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GENERAL INFORMATION

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GENERAL GUIDE LINES AND PRECAUTIONS

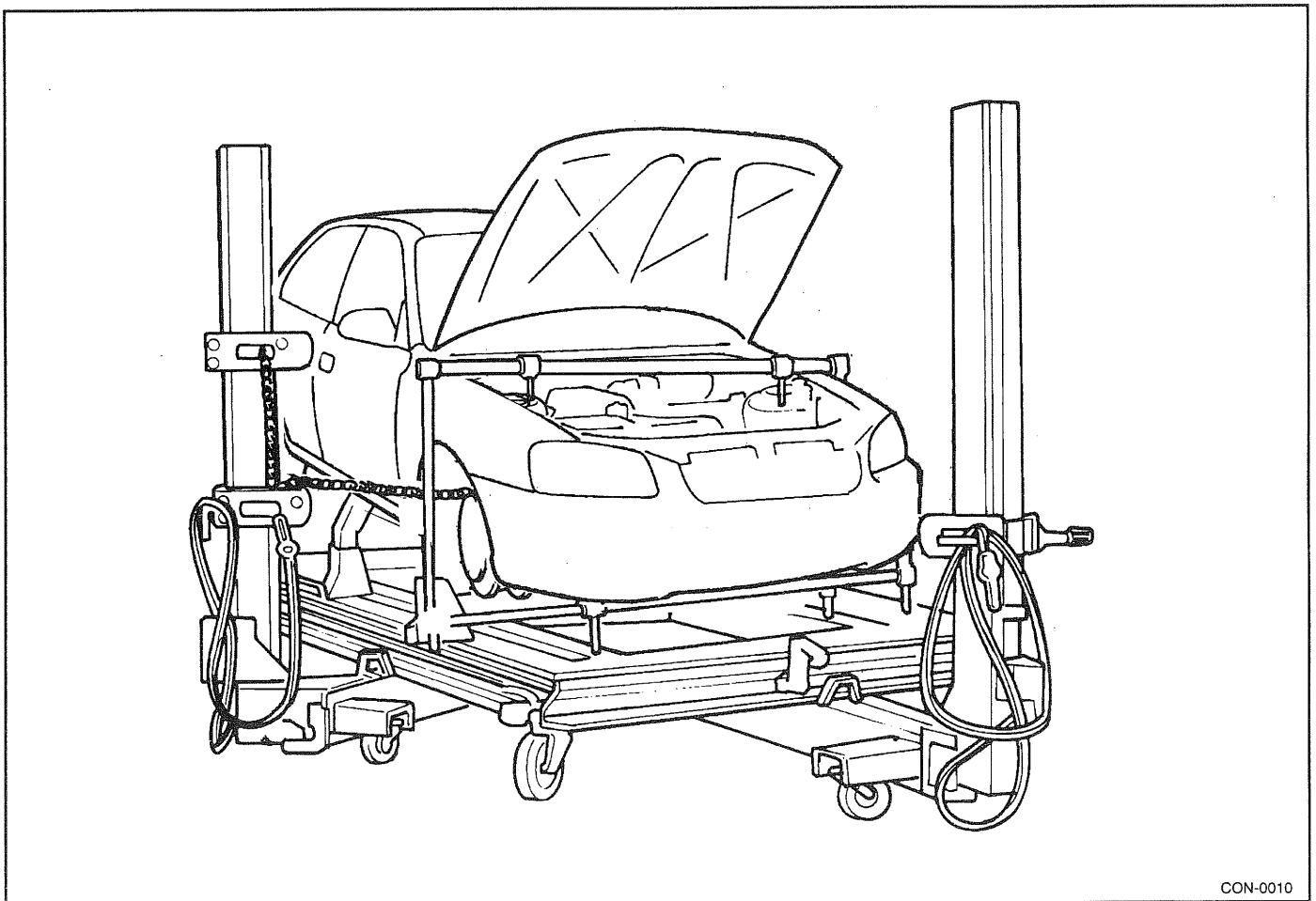
The Hyundai ACCENT(VERNA/EXCEL) is a completely new vehicle design. During its development, close attention has been given to safety, stability, weight and corrosion protection. Typical of unit body design, the Hyundai ACCENT(VERNA/EXCEL) is designed so that the front and rear compartments will absorb 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 ACCENT(VERNA/EXCEL) 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.

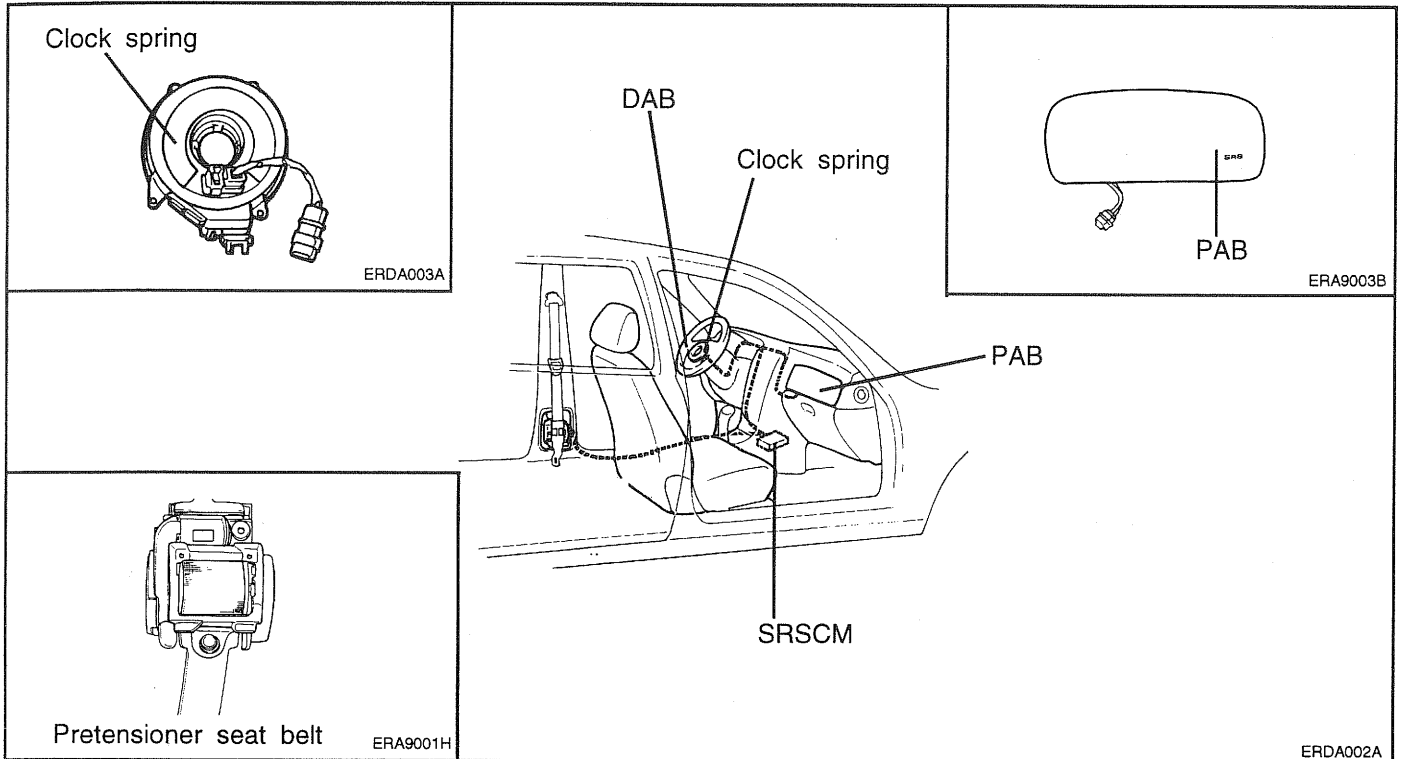
During the repair of a collision damaged automobile, it is impossible to fully duplicate the methods used in the factory during the vehicle manufacture. Therefore, auto body repair techniques have been developed to provide a repair that has strength properties equivalent to those of the original design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

Certain guidelines and precaution are noted as follows.



SRS AIRBAG

SYSTEM COMPONENT



The Hyundai ACCENT(VERNA/EXCEL) 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 ACCENT(VERNA/EXCEL) 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.

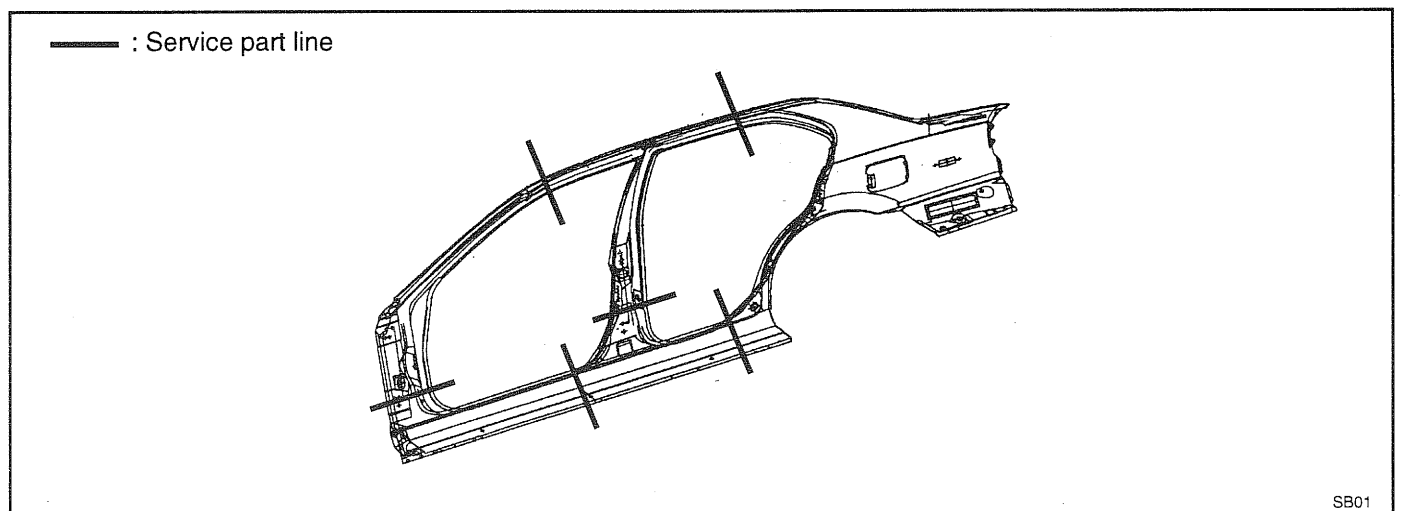
A two part epoxy primer was applied to the metal surfaces during the latter part of the repair. For closed sections, such as front and rear rails, rocker panels and pillars, the primer is applied without applying the metal conditioner and the conversion coating. These steps are omitted to insure that 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 ACCENT(VERNA/EXCEL) 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, refer to "Replacement parts section" of this manual to select and use the appropriate part.



WELDING

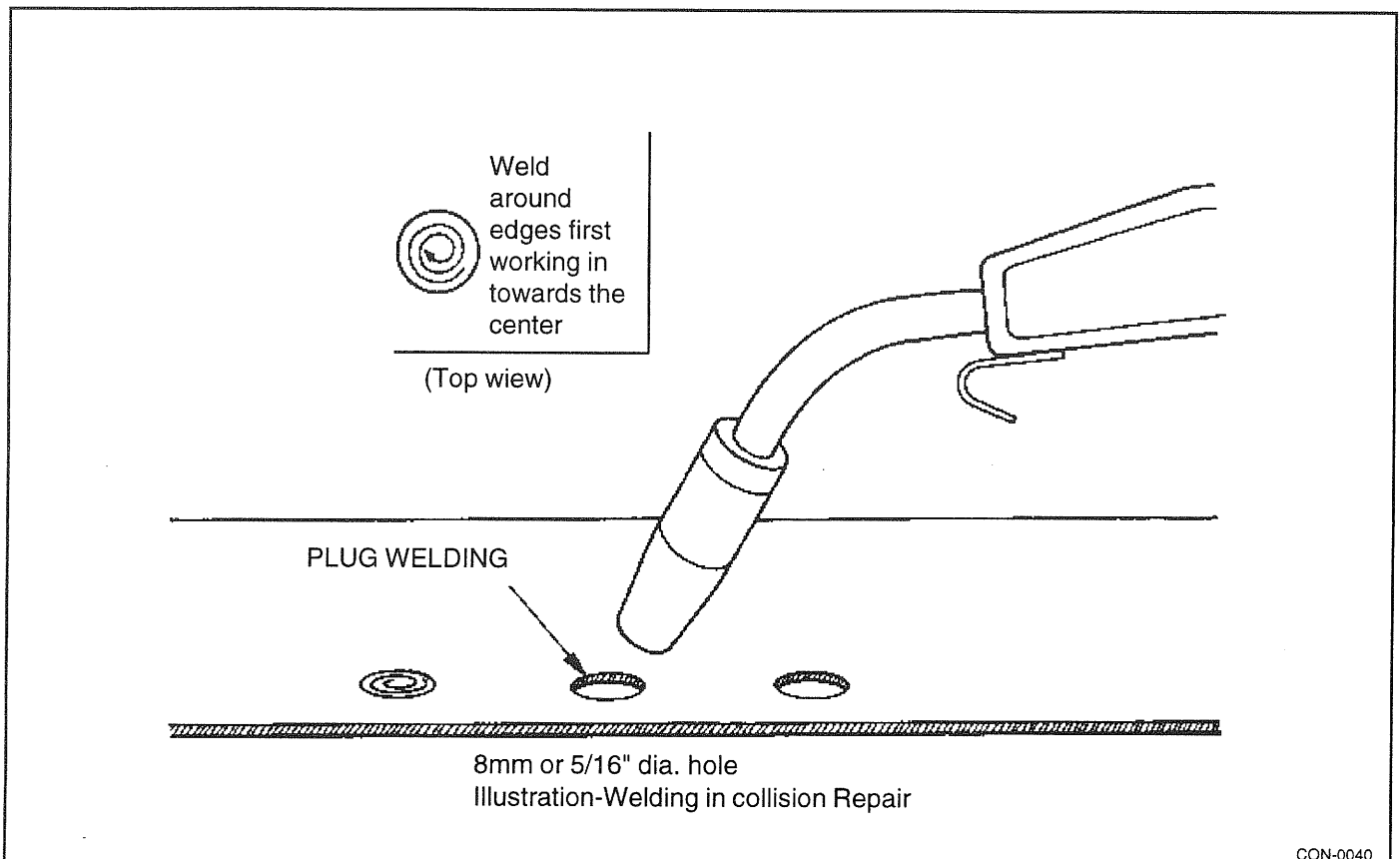
All repairs in this manual require the use of a Metal-Inert Gas (MIG) welder, Gas (oxyacetylene) welding must not be used.

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% CO₂.

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.



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.

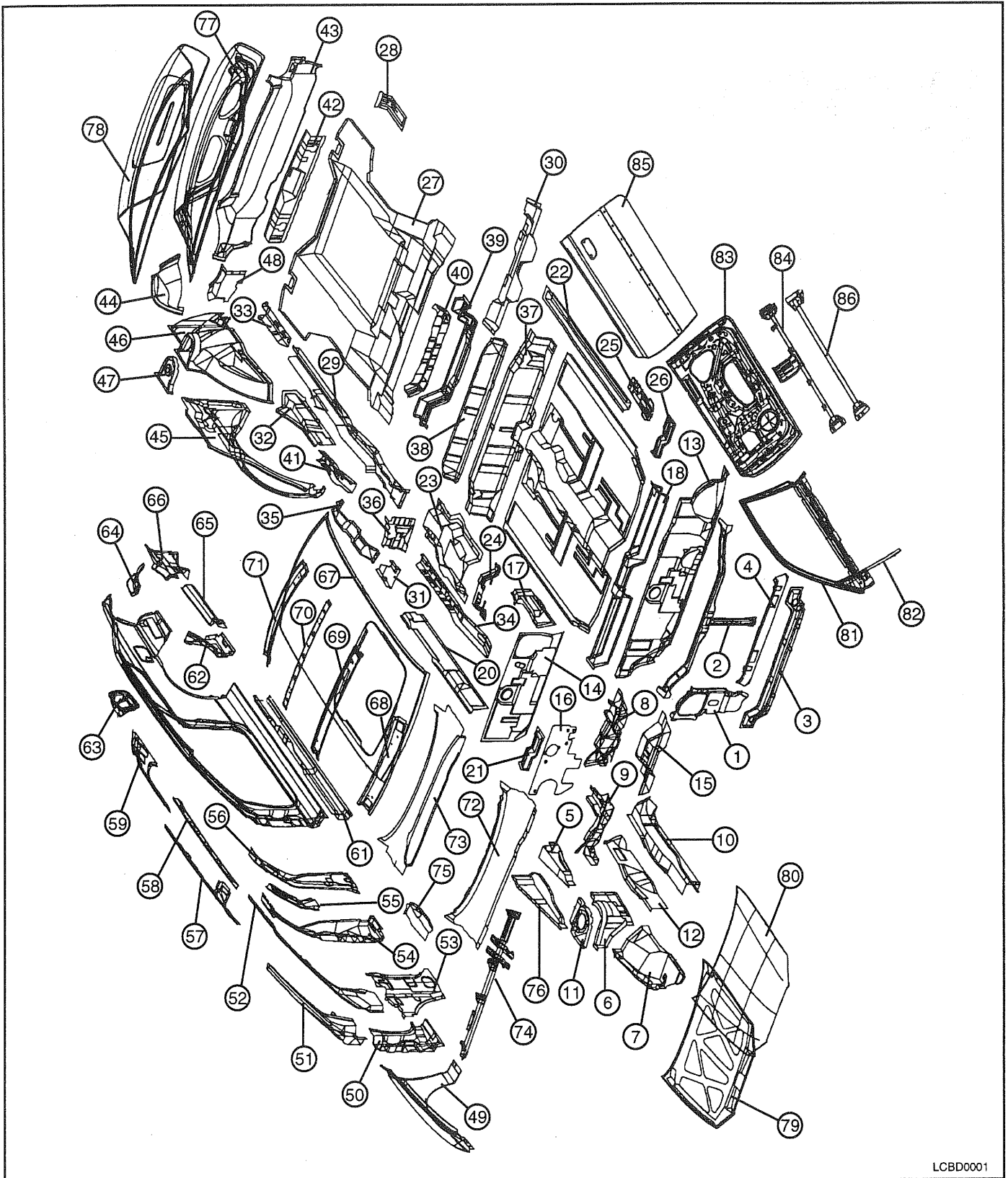
Take care when using gas or cutting torches so as not to burn body sealer or interior. Extinguish immediately if they should catch fire.

BODY CONSTRUCTION

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BODY COMPONENTS - 3 DOOR

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.



LCBD0001

BODY COMPONENTS - 3 DOOR

1. Headlamp support panel
2. Radiator support member
3. Radiator support lower outer member
4. Radiator support lower inner member
5. Front apron outer rear panel
6. Front apron inner panel
7. Front apron outer panel
8. Front side rear lower member
9. Front side rear upper member
10. Front side outer member
11. Shock absorber housing cover
12. Engine mounting bracket
13. Dash panel
14. Dash reinforcement
15. Dash lower center reinforcement
16. Dash panel asphalt No.1 pad
17. Side sill inner front extension
18. Front seat cross member
19. Center floor panel
20. Side sill inner panel
21. Front seat rear mounting bracket
22. Center floor side member
23. Parking brake aperture panel
24. Muffler & heat protector mounting bracket
25. Parking brake aperture reinforcement
26. Front seat rear side mounting bracket
27. Rear floor panel
28. Rear towing hook bracket
29. Rear floor side member
30. Rear seat belt anchorage member
31. Rear tie down hook reinforcement
32. Side sill inner rear extension
33. Rear floor side member extension
34. Rear floor side member reinforcement
35. Rear seat belt side mounting bracket
36. Rear floor front side reinforcement
37. Rear floor front extension
38. Rear floor front cross member
39. Rear floor center cross member
40. Rear floor center cross member reinforcement
41. Rear floor side member inner lower reinforcement
42. Rear transverse member
43. Back panel
44. Side outer rear filler
45. Quarter inner panel
46. Wheel house inner panel
47. Rear spring house cover
48. Rear transverse member extension
49. Fender panel
50. Front pillar outer lower reinforcement
51. Front pillar outer upper reinforcement
52. Front inner upper pillar
53. Front inner lower pillar
54. Quarter outer front reinforcement
55. Front seat belt upper bracket
56. Quarter inner front panel
57. Roof side inner rail
58. Roof side inner reinforcement
59. Quarter inner upper panel
60. Side outer panel
61. Side sill outer reinforcement
62. Side outer rear lower extension
63. Fuel filler housing
64. Side outer rear extension
65. Quarter inner side panel
66. Quarter pillar reinforcement
67. Roof panel
68. Roof front rail
69. Roof center rail
70. Roof center No.2 rail
71. Roof rear rail
72. Cowl inner upper panel
73. Cowl top outer panel
74. Cowl cross bar
75. Cowl side inner upper panel
76. Cowl side upper outer panel
77. Tail gate inner panel
78. Tail gate outer panel
79. Hood inner panel
80. Hood outer panel
81. Door frame
82. Front door quadrant channel
83. Door inner panel
84. Door reinforcement beam
85. Door outer panel
86. Door reinforcement beam