I-CAR NEW ZEALAND technical report

Let's look at the Mitsubishi Triton

In this issue we will look at a similar type commercial vehicle as the one featured in the last edition of PanelTalk, and when comparing these it highlights how manufacturers repair methods may be similar but do differ for a same type construction. This reinforces the importance of checking for the correct repair methods before starting the job.

We thank Mitsubishi Motors NZ for their assistance with providing the technical information for this article. Remember Mitsubishi not only supply new parts but also have a full range of current model recycled vehicles for those hard to get items.

The Triton has a 4 star safety rating with a cabin that comes with single or double cab options; these are mounted on a full frame chassis. The cab is built using a standard type Unibody construction and the repair considerations should be the same as any passenger type vehicle.

STEELS USED

The Triton uses a combination of High-tensile steels and Anti-corrosion steel panels and what appears in the illustration to be uncoated mild steel for the roof panel, floor and front inner guard. Mitsubishi don't give a breakdown of the different grades of high-tensile steels used, but do also state that the steel side reinforcement panels have been thickened for passenger safety.

High-tensile steels are used for most inner reinforcements plus the door skins, bonnet and front guards. The outer side panel is not high-tensile but Anti-corrosion steel.

WELDING

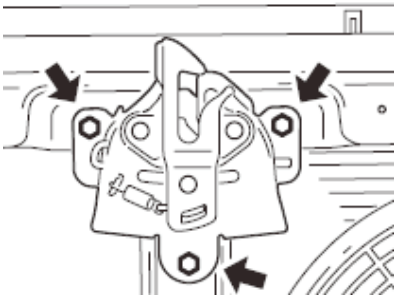
The type and number of welds required is illustrated clearly on all welded panel replacement procedures, Mig plug (NOT SPOT) welds are used on many of the heavier gauge and multiple panel joints. The key below shows the symbols used for the type of weld required.

Symbol	Operation description
● ● ● ●	Spot welding
■ ■ ▲ ▲	MIG plug welding (■: indicates two panels to be welded ▲: indicates three panels to be welded)
+ + + +	MIG spot welding
⫴⫴⫴⫴⫴	MIG arc welding (continuous)
○○○○○○○○○	Braze welding
	Anti-corrosion agent application locations (Use access holes to apply liberally to butt-welded joints.)

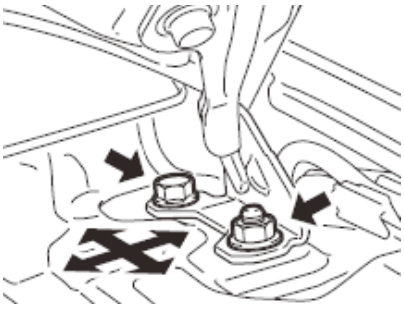
TORQUE SETTINGS

These are given throughout the repair manual with the following showing some common torque settings.

Hood latch mounting bolts tightening torque: 9.0 ± 2.0 N•m



Hood hinge mounting bolt tightening torque: 22 ± 4 N•m
Hood hinge mounting nut tightening torque: 12 ± 2 N•m



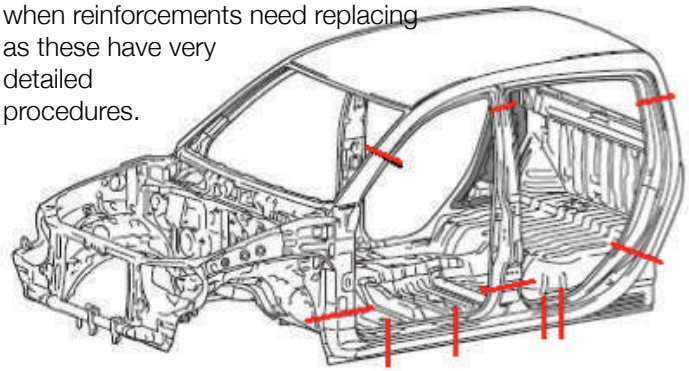
Front door hinge mounting bolts tightening torque: 27 ± 5 N•m
Rear door hinge mounting bolts tightening torque: 25 ± 7 N•m
Rear door hinge mounting nuts tightening torque: 22 ± 4 N•m

ADHESIVES AND FOAMS

The Triton repair procedures show that adhesive is required in a variety of locations when replacing welded panels. It also has weld only or adhesive with anchor weld options for replacing the door skins. 1.6mm and 3.2mm thick silencer matting sheets are used on the floor with urethane foam in the body cavities for controlling the NVH. The adhesive and sealers recommended are as follows;
Adhesive 1: Epoxyayresin adhesive
Brand: 3M ATD Part No.8115 or equivalent
Adhesive 2: Urethane body sealer
Brand: 3M ATD Part No.8542 or equivalent

SECTIONING OPTIONS

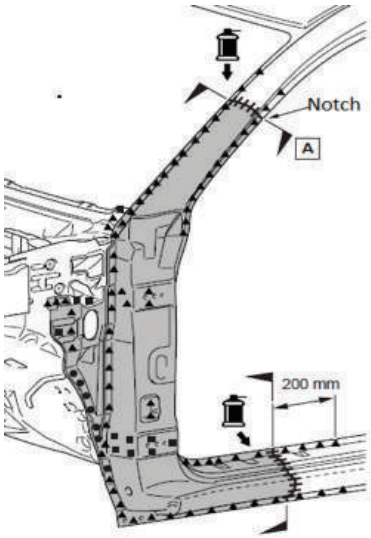
Partial panel replacement locations are typical of most vehicles of this type as shown on the illustration below. They give accurate cut measurements at points identified by a **notch** in the body, and also give a plus or minus option for some cut locations Be sure to check the full repair method when reinforcements need replacing as these have very detailed procedures.



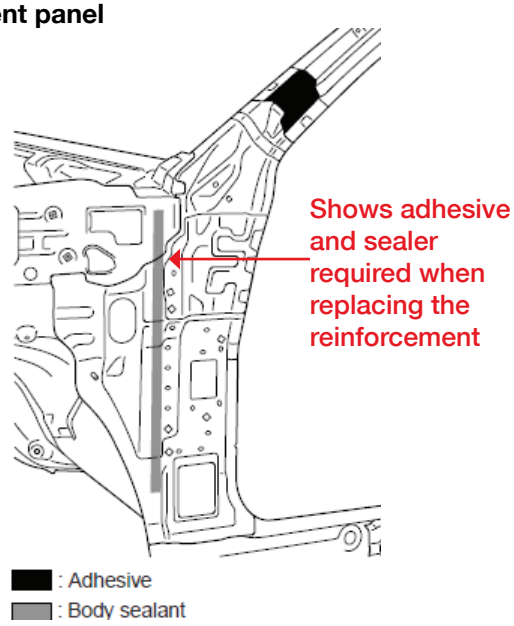
A PILLAR REPLACEMENT

The joint location is the same for both the single and double cab outer A pillar, if replacing the reinforcement check for adhesive !!!

Outer panel

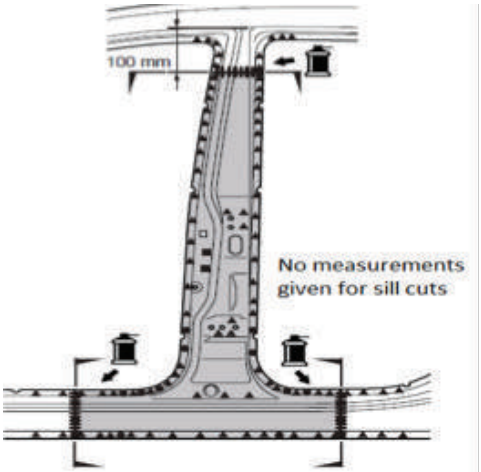


Reinforcement panel



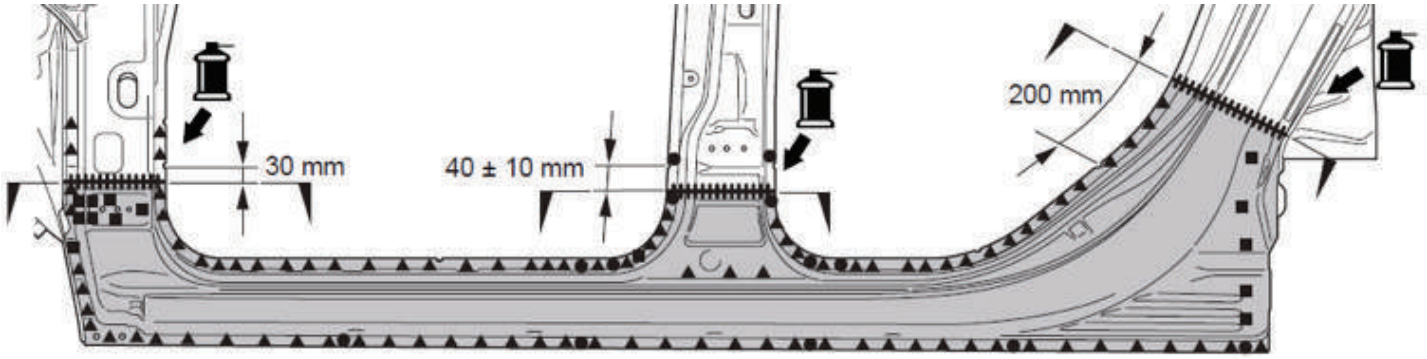
B PILLAR REPLACEMENT

The B pillar outer panel is fitted using open butt weld joints, the top cut line is 100mm down from the top door opening swage line. There are no measurements given for the sill cut joints.



SILL PANEL REPLACEMENT

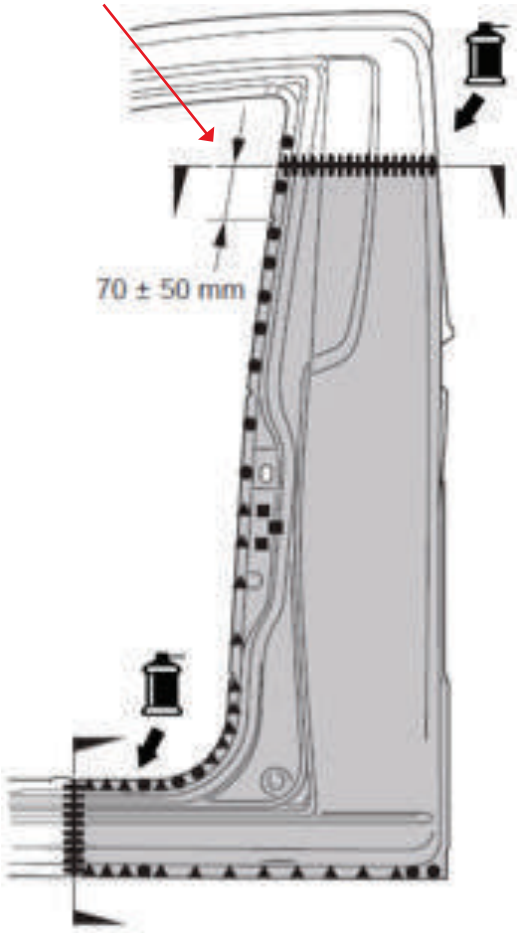
The sill panel joints are as shown with a tolerance of plus or minus 10mm for the B pillar joint.



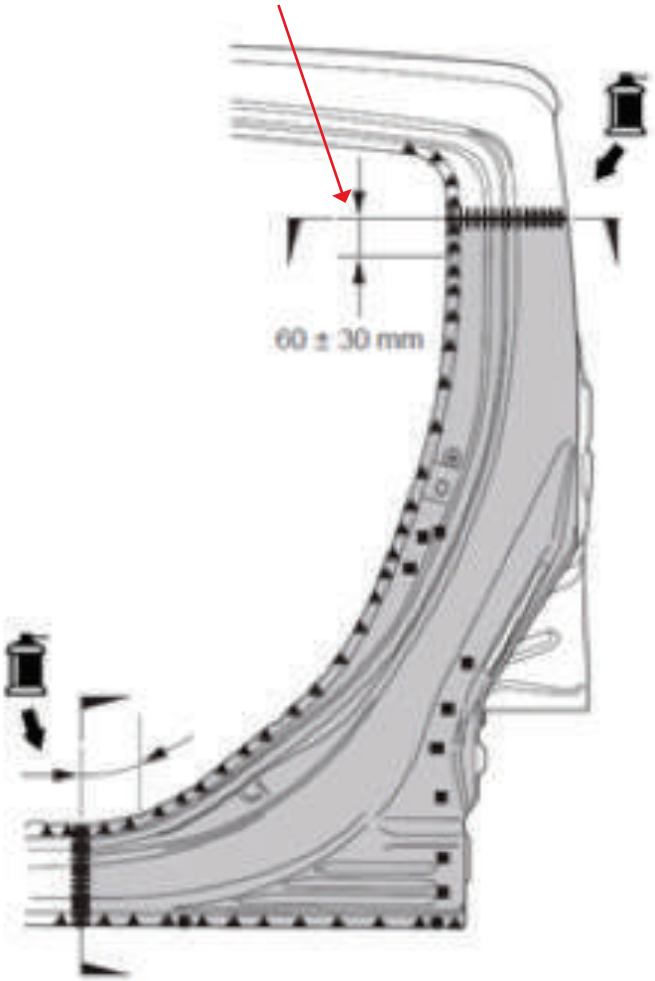
REAR OUTER PILLAR REPLACEMENT

Note in the illustration below, the upper joints for both models have a plus or minus tolerance, no measurement is shown for the lower joint. Adhesive is required for part of the pillar to rear panel joint.

70 plus or minus 50mm

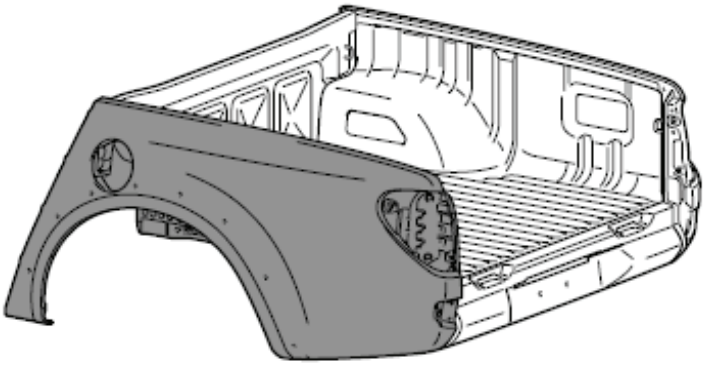


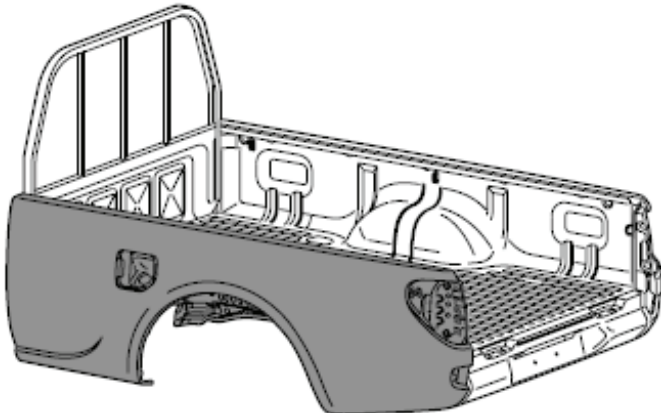
60 plus or minus 30mm



REAR DECK PANEL REPLACEMENT

The rear deck has weld only full panel replacement for all panels, however it does show some adhesive used in various joints.





CHASSIS CROSS MEMBER REPLACEMENT

Only the front and rear cross members plus mounting brakets are shown as replacement part options, no repair options are shown for the rails.