

Body Repair Recommendations

I-CAR NZ plans to research and provide a Body Repair Technical awareness overview of a new release vehicle for each edition of PanelTalk, these will be for high volume models and brands, in this edition we look at the 2011 Holden Barina Spark.

Holden NZ has been very helpful with providing information for this article.

Technical information for Holden will also be supplied free of charge from your Holden Dealership when purchasing new parts.

Other Technical information can also be found from pay sites www.gmtechinfo.com and www.acdelcotds.com.

Another GM site for USA Vehicles is a free site www.goodwrenchjsp/gmspo.

MODEL AWARENESS

Always check you have the correct Model Specifications of the vehicle before carrying out any repairs.

ELECTRONIC AWARENESS

Warning: When performing service on or near the SIR components or the SIR wiring, the SIR system must be disabled. Refer to SIR Disabling and Enabling . Failure to observe the correct procedure could cause deployment of the SIR components, personal injury, or unnecessary SIR system repairs.

Note: The inflatable restraint sensing and diagnostic module (SDM) maintains a reserved energy supply. The reserved energy supply provides deployment power for the SIR air bags. Deployment power may be available for up to 60 seconds after disconnecting the vehicle power. Disabling the SIR system prevents deployment of the SIR air bags from the reserved energy supply.

Note: The following are general service instructions which must be followed in order to properly repair the vehicle and return it to its original integrity:

STEELS USED AND PRECAUTIONS

A combination of different steel is used during manufacture and Holden has different recommendations for repairing each type.

These include:

Dual Phase (DP), this mainly used for the roof side rails, A & B pillar reinforcements - Cold straightening only but not kinked metal

High Strength Low Alloy HSLA, used for the front inner guards and other reinforcements - Cold straightening recommended but not kinks, controlled heat allowed, 650c for up to 90 seconds but only twice

Mild Steel also known as Mild/Bakehardenable (BH) or Solid Solution Strengthened Steel, used for the roof panel and outer exterior panels. - Treated the same as HSLA

Ultra High Strength Dual Phase (UHSDP) used in the floor cross beams and sill reinforcements. - Not recommended for repair, Only fit at factory joints, Don't use inserts, Stitch

welding not recommended

The rear panels of the Spark use all Mild Steel with some DP used for reinforcement panels

WELDING

A combination of STRSW (Squeeze Type Resistance Spot Welding) MIG Steel and Bronze welding is included in the Collision Repair Specifications

PARTIAL REPLACEMENT PANELS

Holden Warning

Sectioning should be performed only in recommended areas. Failure to do so may compromise the structural integrity of the vehicle and cause personal injury if in a collision.

The Spark does allow sectioning to a number of exterior body panels and recommends using reinforcement inserts. Illustrations provide easy to understand sectioning locations.

Partial replacement options include:

- A Pillar outer - Fig.1
- B Pillar outer - Fig. 2
- Sill Panel - Fig. 3
- Rear Guard - Fig. 4
- Rear Rail - Fig. 5 & 6

All other body panels are full replacement at factory seams.

Unfortunately there is no partial replacement sectioning options for the front rails or for any reinforcement panels.

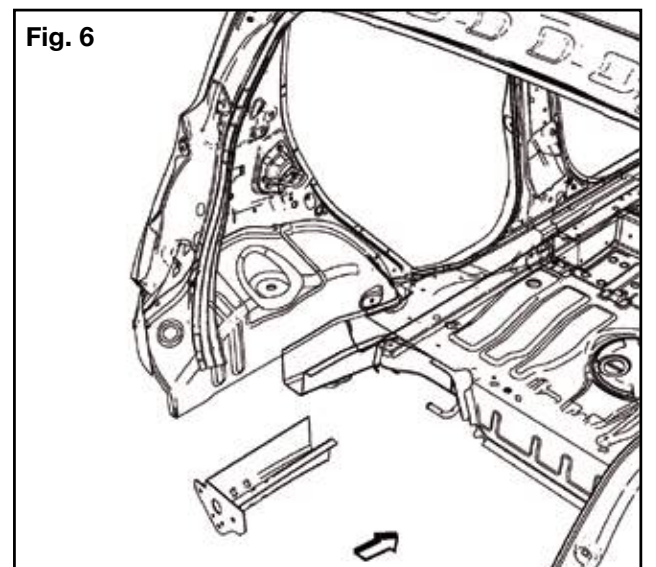
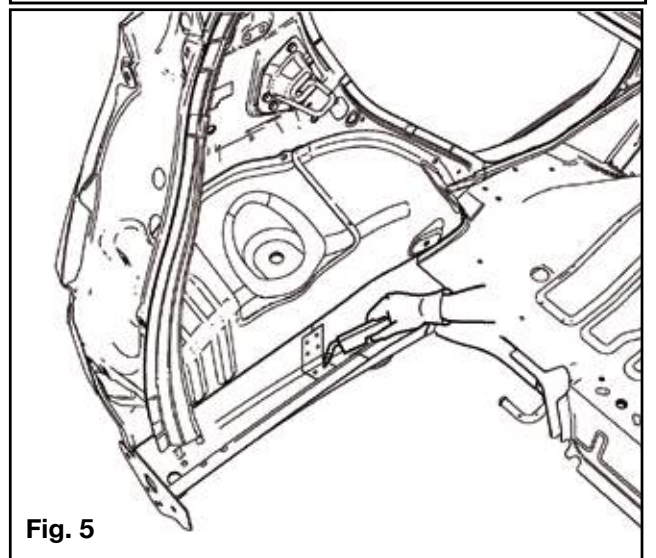
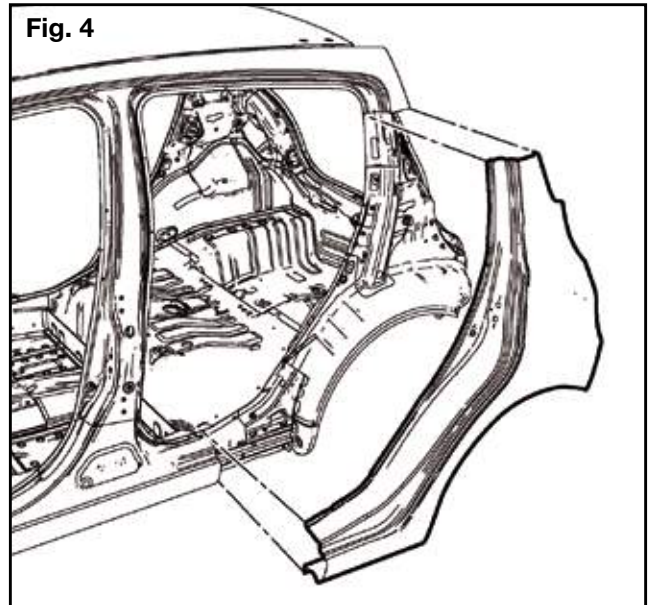
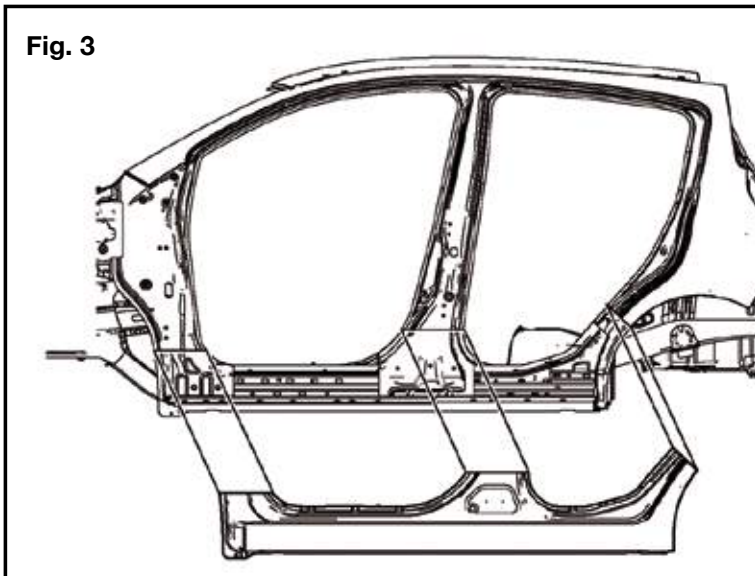
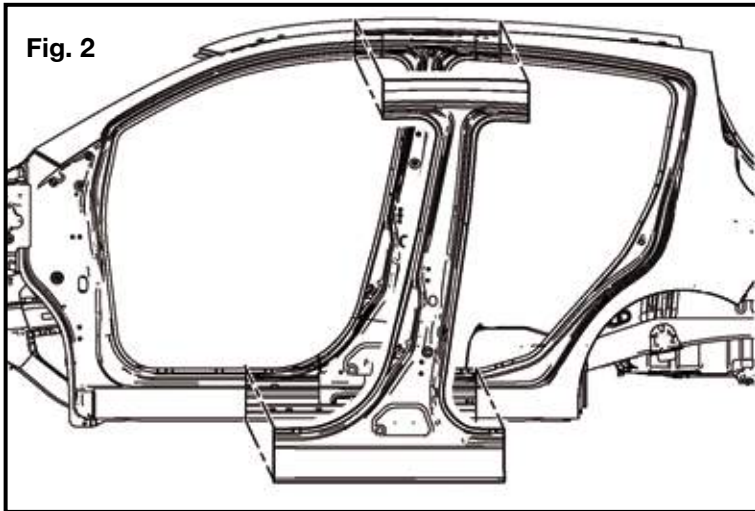
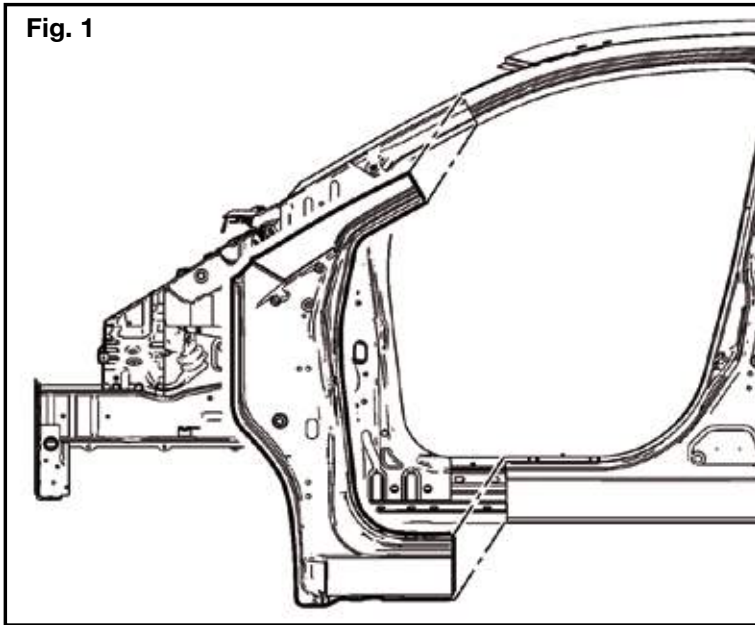
OVERLAP/BACKING PLATE SECTIONING

Holden recommends

1. Fit the service panel to the vehicle to ensure a proper fit.
2. Measure and mark a line at the sail panel 120 mm (4 3/4 in) from the back glass opening and 70 mm (2 3/4 in) rearward from the rocker panel locating hole edge of the service panel.
3. Cut along the line to trim the service panel.
4. Fabricate a 50 mm (2 in) backer plate so that the panel will fit behind the sectioning joint at the sail panel.
5. Fabricate a 100 mm (4 in) backer plate for the rocker panel.
6. Drill 8 mm (5/16 in) plug weld holes as necessary in the locations noted from the original panel.
7. Bevel the sail panel and service panel edges at the sectioned area to approximately 10 degrees.
8. Grind a 50 mm (2 in) area of the outer surface on the vehicle to remove any corrosion, E-coat, primers, coatings and galvanizing that may be present.
9. At the section area on the service panel, grind a 50 mm (2 in) area of the back side to remove any corrosion, E-coat, primers, coatings and galvanizing that may be present.
10. Drill plug weld holes approximately 13 mm (1/2 in) from the edge of the cuts the sectioning areas of the service panel and the original panel.

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for the Holden Barina Spark



11. Prepare all mating surfaces as necessary.
12. Apply GM-approved weld-thru coating or equivalent to all mating surfaces. Refer to Anti-Corrosion Treatment and Repair.
13. Position and clamp or screw the backer plate with half of the backer plate exposed at the sectioning joint.

Note: Leave a gap of 1 1/2 times the thickness of the metal at the sectioning joint to the original panel.

14. Position the service panel to overlap the backer plate and 1 1/2 times the thickness up to the original panel.
15. Check for proper fit and alignment to the vehicle. Clamp the panels together.
16. Plug weld the backer plate accordingly.
17. Stitch weld along the entire sectioning joint, make 25 mm (1 in) welds along the seam with 25 mm (1 in) gaps between them.
18. Complete the stitch weld.
19. Clean and prepare all welded surfaces of the entire sectioning joint.

Note: Always follow the system manufacturer's instructions for application, handling, and curing.

20. Apply a lightweight body filler to the backer plate area.

GLUES SEALERS AND NVH

Holden recommends checking if glues or sealants are required when replacing panels and duplicate all sealers and glues used at OEM, these can be purchased through the dealership or use the equivalent aftermarket product.

TORQUE SETTINGS

Holden cautions on Fasteners

Replacement components must be the correct part number and any thread locking compound, lubricates or anticorrosion inhibitors must be those recommended in the service information.

Use the correct torque setting when installing components.

Many bolts on the Spark are one time fasteners and must be replaced with new.

Torque settings are given for all bolts used on panel operations.

OTHER INTERESTING CAUTIONS BY HOLDEN

Steering column in lock position warning,

Caution: With wheels of the vehicle facing straight ahead, secure the steering wheel utilizing steering column anti-rotation pin, steering column lock, or a strap to prevent rotation. Locking of the steering column will prevent damage and a possible malfunction of the SIR system. The steering wheel must be secured in position before disconnecting the following components:

- The steering column
- The steering shaft coupling
- The intermediate shaft(s)

After disconnecting these components, do not rotate the steering wheel or move the front tires and wheels. Failure to follow this procedure may cause the SIR coil assembly to become un-centered and cause possible damage to the SIR coil. If you think the SIR coil has become un-centered, refer to your specific SIR coil's centering procedure to re-center SIR Coil.

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