Ford F-150 (P702 14th Gen) 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.

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

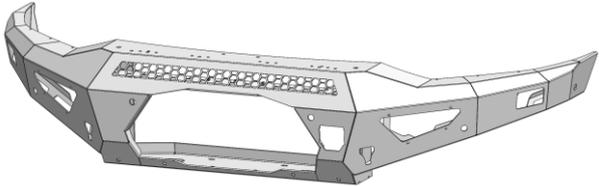Use the following bolt torques on all structural front bar mount and tow point fasteners, and rear towbar fasteners, unless otherwise specified.
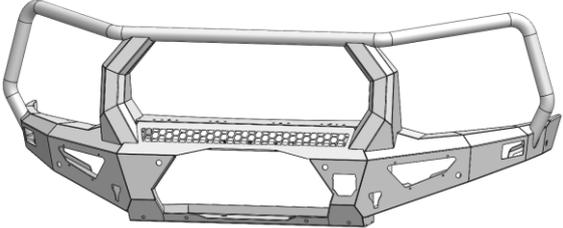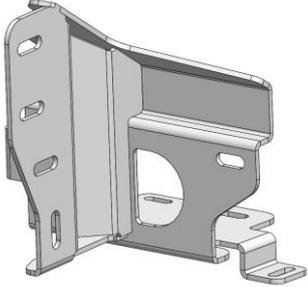
FRONT BAR MOUNTS AND TOW POINTS + REAR TOWBAR	
Size	Torque Nm
M10	57 Nm
M12	100 Nm
M14	164 Nm
M16	248 Nm

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.

Parts List

Qty	Part Number	Description	Image
PREDATOR ONLY			
1	FB-F150-P702-21-PR-ASM1	P702 F-150 Predator Bar Welded Assembly	
TORO ONLY			
1	FB-F150-P702-21-TOR-ASM1	P702 F-150 Predator Bar Welded Assembly	
1	FB-F150-P702-21-PR-ASM2R	P702 F-150 Impact Assy RH	
1	FB-F150-P702-21-PR-ASM2L	P702 F-150 Impact Assy LH	
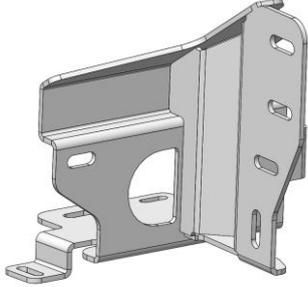
1	FB-F150-P702-21-PR-ASM3R	P702 F-150 Chassis Brace RH	
1	FB-F150-P702-21-PR-ASM3L	P702 F-150 Chassis Brace LH	
1	FB-F150-P702-21-PR-ASM4	P702 F-150 Mesh Fairlead Assy	
2	FB-F150-P702-21-PR-ASM5	P702 F-150 Tow Hook Nut Plate	
1	FB-F150-P702-21-PR-ASM6R	P702 F-150 Lower Base Plate Mount Welded Assy RH	
1	FB-F150-P702-21-PR-ASM6L	P702 F-150 Lower Base Plate Mount Welded Assy LH	
1	B-0797R	Toro Indicator Repeater Bracket RH	
1	B-0797L	Toro Indicator Repeater Bracket LH	
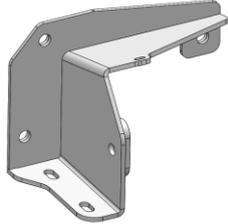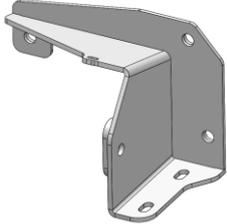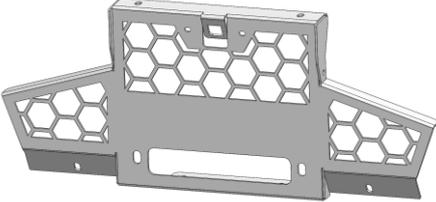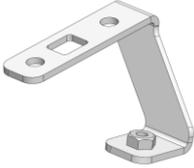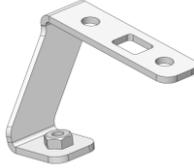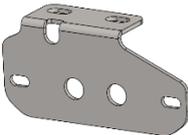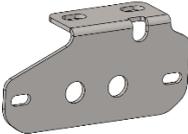
1	B-1008R	RAM 2500 DJ2 Halo Fog Light Bracket RH	
1	B-1008L	RAM 2500 DJ2 Halo Fog Light Bracket LH	
1	B-1099	P702 F-150 Pan Brace	
1	B-1100R	P702 F-150 ACC Radar Bracket RH	
1	B-1100L	P702 F-150 ACC Radar Bracket LH	
1	B-1101	P702 F-150 Front Camera Backing Plate	
1	B-1102	P702 F-150 Front Camera Cover	
1	B-1115	P702 F-150 Lower Bash Plate Air Guide	
1	B-1118R	P702 F-150 Fender Guard Cover Plate RH	
1	B-1118L	P702 F-150 Fender Guard Cover Plate LH	
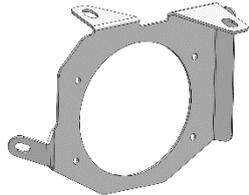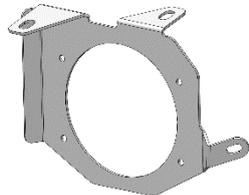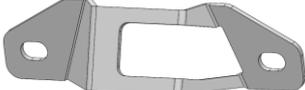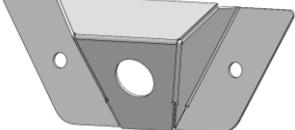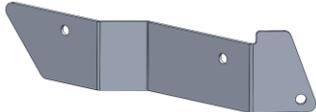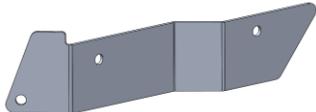
1	B-1119	P702 F-150 Intercooler Air Guide	
1	B-1266R	P702 F-150 Intersection Assist Radar Clamp Bracket Outer	
1	B-1266L	P702 F-150 Intersection Assist Radar Clamp Bracket Outer	
1	B-1267R	P702 F-150 Intersection Assist Radar Clamp Bracket Inner	
1	B-1267L	P702 F-150 Intersection Assist Radar Clamp Bracket Inner	
1	B-1268R	P702 F-150 Pre-Facelift Plastic Bumper Support RH	
1	B-1268L	P702 F-150 Pre-Facelift Plastic Bumper Support LH	
1	B-1300	P702 F-150 Number Plate Flip Bracket	
1	M-00030R	Wing Mesh Panel - Toro With Indicator Repeater RH	
2	M-00030L	Wing Mesh Panel - Toro With Indicator Repeater LH	
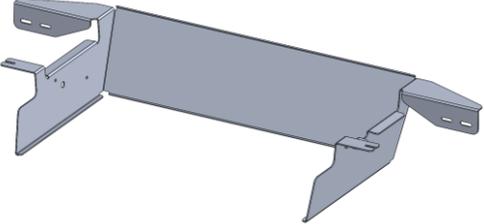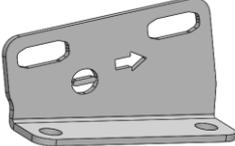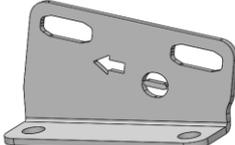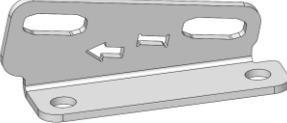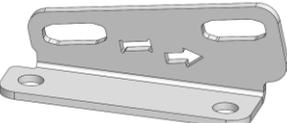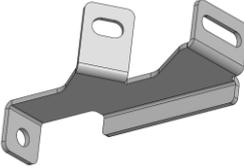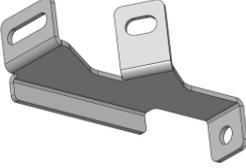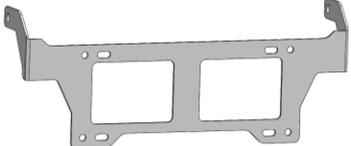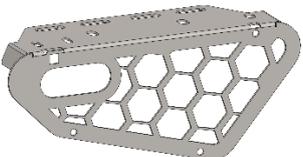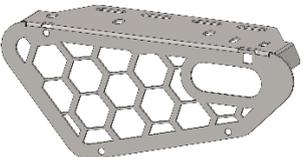
10	P-0344	P702 F-150 Impact Assy Spacer Block	
1	P-0396	P702 F-150 Intercooler Active Shutter Motor Pin Holder	
1	T-0096	P702 F-150 Intercooler Active Shutter Motor Spacer 15mm	
1	T-0097	P702 F-150 Intercooler Active Shutter Motor Spacer 23.5mm	
1	T-0115	P702 F-150 Intercooler Active Shutter Motor Spacer 12.5mm	
1	T-0116	P702 F-150 Intercooler Active Shutter Motor Spacer 8.5mm	
1	U-0072	P702 F-150 Bash Plate	
1	U-0073R	P702 F-150 Side Underpanel RH	
1	U-0073L	P702 F-150 Side Underpanel LH	
1	U-0074	P702 F-150 Lower Bash Plate	
1	11CAT1M-2	LED Autolamps 11CAT1M-2 Front Indicator - Twin Blister Pack	
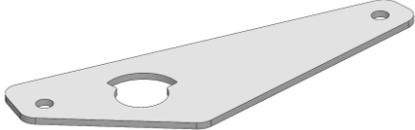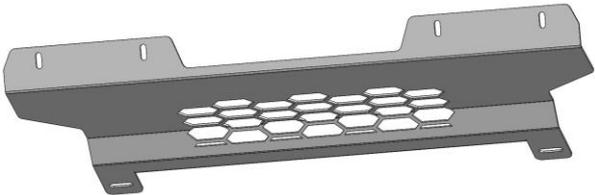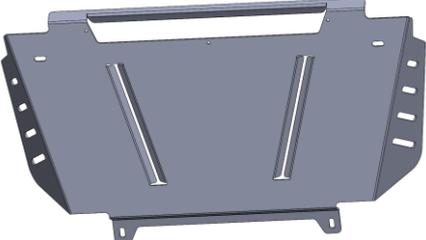
6	CPHP032	Plasitc Hole Insert, 20MM, Black, Tigerlink Hardware CPHP032	
6	F-0030	Parking Sensor Holder - Universal, Flat	
1	TK-COM-PSEN-6	Tape Kit - 6 Sensor Universal	N/A
1	FB-F150-P702-21-PR-ADRCP	ADR Compliance Plate Ford F-150 (P702)	
1	FI Note	Fitting Instruction Note	N/A
1	N-0010	P702 F-150 ACC Radar Cover Panel	
1	N-0014R	P702 F-150 Intersection Assist Radar Cover Panel RH	
1	N-0014L	P702 F-150 Intersection Assist Radar Cover Panel LH	
1	OFA-LOGO	Offroad Animal Metal Logo	
TORO ONLY			
2	B-0649	Toro Antenna Bracket – 90 Degree Tall	
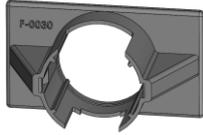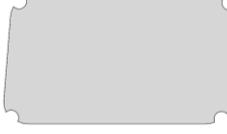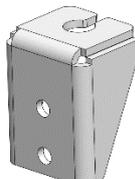
PREDATOR Fasteners – Contained in Small Parts Kit Bag

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
8	M4X12 PAN	SCREW, PAN HEAD PHILLIPS, M4X12X0.7 GR4.6 ZP
3	M4X50 PAN	SCREW, PAN HEAD PHILLIPS, M4X50X0.7 GR4.6 ZP
10	M4 FLAT WASHER	Flat Washer M4, 8mmODx0.8mm T
11	M4 FLANGE NUT	Flange Nut, M4
4	M5X15 BHCS BZP	SCREW, BUTTON HEAD CAP, M5X15X0.8 GR12.9 ISO4042 ZnNi BLACK PASSIVATED FINISH
2	M5X20 PAN	SCREW, PAN HEAD PHILLIPS, M5X20X0.8 GR4.6 ZP
4	M5 Flat washer BZP	M5 Flat Washer, 10x5.3x1, ISO4042 ZnNi BLACK PASSIVATED FINISH
2	M5 Flat washer	M5 Flat Washer, 10x5.3x1
1	M5 Mud Guard Washer	3/16" x 3/4" x 18g (M5 x 19mm x 1.2mm) Zinc Mudguard Washer
6	M5 FLANGE NUT	Flange Nut, M5x0.8 G8.8 ZP
52	M6x16 BHCS BLACK ZINC	SCREW, BUTTON HEAD CAP, M6X16X1 GR12.9, ISO4042 ZnNi BLACK PASSIVATED FINISH
2	M6 X 20 HEX	M6X20 HEX BOLT, ZP, 8.8
54	M6 FLAT WASHER BLACK ZINC	M6 Flat Washer, 12x6.1x1, ISO4042 ZnNi BLACK PASSIVATED FINISH
39	M6 FLANGE NUT	Flange Nut, M6x1 G8.8 ZP
12	M6CN3MM	CAGE NUT M6x2.6-3.5
6	M8 X 20 BHCS BLACK ZINC	SCREW, BUTTON HEAD CAP, M8X20X1.25, ISO4042 ZnNi BLACK PASSIVATED FINISH
10	M8 X 20 HEX	Bolt Hex, M8X20x1.25, GR8.8 ZP
6	M8 HD FLAT WASHER - BZP	M8 FLAT WASHER - High Tensile 19x8x2mm, ISO4042 ZnNi BLACK PASSIVATED FINISH
6	M8 HD FLAT WASHER	M8 FLAT WASHER - High Tensile 19x8x1.9mm
6	M8 FLAT WASHER	M8 FLAT WASHER
2	M8 NYW	Washer, M8, Nylon
6	M8 FLANGE NUT	Flange Nut, M8x1.25 G8.8 ZP
2	M8 NYLOC	NYLOC SELF LOCKING NUT, ST STL A2 ISO
2	M10X30 BHCS	SCREW, BUTTON HEAD CAP, M10X30X1.5 GR12.9 ZP
8	M10 X 40	Bolt Hex, M10X40X1.5, GR8.8 ZP
10	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
4	M12X35	Bolt Hex, M12X35x1.75, GR8.8 ZP
4	M12X60	Bolt Hex, M12X60x1.75, GR8.8 ZP
18	M12 FW LHD	M12 FW Large Heavy Duty
12	M12 FLANGE NUT	Flange Nut, M12x1.75 G8.8 ZP
2	M12 Nyloc nut	M12 NYLOC NUT
2	NP-COM-M12-300-ASM0	M12 NUT PLATE 300MM STEM

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
8	M4X12 PAN	SCREW, PAN HEAD PHILLIPS, M4X12X0.7 GR4.6 ZP
3	M4X50 PAN	SCREW, PAN HEAD PHILLIPS, M4X50X0.7 GR4.6 ZP
10	M4 FLAT WASHER	Flat Washer M4, 8mmODx0.8mm T
11	M4 FLANGE NUT	Flange Nut, M4
4	M5X15 BHCS BZP	SCREW, BUTTON HEAD CAP, M5X15X0.8 GR12.9 ISO4042 ZnNi BLACK PASSIVATED FINISH
2	M5X20 PAN	SCREW, PAN HEAD PHILLIPS, M5X20X0.8 GR4.6 ZP
4	M5 Flat washer BZP	M5 Flat Washer, 10x5.3x1, ISO4042 ZnNi BLACK PASSIVATED FINISH
2	M5 Flat washer	M5 Flat Washer, 10x5.3x1
1	M5 Mud Guard Washer	3/16" x 3/4" x 18g (M5 x 19mm x 1.2mm) Zinc Mudguard Washer
6	M5 FLANGE NUT	Flange Nut, M5x0.8 G8.8 ZP
52	M6x16 BHCS BLACK ZINC	SCREW, BUTTON HEAD CAP, M6X16X1 GR12.9, ISO4042 ZnNi BLACK PASSIVATED FINISH
2	M6 X 20 HEX	M6X20 HEX BOLT, ZP, 8.8
54	M6 FLAT WASHER BLACK ZINC	M6 Flat Washer, 12x6.1x1, ISO4042 ZnNi BLACK PASSIVATED FINISH
39	M6 FLANGE NUT	Flange Nut, M6x1 G8.8 ZP
12	M6CN3MM	CAGE NUT M6x2.6-3.5
10	M8 X 20 BHCS BLACK ZINC	SCREW, BUTTON HEAD CAP, M8X20X1.25, ISO4042 ZnNi BLACK PASSIVATED FINISH
10	M8 X 20 HEX	Bolt Hex, M8X20x1.25, GR8.8 ZP
10	M8 HD FLAT WASHER - BZP	M8 FLAT WASHER - High Tensile 19x8x2mm, ISO4042 ZnNi BLACK PASSIVATED FINISH
6	M8 HD FLAT WASHER	M8 FLAT WASHER - High Tensile 19x8x1.9mm
6	M8 FLAT WASHER	M8 FLAT WASHER
2	M8 NYW	Washer, M8, Nylon
6	M8 FLANGE NUT	Flange Nut, M8x1.25 G8.8 ZP
2	M8 NYLOC	NYLOC SELF LOCKING NUT, ST STL A2 ISO
2	M10X30 BHCS	SCREW, BUTTON HEAD CAP, M10X30X1.5 GR12.9 ZP
8	M10 X 40	Bolt Hex, M10X40X1.5, GR8.8 ZP
10	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
4	M12X35	Bolt Hex, M12X35x1.75, GR8.8 ZP
4	M12X60	Bolt Hex, M12X60x1.75, GR8.8 ZP
18	M12 FW LHD	M12 FW Large Heavy Duty
12	M12 FLANGE NUT	Flange Nut, M12x1.75 G8.8 ZP
2	M12 Nyloc nut	M12 NYLOC NUT
2	NP-COM-M12-300-ASM0	M12 NUT PLATE 300MM STEM

TOOLS REQUIRED

The following tools will be required to install the product.

Hand Tools	Power Tools	Workshop Equipment
Metric Socket Set 5.5-21mm	Angle grinder	Tape Measure
Socket Extension Bar	Electric/Air Impact Driver (Optional)	Isopropyl Alcohol
Metric Spanner Set 5.5-21mm		Rag
Hex (Allen) Key Set 3-6mm	Electric drill	Cable Ties
Torx Key Set	Soldering Iron	Solder
Trim Removal Tool	Air hacksaw or Jigsaw	Heatshrink
Plastic Auto Trim Tool Set		Electrical Tape
Flat Blade Screwdriver Set	Heat Gun	Marker Pen
Phillips Head Screwdriver Set		Masking Tape
Utility Knife		Crimp Terminals (Optional)
Side Cutters		Electrical Conduit (Optional)
Pliers		Automotive Electrical Wire (Optional)
Wire Strippers		Lifting Trolley (Optional)
Crimping Tool (Optional)		Sandpaper
4mm Drill Bit		Automotive adhesive sealant (eg. Sikaflex)

WORKSHOP SAFTEY

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.

DO NOT turn on or move car whilst any camera or radar systems are disconnected. **Failure to observe this precaution will result in system errors that will need car to be taken to a Ford Dealership to resolve.** **Keep proximity keys away from vehicle and out of range to minimise the chances of onboard vehicle computers activating whilst modules are disconnected.** 1. Remove the number plate and set aside.	**TOOLS REQUIRED** **FASTENERS**

Insert in notch and pry up
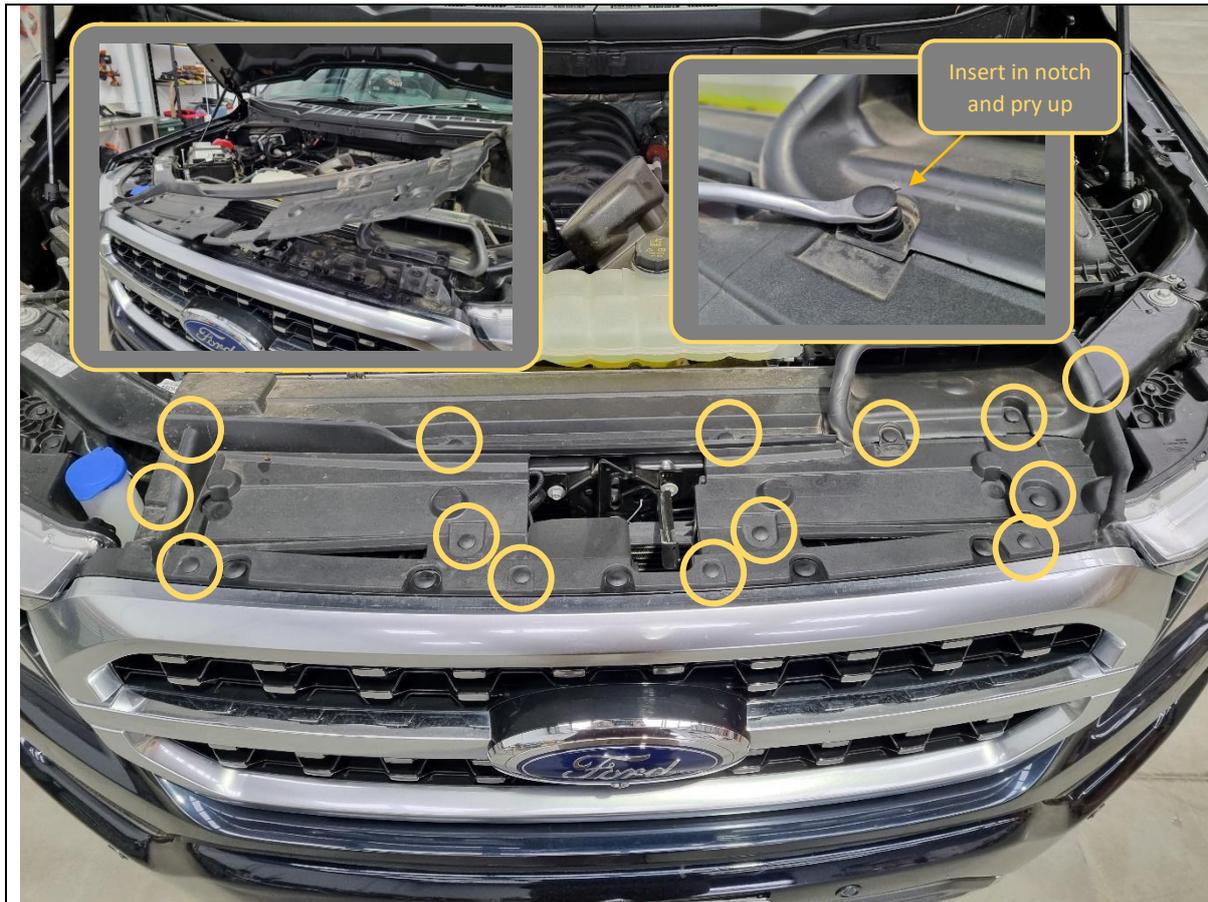
2. Open the bonnet. 3. Remove 14x plastic push rivets securing the radiator grille cover, by levering centre section upwards using flat bladed screwdriver or trim tool, as shown. Note the radiator grille cover also sits underneath the air intake.	**TOOLS REQUIRED** Trim tool or Flat blade screwdriver
	FASTENERS 14x Plastic Push Rivet Retain for Reassembly

4. Remove 2x 7mm hex bolts securing the plastic bumper trim to the inner wheel guard, on each side.	**TOOLS REQUIRED** 7mm socket/spanner
	FASTENERS 4x 7mm factory hex bolts

5. Pull and release the clips holding the plastic bumper trim. Set aside for later.	**TOOLS REQUIRED**
	FASTENERS

6. Remove 1x 8mm hex bolt securing the outer corner of the grille to the body, on each side.	**TOOLS REQUIRED** 8mm socket/spanner
	FASTENERS 2x 8mm factory hex bolts Retain for Reassembly
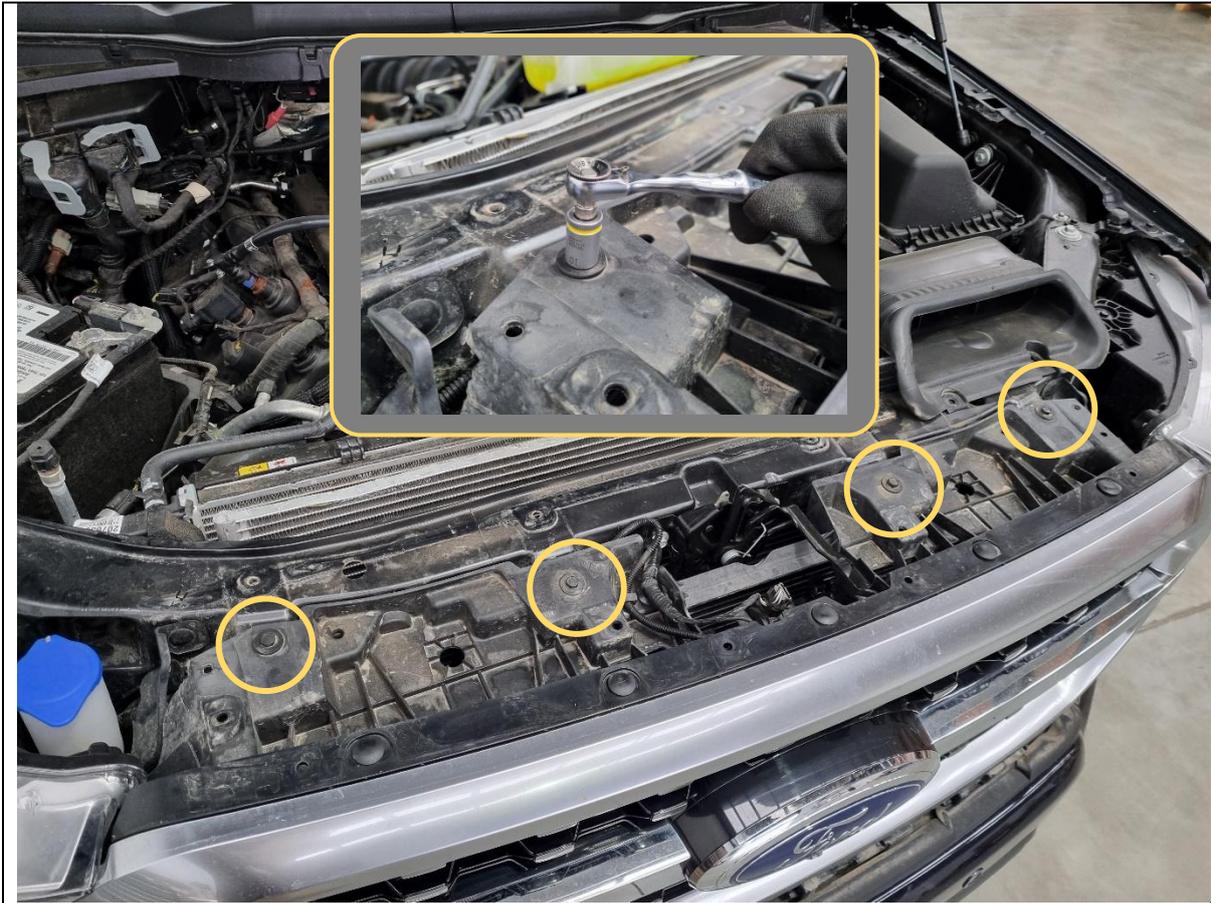
7. Remove 4x 10mm hex bolts securing the top of the grille to the body.	**TOOLS REQUIRED** 10mm socket/spanner
	FASTENERS 4x 10mm factory hex bolts Retain for Reassembly
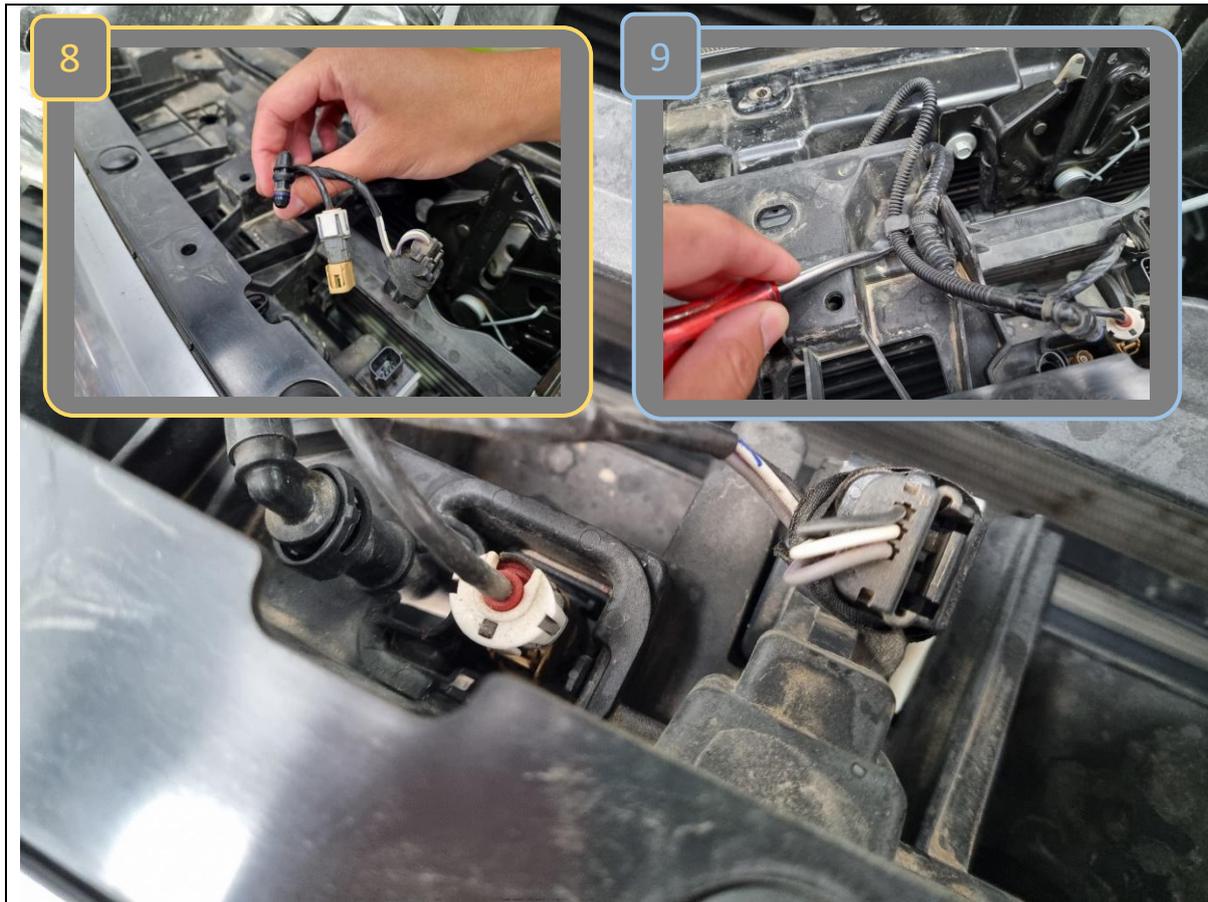
8. Locate the harness connectors on the top centre of the grille. Disconnect the main harness, camera harness (if equipped) and camera washer hose (if equipped). 9. Unclip the harness from the grille with a flat bladed screwdriver or trim tool.	**TOOLS REQUIRED** Trim tool or Flat blade screwdriver
	FASTENERS

10. Pull outwards and remove the grille. Set aside for later.	**TOOLS REQUIRED**
	FASTENERS

	TOOLS REQUIRED
11. Locate the main bumper harness on top of the RH chassis frame end. 12. Pull up on the lever and disconnect the harness. 13. Unclip the harness loose from the chassis frame.	Trim tool or Flat blade screwdriver
	FASTENERS

V6 EcoBoost engines ONLY

14. On vehicles with 3.5L V6 EcoBoost engines, disconnect the 2x harnesses around the intercooler shroud. 15. Unclip the harness from the intercooler shroud.	**TOOLS REQUIRED** Trim tool or Flat blade screwdriver
	FASTENERS
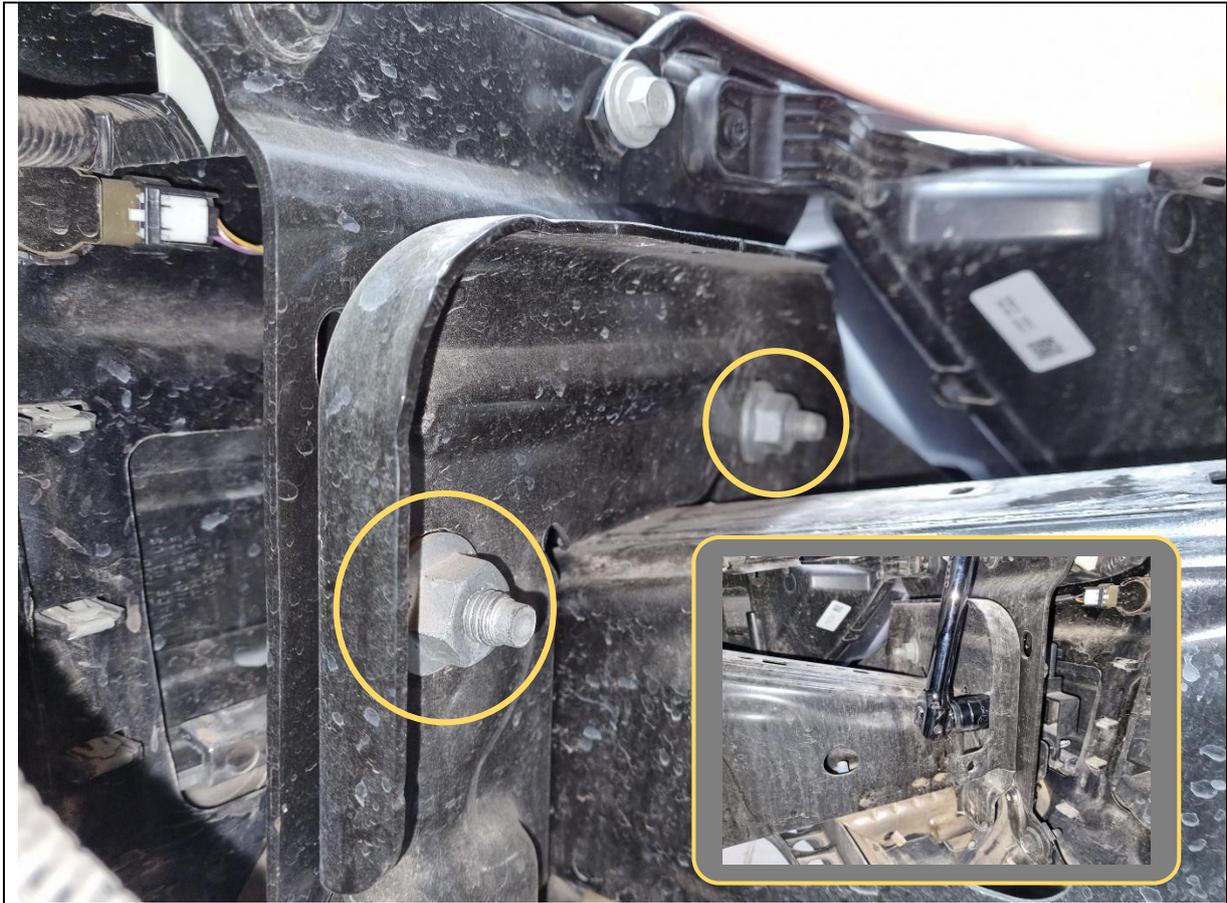
	TOOLS REQUIRED
16. Remove the 3x 21mm hex nuts holding the bumper onto the chassis frame end, on each side.	21mm socket/spanner
	FASTENERS
	6x 21mm factory hex nuts

17. Pull the bumper off the vehicle and set aside in a safe place.	**TOOLS REQUIRED**
	FASTENERS
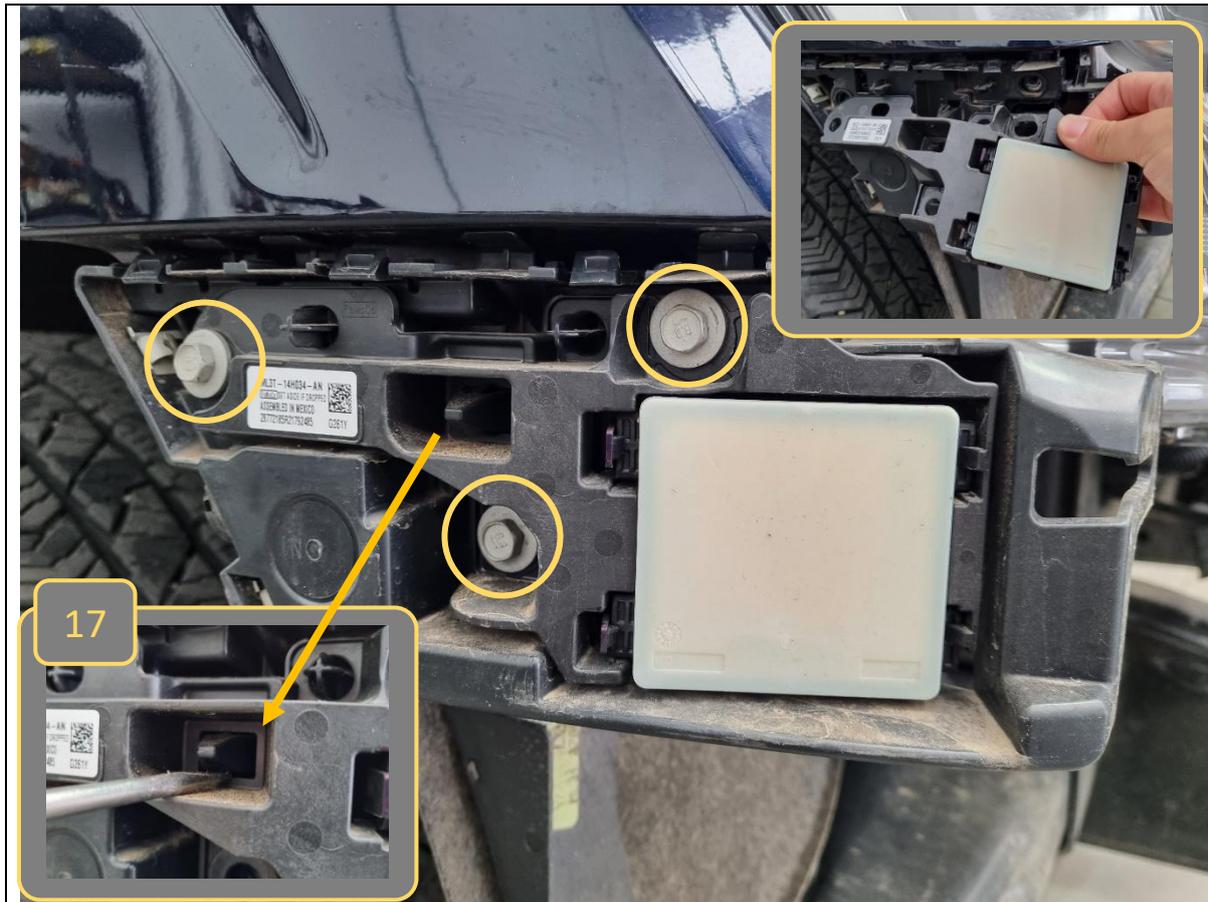
Instructions	TOOLS REQUIRED
18. Remove 3x 10mm hex bolts securing the bumper clip, on each side. 19. If intersection collision assist (ICA) radars are equipped, press down on the tab with a screwdriver, then pull and release the radar and its plastic holder. 20. Unplug the radar, and carefully set it aside in a safe place. Take note of the radar orientation and LH/RH units.	10mm socket/spanner Flat blade screwdriver **FASTENERS** 6x 10mm factory hex bolts
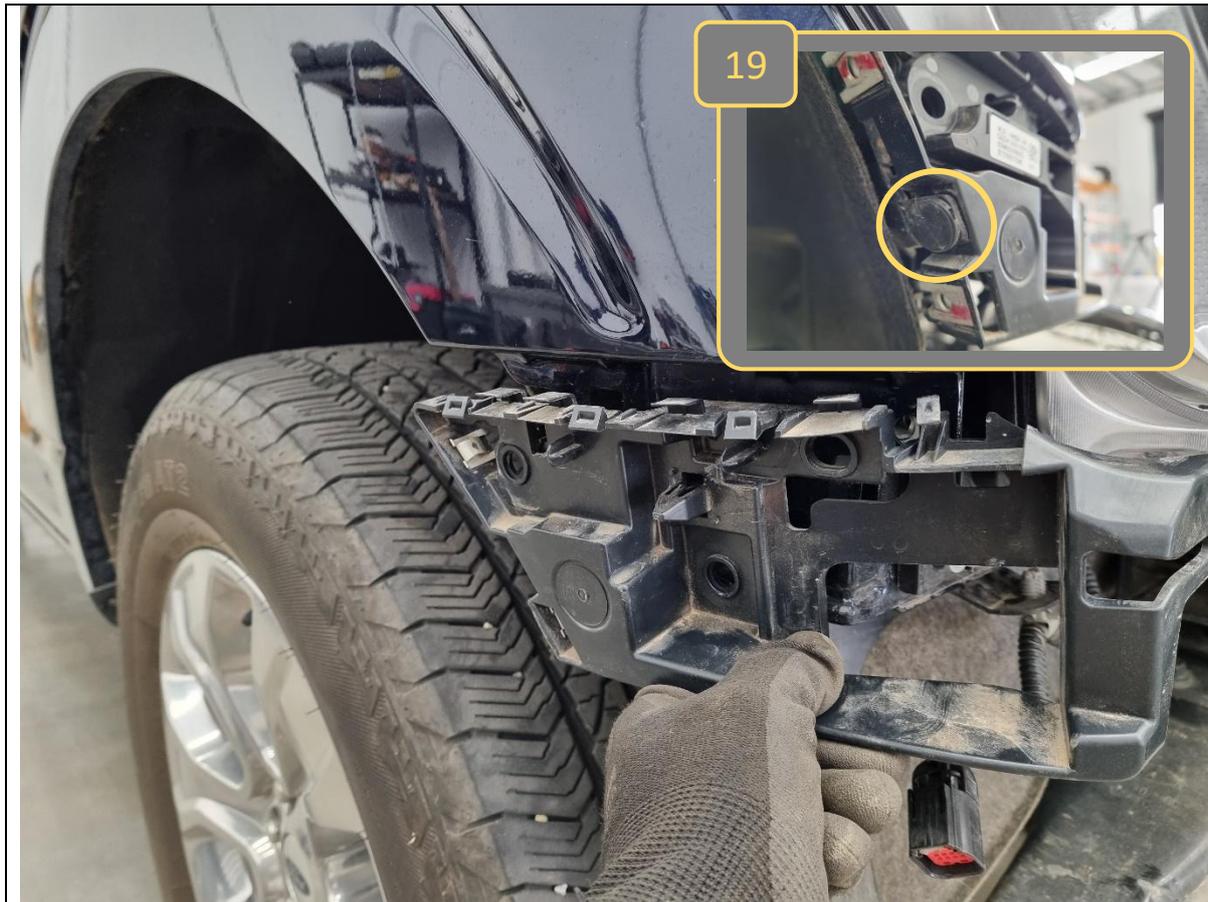
	TOOLS REQUIRED
21. Remove the plastic push rivet on the rearwards facing side of the bumper clip, on each side. 22. Pull and remove the bumper clip.	Trim tool or Flat blade screwdriver
	FASTENERS 2x Plastic Push Rivet

23. Remove 2x 7mm hex bolts securing the inner wheel guard to the plastic lower wheel guard trim.

24. Remove 1x 10mm hex nut securing the front of the lower wheel guard trim to the headlight/body.

25. Unclip the intersection collision assist radar harness, if equipped.

26. Remove the lower wheel guard trim. Repeat for other side.

TOOLS REQUIRED

7mm socket/spanner

10mm socket/spanner

FASTENERS

4x factory 7mm hex bolts

2x factory 10mm hex nuts

V6 EcoBoost engines ONLY

27. Unclip the remainder of the harness on top of the intercooler shroud.	**TOOLS REQUIRED** Trim tool or Flat blade screwdriver
	FASTENERS

V6 EcoBoost engines ONLY
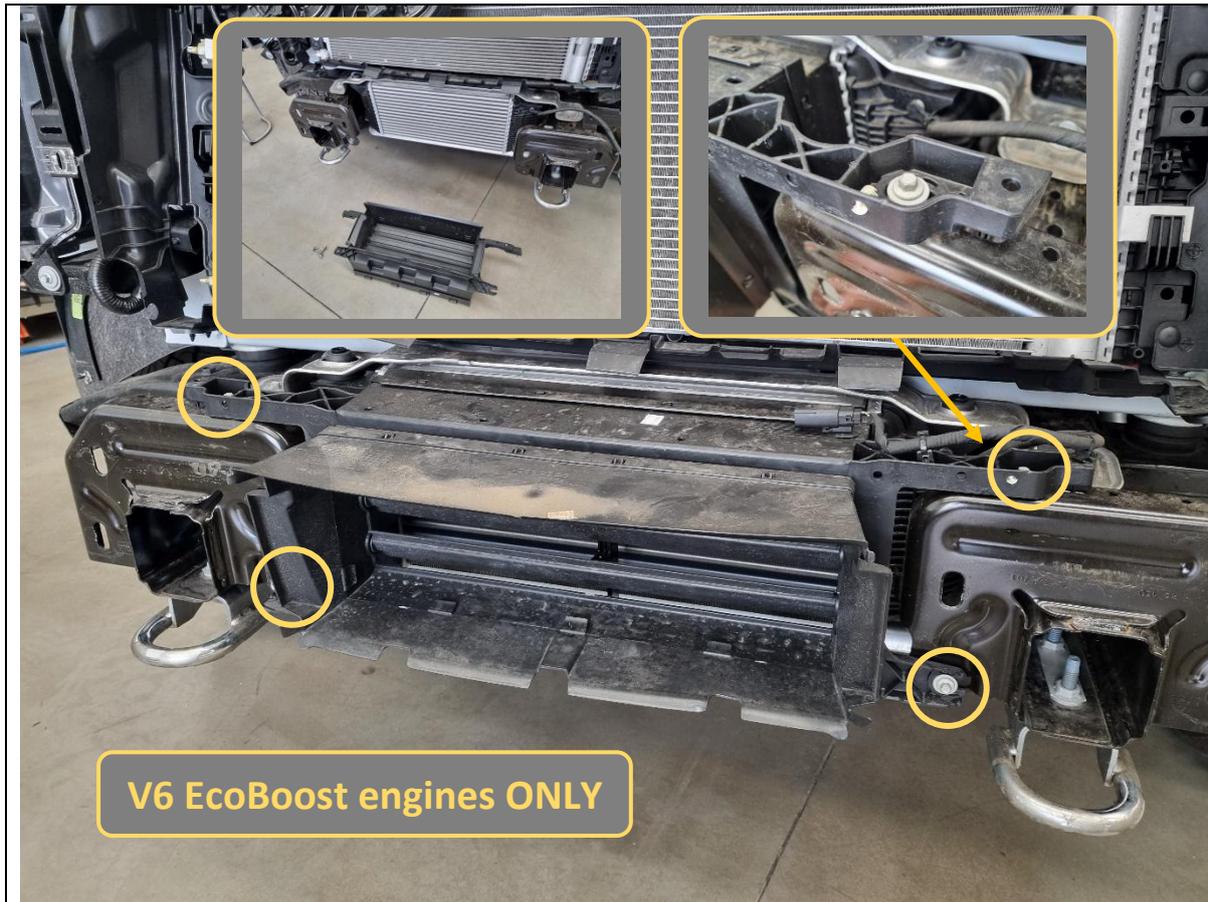
28. Remove 4x 8mm hex bolts holding the intercooler shroud.	**TOOLS REQUIRED** 8mm socket/spanner
29. Remove the intercooler shroud and set aside in a safe place.	
	FASTENERS 4x factory 8mm hex bolts
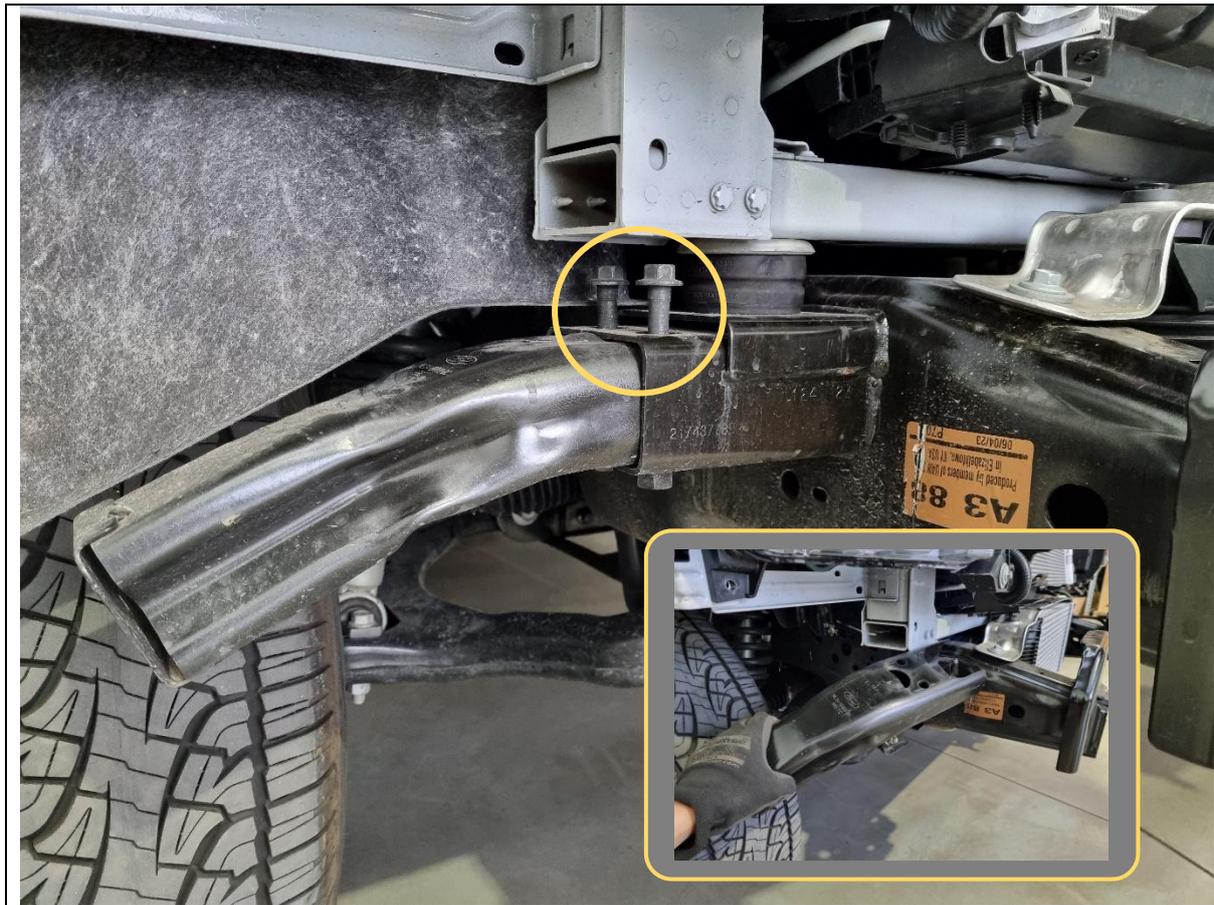
30. Remove the 2x 15mm hex bolts securing the chassis horns on each side of the chassis. If required, use an angle grinder to cut the bolts free (easier to do after removing wheel arch liners, secured by 7mm hex bolts and plastic push rivets). 31. Remove and discard the chassis horns.	**TOOLS REQUIRED** 15mm socket/spanner Angle grinder
	FASTENERS 4x 15mm factory hex bolts

32. Remove the 2x 15mm hex bolts and nutplates securing the tow hook to the chassis, on each side. Set aside for re-fitment.	**TOOLS REQUIRED** 15mm socket/spanner
	FASTENERS 4x 15mm factory hex bolts Retain for Reassembly

V6 EcoBoost engines ONLY

	TOOLS REQUIRED
33. Manually manipulate the intercooler shutter guide vanes to the fully open and fully closed positions and mark the corresponding rotation on the actuator with a marker pen. 34. Avoid opening/closing the shutter guide vanes too many times while doing this as may put too much load on the motor shaft.	Marker pen
	FASTENERS

V6 EcoBoost engines ONLY

35. Remove the shutter motor by removing the 2x T20 Torx screws securing it to the shroud. Set it aside.	**TOOLS REQUIRED** T20 Torx bit
	FASTENERS 2x T20 Torx screws

V6 EcoBoost engines ONLY

	TOOLS REQUIRED
36. Pull up on the tabs and remove the centre guide vane holder (see inset photos). 37. Remove the lower guide vane that was connected to the shutter motor. Discard the rest of the intercooler shroud.	
	FASTENERS

V6 EcoBoost engines ONLY

	TOOLS REQUIRED
38. Cut off the end of the guide vane with the splined motor pin shaft as shown. Keep the motor pin (bottom right inset photo) and discard the rest.	Air hacksaw or Angle grinder or Jigsaw or Utility knife
39. Clean up the cut face so that it is flat.	
	FASTENERS

V6 EcoBoost engines ONLY

	TOOLS REQUIRED
40. Drill a 4mm hole all the way through the centre of the motor pin (locate with pre-existing hole).	Electric drill 4mm drill bit
41. Insert the motor pin back into the shutter motor from the opposite direction compared to factory.	
42. Ensure the keying feature (highlighted) is positioned within the open/closed range marked on the motor previously.	**FASTENERS**

V6 EcoBoost engines ONLY

	TOOLS REQUIRED
43. Fit the P-0396 motor pin holder plate over the motor pin, ensuring the keying feature sits in the cut-out on the holder plate. 44. Secure the motor pin to the shutter motor with 1x M4x50 pan head screw, M5 mudguard washer and M4 flange nut as shown. Do not apply too much tightening torque as it may crack the plastic.	Phillips head screwdriver
	FASTENERS 1x M4x50 pan head screw 1x M5 mudguard washer 1x M4 flange nut

T-0115 12.5mm crush tube

T-0096 15mm crush tube

V6 EcoBoost engines ONLY

View from inside looking out

T-0116 8.5mm crush tube

T-0097 23.5mm crush tube
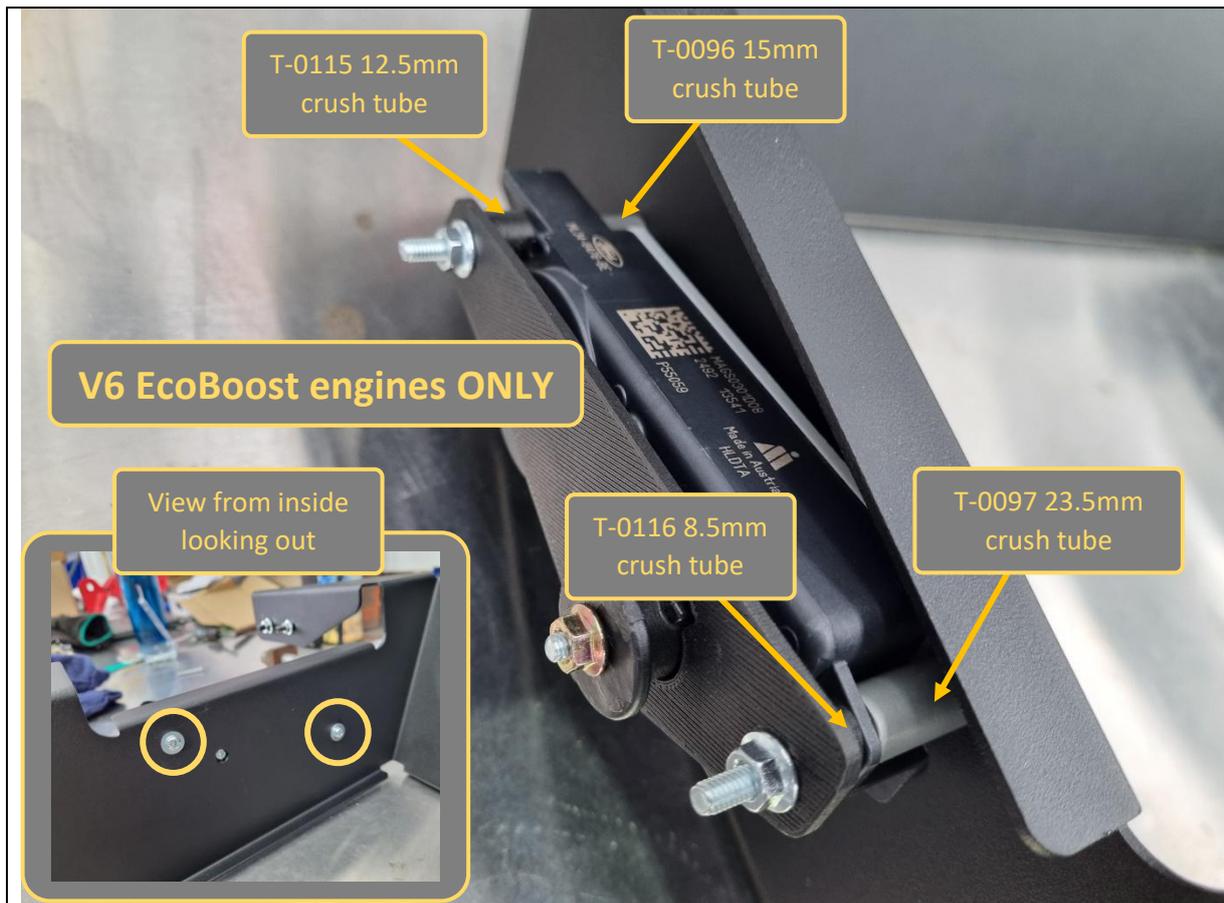
45. Bolt the shutter motor onto the outside of the supplied sheet metal intercooler shroud use 2x M4x50 pan head screws, washers, crush tubes and flange nuts. 46. Refer to photo above for installation order of crush tubes. The shutter motor is sandwiched in between the 4x different length crush tubes.	**TOOLS REQUIRED** Phillips head screwdriver
	FASTENERS 2x M4x50 pan head screw 2x M4 flat washer 2x M4 flange nut 1x T-0096 15mm crush tube 1x T-0097 23.5mm crush tube 1x T-0115 12.5mm crush tube 1x T-0116 8.5mm crush tube

M5x15

M6x16

V6 EcoBoost engines ONLY
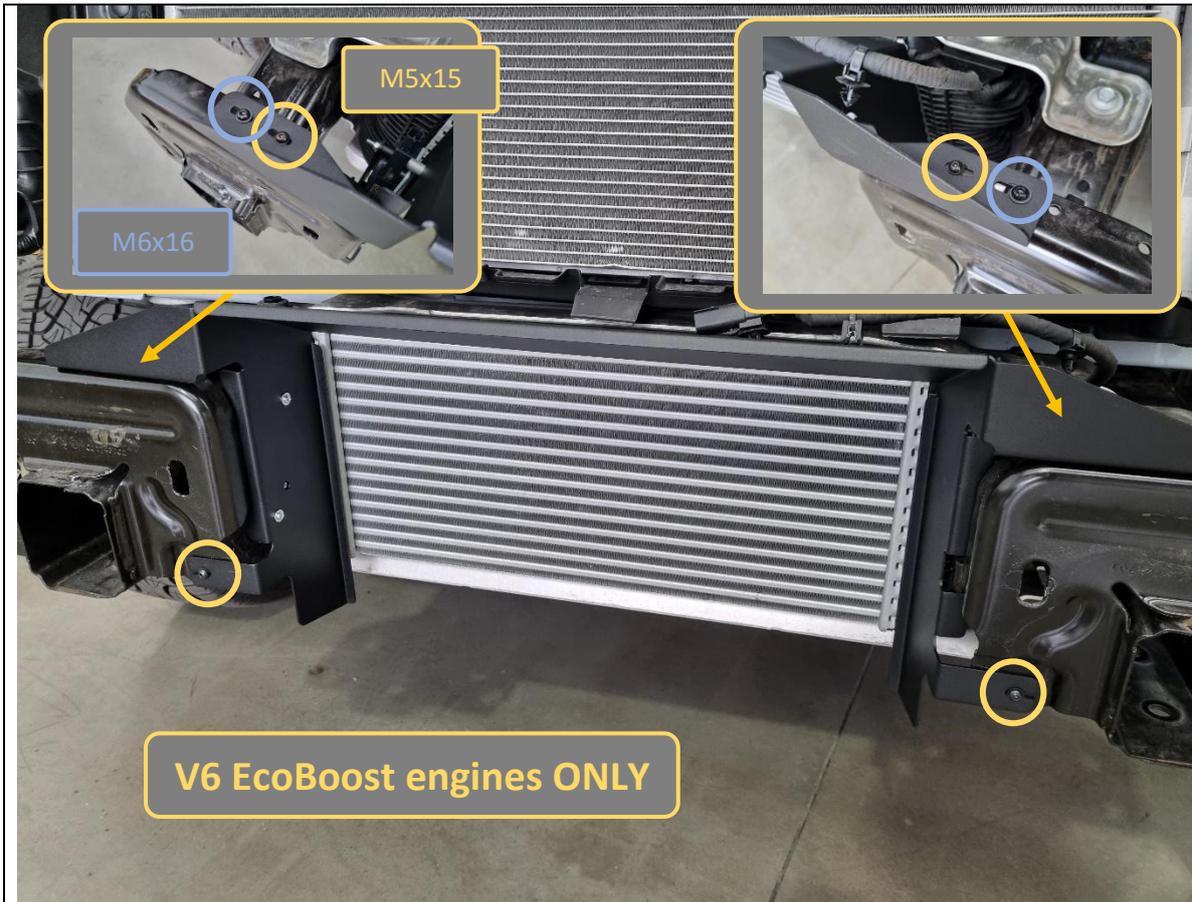
47. Fit the sheet metal shroud onto the vehicle. The shutter motor should be in the same location and orientation as it was originally.	**TOOLS REQUIRED** 3mm hex/Allen key 4mm hex/Allen key
48. Secure it to the same hole locations as the factory plastic intercooler shroud using supplied 4x M5x15 black button head bolts, 2x M6x16 black button head bolts, black washers and flange nuts.	
	FASTENERS 4x M5x15 black button head 4x M5 black flat washer 4x M5 flange nut 2x M6x16 black button head 2x M6 black flat washer 2x M6 flange nut

RH SHOWN

49. Fit the chassis brace to the outside of the frame end, and loosely secure with 1x M12x35 hex bolt, heavy duty flat washer and M12 lollipop nutplate (inserted through the front opening of the chassis, see inset). 50. Repeat for other side.	**TOOLS REQUIRED**
	FASTENERS 2x M12x35 hex bolt 2x M12 heavy duty washer 2x M12 lollipop nutplate

RH SHOWN

M12x35 + washer + flange nut

M12x35 + washer + 2x spacer blocks + flange nut for both lower holes

	TOOLS REQUIRED
51. Fit the impact assembly onto the chassis and chassis brace.	
52. Loosely secure top hole to the chassis brace using 1x M12x35 hex bolt, heavy duty washer and flange nut.	
53. Loosely secure each of the 2x lower holes to the chassis brace using 1x M12x35 hex bolt, heavy duty washer, 2x P-0344 spacer blocks and flange nut.	
54. Repeat for other side impact assembly.	**FASTENERS**
55. Snug (tighten by hand) all M12 bolts (including the one chassis brace in Step 49) so that there are no gaps to the chassis, but still allow enough freedom to adjust and slide the mounts left/right.	6x M12x35 hex bolt 6x M12 heavy duty washer 8x P-0344 spacer block 6x M12 flange nut

RH SHOWN

	TOOLS REQUIRED
56. Loosely secure the rear of the impact assembly to the chassis brace using 2x M10x40 hex bolts, heavy duty washers and flange nuts. 57. Repeat for other side.	
	FASTENERS 4x M10x40 hex bolt 4x M10 heavy duty washer 4x M10 flange nut

RH SHOWN
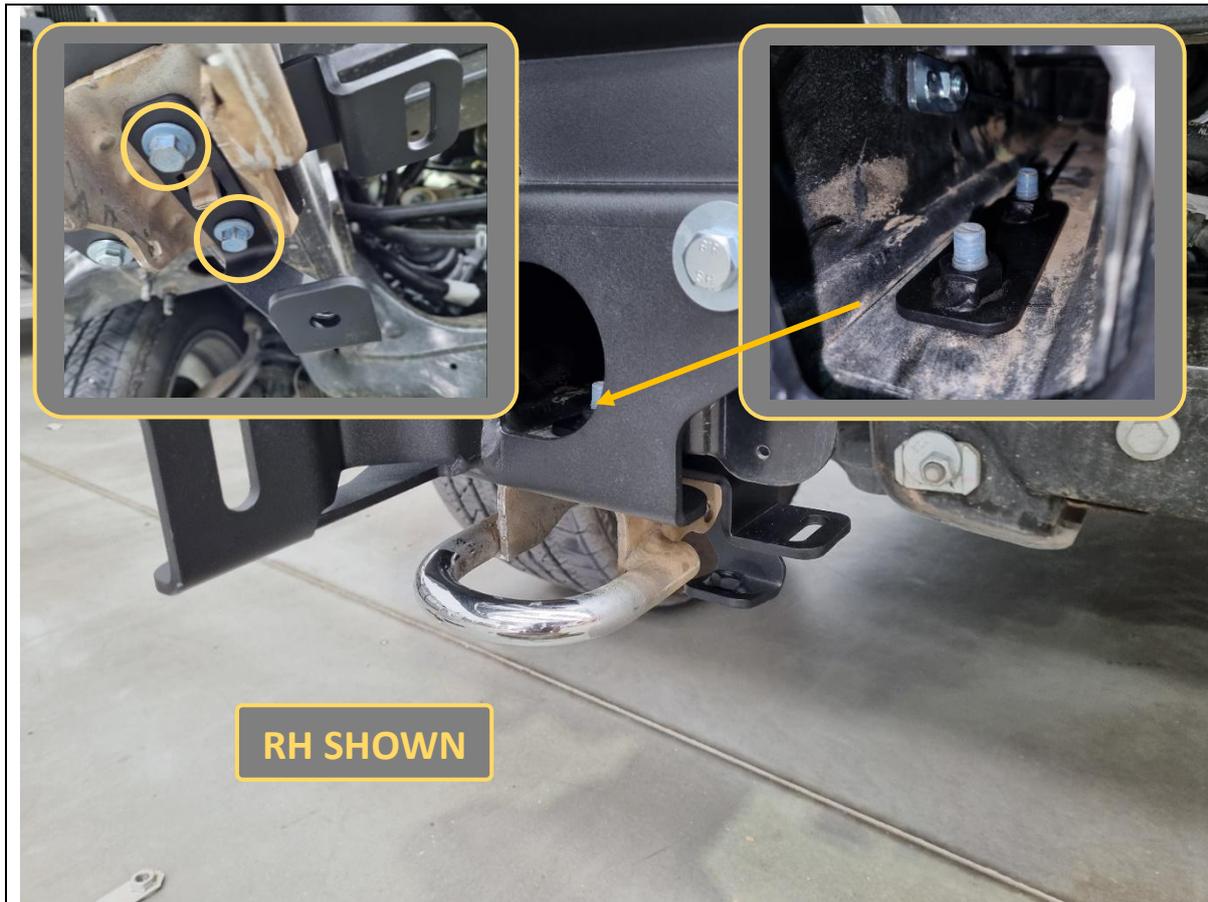
	TOOLS REQUIRED
58. Re-fit the tow point to the vehicle, along with B-1114 lower bash plate mount bracket. 59. Loosely secure with retained 2x 15mm factory hex bolts, and 1x FB-F150-P702-21-PR-ASM5 tow hook nut plate (inserted through the front opening of the chassis, see RH inset). 60. Repeat for other side.	
	FASTENERS 4x 15mm factory hex bolts 2x FB-F150-P702-21-PR-ASM5 tow hook nut plate
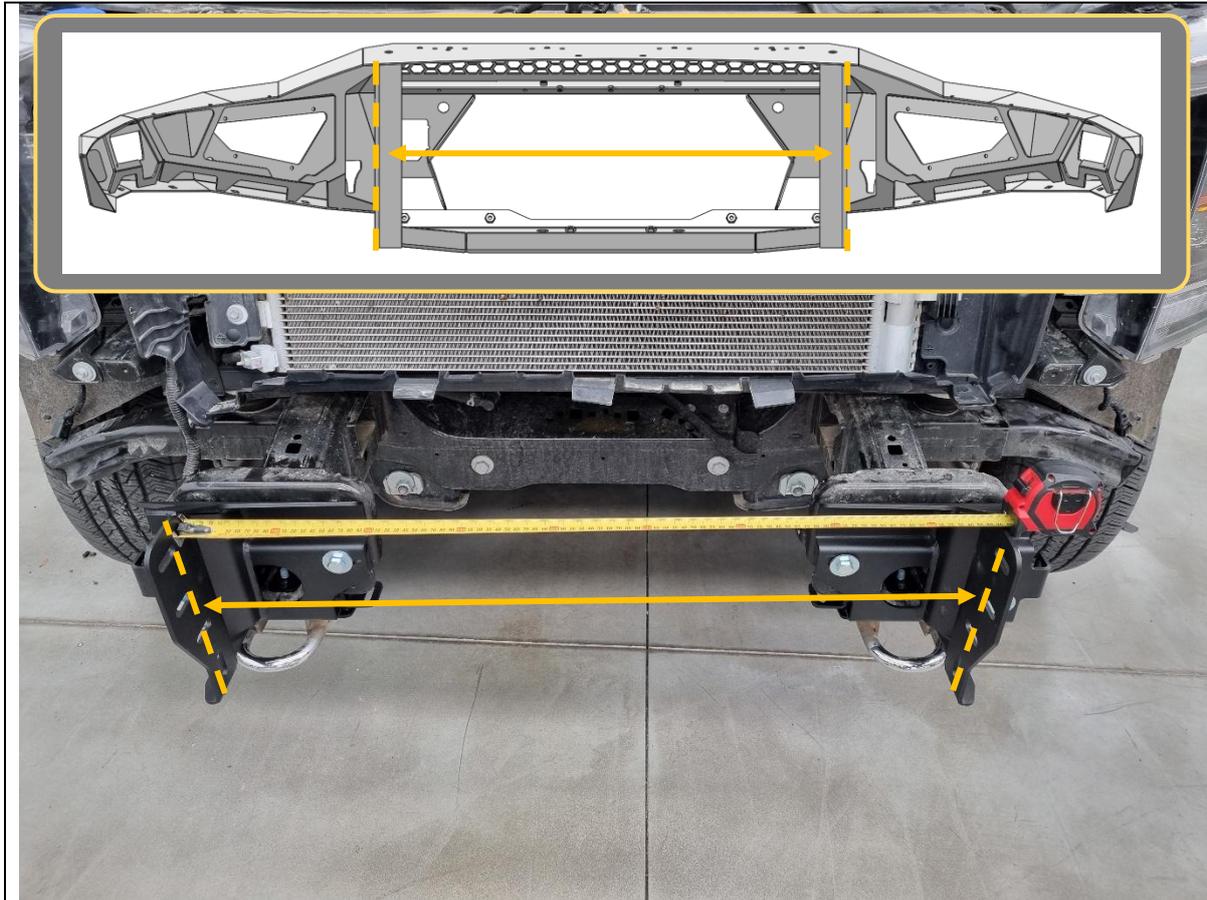
61. Measure the distance between the outside faces of uprights on bar using tape measure. Write distance below for reference if required.

    Bar Upright Width = _____mm

62. Adjust mounts by sliding left/right on the slots, such that distance between inner faces of mounts are approximately 2mm more than bar. Ensure the mount faces are vertically upright and symmetric left/right on the chassis.

63. Secure and tighten mounts. Tighten in the following order:
    a. 15mm factory tow hook bolts
    b. M12 hex bolts (including brace)
    c. M10 hex bolts

TOOLS REQUIRED

Tape measure

15mm socket/spanner
16mm socket/spanner
19mm socket/spanner

FASTENERS

Optional camera relocation

LM-FRA-NG-CAM-900 required
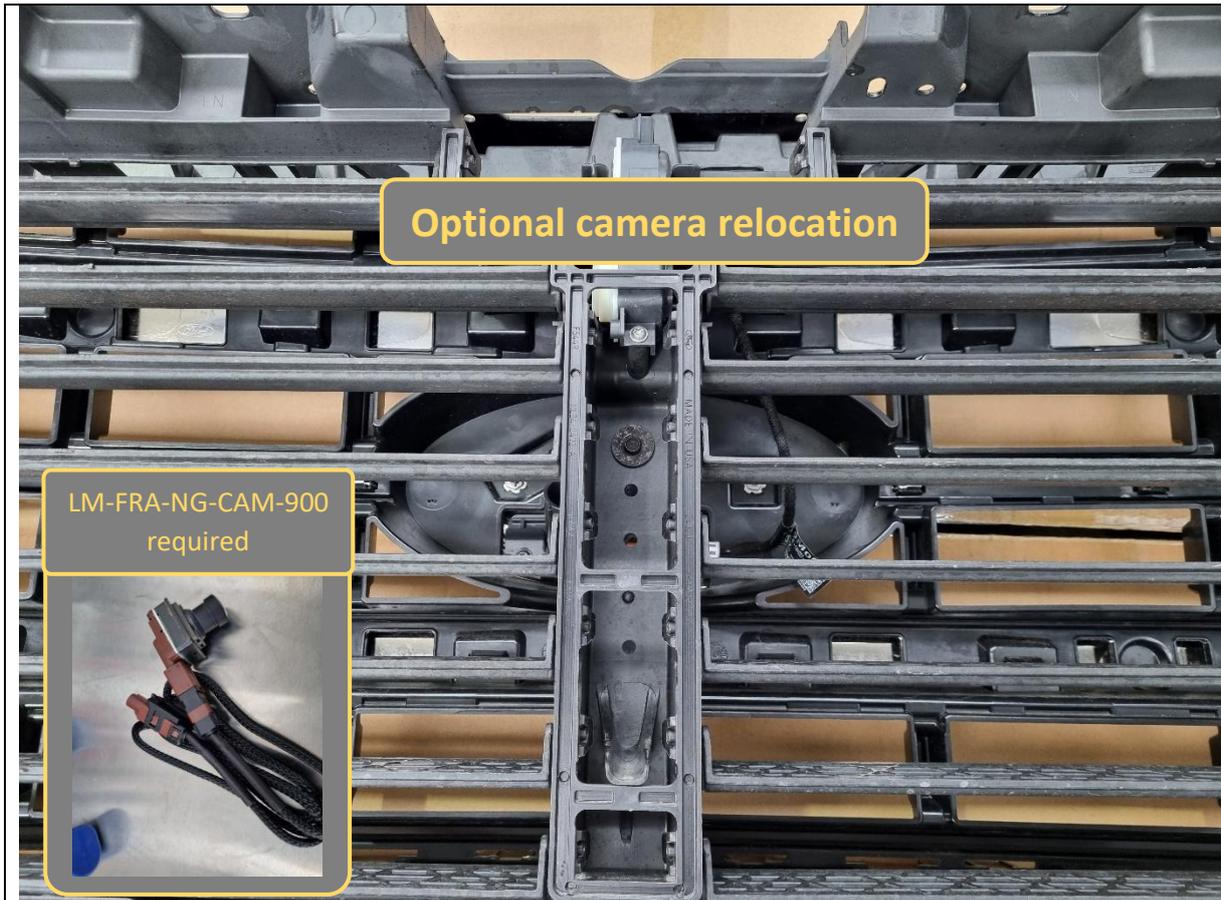
	TOOLS REQUIRED
64. Front 360 degree camera relocation is optional but recommended when fitting with driving lights or Offroad Animal top tube accessories (eg. Stealth Hoop or Rally Hoop). **The camera harness extension (part no. LM-FRA-NG-CAM-900) must be purchased and used for this.**	
65. If equipped, the front camera washer nozzle cannot be relocated, it must remain in the Ford badge on the grille. 66. Open the louvre vanes on the back of the grille.	**FASTENERS**

Optional camera relocation

	TOOLS REQUIRED
67. Remove the camera from the Ford emblem by removing 3x T25 Torx screws holding the plastic camera mount bracket.	T25 Torx bit
68. Disconnect the camera harness plug.	
69. Take note of the camera orientation (plug should be facing the RH side of the vehicle) and set aside in a safe place.	
	FASTENERS
70. Refit the plastic camera mount bracket to the Ford emblem, and refit the Ford emblem to the grille, if required.	3x T25 Torx screws

Optional camera relocation

	TOOLS REQUIRED
71. Fit the camera harness extension (part no. LM-FRA-NG-CAM-900) to the plug on the back of the grille. 72. Route the harness extension out to the bottom and front of the grille as shown. **Ensure the harness extension does not pass through any of the louvre vanes as it will get squished by the opening/closing of the louvres.**	
	FASTENERS

73. Re-fit the grille to the vehicle and secure using fasteners removed in Step 6 and 7.	**TOOLS REQUIRED** 8mm socket/spanner 10mm socket/spanner
	FASTENERS 2x 8mm factory hex bolts 4x 10mm factory hex bolts

RH SHOWN

74. Fit the B-1118 fender guard cover plate and B-1268 plastic bumper support bracket to the vehicle, near the headlight.	**TOOLS REQUIRED** 4mm hex/Allen key 10mm socket/spanner
75. Secure the fender guard cover plate with 2x M6x16 black button head bolts, black washers and flange nuts.	
76. Secure the support bracket to the base of the headlight housing with 1x M6x20 hex bolt, black washer and flange nut.	
77. Secure the support bracket to the fender guard cover plate with 1x M6x16 black button head bolt, black washer and flange nut.	**FASTENERS** 6x M6x16 black button head 2x M6x20 hex bolt 8x M6 black flat washer 8x M6 flange nut
78. Repeat for other side.	

81. Last edge is 90deg perpendicular to the edge of the bumper

80. Line appears vertical in front/rear view, but actually kinks outward

79. Vertical line next to bumper clip protrusion

RH SHOWN

82. Horizontal 100mm

83. Vertical line down to corner

84. Line perpendicular to edge, to the small notch flange

79. The plastic bumper removed in Step 5 needs to be trimmed. Refer to annotations above.

80. On the inside of the bumper, mark a vertical line next directly next to the bumper clip protrusion. Ensure this bumper clip is retained after trimming.

81. Extend the line upwards past the first fold line in the bumper and to to the second fold line, keeping it vertical when viewing from the front/rear as it is mounted on the vehicle. (see top left inset photo)

82. Extend the line to the edge of the bumper, keeping it at 90 degrees perpendicular to the edge.

83. Mark a 100mm long horizontal line running through the midpoint of the rectangle cuts on the inner bumper skin.

84. Mark a vertical line from the end of the horizontal line, down to the 90 degree corner in the bumper.

85. Mark a line 90 degrees perpendicular to the edge of the bumper. It should line up with the small notch as shown on the annotations.

TOOLS REQUIRED

Marker pen

FASTENERS

RH SHOWN

Should be about 35-40mm
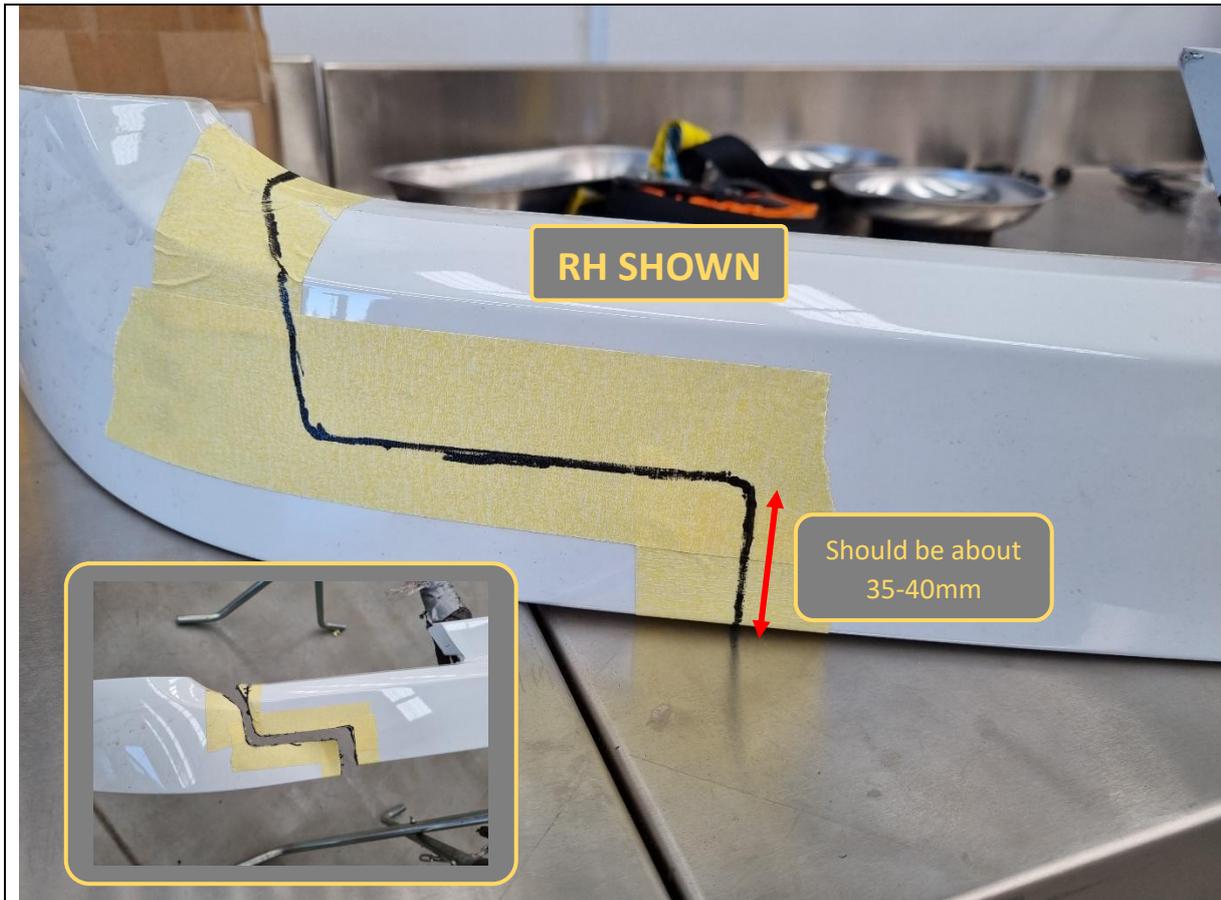
Instructions	TOOLS REQUIRED
86. Apply masking tape to the outside of the bumper and trace out the same cut line as the inside. 87. Use the marked cut line on the outside as reference and cut the plastic bumper with an air hacksaw or similar cutting device. 88. Discard the small outer section and keep the main middle section. 89. Repeat the markings on the outer side of the bumper and cut off the end.	Masking tape Marker pen Air hacksaw or Angle grinder or Jigsaw **FASTENERS**

Cut to accommodate tall winch control boxes
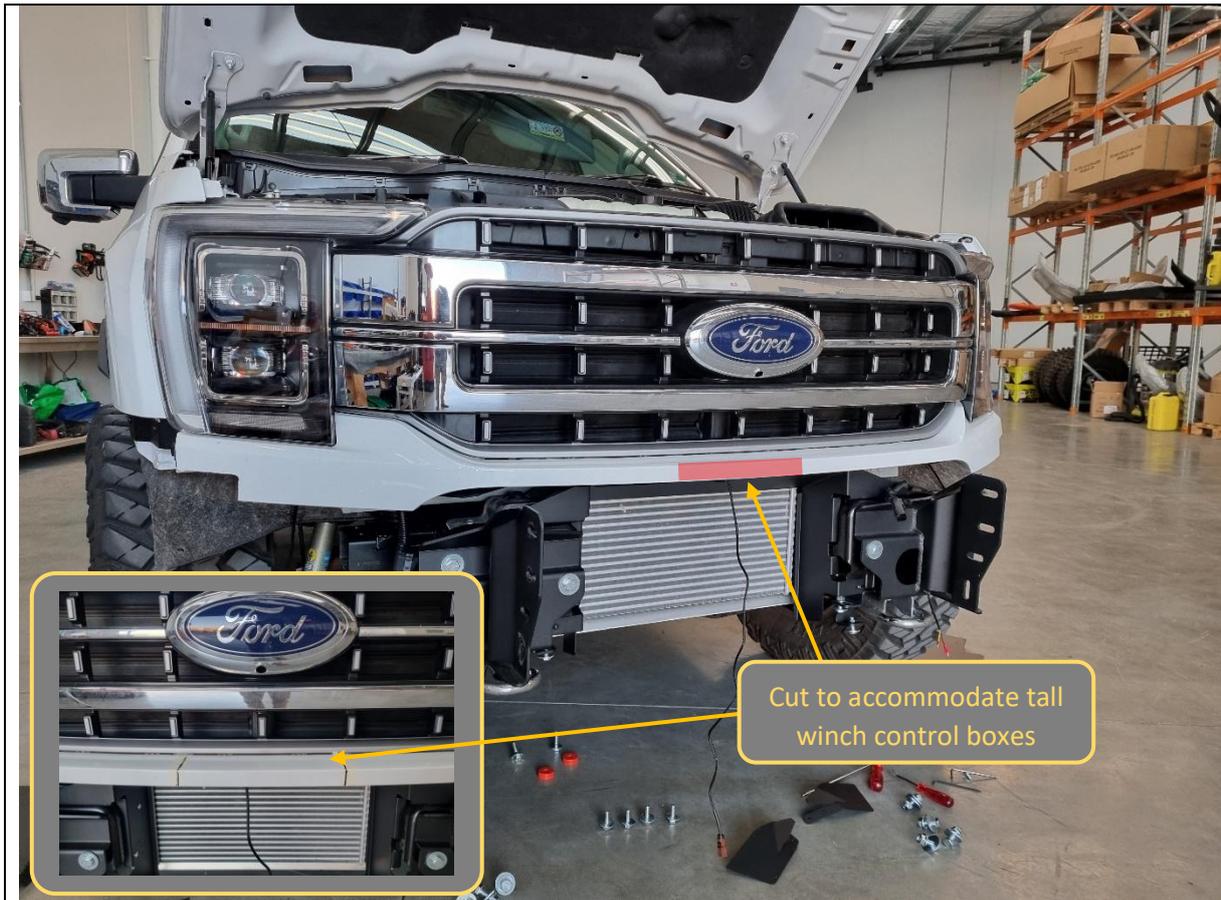
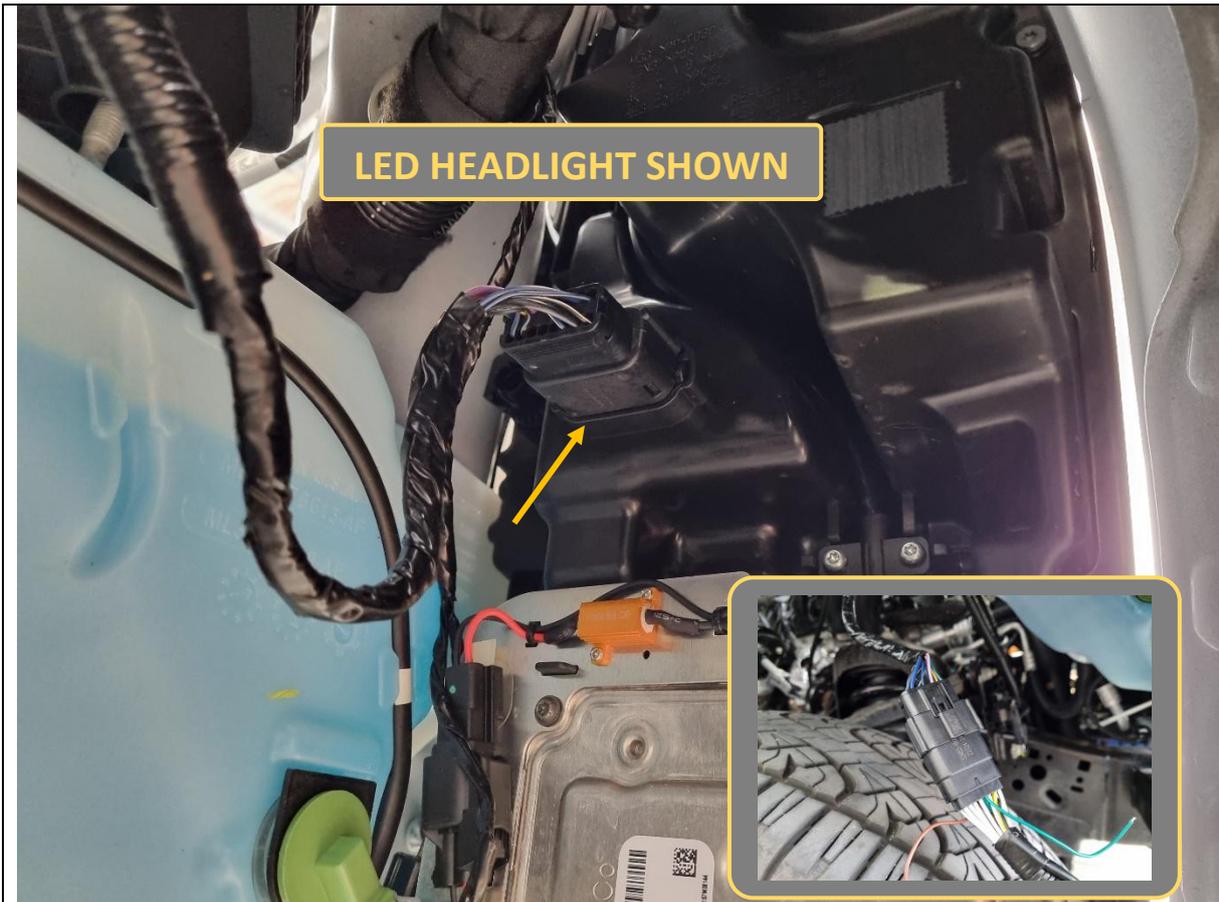|	TOOLS REQUIRED
90. Re-fit the trimmed plastic bumper onto the vehicle and clip into the grille and outer support brackets installed in Steps 74-78.	Angle grinder or Air hacksaw
91. If fitting a winch with top mount control box that is 255mm or taller (eg. WARN ZEON), you will need to cut out a notch from the bumper and grille skin as marked on the photo above. The width depends on the size of the control box. Take care not to cut the camera extension harness if installed. WARN VR Evo winch should not need cutting if bar is fitted in the nominal correct position.	**FASTENERS**

LED HEADLIGHT SHOWN

92. Pull back on the inner wheel arch liner to expose the back of the headlights (remove clips if required).

93. Unplug the main headlight connector. Image shown is for LED headlights, halogen headlight connector will look different.

94. If the optional indicator piggyback harness has been selected for LED headlights (eg. Lariat/Platinum trim levels), fit it to the vehicle now. Note the extra exposed wire tails on the harness do not work (Ford Ranger high beam trigger only) and need to be sealed off/insulated with heatshrink.

95. If not using the piggyback harness or halogen headlights are present (eg. XLT), use a test light to determine the indicator and ground wires and splice into them with automotive electrical wire. Apply appropriate electrical insulation (eg. electrical tape/conduit).

96. Now is also the best time to wire up high beam driving light accessories.

TOOLS REQUIRED

Heatshrink
Heat gun
Solder
Soldering iron
Automotive electrical wire
Electrical tape
Electrical conduit

FASTENERS
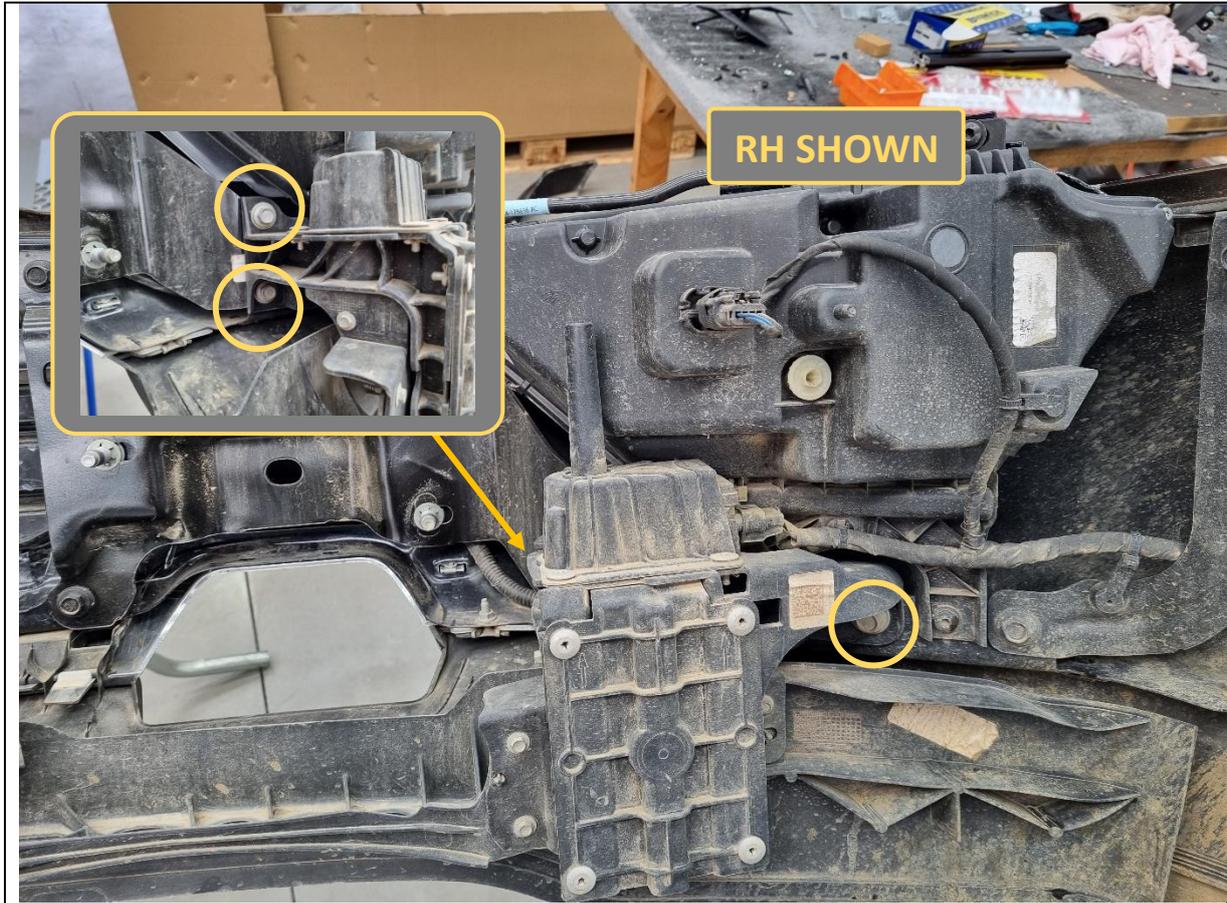
	TOOLS REQUIRED
97. Prepare the bumper for stripping sensors and looms.	13mm socket/spanner
98. Remove 6x 13mm hex bolts securing the active air dam spoiler to the bumper. 3x bolts per side on the spoiler actuators.	
	FASTENERS
	6x factory 13mm hex bolts
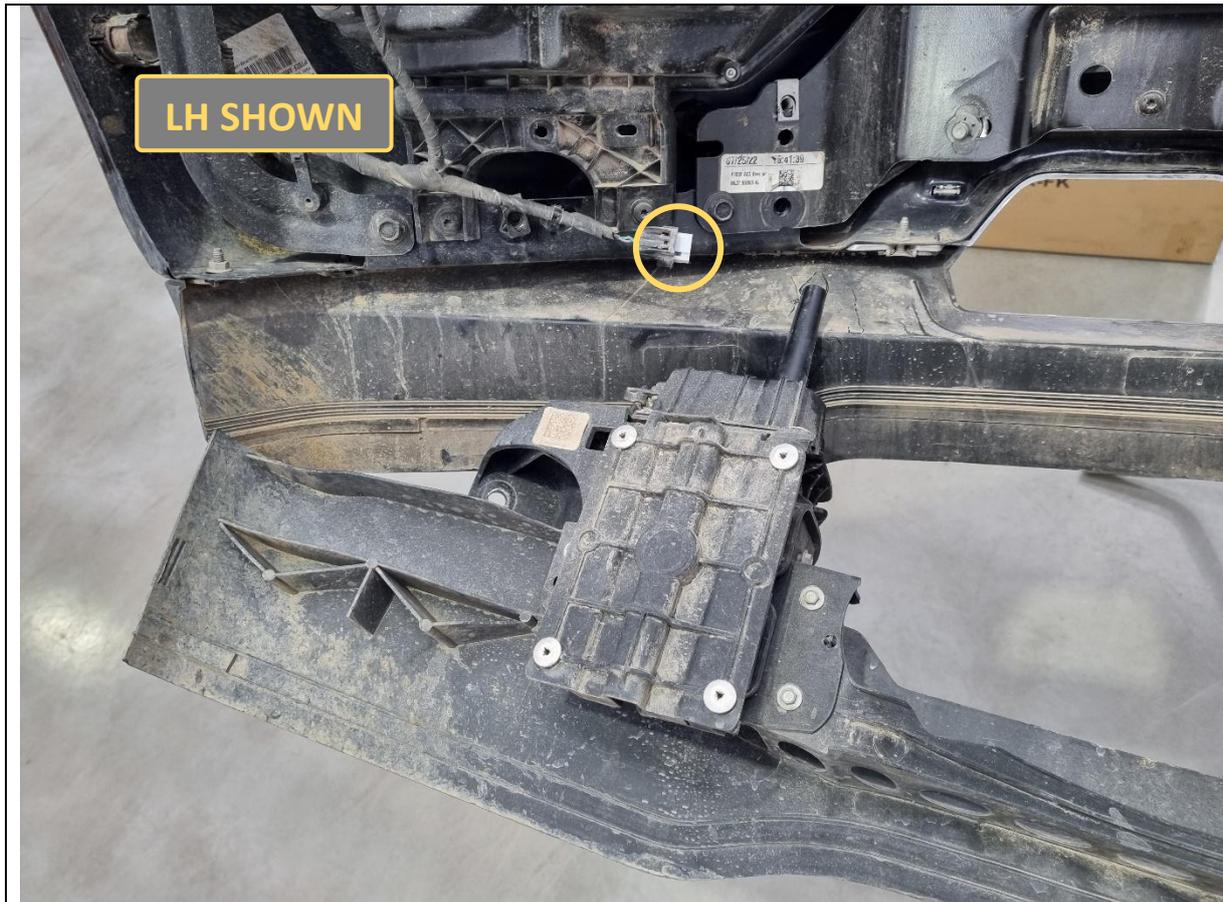
		TOOLS REQUIRED
99.	Disconnect the wiring harness plug to each spoiler actuator.	
100.	Remove the active air dam spoiler assembly. Removing the spoiler will not cause an engine management light (EML) on the dash, but may potentially leave a code on the ECU.	
	Offroad Animal recommends retaining the air dam spoiler assembly for a period of time (eg. 1 month) after bar installation, in case this causes issues and needs to be plugged back in. Removal of this assembly has been done and tested on multiple fitments without issue.	FASTENERS

RH SHOWN
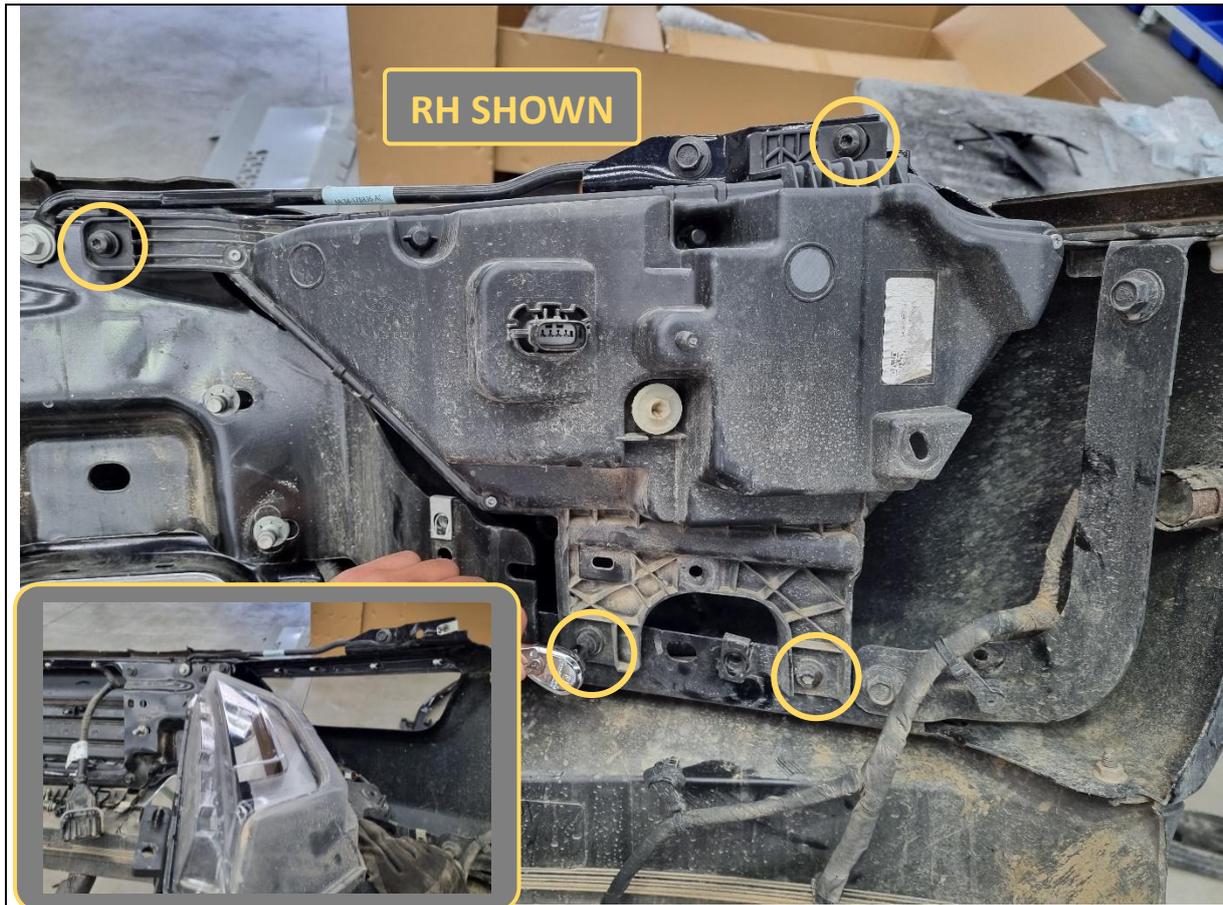
Instructions	TOOLS REQUIRED
101. Disconnect the wiring harness plug to each fog light.	Trim tool
	or
102. Unclip the bumper wiring harness from each fog light. Use a trim tool or flat blade screwdriver to assist.	Flat blade screwdriver
	T30 Torx bit
103. Remove 4x T30 Torx screws securing each fog light to the bumper.	**FASTENERS**
104. Remove both fog lights and discard.	8x T30 Torx screws

RH SHOWN
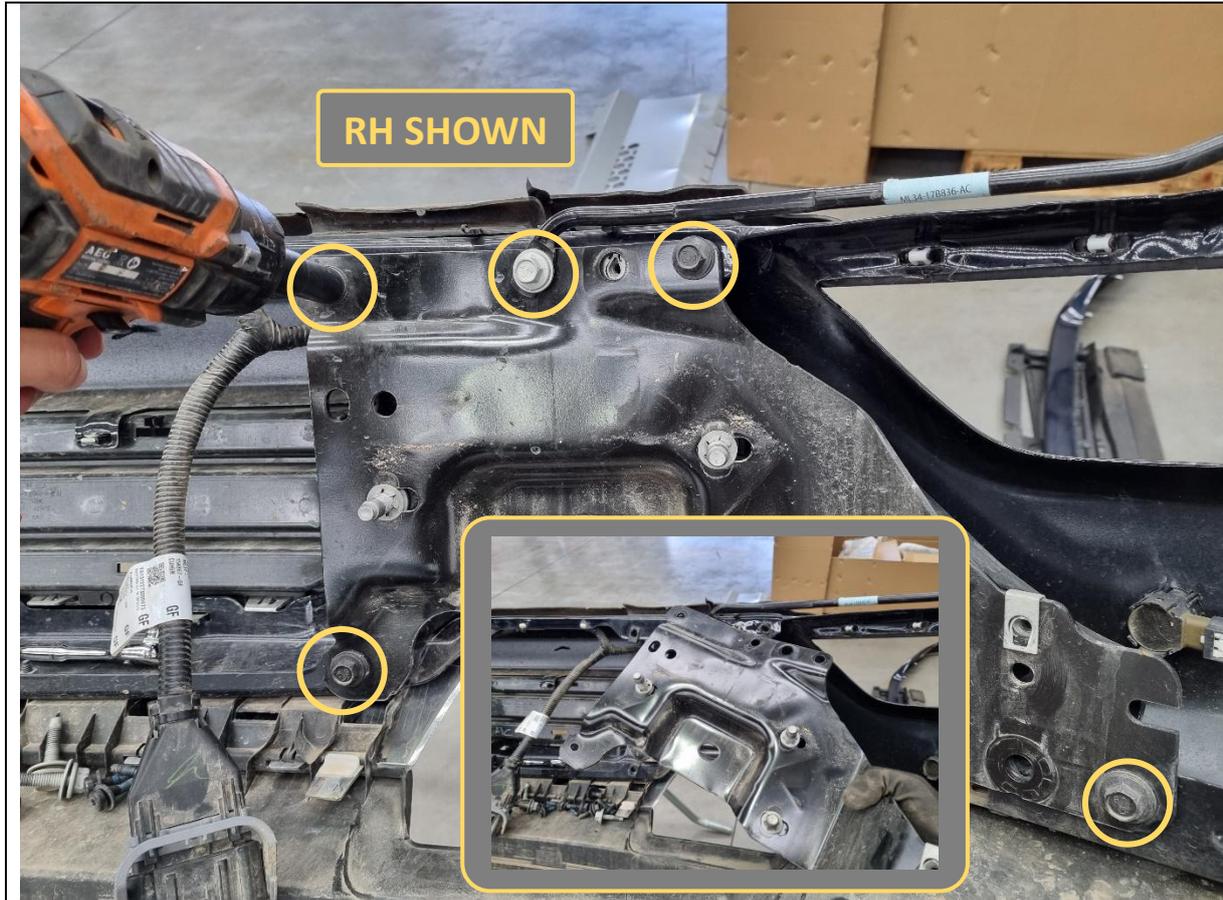
105. Remove 5x 13mm hex bolts securing the inner steel bumper bracket to the main bumper. Do this for both sides. **Do not drop the LH bracket which contains the adaptive cruise control (ACC) radar.**	**TOOLS REQUIRED** 13mm socket/spanner
	FASTENERS 10x 13mm factory hex bolts
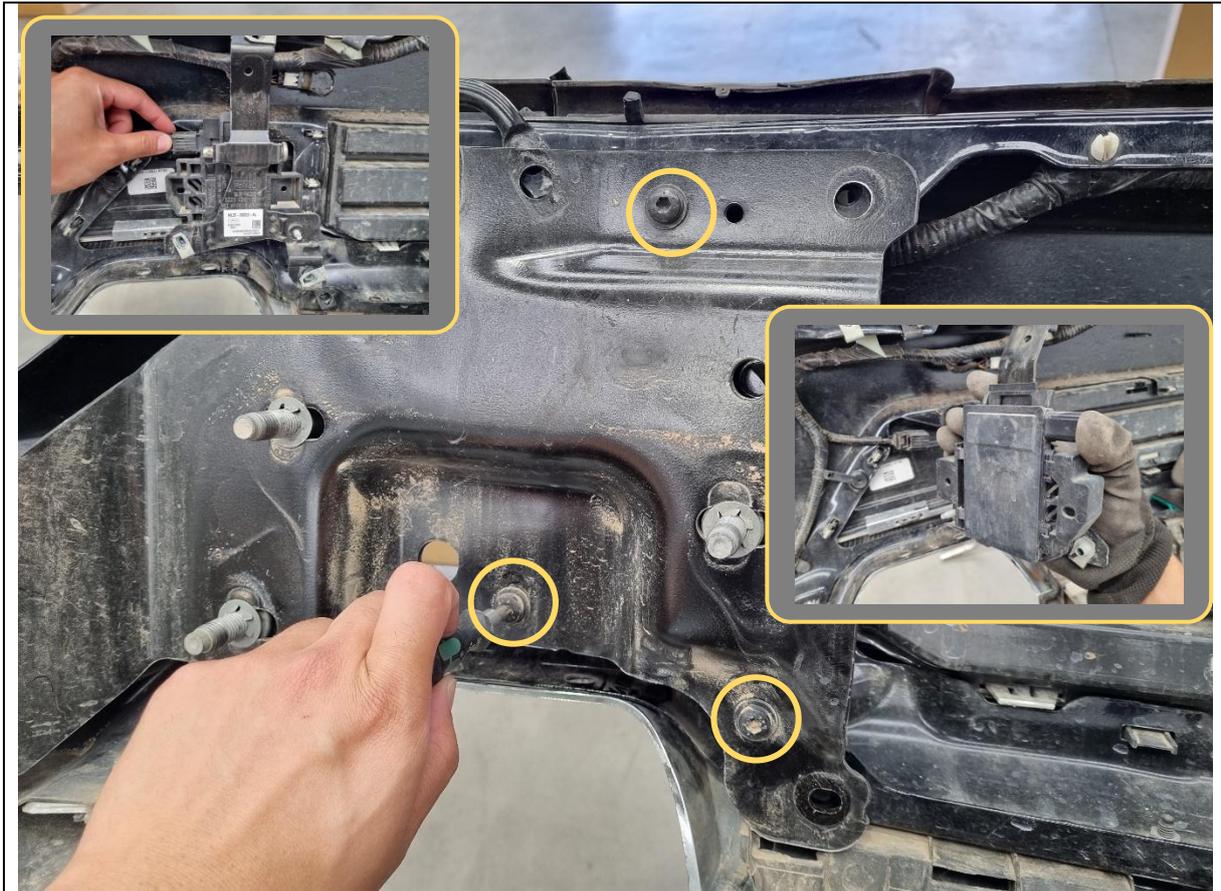
106. If the ACC radar is present, remove 3x T30 Torx screws securing the radar to the LH inner steel bumper bracket.	**TOOLS REQUIRED** T30 Torx bit
107. Disconnect the radar and set the radar and its mounting bracket aside in a safe place. Take care not to drop or damage the radar.	
	FASTENERS 3x T30 Torx screws

	TOOLS REQUIRED
108. If parking sensors are equipped, carefully pry apart the sensor holder plastic tabs to unclip each parking sensor.	
109. Take note of the plug direction on each parking sensor (facing in/out). These will be re-installed into the bullbar in the same orientation.	
110. Unclip the remainder of the bumper wiring harness and remove from the bumper, with parking sensors still attached. Set aside in a safe place.	**FASTENERS**

111. Fit 10x M6 cage nuts into the rectangular slots on the bottom of the bar wing (5x per side). To aid fitting, use a small flat blade screwdriver to push the edge of the cage nut to engage with the slot.	**TOOLS REQUIRED** Flat blade screwdriver
	FASTENERS 10x M6 cage nut

LH SHOWN

	TOOLS REQUIRED
112. If the option has been selected, fit the Offroad Animal Halo fog lights to the supplied fog light brackets using 4x M4x12 pan head screws, flat washers and flange nuts (each).	Phillips head screwdriver 13mm socket/spanner
113. Fit the fog light and bracket to the light mesh panel, using the supplied 2x M8x20 hex bolts, flat washers and flange nuts.	
	FASTENERS 8x M4x12 pan head 8x M4 flat washer 8x M4 flange nut 4x M8x20 hex bolt 4x M8 flat washer 4x M8 flange nut

114. Fit the indicator repeater lamps to the indicator brackets, using M3x12 pan head screws, washers, nuts and the adhesive backing included with the lamp module.	**TOOLS REQUIRED** Phillips head screwdriver 5.5mm socket/spanner
	FASTENERS 4x M3x12 pan head screw 4x M3 flat washer 4x M3 hex nut

LH SHOWN

115. Insert 1x M6 cage nut into the square hole in the top corner of the light mesh panel.	**TOOLS REQUIRED** 4mm hex/Allen Key
116. Fit the indicator brackets to the mesh panel, using the supplied M6 fasteners. The indicator should be located centrally in the cutout.	
	FASTENERS 4x M6x16 black button head 4x M6 black washer 4x M6 flange nut 2x M6 cage nut

LH SHOWN

117.	Fit the fog light, indicator + mesh panel to the bullbar using 4x M16x16 black button head bolts, black flat washers and flange nuts.	**TOOLS REQUIRED**	
		4mm hex/Allen Key	
118.	Secure and tighten using 4mm hex/Allen key and repeat for other side.		
		FASTENERS	
		8x M6x16 black button head	
		8x M6 black washer	
		6x M6 flange nut	
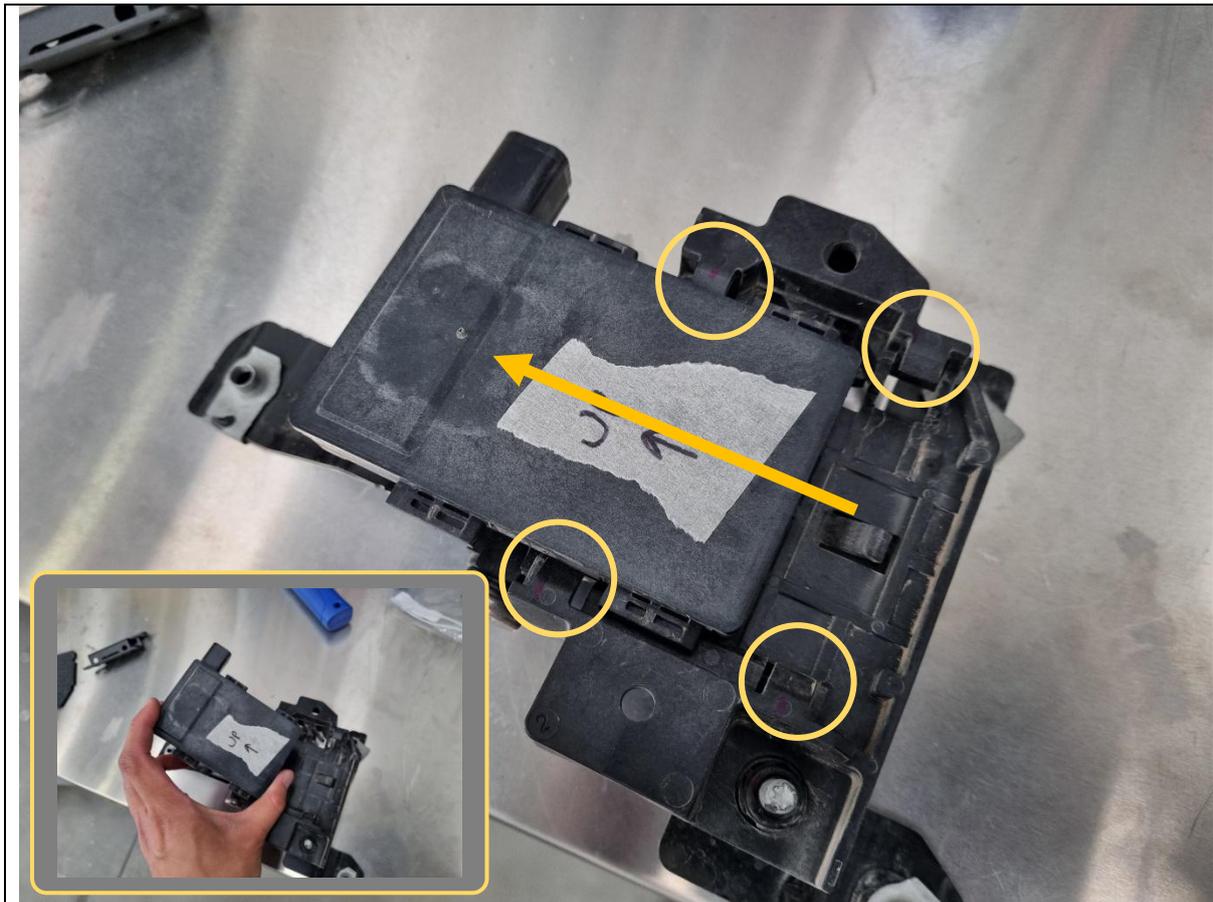
119. Release 4x tabs on the ACC radar mount and slide the ACC radar unit up and away.	**TOOLS REQUIRED**
	FASTENERS
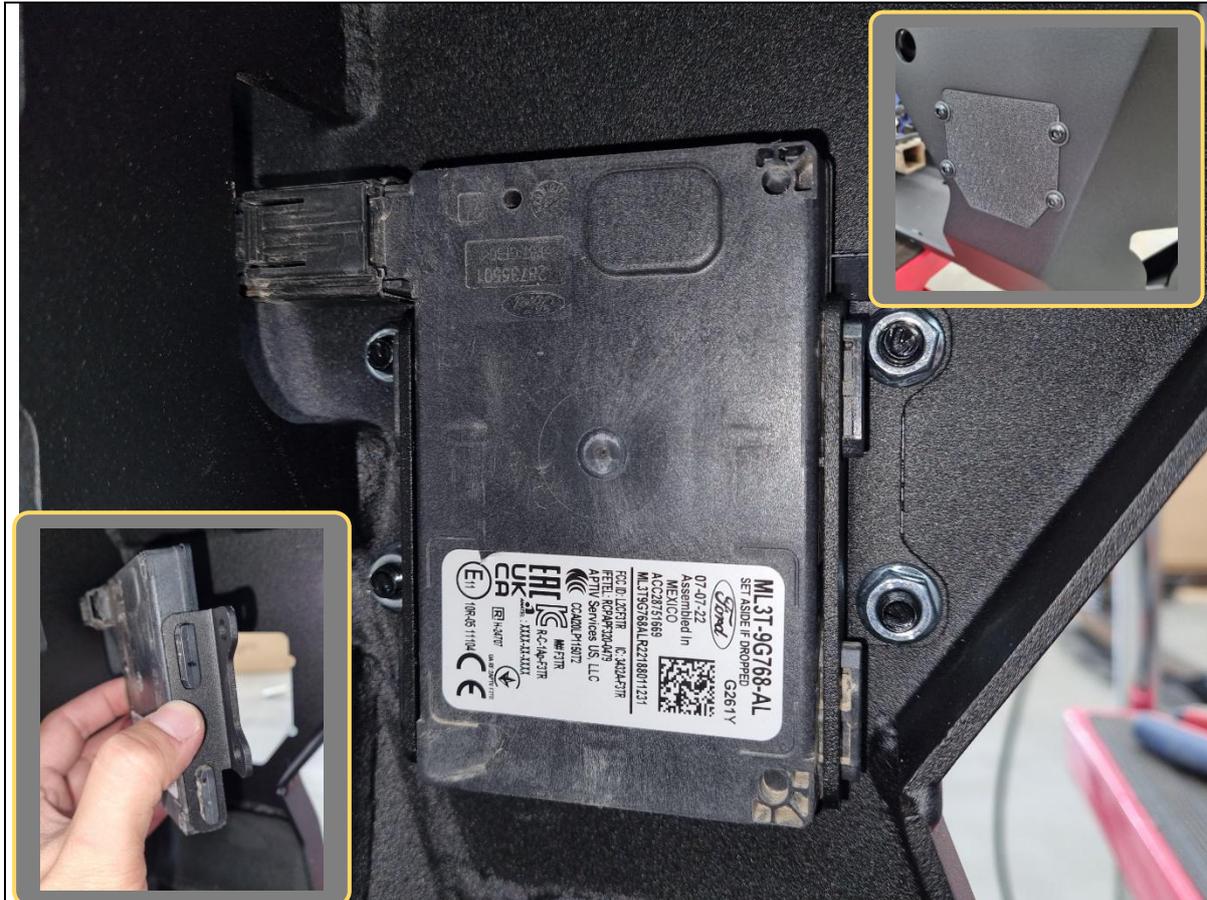
120. Fit the 2x B-1100 radar brackets onto the ACC radar unit, then hold it up against the inside of the bullbar, on the LH front face. Note the radar plug pointing outwards through the cutout in the bullbar upright.	**TOOLS REQUIRED** 4mm hex/Allen key
121. From the front face, fit the plastic ACC radar cover panel (textured face on outside) into the cutout window in the bullbar, and secure it to the radar brackets on the inside with 4x M6x16 black button head bolts, black washers and flange nuts. 122. Ensure the 2x radar brackets are tightly clamped together by hand before fully tightening M6 bolts. 123. If ACC radar is not equipped, fit the radar cover panel and brackets with no radar installed.	**FASTENERS** 4x M6x16 black button head 4x M6 black flat washer 4x M6 flange nut
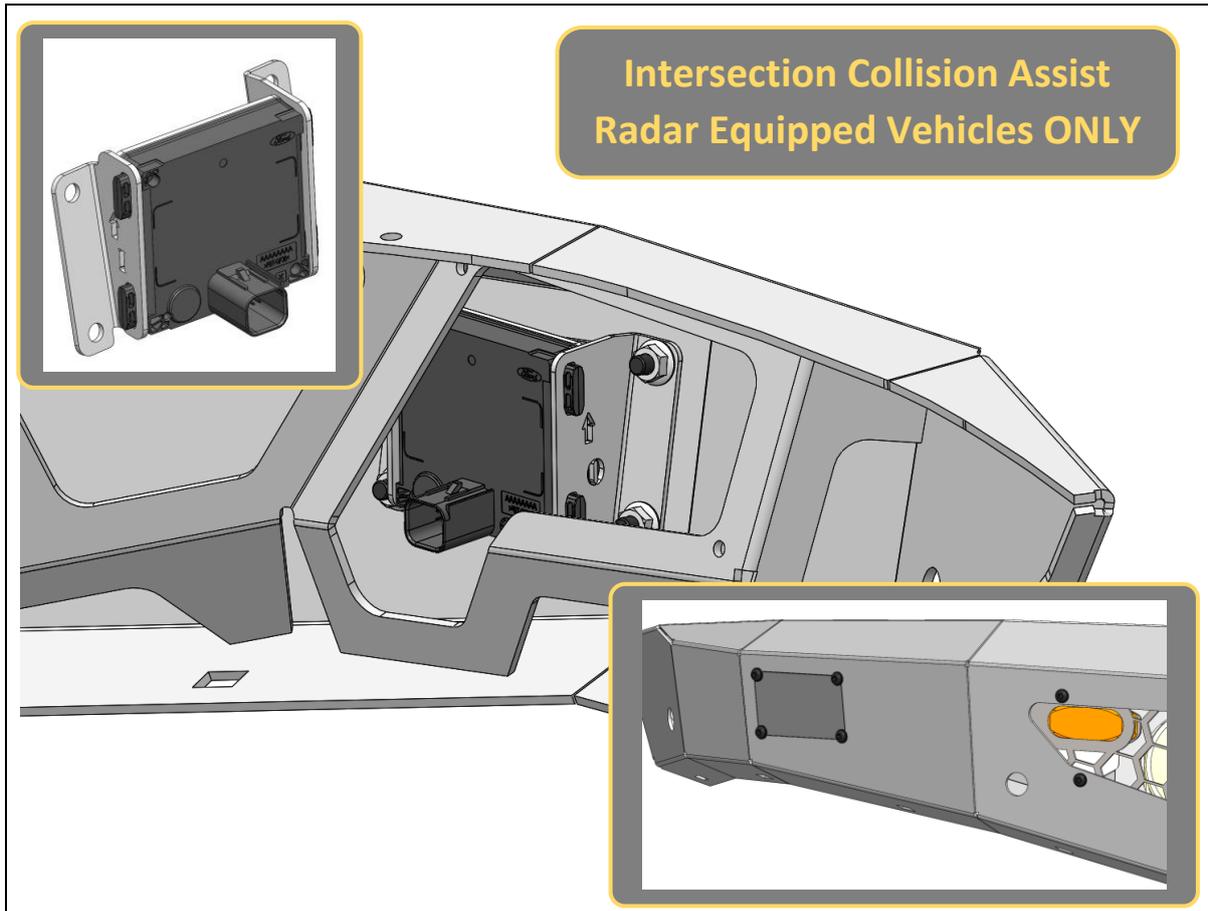
**Intersection Collision Assist
Radar Equipped Vehicles ONLY**

124. Take the ICA radar units from Step 20 and fit it to the inner and outer ICA radar clamp brackets.

    Use the 'I' and 'O' markings to determine inner and outer brackets. Inner bracket is towards the inside of vehicle, outer towards the outside.

    The arrow markings on the brackets should also be pointing up. Ensure the ICA radar orientation is correct and matches with the clamp brackets.

125. Hold the radar and brackets up against the inside of the bullbar, then from the front face, fit the plastic ICA radar cover panel (textured face on outside) into the cutout window in the bullbar, and secure it to the radar brackets on the inside with 4x M6x16 black button head bolts, black washers and flange nuts.

126. Ensure the 2x radar brackets are tightly clamped together by hand before fully tightening M6 bolts.

127. Repeat for other ICA radar. If no ICA radars are equipped, fit the radar cover panel and brackets with no radar installed.

TOOLS REQUIRED

4mm hex/Allen key

FASTENERS

8x M6x16 black button head
8x M6 black flat washer
8x M6 flange nut

	TOOLS REQUIRED
128. If not fitting parking sensors, fit the supplied plastic round blanking plugs into the 6x round holes in the bullbar.	Isopropyl alcohol Clean rag Sandpaper
129. If the vehicle only has 4x parking sensors, fit 2x plastic round blanking plugs to the outermost hole in bullbar on each side.	
130. If fitting parking sensors, clean the areas on the inside of the bullbar adjacent to the sensor holes with isopropyl alcohol. Allow to dry.	FASTENERS
131. Lightly scuff the bonding surfaces of the 4x supplied plastic sensor housings with sandpaper. Then clean with isopropyl alcohol or similar. Allow to dry.	

Parking Sensor Fitment ONLY

		TOOLS REQUIRED
132.	Press down on the arrow location and break the bulb of the supplied 3M Primer 94 ampule to activate the primer dispensing.	
133.	Apply 3M Primer 94 to all areas adjacent to the parking sensor locations, on both the bullbar and the sensor housings.	
	Important: Allow at least 5 minutes for the primer to chemically bond to the surfaces.	**FASTENERS**

	TOOLS REQUIRED
134. Unplug the parking sensors from the previously removed bumper wiring harness. Take note of the location of each parking sensor on the car/bullbar (eg. outer left, middle left, middle right etc.). 135. Fit parking sensors into the plastic sensor housings. 136. Apply supplied VHB tape pads to all sensor housings as shown.	
	FASTENERS

RH SHOWN

137. Remove backing film on VHB tape (easier with utility knife to peel off) and adhere parking sensors in position in the bullbar.

138. Apply pressure for at least 10 seconds after positioning for best adhesion.

   Ensure the parking sensor orientation matches the original bumper. Inner 2x sensors should have plugs pointing outwards. On 4x sensor vehicles the outer 2x sensors are also pointing outwards. On 6x sensor vehicles all sensors point outwards, except for the outermost sensors on each side, which point inwards.

139. 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.
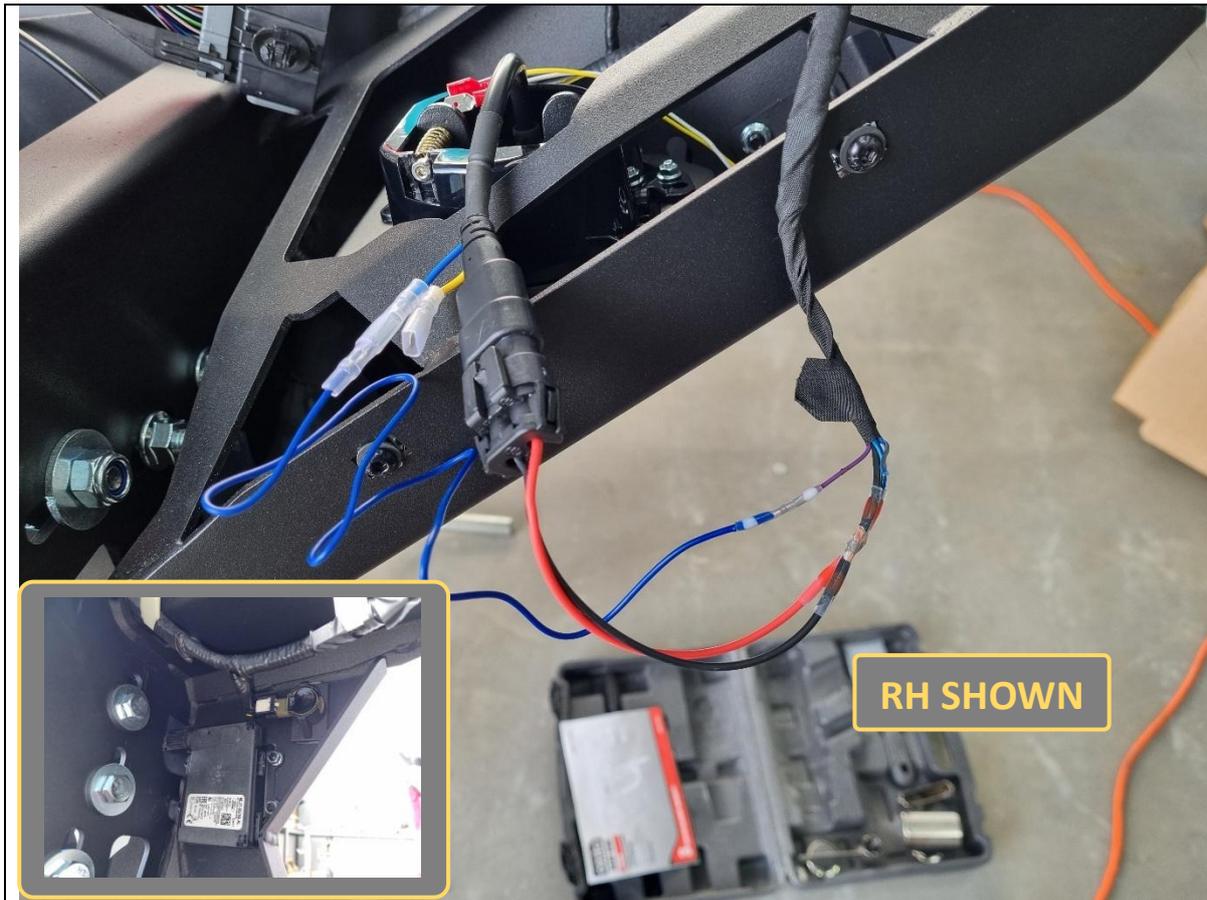
140. Route the bumper wiring harness through the cutouts inside the bullbar.

141. Connect all parking sensors back to the wiring harness.

TOOLS REQUIRED

Utility knife
Automotive adhesive sealant (eg. Sikaflex)

FASTENERS

RH SHOWN

142. Connect all radars back to the wiring harness.

143. Cut off the fog light connectors on the factory bumper harness.

144. Determine fog light, ground and DRL (LED OE fog lights only) wires in the harness. This may need to be done with a test light after the bullbar is fitted back onto the vehicle.

    For LED OE fog lights (eg. Lariat/Platinum), the wiring pinout should be as follows:

Signal	OE harness	ORA Halo Fog
RH fog	Blue w/ green trace	Red
RH DRL	Violet	Blue
RH ground	Black w/grey trace	Black
LH Fog	Blue w/ red trace	Red
LH DRL	Grey w/ red trace	Blue
LH ground	Black w/ yellow track	Black

145. Solder the bumper harness wires to the supplied wire tails with the Halo fog light. Use heatshrink or electrical tape to insulate them.

TOOLS REQUIRED

Cutting pliers
Wire strippers
Solder
Soldering iron
Heatshrink
Heat gun
Electrical tape

FASTENERS

146. 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 inwards, 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 "30-32 inch" size light bars. Stedi ST3K light bars require legs facing outwards.

147. If fitting driving lights, stealth hoop, round hoop or rally hoop to this bar, this is also the most convenient time to do so. It is still possible later but is more difficult.

148. Fit the pan brace to the back of the bar (see inset) using 5x M6x16 black button head bolts, flat washers and flange nuts.

149. Tidy up the wiring harness and other looms with cable ties on the inside of the bar.

TOOLS REQUIRED

4mm hex/Allen key

Supplied with light bar

Cable ties
Cutting pliers

FASTENERS

5x M6x16 black button head
5x M6 black flat washer
2x M6 flange nut

Supplied with light bar

TORO ONLY

	TOOLS REQUIRED
150. If fitting antennas or other accessories on the Toro bar, fit the antenna mount bracket to the back of the Toro uprights using 2x M8x20 black button head bolts and black flat washers.	5mm hex/Allen key
151. 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.	
	FASTENERS
	M8x20 black button head M8 flat washer

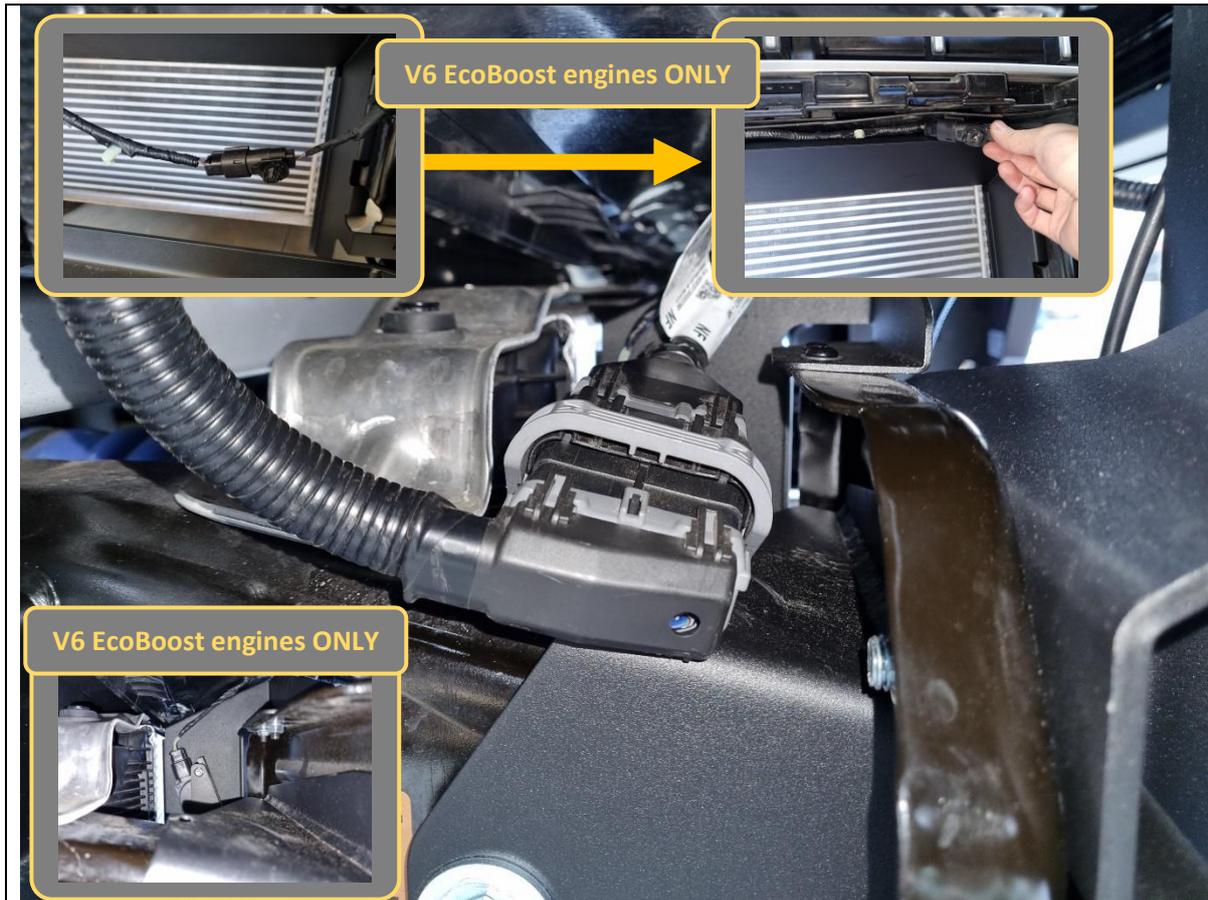|		
152. With assistance, either from another person, or a lifting trolley, lift the bar onto the mounts on the vehicle.	**TOOLS REQUIRED**	
	Lifting trolley	
153. Secure the bar to the mounts with 8x M12x30 Bolts, heavy duty washers and M12 Nyloc + flange nuts.		
Leave finger tight at this stage.	**FASTENERS**	
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.	8x M12x30 hex bolt 10x M12 heavy duty washer 2x M12 Nyloc nut 6x M12 flange nut	

	TOOLS REQUIRED
154. **V6 EcoBoost engine only.** Re-connect the 2x intercooler shutter harnesses. One to the re-mounted shutter motor on the RH, one to the harness on the LH side.	
155. **V6 EcoBoost engine only.** Re-route the LH shutter harness in between the intercooler shroud and grille. (RH top inset)	
156. Re-connect the main bumper harness to the body harness. Clip the harness into the slot cutout on top of the RH chassis brace.	**FASTENERS**
157. Connect the indicator/repeater lamps (solder/crimp together, ensure well insulated).	
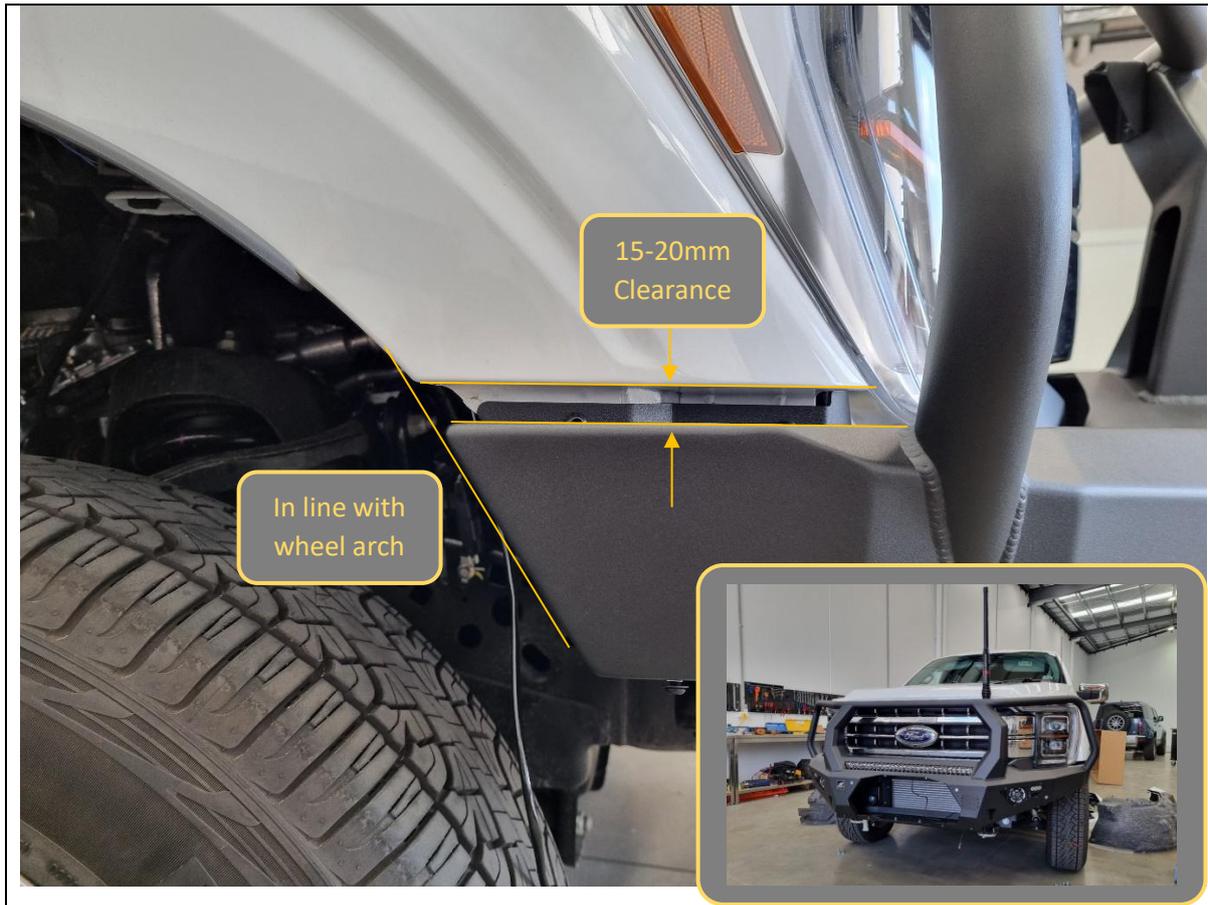
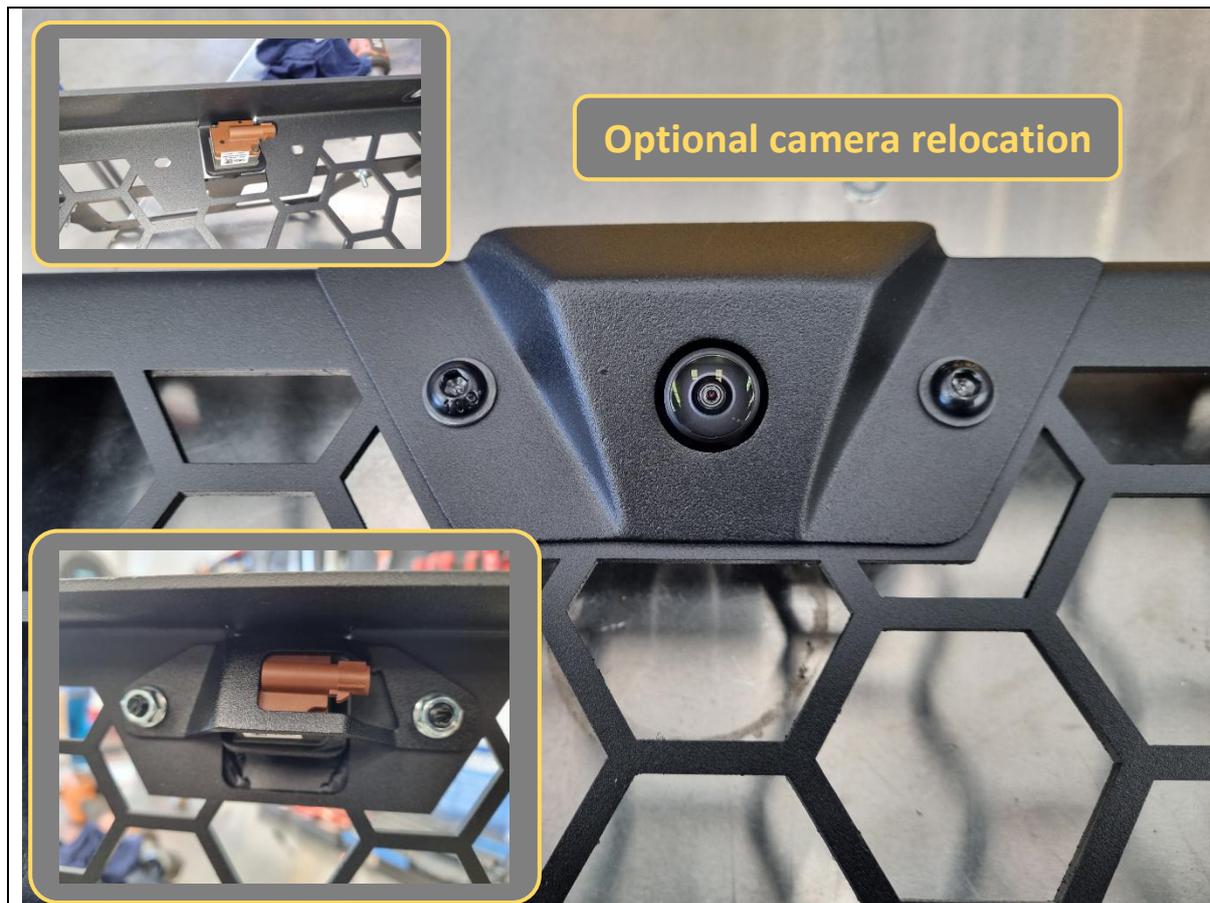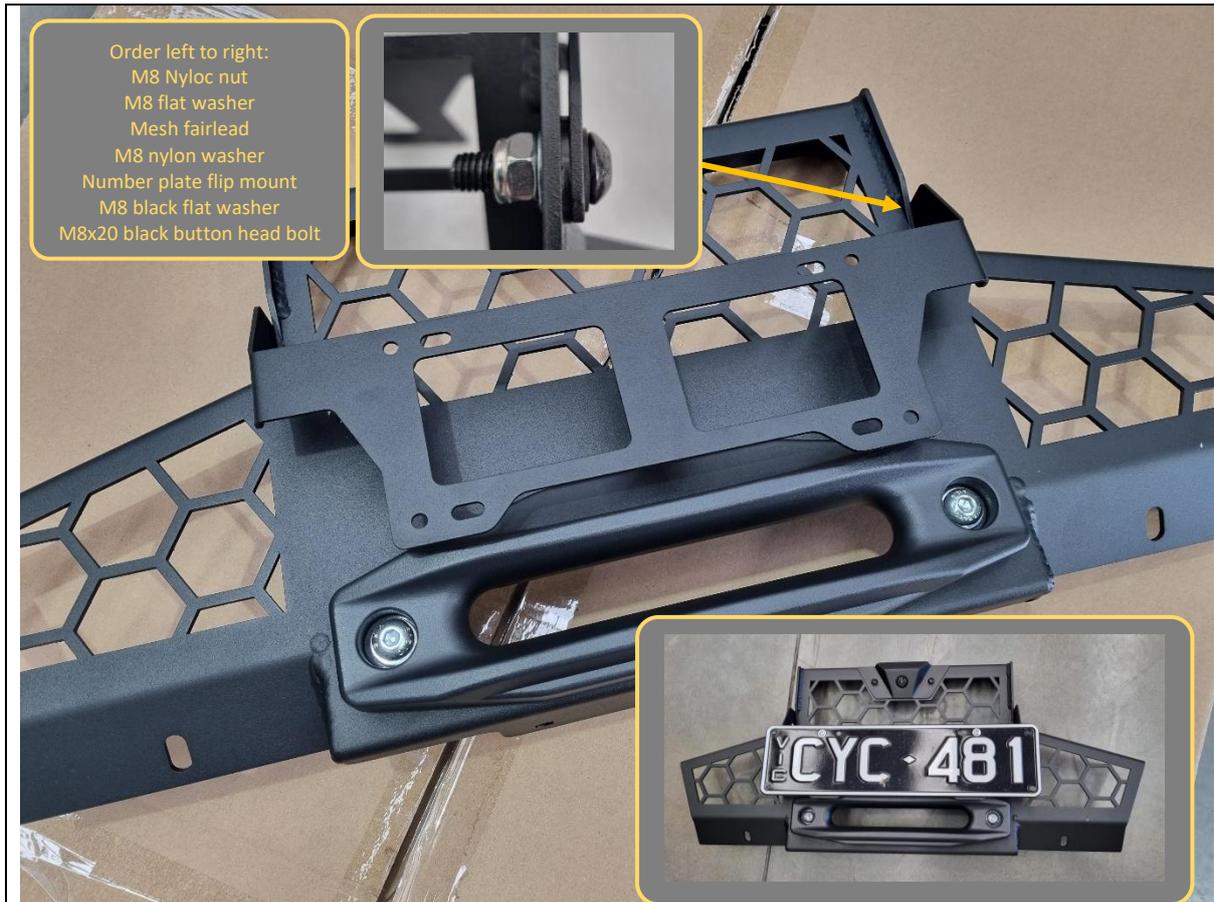|	TOOLS REQUIRED
158. With assistance, from another person, align the bar with the edges of the vehicle. In front view, the bar should sit horizontally level and symmetric left/right on the vehicle. In side view, the end of the bar wing should be in line with the wheel arch liner. There should be 15-20mm vertical clearance between the top of the bullbar wing and the vehicle quarter panel. In top view, there should be 15-20mm clearance between the bar and grille. 159. Once happy with alignment, tighten all 8x M12 bolts.	18/19mm socket/spanner
	FASTENERS

|	
160. If fitting a winch, do so now.	**TOOLS REQUIRED**
161. This bar is designed to fit most low mount winches, in foot down configuration. WARN ZEON 12 is the largest winch confirmed to fit (with grille cut as detailed in Step 91).	Refer to instructions supplied by winch
162. Ensure clutch handle will be accessible through opening in front mesh panel. Refer to winch instructions regarding changing clutch handle location.	**FASTENERS** Supplied with winch

Optional camera relocation

163. Fit the camera to the back of the mesh fairlead, through the keyed cutout.	**TOOLS REQUIRED** 4mm hex/Allen key
164. Fit the front camera cover on the outside, and the backing plate on the inside. The camera plug should protrude through the cutout in the backing plate.	
165. Clamp the camera together by hand and secure the cover to the backing plate with 2x M6x16 black button head bolts, black flat washers and flange nuts.	**FASTENERS** 2x M6x16 black button head 2x M6 black washer 2x M6 flange nut

Order left to right:
M8 Nyloc nut
M8 flat washer
Mesh fairlead
M8 nylon washer
Number plate flip mount
M8 black flat washer
M8x20 black button head bolt

|	
166. 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** 5mm hex/Allen key 13mm socket/spanner Phillips head screwdriver
167. Fit number plate flip mount to mesh panel as shown above. Tighten bolts so that flip mount can be moved by hand with some friction resistance.	
168. Attach number plate to mount using 2x M5x20 pan head screws, washers and flange nuts.	**FASTENERS** 2x M8x20 black button head 2x M8 black flat washer 2x M8 nylon washer 2x M8 flat washer 2x M8 flange nut 2x M5x20 pan head screw 2x M5 flat washer 2x M5 flange nut
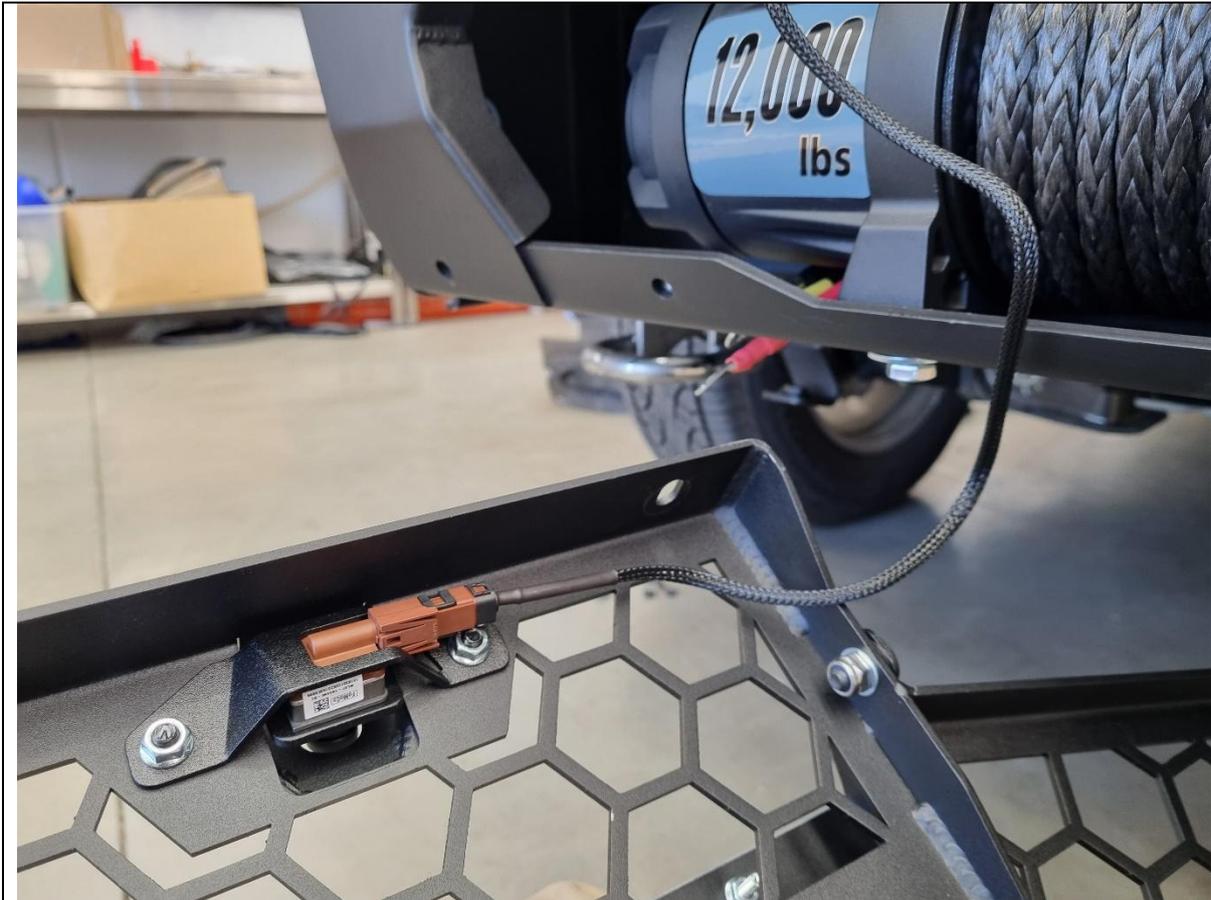
	TOOLS REQUIRED
169. Present the mesh fairlead up to the bar and connect the camera to the previously installed camera extension harness.	
	FASTENERS

	TOOLS REQUIRED
170. Fit the mesh fairlead mount to the centre of the bar, using 4x M8x20 hex bolts and heavy-duty washers. (2x top, 2x bottom underneath the cradle)	13mm socket/spanner
171. Access the top bolt holes from around the sides of the mesh fairlead.	
172. Tighten fasteners using 13mm socket/spanner.	
	FASTENERS
173. Feed winch cable through the hawse fairlead if applicable.	4x M8x20 hex head bolt 4x M8 heavy duty washer
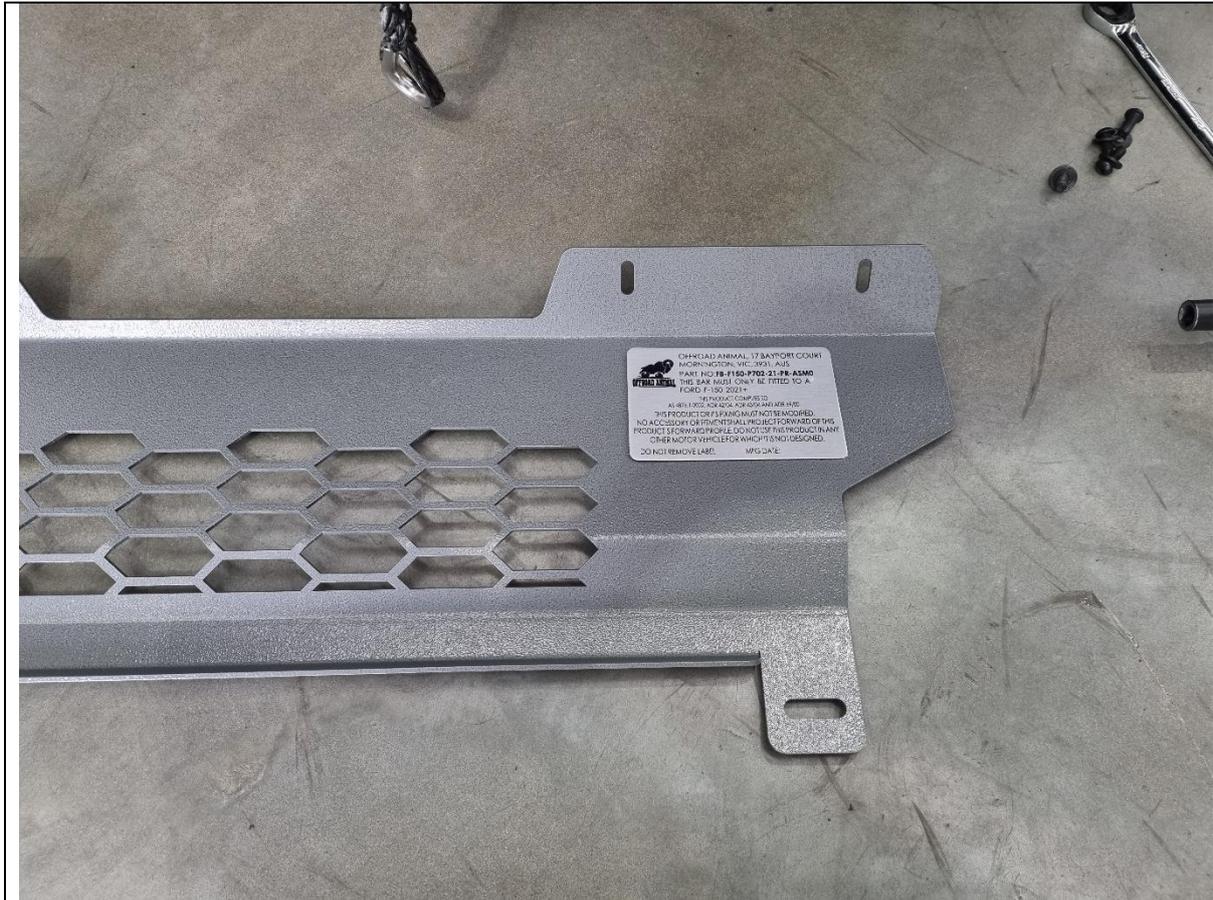
	TOOLS REQUIRED
174. Fit the supplied compliance plate to the inside of the centre bash plate as shown. Peel the backing film off and adhere to the bash plate surface.	
	FASTENERS

|	TOOLS REQUIRED
175. Fit the centre bash plate to the bar using 4x M8x20 black button bolts and flat washers. 176. Secure the back of the centre bash plate to the impact assemblies using 2x M10x40 hex head bolts, heavy-duty washers and flange nuts.	5mm hex/Allen key 16/17mm socket/spanner
	FASTENERS 4x M8x20 black button head 4x M8 black flat washer 2x M10x40 hex head bolt 2x M10 heavy duty washer 2x M10 flange nut

177.	Bolt the air guide to the lower bash plate and secure using 3x M6x16 black button head bolts, black washers and flange nuts.	**TOOLS REQUIRED** 4mm hex/Allen key
		FASTENERS 3x M6x16 black button head 3x M6 black washer 3x M6 flange nut
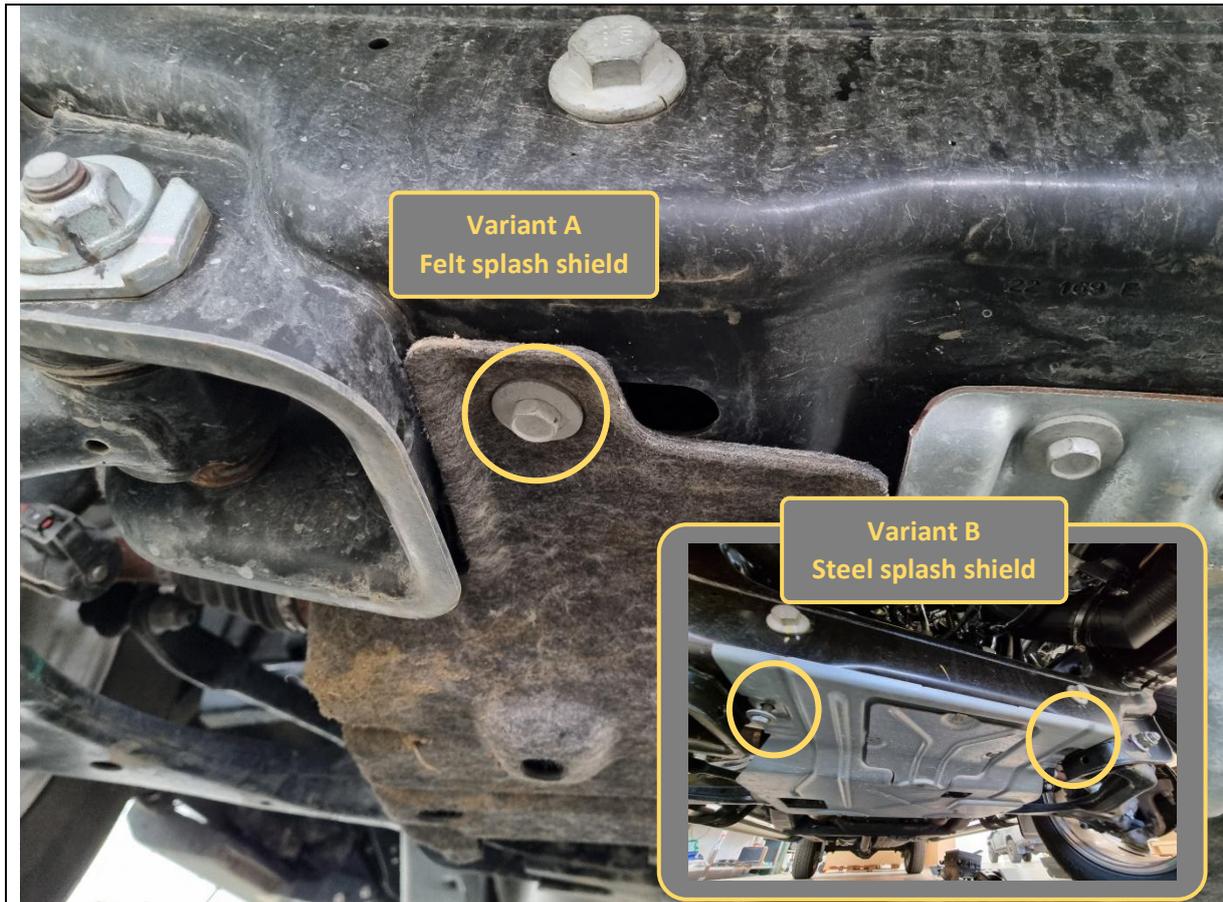
	TOOLS REQUIRED
178. Remove the 2x front 15mm hex bolts holding the splash shield (if equipped).	15mm socket/spanner
179. Note there are two variants. If the splash shield is carpet felt, retain the fasteners. If it is steel, discard and replace with supplied fasteners, as outlined in next step.	
	FASTENERS
	2x factory 15mm hex bolts

Variant A

Variant B

180. Fit the lower bash plate. Secure the front to the lower bash plate mount weld nuts with 2x M10x30 button head bolts and heavy-duty washers.

181. For vehicles with carpet felt splash shields, fit the rear of the lower bash plate in between the splash shield and chassis, then secure with the retained 15mm factory hex bolts.

182. For vehicles with steel or no splash shields, fit the rear of the lower bash plate on the outside, and secure with 2x M10x40 hex bolts, heavy-duty washers and P-0344 spacer block inserted between the bash plate and splash shield/chassis.

TOOLS REQUIRED

6mm hex/Allen key

15mm socket/spanner
or
16/17mm socket/spanner

FASTENERS

2x M10x30 button head bolts
2x M10 heavy duty washers

2x factory 15mm hex bolts
or
2x M10x40 hex bolts
2x M10 heavy duty washers
2x P-0344 spacer blocks

Fold to inside of bar

183. Re-fit the wheel arch liners and fold/tuck the tip in to the inside of bullbar.	**TOOLS REQUIRED** 4mm hex/Allen key 13mm socket/spanner
184. Secure the side underpanel to the bar with 5x M6x16 black button head bolts and black flat washers.	
185. Secure the side underpanel to the impact assembly using 1x M8x20 hex head bolt, flat washer and flange nut.	**FASTENERS** 10x M6x16 black button head 10x M6 black flat washer 2x M8x20 hex head bolt 2x M8 flat washer 2x M8 flange nut
186. Repeat for other side underpanel.	

	TOOLS REQUIRED
187. Review fitment and double check all bolts are tightened correctly. 188. Confirm correct operation of all indicators, fog lights, DRLs, radars and parking sensors.	
	FASTENERS

Congratulations! You're done!
Head out of town and enjoy your newly protected F-150!