Preparation of Work

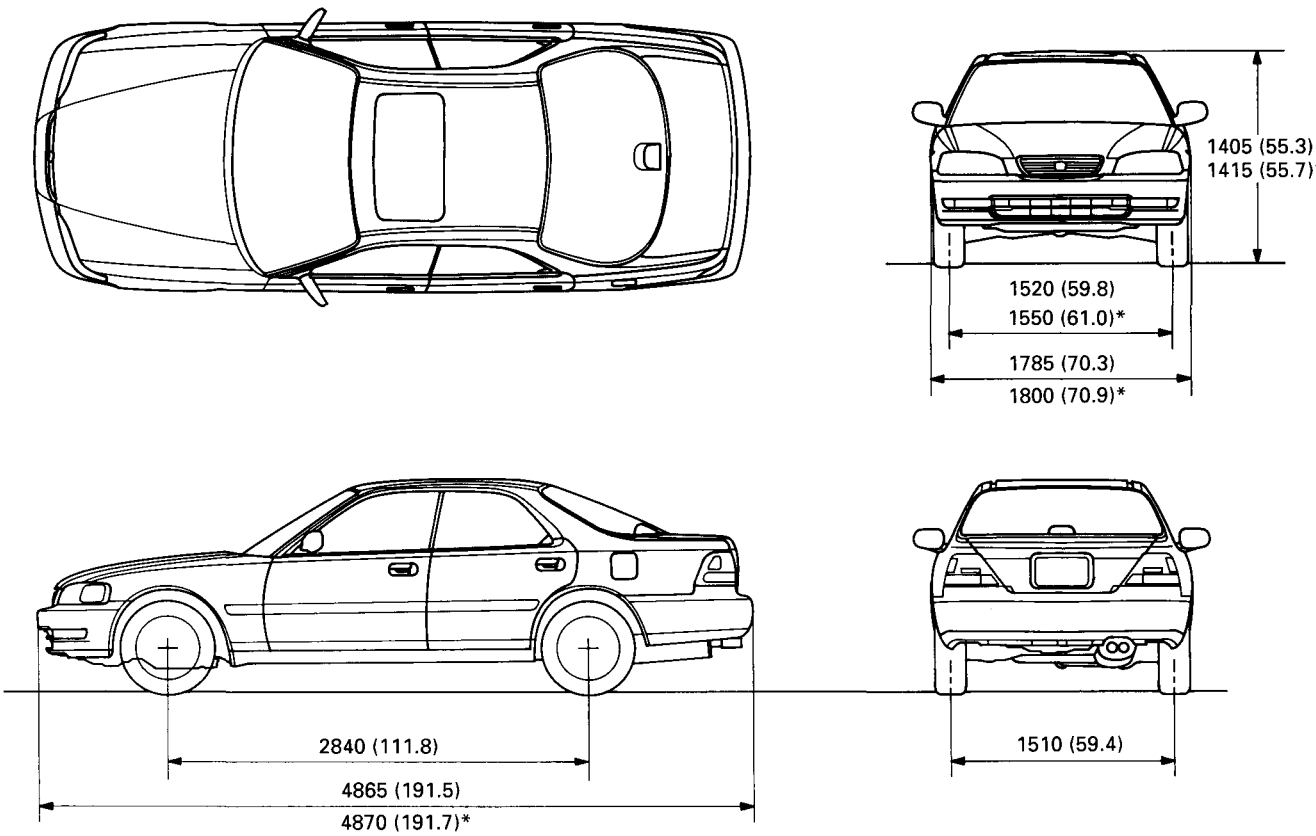
Description

- Most monocoque bodies are composed as a single unit by welding together pressed parts made of steel plates which come in a variety of different shapes and sizes. Each part is responsible for displaying a certain strength and durability in order that it may play its role in meeting the functions of the body as a whole.

Damage to the exterior of the body can be inspected visually, but where there has been an external impact, it is necessary to inspect the extent of the damage. In some cases, the deformation has spread beyond the actual areas which were in the collision and so this has to be inspected closely.

Unit:mm (in)

2.5TL:



Front wheel alignment:

Camber	0°00′±1°	
Caster	2°07′±1°/3°40′±1°*	
Total toe	0±2 (0±0.08)/OUT1±2 (0.04±0.08)*	
Wheel turning angle	in	40°00′±2°/47°30′±2°*
	out	33°18′/34°30′*

Rear wheel alignment:

Camber	−0°30′±1°
Total toe	IN2±2 (0.08±0.08) IN3±2 (0.12±0.08)*

*: 3.2TL

Checkpoints

- **Accurate Inspection of Damaged Parts (Visual)**

Seat Belts

Replace the seat belts if:

1. The belt material is cut, punctured, burned or in any way damaged.
2. The buckle or retractor does not work properly.
3. They were being worn at the time of a collision (check for damage at the seat belt anchor points).
4. Their condition is questionable.

Front Section:

1. Is there any bending, splitting, denting or other damage to the suspension and its related parts?
2. Is there any deformation of the front bulkhead or radiator core? Have any of the connected sections come apart?
3. Are there any creases or distortion in the front wheelhouse or side frame? Have any of the connected sections come apart?
4. Is there any bending or twisting of the whole front area?
5. Is there any deformation like creases, bulges, or dents in the front pillar, dashboard, floor, etc.?
6. Is there any vertical twisting or misaligned clearance in the door?
7. Is the windshield seal broken?
8. Is there any deformation in the vicinity of the top part of the roof panel's center pillar?
9. Is there any damage inside the automobile (is there any twisting of the dashboard, or anything irregular with the clearances or sheet-mounting parts)?
10. Is there any damage to the steering wheel? Is there any deformation in the column and the column-mounted parts?
11. Is there any oil or water leakage and damage to the engine, transmission or brakes?
12. Is there any irregular noise in the gear changing operation, engine and transmission rotation?
13. Are there any traces of contact between the engine block and the dashboard lower panel?
14. Is there any damage to brake or fuel lines, or wire harnesses?

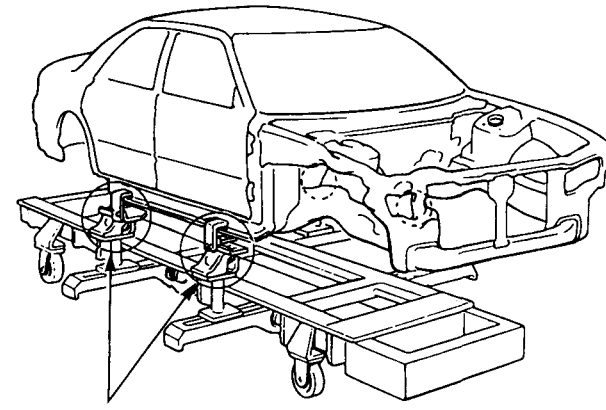
Rear Section:

1. Is there any twisting, bulging or denting of the rear floor and rear bolsters? Have any of the connected sections come apart?
2. Is there any irregular bulging or denting in the rear fender?
3. Is there any distortion in the rear inner panel? Is there any bending and denting in the vicinity of the rear pillar?
4. Is there any distortion or creasing is the rear wheelhouse and arch sections? Have any of the connected sections come apart?
5. Is there anything irregular in the rear glass and quarter glass seal clearance?
6. Is there any twisting or misalignment of the clearance of the trunk lid or tailgate opening section?
7. Is there any bending, splitting, denting or other damage to the suspension and its related parts?
8. Is there any deformation of the rear floor, rear floor cross member and damper base? Have any of the connected sections comeapart?

Preparation of Work

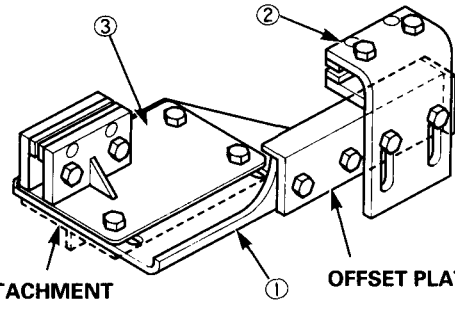
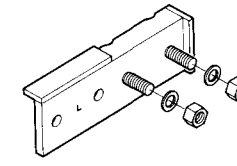
Correction of the Damaged Area

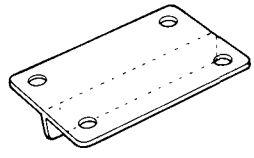
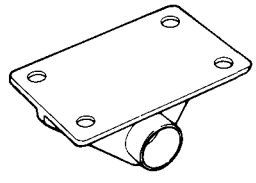
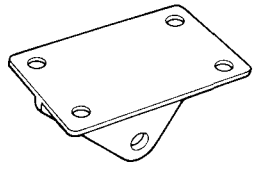
Set the frame corrector on the car body.
The side sill is flangeless to allow reshaping by pulling it out.
Use the horizontal pinch welds for anchoring the car.



UNDERBODY CLAMPS

Underbody Clamp Specifications:

UNDERBODY CLAMP (Special tool)	Clamp Number	
	AT-63 ① Clamp body ② Side clamp ③ Under clamp (Without offset plate and attachment)	OFFSET PLATE (No. AT-63-100)  NOTE:Use a offset plate, clamp the lower section of the front pillar of the body.

ATTACHMENT	Number	Frame correctors
Standard type: 	AT-63-AL	● Dataliner ● Celette ● Car-o-liner ● Flex-o-liner ● etc.
C – type: 	AT-63-C Inner diameter 65 mm (2.6 in)	● Korek ● Auto pole ● etc.
U – type: 	AT-63-U Inner diameter 20 mm (0.8 in)	● U-Base ● Pro-Tec ● etc.

1. Apply load to the damaged section and pull it out until the section is almost restored to the original shape.

2. Check that the parts of the body they cover have been more or less restored to their original shapes.

   NOTE: Check the original position using the body dimensional drawings (see section 6) and the positioning jigs (see page 1-7).

3. Remove the parts that require replacement.

4. Decide whether to replace all the affected parts or whether to cut the weld joint parts and replace them.

5. Cut off and separate the damaged parts.

   NOTE: When cutting the parts off, take special care that you do not damage adjacent parts on the automobile.

   Setting Condition of Replacement Parts Joint Sections:
   - Make sure that you can perform straightening work after welding.
   - Make sure that the locations are not susceptible to distortion caused by other parts.
   - Make sure that there are few removable parts and that the location allows safe welding.
   - Make sure that the joints are short, and that paint repair can be performed easily.
   - Make sure the locations are such that the joints can be finished in a way that does not affect the outward appearance.
   - Make sure that the locations do not hinder the removing and attaching of parts.
     NOTE: Bear in mind all of these conditions, and after determining the joint locations, cut the joints for an overlap of 20~30 mm (0.8~1.2 in).

6. Mold the related parts.

7. Set and tack weld the replacement parts.

   NOTE: Temporarily mount the related parts and check the clearance and level differences.

8. Weld the replacement parts.
   Welding methods (see section 2).

   NOTE: Use of the positioning jig is recommended.

   CAUTION: Protect body parts with the heat-resistant protective cover to prevent damage, when welding.

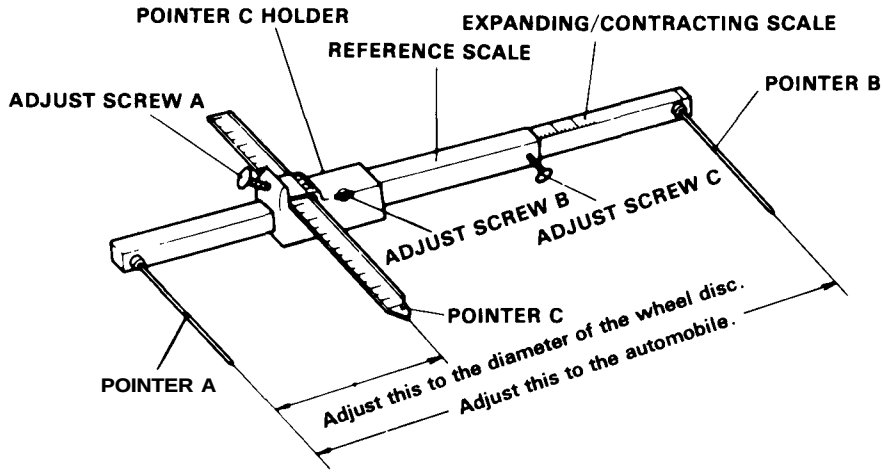
   The paint film, which is designed to prevent corrosion caused by moisture, is destroyed around the edges of the locations which have been repaired by welding.
   Therefore, in such places and especially in those areas which are not visible, apply another coat of the paint, referring to the anti-corrosion painting manual. This operation is designed to maintain durability and quality (see section 7).

Preparation of Work

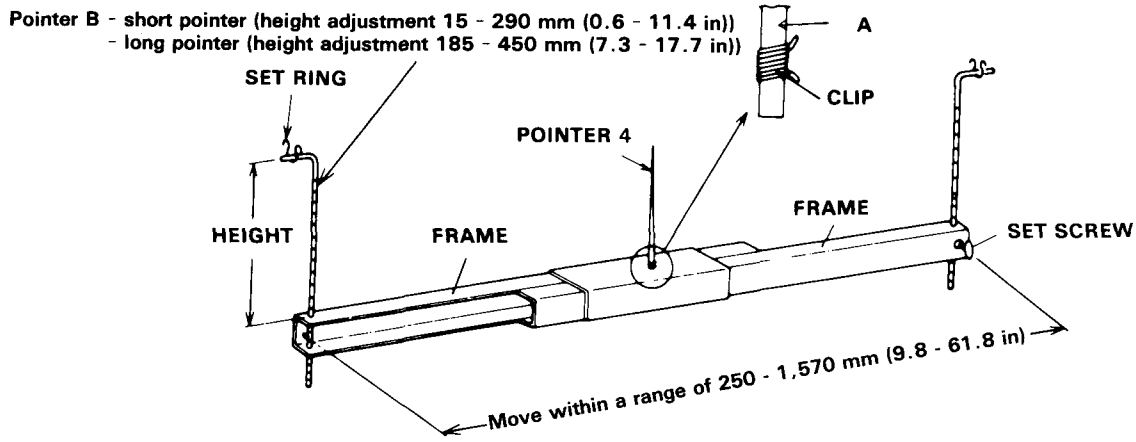
Measurement (Excluding small damage)

Whenever possible, make judgements and conclusions based on measurement. Measure the wheel alignment (see page 1-2) so as to prevent any future trouble like unsymmetrical wear of the tires or catching of the steering wheel.

If there are any deviations, use a tram tracking gauge and measure parts of the body.



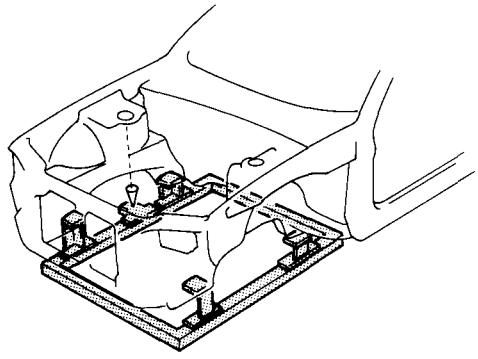
If there is any twisting to the body, measure using a frame centering gauge.

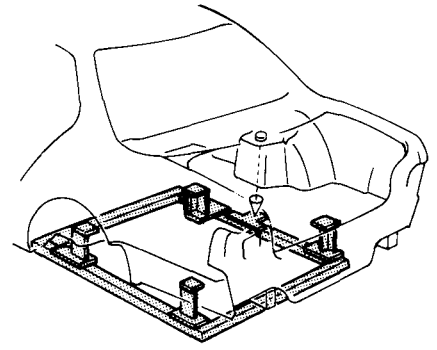


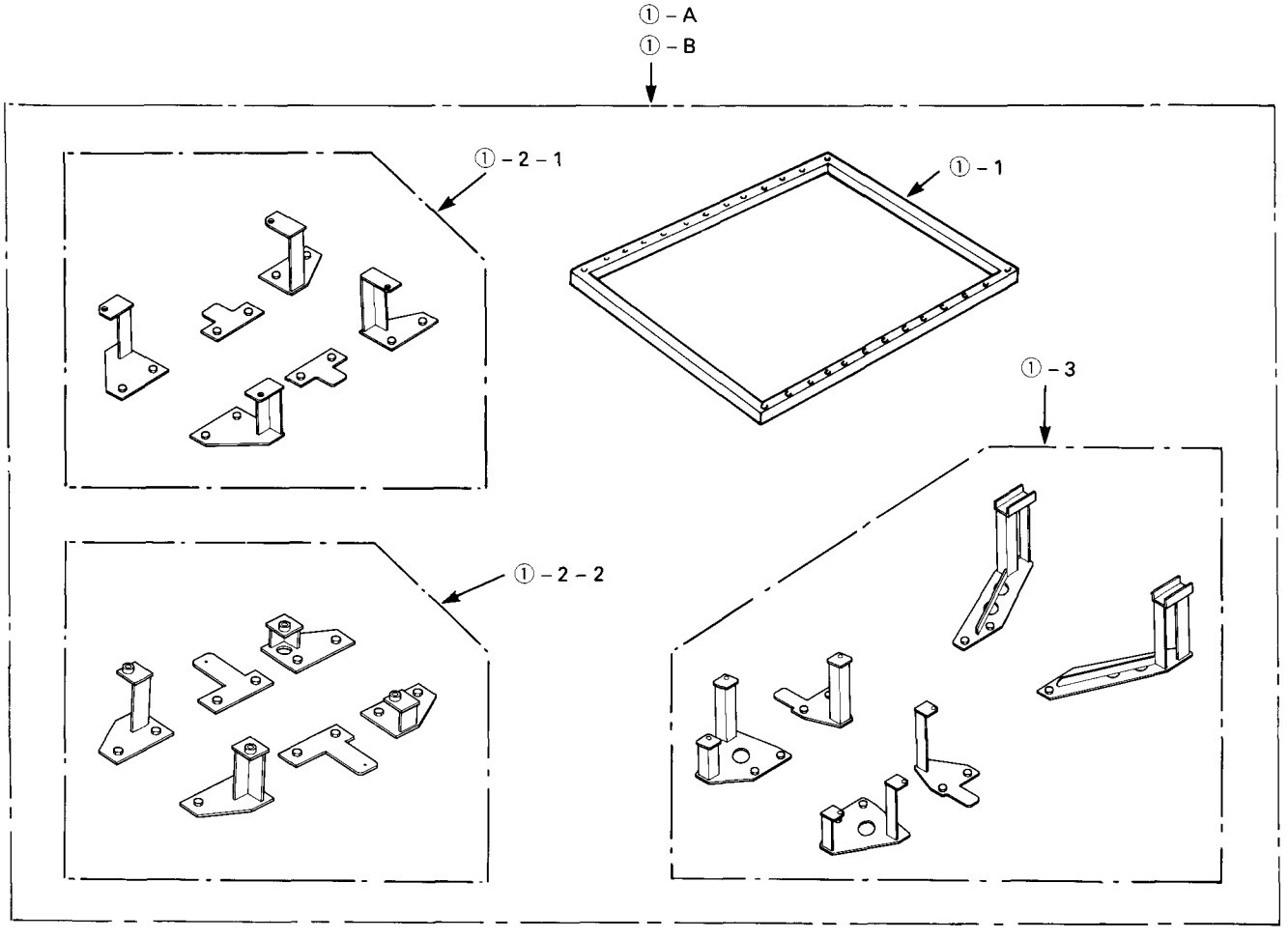
When measuring body dimensions, use a universal tram gauge.

Positioning Jigs

No.	Jig Number	Desctiption	Page Reference
① – A	HJ-33	Under frame positioning jig set (2.5TL)	
① – B	HJ-34	Under frame positioning jig set (3.2TL)	
① – 1	HJF-01	Frame	4-12, 4-18, 4-50, 4-55
① – 2 – 1	HJ-33-F	Front jig brackets (2.5TL)	4-12, 4-18
① – 2 – 2	HJ-17-F	Front jig brackets (3.2TL)	
① – 3	HJ-33-R	Rear jig brackets	4-50, 4-55





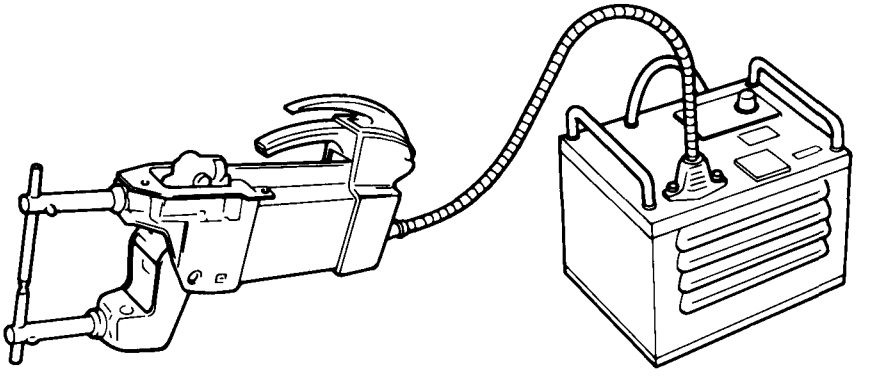


Welding Methods/Repair Tools

SpotWelding

Spot welding is also known as resistance spot welding, and it is the most suitable method of welding for automobiles. It has three main features: the welding can be performed instantaneously, it exercises very little effect on the mother material, and it reduces the generation of distortion to the absolute minimum. However, please remember to remove all paint and other impurities from the surface of the material you intend to weld for reliable results.

Welders:



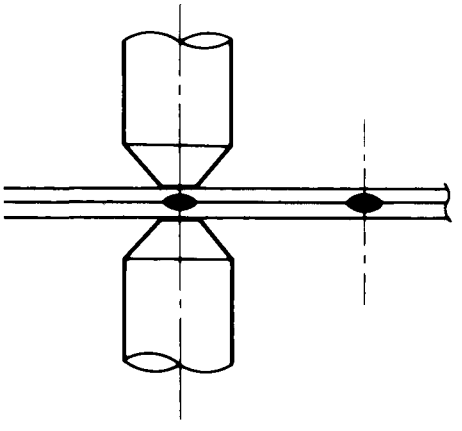
Spot welder Timer

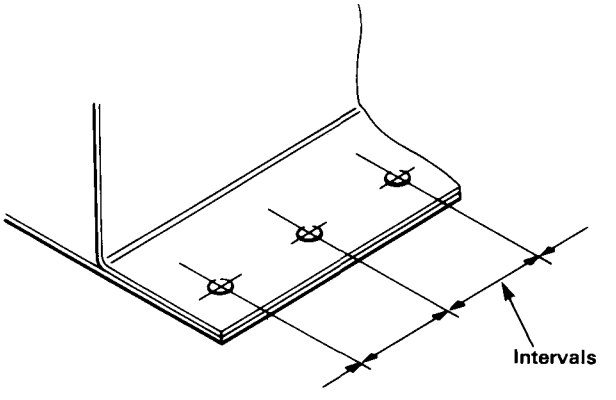
Welding Conditions:

When performing spot welding, make absolutely sure that you conform to the conditions governed by the current, conductivity time, welding pressure, holding time, and shutdown time recommended for the spot welder.

Please bear in mind the following points when welding:

- Plate thickness and minimum welding pitch



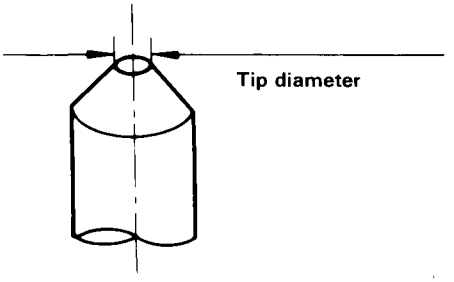


NOTE: When the welding intervals are too small, this leads to branching, making it impossible to maintain the desired soldering state.

Unit: mm (in)

Plate thickness	0.6 (0.02)	0.9 (0.04)	1.2 (0.05)	1.6 (0.06)
Minimum intervals	11 (0.43)	16 (0.63)	20 (0.79)	24 (0.94)

- Plate thickness and tip diameter



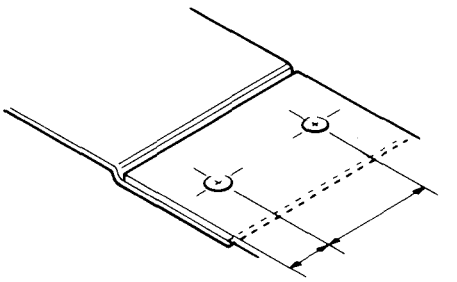
Unit: mm (in)

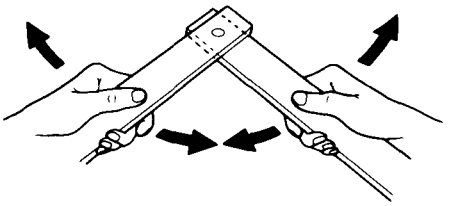
Plate thickness	0.8 (0.03)	0.9 (0.04)	1.2 (0.05)	1.6 (0.06)
Tip diameter	4.5 (0.12)	5.0 (0.2)	5.5 (0.22)	6.0 (0.24)

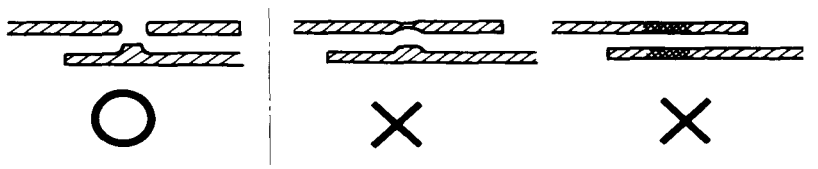
- **Welding Strength Test**

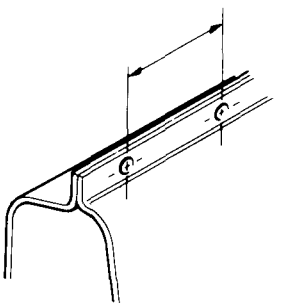
Even if you perform the welding in accordance with the conditions, the strength of the welded sections may fluctuate widely with drops in the voltage and other factors. The quality of the welding cannot be evaluated unless the welded sections are destroyed. Provide yourself with a steel plate of the same thickness and conduct a destruction test.

- If holes appear in the steel plates, this means that the welding is standard strength.

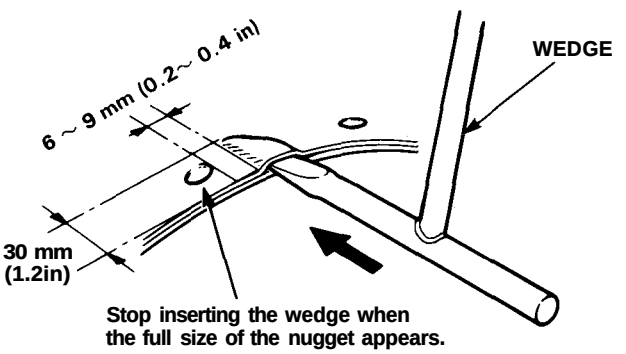


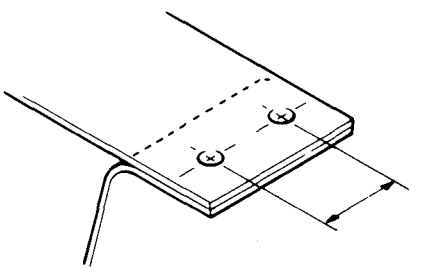






- Drive a wedge between two panels near the nugget. If the welded parts do not come apart and the diameter of the nugget is more than 3mm (0.1 in), the welding should be satisfactory.





NOTE:

It is difficult to perform spot welding in the following circumstances:

- When it is not possible to remove any rust or paint attached to the welding surfaces.
- When the tip of the spot welder cannot be inserted into the welding section.
- When the welding surfaces can be seen from the outside and welding will impair the exterior appearance.

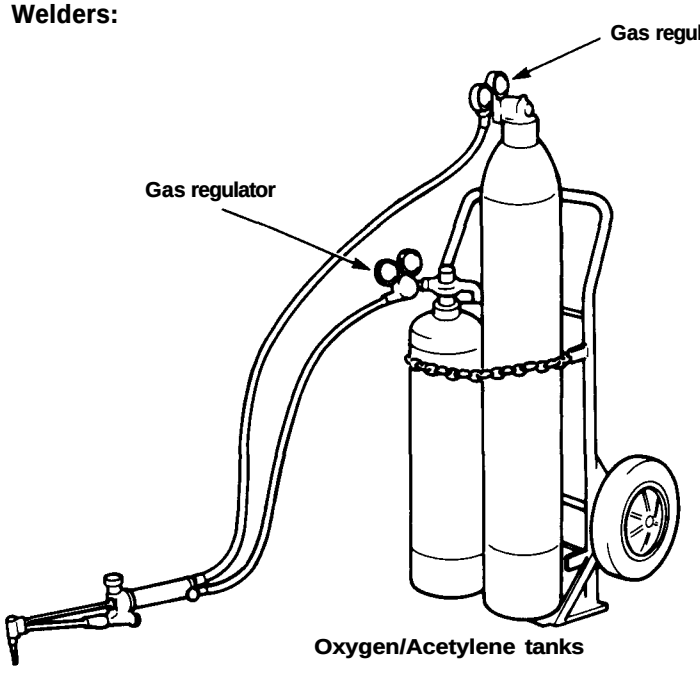
In all these cases, the gas welding method should be employed. Moreover, if it is not possible to perform spot welding because of space restrictions, plug welding using on the arc welding method may be performed instead. For plug welding, the sections to be welded must be close together.

Welding Methods/Repair Tools

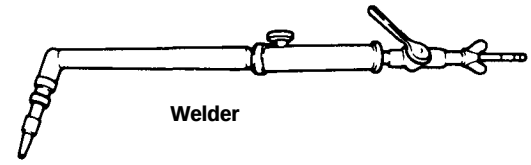
Gas Welding

Gas welding is indispensable for body repair because of the broad range of its applications for joining the body panels, cutting the materials that construct the body, and applying heat to reform panels, and also because it is easy to get hold of the tools. However, this method requires experience.

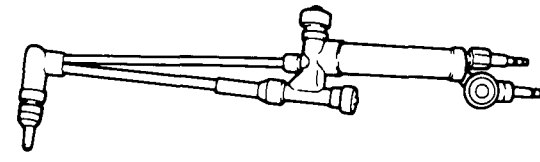
Welders:



Oxygen/Acetylene tanks



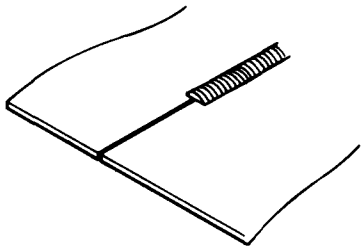
Welder



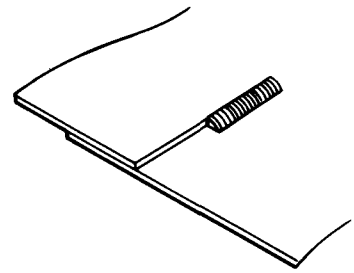
Cutter

Welding Methods:

Butt welding



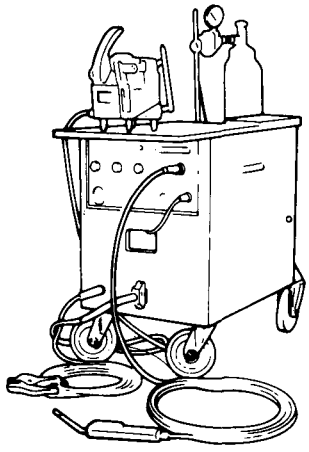
Fillet welding or soldering

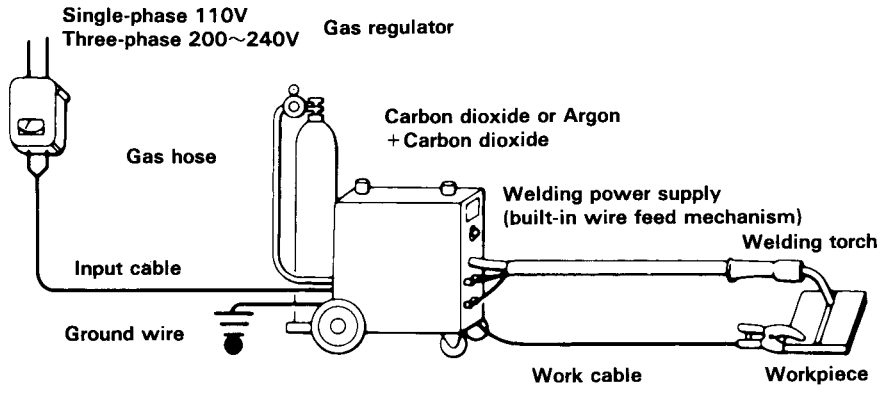


Carbon Dioxide Arc Welder (MIG Arc Weld)

This welding process uses inexpensive carbon dioxide instead of expensive inert gases as a shielding means. Consumable metal electrodes are employed. It has a wide range of applications, including butt welding of thin plate, fillet welding, plug welding, and MIG spot welding. In terms of the weld strength, it is also highly stable.

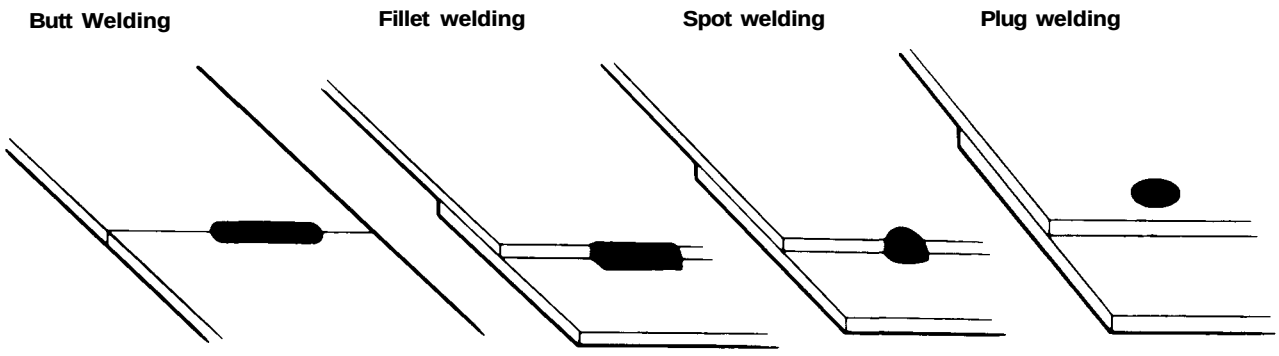
Welders:





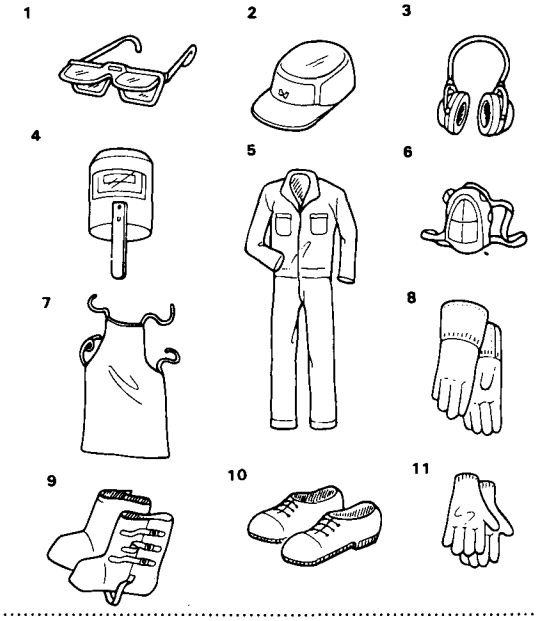
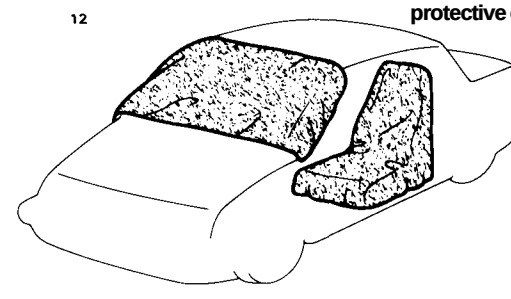
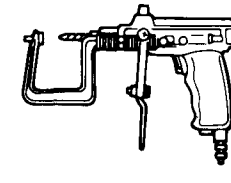
CAUTION: Disconnect the negative battery cable before arc welding.

Welding Methods:



Welding Methods/Repair Tools

Examples of Repair Tools

<table>
<tr><th>Item</th><th>Work</th><th>Tools, equipment used</th></tr>
<tr><td>Protective tools</td><td>Operator</td><td>1. Protective goggles
2. Cap
3. Ear plug
4. Shield for eyes
5. Overalls with long sleeves
6. Dust-proof mask
7. Protective apron
8. Welding gloves
9. Foot protectors
10. Safety shoes
11. Work gloves
12. Spattering guard
 
</td></tr>
<tr><td></td><td>Vehicle body</td><td>Heat-resistant protective cover.
 
</td></tr>
<tr><td>Processing tools</td><td>Plug hole drilling</td><td>DRILLING BLADE, DRILL, SPOT CUTTER
 
PUNCH
 
PRESSURE DRILL
  </td></tr>
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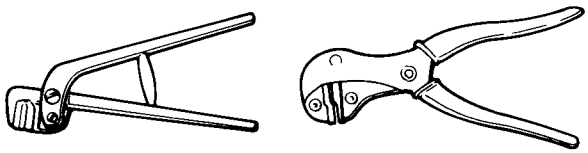
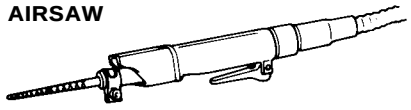
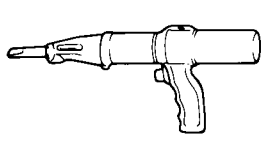
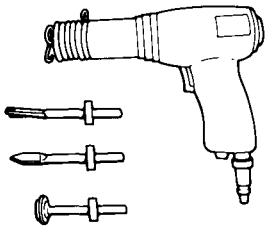
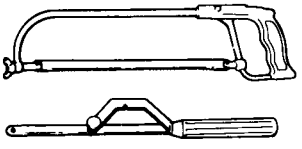
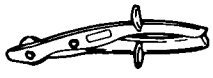
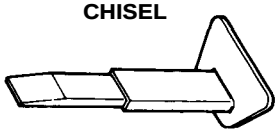
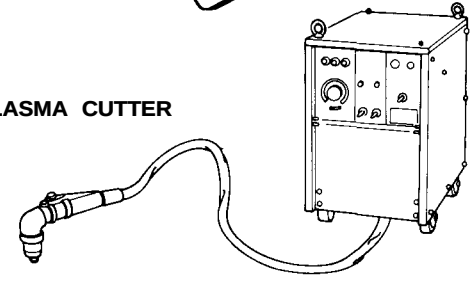
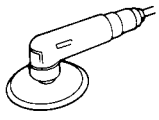
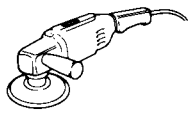
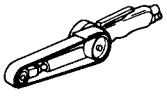
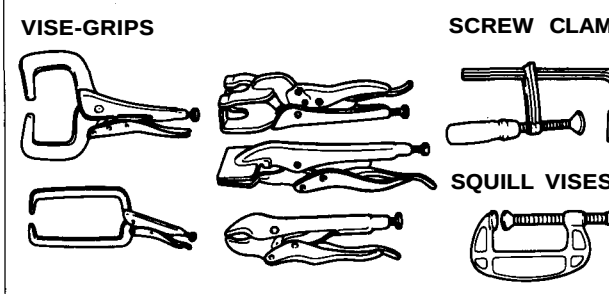
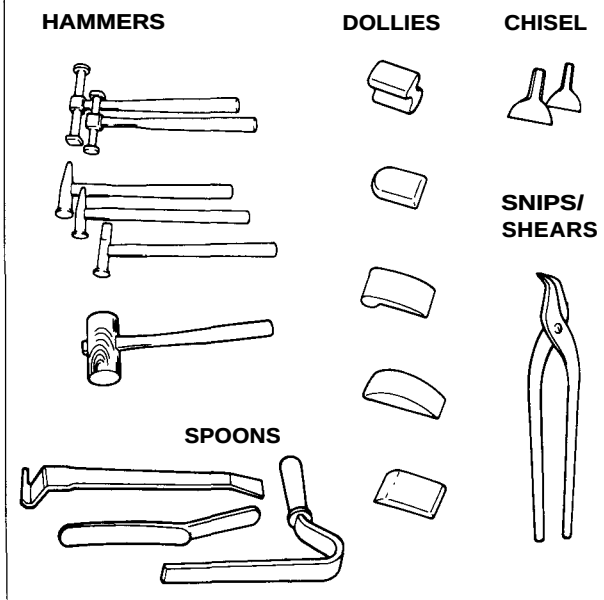
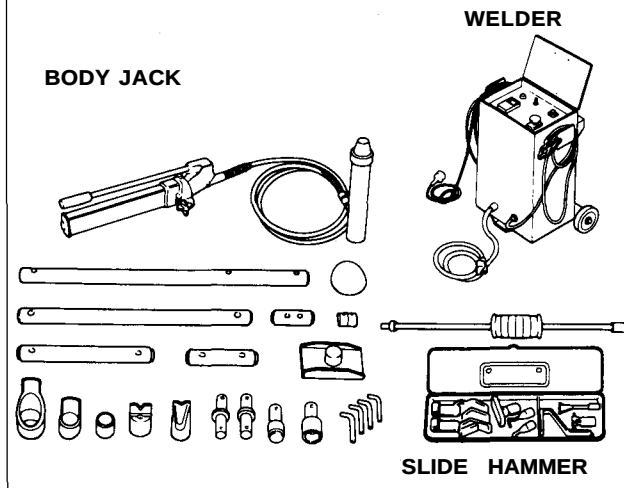
Item	Work	Tools, equipment used
Flange tools	Edge preparation	
Cutting tools	Cutting	**AIRSAW**  **AIR IMPACT CUTTER** **AIR JIGSAW**   **HANDSAW**  **HAND NIBBLER**  **CHISEL**   **PLASMA CUTTER** 
Sanding tools	Cleaning	**DISC SANDER** **BELT SANDER** **Air type:** **Electric type:**   

(cont'd)

Welding Methods/Repair Tools

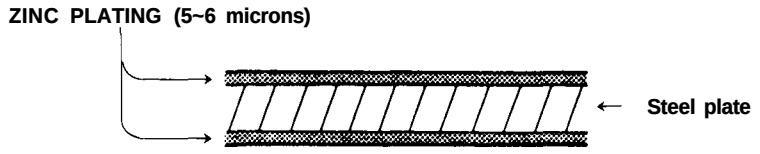
Examples of Repair Tools (cont'd)

Item	Work	Tools, equipment used
Fixing tools	Base metal fixing	
Shaping tools	Skin panel shaping	
	Body, frame shaping	

General Information

Zinc-plated Steel Plate Repair

The zinc-plated steel plate used in some panels of the Acura 2.5TL/3.2TL requires different repair techniques than ordinary steel plate. Refer to "Body Construction" (see page 4-2) for the location of the zinc-plated panels.



1. Before spot welding the zinc-plated steel plate, remove the paint from both sides of the flange to be welded. Apply sealer to the flange after welding.

   ⚠WARNING To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.
   NOTE: Seal the sanded surfaces thoroughly to prevent rust.

2. The electric continuity properties of zinc-plated steel plate is different from ordinary steel plate. When spot welding, increase the current by 10-20%, or increase the resistance welding time.
   Increase the number of weld spots by 10-20% also.

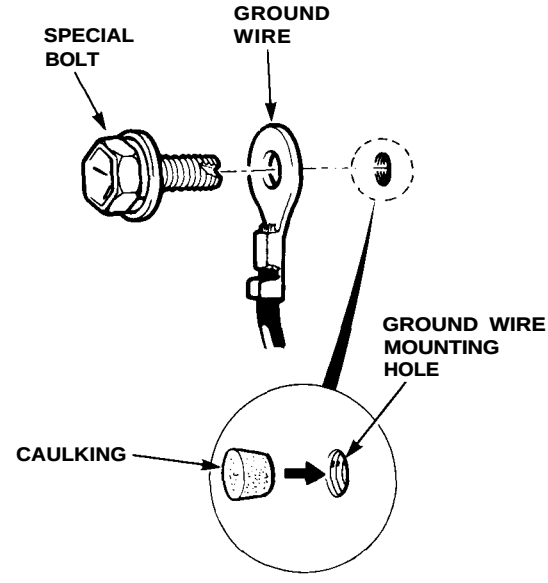
   NOTE: The MIG welding procedures for zinc-plated steel plate are the same as for ordinary steel plate.

   ⚠WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

3. Before applying putty or body filler to the zinc-plated steel plate, sand the zinc plating thoroughly to promote adhesion and prevent blistering.

   NOTE:
   - Use only epoxy-based putties and fillers on zinc-plated steel plate.
   - Follow the manufacturer's specification.

4. When performing paint work, apply caulking to the ground wire mounting position to mask the body.



Avoid puttying as much as possible when repairing a new car. Use alternative methods as much as possible.

⚠ WARNING

- **Most paints contain substances that are harmful if inhaled or swallowed. Read the paint label before opening the container. Spray paint only in a well ventilated area.**
- **Cover spilled paint with sand, or wipe it up at once.**
- **Wear an approved respirator, gloves, eye protection and appropriate clothing when painting. Avoid contact with skin.**
- **If paint gets in your mouth or on your skin, rinse or wash thoroughly with water. If paint gets in your eyes, flush with water and get prompt medical attention.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

Operation	Tools/Materials	Procedure	Remarks
1. Prep the repair area.	Double-action sander, #80 sandpaper.	Sand the area with a double-action sander and #80 sandpaper. Clean with wax and grease remover.	
2. Apply putty. NOTE: Putty can be applied after priming as described in step 4.	Epoxy-based putty. ● Mix the putty and hardener according to the manufacturer's directions. Polyester resin putty. Body filler.	Apply in several thin coats if necessary. Try to avoid leaving pinholes in the putty. ● Follow the manufacturer's recommendations for preparation.	
3. Sand and clean the puttied area.	Double-action sander, orbital sander, hand sanding file, #80, #120, # 240 sandpaper, wax and grease remover, shop towels.	Rough-sand the area with a double-action sander and #80 sandpaper, then sand with #120 sandpaper. Featheredge with #240 sandpaper. Clean with wax and grease remover.	
4. Coat with primer. NOTE: Apply to bare sheet metal and puttied area.	Epoxy-based primer and hardener, epoxy thinner. ● Mix and thin the primer according to the manufacturer's directions.	Apply 2–4 coats, allowing sufficient flash time between coats. Force dry at 140–158°F (60–70°C) for at least 30 minutes.	Spray to a thickness of 30–35 microns
5. Sand and clean the whole area.	Double-action sander, #300, #400 sandpaper, wax and grease remover, shop towels.	Sand the repair area by hand with #300, # 400 sandpaper. Blow off with compressed air. Clean with wax and grease remover.	
6. Apply intermediate coat to the whole area to be repainted.	Polyester/urethane resin primer/surfacer or top-coat enamel. ● Mix and thin the primer according to the manufacturer's directions.	Apply 2–4 coats, allowing sufficient flash time between coats. Force dry at 140–158°F (60–70°C) for at least 30 minutes.	Spray to a thickness of 30–35 microns
7. Sand and clean the whole area to be repainted.	Hand sanding file, double-action sander, #400, #600 sandpaper, wax and grease remover, shop towels.	Sand the repair area by hand with #400 sandpaper until it's level. Sand the whole area to repainted with #400–600 sandpaper. Clean with wax and grease remover.	
8. Top-coat the whole area to repainted.	Acrylic urethane resin top coat paint, hardener, and thinner. ● Mix and thin the paint according to the manufacturer's directions.	Apply 2–4 coats allowing sufficient flash time between coats. Force dry at 140–158°F (60–70°C) for at least 30 minutes.	Spray to a thickness of 40–50 microns

General Information

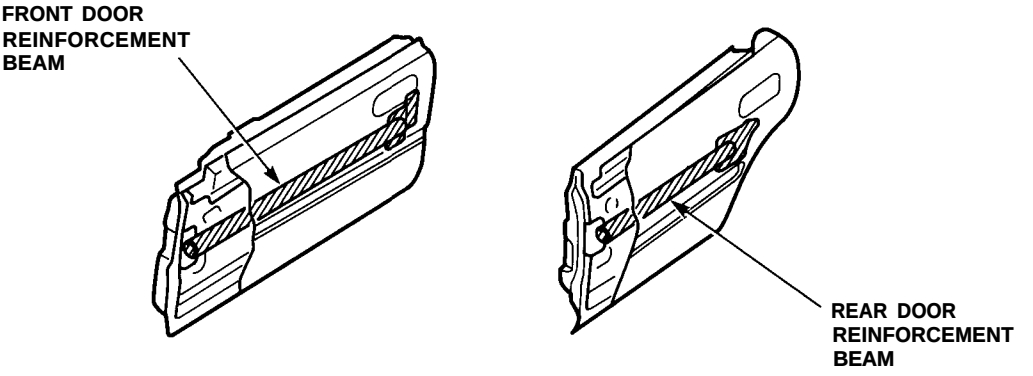
Door and Bumper Reinforcement Beams

Door and bumper reinforcement beams used on Honda automobiles are made from a metal equivalent to High Strength Steel (except 2.5TLfront bumper reinforcement beam).

Should High Strength Steel be heated, the strength of the steel will be reduced. If High Strength Steel is damaged, as in a automobile accident where the door reinforcement beams are bent, the beams may crack should any attempt be made to straighten them.
2.5TL front bumper reinforcement beam is made of aluminum alloy (#6000).

For this reason, Door and Bumper Reinforcement Beams should **never** be repaired, they should be **replaced** if they become damaged.

NOTE: If a door beam is damaged, the whole door panel assembly should be replaced.



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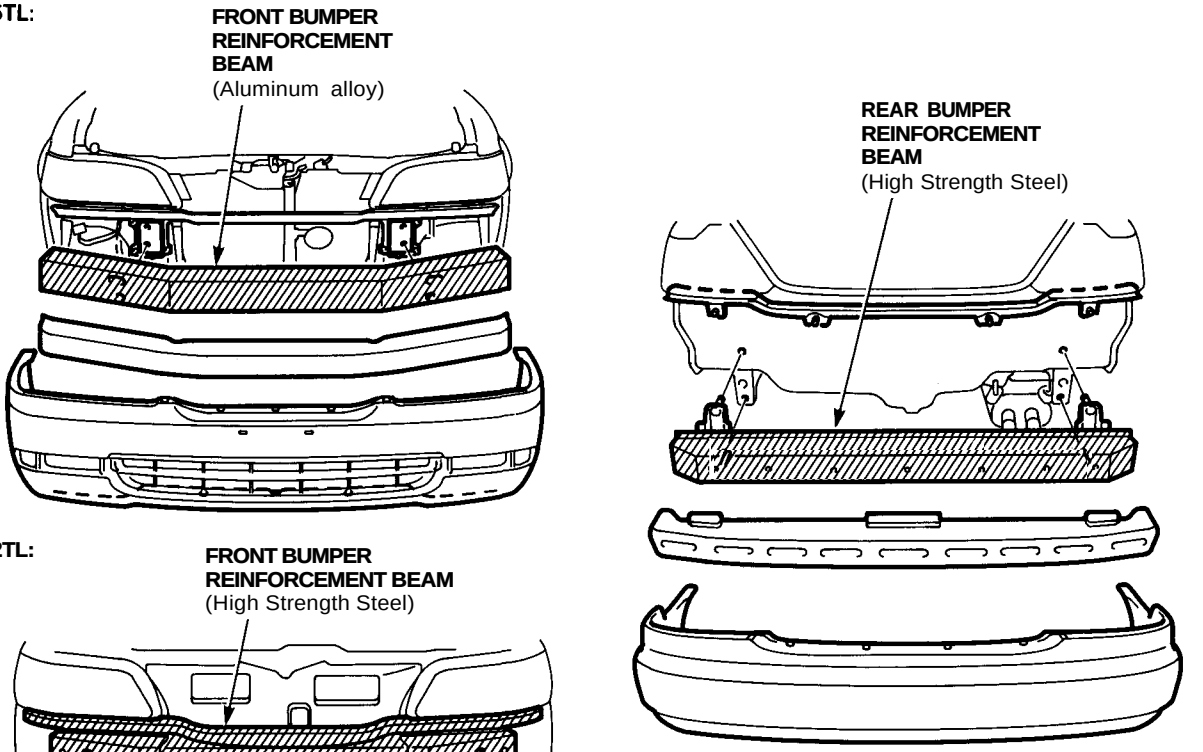
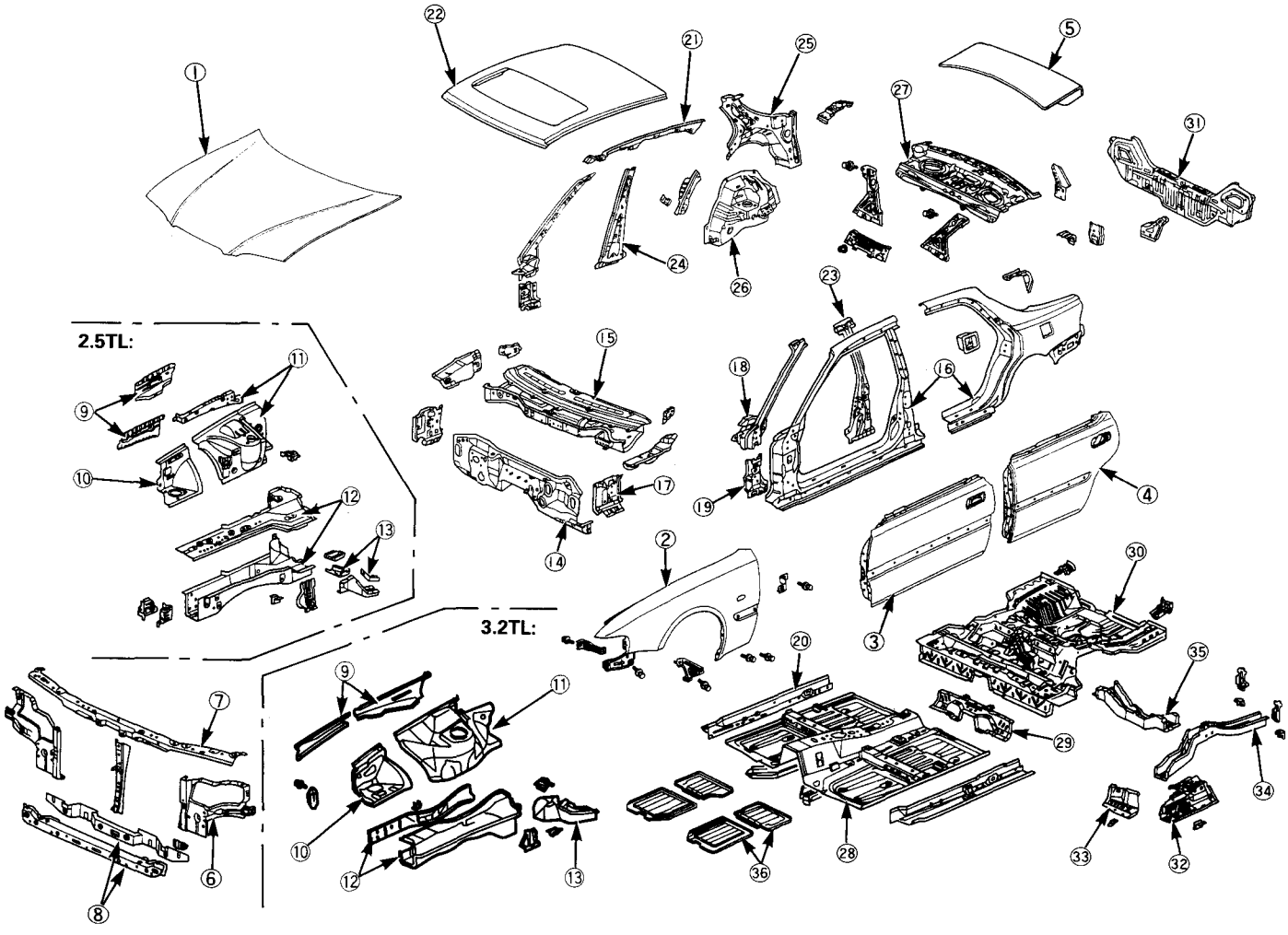


3.2TL:

Construction



NOTE: Be sure to use epoxy-based putty and primer **surfacer** to make any repairs on paint coats or zinc-plated sheet metal (see page 3-3).

No.	Part Name	Zinc-plated		No.	Part Name	Zinc-plated	
		Both Sides	One Side			Both Sides	One Side
①	Hood	○		⑲	Front Pillar Lower Stiffener	○	
②	Front Fender	○		⑳	Inside Sill	○	
③	Front Door Panel/Door Skin	○		㉑	Roof Side Rail		
④	Rear Door Panel/Door Skin	○		㉒	Roof Panel		
⑤	Trunk Lid	○		㉓	Center Pillar Stiffener		
⑥	Front Side Bulkhead	○		㉔	Center Pillar Inner		
⑦	Bulkhead Upper Frame	○		㉕	Rear Inner Panel	○	
⑧	Front Lower Cross Member	○		㉖	Rear Wheelhouse	○	
⑨	Wheelhouse Upper Member			㉗	Parcel Shelf		
⑩	Front Wheelhouse	○		㉘	Front Floor	○	
⑪	Damper Housing	○		㉙	Middle Floor Cross Member	○	
⑫	Front Side Frame	○		㉚	Rear Floor	○	
⑬	Front Side Outriger/Front Side Extension	○		㉛	Rear Panel	○	
⑭	Dashboard Lower	○		㉜	Side Sill Extension	○	
⑮	Dashboard Upper	○		㉝	Rear Frame Extension	○	
⑯	Outer Panel	○		㉞	Rear Frame	○	
⑰	Front Pillar Inner Lower	○		㉟	Rear Floor Cross Member	○	
⑱	Front Pillar Inner Upper			㊱	Honeycomb Floors (2.5TL)		

Front Fender

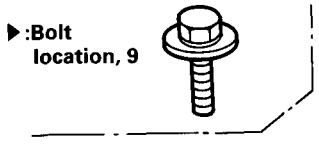
Replacement

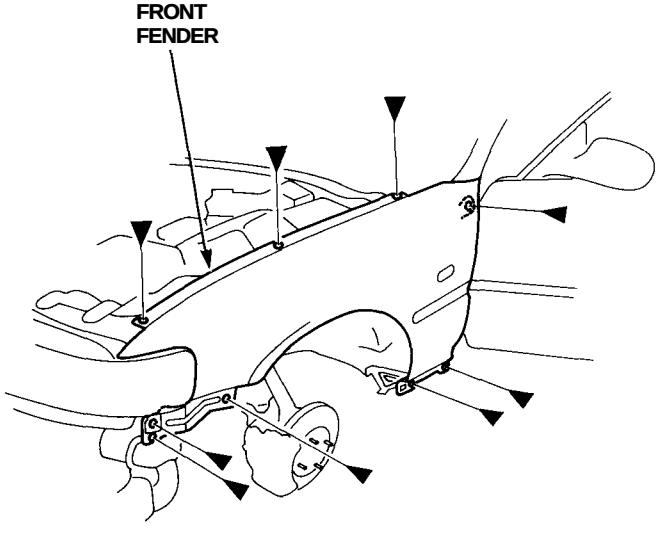
NOTE: Check clearance and level differences of the hood, door panels and front bumper.

1. Remove the related parts.
   - Front bumper
   - Headlight
   - Mud guard
   - Side sill panel
   - Inner fender

2. Mask parts with tape.
   Stick masking tape on the neighboring lower windshield and the door to protect painted surfaces from damage.

3. Remove the front fender mounting bolts.





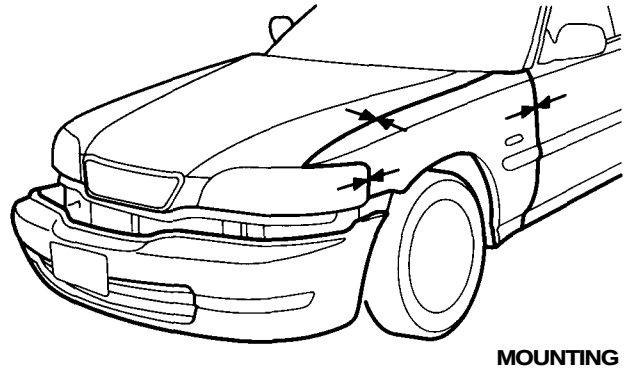
4. Apply paint on the back of the new fender.
   See Paint Repair section

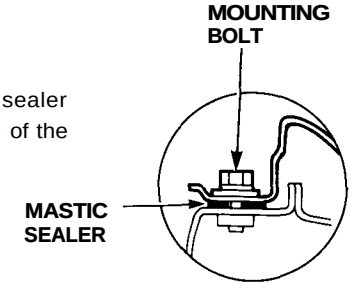
⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

NOTE: Apply paint to lower section of front pillar also.

5. Set the front fender.
   Fasten to the front wheelhouse at two spots with bolts. Close the hood and check the front and rear clearances, door clearance and level differences.





NOTE: Apply the mastic sealer to the mounting positions of the front fender.

6. After checking the mounting position, tighten all bolts fully.

7. Apply the undercoat (see section 7).
   Apply an undercoat to the inside of the front fender and upper face of the front wheelhouse.

8. Apply the paint.
   See Paint Repair section.

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

9. Install the related parts.
   Install in the reverse order in which they were removed.

10. Check and adjust.
    - Check wiring connections.
    - Adjust the headlight aim.

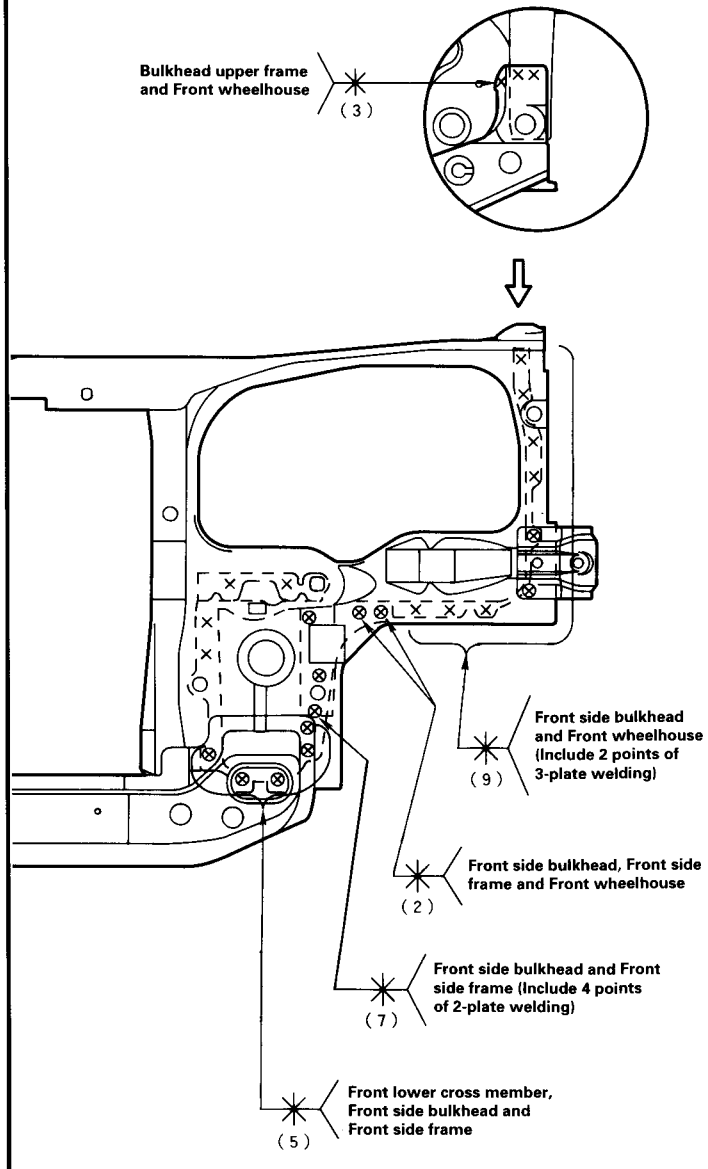
Front Bulkhead

Description

The front bulkhead is joined to the front wheelhouse and front side frame. It forms the base for the headlights and other parts and maintains the rigidity of the front section of the body. Pay particular attention to twists and parallelism and check mounting of related parts when welding.

Mass Production Body Welding Diagram

2.5TL:



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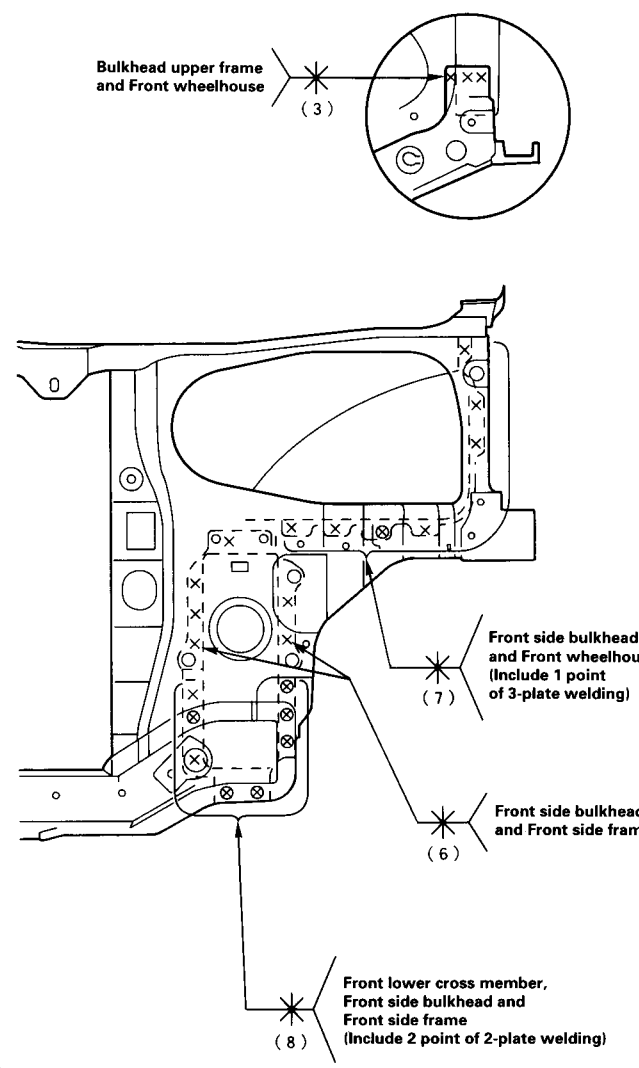
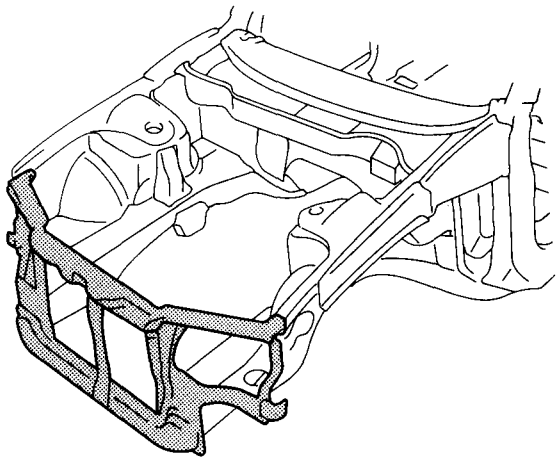


Replacement

1. Remove the related parts.
   - Front bumper
   - Hood
   - Right and left headlights
   - Right and left front fenders
   - Radiator, condenser
   - Hood latch



2. Roughly pull out and straighten the damaged area.
   - Check the damage to the front wheelhouse and front side frame before removing the front bulkhead. Use the frame staightener to roughly pull out and repair the damaged bulkhead before removing the bulkhead.

   NOTE: Check the fit of the door, taking care not to pull the damaged area out more than necessary.

   - Use the horizontal pinch weld clamps and attach the car to the frame straightener at the clamping points securely.

3. Keep the body level.
   Jack up the body, and place safety stands at the four designated places of the side sills.

   NOTE: Refer to the Acura 2.5TL/Acura 3.2TL Service Manuals for safety stand location points.

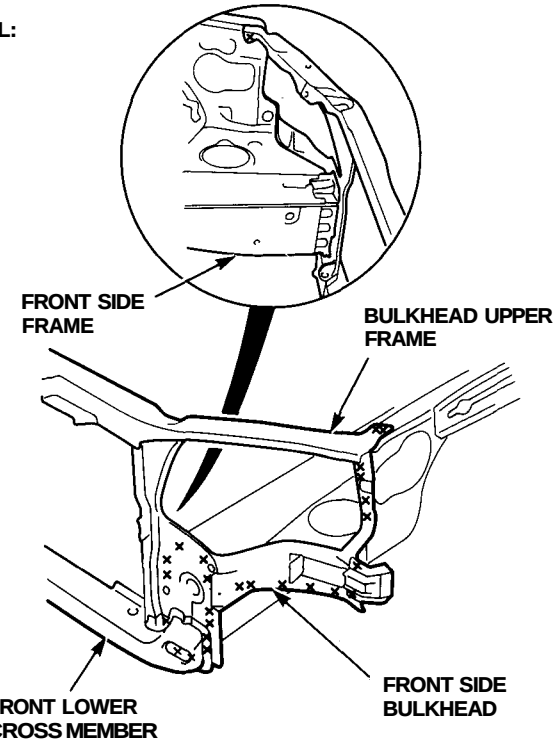
4. Cut and pry off the front bulkhead.
   - Center punch around the spot weld imprints.
   - Use the special spot cutter to drill holes at the spot weld nuggets on the front wheelhouse and front side frame.

NOTE: When drilling holes be careful not to drill down to the front wheelhouse or front side frame themselves.

- Cut off the bulkhead with an air chisel, leaving the welding flanges intact.
- Level and finish the burrs from the pried off spot welds with a disc sander.

⚠ WARNING **To prevent eye injury, wear goggles or safety glass whenever sanding, cutting or grinding.**

2.5TL:



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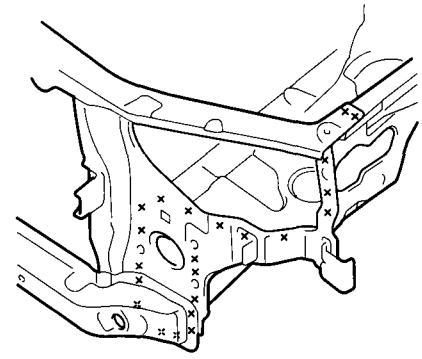


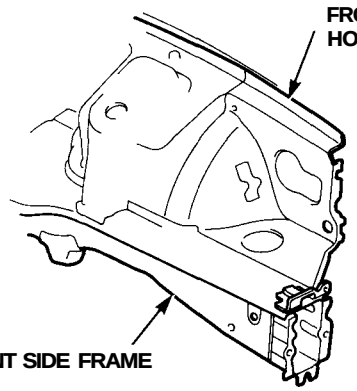
(cont'd)

Front Bulkhead

Replacement (cont'd)

5. Mold the damaged related parts.
   - Use a hammer and dolly to mold the damaged areas of the front wheelhouse front and side frame.
   - Even out the welding flanges with a hammer and dolly.
   - Fill all drilled holes by MIG or gas welding.

2.5TL:



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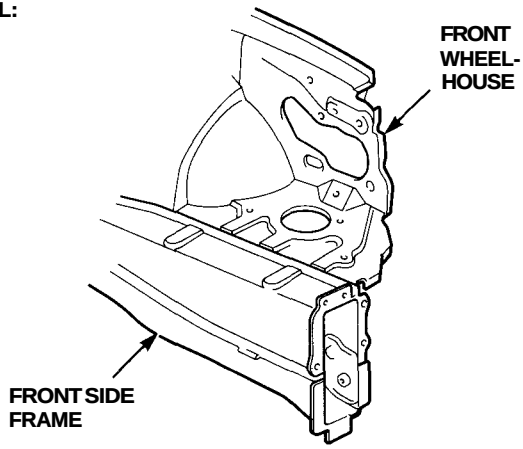


6. Set the new front bulkhead.
   - Grind both sides of the welding section of the bulkhead with a sander to remove the undercoat and expose the steel plate.

⚠ WARNING To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

   - Clamp both the right and left sides with the vise-grips as shown.

NOTE: Apply the spot sealer to the welding surface when spot welding.

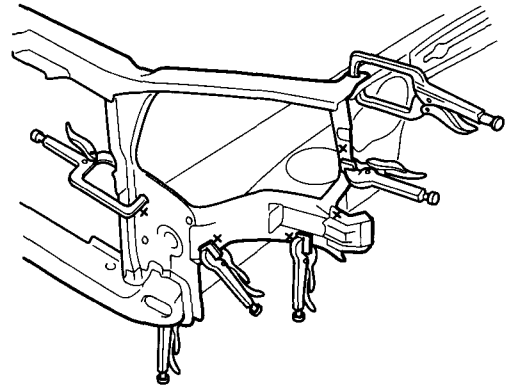
   - Check the front bulkhead position using the body dimensional drawings (see section 6).

7. Tack weld the new front bulkhead.

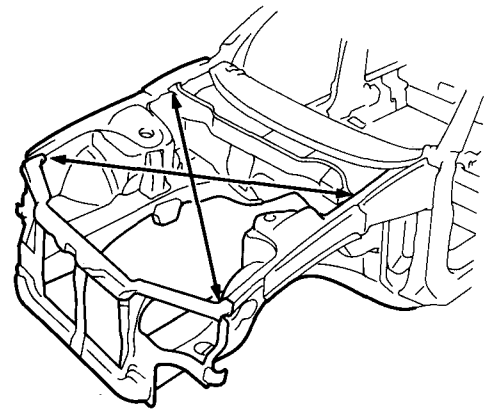
⚠ WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

Spot weld the clamped sections.

NOTE: Make sure that the right and left bulkheads are in line with each other.



8. Measure the front compartment diagonally.
Measure the front compartment diagonally with a tracking gauge or convex tool as shown to check it for twisting or bending.

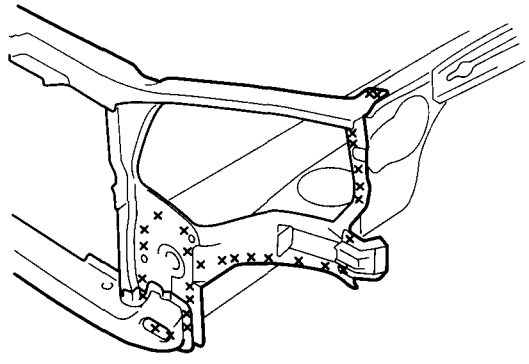


9. Temporarily assemble the hood, headlight and front fender, then check the clearances and level differences.

10. Perform the main welding.
    - Spot weld the bulkhead as shown.
    - Make 20% to 30% more spot welds than there were holes drilled.

⚠ WARNING **To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.**

2.5TL:



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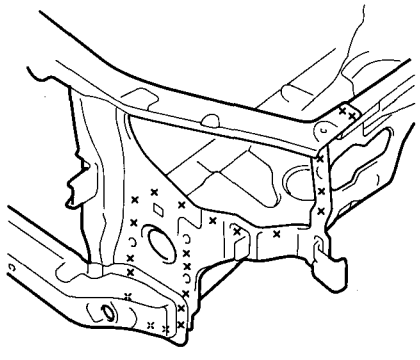
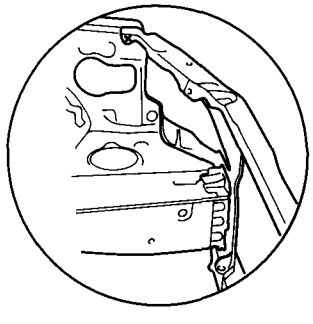


11. Finish the welds.
    Use a hammer and dolly to even out the front wheelhouse and front side frame flanges for a close fit with the surface of the front bulkhead.

2.5TL:



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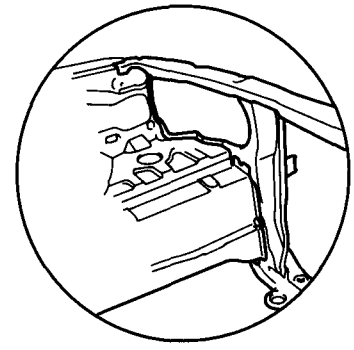


12. Apply the undercoat (see section 7).

13. Attach the front fender.

    Lower the body.
    NOTE: Tighten the wheel nuts to the specified torque.
    Torque: 108 N-m (11.0 kgf-m, 79.6 lbf-ft)

15. Apply the paint.
    See Paint Repair section.

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

16. Install the related parts.

    Inspect, check, and make adjustments.
    - Adjust the headlight aim.
    - Check that the electical components light up and operate properly.
    - Replenish radiator coolant and inspect for leaks.

Front Wheelhouse/Damper Housing

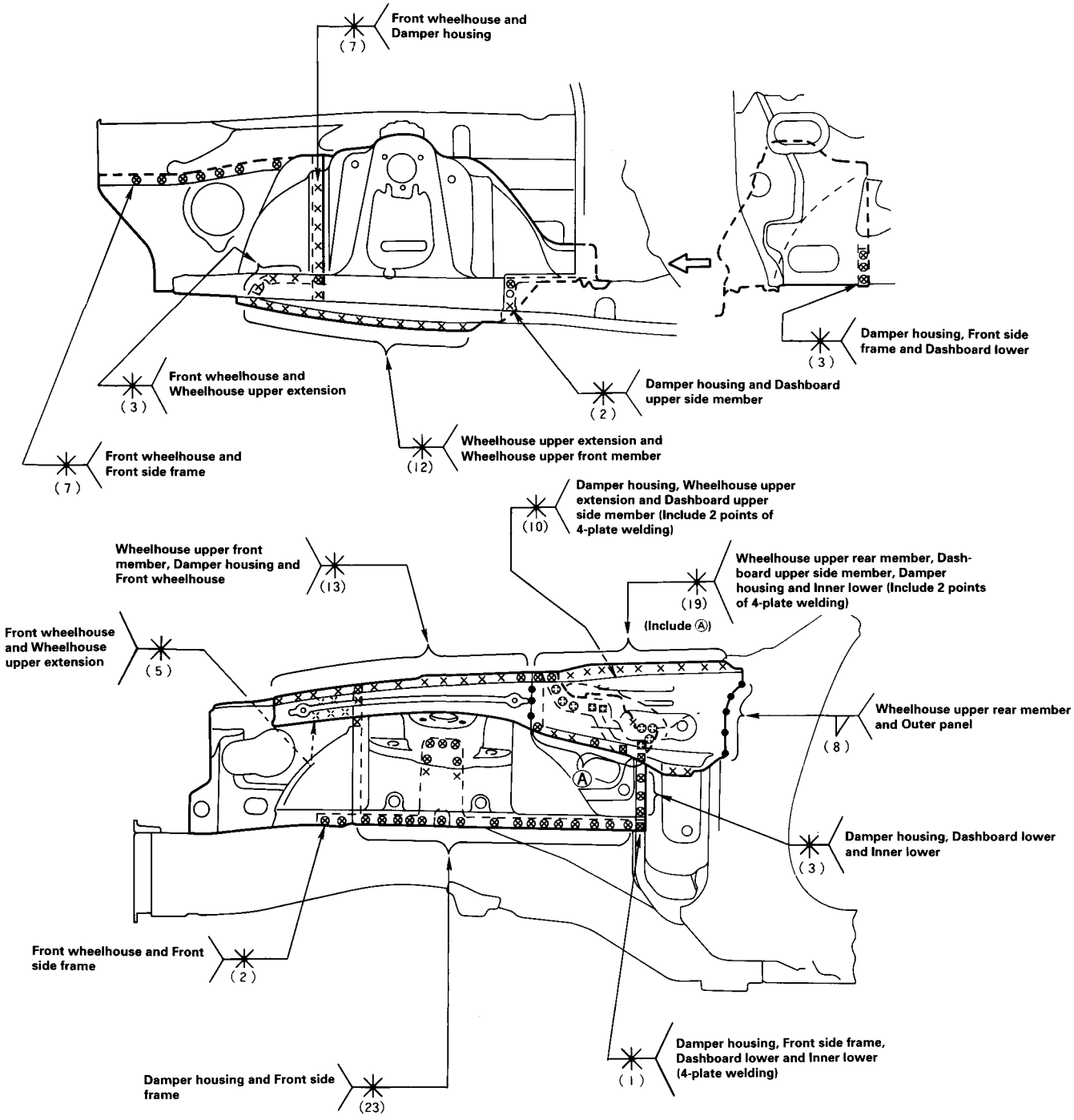
Description

The front wheelhouse component is constructed as a unit with the front damper housing. Therefore, replacement of the component affects the front wheel alignment. When assembling it, either use a positioning jig or follow dimensions on the frame repair chart for positioning. Weld carefully.

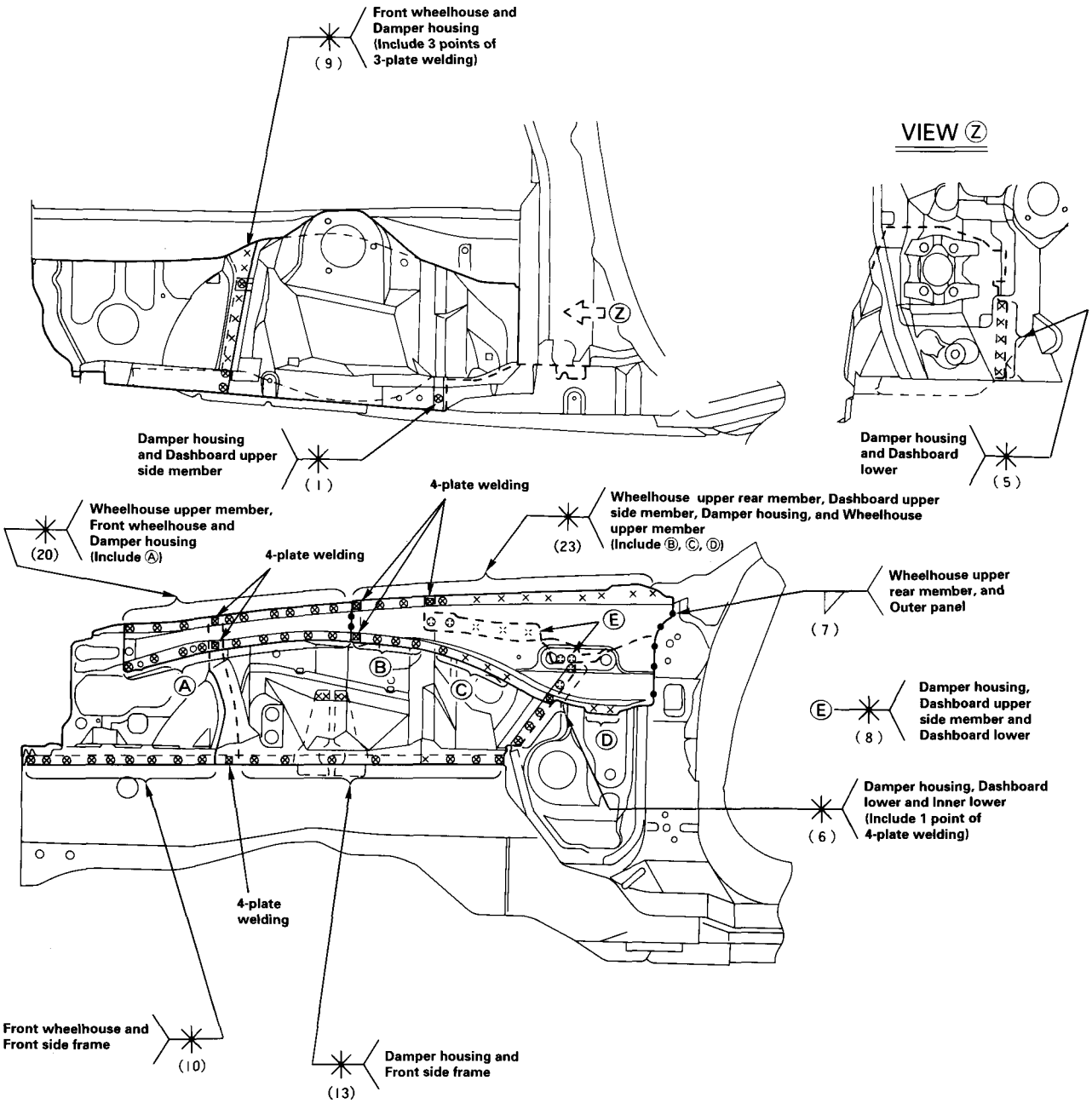
Front Wheelhouse/Damper Housing

Mass Production Body Welding Diagram

2.5TL:



3.2TL:


Front wheelhouse and Damper housing (Include 3 points of 3-plate welding)
(9)
VIEW Ⓩ
Damper housing and Dashboard upper side member
(1)
Damper housing and Dashboard lower
(5)
4-plate welding
Wheelhouse upper member, Front wheelhouse and Damper housing (Include Ⓐ)
(20)
4-plate welding
Wheelhouse upper rear member, Dashboard upper side member, Damper housing, and Wheelhouse upper member (Include Ⓑ, Ⓒ, Ⓓ)
(23)
Wheelhouse upper rear member, and Outer panel
(7)
Damper housing, Dashboard upper side member and Dashboard lower
(8)
Damper housing, Dashboard lower and Inner lower (Include 1 point of 4-plate welding)
(6)
4-plate welding
Front wheelhouse and Front side frame
(10)
Damper housing and Front side frame
(13)

Front Wheelhouse/Damper Housing

Replacement

1. Remove the related parts.
   - Parts to be removed when removing the front bulkhead
   - Parts on passenger side of lower dashboard which are especially flammable
   - Electrical accessories in engine compartment and wire harnesses.

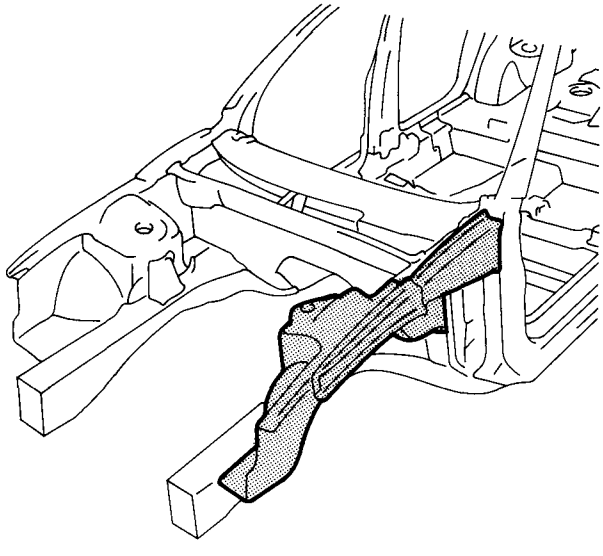
   NOTE: See the 95-96 Acura 2.5TL & 96 Acura 3.2TL Service Manuals, for removal and installation of the engine, front suspension and brakes.

2. Pull out and straighten the damaged area to approximately the original shape.
   - Attach the car to the frame straightener by tightening the underbody clamps at the horizontal pinch weld points.

   NOTE: Refer to the 95-96 Acura 2.5TL & 96 Acura 3.2TL Service Manuals for safety stand location points.

   - Before cutting off the damaged sections, pull them out so that they are restored to the original shape.
   - Do not pull out more than necessary.
   - Pull out and straighten the damaged area of the lower dashboard, front pillar, and other parts.
   - After pulling, check the damper housing position using the body dimensional drawings (see section 6) and positioning jig (see page 1-7).

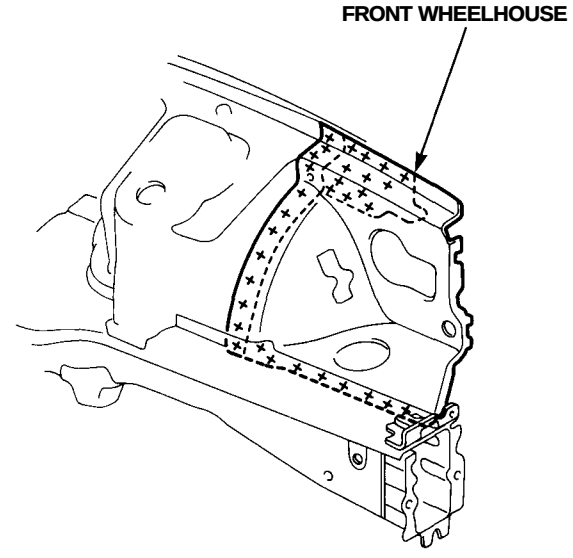
   NOTE: Check the condition of the door and hinges.



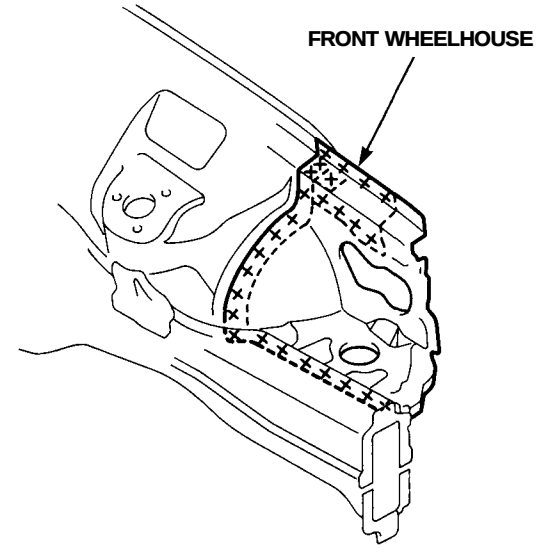
3. Peel off the undercoat.
   Heat the undercoat at the weld areas of the wheelhouse and front side frame with a gas torch, and peel off the undercoat with a metal spatula.

4. Cut and pry off the front wheelhouse and damper housing.
   -1. When replacing the front wheelhouse only.
   - Center punch around the spot weld imprints on the front side frame and damper housing.
   - Drill holes in the center punched areas using a spot cutter.
   - Using a chisel, pry off the welded flange.

2.5TL:



3.2TL:



-2. Replace the damper housing with the front wheelhouse.

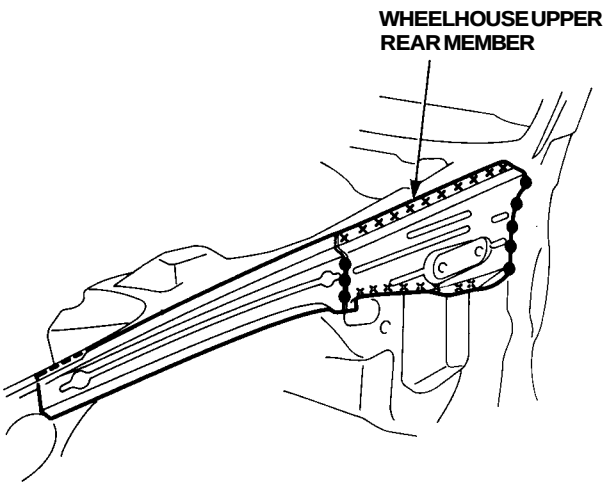
- Remove the wheelhouse upper rear member.
- Remove the MIG weld flange with a disc sander.

⚠WARNING To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

- Using a chisel, pry off the welded flange form the front pillar and damper housing.

NOTE: Remove the wheelhouse upper rear member carefully so they can be reused.

2.5TL:



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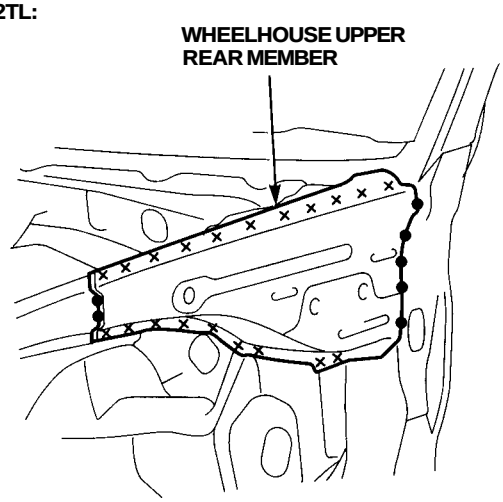

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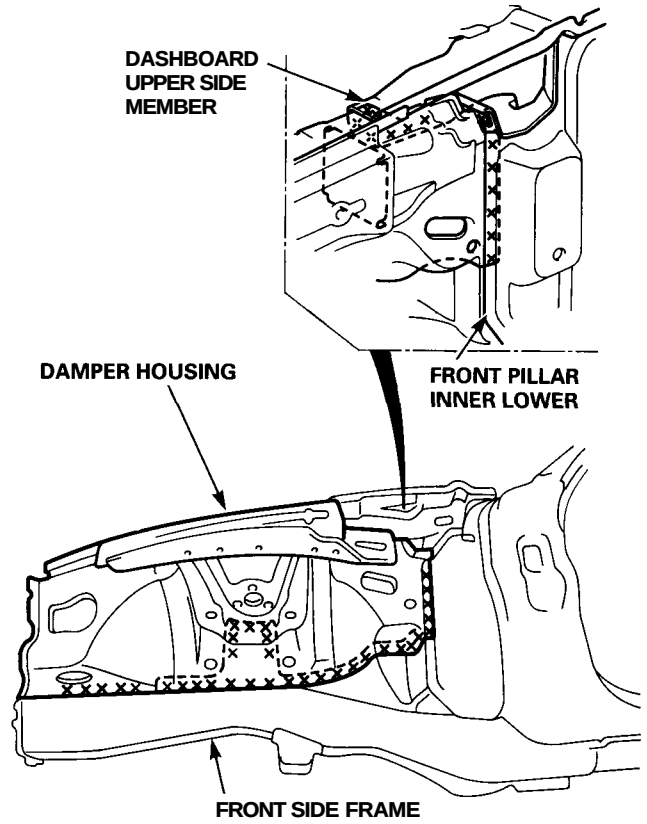

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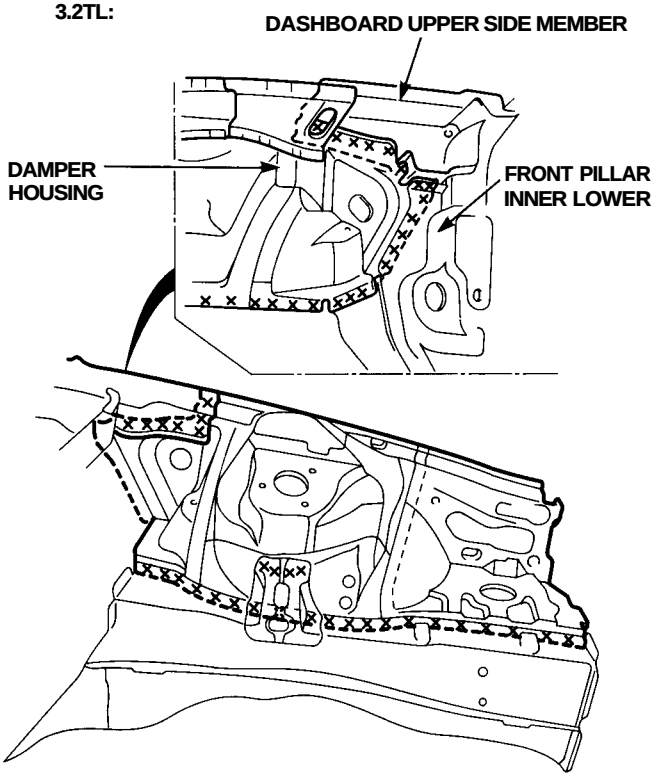


(cont'd)

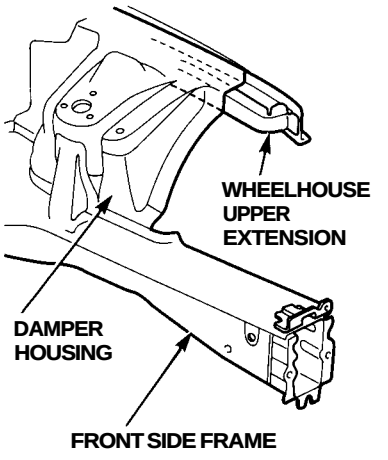
Front wheelhouse/Damper housing

Replacement (cont'd)

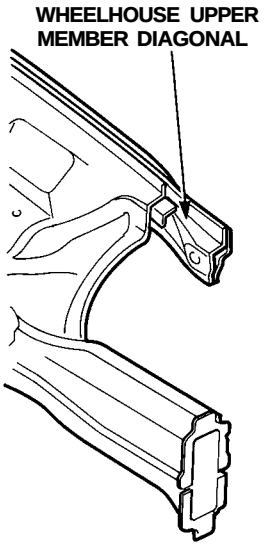
5. Mold the related parts.
   - Level and finish the burrs left on the welding surfaces with a sander.
   - Fill all drilled holes by MIG or gas welding.

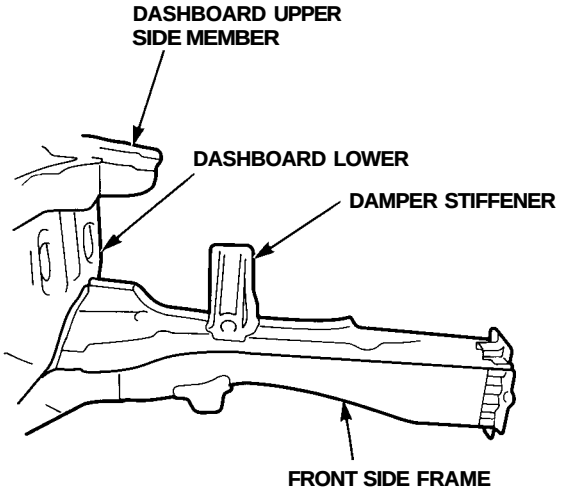
   Use a hammer and dolly to even out the welded areas of the lower dashboard, front side frame and dashboard upper side member.

2.5TL:



3.2TL:





6. Set the new front wheelhouse and damper housing.
   - Apply body paint to both sides of the new front wheelhouse and damper housing.
   - See Paint Repair section.

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammble. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

- Remove the undercoat from both sides of the welding section and expose the steel plate using a disc sander.

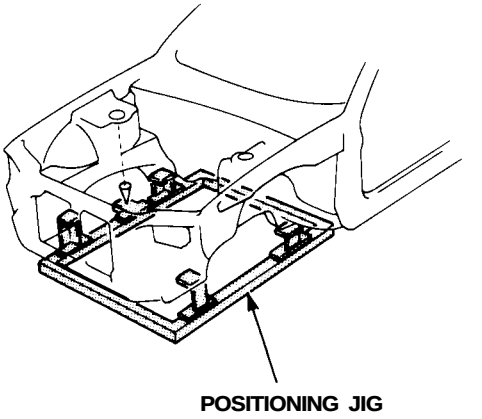
⚠ WARNING **To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.**

- Clamp to the front side frame with vise-grips and squill vises.

NOTE: Apply the spot sealer to the welding surface when spot welding.

- Clamp the front bulkhead with vise-grips.
- Measure the front compartment diagonally.

NOTE: Use of a positioning jig is recommended (see page 1-7).



- Spot weld several points in the clamped sections, and temporarily attach the front wheelhouse and damper housing.

⚠ WARNING **To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.**

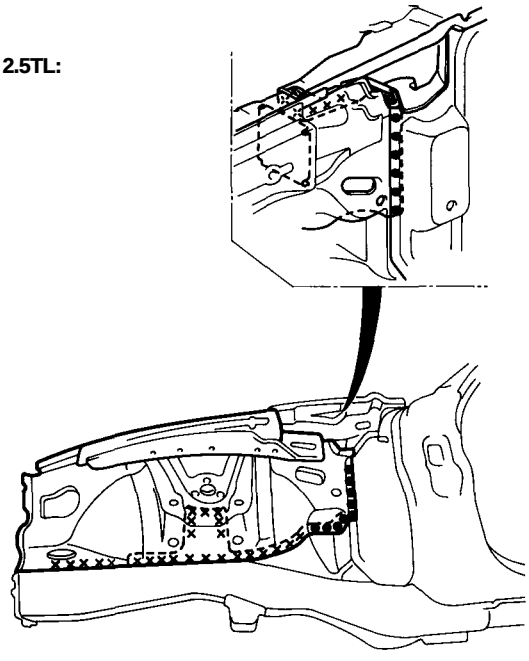
7. Check the dimensions, temporarily install the hood, front fender and headlight, and check for differences in level and clearance.

8. Perform the main welding.
   - Weld as much as possible with the jig still mounted.

⚠ WARNING **To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.**

- Make 20% to 30% more spot welds than there were holes drilled.

2.5TL:



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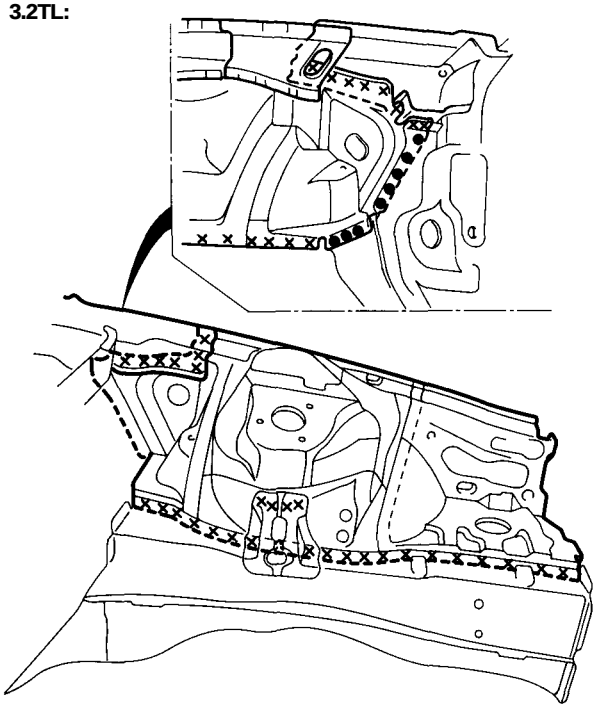
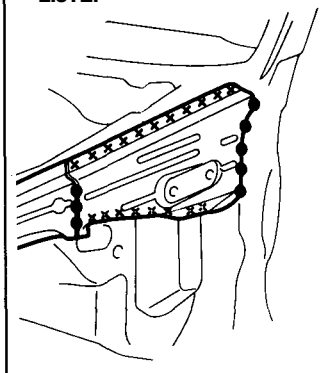


9. Weld the wheelhouse upper rear member.
   When the upper rear member is to be reused, make MIG welds at the drilled holes.

2.5TL:



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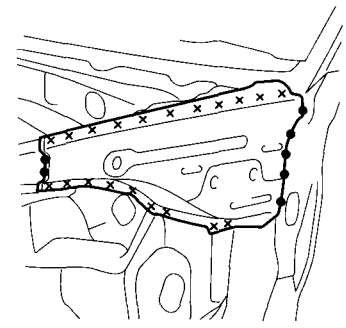


10. Finish the welded area.
    Use a hammer and dolly to even out the side bulkhead and front side frame flanges for close fit with the surface of the front wheelhouse and damper housing.

11. Apply the sealer (see section 5).
    Apply sealer to the mating surfaces of the lower dashboard and front side frame, etc.

12. Apply the paint.
    See Paint Repair section.

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

13. Apply the undercoat.
    Undercoat the front floor, etc, and apply anti-rust agent to the inside of the welding section of the front side frame, lower dashboard, and upper member, etc (see section 7).

14. Install the related parts.
    Install in the reverse order in which they were removed.

15. Inspect, check and make adjustment.
    - Measure the front wheel alignment.
    - Inspect the brake system.
    - Adjust the headlight aim.

Front Side Frame

Description

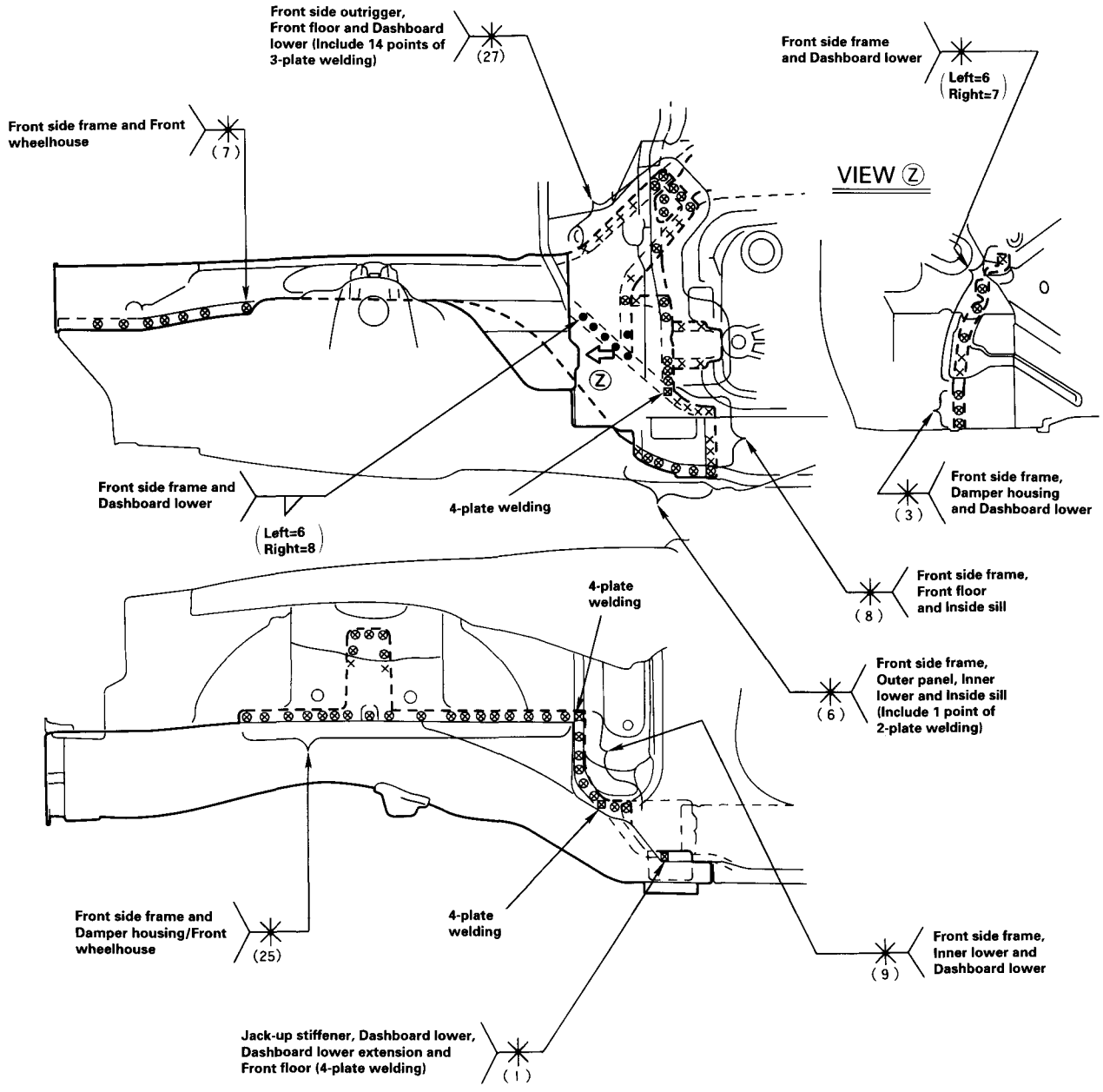
The front side frame acts as a base for the front suspension and is highly important in maintaining the rigidity of the front section. Pay careful attention to the position and dimensions of the weld joints and weld carefully.

Front Side Frame

Mass Production Body Welding Diagram

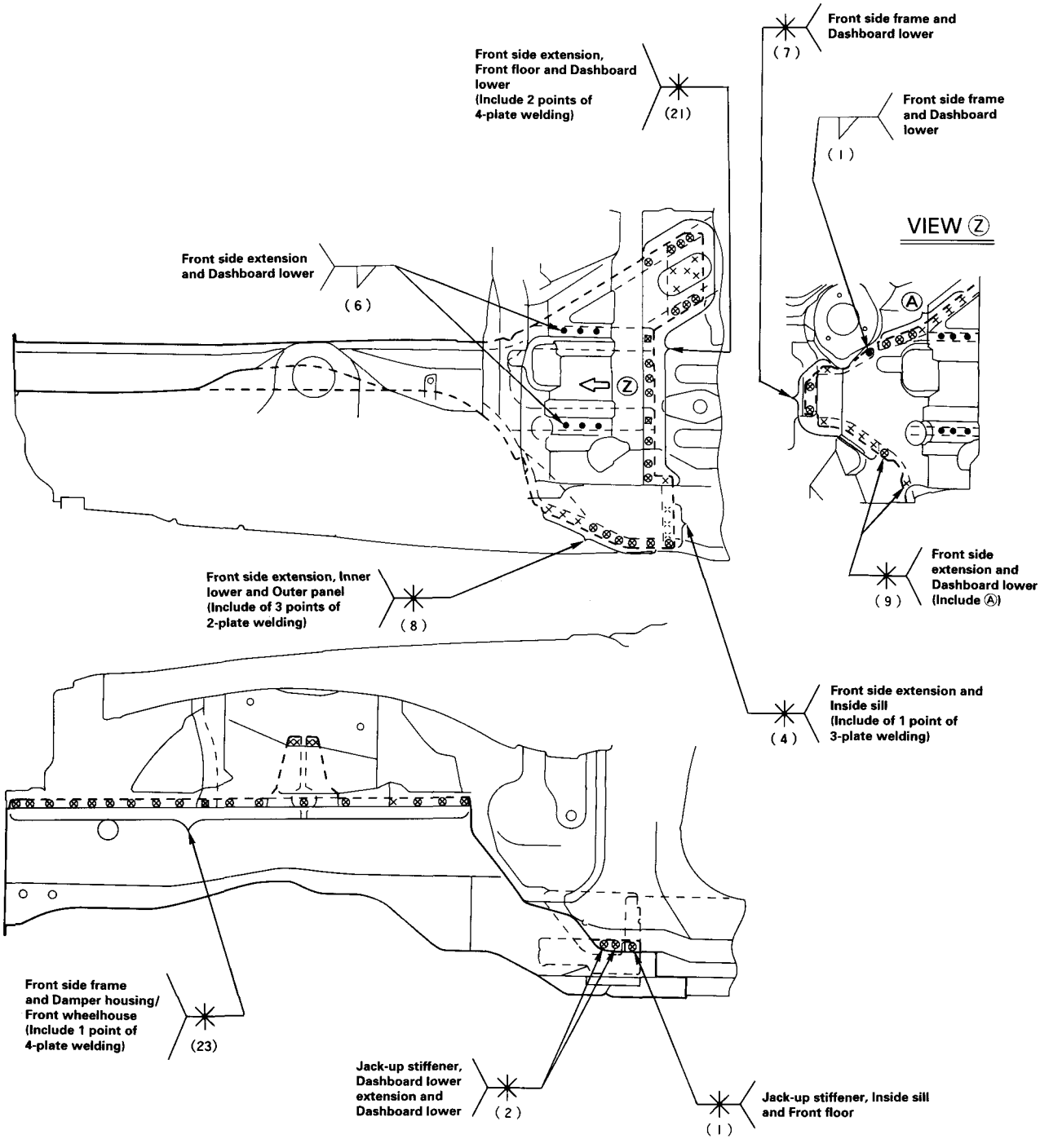
2.5TL:

NOTE: Replace the front side frame and front side outrigger as an assembly.



3.2TL:

NOTE: Replace the front side frame and front side extension as an assembly.

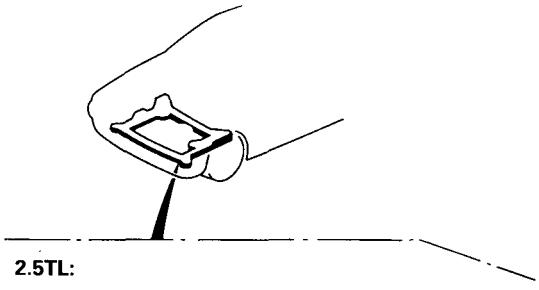


Front Side Frame

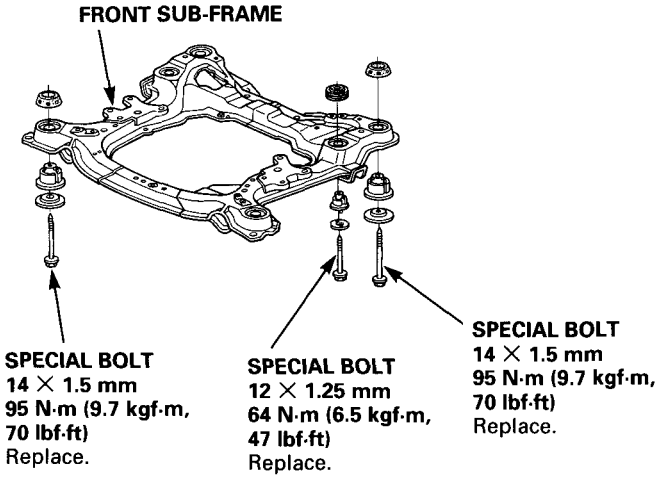
Replacement

1. Remove the related parts.
   - Front suspension related parts
   - Brake hoses and pipes
   - Engine compartment electrical components
   - Fittings in passenger compartment, etc.
   - Steering gearbox.

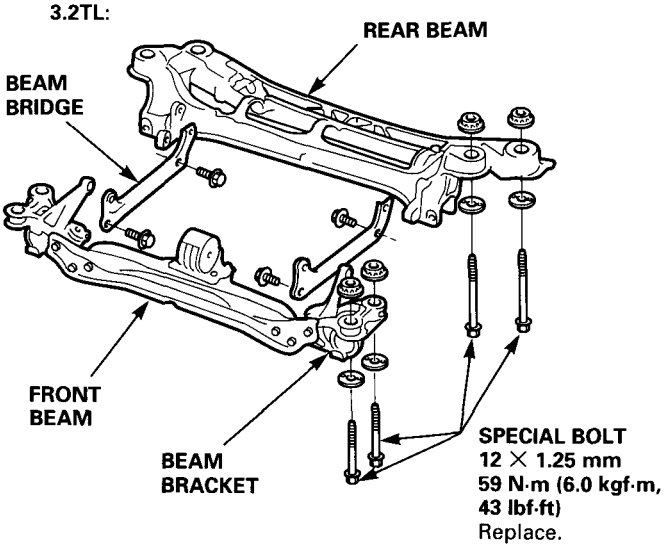
2. Remove the sub-frame.



2.5TL:



3.2TL:

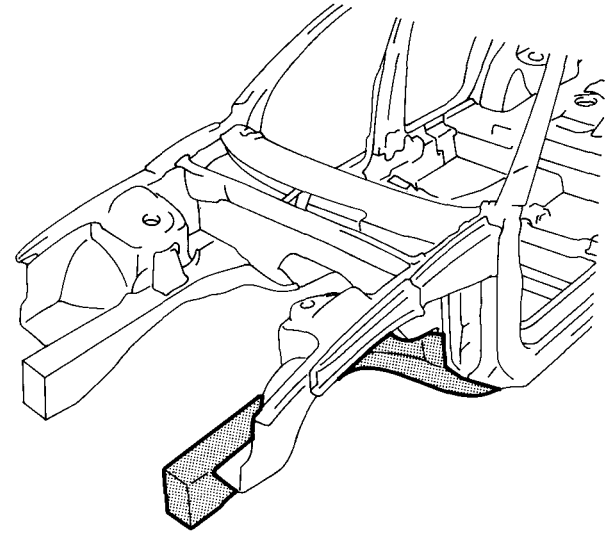


NOTE: With the front bulkhead removed.

3. Roughly pull out and straighten the damaged area.
   - Attach the car to the frame straightener by tightening the underbody clamps located at the horizontal pinch welds.

   NOTE: Refer to the 95-96 Acura 2.5TL & 96 Acura 3.2TL Service Manuals for safety stand location points.

   - Before cutting off the damaged sections, pull them out so that they are restored to the original shape.
   - Cutting off the front side frame before roughly pulling out the damage makes repair of the related front floor, lower dashboard, and other related parts difficult.



4. Peel off the undercoat.

   Heat the undercoat at the weld areas of the lower dashboard, front floor and side sill with a gas torch and peel off the undercoat with a metal spatula.

   CAUTION: Be careful not to burn the fittings inside the passenger compartment when heating.

5. Remove the front side frame.

   NOTE: It's not necessary to separate the front wheelhouse from the front side frame if the wheelhouse/damper housing is to be replaced also.

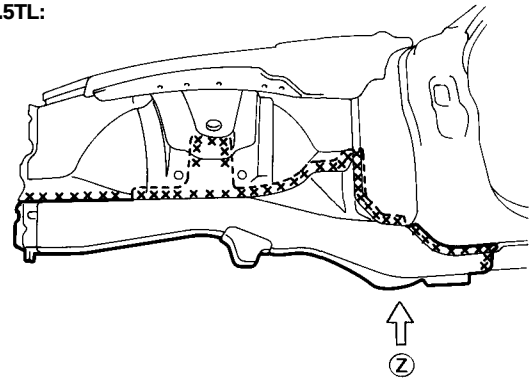
   - Center punch around the spot weld imprints on the wheelhouse, damper housing, lower dashboard, front floor and floor frame.
   - Using a spot cutter, drill holes in the spot welded areas.
   - Peel off the welding flange using the chisel.

- Remove the burrs from the drilled sections with a disc sander.

⚠WARNING To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

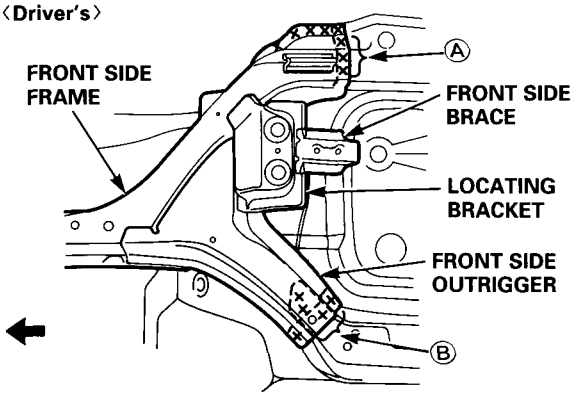
NOTE: When drilling holes (Ⓐ and Ⓑ) be careful not to drill down to the inside sill.

2.5TL:

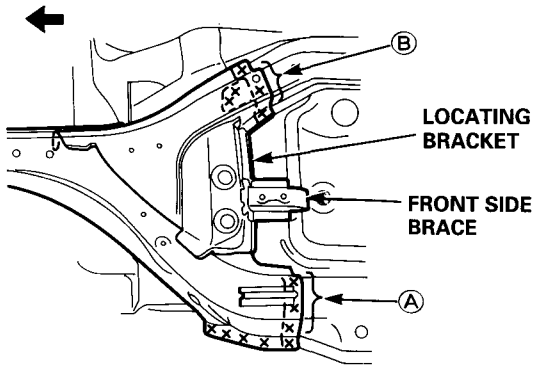


VIEW Ⓩ

〈Driver's〉



〈Passenger's〉



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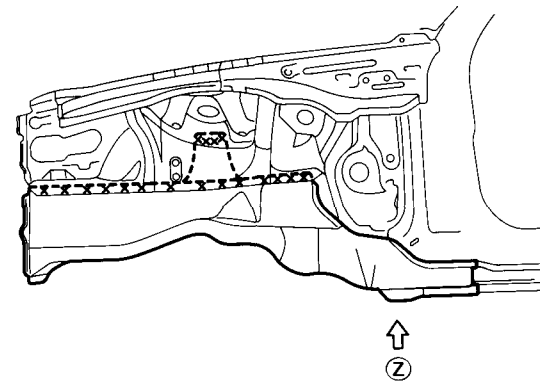
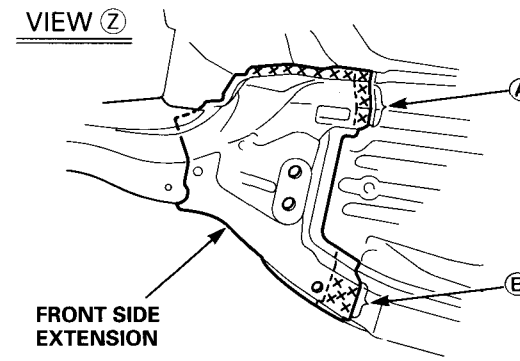


VIEW Ⓩ



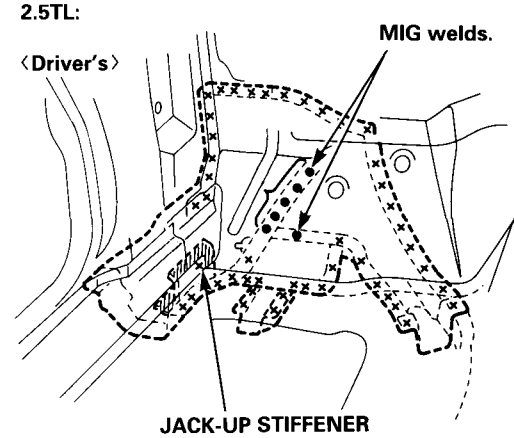
- Center punch around the spot weld imprints on the front side frame and front side outrigger from inside the passenger compartment.
- Drill holes in the spot welded area with a 5 mm (0.2 in) drill.

NOTE: Drill holes completely through the parts since the replacement front side frame, front side outrigger and jack-up stiffener will be welded by MIG welding.

- Remove the MIG welds of the front side frame-and-lower dashboard with a disc sander.

2.5TL:

〈Driver's〉

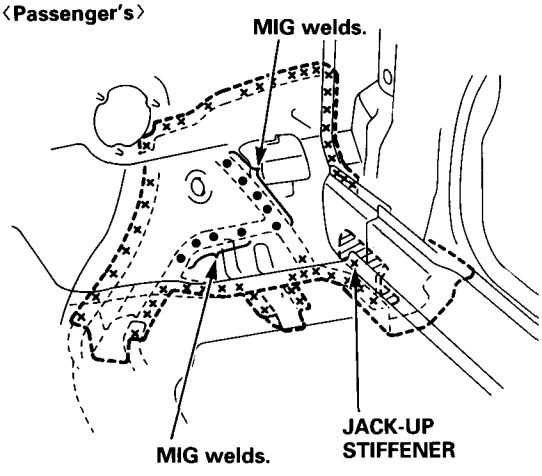


(cont'd)

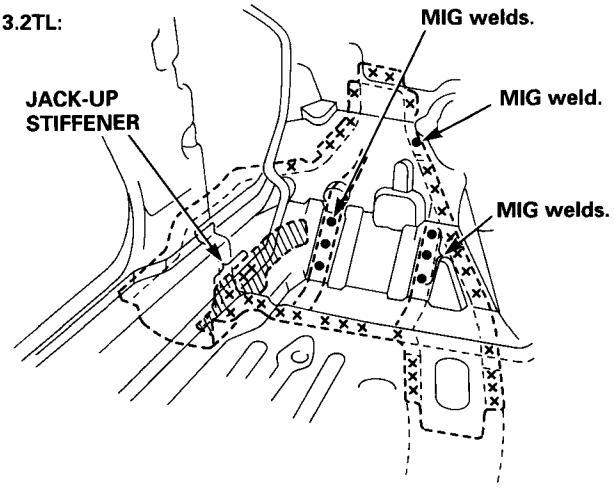
Front Side Frame

Replacement (cont'd)

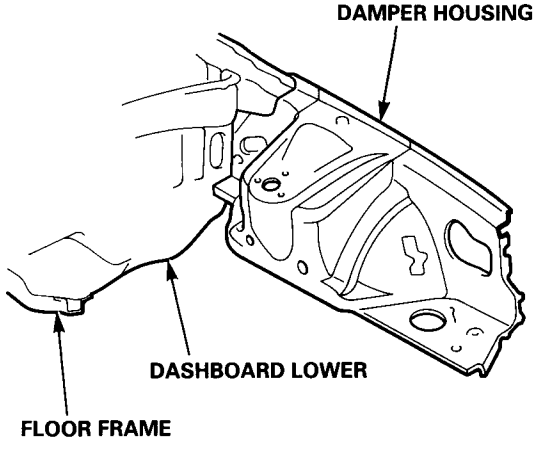
〈Passenger's〉



3.2TL:



6. Mold the related parts.
   - Reshape the front wheelhouse and damper housing lower dashboard-to-front floor joint using a hammer and dolly.
   - Fill all drilled holes by MIG or gas welding.



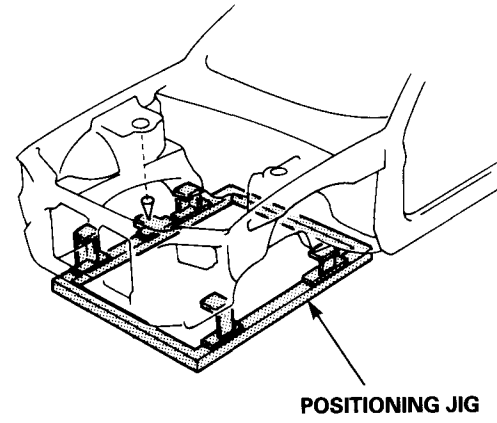
7. Set the new front side frame.
   - Remove the undercoat from the both sides of the welding section, and expose the steel plate using a disc sander.

⚠ WARNING To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

NOTE: Apply the spot sealer to the welding surface when spot welding.

- Tighten the front side frame against the front floor and side sill using vise-grips or pliers.
- Place a jack under the front side frame end and support it, and measure the positions for temporary attachment.

NOTE: Use of a positioning jig is recommended (see page 1-7).



- Clamp the front bulkhead and front wheelhouse/ damper housing with squill vises and vise-grips.
- Measure the front compartment diagonally.
- Spot weld several points in the clamped sections, and temporarily attach the front side frame.

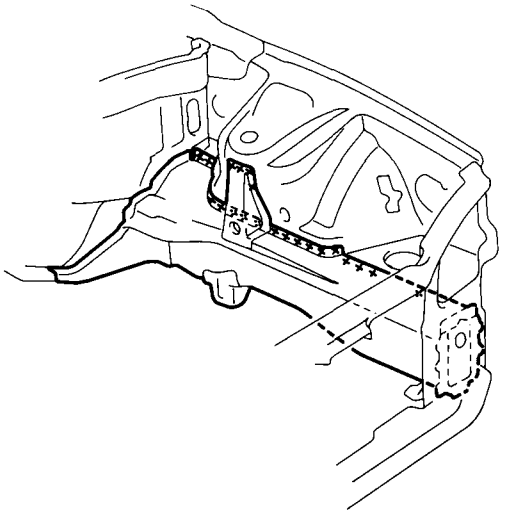
⚠ WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

- Check the body dimensions (see section 6).

8. Perform the main welding.
   - Make 20% to 30% more spot welds than there were holes drilled.
   - Weld as much as possible with the jig still mounted.

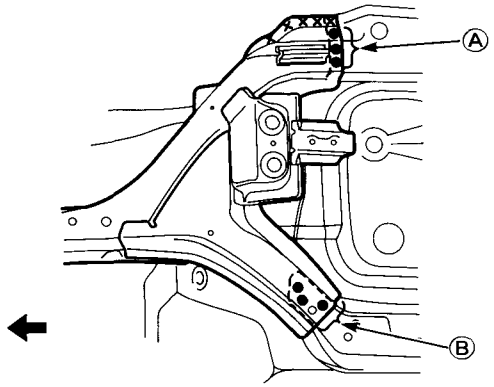
⚠WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

- Weld the front side frame, wheelhouse, damper housing and bulkhead.

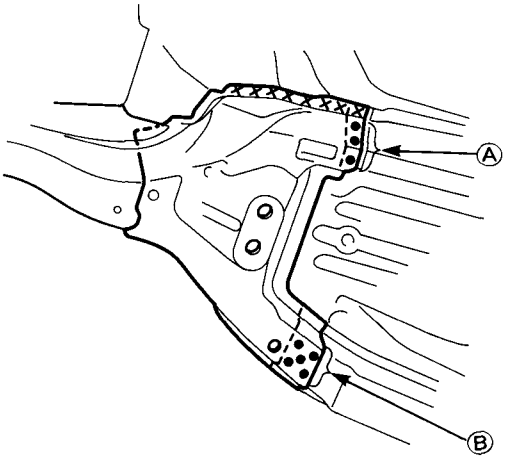


- Ⓐ and Ⓑ, make 5 mm (0.2 in) holes in the MIG weld holes with the outrigger, and plug weld the inside sill with a MIG welder.

2.5TL:



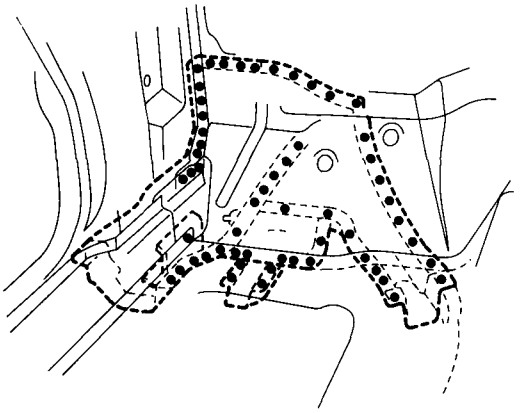
3.2TL:



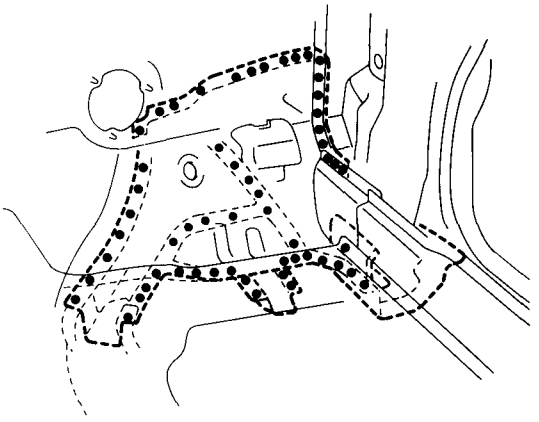
- From the passenger compartment side, plug weld the holed areas of the lower dashboard and front floor with a MIG welder.

2.5TL:

〈**Driver's**〉



〈**Passenger's**〉

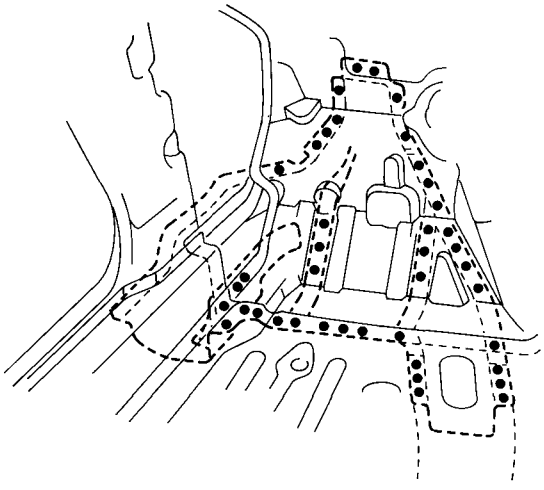


(cont'd)

Front Side Frame

Replacement (cont'd)

3.2TL:



9. Finish the welds.
   Use a hammer and dolly to even out the damper housing, wheelhouse, lower dashboard, front bulkhead and side sill flanges for a close fit with the surface of the front side frame.

10. Apply the sealer (see section 5).
    Apply sealer to the mating surfaces of the lower dashboard, etc.

11. Apply the paint.
    See Paint Repair section.

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

12. Apply the undercoat.
    Undercoat the front floor, and apply anti-rust agent to the inside of the welding section of the side sill, front side frame, etc (see section 7).

13. Install the related parts.
    Install in the reverse order in which they were removed.

14. Inspect, check and adjust.
    - Measure the front wheel alignment.
    - Inspect the brake system.
    - Adjust the headlight aim.

Front Side Outrigger/Front Side Extension

Description

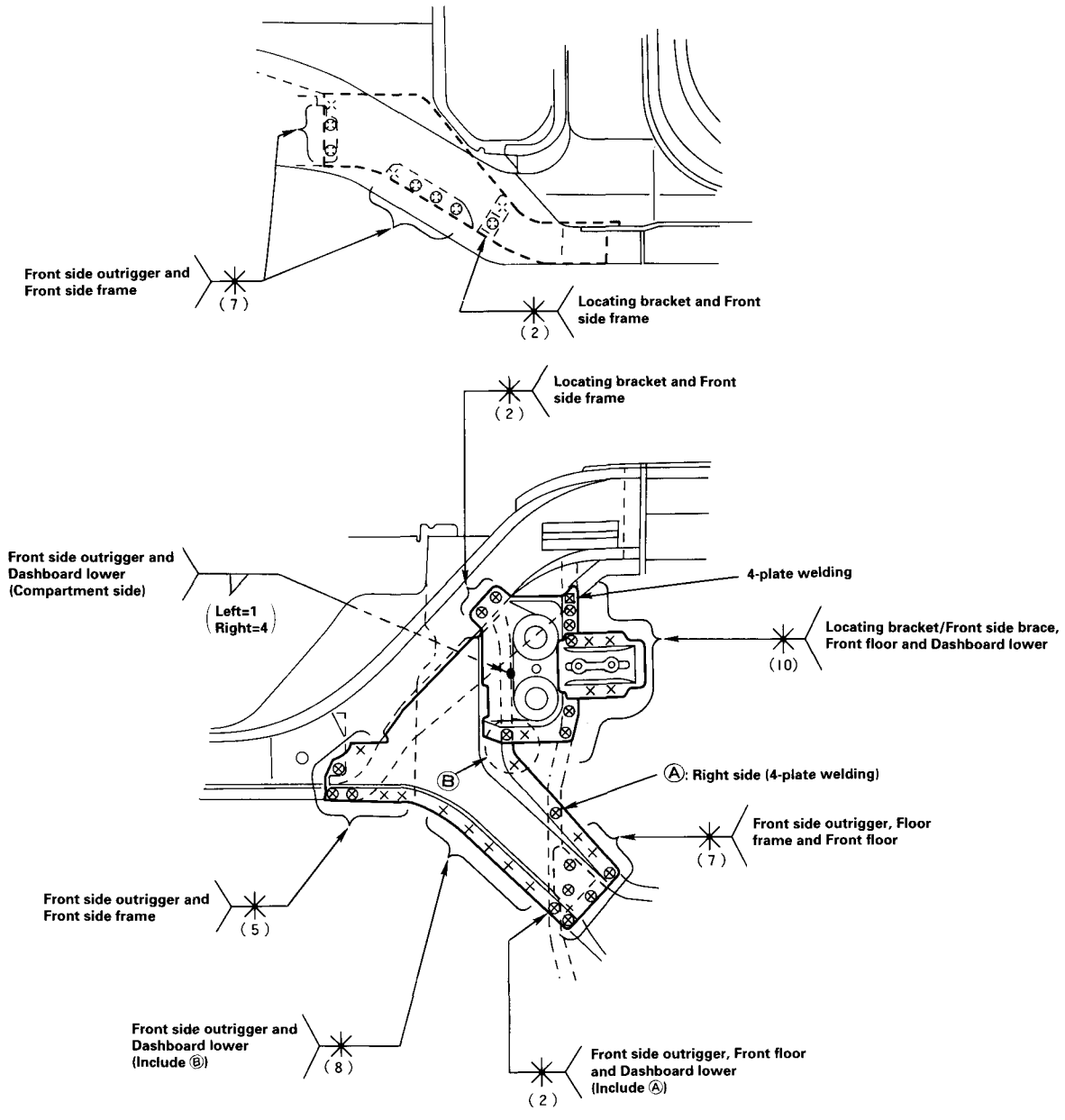
The front side outriggers connect the front side frames to the body and are vital to the rigidity of the entire body frame. Pay particular attention when welding the front side outriggers from beneath the front floor and side sill.

Front Side Outrigger/Front Side Extension

Mass Production Body Welding Diagram

2.5TL:

NOTE: Replace the front side outrigger, locating bracket and front side brace as an assembly.

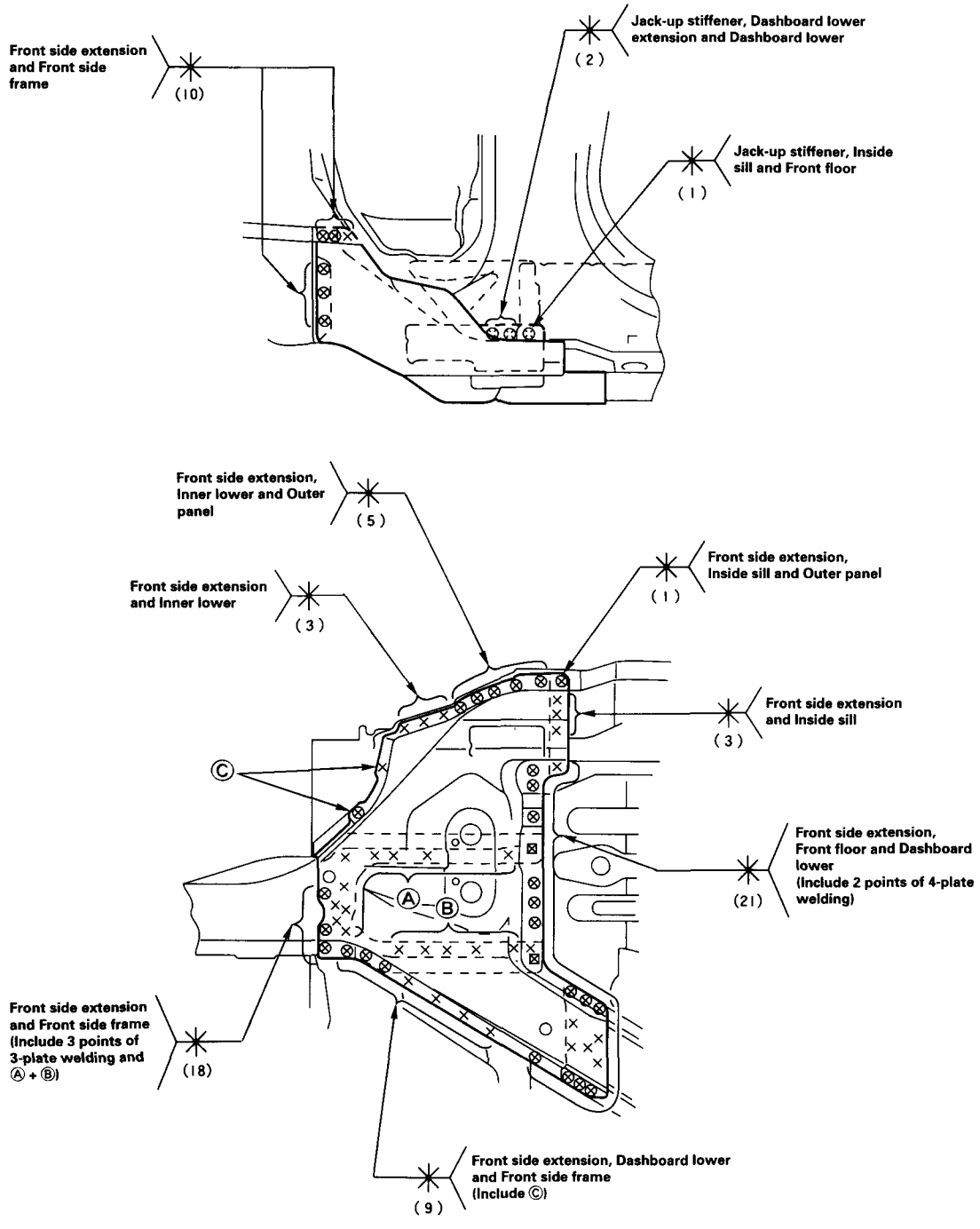


(cont'd)

Front side Outrigger/Front Side Extension

Mass Production Body Welding Diagram (cont'd)

3.2TL:



Replacement

1. Remove the related parts.
   - Front seat
   - Carpet
   - Refer to the front side frame (see page 4-16).

2. Pull out and straighten the damaged area.
   - The front side outrigger receives impact through the front side frame or side sill. Such impact generally requires replacement of all these parts.
   - Before cutting off the front side outrigger or side sill, pull out the damaged area with the frame straightener and correct the related parts such as the front floor and dashboard. Check the clearance and level differences of the front doors.
   - Jack up the body and place safety stands at the four designated places of the side sills. If necessary, place safety stands at the rear of the frame.

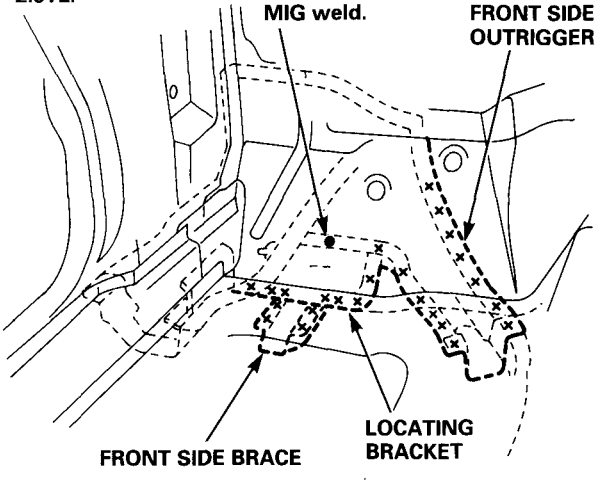
3. Peel off the undercoat.
   Heat the undercoat at the weld areas of the front side outrigger and side frame with a gas torch and peel off the undercoat with a metal spatula.

   CAUTION: Be careful not to burn the fittings inside the passenger compartment when heating.

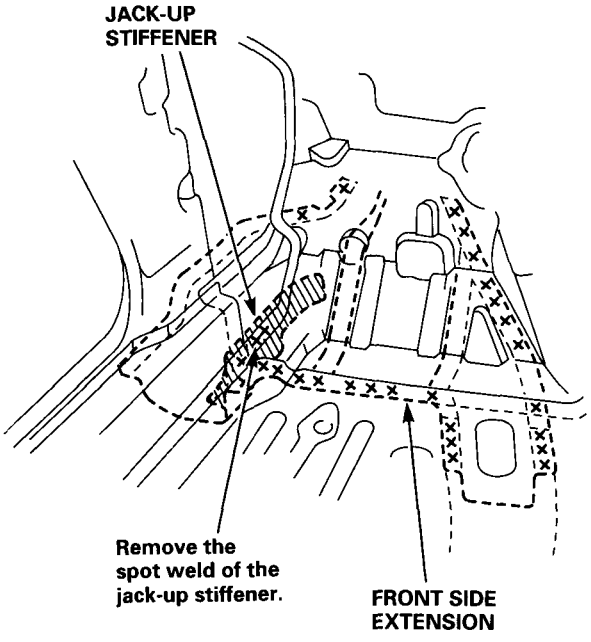
4. Remove the front side outrigger.
   - Center punch around the spot weld imprints on the front side outrigger from inside the passenger compartment.
   - Drill holes is the spot welded areas with a 5 mm (0.2 in) drill.
   - Remove the MIG welds with a disc sander.

   NOTE: Drill holes through the parts completely since the replacement front side outrigger will be welded by MIG welding.

2.5TL:



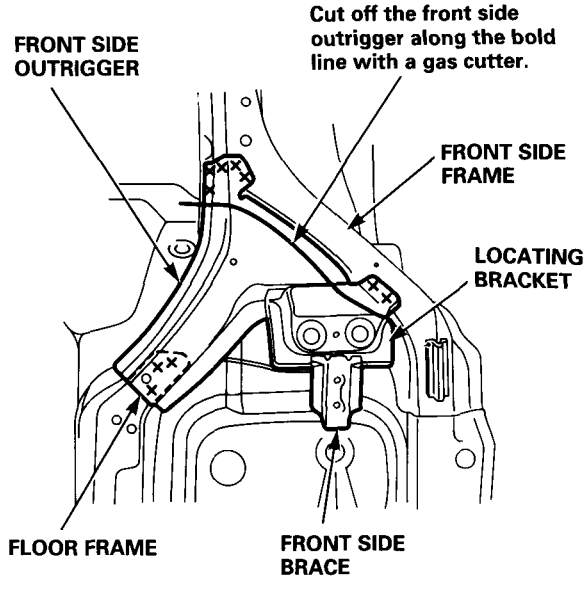
3.2TL:



- Center punch around the spot weld imprints on the front side frame, floor frame and inside sill.
- Drill holes using a spot cutter.

NOTE: When drilling holes be careful not to drill down to the front side frame, floor frame and inside sill.

2.5TL:

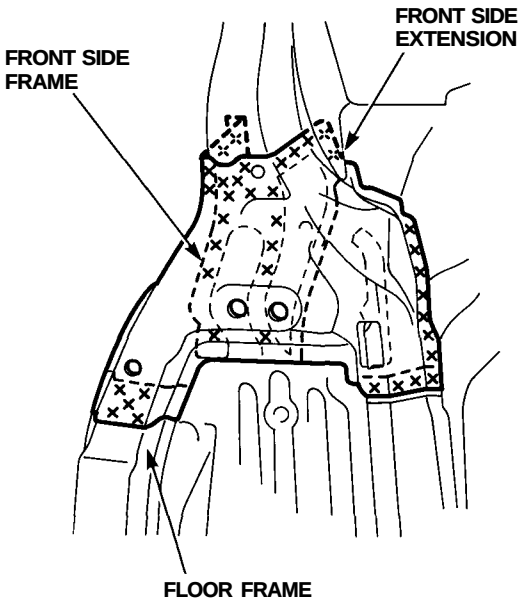


(cont'd)

Front Side Outrigger/Front Side Extension

Replacement (cont'd)

3.2TL:

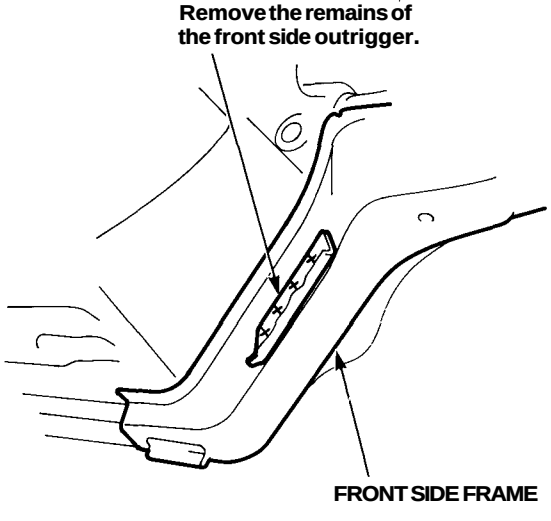


- Level off and finish the burrs of the pried off spot welds with a disc sander.

⚠WARNING To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

5. Mold the related parts.
   Reshape the lower dashboard, front side frame, front floor, inside sill and side sill inner joint using a hammer and dolly.

2.5TL:



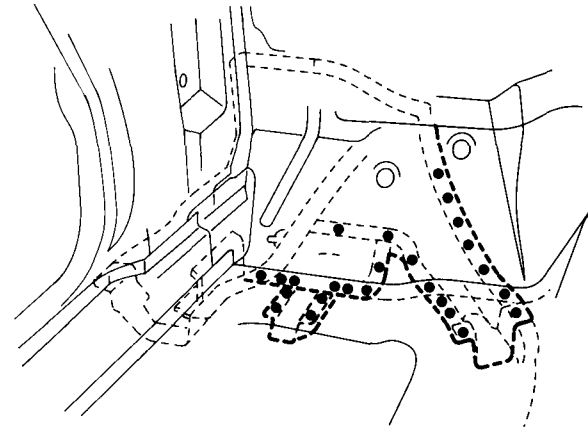
6. Set the new front side outrigger.
   - Remove the undercoat from both sides of the areas to be spot welded with a sander to expose the steel plate.
   - Clamp the weld flanges with the side sill using the vise-grip pliers. Set the front side outrigger on the side frame using a jack.
   - Drill 3 mm (0.12 in) holes, and screw 5 mm self-tapping screws into the drilled holes at the areas where the front side outrigger does not fit closely.
   - Even out the welded flange and damaged area with a hammer and dolly.

7. Perform the main welding.

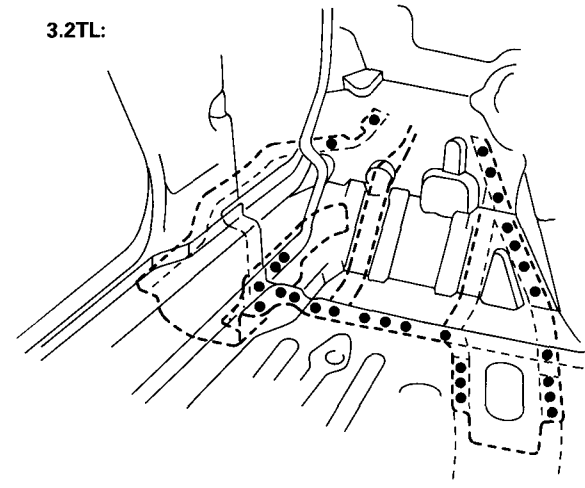
⚠WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

- From the passenger compartment side, weld the holes in the lower dashboard, front floor and floor frame with a MIG welder.
- Weld the front side frame and front side outrigger using MIG welds.

2.5TL:



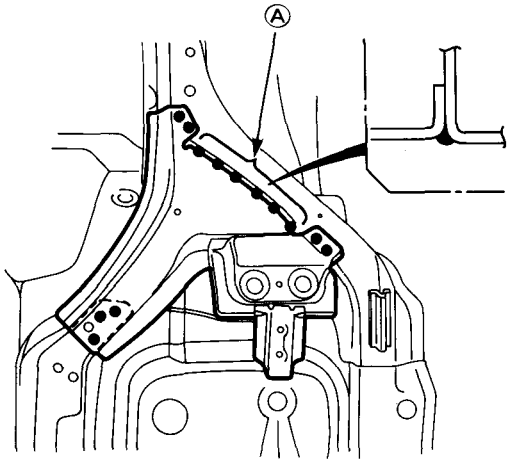
3.2TL:



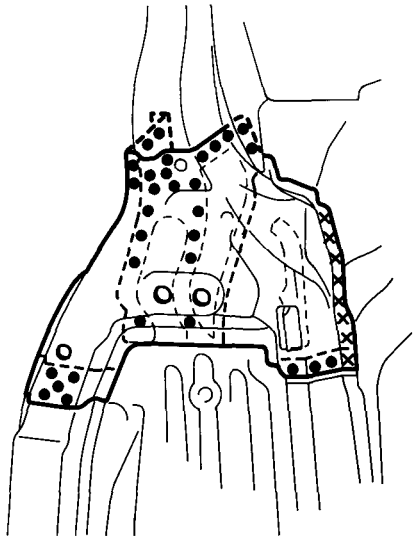
- Make 5 mm (0.2 in) holes in the MIG weld holes with the outrigger or front side extension, and weld the front side frame, floor frame and inside sill with a MIG welder.

2.5TL:

Ⓐ: 6 point of MIG welding the bending angle of a flange. Welding pitch=30 mm (1.2 in)



3.2TL:



8. Apply the sealer (see section 5).
   Apply sealer to the mating surface of the lower dashboard and front floor.

9. Apply the paint.
   See Paint Repair section.

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

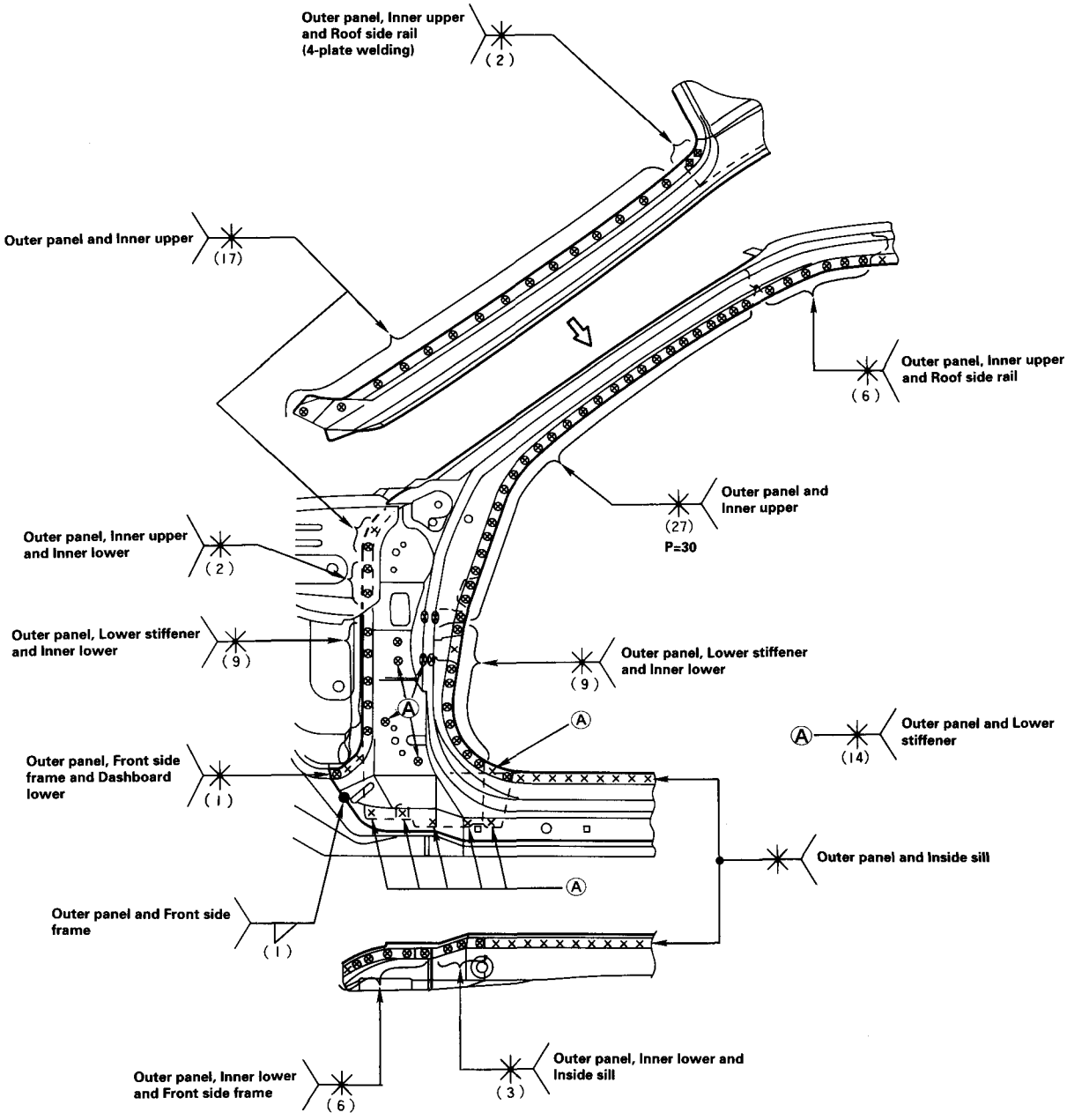
10. Apply the undercoat.
    Undercoat the front floor, etc, and apply anti-rust agent to the inside of the front side outrigger and side sill (see section7).

Front Pillar (Outer Panel)

Description

The front pillar is connected to the roof, windshield, the door hinges, and side sills and is a highly important support. Connection of the front pillar determines the position of the windshield and front door. Align the front fender, door, and windshield while the front pillar is loosely mounted, and check the clearances and level differences.

Mass Production Body Welding Diagram



Replacement

1. Remove the related parts:
   - Hood
   - Front fender
   - Front door
   - Windshield
   - Front side trim
   - Door opening trim
   - Side cowl lining
   - Dashboard
   - Front pillar trim
   - Wire harness, etc.
   - Steering column
   - Steering hanger pipe

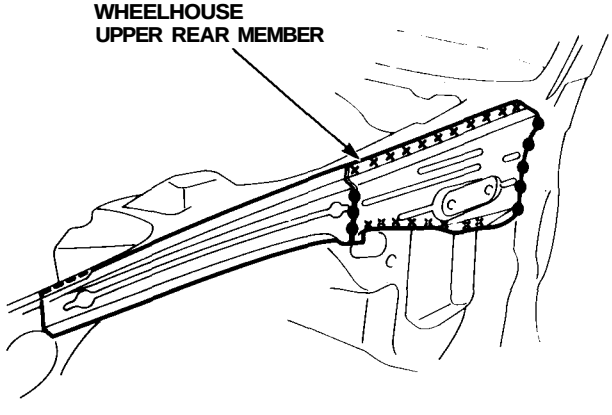
   NOTE: Make sure that the right and left pillars are parallel with the windshield surface. Check the door for proper opening and closing.

2. Pull out and straighten the damaged area.
   - Pull out the damaged area with the frame straightener before cutting off the front pillar extension and front pillar.

   NOTE: Pull out until the pillar is lined up with the surface of the windshield.

   - With the pillar pulled out, pull out and straighten the related lower dashboard and floor section.
   - After pulling, check the inner pillar position using the body dimensional drawings (see section 6).

3. Remove the wheelhouse upper rear member.

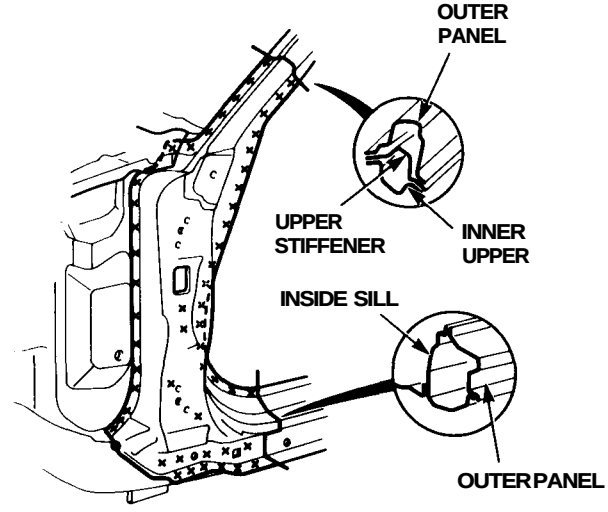


4. Cut off the front pillar.
   - Cut off the front pillar along the bold line shown in the figure to the right with a gas cutter.
   - Use a handsaw to cut the windshield and side sill areas.

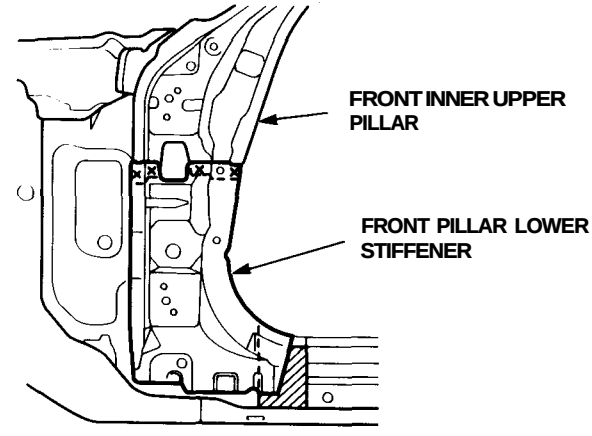
   NOTE: Be careful not to cut the inner section.

   - Center punch around the spot weld imprints.
   - Drill holes using a spot cutter.
   - Chisel off the weld flanges.
   - Finish the burrs at the drilled areas with a disc sander.

⚠WARNING To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.



- Repair the front pillar lower stiffener if necessary.



(cont'd)

Front Pillar (Outer Panel)

Replacement(cont'd)

5. Mold the related parts.
   Fill any holes by MIG or gas welding, and even out with a hammer and dolly.

   ⚠WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

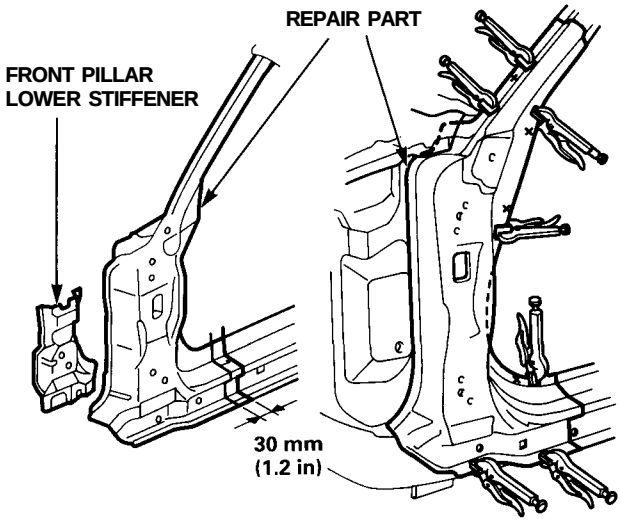
6. Set the repair part
   - Align the repair part with the top cut section, then cut it with a handsaw.

   NOTE: Cut the side sill joint with a handsaw leaving an overlap of 30 mm (1.2 in).

   - Remove the undercoat from both sides of the areas to be spot welded with a sander to expose the steel plate.

   NOTE: Apply the spot sealer to the welding surface when spot welding.

   - Clamp with vise-grips as shown.
   - Check the body dimensions (see section 6).



7. Tack welds the clamped sections.

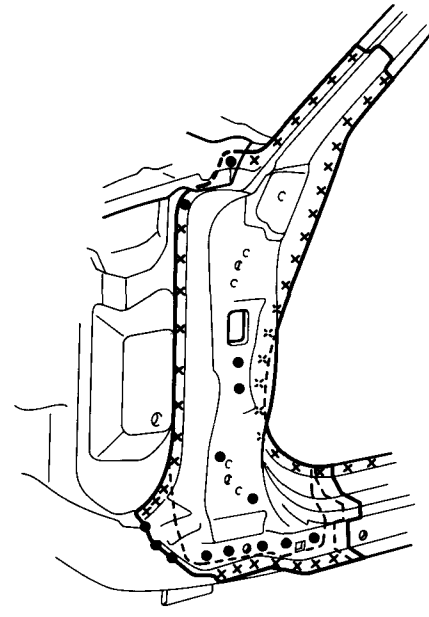
   ⚠WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

8. Temporarily mount the door and front fender.
   - Remove the vise-grips, then mount the door.
   - Check the clearance and level differences of the door and fender.

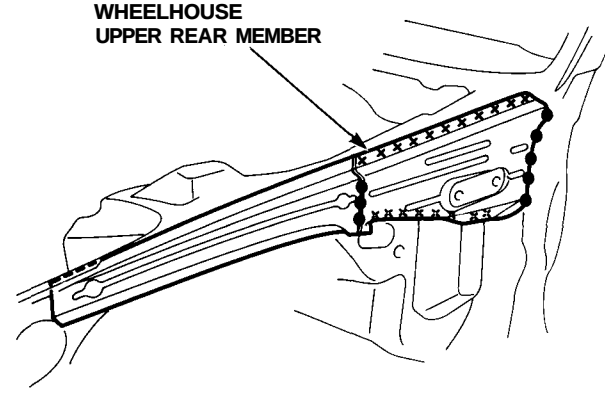
9. Perform main welding.
   - Weld the front pillar and side sill outer joints with a MIG welder.
   - Make 20% to 30% more spot welds than there were holes drilled.

   ⚠WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

   - Make 5 mm (0.2 in) holes in the MIG weld holes with the repair part, and weld the lower stiffener extension, lower stiffener and dashboard upper side member with a MIG welder.



   - Weld the wheelhouse upper rear member.



10. Finish the welding areas.
    - Finish grind the finishing allowance with a disc sander until it is smooth.

    ⚠WARNING **To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.**

    - Smooth the flanged section of the door opening with a hammer and dolly.

11. Apply the sealer (see section 5).

12. Apply the paint.
    See Paint Repair section.

    ⚠WARNING
    - **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
    - **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
    - **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

13. Apply anti-rust agent to the inside of the front pillar, wheelhouse upper member and side sill (see section 7).

14. Install the related parts.
    - Install in the reverse order of removal.
    - Check the door for proper installation and level difference from the fenders.

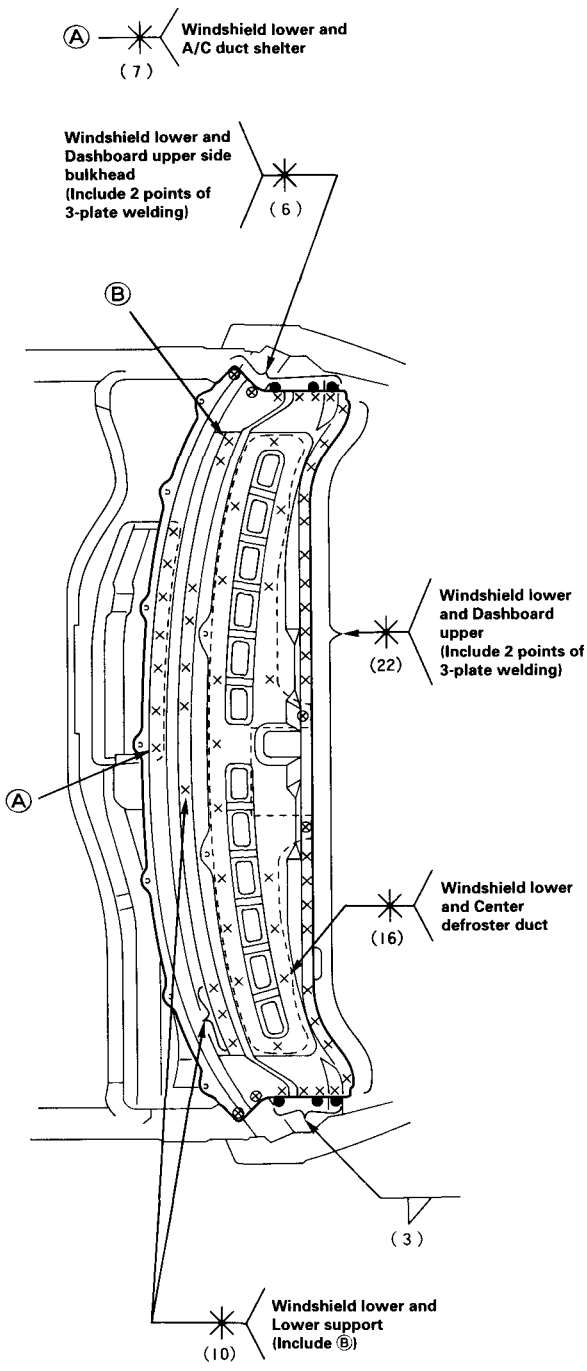
15. Clean and check.
    - After installing the dashboard, check the lights and gauges for proper operation.
    - Clean the passenger compartment and check for water leaks.

Windshield Lower

Description

Impact damage to the windshield lower area may spread to the back of the panel and wiper mounting area, calling for replacement of the affected skins.

Mass Production Body Welding Diagram



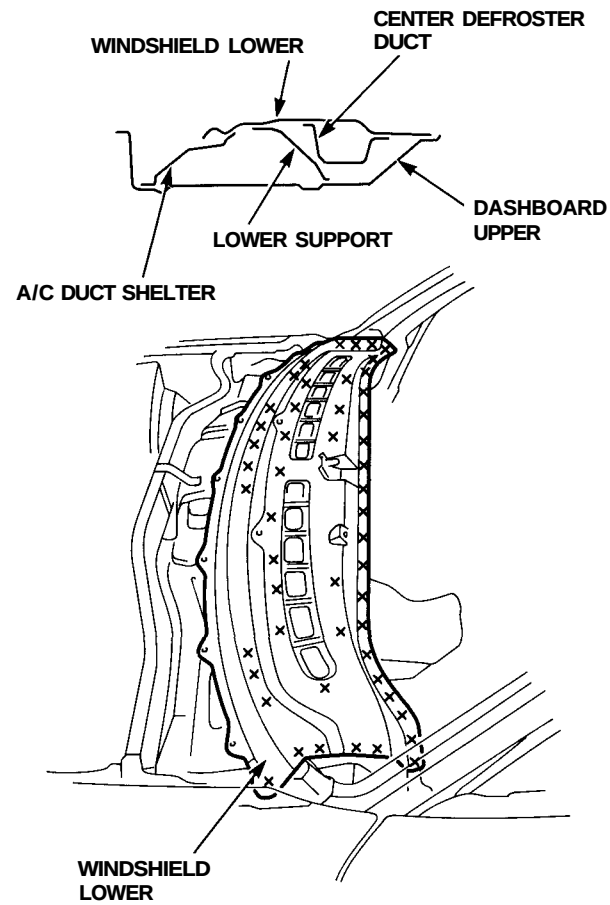
Windshield Lower

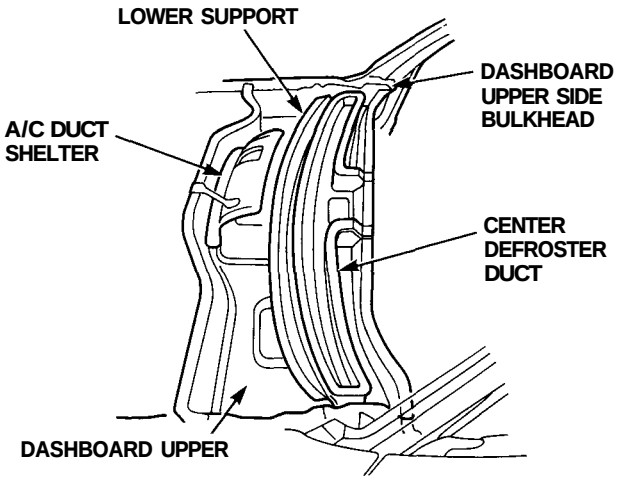
Replacement

1. Remove the related parts.
   - Wiper arm and motor
   - Windshield
   - Right and left front fenders
   - Right and left front door opening trims
   - Front pillar trim
   - Hood
   - Dashboard, etc
   - Wire harnesses and electrical accessories
   - Steering column

2. Cut the windshield lower and separate the welded flange.
   - Center punch around the spot weld imprints.
   - Drill holes with a spot cutter through the nuggets.
   - Peel off the welding flange using a chisel.
   - Level off and finish the burrs of the pried-off spot welds with a sander.

⚠WARNING **To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.**





3. Set the new windshield lower.
   - Apply an undercoat and body paint to the inside.

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

   - Sand off the undercoat down to the metal from both flanges to be welded.
   - Clamp the new windshield lower in place with vise-grips and squill vises.

   NOTE: Apply the spot sealer to the welding surface when spot welding.

   - Install the new windshield and check for proper installation and alignment.

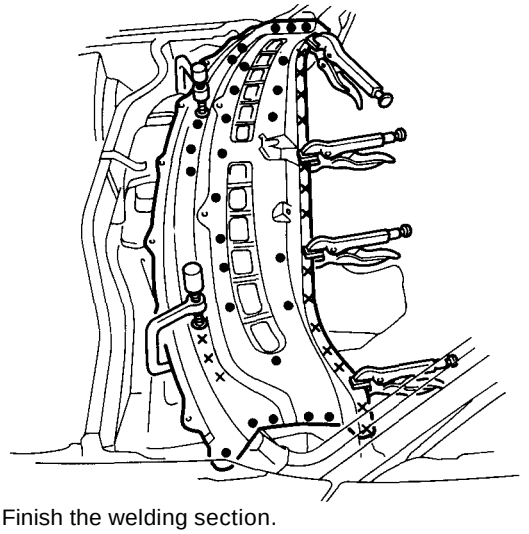
4. Tack weld the new windshield lower.

⚠ WARNING **To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.**

   - Remove the vise-grips and install the fender and hood. Check for differences in level and clearance.

5. Perform the main welding.
   - Make 20% to 30% more spot welds than there were holes drilled.

⚠ WARNING **To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.**



6. Finish the welding section.
   Smooth the mating surface with the windshield with a hammer and dolly.

7. Apply the sealer (see section 5).
   Apply sealer to the upper dashboard, pillars, etc.

8. Install the front fender and hood.
   Check the front fender and hood for differences in level and clearance.

9. Apply the paint.
   See Paint Repair section.

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

10. Apply anti-rust agent to the inside of the windshield lower and dashboard upper (see section 7).

11. Install the related parts.
    Install in the reverse order of removal.

    NOTE: Take care not damage the windshield and the paint finishes.

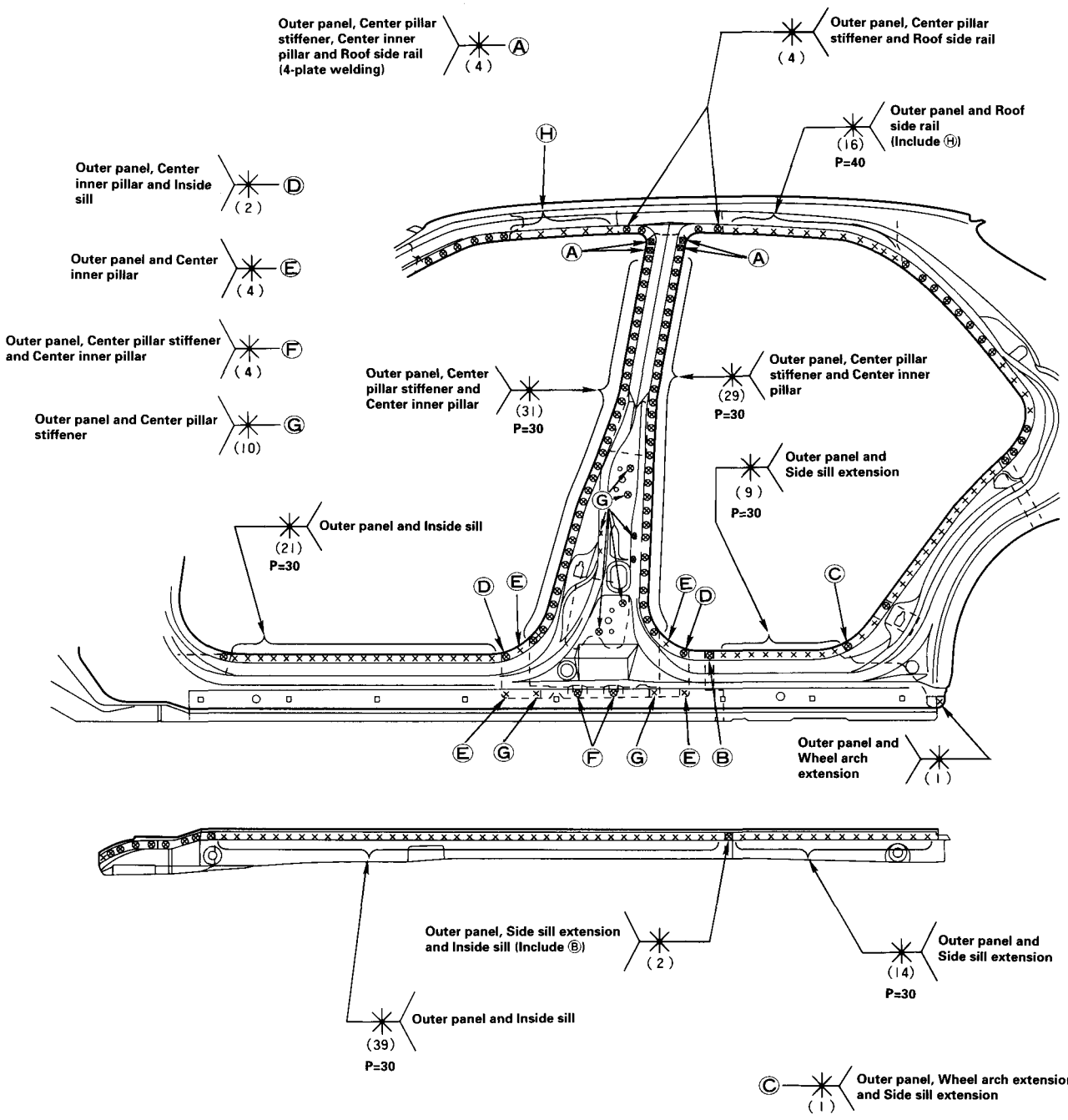
12. Inspect and clean.
    - Check the windshield for water leaks.
    - After installing the dashboard, check the lights, gauges, etc. for proper operation.
    - Clean the interior.

Side Sill (Outer Panel)

Description

The side sill should, depending on the degree of damage, be repaired as much as possible rather than replaced. (Repair by pulling out with slide hammer with pin and washer welded on.)

Mass Production Body Welding Diagram



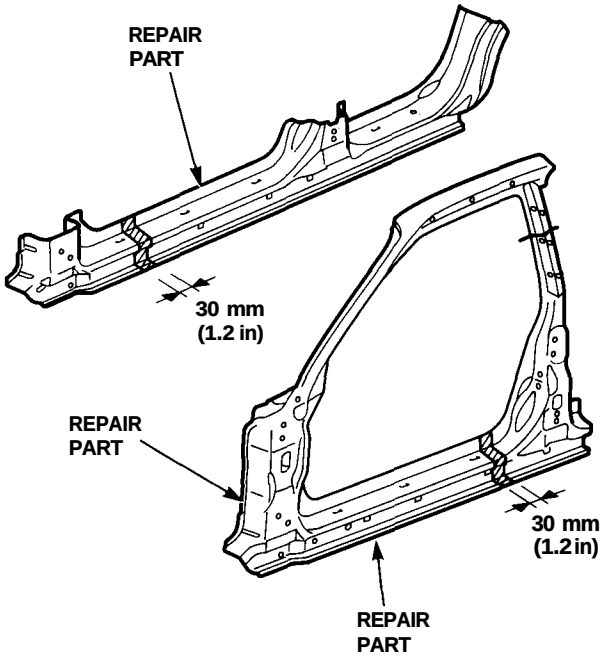
Replacement

1. Remove the related parts.
   - Front and rear doors (remove according to part damaged)
   - Side and center pillar trim
   - Door opening trim
   - Carpet
   - Door switch
   - Seat belt

2. Pull out and straighten the damaged area.
   Damage may extend to the inner pillar, the inside sill and floor. Determine the extent of the damage first, so that the frame can be pulled out properly.

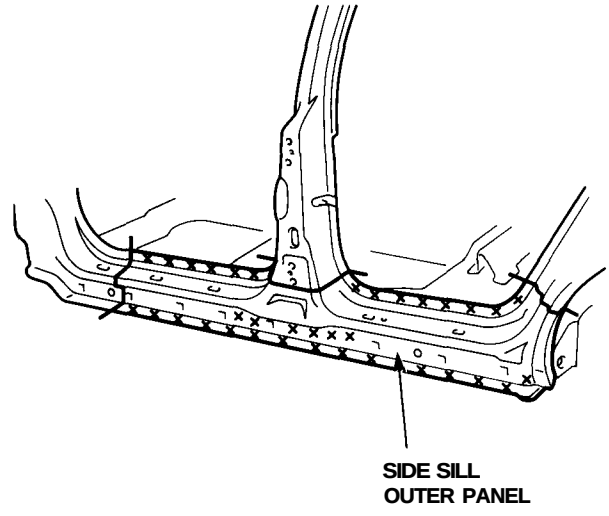
3. Cut and pry off the side sill.
   - Check the damage on the outer side sill, then cut the repair outer side sill so it will overlap by 30 mm (1.2 in) in the front and back.
   - Cut the side sill with a handsaw along the bold line shown in the figure to the right.

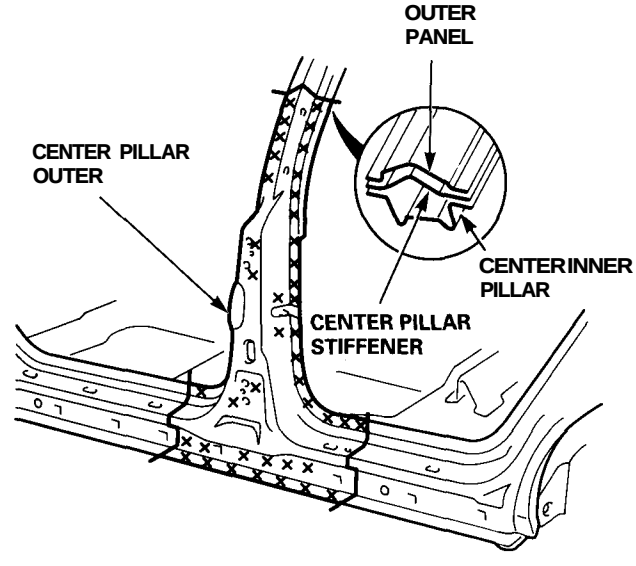
   NOTE: Be careful not to cut the inside sill. This could result in extensive repair.



   - If the damage involves part of the center pillar and rear wheel arch, cut them as shown with a handsaw.
   - Cut the side sill with a chisel leaving the weld flanges intact.
   - Center punch around the spot weld imprints on the welded flange.
   - Drill holes using the spot cutter.
   - Pry off the welded flange with a chisel.

   NOTE: Be careful not to let the holes penetrate down to the inner section.

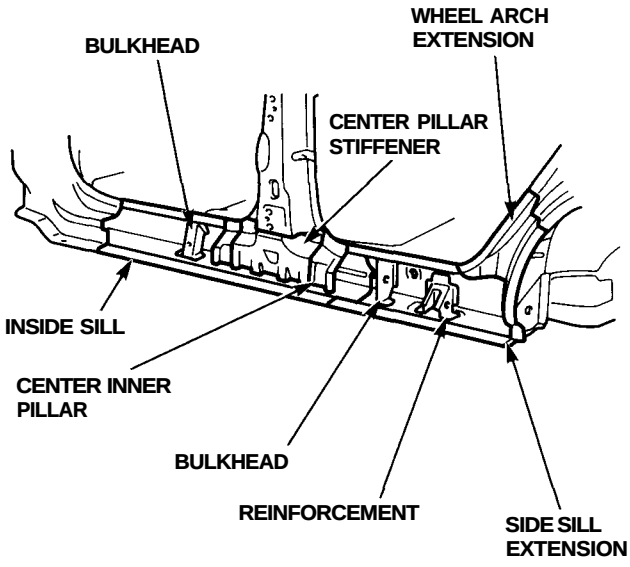


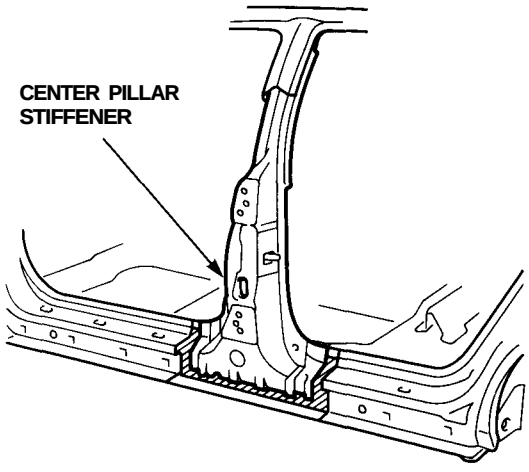


(cont'd)

Side Sill (Outer Panel)

Replacement (cont'd)





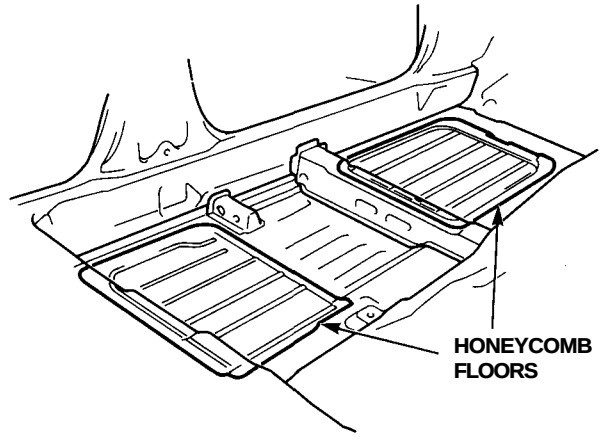
4. Mold the related parts.
   - Fill any holed areas by MIG or gas welding.

⚠ WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

- Level and finish burrs at welded areas with a disc sander, then even them out with a hammer and dolly.
- Sand off the undercoat from both sides of the flange to be welded.

2.5TL:

NOTE: Check the damage of the honeycomb floors and if necessary replace it (see page 4-58).



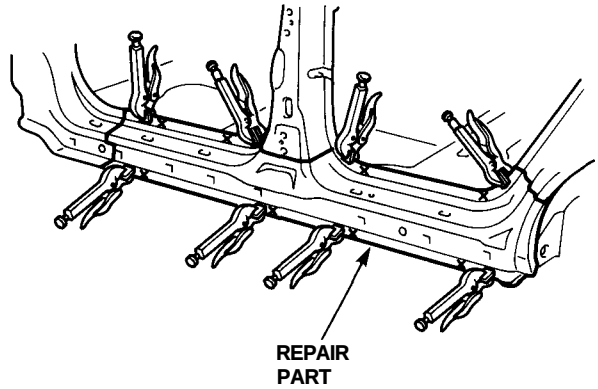
5. Set the repair part.
   - Sand off the undercoat from both sides of the welded flange on the repair part.
   - Clamp the repair part in place with vise-grips.

   NOTE: Apply the spot sealer to the welding surface when spot welding.

   - Check the body dimensions (see section 6).

6. Tack weld the repair part.

⚠ WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

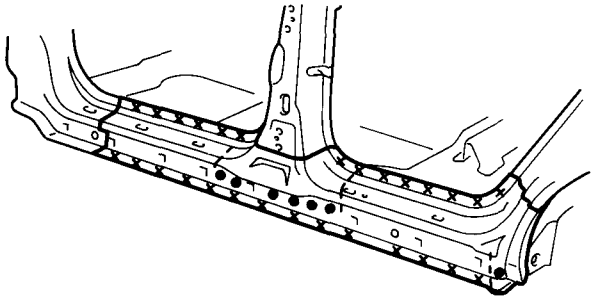


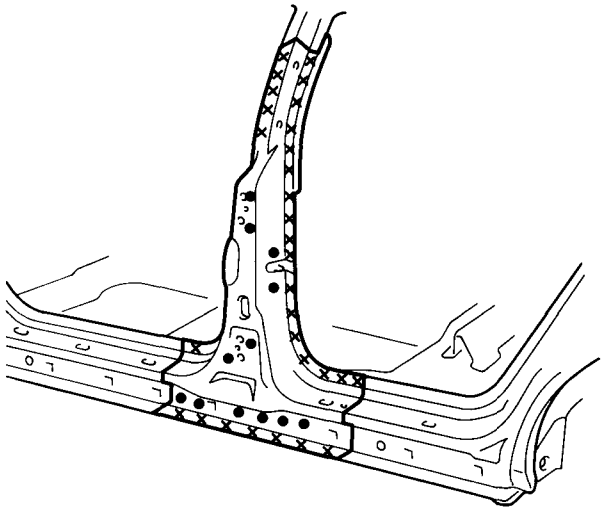
- Remove the vise-grips and install the fender and doors. Check for differences in level and clearance.

7. Perform main welding.

⚠ WARNING **To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.**

- Weld the side sill and rear side outer joints with a MIG welder.
- Spot weld the side sill flanges.
- Make 20% to 30% more spot welds than there were holes drilled.
- Make 5 mm (0.2 in) holes in the MIG weld holes with the repair part, and weld the center pillar stiffener and wheel arch extension with a MIG welder.
- Level the weld beads at the front and rear with a disc sander. Hammer down the projections, then fill with solder or putty to finish it.





8. Apply the sealer.
Apply sealer to the mating surfaces of the floor and inside sill (see section 5).

9. Apply the paint.
See Paint Repair section.

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

10. Apply the undercoat.
Undercoat the front floor, and apply an anti-rust agent to the inside of the side sill and center pillar (see section 7).

11. Install the related parts.
- Install in the reverse order of removal.
- Check the door for proper installation and level differences from the fenders.

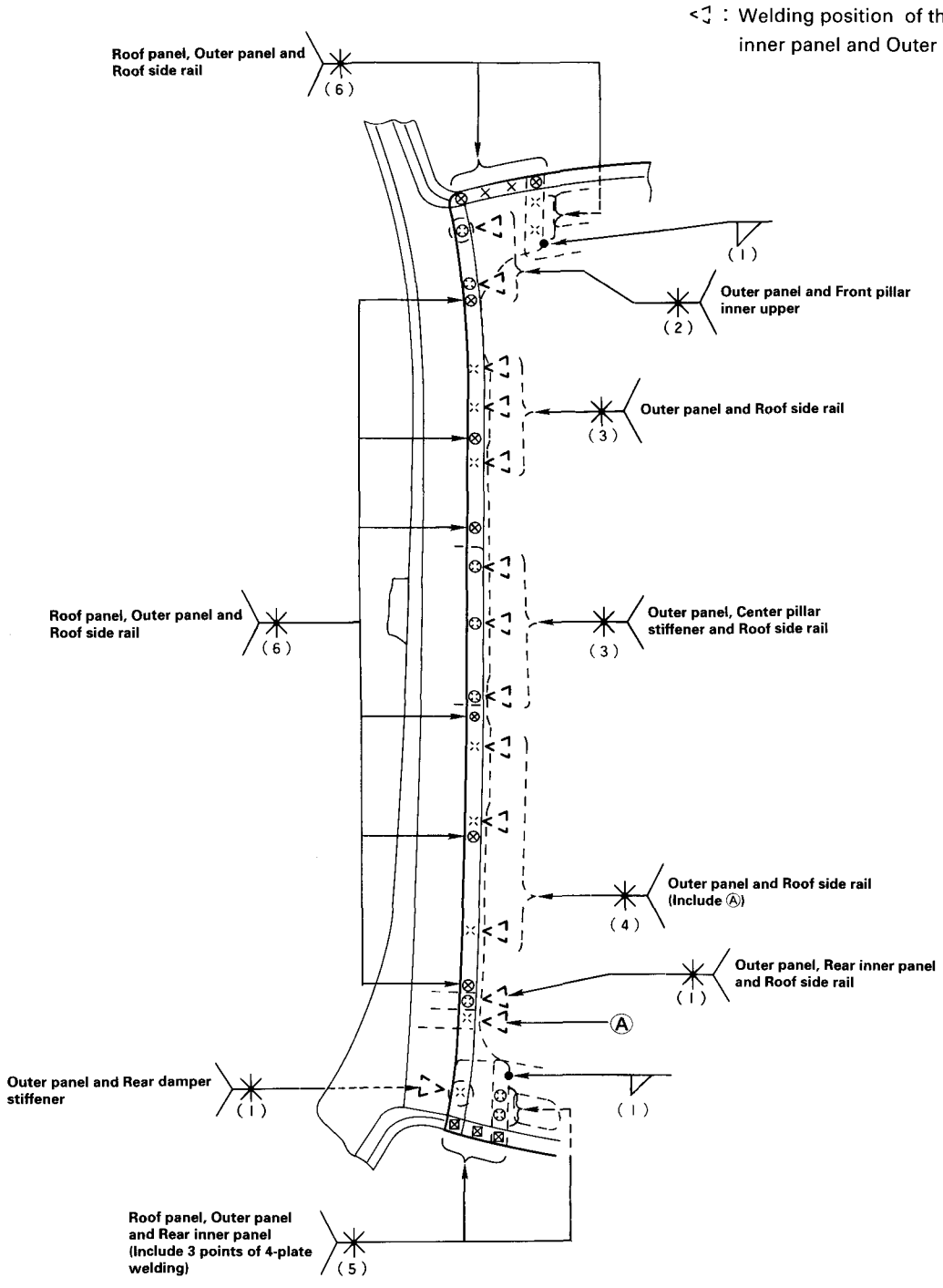
12. Clean and check.
Clean the passenger compartment and check for water leaks.

Roof Panel

Description

Deformation of the roof panel is highly noticeable in terms of the vehicle's outer appearance.
Before replacing the roof rail, make sure that the body is horizontal. Before welding the roof panel, adjust the roof rail flanges so that they contact the roof panel.

Mass Production Body Welding Diagram



Replacement

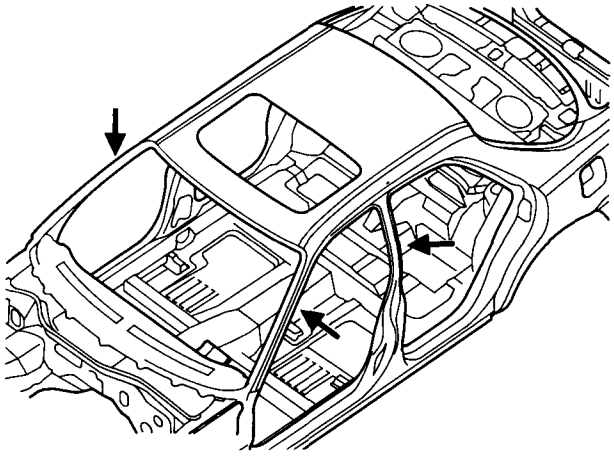
1. Remove the related parts.
   - Windshield
   - Rear window
   - Sunvisor
   - Ceiling lights
   - Headliner
   - Moonroof frame (For some types)
2. Pull out and straighten the damaged area to approximately the original shape.

   NOTE: Check the inner front pillar and the inner center pillar for position and damage.
   Cut the roof panel and pull out the pillars if necessary.

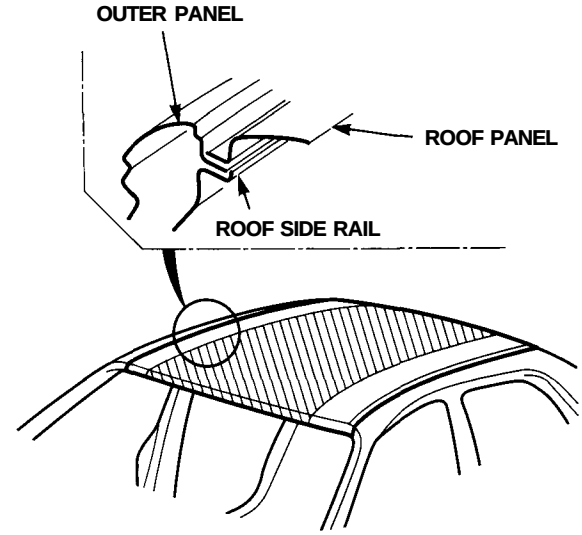
   - Pull out the damaged area with the frame straightener before removing the roof panel.
   - Attach the car to the frame straightener by tightening the underbody clamps located at the horizontal pinch welds.
3. Keep the body level.

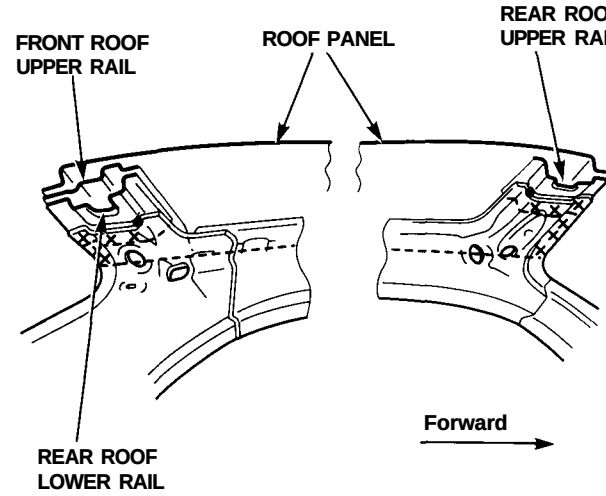
   NOTE: Refer to the 95-96 Acura 2.5TL & 96 Acura 3.2TL Service Manuals for safety stand location points.
   Jack-up the body at the front and back. Place safety stands at the four designated places of the side sills.

   NOTE: Make sure that the right and left pillars are parallel with the windshield surface. Check the door for proper opening and closing.



4. Cut off the shaded areas of the roof panel.
   - Cut the roof rail weld flange with a handsaw at the four corners.
   - Using a chisel, pry off the roof panel along the bold lines as shown.
   - Center punch around the spot weld imprints of the roof gutter welded flange.
   - Drill holes using the spot cutter.
   - Using a chisel, pry off the welded flange.





   - Weld the holed areas with a MIG or gas welder.

⚠ WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

(cont'd)

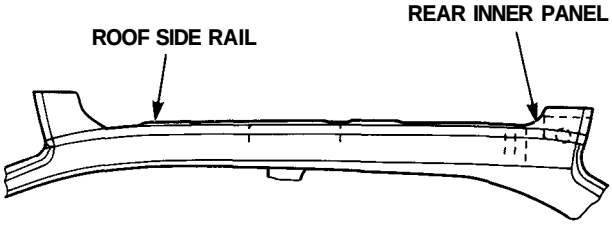
Roof Panel

Replacement (cont'd)

- Level and finish burrs on the welded flanges with a disc sander.

⚠ WARNING To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

- Even out the roof side rail welded flange with a hammer and dolly for a close fit with the roof panel welded flange.



5. Apply paint to the underside of the new roof panel.
   - See Paint Repair section.

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

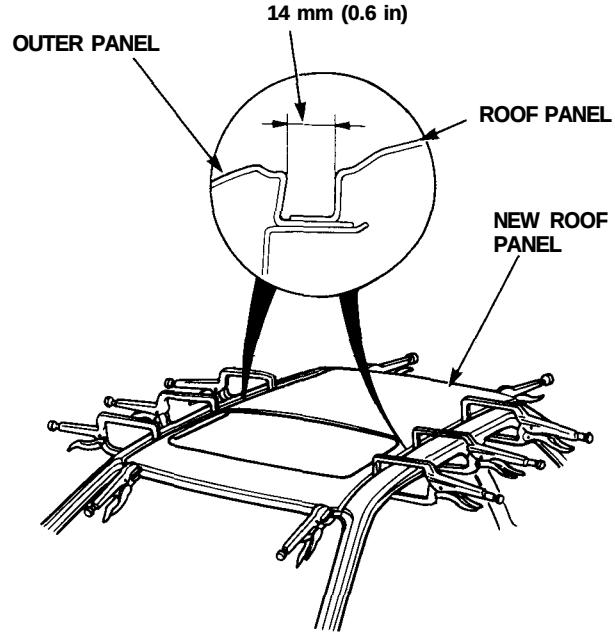
6. Set the new roof panel.
   - Sand off the undercoat from both sides of the flange sections to be spot welded to expose the steel plate.

⚠ WARNING To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

- Clamp the roof panel with vice-grips.

NOTE:

- Check that the flange surfaces fit closely. Be careful not to twist or deform the roof panel.
- Check the width of the groove for the roof moldings on both sides.
- Apply the spot sealer to the welding surface when spot welding.



- Check the body dimension (see section 6).

7. Tack weld the new roof panel.

⚠ WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

- Spot weld the clamped sections to temporarily install the roof panel.
- Set the windshield and rear window, and check the roof panel for proper installation.
- Install the roof molding and check the width of the groove.

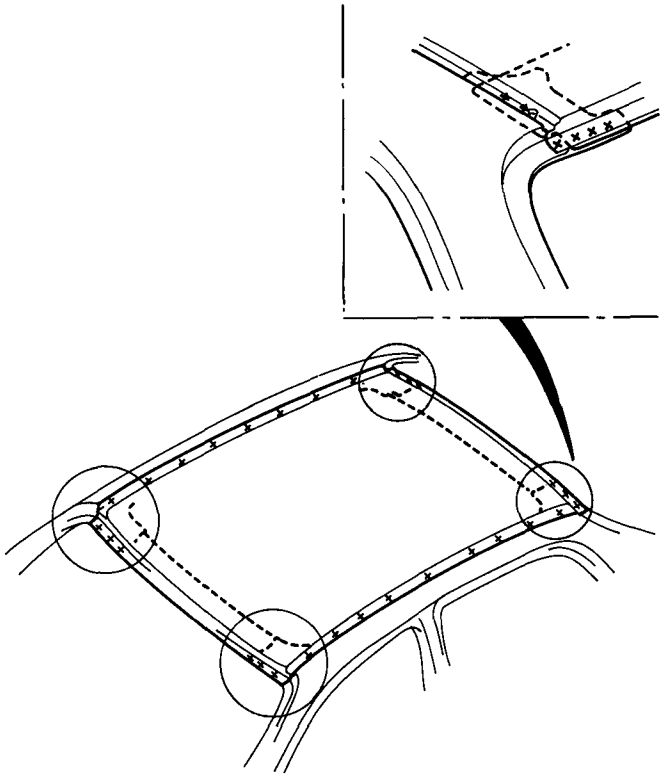
8. Perform the main welding.

⚠ WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

- Spot weld the roof rails at the front and rear.
- Spot weld the roof arch.
- Make 20% to 30% more spot welds than there were holes drilled.

• Smooth the spot weld areas under the windshield and rear window with a hammer and dolly.

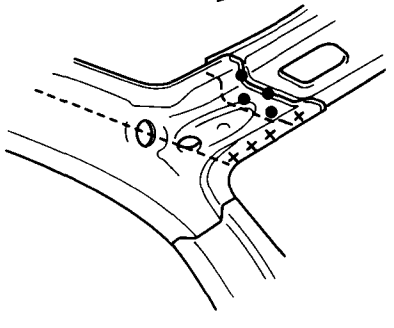
NOTE: After welding the pillars, grind and finish the welded areas flat and blend them into the roof panel.



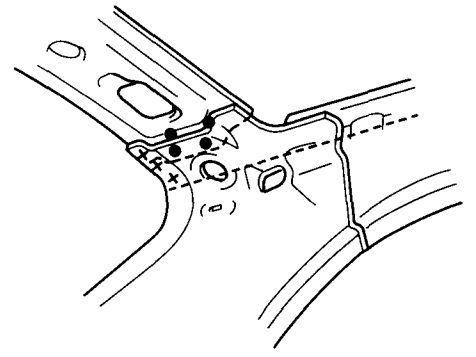
● Weld the roof rail from the inside by MIG welding as shown.

⚠WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

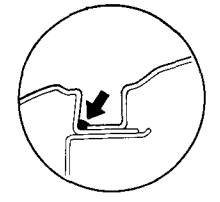
<Front> **Forward**



〈**Rear**〉



9. Apply and level the sealer to the welded areas.



10. Apply the paint.
See Paint Repair section.

⚠WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

11. Apply an anti-rust agent to the inside of the roof side rail.

12. Install the related parts.
Install in the reverse order of removal.

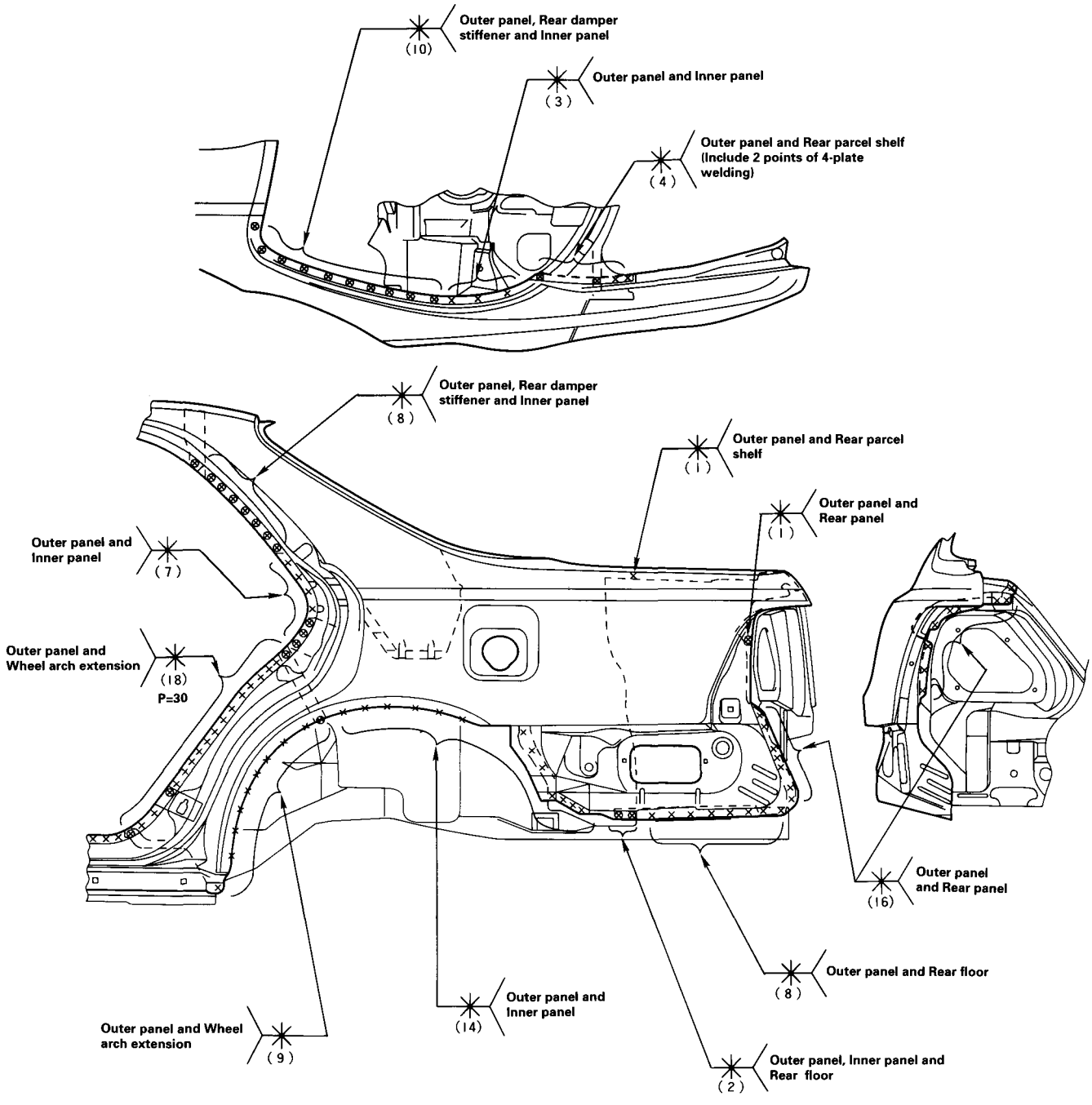
13. Check and clean.
- Check the windshield and rear window for water leaks.
- Make sure the moonroof operates smoothly.
- Clean the passenger compartment thoroughly.

Rear Side Outer Panel

Description

The rear side outer panel is a conspicuous part of the vehicle. It is especially important for body line continuing from the door. Therefore, pay particular attention to it when conducting work. This part also is next to the trunk lid, door and rear window and other parts and must be aligned with them.

Mass Production Body Welding Diagram



Replacement

1. Remove the related parts.
   - Rear bumper
   - Rear window
   - Taillight
   - Rear pillar trim panel
   - Trunk side panel
   - Rear seat
   - Rear seat belt
   - Fuel fill pipe (left side only)

⚠ WARNING **Do not smoke while working near the fuel system. Keep open flame away from the fuel system. If necessary, remove the fuel tank and/or lines before welding nearby. Drain fuel into an approved container.**

2. Pull out and straighten the damaged area.

   NOTE: Carefully check the inner pillar and trunk gutter for position and damage. Pull out the inner panel by cutting the outer if necessary.
   - Jack-up the body and place safety stands at the four designated support points.
   - Pull out the damaged rear side outer panel with the frame straightener, then pull out and straighten the center pillar inner panel and rear wheelhouse.

   NOTE: Be careful not to pull out more than necessary.

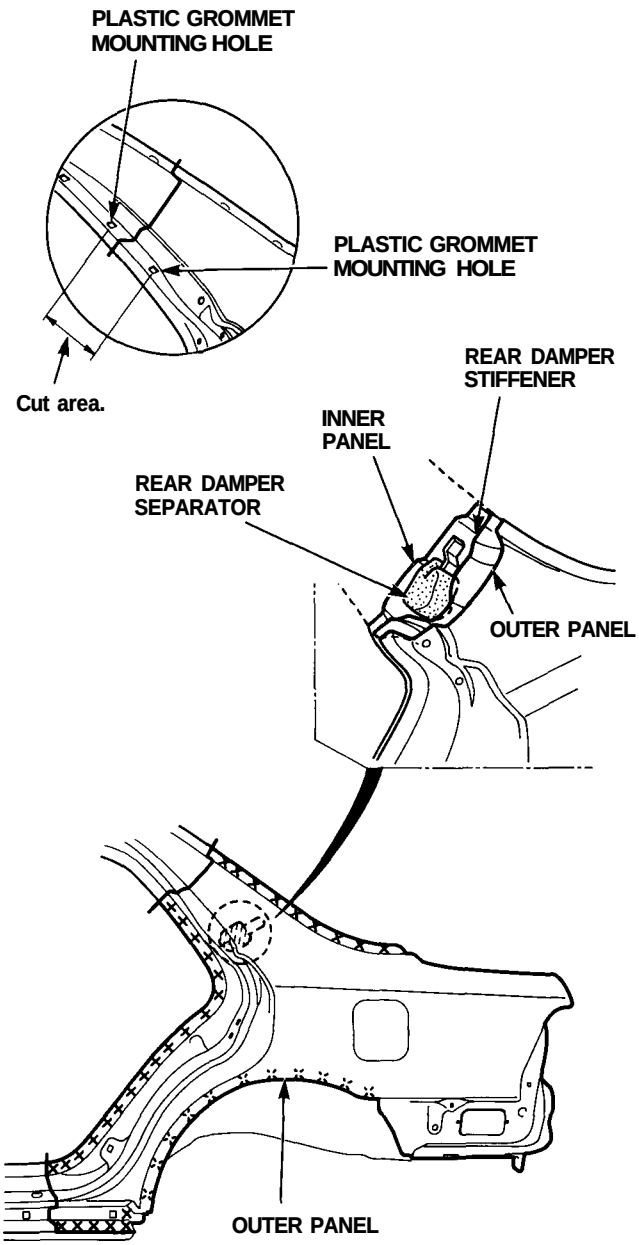
   - After pulling, check the inner pillar and trunk gutter position using the body dimensional drawings (see section 6).

3. Cut and pry off the rear side outer panel.
   - Cut at the rear pillar and side sill with a handsaw.
   - Cut the panel from the body with a chisel leaving the weld flange at the inner panel intact.

   NOTE: Do not cut or damage the inner panel and rear damper stiffener.

   - Cut at the side sill or wheel arch according to the extent of the damage.
   - Center punch around the spot weld imprints on the remaining flange.
   - Drill out the spot welds with the spot cutter.
   - Pry off the welded flange sections using a chisel.

⚠ WARNING **Do not smoke while working near the fuel system. Keep open flame away from the fuel system. If necessary, remove the fuel tank and/or lines before welding nearby. Drain fuel into an approved container.**

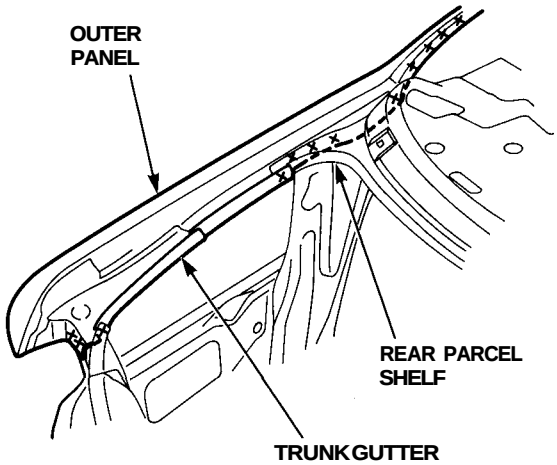


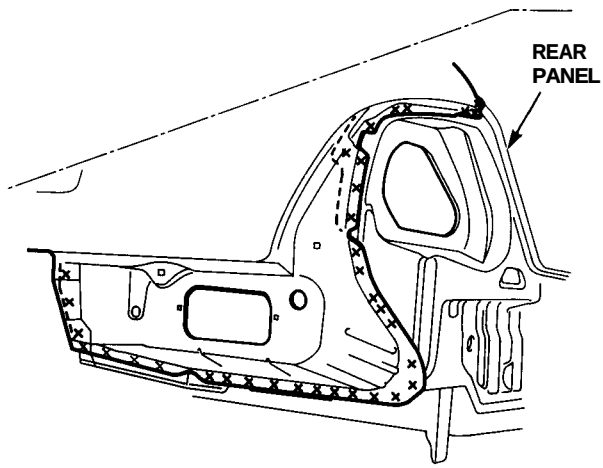
NOTE: Do not cut or damage the rear damper stiffener and rear damper separator.

(cont'd)

Rear Side Outer Panel

Replacement (cont'd)



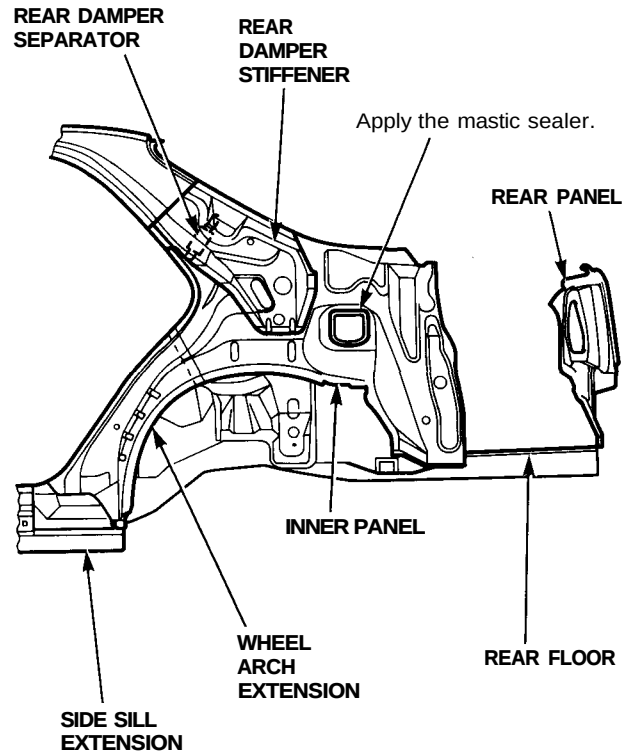


4. Mold the inner panel and related parts.
   - Fill and holes drilled by MIG or gas welding.

⚠ WARNING **To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.**

   - Level and finish burrs, etc. with a disc sander.

⚠ WARNING **To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.**

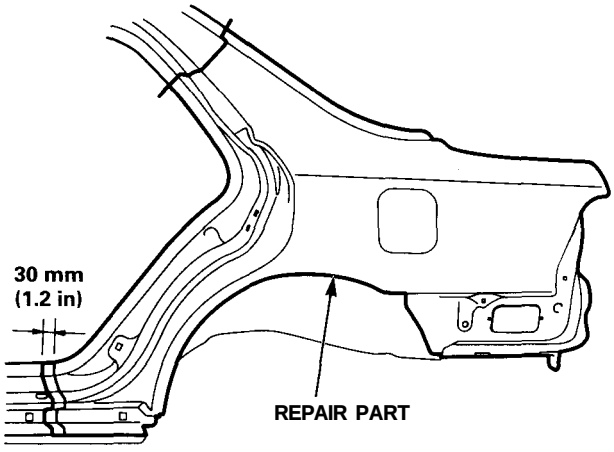


5. Cut the replacement part.
   - Cut so that the repair part overlaps the side sill by 30 mm (1.2 in).
   - Apply body paint to the back of the repair part.
   - See Paint Repair section.

⚠ WARNING

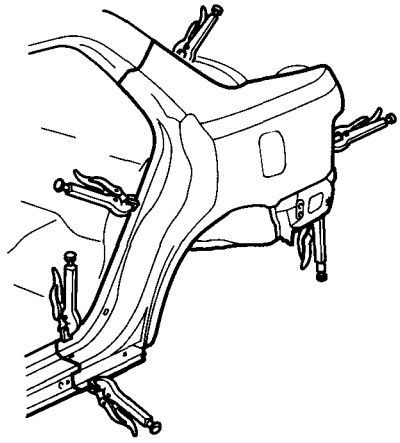
- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

   - Remove the undercoat from both sides of the weld flange with a sander to expose the steel plate.



6. Set the repair part.
   - Install the outer panel and clamp it with vise-grips.

   NOTE: Apply the spot sealer to the welding surface when spot welding.



   - Check the body dimensions (see section 6).

7. Tack weld the repair part.

   ⚠ WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

   Temporarily spot weld the panel at the clamped positions.

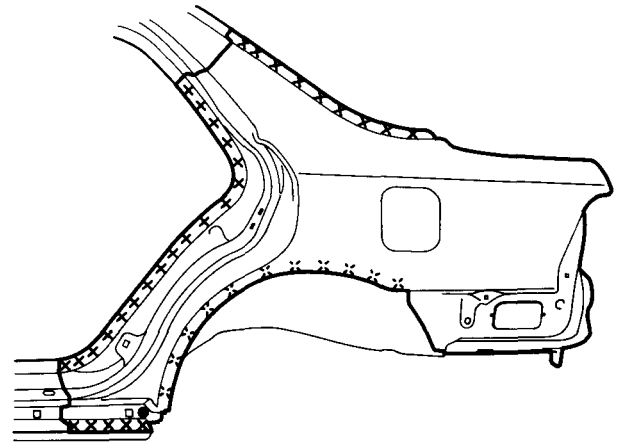
8. Remove the vise-grips and check the alignment of the door and trunk lid.

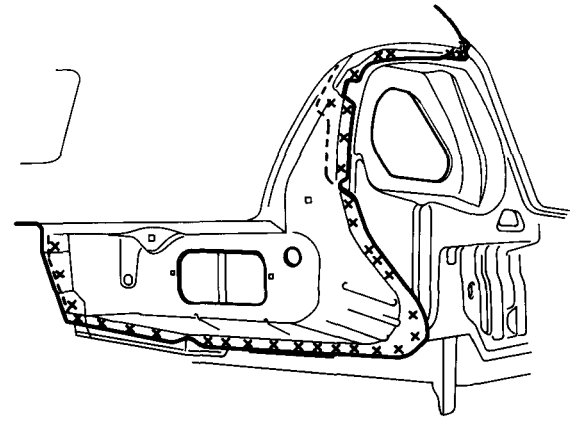
   NOTE:
   - Check for flushness of the front fender, door, and the rear fender and make sure the body lines flow smoothly.
   - Check the rear window openings.

9. Perform the main welding.

   ⚠ WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

   - Weld the outer panel at the rear pillar and side sill with a MIG welder.
   - Make 20% to 30% more spot welds than there were holes drilled.
   - Make 5 mm (0.2 in) hole in the MIG weld hole with the repair part, and the wheel arch extension with a MIG welder.





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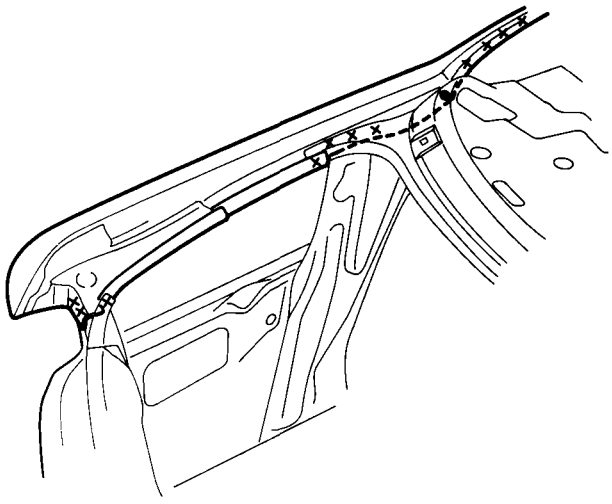
Rear Side Outer Panel

Replacement (cont'd)



10. Finish the welded areas.
    - Level the MIG welded areas with a disc sander.

⚠ WARNING **To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.**

- Even out high areas with a hammer. Be careful not to deform them.
- Even out the spot welded flange areas with a hammer and dolly.
- Fill in deformations and level differences of the welded areas with solder or putty, then finish.

11. Apply the sealer (see section 5).

Apply sealer to the fuel fill section, trunk lid opening joint and around the taillight area of the rear panel.

12. Apply the paint.
See Paint Repair section.

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

13. Apply the undercoat.
Apply undercoat to the wheelhouse and apply anti-rust agent to the inside of the outer panel (see section 7).

14. Install the related parts.
Install in the reverse order in which they were removed.

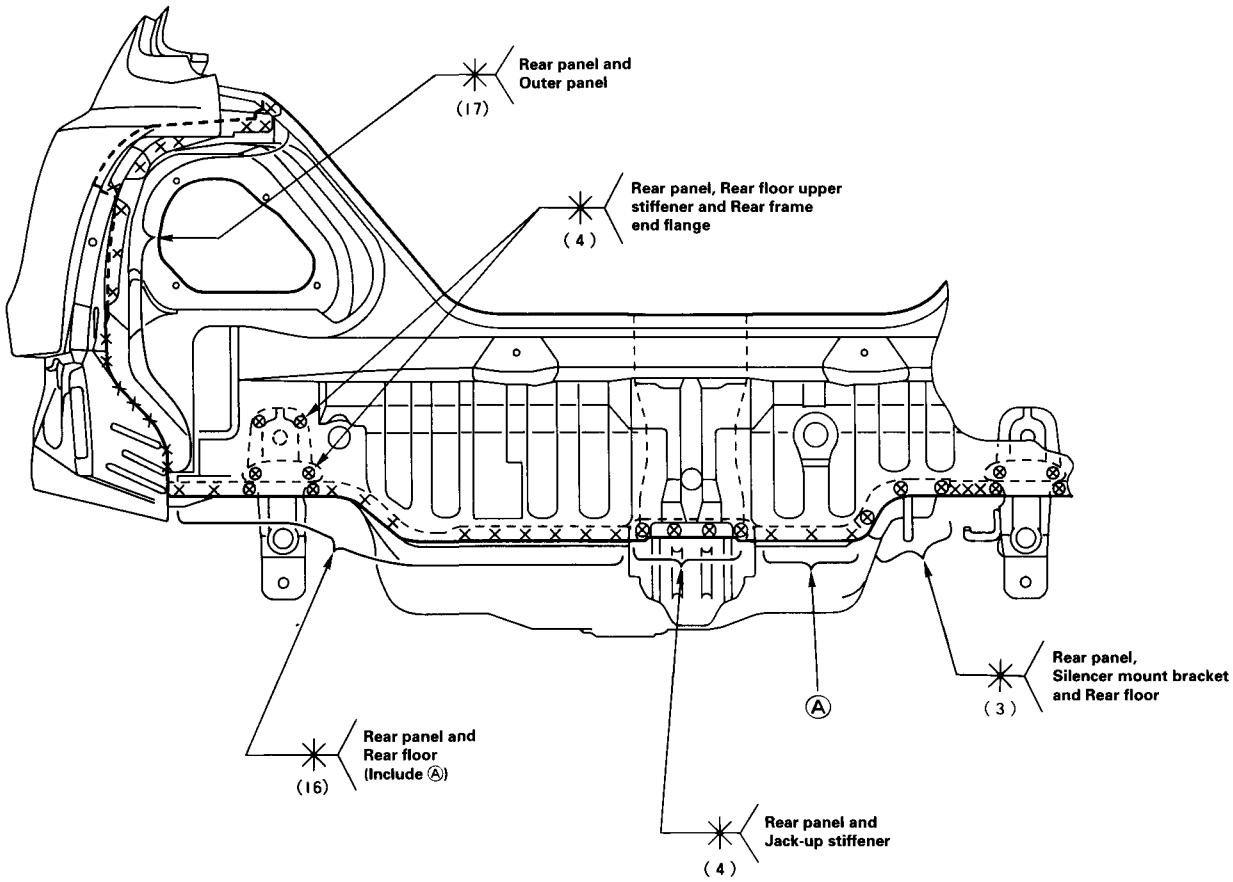
15. Inspect, check, and clean.
    - Adjust the clearance with the door and trunk lid, then adjust the level differences and fit. Check operation.
    - Test for leaks in the trunk and passenger compartments.
    - Clean the trunk floor.

Rear Panel

Description

The rear panel is joined to the rear outer panel and rear floor, and maintains the rigidity of both sides of the rear body. It must be welded carefully.

Mass Production Body Welding Diagram



Rear Panel

Replacement

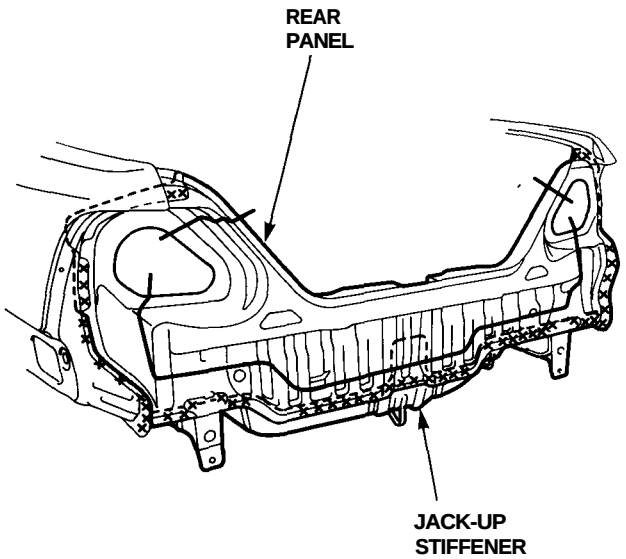
1. Remove the related parts.
   - Rear bumper
   - Rear bumper upper beam
   - Trunk lid lock and its attachments
   - Other related parts
   - Rear and side trim panels
   - Taillights

2. Pull out and straighten the damaged area.
   - Pull out the related rear side inner panel, rear floor, rear side frame and other damaged parts with the frame straightener.
   - Attach the car to the frame straightener by tightening the underbody clamps located at the jack-up points on the bottom of the side sill and the side sill side flanges.

3. Cut and pry off the rear panel.
   - Cut along the bold line shown with a gas cutter or an air chisel and remove the rear panel.
   - Center punch around the spot weld imprints with the rear side outer panel and rear floor.
   - Drill holes using the spot cutter.

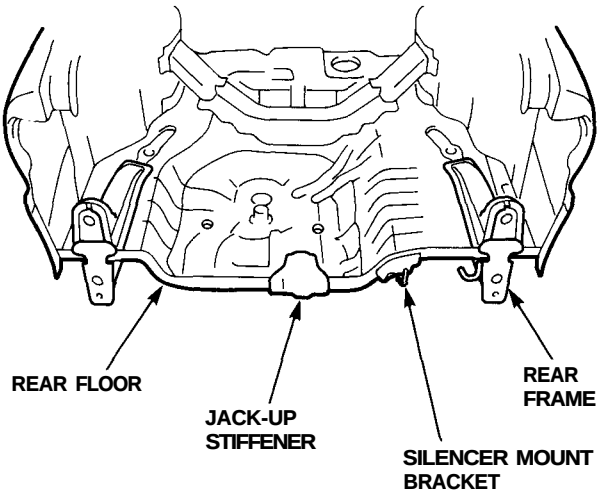
   NOTE: Be careful not to let holes penetrate through to the rear floor.

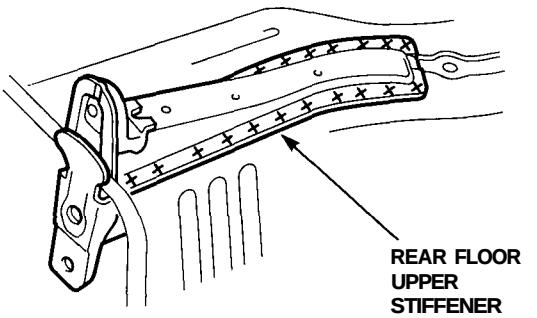
   - Remove weld flange with a chisel.



4. Mold the related parts.
   - Repair the rear floor upper stiffener if necessary.
   - Repair all cracks, holes or other defects by MIG or gas welding.

⚠ WARNING **To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.**





5. Set the new rear panel.
   - Paint the inside of the panel with the body color.
   - See Paint Repair section.

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

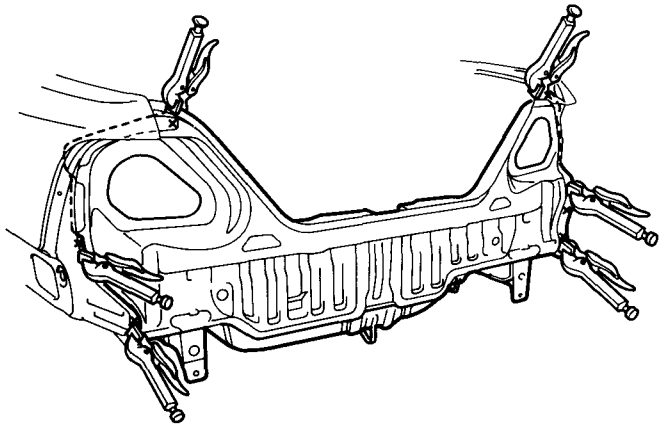
- Remove the undercoat from the welding section of the panel and expose the steel plate using a disc sander.

⚠ WARNING To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

- Install the new rear panel and clamp it with vise-grips.

NOTE: Apply the spot sealer to the welding surface when spot welding.

- Check the rear panel position using the body dimensionnal drawings (see section 6).



6. Tack weld the rear panel.
   - Weld the clamped sections for temporary installation.

⚠ WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

7. Open and close the trunk lid to check for proper installation.

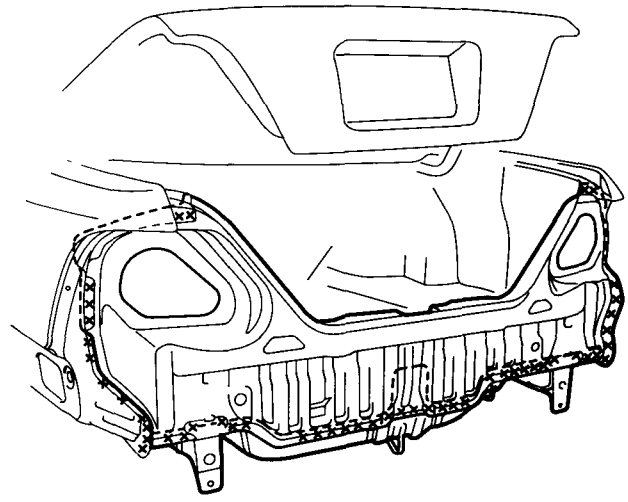
NOTE: Make sure the trunk lid or tailgate locks securely.

Position the rear panel in its correct position with the rear bumper and taillight installed.

8. Perform the main welding.

⚠ WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

- Make 20% to 30% more spot welds than there were holes drilled.



(cont'd)

Rear Panel

Replacement (cont'd)

9. Finish the welding areas.
   - Level the welded acres with a disc sander, then even out high areas with a hammer. Be careful not to deform them.

   ⚠WARNING **To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.**

   - Even out the spot welded flange area with a hammer and dolly.

10. Apply the sealer (see section 5).
    - Apply sealer to the rear side outer joint and around the taillight areas of the rear panel.
    - Apply sealer to the rear panel and rear floor joint.

11. Apply the paint.
    See Paint Repair section.

    ⚠WARNING
    - **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
    - **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
    - **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

12. Apply anti-rust agent (see section 7).
    - Apply agent to the outer panel, rear panel and rear floor joint.
    - Apply agent to the inside of the jack-up stiffener.

13. Install the related parts.
    Install in the reverse order in which they were removed.

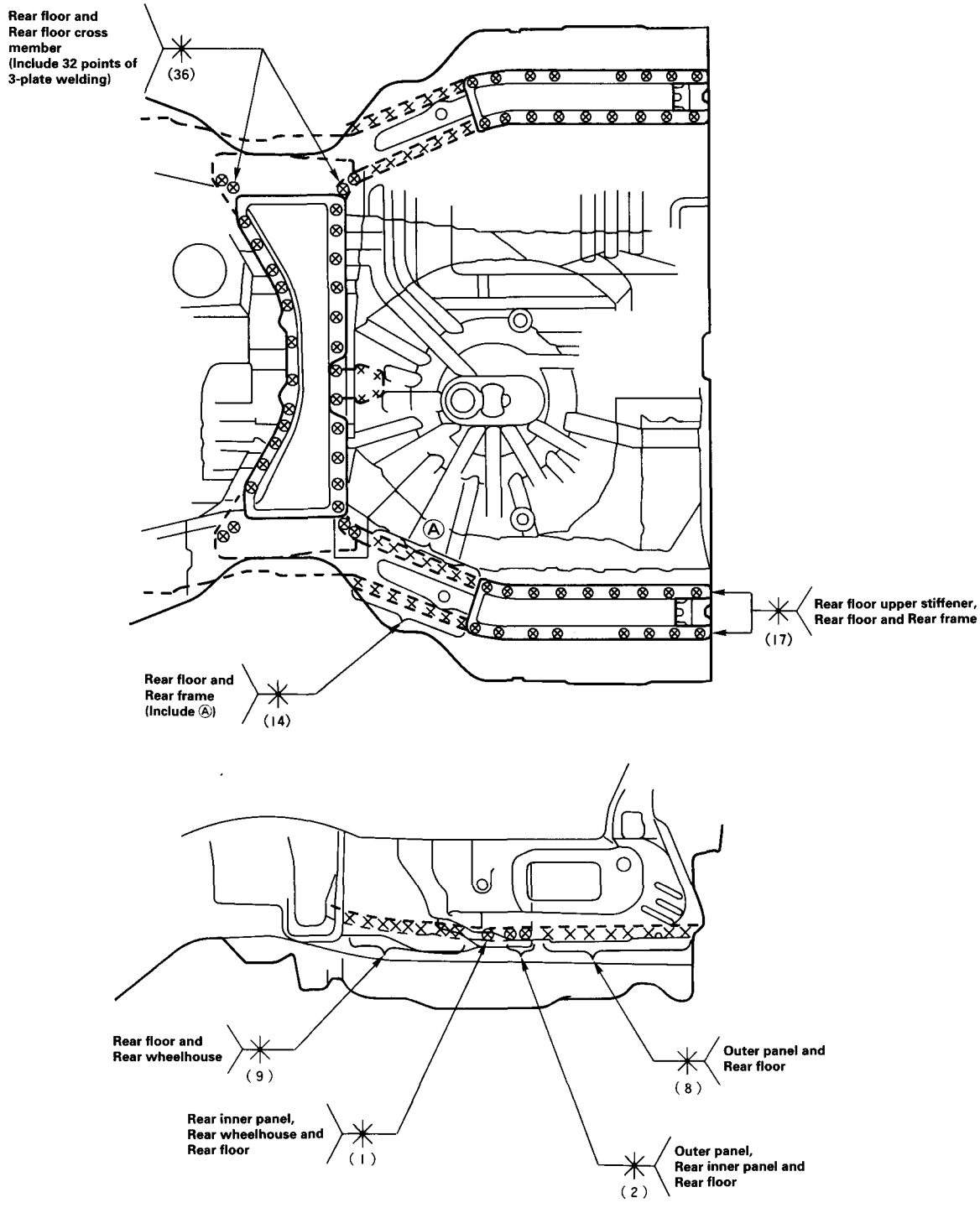
14. Inspect, check, and clean.
    - Adjust the clearance with the trunk lid, then adjust the level difference and fit. Check operation.
    - Test for leaks in the trunk compartment.
    - Clean the trunk floor.

Rear Floor

Description

The rear floor is the base of the rear body and it is critical for the rigidity of the rear body. During replacement, refer to the body dimension chart or body correction chart and determine the position to set the rear floor properly. Be sure that the rear floor is not bent or deformed. Weld securely following the welder manufacturer's instructions to maintain the rigidity of the body.

Mass Production Body Welding Diagram



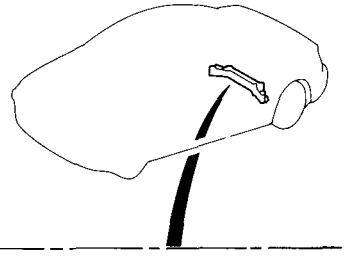
Rear Floor

Replacement

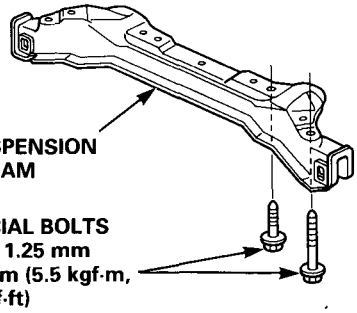
1. Remove the related parts.
   - Rear seat
   - Trim and other luggage compartment fittings
   - Left and right rear suspension assembly
   - Parking brake parts
   - Muffler
   - Wire harness
   - Other parts as necessary
   - Fuel tank and fuel pipes

⚠WARNING **Do not smoke while working near the fuel system. Keep open flame away from the fuel system. If necessary, remove the fuel tank and/or lines before welding nearby. Drain fuel into an approved container.**

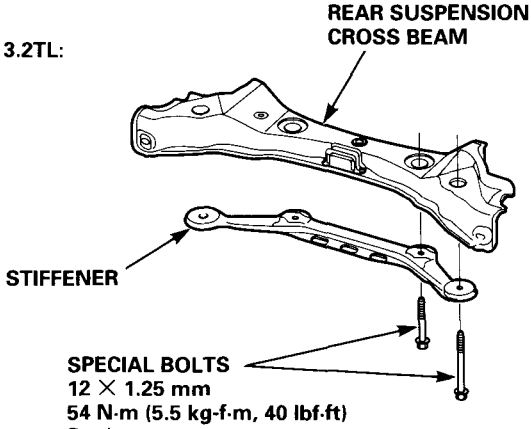
2. Remove the rear suspension cross beam.



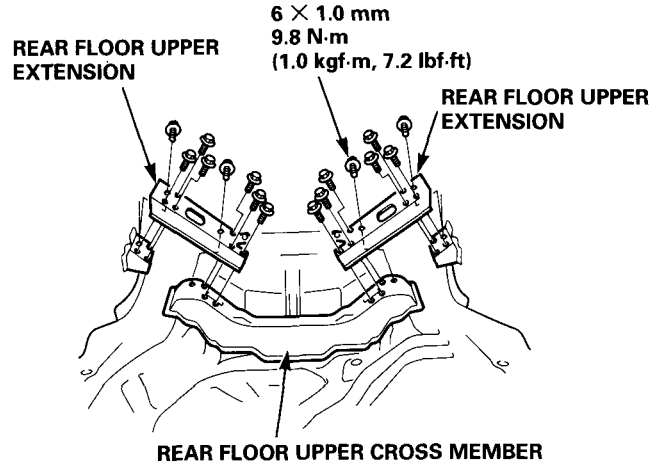
2.5TL:



3.2TL:

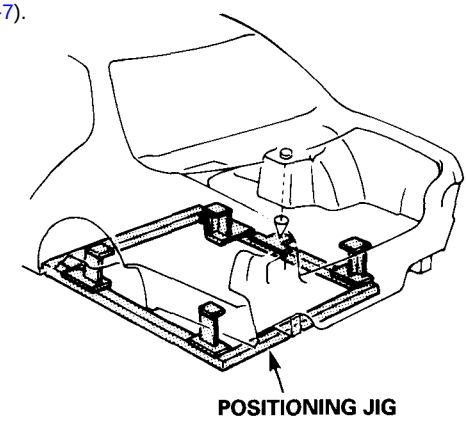


3. Remove the rear floor upper extensions.



4. Pull out and straighten the damaged area.
   - Check whether the damage extended to the rear floor cross member, rear wheelhouse and the passenger compartment, and pull out the damaged parts using the frame corrector.
   - Impact damage to the rear floor spreads to related parts such as the rear frame, rear floor cross member and rear wheelhouse.
   - Therefore, pull out the damaged areas with the frame straightener and measure in reference to body dimensional drawing.

NOTE: Use of a positioning jig is recommended (see page 1-7).

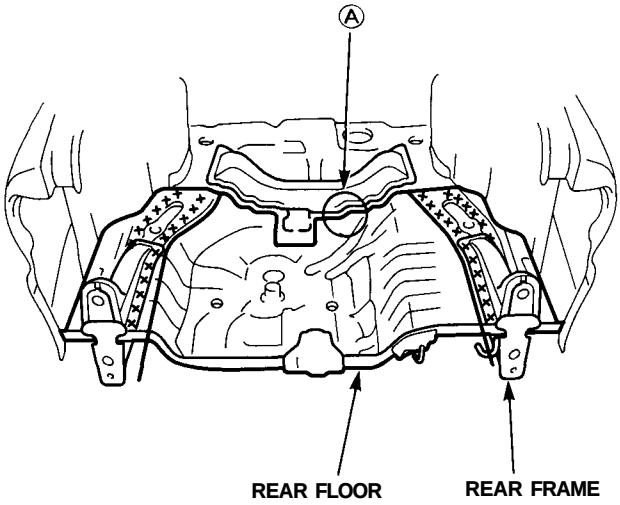


5. Peel off the undercoat.
   Heat the undercoat at the weld areas of the lower rear floor with a gas torch and peel off the undercoat with a metal spatula.

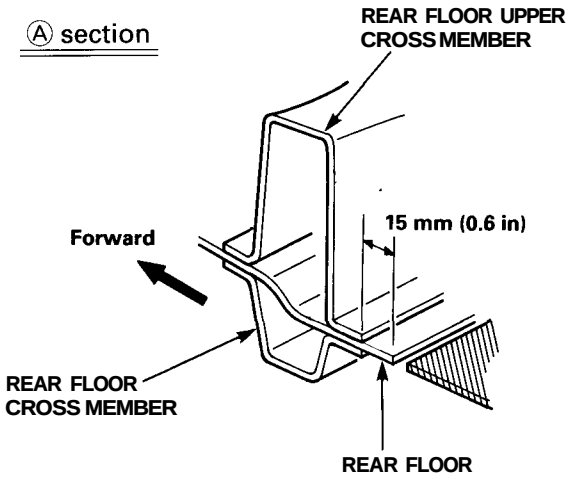
CAUTION: Be careful not to burn the fittings inside the trunk compartment while heating.

6. Cut and pry off the rear panel (see page 4-45).

7. Cut and pry off the rear floor.
   - Cut off the rear floor with a gas cutter or air chisel. Level the spot welded flanges of the rear side frame and rear floor cross member, as shown by the bold line in the figure below.



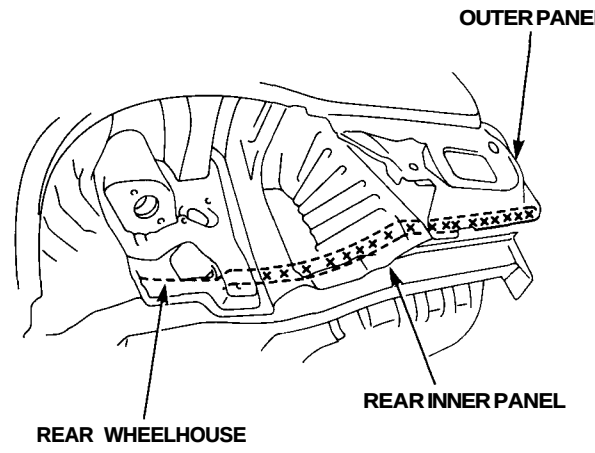
NOTE: Cut the rear floor 15 mm (0.6 in) from the welded flange of the rear floor upper cross member.



   - Center punch around the spot weld imprints on the remaining welded flanges. Do the same with the rear wheelhouse and the side of the rear end inner panel.
   - Drill holes with a spot cutter.

NOTE: When drilling holes, be careful not to drill down to the rear frame.

   - Pry off the flanges using a chisel.



8. Mold the related parts.
   - Remove the burrs from the spot weld or MIG weld using a sander.

⚠ WARNING To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

   - Fill any holes made in the spot welded areas of the flange by MIG or gas welding.

⚠ WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

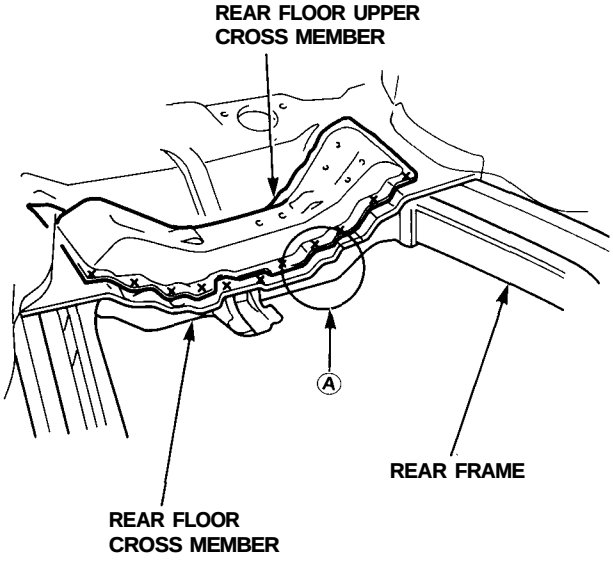
(cont'd)

Rear Floor

Replacement (cont'd)

- Smooth the welding flanges of the rear frame with a hammer and dolly.

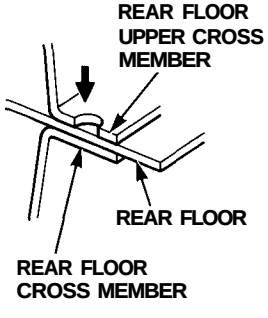
NOTE: Check that the rear frame is parallel at the right and left.



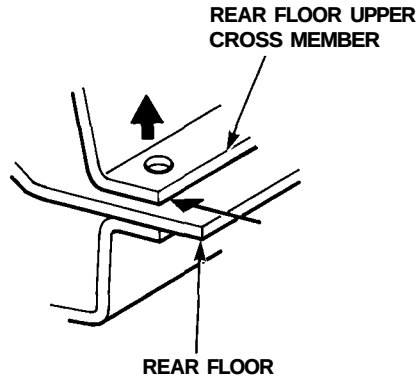
- Center punch the spot weld imprints on the rear floor upper cross member welded flange.
- Drill holes with a spot cutter at the areas joined to the rear floor upper cross member and rear floor.

NOTE: When drilling holes be careful not to drill down to the rear floor.

Ⓐ area



- Pry off the welded flange sections using a chisel.



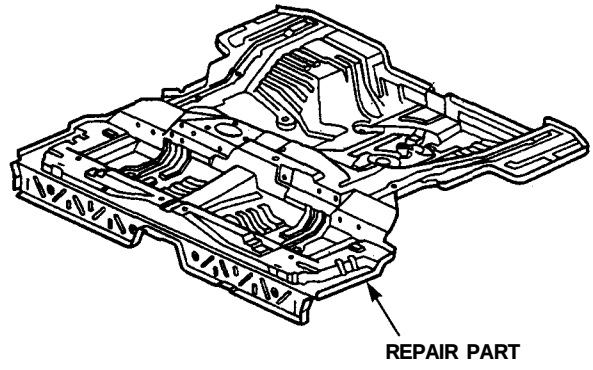
9. Keep the body level.
   Jack-up the body at the front and back. Place safety stands at the four designated places of the side sill.

10. Set the repair part.
    - Cut the new rear floor to align it with the body.

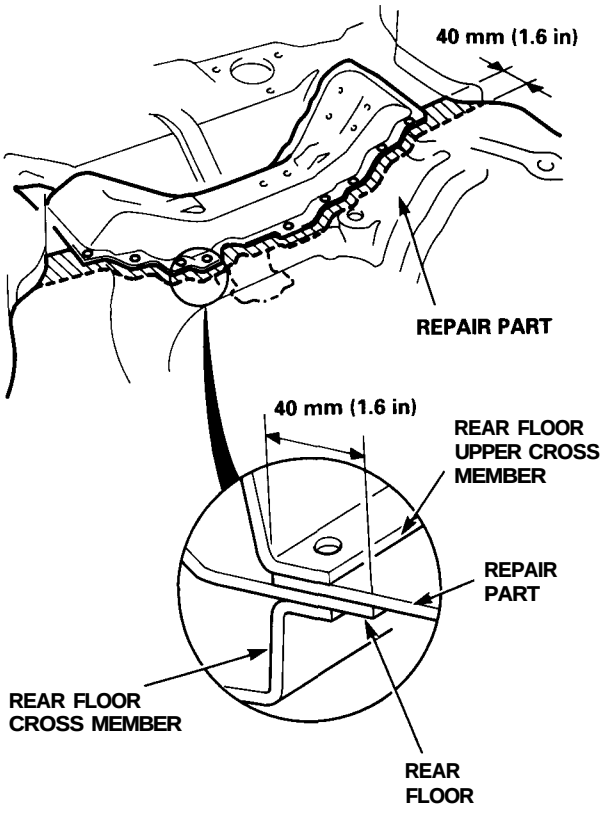
NOTE: Cut the new part so it overlaps the body side floor by approximately 40 mm (1.6 in).

- Remove the undercoat from both sides of the areas to be welded with a sander to expose the steel plate.

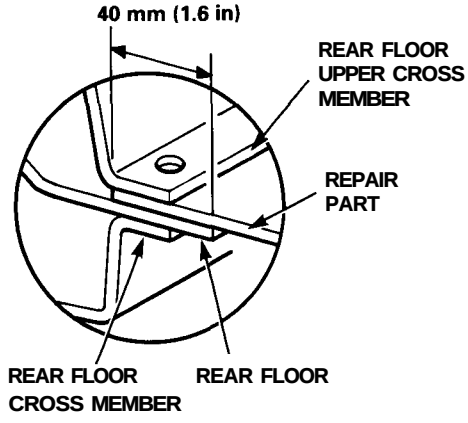
⚠WARNING To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.



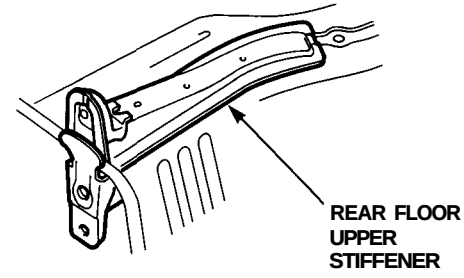
- Insert the repair part between the rear floor and rear floor upper cross member.
- Check that the weld flange surfaces fit closely.



- Check the position of the rear floor and rear frames using the body dimensional drawings (see section 6) and the positioning jig.



11. Set the rear floor upper stiffener, and check the rear panel position.



12. Perform the main welding.

⚠ WARNING To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

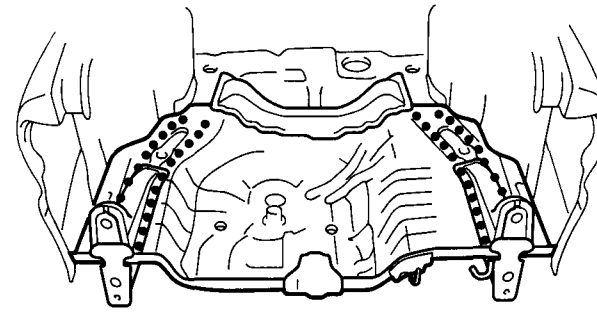
Spot welding:

NOTE: Apply the spot sealer to the welding surface when spot welding.

- Recheck the position of the rear frames and rear floor, then weld the repair part and rear frames.
- Make 20% to 30% more spot welds than there were holes drilled.

MIG welding:

- Drill the holes for welding the repair part.
- Check the rear frame position and weld the repair part to the rear frames.

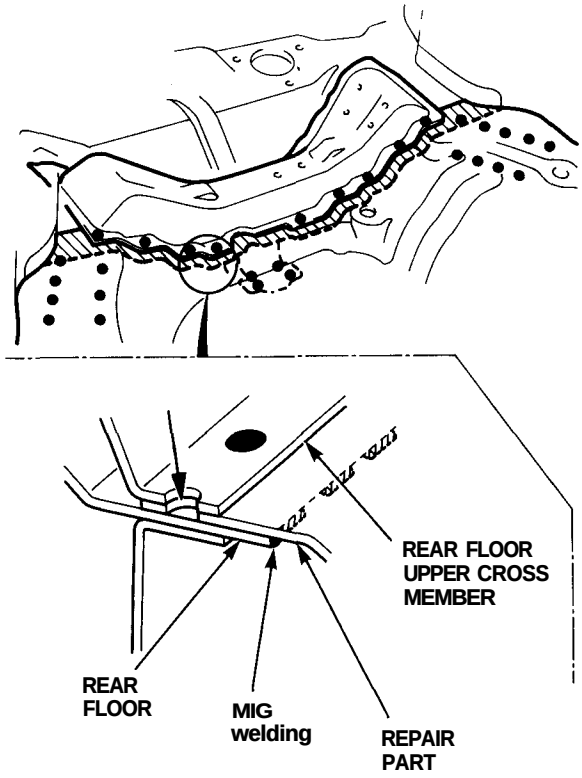


(cont'd)

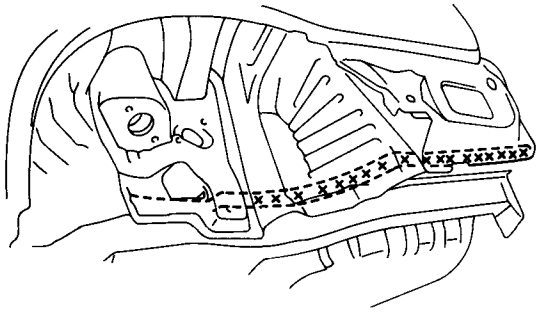
Rear Floor

Replacement (cont'd)

- Make 5 mm (0.2 in) hole in the MIG weld hole with the repair part.
- Weld the rear floor, repair part and rear floor upper cross member.



- Weld the rear wheelhouse and outer panel.



- Weld the rear panel and install the rear floor upper extension.

13. Finish the welded area.
Even out the welded area with a hammer and dolly, and fit the flange surfaces closely together.

14. Apply the sealer.
Apply sealer at the overlapped area of the rear floor, and the welded surfaces of the rear wheelhouse and rear end inner panel. Seal gaps completely (see section 5).

15. Apply the paint.
See Paint Repair section.

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

16. Apply the undercoat.
Apply anti-rust agent to the inside of the jack-up stiffener and jointed areas of the rear floor (see section 7).

17- Weld the rear panel and install the related parts.
Install in the reverse order in which they were removed.

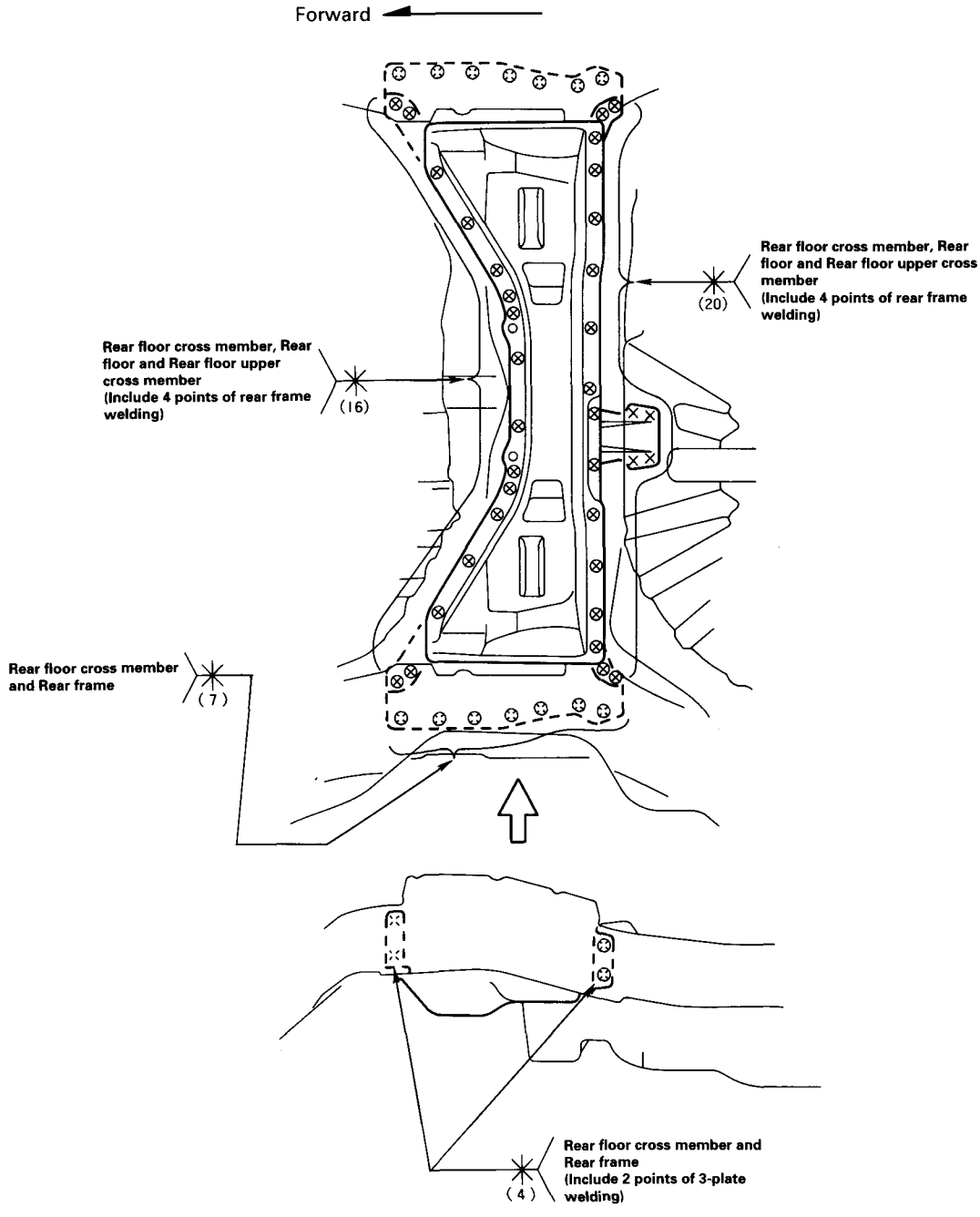
18. Inspect and clean.
- Measure the rear wheel alignment.
- Clean the inside of the trunk compartment.

Rear Floor Cross Member

Description

The rear floor cross member position is critical for rear wheel alignment. During replacement, check the position of the rear beam and rear damper base and position the rear floor cross member properly.
Weld securely following the welder manufacturer's instructions to maintain rigidity. Use of the positioning jig is recommended.

Mass Production Body Welding Diagram



Rear Floor Cross Member

Replacement

1. See Rear Floor Replacement for removal of related parts.

2. Peel off the undercoat.
   Heat the undercoat at the weld areas of the rear floor and rear frame with a gas torch, and peel off the undercoat with a metal spatula.

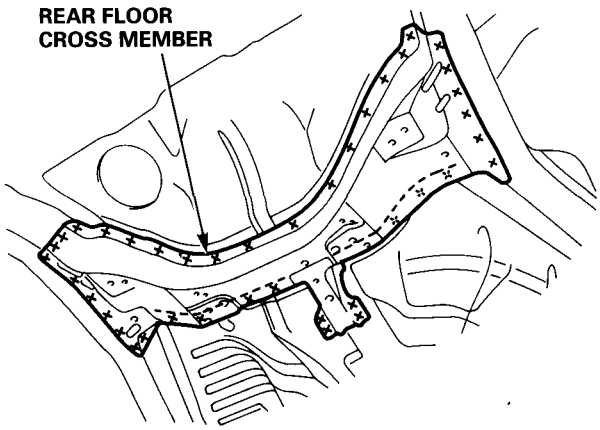
   CAUTION: Be careful not to burn the fittings inside the trunk compartment when heating.

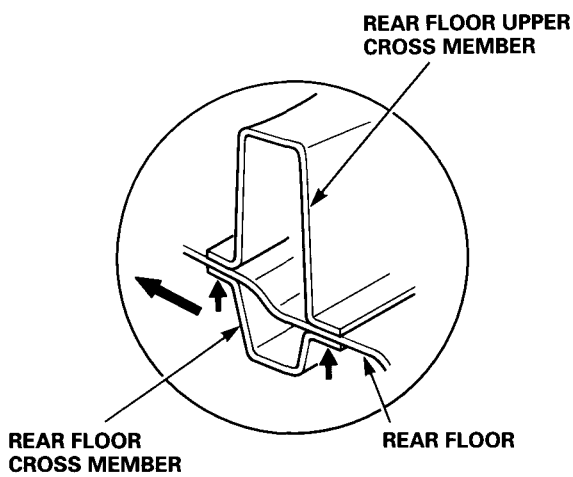
3. Remove the rear floor cross member.

   WARNING **To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.**

   - Center punch around the spot weld imprints on the rear floor cross member from under the rear floor.
   - Drill holes with a spot cutter at the area joined to the rear floor cross member and rear floor.

   NOTE: When drilling holes be careful not to drill down to the rear floor upper cross member.





   - Center punch around the spot weld imprints on the rear frame.
   - Drill holes with a spot cutter.
   - Be careful not to let them penetrate through to the rear frame.
   - Pry off the part with a chisel.

4. Set the new rear floor cross member.
   - Sand off undercoat from both sides of the areas to be welded to expose the steel plate.

   WARNING **To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.**

   - Make 5 mm (0.2 in) holes in the MIG weld holes with the new rear floor cross member.
   - Set the new rear floor cross member in the original position properly and place a jack under the rear floor cross member for support.
   - Refer to the set position body dimensional drawings (see section 6) for proper positioning of the rear floor cross member.
   - Temporarily weld the mating surfaces with the rear frame.

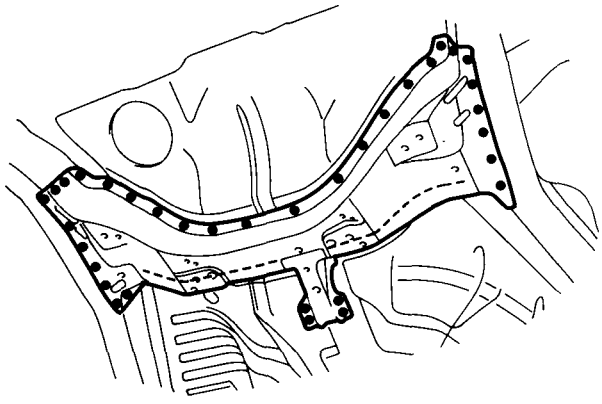
   WARNING **To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.**

   - Check the rear floor cross member in its correct position with the fuel tank installed.

5. Perform the main welding.

   WARNING **To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.**

   - MIG weld the rear floor cross member from under the rear floor.



6. Finish the welding area.
   Roughly grind the welds in the trunk compartment with a disc grinder. Be sure to leave the finishing allowance.

   NOTE: Take care not to grind excessively.

7. Apply the sealer (see section 5).

8. Apply the paint.
   See Paint Repair section.

   ⚠ WARNING

   - **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
   - **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
   - **Paint is flammable. Store it in *a* safe place, and keep it away from sparks, flames or cigarettes.**

9. Apply the undercoat (see section 7).

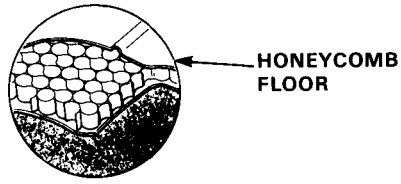
10. Install the related parts.
    Install in the reverse order of removal.

11. Check and clean.
    - Check the rear wheel alignment.
    - Clean the trunk compartment.

Honeycomb Floors (2.5TL)

NOTE: What is known as "honeycomb" construction is employed for the front floor. Properly designed and applied, it plays an important role in maintaining the structural rigidity of that section of the car's floor. The honeycomb floor is installed with an epoxy resin adhesive. Care must be exercised when installing a new honeycomb floor as seepage of water into the honeycomb construction will adversely affect its performance.

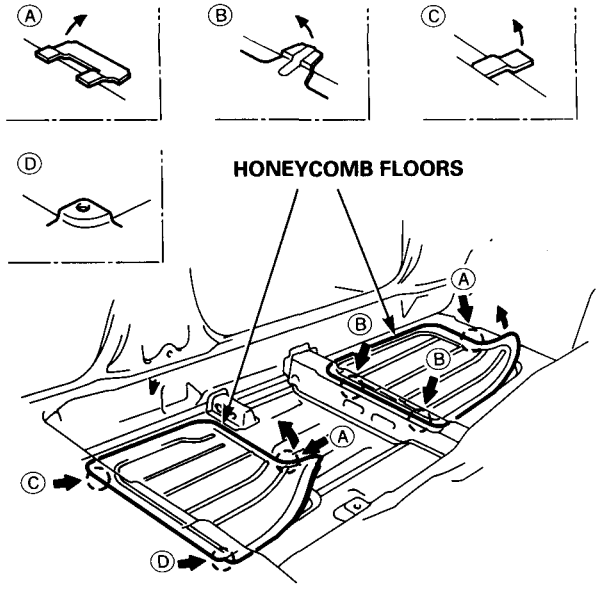
Replacement



1. Remove the related parts.
   - Front and rear seats.
   - Carpet, others

2. Removal of honeycomb floors.
   - Scrape off the dust sealer all the way around the floor.
   - Separate the floor from the body by using a pair of pliers.

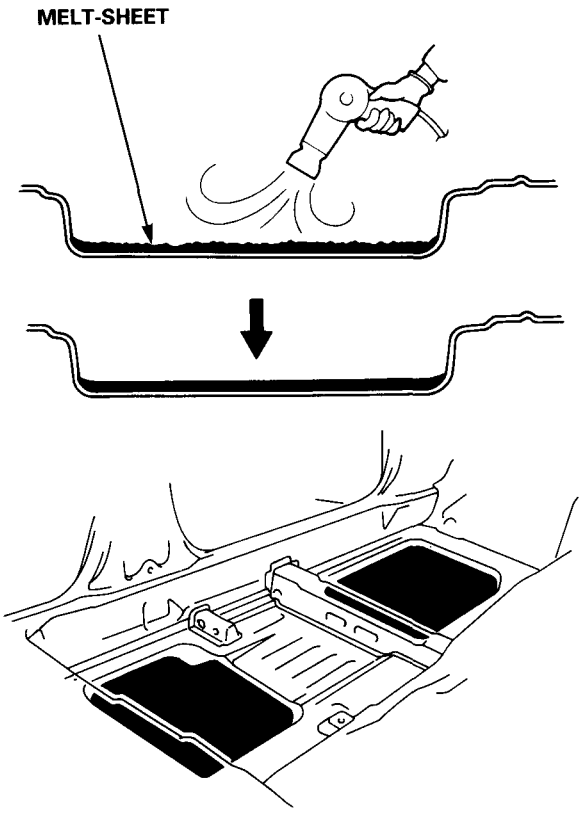
◌ : Clamp positions



3. Flattening of melt-sheet
   - Heat the surface of the melt-sheet with a torch or heat gun until it becomes soft and pliable.
   - Finish the surface smooth and flat with a steel spatula.

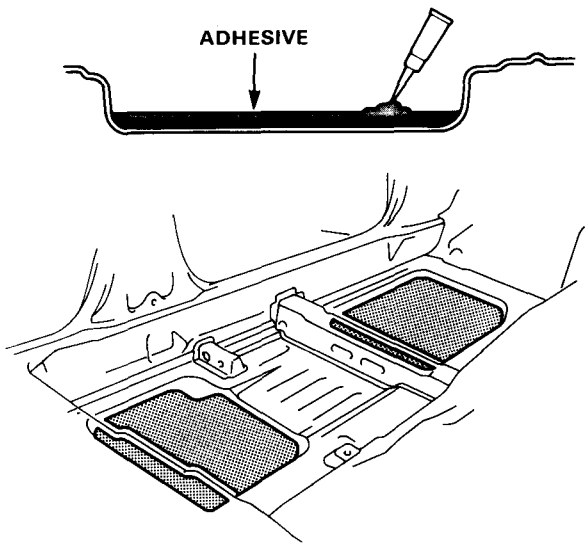
NOTE: In order to take full advantage of the honeycomb floor, its face must contact the base fully.

CAUTION: Be careful not to burn the fittings inside the passenger compartment when heating.



4. Application of adhesive.
   - Apply adhesive all over the melt-sheet.

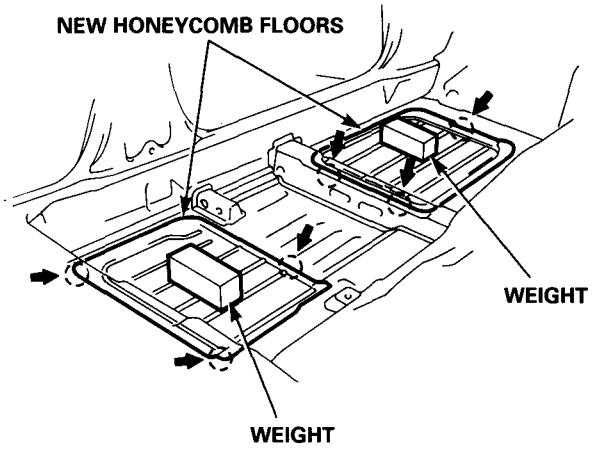
   NOTE: Use CEMEDINE EP-330 or equivalent (epoxy resin adhesive designed to harden quickly at normal temperature). Follow the adhesive manufacturer's instructions.



5. Installation of new honeycomb floors.
   - Install the new honeycomb floors.
   - Clamp the floor in place using a clamp at the front and rear as shown.

   NOTE: Place weights on the floor for 30-60 minutes until the adhesive hardens.

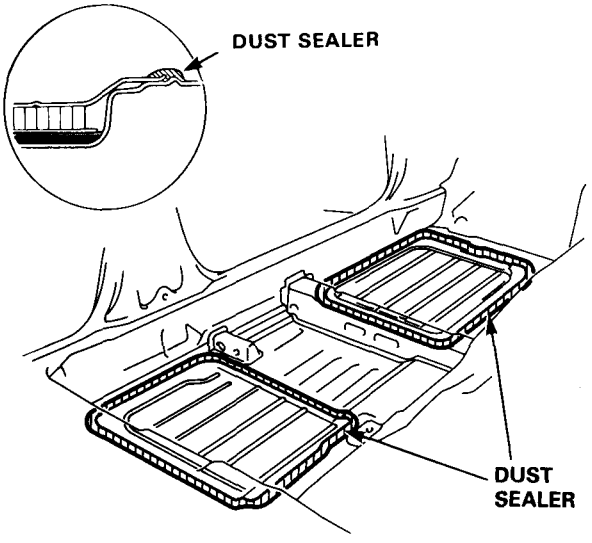
◯ : **Clamp positions**



6. Application of dust sealant.
   - Apply dust sealer all the way around the floors.

   NOTE: It is essential to make the floor completely impervious to water as seepage into honeycomb construction will adversely affect its performance. Use sufficient dust sealant to seal the floor.

   - Using a bristle brush or spatula, spread the dust sealant all over the surface until it becomes smooth and flat.
   - Check that the dust sealant is applied to the seat brackets thoroughly.



7. Apply the paint (body color).
   - See Paint Repair Manual.

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store in a safe place, and keep it away from sparks, flames or cigarettes.**

8. Install the related parts.

9. Check and clean.
   Check the electrical parts for proper operation.

Cross Section of Body and Sealants

NOTE: Seal the following areas to prevent air leaks, water leaks and rust.

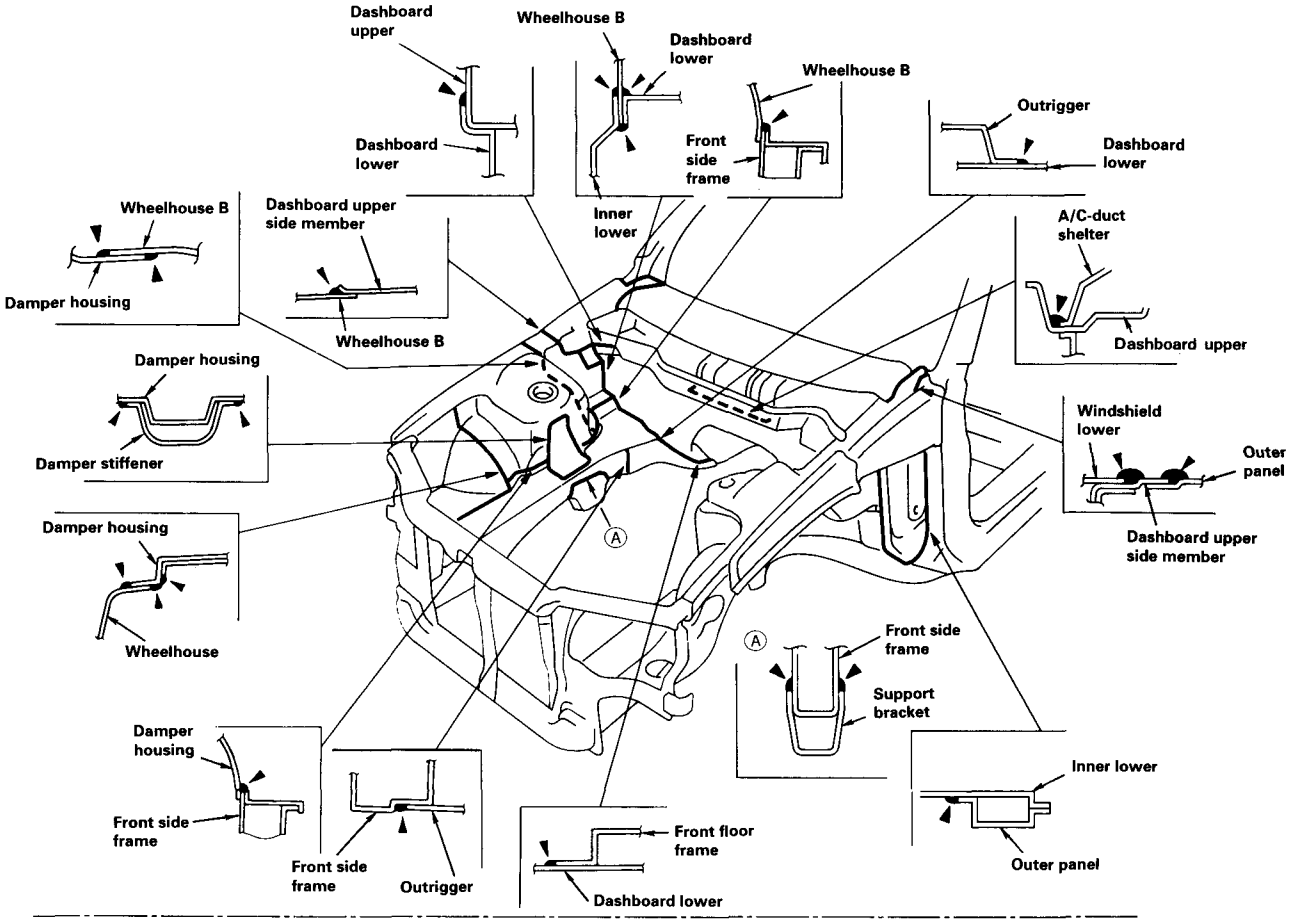
▶ : Sealing locations

Spot Sealer: 3M #08892 (Internal)
: 3M #08893 (External)

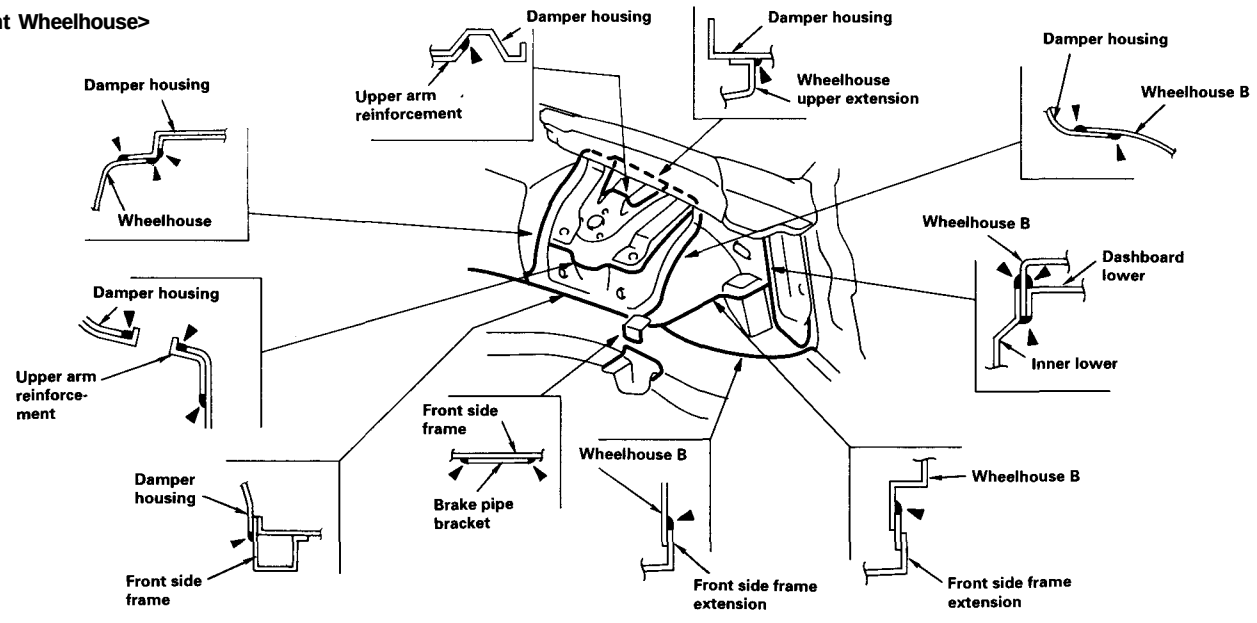
Use materials above or equivalents.

2.5TL:

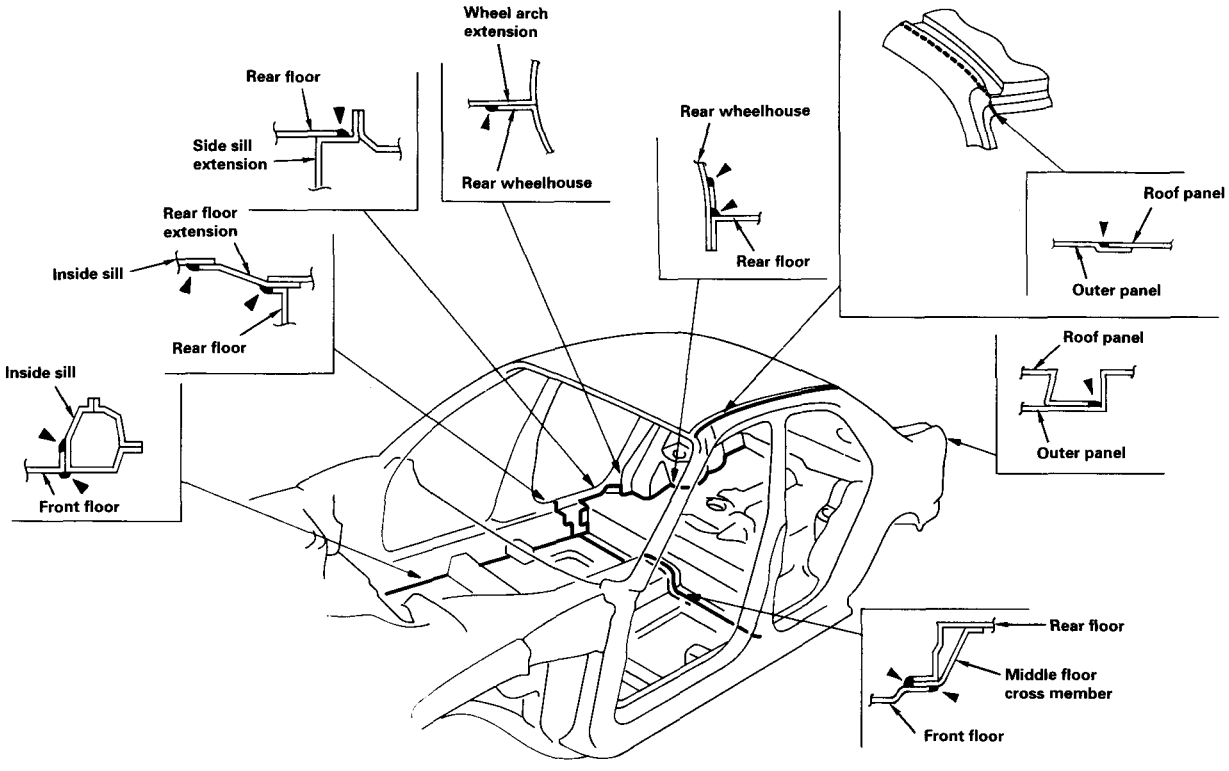
<EngineCompartment>



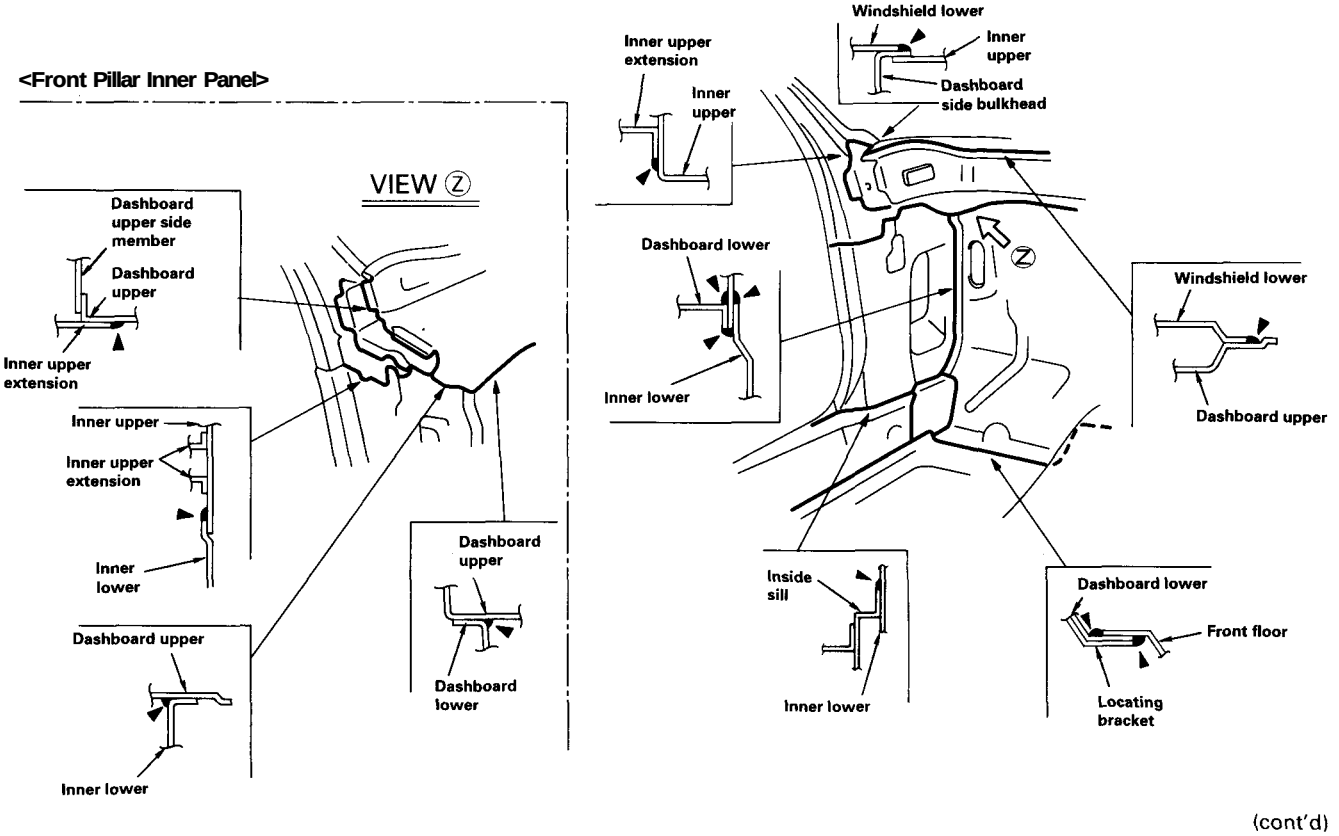
<Front Wheelhouse>



<Front Floor/Rear Floor>



<Front Pillar Inner Panel>

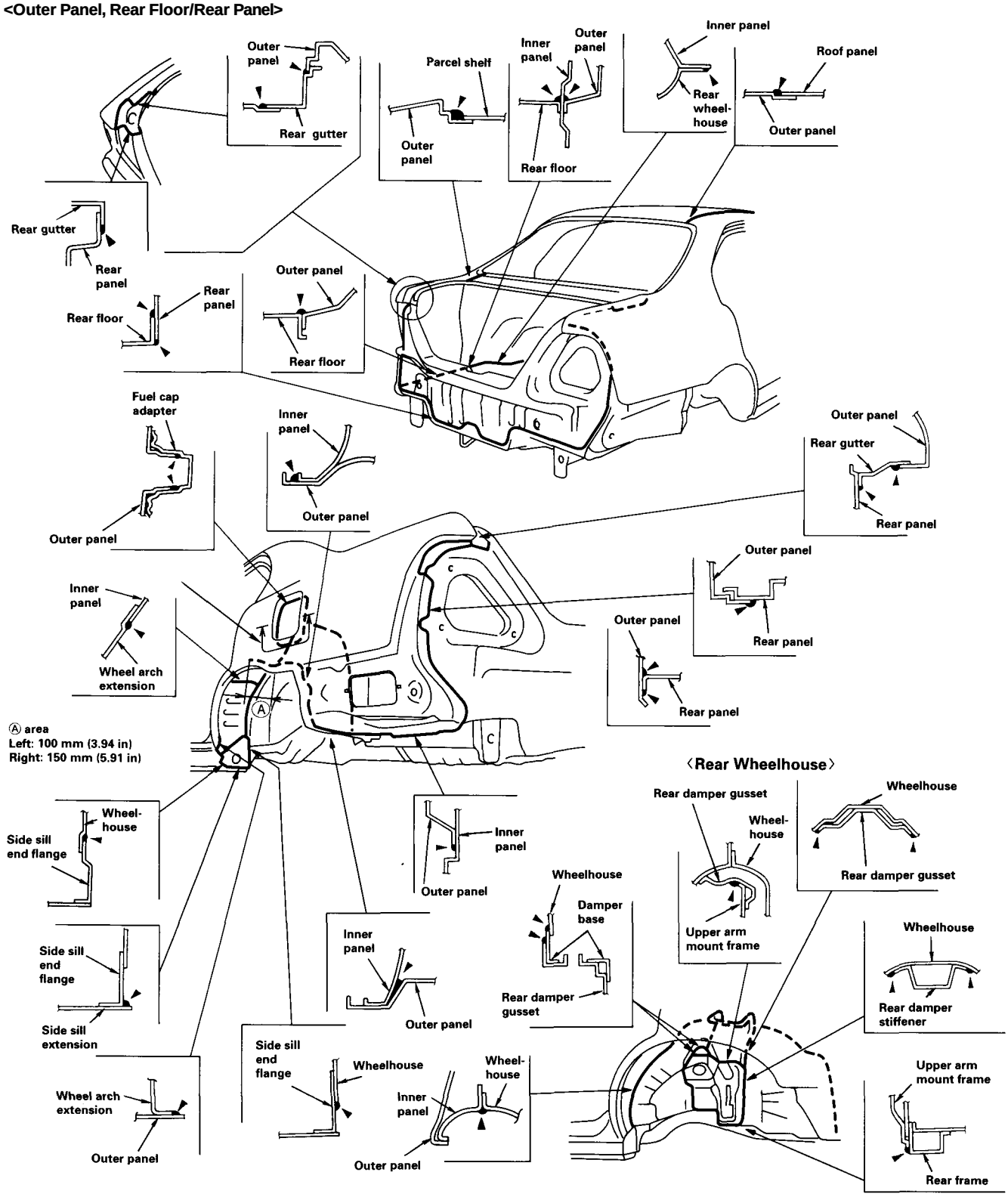


(cont'd)

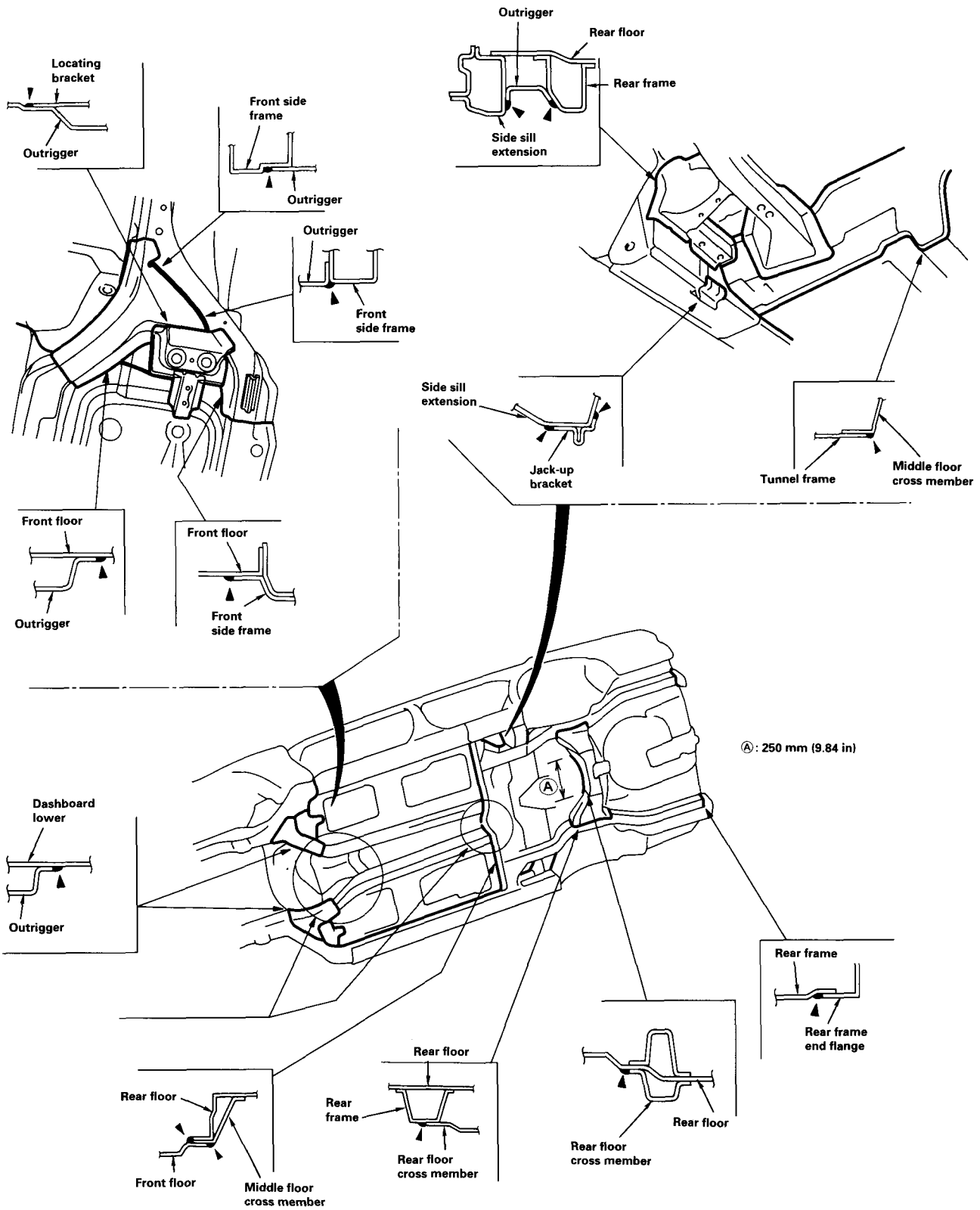
Cross Section of Body and Sealants (cont'd)

2.5TL:

<Outer Panel, Rear Floor/Rear Panel>



<Under Floor/Frame>

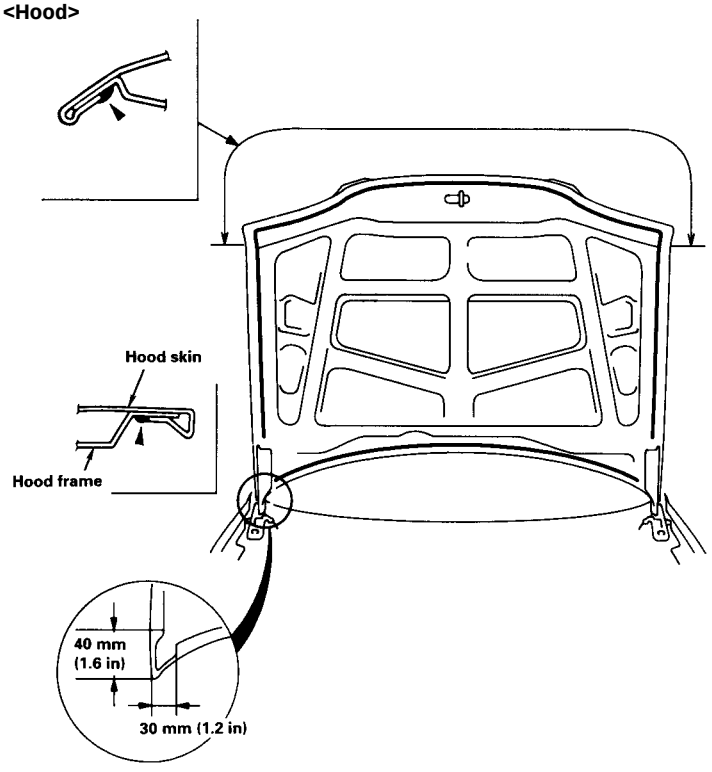


(cont'd)

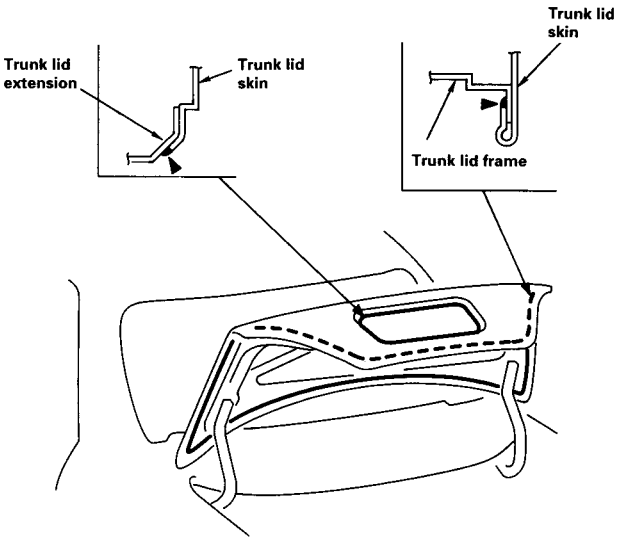
Cross Section of Body and Sealants (cont'd)

2.5TL:

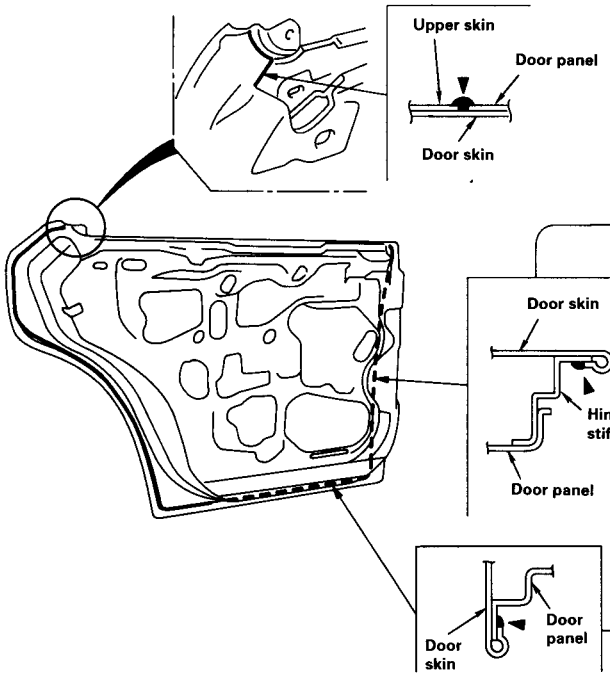
<Hood>



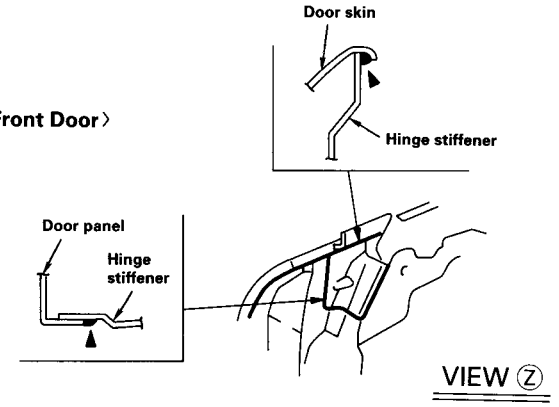
〈Trunk Lid〉



〈Rear Door〉

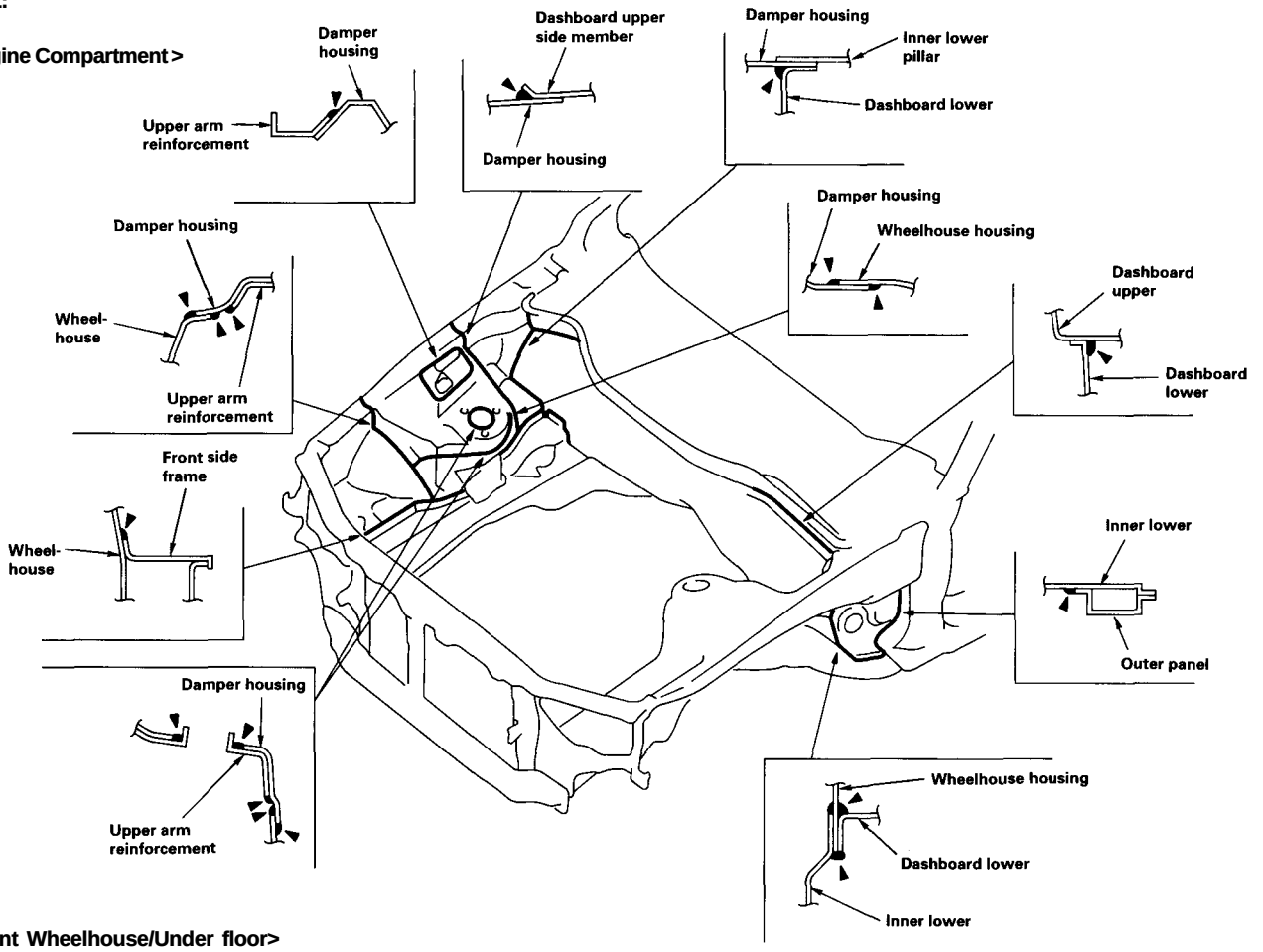


〈Front Door〉

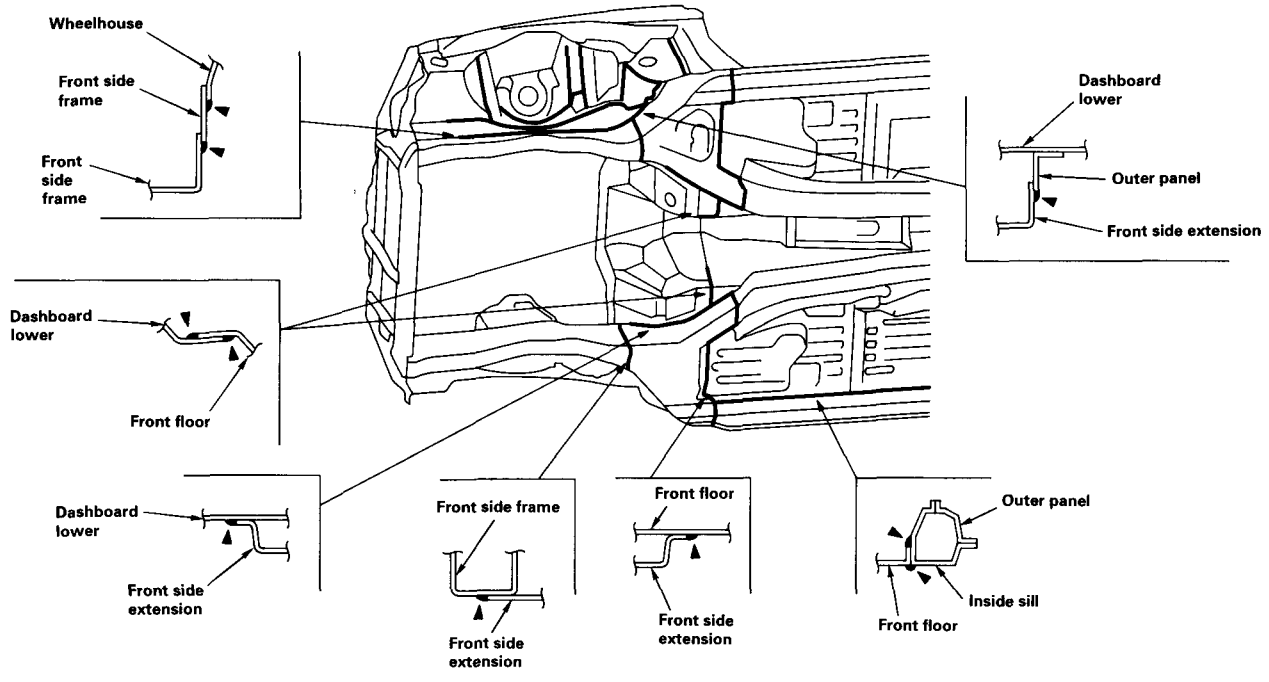


3.2TL:

< Engine Compartment >



<Front Wheelhouse/Under floor>



NOTE: The sealing locations of except those above are the same as 2.5TL.

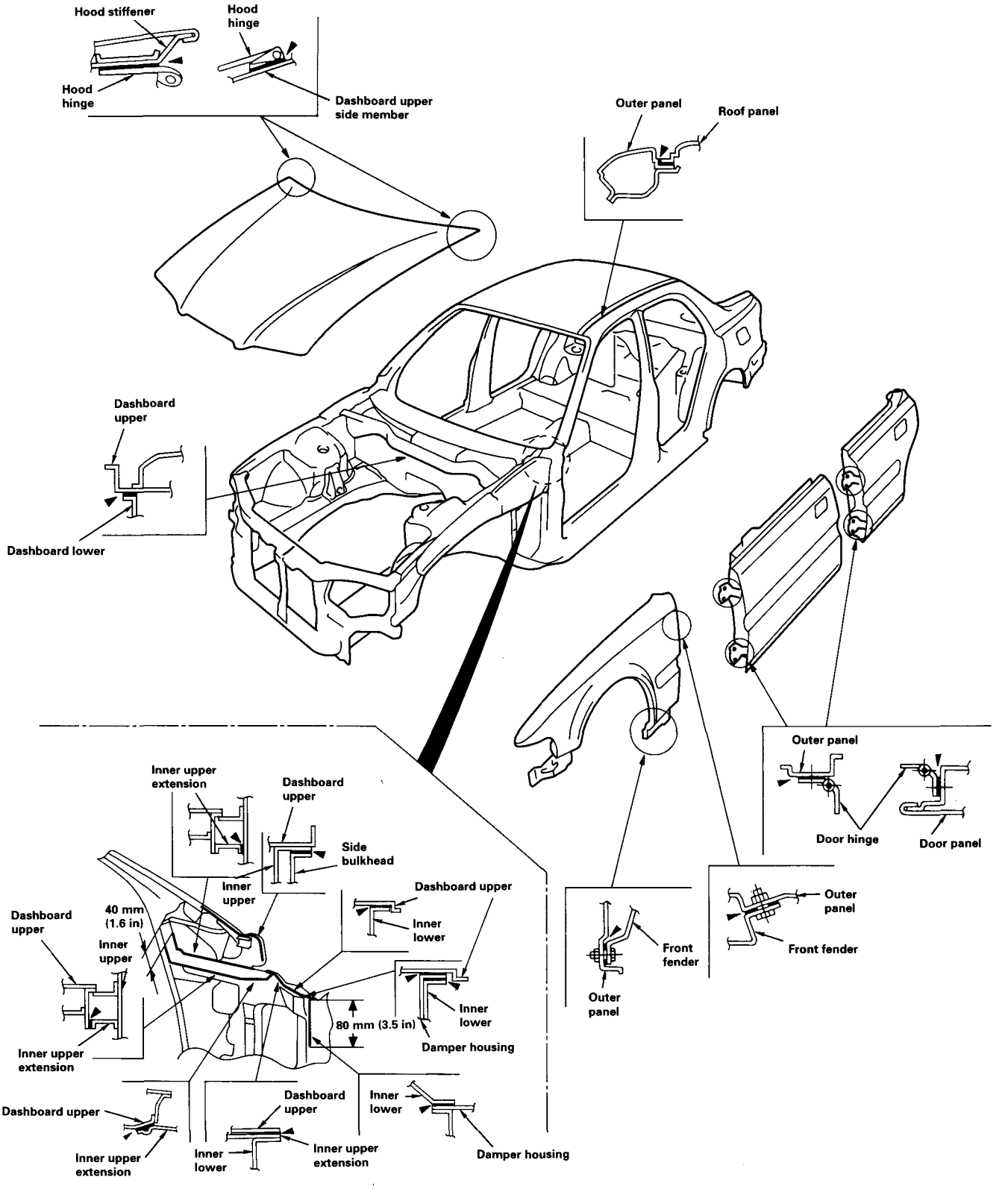
Cross Section of Body and Sealants

Spot/Mastic Sealers

NOTE: Seal the following areas to prevent air leaks, water leaks and rust.

▶ : Sealing locations

Spot Sealer : 3M #08892 (Internal)
: 3M #08893 (External)
Mastic sealer : 3M #08654
Use materials above or equivalents.



Body Dimensional Drawings

Upper Body Measuring Dimensions

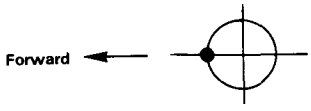
<Engine Compartment>

2.5TL:

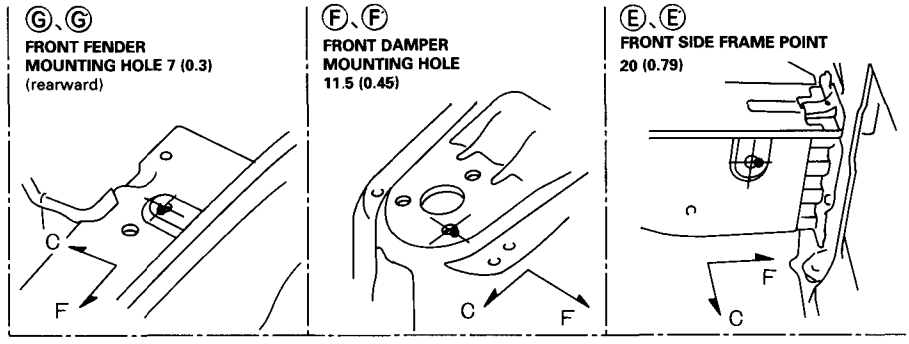
Unit: mm (in)

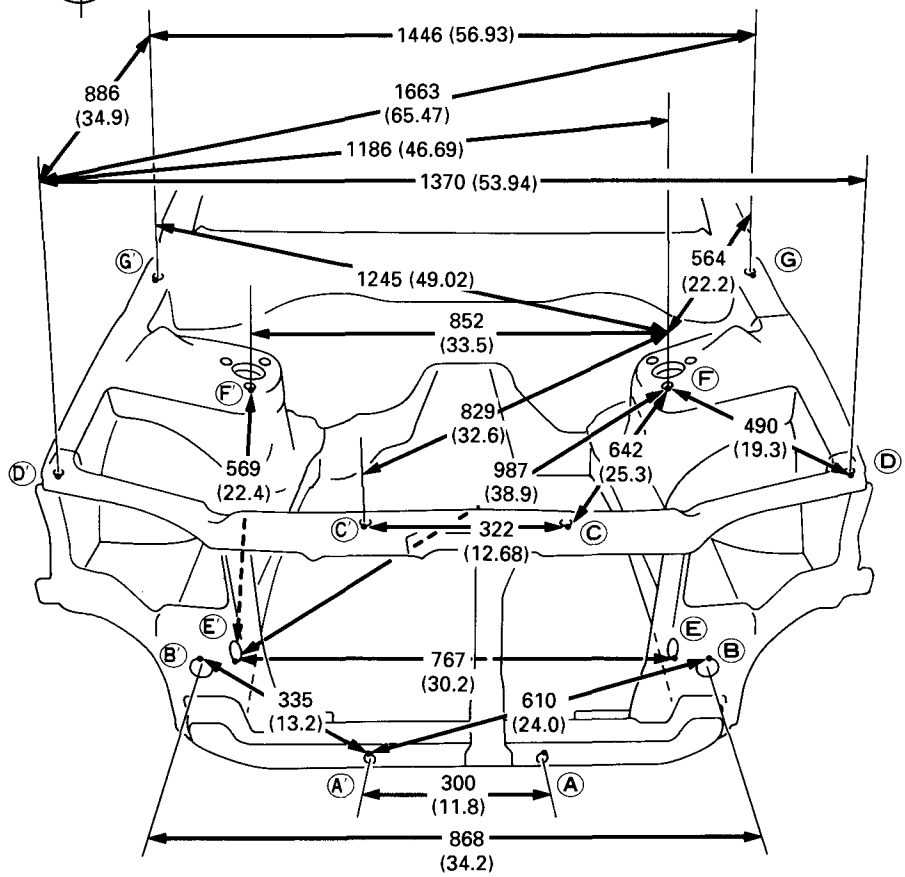
NOTE: Measuring dimensions show the distance between the forward or upper edge of positioning bosses and/or holes shown in the detail sketches.

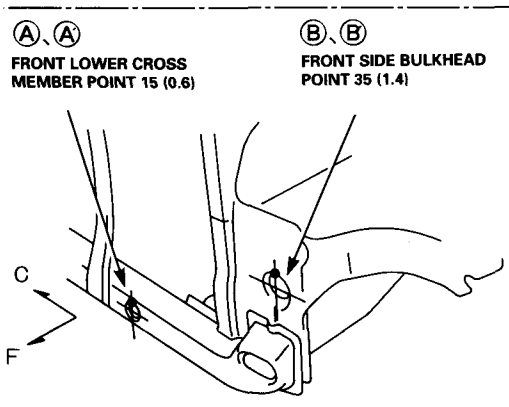
Measuring point (Black dots)

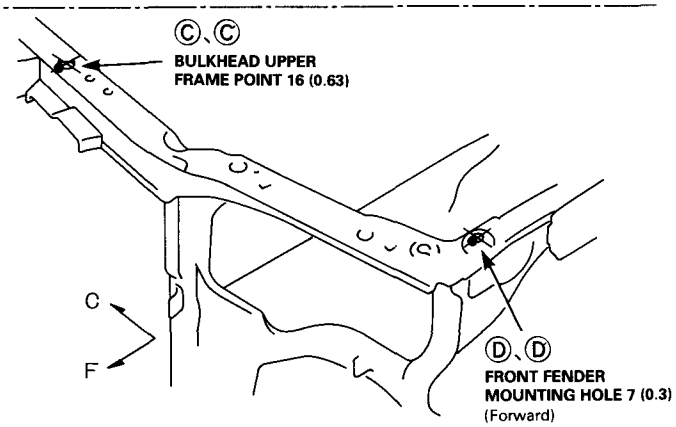


F: Forward
C: Center

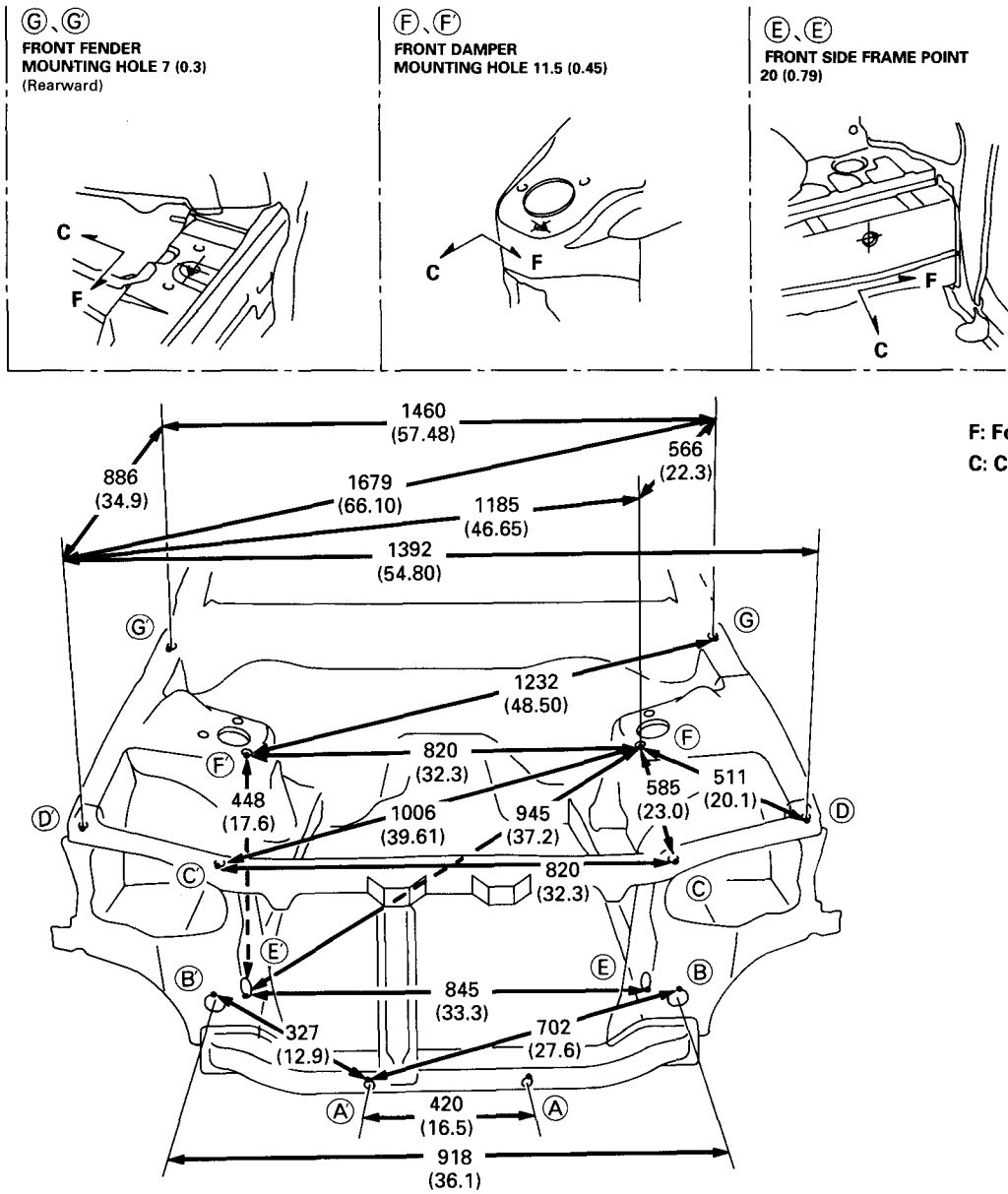


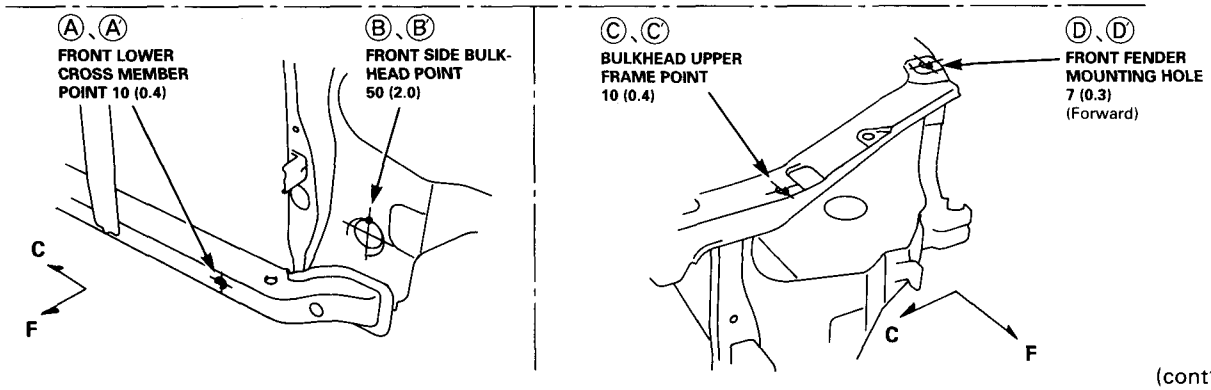






3.2TL: Unit: mm (in)





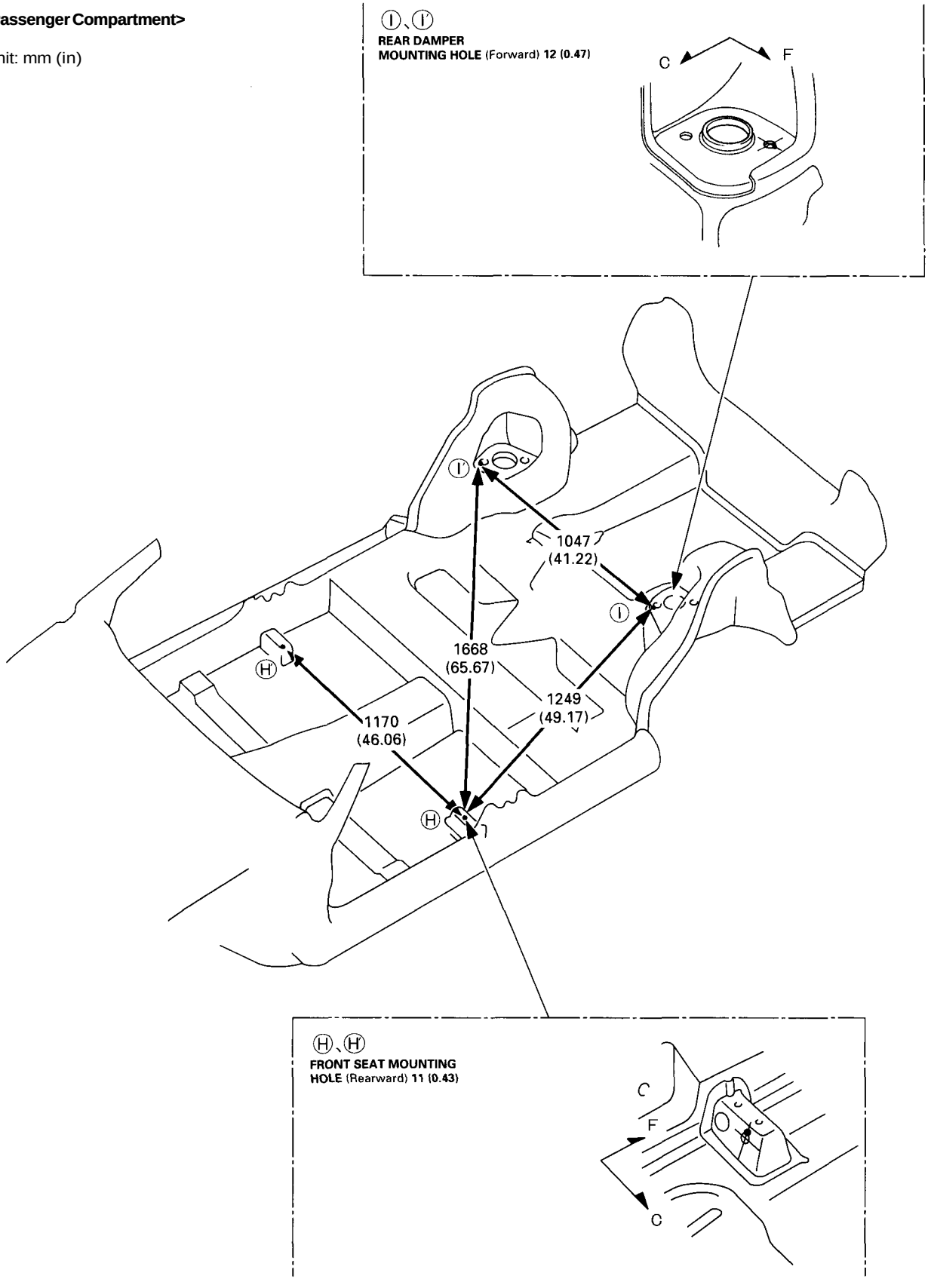
(cont'd)

Body Dimensional Drawings

Upper Body Measuring Dimensions (cont'd)

<Passenger Compartment>

Unit: mm (in)

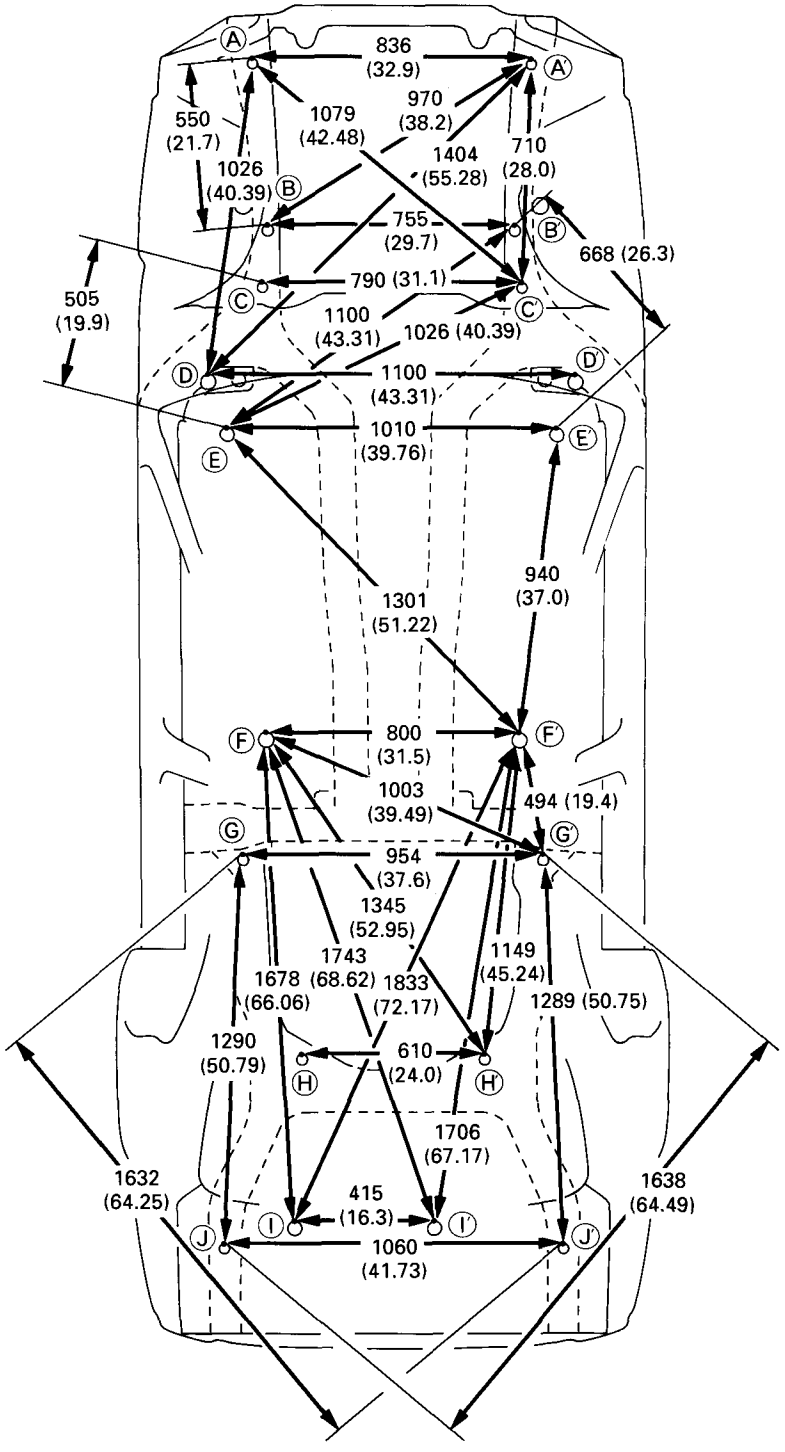


Under Body Measuring Dimensions

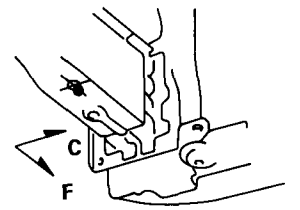
2.5TL:

Unit: mm (in)

F: Forward
C: Center

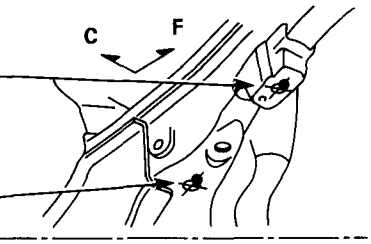


Ⓐ、Ⓐ' **SUB-FRAME MOUNTING HOLE** (Forward) **16 (0.63)**



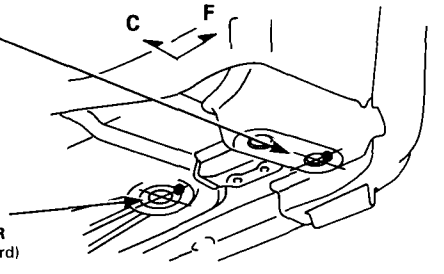
Ⓑ、Ⓑ' **SUB-FRAME MOUNTING HOLE** (center) **14 (0.55)**

Ⓒ、Ⓒ' **SUB-FRAME MOUNTING HOLE** (Rearward) **16 (0.63)**

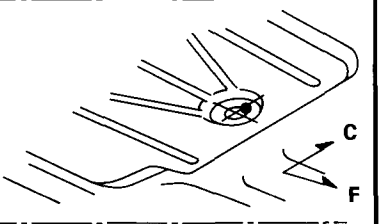


Ⓓ、Ⓓ' **LOCATING BRACKET POINT 25 (1.0)**

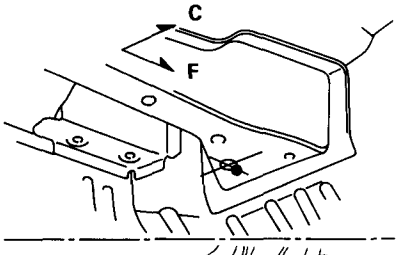
Ⓔ、Ⓔ' **FRONT FLOOR POINT** (Forward) **25 (1.0)**



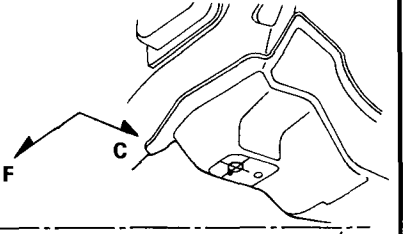
Ⓕ、Ⓕ' **FRONT FLOOR POINT** (Rearward) **25 (1.0)**



Ⓖ、Ⓖ' **REAR FRAME POINT** (Forward) **14 (0.55)**

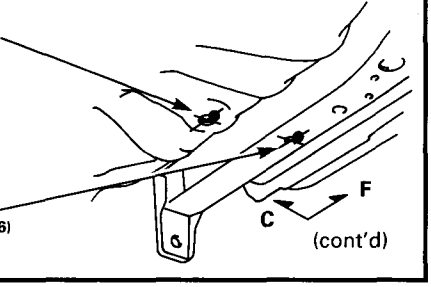


Ⓗ、Ⓗ' **CROSS BEAM MOUNTING HOLE 16 (0.63)**



Ⓘ、Ⓘ' **REAR FLOOR POINT 25 (1.0)**

Ⓙ、Ⓙ' **REAR FRAME POINT** (Rearward) **15 (0.6)**



(cont'd)

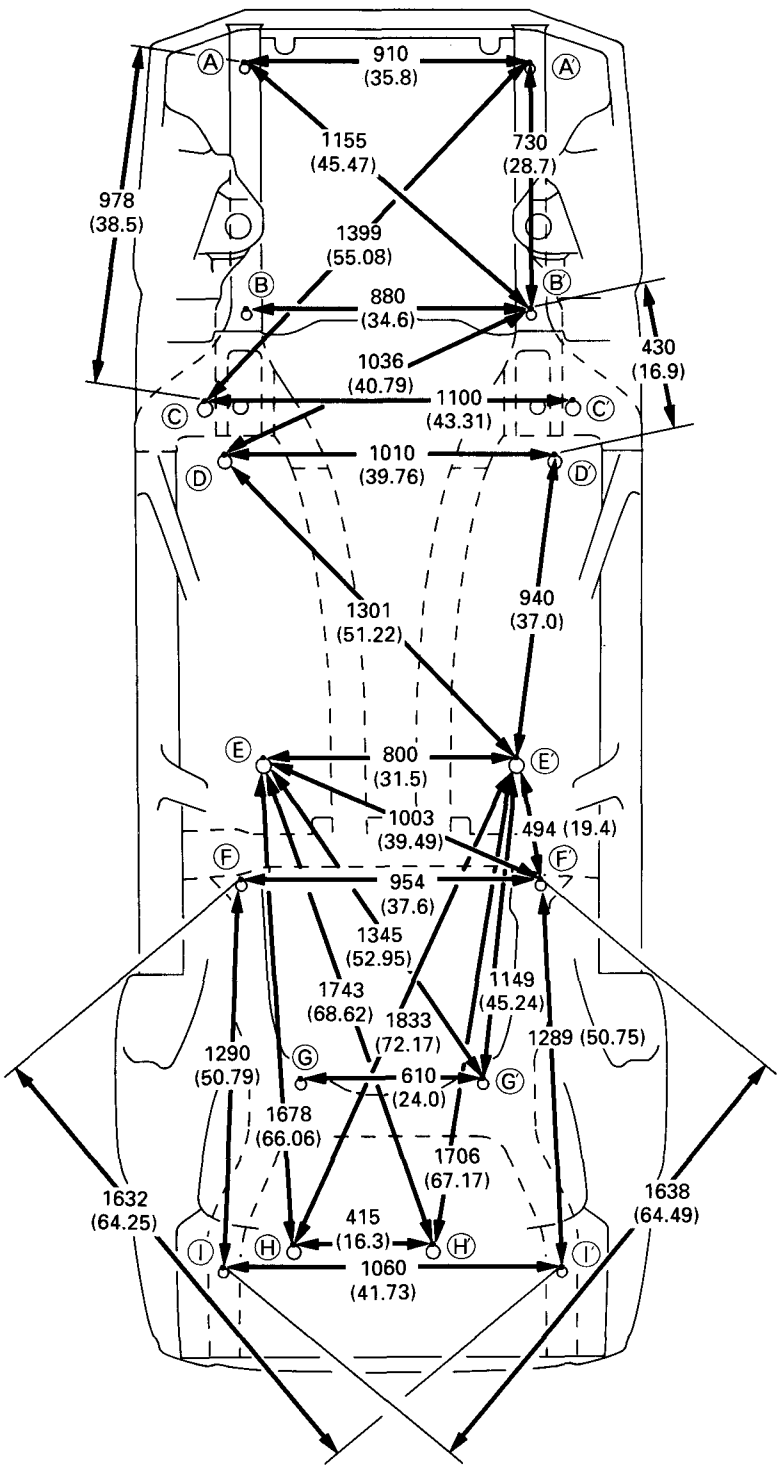
Body Dimensional Drawings

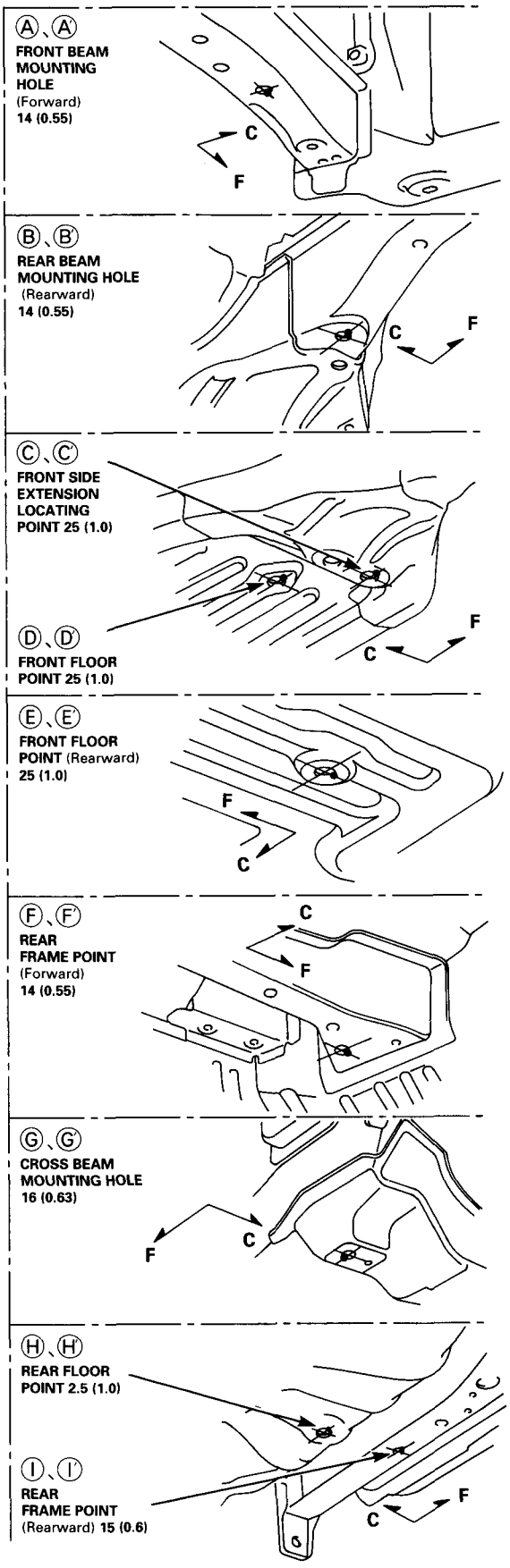
Under Body Measuring Dimensions (cont'd)

3.2TL:

Unit: mm (in)

F: Forward
C: Center



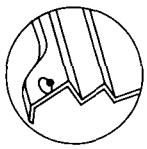


Opening Repair Chart

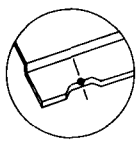
Unit: mm (in)

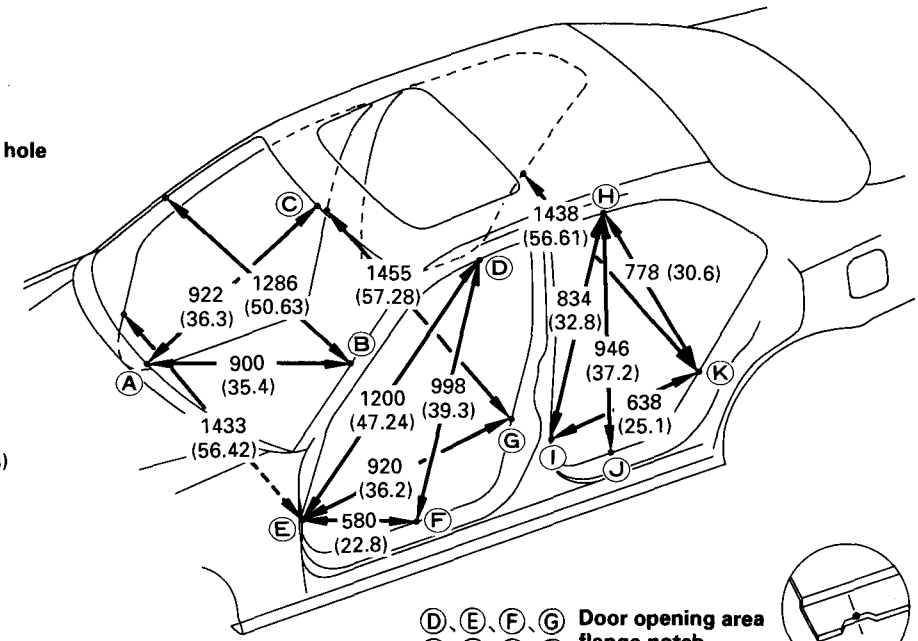
<Windshield/Doors Opening>

Ⓐ **Dashboard upper air scoop grille mounting hole**



Ⓑ、Ⓒ **Windshield opening flange notch** (3 places)

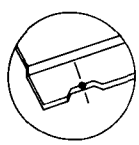




Ⓓ、Ⓔ、Ⓕ、Ⓖ Ⓗ、Ⓘ、Ⓙ、Ⓚ **Door opening area flange notch** (8 places)

<Rear Window/Trunk Lid Opening>

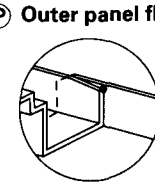
Ⓛ、Ⓜ **Rear window opening flange notch (3 places)**

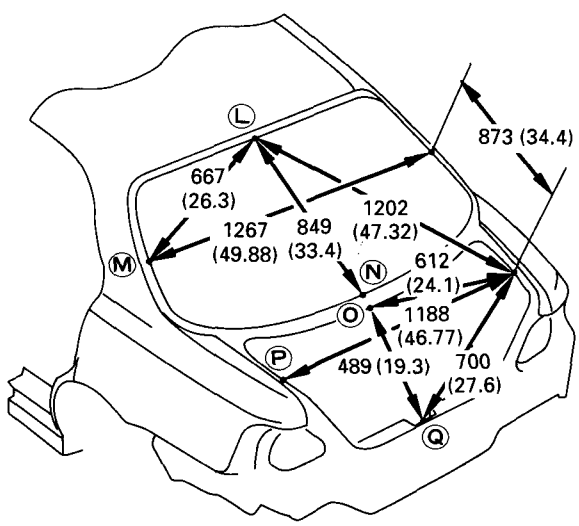


Ⓝ **Rear window opening convex bead**

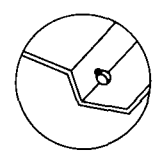
Ⓞ **Trunk gutter area convex bead**

Ⓟ **Outer panel flange end (2 places)**





Ⓠ **Trunk seal flange water drain hole**



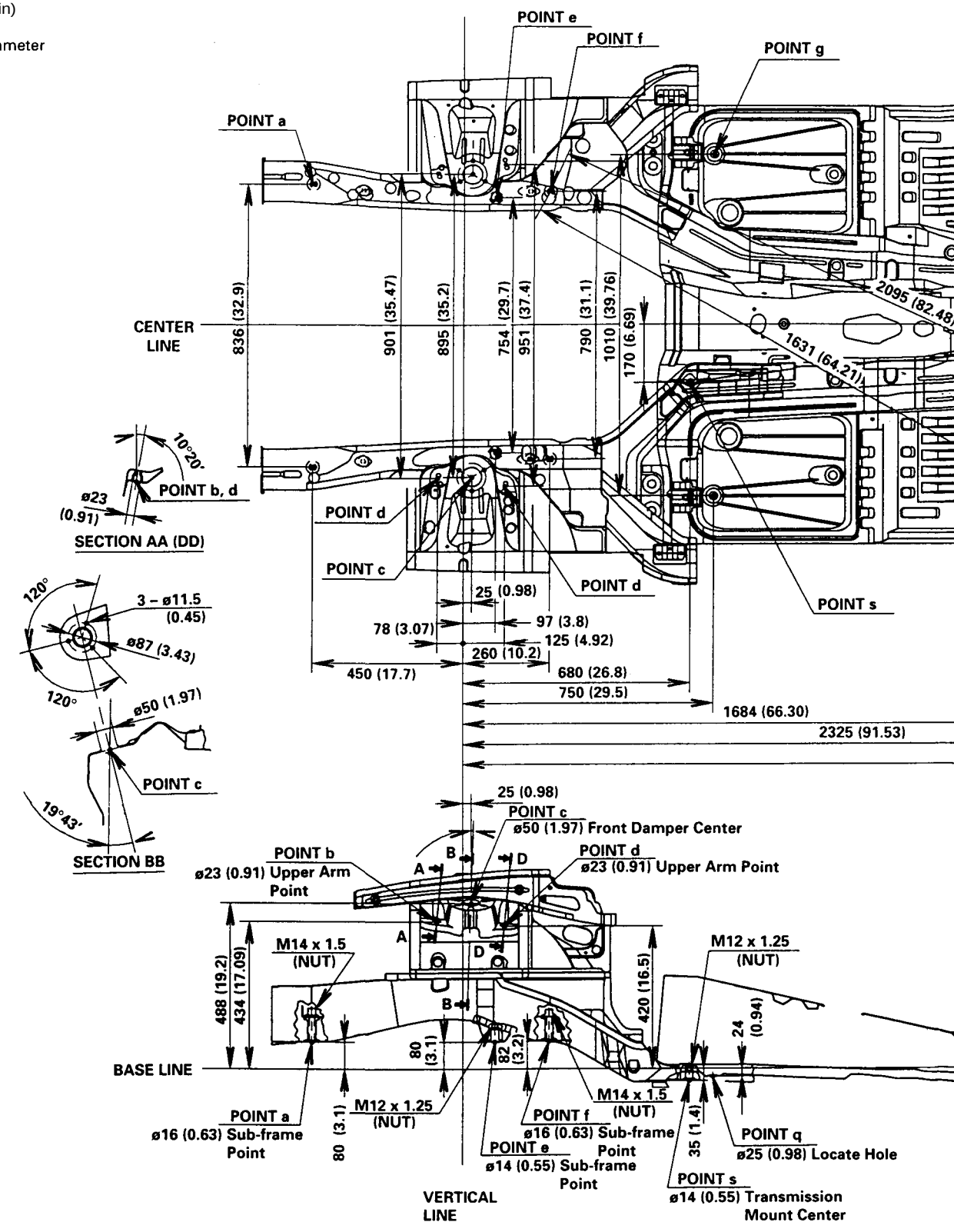
Body Dimensional Drawings

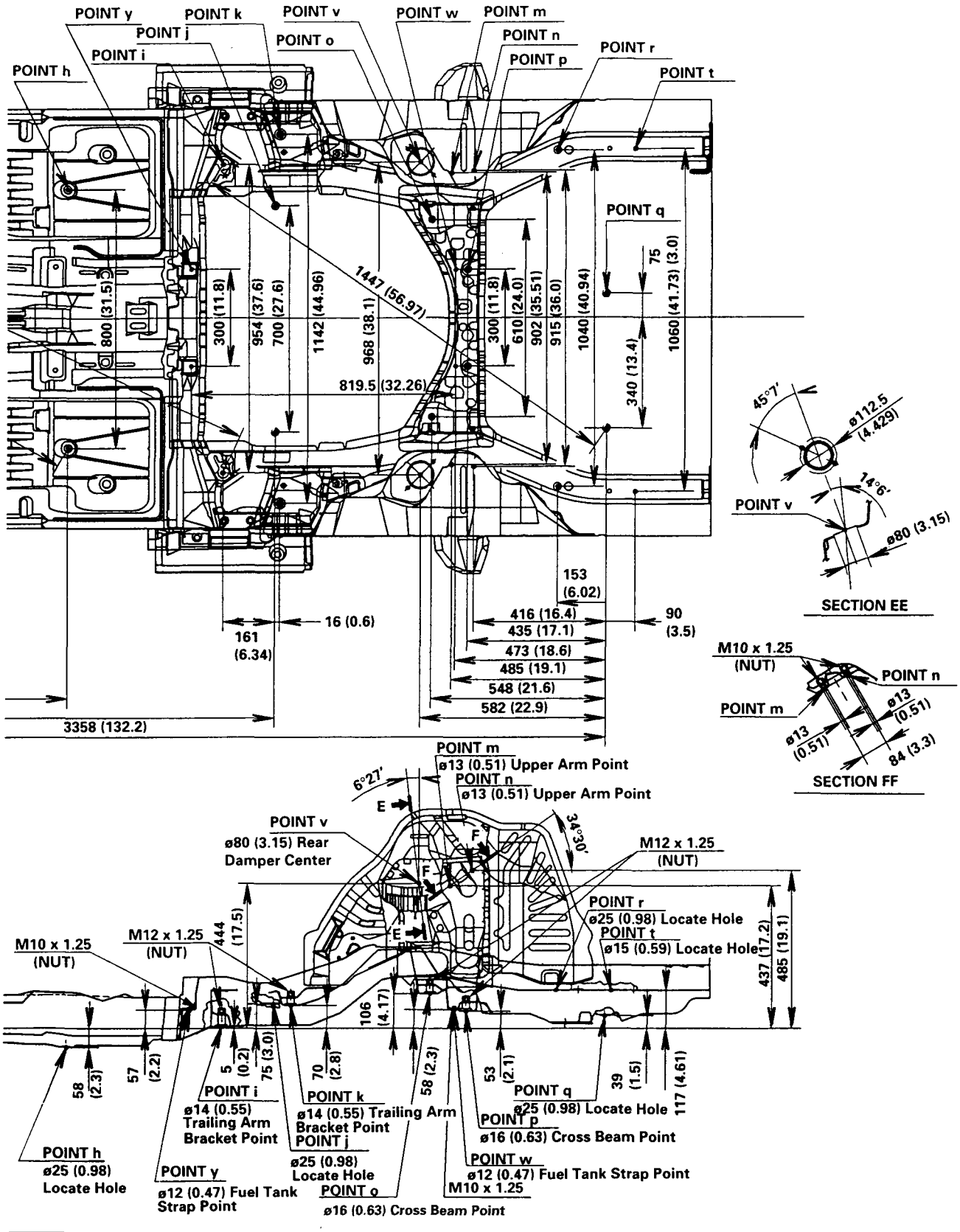
Frame Repair Chart

2.5TL:

Unit: mm (in)

ø: Inner diameter

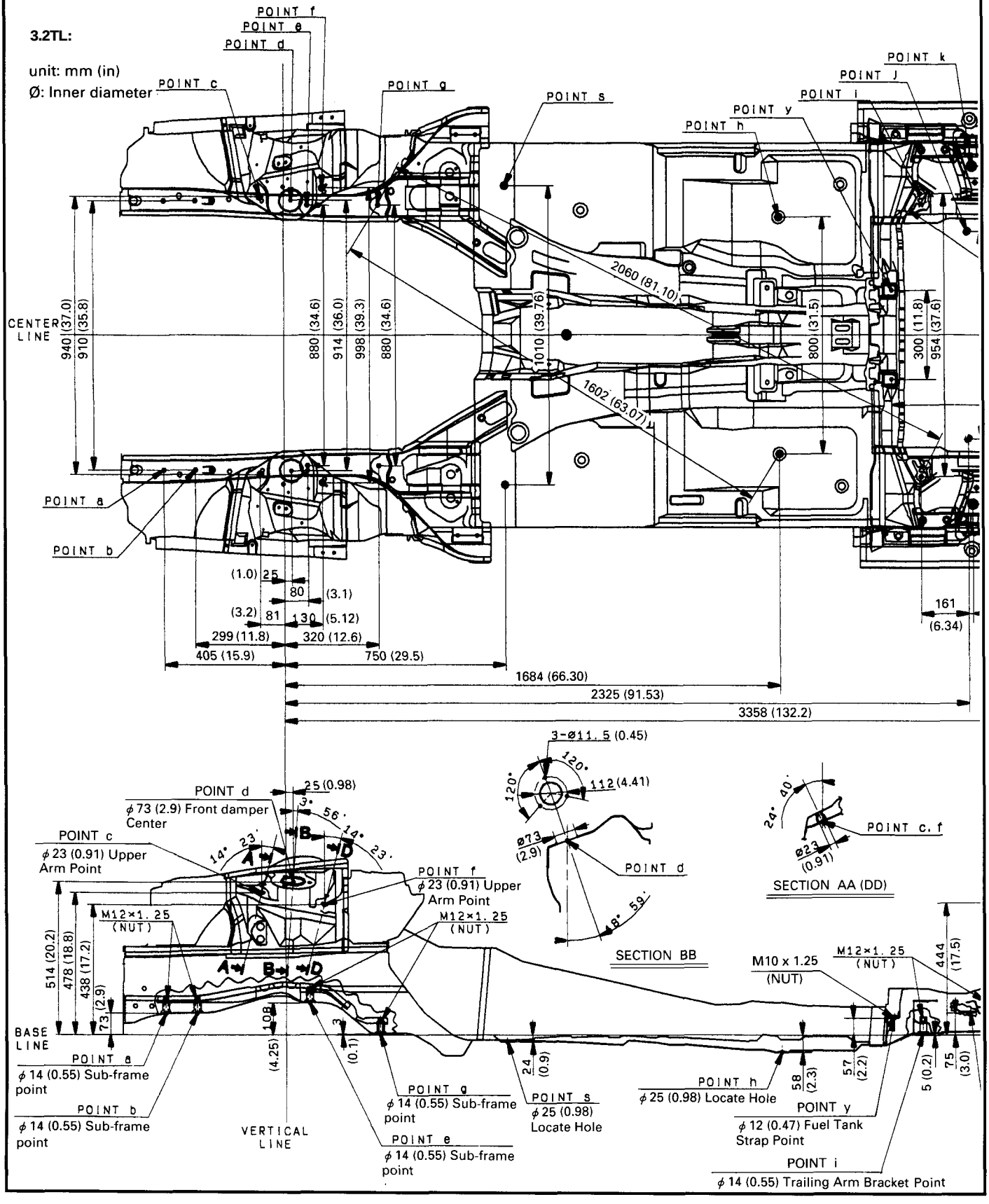



POINT y
POINT k
POINT v
POINT w
POINT m
POINT j
POINT o
POINT n
POINT r
POINT i
POINT p
POINT t
POINT h
POINT q
800 (31.5)
300 (11.8)
954 (37.6)
700 (27.6)
1142 (44.96)
1447 (56.97)
968 (38.1)
819.5 (32.26)
300 (11.8)
610 (24.0)
902 (35.51)
915 (36.0)
1040 (40.94)
75
1060 (41.73) (3.0)
340 (13.4)
153 (6.02)
161 (6.34)
16 (0.6)
416 (16.4)
435 (17.1)
473 (18.6)
485 (19.1)
548 (21.6)
582 (22.9)
90 (3.5)
3358 (132.2)
45°7'
ø112.5 (4.429)
14°6'
POINT v
ø80 (3.15)
SECTION EE
M10 x 1.25 (NUT)
POINT n
POINT m
ø13 (0.51)
ø13 (0.51)
84 (3.3)
SECTION FF
POINT m
ø13 (0.51) Upper Arm Point
POINT n
ø13 (0.51) Upper Arm Point
6°27'
E
POINT v
ø80 (3.15) Rear Damper Center
F
34°30'
M12 x 1.25 (NUT)
POINT r
ø25 (0.98) Locate Hole
POINT t
ø15 (0.59) Locate Hole
M10 x 1.25 (NUT)
M12 x 1.25 (NUT)
444 (17.5)
437 (17.2)
485 (19.1)
106 (4.17)
58 (2.3)
57 (2.2)
5 (0.2)
75 (3.0)
70 (2.8)
58 (2.3)
53 (2.1)
39 (1.5)
117 (4.61)
POINT i
ø14 (0.55) Trailing Arm Bracket Point
POINT k
ø14 (0.55) Trailing Arm Bracket Point
POINT q
ø25 (0.98) Locate Hole
POINT p
ø16 (0.63) Cross Beam Point
POINT h
ø25 (0.98) Locate Hole
POINT j
ø25 (0.98) Locate Hole
POINT w
ø12 (0.47) Fuel Tank Strap Point
POINT y
ø12 (0.47) Fuel Tank Strap Point
POINT o
ø16 (0.63) Cross Beam Point
M10 x 1.25

Body Dimensional Drawings

Frame Repair chart

NOTE: The dimensions of the rear floor area are the same as the table on page 6-9.



Rust-preventive Treatments

General

Corrosion starts immediately after the steel base contacts the atmosphere. The condition is aggravated by sea wind, road salt, rain, snow and industrial fallout. There are many ways to protect automobiles against corrosion. Primers, primer surfacers and paints are applied by electrodeposition or spray to protect the car body.

Anti-rust Agents and Spray Guns

Use the following anti-rust agents or equivalents when making a body repair.

⚠WARNING ANTI-RUST agents contain substances that are harmful if you breathe or swallow them, or get them on your skin. Wear coveralls, gloves, eye protection, and an approved respirator while using such agents.

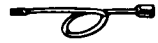
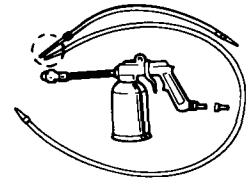
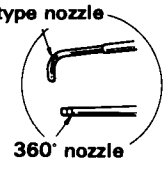
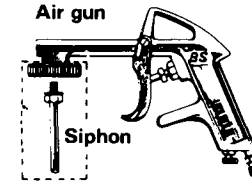
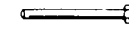
Anti-rust agents:

RUSTOP DEOX#100 WAXOYL	U.S.A.MARKET AUTO ARMOR 1031 (made by E.C.P.)	To be applied to welded joints inside body panels.
NOX-RUST 409-20S SOLTON 1000S	AUTOR ARMOR OUTSIDE COATING (made by E.C.P.)	To be applied to under-floor and wheelhouse.

Spray guns:

Use the correct gun for the agent being used.

- Use of a pressure type spray gun is recommended when work involves a considerable number of cars.

For RUSTOP	For DEOX#100	For WAXOYL	For NOXRUST 409-20S/ SOLTON 1000S
 Flexible nozzle  Open nozzle 	 L-type nozzle  360° nozzle 	 L-type nozzle  360° nozzle	Air gun  Siphon V-type nozzle Open nozzle 
Protectors: Wear gloves, mask and suitable eye protection. ● Use light oil and a rag to clean up spilled anti-rust agents.			

Precautions:

1. Before applying an anti-rust agent, thoroughly clean the areas to be coated with a steam cleaner, etc., and let dry.

   NOTE: Waxoyl may be applied to wet surface.

2. Spray an anti-rust agent sufficiently until the excess amount oozes out when filling, the doors, side sills, etc.
   Wipe the excess agent with a clean rag dampened with light oil.
3. Do not spray an anti-rust agent to the brake hoses, brake wheel cylinders, brake drums, exhaust muffler and its related parts, emission control devices in the engine compartment, ball joint covers, plastic fuel strainer, etc.
   Wipe up spilled agent at once.
4. Heat an anti-rust agent to room temperature 97.7°F (36.5°C) by submerging the container in hot water when outside temperature is below 50°F (10°C).
5. Ventilate when spraying an anti-rust agent since it contains a small amount of organic solvent. Keep sparks, flames and cigarettes away.
   Clean the spray gun after spraying with anti-rust agent.

CAUTION: Any remaining agent will harden in the passages of the spray gun, making it unserviceable.

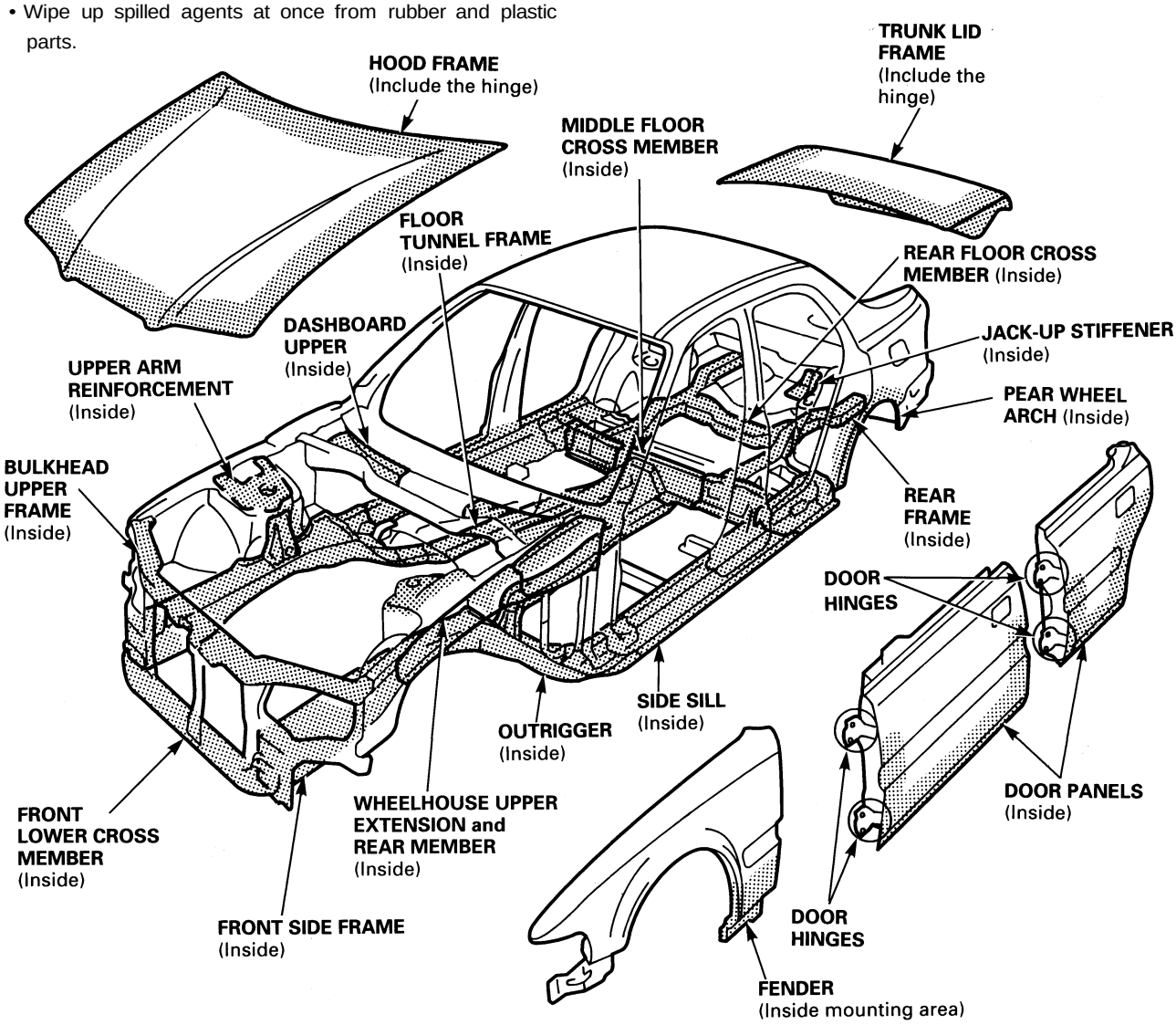
Diagram

NOTE:

- Apply the designated thickness over surfaces including gaps and edges.
- Avoid spraying agents on following parts:
  Window glass, lights, grille, exhaust parts, tires, bumper and lower skirt.
- Wipe up spilled agents at once from rubber and plastic parts.

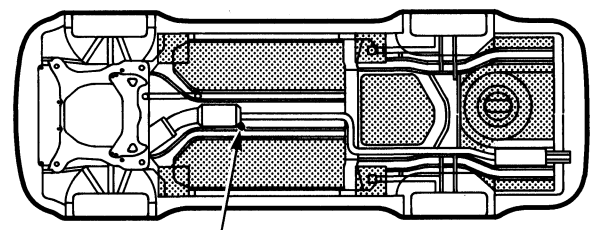
Anti-rust Agents:

- Use RUSTOP, DEOX #100, WAXOYL or equivalents for protecting inner surfaces.
- Use NOX-RUST 409-20S, SOLTON 1000S or equivalents for protecting outer surfaces.



〈Whole underside of floor〉

NOTE: Apply the agent to the shaded areas only. Do not apply it to the exhaust system and heated oxygen sensors.



Rust-preventive Treatments

Areas to be Covered by Anti-rust Agents

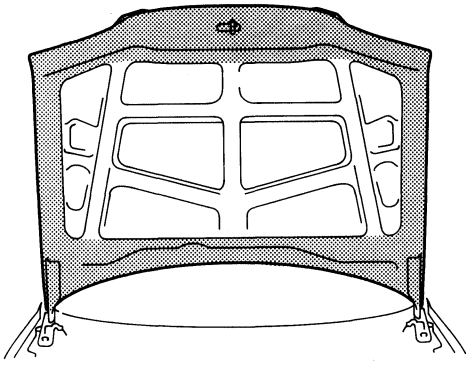
Rust-preventive Treatments:

Nozzle	Type
A	360°
B	L-type
C	Straight nozzle (undercoat gun)

Hood, Underside

- Coat the entire panel and seams all the way around.
- Spray sufficient anti-rust agent to the front area and each corner.
- Apply rust-preventive agent or grease to the hood hinges.
- Also coat the bulkhead upper frame and hood frame with anti-rust agent.

Nozzles used: A and B

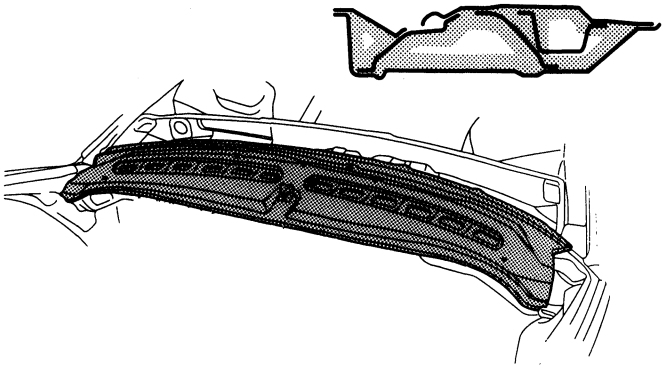


Dashboard Upper/Windshield Lower

- Coat the windshield lower and dashboard upper water drain with anti-rust agent at front, right and left.
- Spray anti-rust agent completely over the rear of the dashboard upper (windshield side).

NOTE: To insert the nozzle in the dashboard upper, remove the air scoop grille for easier, more thorough spraying.

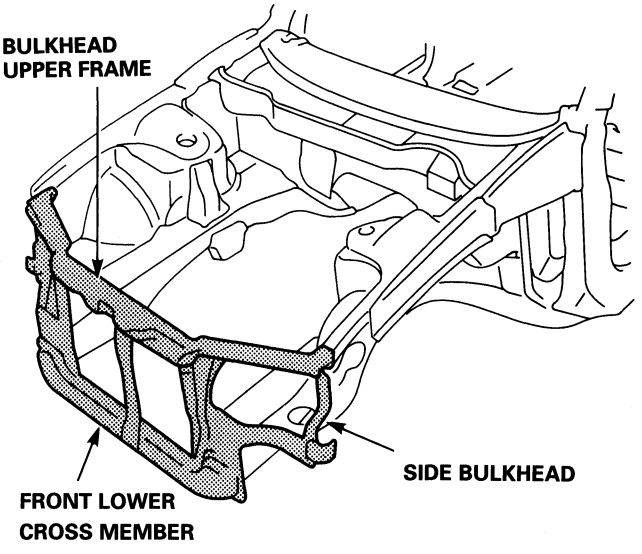
Nozzles used: A and B



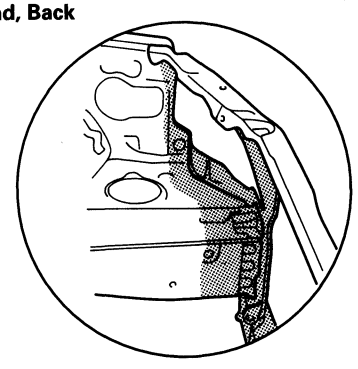
Front Bulkhead Area

- With the hood opened, coat the joints of the bulkhead, wheelhouse and side frame and around the back of the headlight assembly.

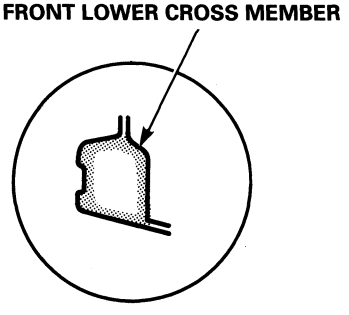
Nozzle used: B



Side bulkhead, Back



- Coat the inside of the front lower cross member.



Nozzles used: A and B

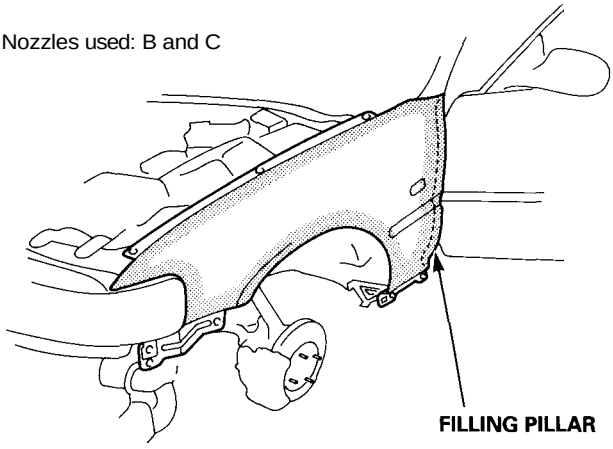
Front Fender, Underside

Apply anti-rust agent to the end of the fender, wheelhouse, and side sill installation.

NOTE:

- Apply a coat of agent to the front door side, wheel arch end.
- If the fender is to be removed, care take to avoid damaging the paint finish. Apply agent to the entire surface of the back of the fender.
- Apply agent to the front fender filling pillar.

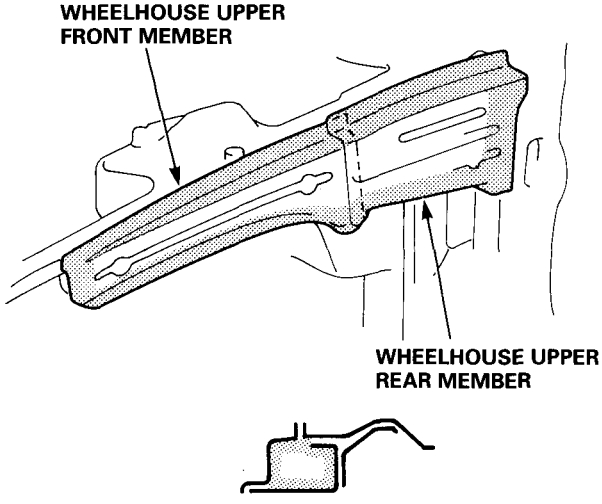
Nozzles used: B and C



Wheelhouse Upper Member, Inside

- Remove the front fender.
- Remove the air scoop grille in the dashboard upper and coat the inside of the wheelhouse upper member with anti-rust agent.

Nozzles used: A and B



Outside Panel (Front Pillar and Center Pillar), Inside

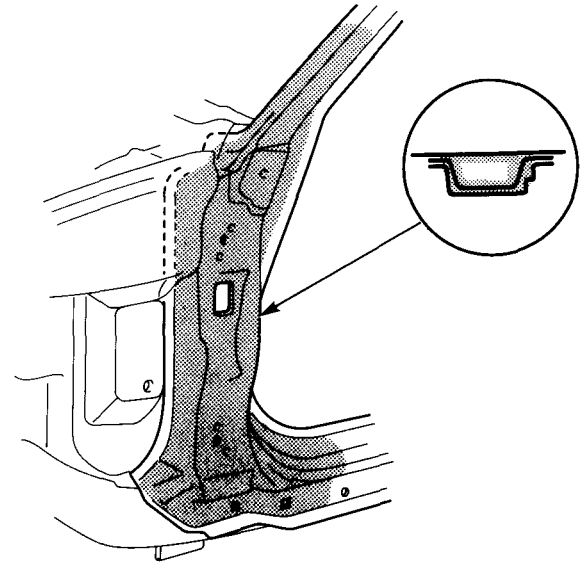
- Remove the door harness grommet and insert the nozzle facing down.

NOTE: Make sure that the nozzle is not interfering with the door hinge bracket. Spray thoroughly.

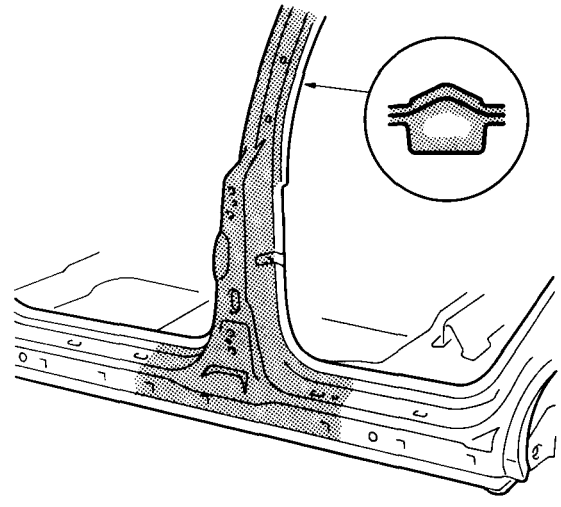
- Coat the door checker bracket.

Nozzles used: A and B

Front Pillar



Center Pillar



(cont'd)

Rust-preventive Treatments

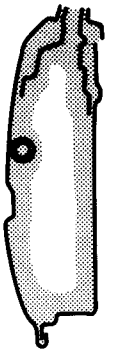
Areas to be Covered by Anti-rust Agents (cont'd)

Doors, Inside

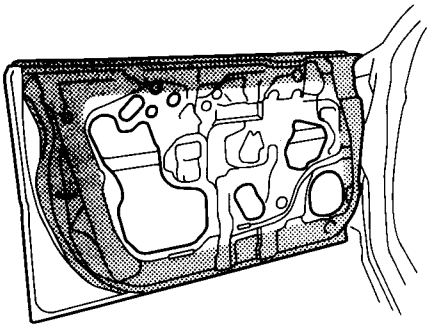
- Apply agent to the joint between the door stiffener and door skin through the water drain hole at the bottom of the door.
- If necessary, remove the door side molding and weather-strip, then spray the agent through the hole.

NOTE: When a suction type spray gun is used, remove the door trim panel.

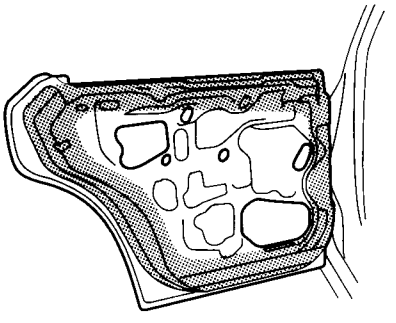
Nozzles used: A and B



<Front>



<Rear>

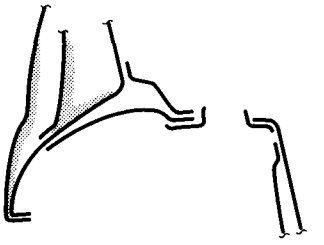


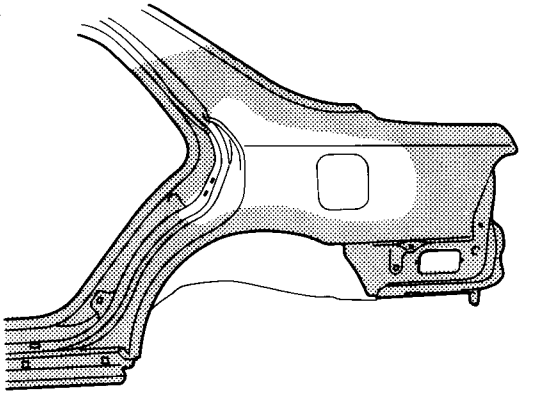
Rear Side Outer Panel, Inside

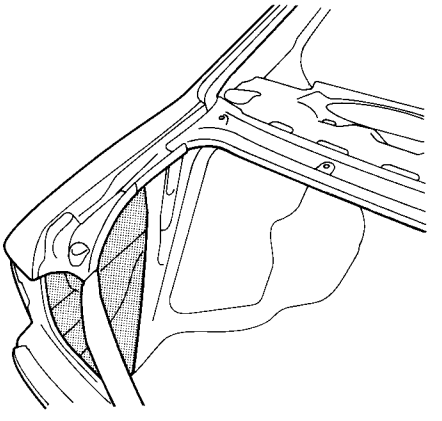
- Remove the door lock striker, taillight and grommets, then spray agent through the hole.
- To apply agent to the inside of the rear wheelhouse, remove rear trim panel and trunk side trim panel.

NOTE: Make sure that all the surfaces are coated with anti-rust agent since the areas to be covered are relatively extensive.

Nozzle used: A



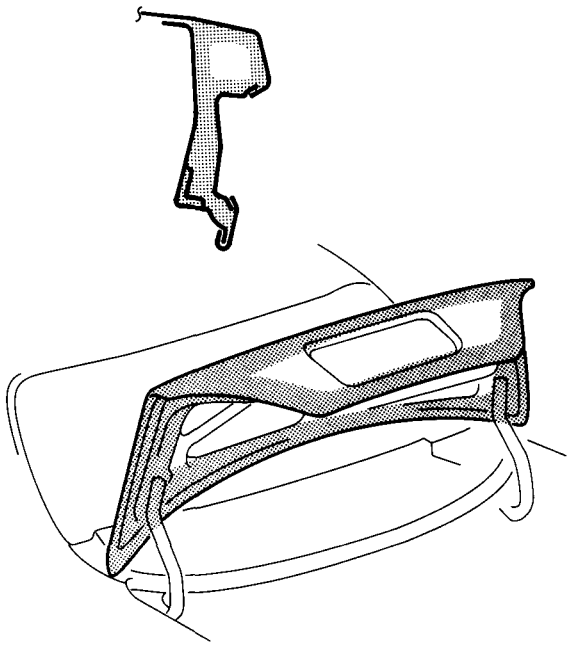




Trunk Lid Inside

- Coat the trunk lid skin, and frame seams all the way around.
- On the trunk lid, apply the agent to the inside of the reinforcement frame.

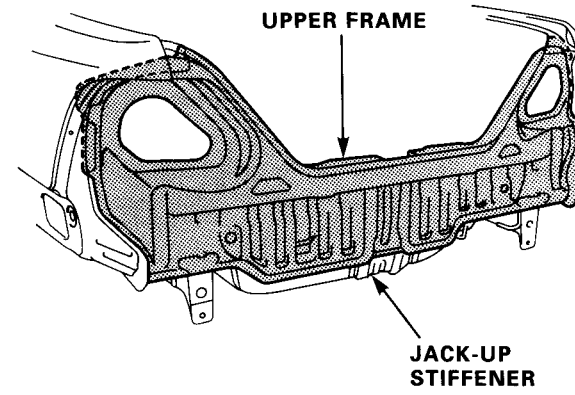
Nozzles used: A and B



Rear Panel, Inside and Outside/Rear Floor End

- Apply the agent to the gap between the rear panel and rear floor.
- Apply the agent to the inside of the rear panel upper and center frame.
- Undercoat may be used on those areas of the rear panel that are concealed from view when parts are installed.
- Apply the agent to the inside of the jack-up stiffener.

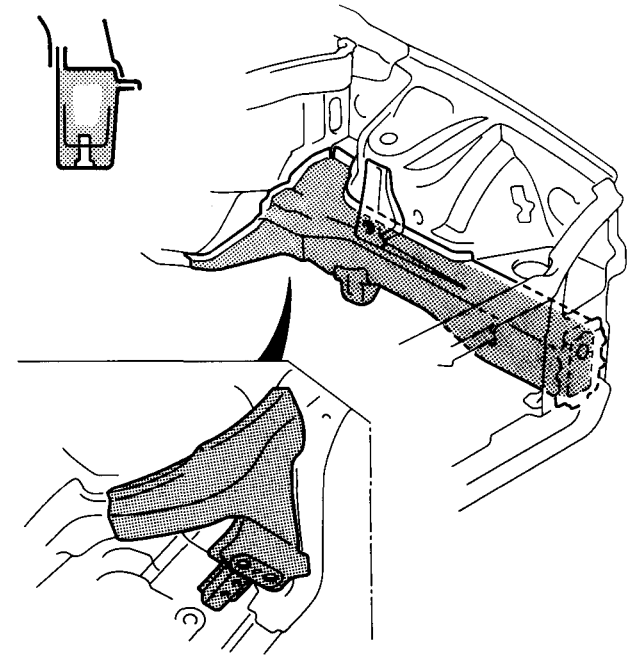
Nozzle used : B



Front Side Frame, Inside

- Remove the grommets from inside the front compartment and coat the inside of the front side frame.
- Coat the battery mount bracket base.

Nozzles used: A and B



(cont'd)

Rust-preventive Treatments

Areas to be Covered by Anti-rust Agents (cont'd)

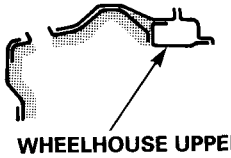
Front Wheelhouse

- Spray agent on the wheelhouse, front fender stay, upper member and damper bracket as shown.
- Undercoat the wheelhouse where anti-rust agent or undercoat has not yet been applied.

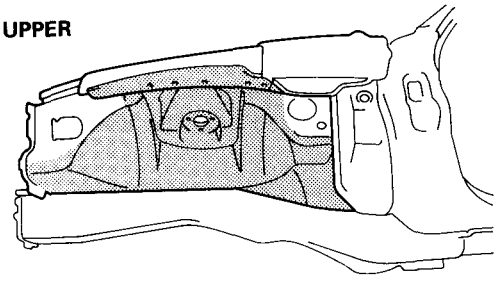
NOTE:

- Coat the wheelhouse extension, particularly the upper face.
- Undercoat the inner fender mounting area of the wheelhouse and upper face of the inner fender

Nozzles used: A and C



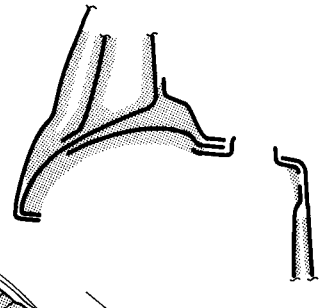
WHEELHOUSE UPPER EXTENSION

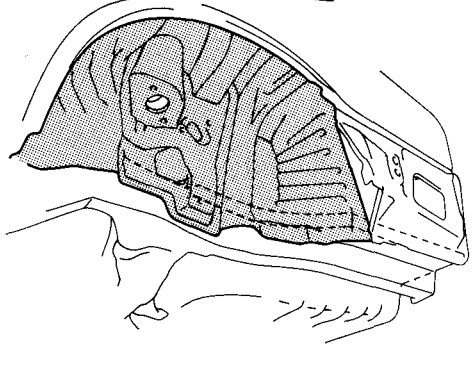


Rear Wheelhouse

- Coat the gaps between the inner and outer wheelhouses, including the damper base.
- Apply agent to the edge of the rear side frame, side sill and rear floor.
- Undercoat the wheelhouse where undercoat or anti-rust agent has not yet been applied.

Nozzles used: B and C



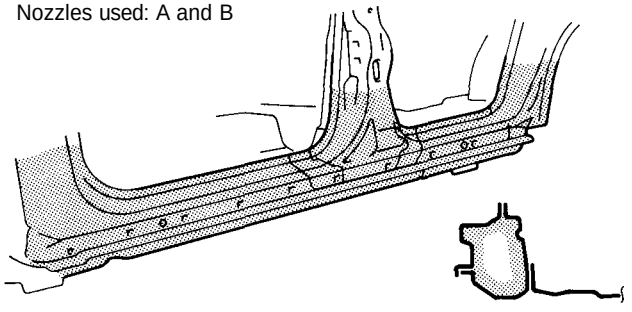


Side Sill, Inside

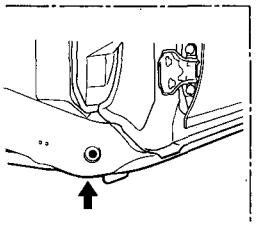
- Remove the front and rear grommets and side sill panel to spray agent.
- Insert the nozzle all the way through the grommet holes and spray.
  Move the nozzle right and left, and up and down while pulling it back out of the grommet hole.

NOTE: Spray agent until it drips from the drain hole.

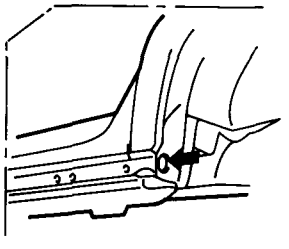
Nozzles used: A and B



Front: (2.5TL)



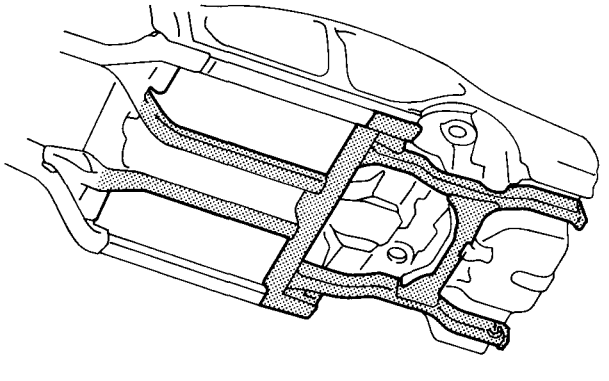
Rear:



Under-Floor Member/Floor Frame, Inside

- To spray agent to the inside of the under floor member, insert the nozzle in the holes in the members.
- Also coat the under-floor, side sill, and front and rear wheelhouses at the ends.

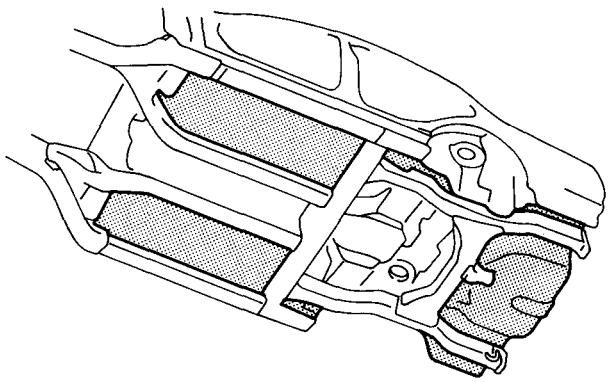
Nozzle used: A



Under-Floor

- Apply the agent to the shaded areas only. Do not apply it to the exhaust system and heated oxygen sensors.
- Coat the bottom of the fuel tank.

Nozzle used: C



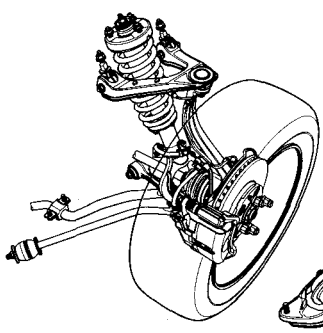
Suspension

NOTE:Do not apply to the brake disc and brake caliper.

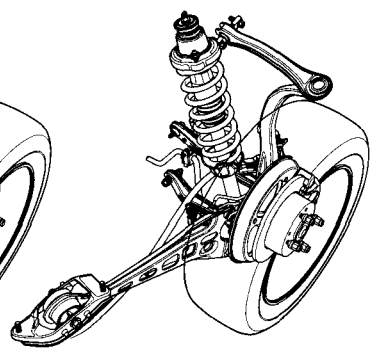
Coat the outside (and inside if necessary)

- Front Beam
- Rear Beam
- Beam Bracket
- Beam Bridge
- Damper
- Upper Arm
- Steering Knuckle
- Rear Cross Beam
- Lower Arm
- Radius Rod
- Stabilizer
- Brake Pipe

Front:



Rear:



Rust-preventive Treatments

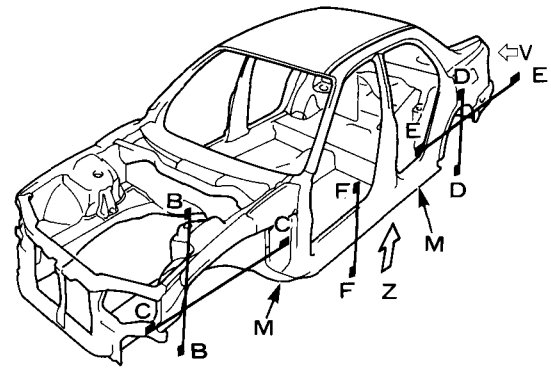
Undercoating Diagram

indicates PVC coating areas.

NOTE:

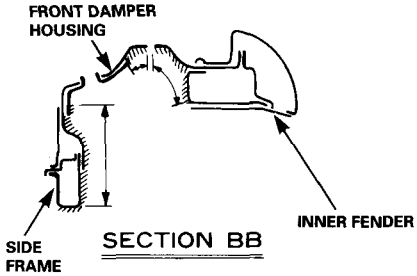
- Coating thickness: 0.5 mm (0.02 in) MIN.
- Follow the above instructions for paint repair or refinishing.
- Avoid coating on the front and rear suspensions, and exhaust system mount area.
- Items marked with an asterisk (*) on the important control areas. Coating thickness 1 mm (0.04 in).

Unit: mm (in)

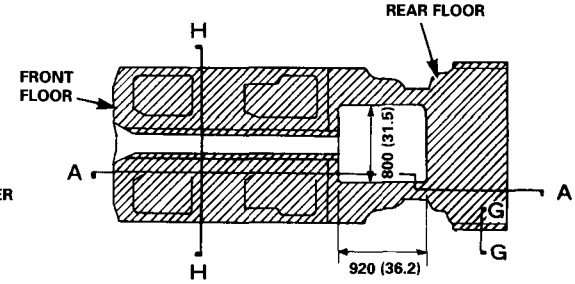


VIEW V

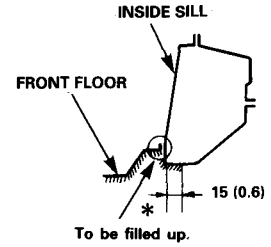
FUEL CAP ADAPTOR
Do not apply to the mounting nut area.



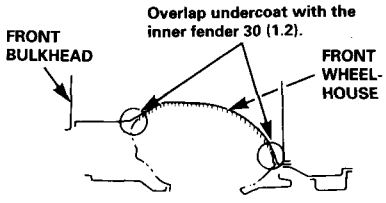
SECTION BB



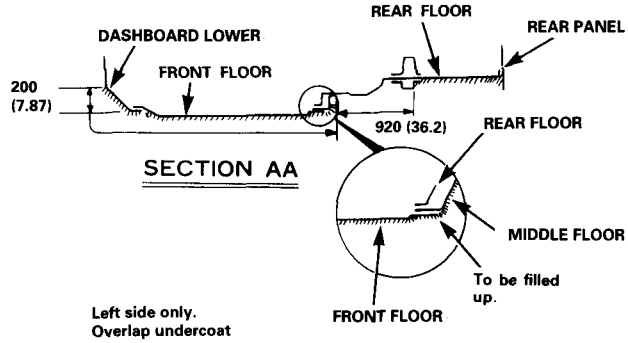
VIEW Z



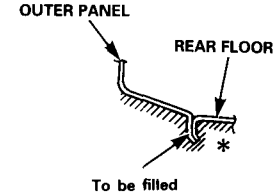
SECTION FF



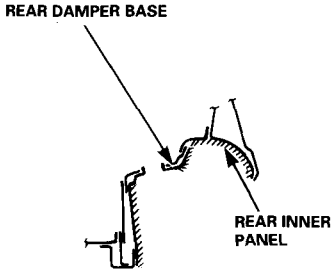
SECTION CC



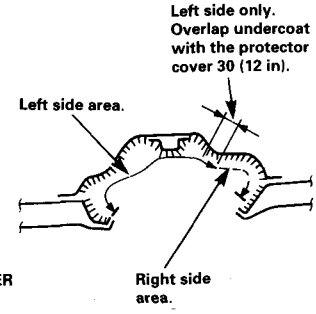
SECTION AA



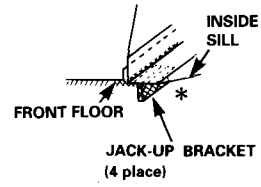
SECTION GG



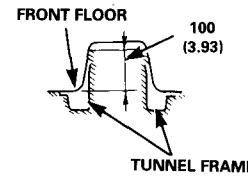
SECTION DD



SECTION EE



VIEW M



SECTION HH

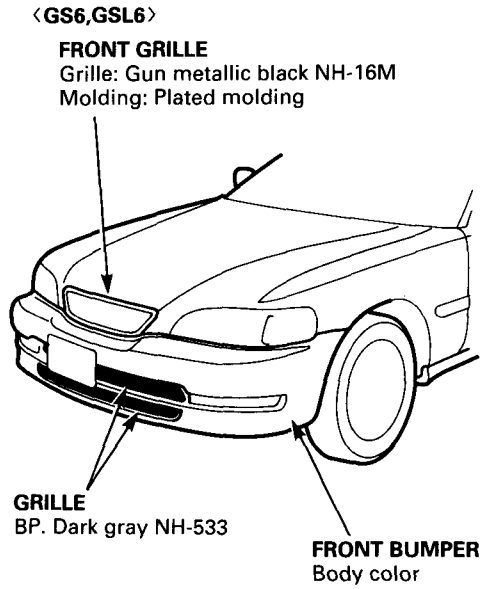
Color Chart Painting Specifications

Paint Code Color Name	USA Model				Canada Model	
	2.5TL		3.2TL		2.5TL	3.2TL
	GS5	GSL5	GS6	GSL6	LS5	GSL6
G-79P Bayern Green Pearl.	○	○	○	○	○	○
NH-503P Granada Black Pearl.	○	○	○	○	○	○
NH-578 Taffeta White	○	○			○	
NH-585P Cayman White Pearl			○	○		○
R-91P Garnet Red Pearl	○	○	○	○	○	○
YR-506M Arbere Taupe Metallic	○	○	○	○	○	○
YR-509P Granite Silver Pearl	○	○	○	○	○	○

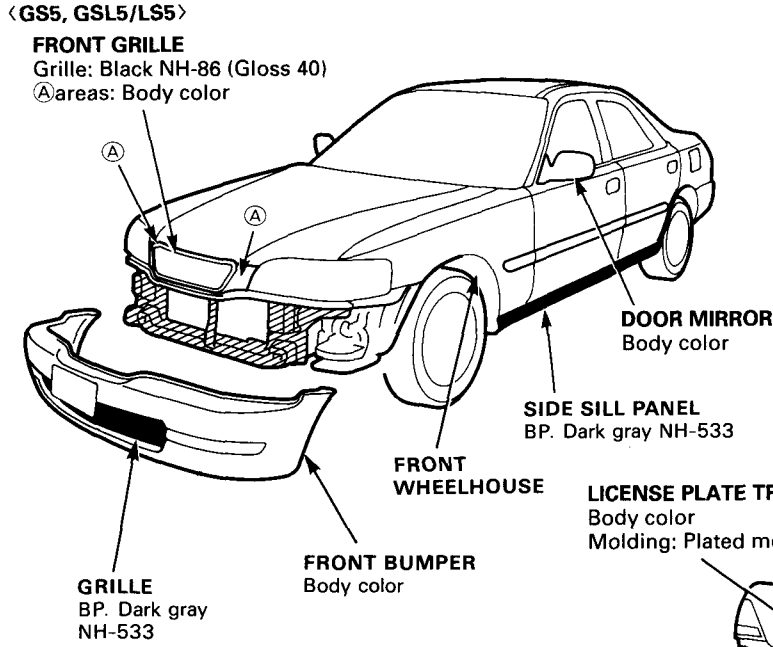
NOTE:

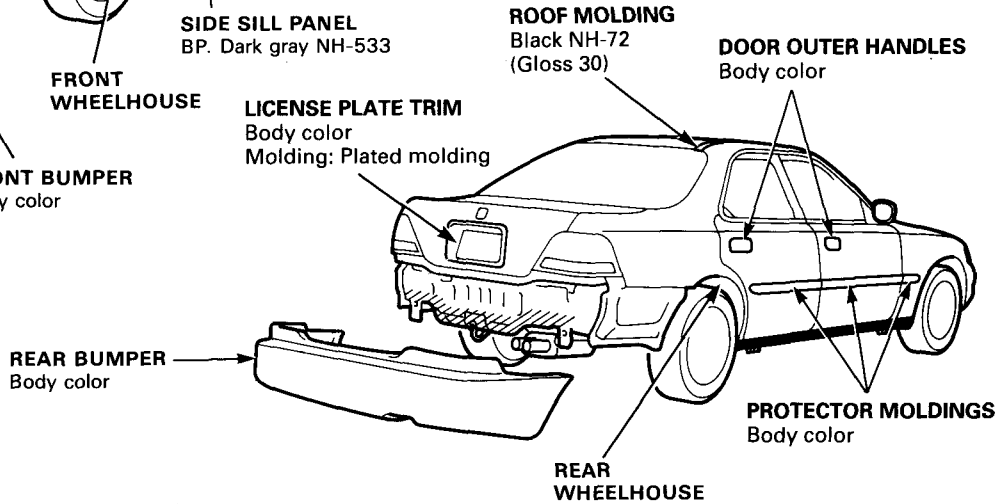
- Apply NH-86 black (Gloss 40) to the visible surfaces of shadowed areas after installing equipment (except cars painted with NH-503P).
- In case of NH-503P there is no need to paint black.
- With body colors are NH-585P, NH-578, YR-509P. G-79P, R-91P and YR-506M, apply NH-86 black (Gloss 40) to the front and rear wheelhouses.
- NH-585P: 4C•4B (4-Coat • 4-Bake) paint

〈GS6,GSL6〉



〈GS5, GSL5/LS5〉





Paint

General

The 3-coat•3-bake (3C•3B) and 4-coat•4-bake (4C•4B) paint finishes give the Acura 2.5TL/3.2TL a deep gloss and stunning finish. This manual provides information on paint defect repair and refinishing. Throughout, the objective is to explain in a simple yet comprehensive manner the basic items you should know about paint repairs. Select the correct material for the defect and repaint or refinish in the correct manner as described in this manual.

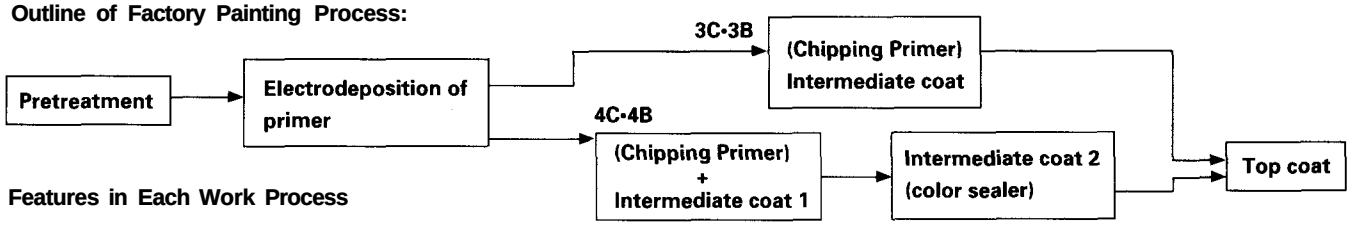
⚠ WARNING

- **Most paints contain substances that are harmful if inhaled or swallowed. Read the paint label before opening the container. Spray paint only in a well ventilated area.**
- **Cover spilled paint with sand, or wipe it up at once.**
- **Wear an approved respirator, gloves, eye protection and appropriate clothing when painting. Avoid contact with skin.**
- **If paint gets in your mouth or on your skin, rinse or wash thoroughly with water. If paint gets in your eyes, flush with water and get prompt medical attention.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

Basic Rules for Repairing a Paint Finish

To repair paint damage, always use the 2-part acrylic urethane paints designated; polish and bake each of the three coats, as in production, to maintain the original film thickness, and to assure the same quality as the original finish.

Outline of Factory Painting Process:



Features in Each Work Process

1. Pretreatment and Electrodeposition

In the pretreatment process, the entire body is degreased, cleaned, and coated with zinc phosphate by dipping. After the body has been cleaned with pure water, it is placed in an electrolytic bath of soluble primer (Cationic Electrodeposition). This produces a thorough corrosion inhibiting coating on the inner surfaces and corners of the body, pillars, sills and panel joints. Chipping primer is then applied to the most susceptible areas (see page 8-16).

2. Intermediate coat / Intermediate coat 1 (4C•4B)

The intermediate coat is applied to the prepared surface for further protection against damage.

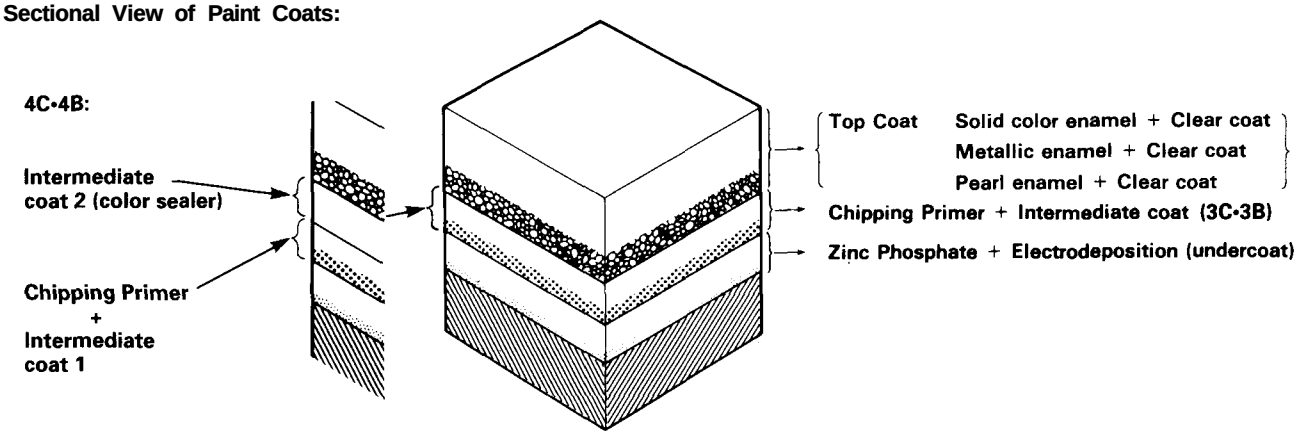
- Intermediate coat 2 (4C•4B)

  The intermediate coat 2 is matched to the color of the top coat.

3. Top coat

Enamel paint and either polyester or acrylic resin paint are used in the top coat for higher solidity, smoothness, brightness, and weather resistance.

Sectional View of Paint Coats:



Paint

Intermediate Coat Colors

The intermediate coat will determine the color and quality of the paint finish (smoothness, gloss, brightness and thickness). Be sure to follow mixing instructions explicitly and measure the paint accurately.

Combination Table:

<table>
<tr><td rowspan="2">Top coat</td><td colspan="2">For Mass Production</td><td colspan="2">For Repair</td></tr>
<tr><td colspan="2">Intermediate coat</td><td colspan="2">Intermediate coat</td></tr>
<tr><td>G-79P
Bayern Green P.</td><td colspan="2">N2.0
(Dark gray-2)</td><td colspan="2" rowspan="6">Use enamel paint for top coat as intermediate coat.
(Acrylic urethane paint)</td></tr>
<tr><td>NH-503P
Granada Black P.</td><td colspan="2">N2.0
(Dark gray-2)</td></tr>
<tr><td>NH-578
Taffeta White</td><td colspan="2">N8.0
(White)</td></tr>
<tr><td>R-91P
Garnet Red P.</td><td colspan="2">N2.0
(Dark gray-2)</td></tr>
<tr><td>YR-506M
Arbere Taupe M.</td><td colspan="2">N5.5
(Dark gray-1)</td></tr>
<tr><td>YR-509P
Granite Silver P.</td><td colspan="2">N5.5
(Dark gray-1)</td></tr>
<tr><td rowspan="2">Cayman White P.</td><td>Intermediate coat 2</td><td>Intermediate coat 1</td><td>Intermediate coat 2</td><td>Intermediate coat 1</td></tr>
<tr><td>Exclusive color
(White color base)</td><td>N8.0
(White)</td><td>Exclusive color
Use the same hue as the exclusive color.
(Acrylic urethane paint)</td><td>Epoxy two-part primer surfacer (gray) may be used.</td></tr>
</table>

P : Pearl
M : Metallic

Paint Refinishing

Paint damage can appear in any form. Before making a repair, check the damaged area carefully, and determine the procedure best suited to the type. The following relates paint refinishing methods to various types of paint damage of damage or defects.

Defects and Refinishing Processes

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

A. Damage or defects that have gone through to the metal surface

Rusting or deformation:

Steps:

① Featheredge the damaged area.
② Prepare the metal surface.
③ Apply a chemical coating to metal surface.
Metal conditioner, Precoat, A.C.P treatment
④ Apply an undercoat (primer surfacer)
NH-585P:
④-1 Apply intermediate coat 1 (surfacer and primer surfacer)
⑤ Apply an intermediate coat (color matched to top enamel paint).
NH-585P : Intermediate coat 2
(Exclusive color paint)
⑥ Apply a top coat (body color paint).
Solid color: Enamel top coat paint
Metallic color: Metallic enamel paint + Clear top coat
Pearl color: Pearl enamel paint + Clear top coat

B. Damage or defects up to undercoat or intermediate coat/intermediate coat 1 (NH-585P)

External damage or blisters:

(1) Perform Steps ④ through ⑥ under Item A.

NH-585P :

Damage or defects up to intermediate coat 2

External damage

(1) Performsteps ⑤ through ⑥ under Item A.

C. Damage or defects that have not gone through to intermediate coats (only in top coat)

Shallow scratches or score marks:

(1) If damage has gone through to the metallic paint, spray metallic enamel, then apply top coat wet on wet.
(2) If damage has not reached the metallic color paint and remained in the clear top coat,polish the damaged surface or spray only the clear top coat.

NOTE: Try to repair by polishing as much as possible if the damage has not reached the metallic color paint.

D. Replacement of Parts

-1 Welded parts

Rear side outer panel, etc.

(1) Perform Step ① through ⑥ if the damaged area is covered with filler or welded with reinforcement plate.
(2) Perform Steps ⑤ and ⑥ for undercoats except those on joints (Intermediate coat for replacement parts).
(3) On inner panels, apply paint where the undercoat is burned by heat of welding. Follow this with a rust preventive treatment (see section 7).

-2 Single Parts

- Painting of outer and inner hood, door, trunk, lid, etc.
Perform Steps ⑤ and ⑥ under Item A.
- Painting of inside of front fender.
Only enamel top coat paint may be used:
Solid color enamel. Metallic enamel or Pearl enamel.
- After spraying enamel paint, perform rust preventive treatment (apply inner or outer rust preventive agent).

Paint

Refinishing Processes

NOTE: (▨ : Indicates steps which may be required according to the degree of damage)

Refinishing Processing \ Damage	To metal alloy base	To under/ intermediate coats	To intermediate coat 2 (NH-585P only)	To top coat	Replacement Parts	
					Welded part	Single part
1. Featheredging (polishing damaged surface)						
2. Preparation of metal alloy base						
3. Air blowing/Degreasing						
4. Treatment of metal alloy base						
5. Filling/drying/Polishing						
6. Air blowing/Degreasing						
7. Masking (part)						
8. Undercoating/Drying						
9. Polishing undercoat						
10. Air blowing/Degreasing						
11. Masking						
12. Spraying intermediate coat 1/Drying						
13. Polishing intermediate coat 1						
14. Air blowing/Degreasing						
15. Masking (reinforcement)						
16. Spraying intermediate coat 2/Drying (NH-585P only)						
17. Polishing intermediate coat 2/Top coat (NH-585P only)						
18. Air blowing/Degreasing						
19. Masking						
20. Spraying top coat/Drying						
21. Polishing/Buffing						

Refinishing Procedures

1. Featheredging (polishing damaged areas)

-1. Damage to metal surface

- Sand the damaged area flat and smooth with a double action sander and #60 or #80 disc paper.
- Sand the boundary between the metal surface and undercoat with a double action sander and #180 or #280 disc paper. Try to sand a larger area than the damage.

NOTE:
- Make sure there is no height difference between the metal surface and undercoat.
- If a double action sander is not available, use a rubber block and wrap sandpaper around it to sand the surface.

⚠WARNING To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

-2.Damage to Undercoat
Intermediate coat
Top coat
Paint coat on replacement parts

Sand the damaged surface flat and smooth with a double action sander and #280 or #320 paper.

NOTE:
- If a double action sander is not available, use a rubber pad and wet or dry sand the surface with #280, #320, #400 or #600 sandpaper.
- After sanding, check that the surface is flat ant smooth.
- Perform the operations under Item 1-1 for the areas where parts are welded to the body.

2. Preparation of metal surface.

Remove all corrosion from the damaged area using a #180 or #280 paper.

3. Air Blowing/Degreasing

Air blow the sanded area, then degrease with a wax and grease remover (for USA usage-Dupont 38125 Enamel Reducer).

⚠WARNING

- **Do not use high air pressure: Use only an approved, 210 kPa (2.1 kgf/cm^2, 30psi) air nozzle.**
- **Wear goggles or safety glasses to prevent eye injury.**

4. Treatment of metal surface

- Brush or spray a solution of chrome phoshate or washer primer on the exposed metal surface.
- Use the following materials to treat the metal surface:
- Metal conditioner (kamsai Paint) (for USA usage-Duporit 2415 Kwik-Prep TM)
- ACP agent (Nippon Paint)
- Precoat (Isam Paint) (for USA usage-Dupont 6155/6165 Vari Prim Self-Etching Primer TM)

NOTE:
- Follow the manufacturer's instructions.
- Treat the metal surface, as much as possible, to provide a better bonding surface for the subsequent paint.

5. Application of Filler
Drying
Sanding

- Small cracks or pinholes in the sheet metal should be repaired with a filler and sanded flat and smooth.

NOTE:
- Mix the putty with the hardener in the correct ratio.
- Follow the filler manufacturer's instructions.

(cont'd)

Paint

Refinishing Procedures (cont'd)

⚠ WARNING **Body parts being dried with an industrial dryer can get hot enough to cause injury- Do not touch parts being dried.**

- Allow the filler to air dry for about 5-6 minutes, then force dry with an infrared lamp.

NOTE: Keep the lamp 40-50 cm (16-20 in) from the filler while drying.

- Stop drying the filler if a white mark appears when the surface is scratched with your nail. Wet or dry sand the surface flat and smooth with a #280 or #320 paper.

6. Air Blowing/Degreasing

Air blow the surface to be repaired, then degrease with a wax and grease remover (for USA usage-Dupont 38125 Enamel Reducer).

NOTE: Also clean and degrease surfaces where masking tape will be attached.

7. Masking

Mask the areas surrounding the damage to prevent overspray from the primer.

8. Application and Drying of Primer/Drying

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

- Spray the primer over the filler and surface (use epoxy or urethane 2-part primer).
  Spray : 2-3 coats.
  - Use the following materials:
    - 615S Primer Surfacer (DuPont)
    - Primer Surfacer EP (Akzo)
    - NPS735 Urethane Primer Surfacer (R-M)

- Let the primer air dry for 5-10 minutes, then force dry with a infrared lamp.

NOTE: Keep the dryer 40-50 cm (16-20 in) from the surface.

9. Polishing Undercoat

- Remove the masking paper and tape.
- Check that the undercoat has dried thoroughly, then dry or wet sand the surface with a #280 or #320 paper.

NOTE:
- Use a rubber block and sand flat and smooth.
- Sand the entire surface to be refinished.

10. Air Blowing/Degreasing

⚠ WARNING

- **Do not use high air pressure; use only an approved, 210 kPa (2.1 kgf/cm^2, 30 psi) air nozzle.**
- **Wear goggles or safety glasses to prevent eye injury.**

Air blow all the surfaces, then degrease with wax and grease remover (for USA usage-DuPont 38125 Enamel Reducer).

NOTE: Also degrease the surfaces where masking tape will be attached.

11. Masking

Mask the undamaged areas surrounding the damage to prevent overspray from primer surfacer (undercoat).

NOTE: Use masking tape and paper to mask the body. A vinyl cover may also be used to effectively mask the body.

12. Application of Intermediate Coat

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

- Use the same color paint as the top coat. Spray it over the surface until the undercoat (primer surfacer) is fully covered.
- Spray the paint slightly thicker than normal to allow for loss during subsequent polishing.
- Super ponacle II (R-M)
- Super Centri (DuPont)
- Auto cryl (Akzo)

13. Polishing of Intermediate Coat

- Check that the paint coat has dried thoroughly, then dry or wet sand the surface with a #600 and #800 paper.

NOTE: Use a rubber block and sand flat and smooth, being careful not to expose the undercoat.

Polishing of Top Coat (if damaged):
Use the same technique described above.

14. Air Blowing/Degreasing

⚠ WARNING

- **Do not use high air pressure; use only an approved, 210 kPa (2.1 kgf/cm^2, 30 psi) air nozzle.**
- **Wear goggles or safety glasses to prevent eye injury.**

- Air blow the entire surface, then degrease with wax and grease remover (for USA usage-Dupont 38125 Enamel Reducer).
- For shading or spot painting, polish the area with a polishing compound. Sand with a #2000 paper to give a better bonding surface for the subsequent paint.

15. Masking

- Remove all existing masking paper, then mask with new paper.
- Use a heat-resistant masking tape (SCOTCH TAPE) where tape is attached directly to the body.
- Use brown paper or masking roll paper to cover.

NOTE:
- Mask the area surrounding the damage sufficiently to prevent overspray. It is also a good practice to use a vinyl cover to protect other areas.
- Protect resin parts with aluminum foil under the brown paper or masking paper to prevent damage due to heat during baking.

16. Application of Top Coat/Drying

- Prior to putting the car in the painting booth, thoroughly clean the interior and spray water over the floor. Be careful about blowing dust and dirt.

⚠ WARNING

- **Do not use high air pressure; use only an approved, 210 kPa (2.1 kgf/cm^2, 30 psi) air nozzle.**
- **Wear goggles or safety glasses to prevent eye injury.**

- Air blow and degrease the surface before spraying the paint. Also clean the surface with a tack cloth.

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

- Spray color-matched top coat over the prepared surface. Apply 2-3 coats in two directions until the intermediate coat is fully covered.

NOTE: For application of the top coat, refer to step 12 "Application of Intermediate Coat."
Solid color: Color enamel + Color clear coat
Metallic color: Metallic enamel + Clear coat
Pearl color: Pearl enamel + Clear coat

(cont'd)

Paint

Refinishing Procedures (cont'd)

⚠WARNING Body parts being dried with an industrial dryer can get hot enough to cause injury. Do not touch parts being dried.

- After spraying, allow the paint to settle for about 10 minutes, then force dry with an infrared lamp.

NOTE: Follow the paint manufacturer's instructions.

17. Polishing/Buffing

- Let the paint dry gradually, then polish the surface carefully using a polishing compound and sponge buff.
- To remove lint or dirt, wet sand the surface with #2000 paper or finer first, then polish with compound.

NOTE: Polish all roughness caused by sanding thoroughly. To do this, first polish with very fine compound, then with ultra fine compound.

- After polishing, remove the masking paper and tape, then wash the entire vehicle thoroughly.

NH-585P (Cayman White Pearl) Paint

Refinishing Procedures

NOTE: The refinishing steps ① through ⑪ are the same as on pages 8-7 and 8-8.

12. Application of Intermediate Coat 1/Drying

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store in a safe place, and keep it away from sparks, flames or cigarettes.**

- Spray either 2-part epoxy or urethane primer surfacer to the polished primed surface as an intermediate coat.
- Let the paint coat air dry for 5-10 minutes, then force dry with an infrared lamp.

NOTE: Keep the dryer 40-50 cm (16-20 in) from the surface.

For replacement parts:
Spray intermediate coat 2 over the surface.

NOTE:
- For inner surfaces, you may start with Step 16 "Application of Intermediate Coat 2."
- Top coat enamel is used for this purpose

13. Polishing of Intermediate Coat 1

Check that the undercoat is dried thoroughly, then dry or wet sand the surface with a #400 or #600 paper.

NOTE: Use a rubber block and sand flat and smooth, covering entire surface.

14. Air Blowing/Degreasing

⚠ WARNING

- **Do not use high air pressure; use only an approved, 210kPa (2.1 kg/cm^2, 30 psi) air nozzle.**
- **Wear goggles or safety glasses to prevent eye injury.**

Air blow all the surface, then degrease with a wax and grease remover (for USA usage-DuPont 38125 Enamel Reducer).

15. Masking

Check the masking paper (Step 11) for tears or fouling, and repair or reinforce as necessary (see page 8-8).

16. Application of Intermediate Coat 2

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store in a safe place, and keep it away from sparks, flames or cigarettes.**

- Use the same color paint as the top coat, and spray it over the surface until the intermediate coat (primer surfacer) is fully covered.
- Spray the paint slightly thicker than normal to allow for loss during subsequent polishing.
- Super ponacle II (R-M)
- Super Centari (Du Pont)
- Auto cryl (Akzo)

17. Polishing of Intermediate Coat 2

- Check that the paint coat has been dried thoroughly, then dry or wet sand the surface with a #600, #800, or #1000 paper.

NOTE: Use a rubber block and sand flat and smooth, being careful not to expose the intermediate coat 1.

Polishing of Top Coat (if damaged):
- Use the same technique described above.

(cont'd)

NH-585P (Cayman White Pearl) Paint

Refinishing Procedures (cont'd)

18. Air Blowing/Degreasing

⚠WARNING

- **Do not use high air pressure; use only an approved, 210kPa (2.1 kg/cm^2, 30 psi) air nozzle.**
- **Wear goggles or safety glasses to prevent eye injury.**

- Air blow the entire surface, then degrease with a wax and grease remover (for USA usage-DuPont 38125 Enamel Reducer).
- For shading or spot painting, polish the area with a polishing compound. Sand with a #2000 paper to give a better bonding surface for the subsequent paint.

19. Masking

- Remove all existing masking papers, then mask with new papers.
- Use a heat-resistant masking tape (SCOTCH TAPE) where tape is attached directly to the body.
- Use brown paper or masking roll paper to cover.

NOTE:

- Mask the area surrounding the damage sufficiently to prevent overspray. It is also a good practice to use *a* vinyl cover to protect other areas.
- Protect resin parts with aluminum foil under the brown paper or masking paper to prevent damage to due to heat during baking.

20. Application of Top Coat Spraying/drying

- Prior to putting the car in the painting booth, thoroughly clean the interior and spray water over the floor. Be careful about blowing dust and dirt.

- Air dry and degrease the surface before spraying the paint. Also clean the surface with a tack cloth.

⚠WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store in a safe place, and keep it away from sparks, flames or cigarettes.**

- Spray color-matched top coat over the prepared surface. Apply 2-3 coats in two directions until the intermediate coat 2 is fully covered.

NOTE: For application of the top coat, refer to Step 16 "Application of Intermediate Coat 2."
Pearl color: Pearl enamel + clear coat

⚠WARNING **Body parts being dried with an industrial dryer can get hot enough to cause injury. Do no touch parts being dried.**

- After spraying, allow the paint to settle for about 10 minutes, then force dry with an infrared lamp.

NOTE: Follow the paint manufacturer's instructions.

21. Polishing/buffing

- Let the paint dry gradually, then polish the surface carefully using a polishing compound and sponge buffing pad.
- To remove lint or dirt, wet sand the surface with #2000 paper or finer first, then polish with compound.

NOTE: Polish all roughness caused by sanding thoroughly. To do this, first polish with very fine compound, then with ultra fine compound.

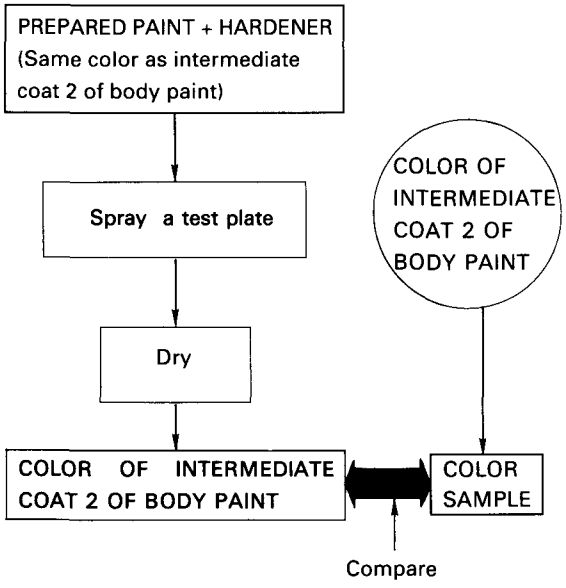
- After polishing, remove the masking paper and tape and wash the entire vehicle thoroughly.

Color Matching

Repair of NH-585P (cayman white Pearl) paint coat requires different procedures from that of metallic and three-coat pearl paint coats.

Determination of color:

1. Using a #800 - #1000 sandpaper, sand the damaged paint coat until the intermediate coat 2 appears.
2. Polish the exposed paint coat with an ultra fine compound, then compare its color with the color sample provided.
3. Prepare a paint based on the color sample selected according to the instructions.
4. After preparing, check that the paint prepared matches the color sample selected in step 2.



NOTE: On pearl paint, the color of the intermediate coat 2 will determine the final color of the paint repair.

Mixing (Reference):
The paint prepared should be mixed with thinner and hardner as follows.

NOTE: The following examples are based on the paints manufactured by ISAM Paint Co., Ltd High Art #3000).

PAINT Ⓐ (Intermediate Coat 2: color base)

THINNER	50–60%		Volume Ratio
HARDENER	1	Weight Ratio	
PREPARED PAINT	4		

PAINT Ⓑ (Top Coat: Pearl base)

THINNER	150%		Volume Ratio
HARDENER	1	Weight Ratio	
TOP COAT (Pearl Base)	4		

The above paints and materials or their equivalents should be used.

NOTE: Follow the paint manufacturer's instructions when mixing the paint and other materials.

Refinishing Procedures:

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store in a safe place, and keep it away from sparks, flames or cigarettes.**

1. To prepare the first coat (paint Ⓒ) add a 1 part of paint Ⓐ to 1 part of paint Ⓑ and mix well.

PAINT Ⓒ =

PAINT Ⓐ		PAINT Ⓑ
1	:	1

(cont'd)

NH-585P (Cayman White Pearl) Paint

Color Matching (cont'd)

2. Pour the mixture through a filter, then spray 2-3 light coats over the damaged surface.

   NOTE: Spray the mixture until the intermediate coat 2 is thoroughly covered.

3. Prepare paint Ⓓ for graduation by mixing 1 part of Paint Ⓒ with 19 parts of the paint Ⓑ. Stir the mixture well.

PAINT Ⓓ =	PAINT Ⓒ	PAINT Ⓑ
	1	: 19

4. Pour the mixture through a filter, then spray 2-3 light coats of the filtered mixture over paint Ⓒ Start at the center, then work toward the edge.

   NOTE:
   - Check that the painted coat matches the color of the body paint while spraying.
   - Application of the mixture will determine the final color of the paint repair. Do not spray the mixture excessively as this may alter the final color of the repair.

5. Apply 1-2 light coats of paint Ⓑ over the repaired surface.

6. For the final top coat, add 15% thinner to a 4 : 1 mixture of the clear paint and hardener.

CLEAR PAINT	HARDENER		THINNER
4	: 1	+	15%

7. Spray 2-3 light final top coats over the damaged area.

Soft Chipping Guard Primer Coat

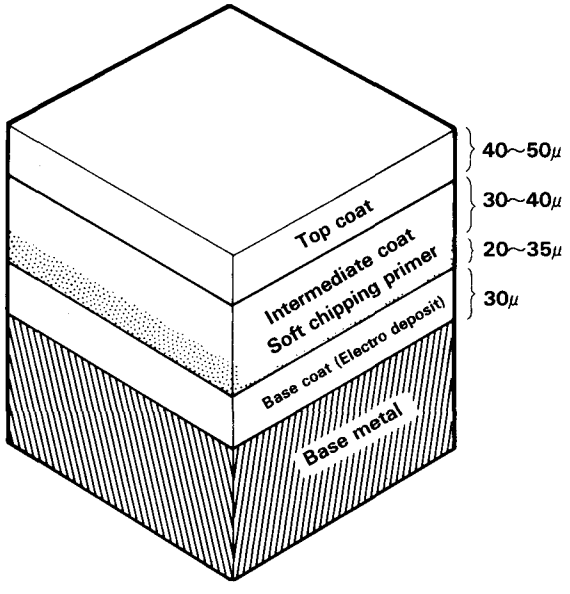
General

The removal of paint and undercoating by stones and gravel immediately exposes metal to the atmosphere, causing it to rust. The thickness of this rust increases if the process continues unchecked. The soft chipping guard primer protects against damage due to the impact of flying objects. The purpose of this guide is to provide information you will find useful when repairing damage to the protective coating. Refer to the Soft Chipping Primer Undercoating Diagram.

Type	Composition	Physical properties	Drying time
Polyester resin	Polyester resin, Pigment, Additive, Solvent } 100 %	Color Gray Viscosity 26sec/68°F (20°C) at painting Non volatile 40~45% at painting	302~320°F (150~160°C) × 30 minutes

The soft chipping guard primer is applied over the E.D. (Electrostatically Deposited) primer. It is followed by guide coating and top coating.

The soft chipping guard primer produces a smooth surface when dry. It should be sprayed so the thickness of the protective film is 20 microns.

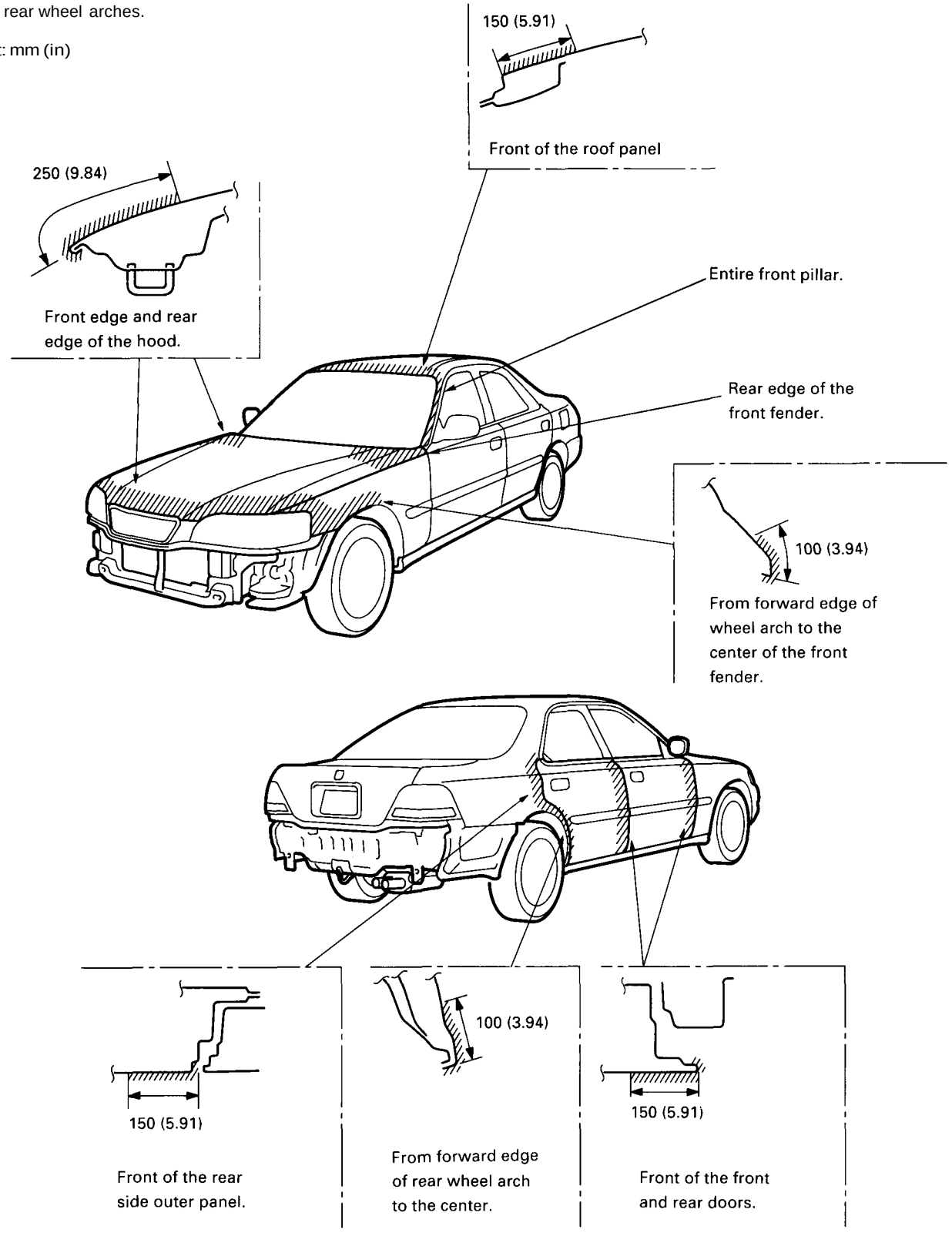


Soft Chipping Guard Primer Coat

Coating Diagram

The diagram shows the areas to which soft chipping primer is to be applied.
NOTE: Make sure to coat the flange on front and rear wheel arches.

Unit: mm (in)



Types of Soft Chipping Guard Primer (Reference)

Type	Application	Composition	Physical property	Drying time
Dual liquid synthetic resin	Room temperature Baked at 176°F (80°C) for 40 minutes	Pigment: 12% Calcic pigment: 37% Epoxy poliole resin: 15% Additive, Solvent 36% 100%	Color: Gray Viscosity: 68°F (20°C) Non volatile: 65% mini. Specific gravity: 68°F (20°C), 1.378	Room temperature: 68°F (20°C), 3 days Baked: 176°F (80°C), 40 minutes (to harden thoroughly)
Dual liquid Acrylic / Urethane } resin	Room temperature Baked at 176°F (80°C) for 30 minutes.	Pigment: 40% Acrylic resin: 37% Additive, Solvent 23% 100%	Color: Gray Viscosity: 68°F (20°C) 4–6 Poiseuille Non volatile: 65% mini. Specific gravity: 68°F (20°C), 1.35	Room temperature: 68°F (20°C), a day Baked: 176°F (80°C), 30 minutes (to harden thoroughly)

Repair Materials and Tools

Gun and brushes:
- Spray gun

  NOTE: Any gun having a tip of more than 1.0 mm (0.04 in) in diameter may be used for spraying the primer.
- Viscosity measure
  Iwata-type (IMS) cup, Ford cup
- Beaker
  1-2ℓ (1.05-2.10 US. qt, 0.9-2 Imp. qt) in capacity
- Stirring stick

Tools:
- Air or double action sander
- Sandpaper (#240-#400)

Thinner and cleaner:
- Use the thinner specified for the primer.
- Any commercially available lacquer thinner may be used to clean the gun.

Materials:
- Use primers equivalent to the ones shown in Types of Chipping Guard Primer (Reference).
- Make sure to keep the thickness of the coat at 20 microns.

Masking:
- Masking tape, paper, vinyl sheet and plate (veneer and steel).
- Masking plates are not necessary when spraying in a booth.

Protectors:
- Wear an approved respirator or dust mask, gloves, safety goggles and other protective clothing.
- Rags.

⚠ WARNING

- **Most paints contain substances that are harmful if inhaled or swallowed. Read the paint label before opening the container.**
- **Spray paint only in a well ventilated area.**
- **Cover spilled paint with sand, or wipe it up at once.**
- **Wear an approved respirator, gloves, eye protection and appropriate clothing when painting. Avoid contact with skin.**
- **If paint gets in your mouth or on your skin, rinse or wash thoroughly with water. If paint gets in your eyes, flush with water and get prompt medical attention.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

Soft Chipping Guard Primer Coat

Coating Procedures

NOTE: This section covers the application of the soft chipping primer to the replacement part.

1. Sanding the replacement part

⚠WARNING Wear goggles or safety glasses to prevent eye injury.

Sand the area to be painted with #240-#400 sandpaper.

NOTE:
- Do not oversand the edges or corners of the part.
- Do not expose bare metal.

2. Air blowing/degreasing

⚠WARNING
- **Do not use high air pressure; use only an approved, 210 kPa (2.1 kgf/cm^2, 30 psi) air nozzle.**
- **Wear goggles or safety glasses to prevent eye injury.**
- **Paint thinner is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

Clean the surface with compressed air and wax and grease remover.

3. Masking
- Place masking tape or paper around the surface to be painted.
- Cover as wide an area as possible with tape or paper to keep primer from spreading.

4. Spraying chipping guard primer
- Stir the primer thoroughly.
- Put the primer in a beaker and weigh the needed amount of primer to be used.
- Mix the hardener into the primer, following the manufacturer's instructions.

NOTE: Measure the primer and hardener so they are in correct ratio.

Item	Primer : Hardener
*High Primer Surfacer 2C	10 : 1
*Auto Primer Surfacer Mighty	5 : 1

- Add the specified thinner to the mixture of hardener and primer to attain the proper viscosity for spraying.
  2C 68°F (20°C) 18 sec ± 1
- These substances are not available in the U.S.A. Honda recommends using DuPont's 123 Vinyl Coating, or Sherwin-Williams' Vinyl Gravel Guard. Follow the manufacturer's instructions for application.
- Once mixed with the hardener and thinner, the primer must be used within the times shown below.

Temp.		41°F (5°C)	50°F (10°C)	68°F (20°C)
Time	High Primer Sufacer 2C	30H	24H	8H
	Auto Primer Surfacer Mighty	4H	3.5H	3H

⚠WARNING
- **Most paints contain substances that are harmful if inhaled or swallowed. Read the paint label before opening the container. Spray paint only in a well ventilated area.**
- **Cover spilled paint with sand, or wipe it up at once.**
- **Wear an approved respirator, gloves, eye protection and appropriate clothing when painting. Avoid contact with skin.**
- **If paint gets in your mouth or on your skin, rinse or wash thoroughly with water. If paint gets in your eyes, flush with water and get prompt medical attention.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

- Fill the gun's paint cup with the primer. Use a strainer when pouring the primer into the cup.

- Primer should never be applied to a dirty or greasy surface. Before spraying, blow dust and dirt off the surface and clean with wax and grease remover.

(Method of spraying)

- Do not try to cover the surface with one heavy coat. Apply several thin coats.

NOTE:
- Spray coat 4-5 coats to get 20 microns of thickness, as one coat deposits 5-7 microns.
- Spray the primer at 250-300 kPa (2.5-3.0 kgf/cm^2, 35.6-42.7 psi) pressure. Spraying with improper air pressure will cause imperfections.
- Open the gun 3-4 turns.
- Wipe up unwanted primer immediately with thinner.

5. Cleaning spray gun

- After spraying, be sure to clean the spray gun thoroughly with thinner or solvent.

- The gun will be permanently clogged if the primer is allowed to dry.

6. Drying

- After spraying the chipping guard primer, air-dry for 7-10 minutes to evaporate the thinner in the primer. Then dry it with infrared lamps at 176°F (80°C) for 30-40 minutes.

NOTE: Insufficient baking may cause pinholes if the primer coat is too thick.

- The temperature lamps and drying time recommendations should be followed closely.

7. Intermediate and Top coating

- Sand the chipping guard primer film with #280-#400 sandpaper.

- Follow the intermediate/top coating procedures (see pages 8-9 and 8-11).

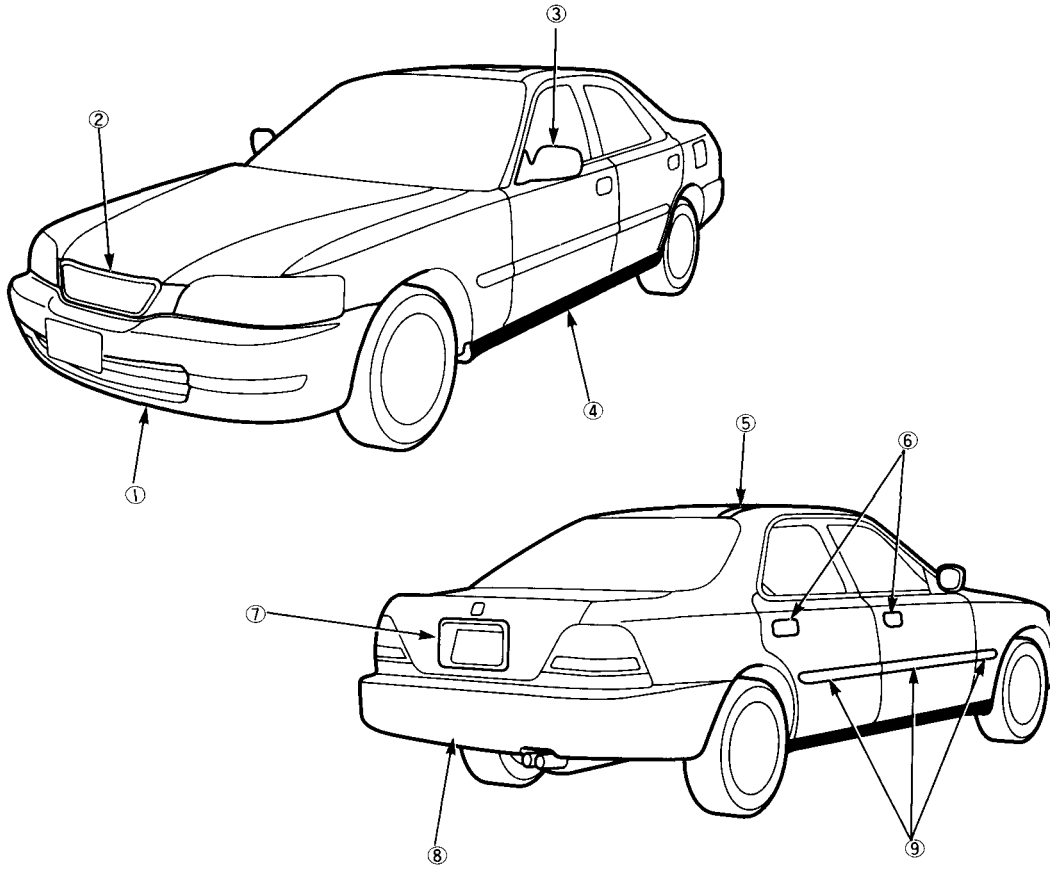
Temperature		41°F (5°C)	68°F (20°C)	86°F (30°C)	140°F (60°C)	176°F (80°C)
Time	Before sanding	8−13H 6−10H	3.5−5H 4−5H	2−3H 2−4H	30 Min. 15−20 Min.	20 Min. 10−15 Min.
Minimum time	Before painting	8H 10−18H	4H 6−8H	3H 4−8H	30 Min. 20−40 Min.	20 Min. 15−30 Min.

NOTE: The upper line of time shows specifications for High Primer Surfacer 2C, and the lower line Auto Primer Surfacer Mighty.

Types and Materials of Exterior Resin Parts

NOTE: A standard symbol is stamped on the underside of each resin part to show the type of material of used.

Example:



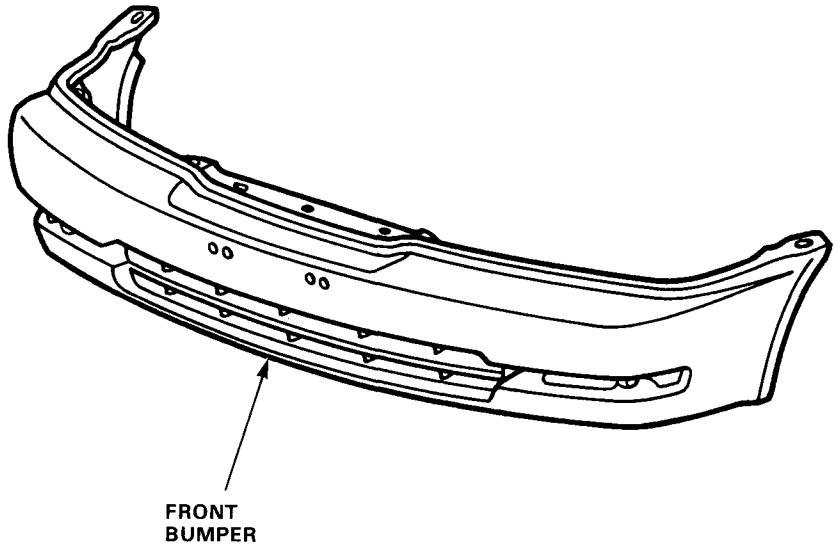
No.	Part Name	Material
①	Front Bumper	Polypropylene (PP)
②	Front Grille	Acrylonitrile/Butadiene/Styrene (ABS)
③	Door Mirror Housing	Acrylonitrile/Butadiene/Styrene (ABS)
④	Side Sill Panel	Polypropylene (PP)
⑤	Roof Molding	Poly vinyl chloride (PVC)
⑥	Door Outer Handle	Poly carbonate plastics (PC)
⑦	License Plate Trim	Acrylonitrile/Butadiene/Styrene (ABS)
⑧	Rear Bumper	Polypropylene (PP)
⑨	Front Side and Door Protector Moldings	Polypropylene (PP)

- No. ①,④,⑧,⑨ : Repair procedures see page 9-6
- No. ②,③,⑥,⑦ : Repair procedures see page 9-13

Polypropylene (PP) Resin Parts

General

The front bumper, rear bumper, protector moldings, and side sill panel are made of polypropylene (PP) resin. They can be repaired if the damage or deformation is minor in nature. This section covers PP repair. Repairing PP is different from other resins such as ABS and urethane.



Polypropylene (PP) Resin Parts

Repair Materials and Tools

The following materials and tools are required to resin bumpers:

Adhesive and Filler (examples):
- Bumper primer (clear type)
- Bond quick mender
- High art mat black
- High art thinner
- High art hardener

Primer surfacer (examples).
- Dual-liquid type bumper primer surfacer (gray) Reference (Isam Paint)
- Pigment: (1kg) (35.3 oz)
- Hardener: (100g) (3.5 oz)
- Thinner: (900 mℓ) (30.4 fℓ. oz, 31.7 Imp. oz)

NOTE: Follow the manufacturer's recommendations

Tools:
- Putty knife
- Base (putty)
- Sandpaper
- Cutter
- Brush
- Masking tape
- Masking paper

1. Bumper Primer (Clear): Premixed type

The primer provides a good support for the filler and primer surfacer. It is applied to the surface of the bumper.

Drying time:

Natural	68°F (20°C) 20 minutes
Baked	140°F (60°C) 10 minutes

2. PUTTY BOND QUICK MENDER

After the PP primer has dried thoroughly, apply the PUTTY BOND QUICK MENDER.

-1. Mix one part of the mender (A) and one part of the hardener (B) and stir thoroughly.

NOTE: Do not mix the mender and hardener in excess of 20g (0.7oz) at a time.

(cont'd)

Polypropylene (PP) Resin Parts

Materials and Tools (cont'd)

-2.Hardening starts immediately after mixing.
Practical hardness will be obtained within 60 minutes. The surface will be tacky within 5 minutes and nearly hardened after 15 minutes. It takes 12 hours for the surface to harden thoroughly 68°F (20°C)

-3.Sanding can be done after:

3 hours	68°F (20°C)-natural drying
30 minutes	140°F (60°C)-baked

3. Primer Surfacer

NOTE: Use a dual-liquid type bumper primer surfacer (gray).

- The primer surface is used to protect the PP resin surface and to fill cavities or flaws in the intermediate and top coats.
- Mix 10 parts of primer surfacer and 1 part of hardener. Add the specific thinner (30-60%) to the mixture of the hardener and primer to attain the proper viscosity for spraying.

4. Intermediate and Top Paint Coats (Body color)

NOTE:
- The paints are the dual liquid type based on the color chart.
- Measure the pigment and hardener as described so they are in correct ratio.
- Use the acrylic urethane paint prepared according to the mixing chart as the intermediate coat.

Mixing Ratio:
Mix 5 parts of body color pigment to 1 part of additive. Mix 4 parts of the mixture of the pigment and additive with 1 part of the hardener.

NOTE:
- Dilute the mixture with 40-50% of the specified thinner (Highart Thinner).
- Be sure to mix the correct amount of the additive.
- Use a spray gun to apply the paint. Do not use a brush.

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

Drying time:

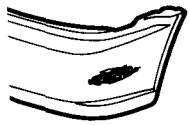
Natural	68°F(20°C)
Surface only	20 minutes
Almost hardened	4 hours
Thoroughly hardened	96 hours

NOTE: The HIGH ART MAT BLACK SURFACER is a dual liquid type. If mixed, it will harden in a matter of hours.

Refinishing Processes

Type of Damage

A. Scratch
Repaint



- Perform Steps ①, ④ ⑤ through ⑦

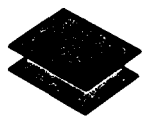
B. Hole
Deep abrasion

- Perform steps ① through ⑦

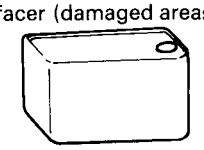
C. Deep groove
Deformation

Repair

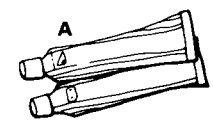
① Wet sand the surface with a #240 and #400 sandpaper.



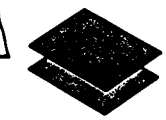
② Spray bumper primer (clear type) or dual-liquid bumper primer surfacer (damaged areas).



③ Apply filler and sand



Sand-paper



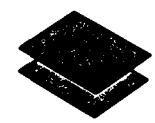
④ Degrease and Air blow

⑤ Spray dual-liquid bumper primer surfacer and dry

Primer Surfacer

Hardener

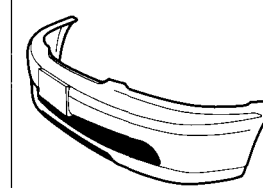
Sandpaper



- Wet sand the surface with a #600 sandpaper

#600

Replacement
(New part)



⑥ Mask and intermediate coat

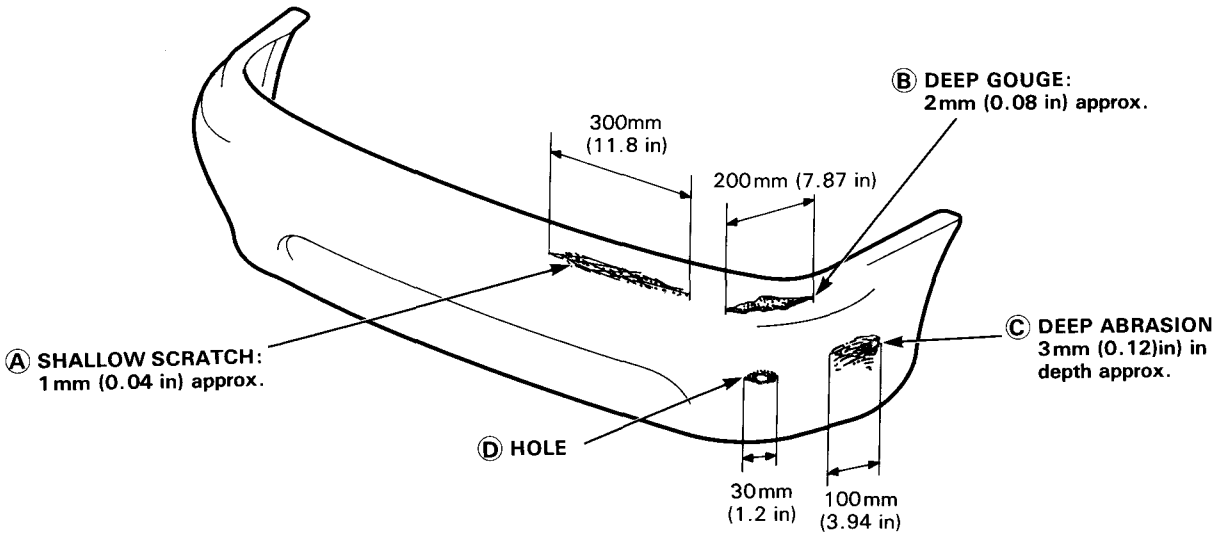
- Air blow and degrease the sanded surface.
- Spray paint and dry.

NOTE: Use the paint for top coat enamel.

⑦ Top coat { Solid color / Metallic color / Pearl color

Polypropylene (PP) Resin Parts

Repair Procedures



NOTE: ( ): Indicates steps which may be required according to the degree of damage.

Work Steps \ Damage	Ⓐ	Ⓑ	Ⓒ Ⓓ	Repaint	Replacement
1. Sanding					
2. Degreasing/Cleaning (damaged areas)					
3. Spraying primer or primer					
4. Drying surfacer					
5. Applying filler					
6. Drying filler					
7. Sanding filler					
8. Degreasing/Cleaning (filled area)					
9. Spraying primer surfacer					
10. Polishing (Air blowing/ degreasing)					
11. Intermediate coating					
12. Degreasing/Cleaning					
13. Masking				Sanding top coat	
14. Top coating					
15. Drying top coat					
16. Polishing/Buffing					

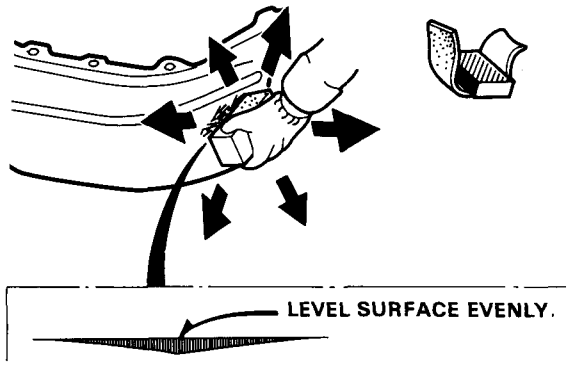
NOTE: Intermediate coating is recommended for bright colors.

Refinishing Procedures

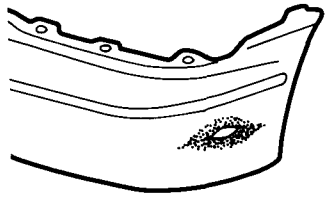
1. Sanding damaged areas

Shallow scratch:
- Level and finish damaged areas with #240-#400 sandpaper.
- Polish the leveled area with #400 sandpaper.

NOTE:
- Use a flexible block to sand the surface evenly.
- Do not remove too much material.



Deep groove/tear:
- Level and finish burrs and other irregularities with #240 sandpaper. Keep the surface as even as possible.



2. Degreasing/Cleaning

⚠ WARNING
- **Do not use high air pressure; use only an approved, 210 kPa (2.1 kgf/cm^2,30 psi) air nozzle.**
- **Wear goggles or safety glasses to prevent eye injury.**

- Clean with wax and grease remover and dry with compressed air.
- Dry the primer thoroughly with an infrared dryer or surface with a tack cloth.

NOTE: Be sure to use a tack cloth. Dust and dirt are electrostatically drawn to the surface.

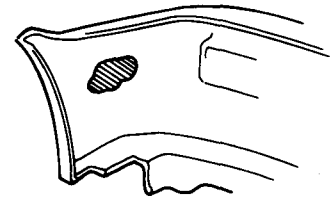
3. Applying bumper primer (clear type).

- Stir thoroughly before applying the primer. Use a spray gun or brush depending on working conditions.

⚠ WARNING
- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

- Cover as wide an area as possible, except for shallow grooves (2-3 coats).

NOTE:
- Do not dilute the primer with thinner.
- Warm the primer if the outside temperature is below 50°F (10°C).
- Apply the primer to the back of the bumper if the damage is a tear or hole.



4. Drying bumper primer.

⚠ WARNING **Body parts being dried with an industrial dryer can get hot enough to cause injury. Do not touch parts being dried.**

- Dry the primer thoroughly with an infrared dryer or other dryer suitable for the purpose.

(cont'd)

Polypropylene (PP) Resin Parts

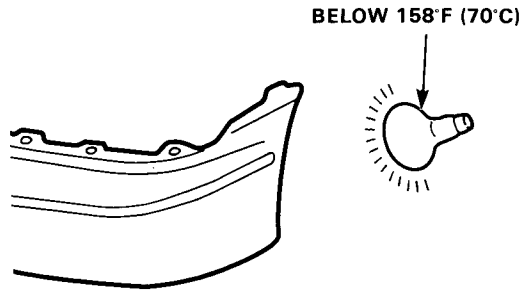
Refinishing Procedures (cont'd)

- If the damage or groove is shallow, heat the entire surface evenly. Apply heat locally if the bumper is gouged or torn open.

Drying time:

Dryer	10 minutes 140°F (60°C)
Natural	20 minutes 68°F (20°C)

NOTE:
- Use a dryer whenever possible.
- Do not allow temperature to exceed 158°F (70°C) or the bumper will deform



5. Apply filler (BOND QUICK MENDER.)

Mix the mender (A) into the hardener (B) in the ratio of I to I, and stir until they are thoroughly mixed.

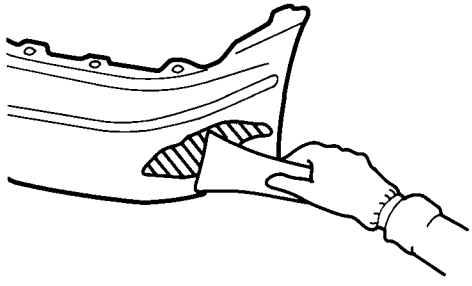
-1 .Apply the mixture over the damaged area with a putty knife using light pressure.

-2. Even out the surface to match the contour of the bumper.

-3. If there is a hole, cover it with a masking tape from the back, and apply the filler over the outside surface.

After the filler has been dried, remove the tape and apply filler to the side that was taped.

NOTE: Apply filler so it extends over more than the damaged area.



6. Drying filler

Drying time:

Almost hardened	5 minutes
Initial hardness	15 minutes
Practical hardness	60 minutes
Sanding 68°F (20°C)	After 3 hours
140°F (60°C)	After 30 minutes

7. Sanding filler

⚠ WARNING To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

Wet sand first with #240 sandpaper then with #400 sandpaper.

NOTE: Sand the surface evenly, particularly at the area where the PP resin and mender meet.

8. Degreasing/Cleaning

- Blow off the sanded surface, then clean with wax and grease remover.

⚠ WARNING
- **Do not use high air pressure; use only an approved, 210 kPa (2.1 kgf/cm^2,30 psi) air nozzle.**
- **Wear goggles or safety glasses to prevent eye injury.**

- Remove all dust and dirt with a tack cloth.

9. Spraying dual-liquid bumper primer surfacer (gray)

NOTE: Use the urethane bumper primer.

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

Spray the primer surfacer over a wider area than the filler and the exposed surfaces of bumper primer.
NOTE: Spray 2-3 coats to get 20-25 microns of thickness.

Mixing Ratio: (Reference)

Urethane bumper primer	10
Hardener	1
Thinner	30-60%

10. Drying and polishing

Force dry the primer surfacer with infrared lamps or other industrial dryer.

⚠ WARNING **Body parts being dried with an industrial dryer can get hot enough to cause injury. Do not touch parts being dried.**

Drying temperature:

Force drying	140°F (60°C) 20 minutes
Natural drying	68°F (20°C) 2 hours min

NOTE:

- Use a dryer whenever possible.
- Do not allow the temperature to exceed 158°F (70°C).

-1 .After force drying, wet sand the primer surface with #600 sandpaper.

NOTE: Use #600 or finer sandpaper as any paper coarser than this might scratch the surface.

⚠ WARNING

- **Do not use high air pressure; use only an approved, 210 kPa (2.1kgf/cm^2, 30 psi) air nozzle**
- **Wear goggles or safety glasses to prevent eye injury.**

-2.Air blow the surface to be repaired, then degrease with a wax and grease remover.

-3.Also clean and degrease where masking tape will be attached.

11. Intermediate coating

NOTE: Intermediate coating is recommended for bright colors.

- Use the top coat enamel.

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

- Mix the additive into the solid enamel color, metallic enamel or pearl enamel color in the ratio of 1 to 5 (by weight).
- Mix the hardener into the mixture of pigment and additive described above in the ratio of 1 to 4 (by weight).

NOTE: Keep the correct ratio, especially of the additive. Excessive additive takes longer to dry.

- Adjust to the proper viscosity for spray by adding the thinner specified for the primer into the mixture of primer additive and hardener.
  Viscosity: 68°F (20°C) 11-13 sec.

(cont'd)

Polypropylene (PP) Resin Parts

Refinishing Procedures (cont'd)

NOTE: It is not necessary to apply the clear coat.

- Spray 2-3 coats of the top coat enamel to get 15-20 microns of thickness. The primer surfacer (gray) should not show through the top coat.

NOTE:
- Apply the top coat enamel to the repaired surface.
- Apply the top coat enamel to the entire surface of the primer surfacer when replacement is necessary.

12. Degreasing and Cleaning

Air dry the entire surface, then clean with wax and grease remover (for USA usage-Dupont 38125 Enamel Reducer).

NOTE: For shading or spot painting, polish the area with a polishing compound. Also sand with a #1500 paper to make a better bonding surface for the paint.

13. Masking

- Remove all existing masking paper, then mask with new paper.
- Use a heat resistant type masking tape (SCOTCH TAPE) where tape is attached directly to the bumper.
- Use brown paper or masking roll paper to cover.

NOTE:
- Mask the area completely to prevent overspray.
- Protect resin parts with aluminum foil under the brown paper or masking paper to prevent damage due to heat during baking.

14. Top Coating

- Air dry and degrease the surface before spraying the paint. Also clean the surface with a tack cloth.

⚠ WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**

- Remove dust and dirt from the surface to be coated with compressed air, then use a tack cloth.
- Use a strainer when filling the cup with paint.

- Spray the paint evenly over the surface so the replacement part is completely covered.

- For application of the top coating refer to step 11 " Intermediate coating."

NOTE: Do not try to cover the surface with one heavy coat. Apply several thin coats.

- With solid color (2-coat type), metallic color and pearl color enamels, allow final coat to flash-off (5-20 minutes) before applying clear coat.

- Mix the additive into the clear in the ratio of 1 to 5. Adding the hardener and adjusting viscosity should be done the same way as described on the previous page.
  Viscosity: 68°F (20°C) 13-15 sec.

Mixing Ratio (weight)

Metallic enamel/Clear solid enamel	Additive	Hardener
5 :	1-4 :	1

15. Drying top coat

⚠WARNING **Body parts being dried with an industrial dryer can get hot enough to cause injury. Do not touch parts being dried.**

- Before force drying, let it air dry for 5-10 minutes.
- Force dry the sprayed surface under the infrared lamps for 60-90 minutes.
- Keep the drying temperature between 140°F (60°C) and 158°F (70°C).

NOTE: Take care not to let the heat deform the part during the drying process.

16. Polishing and Buffing

- Let the paint dry gradually, then polish the surface carefully using a polishing compound and sponge buff.
- To remove lint or dirt, wet sand the surface with #2000 or finer paper first, then polish with compound.

NOTE: Polish all roughness caused by sanding thoroughly. To do this, first polish with very fine compound, then with ultra fine compound.

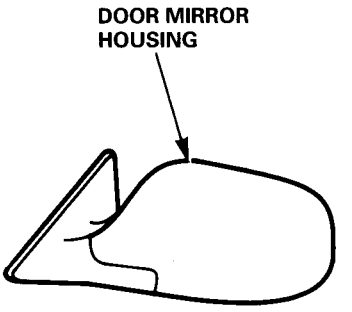
- After polishing, remove the masking paper and tape and wash the entire vehicle thoroughly.

ABS/PC Resin Parts

General

The door mirror housing, license plate trim, and front grille are made ABS resin.
They can be repaired if the damage or deformation is minor in nature. This section covers ABS repair. Repairing ABS is different from other resins such as PP and urethane.

NOTE:
- The ABS resin is the copolymer resin consisting of the three monomers of acrylonitrile, butadiene, and styrene.
- Polycarbonate is a generic name for high polymers which have the carbonic ester structure in the structural unit. The most prominent feature of polycarbonate is its tensile strength which shows the same level of yielding point as metals in the normal temperature. It also has outstanding impact strength compared to other plastics.



NOTE: The following repair procedures also apply to the door outer handle (PC).

Repair Materials

Examples:

Adhesive and filler: Epoxy

- Kemit TE2301 bond quick mender

Filler:

- R-M Stop zinc (R-M)
- 3M 5900 Repair Material (Akzo)

NOTE: Follow the manufacturer's specification.

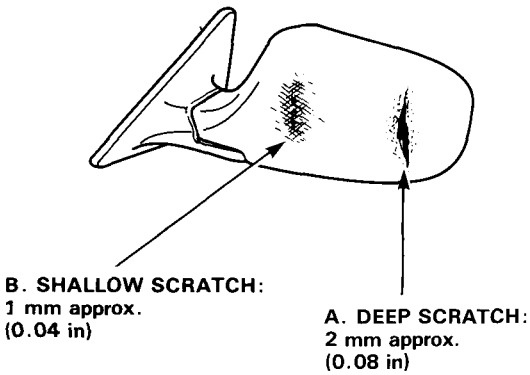
Top coat:

- Super ponacle II,Solo de Diamont, Diamont (R-M)
- Autocryl Auto base (Akzo)
- Super Centari (DuPont)

Primer/Primer surfacer:
Use when the resin material is exposed.

- R-M fast filler + R-M flex primer (R-M)
- Plasto flex primer 2 coat (Akzo)
- 1220RH-S filler primer (DuPont)

Repair Procedures



A. Deep scratches, when filling:

(1) Sand the damage section. (#120~#240)
(2) Apply the filler and dry.
(3) Sand the filler (#240~#400)
(4) Coat with the primer/primer surfacer and dry.
(5) Sand the primer surfacer. (#600~#800)
(6) Top coating.

B. Shallow scratches:

(1) Coat with the primer/primer surfacer.
(2) Sand the primer surfacer. (#600~#800)
(3) Top coating.

C. Repaint:

(1) Sand the primer surfacer. (#600~#800)
(2) Top coating.

Refinishing Procedures

1. Base material reconditioning (sanding)

-1. Repaint and replacement part
Lightly sand the part with #400, #600 or #800.

-2. Slight scores or scratches
Use a flexible sanding block and wet sand the damaged section with #400, #600.
NOTE: Sand level to remove damage.

-3. Deep scratches, when filling.
Use a flexible sanding block and wet sand the damaged section with #240, #400.

2. Degreasing and cleaning

Clean the repaired area with wax and grease remover, then blow with air dry.

⚠WARNING

- **Do not use high air pressure; use only an approved, 210 kPa (2.1 kgf/cm^2, 30 psi) air nozzle.**
- **Wear goggles or safety glasses to prevent eye injury.**

NOTE: Wipe dust off surface with a tack cloth.

3. Filling, drying and sanding

Apply the filler in several thin coats.
NOTE: Mix and apply the filler according to the manufacturer's instructions.

-1.Dry the filler with an infrared dryer for 5 or 6 minutes.
Be sure to keep the dryer 40-50 cm (16-20 in) away from the surface.

-2. Scratch the filled surface with your nail. If the surface is white when scratched, dry sand and wet sand with the #240-#400 paper. Be sure to sand level.

4. Cleaning with compressed air, and degreasing

Blow the entire area to be coated with compressed air, then clean with wax and grease remover.

⚠WARNING

- **Do not use high air pressure; use only an approved, 210 kPa (2.1 kgf/cm^2, 30 psi) air nozzle.**
- **Wear goggles or safety glasses to prevent eye injury.**

NOTE: Clean the whole surface to the help the masking tape adhere securely.

(cont'd)

ABS/PC Resin Parts

Refinishing Procedures (cont'd)

5. Masking

Use the masking tape and paper to mask the area that should not be sprayed.

6. Coat with primer/primer surfacer, drying and sanding.

- Spray the primer surfacer over the filled area.

⚠WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**
- **Do not use high air pressure; use only an approved, 210 kPa (2.1kgf/cm^2, 30 psi) air nozzle.**
- **Wear goggles or safety glasses to prevent eye injury.**

- The coating thickness should be 20-25 microns.

NOTE: Follow the primer/primer surfacer manufacturer's instructions.

-1. Drying

- Let the primer surfacer dry naturally for 5 to 10 minutes, then dry with a infrared dryer.

⚠WARNING **Body parts being dried with an industrial dryer can get hot enough to cause injury. Do not touch parts being dried.**

- Be sure to keep the dryer 40-50 cm (16-20 in) away from the paint film.

-2. Sanding

Lightly dry sand the whole area to be painted with #600, #800 sandpaper.

7. Blow off with compressed air, then clean with wax and grease remover.

⚠WARNING

- **Do not use high air pressure; use only an approved, 210 kPa (2.1kgf/cm^2, 30 psi) air nozzle.**
- **Wear goggles or safety glasses to prevent eye injury.**

NOTE: Clean the whole surface to help the masking tape adhere securely.

8. Top coating

- Remove dust with a tack cloth before spraying.
- Spray the top coating. Spray until the primer surfacer is covered.
- The coating thickness should be 30-35 microns.

⚠WARNING

- **Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.**
- **Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.**
- **Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.**
- **Do not use high air pressure; use only an approved, 210 kPa (2.1kgf/cm^2, 30 psi) air nozzle.**
- **Wear goggles or safety glasses to prevent eye injury.**

NOTE: For the recommended top coat paint, refer to "Example of repair materials".
Solid color: Color enamel + color clear coat
Metallic: Metallic enamel + clear coat
Pearl: Pearl enamel + clear coat

9. Drying

After top coating for about 10 minutes, then dry with an infrared dryer.
NOTE: Follow the paint manufacturer's specification to dry properly.

Glossary

All paint	Painting of complete surface.
Air blow	Using compressed air to blow away dust and debris.
Block paint	Painting a section only, such as a door.
Clear paint (clear coat)	Clear paint without dye (pigment).
Double coat	Application of two paint coats.
Dry coat	Paint which left the spray gun and dried partially before it reached the surface, thereby making the painted surface rough. Dry coating is caused by too little paint being fed, too high an air pressure, too much distance between the painted surface and the gun, or moving the gun too fast.
Dry film	Paint which has dried completely.
Dust coat	Paint is applied thinner than a dry coat. Painted surface becomes rough.
ED painting	Electrostatic discharge painting.
Enamel	Finishing paint pigmented with dye.
Featheredging	Smoothing off the edges of painted surfaces.
Flash off	Evaporation of the paint solvent. (Flash off time is the period between paint coat applications.)
Ford cup	A type of viscosity meter .
Gun stroke	Movement of the paint gun.
Hardener	Hardening agent of two-liquid type paint or fillers. Polycyanates and oxides are used for hardeners.
Heat-hardening acrylic resin paint	Composed of acrylic resin and meramine resin, and hardened (forms a paint film) by baking.

(cont'd)

Glossary
(cont'd)

Lacquer	A type of paint that uses cellulose nitrate or other chemicals, and which dries by evaporation of its solvent agent.
Meramine resin	Used as component for aminoalkyd resin paint and heat-hardening acrylic resin paint.
Metallic-base paint	Paint with aluminum powder for metallic tone.
Mist coat	Painting for fade-in sections. A small amount of paint may be dissolved with slow-evaporating thinner, or thinner alone may be applied with low pressure. 150-200kPa (1.5-2.0kgf/cm^2,21.3-28.4psi)
Mixing scale	Color mixing device.
Overlap	Blending of spray patterns.
Overspray	Spraying other than the area that needs painting.
Paddle	A tool to mix paint.
Paint dust	Dust of paint formed by spraying.
Paper dispenser	A paper posting device (masker) that combines tape and paper.
Scrapes	Traces of scratches.
Scuffing	Particles on the painted surface are lightly polished with fine emery paper (#600 or over).
Set (setting)	Evaporation time of solvent in the paint, before drying the layer forcefully or by baking. (May be considered the same as flash-off time.)
Single coat	Application of paint in single layer.
Spot paint	Painting of small section, such as for touch-up.
Undercoat	Undercoat paint (such as primer and surfacer). May be applied to lower section of car for noise prevention and rustproofing.

Wet coat	Paint is applied with an excess of solvent, thereby producing a painted surface that's smooth, glossy, and has a wet look.
Wet film	Paint which has not dried completely.
Wet on wet	Application of the next coat of paint before the preceding layer has dried completely.
Wool bonnet	Wool grinder for compound polishing.

General Safety Precautions

Before beginning work:

Disconnect the battery to reduce the possibility of fire caused by electrical shorts.

Check for fuel leaks and repair as necessary.

Remove the fuel tank and/or fuel lines if welding equipment is to be used near the fuel system.

Before welding, sanding or cutting, protect carpets and seats with fire-proof covers.

Follow standard safety practices when using toxic or flammable liquids.

Use standard safety equipment when spraying paint, welding, cutting, sanding or grinding. Standard safety equipment includes:

Respirator and filter masks—Designed to filter out toxic fumes, mist, dust or other airborn particles. Use a respirator or filter mask designed to protect you from the hazards of the particular job; some respirators, for example, are designed to filter out only dust and airborn particles, not toxic fumes.

Safety goggles or glasses—Designed to protect your eyes from projectiles, dust particles or splashing liquid.

Gloves—Rubber gloves protect against corrosive chemicals. Welding gloves protect against burns and abrasions caused by welding, sanding or grinding.

Safety shoes—Non-slip soles protect against slipping. Metal toe inserts protect against falling objects.

Ear plugs—Protect eardrums from harmful noise levels.

During work:

Do not smoke while working near the fuel system.

Deposit gas or solvent-soaked shop towels in an approved container.

Always attach a safety cable when using a hydraulic ram or a frame straightening table: do not stand in direct line with the chains used on such equipment.

Service Precautions

Supplemental Restraint System (SRS)

The Acura 2.5TL/3.2TL SRS includes a driver's airbag, located in the steering wheel hub, and a front passenger's airbag located in the dashboard above the glove box. The SRS unit is not part of the airbag assembly and has built-in sensors (SRS-Type III).

NOTE: The following precautions should be observed when performing sheet metal work, paint work and repair work around the locations of the SRS components.

① SRS unit (including safing sensor and impact sensor) is located under the dashboard. Avoid strong impact with a hammer or other tools when repairing the front side frame and the lower part of the dashboard. Do not apply heat to these areas with a torch, etc.
② All SRS electrical wiring harnesses are located under the lower part of the dashboard below the dashboard panel. (All SRS electrical wiring harnesses are covered with yellow insulation.) Care should be taken not to damage the harness when repairing this area.
③ Do not apply heat of more than 100°C (212°F) when drying painted surfaces anywhere around the locations of SRS components.
④ If strong impact or high temperature needs to be applied to the areas around the locations of SRS components, remove the components before performing repair work.
⑤ If any of the SRS related components are damaged or deformed, be sure to replace them.

NOTE: Refer to the Service Manual (Supplemental Restraint System) for removal and replacement of SRS related components.