



## INEOS Grenadier

### Predator & Toro Front Bar Fitting Instruction

#### IMPORTANT! – READ BEFORE INSTALLATION

- When installed in accordance with these instructions, the front protection bar does not affect the operation of the vehicles SRS airbags.
- This product must be installed exactly as per these instructions using only hardware supplied.
- Take a few moments to read instructions thoroughly before beginning work.
- In the event of damage to any bar component please contact OFFROAD ANIMAL to arrange repair/replacement of components.
- Do not use this product for any vehicle make or model other than that specified on these instructions.
- Do not remove labels from this product.
- This product and its fixings must not be modified in any way unless stated in these fitting instructions.
- The installation of this product is recommended for trained personnel.
- These instructions are correct at time of publication. OFFROAD ANIMAL cannot be held responsible for the impact of any changes subsequently made by the vehicle manufacturer. If you find something has changed please contact us to let us know!
- During installation it is the duty of the installer to check correct operation/clearances of all components.
- If Instructions are to be printed for reference in the workshop, it is recommended that they are printed in colour, for best legibility.
- All Grenadiers have a complex electrical system with the main battery under the rear seat. If vehicle is not equipped with **“High Load Auxiliary Switch Panel & Electrical Preparation”** engage a qualified auto electrician to connect the winch.



## GENERAL CARE AND MAINTENANCE

Only wash the product with a PH neutral car wash to prevent paint damage and discolouration.

Plastic parts may be maintained with silicone spray.

Do not use acidic or alkaline based cleaning products.

It is important to perform regular checks (pre trip or on an annual basis) on the installed product. Checks include:

- Visual inspection for damage (eg. cracks, chips, dents etc.)
- Electrical wiring is not rubbing anything or worn out
- Bolts are torqued to correct specification (see torque guide below)

For touching up small stone chips, Offroad Animal recommends the following paint products:

- Dupli-Color Trim & Bumper Paint Black (TB101)
- VHT Hood, Bumper & Trim Paint Black (SP27)

## BOLT TORQUE SETTINGS

Use the following bolt torques on all general fasteners, unless otherwise specified.

| GENERAL FASTENERS |           |
|-------------------|-----------|
| Size              | Torque Nm |
| M5                | 5 Nm      |
| M6                | 9 Nm      |
| M8                | 22 Nm     |
| M10               | 44 Nm     |
| M12               | 77 Nm     |

Use the following bolt torques on all structural front bar mount and tow point fasteners, and rear towbar fasteners, unless otherwise specified.


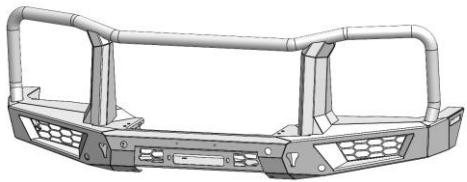
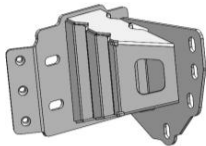
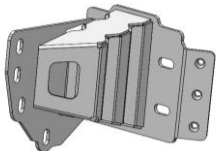
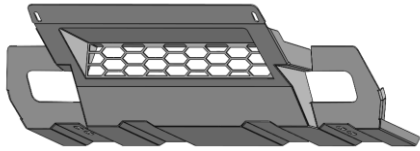
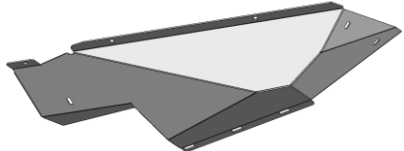
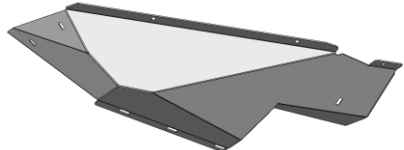
| FRONT BAR MOUNTS AND TOW POINTS<br>+ REAR TOWBAR |           |
|--|-----------|
| Size   | Torque Nm |
| M10  | 57 Nm     |
| M12  | 100 Nm    |
| M14  | 164 Nm    |
| M16  | 248 Nm    |

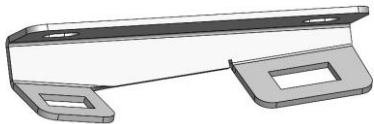
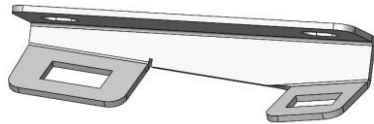
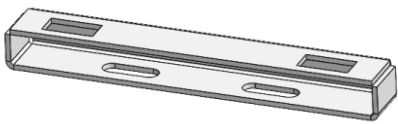
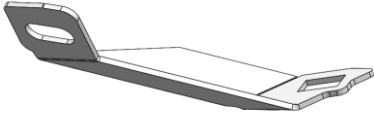
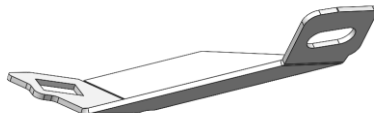
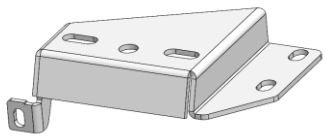
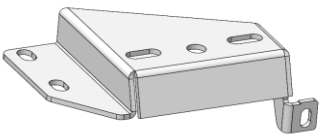
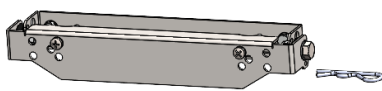
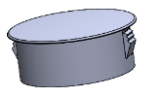
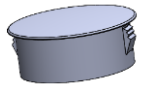
**Always use a torque wrench to set correct torque settings. Ensure torque wrench is set to Nm unit of measurement. Otherwise perform conversion to lb-ft.**

## PARTS LISTING


**IMPORTANT:** Check all parts are present before beginning work! Contact OFFROAD ANIMAL if something is missing.

### Main Parts – In the Box


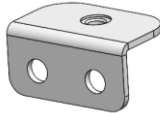
| Qty | Part Number           | Description                                 | Image   |
|-----|-----------------------|---|---|
| 1   | FB-IGR-G1-23-PR-ASM1  | Ineos Grenadier Predator Front Bar Weldment |     |
| OR  |                       |   |   |
| 1   | FB-IGR-G1-23-TOR-ASM1 | Ineos Grenadier Toro Front Bar Weldment     |     |
| 1   | FB-IGR-G1-23-PR-ASM2R | Ineos Grenadier Front Bar Impact Assy       |  |
| 1   | FB-IGR-G1-23-PR-ASM2L | Ineos Grenadier Front Bar Impact Assy       |   |
| 1   | FB-IGR-G1-23-PR-ASM3  | Ineos Grenadier Front Bash Plate Assy       |   |
| 1   | FB-IGR-G1-23-PR-ASM5L | Ineos Grenadier Side Under Panel Assembly   |   |
| 1   | FB-IGR-G1-23-PR-ASM5R | Ineos Grenadier Side Under Panel Assembly   |   |

|   |                 |  |   |
|---|-----------------|--|---|
| 1 | B-1342L         | Ineos Grenadier Under Panel Support Bracket                  |     |
| 1 | B-1342R         | Ineos Grenadier Under Panel Support Bracket                  |     |
| 2 | B-1341          | Ineos Grenadier Wheel Arch Liner Bracket                     |     |
| 1 | B-1343L         | Ineos Grenadier Under panel Center Brace                     |     |
| 1 | B-1343R         | Ineos Grenadier Under panel Center Brace                     |    |
| 1 | B-1344L         | Grenadier Driving Light Bracket                              |   |
| 1 | B-1344R         | Grenadier Driving Light Bracket                              |   |
| 1 | NPF-COM-SM-ASM0 | Number plate flip asm Small                                  |   |
| 4 | CPHP020         | Plastic Hole Insert, 28MM, Black, Tigerlink Hardware CPHP020 |  |
| 2 | CPHP028         | Plastic Hole Insert, 14MM, Black, Tigerlink Hardware CPHP28  |  |
| 2 | TK-FB-FRA-NG-22 | Tape Kit – 2x100x6mm VHB Tape                                | No image  |



|          |                       |   |   |
|----------|-----------------------|---|---|
| <b>1</b> | FB-IGR-G1-23-PR-ARDCP | ADR Compliance Plate<br>Ineos Grenadier |  |
|----------|-----------------------|---|---|

## Optional Winch Cover Kit - FB-IGR-G1-23-PR-ASM4

| Qty       | Part Number                     | Description   | Image   |
|-----------|---------------------------------|---|---|
| <b>1</b>  | B-1297                          | Ineos Grenadier Front Bar Winch Delete Panel                                  |   |
| <b>6</b>  | 1298                            | Ineos Grenadier Front Bar Winch Delete Panel Support Brkt                     |  |
| <b>18</b> | M6x16 BHCS<br>BLACK ZINC        | SCREW, BUTTON HEAD CAP,<br>M6X16X1.0, ISO4042 ZnNi BLACK<br>PASSIVATED FINISH | No Image  |
| <b>18</b> | M6 FLAT<br>WASHER<br>BLACK ZINC | M6 Flat Washer, 12x6.1x1, ISO4042<br>ZnNi BLACK PASSIVATED FINISH             | No Image  |
| <b>12</b> | M6 FLANGE<br>NUT                | Flange Nut, M6x1 G8.8 ZP  | No Image  |



## Predator Small Parts – Contained in Small Parts Kit Bag

| QTY. | PART NO.                   | DESCRIPTION   |
|------|----------------------------|---|
| 4    | M8 X 20 BHCS BLACK ZINC    | SCREW, BUTTON HEAD CAP, M8X20X1.25, ISO4042 ZnNi BLACK PASSIVATED FINISH        |
| 4    | M8 FLAT WASHER- BLACK ZINC | M8 FLAT WASHER, 16.5x8.4x1.2, ISO4042 ZnNi BLACK PASSIVATED FINISH              |
| 16   | M6x16 BHCS BLACK ZINC      | SCREW, BUTTON HEAD CAP, M6X16X1.0, ISO4042 ZnNi BLACK PASSIVATED FINISH         |
| 8    | M6CN3MM                    | CAGE NUT M6x2.6-3.5   |
| 22   | M6 FLAT WASHER BLACK ZINC  | M6 Flat Washer, 12x6.1x1, ISO4042 ZnNi BLACK PASSIVATED FINISH                  |
| 4    | M12 FLANGE NUT             | Flange Nut, M12x1.75 G8.8 ZP  |
| 12   | M12 FW LHD                 | M12 FW Large Heavy Duty   |
| 4    | M12 Nyloc nut              | M12 NYLOC NUT   |
| 8    | M12X30                     | Bolt Hex, M12X30x1.75, GR8.8 ZP   |
| 2    | M10 FW LHD BLACK ZINC      | WASHER, FLAT M10X28.5X2.5, ISO4042 ZnNi BLACK PASSIVATED FINISH                 |
| 2    | M10X25 BHCS BLACK ZINC     | SCREW, BUTTON HEAD CAP, M10X25X1.5 GR12.9, ISO4042 ZnNi BLACK PASSIVATED FINISH |
| 4    | M10 FW LHD                 | WASHER, FLAT M10X28.5X2.5   |
| 4    | M10 x 30                   | Bolt Hex, M10X30x[1.5], GR8.8 ZP  |
| 14   | M6CN2MM                    | CAGE NUT M6x1.6-2.5   |
| 6    | M6x25 BHCS BLACK ZINC      | SCREW, BUTTON HEAD CAP, M6X25X1 GR12.9, ISO4042 ZnNi BLACK PASSIVATED FINISH    |
| 10   | M6 FLANGE NUT              | Flange Nut, M6x1 G8.8 ZP  |
| 10   | M6 FLAT WASHER             | M6 FW   |
| 10   | M6 X 16 HEX                | M6X16 HEX BOLT, ZP, 8.8   |
| 2    | M8 FLANGE NUT              | Flange Nut, M8x1.25 G8.8 ZP   |
| 2    | M8 HD FLAT WASHER          | M8 FLAT WASHER - High Tensile 19x8x1.9mm  |
| 2    | M8 X 20 HEX                | Bolt Hex, M8X20x1.25, GR8.8 ZP  |

## Toro Additional Parts

| QTY. | PART NO.                   | DESCRIPTION  |
|------|----------------------------|--|
| 2    | B-0649                     | Toro Antenna Bracket - 90 Degree Tall                                    |
| 4    | M8 X 20 BHCS BLACK ZINC    | SCREW, BUTTON HEAD CAP, M8X20X1.25, ISO4042 ZnNi BLACK PASSIVATED FINISH |
| 4    | M8 FLAT WASHER- BLACK ZINC | M8 FLAT WASHER, 16.5x8.4x1.2, ISO4042 ZnNi BLACK PASSIVATED FINISH       |



## TOOLS REQUIRED

The following tools will be required to install the product.

| Hand Tools  | Power Tools   | Workshop Supplies   |
|---|---|---|
| Metric Socket Set 8-19mm<br>Socket Extension Bar<br>Metric Spanner Set 10-19mm<br>Hex (Allen) Key Set 4-6mm<br>Torx Key Set<br>Trim Puller Tool<br>Flat Blade Screwdriver set<br>Phillips Head Screwdriver set<br>Utility Knife<br>Side Cutters<br>Pliers | Electric/Air Impact Driver (Optional)<br>Air Hacksaw<br>Or<br>Oscillating Multi Tool<br>Or<br>Angle Grinder | Panel Stand or Soft Blanket<br>Cable Ties<br>Masking Tape |

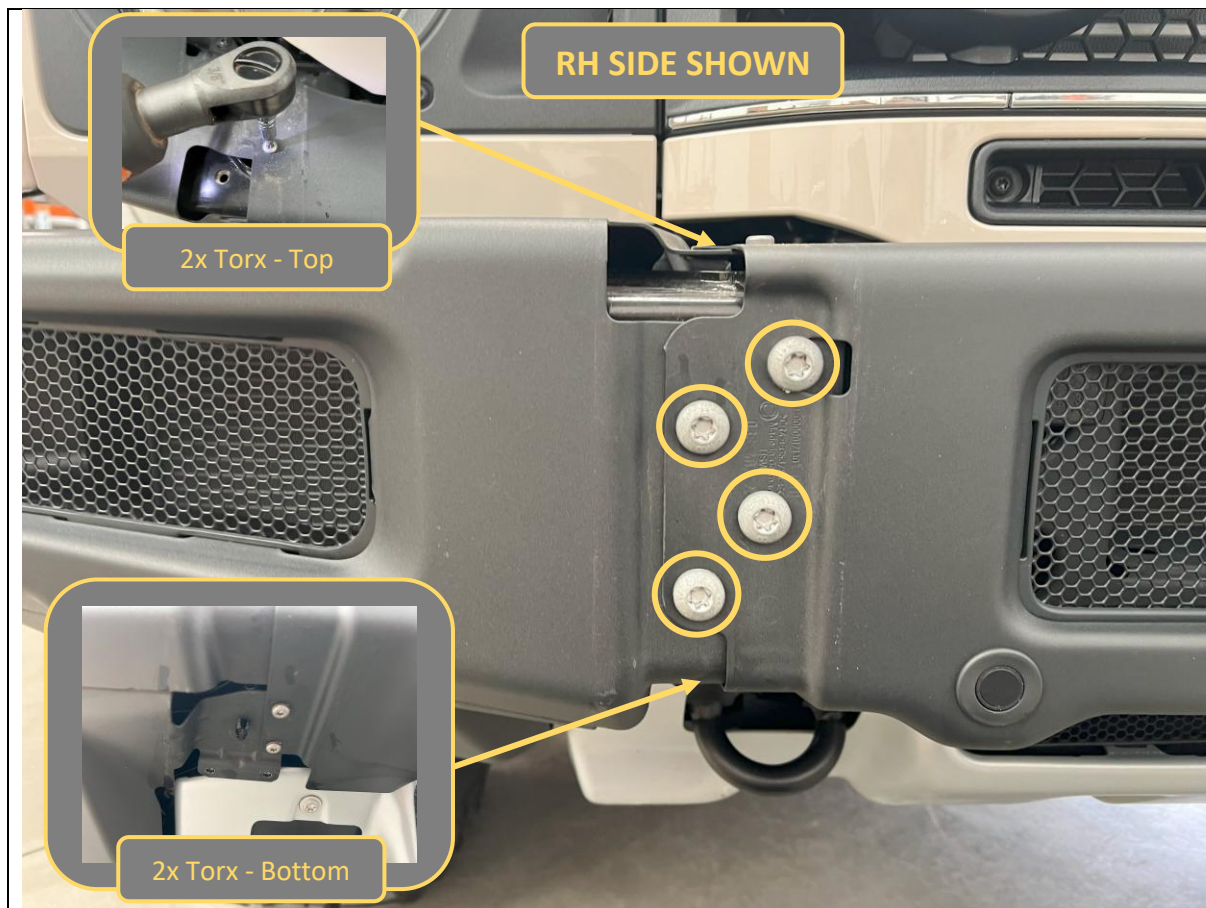
## WORKSHOP SAFETY

It is the responsibility of the installer to always complete works in a safe manner. Make sure the following safety equipment is available and precautions are observed whilst fitting this product.

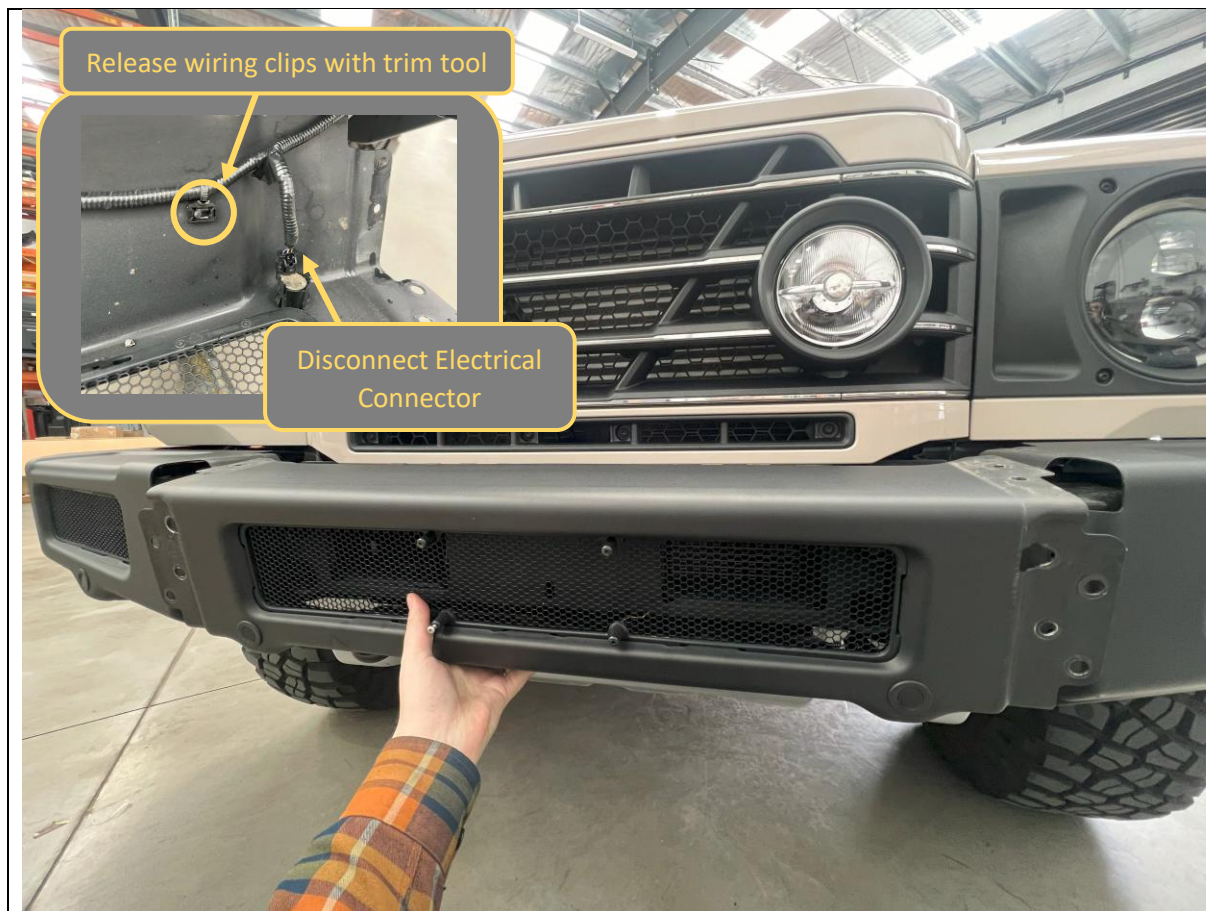
|   |  |
|---|--|
| <p>Hearing Protection</p>  | <p>Always wear ear protection when using power tools.</p>  |
| <p>Eye Protection</p>      | <p>Ensure eye protection is always worn when cutting or drilling.</p>  |
| <p>Manual Handling</p>   | <p>Do not attempt to lift bar assemblies or rock sliders on your own.</p> <p>Always use two people to lift or use mechanical Lifting aid such as hydraulic lifting trolley.</p>                          |
| <p>Vehicle Support</p>   | <p>Always ensure vehicle is properly supported when working on it. Do not attempt to fit products whilst suspension work is being carried out. Do not work under a vehicle supported only by a jack.</p> |



|  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. Park up vehicle in appropriate work location and remove the front number plate.</li> <li>2. Remove the 2x plastic bumper trims. These are secured with 4x Torx screws (2x top and 2x bottom). Once screws are removed, pull from underneath to flex and release the trim.</li> <li>3. Remove bumper trims on both sides of the vehicle.</li> </ol> | <p><b>TOOLS REQUIRED</b></p> <p>T30 Torx Driver</p>     |
|  | <p><b>FASTENERS</b></p> <p>Factory Screws - Discard</p> |



|  |  |
|--|--|
| <ol style="list-style-type: none"> <li>Remove the 2x Torx head screws on the top of the bumper, under the cover</li> <li>Remove the 2x Torx head screws on the Bottom of the bumper, under the cover</li> <li>Remove the 4x Large Torx head screws on the front face of the bumper.</li> </ol> | <p><b>TOOLS REQUIRED</b></p> <p>8mm socket<br/>T30 Torx Driver<br/>T50 Torx Driver</p> |
| <ol style="list-style-type: none"> <li>Complete for both sides of the vehicle.</li> </ol>  | <p><b>FASTENERS</b></p> <p>Factory Bolts (Discard)</p>                                 |



|  |   |
|--|---|
| <p>8. With all bolts removed, slide the center bumper panel forwards to remove.</p> <p>9. If equipped, disconnect the parking sensors by the electrical connectors, and release the wiring clips to completely remove the center bumper panel.</p> | <p><b>TOOLS REQUIRED</b></p> <p>Trim Tool</p> |
|  | <p><b>FASTENERS</b></p>                       |



10. Remove Torx head screws retaining the outer bumper panel to the vehicle. Locations are shown in the image above.
11. Once released gently pull the outer bumper panel forward.

#### TOOLS REQUIRED

T30 Torx Driver

#### FASTENERS

Factory Torx Screws (Discard)



12. Once the bumper panel is forward far enough for access, disconnect the clearance light connector. First slide back the red locking tab, then squeeze and pull to release.
13. Continue removing the corner bumper panels, and if equipped, disconnect the parking sensors and looms using similar technique to the center bumper panel.
14. Once removed, complete side bumper panel removal for other side of vehicle.

#### TOOLS REQUIRED

Trim Tool

#### FASTENERS

LH SIDE SHOWN



15. Once bumper panel is removed, replace the factory screw that secures the corner of the auxiliary radiator mounts.

**TOOLS REQUIRED**

T30 Torx Driver

**FASTENERS**

Factory Screw



16. **NOTE:** If vehicle is **NOT** equipped with parking sensors and a winch is **NOT** being fitted, it is possible to avoid removal of the headlight & trims, but it may make some fastener access more difficult.
17. On the right-hand side, remove the headlight surround trim. First remove the 4x Torx screws securing then carefully un-clip and remove the trim.

**TOOLS REQUIRED**

T30 Torx

**FASTENERS**

Factory Screws (Retain)



18. Remove the large headlight cover trim from the vehicle.
19. Remove the 4x Torx Screws securing trim panel to the vehicle.
20. After screws removed, unclip the bottom corner of the trim from the grille.
21. Unclip the trim from the fender panel. The clips are oriented to be released by pulling the panel straight forwards relative to the vehicle.

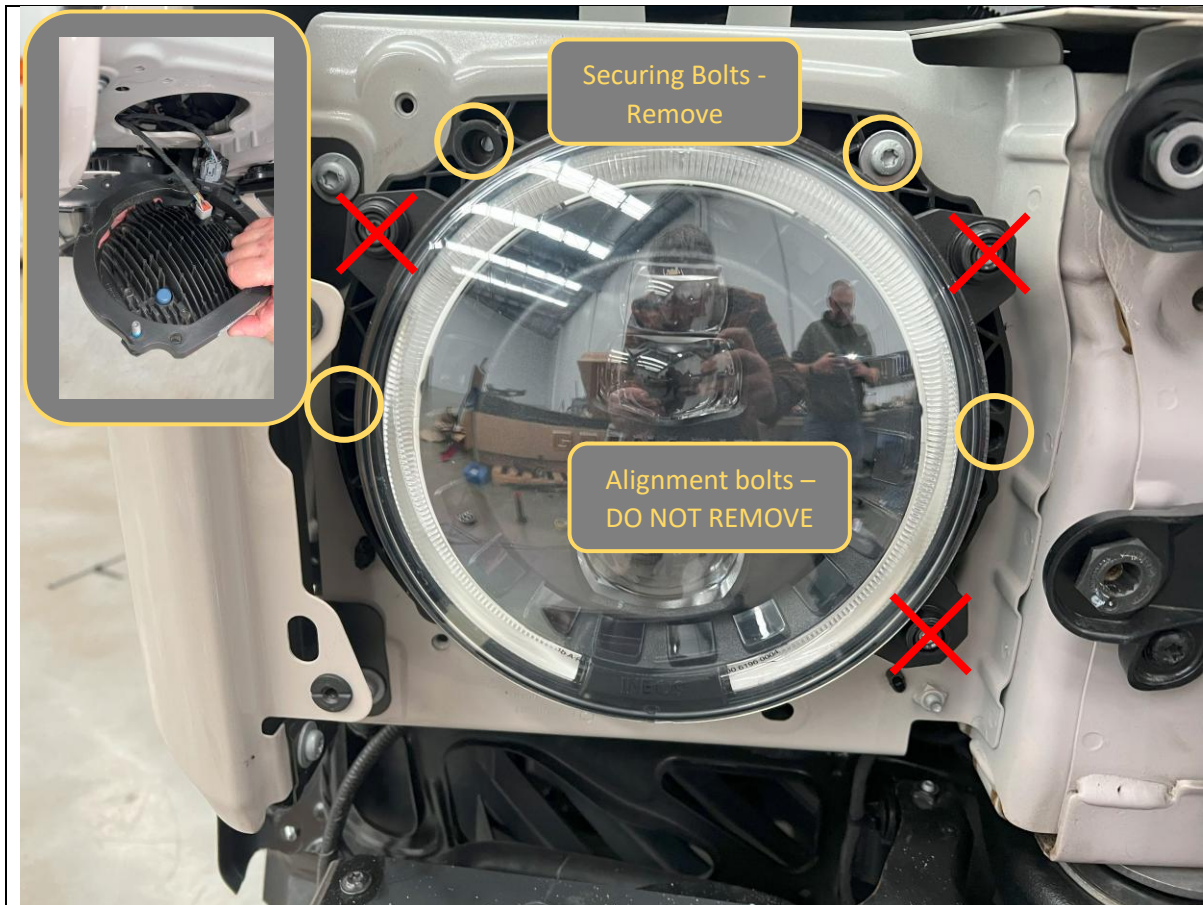
If required carefully pry this gap using a plastic trim tool and rag to protect the finish on these parts.

#### TOOLS REQUIRED

T30 Torx Driver  
Trim Tool  
Rag

#### FASTENERS

Factory Torx Screws (Retain)



22. Remove the Headlight.

23. It is important to only release the Silver T40 Securing screws, not the headlight alignment screws. Refer to the above image.

24. Once released, unplug the headlight wiring connectors and set aside in safe place for later refitment.

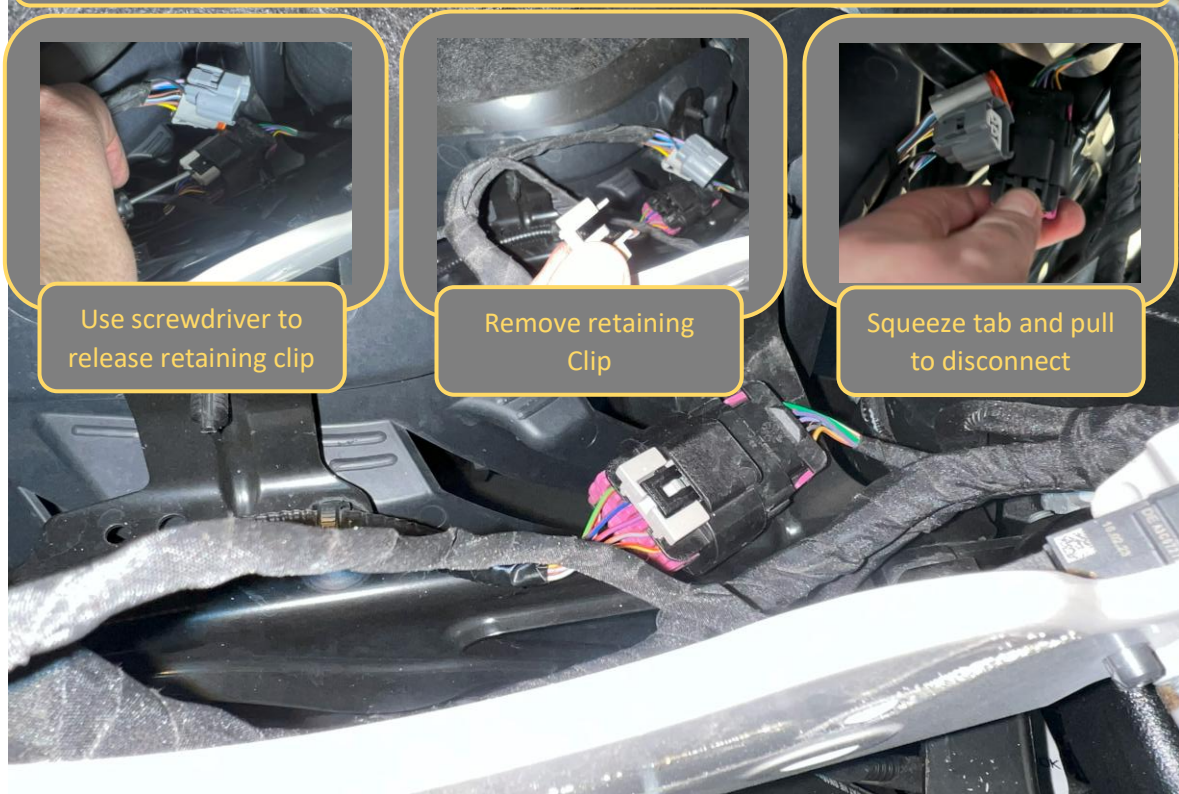
#### TOOLS REQUIRED

T40 Torx Driver

#### FASTENERS

Factory Screws (Retain)

## PARKING SENSOR EQUIPPED VEHICLES ONLY



25. Disconnect the main parking sensor wiring harness connector, accessed through the headlight opening.

26. First release the retaining clip using a small flat head screwdriver to lever it out. Once loosened remove the clip and retain for refitment later.

27. Once the retaining clip is released squeeze the connector tab and pull backwards to release the connector.

28. Use a trim tool to remove the harness from any clips securing it to the body.

### TOOLS REQUIRED

Small Flat Head Screwdriver

### FASTENERS



29. Unclip the clearance light harness from the wheel arch bracket.

This will provide more length on the cable to re-plug into the relocated light in the bar.

30. Complete on both sides.

#### TOOLS REQUIRED

Trim Tool

#### FASTENERS



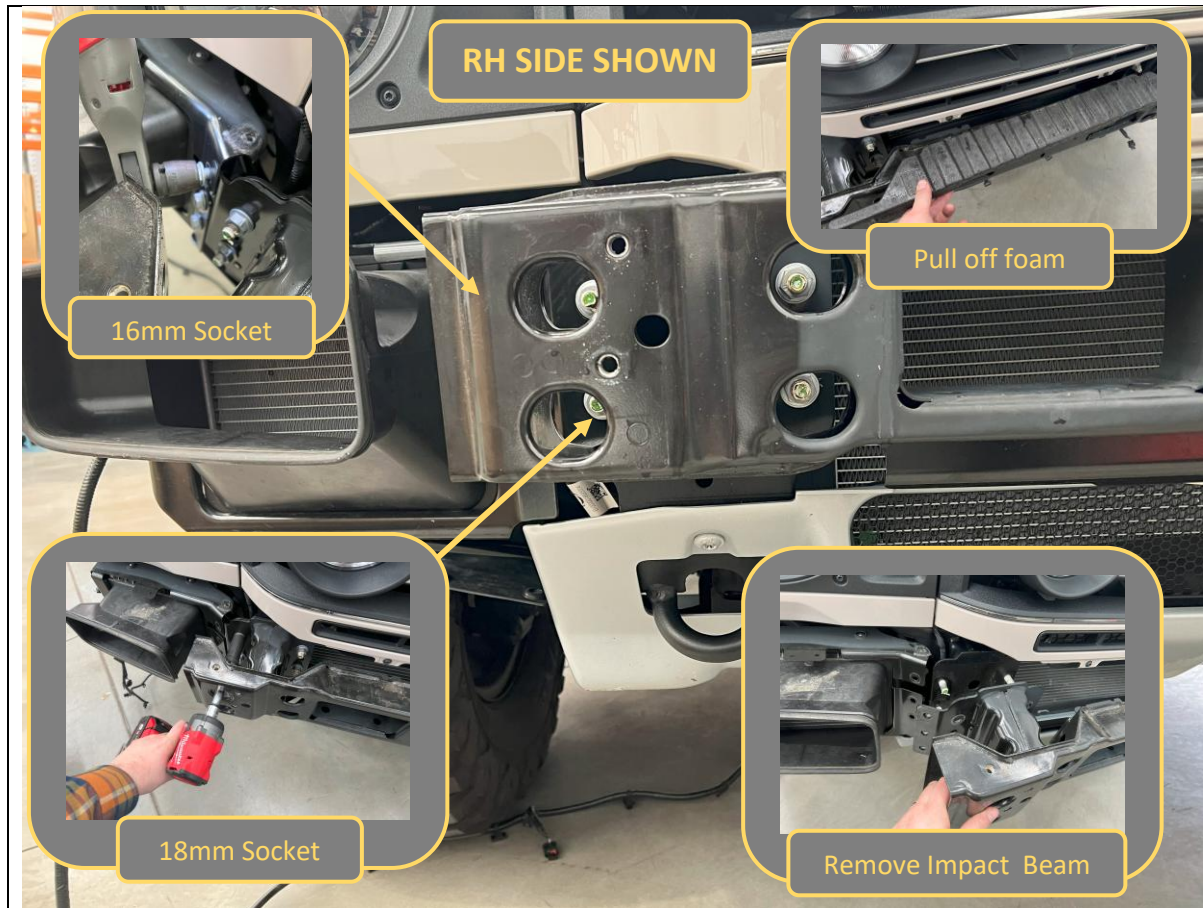
31. Remove the 2x T30 Screws holding the bash plate to the center crossbeam.

**TOOLS REQUIRED**

T30 Torx Driver

**FASTENERS**

Factory Screws (Discard)



32. Remove the foam buffer from front the center impact beam.
33. Remove the 3x Bolts per side securing the aux radiator mounts to the impact beam using 16mm Socket.
34. Remove the 4x Factory flange nuts per side securing the impact beam to the chassis using 18mm socket.
35. Once all fasteners have been removed remove the front impact beam.

#### TOOLS REQUIRED

16mm Socket  
18mm Socket

#### FASTENERS

Factory Fasteners Retain



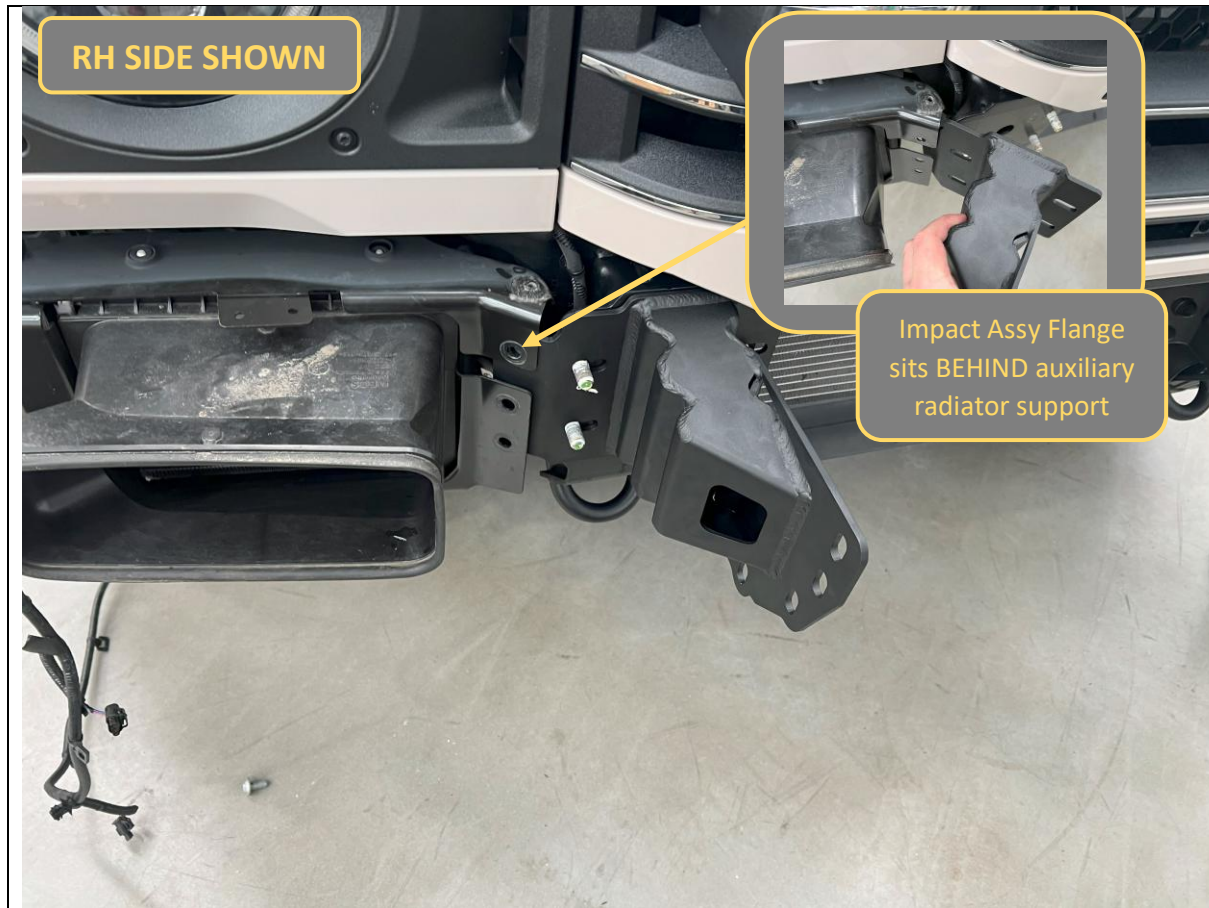
36. Remove the 2x T50 Torx screws securing the top of the bash plate to the chassis.
37. Remove the 4x T50 Torx Screws securing the bottom of the bash plate to the chassis. Lower the bash plate down and remove.

#### TOOLS REQUIRED

T50 Torx Driver

#### FASTENERS

Factory Fasteners (Discard)



38. Fit the impact assemblies to the chassis. Insert the impact assembly on an angle, such that it positions the side flange BEHIND the auxiliary radiator supports.

#### TOOLS REQUIRED

#### FASTENERS



39. Secure the impact assembly to the chassis and auxiliary radiator bracket, re-using the factory bolts and flange nuts removed from the impact beam.

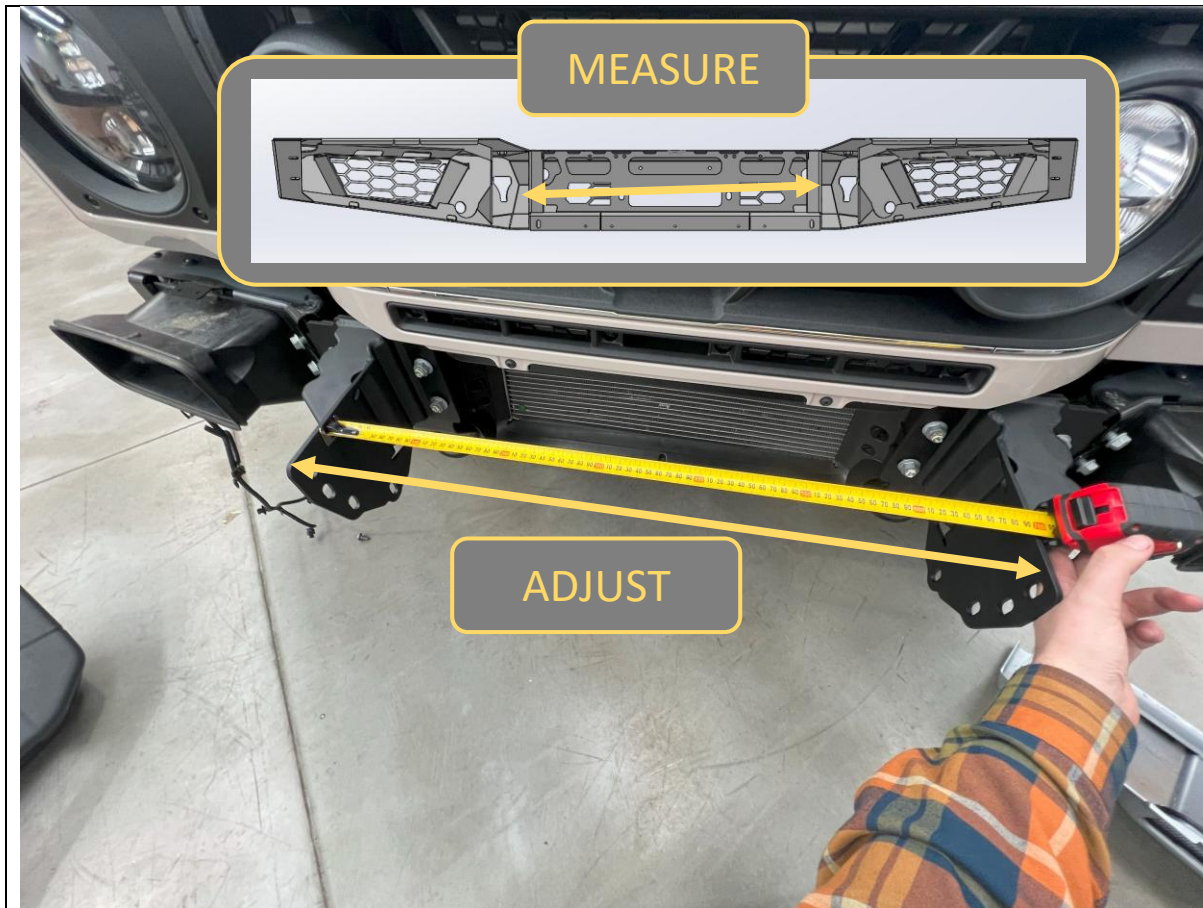
Leave fasteners finger tight. Complete for both sides.

#### TOOLS REQUIRED

16mm Socket  
18mm Socket

#### FASTENERS

Factory Flange Nut (18mm head)  
Factory Bolt (16mm head)  
Re-Use



40. Measure Distance between outside edges uprights on bar using tape measure. Write distance below for reference if required.

Bar Upright Width = \_\_\_\_\_mm

41. Adjust mounts by sliding mounts on slots, such that distance between inside edges of mounts is approximately 2mm greater than the bar. Ensure the mounts are centered on the vehicle chassis.

42. Secure and tighten mounts. Tighten the 4x Flange Nuts first, then the Flange bolts that secure the Aux radiators.

#### TOOLS REQUIRED

18mm Socket  
16mm Socket  
Tape Measure

#### FASTENERS

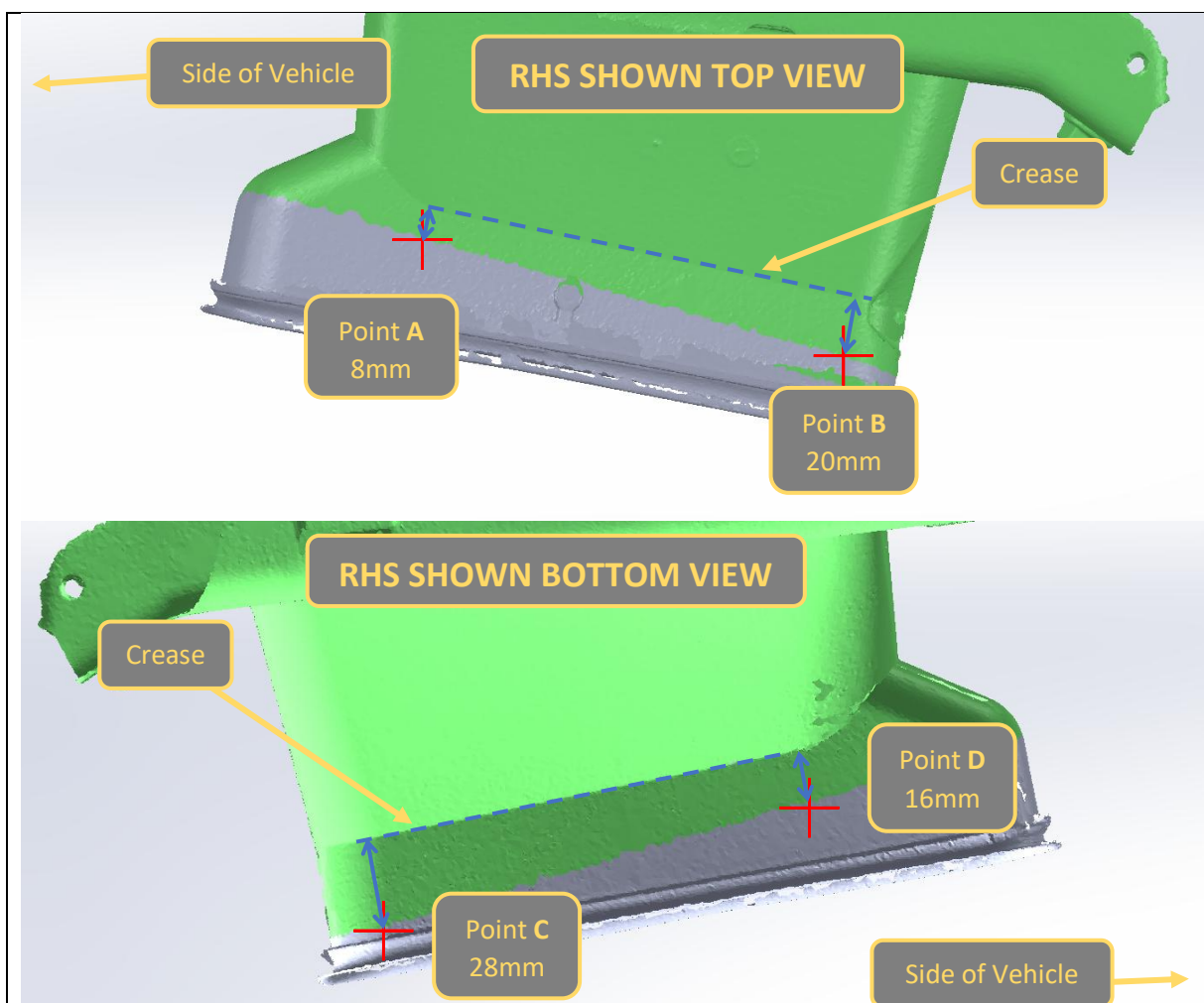


43. Cover the outer section of the plastic aux radiator air guides with masking tape, as shown.

**TOOLS REQUIRED**

Masking Tape

**FASTENERS**



44. Using a steel rule measure and mark the following points, Distances are measured perpendicular to the straight section of the molded crease in the air guide.

| Point | Location       | Distance from Crease |
|-------|----------------|----------------------|
| A     | Top Outside    | 8mm                  |
| B     | Top Inside     | 20mm                 |
| C     | Bottom Inside  | 28mm                 |
| D     | Bottom Outside | 16mm                 |

45. Right hand side is shown in the image. Mark the same points, on the left side. Points will keep their relative location, I.E point A is still on the top and toward the outside of the vehicle on the LH side.

#### TOOLS REQUIRED

Steel Rule  
Marker / Pencil

#### FASTENERS

**RH SIDE SHOWN**



46. Using a ruler and marker, mark a straight line between the 4 points marked around the air guide in the previous step.

47. Complete on both sides of vehicle.

**TOOLS REQUIRED**

Ruler  
Marker

**FASTENERS**



**RH SIDE SHOWN**

48. Using an air hacksaw or oscillating multi tool, cut along the line marked.
49. Neaten up cut edges using file, utility knife or de-burring tool.
50. Complete cut on other side of vehicle.

**TOOLS REQUIRED**

Air Hacksaw  
Or  
Oscillating multi-tool

Knife, file or De-burring Tool

**FASTENERS**



51. Remove the marker lamps from the outer bumper panels. Use a sharp utility knife to cut the tape, then gently use a trim tool to pry the light out.
52. Take note of the side and orientation of the lamp units to ensure they are re-fitted in the same way
53. Retain lights for re-fitment to Offroad Animal Bar.

#### TOOLS REQUIRED

Utility Knife  
Trim Tool

#### FASTENERS

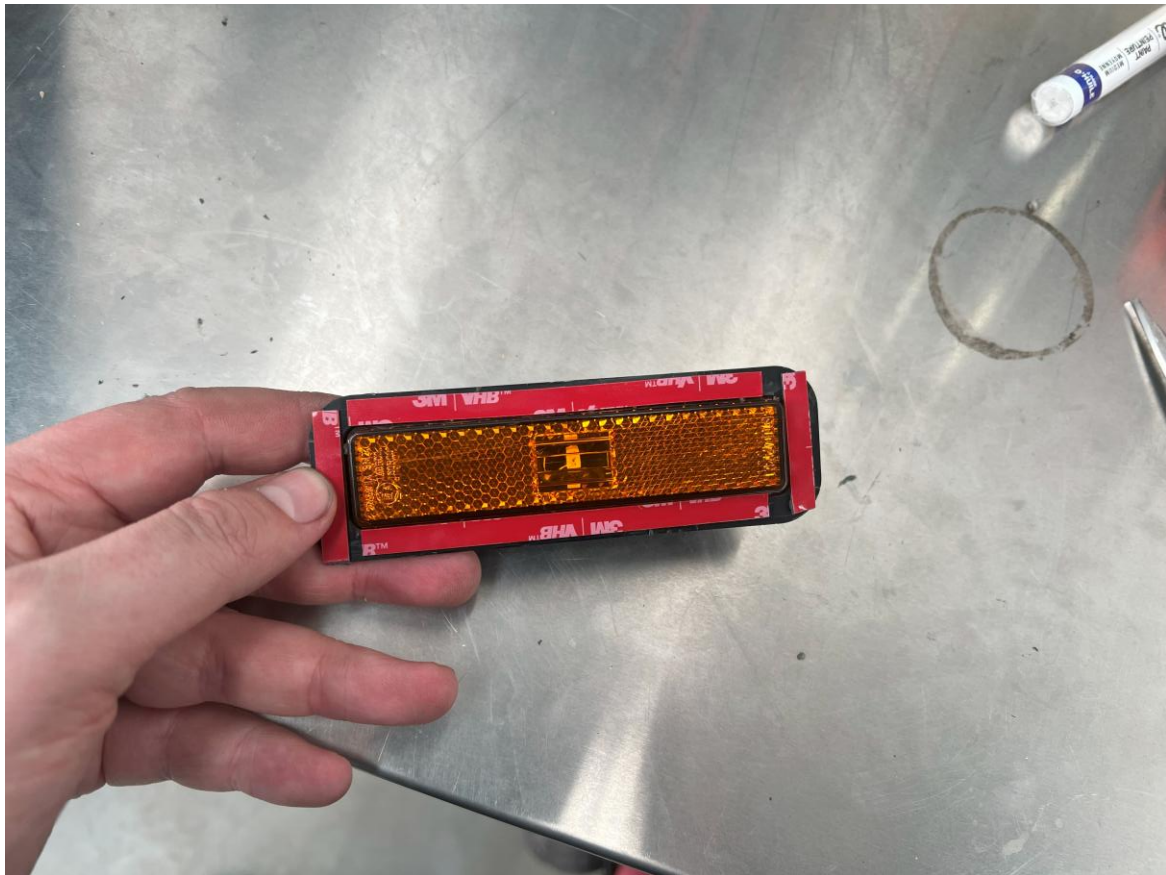


54. Remove all adhesive, and adhesive residue from the clearance lights.
55. Remove the bulk of the adhesive using a knife or scraper, then clean the rest off using solvents / rag.
56. Ensure the surface is clean and ready to re-apply tape for refitment to the bar.

#### TOOLS REQUIRED

Utility Knife  
Scraper  
Rag  
Isopropyl alcohol or other solvent

#### FASTENERS



57. Using tape kit supplied, apply adhesive tape to perimeter of the clearance light.
58. Trim tape to length using scissors / knife as required.
59. Set aside clearance lights for later re-fitment to bar.

#### TOOLS REQUIRED

Scissors  
Utility Knife

#### FASTENERS

## PARKING SENSOR EQUIPPED VEHICLES ONLY

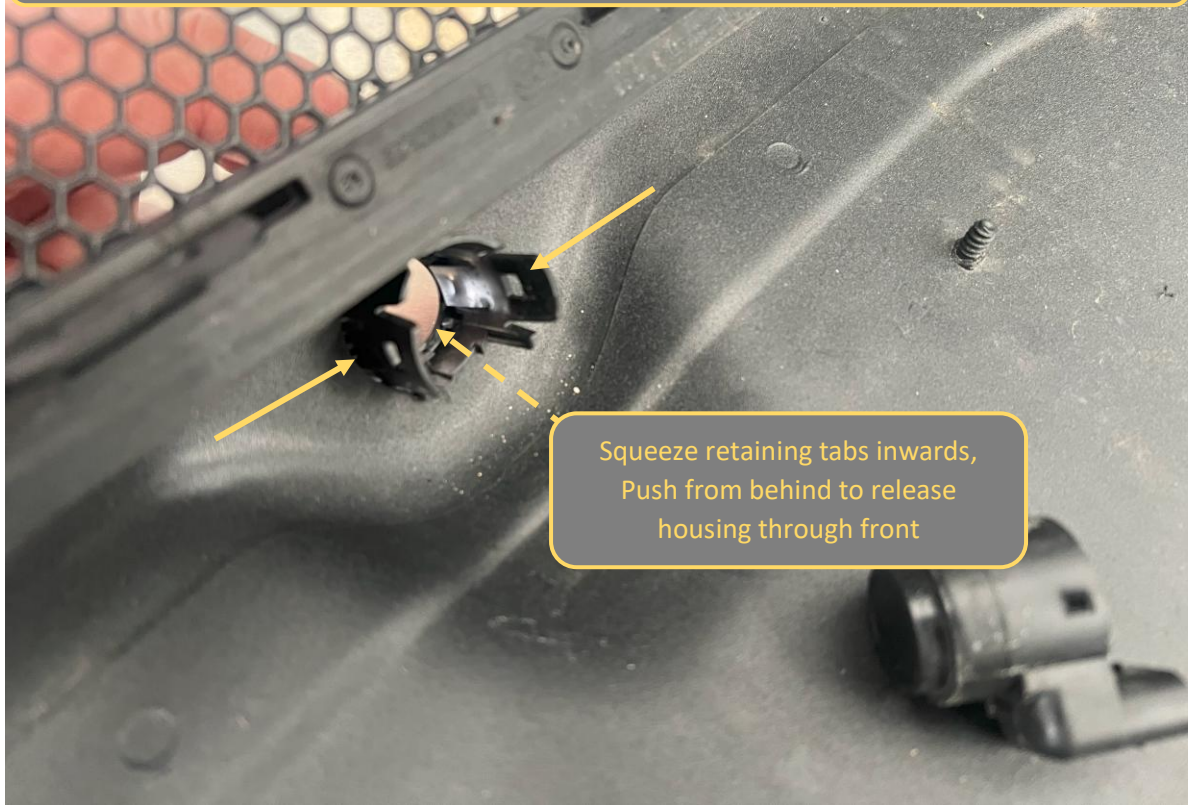


60. If fitted, Remove the parking sensors from both the center and outer bumper segments. The removal process is the same for all sensors.
61. Pry the two side tabs outward, whilst applying pressure to the sensor from the front side of the bumper.
62. Once unclipped, the sensor can be removed from the back side of the bumper panel.
63. Repeat removal for all sensors. Keep track of which sensors go in each sensor location.

### TOOLS REQUIRED

### FASTENERS

## PARKING SENSOR EQUIPPED VEHICLES ONLY



64. Once sensors are removed, remove the sensor housings from the bumper.
65. Squeeze the two retaining tabs inwards, whilst applying pressure from the back side of the bumper.
66. Once unclipped the sensor housing can be removed from the front side of the bumper panel.

### TOOLS REQUIRED

### FASTENERS

## PARKING SENSOR EQUIPPED VEHICLES ONLY




67. Using a sharp utility knife, cut off the keying notch on from the sensor housing.
68. Ensure the cut is flush at the bottom edge. The housing should look like the inset image once complete.
69. Complete trim for all sensor housings.

### TOOLS REQUIRED

Utility Knife

### FASTENERS

|  |   |
|--|---|
|   |   |
| <p>70. Re-fit the sensor housing and parking sensors to the bar.</p> <p>71. First insert the housing from the front side of the bar. Then fit the sensor back into the housing from the rear. Ensure the rubber retaining ring is not pinched and the sensor is clipped into both sides of the sensor housing.</p> <p>72. If parking sensors are not equipped, fit the blanking plugs to the sensor holes.</p> | <p><b>TOOLS REQUIRED</b></p>                  |
|  | <p><b>FASTENERS</b></p> <p>Blanking Plugs</p> |

## PARKING SENSOR EQUIPPED VEHICLES ONLY



73. Before re-fitting the parking sensor loom, remove all the stud clips, by carefully cutting off using side cutters. This will make the loom much easier to run through the bar.
74. Route the loom, starting from the RH side lower, through the gap in the upright, to the parking sensor location, then through the gap between the front face and brace along the front of the bar.
75. Route through same gap in upright on LH side of bar

### TOOLS REQUIRED

Side cutters

### FASTENERS

## PARKING SENSOR EQUIPPED VEHICLES ONLY








76. Re-connect the parking sensor electrical connectors.
77. Using cable ties, tidy and secure loom to the bar

### TOOLS REQUIRED

### FASTENERS

Cable ties

|   |   |
|---|---|
|    |   |
| <p>78. Using isopropyl alcohol or a rag, clean the surfaces around the clearance light hole in the wing.</p> <p>79. Break the ampule on the 3M primer 94 stick, by squeezing in the location indicated on the tube.</p> <p>80. Apply Adhesion promoter to the bond area surrounding the clearance light hole.</p> <p>81. Allow at least <b>5 minutes</b> for the adhesion promoter to chemically bond to the surface.</p> | <p><b>TOOLS REQUIRED</b></p> <p>3M Primer Stick<br/>Rag<br/>Isopropyl Alcohol</p> |
|   | <p><b>FASTENERS</b></p>   |

|   |   |
|---|---|
|  <p>3MM Cage      2MM Cage</p>   |  <p>B-1342L/R - 2x 2mm Cage Nut</p> |
|  <p>B-1343L/R - 1x 3mm Cage Nut</p>   |  <p>B-1341 - 2x 2mm Cage Nut</p>   |
| <p>82. Whilst waiting for the adhesion promoter to cure, fit the M6 cage nuts to parts that require them.</p> <p>83. Note there are 2x types of cage nut supplied, one suited to 2mm thick material and one for 3mm thick material. Ensure the correct cage nuts are used for each application.</p> <p>84. It can be helpful to use a small flat blade screwdriver to push the cage nut into the square slot.</p> <p>85. Fit 2x 2mm Cage nuts to each of the B-1342L/R under-panel support brackets.</p> <p>86. Fit 2x 2mm Cage nuts to each of the B-1341 Inner Arch Liner Brackets.</p> <p>87. Fit 1x 3mm Cage nuts to each of the B-1343L/R Under-panel Centre Braces.</p> <p>88. Fit 6x 3mm Cage nuts to the square slots in the bottom of the wings on the main bar assembly</p> | <p><b>TOOLS REQUIRED</b></p> <p>Flat Blade Screwdriver</p>  |
|   | <p><b>FASTENERS</b></p> <p>M6 Cage Nuts</p>   |



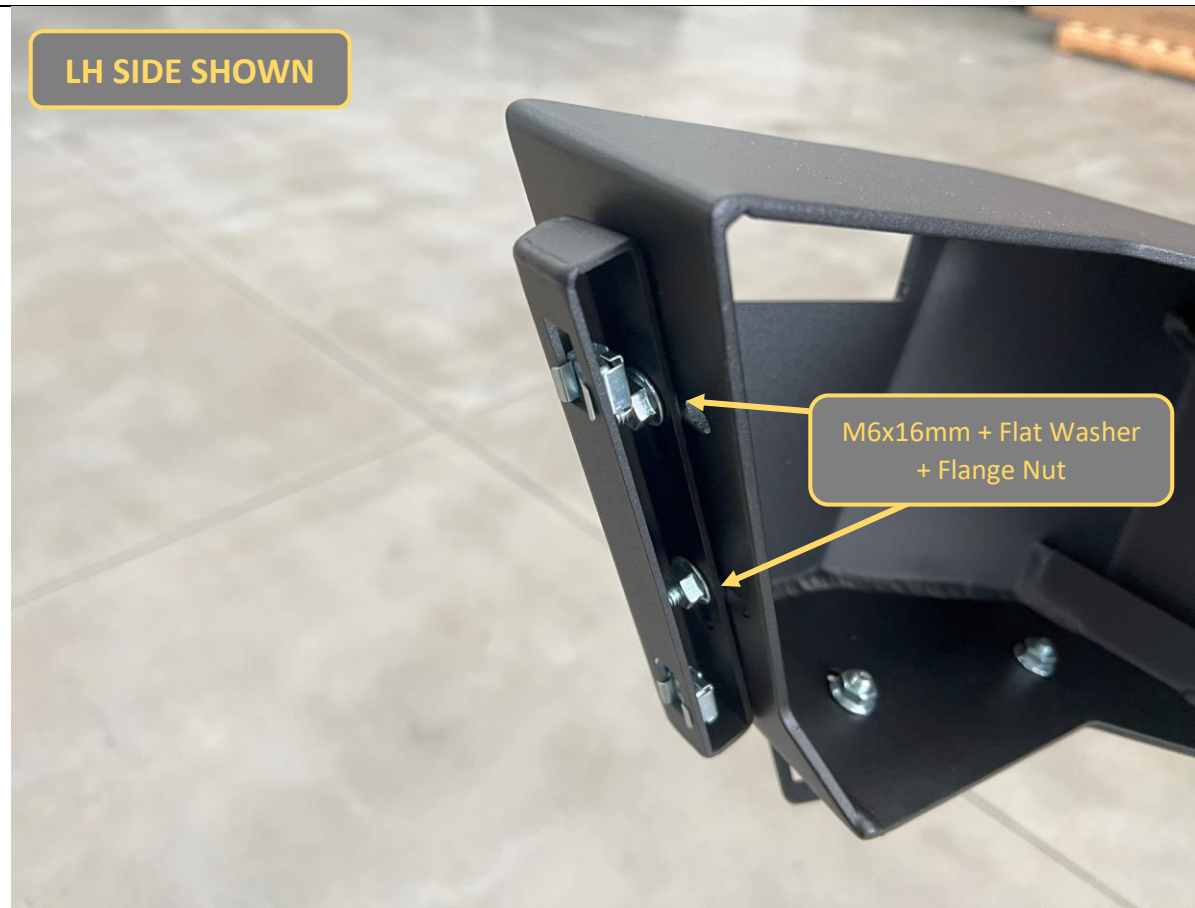
89. Fit the under-panel support brackets to the slots in the bottom edge of the wing, using M6x16 Hex bolts, Flat Washers and Flange nuts. Leave finger tight at this stage.
90. Note we found it is better to fit the bolts in the opposite direction to that shown in the image (i.e Nut on the bottom), as it makes it easier to tighten later.
91. Repeat on the other side of the bar.

#### TOOLS REQUIRED

#### FASTENERS

2x M6x16 Hex  
2x M6 Flat Washers  
2x M6 Flange nuts

Per Side



92. Fit the Inner Arch Liner Brackets to the slots in the back edge of the wing, using M6x16 Hex bolts, Flat Washers and Flange nuts. Leave finger tight at this stage.


93. Repeat on the other side of bar

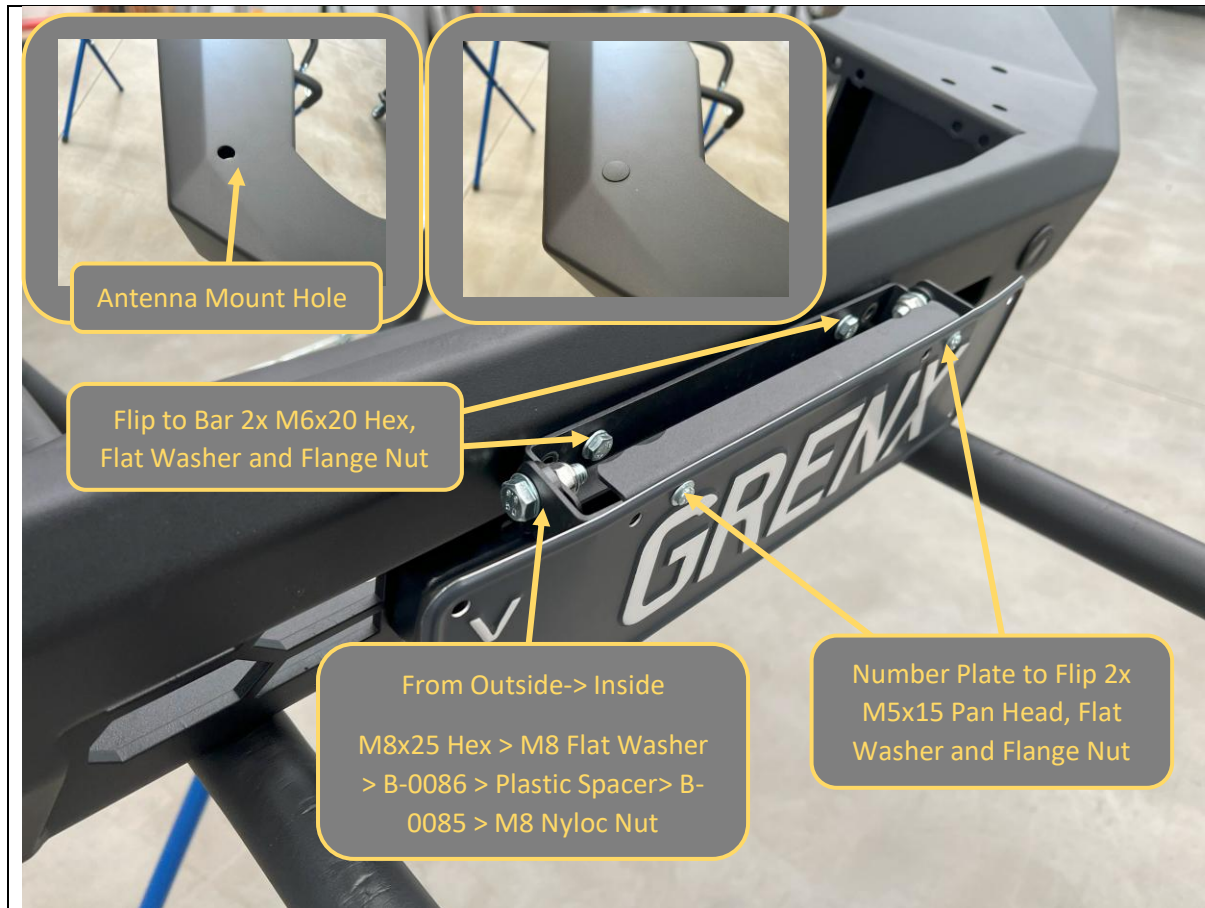
#### TOOLS REQUIRED

#### FASTENERS

2x M6x16 Hex  
2x M6 Flat Washer  
2x M6 Flange Nut

Per side

|   |   |
|---|---|
| <div> <div>RH SIDE SHOWN</div>  </div>   |   |
| <p>94. Taking care to ensure the correct orientation is maintained, fit the clearance lamps to the cutouts in the bar, using the previously applied 3M tape.</p> <p>95. It can be helpful to use the tip of a utility knife or pick to lift the backing off the tape.</p> <p>96. Complete on both sides of the bar.</p> | <p><b>TOOLS REQUIRED</b></p> <p>Utility Knife or Pick</p> |
|   | <p><b>FASTENERS</b></p>                                   |



97. If fitting an antenna to Predator bars, fit it now to the hole on the outer edge of the wing.

If not fitting antenna, fit the blanking plug to this hole.

98. Assemble and fit the number plate flip to the front of the bar.

Follow the bolt order shown in the image above.

Adjust tension to allow smooth operation of the flip, with enough friction to maintain in the open position.

99. Fit the number plate to the number plate flip

#### TOOLS REQUIRED

13mm socket / Spanner  
10mm Socket / Spanner

#### FASTENERS

2x M6x20 Hex  
2x M6 Flat Washer  
2x M6 Flange Nut  
2xM8x25 Hex  
2xM8 Flat Washer  
2x M8 Plastic Spacer  
2x M8 Nyloc Nut  
2x M5x15 Pan  
2x M5 Flat Washer  
2x M5 Flange Nut



100. Temporarily re-fit the headlight surround panel, to allow reference for alignment of bar.
101. It is not necessary to re-fit all fasteners, but ensure the panel is sitting in the correct location and secure.

**TOOLS REQUIRED**

T30 Torx Driver

**FASTENERS**

Factory Torx screws



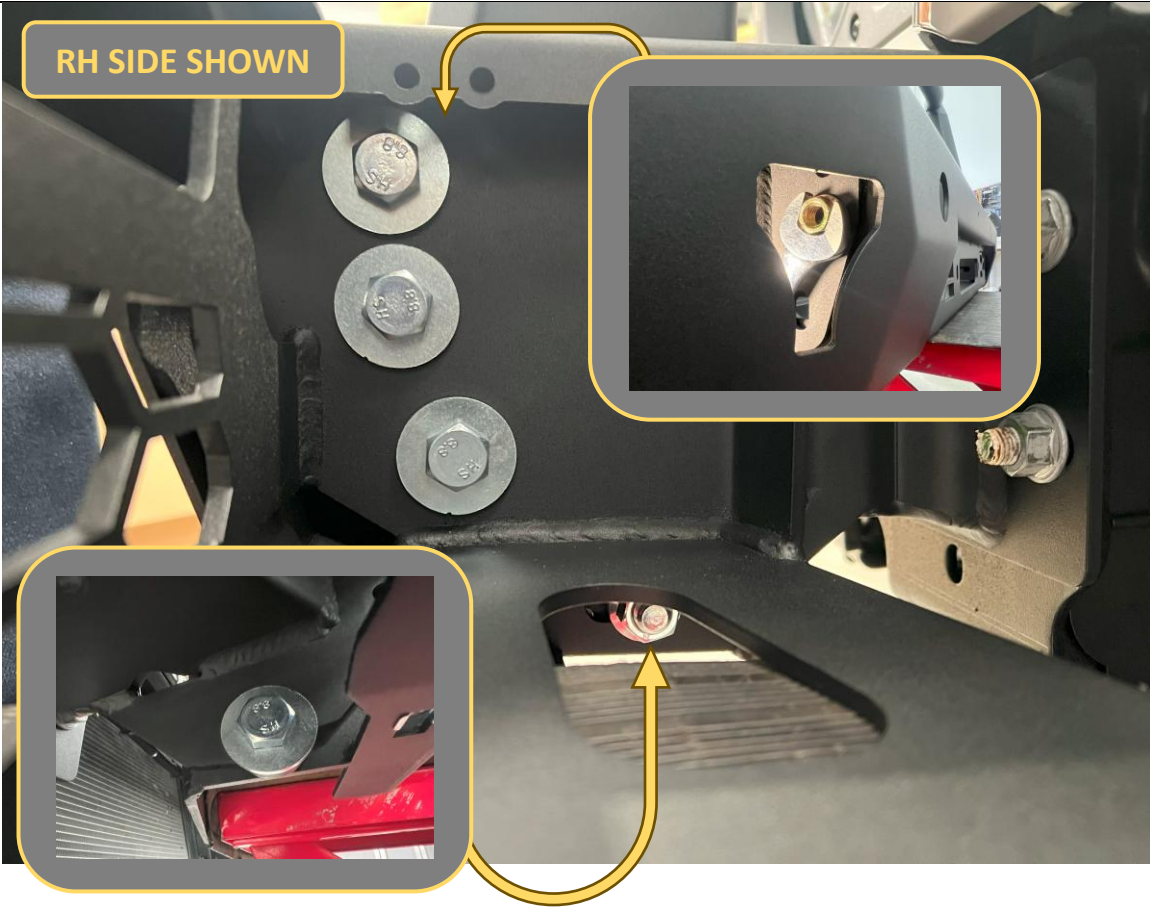
102. With assistance, either from another person, or a lifting trolley, lift the bar onto the mounts on the vehicle.

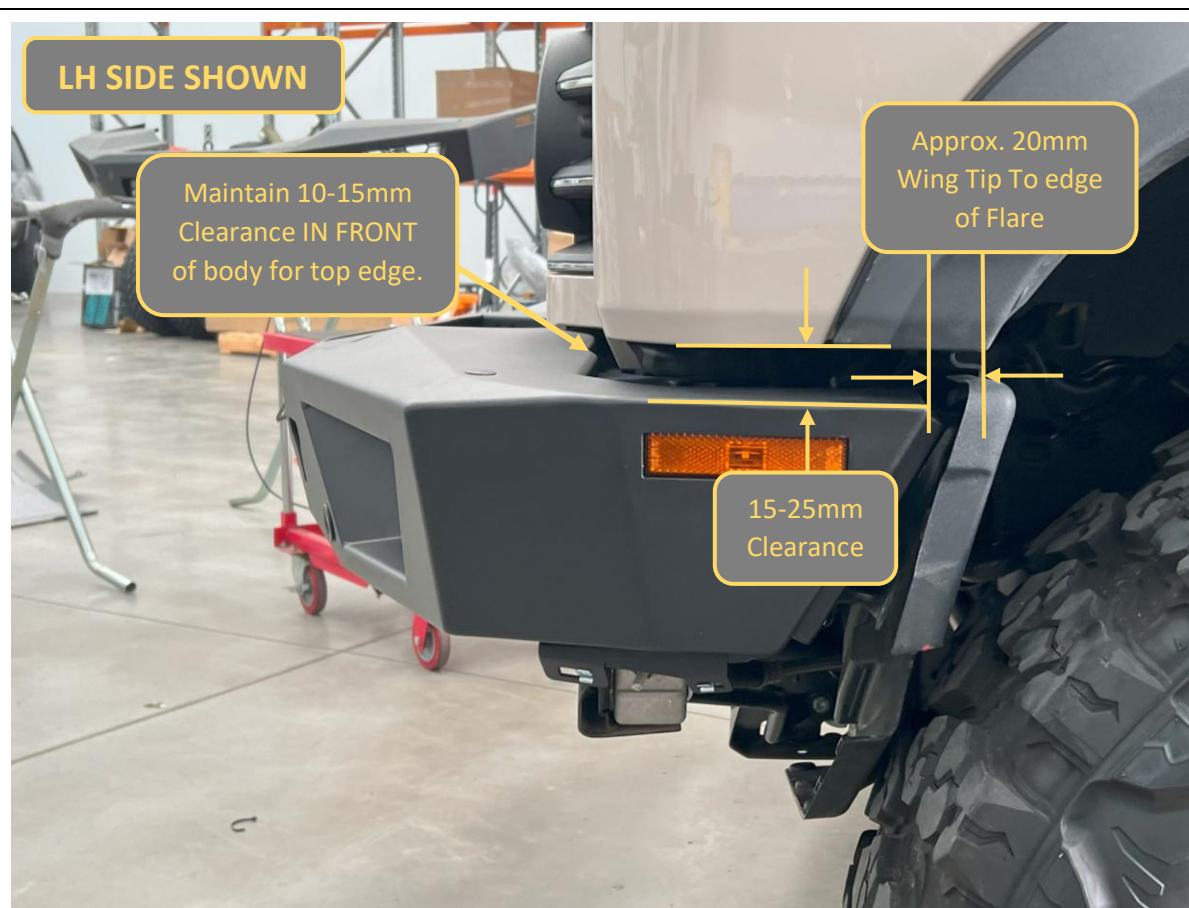
103. Push the bar onto the mounts to check full range of adjustment. If there is any interference found with air guides, remove and re-trim the guides as required.

#### TOOLS REQUIRED

Lifting Trolley

#### FASTENERS

|   |  |
|---|--|
|    |  |
| <p>104. Secure with 4x M12x30 Bolts, Heavy Duty washers and M12 Nyloc and Flange Nuts per side, Finger tight at this stage.</p> <p>105. It can be helpful to use a spanner to position the top nuts. We recommend fitting the Nyloc nuts on the two lower positions for easier tool access.</p> <p>Note: Use a washer on both bolt and nut side for the Nyloc nut. 1x washer on the bolt side is all that is required with flange nuts.</p> | <p><b>TOOLS REQUIRED</b></p> <p>Lifting Trolley<br/>18/19mm Socket and Spanner<br/>4mm Hex Key</p>                           |
|   | <p><b>FASTENERS</b></p> <p>8x M12x30 Bolt<br/>12x M12 Heavy Duty Large Washer<br/>4x M12 Nyloc Nut<br/>4x M12 Flange Nut</p> |



106. With assistance from another person, Align the bar with the edges of the vehicle. Adjust such that the clearances are neat and even side to side.

Acceptable range of clearances shown in image above.

107. Once in position, tighten the M12 Bolts using socket and spanner. An impact driver may be used to speed up this process.

108. Once the position is locked in, remove the headlight trim panel again, for better access for the following steps.

#### TOOLS REQUIRED

Ruler  
18/19mm Socket and Spanner

#### FASTENERS



109. If NOT fitting a winch, fit the winch cover panel brackets to the bar using M6x16 button head bolts, Flat washers and flange nuts supplied with the winch cover kit.

110. Do not fit the cover panel yet.

#### TOOLS REQUIRED

4mm Hex Key

#### FASTENERS

Supplied with winch cover kit



111. If fitting a winch, do so now.

112. First, fit the winch fairlead to the bar, using fasteners supplied with winch fairlead. Note that this bar will only suit slimline hawse type fairleads.

113. Insert the winch through the top opening, feet down.

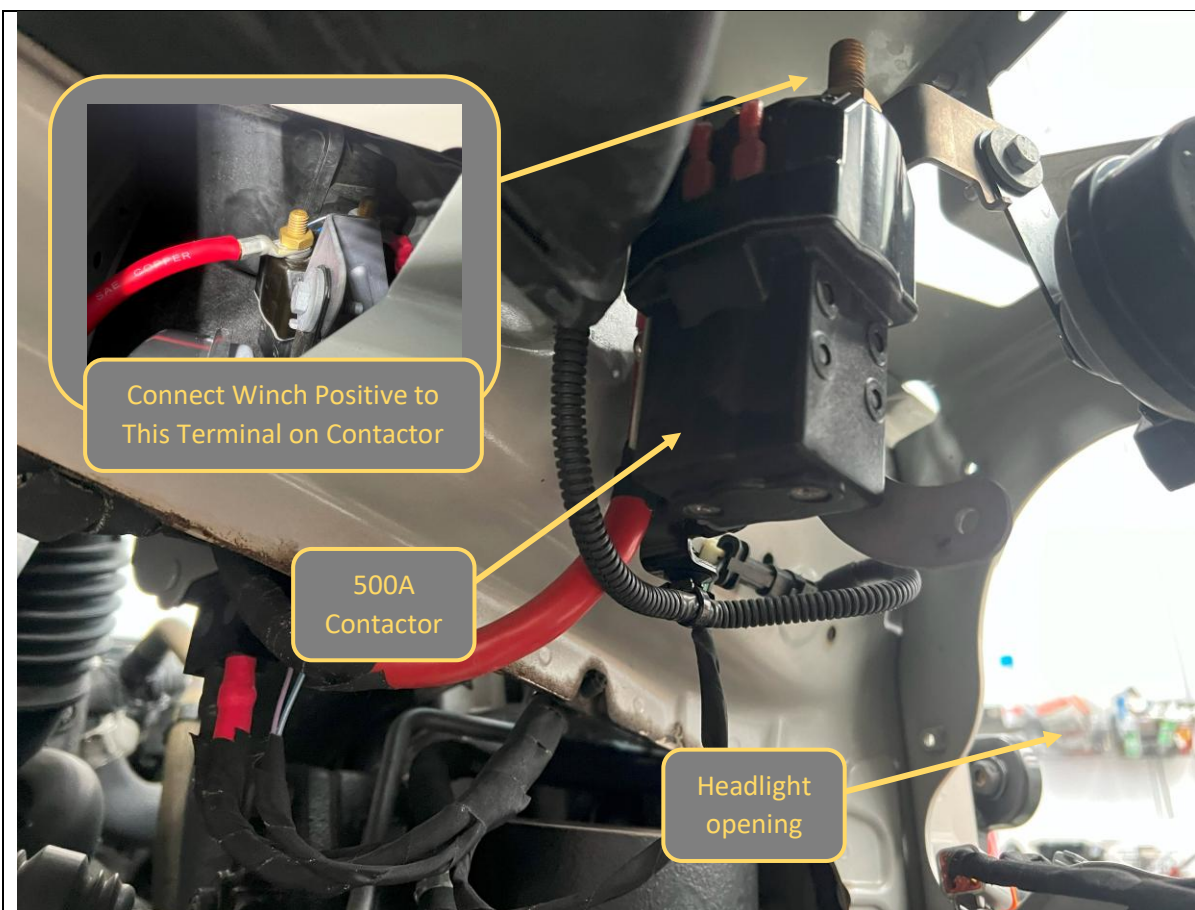
114. Secure to the winch cradle from underneath, using fasteners supplied with the winch.

#### TOOLS REQUIRED

16mm socket / spanner

#### FASTENERS

Supplied with winch kit



115. For vehicles equipped with **“High Load Auxiliary Switch Panel & Electrical Preparation”** the winch positive needs to be connected to the dedicated 500A contactor located behind the front RH headlight.

116. All Grenadiers have a complex electrical system with the main battery under the rear seat. If vehicle is not equipped with **“High Load Auxiliary Switch Panel & Electrical Preparation”** engage a qualified auto electrician to connect the winch.

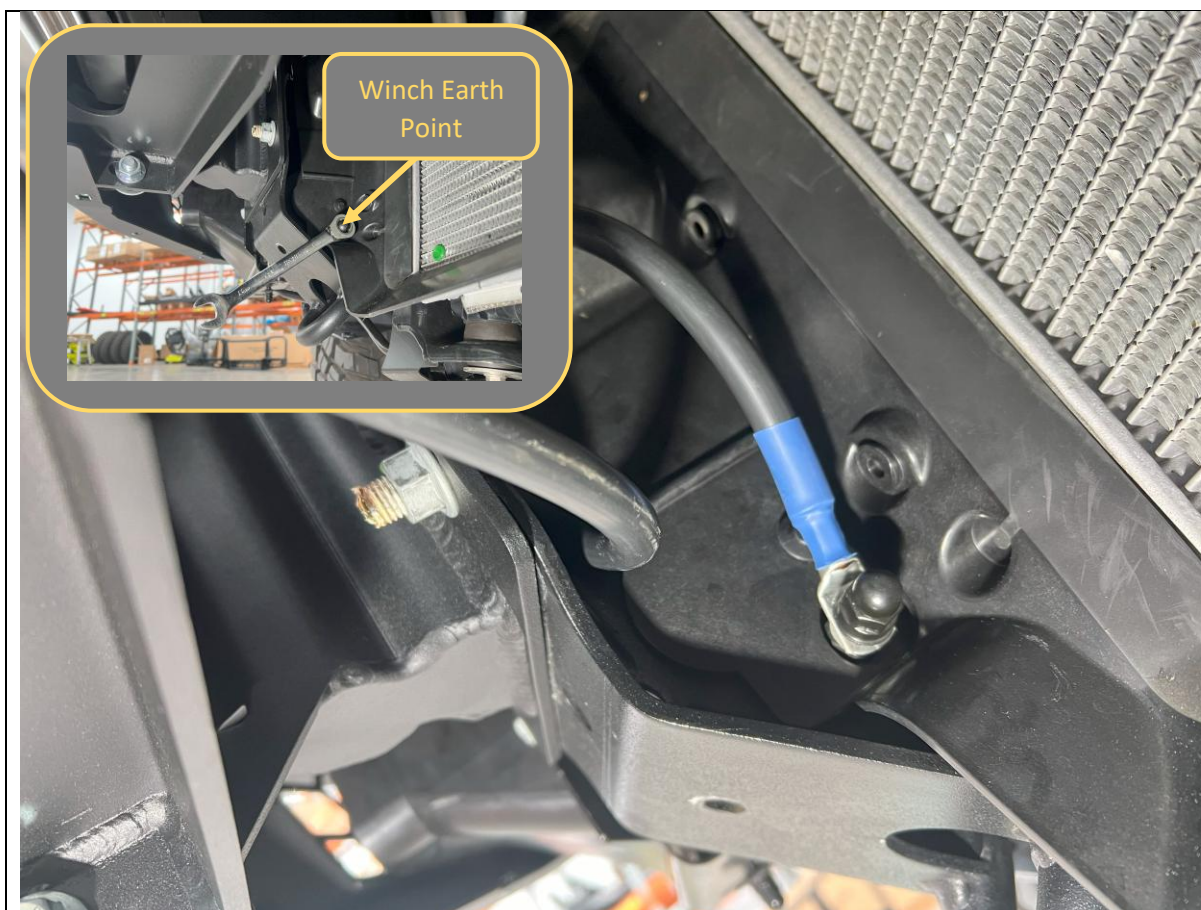
**NOTE:** The contactor for the winch will only switch on when the vehicle is in neutral. Ensure vehicle is switched on and in neutral when testing winch operation.

#### TOOLS REQUIRED

17mm Stubby Spanner

#### FASTENERS

Use nut on terminal



|   |  |
|---|--|
| <p>117. For vehicles equipped with <b>“High Load Auxiliary Switch Panel &amp; Electrical Preparation”</b> the winch negative needs to be connected to the dedicated earthing stud located on the RH chassis rail. Use a 13mm spanner to remove the Dome nut to connect the earth cable.</p> | <p><b>TOOLS REQUIRED</b></p> <p>13mm Spanner</p> |
| <p>118. All Grenadiers have a complex electrical system with the main battery under the rear seat. If vehicle is not equipped with <b>“High Load Auxiliary Switch Panel &amp; Electrical Preparation”</b> engage a qualified auto electrician to connect the winch.</p>                     | <p><b>FASTENERS</b></p> <p>Re-Use Factory</p>    |

## PARKING SENSOR EQUIPPED VEHICLES ONLY



119. If vehicle is equipped with parking sensors, re-connect the main parking sensor loom behind the headlight. Remember to replace the retaining clip.

### TOOLS REQUIRED

### FASTENERS

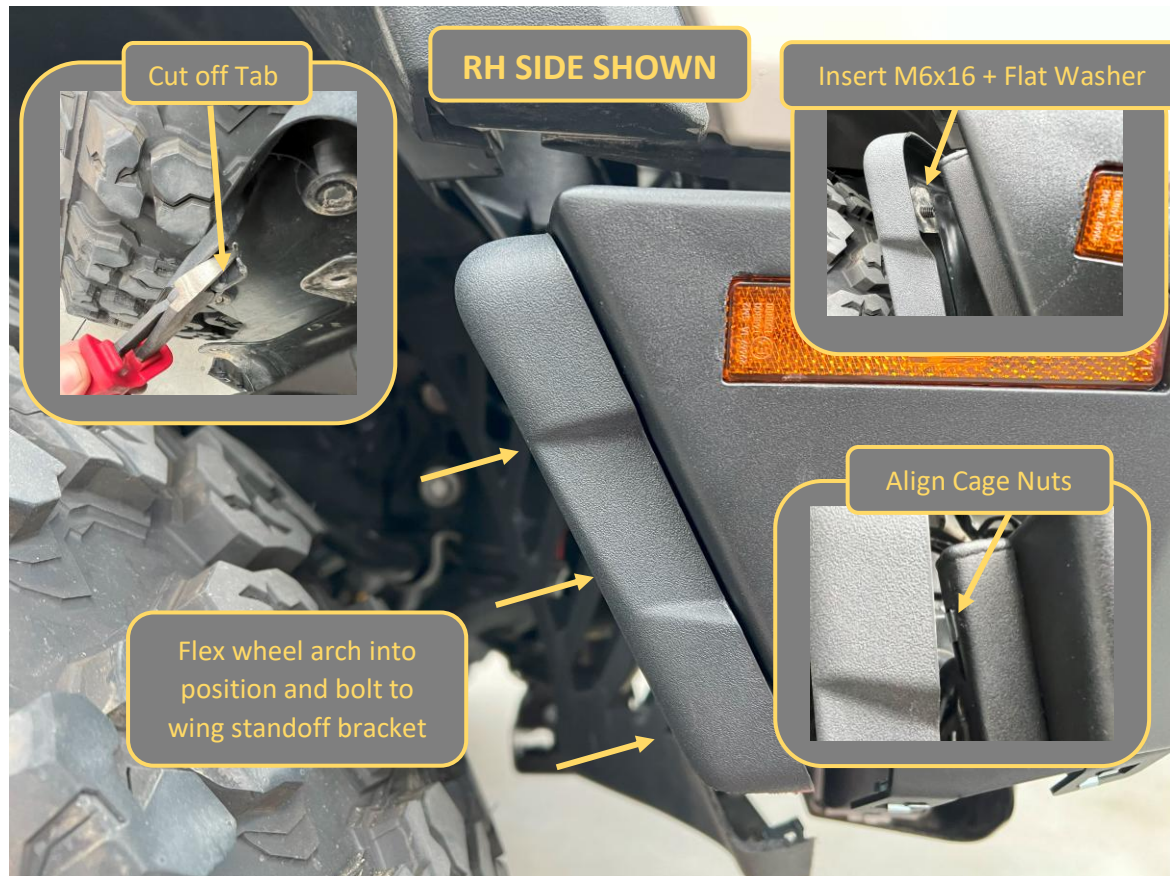


120. From underneath, reconnect the side clearance lamp electrical connectors.

121. Repeat for both sides

#### TOOLS REQUIRED

#### FASTENERS



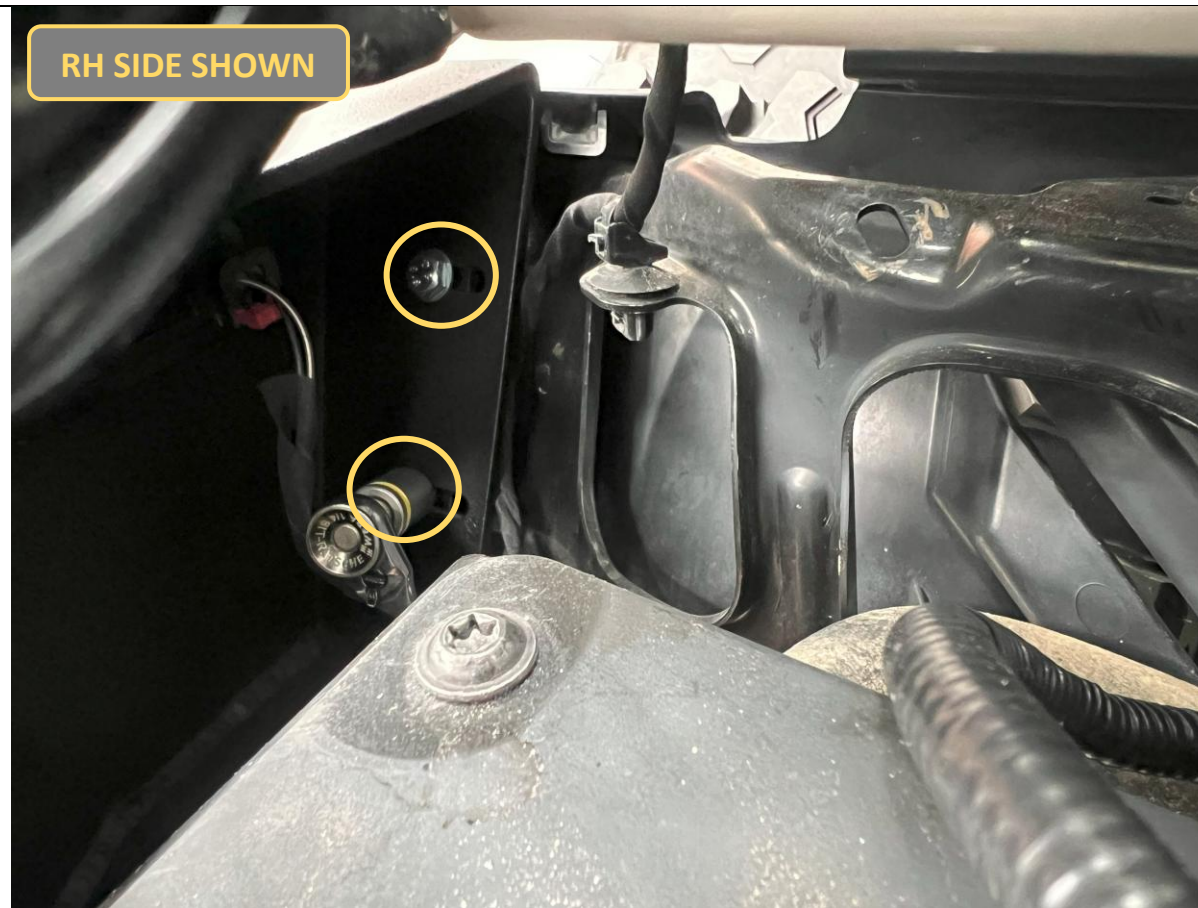
122. Using Side cutters, cut of the tabs on the inside edge of the plastic inner wheel arch liners
123. Prepare to re-fit the inner arch liner to the bar, by flexing the arch liner panel to the back of the wing and observing the required locations for the cage nuts.
124. Manipulate the bracket and cage nut positions to align with the required locations.
125. With assistance to hold the inner arch panel against the back edge of the wing, secure with the M6x16 Button head bolts and Washers into the cage nuts on the inner arch bracket.
126. Complete on both sides.

#### TOOLS REQUIRED

4mm Hex Key  
Side Cutters

#### FASTENERS

2x M6x16 Button Head  
2xM6 Flat Washer  
  
Per side



127. Once the inner arch bracket is connected, tighten the M6 bolts securing the bracket to the wing, using 10mm socket or spanner

128. Complete on both sides.

#### TOOLS REQUIRED

10mm Socket or Spanner

#### FASTENERS



129. Fit Under-panel Centre Braces to the Winch cradle, using supplied M8x20 Hex Bolt Flat washer and Flange Nut. Leave bolt finger tight at this stage.

130. Complete on both sides.

131. The M8 Bolt will be tightened later from above, after the fitment of the side under panels.

#### TOOLS REQUIRED

#### FASTENERS

1x M8x20 Button Head  
1xM8 Flat Washer  
2xM8Flange Nut

Per Side



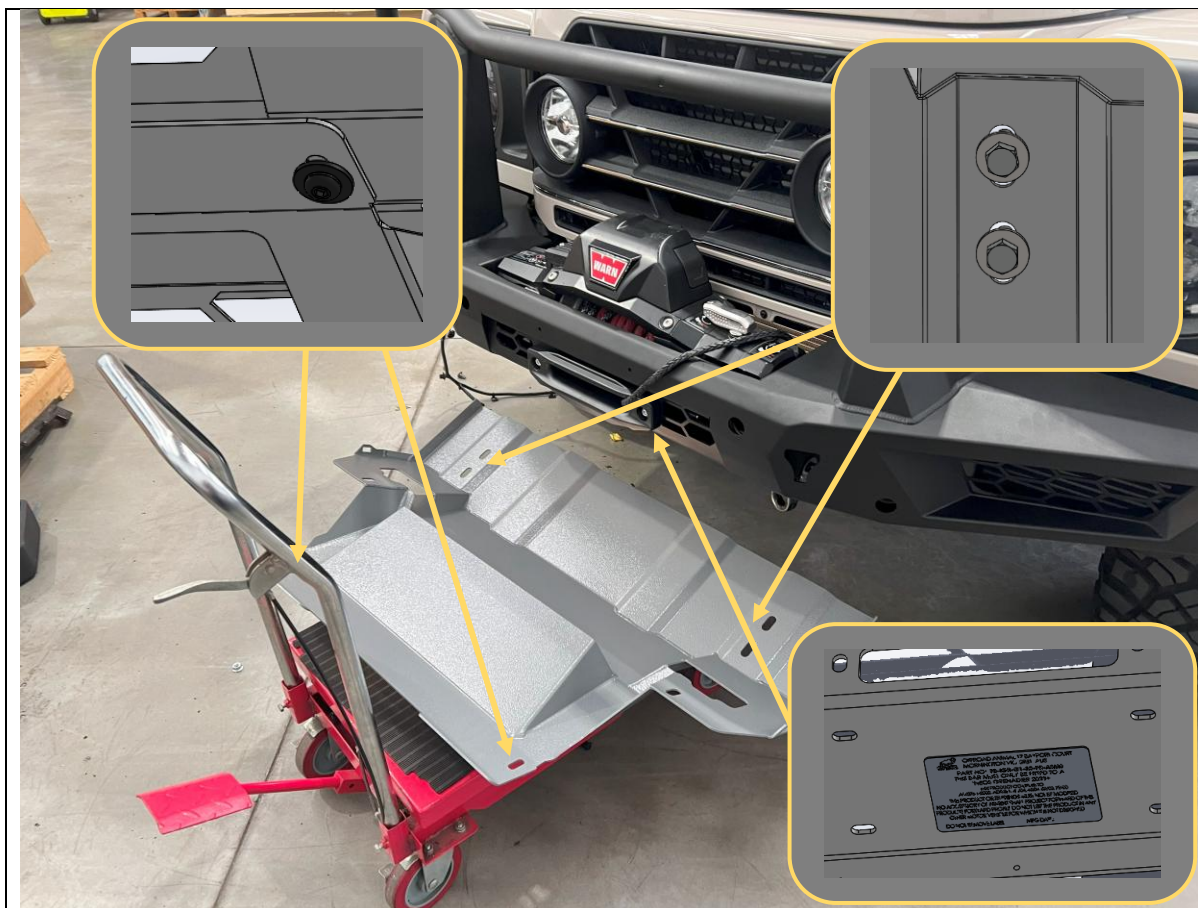
132. Replace the headlight and all trims on the RH front headlight, re using all original fasteners.
133. The refit procedure is reverse of removal.

**TOOLS REQUIRED**

T30 + T40 Torx Driver

**FASTENERS**

Factory Torx Re-Used



134. Using the adhesive backing, fit the compliance plate to the underside of the winch cradle.

135. Fit Center Bash Plate. As the bash plate is quite large, we recommend using either a lift trolley or assistance from another person.

136. Secure to the threaded points in the bottom of the chassis using 4x M10x30 Hex bolts and HD flat washers.

137. Secure to the threaded points in front of the bar using 2x M10x25 Black Button Head bolts and Black HD flat washers.

138. Tighten all the bolts.

#### TOOLS REQUIRED

6mm Hex Key  
16/17 mm Socket / Spanner  
Lift trolley

#### FASTENERS

4x M10x30 Hex Head  
4xM10 HD Flat Washer  
2x M10x25 Black Button Head  
2xM10 Black HD Flat Washer



139. Fit 3x M6x2mm Cage nuts to each of the side under panels.

140. It can be helpful to use a small flat blade screwdriver to push the cage nut into the square slot.

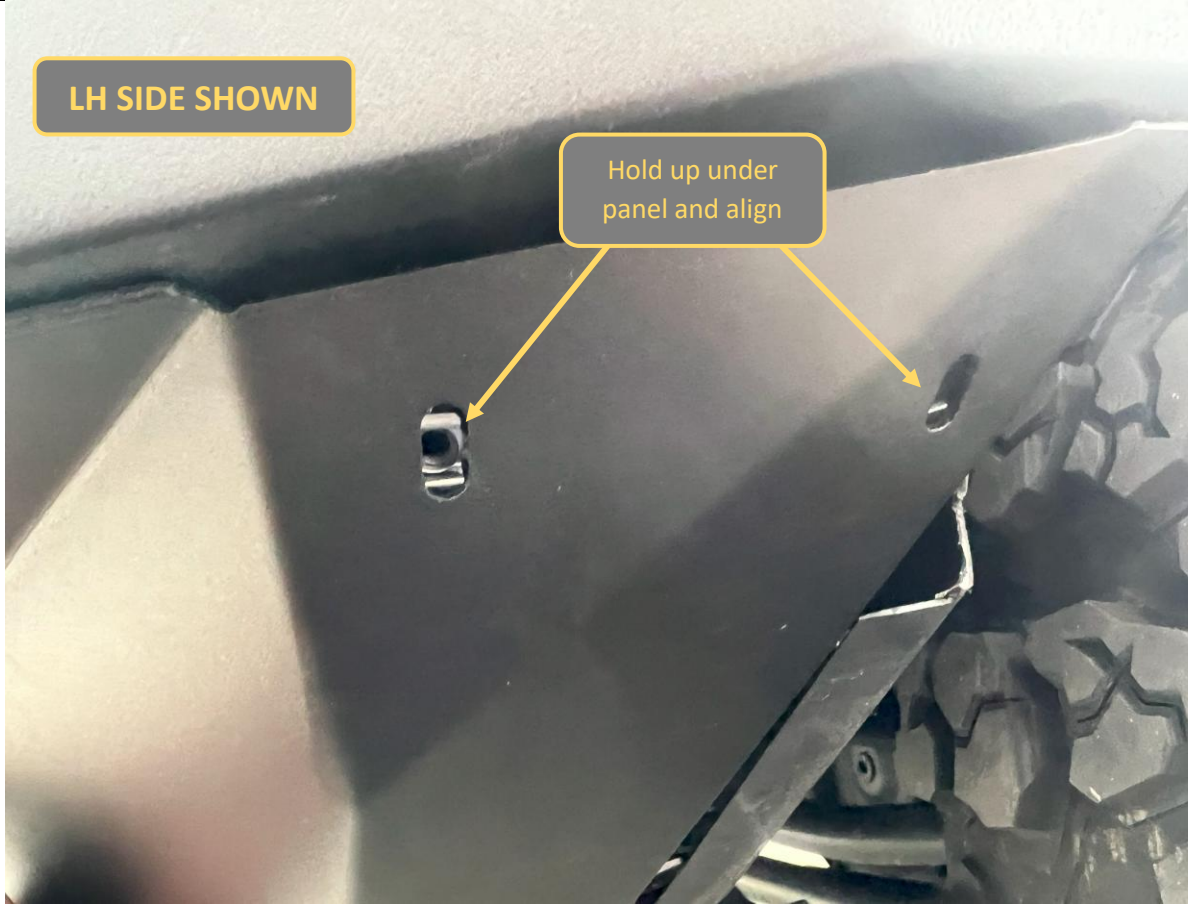
#### TOOLS REQUIRED


Flat blade Screwdriver

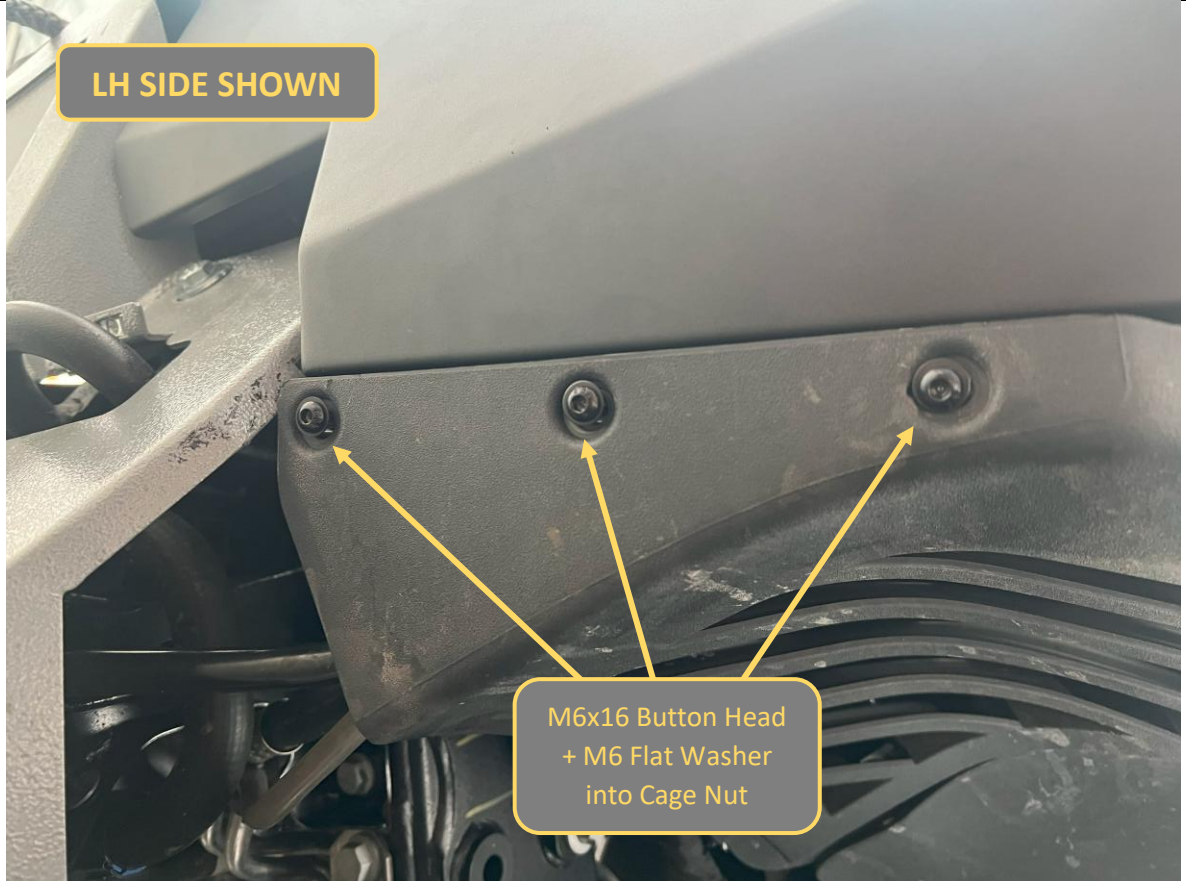
#### FASTENERS

3x M6x2mm Cage nuts

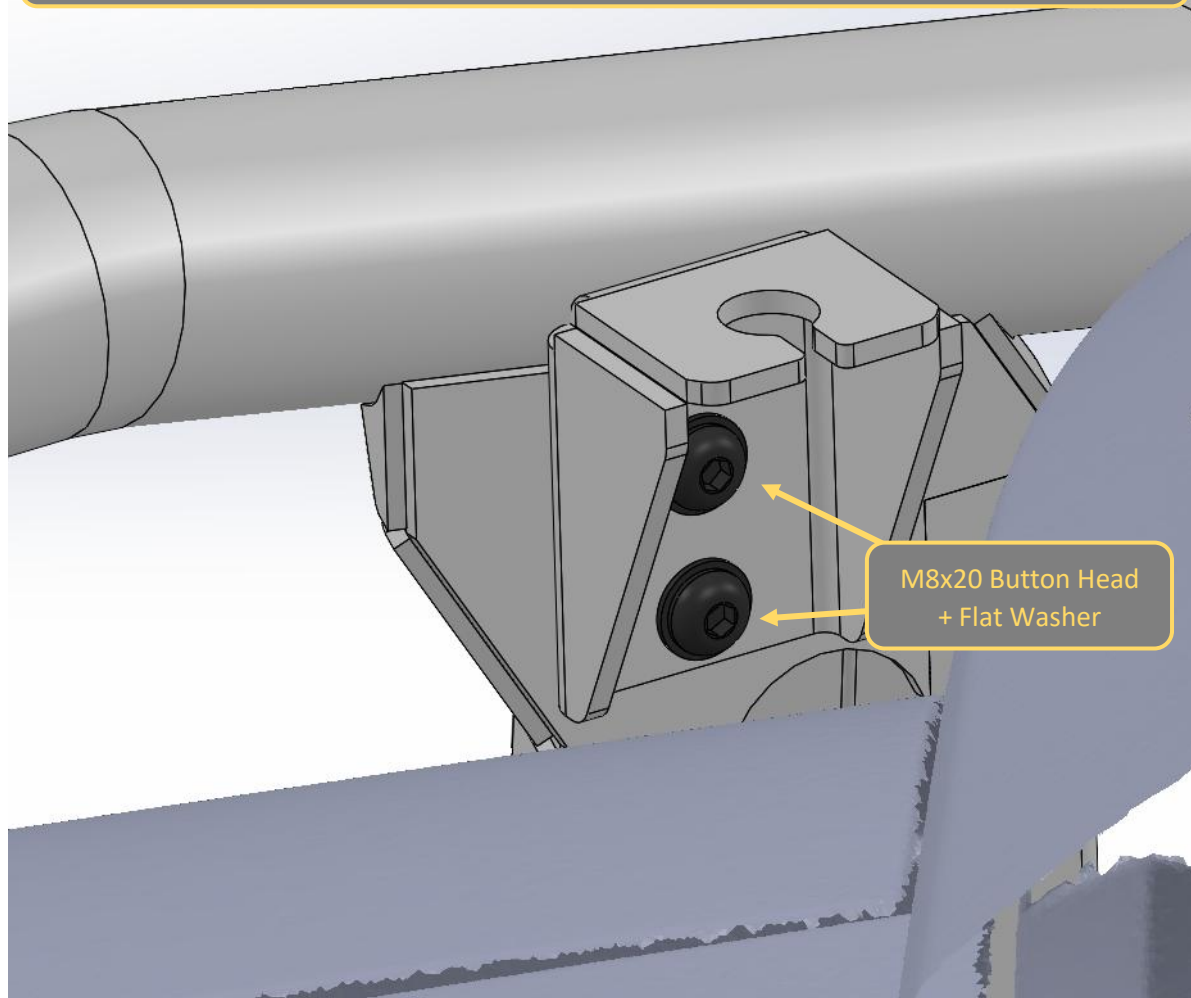
Per side

|   |  |
|---|--|
|    |  |
| <p>141. Test Fit Side Under panels holding them in position and aligning the bolt holes. Adjust position of under panel brackets to suit.</p> <p>142. Lock under panel brackets in position by tightening the M6 bolts securing it to the wing, using 10mm socket or spanner.</p> | <p><b>TOOLS REQUIRED</b></p> <p>10mm socket / Spanner</p>  |
|   | <p><b>FASTENERS</b></p> <p>10x M6x16 Button Head<br/>10x M6 Flat Washer<br/>2x M8x25 Hex Head<br/>2x M8 Flange Nut<br/>2x M8 Flat Washer</p> |

|  |   |
|--|---|
|   |   |
| <p>143. Fit Side Under panels using 6x M6x16 button head bolts and flat washers into the cage nuts placed earlier.</p> <p>144. Leave finger tight at this stage.</p> | <p><b>TOOLS REQUIRED</b></p>  |
|  | <p><b>FASTENERS</b></p> <p>6x M6x16 Button Head<br/>6x M6 Flat Washer</p> <p>Per side</p> |

|   |   |
|---|---|
|    |   |
| <p>145. Secure the inner wheel arch liner to the bottom of the side under panel using 3x M6x25 Button head bolts and Flat washers</p> <p>146. Tighten all under panel bolts with 4mm hex wrench.</p> <p>147. Complete under panel fitment on both sides of vehicle.</p> | <p><b>TOOLS REQUIRED</b></p> <p>4mm Hex key</p>   |
|   | <p><b>FASTENERS</b></p> <p>3x M6x25 Button Head<br/>3x M6 Flat Washer</p> <p>Per side</p> |

## TORO BARS ONLY



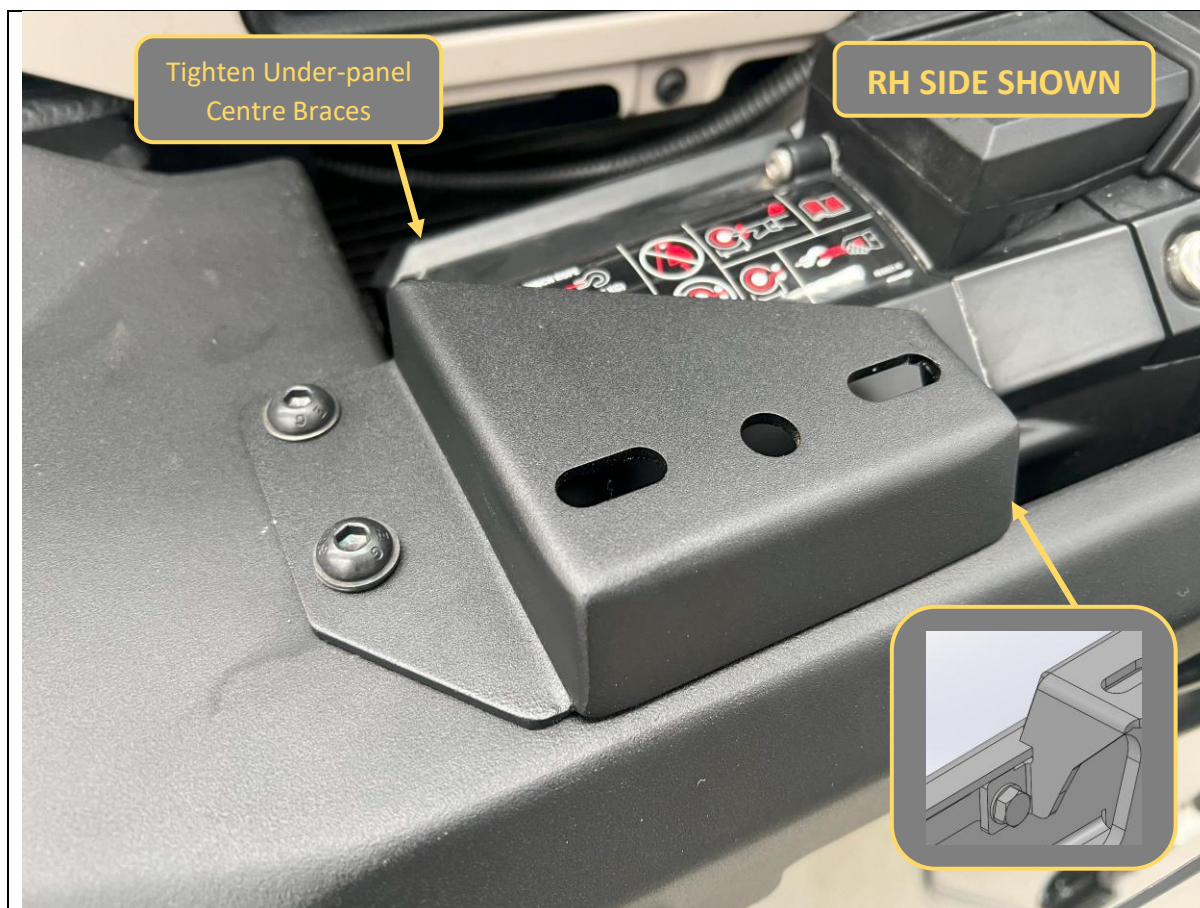
148. If required, fit antenna brackets to the threaded inserts behind bar upright using M8x20 Button Head bolts and Flat Washers.
149. Tighten with 5mm Allen wrench.
150. Fit antenna as required.
151. If not fitting antenna brackets, Fit the M8x20 bolts and washer the threaded points to protect the threads. Retain and supply the brackets to the customer for future use.

### TOOLS REQUIRED

5mm Hex Key

### FASTENERS

2x M8x20 Button Head Bolt  
2xM8 Flat Washer



152. Using a 13mm spanner, with access from behind the winch, tighten the M8 bolt securing the Under-panel Centre Braces to the winch cradle.
153. If required fit the driving light mount brackets to the top of the bar using supplied M8x20 Black Button head bolts and flat washers into the threaded points on the top face of the bar.
154. Secure the front of the bracket to the hole inside the winch area using M6x16 Bolt, Flat washer and Flange Nut
155. These brackets will accept up tot a 9" driving light.
156. If not fitting a winch, fit the winch cover plate now, to the threaded points in the winch cover brackets fitted earlier. Use the M6x16 Button head bolts, and Flat washers supplied in the winch cover kit to secure.

#### TOOLS REQUIRED

5mm Hex Key  
10mm Spanner  
13mm Spanner

#### FASTENERS

2x M8x20 Black Button head  
2x M8 Black Flat Washer

1xM6x16 Hex  
1xM6 Flat Washer  
1x M6 Flat washer

Per side



157. Check all Fasteners are tight.
158. Re-Fit number plate to number plate flip, if not done earlier.
159. Head Bush and Enjoy your newly protected Grenadier!

**For contact details see [www.offroadanimal.com](http://www.offroadanimal.com)**