/RH
D	COWL SIDE UPPER OUTER MEMBER,	LH/RH
E	COWL COMPLETE PANEL ASSEMBLY	
F	DASH PANEL COMPLETE ASSEMBLY	
G	COWL CROSS BAR ASSEMBLY	

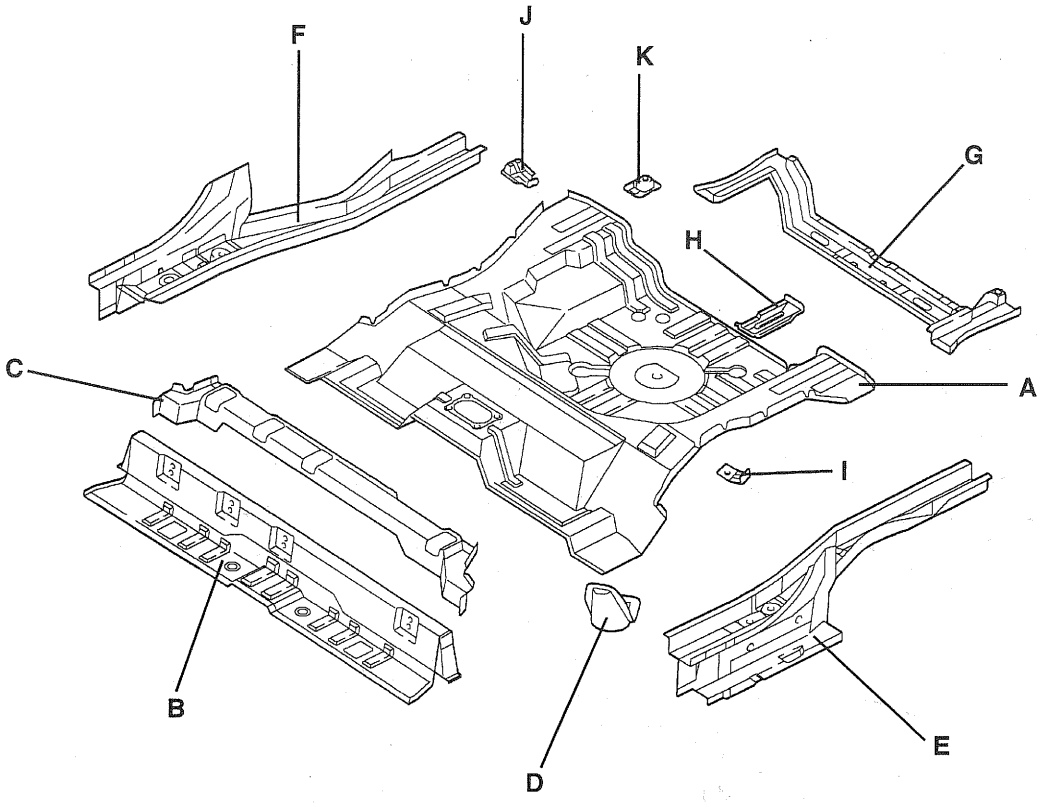
SIDE BODY



CON-0381/A

	PART NAME	
A	SIDE INNER ASSEMBLY,	LH/RH
B	SIDE OUTER REINFORCEMENT ASSEMBLY,	LH/RH
C	SIDE OUTER FRONT EXTENSION,	LH/RH
D	FENDER MOUNTING BRACKET,	LH/RH
E	FRONT PILLAR OUTER PANEL ASSEMBLY,	LH/RH
F	CENTER PILLAR OUTER PANEL ASSEMBLY,	LH/RH
G	SIDE SILL OUTER PANEL,	LH/RH
H	QUARTER OUTER PANEL ASSEMBLY,	LH/RH
I	QUARTER INNER PANEL ASSEMBLY,	LH/RH
J	REAR DOOR STRIKER RETAINER,	LH/RH
K	REAR FILLER PANEL ASSEMBLY,	LH/RH
L	QUARTER OUTER REAR EXTENSION ASSEMBLY,	LH/RH

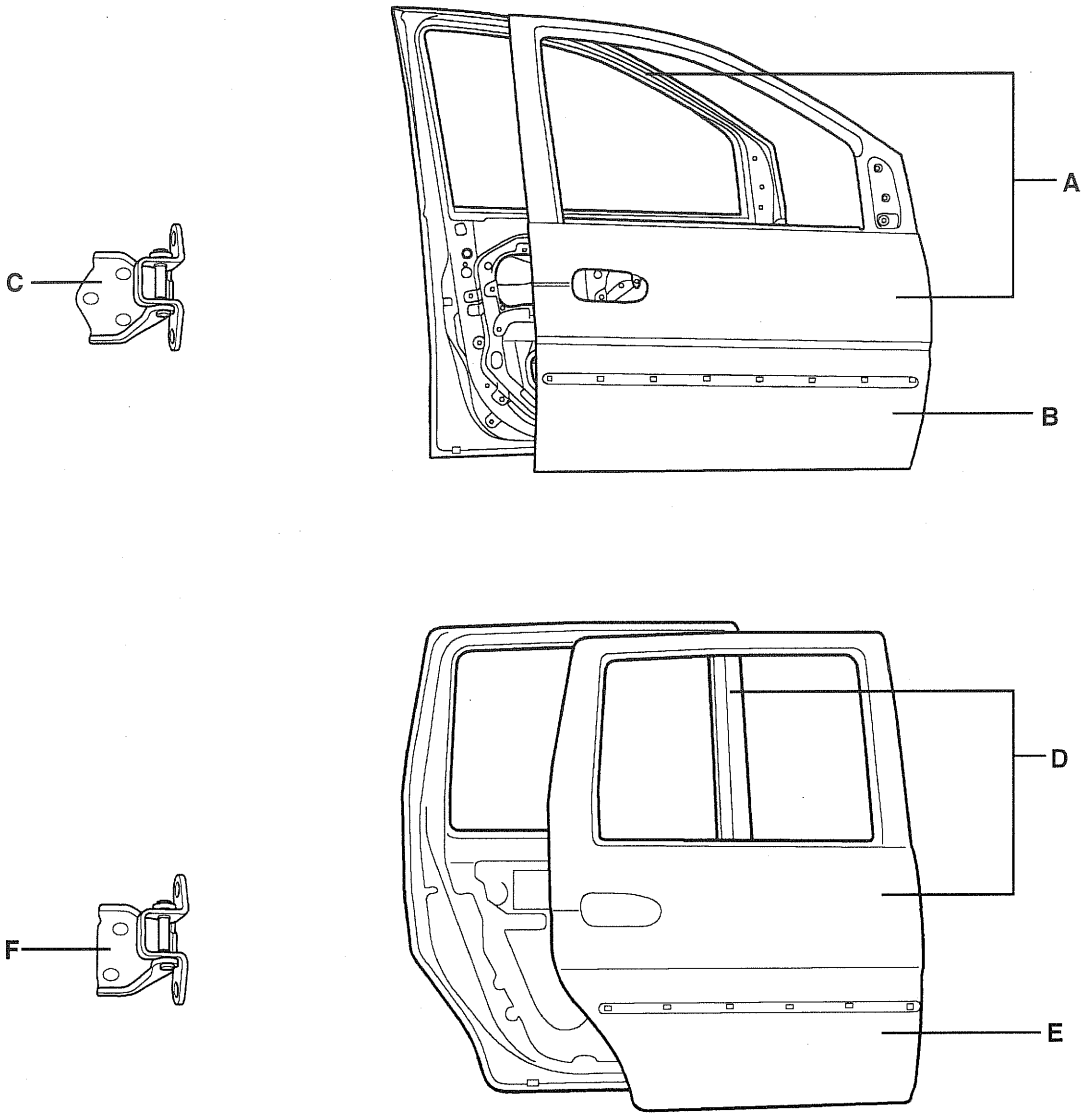
REAR BODY



CON-0860

	PART NAME	
A	REAR FLOOR PANEL	
B	REAR JACK UP SIDE REINFORCEMENT ASSEMBLY	
C	REAR SEAT MOUNTING MEMBER ASSEMBLY	
D	REAR SEAT BELT ANCHOR REINFORCEMENT ASSEMBLY,	LH/RH
E	REAR FLOOR SIDE COMPLETE MEMBER ASSEMBLY,	LH
F	REAR FLOOR SIDE COMPLETE MEMBER ASSEMBLY,	RH
G	REAR FLOOR CENTER CROSS MEMBER ASSEMBLY	
H	REAR TOWING HOOK BRACKET ASSEMBLY	
I	RUGGAGE NET FRONT MOUNTING BRACKET ASSEMBLY,	LH/RH
J	JACK MOUNTING BRACKET	
K	SPARE TIRE MOUNTING BRACKET ASSEMBLY	

DOOR



CON-0870-3

	PART NAME
A	FRONT DOOR PANEL ASSEMBLY, LH/RH
B	FRONT DOOR OUTER PANEL, LH/RH
C	FRONT DOOR HINGE ASSEMBLY, LH/RH
D	REAR DOOR PANEL ASSEMBLY, LH/RH
E	REAR DOOR OUTER PANEL, LH/RH
F	REAR DOOR HINGE ASSEMBLY, LH/RH

BODY DIMENSIONS

BD

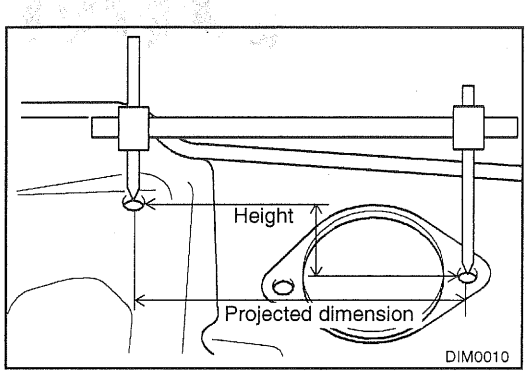
GENERAL

1. Basically, all measurements in this manual are taken with a tracking gauge.
2. When a measuring tape is used, check to be sure there is no elongation, twisting or bending.
3. For measuring dimensions, both projected dimension and actual-measurement dimension are used in this manual.

MEASUREMENT METHOD

PROJECTED DIMENSIONS

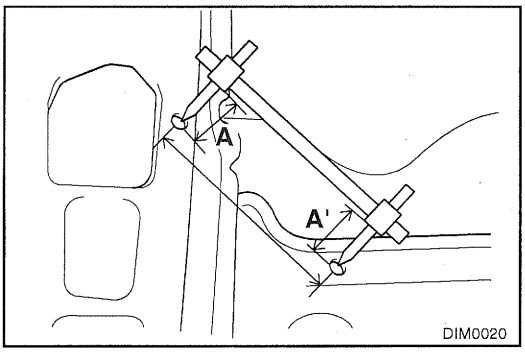
1. These are the dimensions measured when the measurement points are projected into the reference plane, and are the reference dimensions used for body alterations.
2. If the length of the tracking gauge probes are adjustable, make the measurement by lengthening one probe by the amount equivalent to the difference in height of the two surfaces.



ACTUAL-MEASUREMENT DIMENSIONS

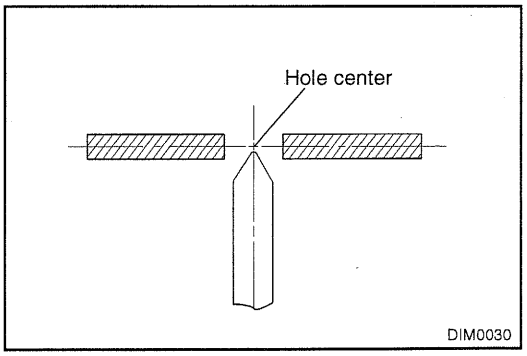
1. These dimensions indicate the actual linear distance between measurement points, and are the reference dimensions for use if a tracking gauge is used for measurement.
2. Measure by first adjusting both probes to the same length (A=A').

NOTE
Check the probes and gauge itself to make sure there is no free play.

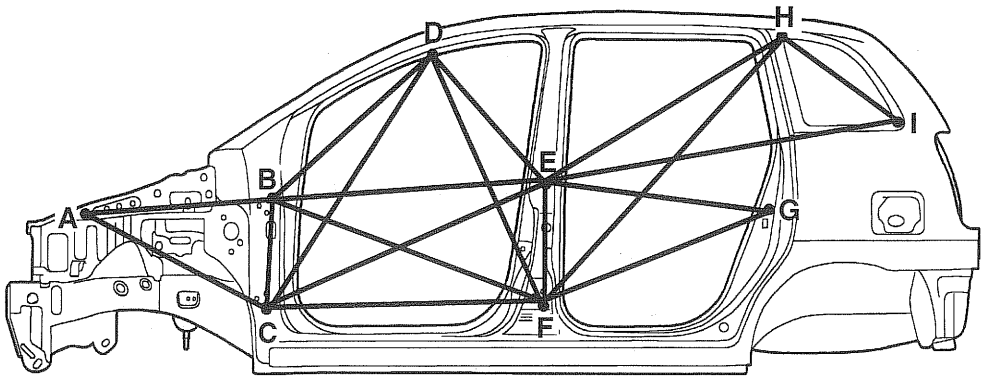


MEASUREMENT POINT

1. Measurements should be taken at the hole center.

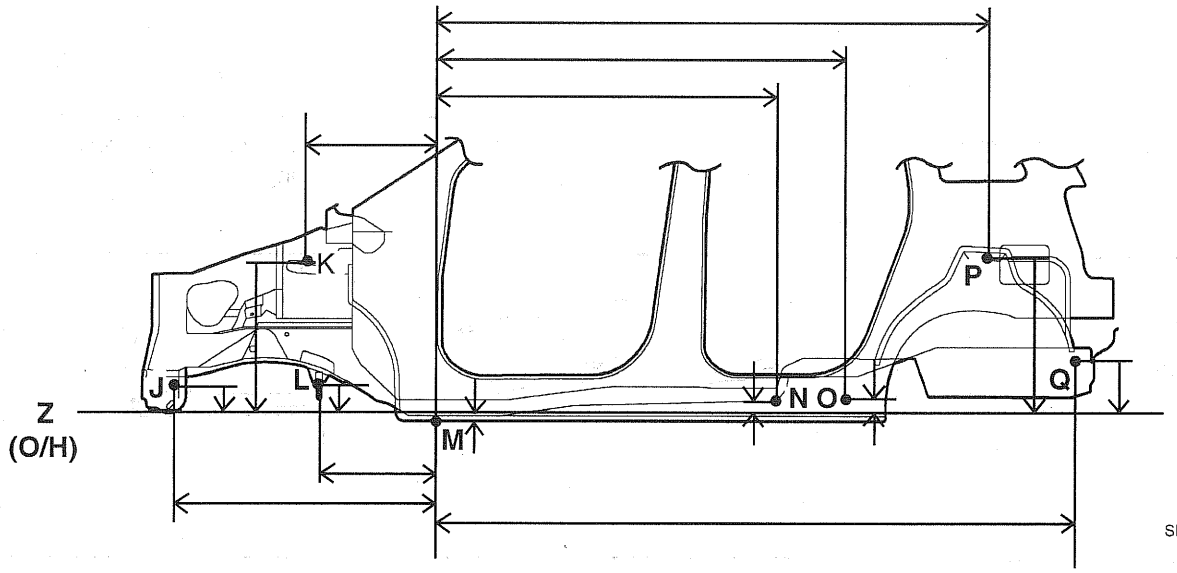


SIDE BODY



SIDE-2

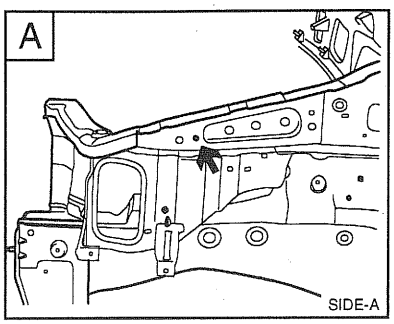
* These dimensions indicated in this figure are **actual-measurement dimensions.**



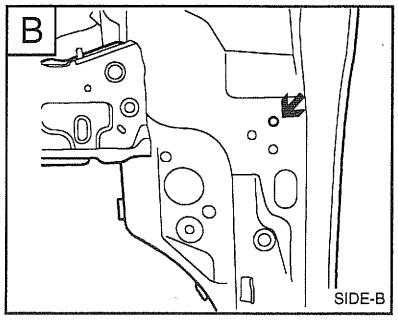
SIDE-1

* These dimensions indicated in this figure are **projected dimensions.**

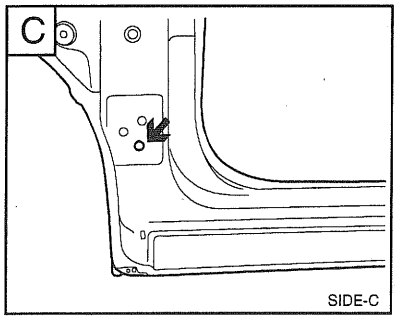
Point symbol	A-B	A-C	B-C	B-D	B-E	B-F	C-D	C-E
Length (mm)	687	762	395	846	1057	1114	1152	1142
Point symbol	C-F	D-E	D-F	E-F	E-G	E-H	E-I	F-G
Length (mm)	1053	718	1053	405	852	1110	1354	917
Point symbol	F-H	J-Z	K-Z	L-Z	M-Z	N-Z	O-Z	P-Z
Length (mm)	1397	125	584	120	14.4	41	41	620
Point symbol	Q-Z	J-M	K-M	L-M	M-N	M-O	M-P	M-Q
Length (mm)	185	1045	480	456	1400	1563	2119	2442



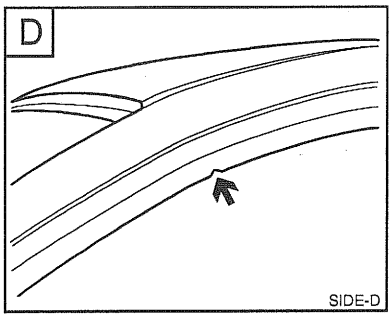
Washer hose mounting hole (Ø7)



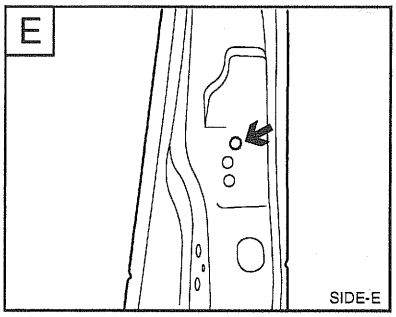
Front door hinge upper mounting hole (Ø12)



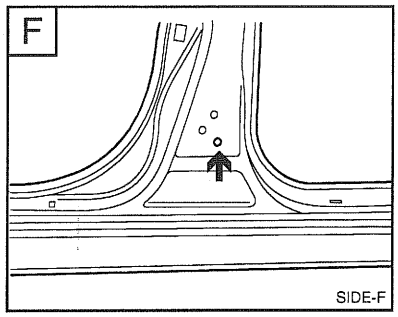
Front door hinge lower mounting hole (Ø12)



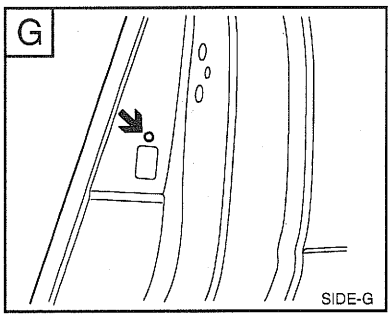
Side body outer positioning notch



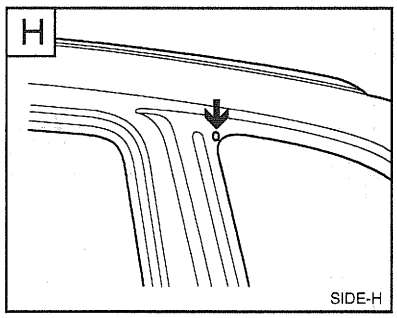
Rear door hinge upper mounting hole (Ø12)



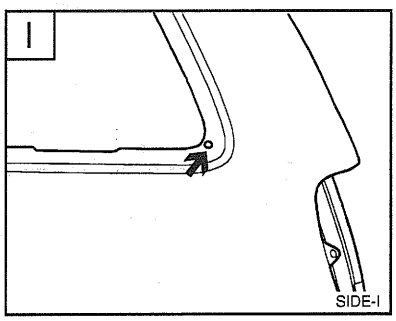
Rear door hinge lower mounting hole(Ø12)



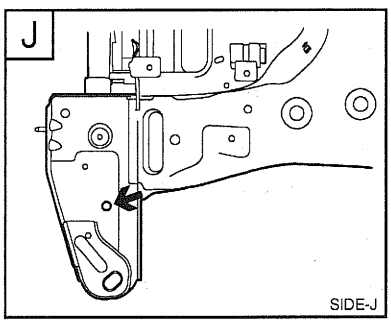
Rear door switch mounting hole (Ø8)



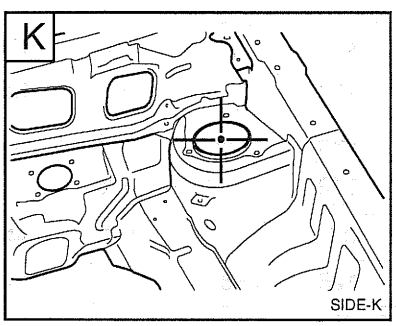
Fixed glass mounting hole (⬭ 9 x 7 slot hole)



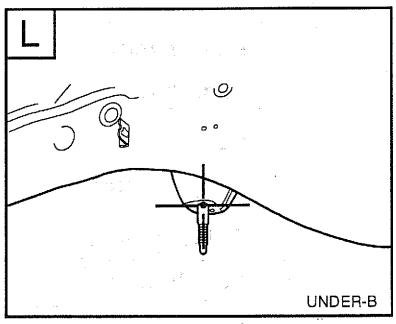
Fixed glass mounting hole (⬭ 9 x 7 slot hole)



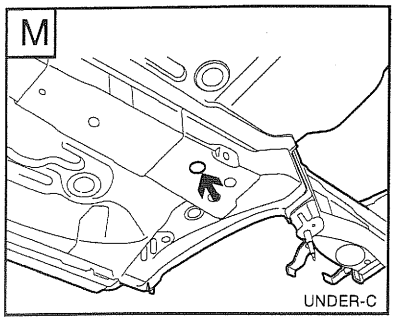
Tooling hole(Ø12)



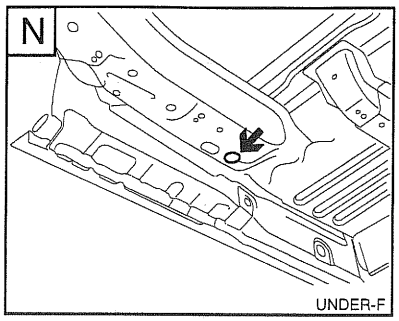
Front strut hole (Ø103.8)



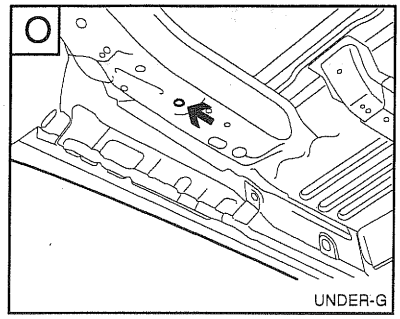
Cross member mounting hole (Ø17)



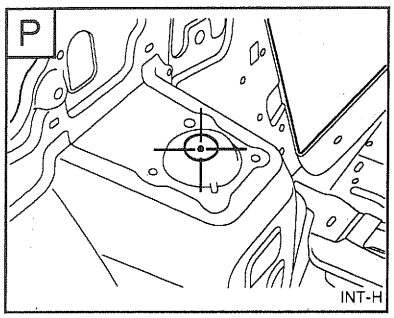
Tooling hole(∅28)



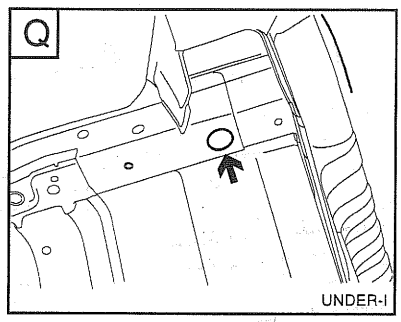
Tooling hole(∅25)



Rear trailing arm mounting hole (∅14)

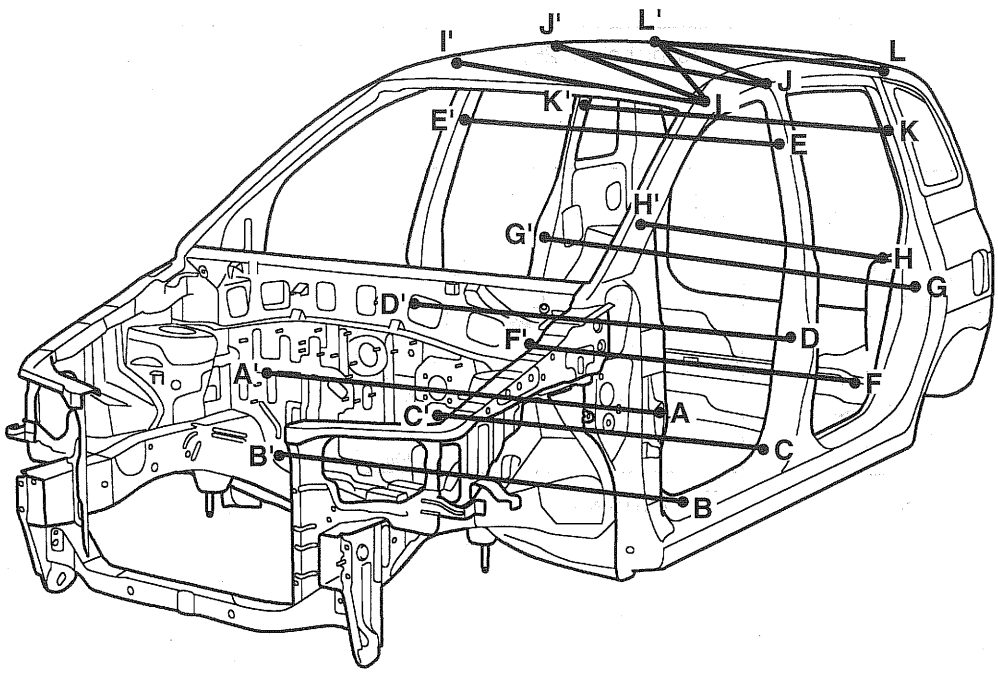


Rear strut hole(∅34)



Tooling hole (∅30)

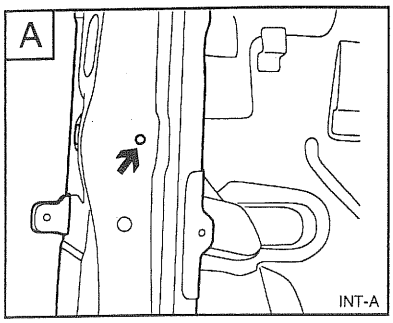
INTERIOR



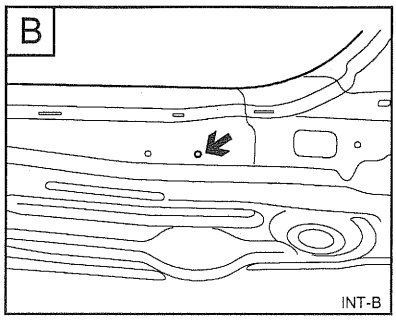
INT-ASSY

* These dimensions indicated in this figure are **actual-measurement dimensions.**

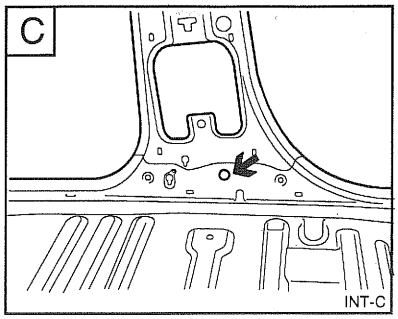
Point symbol	A-A'	B-B'	C-C'	D-D'	E-E'	F-F'	G-G'	H-H'
Length (mm)	1449	1349	1367	1492	1161	1248	1480	1209
Point symbol	I-I'	I-J'	J-J'	J-L'	K-K'	L-L'	I-L'	
Length (mm)	1109	1269	1072	1241	1229	1084	1672	



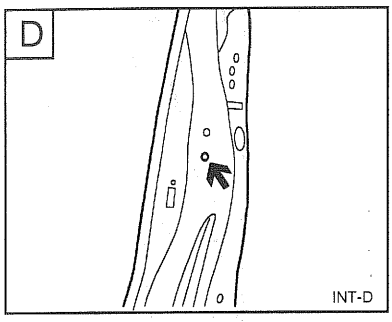
Front door checker mounting hole (∅12)



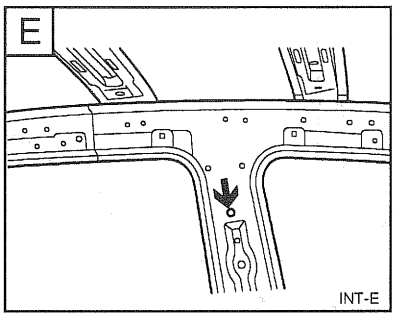
Door scuff mounting hole(∅6.6)



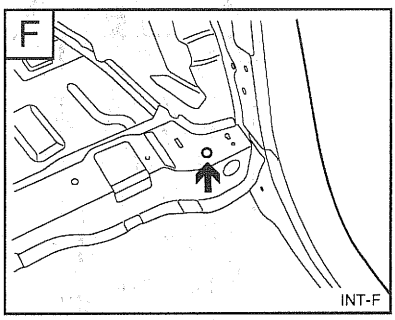
Seat belt mounting hole(∅18)



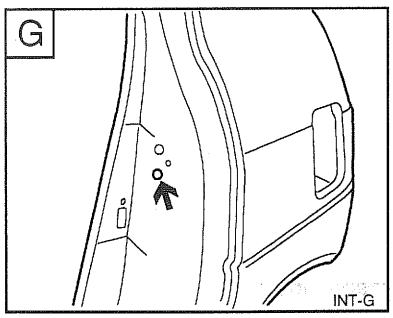
Front door striker mounting hole(∅13)



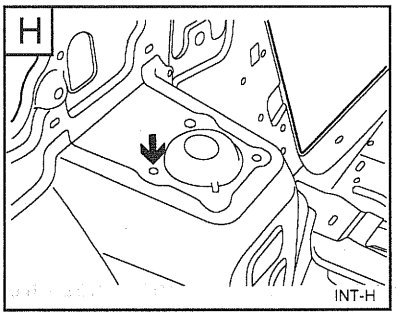
Seat belt anchor mounting hole(∅15)



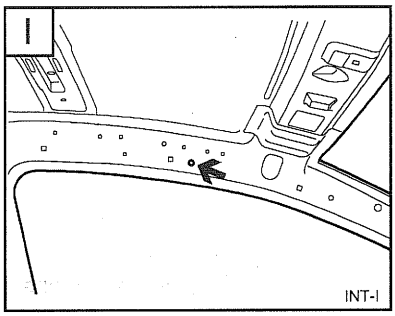
Seat belt lower anchor mounting hole(∅12.2)



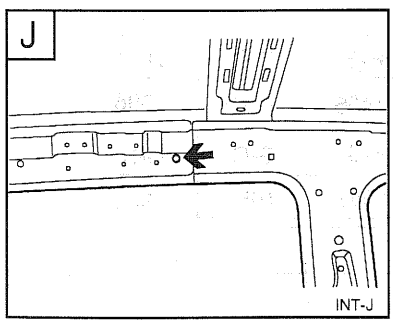
Rear door striker mounting hole (∅13)



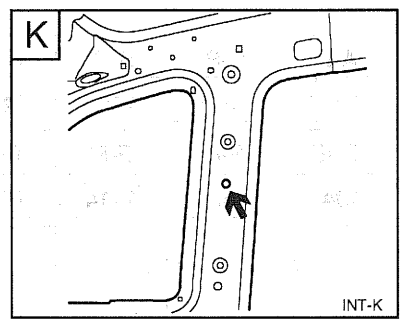
Rear shock absorber mounting hole (∅9)



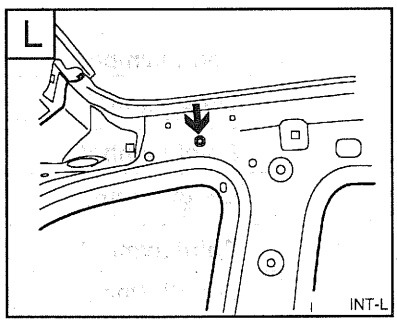
Assist handle mounting hole(∅9)



Tooling hole (∅10)

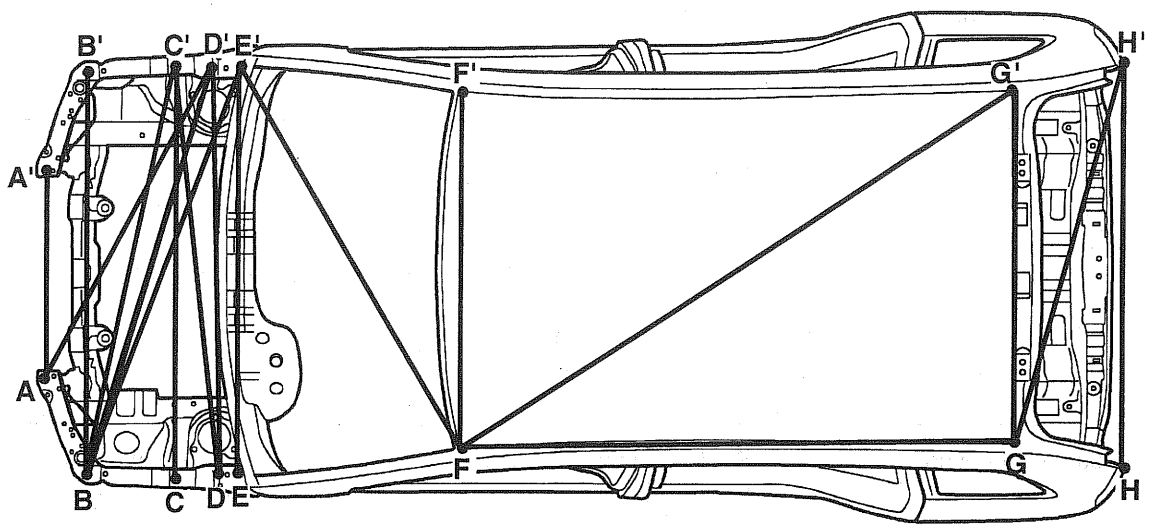


Seat belt anchor mounting hole (∅15)



Roof rack mounting hole(∅9)

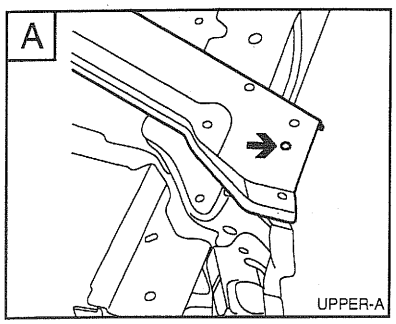
UPPER BODY



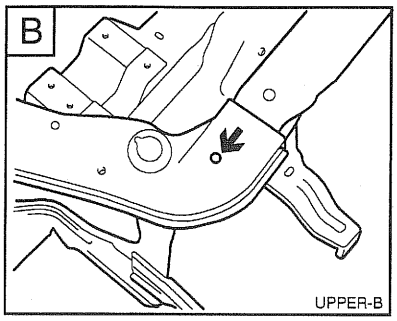
UPPER-ASSY

* These dimensions indicated in this figure are **actual-measurement dimensions.**

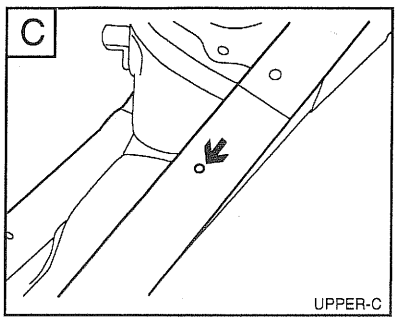
Point symbol	A-A'	A-D'	B-B'	B-C'	B-D'	B-E'	C-C'	D-C'
Length (mm)	710	1214	1376	1404	1452	1486	1390	1398
Point symbol	D-D'	E-E'	F-E'	F-F'	F-G	F-G'	G-G'	G-H'
Length (mm)	1366	1343	1559	1114	1667	1989	1057	1303
Point symbol	H-H'							
Length (mm)	1282							



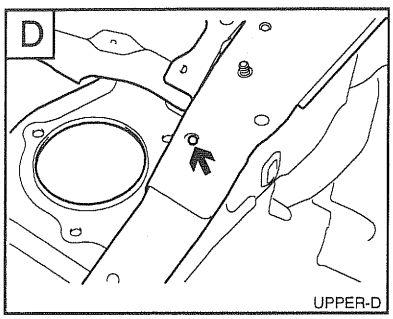
Radiator support upper center mounting hole(∅6.6)



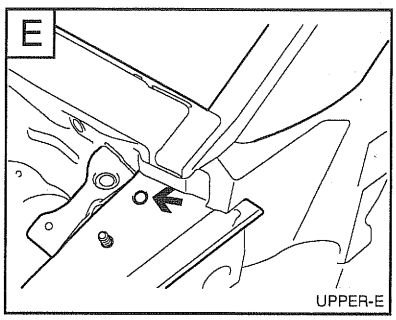
Fender mounting hole(∅12)



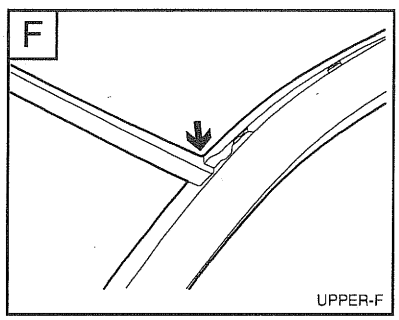
Fender mounting hole (∅6.6)



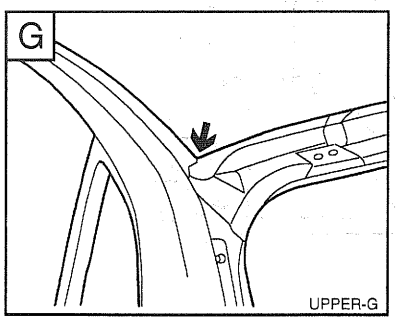
Fender mounting hole (∅12)



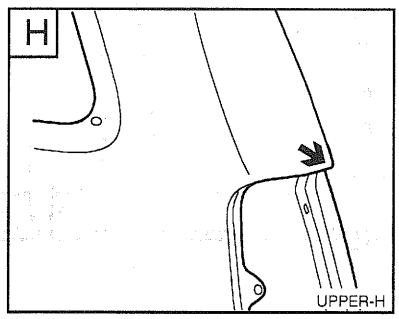
Hood hinge mounting hole (∅12)



Left front roof corner

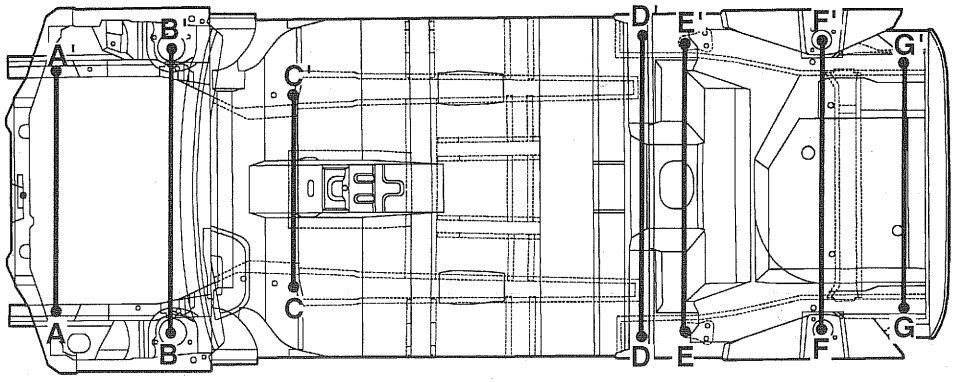


Left rear roof corner



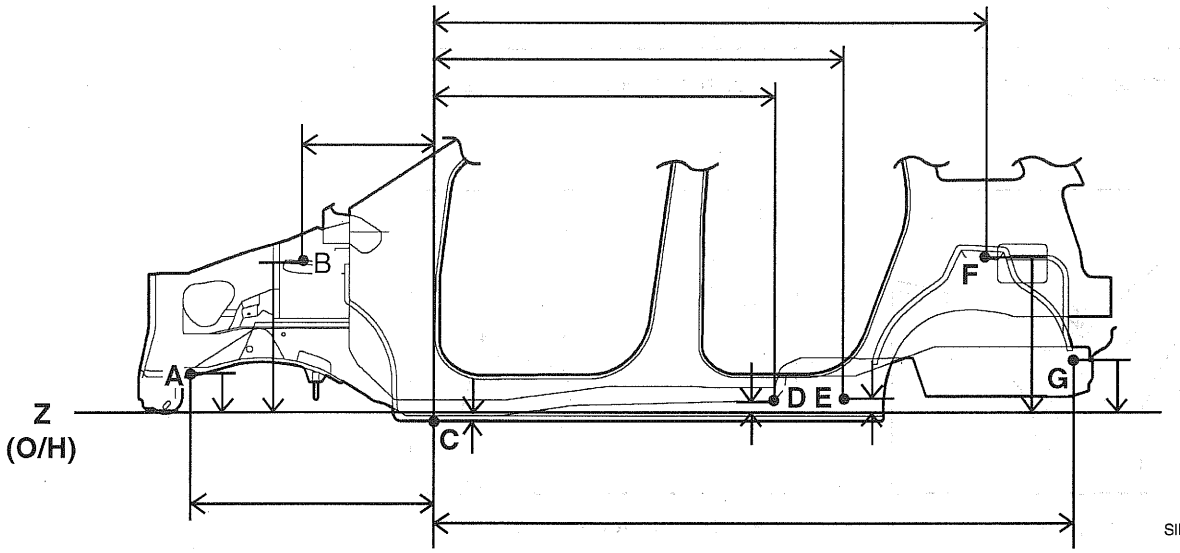
Left rear quarter panel edge

UNDER BODY



UNDER-1

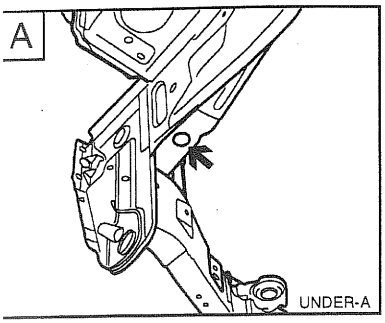
* These dimensions indicated in this figure are **actual-measurement dimensions.**



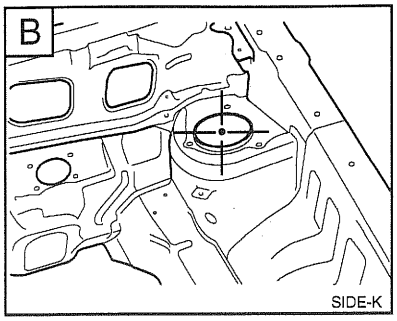
SIDE-1

* These dimensions indicated in this figure are **projected dimensions.**

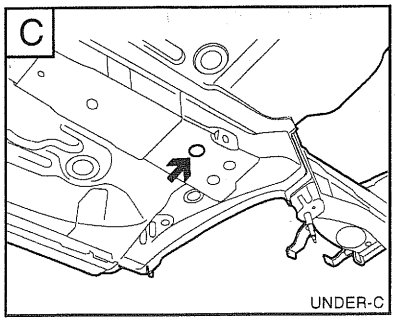
Point symbol	A-A'	B-B'	C-C'	D-D'	E-E'	F-F'	G-G'	A-Z
Length (mm)	960	1137	754	1192	1136	1149	960	175
Point symbol	B-Z	C-Z	D-Z	E-Z	F-Z	G-Z	A-C	B-C
Length (mm)	584	14.4	41	41	620	185	958	480
Point symbol	C-D	C-E	C-F	C-G				
Length (mm)	1400	1563	2119	2442				



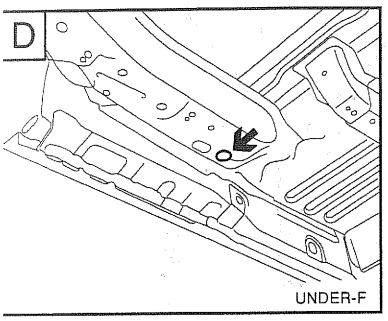
Tooling hole (∅25)



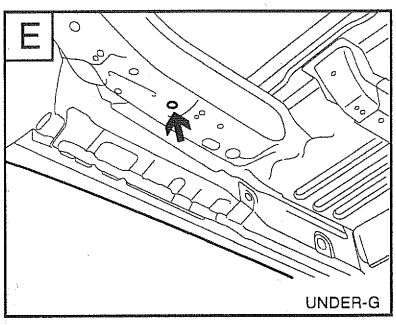
Front strut hole(∅103.8)



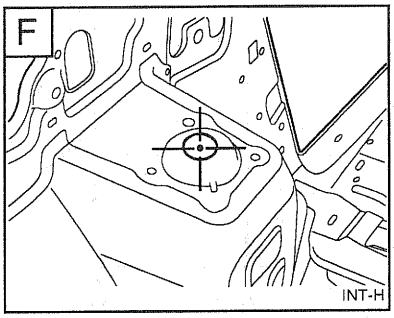
Tooling hole(∅28)



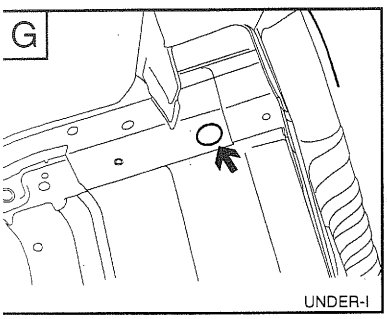
Tooling hole (∅25)



Rear trailing arm mounting hole (∅14)

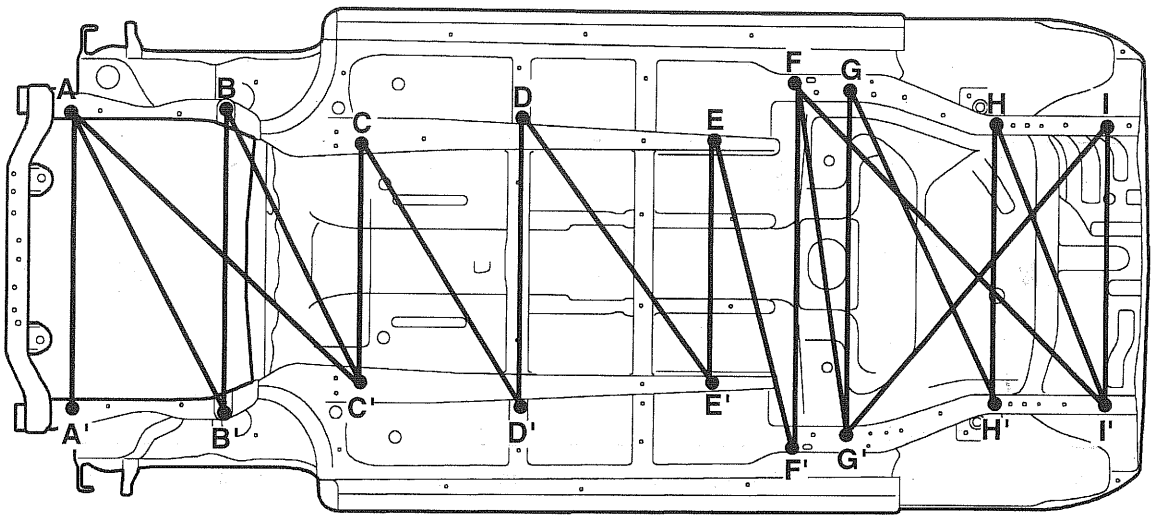


Rear strut hole(∅34)



Tooling hole(∅30)

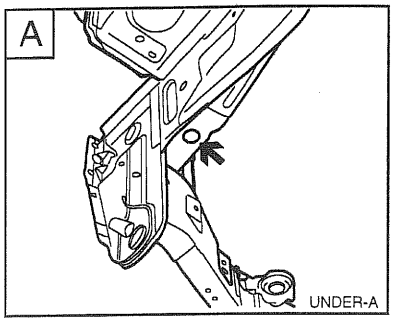
UNDER BODY



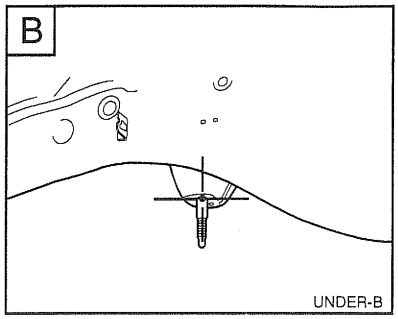
UNDER-2

* These dimensions indicated in this figure are **actual-measurement dimensions.**

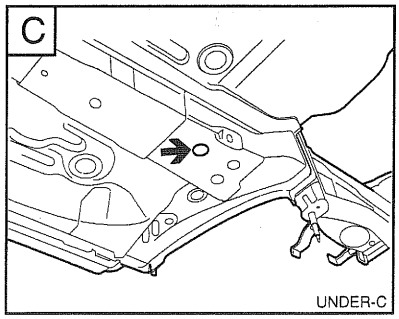
Point symbol	A-A'	B-B'	C-C'	D-D'	E-E'	F-F'	G-G'	H-H'
Length (mm)	960	964	754	940	784	1192	1136	968
Point symbol	I-I'	A-B'	A-C'	B-C'	C-D'	D-E'	E-F'	F-G'
Length (mm)	960	1085	1299	986	991	1068	1021	1192
Point symbol	F-I'	G-H'	H-I'	I-G'				
Length (mm)	1505	1180	1029	1375				



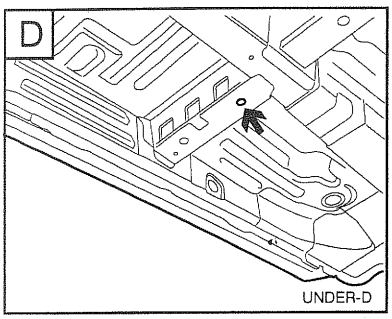
Tooling hole(Ø25)



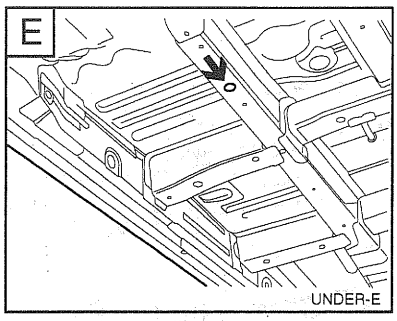
Cross member mounting hole (Ø17)



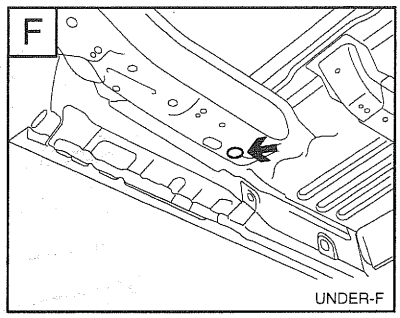
Tooling hole(Ø28)



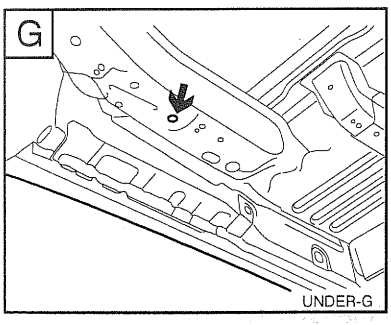
Tooling hole(Ø25)



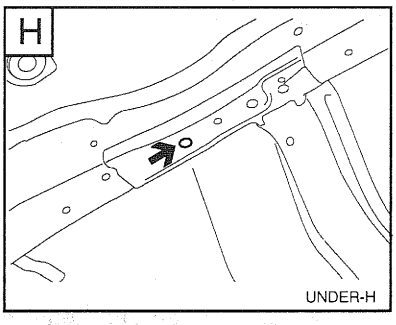
Tooling hole(Ø18)



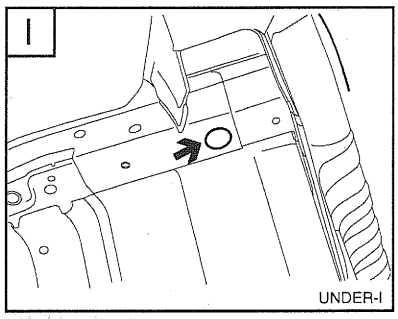
Tooling hole(Ø25)



Rear trailing arm mounting hole(Ø14)

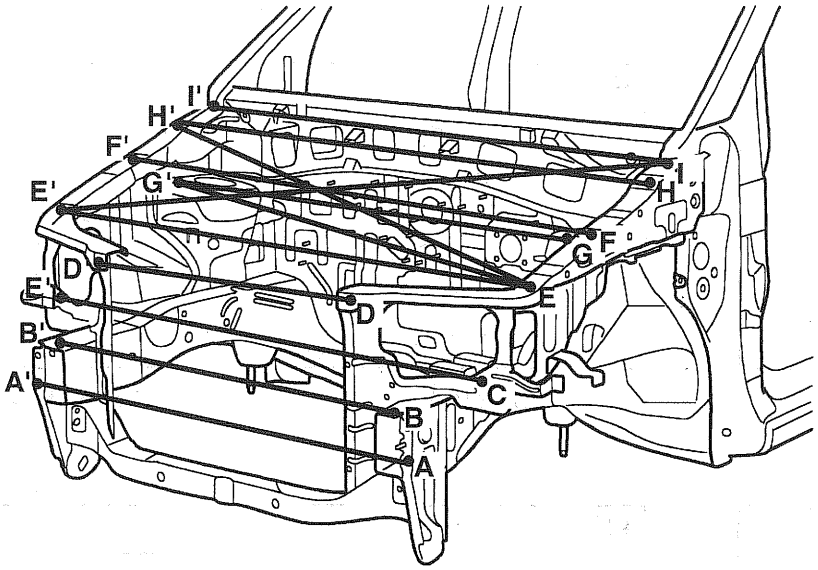


Center cross member mounting hole(Ø16)



Tooling hole(Ø30)

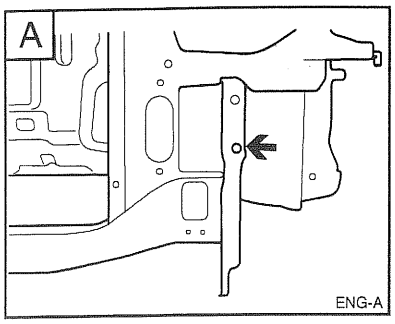
FRONT BODY



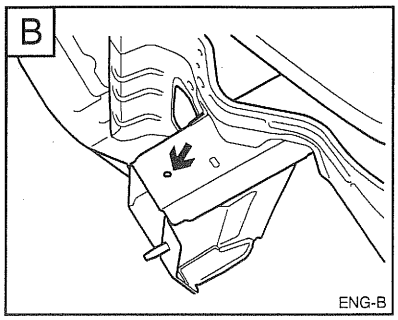
FRONT-1

* These dimensions indicated in this figure are **actual-measurement dimensions.**

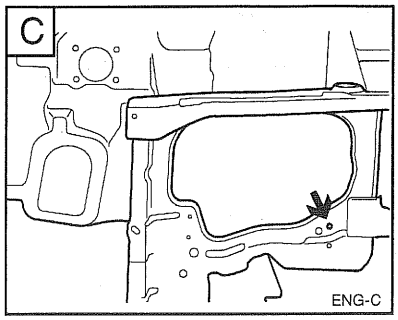
Point symbol	A-A'	B-B'	C-C'	D-D'	E-E'	E-G'	E-H'	F-F'
Length (mm)	1088	970	1250	704	1376	1351	1452	1390
Point symbol	G-G'	H-H'	I-I'	I-E'				
Length (mm)	1217	1366	1343	1486				



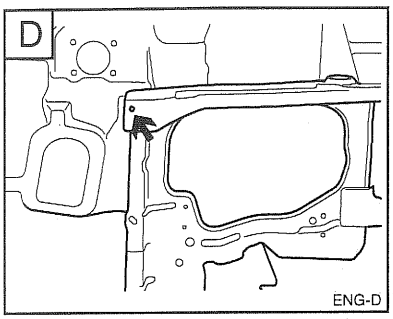
Bumper mounting hole(Ø13)



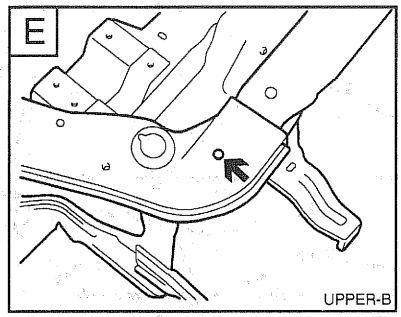
Front bumper mounting hole(Ø9)



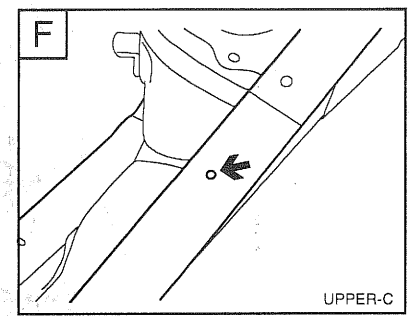
Head lamp mounting hole(Ø6.6)



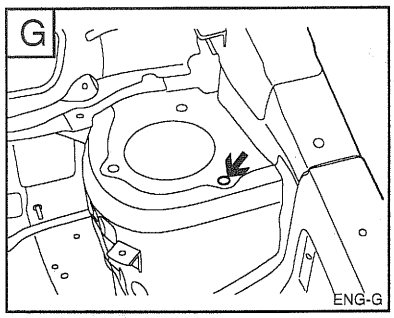
Member-radiator support upper center mounting hole(Ø6.6)



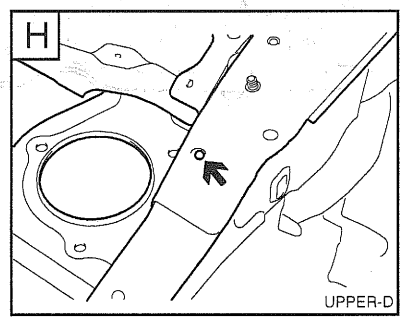
Fender mounting hole (Ø12)



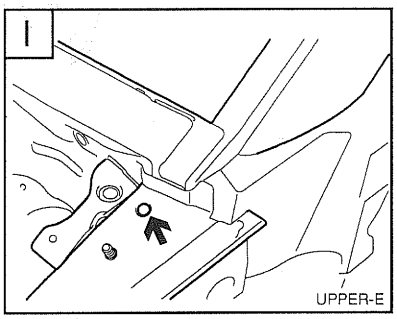
Fender mounting hole(Ø6.6)



Front shock absorber mounting hole (Ø11)

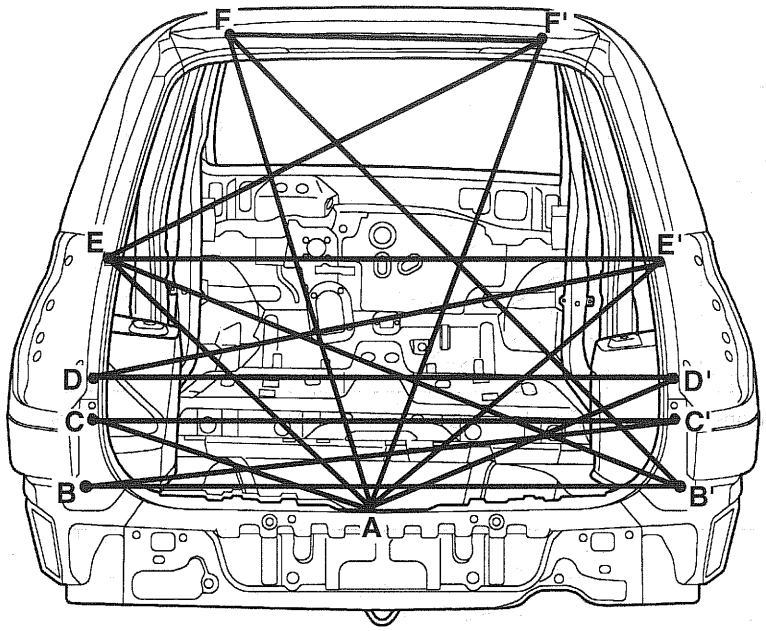


Fender mounting hole(Ø12)



Hood hinge mounting hole(Ø12)

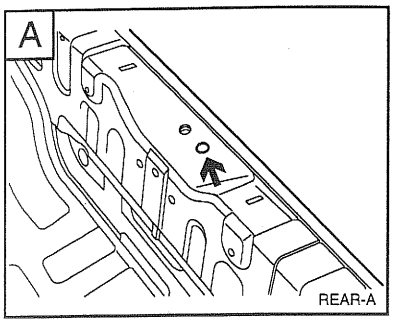
REAR BODY



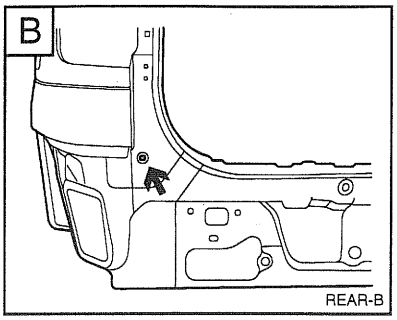
REAR-1

* These dimensions indicated in this figure are **actual-measurement dimensions.**

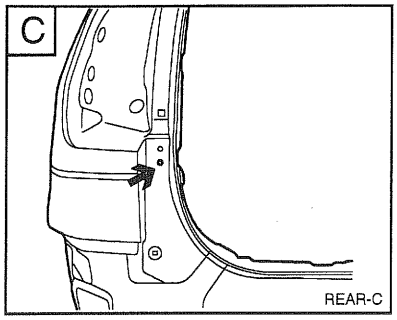
Point symbol	A-C	A-D'	A-E	A-E'	B-B'	B-C'	C-C'	D-D'
Length (mm)	643	709	790	820	1286	1286	1267	1264
Point symbol	**D-E'**	**E-E'**	**E-B'**	**E-F'**	**F-F'**	**F-A**	**F-B'**	**A-F'**
Length (mm)	1267	1222	1344	1085	630	1107	1403	1118



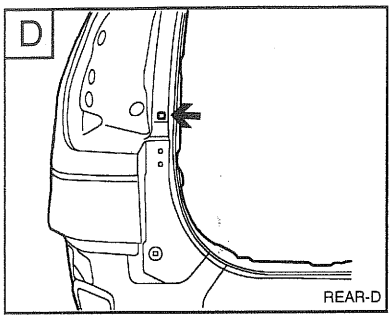
Tail gate striker mounting hole(∅13)



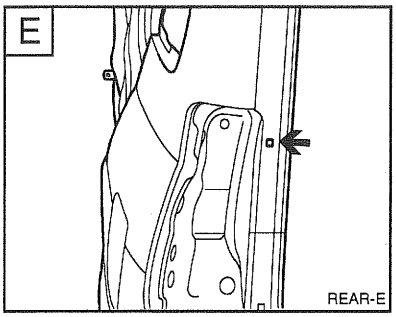
Rear bumper mounting hole (□ 7×7 hole)



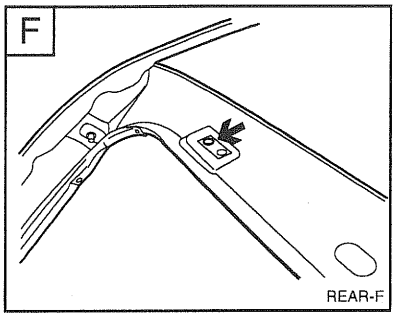
Tail gate guide bumper mounting hole(∅8)



Rear combination lamp mounting hole(□ 8.5×8.5)



Rear combination lamp mounting hole(□ 8.5×8.5)



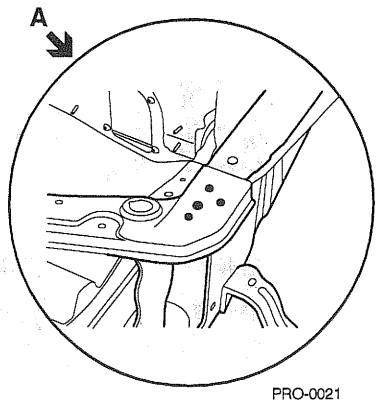
Tail gate mounting hole(∅11.9)

BODY PANEL REPAIR PROCEDURE

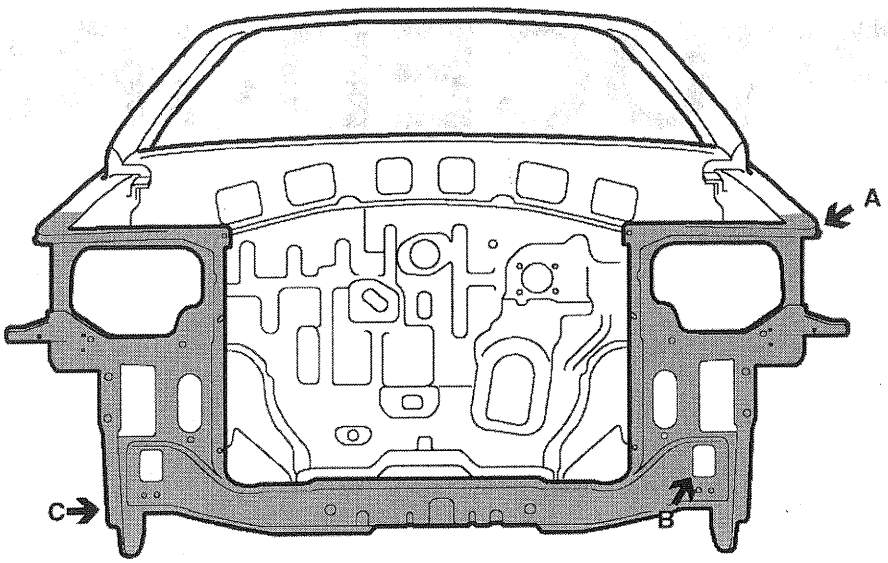
BP

RADIATOR SUPPORT PANEL

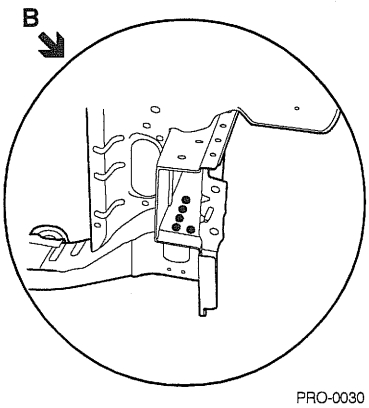
WELDLING POINTS



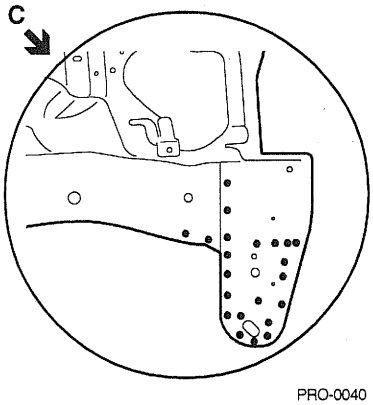
PRO-0021



PRO-0020



PRO-0030

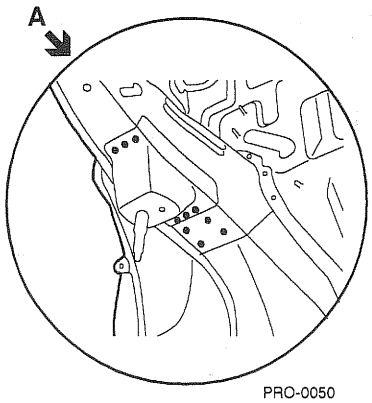


PRO-0040

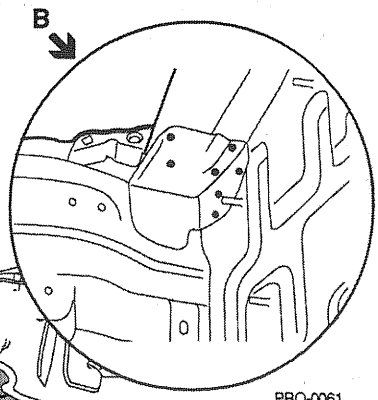
- MIG plug welding

FENDER APRON AND FRONT SIDE MEMBER (ASSEMBLY)

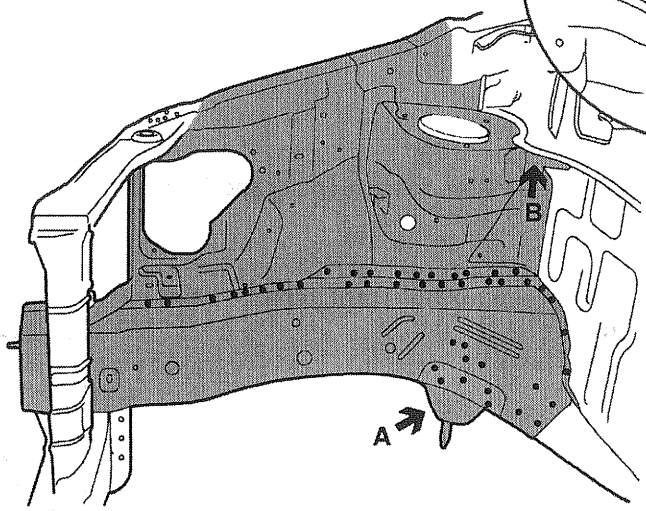
WELDLING POINTS



PRO-0050

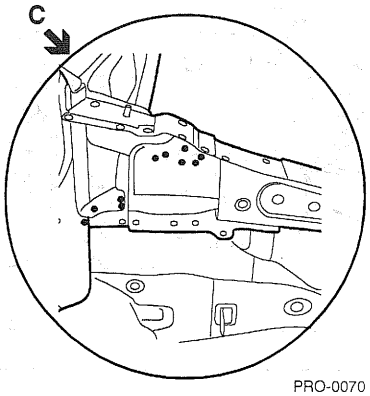


PRO-0061

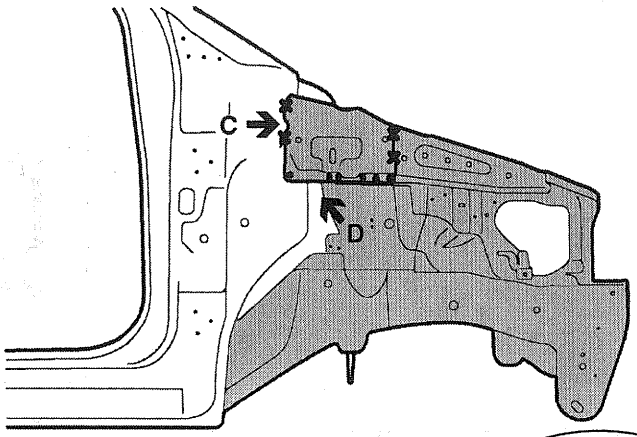


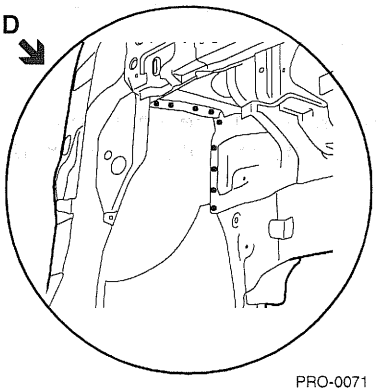
● MIG plug welding
⤫⤫ MIG lap welding

PRO-0060



PRO-0070



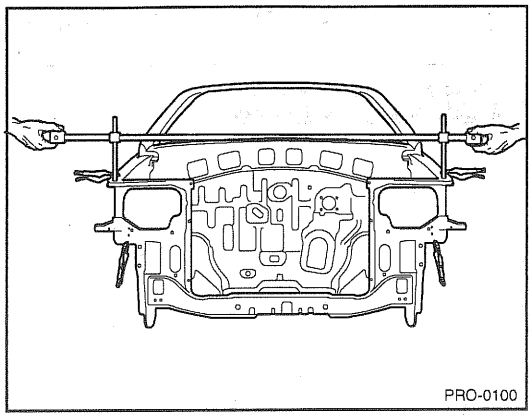


PRO-0080

● MIG plug welding
⫴ MIG butt welding
⤫⤫ MIG lap welding

PRO-0071

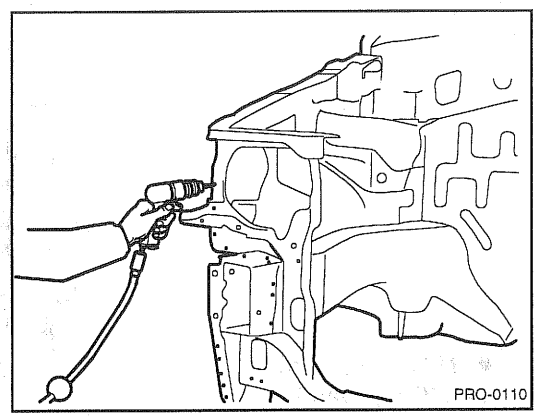
NOTE
Before repairing, remove Engine and Suspension Components. Refer to the body dimension charts and measure the vehicle to determine straightening and alignment requirements. The body must be returned to its original dimension before you begin the repair procedure.


PRO-0100

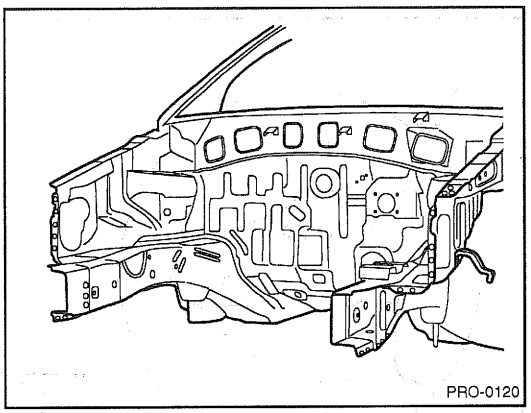
REMOVAL

1. Drill out all the spotwelds to separate radiator support panel from Front Side member.

   NOTE
   When spotwelded portions are not apparent, remove paint with a rotary wire brush.

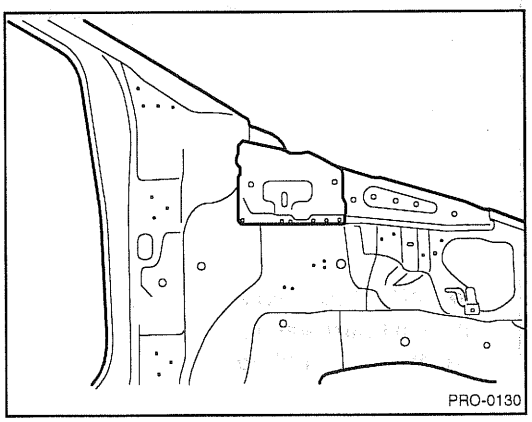

PRO-0110

2. Remove the radiator support panel.

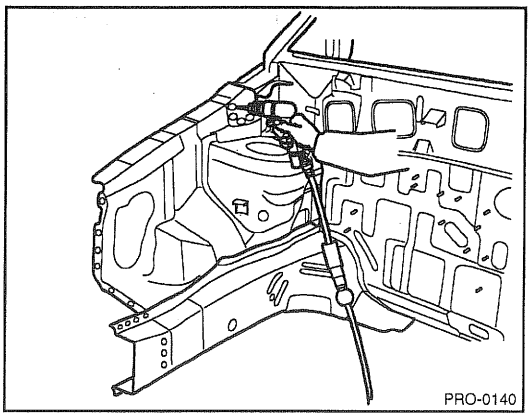

PRO-0120

3. Drill out all the spotwelds attaching the fender apron upper outer rear panel.

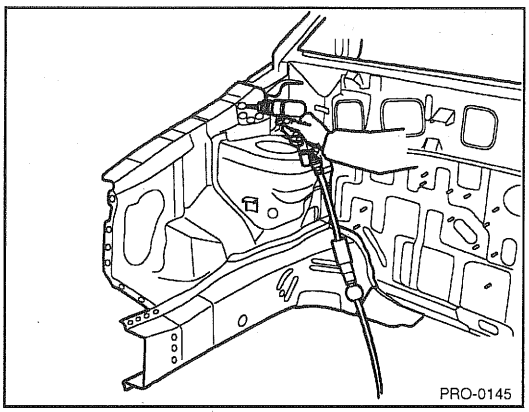
   NOTE
   If it is possible that the fender apron upper outer rear panel is reusable, be careful not to damage it while removing.


PRO-0130

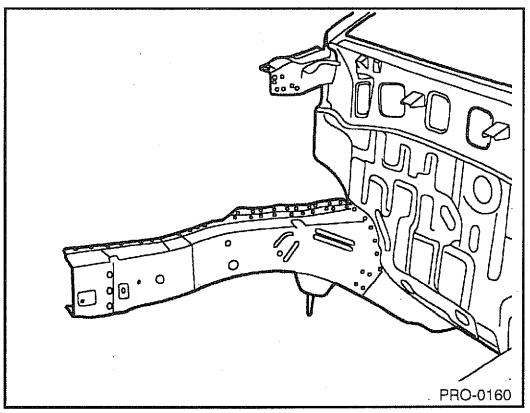
4. Using a spotweld cutter, drill out all the spotwelds attaching the fender apron to the dash panel and front side member.
5. Remove the fender apron panel.



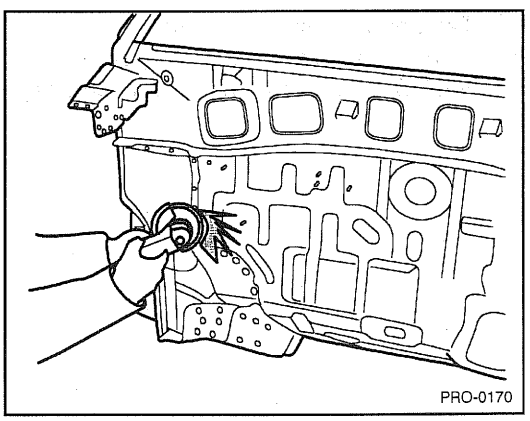
NOTE
If collision damage requires replacement of fender apron and front side member together, remove both of them at the same time.



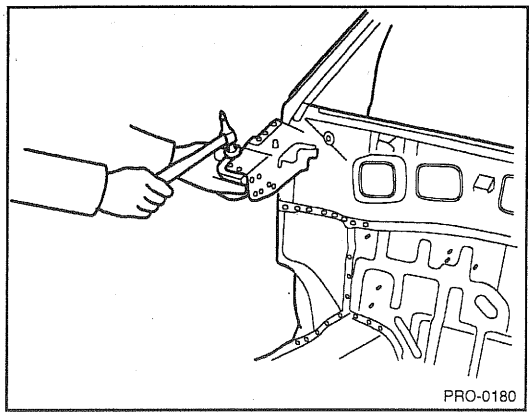
6. Using a spotweld cutter, remove the front side member by drilling out the spotwelds.



7. Grind and smooth any weld traces which might be left on the body surface by using an air grinder or similar tool, being careful not to damage any of the panels which is not to be replaced.

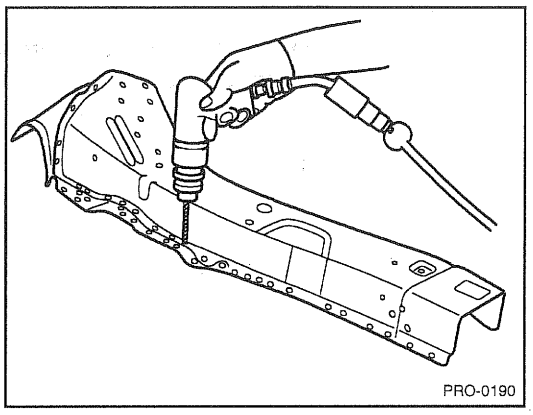


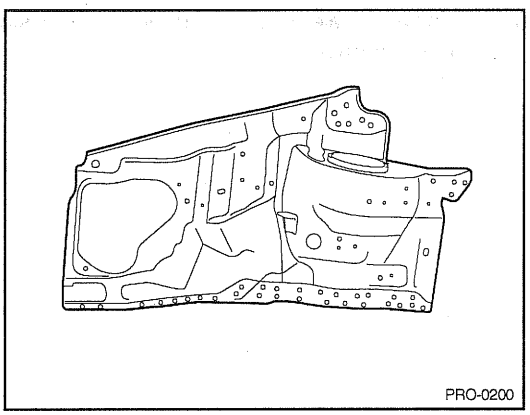
8. Using a hammer and dolly, correct any flanges that become bent or deformed when spotwelds are broken.


PRO-0180

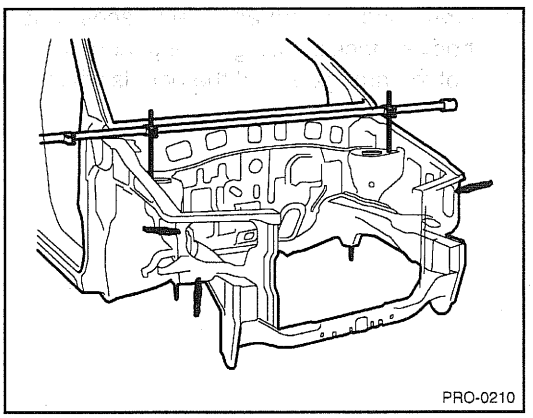
INSTALLATION

1. Drill 8 mm holes in the new fender apron and front side member for MIG plug welding.
2. Remove paint from both sides of all portions that are to be welded such as peripheries of MIG plug weld holes.

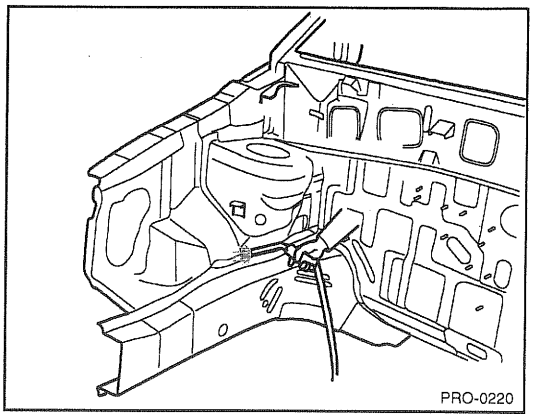

PRO-0190


PRO-0200

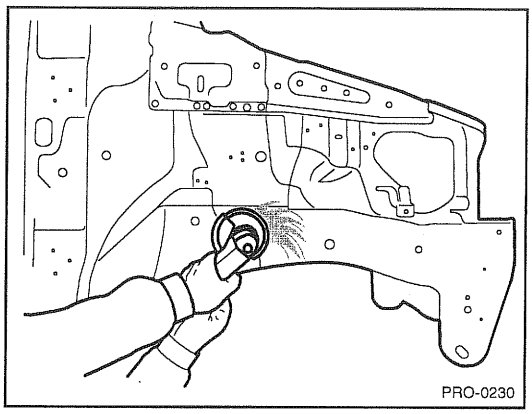
3. Temporarily install new parts in place.
4. Measure each measurement point (Refer to the BODY DIMENSIONS) and corrcet the installation position.


PRO-0210

5. MIG plug weld all holes

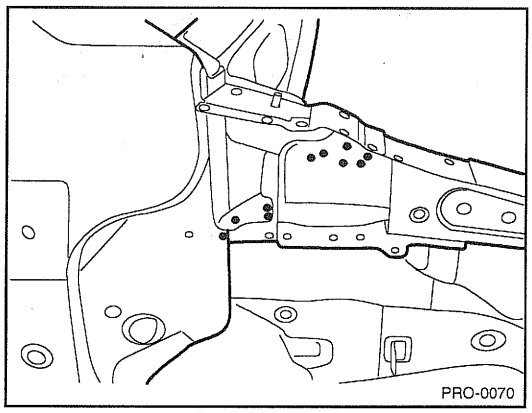


6. Clean MIG welds with a disc grinder.

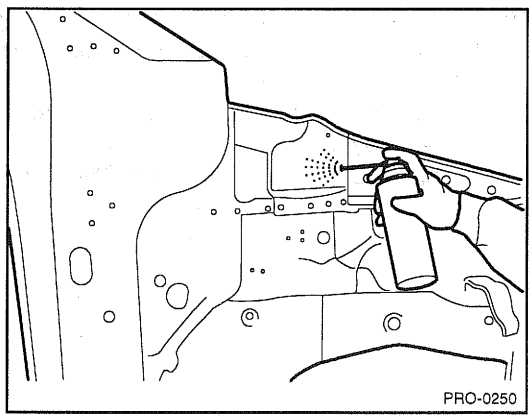


NOTE

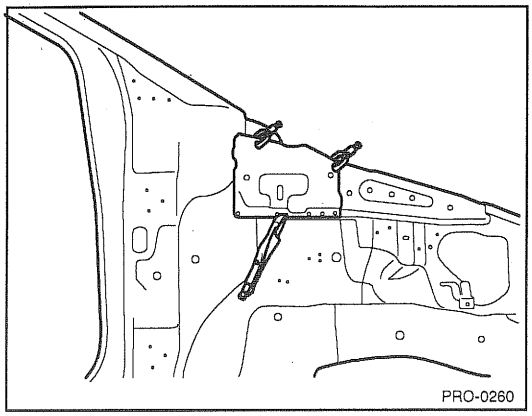
1. **Be careful not to grind welded portions too much.**
2. **The internal parts will be stronger if the weld traces are not ground.**



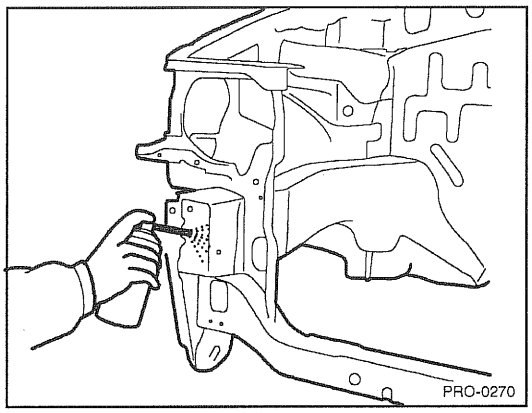
7. Before welding the fender apron upper outer rear panel, apply the two part epoxy primer and anti-corrosion agent to the interior of the fender apron panel.



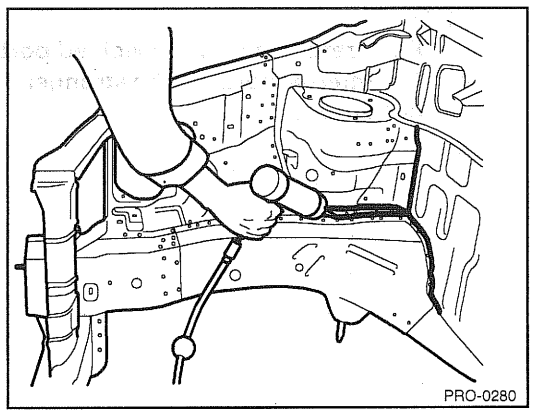
8. Install the fender apron upper outer rear panel in place.
9. MIG plug weld all holes.
10. Clean and prepare all welds, remove all residue.
11. Apply the two part epoxy primer to the interior of the each panel.



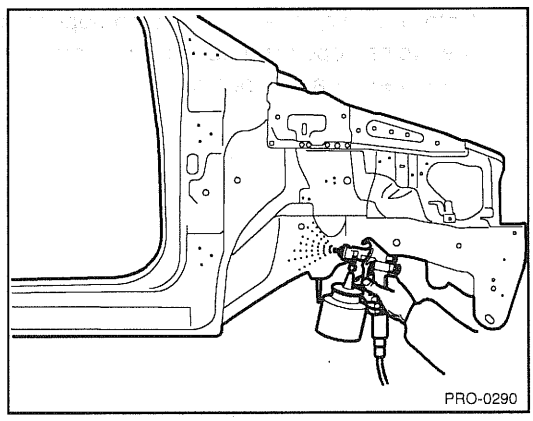
12. Apply an anti-corrosion agent as required (Refer to the CORROSION PROTECTION).
13. Prepare the exterior surfaces for priming using wax and grease remover.
14. Apply metal conditioner and water rinse.
15. Apply conversion coating and water rinse.
16. Apply the two-part epoxy primer.



17. Apply the correct seam sealer to all joints carefully (Refer to the BODY SEALING LOCATION).
18. Reprime over the seam sealer to complete the repair.

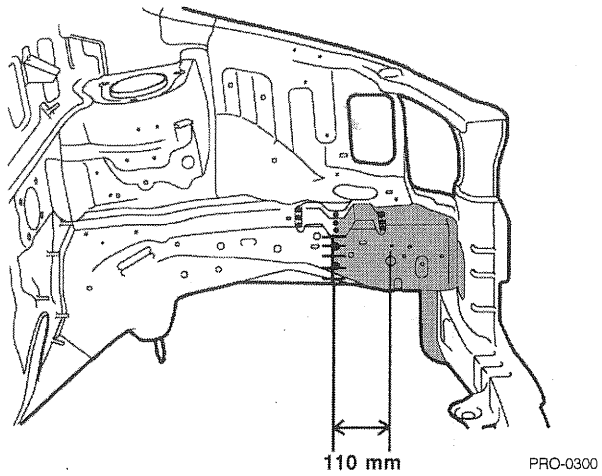


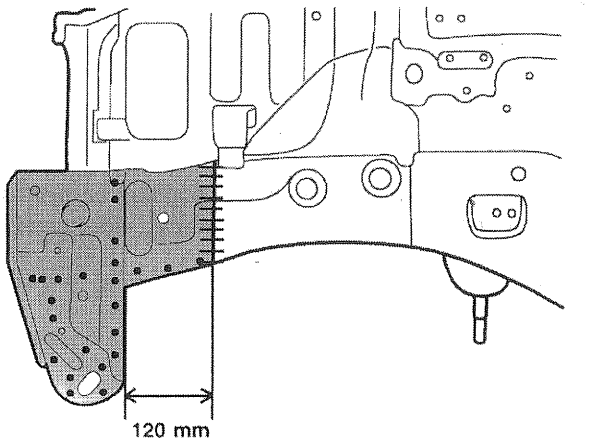
19. After completing body repairs, carefully apply under coating to the front sidemember and fender apron (Refer to the CORROSION PROTECTION).
20. In order to improve corrosion resistance, if necessary, apply an under body anti-corrosion agent to the panel which is repaired or replaced (Refer to the CORROSION PROTECTION).



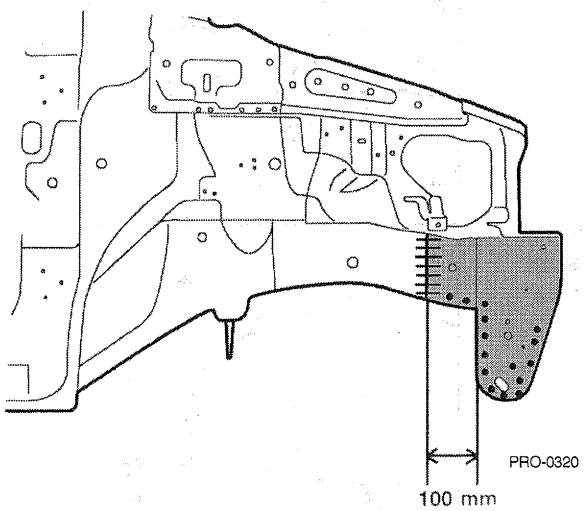
FRONT SIDE MEMBER

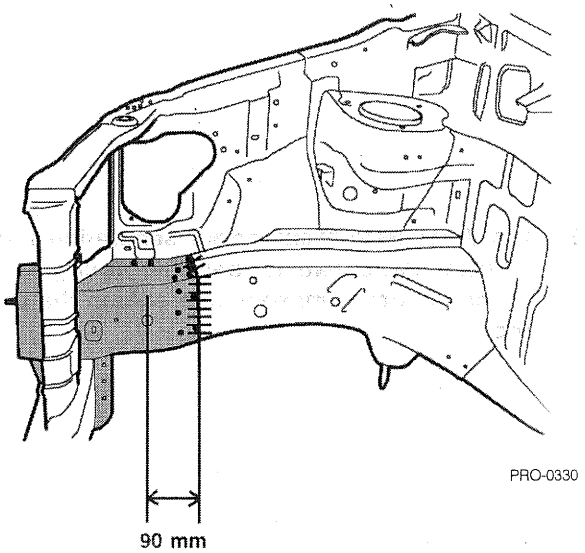
WELDLING POINTS





● MIG plug welding
⤫⤫ MIG lap welding



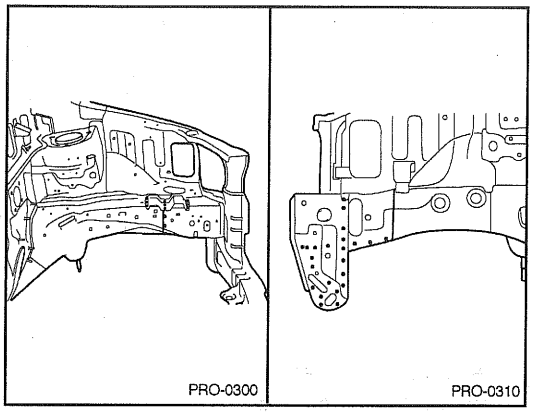


● MIG plug welding
⤫⤫ MIG lap welding

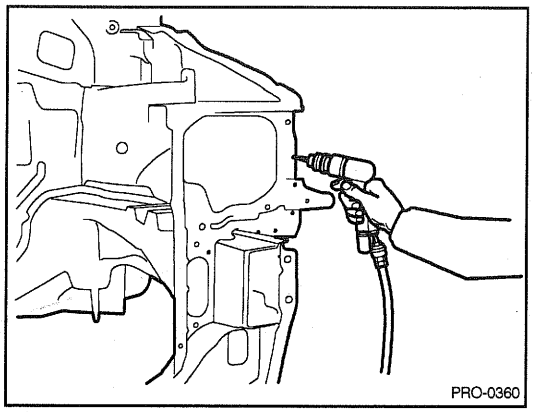
REMOVAL

NOTE
This procedure is to be used only for repair of minor damage to the front side member and when it is impossible to staighten the damaged side member. The following procedure illustrates a repair for the front left side member.
The procedure may also be applied to the front right side member.

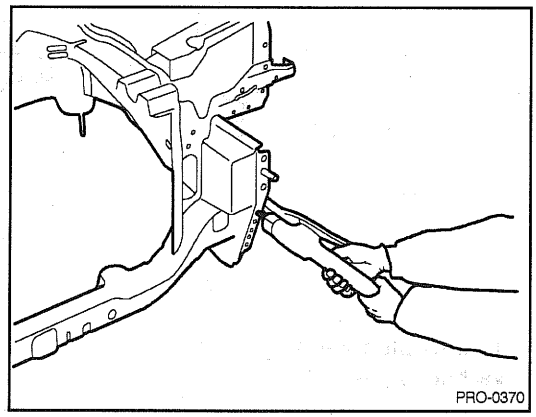
1. Measure and mark the vertical cutlines on front side member outer and inner from rear edge of front side member gusset.



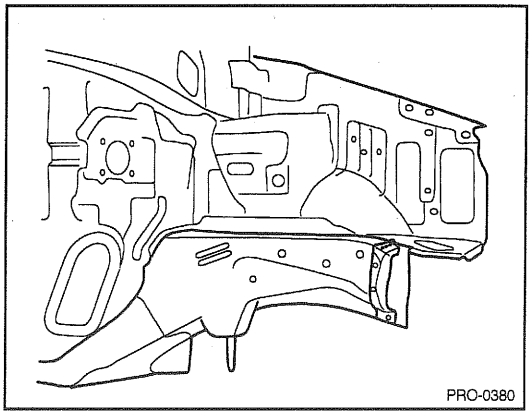
2. Drill out all the spotwelds to separate radiator support panel from front side member.
   NOTE
   1. **When spotwelded portions are not apparant, remove paint with a rotary wire braush.**



   2. **In order to perform cutting and separation of spotwelded points use a spot weld cutter which is larger than the size of the nugget to make a hole only in the panels to be replaced.**

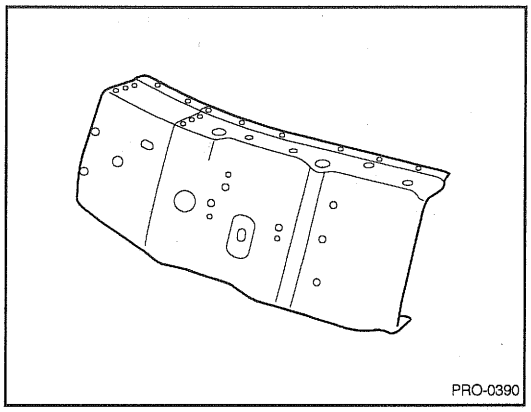


3. Cut through the front side member inner and outer at cutlines.
   NOTE
   Take care not to cut through front side member inner reinforcement.
4. Prepare all surfaces to be welded.

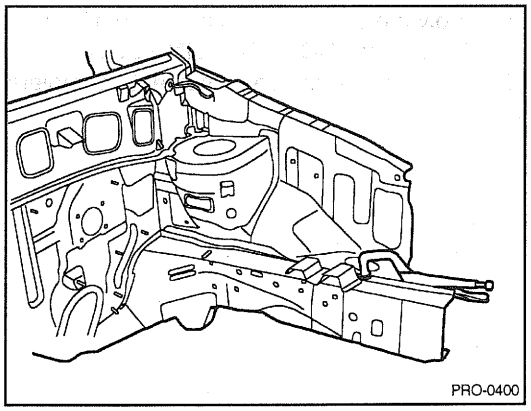

PRO-0380

INSTALLATION

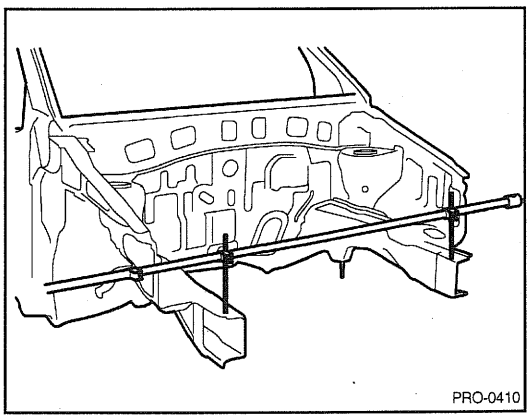
1. Transcribe the front side member inner and outer cutline to the new front member, cut to length and chamfer butt end to improve weld surface.
2. Drill 8mm holes in new front side member for MIG plug welding.


PRO-0390

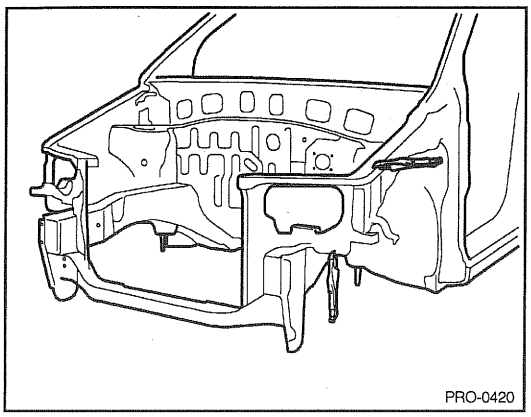
3. Fit and clamp the front side member inner and outer in place.
4. MIG plug weld all holes and MIG butt weld all seams.


PRO-0400

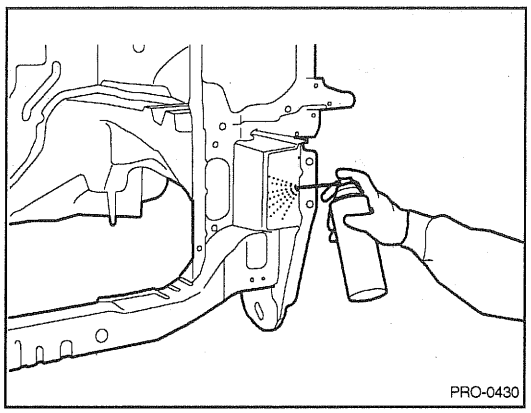
5. Measure each measurement point(Refer to the BODY DIMENSIONS) and correct the installation position.


PRO-0410

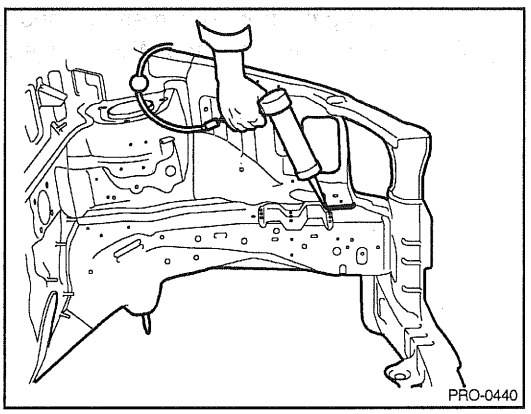
6. Fit and clamp the radiator support panel in place.
7. MIG plug weld all holes.
8. Clean and prepare all welds, remove all residue.
9. Apply the two-part epoxy primer to the interior of the front side member.



10. Apply an anti-corrotion agent as required (Refer to the CORROSION RPOTECTION).
11. Prepare the exterior surfaces for priming using wax and grease remover.
12. Apply metal conditioner and water rinse.
13. Apply conversion coating and water rinse.
14. Apply the two-part epoxy primer.

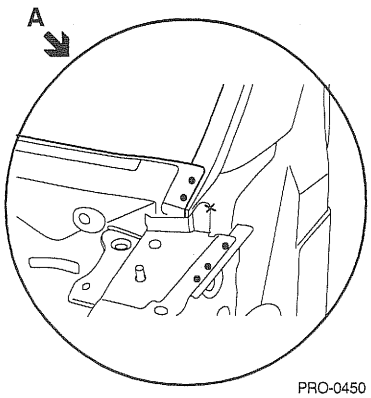


15. Apply the correct seam selaer to all joints carefully (Refer to the BODY SEALING LOCATIONS).
16. Reprime over the seam sealer to complete the repair.

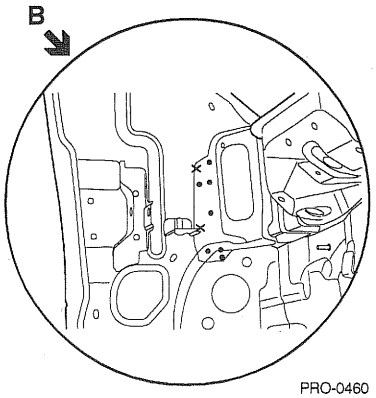


FRONT PILLAR

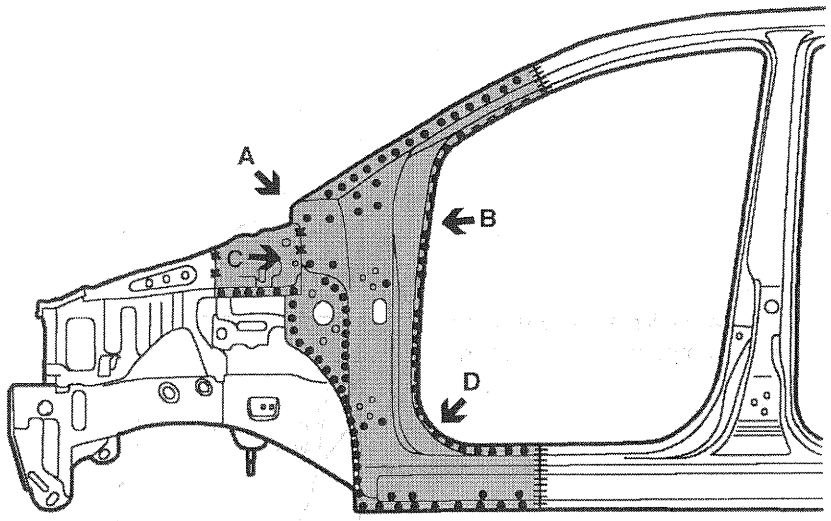
WELDLING POINTS



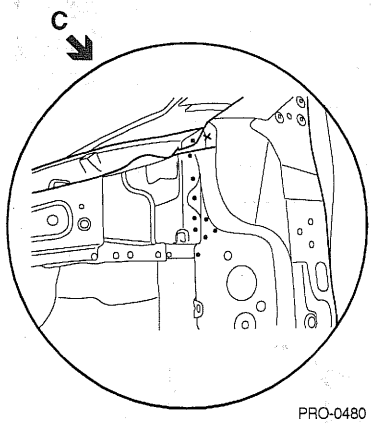
PRO-0450



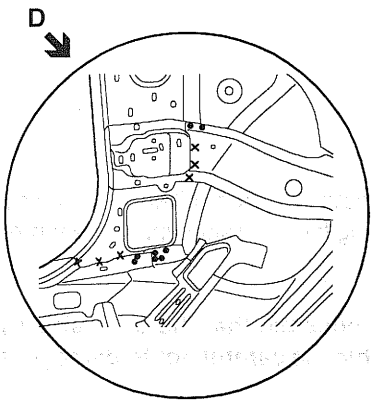
PRO-0460



PRO-0470



PRO-0480

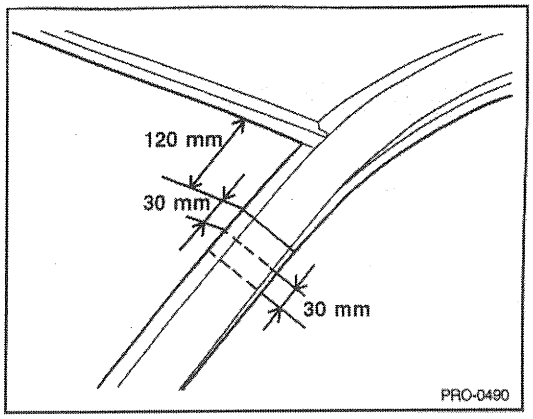


PRO-0481

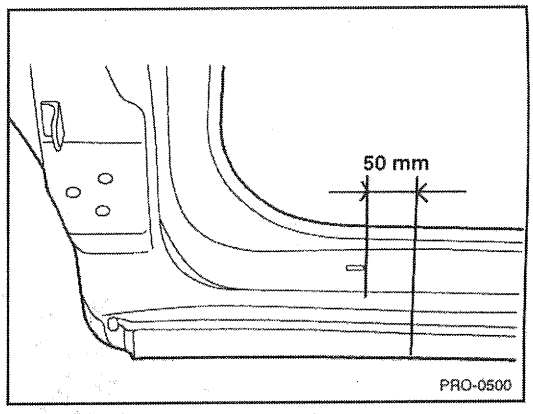
- ● MIG plug welding
- ⫴ MIG butt welding
- ⤫ MIG lap welding

REMOVAL

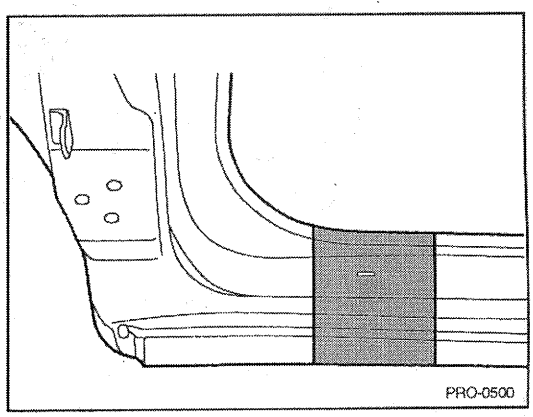
1. Measure and mark the each cutline on the front pillar outer panel at 120mm from the roof panel end line to remove the front pillar outer panel in the illustration.



2. Measure and mark the cutline on front side sill outer panel as shown in the illustration.

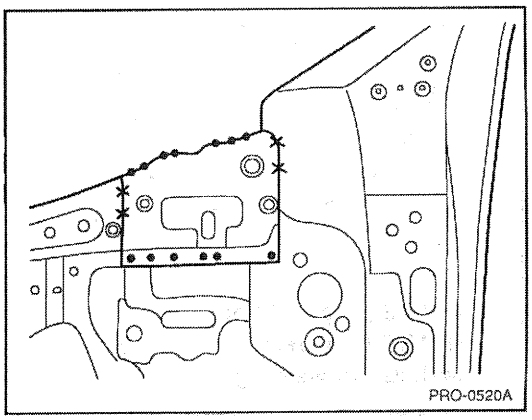


3. Depending on the extend of damaged area, it may be possible to determine the cutting range within indicated in the illustration.

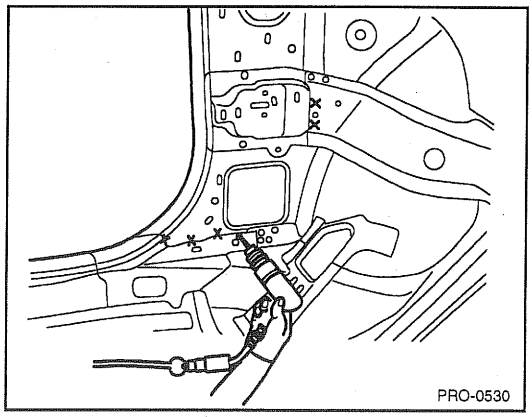


4. To remove the front pillar, grind away and drill out all welds attaching the cowl side upper outer member as illustration.

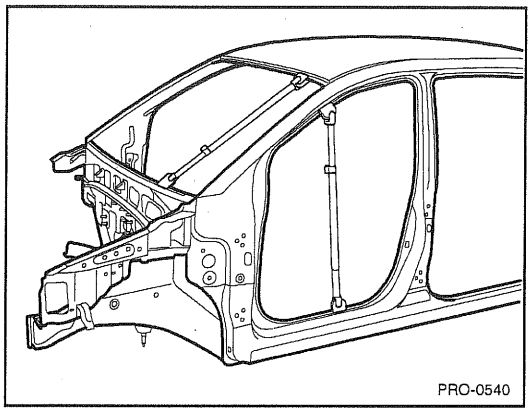
   NOTE
   If it is possible that the cowl side upper outer member is reusable, be careful not to damage it while removing.



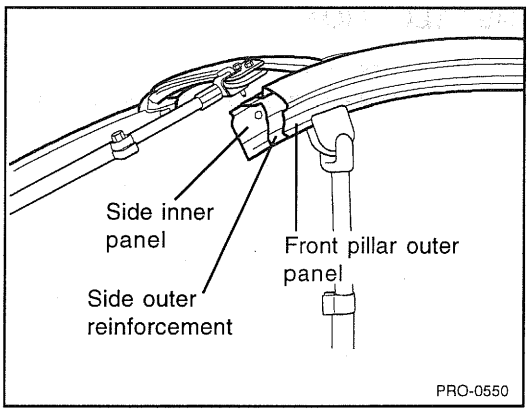
5. Drill out all welds attaching the front inner pillar to dash and cowl top outer, dash crossmember.
6. Remove spotwelds and lap welds attaching cowl crossmember bar mounting upper bracket to remove front pillar.



7. Before cutting front pillar, be sure to support roof panel.

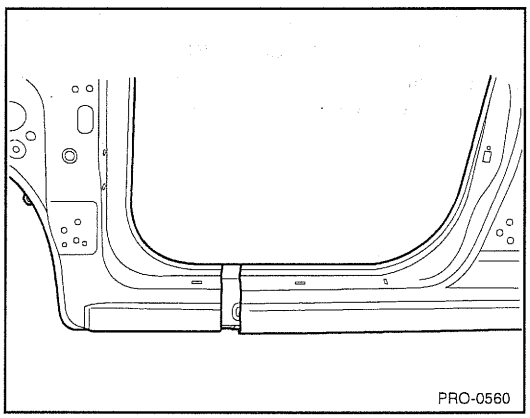


8. Cut the front pillar through each cutline, taking care not to damage the other panel as illustration.

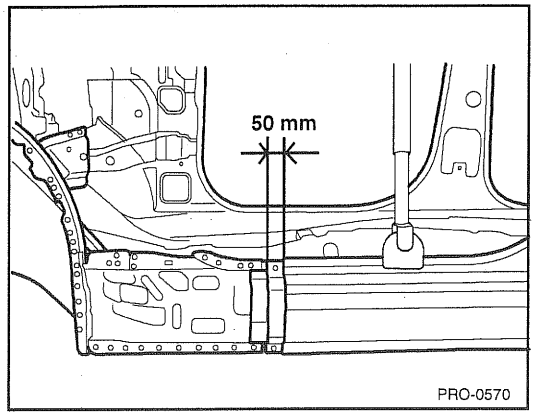


9. Before cutting the front side sill outer panel, make a rough cut the front side sill outer panel only.

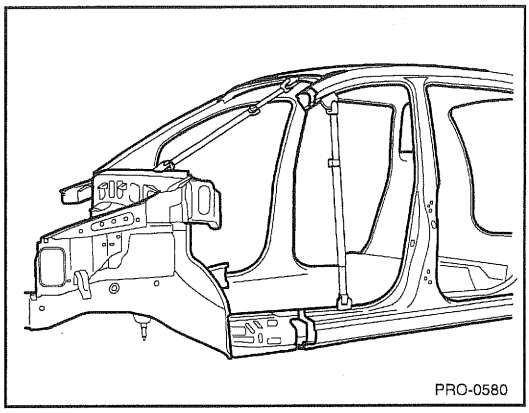
NOTE
When cutting the front side sill outer panel, be careful not to cut side outer reinforcement.



10. Cut the side outer reinforcement as illustration.
11. Cut the front side sill outer panel vertical cutline and remove the front pillar.

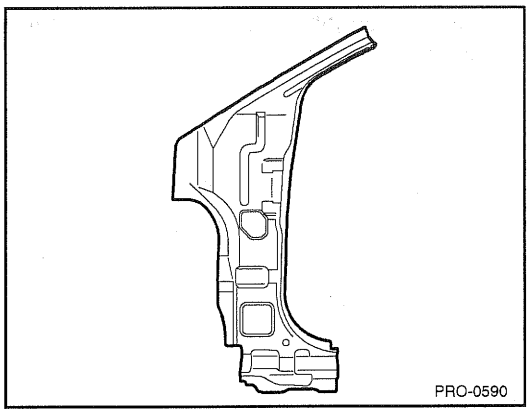


12. Straighten all flanges as necessary, prepare all surfaces to be welded.

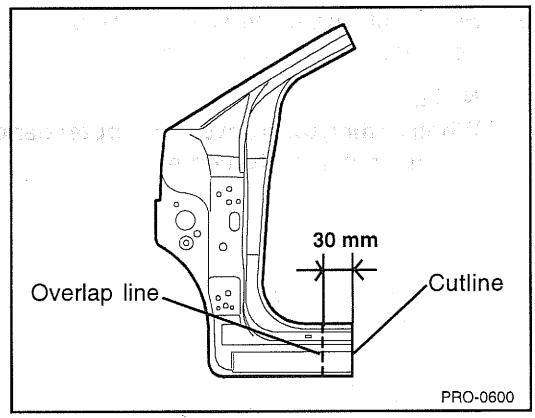


INSTALLATION

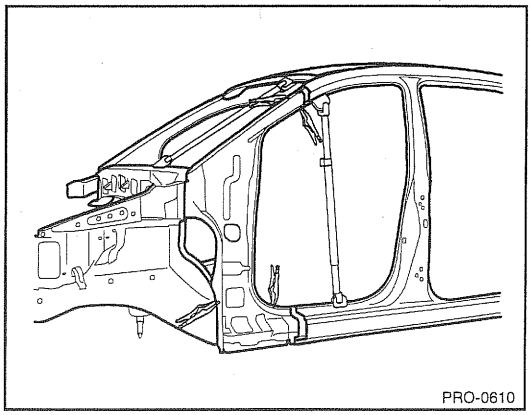
1. Transcribe the cutline to the new front inner panel, cut to length and chamfer butt end to improve weld surface.



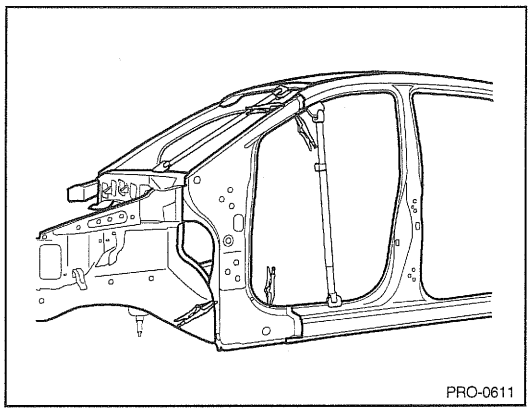
2. Transcribe the cutline to the new front side sill outer panel and new front pillar, adding 30mm overlap to end and cut to length.
3. Drill 8mm holes along outer panel flanges in production location for attachment to other panels.



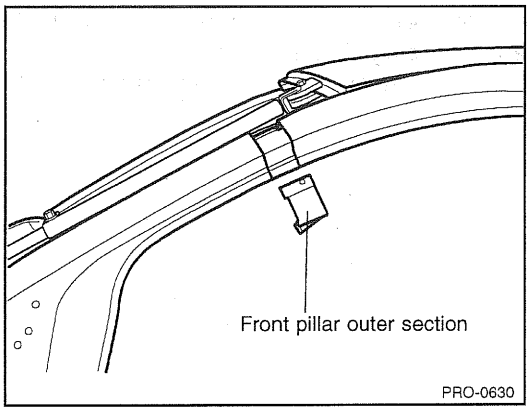
4. Transcribe the cutline to the new side inner panel, adding 30mm overlap to end and cut to length.
5. Drill 8mm holes in the side inner panel for MIG plug welding.
6. Fit and clamp the new side inner panel in place for welding.
7. MIG plug weld all holes and MIG butt weld the seams.


PRO-0610

8. Temporarily install side inner panel and side outer reinforcement in place.
9. Measure and each measurement point (Refer to the BODY DIMENSIONS) and correct the installation position.
10. If necessary, make temporary welds, and then check to confirm that the closing and fit for windshield glass, door and fender are correct.

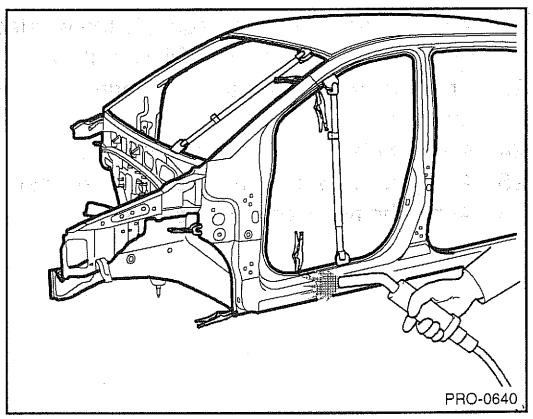

PRO-0611

11. MIG butt weld front pillar outer panel and front side outer panel seams.
12. Reattach the cut away front pillar outer panel section, then MIG butt weld.



PRO-0630

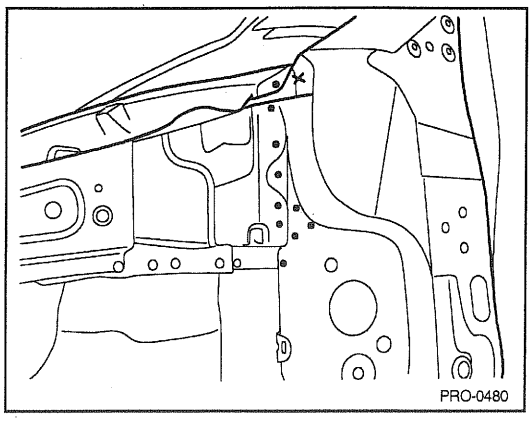
13. MIG plug weld all holes and MIG butt weld all seams in the front side sill outer panel.
14. Clean and prepare all welds, removing all residue.
15. Apply body filler to joints and sand as needed.
16. Apply the two-part epoxy primer to the interior of the front pillar.


PRO-0640

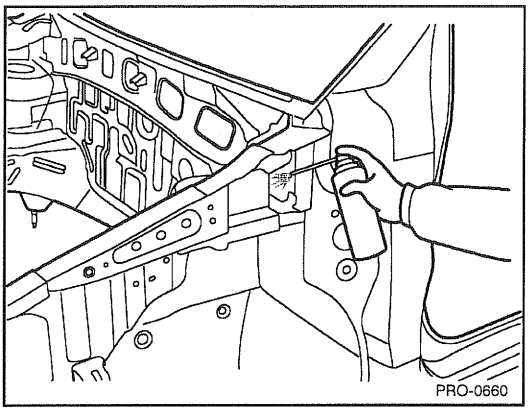
17. Clean all welds with a disc grinder.

NOTE

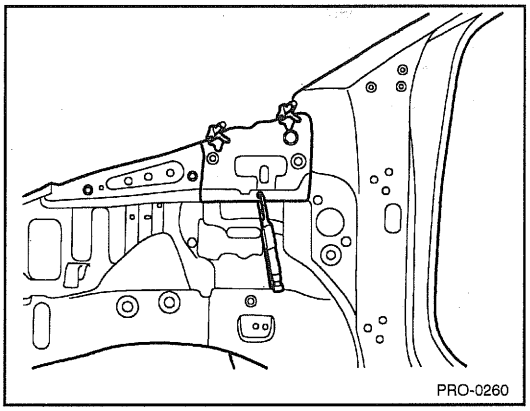
1. **Be careful not to grind welded portions too much.**
2. **The internal parts will be stronger if the weld traces are not ground.**



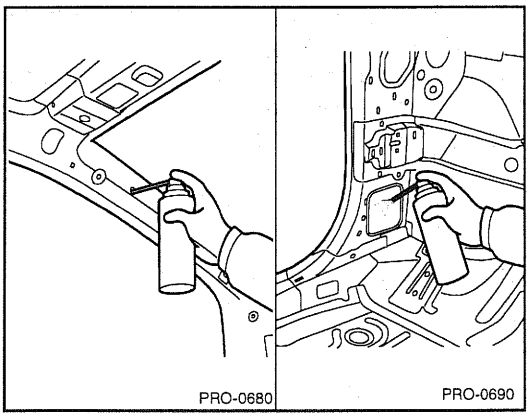
18. Before welding the cowl side upper outer member, apply the two part epoxy primer and anti-corrosion agent to the interior of the fender apron panel.



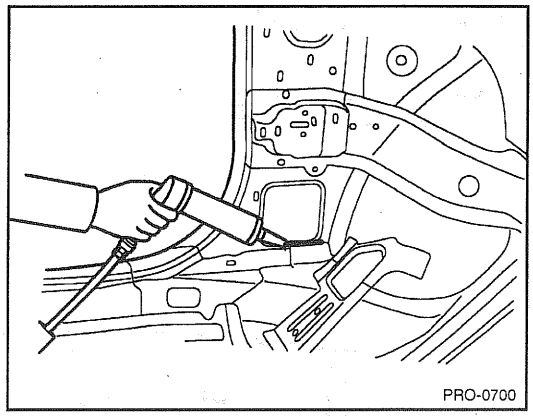
19. Install the cowl side upper outer member in place.
20. MIG plug weld all holes.
21. Clean and prepare all welds, removing all residue.



22. Apply an anti-corrosion agent to the welded parts and inside of front pillar (Refer to the CORROSION PROTECTION).
23. Prepare exterior surfaces for priming, using wax and grease remover.
24. Apply metal conditioner and water rinse.
25. Apply conversion coating and water rinse.
26. Apply the two-part epoxy primer.

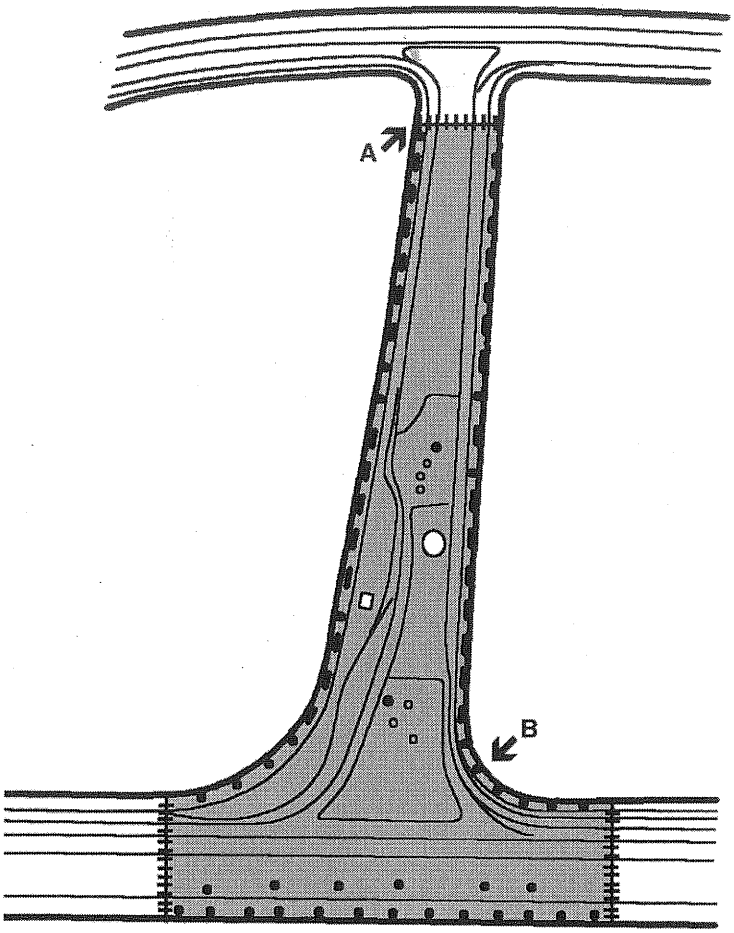


27. Apply the correct seam sealer to all joints carefully (Refer to the BODY SEALING LOCATIONS).
28. Reprime over the seam sealer to complete the repair.

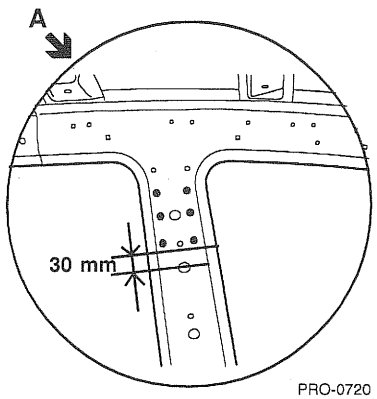


CENTER PILLAR

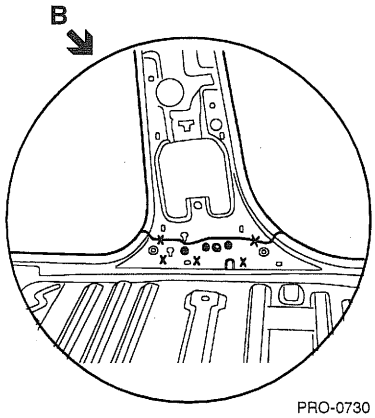
WELDLING POINTS



PRO-0710



PRO-0720

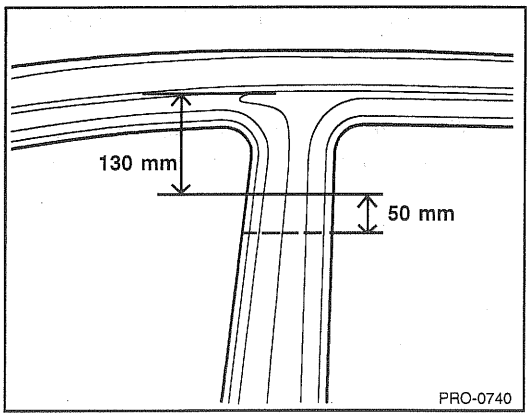


PRO-0730

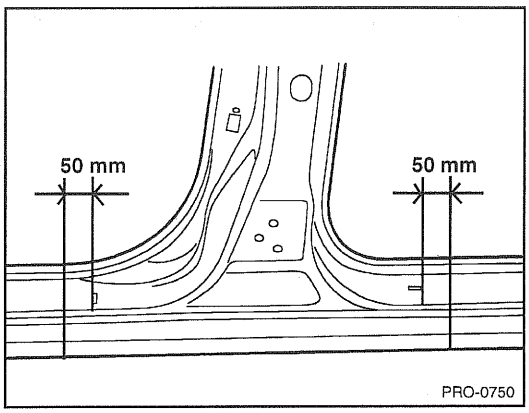
● MIG plug welding
⫼ MIG butt welding
⫻ MIG lap welding

REMOVAL

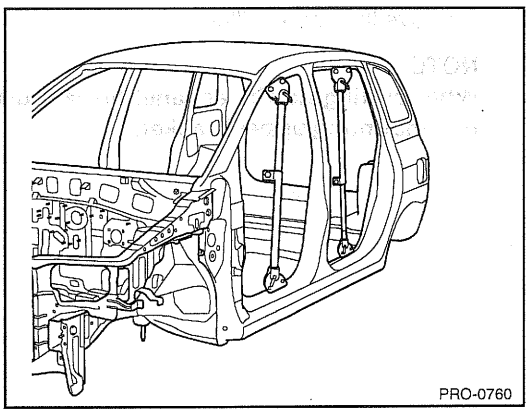
1. Measure and mark the horizontal cutline on center outer pillar as illustration.



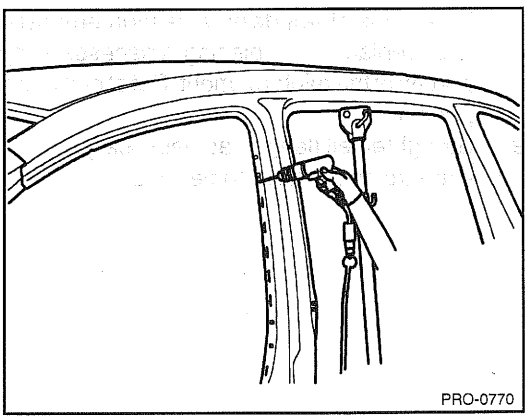
2. Measure and mark the vertical cutline on side sill outer panel 50mm from the front door scuff trim mounting hole and rear door scuff trim mounting hole.



3. Before cutting center pillar, be sure to support roof panel.

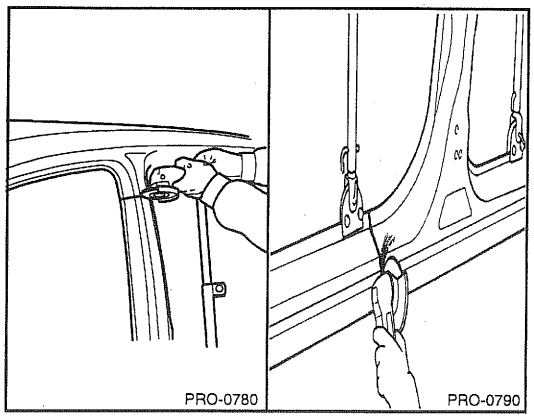


4. Drill out all spotwelds and laser welding attaching the center outer pillar to the body to remove center outer pillar.

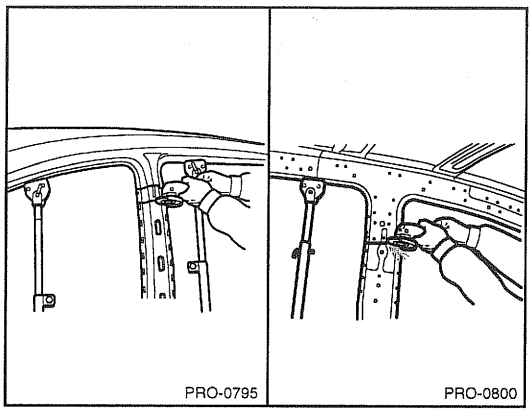


5. Cut through center outer pillar and side sill outer panel at cutlines.

   NOTE
   When cutting side sill outer panel take care not to cut through mating flanges or side outer reinforcement.

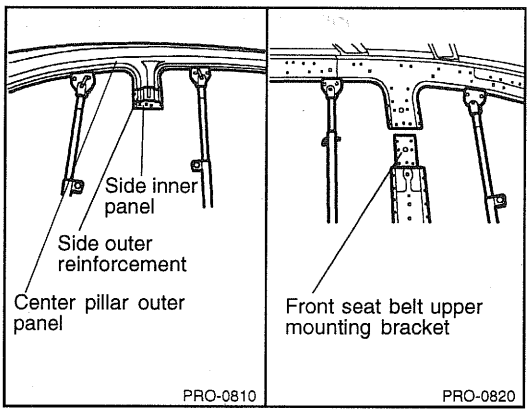


6. After cutting side outer panel (center outer pillar & side sill), cut the side outer reinforcement and side inner panel.

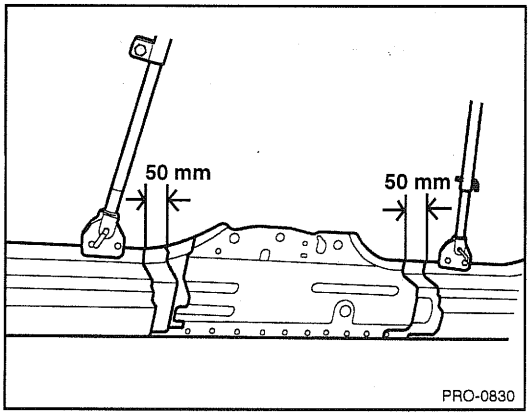


7. Remove the center pillar.

   NOTE
   When cutting side inner panel, be careful not to cut front seat belt mounting upper bracket.

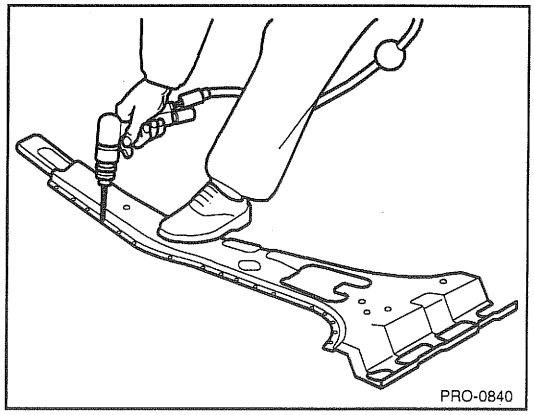


8. Determine if the side outer reinforcement is damaged and needs to be replaced. If replacing is necessary, mark out the damaged portion of the reinforcement. Cut at cutlines and remove damaged portion.
9. Straighten all flanges as necessary.
10. Prepare all surfaces to be welded.

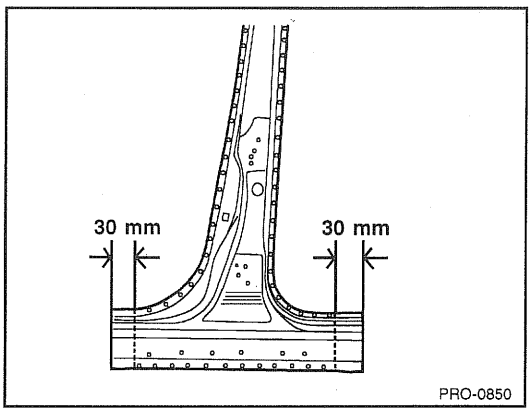


INSTALLATION

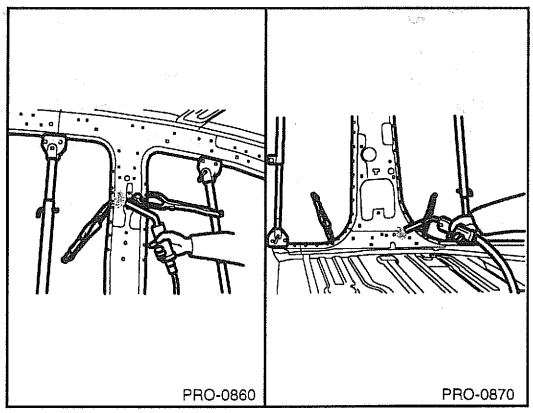
1. In order to install side inner panel drill out all spotwelds attaching the roof side inner rail to side inner panel to separate them.

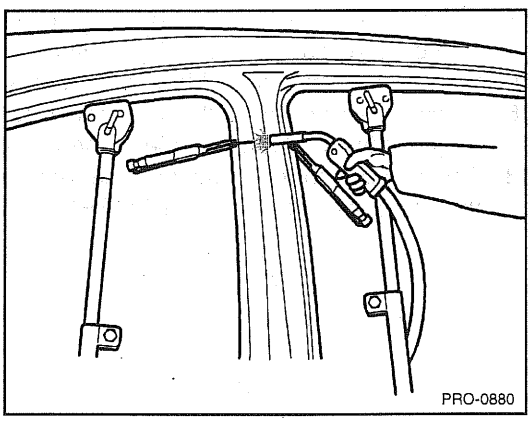


2. Transcribe the center outer pillar cutlines to the new center outer pillar, adding 30mm overlap at center lower pillar ends.
3. Cut and chamfer butt end to improve weld surface.
4. Drill 8mm holes in overlap area and along outer panel flanges.

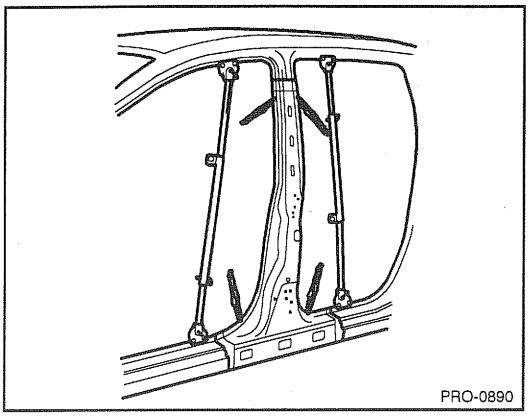


5. MIG butt weld all seams in side inner panel and side outer reinforcement and center outer pillar panel as illustration.



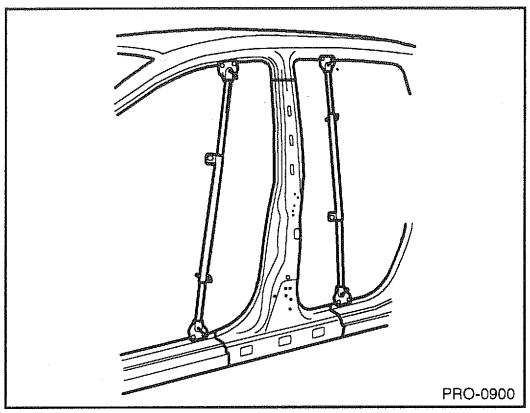


6. Transcribe the cutline dimensions to the new side outer reinforcement, adding 30mm overlap to each end and cut to length.
7. Drill 8mm holes in overlap areas on each end of new side outer reinforcement and clamp.

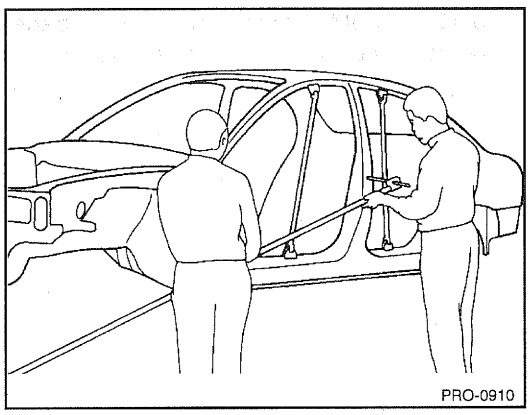

PRO-0890

8. MIG plug weld all holes MIG butt weld seams.

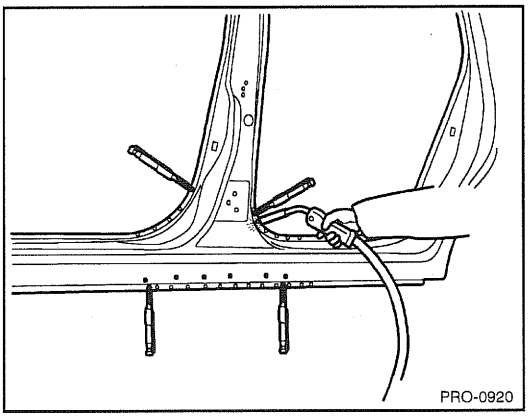
NOTE
The reinforcement will be stronger if the weld traces are not ground.


PRO-0900

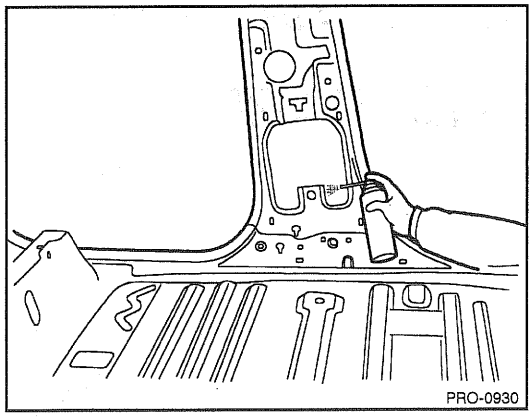
9. Temporarily install new center outer panel in place.
10. Screw center pillar in place.
11. Measure and each measurement point (Refer to the BODY DIMENSIONS) and correct the installation position.
12. Check the fit of the front and rear doors.

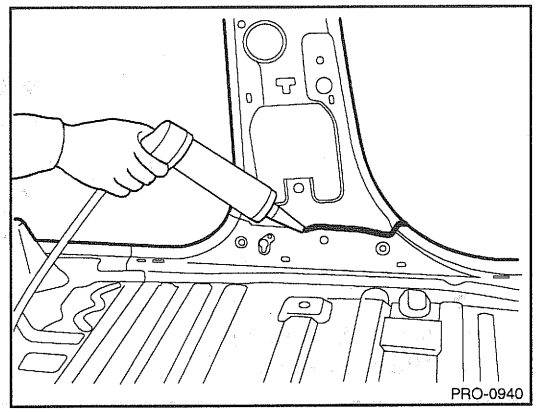

PRO-0910

13. Reinstall center outer pillar and screw in place.
14. MIG plug weld all holes and MIG butt weld all seams.
15. Clean and prepare all welds, and remove all residue.
16. Apply body filler to the outer center pillar seam. Sand and finish.
17. Apply the two-part epoxy primer to the interior of the center pillar.
18. Apply an anti-corrosion agent to the welded parts and interior of the center pillar (Refer to the CORROSION PROTECTION).


PRO-0920

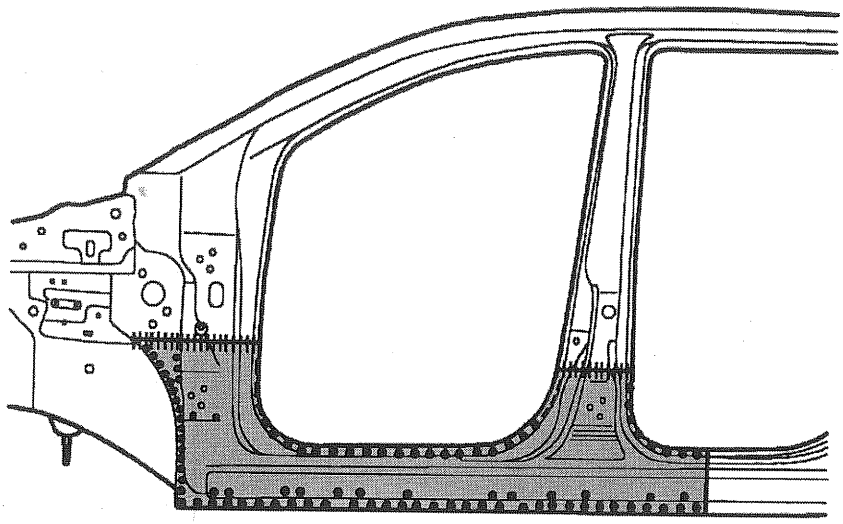
19. Prepare exterior surfaces for priming, using wax and grease remover.
20. Apply metal conditioner and water rinse.
21. Apply conversion coating and water rinse.
22. Apply the two-part epoxy primer.
23. Apply the correct seam sealer to all joints carefully (Refer to the BODY SEALING LOCATIONS).
24. Reprime over the seam sealer to complete the repair.


PRO-0930


PRO-0940

SIDE SILL (ASSEMBLY)

WELDLING POINTS

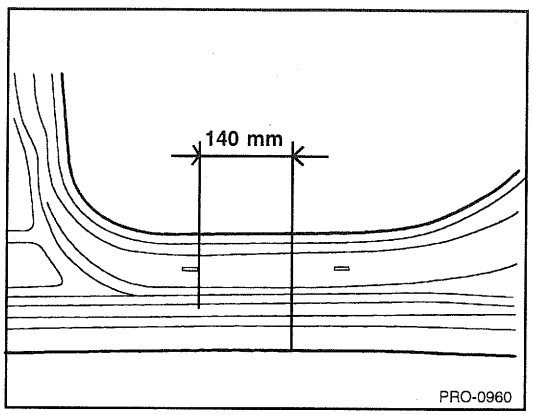


● MIG plug welding
MIG butt welding
MIG lap welding

PRO-0950A

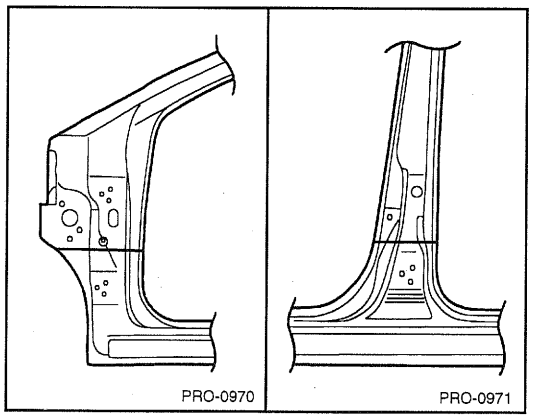
REMOVAL

1. Measure and mark vertical cutline from the rear door scuff trim mounting hole on the rear side sill outer panel.



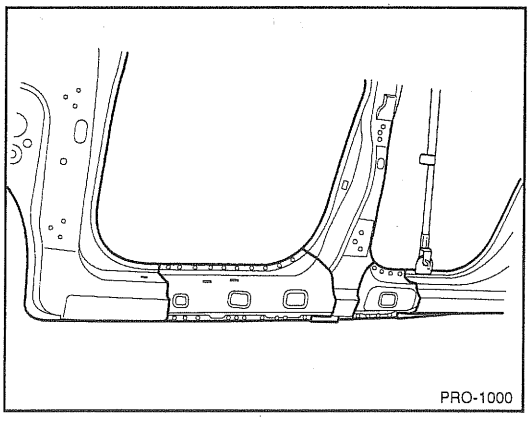
PRO-0960

2. At the front and center pillar, measure and mark horizontal cutlines from the door hinge mounting hole on the side outer panel as illustration.

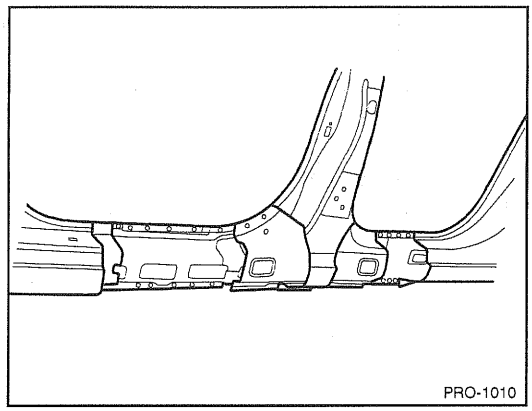


PRO-0970 PRO-0971

3. Cut the side sill outer panel along cutlines. Be careful not to cut mating flanges.
4. Drill out all spotwelds, attaching the side sill outer panel to side outer reinforcement.
5. Remove the side sill outer panel.

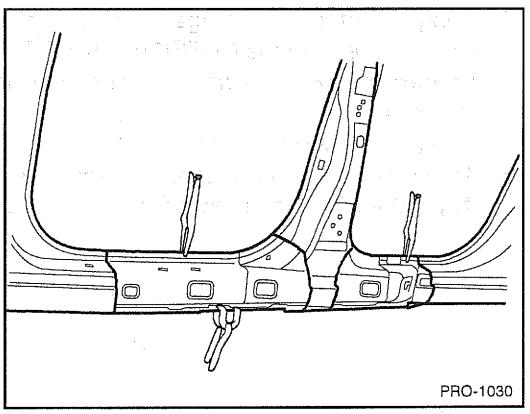

PRO-1000

6. Determine if the side outer reinforcement is damaged and needs to be replaced, measure cutline on reinforcement as illustration.
7. Cut side outer reinforcement along the cutline.
8. Drill out spotwelds attaching the side sill outer to the body and remove side sill outer.
9. Prepare all surfaces to be welded.


PRO-1010

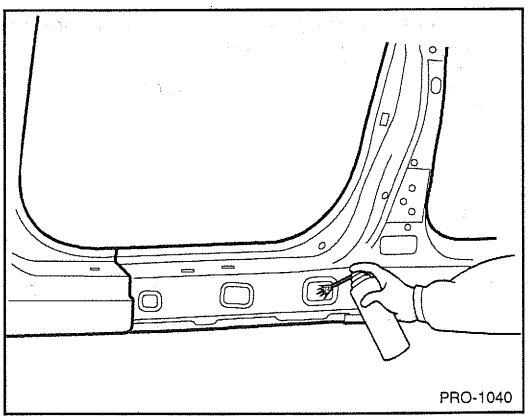
INSTALLATION

1. Transcribe cutline dimension to side sill outer panel, adding 30mm overlap to rear end and cut to length.
2. Drill 8mm holes in overlap area on rear end and along front flange.
3. Fit and clamp the side outer reinforcement in place.
4. MIG plug weld all holes and MIG butt weld seams.

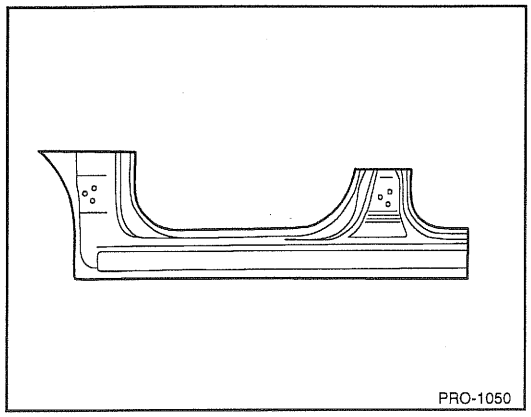

PRO-1030

5. Before welding the side sill outer panel, apply the two-part epoxy primer and anti-corrosion agent to the welded parts.

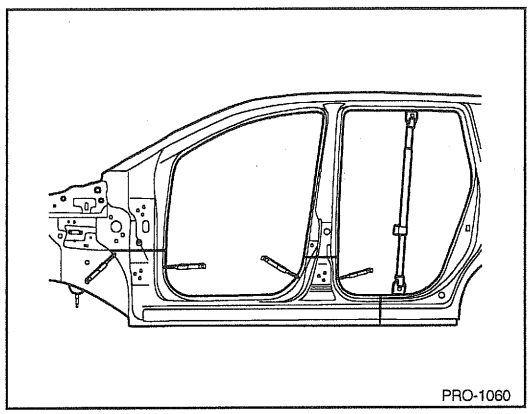
NOTE
The reinforcement will be stronger if the weld traces are not ground.


PRO-1040

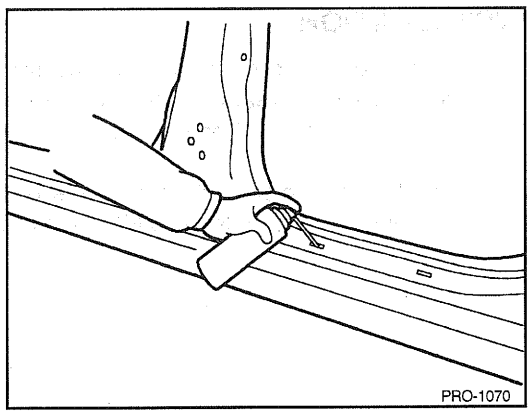
6. Using service panel for replacement of side sill outer panel, drill 8mm holes in overlap areas and along upper and lower flanges.



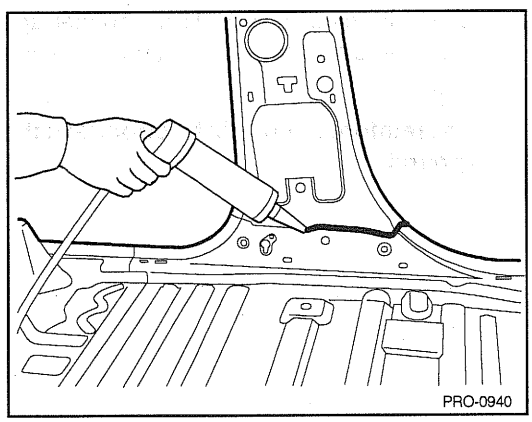
7. Crimp flanges on the remaining portion of the side sill outer panel at all joint for overlap.
8. Fit and clamp the side sill outer panel in place.
9. MIG plug weld all holes and MIG butt weld seams.
10. Clean and prepare all welds and remove all residue.
11. Apply body filler to the side sill outer seams.
12. Apply the two-part epoxy primer to the interior of the side sill.



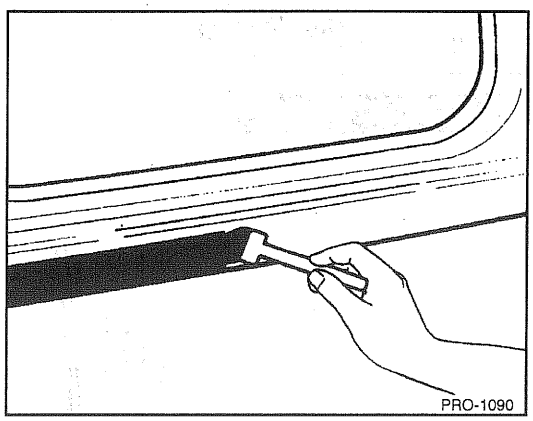
13. Apply an anti-corrosion agent to welded parts and interior of the side sill (Refer to the CORROSION PROTECTION).
14. Prepare the exterior surfaces for priming, using wax and grease remover.
15. Apply metal conditioner and water rinse.
16. Apply conversion coating and water rinse.
17. Apply the two-part epoxy primer.



18. Apply the correct seam sealer to all joints (Refer to the BODY SEALING LOCATIONS).
19. Reprime over the seam sealer.

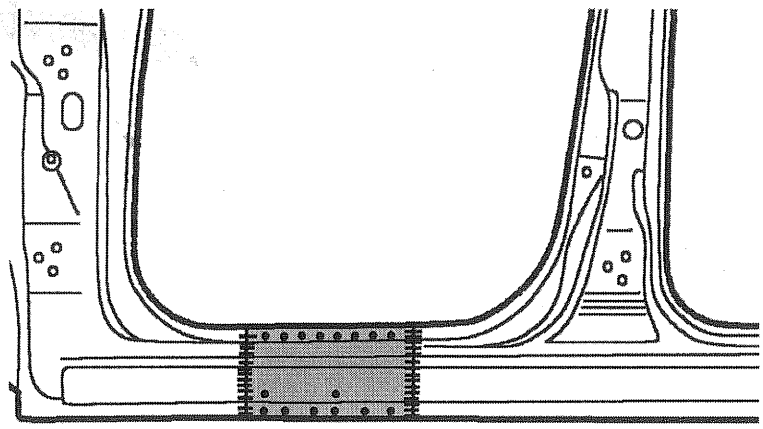


20. Apply the anti-corrosion primer to the side sill outer panel to complete the repair (Refer to the CORROSION PROTECTION).



SIDE SILL (PARTIAL)

WELDLING POINTS

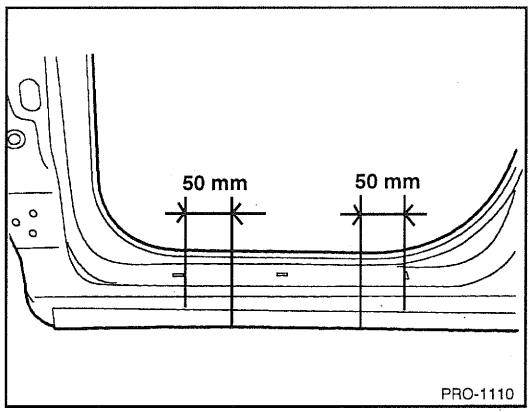


● MIG plug welding
MIG butt welding
MIG lap welding

PRO-0950B

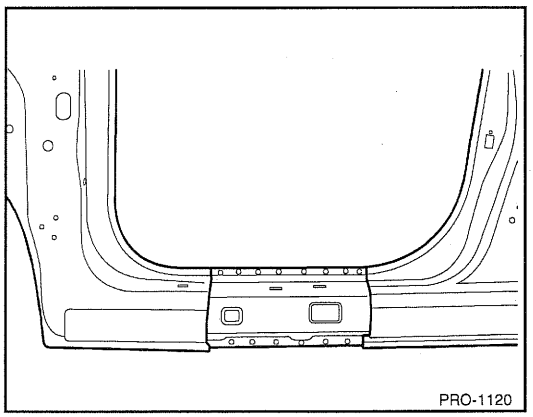
REMOVAL

1. Depending on the extent of damage, mark out the damaged portion of the side sill.



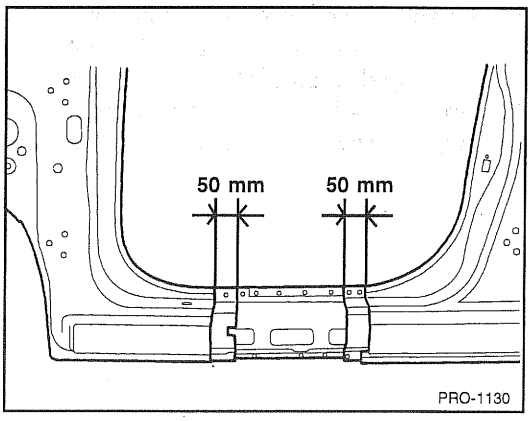
PRO-1110

2. Drill out the spotwelds in upper and lower flanges of side sill between cutlines to remove side sill outer panel and cut the damaged portion of the side sill at the cutlines.



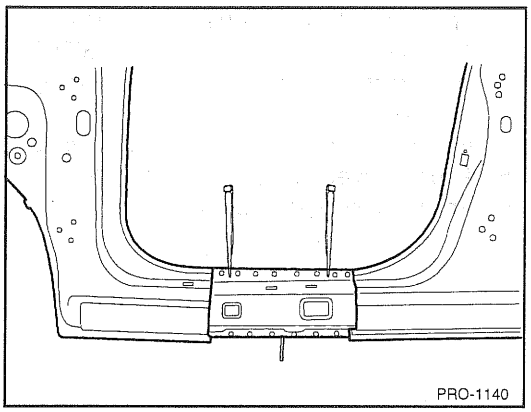
PRO-1120

3. Determine if the side outer reinforcement is damaged and needs to be replaced. If replacing is necessary, mark out the damaged portion of the side outer reinforcement.
   Cut at cutlines and remove the damaged portion.
4. Prepare all surfaces to be welded.



INSTALLATION

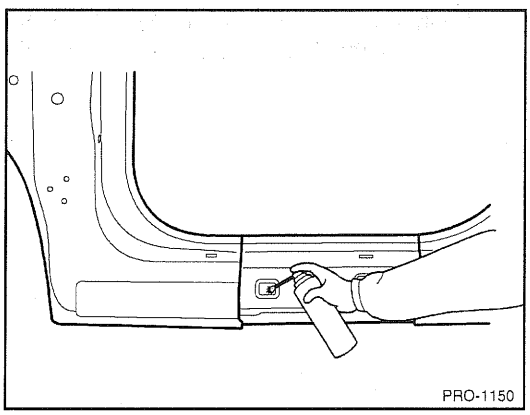
1. Transcribe the cutline to the new side outer reinforcement, adding 30 mm overlap to each end and cut to length.
2. Drill 8 mm holes in overlap areas on each end and upper flange of new side outer reinforcement and clamp.



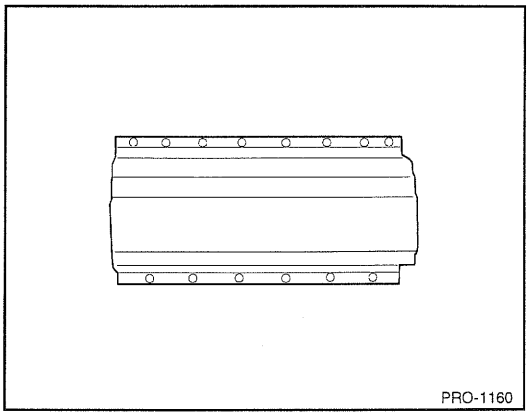
3. MIG plug weld all holes and MIG butt weld all seams.

   NOTE
   The reinforcement will be stronger if the weld traces are not ground.

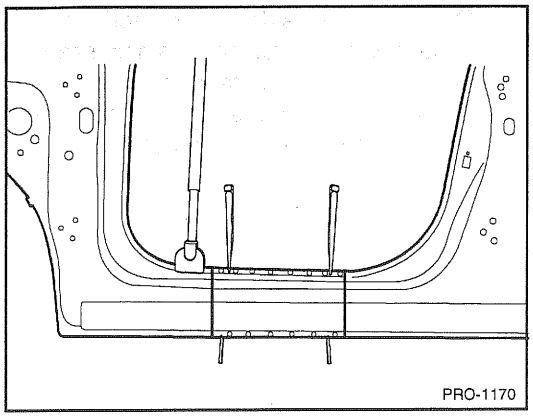
4. Before welding the side sill outer panel, apply the two part epoxy primer and anti-corrosion agent to the welded parts.



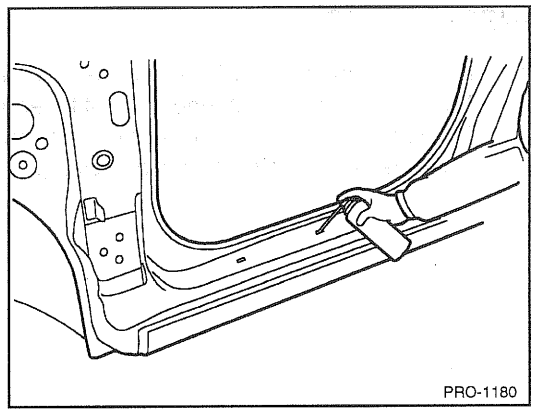
5. Transcribe the side sill outer panel cutline to the new side sill, adding 30 mm overlap to each end, cut and chamfer butt end to improve weld surface.
6. Drill 8 mm holes in overlap areas on each end and along upper and lower flanges of the new side sill outer panel for MIG plug welding.



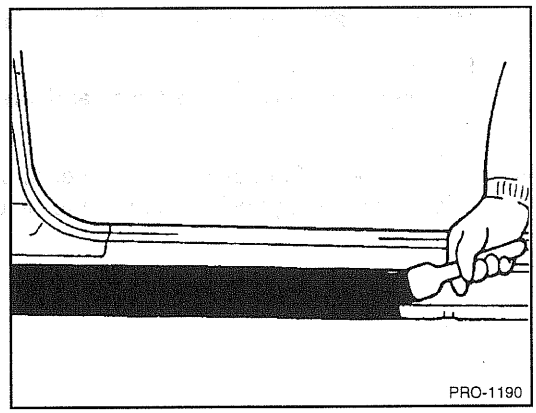
7. Fit and clamp the side sill in place.
8. MIG plug weld all holes and MIG butt weld seams.
9. Clean and prepare all welds, removing all residue.
10. Apply body filler to the side sill outer seams.
11. Apply the two-part epoxy primer to the interior of the side sill.


PRO-1170

12. Apply an anti-corrosion agent to the welded parts and interior of the side sill (Refer to the CORROSION PROTECTION).
13. Prepare the exterior surfaces for priming, using wax and grease remover.
14. Apply metal conditioner and water rinse.
15. Apply conversion coating and water rinse.
16. Apply the two-part epoxy primer.

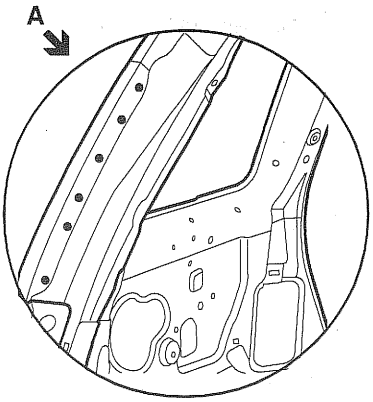

PRO-1180

17. Apply the anti-corrosion primer to the side sill outer panel to complete the repair (Refer to the CORROSION PROTECTION).

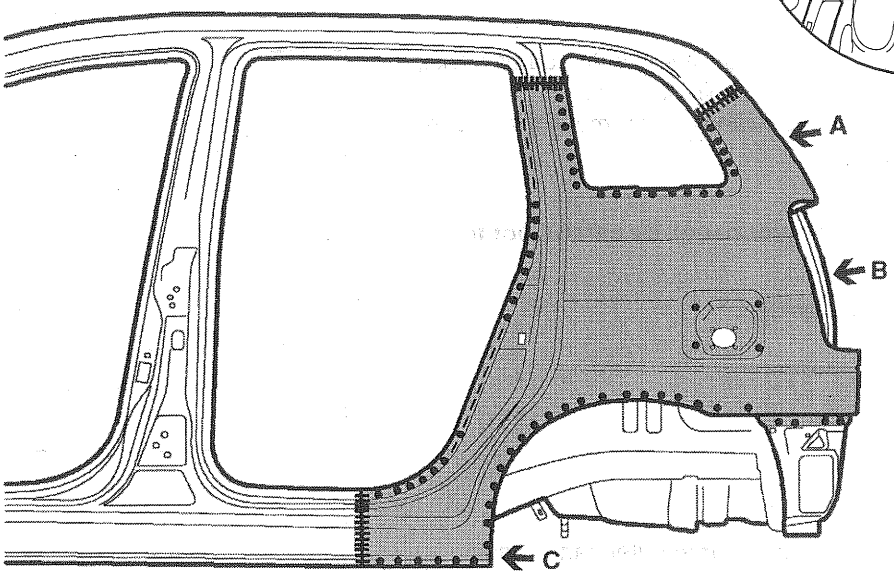

PRO-1190

QUARTER PANEL

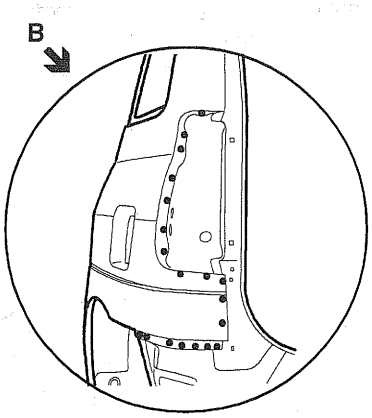
WELDLING POINTS



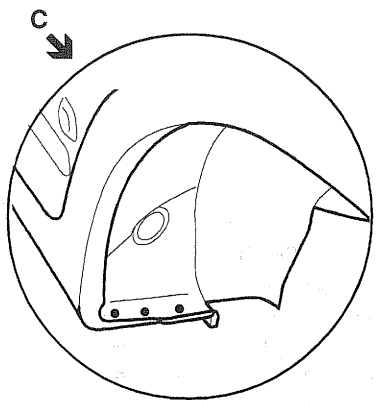
PRO-1221



PRO-1220



PRO-1222

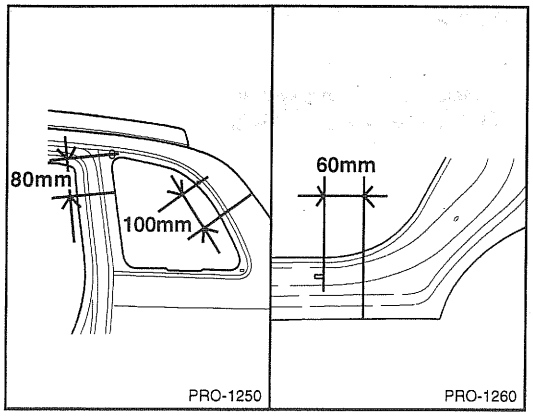


PRO-1223

- ● MIG plug welding
- ⫲ MIG butt welding
- ⫘ MIG lap welding

REMOVAL

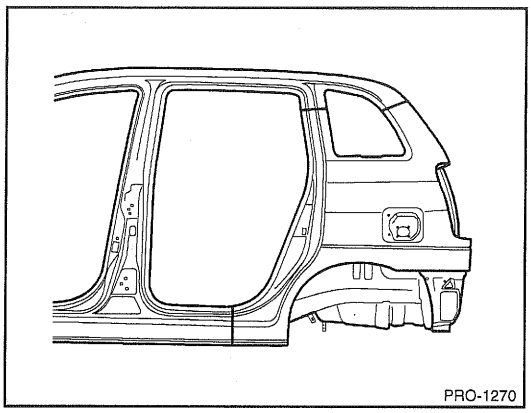
1. Depending on the extent of damage, measure and mark cutlines on the quarter outer panel as illustration.



2. Drill out all attaching spotwelds on the quarter outer panel, including the seam around the door lip opening.
3. Cut the quarter outer panel at cutlines and remove the quarter outer panel as illustration.

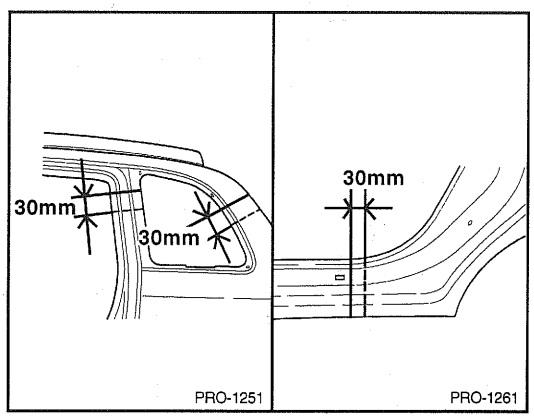
   NOTE
   When cutting the quarter outer panel, be careful not to cut quarter inner panel.

4. Prepare all surfaces to be welded.

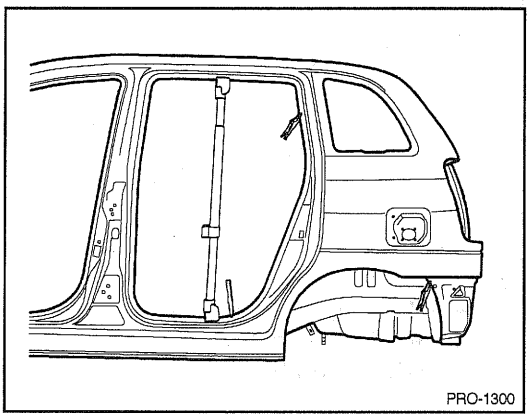


INSTALLATION

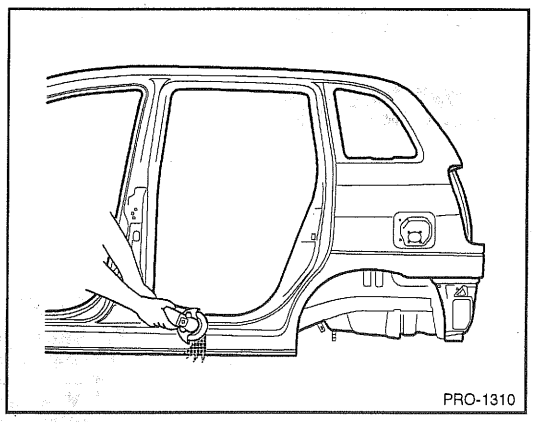
1. Transcribe the cutline to the new quarter outer panel, adding 30 mm for overlap at the old joint.
2. Drill 8 mm holes in overlap areas and along upper and lower flanges of the new quarter outer panel for MIG plug welding.



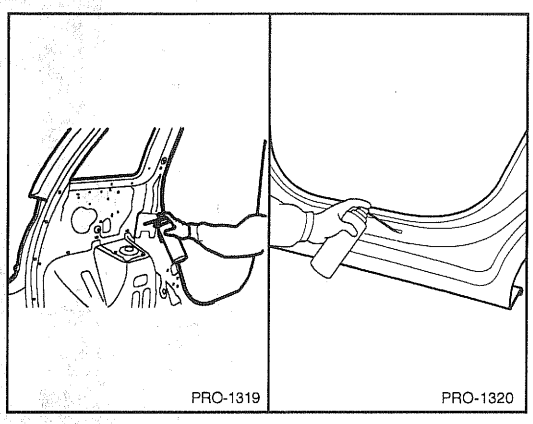
3. Fit and clamp the quarter outer panel in place.
4. MIG plug weld all holes and MIG butt weld seams. At the wheel well the edge must be crimped over the wheel housing.
   This joint may be welded after crimping or may be made by applying a bead of adhesive may be applied to the joint before or after crimping.
5. Clean and prepare all welds, removing all residue.



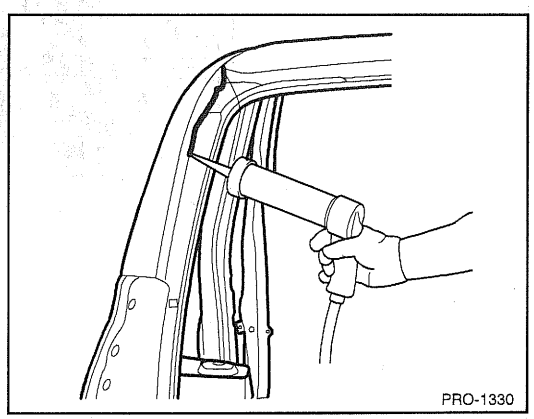
6. Apply body filler to the welded seam. Sand and finish.
   Apply the two-part epoxy primer to the interior of the quarter outer panel.


PRO-1310

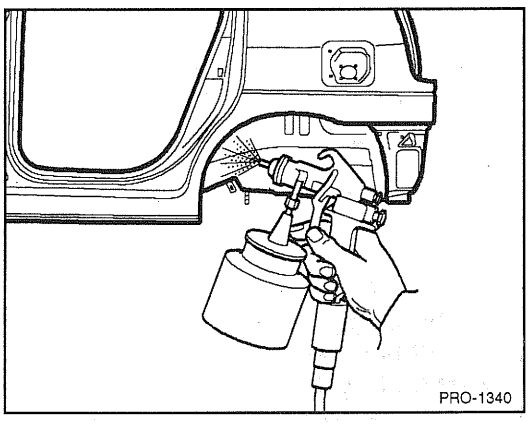
7. Apply an anti-corrosion agent to the welded parts and interior of the quarter outer panel (Refer to the CORROSION PROTECTION).
8. Prepare exterior surfaces for priming, using wax and grease remover.
9. Apply metal conditioner and water rinse.
10. Apply conversion coating and water rinse.
11. Apply the two-part epoxy primer.


PRO-1319 PRO-1320

12. Apply the correct seam sealers to all joints.
13. Reprime over the seam sealer to complete the repair.

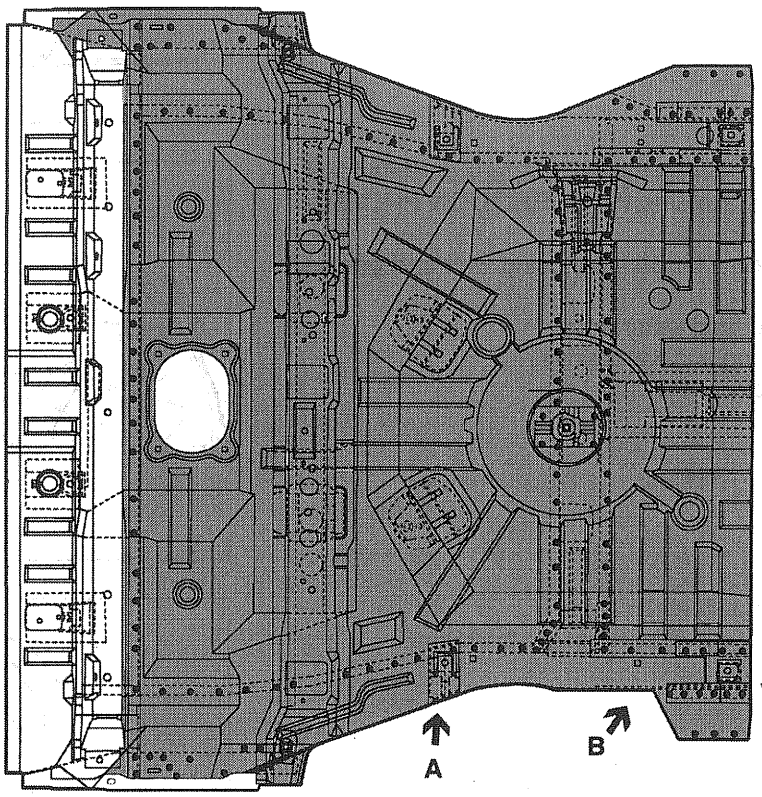

PRO-1330

14. In order to improve corrosion resistance, if necessary, apply a under body anti-corrosion agent to the wheel well (Refer to the CORROSION PROTECTION).

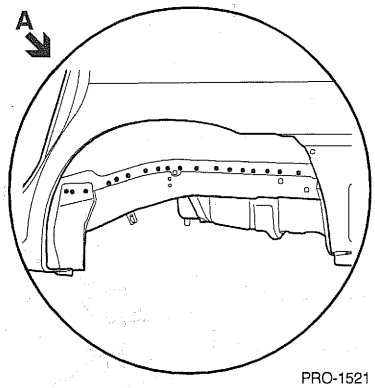

PRO-1340

REAR FLOOR

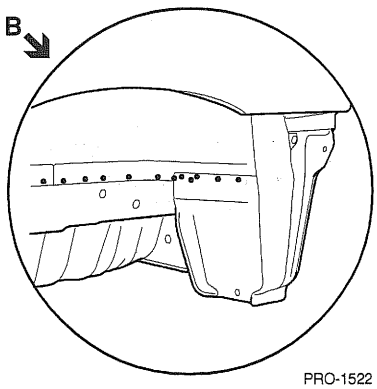
WELDLING POINTS



RFP-1100A



PRO-1521

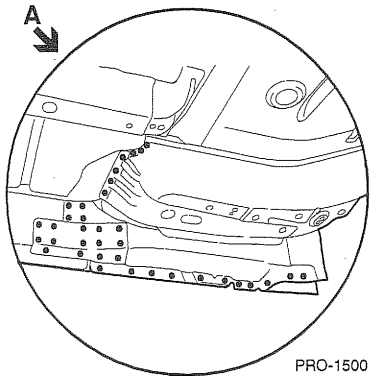


PRO-1522

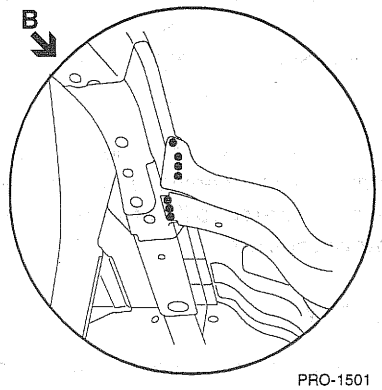
- ● MIG plug welding
- ⫲ MIG butt welding
- ⫘ MIG lap welding

REAR SIDE MEMBER (ASSEMBLY)

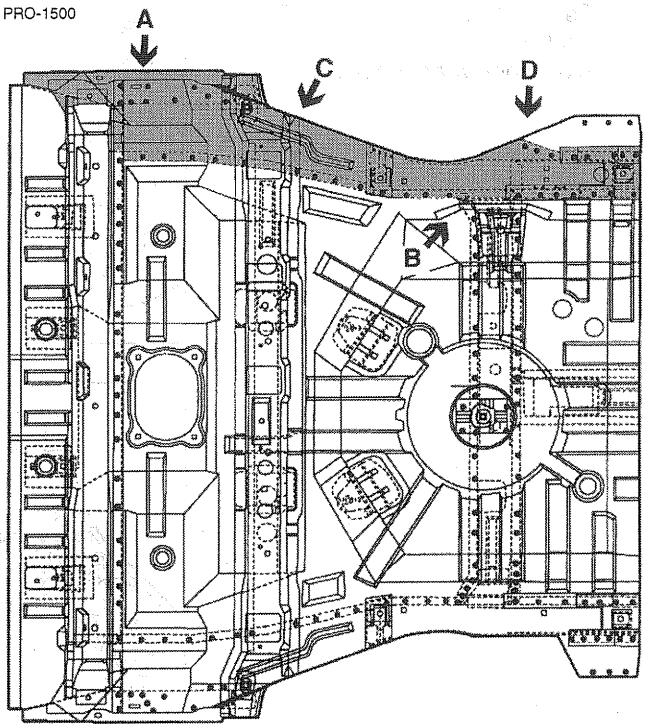
WELDLING POINTS



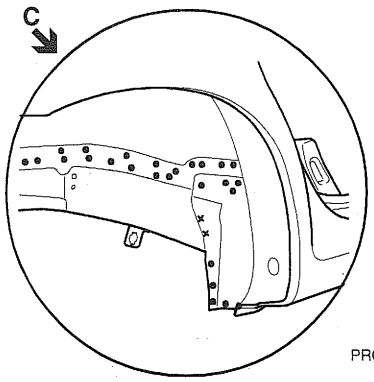
PRO-1500



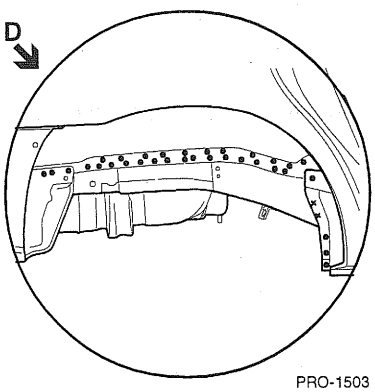
PRO-1501



RFP-1100B



PRO-1502



PRO-1503

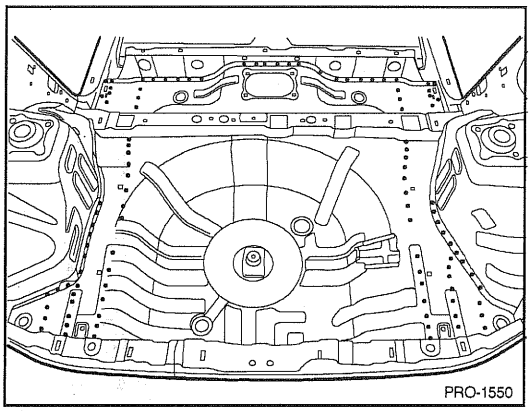
- ● MIG plug welding
- ⫴ MIG butt welding
- ⤫ MIG lap welding

NOTE
Because the rear side members are desigened to absorb energy during a rear collision, care must be taken when deciding to use this repair method. This repair is recommended only for moderate damage to vehicle, where distortions do not extend forward of the trunk region. If the damage is more severe, then the entire side member assembly should be replaced at factory seams without employing this sectioning procedure.

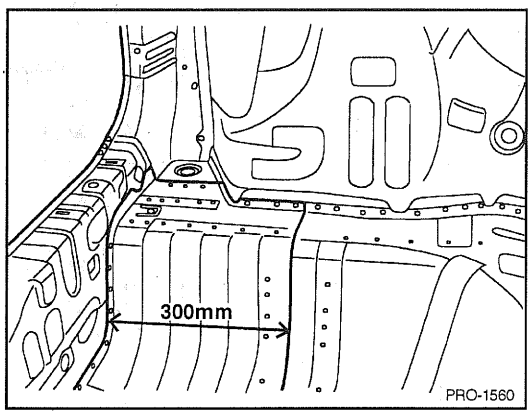
Refer to the body dimension chart and measure the vehicle to determine straigthening and alignment requirements. **The body must be returned to its original dimension before beginning the repair procedure.**

REMOVAL

1. Drill out all the spotwelds attaching the rear floor panel to the wheel housings and rear side members.
2. Make a rough cutting of the rear floor panel where shown in the figure.

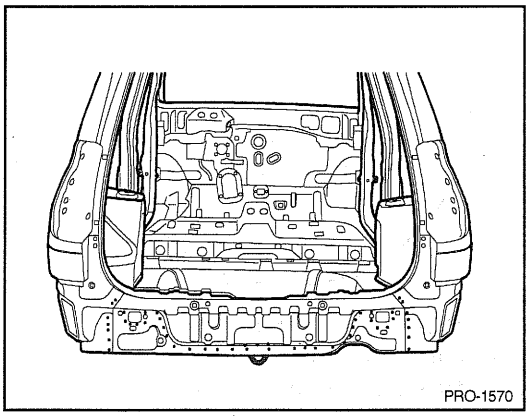

PRO-1550

3. Remove the rear floor panel.

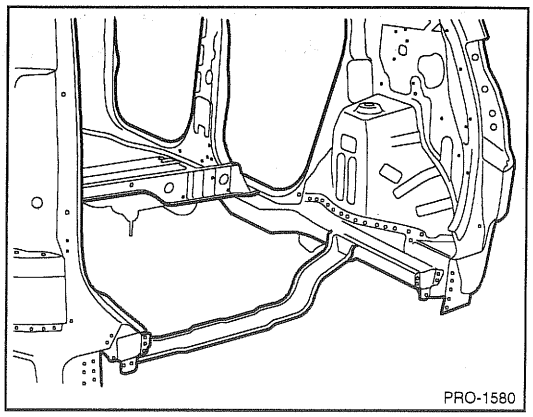


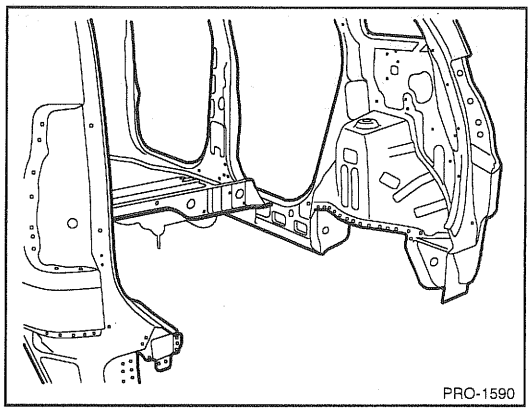
PRO-1560

4. Remove the back panel by drilling out all attaching spotwelds.


PRO-1570

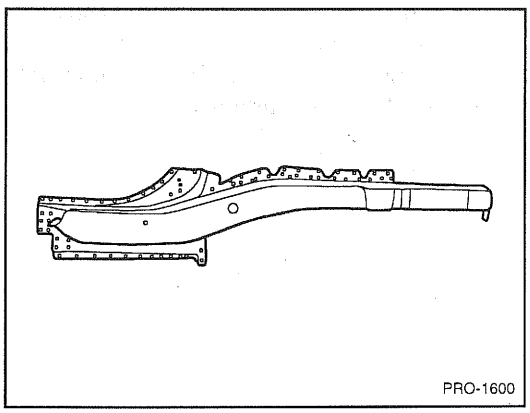
5. Remove the rear floor panel (rear section) and rear side member from the rear body.


PRO-1580


PRO-1590

INSTALLATION

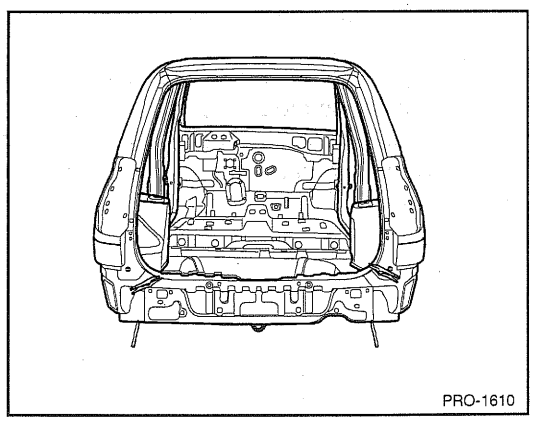
1. Transcribe the cutline to the new rear side members. Drill out the spotwelds attaching the inner reinforcements.
   Remove remaining portions of side members.


PRO-1600

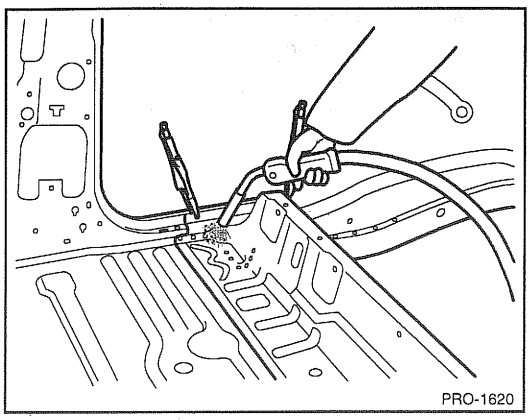
2. Temporarily fit and clamp the rear side members in place.

   NOTE
   When installing the rear floor side member, temporarily install the rear and outer cross member to measure each measurement point.

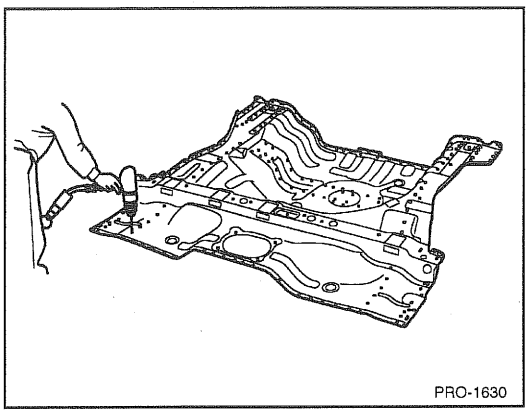
3. Measure each measurement point (Refer to BODY DIMENSIONS) and correct the installation position.
4. If necessary, make temporarily welds, and then check to confirm that the fit of rear floor panel is correct.


PRO-1610

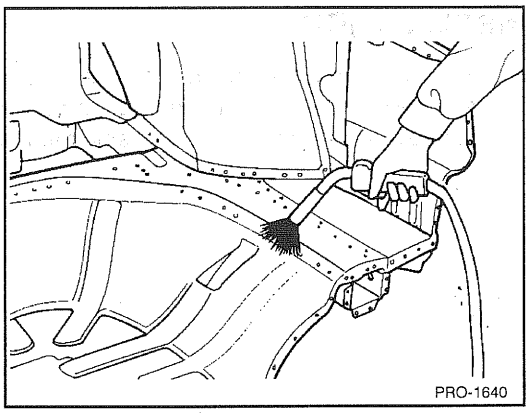
5. MIG plug weld the rear side members and MIG butt weld seams.
6. Prepare the welds and surfaces to which the rear floor will attach.


PRO-1620

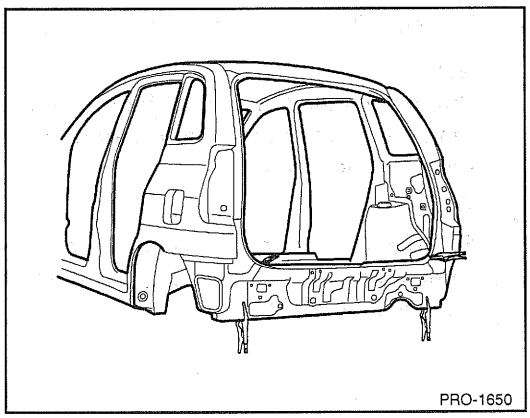
7. Transcribe the cutline to the new rear floor panel, adding 30mm for overlap at the old joint.
8. Drill 8mm holes in overlap area and production locations of the new rear floor panel for MIG plug welding.


PRO-1630

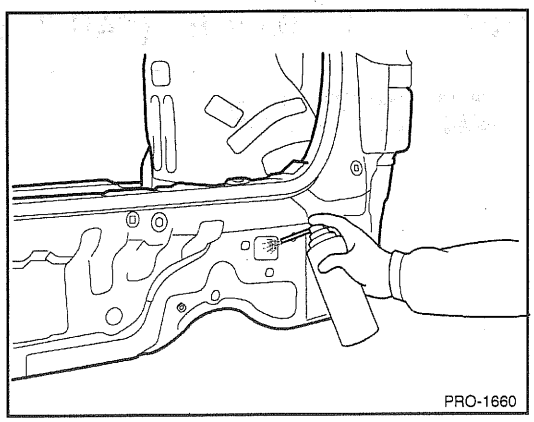
9. Fit and clamp the rear floor panel and attach the rear floor panel to the rear side members and other panels.
10. MIG plug weld all holes and MIG butt weld the seams.
11. Clean all welded surfaces.


PRO-1640

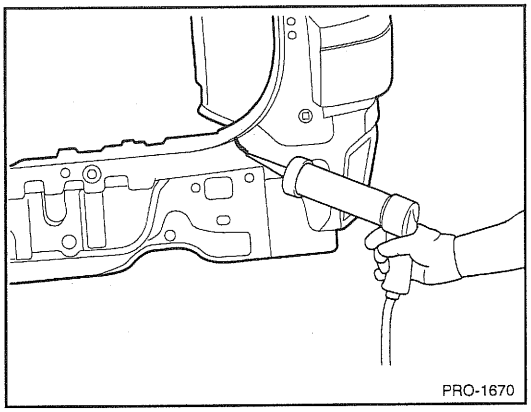
12. Drill 8 mm holes on the flange attaching the back panel to the rear floor and side member ends.
13. Fit and clamp the back panel in place.
14. MIG plug weld the back panel.
15. Clean and prepare all welds, remove all residue.
16. Apply the two-part epoxy primer to the interior of the rear side members.


PRO-1650

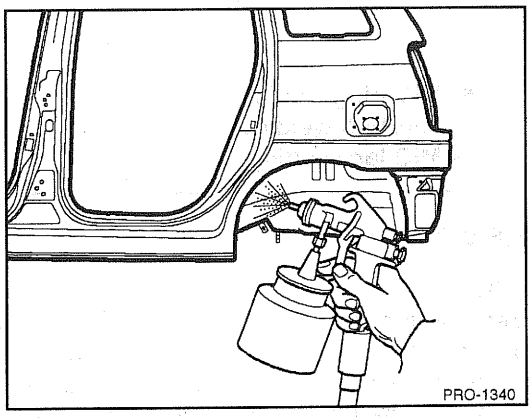
17. Apply an anti-corrosion to the interior of the rear side members (Refer to the CORROSION PROTECTION).
18. Prepare exterior surfaces for priming, using wax and grease remover.
19. Apply metal conditioner and water rinse.
20. Apply the two-part epoxy primer.


PRO-1660

21. Apply the correct seam sealer to all joints (Refer to the BODY SEALING LOCATIONS).
22. Reprime over the seam sealer to complete the repair.

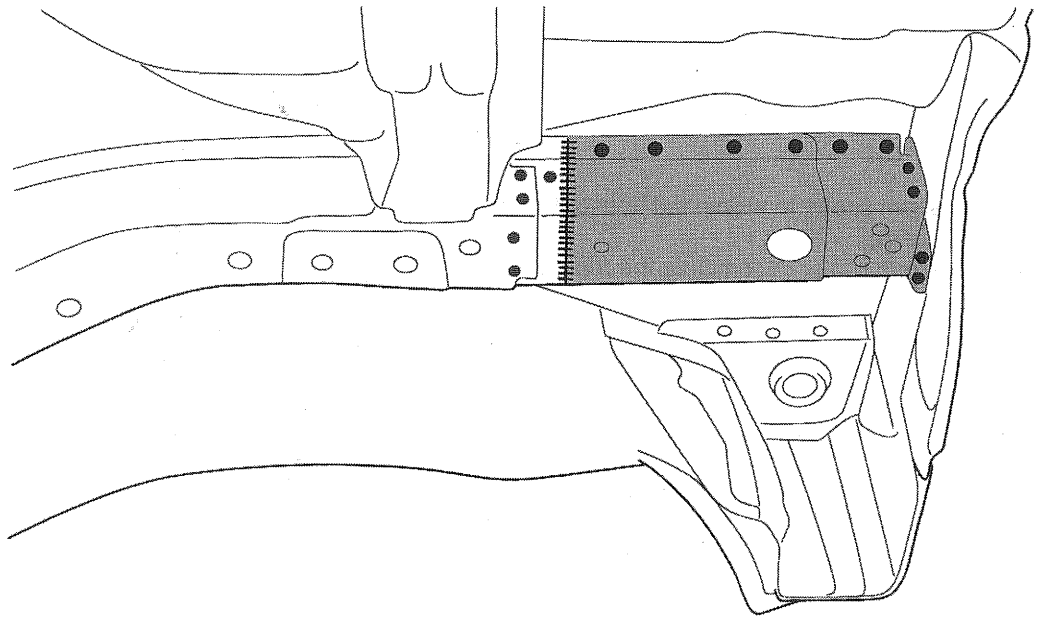

PRO-1670

23. After completing body repairs, carefully apply under coating to the under body (Refer to the CORROSION PROTECTION).
24. In order to improve corrosion resistance, if necessary, apply an under body anti-corrosion agent to the panel which is repaired or replaced (Refer to the CORROSION PROTECTION).


PRO-1340

REAR SIDE MEMBER (PARTIAL)

WELDLING POINTS



● MIG plug welding
MIG butt welding
MIG lap welding

PRO-1690

REMOVAL

NOTE

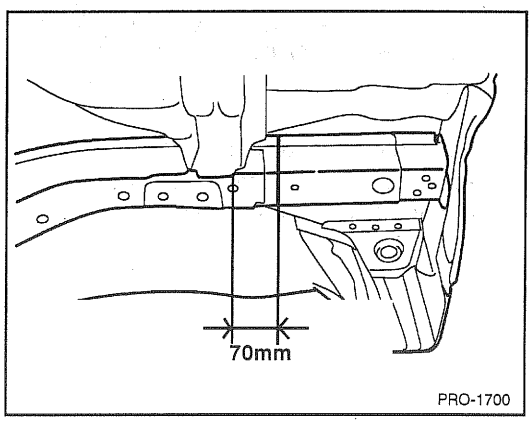
Because the rear side members are designed to absorb energy during a rear collision, care must be used when deciding to use this repair method. This repair is recommended only for moderate damage to the vehicle, where distortions do not extend forward of the trunk region. If the damage is more severe, then the entire side member assembly should be replaced at the factory seams without employing this sectioning procedure.

The following procedure applys when only one rear side member needs to be replaced. If both side members are damaged and need to be replaced, then the procedure of Rear Side members And Rear Floor Section should be followed.

Refer to the body dimension charts and measure the vehicle to determine straightening and alignment requirements. **The body must be returned to its original dimensions before beginning the repair procedure.**

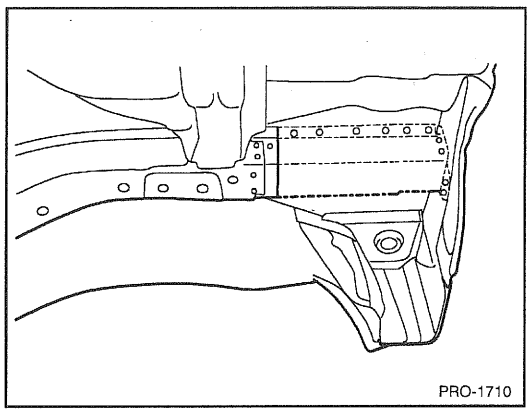
1. Depending on the extent of damage, if the right side member is to be replaced it should be measured and marked 70mm from the tooling hole center of the rear floor center crossmember.

NOTE
The flowing procedure illustrates a repair for the right rear side member. The procedure may also be applied the left rear side member.



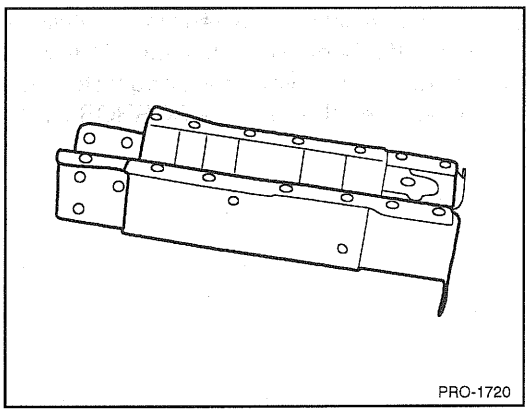
PRO-1700

2. Cut through rear side member at cutline being careful.
3. Removing the rear floor side member by drilling out all attaching spotwelds.
4. Prepare all surfaces to be welded.

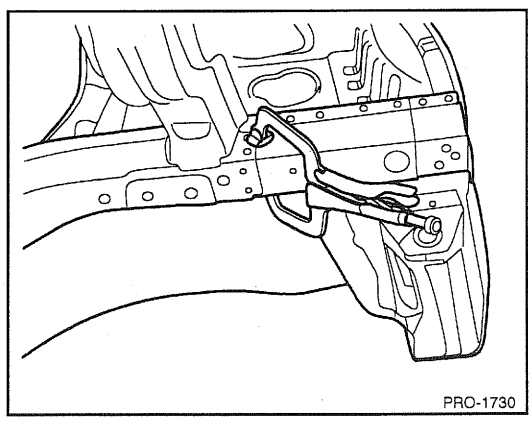

PRO-1710

INSTALLATION

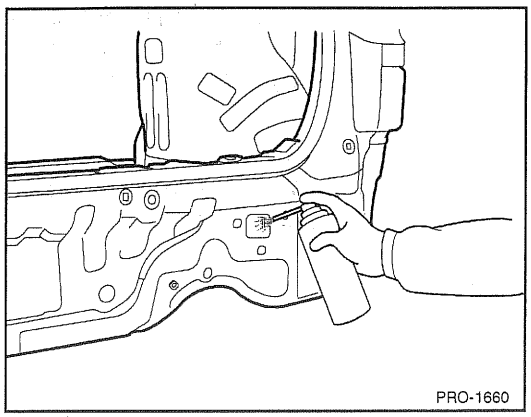
1. Transcribe the cutline to the new rear side member. Cut at line and drill out the spotwelds attaching the inner reinforcement and separate it.


PRO-1720

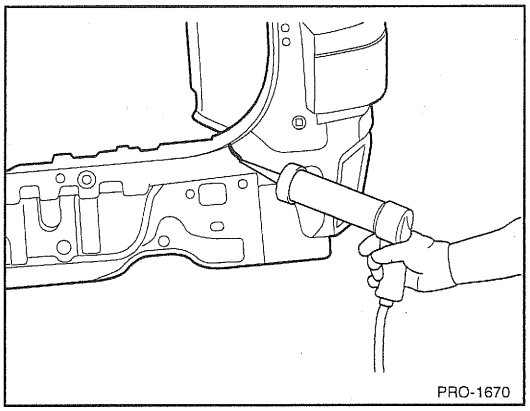
2. Fit and clamp the new rear side member in place for welding. Measure to ensure dimensions are accurate as given in the body dimension charts.
3. MIG plug weld at the holes and MIG butt weld the seam in the side member.
4. Clean and prepare all surfaces to be welded and remove all residue.
5. Apply the two-part epoxy primer to the interior of the rear side member.


PRO-1730

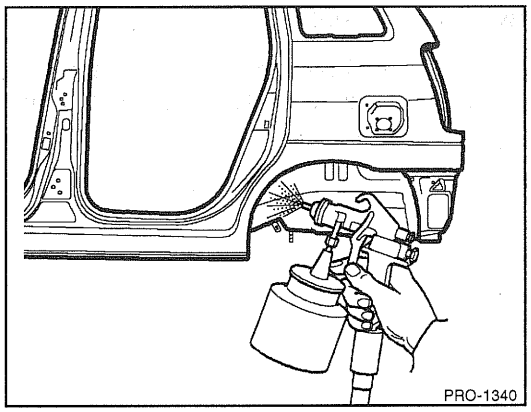
6. Apply an anti-corrosion to the interior of the rear side member (Refer to the CORROSION PROTECTION).
7. Prepare exterior surfaces for priming, using wax and grease remover.
8. Apply metal conditioner and water rinse.
9. Apply conversion coating and water rinse.
10. Apply the two-part epoxy primer.


PRO-1660

11. Apply the correct seam sealer to all joints (Refer to the BODY SEALING LOCATIONS).
12. Reprime over the seam sealer to complete the repair.


PRO-1670

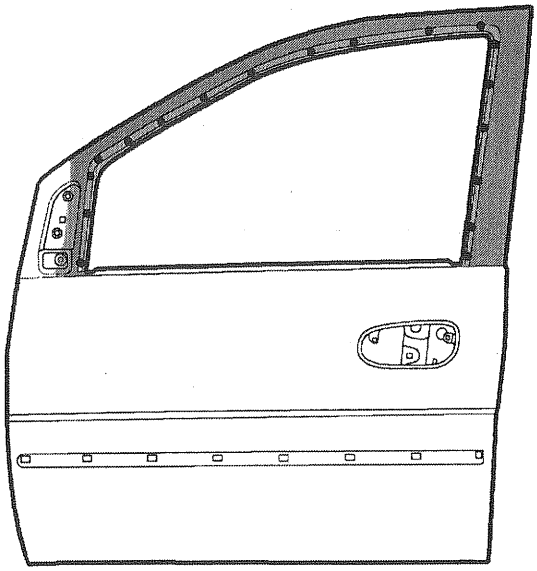
13. After completing body repairs, carefully apply under coating to the under body (Refer to the CORROSION PROTECTION).
14. In order to improve corrosion agent to the panel which is repaired or replaced (Refer to the CORROSION PROTECTION).


PRO-1340

FRONT AND REAR DOOR OUTER PANELS

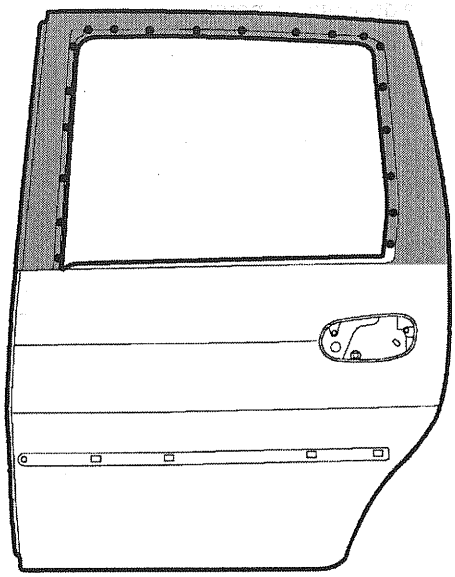
WELDLING POINTS

FRONT DOOR



CON-0700

REAR DOOR

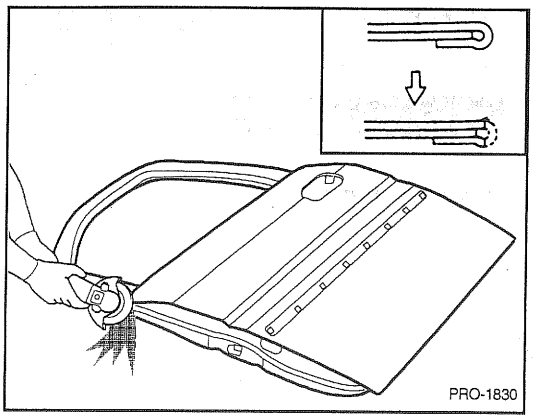


CON-0800

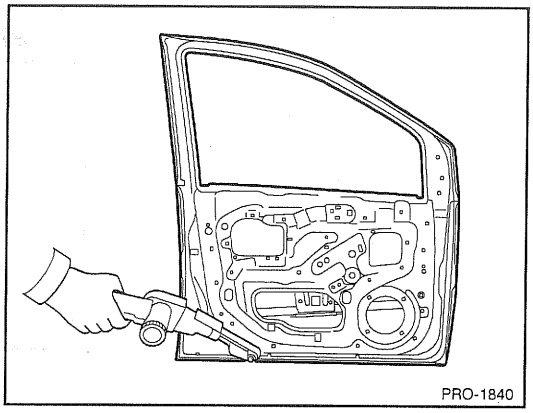
● MIG plug welding
⁂ MIG lap welding

REMOVAL

1. Cut door outer panel hem with a sander.
2. After grinding off the hemming location, remove the outer panel.

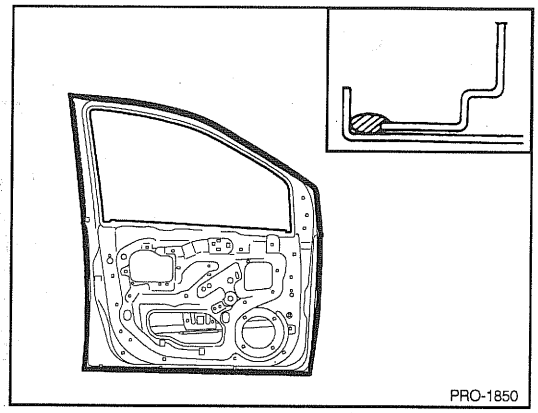


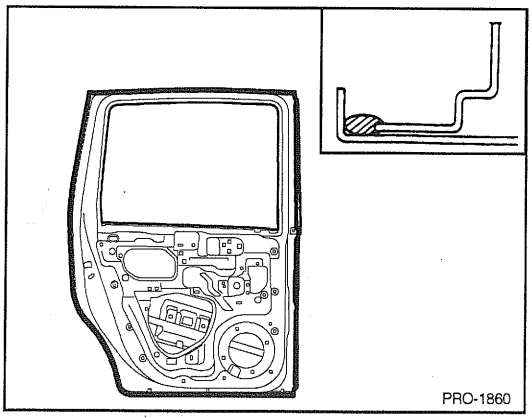
3. Dress rusty part with a sander and prepare surface to be hemmed.



INSTALLATION

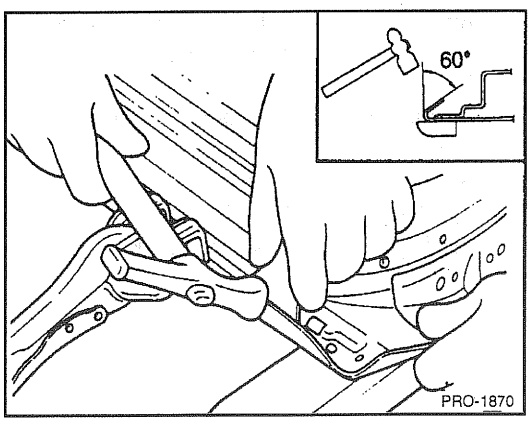
1. Apply adhesive or equivalent to outer panel hem.
2. Apply mastic sealer or equivalent to the door upper member and door reinforcement beam as shown in the figure.

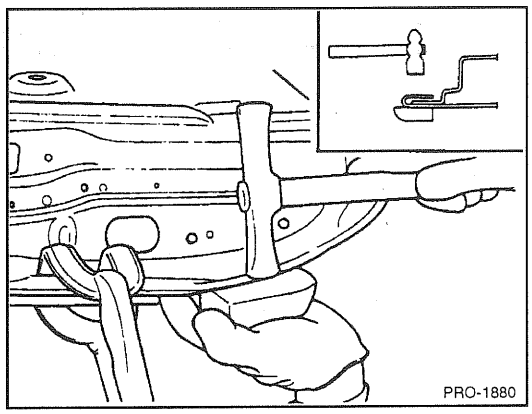


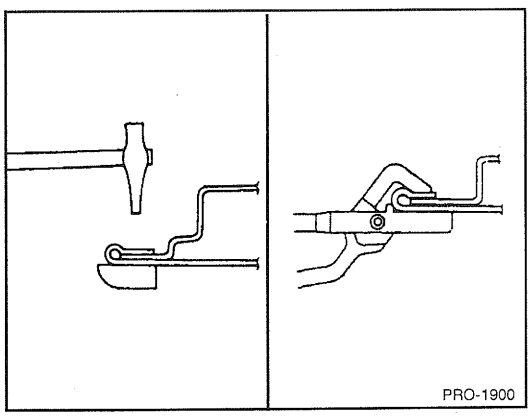


3. Bend the flange hem with a hammer and dolly, then fasten tightly with a hemming tool.

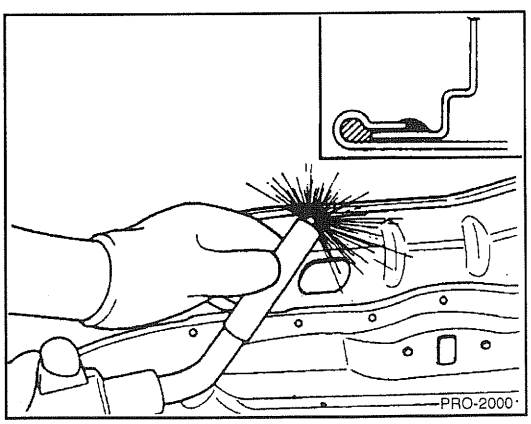
NOTE
1. **Hemming work should be done in three steps as illustration.**
2. **If a hemming tool cannot be used, hem with a hammer and dolly.**



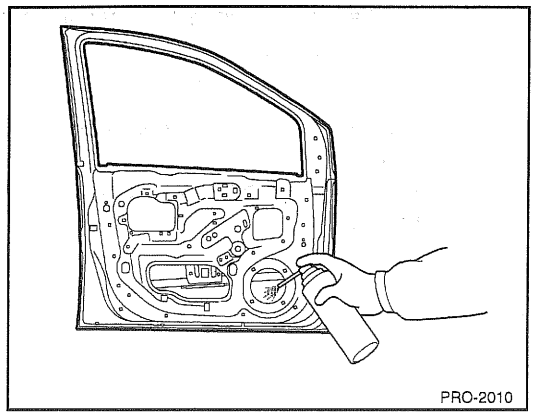




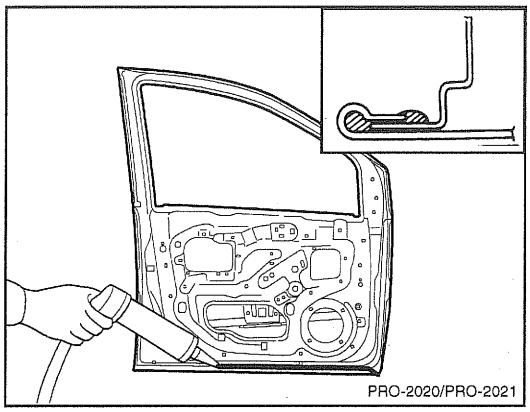
4. After completing the hemming work, make MIG spot welds at 50 mm intervals on the inside.
5. Clean and prepare all welds, remove all residue.
6. Apply the two-part epoxy primer to the interior of the door panel.



7. Apply an anti-corrosion agent to the welded parts and lower inside of the door panel (Refer to the CORROSION PROTECTION).
8. Prepare exterior surfaces for priming, using wax and grease remover.
9. Apply metal conditioner and water rinse.
10. Apply conversion coating and water rinse.
11. Apply the two-part epoxy primer.


PRO-2010

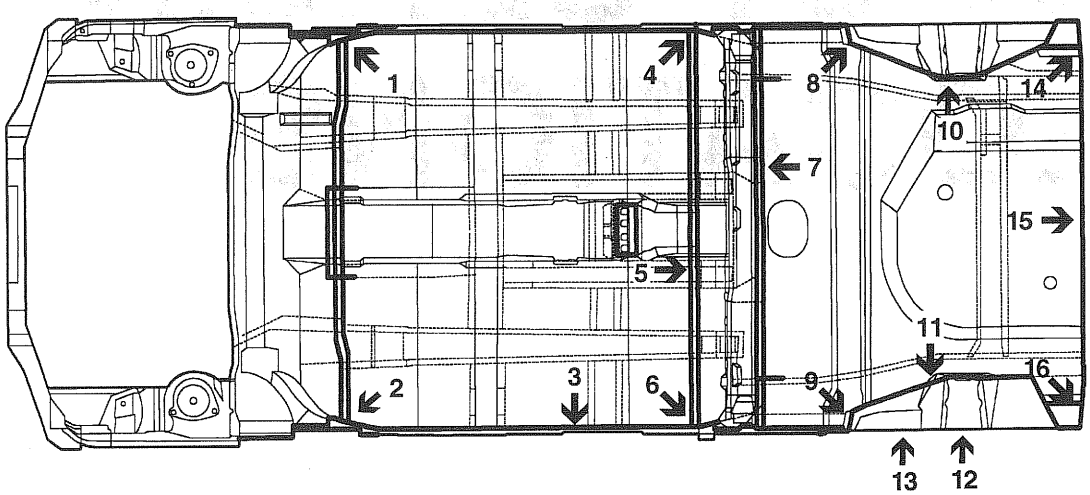
12. Apply the correct seam sealer to whole panel edge.
13. Reprime over the seam sealer to complete the repair.


PRO-2020/PRO-2021

BODY SEALING LOCATIONS

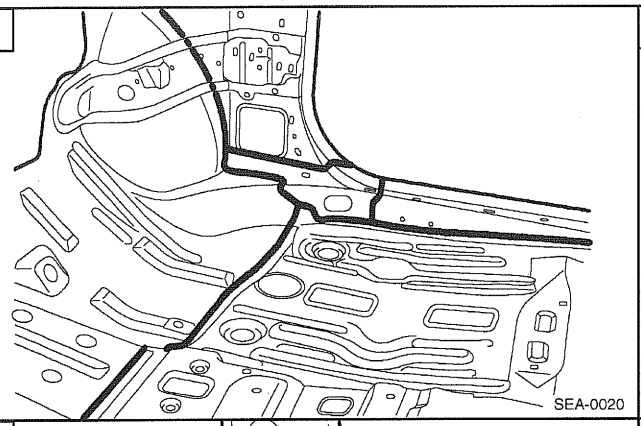
BS

FLOOR



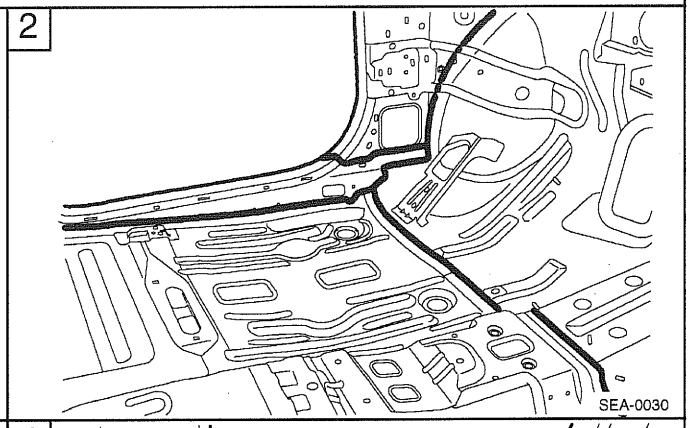
SEA-0010

1



SEA-0020

2



SEA-0030

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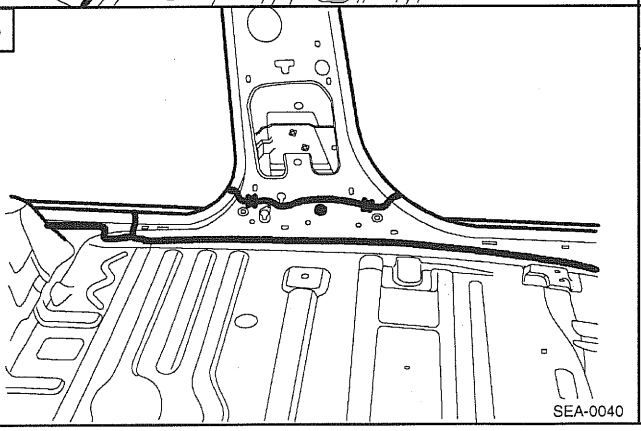

SEA-0040

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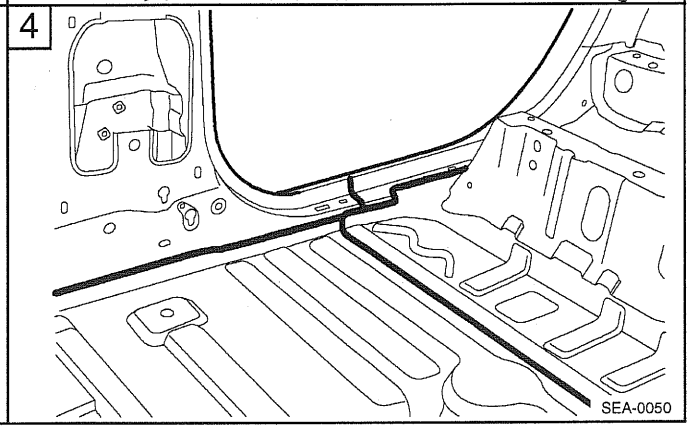
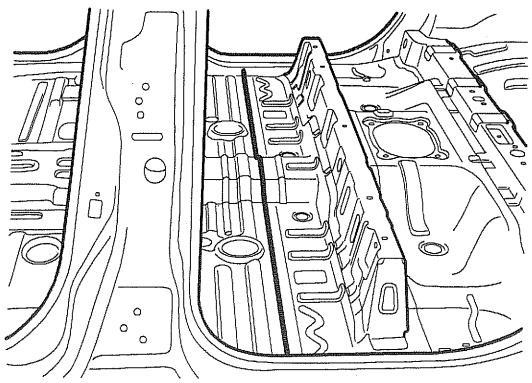


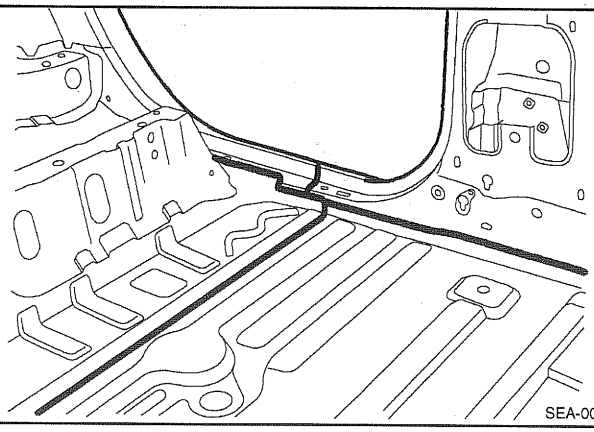
SEA-0050

5



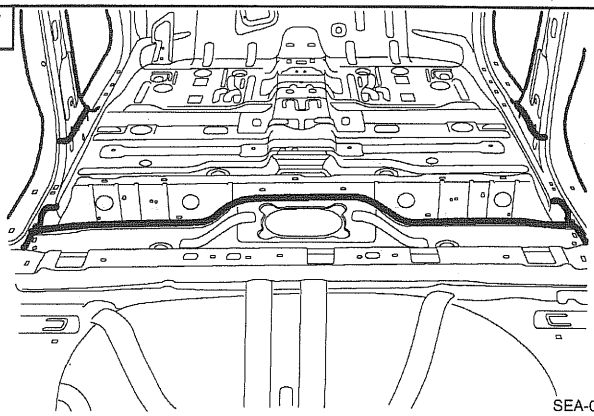
SEA-0060

6



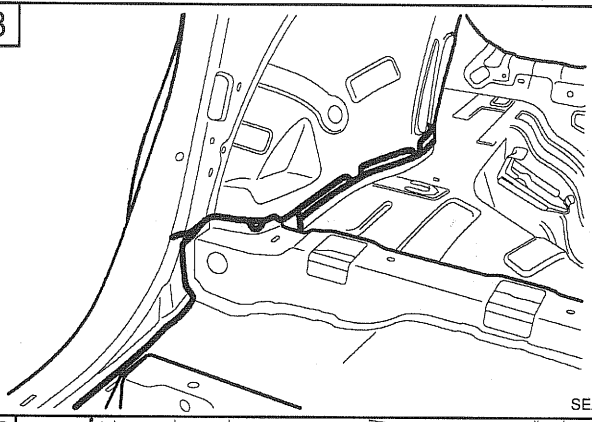
SEA-0070

7



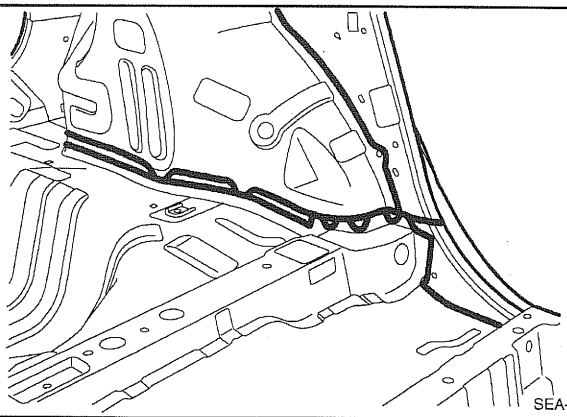
SEA-0080

8



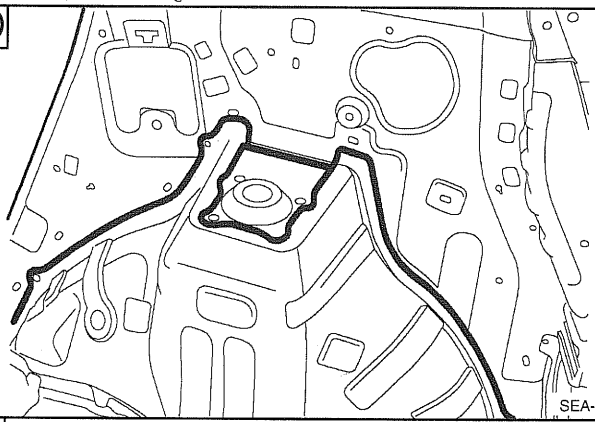
SEA-0090

9



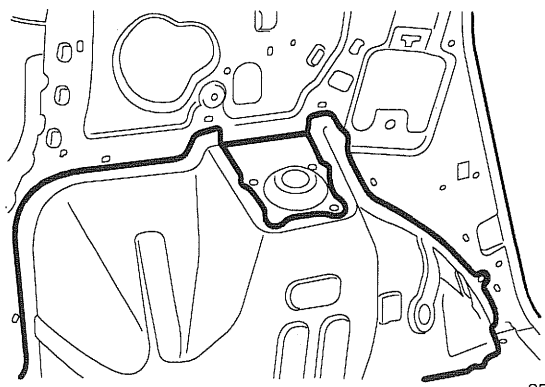
SEA-0100

10



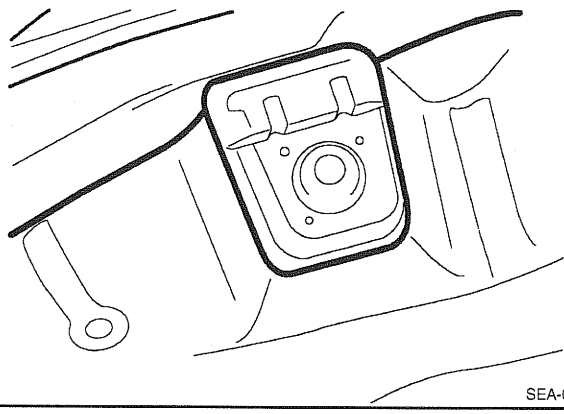
SEA-0110

11



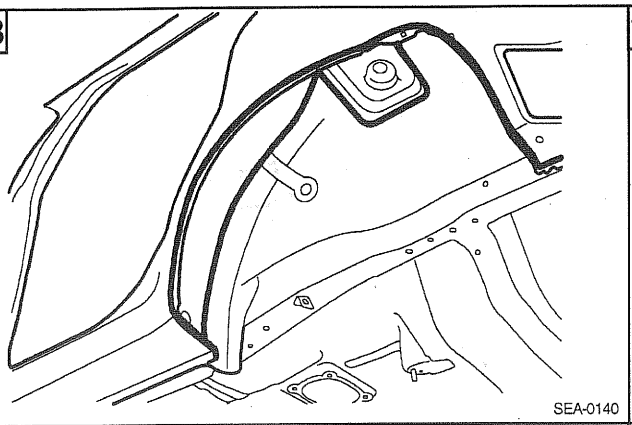
SEA-0120

12



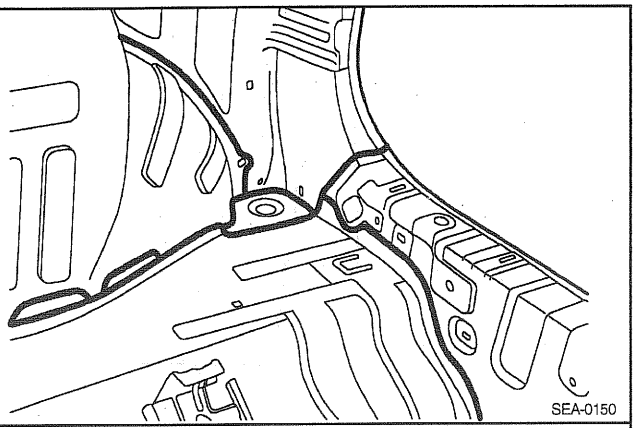
SEA-0130

13



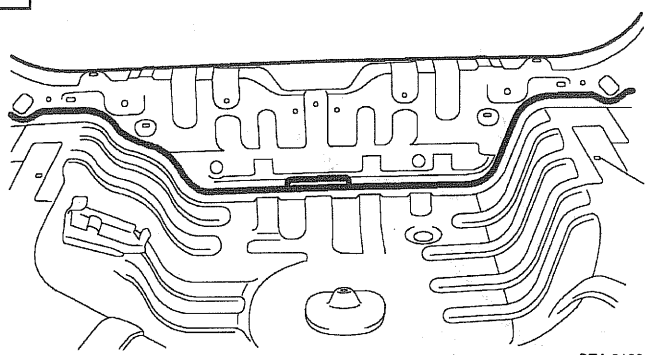
SEA-0140

14



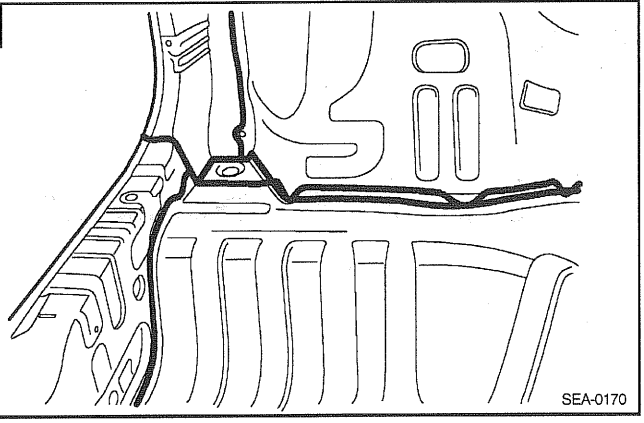
SEA-0150

15



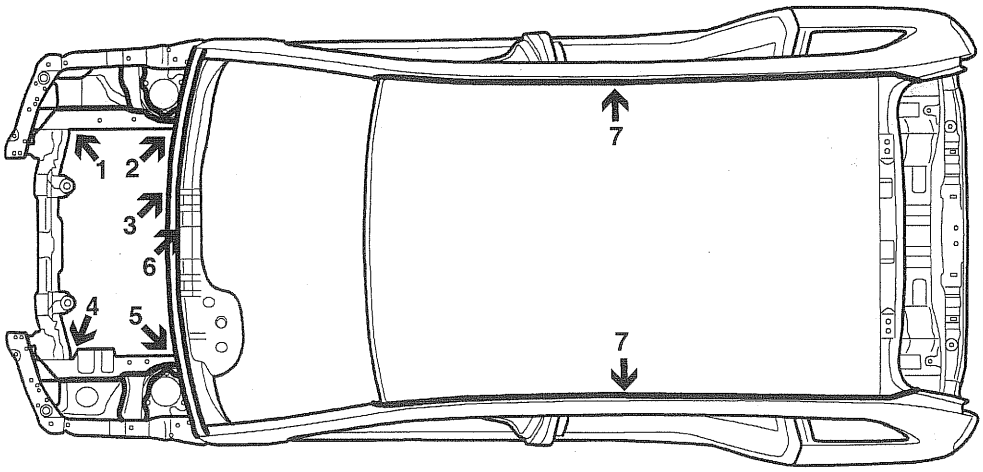
SEA-0160

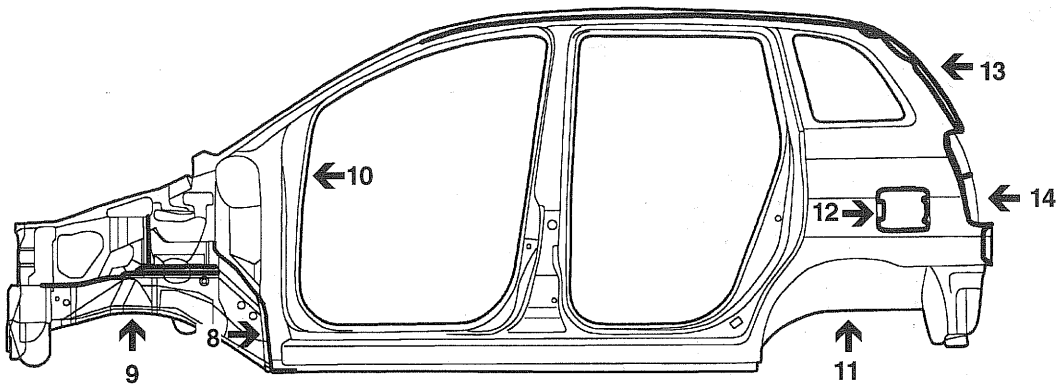
16



SEA-0170

UPPER AND SIDE BODY





SEA-0180, SEA-0190

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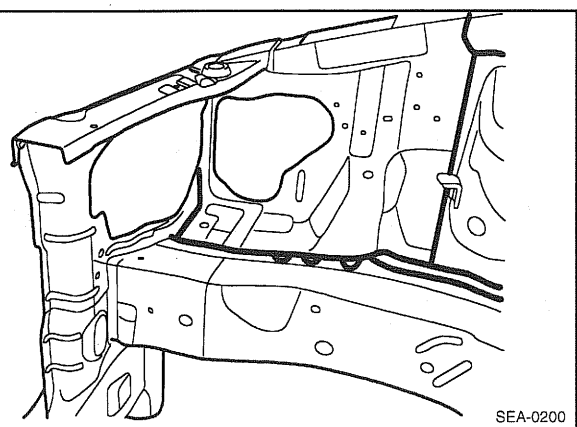

SEA-0200

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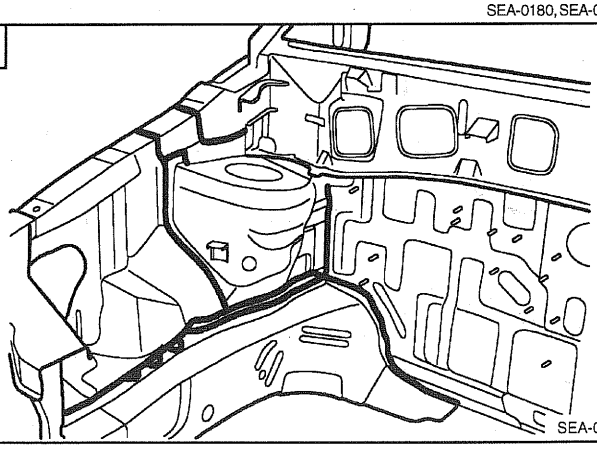

SEA-0210

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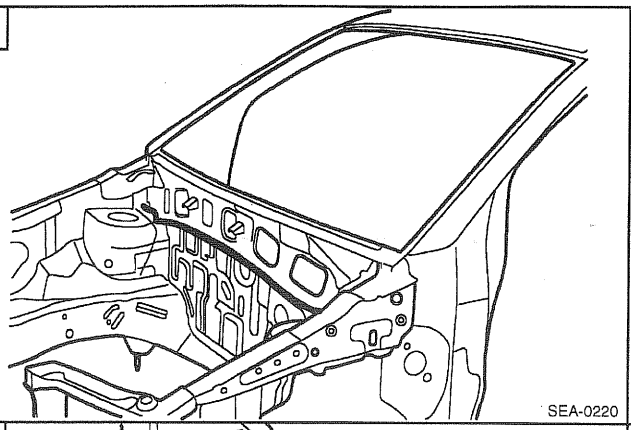

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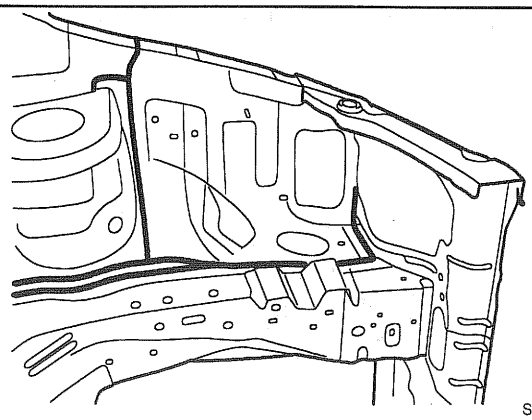

SEA-0230

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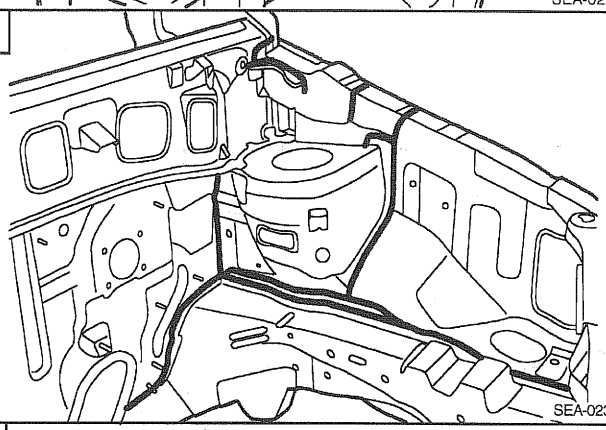

SEA-0231

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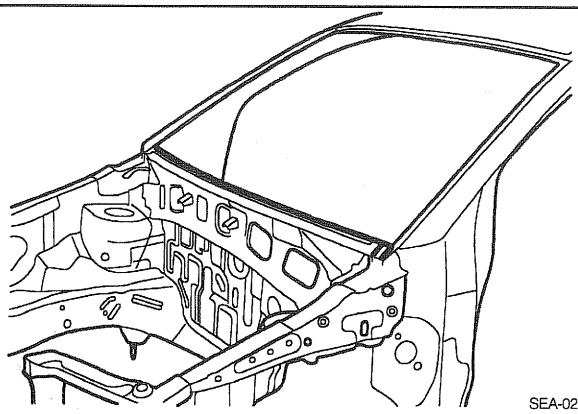
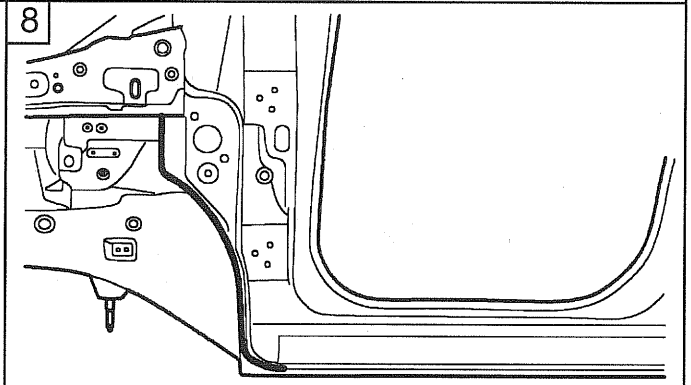


SEA-0240

7

SEA-0250

8



SEA-0260

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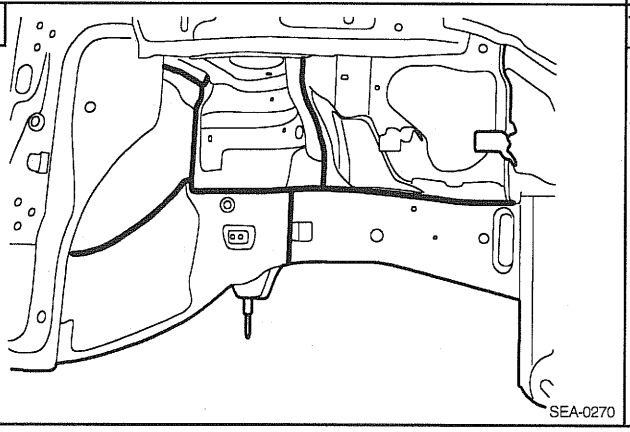
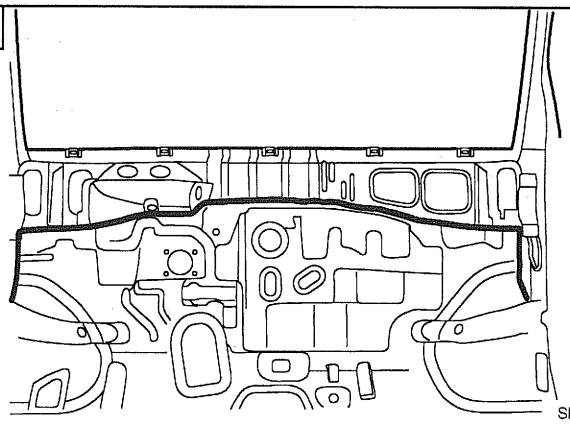


SEA-0270

10



SEA-0280

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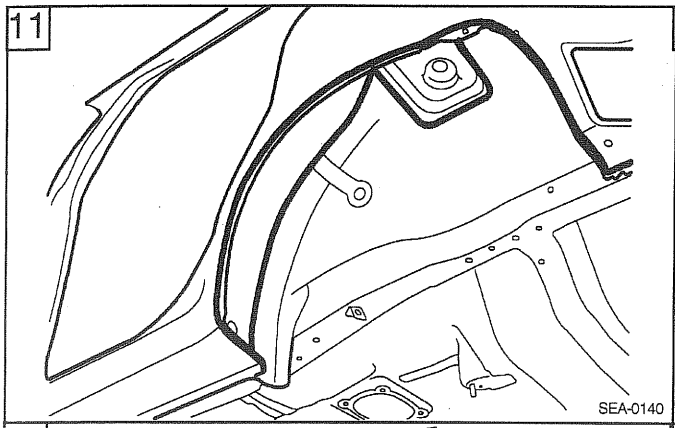

SEA-0140

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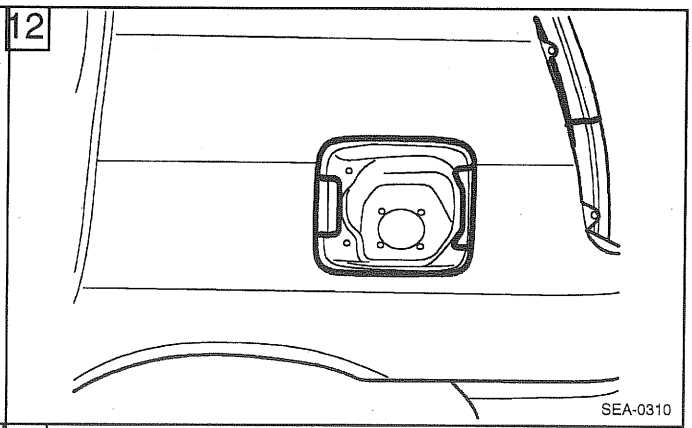

SEA-0310

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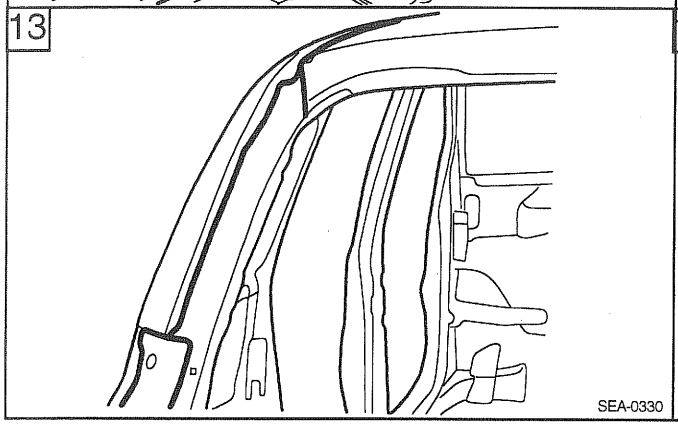
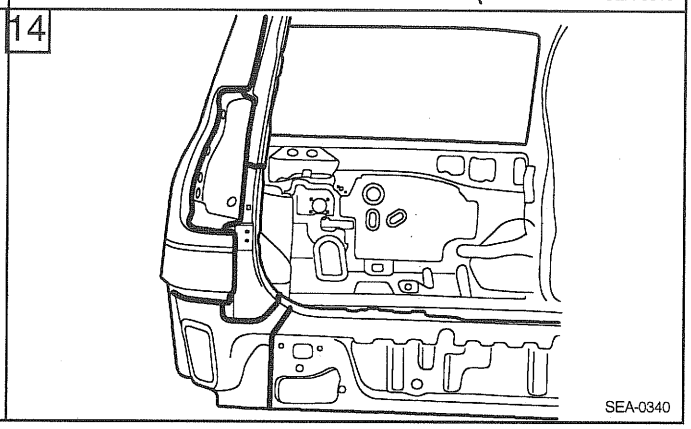


SEA-0330

14



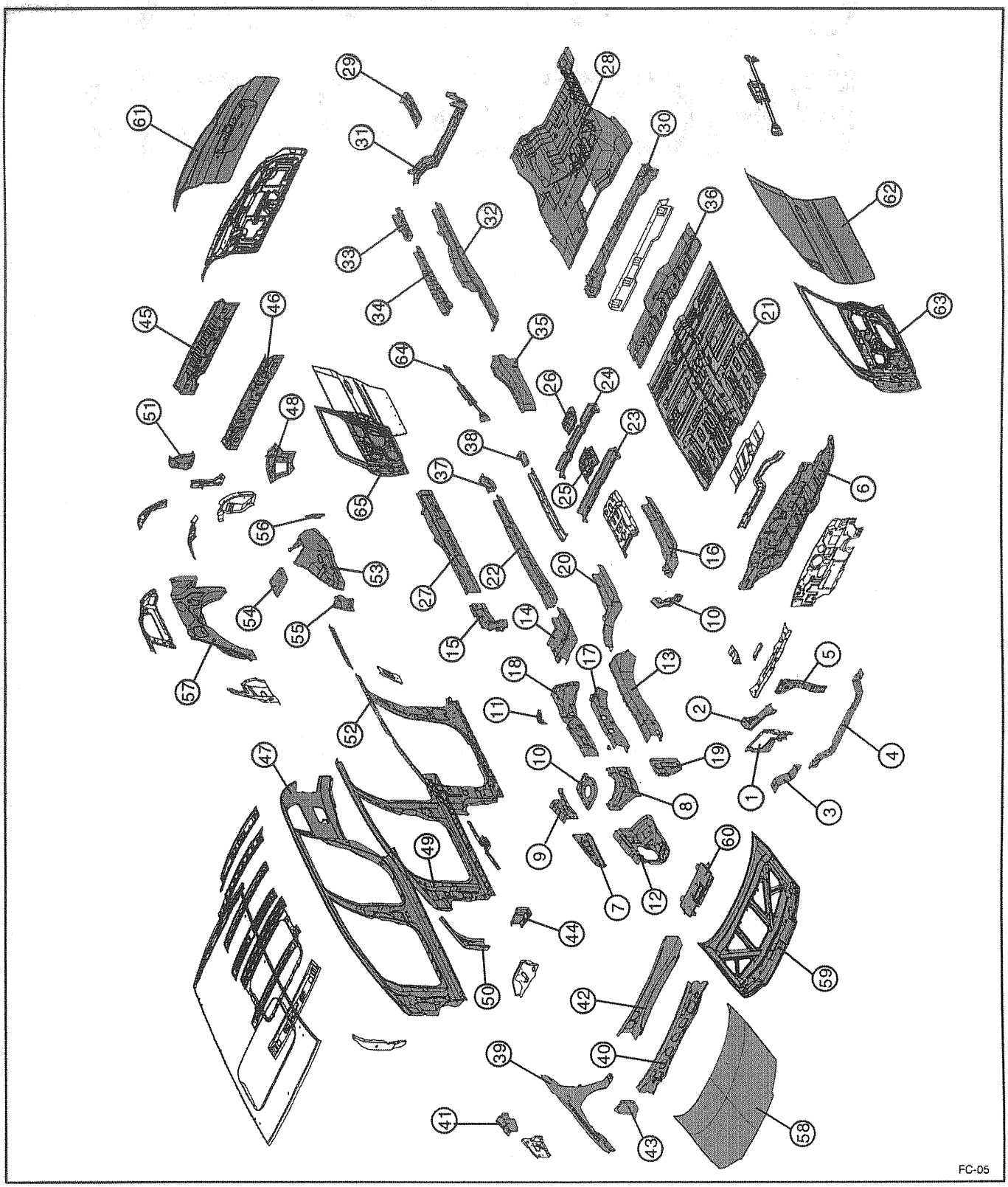
SEA-0340

CORROSION PROTECTION

CP

ZINC-GALVANIZED STEEL PANELS

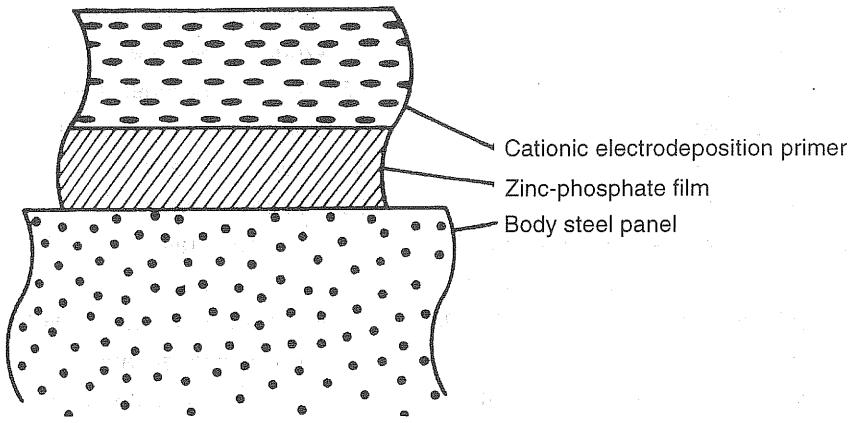
Because galvanized steel panel has excellent resistance, it is used in areas which have a high possibility of painting deficiency below.



1. Head lamp support panel(LH/RH)
2. Radiator support upper side member(LH/RH)
3. Radiator lower inner extension(LH/RH)
4. Radiator lower outer member
5. Radiator support center member
6. Dash panel
7. Fender apron outer member(LH/RH)
8. Fender apron inner panel(LH/RH)
9. Fender apron inner front bracket(LH/RH)
10. Front shock absorber cover panel(LH/RH)
11. Fender apron to cowl gusset(LH/RH)
12. Fender apron outer member(LH/RH)
13. Front side inner member(LH/RH)
14. Front side rear lower member(LH/RH)
15. Front side member inner rear reinforcement(LH/RH)
16. Front side member rear lower extension(LH/RH)
17. Front side member inner front reinforcement(LH/RH)
18. Front side outer member
19. Front side member outer front extension(LH/RH)
20. Front side rear upper member(LH/RH)
21. Center floor panel
22. Center floor side outer member
23. Center floor front cross center member
24. Center floor rear cross center member
25. Parking brake lever mounting reinforcement
26. Parking brake cable mounting bracket
27. Side sill inner panel(LH/RH)
28. Rear floor panel
29. Rear towing hook bracket
30. Rear seat rear mounting member
31. Rear floor center cross member
32. Rear floor side member(LH/RH)
33. Rear bumper mounting reinforcement
34. Rear side member reinforcement
35. Side sill inner rear panel(LH/RH)
36. Rear floor front extension
37. Center floor side member rear extension(LH/RH)
38. Fuel tank front mounting bracket
39. Fender panel(LH/RH)
40. Cowl front outer panel
41. Cowl side outer panel(LH/RH)
42. Cowl inner lower panel
43. Cowl side inner lower panel(LH/RH)
44. Cowl inner bulk head
45. Back panel
46. Rear transverse member
47. Side outer panel(LH/RH)
48. Quarter outer rear lower extension(LH/RH)
49. Side outer reinforcement(LH/RH)
50. Front door upper mounting reinforcement(LH/RH)
51. Rear combination lamp housing panel(LH/RH)
52. Side inner panel(LH/RH)
53. Wheel house inner panel(LH/RH)
54. Rear spring house cover(LH/RH)
55. Wheel house inner front extension(LH/RH)
56. Wheel house inner rear extension(LH/RH)
57. Quarter inner lower panel(LH/RH)
58. Hood outer panel
59. Hood inner panel
60. Hood outer rail
61. Tail gate outer panel
62. Front door outer panel(LH/RH)
63. Front door inner panel(LH/RH)
64. Rear door lower beam(LH/RH)
65. Rear door inner panel(LH/RH)

ZINC-PHOSPHATE COAT & CATIONIC ELECTRODEPOSITION PRIMER

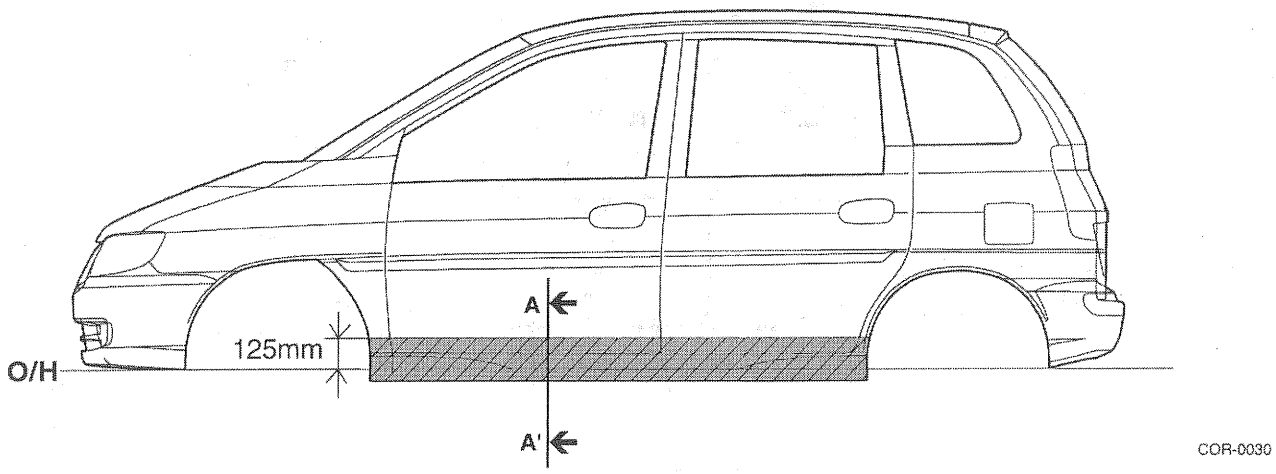
In order to improve the adhesion of the paint coat on the steel panel, and also to improve the corrosion resistance, the entire body is coated with a film of Zinc-phosphate and a cationic electrodeposition primer.



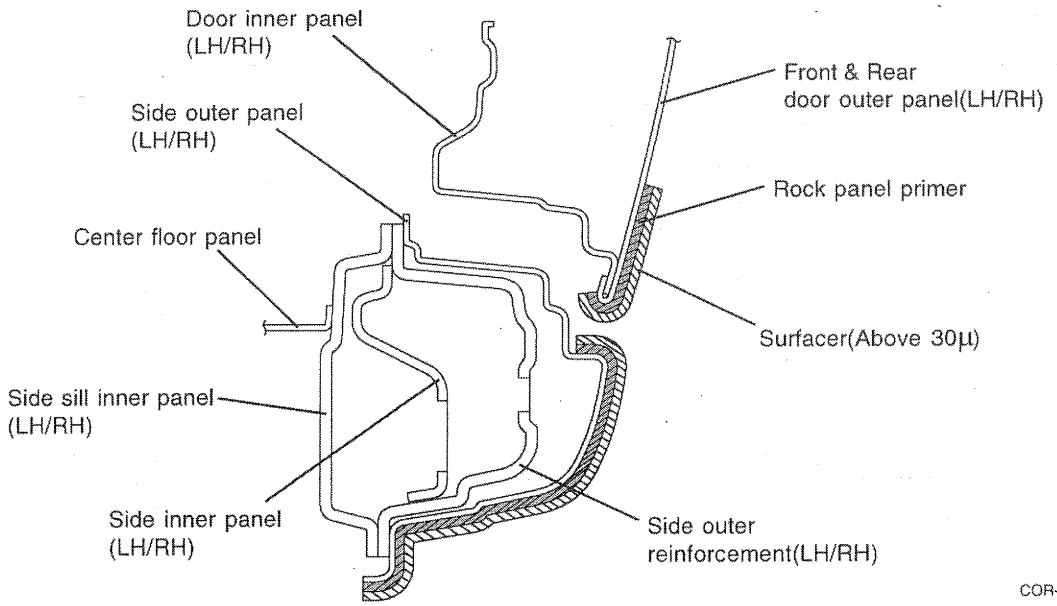
COR-0020

ANTI-CORROSION PRIMER

An anti-corrosion primer has been applied to the side sill outer panel for the purposes of corrosion prevention and abrasion protection. If this panel is replaced, apply an anti-corrosion primer between the undercoat and the intermediate coat, as shown in the following illustrations.



COR-0030

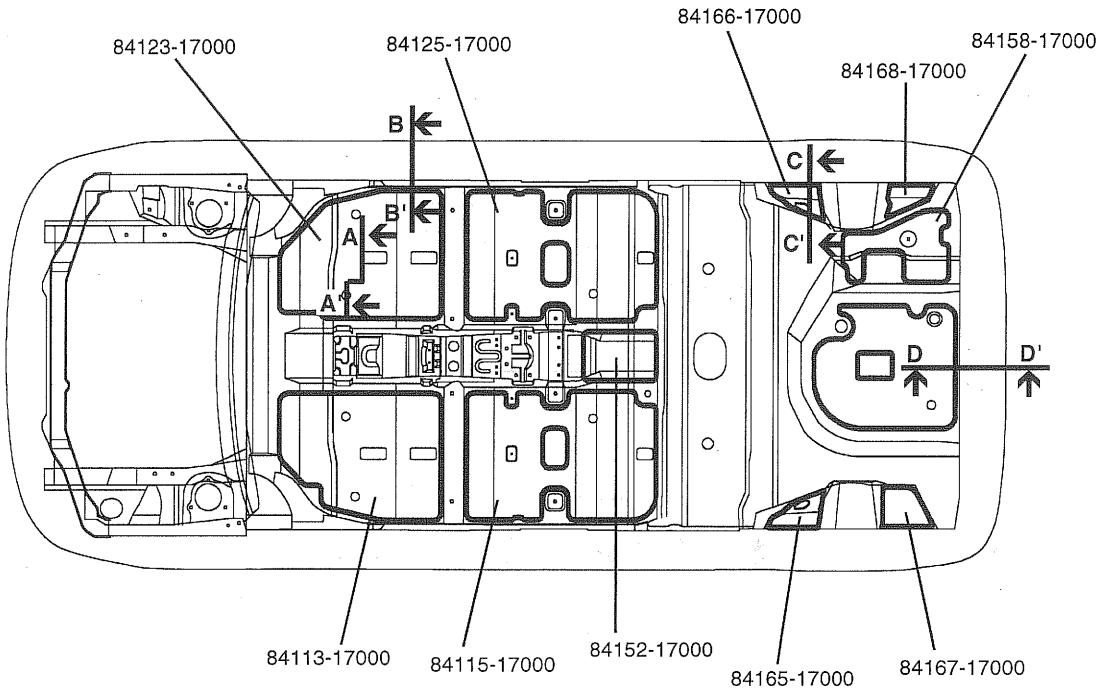


COR-0040

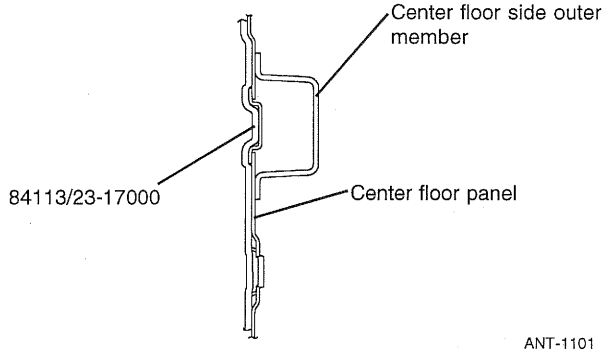
SECTION A-A'

Rock panel primer (Thickness 350μ)

ANTIVIBRATION PADS-LOCATION & SECTION

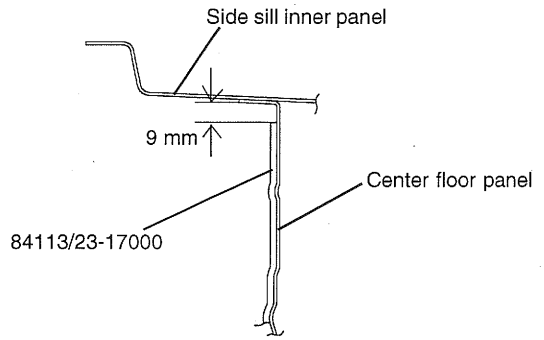


ANT-1100



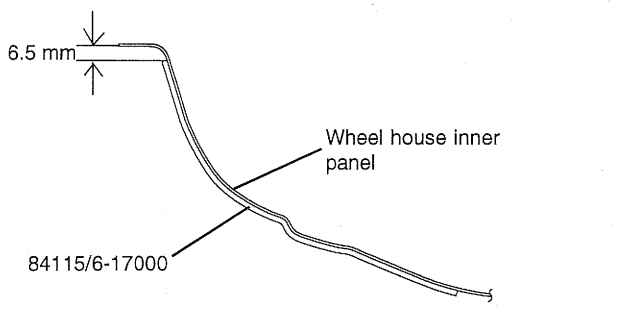
ANT-1101

SECTION A-A'



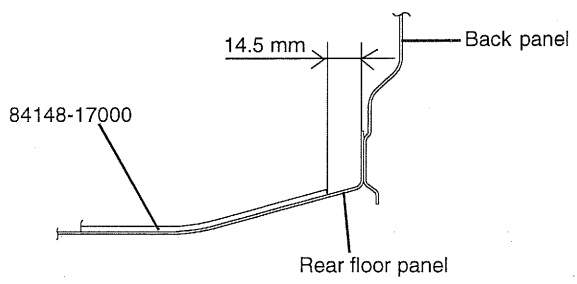
ANT-1102

SECTION B-B'



ANT-1103

SECTION C-C'

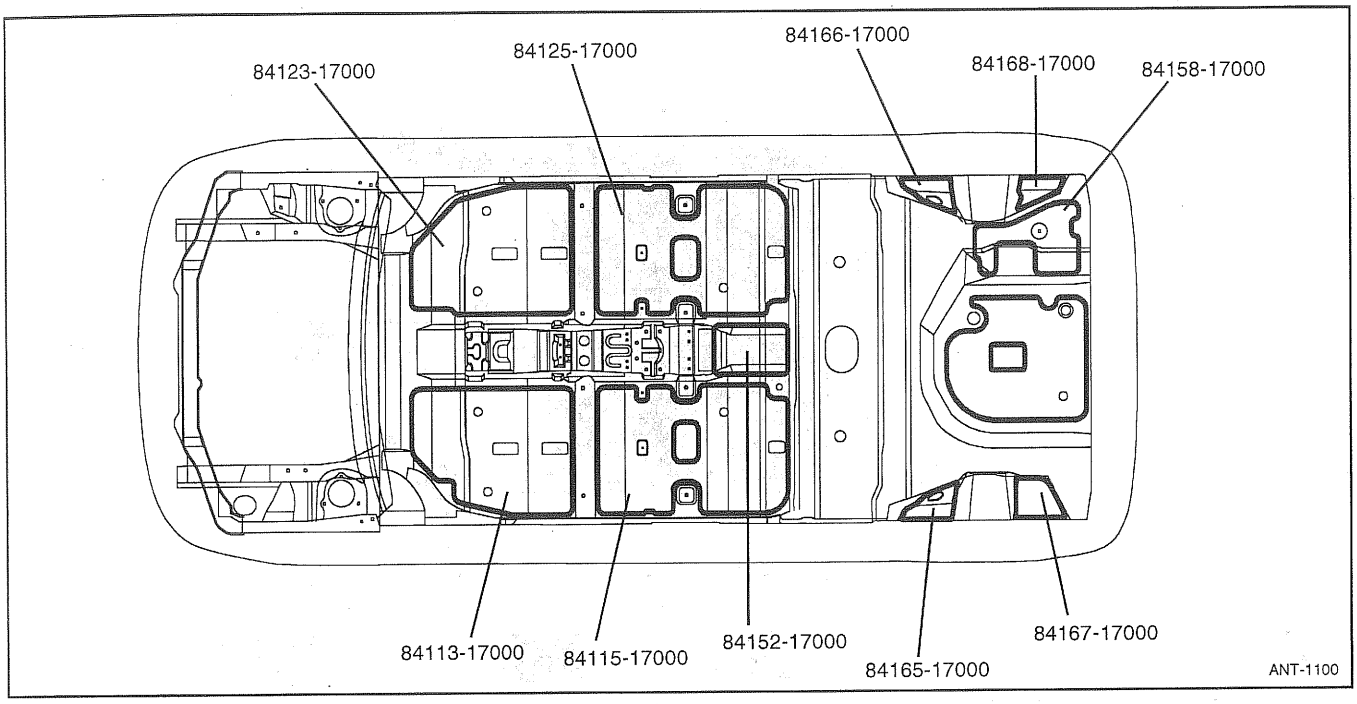


ANT-1104

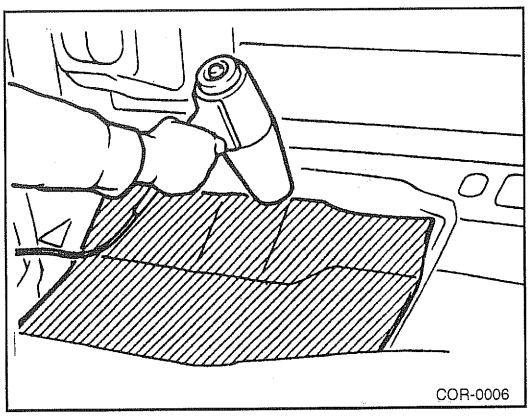
SECTION D-D'

ATTACHMENT OF ANTIVIBRATION PADS

Antivibration pads are attached to the upper surface of the floor and at the interior side of the dash panel in order to absorb vibrations and shut out exhaust gas heat. If these antivibration pads are peeled off in the course of replacement or repair of a welded panel,cut and attach replacement material (in the shape shown in the figure). For detailed information concerning the locations where antivibration pads are to be attached for individual models, refer to the figure below .

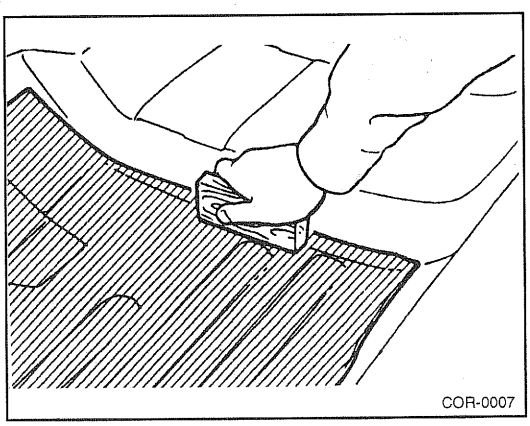


1. Heat the "antivibration pad" with a blow drier to soften it.



2. Align the antivibration pad layer in the position where it is to be installed, and then press it down with a roller or a block of wood so that it adheres well.

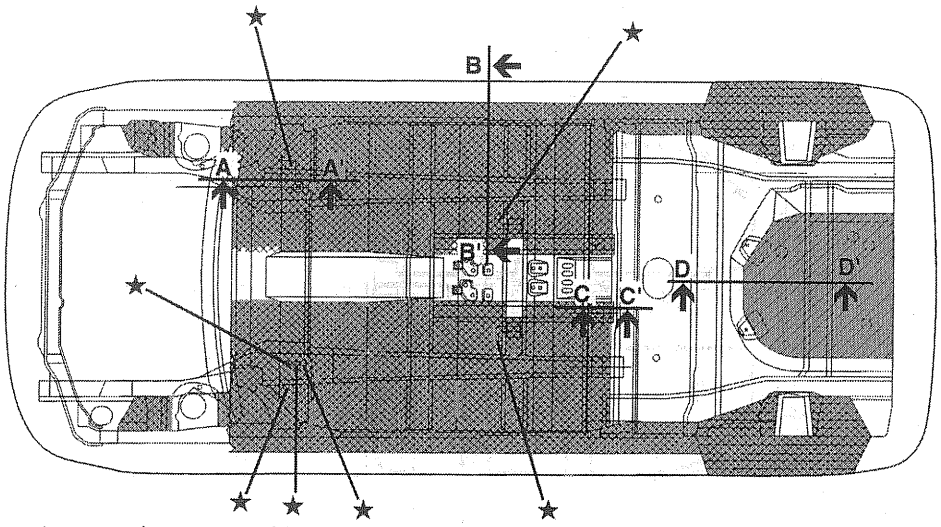
   NOTE
   An infrared lamp can also be used to heat both the antivibration pad layer and the body panels(be sure to wear gloves).



UNDER BODY COAT

In order to provide corrosion, stone chipping and vibration resistance, and under body coat is applied to the under sides of the floor and wheel house.
Therefore, when such panel is replaced or repaired, apply under body coat to that part.

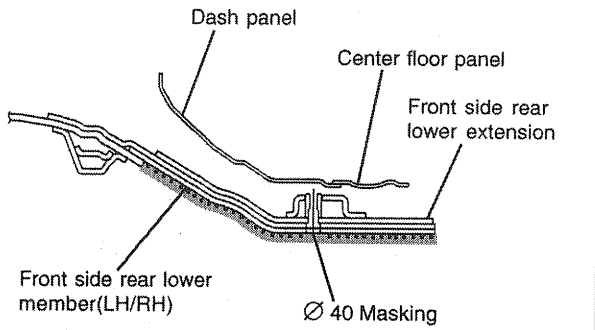
FLOOR



★ Because parts are to be mounted in these locatins, mask the location, before applying the under body coat.

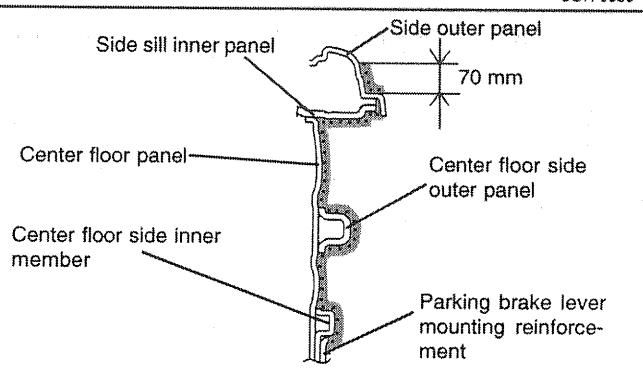
Under body coating (Thickness : ; 0.8mm, ; 1.0 mm , ; 2.0 mm)

COR-0050



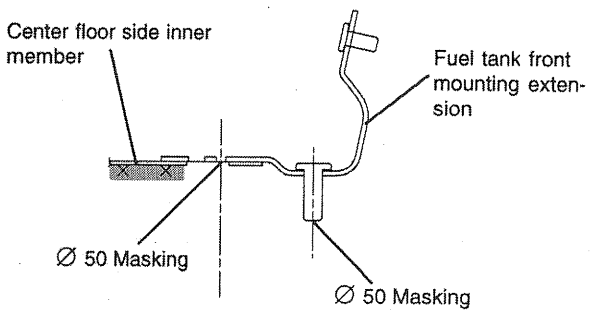
COR-0060

SECTION A-A'



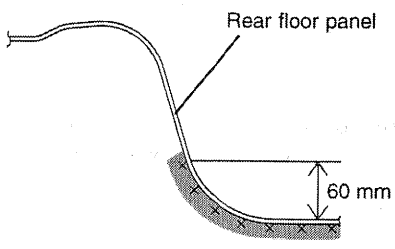
COR-0070

SECTION B-B'



COR-0080

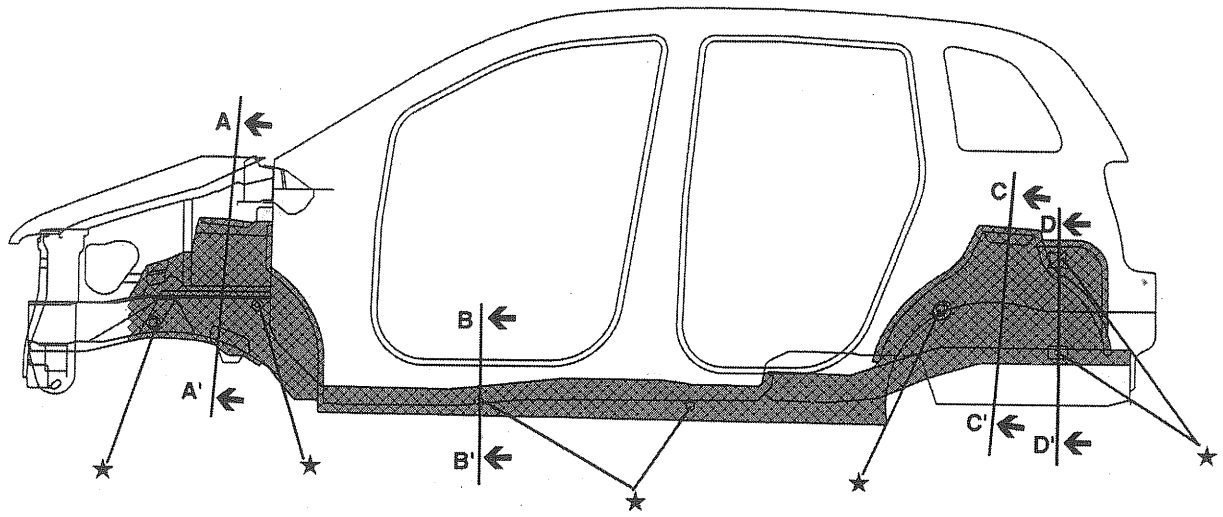
SECTION C-C'



COR-0090

SECTION D-D'

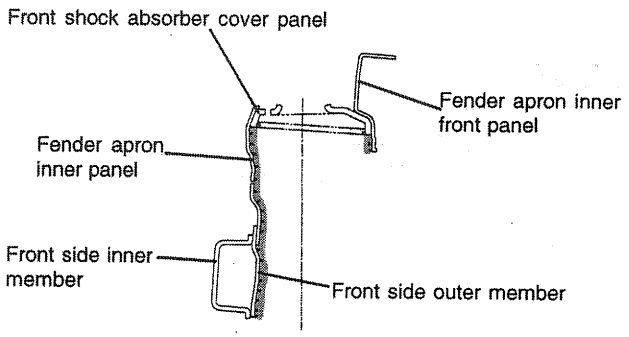
SIDE BODY



★ Because parts are to be mounted in these locatins, mask the location, before applying the under body coat.

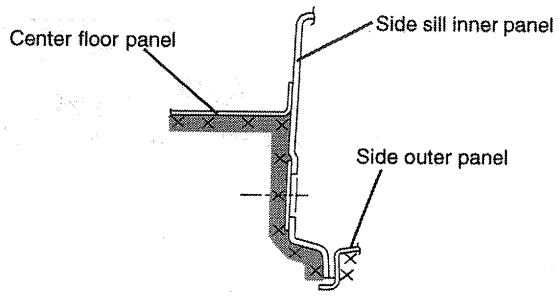
Under body coating (Thickness 1.0 mm)

COR-0100



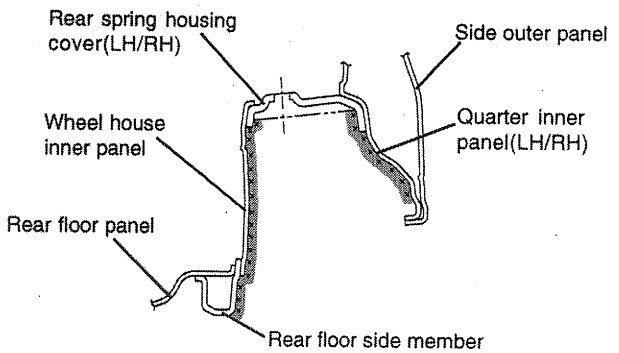
COR-0110

SECTION A-A'



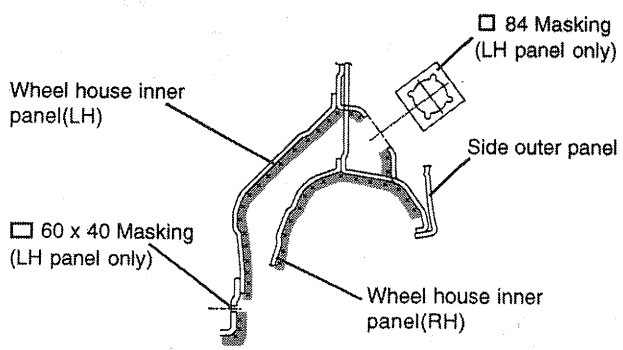
COR-0120

SECTION B-B'



COR-0130

SECTION C-C'

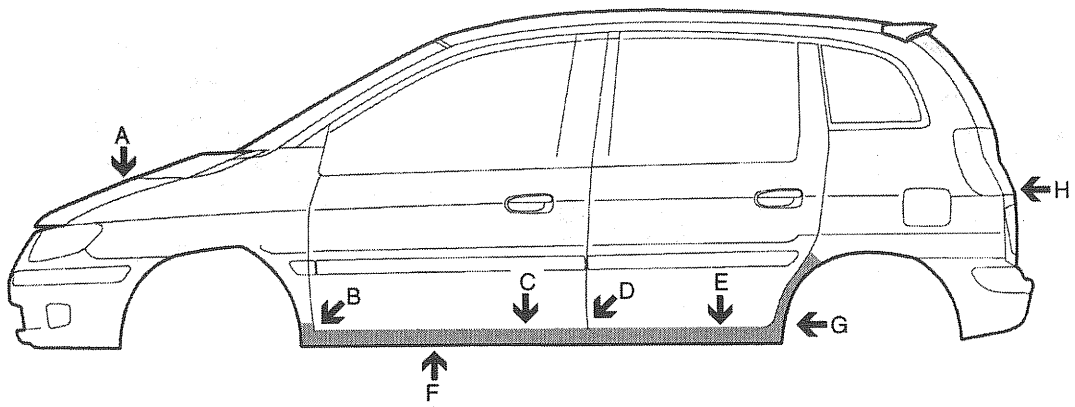


COR-0140

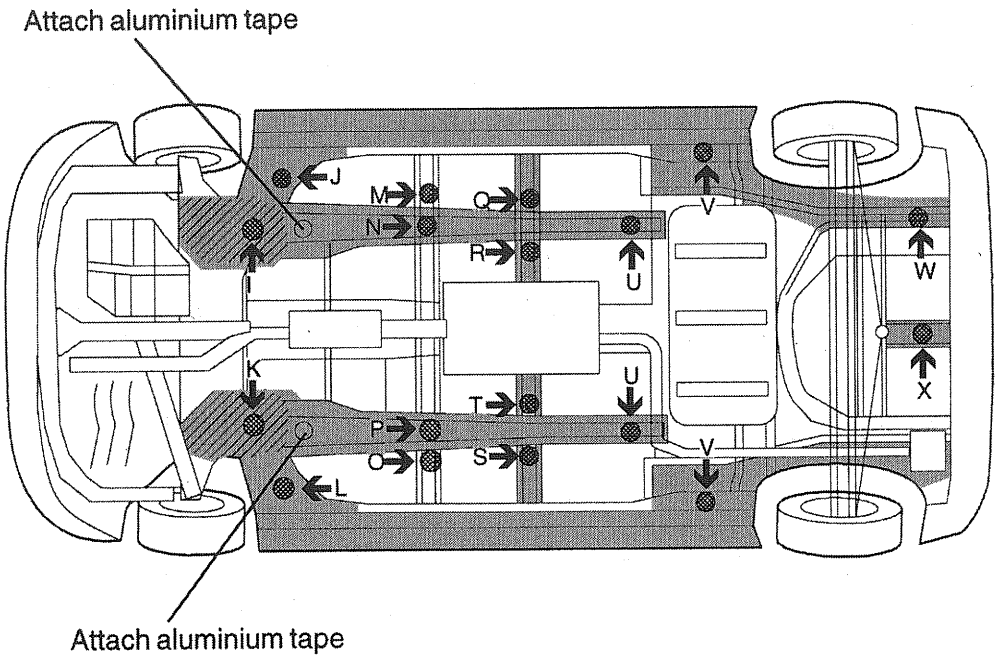
SECTION D-D'

CAVITY WAX INJECTION

In order to provide greater corrosion resistance, cavity wax injection has been performed for the lower areas of the vehicle, such as the sidemember, the side sill and the inside of other panels which are a hollow construction. When replacing these parts, be such to apply cavity wax to the appropriate areas of the new parts.



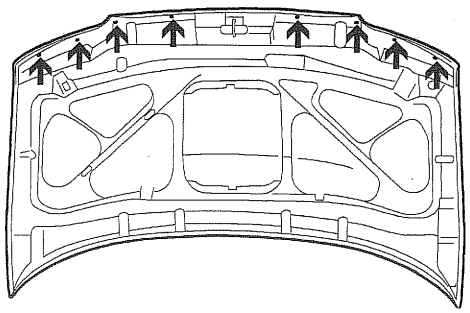
COR-0031



COR-0041

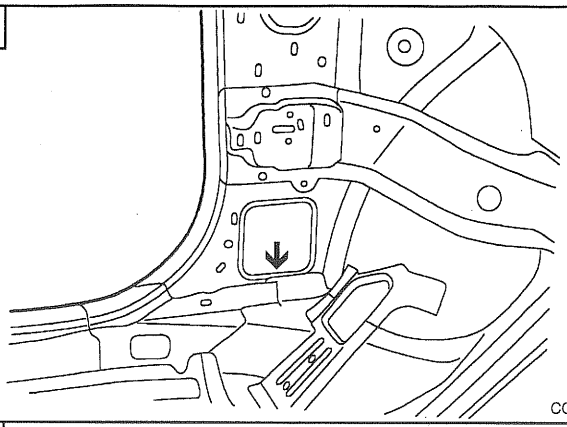
Cavity wax injection (Thickness 40 ~ 50μm)

A



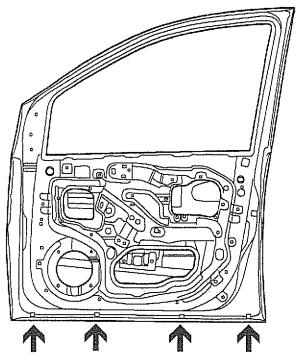
COR-0160

B



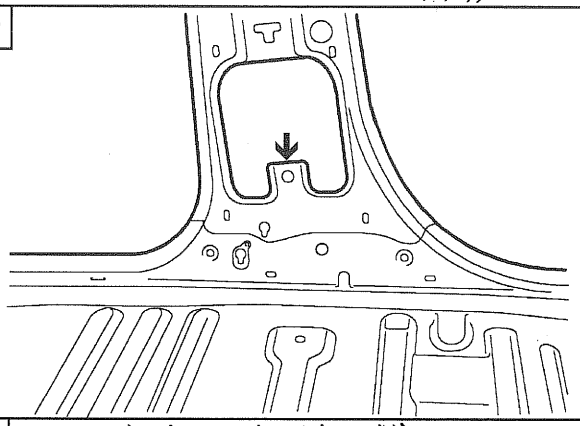
COR-0170

C



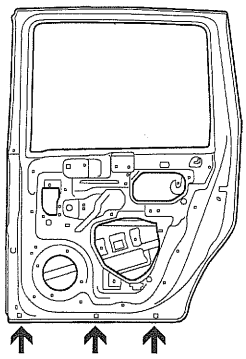
FD1100

D



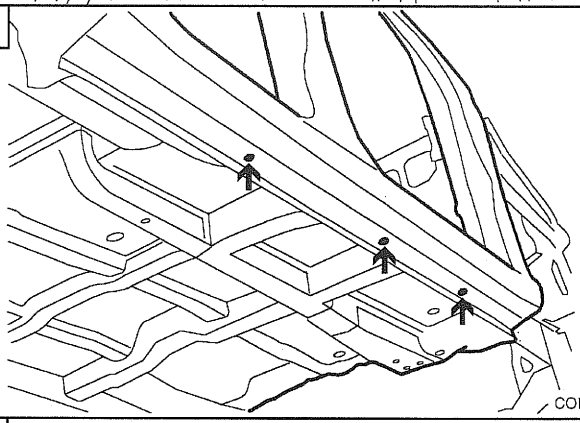
INT-C

E



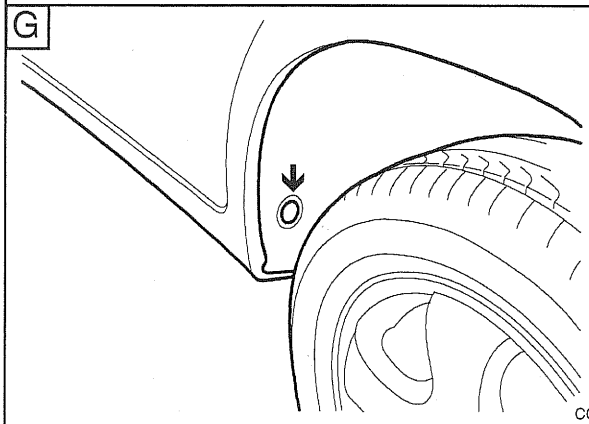
RD1100

F



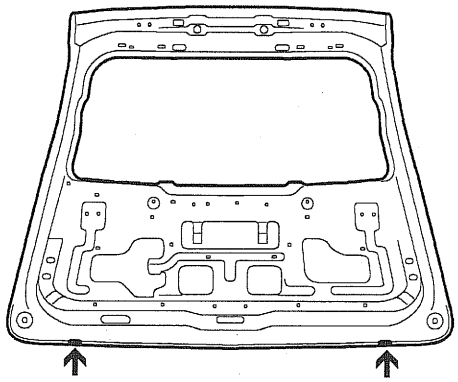
COR-0210

G



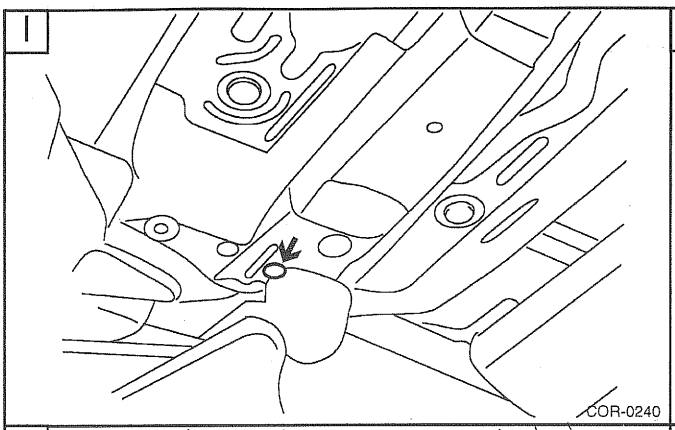
COR-0220

H



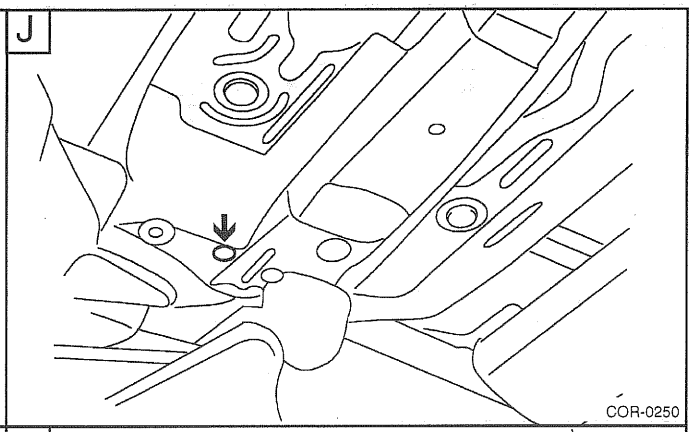
COR-0230

I



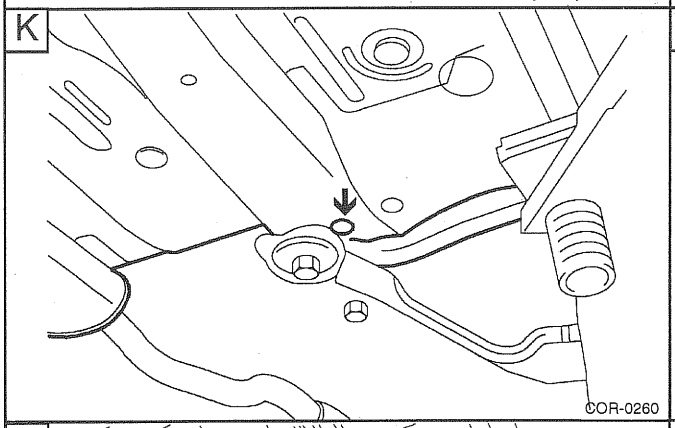
COR-0240

J



COR-0250

K



COR-0260

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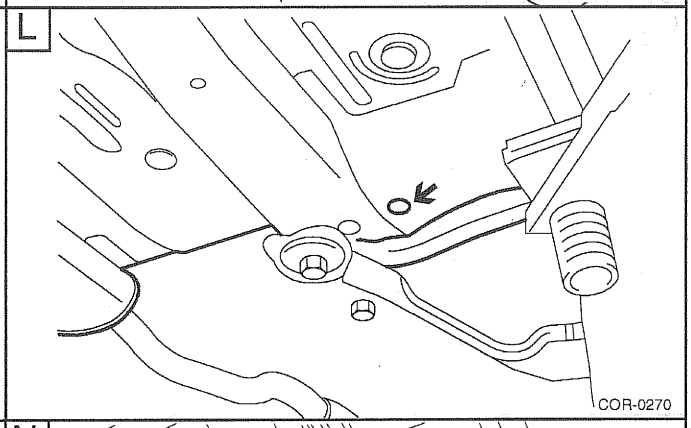
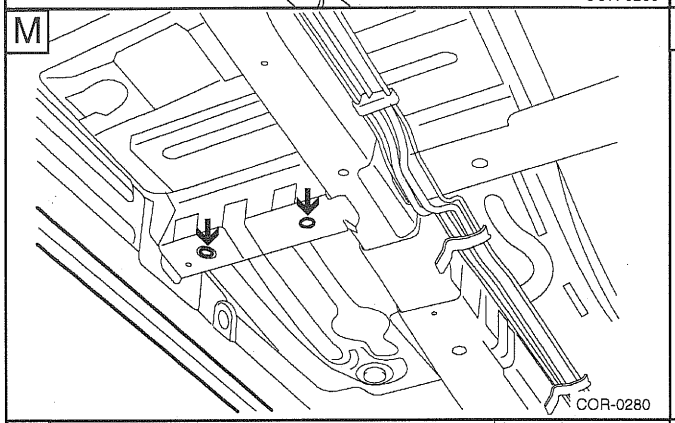


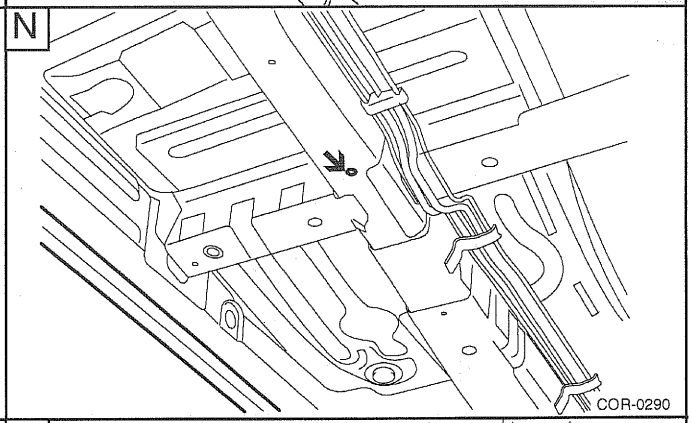
COR-0270

M



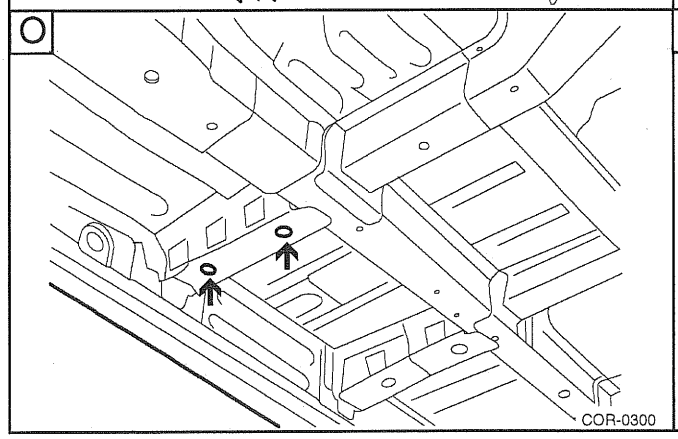
COR-0280

N



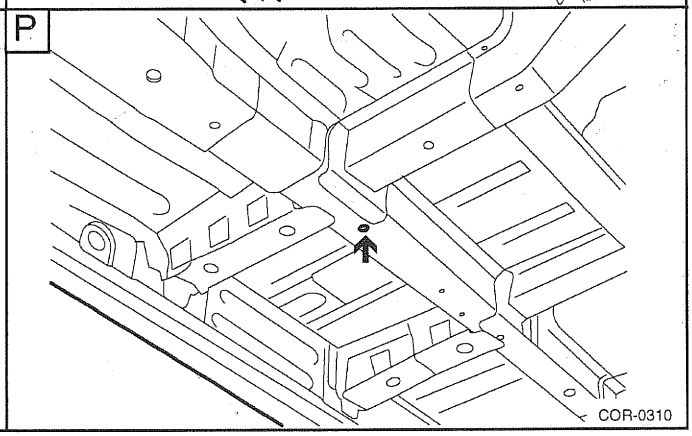
COR-0290

O

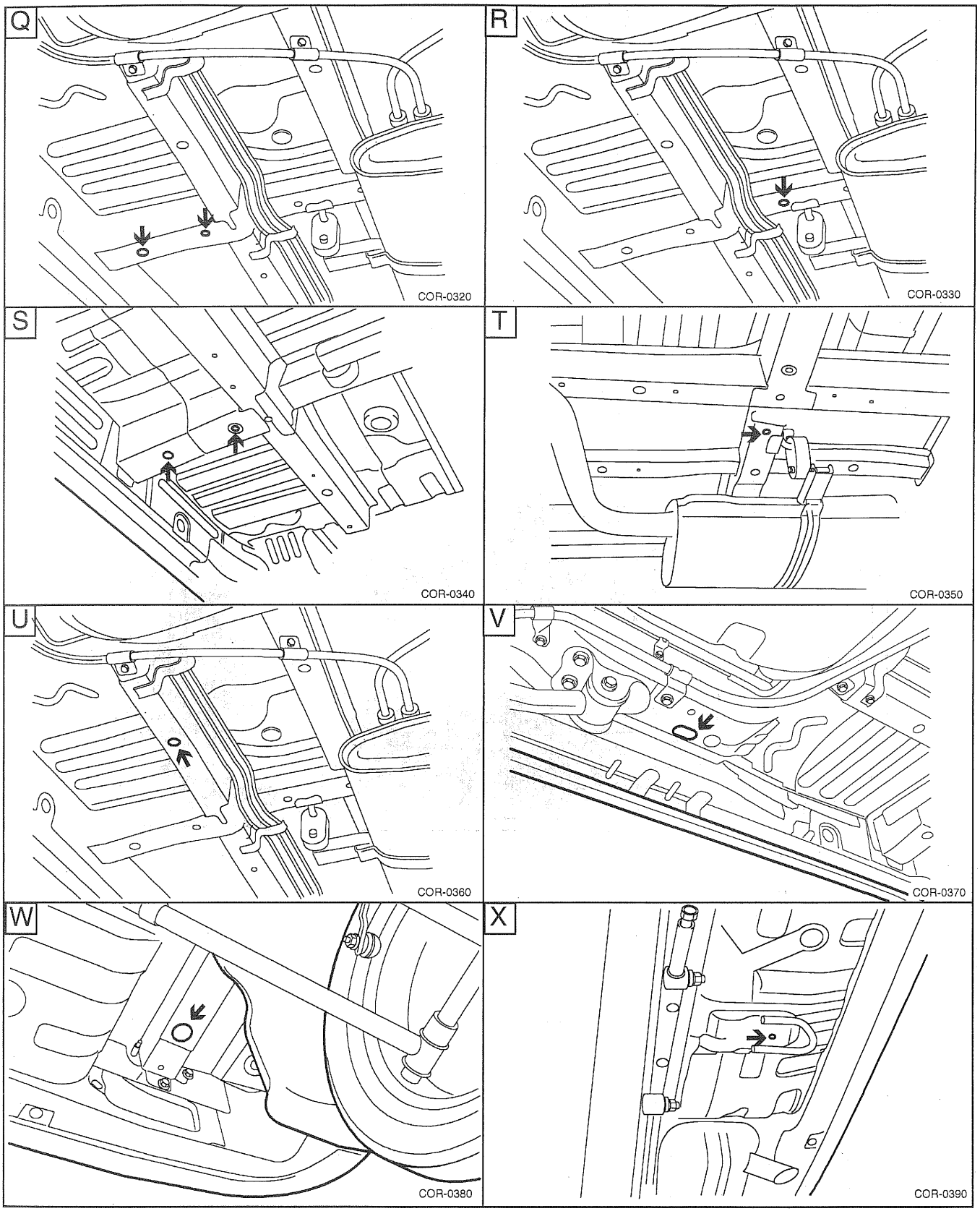


COR-0300

P



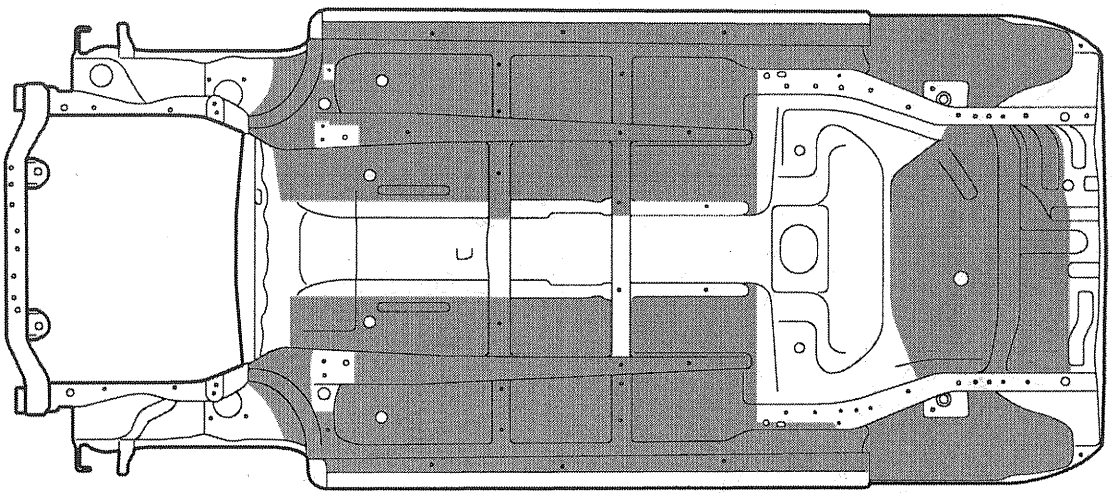
COR-0310


Q
COR-0320
R
COR-0330
S
COR-0340
T
COR-0350
U
COR-0360
V
COR-0370
W
COR-0380
X
COR-0390

UNDER BODY ANTI-CORROSION AGENT

The undersides of the floor and wheel house are undercoated to provide greater corrosion resistance. Therefore, when such panel is replaced or repaired, apply under body anti-corrosion agent to that part.

NOTE
Do not apply the under body anti-corrosion agent to come in contact with tires, muffler and exhaust pipe.



Under body anti-corrosion agent (Thickness 1.0 ~ 2.0mm)

UNDER-2