

SECTION 5

ROOF, BACK PANEL AND REAR FLOOR
PANEL

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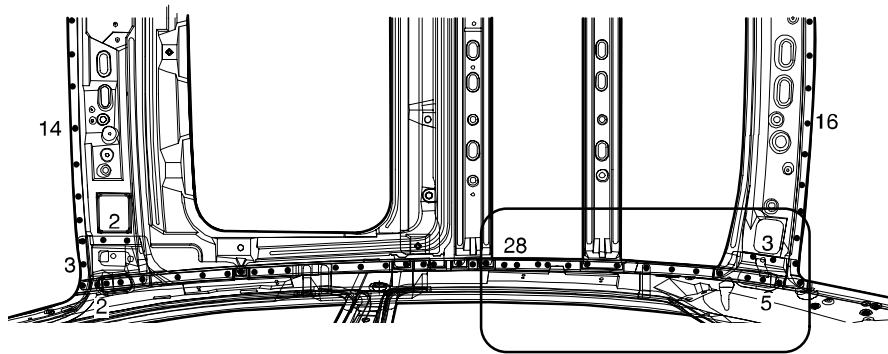
5-11

1. ROOF

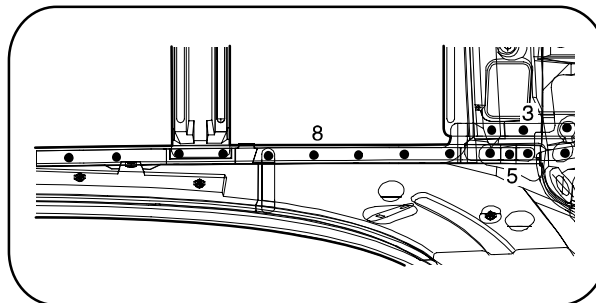
1-1. GENERAL DESCRIPTION

Deformation of the roof panel is highly noticeable in terms of the vehicle's outer appearance. Before replacing the roof, make sure that the body is horizontal. Be-

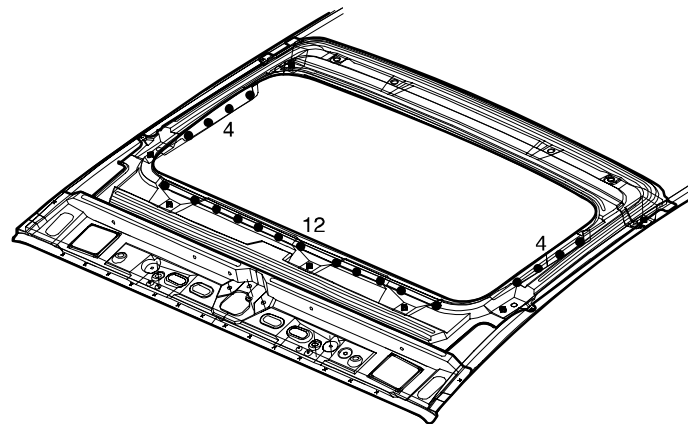
fore welding the roof panel, adjust the frame door opening flanges so that they contact the roof panel. Pay particular attention to twists and parallelism.



(NOTCHBACK)



(HATCHBACK)



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Fig. 1

1-2. REPAIR PROCEDURE

1. Remove the related parts.

- Room lamp, door weatherstrip and pillar trims.
- Headlining and wiring harness.
- Wiper, cowl and windshield.
- Rear glass and others.

2. Pull out and straighten the damaged area to approximately the original shape.

Note : Use heat-resistant protective cover for protect painting areas, seats, carpets and other parts.

- Attach the car to the frame straightener by tightening the underbody clamps at the horizontal pinch welds.
- Before cutting off the roof panel, pull them out so that they are restored to the original shape.
- Do not pull out more than necessary.
- Pull out and straighten the related damaged parts to approximately their original shape.

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

3. Keep the body, level.

- Jack up the body, and place safety stands at the four designated places of the frame door opening.

4. Cut off the shaded areas of the roof panel.

- Cut the roof weld flanges with a hand saw and snips at the roof panel and roof frames.

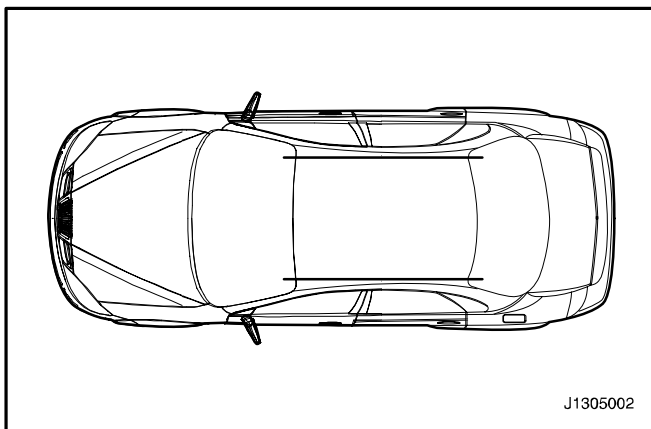


Fig. 2

- Using a chisel, pry off the roof panel along the bold lines as shown.
- Center punch around the spot weld imprints of the roof welded flange.
- Drill holes using the spot cutter.
- Using a chisel and a disc sander, pry off the welded flange from the front, rear body pillar and roof panel.
- Level and finish the burrs of welded flanges with a disc sander.

CAUTION : To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting, or grinding.

5. Peel off the sealer.

- Peel off the sealer with a steel spatula at the welding areas of the frame door opening.

6. Mold damaged related parts.

- Use a hammer and dolly to mold damaged areas of the front, rear body pillar inner and frame door opening.
- Even out the welding flanges with a hammer and dolly for close fit with the roof panel welding flange.
- Fill any holes drilled by welding.

7. Set the new panels.

- Grind both sides of the welding section of the rail windshield header, support roof panel, frame rear roof panel and roof panel with a disc sander to remove the paint and expose the steel plate.

CAUTION : To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting, or grinding.

- Temporarily set the new three frames and roof panel and clamp with the vise grips.

Note : Check that the flange surface fit closely. Be careful not to twist or deform the roof panel.

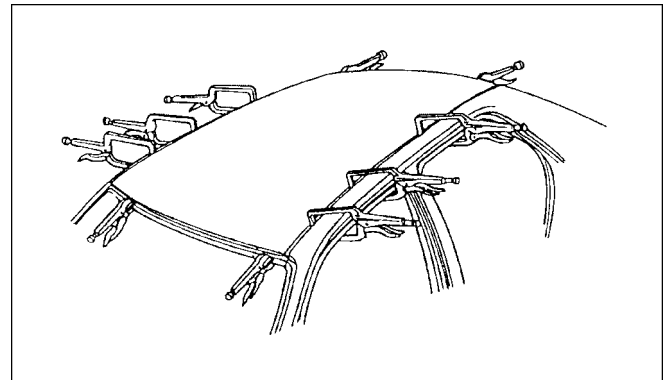


Fig. 3

- Measure the dimensions diagonally at the windshield area and rear glass area with a tracking gauge or convex rule as shown to check it for twisting or bending.

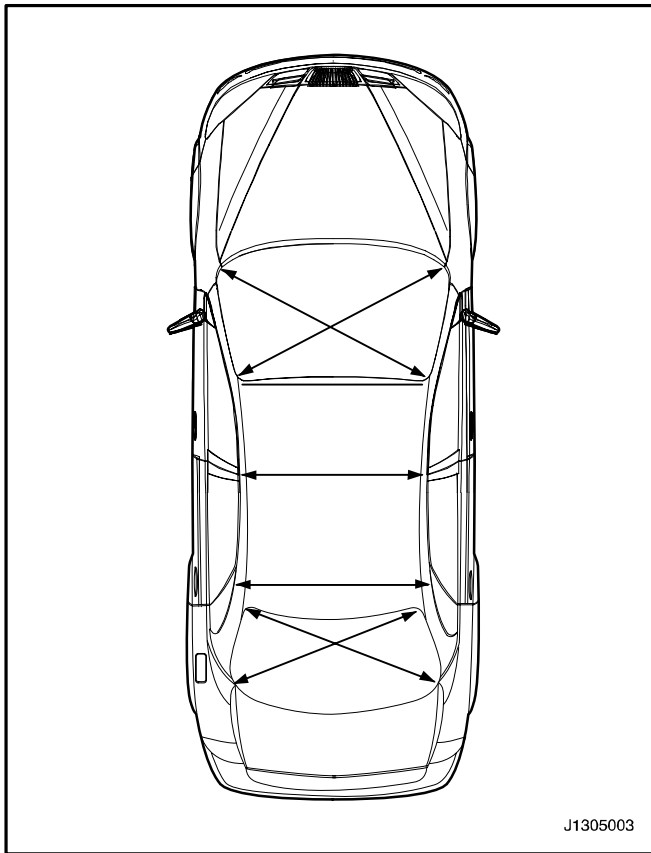


Fig. 4

- Dismantle the new roof panel.
- Weld the clamped sections of the roof frames and front, rear body pillar inner for temporary installation.

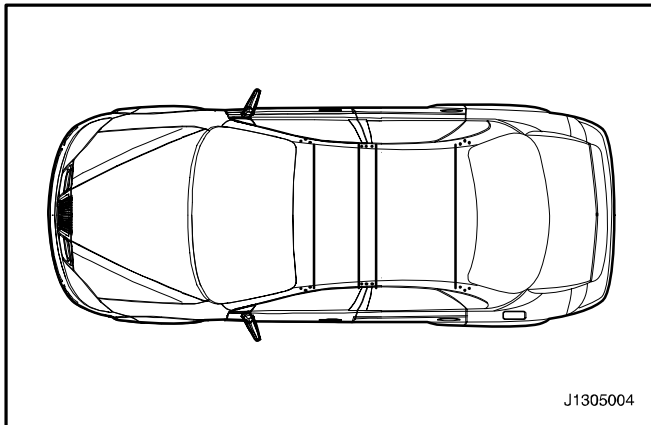


Fig. 5

- Set the new roof panel and clamp again.
 - Temporarily set the windshield and rear glass, and check the roof panel for proper installation.
 - Install the roof molding and check the clearance and outer appearance.
8. Apply the sealer to the roof frames.
- Dismantle the new roof panel again.
 - Apply the sealer to one groove of the rail windshield

header, two grooves of the support roof panel and one groove of the frame rear roof panel.

- Set and tack weld the roof panel.

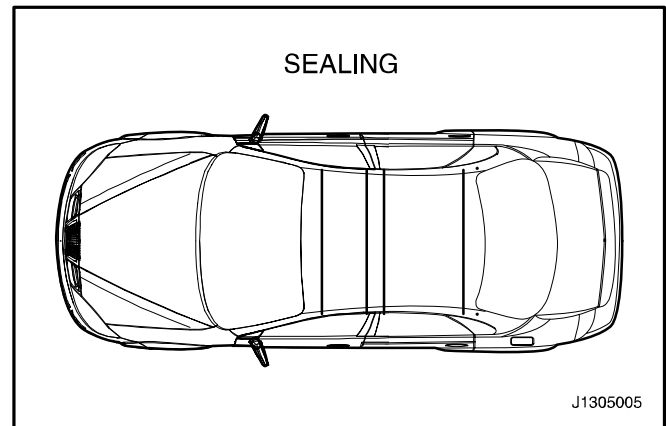


Fig. 6

9. Perform the main welding and finish.

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

- Perform a trial welding first, and check the welding condition.
- Increase the number of spot by 20% for areas to be spot welded.
- Use a hammer and dolly to smooth the spot weld areas on the windshield and rear glass.
- Cut off the irregular and useless flanges and even out the flanges for a close fit with the surface of the roof panel.

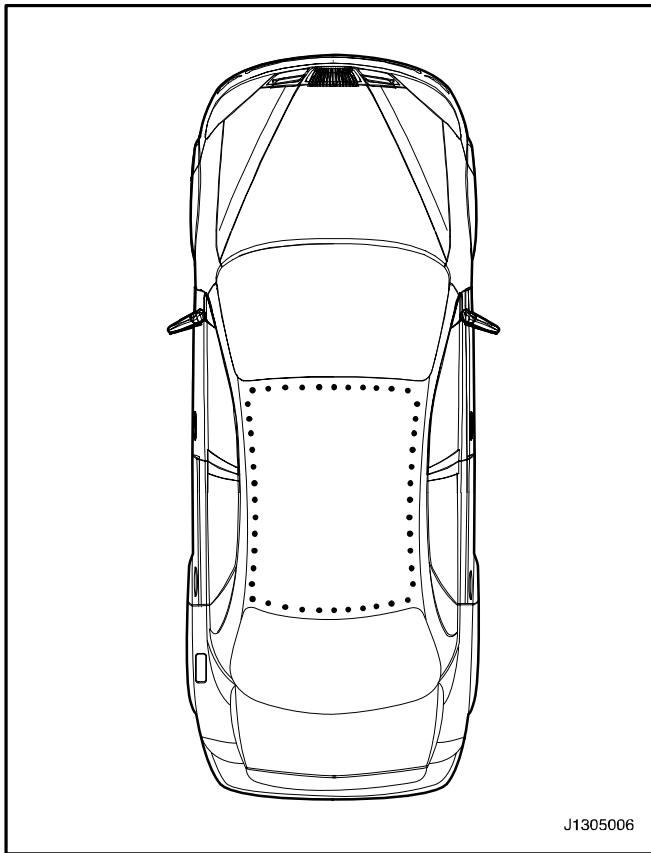


Fig. 7

10. Apply the sealer.

- Apply the sealer to the welded areas.

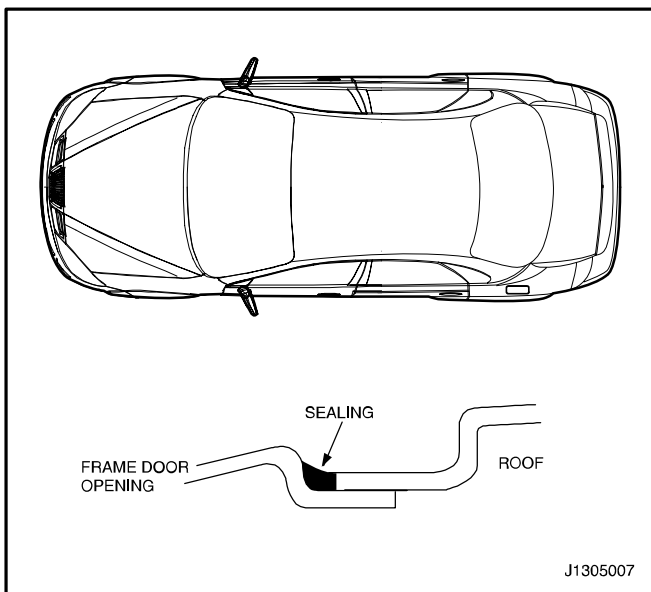


Fig. 8

11. Apply the paint.

CAUTION

- 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.

12. Apply the deadner.

- Apply the deadner to the front inside of roof panel as shown.

13. Install the related parts.

- Windshield and rear glass.
- Cowl, wiper and related parts.
- Wiring harness and headlining.
- Pillar trims, door weatherstrip and others.
- Install in the reverse order in which they were removed.

14. Check and adjust.

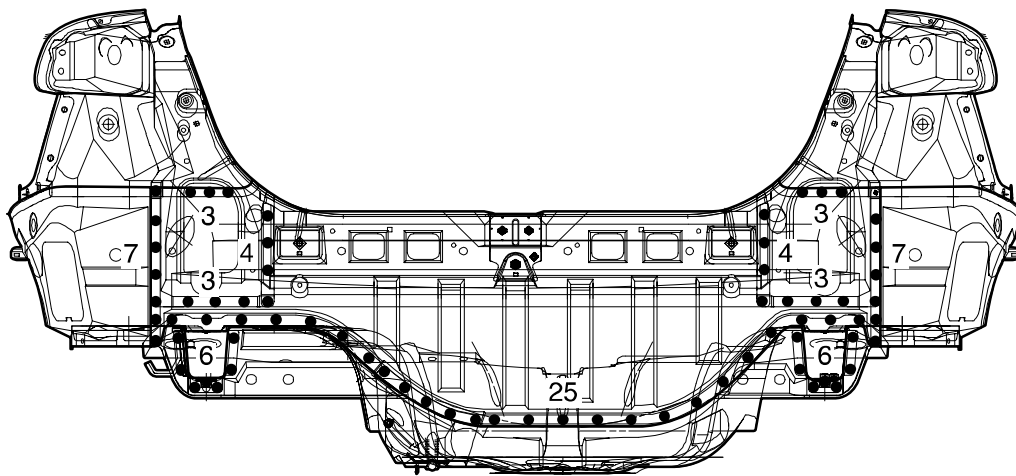
- Clean the passenger compartment.
- Check the windshield and rear glass for water leaks.
- Wiring harness and headlining.

2. BACK PANEL

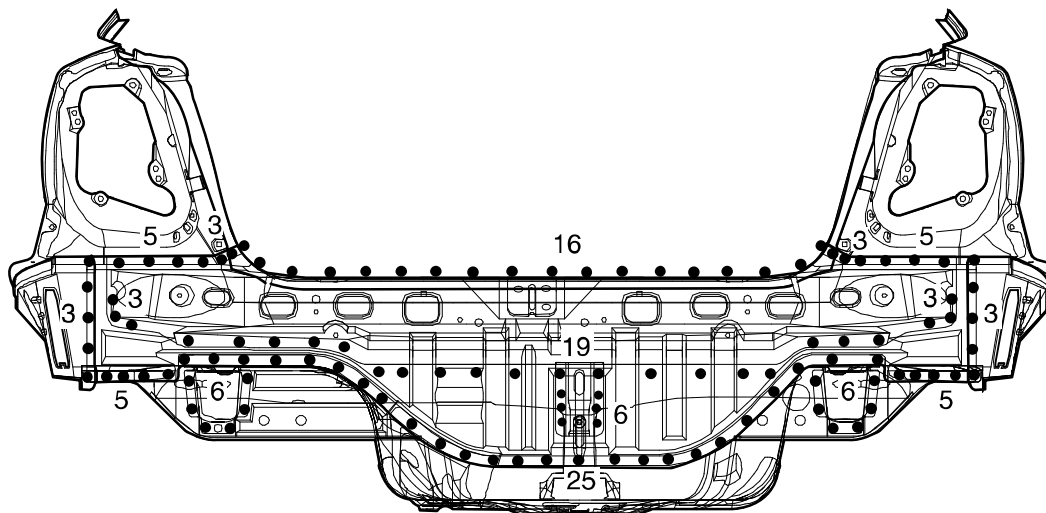
2-1. GENERAL DESCRIPTION

The back panel is joined to the side panel outer, rear extension longitudinal and extension rear floor. It forms the base for the rear combination lamps and other parts

and maintains the rigidity of the rear body. Pay particular attention to twists and parallelism and check mounting of related parts when welding.



(HATCHBACK)



(NOTCHBACK)

J3405008

Fig. 9 Back Panel Welding Assembly

2-2. REPAIR PROCEDURE

1. Remove the related parts.

- Rear and trunk trims
- Trunk lid lock and related parts.
- Rear combination lamps and wiring harness.
- Rear bumper and related parts.
- Other related parts.

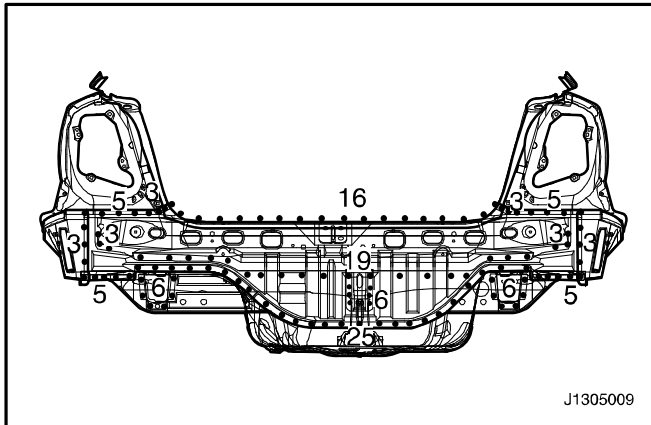


Fig. 10

2. Roughly pull out and straighten the damaged area.

- Check the damage and roughly pull out and repair the related side panel inner, rear floor, rear longitudinal and other damaged parts with the frame straightener before removing the back panel.
- Attach the car to the frame straightener by tightening the underbody clamps located at the jack up designated points on the bottom of the frame door opening.

3. Cut and pry off the rear panel.

- Center punch around the spot weld imprints with the rear side outer and extension rear floor panel.
- Use the special spot cutter to drill holes at the spot weld nuggets on the rear side outer and extension rear floor panel.

Note : When drilling holes be careful not to drill down to the side outer and extension rear floor panel themselves.

- Cut off the rear panel with an air chisel, leaving the welding flanges intact.
- Level and finish the burrs from the fried off spot welds with disc sander and repair all cracks, holes or other defects by welding also repair the floor panel if necessary.

CAUTION : To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting, or grinding.

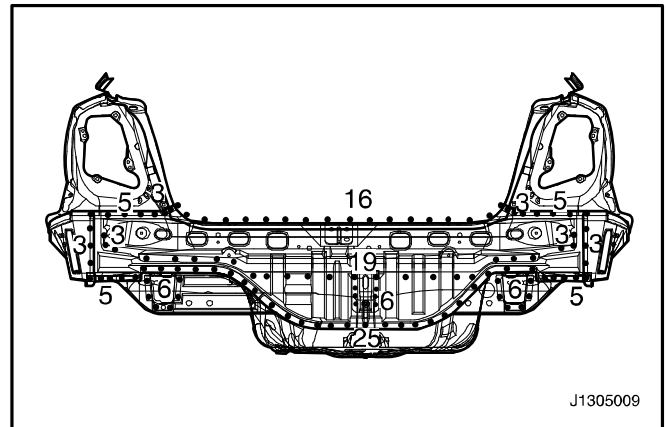


Fig. 11

NOTE:

- If damage has occurred only on one side, cut the damaged section of the rear panel, trim the new panel to fit the remaining section, then butt weld both parts at the inner ends.
- Where damage has not extended into the rear side outer panel, cut the rear panel from the body on either panel.

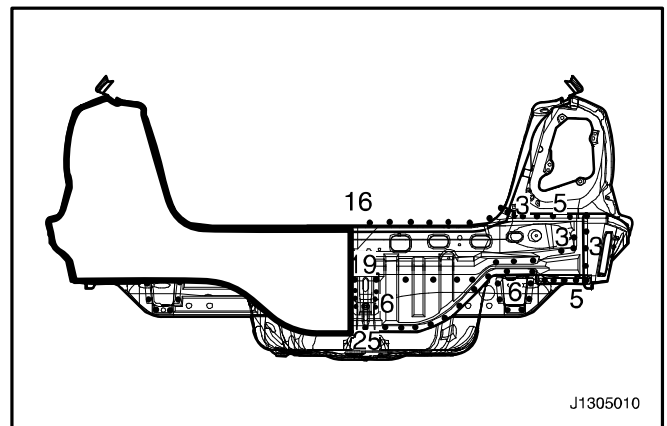


Fig. 12

4. Peel off the undercoat and sealer.

- Heat the undercoat and sealer at the welding areas of the rear side outer panel and extension rear floor with a gas torch and peel off the undercoat and sealer with a steel spatula.

5. Mold damaged related parts.

- Use a hammer and dolly to mold damaged areas of the rear side outer and extension rear floor panel.
- Even out the welding flanges with a hammer and dolly.
- Fill any holes drilled by welding.

6. Set the new rear panel.

- Grind both sides of the welding section of the rear panel with a sander to remove the paint and expose the steel plate.

CAUTION : 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.
- Weld the clamped sections for temporary installation.

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

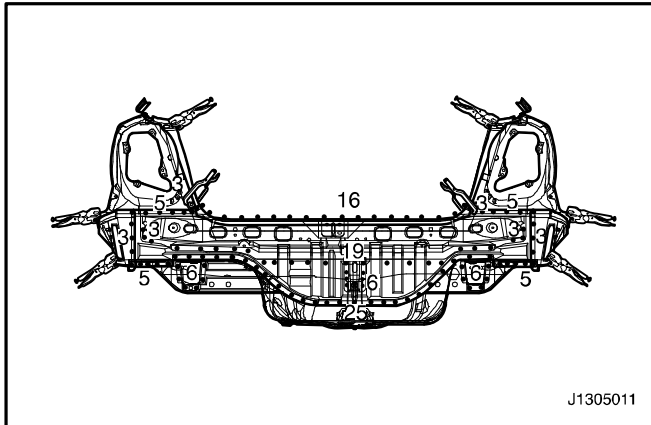


Fig. 13

7. Measure and check.

- Measure the trunk compartment diagonally to check it for twisting or bending and its correct position with the rear bumper installed.
- Temporarily assemble the rear combination lamps and trunk, then check the clearances and level differences.

8. Perform the main welding.

- Make MIG or gas welds at the butt joints.
- Spot weld the back panel as shown.

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

- Perform a trial welding first, and check the welding condition.
- Increase the number of spot by 20% for areas to be spot welded.

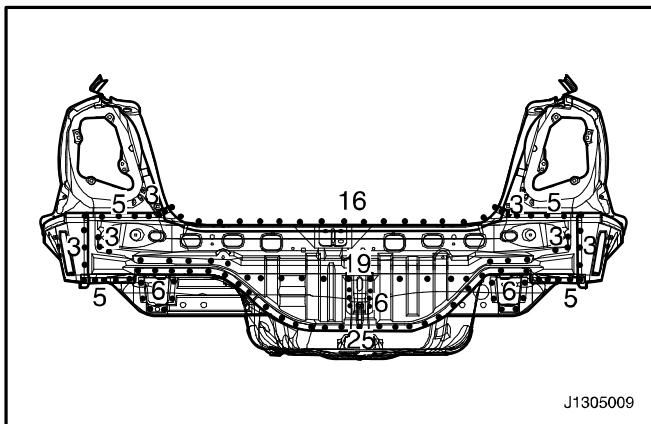


Fig. 14

9. Finish the welding areas.

- Level the gas or MIG welded areas with disc sander, then even out high areas with a hammer being careful not to deform them.
- Use a hammer and dolly to even out the rear side outer and extension rear floor panel flanges for a close fit with the surface of the rear panel.

10. Apply the sealer.

- Apply the sealer to the rear side outer joint and around the rear lamps areas of the rear panel.
- Apply the sealer to the extension rear floor panel and rear panel joint.

11. Apply the undercoat.

- Undercoat to the joint and overlapped areas of the rear floor under side.

12. Apply the paint.

CAUTION

- 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.
13. Install the related parts.

- Clean the trunk compartment.
 - Install in the reverse order in which they were removed.
14. Check and adjust.

- Check clearances and level differences.
- Check the trunk locking and unlocking condition.
- Check all operation.
- Check for water leaks in the trunk compartment.

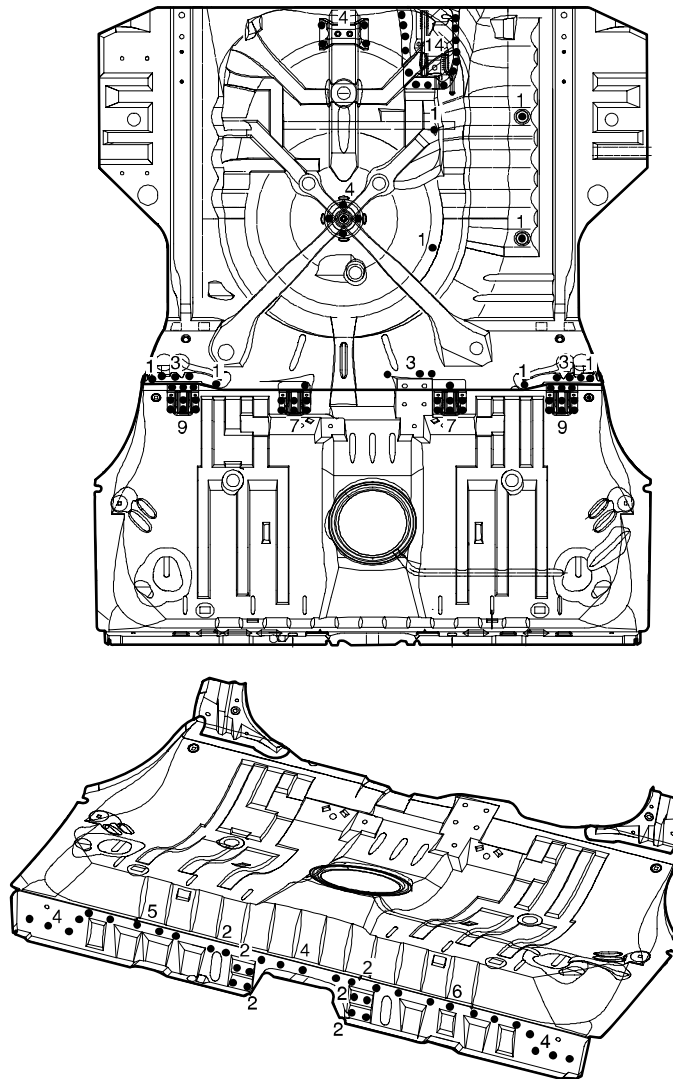
Note : Use specified check sheet for operation check properly.

3. REAR FLOOR PANEL

3-1. GENERAL DESCRIPTION

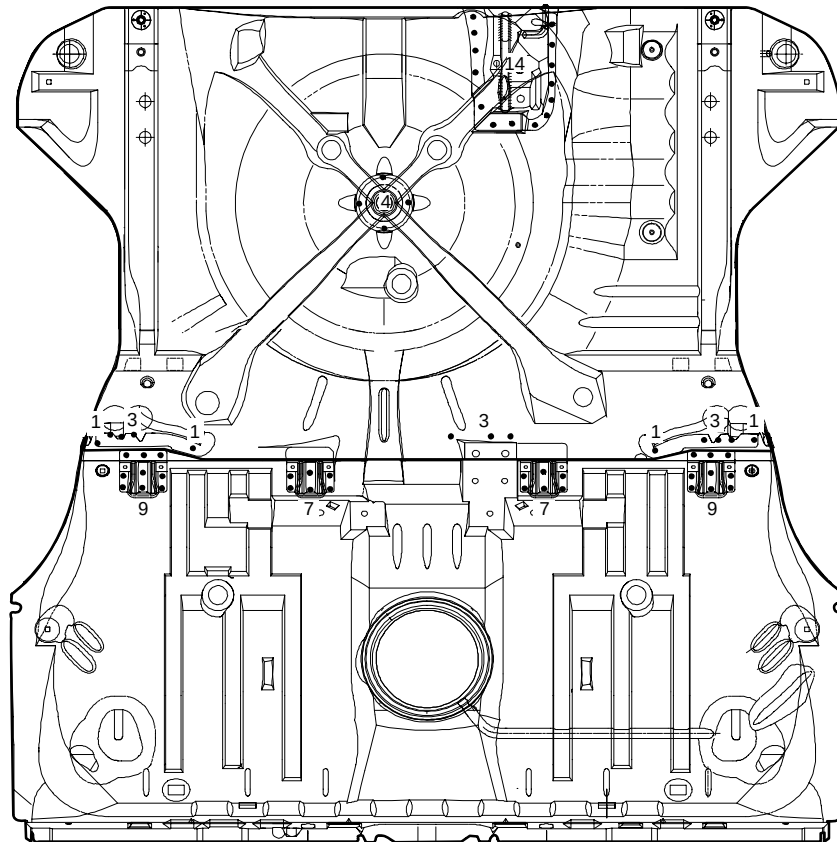
The rear floor panel is the base of the rear body and it is critical for the rigidity of the rear body. During replacement, refer to the body dimension chart or body repair chart and determine the position to set the rear floor properly.

Be sure that the rear floor is not bent or deformed. Weld securely to maintain the rigidity of the rear body.



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Fig. 15 Rear Floor Welding Assembly (NOTCHBACK)



J3405012

Fig. 16 Rear Floor Welding Assembly (HATCHBACK)

3-2. REPAIR PROCEDURE

1. Remove the related parts.

- Parts to be removed when removing the back panel.
- Rear seat belt and rear seat.
- Muffler, fuel tank and related parts.
- Chassis parts.
- Other related parts.

CAUTION : Do not smoke while working near the fuel system. Keep open flame away from the fuel system. If necessary, remove the fuel tank and off lines.

2. Roughly pull out and straighten the damaged area.

- Check the damage and roughly pull out and re pair the related back panel, side panel, wheel house inner, rear longitudinal and other damaged parts with the frame straightener before removing the extension rear floor panel, rear floor pane and back panel.
- Attach the car to the frame straightener by tightening the underbody clamps located at the jack up designated points on the bottom of the frame door opening.

Note : Measure in reference to the dimensions on the body repair chart.

3. Cut and pry off the back panel.

- The back panel to be cut and pried off when removing the back panel.
- Cut and pry off the rear floor and extension rear floor panel.
- Cut off the rear floor and extension rear floor with a gas torch or air chisel leaving the spot welded flanges of the rear longitudinal along the bold line in the figure below.

Note : Cut the rear floor 15mm(0.59in.) from welded flange of the cross member rear seat.

- Center punch around the spot weld imprints with the rear longitudinal, extension rear longitudinal and web plate.
- Use the special spot cutter to drill holes at the spot weld nuggets on the center punched areas.

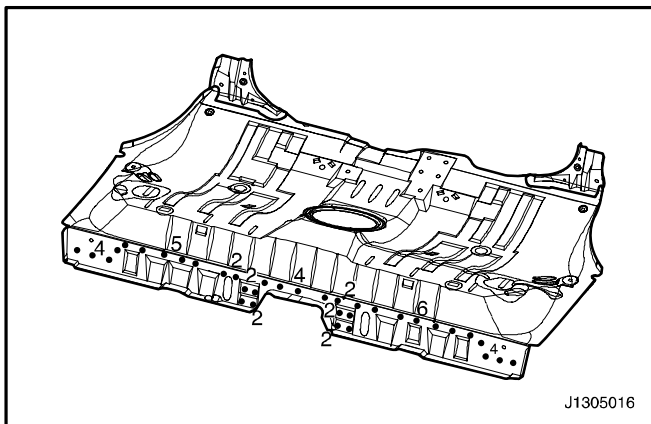


Fig. 17

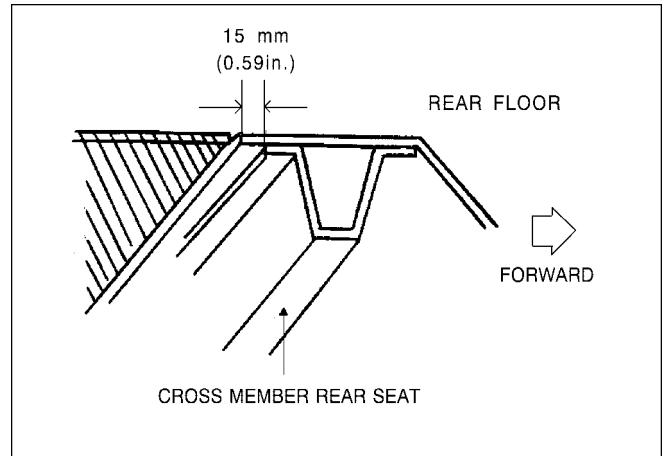


Fig. 18

Note : When drilling holes be careful not to drill down to the rear longitudinal, extension rear longitudinal and web plate themselves.

- Cut and pry off the remaining rear floor and extension rear floor panel with an air chisel, leaving the welding flanges intact.
- Level and finish the burrs from the pried off spot welds with disc sander and repair all cracks, holes or other defects by welding also repair the rear longitudinal and extension rear longitudinal if necessary.

CAUTION : To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting, or grinding.

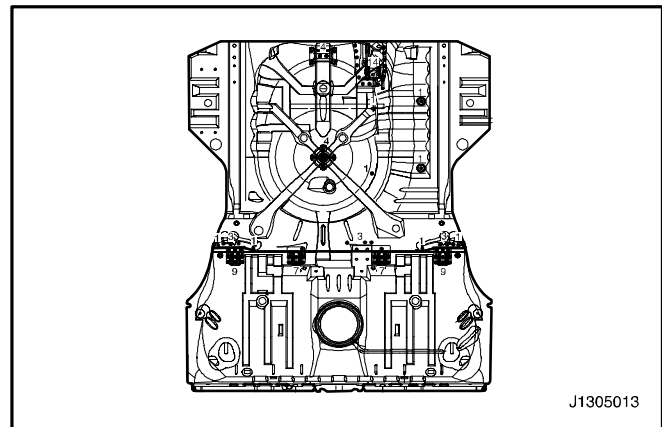


Fig. 19

5. Peel off the undercoat and sealer.

- Heat the undercoat and sealer at the welding areas with a gas torch and peel off the undercoat and sealer with a steel spatula.

6. Mold damaged related parts.

- Use a hammer and dolly to mold damaged areas of the rear longitudinal and extension rear longitudinal.
- Even out the welding flanges with a hammer and dolly.
- Fill any holes drilled by welding.

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

- Level and finish the burrs from the pried off spot welds with disc sander.
 - Sand off the paint and undercoat from both sides of the flange to be welded.
7. Cut the new rear floor to align it with the body, then set the new rear floor and extension rear floor.
- Cut the new part so it overlaps the cross member rear seat by approximately 40mm(1.57in.).

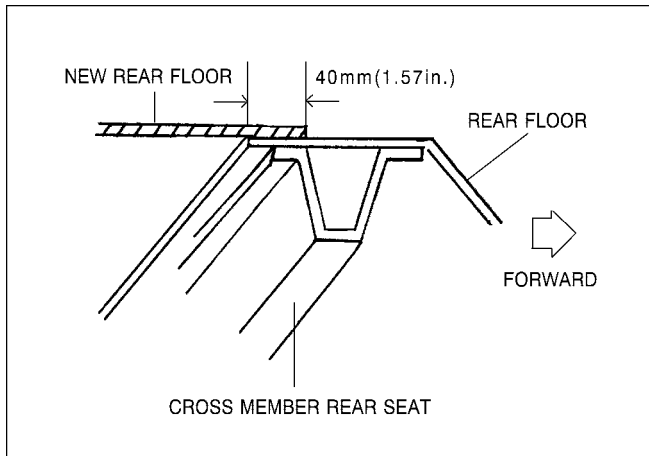


Fig. 20

- Grind both sides of the welding section of the rear floor and extension rear floor with a disk sander to remove the paint and expose the steel plate.

CAUTION : To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting, or grinding.

- Set and clamp the new panel in place with the vise grips.

Note : Use of jigs is recommended for correct positions and check that the both rear longitudinal is parallel.

- Tack weld the clamped section for temporary installation.

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

- Remove the vise grips and temporarily install the rear panel, then check the alignment, level differences and outer appearance.

8. Remove the main welding.

- Weld the rear floor and cross member rear seat with a MIG welder fillet weldings as shown.

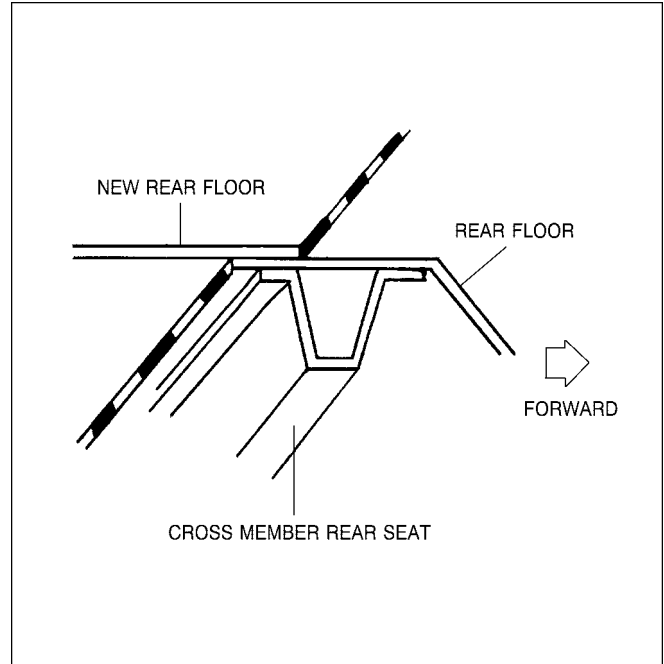


Fig. 21

- Spot weld the rear floor and extension rear floor with rear longitudinal flange areas and web plate flanges as shown.

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

- Perform a trial welding first, and check the welding condition.

- Increase the number of spot by 20% for areas to be spot welded.

9. Weld the back panel

- The back panel to be welded when replacement the back panel.

10. Finish the welding area.

- Level the MIG welded areas with a disc sander, then even out high areas with a hammer being careful not to deform them.

CAUTION : To prevent eye injury, wear goggles or safety glasses whenever standing, cutting, or grinding.

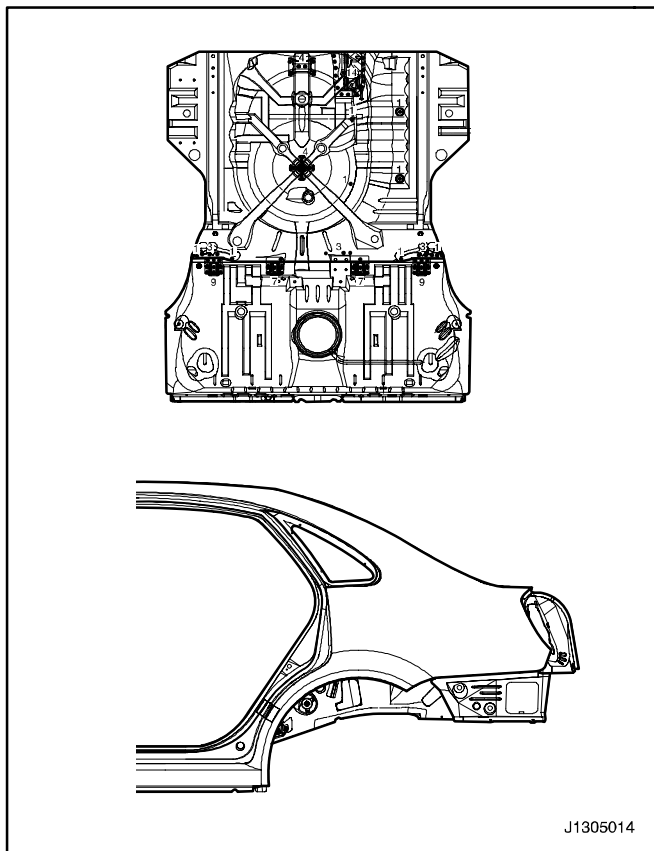


Fig. 22

- Use a hammer and dolly to even out the spot welded areas for a close fill the flange surface together.
11. Apply the sealer.
 - Apply the sealer at the overlapped areas of the rear floor and extension rear floor, and welded surfaces of the matching panel and all sealing gaps completely.
 12. Apply the undercoat.
 - Undercoat to the rear wheelhouse and designated rear floor.
 13. Apply the paint

CAUTION

- 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.
14. Apply the deadner.
 - Clean the passenger and trunk compartment.
 - Apply the deadner to the surface of rear floor and extension rear floor.

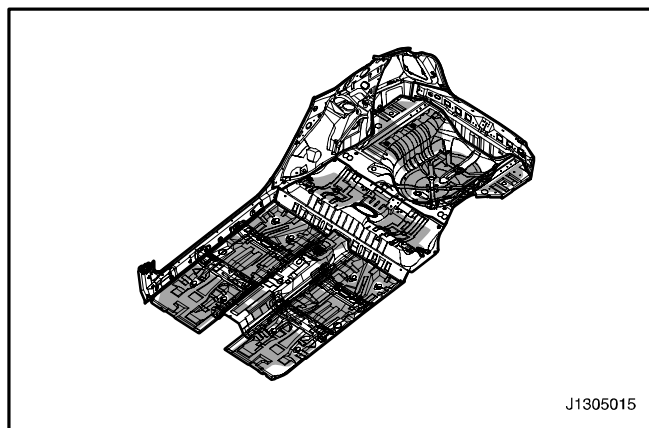


Fig. 23

15. Install the related parts.

- Install in the reverse order in which they were removed.
16. Check and adjust
 - Check clearances and level differences.
 - Check the trunk locking and unlocking condition.
 - Check all operation.
 - Check for water leaks in the trunk compartment.

Note : Use specified check sheet for operation check properly.