



BYD SHARK 6 PAH MY25 ON PREDATOR & TORO FRONT BAR

IMPORTANT! – READ BEFORE INSTALLATION

- When installed in accordance with these instructions, the front protection bar does not affect the operation of the vehicle's 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.

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.

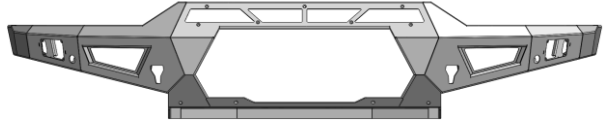
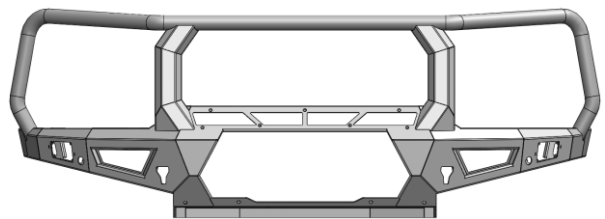
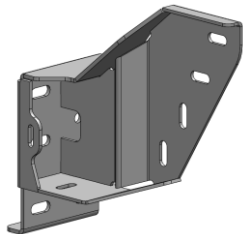
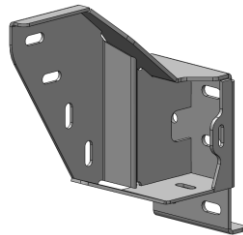
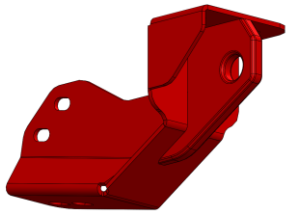
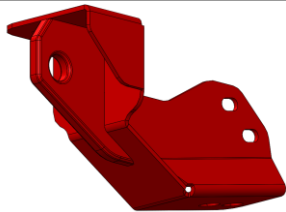
FRONT BAR MOUNTS AND TOW POINTS + REAR TOWBAR	
Size	Torque Nm
M10	57 Nm
M12	100 Nm
M14	164 Nm
M16	248 Nm

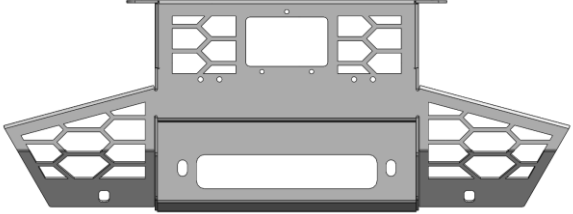
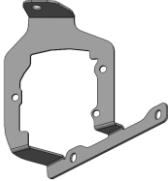
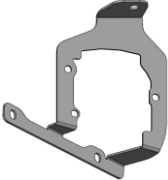
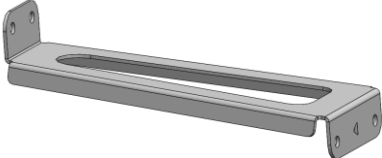
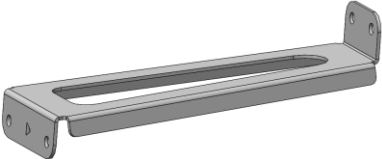
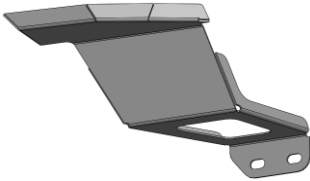
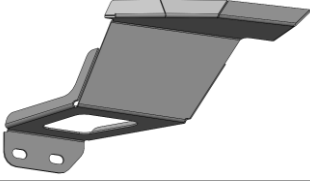
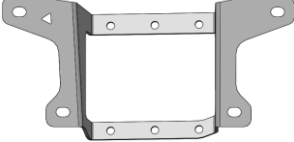
Always use a torque wrench to set correct torque settings. Ensure torque wrench is set to Nm unit of measurement. Otherwise perform conversion to lb-ft.

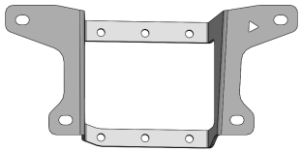
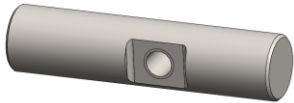
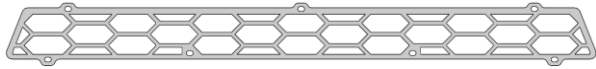
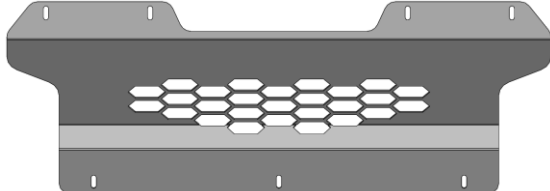
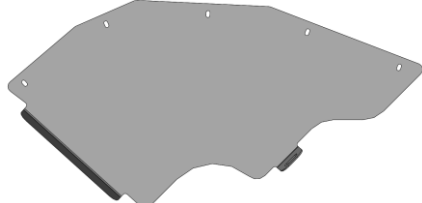
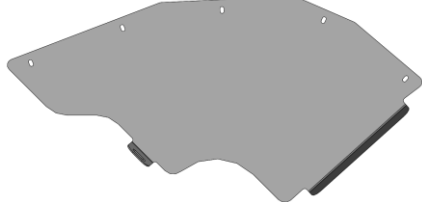
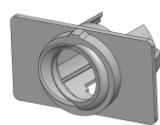
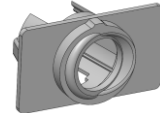
PARTS LISTING

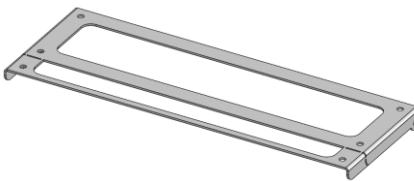
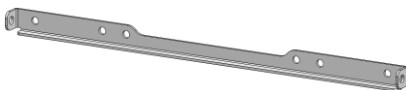
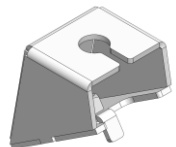
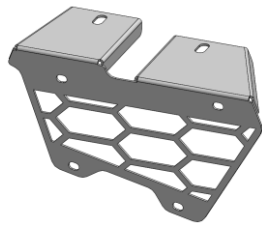
IMPORTANT: Check all parts are present before beginning work! Contact OFFROAD ANIMAL if something is missing.

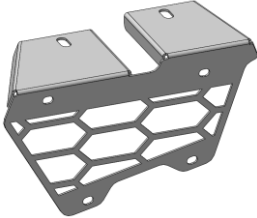
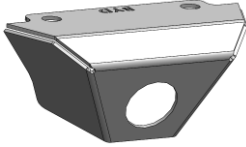
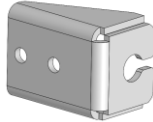
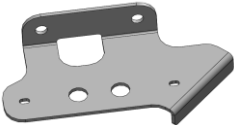
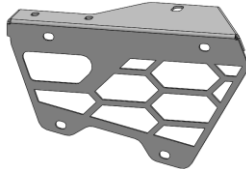
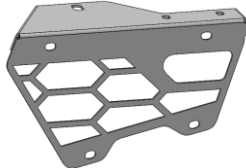
Main Parts – In the Box

Qty	Part Number	Description	Image
1	FB-BSK-PAH-25-PR-ASM1	BYD Shark 6 Predator Bar Weldment	
OR			
1	FB-BSK-PAH-25-TOR-ASM1	BYD Shark 6 Toro Bar Weldment	
1	FB-BSK-PAH-25-PR-ASM2R	BYD Shark 6 Impact Assembly Weldment RH	
1	FB-BSK-PAH-25-PR-ASM2L	BYD Shark 6 Impact Assembly Weldment LH	
1	FB-BSK-PAH-25-PR-ASM3R	BYD Shark 6 Tow Point Weldment RH	
1	FB-BSK-PAH-25-PR-ASM3L	BYD Shark 6 Tow Point Weldment LH	

1	FB-BSK-PAH-25-PR-ASM4	BYD Shark 6 Mesh Fairlead Weldment	
1	B-1601	BYD Shark 6 Bash Plate Lower Reinforcement Mount	
1	B-1608	BYD Shark 6 Pan Brace	
1	B-1609R	BYD Shark 6 Fog Light Bracket RH	
1	B-1609L	BYD Shark 6 Fog Light Bracket LH	
1	B-1610R	BYD Shark 6 Headlight Bracket RH	
1	B-1610L	BYD Shark 6 Headlight Bracket LH	
1	B-1611R	BYD Shark 6 Flare Cover Cap RH	
1	B-1611L	BYD Shark 6 Flare Cover Cap LH	
1	B-1612R	BYD Shark 6 FCTA Radar Mount Bracket RH	

1	B-1612L	BYD Shark 6 FCTA Radar Mount Bracket LH	
2	D-0014	BYD Shark 6 Chassis Brace Pin	
1	P-0481	BYD Shark 6 ACC Radar Mount Plate	
1	P-0488	BYD Shark 6 Lightbar Mesh Infill	
2	P-0490	BYD Shark 6 Tow Point Inner Washer Plate	
2	P-0491	BYD Shark 6 Tow Point Lower Washer Plate	
1	U-0115	BYD Shark 6 Centre Bash Plate	
1	U-0116R	BYD Shark 6 Side Underpanel RH	
1	U-0116L	BYD Shark 6 Side Underpanel LH	
3	DR 110 VO 10mm Spacer	Fischer Elektronik, Round Nylon Spacer, DR 110 VO, 10mm	
1	F-0013R	Ford Ranger Next Gen Sensor Holder - 11 Deg Vertical RH	
1	F-0013L	Ford Ranger Next Gen Sensor Holder - 11 Deg Vertical LH	

12	Fir Tree Clip 4.5mm Hole	Fine-rib push-in rivet, WURTH 0500827023	
1	FB-BSK-PAH- 25-PR-ADRCP	ADR Compliance Plate BYD Shark 6	
1	OFA-LOGO	Offroad Animal Metal Logo	
1	N-0017	Prado 250 ACC Radar Cover	
1	N-0021R	BYD Shark 6 FCTA Radar Cover RH	
1	N-0021L	BYD Shark 6 FCTA Radar Cover LH	
1	TK-COM-PSEN- 4	Tape Kit - 4 Sensor Universal	N/A
NUMBER PLATE FLIP ASSEMBLY (NPF-COM-LGE-ASM0)			
1	B-1446	Number Plate Flip - Large	
1	B-1458	Number Plate Flip Base	
PREDATOR ONLY			
1	FB-TLC-70-24- PR-ASM3	LC70 24+ Predator Antenna Mount Welded Assembly	
1	M-0070R	BYD Shark 6 Predator Wing Light Mesh RH	

1	M-0070L	BYD Shark 6 Predator Wing Light Mesh LH	
PREDATOR ONLY (OPTIONAL CAMERA RELOCATION KIT)			
1	B-1624	BYD Shark 6 Camera Relocation Bracket	
1	B-1625	BYD Shark 6 Camera Cover	
1	CPHP125	Plastic Hole Insert, 16MM, Black, Tigerlink Hardware CPHP125	
TORO ONLY			
2	B-0649	Toro Antenna Bracket - 90 Degree Tall	
1	B-1607R	BYD Shark 6 Toro Indicator Bracket RH	
1	B-1607L	BYD Shark 6 Toro Indicator Bracket LH	
1	M-0071R	BYD Shark 6 Toro Wing Light Mesh RH	
1	M-0071L	BYD Shark 6 Toro Wing Light Mesh LH	
1	11CAT1M-2	LED Autolamps 11CAT1M-2 Front Indicator - Twin Blister Pack	

PREDATOR Fasteners – Contained in Small Parts Kit Bag

Qty	Part Number	Description
6	M5 X 12 HEX	M5X12 HEX BOLT, ZP, 8.8
3	M5X30 BHCS BZP	SCREW, BUTTON HEAD CAP, M5X30X0.8 GR12.9, ISO4042 ZnNi BLACK PASSIVATED FINISH
6	M5 Flat washer	M5 Flat washer
3	M5 Flat washer BZP	M5 Flat Washer, 10x5.3x1, ISO4042 ZnNi BLACK PASSIVATED FINISH
9	M5 FLANGE NUT	Flange Nut, M5x0.8 G8.8 ZP
22	M6 X 12 HEX	M6X12 HEX BOLT, ZP, 8.8
2	M6 X 20 HEX	M6X20 HEX BOLT, ZP, 8.8
7	M6 X 12 CSK BZP	SCREW, COUNTERSUNK CAP, M6X12X1 Black ZP
23	M6x16 BHCS BLACK ZINC	SCREW, BUTTON HEAD CAP, M6X16X1 GR12.9, ISO4042 ZnNi BLACK PASSIVATED FINISH
26	M6 FLAT WASHER	M6 FLAT WASHER
23	M6 FLAT WASHER BLACK ZINC	M6 Flat Washer, 12x6.1x1, ISO4042 ZnNi BLACK PASSIVATED FINISH
32	M6 FLANGE NUT	Flange Nut, M6x1 G8.8 ZP
2	M6 NYLOC	NYLOC SELF LOCKING NUT, ST STL A2 ISO
10	M6CN3MM	CAGE NUT M6x2.6-3.5
6	M8 X 20 HEX	Bolt Hex, M8X20x1.25, GR8.8 ZP
3	M8 X 20 BHCS	SCREW, BUTTON HEAD CAP, M8X20X1.25 GR12.9 ZP
4	M8 X 20 BHCS BLACK ZINC	SCREW, BUTTON HEAD CAP, M8X20X1.25, ISO4042 ZnNi BLACK PASSIVATED FINISH
4	M8 X 30 BHCS BLACK ZINC	SCREW, BUTTON HEAD CAP, M8X30X1.25, ISO4042 ZnNi BLACK PASSIVATED FINISH
9	M8 HD FLAT WASHER	M8 FLAT WASHER - High Tensile 19x8x1.9mm
8	M8 HD FLAT WASHER - BZP	M8 FLAT WASHER - High Tensile 19x8x2mm, ISO4042 ZnNi BLACK PASSIVATED FINISH
6	M8 FLANGE NUT	Flange Nut, M8x1.25 G8.8 ZP
3	M8 Cage nut	NUT, CAGE, M8X1.25 ZINC PLATE
6	M10 x 30	Bolt Hex, M10X30x[1.5], GR8.8 ZP
6	M10 FW LHD	WASHER, FLAT M10X28.5X2.5
6	M10 FLANGE NUT	Flange Nut, M10x1.5 G8.8 ZP
8	M12X30	Bolt Hex, M12X30x1.75, GR8.8 ZP
6	M12X120	Bolt Hex, M12X120x1.75, GR8.8 ZP
12	M12X40x1.25	Bolt Hex, M12X40x1.25, GR8.8 ZP
4	M12 FLAT WASHER	M12 FLAT WASHER
26	M12 FW LHD	M12 FW Large Heavy Duty
2	M12 SW	M12 Spring Washer
10	M12 FLANGE NUT	Flange Nut, M12x1.75 G8.8 ZP
2	M12 NUT X 1.25	Hex Nut, M12x1.25 Fine Pitch G8.8 ZP
2	M12 Nyloc nut	M12 NYLOC NUT

TORO Fasteners – Contained in Small Parts Kit Bag

Qty	Part Number	Description
4	M3X12 PAN	SCREW, PAN HEAD PHILLIPS, M3X12X0.5 GR4.6 ZP
4	M3 FLAT WASHER	Flat Washer M3, 7mmODx0.5mm T
4	M3 NUT	Hex Nut, M3x0.5 G48.8 ZP
6	M5 X 12 HEX	M5X12 HEX BOLT, ZP, 8.8
3	M5X30 BHCS BZP	SCREW, BUTTON HEAD CAP, M5X30X0.8 GR12.9, ISO4042 ZnNi BLACK PASSIVATED FINISH
6	M5 Flat washer	M5 Flat washer
3	M5 Flat washer BZP	M5 Flat Washer, 10x5.3x1, ISO4042 ZnNi BLACK PASSIVATED FINISH
9	M5 FLANGE NUT	Flange Nut, M5x0.8 G8.8 ZP
26	M6 X 12 HEX	M6X12 HEX BOLT, ZP, 8.8
2	M6 X 20 HEX	M6X20 HEX BOLT, ZP, 8.8
7	M6 X 12 CSK BZP	SCREW, COUNTERSUNK CAP, M6X12X1 Black ZP
23	M6x16 BHCS BLACK ZINC	SCREW, BUTTON HEAD CAP, M6X16X1 GR12.9, ISO4042 ZnNi BLACK PASSIVATED FINISH
30	M6 FLAT WASHER	M6 FLAT WASHER
23	M6 FLAT WASHER BLACK ZINC	M6 Flat Washer, 12x6.1x1, ISO4042 ZnNi BLACK PASSIVATED FINISH
36	M6 FLANGE NUT	Flange Nut, M6x1 G8.8 ZP
2	M6 NYLOC	NYLOC SELF LOCKING NUT, ST STL A2 ISO
10	M6CN3MM	CAGE NUT M6x2.6-3.5
6	M8 X 20 HEX	Bolt Hex, M8X20x1.25, GR8.8 ZP
3	M8 X 20 BHCS	SCREW, BUTTON HEAD CAP, M8X20X1.25 GR12.9 ZP
8	M8 X 20 BHCS BLACK ZINC	SCREW, BUTTON HEAD CAP, M8X20X1.25, ISO4042 ZnNi BLACK PASSIVATED FINISH
4	M8 X 30 BHCS BLACK ZINC	SCREW, BUTTON HEAD CAP, M8X30X1.25, ISO4042 ZnNi BLACK PASSIVATED FINISH
9	M8 HD FLAT WASHER	M8 FLAT WASHER - High Tensile 19x8x1.9mm
12	M8 HD FLAT WASHER - BZP	M8 FLAT WASHER - High Tensile 19x8x2mm, ISO4042 ZnNi BLACK PASSIVATED FINISH
6	M8 FLANGE NUT	Flange Nut, M8x1.25 G8.8 ZP
3	M8 Cage nut	NUT, CAGE, M8X1.25 ZINC PLATE
6	M10 x 30	Bolt Hex, M10X30x[1.5], GR8.8 ZP
6	M10 FW LHD	WASHER, FLAT M10X28.5X2.5
6	M10 FLANGE NUT	Flange Nut, M10x1.5 G8.8 ZP
8	M12X30	Bolt Hex, M12X30x1.75, GR8.8 ZP
6	M12X120	Bolt Hex, M12X120x1.75, GR8.8 ZP
12	M12X40x1.25	Bolt Hex, M12X40x1.25, GR8.8 ZP
4	M12 FLAT WASHER	M12 FLAT WASHER
26	M12 FW LHD	M12 FW Large Heavy Duty
2	M12 SW	M12 Spring Washer
10	M12 FLANGE NUT	Flange Nut, M12x1.75 G8.8 ZP
2	M12 NUT X 1.25	Hex Nut, M12x1.25 Fine Pitch G8.8 ZP
2	M12 Nyloc nut	M12 NYLOC NUT

NUMBER PLATE FLIP Fasteners – Contained in Number Plate Flip Kit

Qty	Part Number	Description
4	M6x12 BHCS BLACK ZINC	SCREW, BUTTON HEAD CAP, M6X12X1 GR12.9, ISO4042 ZnNi BLACK PASSIVATED FINISH
4	M6x16 BHCS BLACK ZINC	SCREW, BUTTON HEAD CAP, M6X16X1 GR12.9, ISO4042 ZnNi BLACK PASSIVATED FINISH
10	M6 FLAT WASHER BLACK ZINC	M6 Flat Washer, 12x6.1x1, ISO4042 ZnNi BLACK PASSIVATED FINISH
6	M6 FLANGE NUT	Flange Nut, M6x1 G8.8 ZP
2	M6 NYLON WASHER	Nylon Flat Washer, M6x12x1mm
2	M6 NYLOC	NYLOC SELF LOCKING NUT, ST STL A2 ISO

PREDATOR Antenna Mount Fasteners – Contained in ASM4 Kit

Qty	Part Number	Description
1	M10X20 CAP SCREW	CAP SCREW, M10X20X1.5 GR10.9 ZP
1	M10 Flat Washer	M10 Flat Washer
1	M10 Spring Washer	M10 Spring Washer

PREDATOR Optional Camera Relocation Fasteners – Contained in TB-COM-BYD-CAM-BRKIT Kit

Qty	Part Number	Description
2	M6 X 12 HEX	M6X12 HEX BOLT, ZP, 8.8
2	M6 FLAT WASHER	M6 Flat Washer
2	M6 FLANGE NUT	Flange Nut, M6x1 G8.8 ZP

TOOLS REQUIRED

The following tools will be required to install the product.

Hand Tools	Power Tools	Workshop Equipment
Metric Socket Set 5.5-19mm	Electric/Air Impact Driver (Optional)	Panel Stand or Soft Blanket
Socket Extension Bar	Air hacksaw or Jigsaw or Multi-tool or Angle grinder	Lifting Trolley
Metric Spanner Set 5.5-19mm	Electric/Air Drill	Isopropyl Alcohol
Hex (Allen) Key Set 3-8mm	Soldering Iron (Toro Only)	Clean Workshop Rag
Trim Removal Tool		Marker Pen
Flat Blade Screwdriver Set		Measuring Tape
Phillips Head Screwdriver Set		Masking Tape
Plastic Auto Trim Tool		Black Spray Paint
M12x1.25 tap (optional)		Cable Ties
M12x1.75 tap (optional)		WD-40 or similar
6mm Drill Bit		Heat shrink (Toro Only)
Utility Knife		Electrical tape (Toro Only)
Side Cutters		Sikaflex adhesive
Deburring Tool		
Wire Strippers (Toro Only)		

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.

Hearing Protection 	Always wear ear protection when using power tools.
Eye Protection 	Ensure eye protection is always worn when cutting or drilling.
Manual Handling 	Do not attempt to lift bar assemblies or rock sliders on your own. Always use two people to lift or use mechanical lifting aid such as hydraulic lifting trolley.
Vehicle Support 	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.

**WARNING:**

Do not attempt to turn on and move the vehicle while the radars, sensors and camera are disconnected. Do not drop or impact any of these parts. Failure to do so may cause sensor malfunction that can only be rectified by BYD.

HIGH VOLTAGE WARNING:

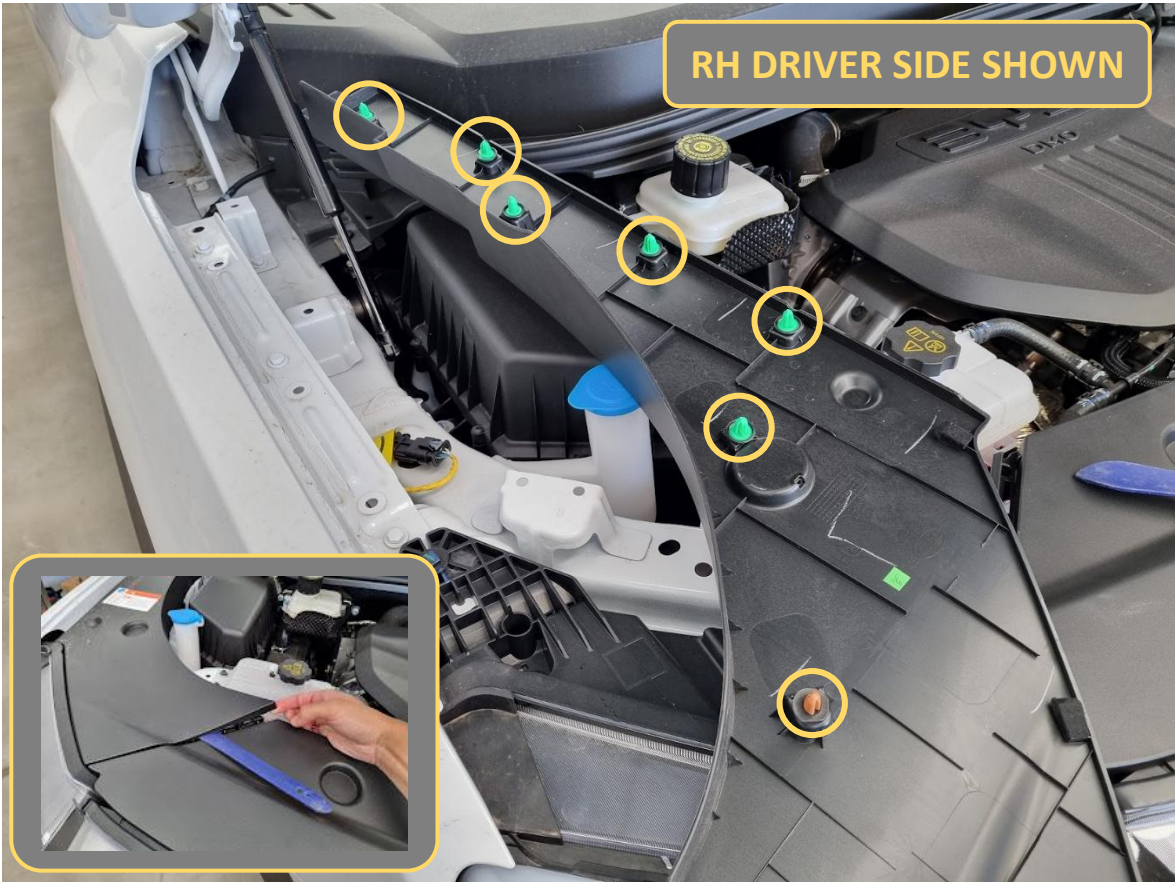
This vehicle has a high voltage (HV) system. When working in the engine bay for installing accessories, do not touch any of the orange coloured HV components or cabling. Electric shock may cause serious or even life threatening injuries.

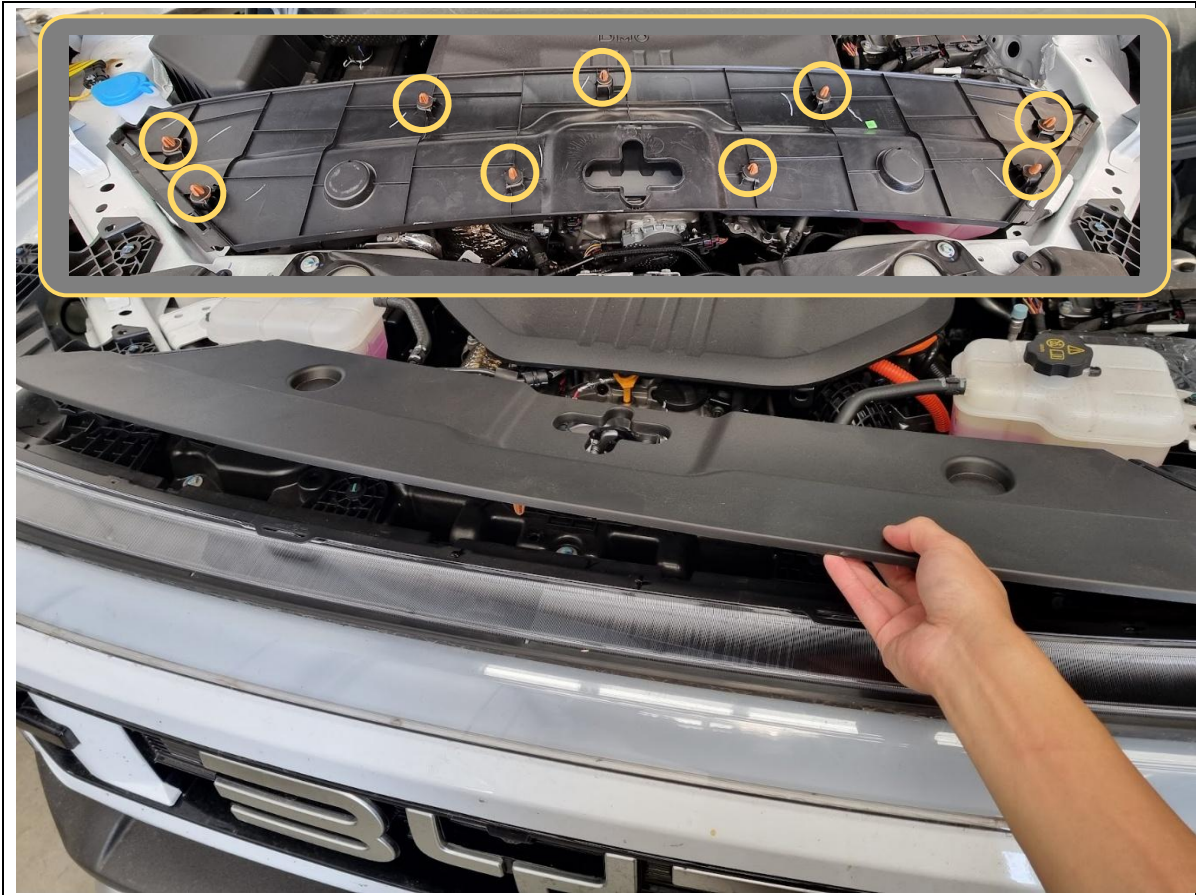
1. Remove number plate from bumper and set aside.
2. Open the bonnet by pulling twice on the lever under the steering wheel on the driver's side.

TOOLS REQUIRED

Phillips head screwdriver

FASTENERS

	
3. Remove the 2x plastic side covers on either side of the engine bay. Use a plastic trim tool to assist with prying up and releasing the 2x tabs on the front edge first. Then pull upwards and towards the front of the vehicle to release 7x plastic clips.	TOOLS REQUIRED Plastic trim tool
	FASTENERS

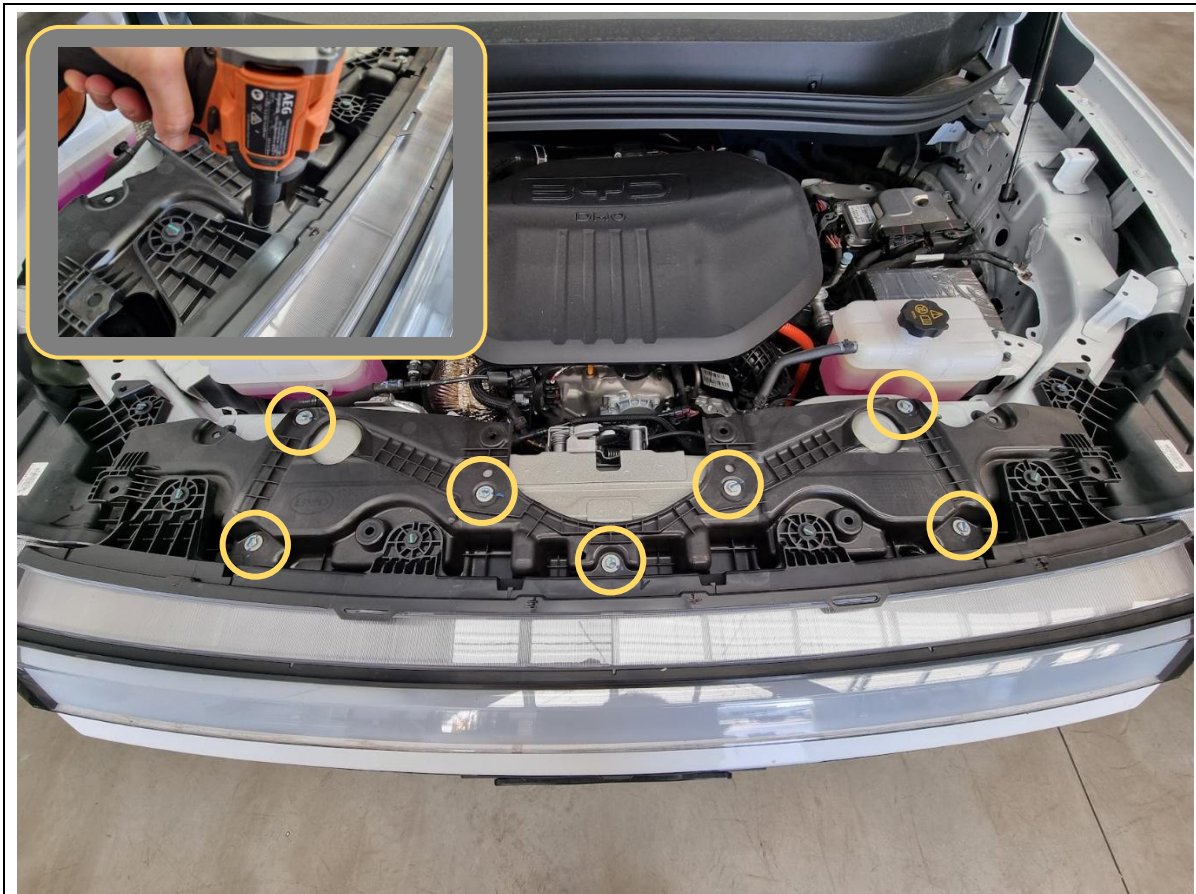


4. Remove the centre plastic radiator cover.
- Use a plastic trim tool to pry up the cover and wiggle side to side to release 9x clips.

TOOLS REQUIRED

Plastic trim tool

FASTENERS



5. Remove 7x 10mm silver coloured hex bolts holding the top of the grille to the vehicle.
- Retain these bolts.

TOOLS REQUIRED

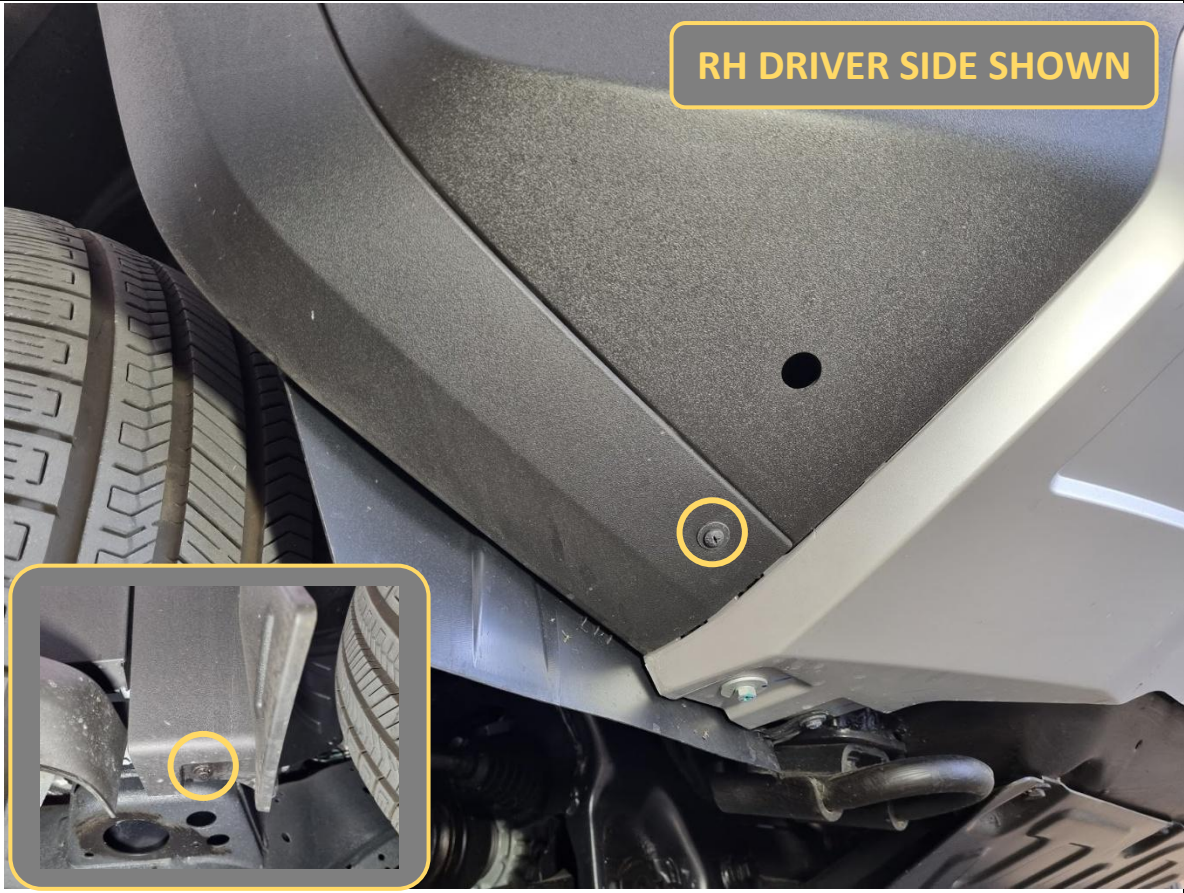
10mm socket/spanner

FASTENERS

7x factory 10mm hex bolt

Retain

 RH DRIVER SIDE SHOWN	
6. The front half of the flares need to be unclipped to remove the bumper, and will need to also be trimmed prior to fitting the bull bar. These instructions will show the procedure for full removal of the flare. Some installers may not find this necessary and may choose to trim the flare while it is still on the car. 7. Remove 3x 10mm hex bolts holding each mudflap.	TOOLS REQUIRED 10mm socket/spanner
	FASTENERS 6x 10mm factory hex bolt Retain



RH DRIVER SIDE SHOWN

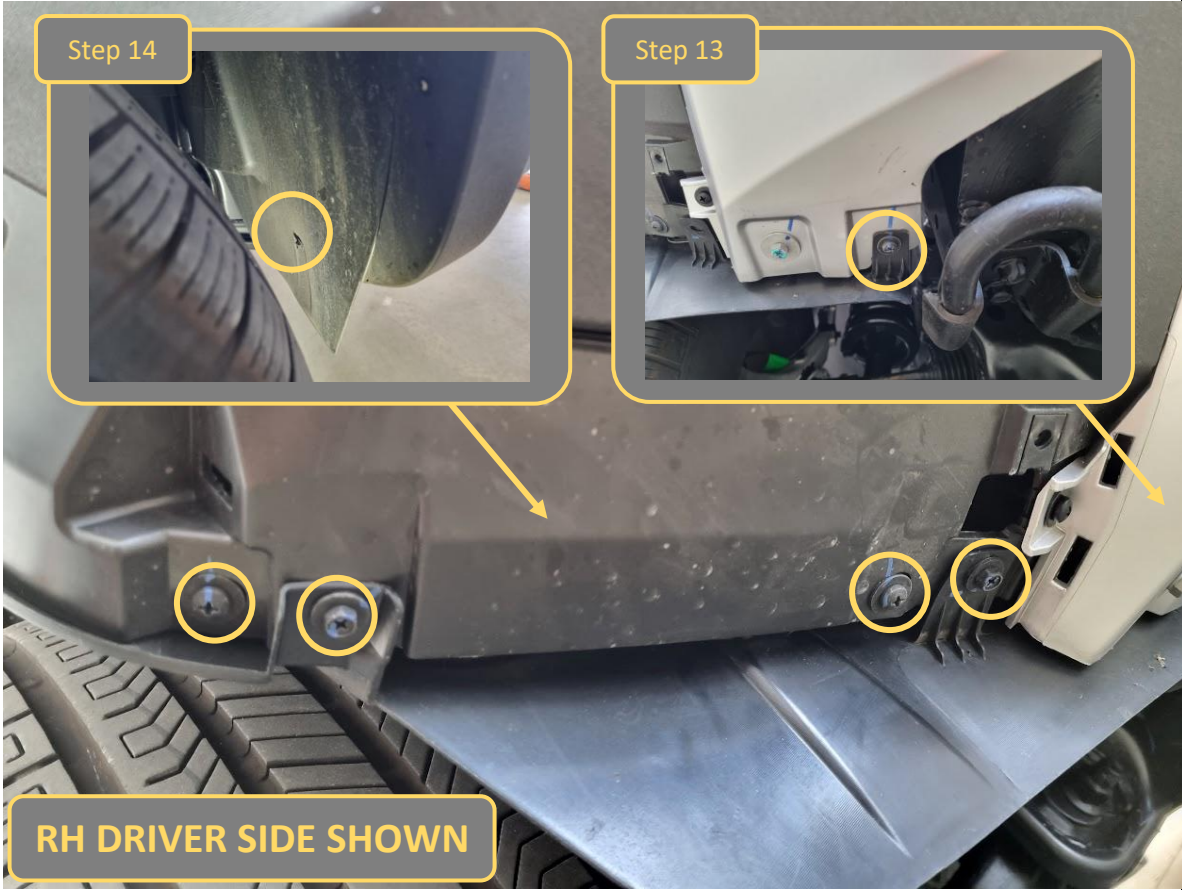
8. Remove 1x Phillips head screw holding the underside of each flare at the front to the bumper. 9. Remove 1x 10mm hex bolt holding the underside of each flare at the rear (see inset photo).	TOOLS REQUIRED Phillips head screwdriver 10mm socket/spanner
	FASTENERS 2x factory Phillips head screws (discard) 2x 10mm factory hex bolt (retain)



10. Starting at the front, carefully pull outwards and unclip the flare. Hint: It is possible to reach behind the flare via the engine bay and use an 8mm socket to help push out the clips holding the flare to the quarter panel.	TOOLS REQUIRED 8mm socket (optional)
	FASTENERS



11. Remove 4x screws on each side of the bumper with a Phillips head screwdriver and/or 8mm socket/spanner. Retain the top 2x screws on each side.	TOOLS REQUIRED Phillips head screwdriver 8mm socket/spanner
	FASTENERS 8x factory screws Retain 4x

 Step 14 Step 13 RH DRIVER SIDE SHOWN		
12. On the underside of the bumper, remove 4x screws on each side with a Phillips head screwdriver and/or 8mm socket/spanner. 13. Remove 1x screw next to each tie down hook. 14. Remove 1x screw on the inside of the wheel arch liner at the bottom front end.		TOOLS REQUIRED Phillips head screwdriver 8mm socket/spanner
		FASTENERS 12x factory screws Discard

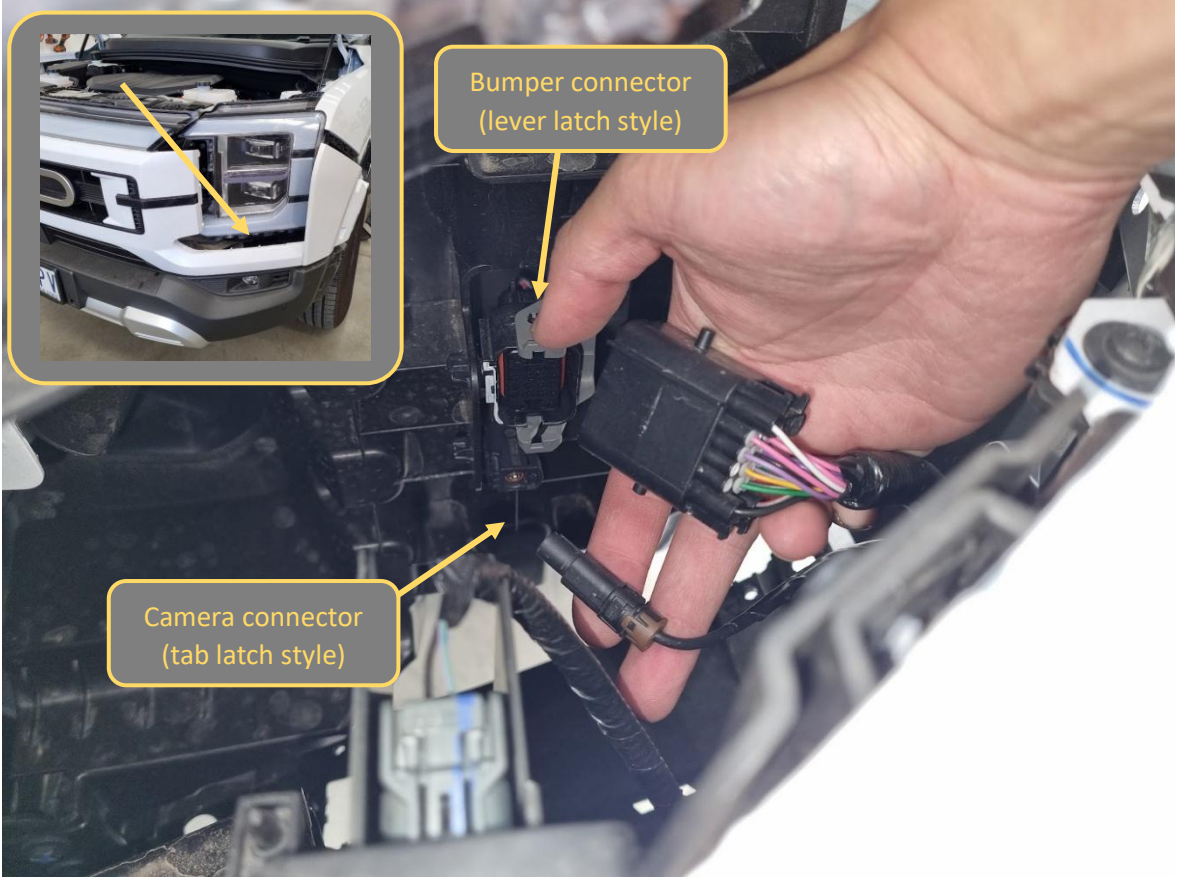
	
15. Use a small flat blade screwdriver to remove the 3x cover panels on the bottom of the bumper.	TOOLS REQUIRED Flat blade screwdriver
	FASTENERS



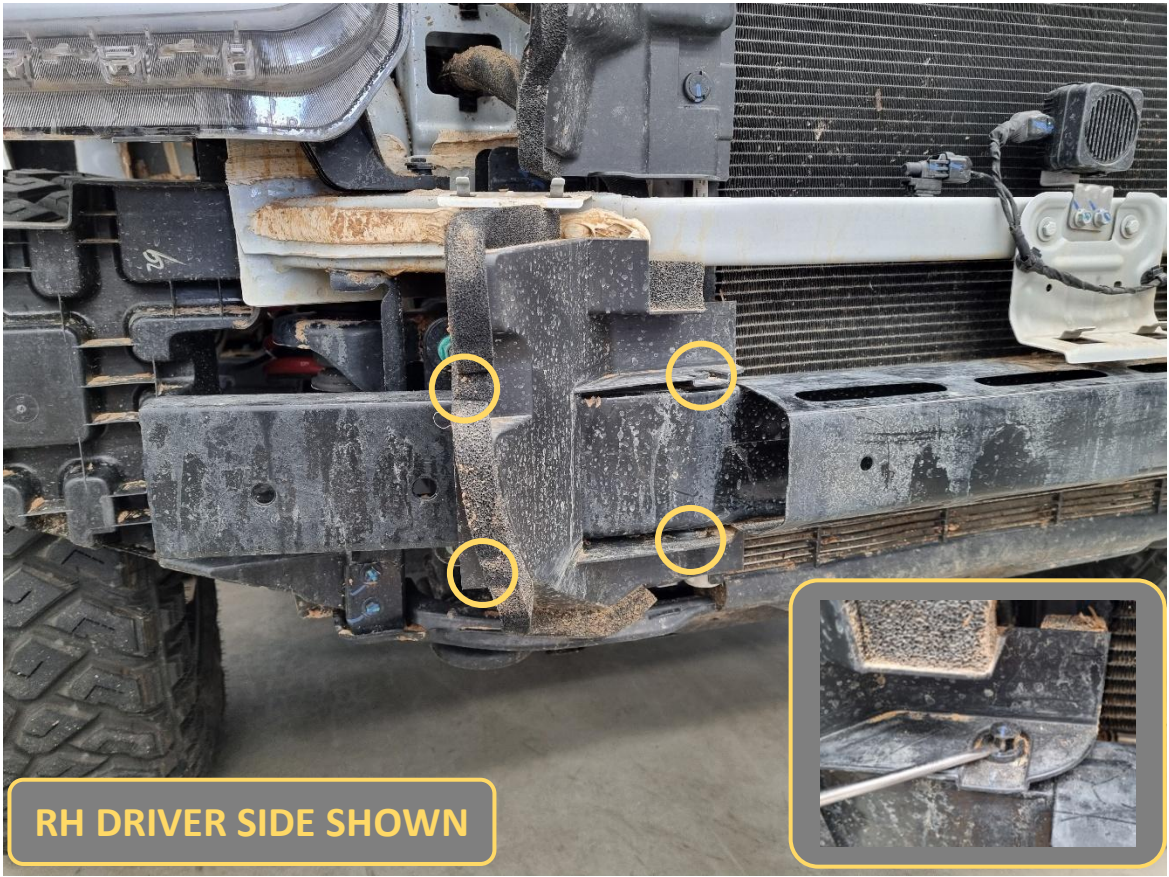
16. Remove 5x 10mm hex bolts along the bottom of the bumper.	TOOLS REQUIRED 10mm socket/spanner
	FASTENERS 5x factory 10mm hex bolts Discard

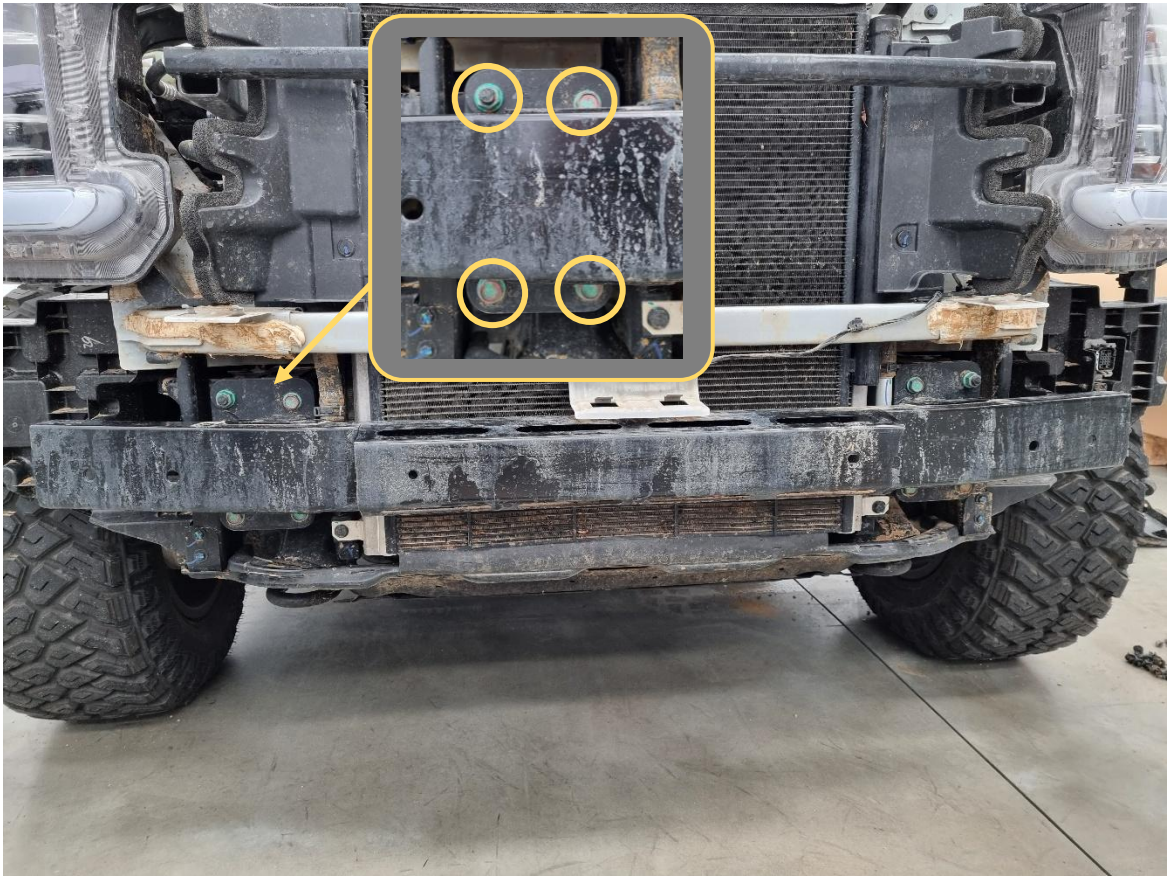


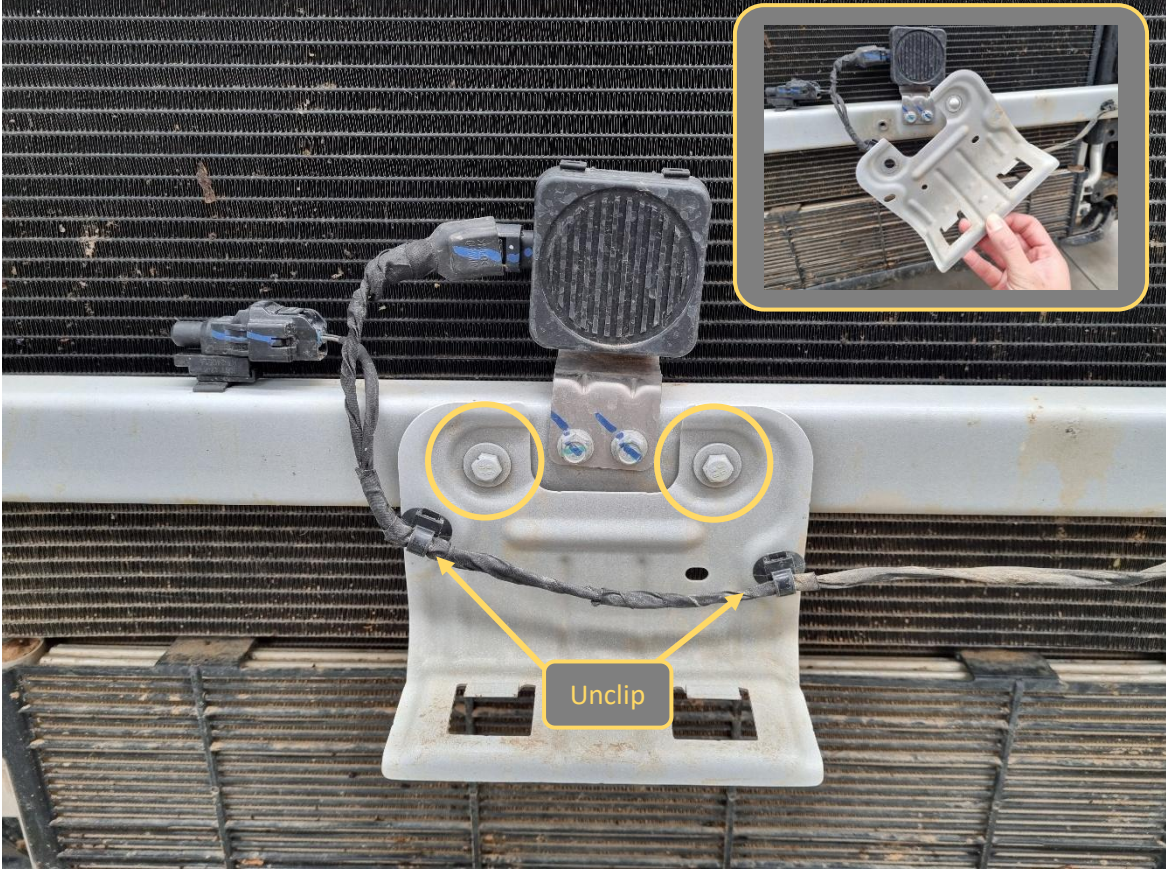
17. Pull outwards and unclip the bumper from the LH corner.	TOOLS REQUIRED
	FASTENERS

	
18. Reach in behind the bumper underneath the LH headlight and unclip the bumper connector (lever latch style) and camera connector (tab latch).	TOOLS REQUIRED
	FASTENERS

	
19. Pull outwards and unclip the remainder of the front bumper. Set aside in a safe place.	TOOLS REQUIRED
	FASTENERS

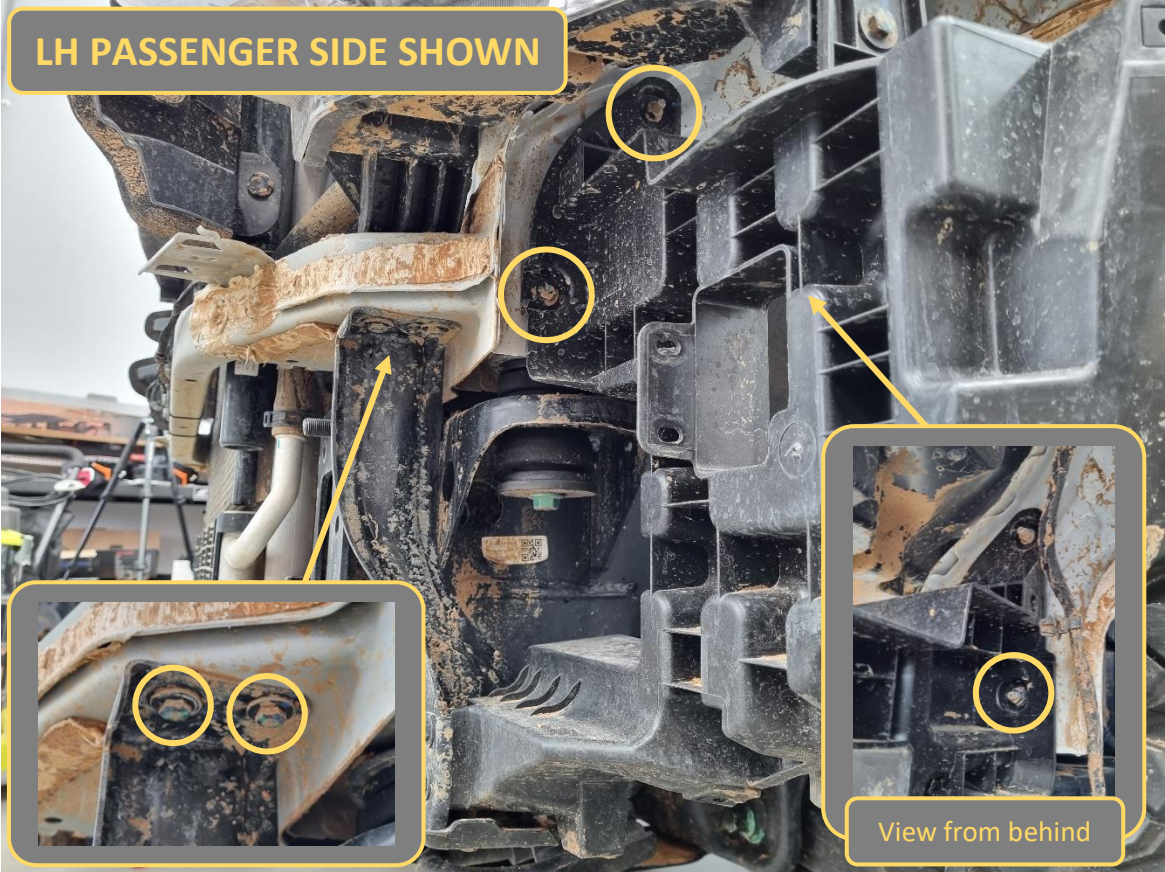
 RH DRIVER SIDE SHOWN	
20. Remove 4x plastic push clips holding each lower air dam to the front impact beam. Use a flat blade screwdriver or trim tool to assist.	TOOLS REQUIRED Flat blade screwdriver or Trim tool
	FASTENERS

	
21. Remove the 17mm hex bolts and nuts holding the impact beam to the chassis. There are 3x bolts and 1x nut per side. 22. Remove and discard the impact beam.	TOOLS REQUIRED 17mm socket/spanner
	FASTENERS 6x 17mm factory hex bolt 6x 16mm factory hex nut Discard

	
23. Unclip the pedestrian speaker and air temp sensor loom from the bracket. 24. Then remove 2x 10mm hex bolts holding the bracket to the car. Discard the bracket.	TOOLS REQUIRED Flat blade screwdriver or Trim tool 10mm socket/spanner
	FASTENERS 2x factory 10mm hex bolt Retain

	
25. Re-fit the 10mm hex bolts back onto the car. 26. Secure the loom to the cross member frame with cable ties (not supplied).	TOOLS REQUIRED 10mm socket/spanner
	FASTENERS 2x factory 10mm hex bolts Cable ties

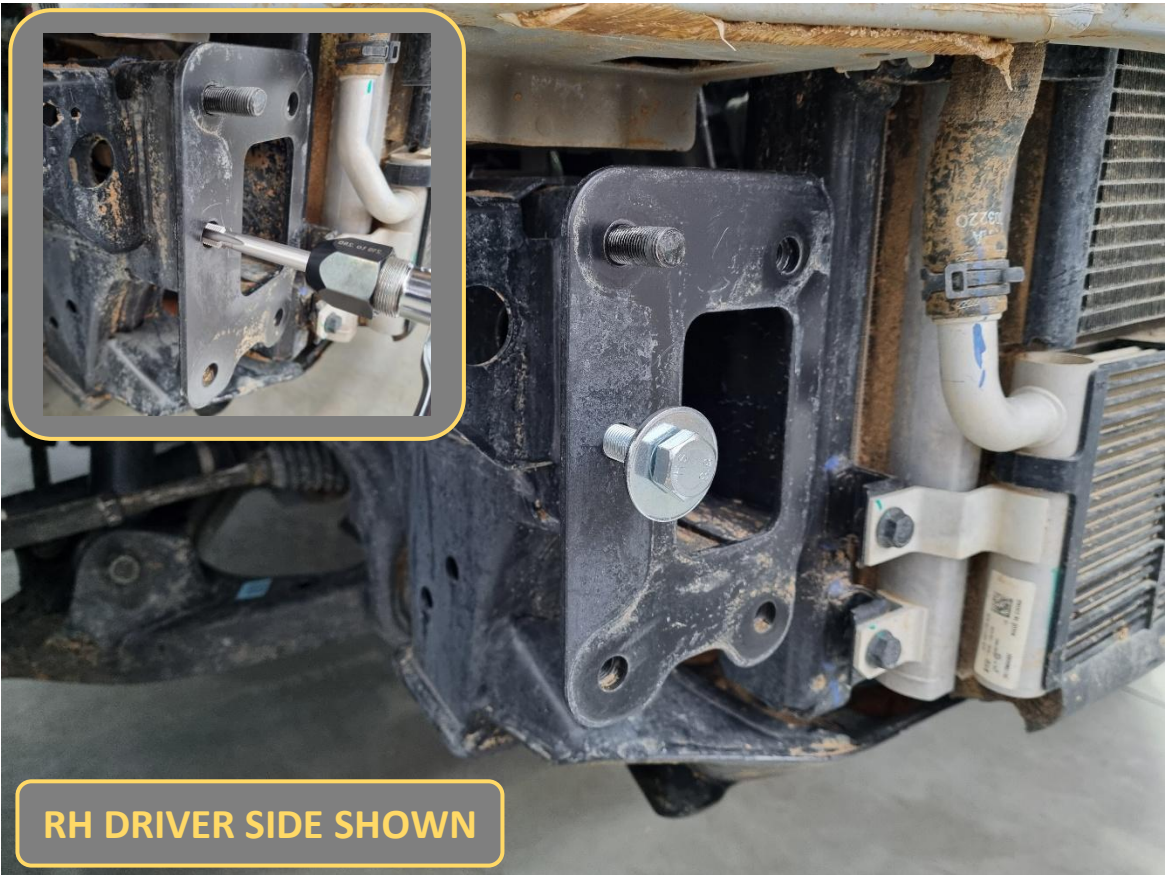
LH PASSENGER SIDE SHOWN  View from behind	
27. Unclip 4x clips holding the bumper connector and camera connector to the LH bumper support.	TOOLS REQUIRED Flat blade screwdriver or Trim tool
	FASTENERS

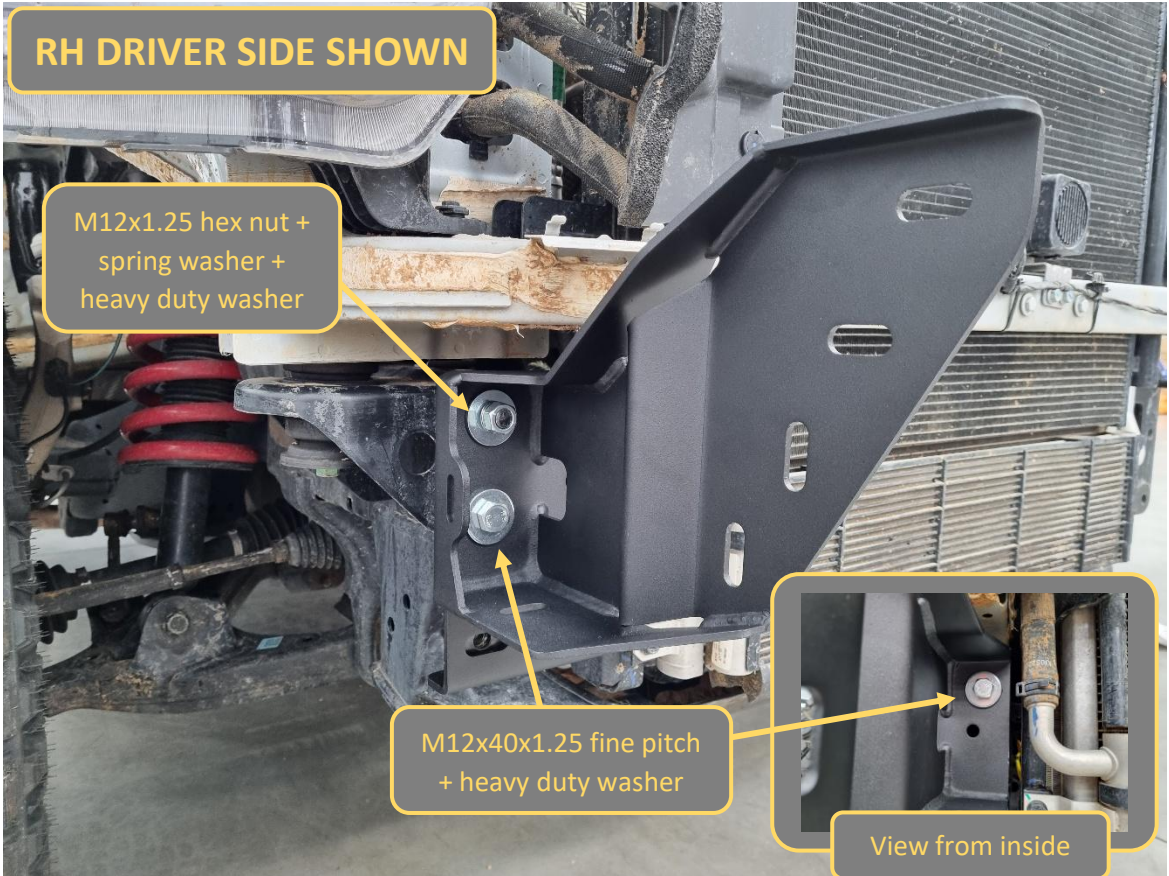
 LH PASSENGER SIDE SHOWN View from behind	
28. Remove 3x 10mm hex bolts and 2x 10mm hex nuts holding the bumper support to the body on each side.	TOOLS REQUIRED 10mm socket/spanner
	FASTENERS 6x 10mm factory hex bolt 4x 10mm factory hex nut Discard

 LH PASSENGER SIDE SHOWN	
29. Also remove 1x 10mm hex bolt holding the bumper support to the bottom outside corner of each headlight.	TOOLS REQUIRED 10mm socket/spanner
	FASTENERS 2x 10mm factory hex bolt Discard

		
30. Fully remove and discard the bumper support structure.	TOOLS REQUIRED	
	FASTENERS	

RH DRIVER SIDE SHOWN 	
31. Remove and discard 2x 17mm hex bolts holding each factory tie down hook to the chassis. 32. Remove and discard the tie down hooks.	TOOLS REQUIRED 17mm socket/spanner
	FASTENERS 4x 17mm factory hex bolt Discard

 RH DRIVER SIDE SHOWN	
33. Check and clean all the chassis hole threads on the front face and where the tie down hooks were. 34. Clean thread with M12x1.25 fine pitch metric tap if necessary.	TOOLS REQUIRED WD-40 or similar M12x1.25 tap (optional)
	FASTENERS

	
35. Fit the impact assemblies to the ends of each chassis rail. 36. Loosely secure each impact assembly with 2x M12x40x1.25 fine pitch bolts and heavy duty washers. 37. Also loosely secure each impact assembly with 1x M12x1.25 fine pitch hex nut, spring washer and heavy duty washer.	TOOLS REQUIRED
	FASTENERS 4x M12x40x1.25 hex bolt 2x M12x1.25 hex nut 6x M12 heavy duty washer

		
38. Clean the threads in the D-0014 machined pin with M12x1.75 coarse pitch tap if necessary.	TOOLS REQUIRED M12x1.75 tap (optional)	
	FASTENERS	

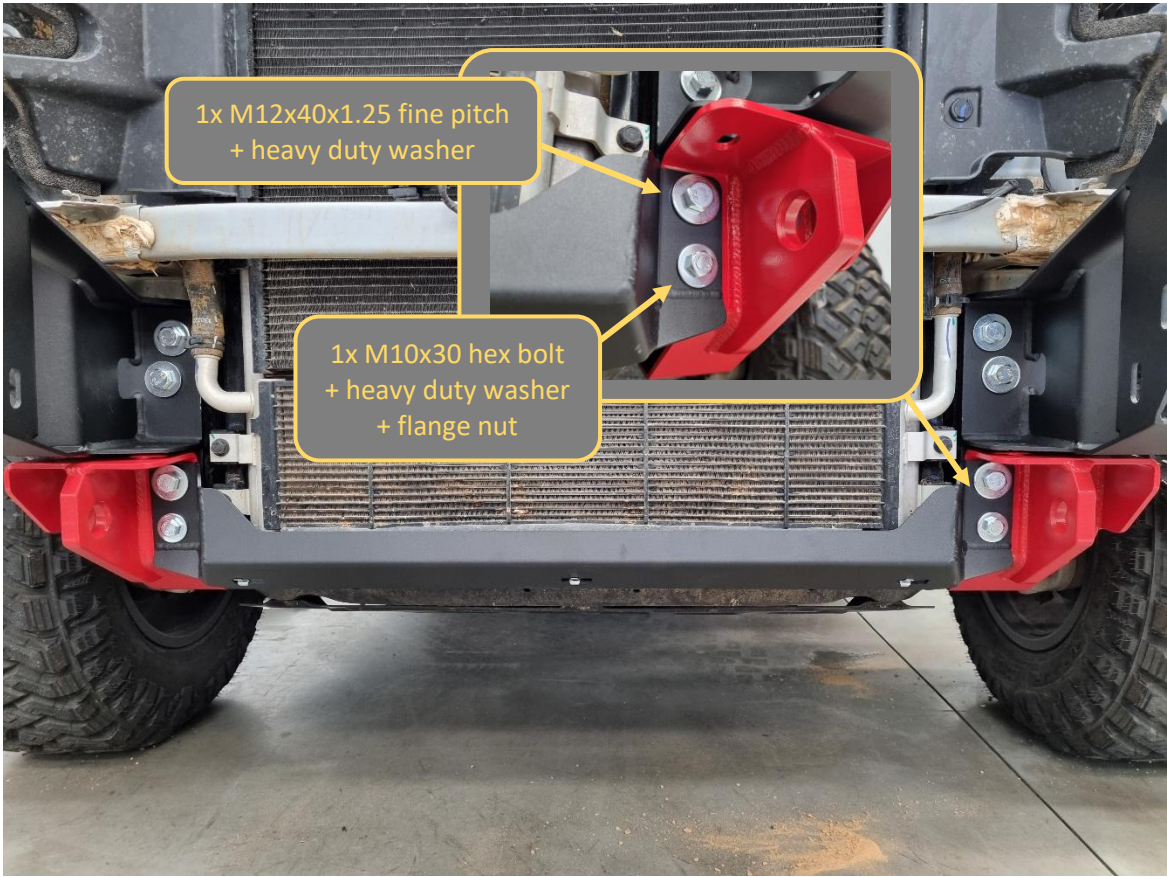
	
39. Insert the machined pin through the hole in the side of the chassis. Short side goes in first when inserting from the outside face of the chassis. 40. Then insert 1x M12x120 hex bolt and heavy duty washer through the hole on the impact assembly and into the thread in the machined pin.	TOOLS REQUIRED
	FASTENERS 2x M12x120 hex bolt 2x M12 heavy duty washer 2x D-0014 machined pin

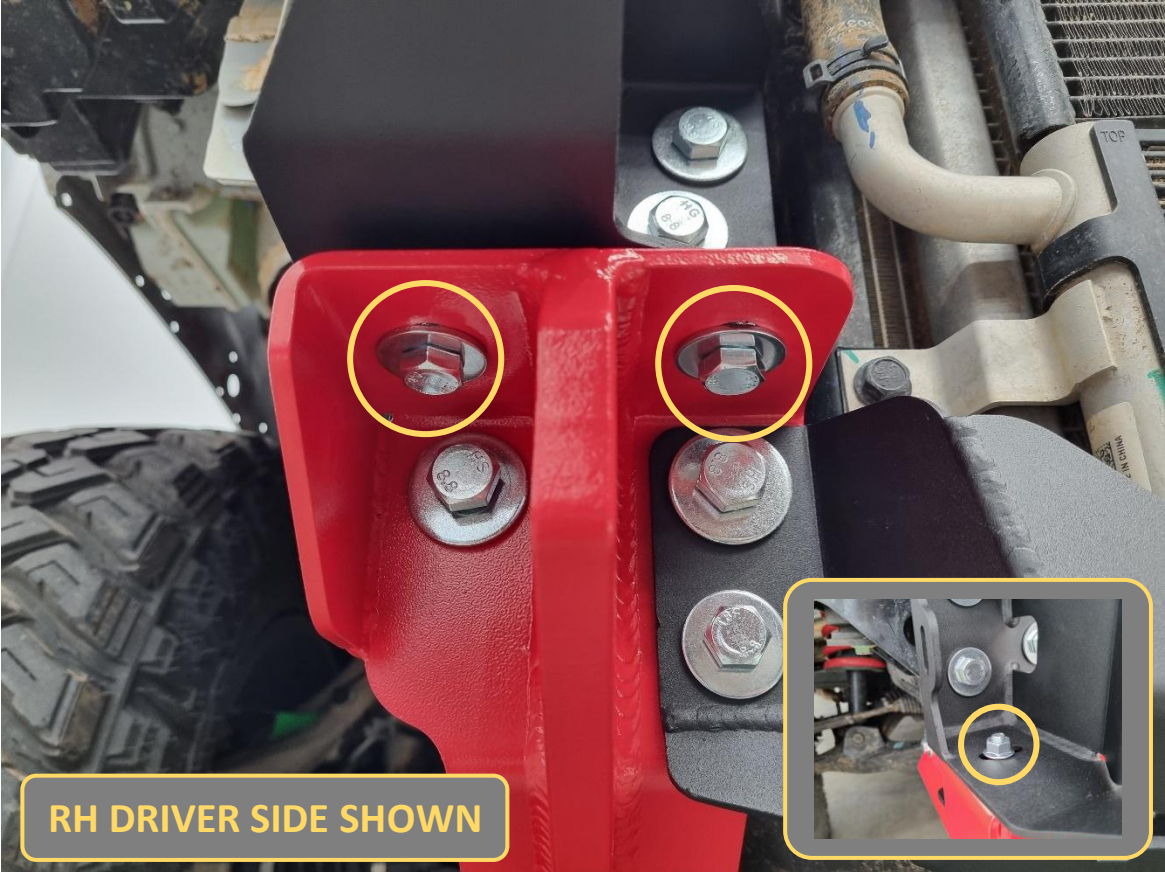
41. Fit the tow points to the vehicle. 42. Loosely secure the bottom with 2x M12x40x1.25 fine pitch bolts, standard washers and 1x P-0491 washer plate into the factory tie down hook holes. 43. Loosely secure the side of the tow point to the chassis with 2x M12x120 hex bolts, heavy duty washers, 1x P-0490 washer plate and 2x flange nuts. 44. Loosely secure the front with 1x M12x40x1.25 fine pitch bolt and heavy duty washer.	TOOLS REQUIRED
	FASTENERS 6x M12x40x1.25 hex bolt 4x M12x120 hex bolt 4x M12 standard washer 6x M12 heavy duty washer 4x M12 flange nut 2x P-0490 washer plate 2x P-0491 washer plate

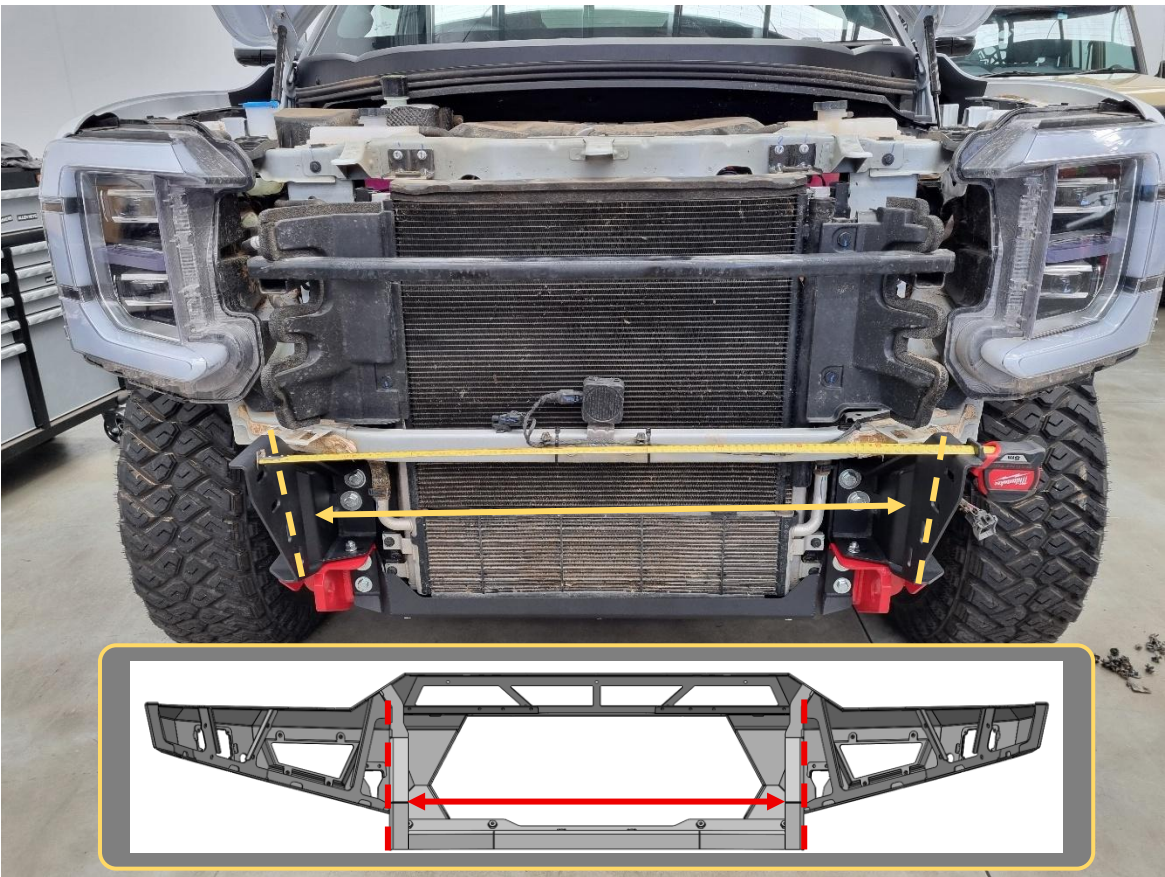


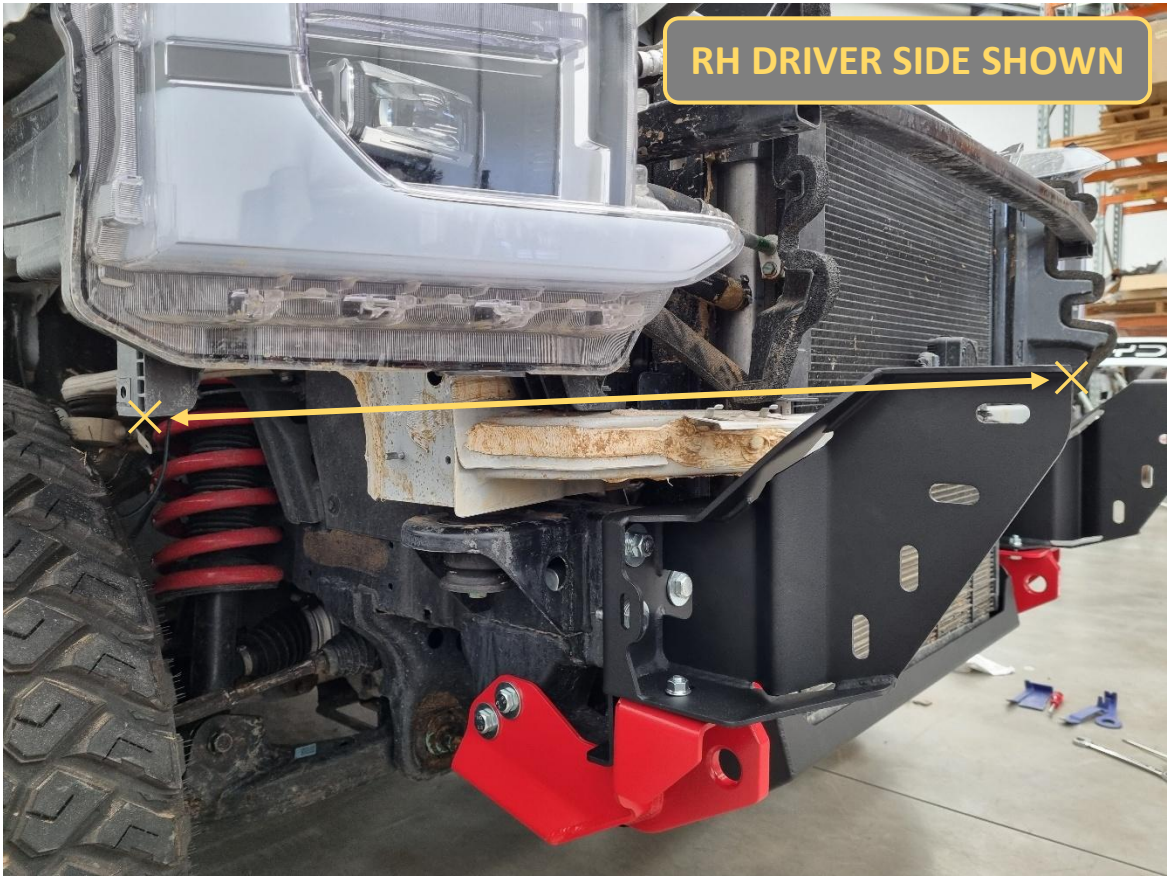
45. Front end of vehicle should now look like this. All bolts should be finger tight.	TOOLS REQUIRED
	FASTENERS

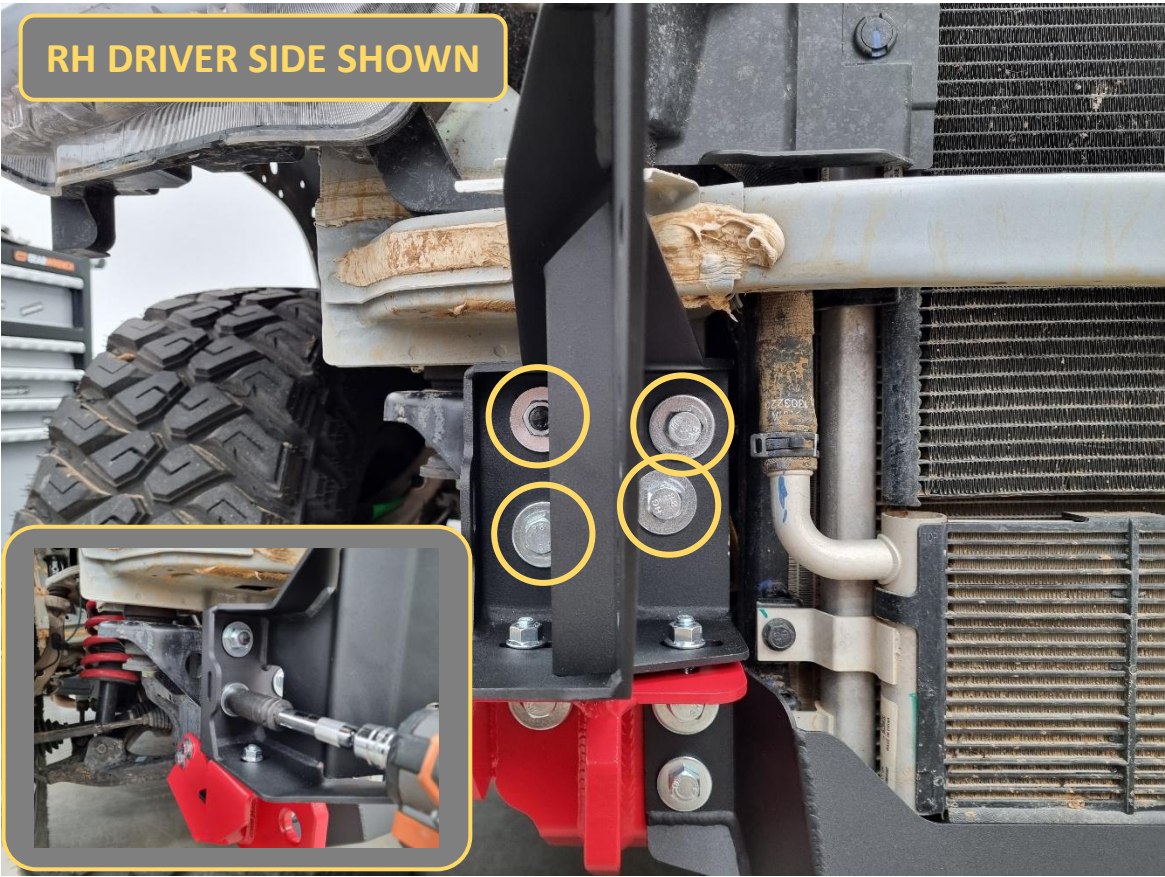
	
46. Fit 3x M8 cage nuts to the inside of the B-1601 bash plate reinforcement bracket as shown. Use a flat blade screwdriver to assist.	TOOLS REQUIRED Flat blade screwdriver
	FASTENERS 3x M8 cage nut

	
47. Fit the bash plate reinforcement bracket to the tow points. 48. Loosely secure the top holes to the chassis with 2x M12x40x1.25 fine pitch bolts and heavy duty washers. 49. Loosely secure the bottom holes to the tow points with 2x M10x30 hex bolts, heavy duty washers and flange nuts (reach in from behind to install).	TOOLS REQUIRED
	FASTENERS 2x M10x30 hex bolt 2x M10 heavy duty washer 2x M10 flange nut 2x M12x40x1.25 hex bolt 2x M12 heavy duty washer

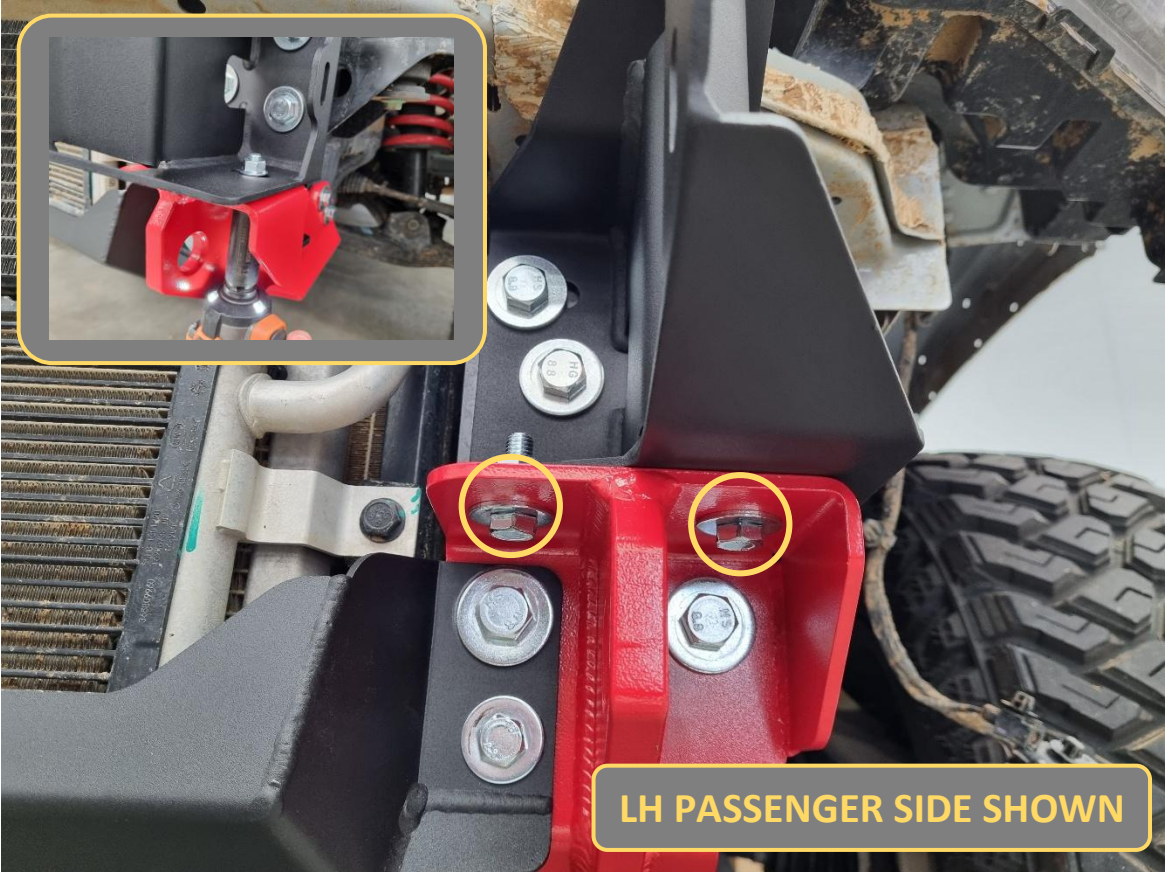
 RH DRIVER SIDE SHOWN	
50. Loosely attach each tow point to the underside of each impact assembly with 2x M10x30 hex bolts, heavy duty washers and flange nuts.	TOOLS REQUIRED
	FASTENERS 4x M10x30 hex bolt 4x M10 heavy duty washer 4x M10 flange nut

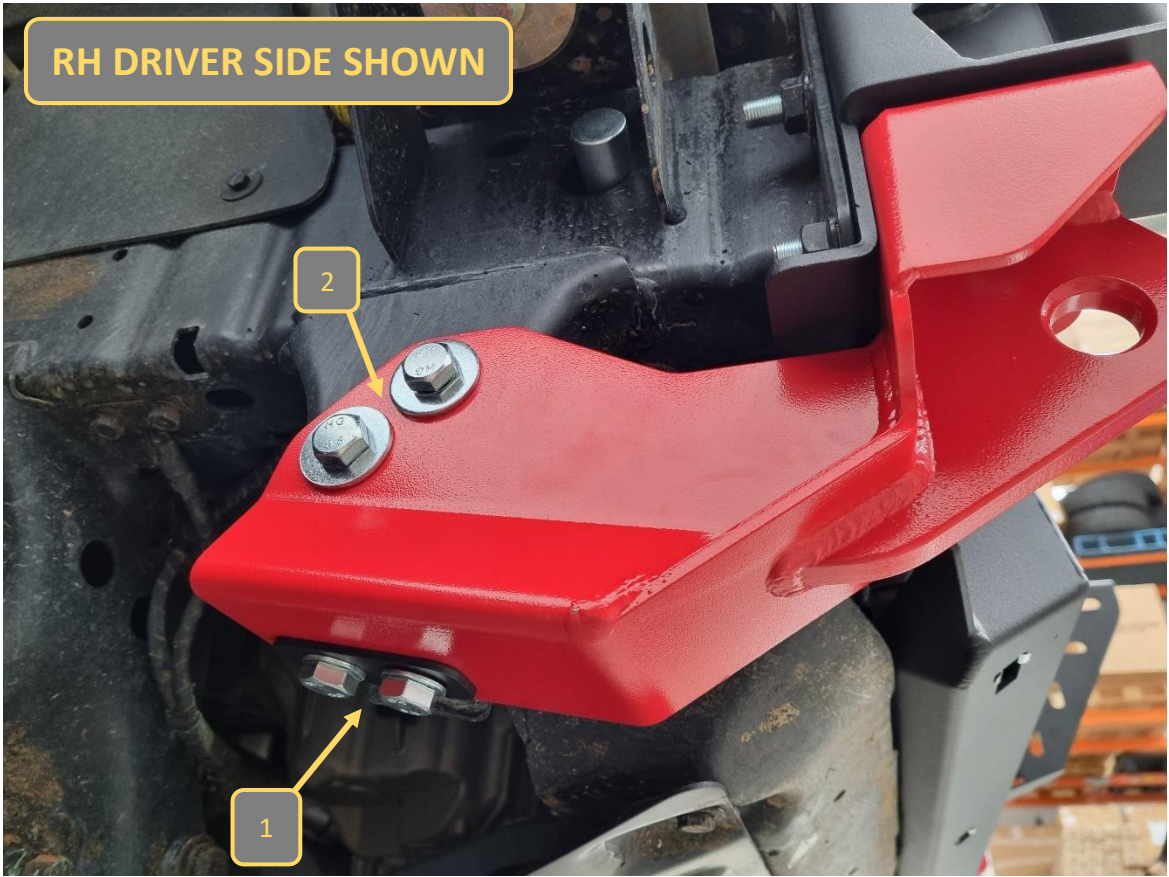
		
51. Measure the distance between the outside faces of uprights on bar using tape measure. Write distance below for reference if required. Bar Upright Width = _____mm 52. Adjust mounts by sliding left/right on the slots, such that distance between inner faces of mounts are between 2-5mm more than bar. Ensure the mount faces are vertically upright.		TOOLS REQUIRED Tape measure
		FASTENERS

	
53. Also check and measure the diagonal distance between the headlight and mount. Ensure this distance is equal and symmetrical on both RH and LH side of the vehicle. Adjust the mounts left/right whilst maintaining the horizontal spacing distance between them.	TOOLS REQUIRED Tape measure
	FASTENERS

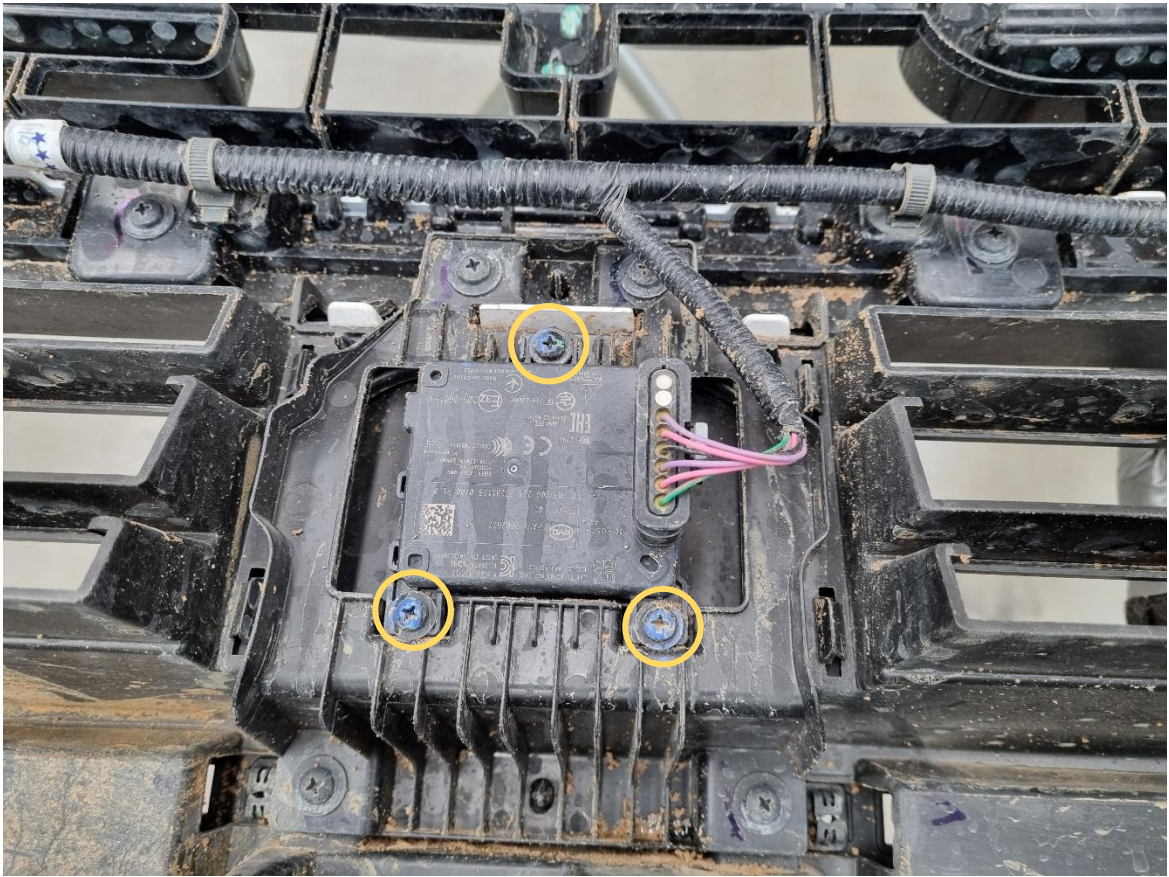
RH DRIVER SIDE SHOWN 	
54. Once happy with alignment, begin tightening bolts and nuts. 55. First tighten the 4x front bolts and nuts as shown. Do this on both sides. 56. Check and confirm the positioning is still within range with a tape measure.	TOOLS REQUIRED 18/19mm socket Socket extension bar Tape measure
	FASTENERS

	
57. Next tighten the tow point front bolts and bash plate reinforcement to the chassis. Ensure the tow point is pushed up against the impact assembly whilst tightening so that there is no/minimal gap.	TOOLS REQUIRED 16/17mm socket 18/19mm socket Socket extension bar
	FASTENERS

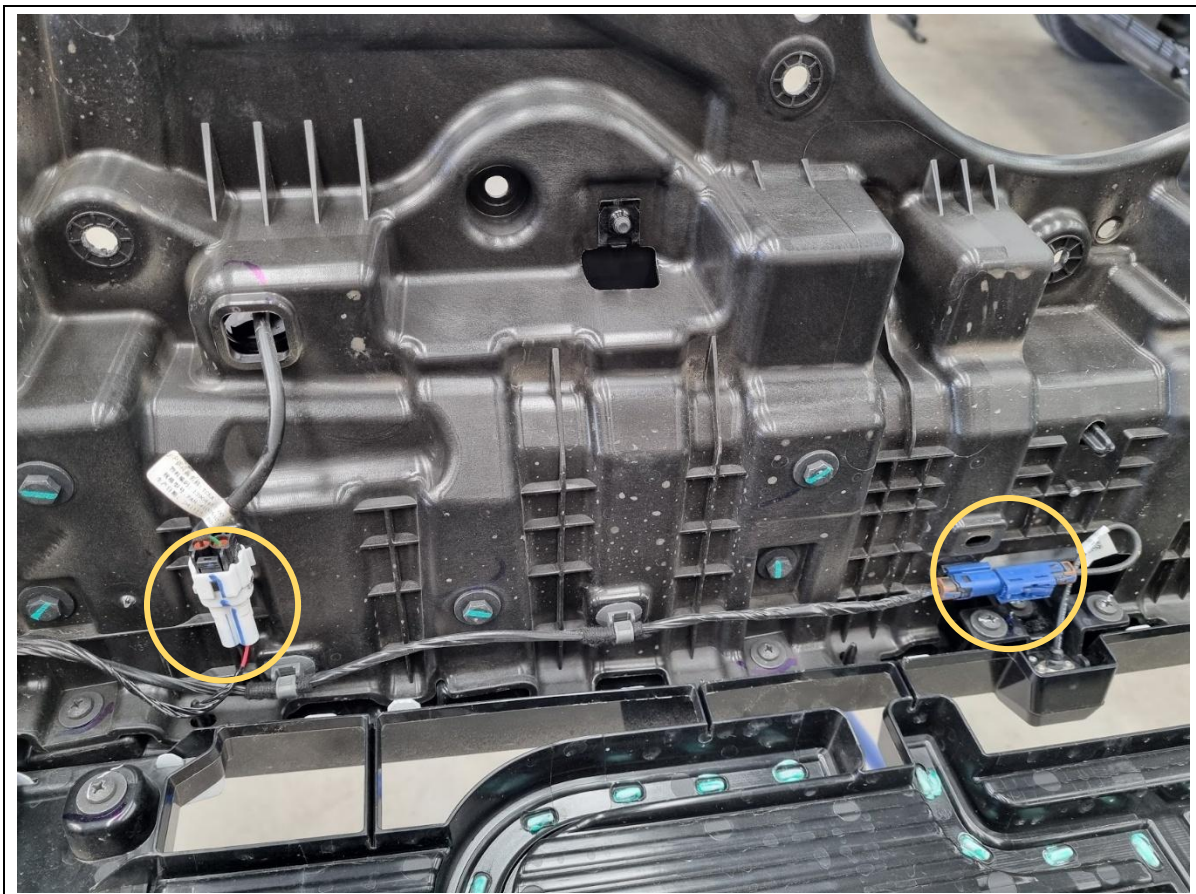
	
58. Then tighten the M10 bolts connecting the tow points to the impact assemblies.	TOOLS REQUIRED 16/17mm socket/spanner
	FASTENERS

	
59. Finally tighten the tow point bottom bolts, then side bolts.	TOOLS REQUIRED 18/19mm socket/spanner
	FASTENERS

 RH DRIVER SIDE SHOWN	
60. Time to strip the bumper. First remove 3x 8mm hex bolts holding each fog light.	TOOLS REQUIRED 8mm socket/spanner
	FASTENERS 6x 8mm factory hex bolt Discard

	
61. Next remove 3x Phillips head screws holding each of the 3x radar units. Label each radar (left, centre, right) and note down the orientation in the bumper. Take care not to drop or damage these radars.	TOOLS REQUIRED Phillips head screwdriver
	FASTENERS 9x Phillips head screws Discard

		
62. Unclip the 2x parking sensors. Spread the tabs on the bumper apart and push the sensor out the back.	TOOLS REQUIRED	
	FASTENERS	



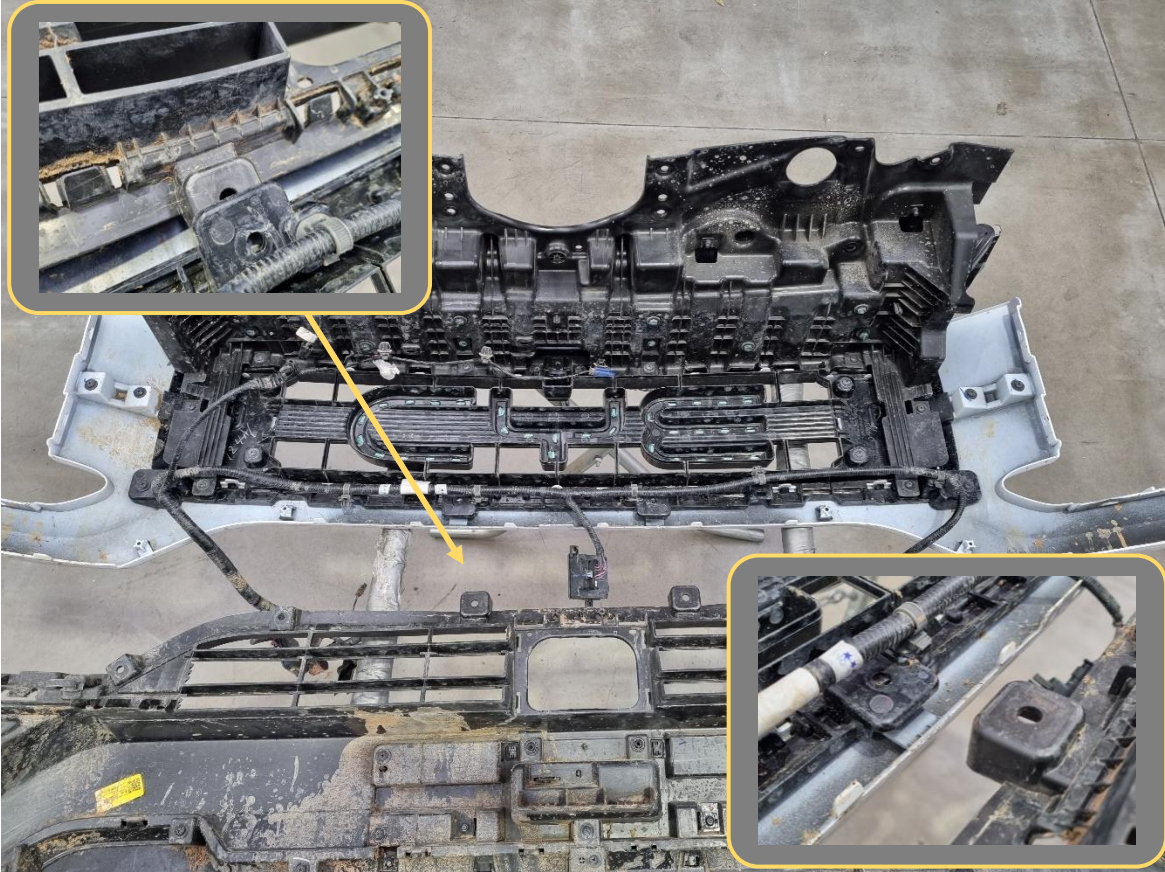
63. Unplug the grille DRL light and front 360 camera from the back of the grille.	TOOLS REQUIRED
	FASTENERS

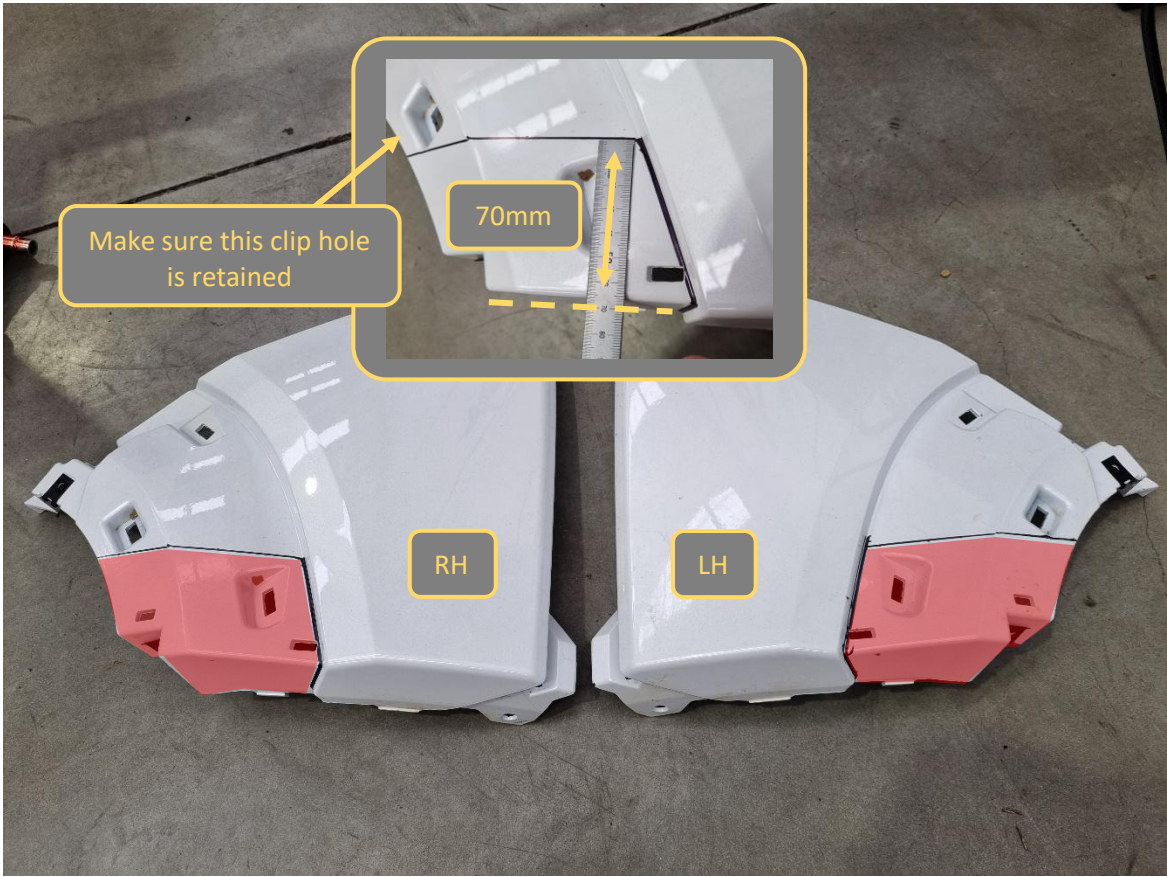
	
64. Release the loom from the bumper by either unclipping or cutting the retaining clips and set aside. The fog lights, radars and parking sensors may also be unplugged now.	TOOLS REQUIRED Side cutters (optional)
	FASTENERS

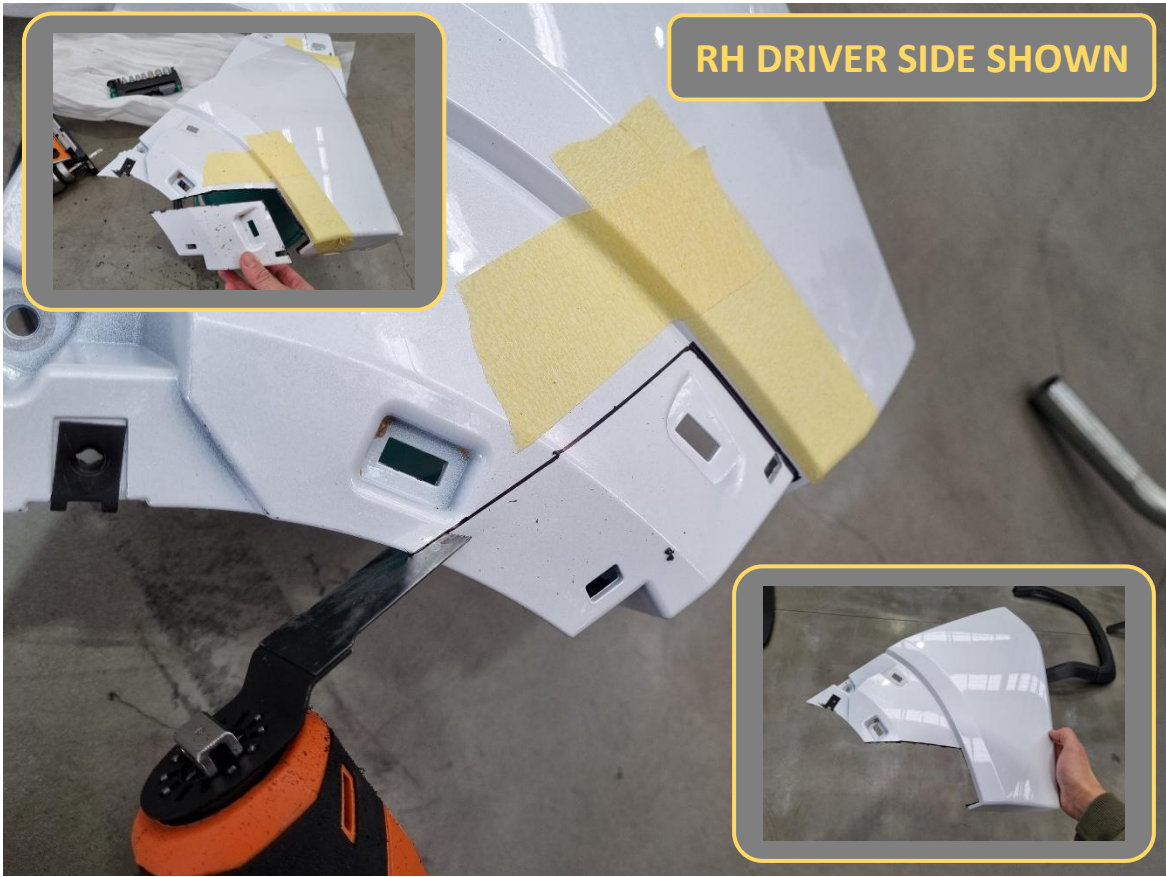
OPTIONAL – PREDATOR BARS ONLY 	
65. Predator only. For Predator bars, there is the option to relocate the front 360 degree camera if fitting with a Stealth Hoop or Rally Hoop bolt-on top tube. If choosing to relocate, remove the camera assembly from the back of the grille by removing 3x Phillips head screws. Otherwise skip this step.	TOOLS REQUIRED Phillips head screwdriver
	FASTENERS 3x Phillips head screws Discard

	
66. Remove 12x Phillips head screws holding lower section of bumper to grille top section.	TOOLS REQUIRED Phillips head screwdriver
	FASTENERS 12x Phillips head screws Discard

RH DRIVER SIDE SHOWN 	
67. Use a trim tool or flat screwdriver to release the clips/tabs holding the outer winglet pieces. 68. Set these aside in a safe place for trimming later.	TOOLS REQUIRED Flat blade screwdriver or Trim tool
	FASTENERS

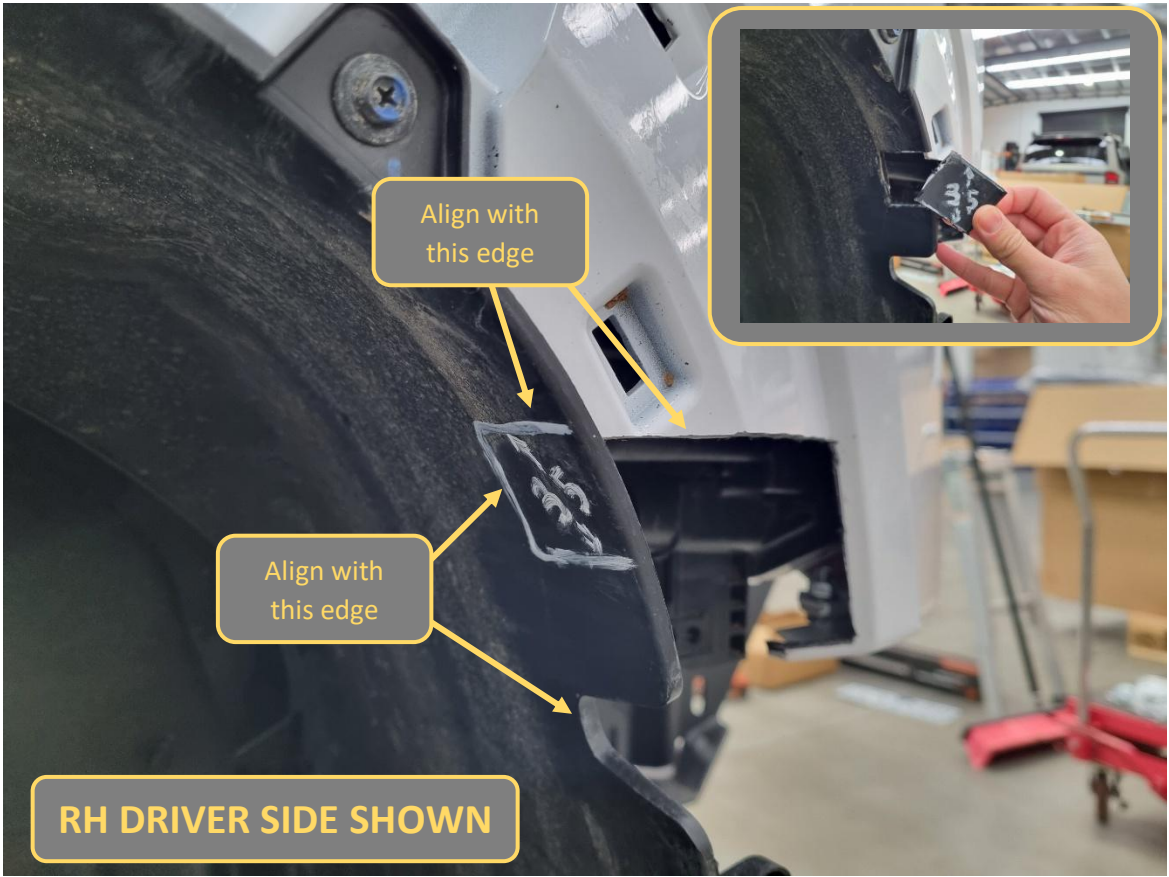
	
69. Continue releasing remaining clips/tabs holding the bumper to the grille. Note: There are 2x sections where the bumper is sandwiched in between the outer and inner grille skins. This takes some time and patience to flex/spread apart to separate the bumper. Take extra care to not damage the grille. The bumper can be discarded.	
TOOLS REQUIRED Flat blade screwdriver or Trim tool	
FASTENERS	

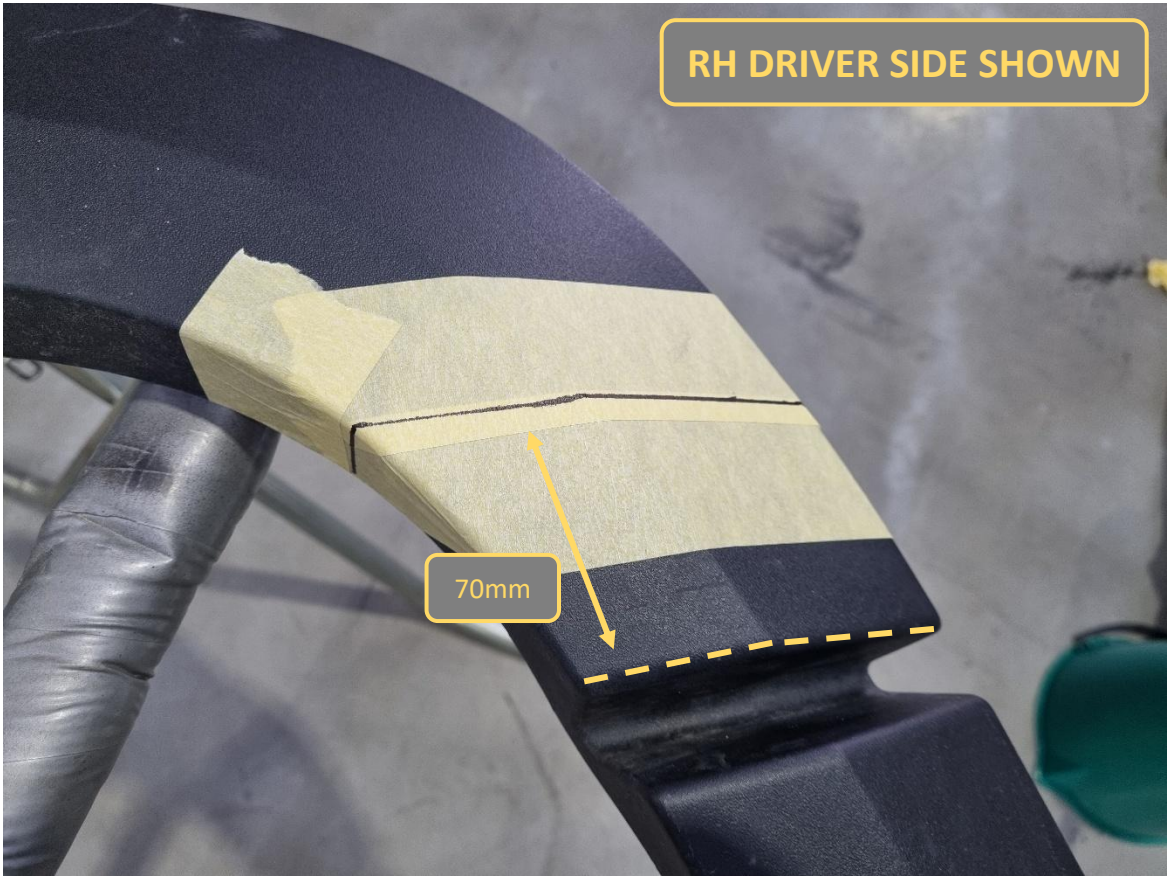
 The image shows two white bumper winglets, labeled 'RH' (Right Hand) and 'LH' (Left Hand), with red lower sections. An inset shows a close-up of the top edge of a winglet with a ruler indicating a 70mm distance from the bottom edge to a horizontal cut line. A callout points to a clip hole, stating 'Make sure this clip hole is retained'.	
70. Mark the bumper winglets for trimming as shown. The cut line is parallel 70mm above the bottom edge of the winglet.	TOOLS REQUIRED Marker pen Ruler
	FASTENERS

 RH DRIVER SIDE SHOWN 	
71. Apply masking tape on the winglet to protect the paint. 72. Trim the winglet with an oscillating multi-tool or other suitable cutting tool. 73. Remove masking tape and clean up the trimmed edges with a deburring tool or utility knife.	TOOLS REQUIRED Masking tape Oscillating multi-tool or similar Deburring tool or Utility knife
	FASTENERS

RH DRIVER SIDE SHOWN 	
74. Re-clip the trimmed bumper winglets back to the grille. 75. Also secure each winglet with 1x M8x20 hex bolt, heavy duty washer and flange nut.	TOOLS REQUIRED 13mm socket/spanner
	FASTENERS 2x M8x20 hex bolt 2x M8 heavy duty washer 2x M8 flange nut

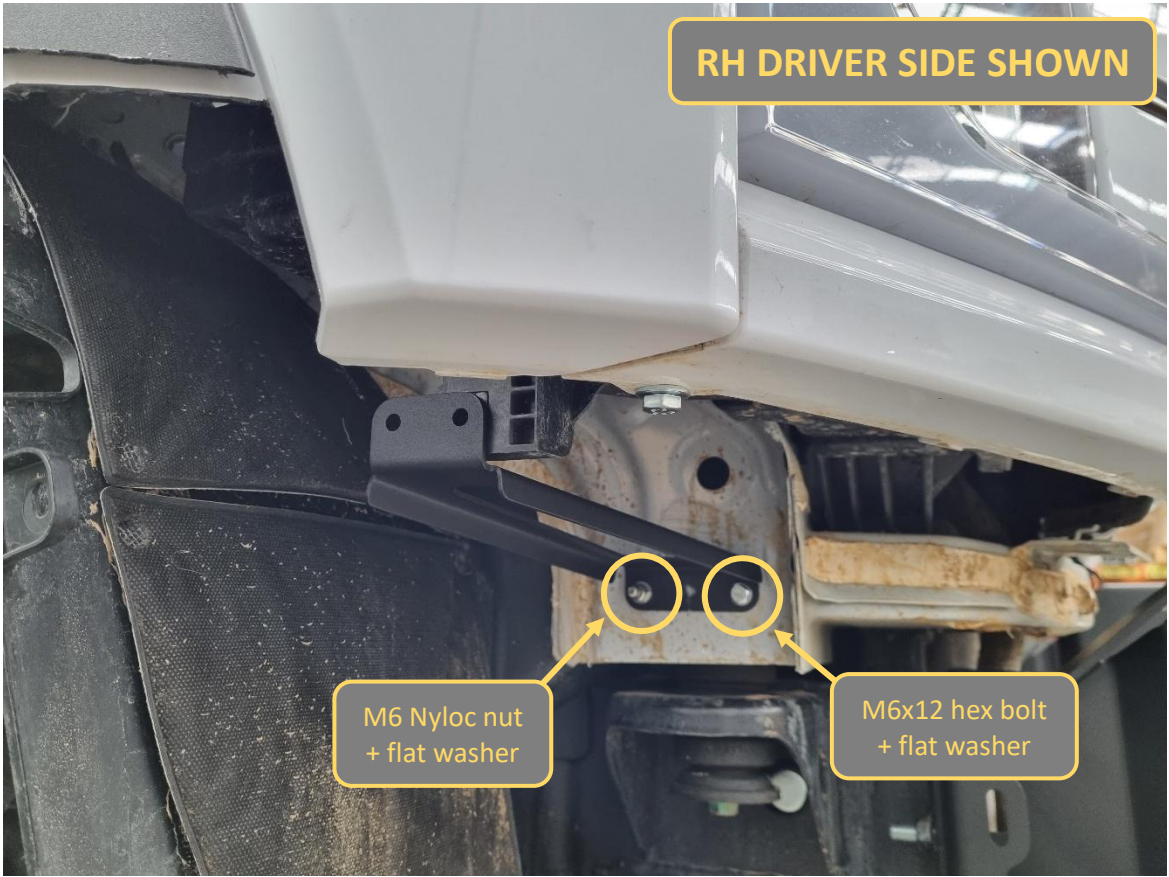
	
76. Re-fit the grille back to the vehicle. 77. Re-secure the top with the 7x 10mm hex bolts retained from Step 5. 78. Re-secure the sides with the 4x Phillips head screws (2x per side) retained from Step 11.	TOOLS REQUIRED 8mm socket/spanner 10mm socket/spanner Phillips head screwdriver
	FASTENERS 7x 10mm factory hex bolts 4x Phillips head screws Retained from Step 5 and 11

 RH DRIVER SIDE SHOWN	
79. Mark and trim a small section out of the wheel arch liner 35mm tall, as shown. 80. Deburr any sharp edges.	TOOLS REQUIRED Marker pen Ruler Oscillating multi-tool or similar Deburring tool or Utility knife
	FASTENERS

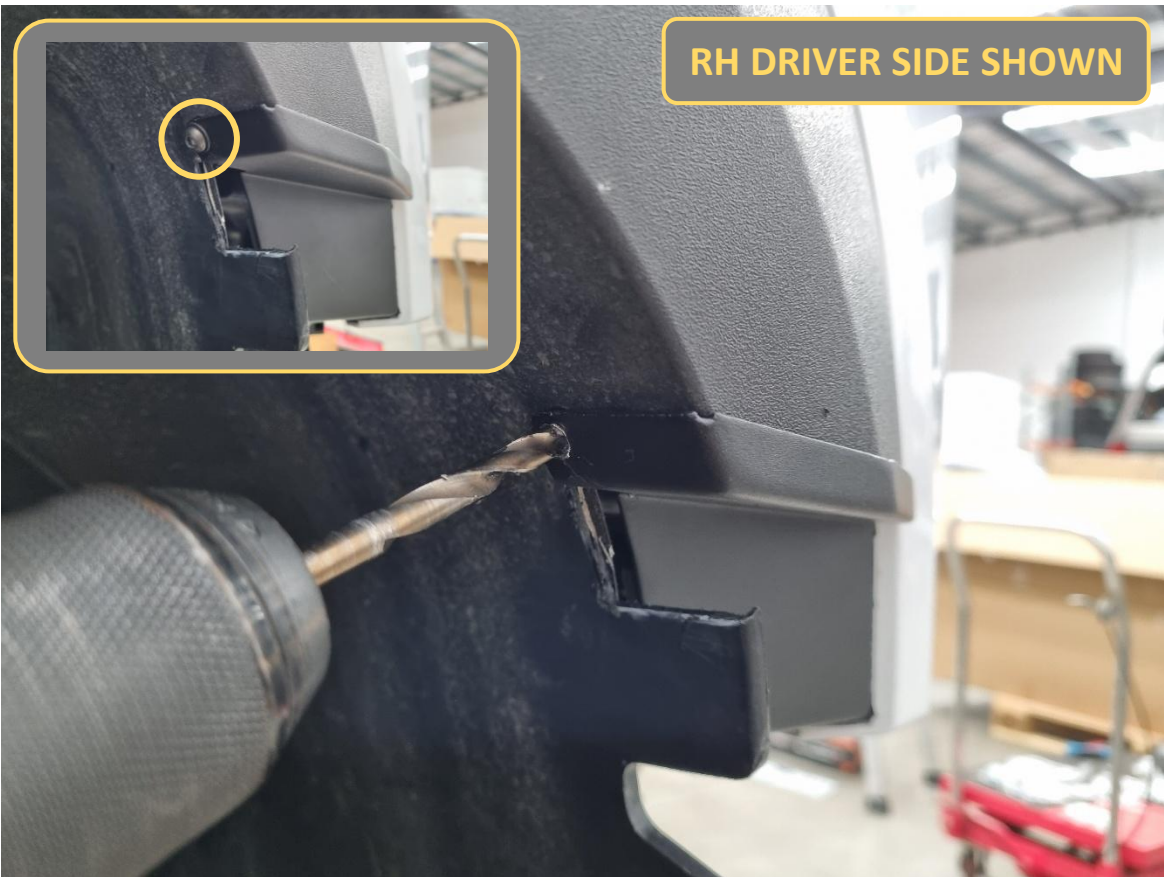
	
81. Apply masking tape over the front of the flare above the bumper split line. 82. Measure and mark a cut line 70mm above the edge of split line in the flare.	TOOLS REQUIRED Masking tape Marker pen Ruler
	FASTENERS

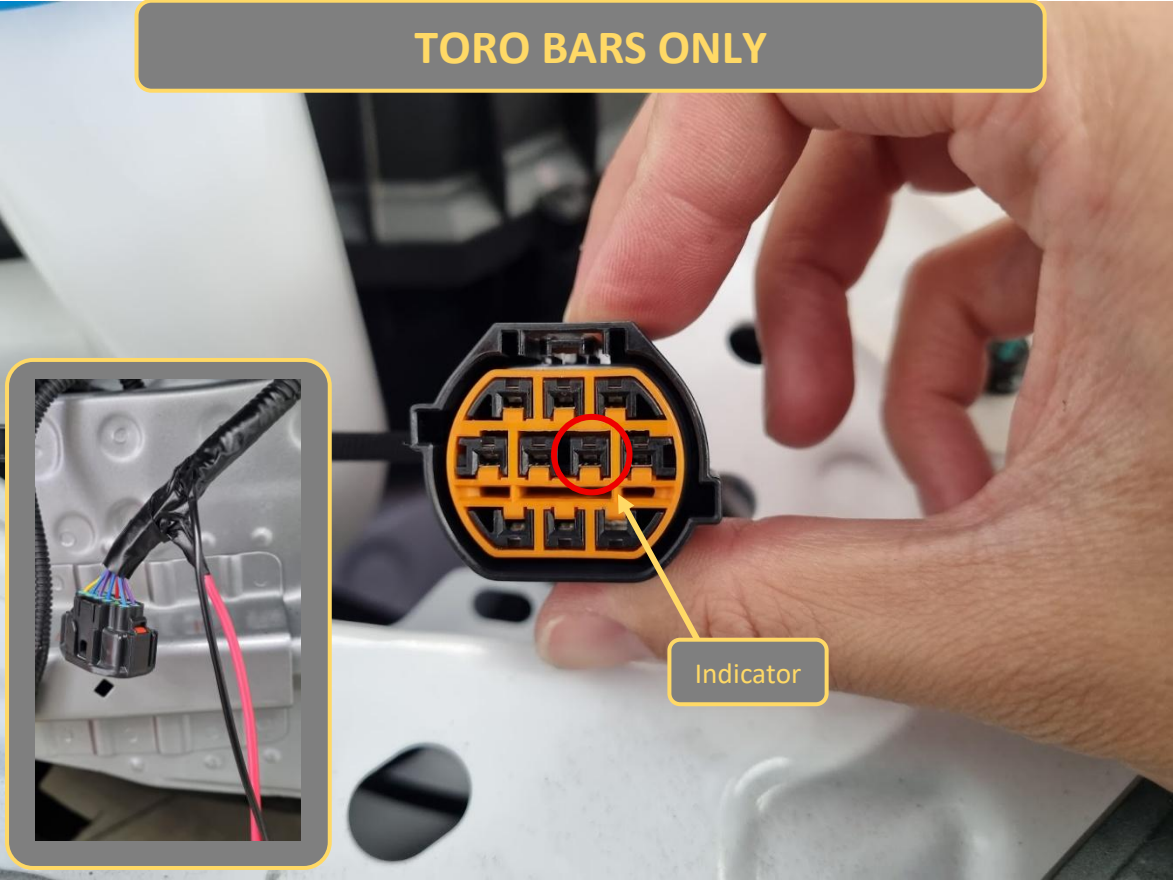
 RH DRIVER SIDE SHOWN	
83. Trim the flare with an oscillating multi-tool or other suitable cutting tool. Discard the front bottom section. 84. Remove masking tape and clean up the trimmed edges with a deburring tool or utility knife.	TOOLS REQUIRED Oscillating multi-tool or similar Deburring tool or Utility knife
	FASTENERS

		
85. Re-fit the trimmed flares and mudflaps (if removed). Re-use the 10mm factory fasteners from Step 7 + 9.	TOOLS REQUIRED 10mm socket/spanner	
	FASTENERS 8x 10mm factory hex bolt Retained from Step 7+ 9	

 RH DRIVER SIDE SHOWN M6 Nyloc nut + flat washer M6x12 hex bolt + flat washer	
86. Fit the B-1610 headlight brackets on each side and secure to the body with 1x M6x12 hex bolt and washer + 1x M6 Nyloc nut and washer. Leave finger tight. Note: There is a small arrow cutout on the bracket, in between the bolt holes. This should be facing the front of the car.	TOOLS REQUIRED
	FASTENERS 2x M6x12 hex bolt 2x M6 Nyloc nut 4x M6 flat washer

 RH DRIVER SIDE SHOWN	
87. Fit the B-1611 flare endcaps on both sides of the vehicle. 88. Secure to the headlight with 1x M6x20 hex bolt and flat washer. 89. Secure to the headlight bracket with 1x M6x12 hex bolt, flat washer and flange nut. 90. Now is also the time to tighten the headlight bracket bolt and nut from the previous step.	TOOLS REQUIRED 10mm socket/spanner
	FASTENERS 2x M6x12 hex bolt 2x M6x20 hex bolt 4x M6 flat washer 2x M6 flange nut

 RH DRIVER SIDE SHOWN 	
91. Use the hole on the back of the flare endcap as a guide and drill a 6mm hole into the wheel arch liner. 92. Secure the flare endcap to the wheel arch liner with 1x M6x16 black button head bolt, black washer and flange nut.	TOOLS REQUIRED Electric drill 6mm drill bit
	FASTENERS 2x M6x16 black button head bolt 2x M6 black flat washer 2x M6 flange nut

TORO BARS ONLY	
	
93. Toro only. Locate the plug on the back of each headlight and disconnect. 94. Toro only. Probe with a test light to confirm indicator signal. The pin location on LH and RH headlight plugs are the same, but wire colours are different. RH side should be yellow with a red trace. LH side should be light blue. 95. Toro only. Splice and solder automotive electrical wires into the harness for indicator signal. Use heat shrink or electrical tape to insulate solder connections. Do this for both LH and RH indicators, then re-plug back into headlight.	TOOLS REQUIRED Cutting pliers Wire strippers Soldering iron Solder Automotive electrical wire Heat shrink Heat gun Electrical tape FASTENERS

	
96. Time to dress the bar. Fit the light bar mesh plate to the inside of the central cutout, and secure using 7x M6x12 black countersunk bolts and flange nuts. Note: This is a structural part and fitment is mandatory.	TOOLS REQUIRED 4mm hex/Allen key
	FASTENERS 7x M6x12 black countersunk bolt 7x M6 flange nut

	
97. If fitting an integrated light bar, do so now. This bar is designed to fit the Offroad Animal 32-inch light bar. If fitting this light bar, assemble the light bar with legs facing <u>inwards</u>, and line it up with the slots in the centre gusset. Secure with M6 fasteners supplied with the light. This bar can accommodate most other “30-32inch” size single row light bars. Stedi ST3K light bars require legs facing <u>outwards</u>.	TOOLS REQUIRED Supplied with accessories
	FASTENERS Supplied with accessories



98. Fit 10x M6 cage nuts into the rectangular slots in bottom of bull bar wing (5x per side).
- Use a small flat blade screwdriver to push the edge of the cage to engage with the slot to aid fitting.

TOOLS REQUIRED

Flat blade screwdriver

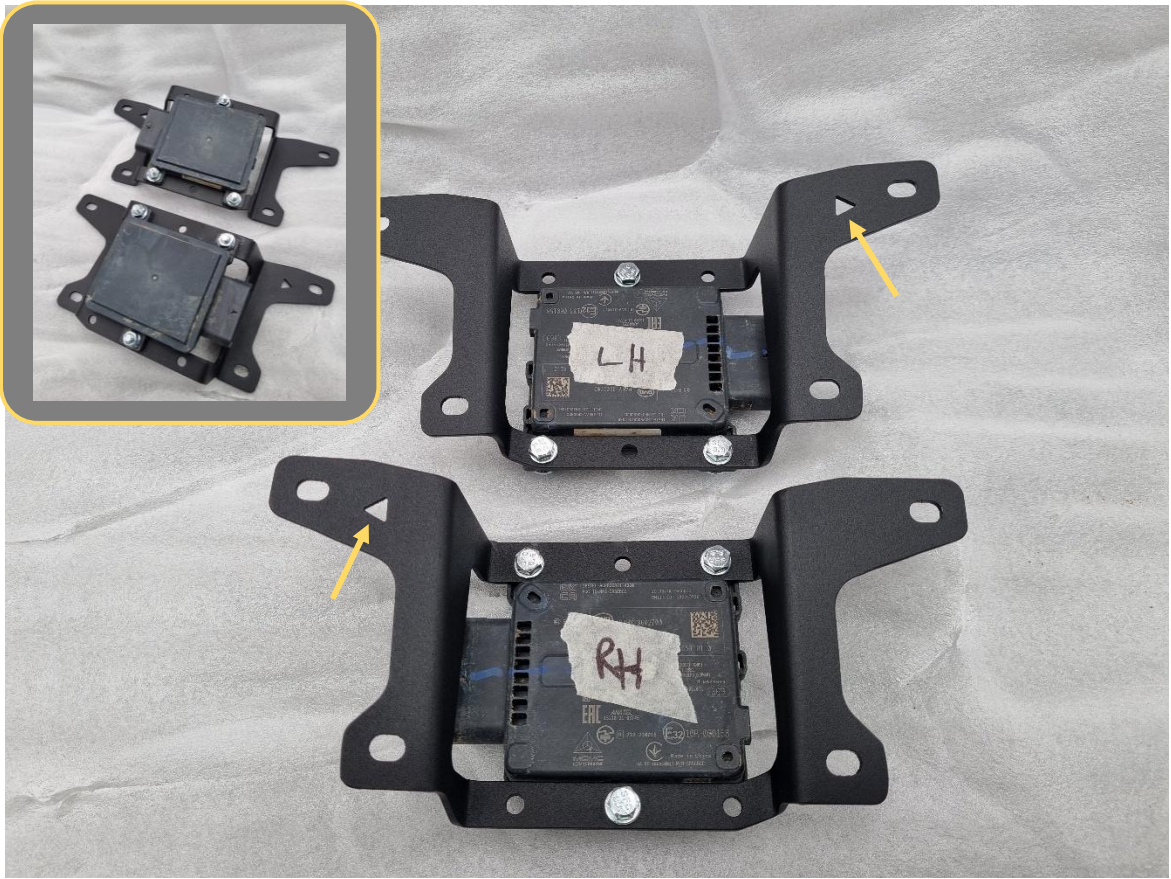
FASTENERS

10x M6 cage nut

	
99. Clean the mounting surfaces of the supplied parking sensor holders and the corresponding mounting locations on the inside of the bull bar with isopropyl alcohol or similar. Let it dry. 100. Press down on the arrow location and break the bulb of the supplied 3M Primer 94 ampule to activate the primer dispensing. 101. Apply 3M Primer 94 to all areas adjacent to the parking sensor locations, on both the bullbar and the sensor housings.	TOOLS REQUIRED Isopropyl alcohol Rag
	FASTENERS 3M Primer 94

	
Important: Allow at least 5 minutes for the primer to chemically bond to the surfaces. 102. Apply supplied VHB tape pads to both sensor housings as shown. 103. Fit parking sensors into plastic sensor housings. Ensure the rubber isolating ring is seated correctly.	TOOLS REQUIRED
	FASTENERS

	
104. Remove backing film on VHB tape (easier with knife to peel off) and adhere parking sensors in position in bar. Apply pressure for at least 10 seconds after positioning for best adhesion. The sensor holders are marked F-0013R (right side) and F-0013L (left side). The production version has a small notch that matches with a notch in the bull bar for alignment (not shown in sample photo). 105. Add a pea-sized blob of automotive adhesive sealant over the sensor holder and inside face of bar to hold to ensure the tape holds position.	TOOLS REQUIRED Utility knife Automotive adhesive sealant (eg. Sikaflex)
	FASTENERS

	
106. Fit the side radars to the supplied brackets as shown. Secure each radar with 3x M5x12 hex bolts, flat washers and flange nuts. Note: The bracket as an arrow cutout that should be pointing the same way as the radar plug, towards the center of vehicle.	TOOLS REQUIRED 8mm socket/spanner
	FASTENERS 6x M5x12 hex bolt 6x M5 flat washer 6x M5 flange nut

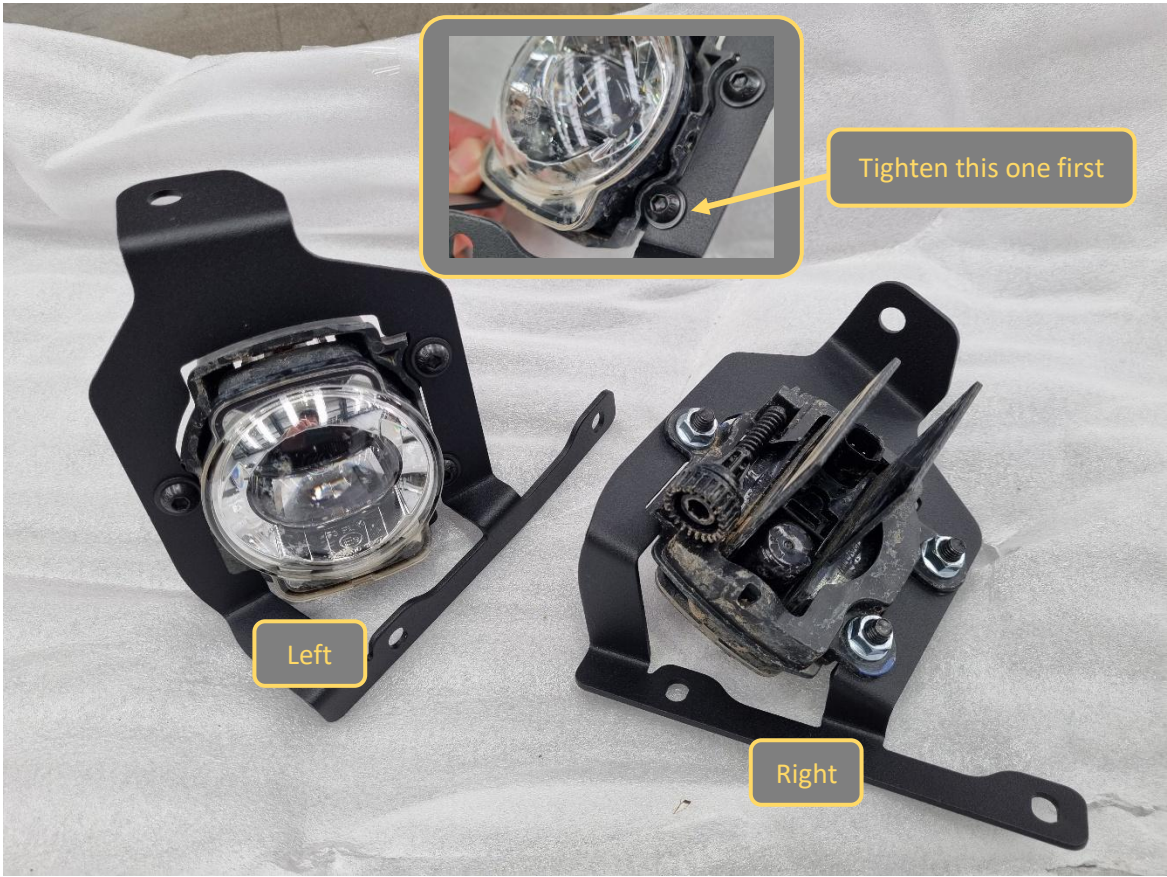
	
107. Install the side radar and bracket into the bull bar wing. Secure the bracket to the bracing inside the bar with 4x M6x12 hex bolts, flat washers and flange nuts. Do this for both sides. Remember to peel off any labels or markings on the radars used to identify RH/LH.	TOOLS REQUIRED 10mm socket/spanner
	FASTENERS 8x M6x12 hex bolt 8x M6 flat washer 8x M6 flange nut

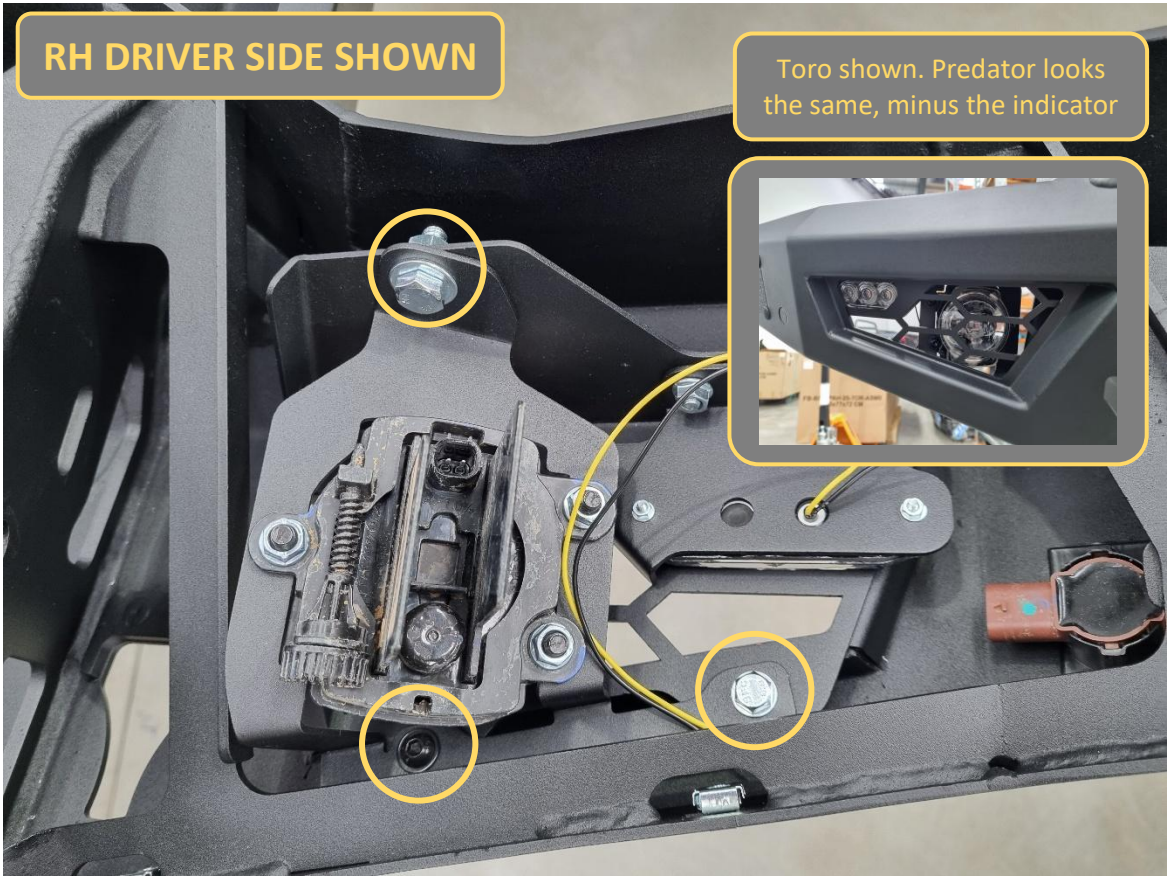
 RH DRIVER SIDE SHOWN	
108. Fit the N-0021 plastic radar covers to the open windows in each bull bar wing, textured face on the outside. 109. Secure each cover with 4x fir tree clips supplied.	TOOLS REQUIRED
	FASTENERS 8x fir tree clips

	
110. Fit the wing meshes to the inside of the bar. Secure each one only at the top with 2x M6x12 hex bolts and flat washers.	TOOLS REQUIRED 10mm socket/spanner
	FASTENERS 4x M6x12 hex bolt 4x M6 flat washer

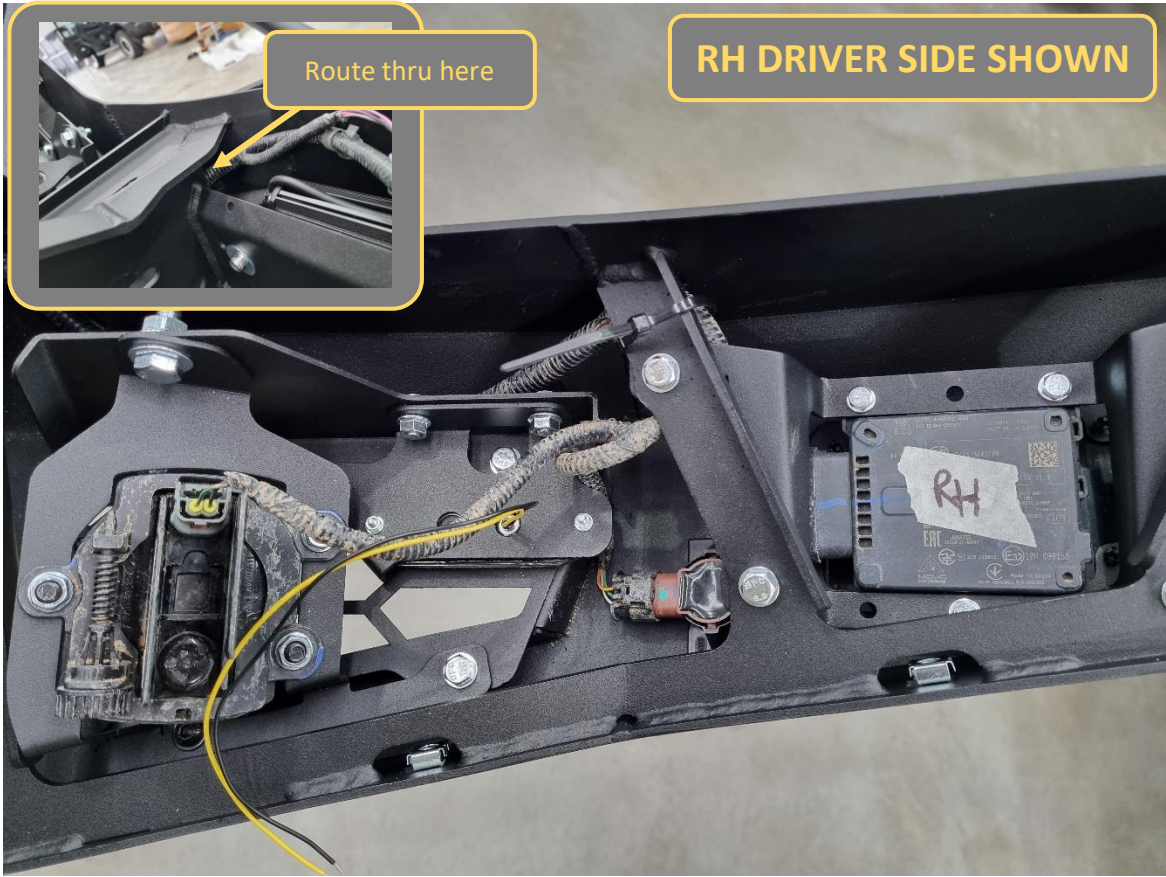
TORO BARS ONLY 	
111. Toro only. Fit the supplied indicator repeaters to the mounting bracekts. Secure each indicator with 2x M3x12 pan head screws, flat washers and hex nuts.	TOOLS REQUIRED Phillips head screwdriver 5.5mm socket/spanner
	FASTENERS 4x M3x12 pan head screw 4x M3 flat washer 4x M3 hex nut

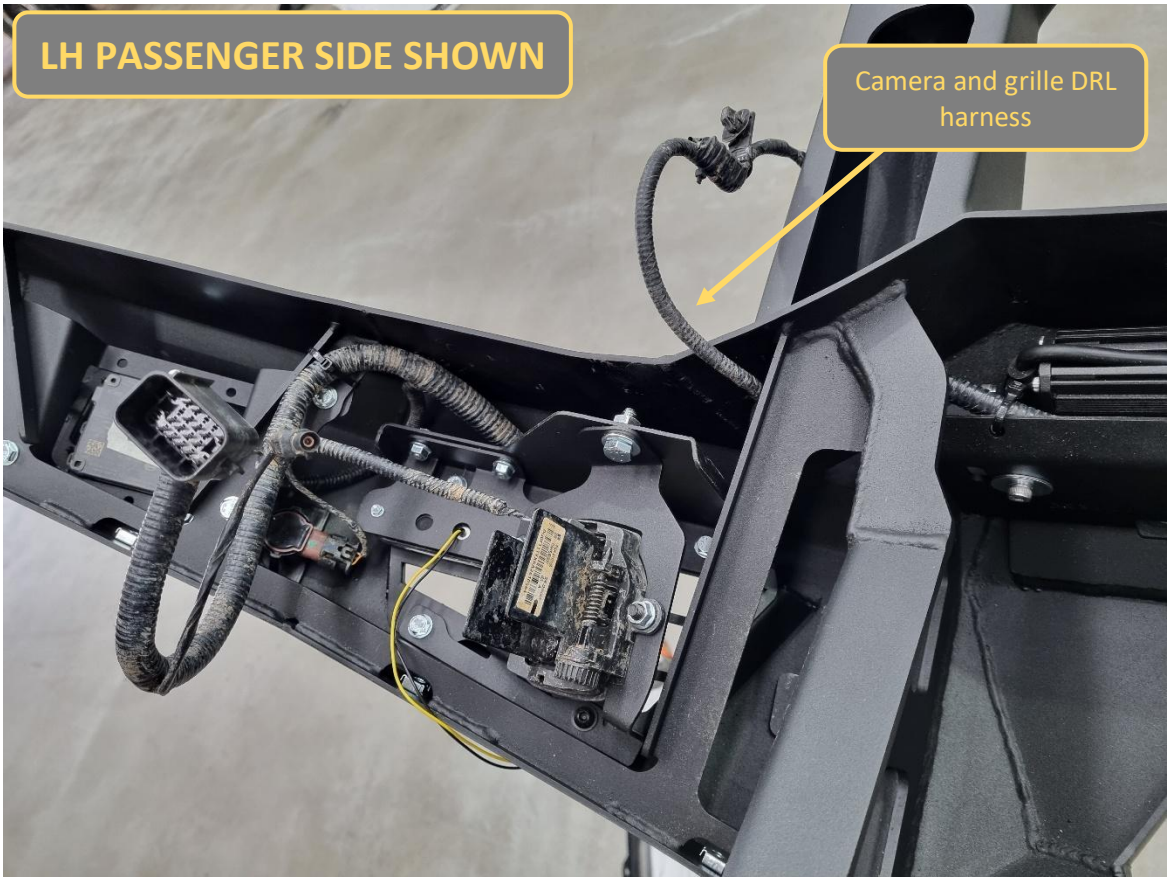
TORO BARS ONLY  RH DRIVER SIDE SHOWN	
112. Toro only. Fit the indicators and brackets to the back of the wing mesh. Secure each one with 2x M6x12 hex bolts, flat washers and flange nuts.	TOOLS REQUIRED 10mm socket/spanner
	FASTENERS 4x M6x12 hex bolt 4x M6 flat washer 4x M6 flange nut

	
113. Fit the fog lights to the supplied brackets and secure each one with 3x M6x16 black button head bolts, black washers and flange nuts. Note: The washers are slightly oversized. It is a tight fit to the fog light on one of the holes. Tighten this one first.	TOOLS REQUIRED 4mm hex/Allen key
	FASTENERS 6x M6x16 black button head bolt 6x M6 black flat washer 6x M6 flange nut

RH DRIVER SIDE SHOWN Toro shown. Predator looks the same, minus the indicator 	
114. Fit the fog lights and brackets to the back of the wing mesh. Secure each one with: a. 1x M8x20 hex bolt, heavy duty washer and flange nut (top) b. 1x M6x16 black button head bolt and black washer (inner) c. 1x M6x12 hex bolt and flat washer (outer)	TOOLS REQUIRED 10mm socket/spanner 13mm socket/spanner 4mm hex/Allen key
	FASTENERS 2x M8x20 hex bolt 2x M8 heavy duty washer 2x M8 flange nut 2x M6x16 black button head bolt 2x M6 black flat washer 2x M6x12 hex bolt 2x M6 flat washer

LH PASSENGER SIDE SHOWN Predator Shown 	
115. The wing meshes also support cube lights in addition to, or to replace the fog lights. Up to 2x can be fitted to each wing mesh for the Predator bar. Toro bars can only take 1x per wing. Bolt them to the underside of the wing mesh flange using fasteners supplied with the lights. Note: For Stedi C4 lights (not pictured), spacers are needed to shift the light downwards so they align with the opening in the bull bar. Offroad Animal brand cube lights (pictured) do not need spacers.	TOOLS REQUIRED Supplied with accessories
	FASTENERS Supplied with accessories

	
116. Fit the bumper loom into the bar. Route the loom via the cutouts at the top near the light bar. 117. Plug in the fog light, parking sensor and side radar on each side. 118. Use cable ties to secure the loom to the bar.	TOOLS REQUIRED Cable ties (not supplied)
	FASTENERS

	
119. Photo of loom in LH side of bar. Note position of camera and grille DRL harness. As well as main connectors back to the vehicle.	TOOLS REQUIRED
	FASTENERS

	
120. Fit the pan brace bracket to the back of the centre section of the bull bar. 121. Secure at the top with 3x M6x16 black button head bolts, black washers and flange nuts. 122. Secure the bottom with 4x M6x12 hex bolts, flat washers and flange nuts.	TOOLS REQUIRED 4mm hex/Allen key 10mm socket/spanner
	FASTENERS 3x M6x16 black button head 3x M6 black flat washer 4x M6x12 hex bolt 4x M6 flat washer 4x M6 flange nut

	
	
123. If fitting driving lights to this bar, this is also the most convenient time to do so. It is still possible later, but it is more difficult. These bars support up to 2x 9" round driving lights.	TOOLS REQUIRED Supplied with accessories
	FASTENERS Supplied with accessories

	
124. Predator only. If fitting top tubes (Stealth Hoop, Round Hoop or Rally Hoop) to the Predator bar, now is the best time to do so. It is still possible later, but it is more difficult. 125. The Stealth Hoop and Rally Hoop come with provisions to relocate the front 360 degree camera (see circled above). The camera relocation kit (TB-COM-BYD-CAM-BRKIT) is purchased separately. Refer to next few steps for how to do that. <u>It is recommended to do this before the top tube is bolted to the bar.</u>	TOOLS REQUIRED Supplied with accessories
	FASTENERS Supplied with accessories

OPTIONAL – PREDATOR BARS ONLY 		
126. Predator only (optional). Fit the supplied plastic blanking plug in the hole in the grille where the camera was.	TOOLS REQUIRED	
	FASTENERS	

OPTIONAL – PREDATOR BARS ONLY 	
127. Predator only (optional) Remove 2x small Phillips head screws holding the camera to its mounting bracket. Retain these screws.	TOOLS REQUIRED Small Phillips head screwdriver
	FASTENERS 2x Phillips head screws Retain

OPTIONAL – PREDATOR BARS ONLY 	
128. Predator only (optional). Fit the camera to the relocation bracket in the optional camera relocation kit using the original small Phillips head screws.	TOOLS REQUIRED Small Phillips head screwdriver
	FASTENERS 2x Phillips head screws

OPTIONAL – PREDATOR BARS ONLY 	
129. Predator only (optional). Fit the camera and relocation bracket to the inside of the camera housing. 130. Predator only (optional). Next fit the camera assembly to the holes in the underside of the Stealth Hoop or Rally Hoop, and secure with 2x M6x12 hex bolts, flat washers and flange nuts. 131. Camera relocation is now complete. <u>Remember to plug the camera back into the vehicle harness once the bar is fitted.</u>	TOOLS REQUIRED 10mm spanner
	FASTENERS 2x M6x12 hex bolt 2x M6 flat washer 2x M6 flange nut

OPTIONAL – PREDATOR BARS ONLY 	
132. Predator only (optional). Antennas may be mounted to the top tubes. 133. Predator only (optional). If no top tubes are fitted, there is also an antenna mounting bracket supplied. First, fit the antenna to the bracket. Then feed the antenna cable through the slot on the angled top face of the bar (can be either LH or RH) and secure the bracket to the bar with 1x M10x20 socket head bolt, spring washer and flat washer.	TOOLS REQUIRED 8mm hex/Allen key FASTENERS 1x M10x20 socket head bolt 1x M10 spring washer 1x M10 flat washer

TORO BARS ONLY 		
134. Toro only. If required, fit the supplied antenna mounting brackets to the back of the bar, and secure with 2x M8x20 black button head bolts and black washers, each. 135. Toro only. Else fit the 2x M8x20 black button head bolts and black washers to the back of each bullbar upright, to protect nut threads in bar for future use.	TOOLS REQUIRED 5mm hex/Allen key	
	FASTENERS 4x M8x20 black button head bolt 4x M8 black flat washer	

	
136. If not doing any more accessory wiring around the back of the headlights, re-fit the radiator top cover and engine bay side covers. The bonnet can now be closed. 137. The bull bar is now finally ready to go onto the vehicle. With assistance, either from another person or a lifting trolley, lift the bar onto the mounts on the vehicle.	TOOLS REQUIRED Lifting trolley
	FASTENERS



138. Secure the bar to the mounts with 8x M12x30 bolts, heavy-duty washers and Nyloc + flange nuts. Leave finger tight at this stage.

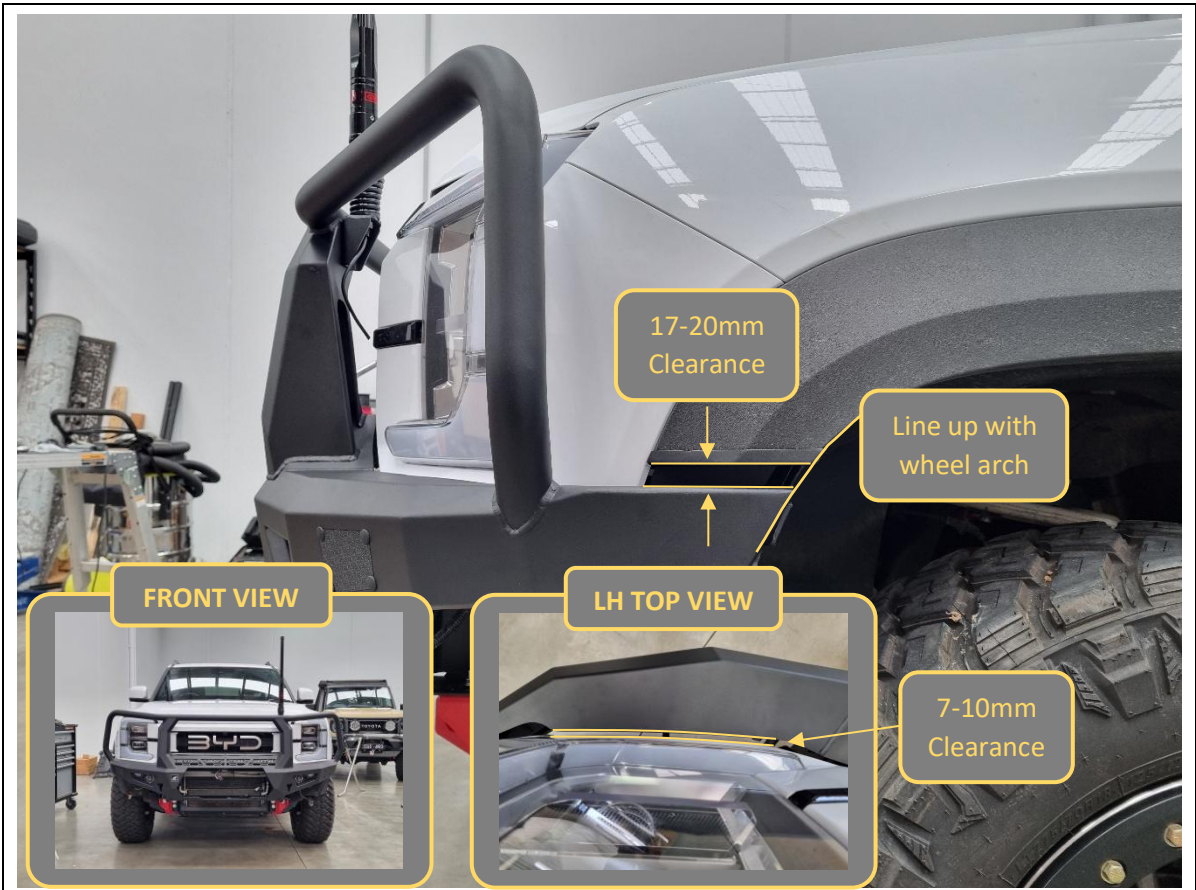
139. **Note:** Use a washer on both bolt and nut side for the Nyloc nut. 1x Nyloc required per side of the bar. 1x washer on the bolt side is all that is required with flange nuts.

TOOLS REQUIRED

18/19mm socket/spanner

FASTENERS

8x M12x30 hex bolt
10x M12 heavy duty washer
2x M12 Nyloc nut
6x M12 flange nut



140. With assistance, from another person, align the bar with the edges of the vehicle. Adjust such that the clearances are neat, and the bar is symmetric left/right on the vehicle.

Acceptable range of clearances are outlined below.
Ensure clearances are maintained all the way below the headlight.

Front view: The bar should sit horizontally level. The top edge of the wings should be around 10mm below the bottom of the headlight.

Side view: The bar should be parallel and have 17-20mm vertical clearance to the flare cut. The end of the bar wing should be in line with the wheel arch liner.

Top view: The bar should sit 7-10mm in front of the grille.

141. Once happy with alignment, fully tighten all 8x M12 bolts.

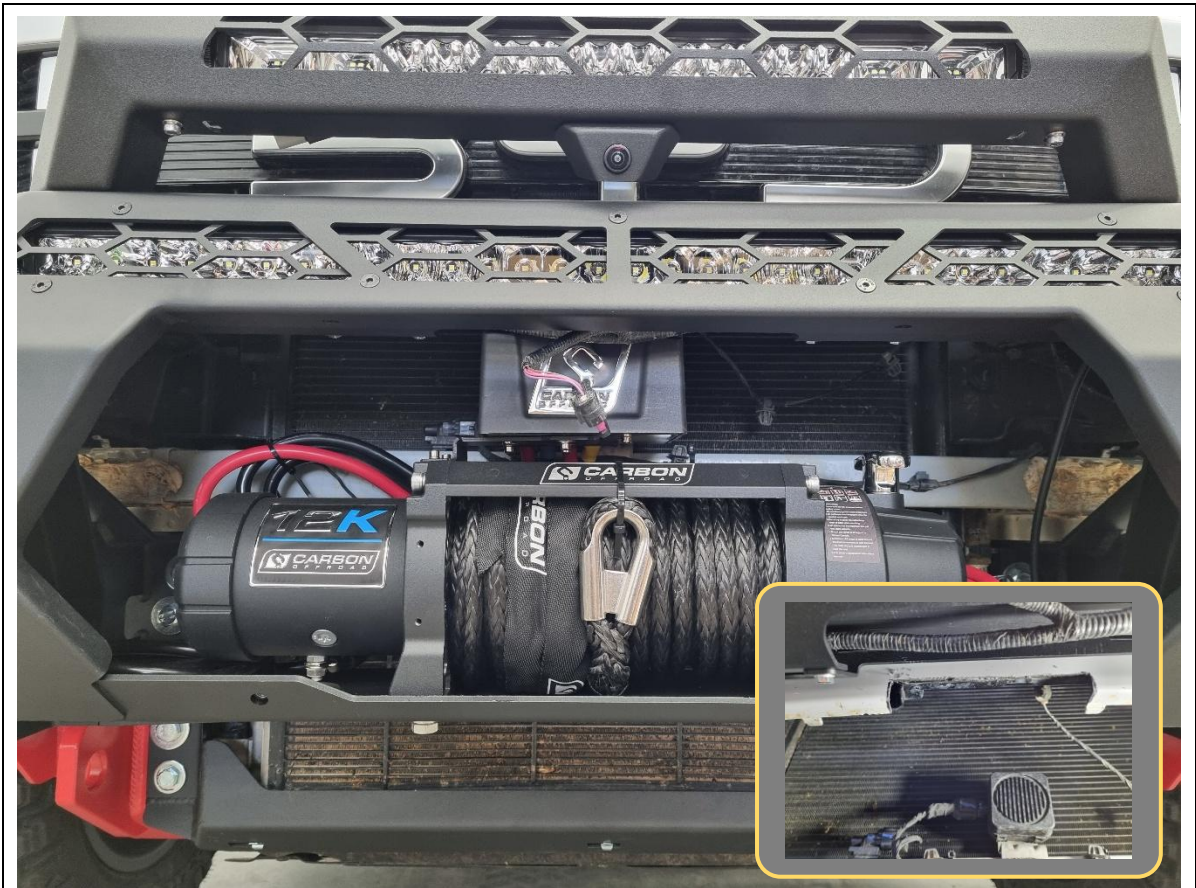
TOOLS REQUIRED

Lifting Trolley
18/19mm socket/spanner

FASTENERS

LH PASSENGER SIDE SHOWN 	
142. Re-connect the bumper harness and camera harness back to the vehicle. 143. Reach in behind the grille from underneath and re-connect the camera and grille DRL harness.	TOOLS REQUIRED
	FASTENERS

	
144. Toro only. Connect the indicator repeater lamps to the vehicle headlight harness (solder/crimp together, ensure well insulated). Refer to packaging on indicator lamps for pinout. 145. Toro only. Ground each indicator repeater lamp to a suitable grounding point on the vehicle body (existing earth points in engine bay preferred). 146. Check all wiring is connected, and that fog lights, indicators (Toro only) and parking sensors are all functional.	TOOLS REQUIRED
	FASTENERS



147. If fitting a winch, do so now. Lift the winch into the opening at the front of the bull bar.

This bar is designed to fit most low mount winches, in foot down configuration. Secure the winch with bolts underneath the cradle.

WARN ZEON 12 is the largest winch confirmed to fit.

Ensure clutch handle will be accessible through opening in front mesh panel. Refer to winch instructions regarding changing clutch handle location.

Note: To fit the Carbon 12K V3 winch control box in the central, the bottom of the grille needs to be cut (see inset photo). WARN ZEON, WARN VR EVO, Bushranger Covert 10, Runva 11XP and Runva 11EXPEDITION winches do not require cutting.

Important: The 12V system battery on the BYD is not capable of delivering high enough current for most winches. At the time of writing, an external 12V battery source is required to power the winch.

TOOLS REQUIRED

Refer to instructions supplied by winch

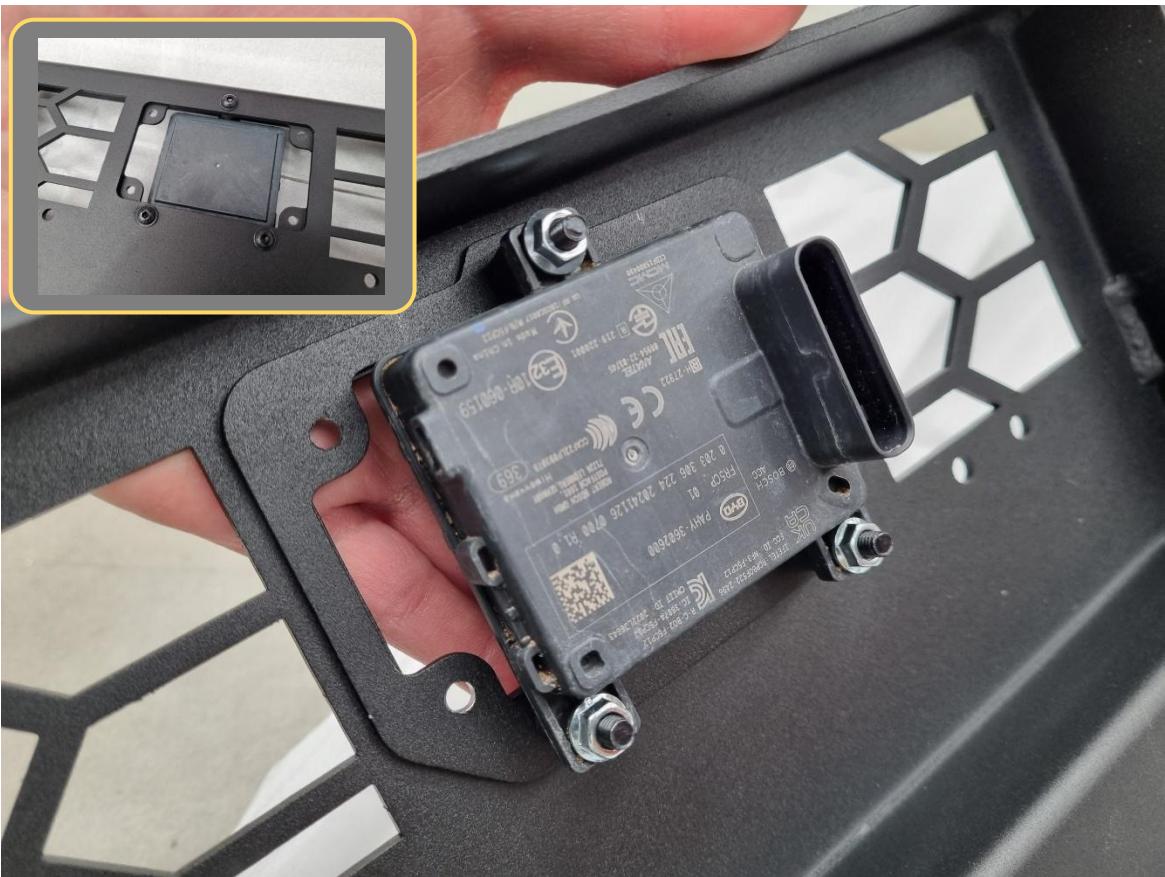
FASTENERS

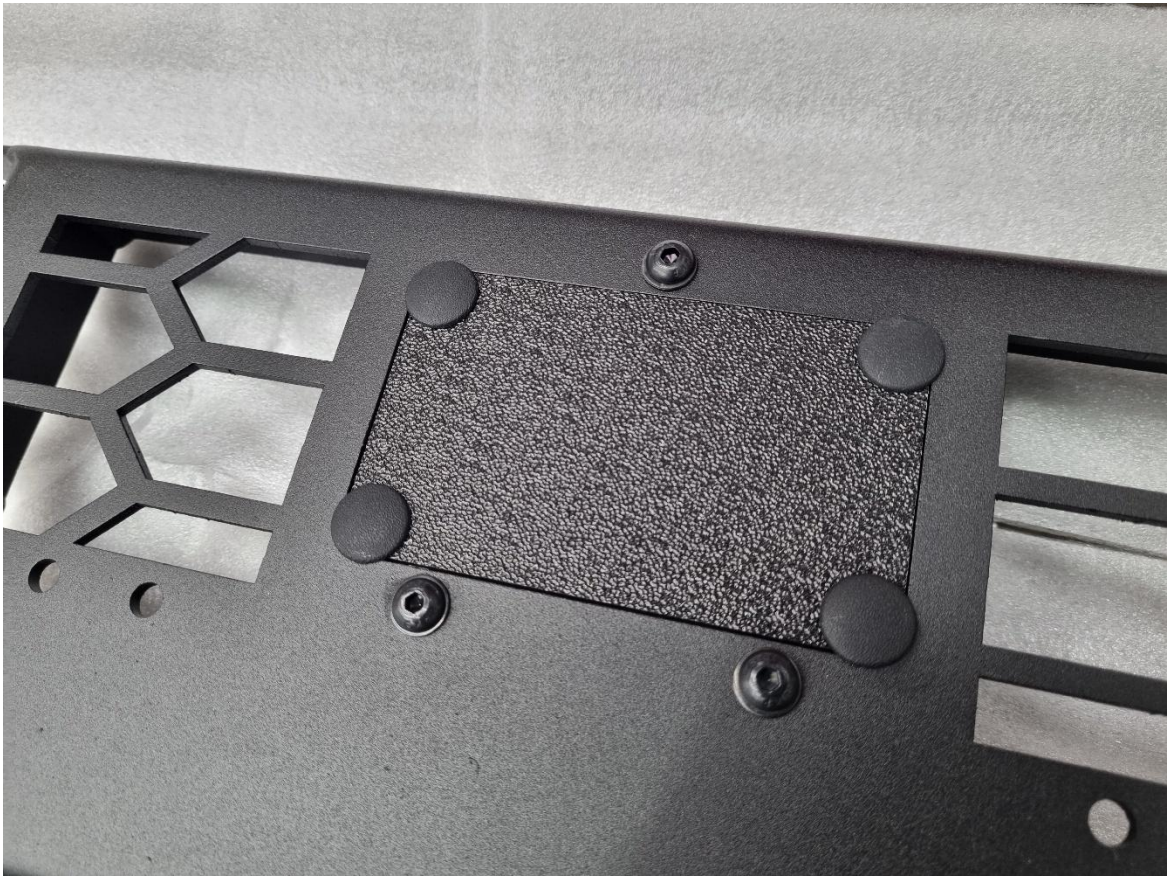
Supplied with winch

	
148. If required, fit the winch fairlead to the mesh fairlead mount using M10 or 3/8" fasteners supplied with the winch. This bar is only compatible with hawse type fairleads.	TOOLS REQUIRED Refer to instructions supplied by winch
	FASTENERS Supplied with winch

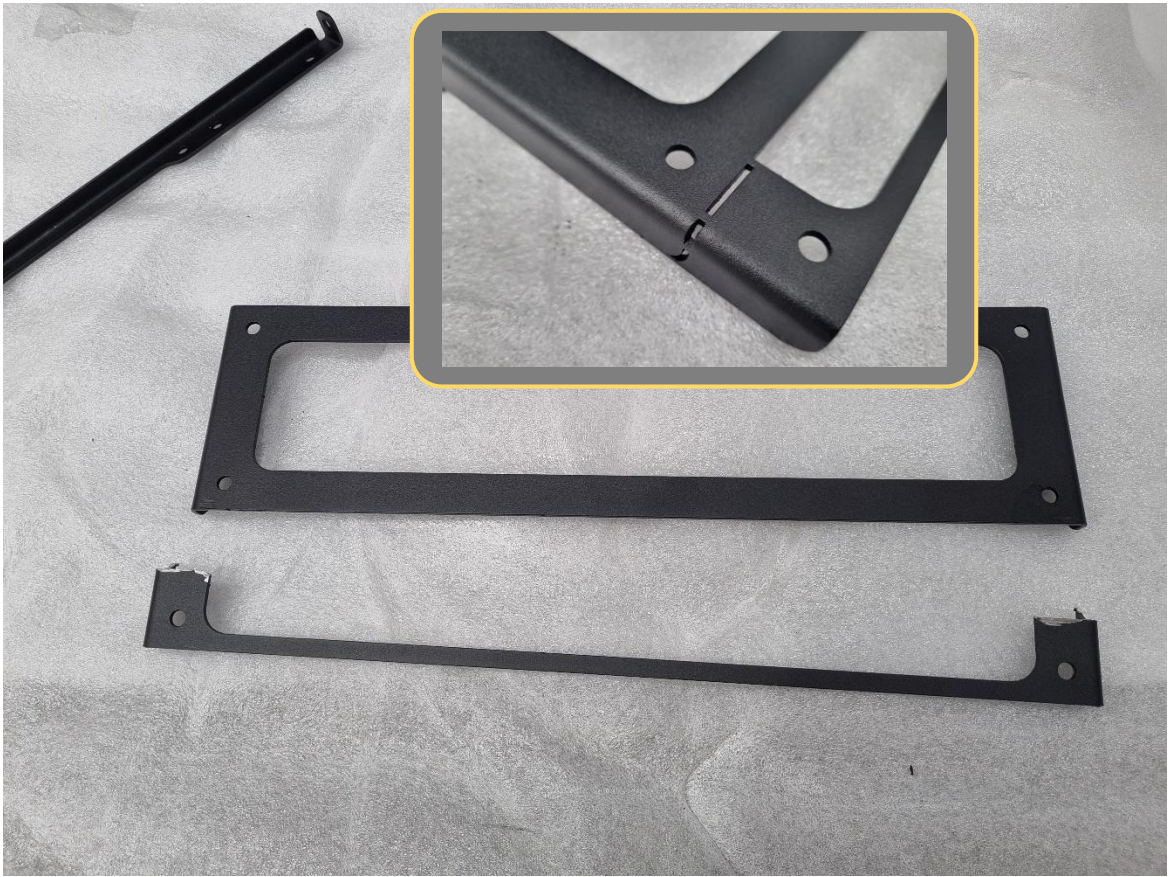
	
149. Lay out the parts required for fitting the centre radar to the mesh fairlead. a. P-0481 radar mount plate b. 3x M5x30 black button head bolts c. 3x M5 black flat washers d. 3x M5 flange nuts e. 3x 10mm nylon spacer tubes	TOOLS REQUIRED
	FASTENERS 3x M5x30 black button head bolt 3x M5 black flat washer 3x M5 flange nut 3x 10mm spacer

	
150. Fit the 3x M5x30 black button head bolts and black washers from the outside of the mesh fairlead. 151. Next place the P-0481 on the inside. 152. Then fit the 3x 10mm nylon spacer tubes onto each bolt.	TOOLS REQUIRED
	FASTENERS 3x M5x30 black button head bolt 3x M5 black flat washer 3x 10mm spacer

		
153. Place the radar onto the mesh fairlead from the back, then secure and tighten the bolts with the 3x M5 flange nuts.	TOOLS REQUIRED 3mm hex/Allen key	
	FASTENERS 3x M5 flange nut	

	
154. Fit the N-0017 plastic radar covers to the open window in front of the radar, textured face on the outside. 155. Secure the cover with 4x fir tree clips supplied.	TOOLS REQUIRED
	FASTENERS 4x fir tree clips

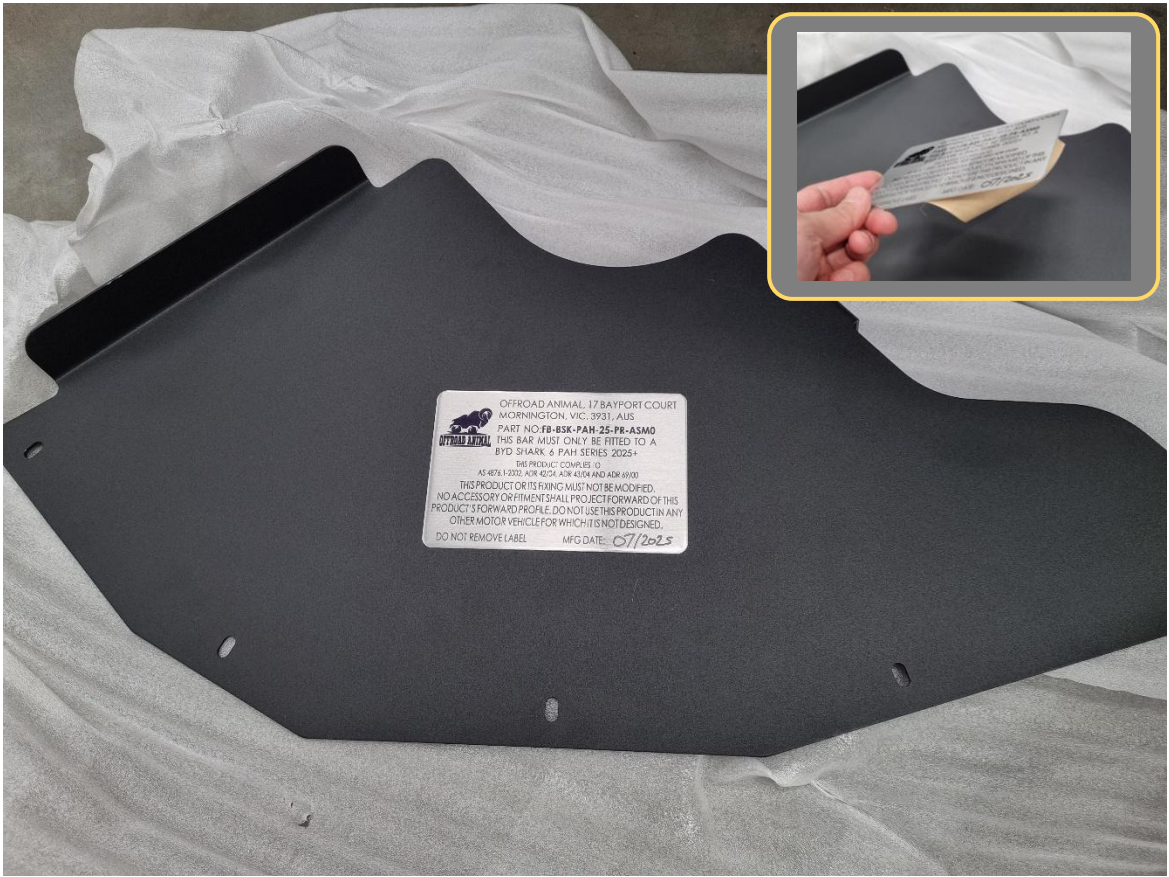
	
Locate the number plate flip brackets and fastener kit. 156. Fit the base bracket to the centre mesh and secure with 2x M6x16 black button head bolts, black washers and flange nuts.	TOOLS REQUIRED 4mm hex/Allen key
	FASTENERS 2x M6x16 black button head bolt 2x M6 black flat washer 2x M6 flange nut

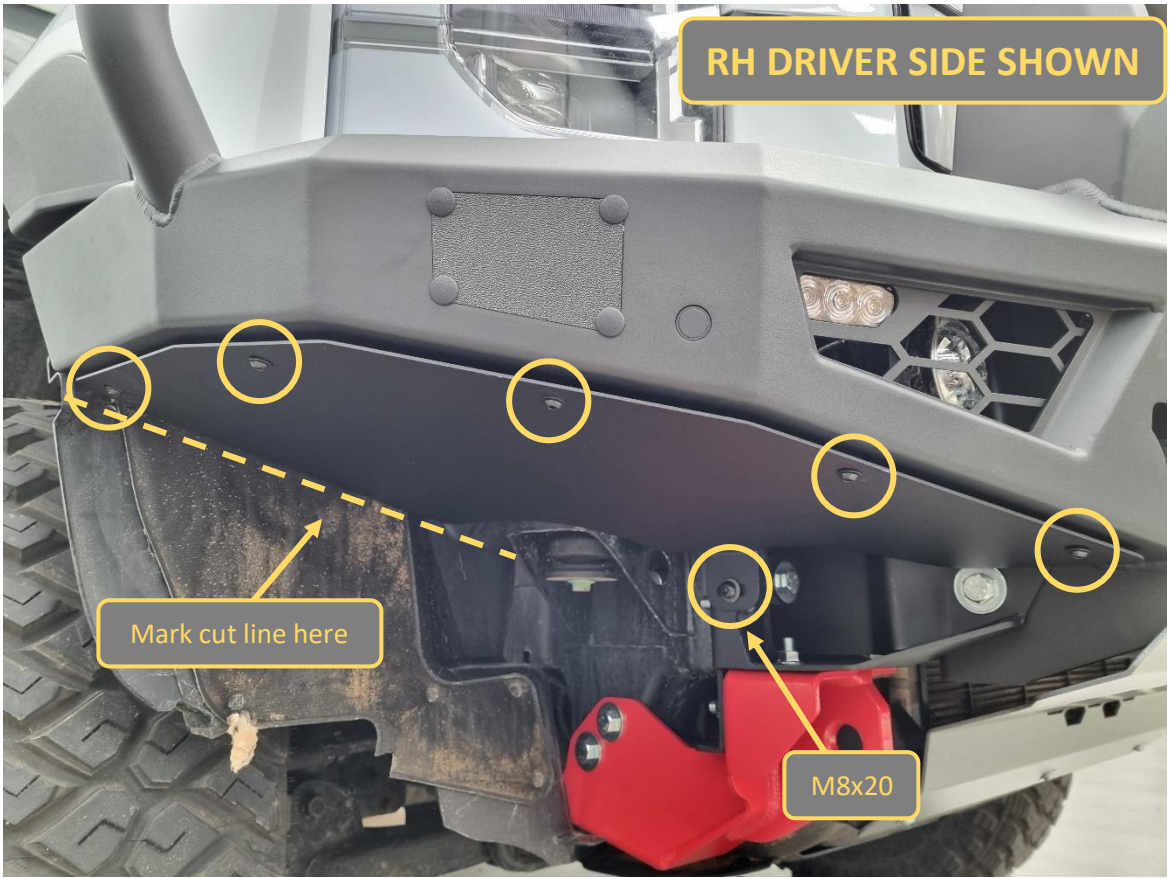
	
The number plate flip bracket is designed to be compatible with both standard and slimline number plates. 157. If fitting to a slimline plate, use an angle grinder to cut the bottom section of the bracket off along the laser cut grooves. 158. Deburr the cut edges, then paint over to prevent rust.	TOOLS REQUIRED Angle grinder Deburring tool Black spray paint
	FASTENERS

 Order right to left: M6x16 black button head bolt M6 black flat washer Number plate flip bracket M6 nylon washer Base bracket M6 black flat washer M6 Nyloc nut		
159. Fit number plate flip bracket to base bracket as shown above. Tighten bolts so that flip bracket can be moved by hand with some friction resistance. 160. Attach number plate to flip bracket using 4x M6x12 black button head bolts, black washers and flange nuts.	TOOLS REQUIRED 4mm hex/Allen key 10mm spanner	
	FASTENERS 4x M6x12 black button head bolt 2x M6x16 black button head bolt 8x M6 black flat washer 4x M6 flange nut 2x M6 nylon washer 2x M6 Nyloc nut	

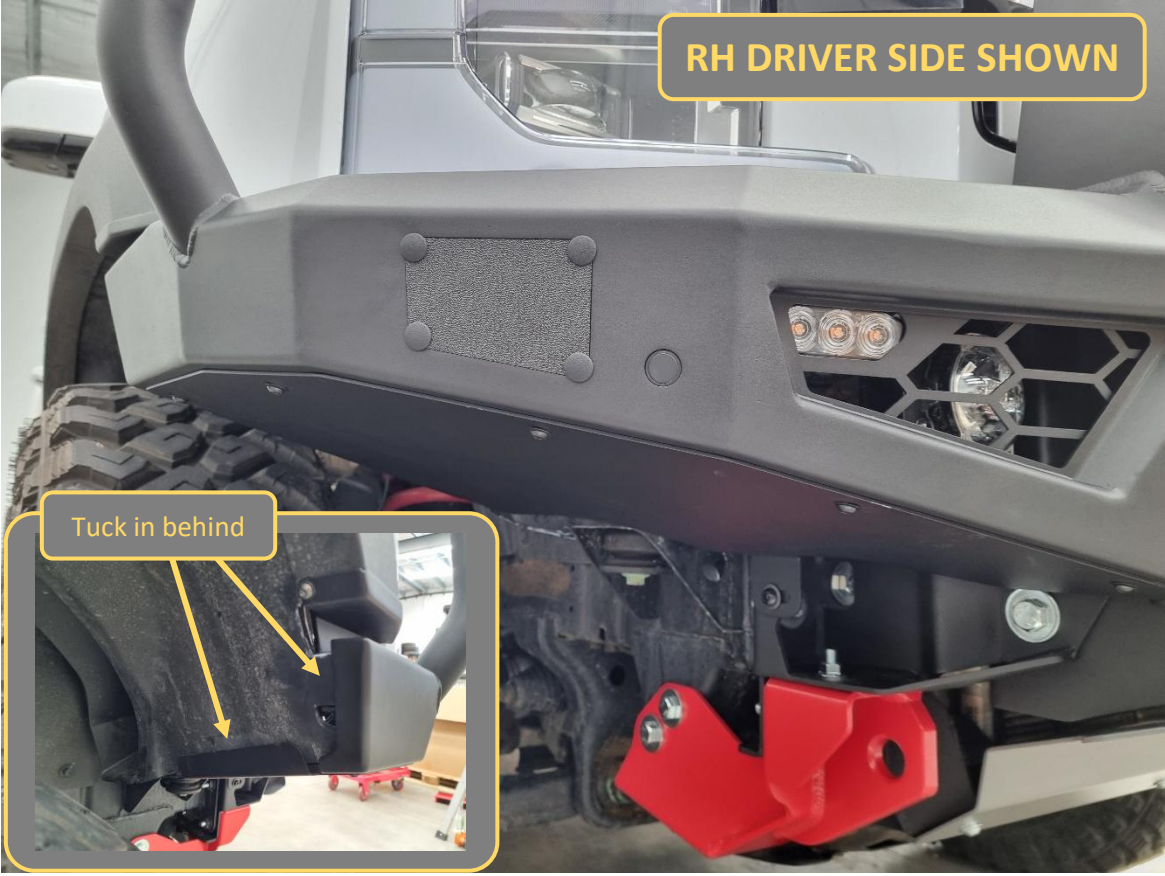
	
161. Present the centre mesh up to the centre opening of the bar. If a winch is fitted, feed the winch rope through the hawse fairlead and fit the winch hook. 162. Connect the radar to the bumper harness. 163. Secure the centre mesh to the bar using 2x M8x16 black button head bolts + black washers (top), 2x M8x20 hex head bolts + heavy duty washers (bottom).	TOOLS REQUIRED 13mm socket/spanner 5mm hex/Allen key
	FASTENERS 2x M8x16 black button head 2x M8 black flat washer 2x M8x20 hex head 2x M8 heavy duty washer

	
164. Fit the bash plate to the underside of the bar. 165. Secure the top to the bullbar using 4x M8x30 black button head bolts and black washers. 166. Secure the bottom to the reinforcement bracket using 3x M8x20 button head bolts and heavy duty washers.	TOOLS REQUIRED 5mm hex/Allen key
	FASTENERS 4x M8x30 black button head bolt 4x M8 black flat washer 3x M8x20 button head bolt 3x M8 heavy duty washer

		
167. Peel off the backing film and affix the ADR compliance plate to the inside of the one of the side underpanel.	TOOLS REQUIRED	
	FASTENERS	

 RH DRIVER SIDE SHOWN Mark cut line here M8x20	
168. Fit the side underpanels to the underside of the bull bar wings. 169. Loosely secure each one with 5x M6x16 black button head bolts and black washers, plus 1x M8x20 black button head bolt, black washer and flange nut. 170. Apply masking tape to the wheel arch liner, then mark out a cut line that matches the profile of the side underpanel. Note: There is a sound deadening pad on the wheel arch liner that can be removed to make cutting easier. Just rip it off.	TOOLS REQUIRED Masking tape Marker pen
	FASTENERS 10x M6x16 black button head 10x M6 black flat washer 2x M8x20 black button head bolt 2x M8 black flat washer 2x M8 flange nut

	
171. Remove the side underpanels. 172. Cut the wheel arch liners along the marked lines with an oscillating multi-tool or other suitable cutting tool. 173. Clean up the cut edge with a deburring tool or similar.	TOOLS REQUIRED Oscillating multi-tool or similar Deburring tool or Utility knife
	FASTENERS

	
174. Re-fit and fully tighten the side underpanels. Ensure the wheel arch liner is tucked inside the flanges on the back of the side underpanels and bull bar. 175. The fitment is now complete. Double check all fasteners are done up.	TOOLS REQUIRED 4mm hex/Allen key 5mm hex/Allen key
	FASTENERS 10x M6x16 black button head 10x M6 black flat washer 2x M8x20 black button head bolt 2x M8 black flat washer 2x M8 flange nut



Congratulations! You're done! Get out and explore in your good looking and tough Shark!