FLEXIGLASS FITTING MANUAL - SECTION 1.3E
FORD RANGER PRE OCT 2011
FLEXISPORT CANOPY FIT - ISSA3

Note: Familiarise yourself with the instructions before you start to ensure you are clear on all aspects of the fit

LIST OF RANGER FLEXISPORT COLOURS AVAILABLE

CANFSRANPR	Canopy FS RMZ DC Primed	
CANFSRMDAG	Canopy FS RMZ DC Arizona Gold	
CANFSRMDBM	Canopy FS RMZ DC Black Mica	Color Codes - 16W - 38A - B7
CANFSRMDCW	Canopy FS RMZ DC Cool White	Colour Code A2W
CANFSRMDHS	Canopy FS RMZ DC Highlight Slv	Colour Code 18G
CANFSRMDLB	Canopy FS RMZ DC Lagoon Blue	Colour Code 37R
CANFSRMDNR	Canopy FS RMZ DC Nifty Red	
CANFSRMDTG	Canopy FS RMZ DC Titanium Grey	Colour Code 30B
CANFSRMDWB	Canopy FS RMZ DC Winning Blue	Colour Code 37L
CANFSRMSP	Canopy FS RMZ ExCab Painted	EXTRA CAB

SAFETY EQUIPMENT
● Hearing protection as required
● Eye protection as required

TOOLS REQUIRED
● Plywood or cardboard sheet
● Pneumatic or hand hacksaw
● Grinder, sander or file
● Metal priming paint
● Paint brush
● Silicone sealant & applicator
● Pneumatic or electric drill
● 5mm Drill bit
● Rivet gun with 5mm capacity
● 6mm Allen key
● Pneumatic or hand driver
● 14mm Socket
● Cable cutter, stripper, crimp tool
● Lock tight
● Knife or scissors
● Snake for guiding cables
● IPA Wipes or similar cleaning product
● Toledo cable strippers
● Wurth Cable strippers

MATERIALS & PARTS REQUIRED (FIT KIT 215)

Part No.	Description	Qty.

Note: If vehicle has no cab rack fitted, proceed to Step 4.

1 Place a piece of thin plywood or heavy duty cardboard sheet between the cab and the tub to protect paint and glass whilst cutting the cab rack off.

2 Sand cut areas of front panel flat and paint bare metal with metal priming paint.

3 Remove protective sheet from the vehicle.

4 Place canopy on it's front end on a soft surface and remove the base rail protector strips. See **ILL 1-a**.
Any forgotten screw leads to damage on the vehicle. Make sure that all screws are removed. **ILL 1-b.**

5 Lift prepared canopy onto tub and position for best fit.

6 Remove the plastic trim from each canopy base side rail and retain for future use. See **ILL 2**.

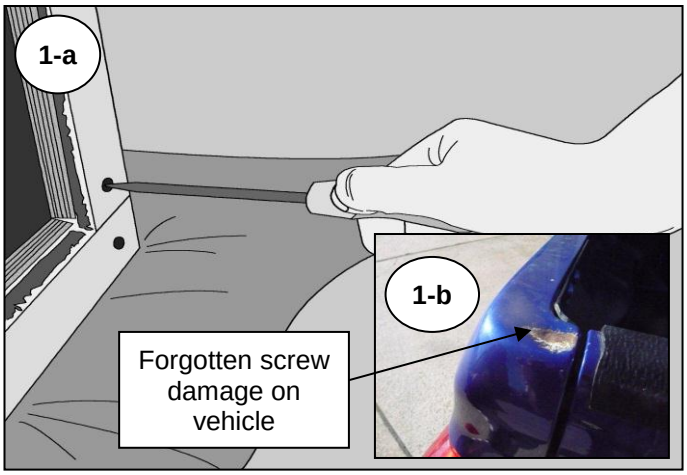
7 If an over lip liner is fitted holes will need to be cut in the liner to allow the fitment of the six clamps. If an underlip liner is fitted ascertain how stiff the plastic is. If it is too stiff to allow the clamp to be pushed up between it and the metal lip, proceed as follows.

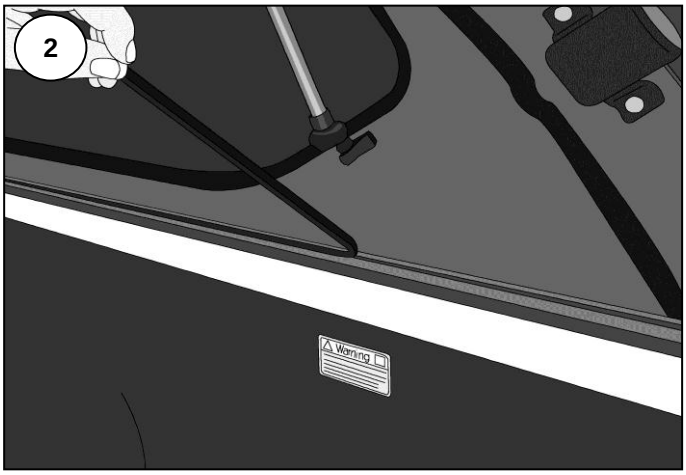
8 Position the clamps so as to miss any ribs on the liner and if possible missing the canopy alloy rail securing screws. The front and rear clamps should be approximately 150mm from their respective rail ends.
Note: If the securing screws cannot be avoided cuta notch in the clamp locating ridge of the top jaw of the clamp to bridge them. See **ILL 4**.

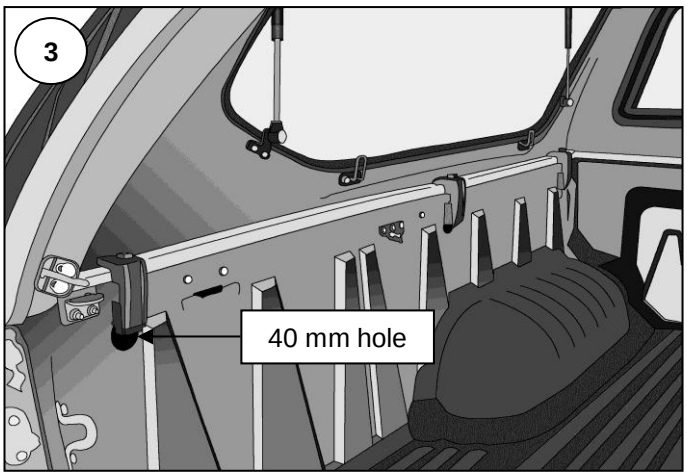
9 Use a 40mm hole saw to cut a hole in the liner so that the top is level with the bottom edge of the coaming lip. Repeat for all six holes.

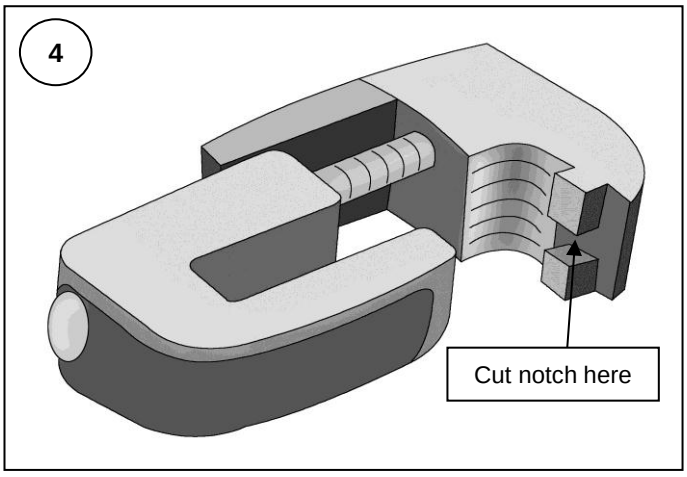
10 Fit a clamp at each hole position. See **ILL 3**.

11 Use a 17mm socket and a torque wrench to tighten the six clamp bolts to a setting of **10NM**.

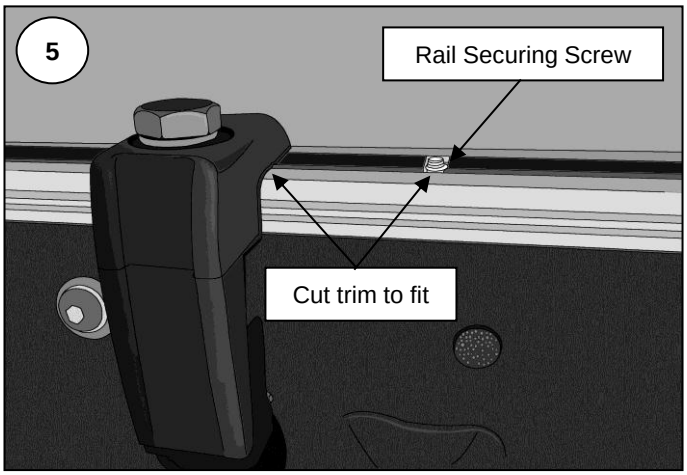






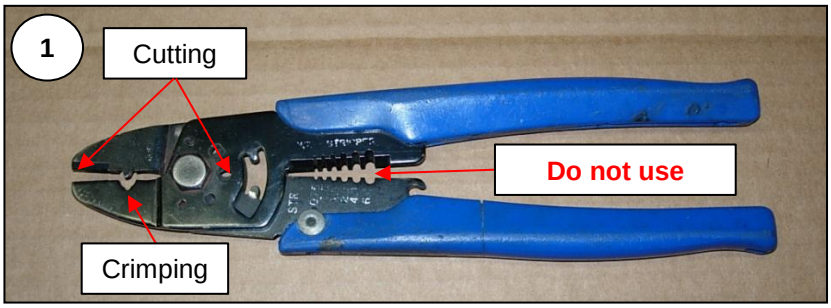


12 Carefully replace the plastic trim to the bottom rail channel. Cutting it either side of each clamp and each rail bolt. See **ILL 5**.



ELECTRICAL WIRE STRIPPING SAFETY PROCEDURE

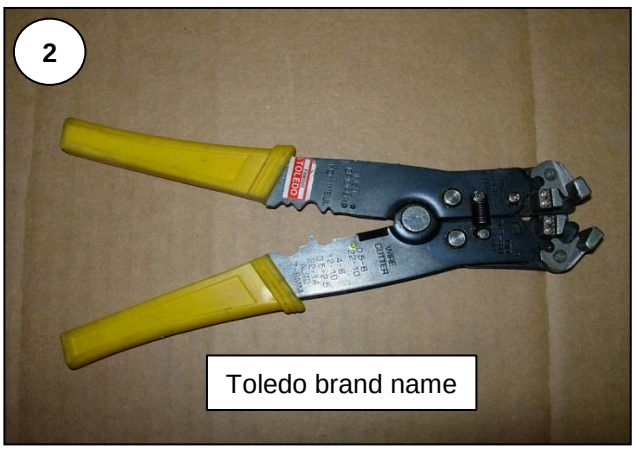
It is Flexiglass policy that the use of combination electrical cutting/crimping and stripping pliers be restricted to cutting and crimping use only.



It is a documented fact that the use of these pliers can cause personal injury due to the fact that they are reliant upon holding the cable in one hand while pulling with the pliers with the opposite hand. Any attachments to the gripped end can be pulled into and through the palm of the gripping hand causing injury.

The single hand action strippers are to be used at all times for stripping cable ends ready for joining or connecting.

Two types of cable strippers are recommended, one operates with the pliers at 90° to the cable **(2)** the other operates in-line with the cable **(3)**.

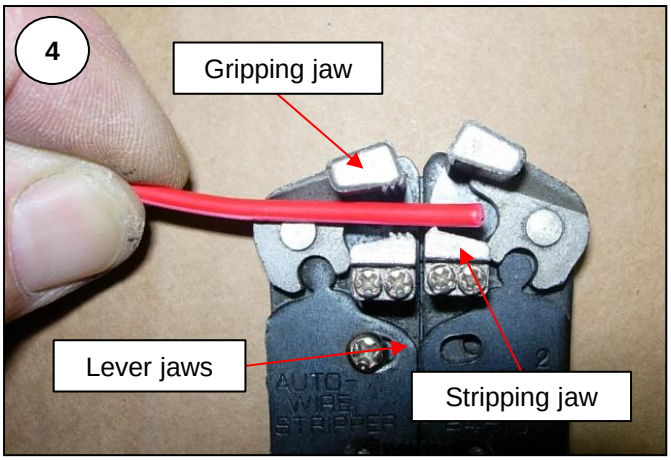


The tool in **ILL 2** is a generaly stronger and harder wearing item but the other is very useful for getting to cables in restricted space, it is therefore recommended that both types be available.

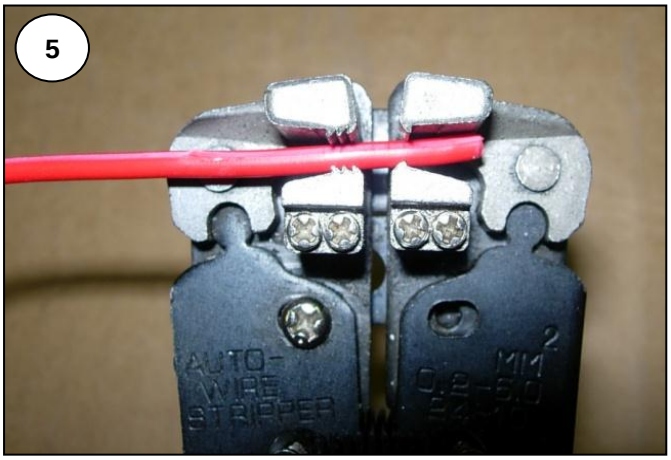
OPERATING INSTRUCTIONS

1 Squeeze handles sufficiently to bring the lever jaws together. Lay cable between stripping jaws as shown in **ILL 4**.

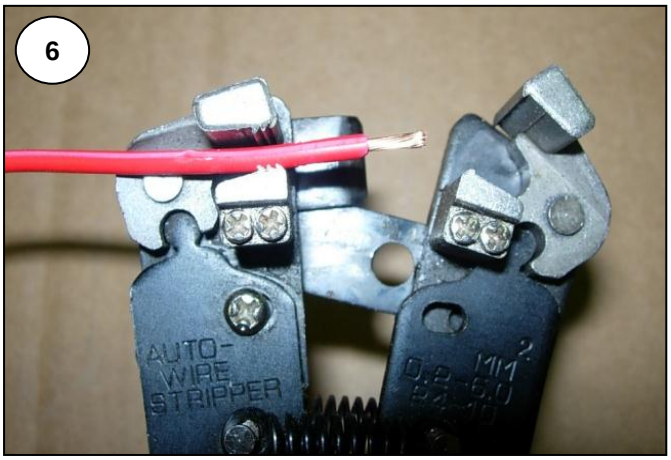
Note:
There should be no necessity to strip more than 10mm of sheathing from the cable end for any of the connectors used by Flexiglass. If for any reason a longer stripped end is required, do it in repeated 10mm bites, the pieces can then be slid off the end using the fingers.

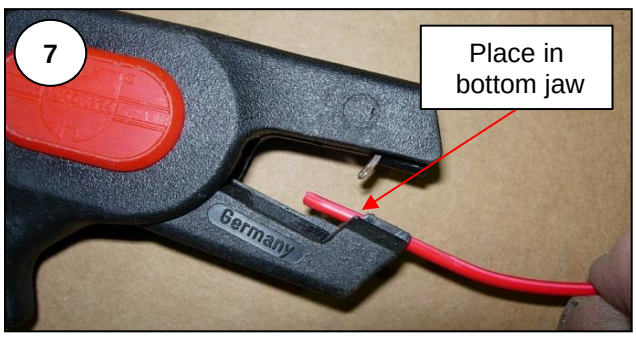


2 Continue squeezing the handles together to engage the gripping and stripping jaws.

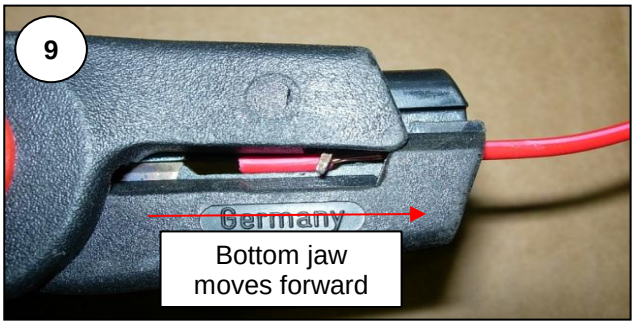


3 Increase the pressure slightly as you continue to squeeze. The stripping jaws will then move indipendantly of the pliers cutting and stripping the end of the wire until with a sharp click both sets of jaws will automaticaly disengage.





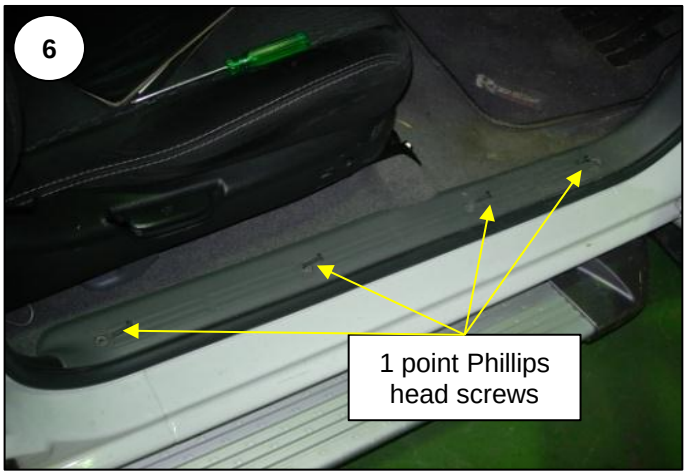
4 The Wurth pliers are simpler in operation. After placing the cable in the "V" of the bottom jaw, **ILL 7,** squeeze the handles together. The squeezing action brings the jaws together and forces the bottom jaw forward both cutting and pulling the sheath from the cable. See **ILL 8** & **9**.



NOTE: Two options for making electrical conections are available.
The prefered method is soldered joints, operators must be trained and familiar with ------ Soldering Iron S.O.P ISS ---. Found in the S.O.P. section of the Secure Members page of the Flexiglass web site.
The alternative (illustrated) is using Scotchlock connectors.

WIRING INSTRUCTIONS

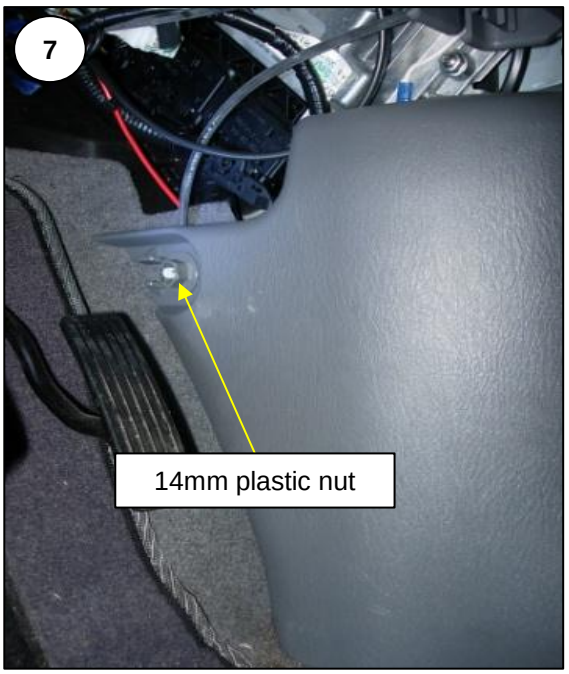
13 Remove the scuff and kick panels. See **ILL 6** & **7**.
Note: There is a spring clip on the door frame edge supporting the kick panel, once the plastic nut has been removed rotate the panel to the rear, to clear the clip before pulling the panel away from the body. Removal of the fuse box cover will improve headroom under the dash.



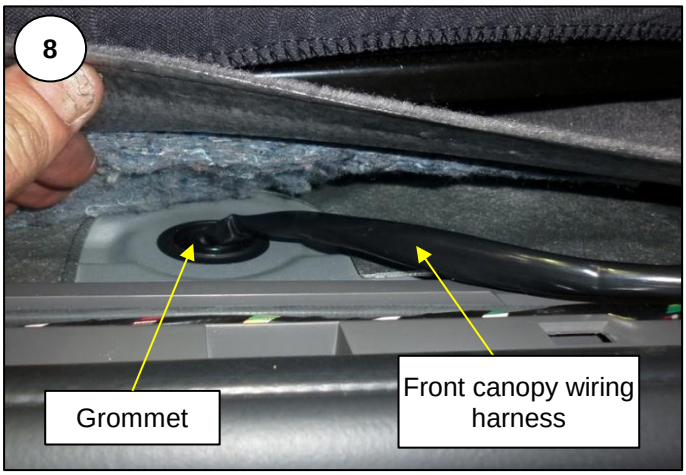
14 Locate the large floor bung beside the drivers seat, beneath the carpet. **ILL 8.**

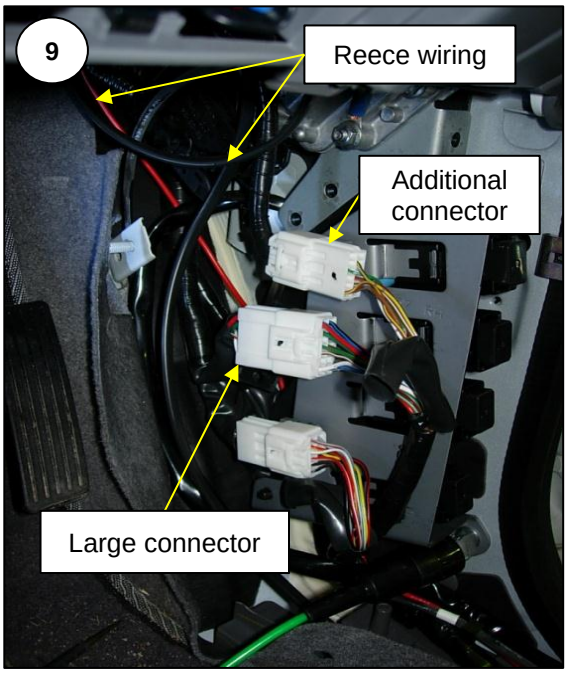
15 Remove the bung and cut a hole in it for the canopy harness, push the connectors (one at a time) through the hole and slide the harness through until the junction on the harness is just forward of the front door pillar. Refit the grommet to its hole.

Note: Behind the kick panel there will be found two or three multiconnectors depending on the vehicle model, the number does not affect the colour coding. It should also be noted that there are extra wires in these illustrations (red single and black double sheathed) that relate to the prior fitment of a Reece electronic brake controller.



NOTE: Stages 16 to 21 can be omitted if soldered connections are being made.





16 On the extreme right hand fire wall locate a large rubber grommet that carries the main vehicle wiring harness. Cut a small slit in it, push a small "snake" through the slot and attach the long leg of the fuse holder wire. Pull the wire up into the engine bay. See **ILL 10**.

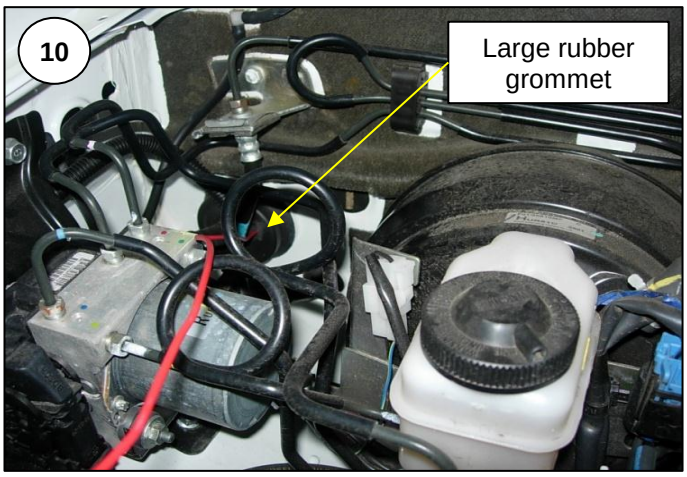
17 Run the wire across to the positive terminal of the battery tieing it in place with insulating tape or wire ties, remove the fuse from the holder and keep for later use.

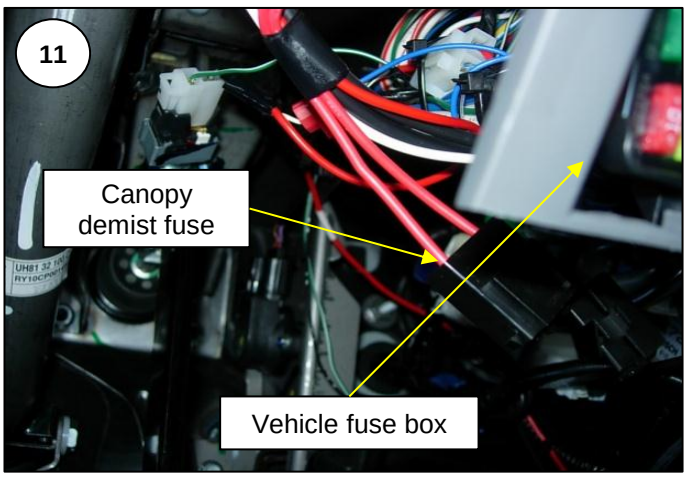
18 Cut of the bullet connector and replace it with a **TERM100** then slacken the battery clamp bolt and attach the terminal to the battery.

19 Tie the fuse holder to a convenient cable bundle adjacent to the vehicle fuse box. See **ILL 11**.

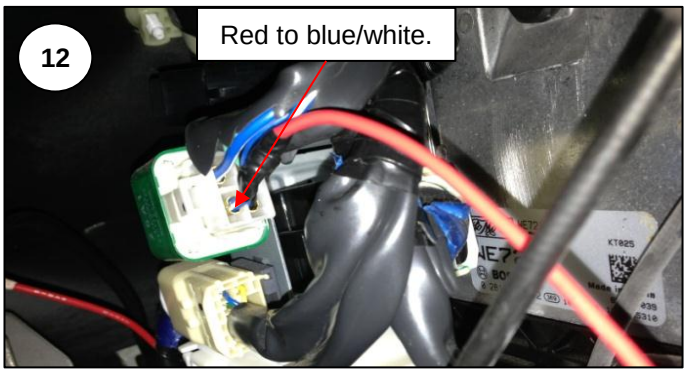
Run the short leg of the demister power line over to the kick panel area and remove the terminal eye from it's end.

21 Attach a **CONF100** female bullet connector to the end and push on to the bullet connector on the canopy harness.



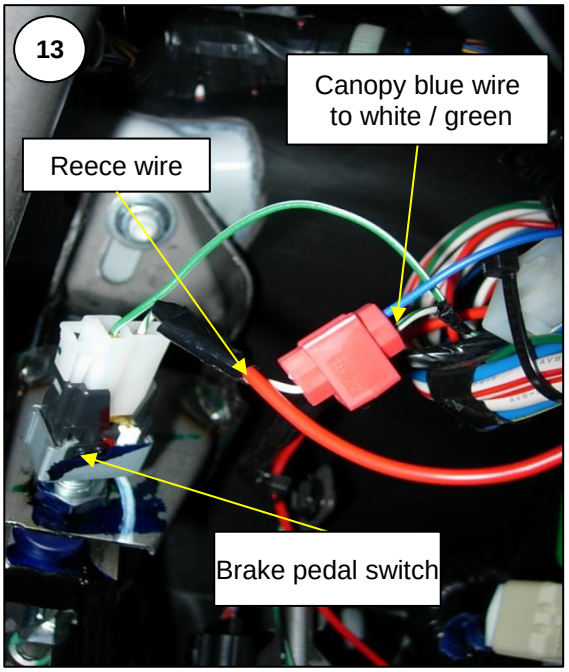


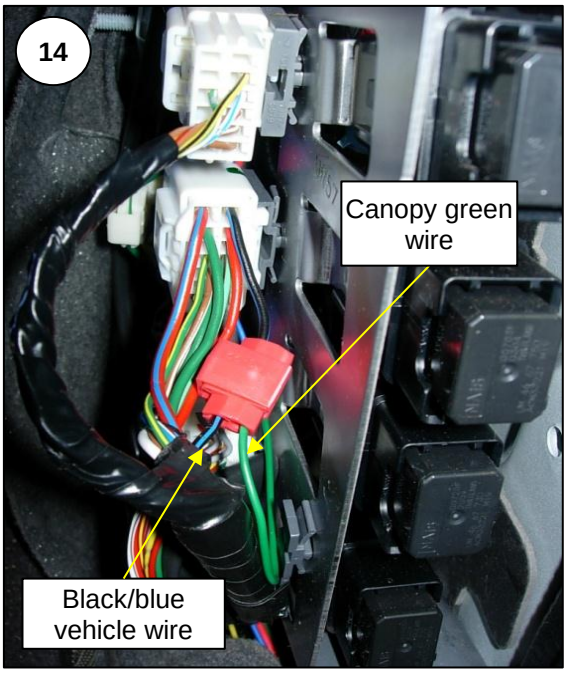
22 Soldered joint alternative to taking power cable to the battery.
Looking upwards behind the dash board locate the green relay shown in **ILL 12** and solder the red fused cable to the blue/white heavy cable coming from it.



23 Run the blue canopy wire up the kick panel area and across to the brake pedal switch. Tap in to the white/green wire coming from the switch. Do not tap into the green/white wire which is adjacent. See **ILL 13**.

Locate the black/blue wire coming from the large central multiconnector and tap the canopy green wire into it. See **ILL 14**.



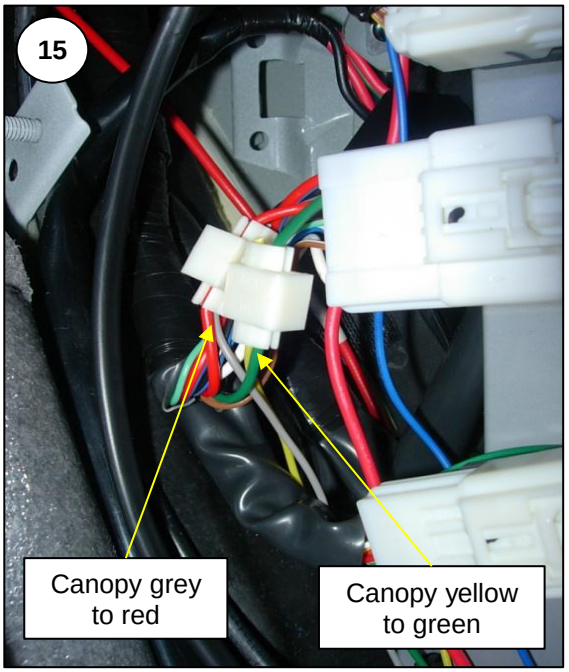


25 Locate the red wire going into the large central multiconnector and attach the canopy grey wire to it. See **ILL 15**.

26 Likewise connect the canopy yellow wire to the green wire going into the connector. See **ILL 15**.

27 Undo the nut securing the electrical chassis to the door pillar fit the terminal eye on the canopy earth line to the stud and re-tighten the nut. See **ILL 16**.

28 Tidy up the wiring in the kick panel area and tuck the relay out of the way tieing cables to fixtures or wire bundles as necessary.



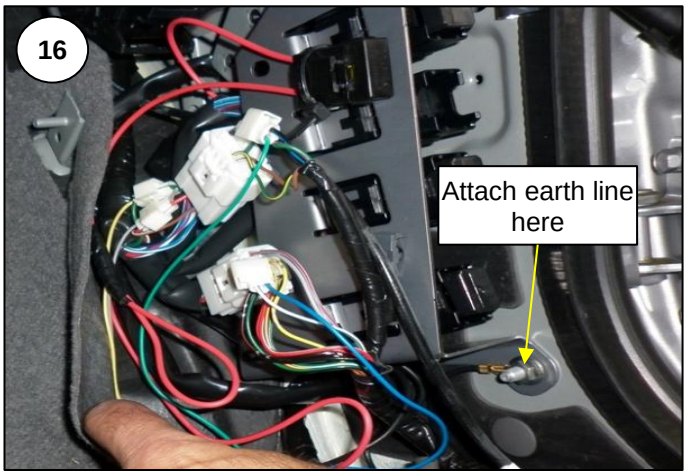
29 At the cab rear connect the two parts of the canopy wiring harness together using the snap connectors provided.

30 Replace the demister fuse in it's holder removed at stage 17 and check the function of each circuit.

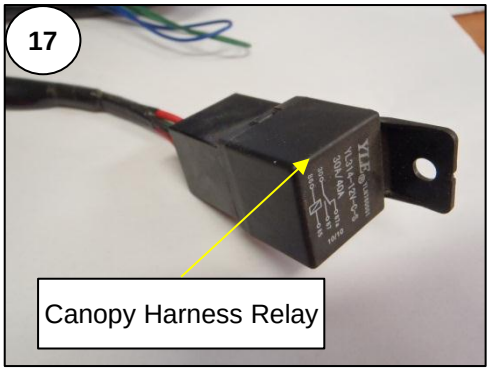
31 If all circuits function correctly the harness along the door sill can be secured and the exit point through the grommet in the floor sealed with a little silicone sealant.

32 Tie the harness to the chassis of the vehicle ensuring it is not near the exhaust or attached to brake lines.

33 Take the excess harness cable, bundle it tidily out of sight beneath the vehicle and tie it securely to the underbody/chassis of the vehicle so that it can't drop down.



34 The canopy harness relay is not a waterproof relay.
We recommend to keep the relay behind the the kick panel **ILL 17.**
Never place the relay out of the car **ILL 18**.



35 Replace and screw down the scuff panel along the door bottom edge.

36 Clean and detail the vehicle and canopy ready for inspection and delivery to the client.