



FITTING INSTRUCTIONS

Part Number:	3440600, 3440610
Product Description:	SUMMIT COMBINATION BULL BAR
Suited to vehicle/s:	FORD RANGER MY22
Optional Fitting Kits:	3540240 – Winch Installation Kit 6821430 or 6821440 – Switch Loom (Vehicles not equipped with factory fog lights) SJBHARNFRD – Solis Driving Light Loom

WARNING

REGARDING VEHICLES EQUIPPED WITH SRS AIRBAG:

When installed in accordance with these instructions, the front protection bar does not affect operation of the SRS airbag.

ALSO, NOTE THE FOLLOWING:

- ◆ This product must be installed exactly as per these instructions using only the hardware supplied.
- ◆ In the event of damage to any bull bar component, contact your nearest authorised ARB stockist. Repairs or modifications to the impact absorption system must not be attempted.
- ◆ Do not use this product for any vehicle make or model, other than those specified by ARB.
- ◆ Do not remove labels from this bull bar.
- ◆ This product or its fixing must not be modified in any way.
- ◆ The installation of this product may require the use of specialized tools and/or techniques.
- ◆ It is recommended that this product is only installed by trained personnel.
- ◆ These instructions are correct as at the publication date. ARB Corporation Ltd. cannot be held responsible for the impact of any changes subsequently made by the vehicle manufacturer.
- ◆ During installation, it is the duty of the installer to check correct operation/clearances of all components.
- ◆ Work safely at all times.
- ◆ Unless otherwise instructed, tighten fasteners to specified torque.
- ◆ Vehicle ignition must remain **OFF** until all sensors are relocated and reconnected in their final position.

ARB 4x4 ACCESSORIES

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GENERAL CARE AND MAINTENANCE

By choosing an ARB Bar, you have bought a product that is one of the most sought after 4WD products in the world. Your bar is a properly engineered, reliable, quality accessory that represents excellent value. To keep your bar in original condition it is important to care and maintain it following these recommendations:



- Prior to exposure to the weather your bar should be treated to a Carnauba based polish on all exposed surfaces. It is recommended that this is performed on a six monthly basis or following exposure to salt, mud, sand or other contaminants.
- As part of any Pre Trip Preparation, or on an annual basis, it is recommended that a thorough visual inspection of the bar is carried out, making sure that all bolts and other components are torqued to the correct specification. Also check that all wiring sheaths, connectors, and fittings are free of damage. Replace any components as necessary. This service can be performed by your local authorized ARB Stockist.

FITTING REQUIREMENTS

REQUIRED TOOLS FOR FITMENT OF PRODUCT:

BASIC TOOL KIT	ELECTRIC RIGHT ANGLE DRILL
OSCILLATING MULTI-TOOL WITH BLADE SUITABLE FOR PLASTIC	Ø5.5, & Ø10MM DRILL BITS
FILE OR SAND PAPER	MASKING TAPE
BASIC MEASURING TOOLS	LARGE G-CLAMP
CORRIGATED SPLIT TUBE (7MM & 12MM)	TORQUE WRENCH 9-100 Nm CAPACITY
1m STEEL RULE	TORX KEYS
ELECTRICAL TAPE	LOCTITE 222
HEAT GUN	CRIMPING TOOL
DIGITAL SPIRIT LEVEL	SCISSORS

HAVE AVAILABLE THESE SAFETY ITEMS WHEN FITTING PRODUCT:

Protective eyewear 	Hearing protection 
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NOTE: When installing ground terminals, please ensure the ground point is clean and secure with good contact. Do not stack more than one additional ground terminal onto any ground point. If adding a ground terminal to an existing ground point, please ensure the fastener is correctly tightened after installation.

NOTE: 'WARNING' notes in the fitting procedure relate to OHS situations, where to avoid a potentially hazardous situation it is suggested that protective safety gear be worn or a safe work procedure be employed. If these notes and warnings are not heeded, injury may result.

FASTENER TORQUE SETTINGS:

SIZE	PROPERTY CLASS	Torque Nm	Torque lbft
M6	8.8	9Nm	7lbft
M8	8.8	22Nm	16lbft
M10	8.8	44Nm	32lbft
M12	8.8	77Nm	57lbft
M12	10.9	92Nm	68lbft

PARTS LISTING

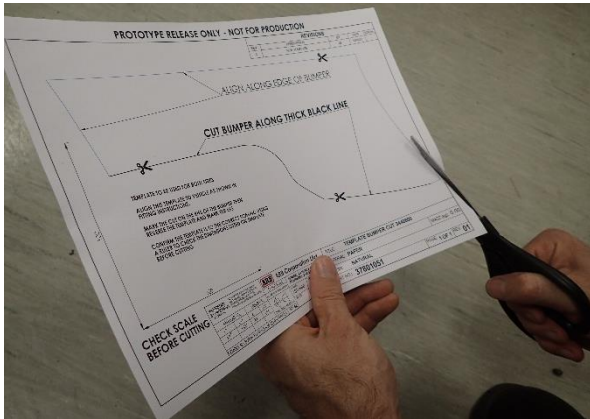
APPLICATION.	PART NO.	QTY	DESCRIPTION
MOUNTS TO CHASSIS	3750991	1	BRACKET CHASSIS RHS
	3750992	1	BRACKET CHASSIS LHS
	4655105R/L	1 PR	MOUNT ASSEMBLY
	4722009	2	CHASSIS CRUSH TUBE
	6365081	2	INTERCOOLER ISOLATING BUSH
	4584363	4	WASHER FLAT M12x26x4 HV300 TZP480
	4584364	14	WASHER FLAT M8x26x4 HV300 BTZP480
	4722009	2	TUBE CHASSIS CRUSH SUIT RANGER M12 X 68.5mm
	5848520	4	PACKER 8mm SUITS RANGER
	6151528	2	NUT HEX NYLOC M12x1.75 PC10.9 ZP
	6151655	10/16	NUT FLANGE M8x1.25 PC8 TZP480 ENS 14/002
	6151688	2	BOLT HXHD M12x1.75x100 PC10.9 ZAS1000
	6151730	8/13	BOLT HXHD FL M8x1.25x20 FT PC8.8 BZP480 ENS14-001
	6151752	4/8	NUT FLANGE M10x1.5 PC8.8 BTZP480
	6151965	4/10	BOLT HXHD FL M10x1.5x30 PC8.8 ZNB480
	6152042	4	BOLT HXHD FL M8x1.25x50 FT PC8.8 ZNB480
	6152066	4	BOLT HXHD FL M12x1.75x50 FT PC10.9 ZAS1000
4584380	2	WASHER FLAT M10x22.9x2 HV300 BTZP480	
BAR TO MOUNTS	3195489	6	ADJUSTMENT SHIM PLATE
	6151173	4/14	NUT FLANGE M6 ZNB480 SERRATED
	6151480	6	NUT FLANGE M12x1.25 PC8.8 TZP480 SERRATED
	6151700	6	BOLT HXHD FL M12x1.25x35 PC8.8 TZP480
	6151752	4/8	NUT FLANGE M10x1.5 PC8.8 BTZP480
	6151965	4/10	BOLT HXHD FL M10x1.5x30 PC8.8 ZNB480
	6152008	4/20	BOLT HXHD FL M6x1.0x25 PC8.8 ZNB480
LIGHTS AND MOULDINGS	3163294	1	COVER STRAP KIT SUMMIT
	3163295	1	OUTER GRILLE KIT SUMMIT
	3163316	1	RADAR COVER LARGE SUMMIT
	3500991	1	ARB LAMP CLUSTER KIT SUMMIT
	3501060/3540290	1	SENSOR SURROUND KIT
	3753258R/L	1 PR	CLUSTER MOUNTING BRACKET
	3753259	2	GRILLE RETAINING BRACKET
	4584329	4/13	WASHER FLAT M6x12.2x1.2 BTZP480
	6151173	6/14	NUT FLANGE M6 ZNB480 SERRATED
	6151213	4/11	BOLT HXHD M6x1.0x20 PC8.8 ZNB480
	6152008	4/20	BOLT HXHD FL M6x1.0x25 PC8.8 ZNB480
6152094	2	SCREW PHD M6x1.0x30 PC8.8 TX ZNB 480	
STONE GUARDS	6523506R/L	1 PR	UNDER WING PANEL
	6523507	1	CENTRE PANEL
	6151300	6/8	NUT CAGED M6 2.6-3.5 956-C
	6151526	6	NUT CAGED M6 1.8-2.7 BZP480
	6151965	2/10	BOLT HXHD FL M10x1.5x30 PC8.8 ZNB480
	6152008	12/20	BOLT HXHD FL M6x1.0x25 PC8.8 ZNB480
WINCH COVER PANEL	6523321	1	WINCH COVER PANEL
	4584329	4/13	WASHER FLAT M6x12.2x1.2 BTZP480
	6151213	4/11	BOLT HXHD M6x1.0x20 PC8.8 ZNB480
	6151223	4/9	NUT HEX NYLOC M6x1.0 ZNB480

ELECTRONIC COMPONENTRY	3195389 <small>(600 ONLY)</small>	1	CAMERA RELOCATION BRACKET
	3750987 <small>(600 ONLY)</small>	1	CAMERA RELOCATION BRACKET
	3753232	1	RADAR MOUNTING BRACKET
	6821426	1	HARNESS BULLBAR FORD ENG
	6821427	1	HARNESS BULLBAR FORD BCM
	3195508	1	BUSBAR WINCH POSITIVE
	3195561	1	BUSBAR WINCH EARTH
	3753231	1	RELAY FUSE MOUNTING BRACKET
	6821439 <small>(600 ONLY)</small>	1	CAMERA CABLE EXTENSION
	4721820 <small>(600 ONLY)</small>	1	HOSE 4.5MM ID 500mm
	4584329	3/13	WASHER FLAT M6x12.2x1.2 BTZP480
	6151173	2/14	NUT FLANGE M6 ZNB480 SERRATED
	6151213	3/11	BOLT HXHD M6x1.0x20 PC8.8 ZNB480
	6151223	5/9	NUT HEX NYLOC M6x1.0 ZNB480
	6151300	2/8	NUT CAGED M6 2.6-3.5 956-C
	6151496 <small>(600 ONLY)</small>	2	BOLT HXHD M6x10 ZINC SILVER
	6151655	6/16	NUT FLANGE M8x1.25 PC8 TZP480 ENS 14/002
	6151730	5/13	BOLT HXHD FL M8x1.25x20 FT PC8.8 BZP480
6151921	1	BOLT COHD M8x20 ZNB480 LWHD	
NUMBER PLATE	6151173	2/14	NUT FLANGE M6 ZNB480 SERRATED
	4584329	2/13	WASHER FLAT M6x12.2x1.2 BTZP480
	5848302	2	NYLON PACKER
	6151459	2	SCREW BHD M6X16 BTZP480
MISC.	3163222	1-2 <small>(610)</small>	SENSOR BLANK PLUG
	37801051	1	BUMPER CUT TEMPLATE
	37801181	1	CALIBRATION INFORMATION NOTICE
	37801223	1	SOFTWARE ROUTINE INSTRUCTION
	6191033	1	EXTRUSION PINCH WELD 412MM

FITTING PROCEDURE



1. Remove number plate and plastic moulding hidden behind.



2. Check cutting template 37801051 is printed at correct scale by measuring both vertical and horizontal 100mm axes in the lower LH corner.

Using scissors, carefully cut out the template along the lines indicated.



3. Apply masking tape to outer right hand corner of bumper.

On the RHS of the vehicle, align template with the wheel arch and the seam between the bumper and quarter panel. Apply masking tape to hold in place.



4. Identify the leading radius of the bumper which is directly below the vehicle's grille.

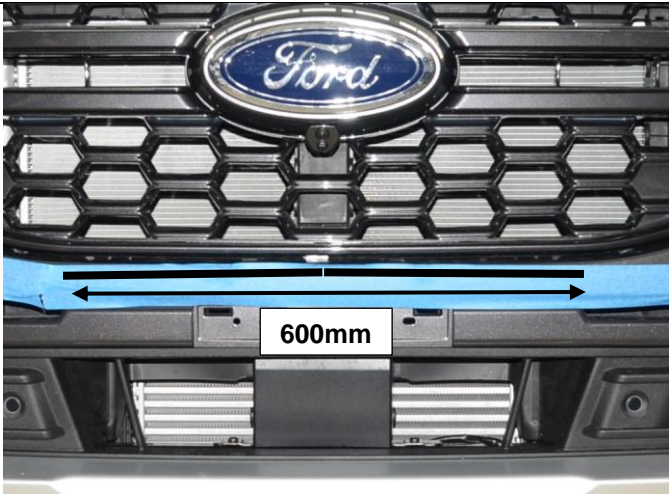
The bumper will be cut along this edge.



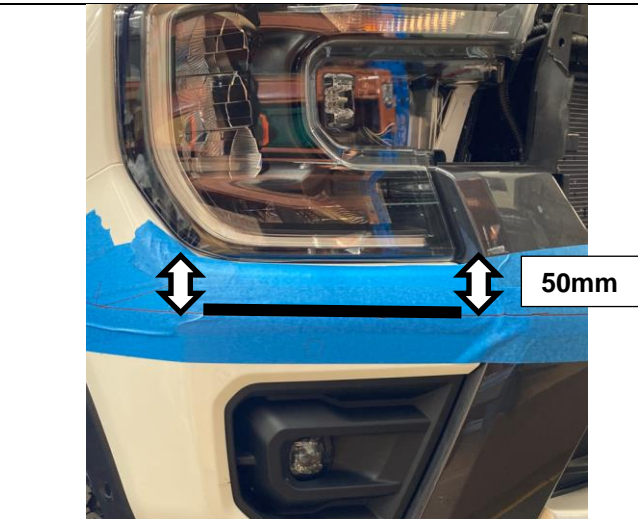
5. Apply masking tape all the way across the front of the bumper from the template to directly under the centre of the grille.

With a felt tipped marker, outline cutting edge of template onto bumper.

Gently remove template and reverse for opposite side. Repeat steps 3-5 on LHS of the vehicle.



6. With a felt tipped pen, mark a straight line 600mm along the edge identified in the previous step.



7. With a felt tipped pen, mark a straight line parallel to & 50mm below each head light.



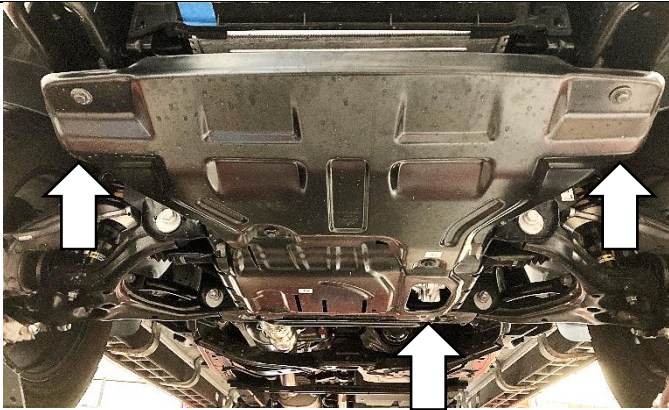
8. Using a straight edge, join the lines marked in the previous steps together to form one continuous line across the front of the bumper.

Cutting line should appear as shown.



9. Remove 10x scrivenets and screws holding the lower bumper to the vehicle. Discard fasteners.

Remove lower three scrivenets in each wheel arch.



10. Remove the OE stone shield by loosening 3x M10 flange bolts, set aside safely.



11. Carefully cut bumper along marked lines using an oscillating multitool.

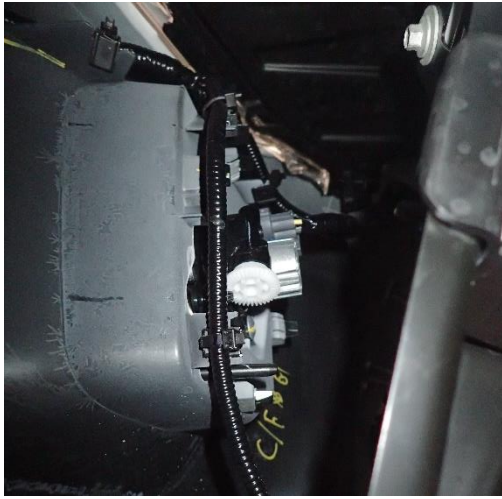
Wheel arch flares will also need to be cut.

DO NOT REMOVE FLARES FROM VEHICLE

Multiple layers will need to be cut in the area below the headlight.



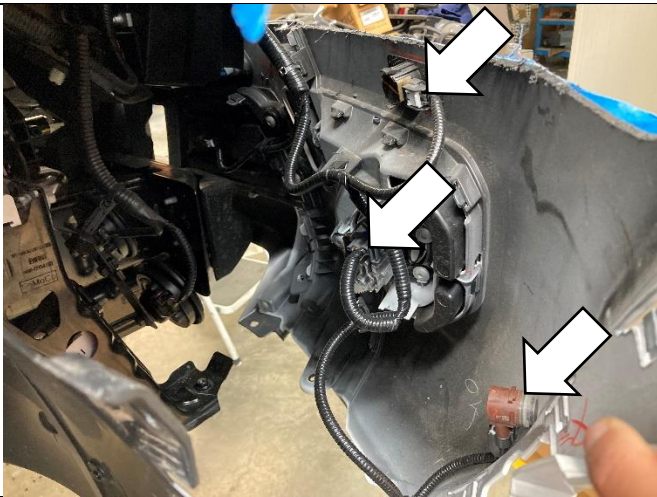
12. Remove wheel flare offcuts to access scrivenets. Remove two scrivenets from each side.



13. Reaching up behind bumper, disconnect fog lights and remove parking sensors from retainers, leave connected to loom.
- Use a felt tipped pen, mark the position of each of the sensors.

EG.

LO	Left Outer	RO	Right Outer
LM	Left Middle	RM	Right Middle
LI	Left Inner	RI	Right Inner

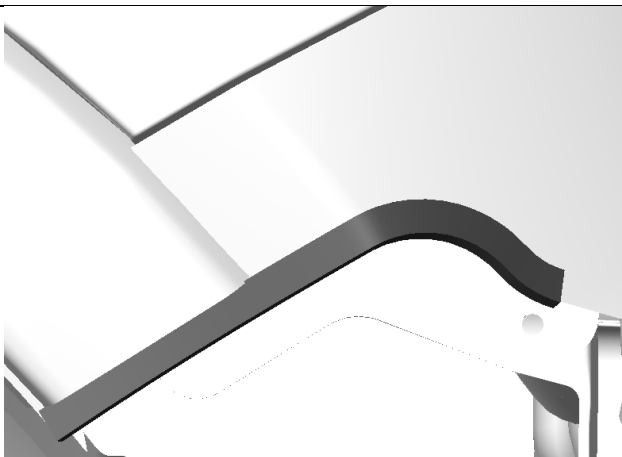


14. Support the bumper to keep it from hanging by the wiring harness after being cut.

WARNING: Vehicle ignition must remain OFF until all sensors are relocated and reconnected in their final position.



15. Remove and discard lower bumper from vehicle by unclipping wiring harness.



16. Using side cutters, cut 400mm length of pinch into two lengths of 200mm.
- Using side cutters, trim a notch at the back to fit around the transition between the wheel arch flare and the bumper.
- Fit pinch weld onto cut edge of bumper as shown, both sides.

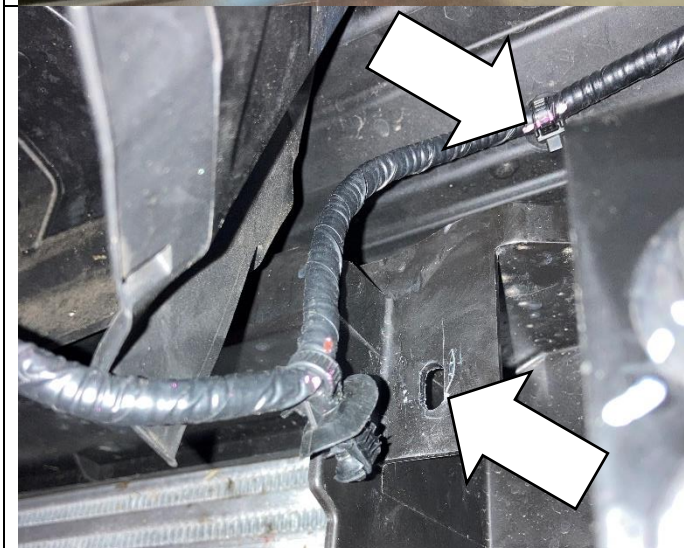


17. Remove foam impact absorber from chassis.



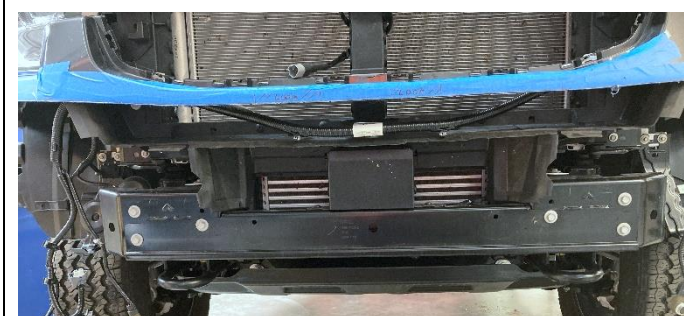
18. Remove scrivenets and black plastic cover from radar module

Disconnect vehicle harness from radar module.



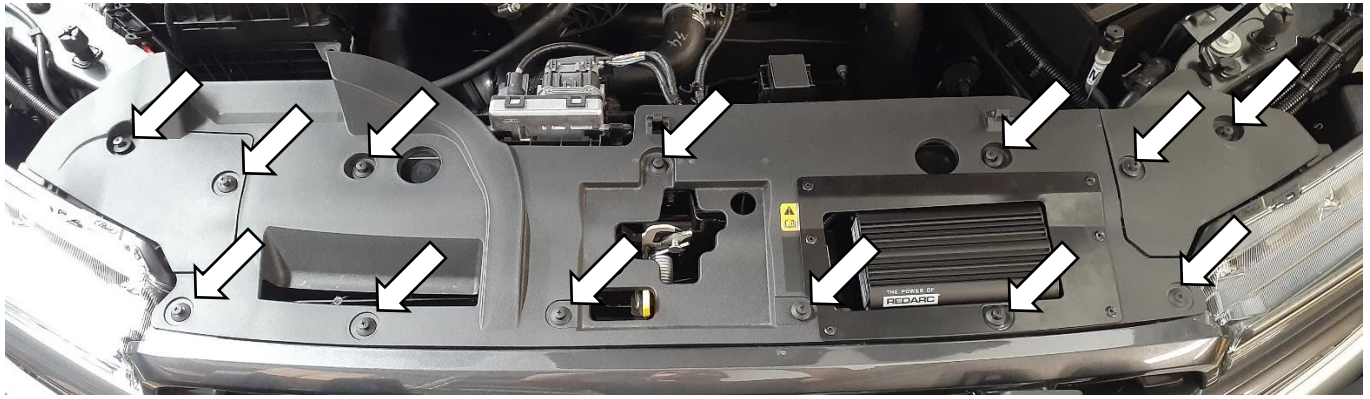
19. Locate the radar loom near the LHS of the vehicle's intercooler, and remove the cable from the first two clips.

This creates the necessary slack to reach the bull bar once fitted.



20. Unbolt front crash beam from chassis. Handle with care, the radar is sensitive and cannot be dropped.

21. Remove the front engine bay shroud by removing 13x scrivets.

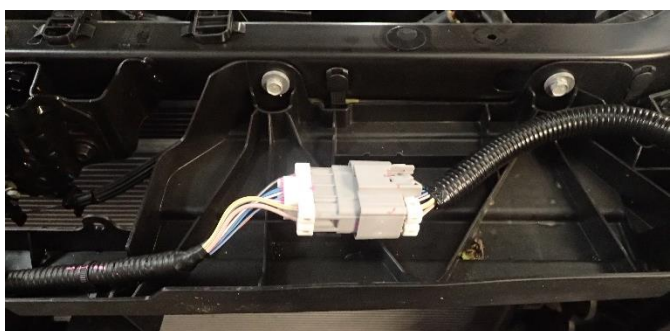


22. Remove the top two bolts which secure the grille.



23. Gently unclip and remove grille starting from the light fixtures and top of grille.

Set grille aside safely on a soft surface.

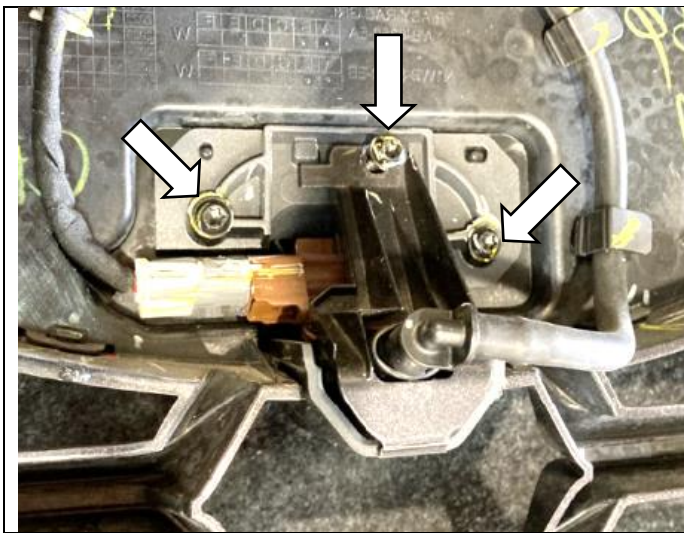


24. Above the grille, complete the following:
a) Disconnect the 20 way connector on front sensor harness by pressing the release and pulling.

If the vehicle is equipped with a front camera

- b) Disconnect coax camera cable.
- c) Disconnect camera washer line.

Remove all three items from vehicle for reuse later.

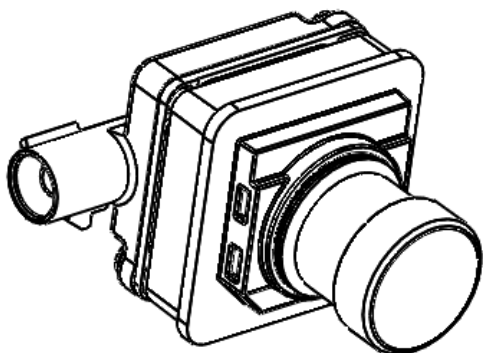


CAMERA EQUIPPED VEHICLES ONLY

Non camera equipped vehicles skip to step 32

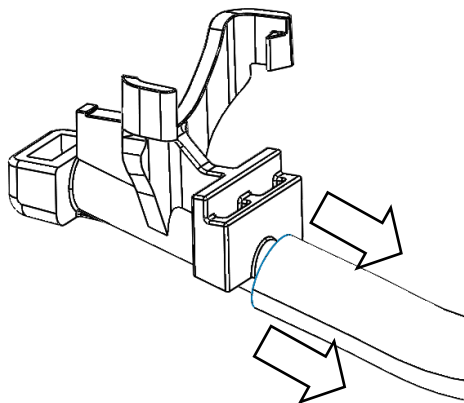
25. Place the grille face down on a soft surface to avoid damage.

Loosen the 3x Torx screws in order to open the camera housing.

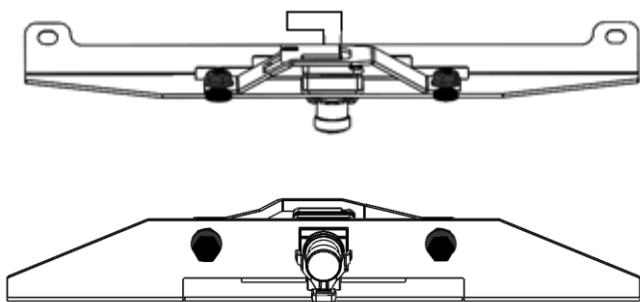


26. Carefully remove the camera from its housing, disconnecting the camera cable and the washer nozzle from the camera.

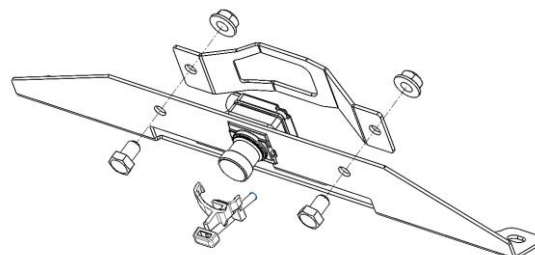
Set the camera aside safely.




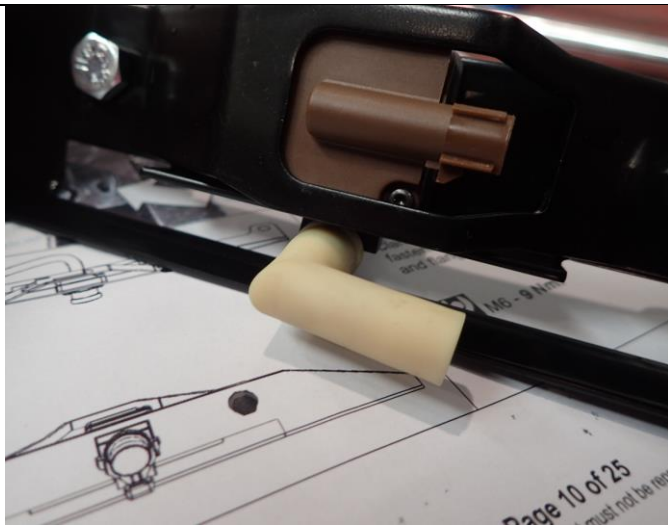
27. Remove the camera washer nozzle from the grille by removing the washer line from the back of the nozzle.



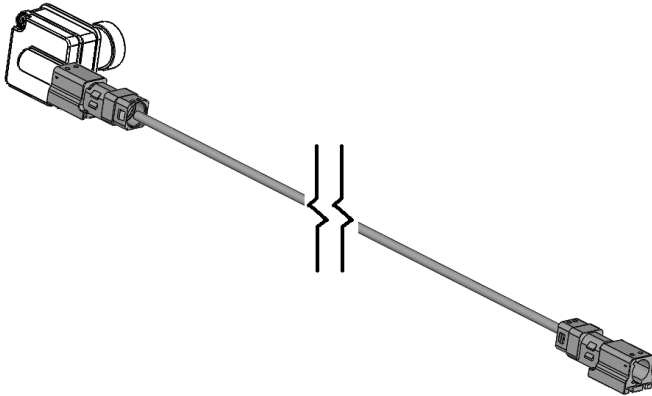
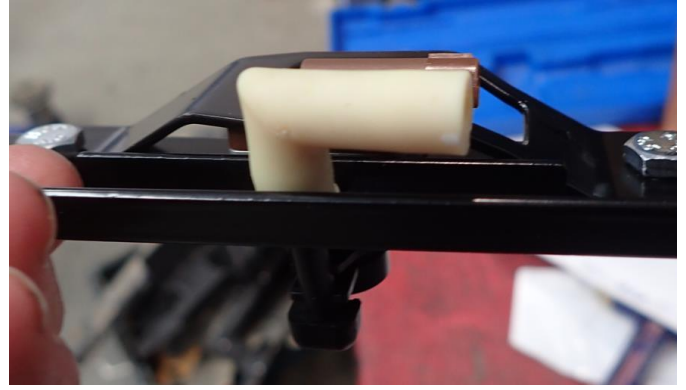
28. Assemble the camera module and washer nozzle into ARB brackets 3750987 and 3195389. Clamp the camera and nozzle together by fastening the brackets with two M6x10 bolts and flange nuts.



 M6 - 9 Nm.

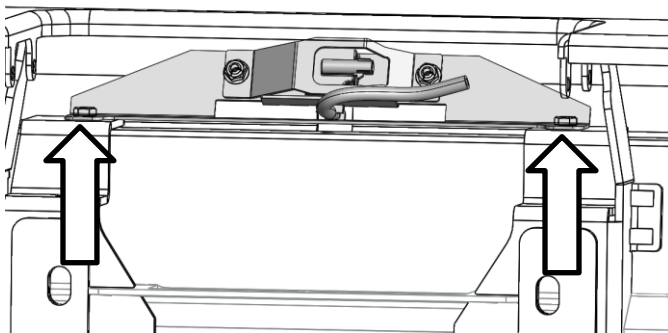


29. From the washer line previously removed, fit the white 90° elbow to the washer nozzle barb.




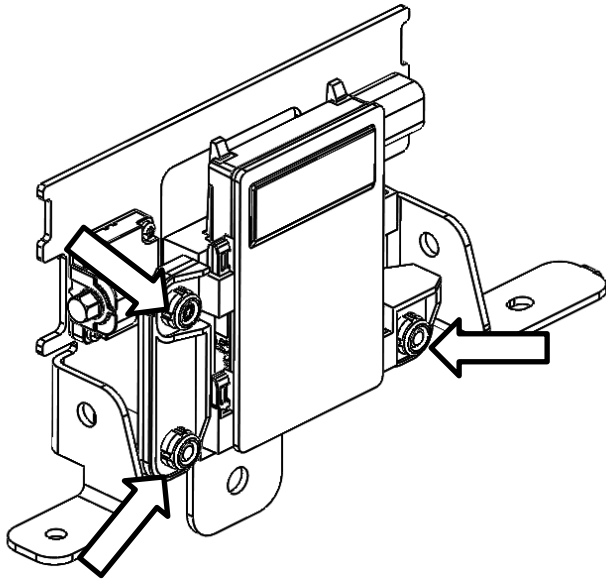
30. Connect camera coax extension loom to camera.

Connect original Ford washer line components and 500mm length of rubber hose (supplied in ARB kit) to 90° elbow fitted in previous step.

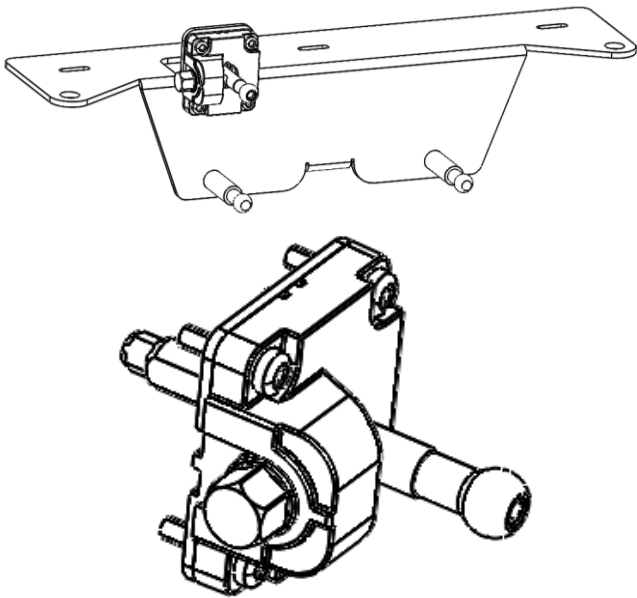


31. Fit camera bracket assembly to bar using 2x M6x20 bolts, M6x12 flat washer and M6 flange nuts.

 M6 - 9 Nm.

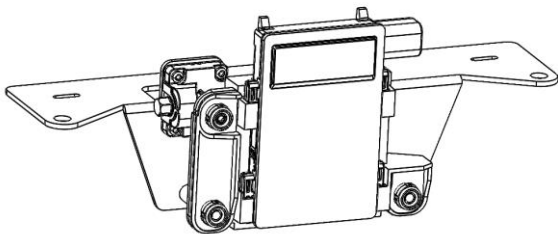


32. Gently unclip radar from ball point mounts and set aside in a safe place

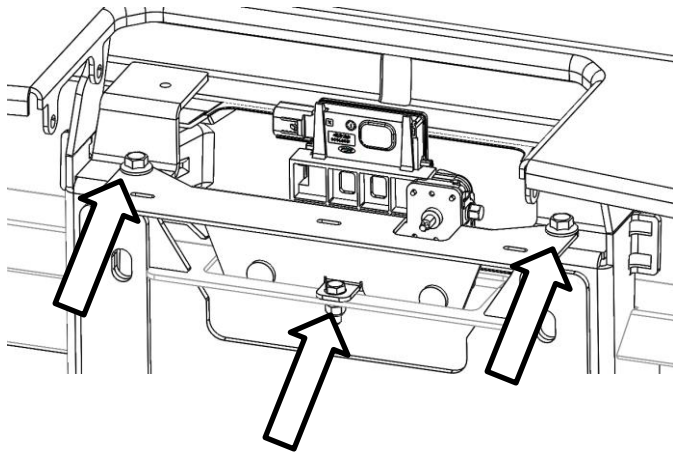


33. Remove adjustment mechanism from Ford radar bracket and assemble onto ARB bracket 3753232 as shown.

Reuse original hardware for reassembly
 4x Torx drive screws (T10)
 1x Torx drive stud (T20)




34. Reassemble radar onto ARB bracket 3753232 by clipping onto ball point mounts.




35. Using a pair of M8x20 black flange head bolts and M8 flange nuts, assemble radar and bracket onto bull bar winch cradle.

Fasten the lower return to the lower pan of the bull bar using an M6x20 hex bolt, washer and flange nut.

Torque to specification:

 M8 - 22 Nm.

 M6 - 9 Nm.

36. There are two harnesses supplied with this product; Engine Bay Harness 6821426 (IMAGE 1) & Cabin Harness 6821427 (IMAGE 2). Please study the layout of these harnesses and the connectors as these will be referenced throughout the harness install procedure.

IMAGE 1

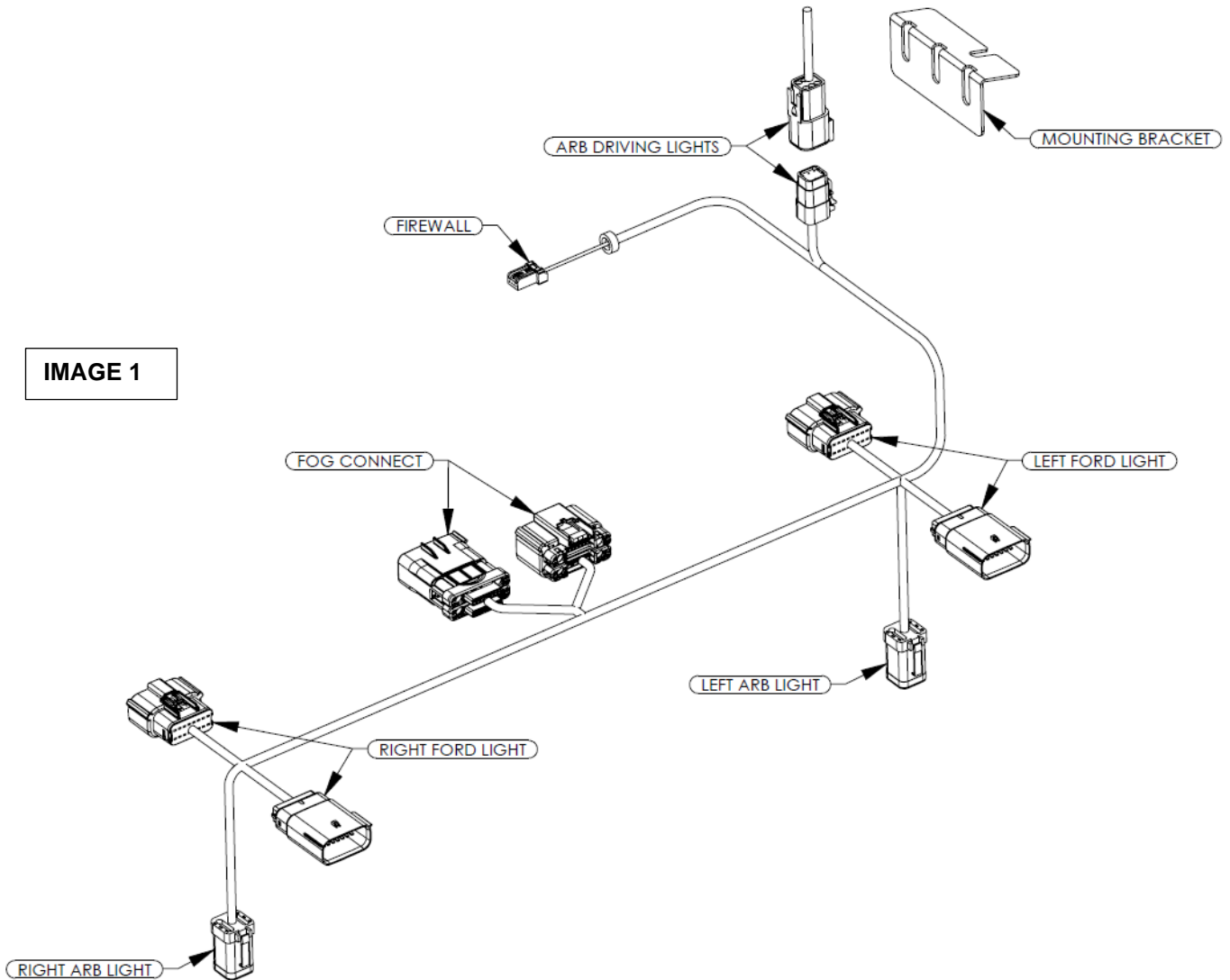
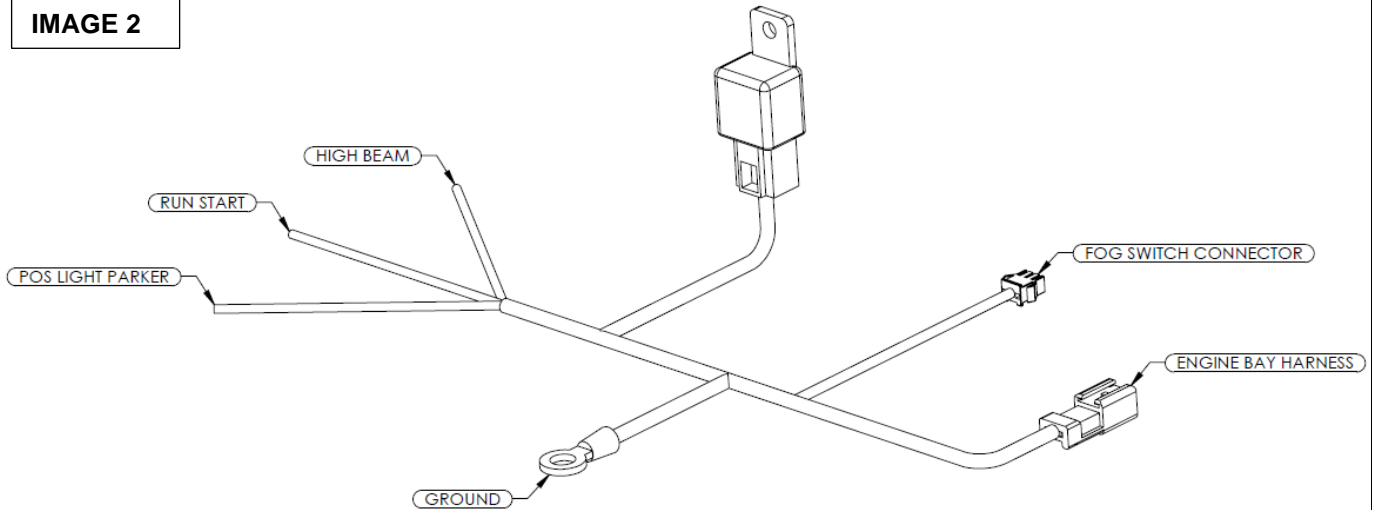


IMAGE 2



37. Disconnect the negative battery terminal from the battery.



VEHICLES NOT FOG LIGHT EQUIPPED ONLY

For vehicles not fitted with OEM fog lights, complete this STEP. Otherwise continue to next step.

38. Identify the engine bay harness and locate connectors labelled "FOG CONNECT".

Connect the two "FOG CONNECT" connectors together.

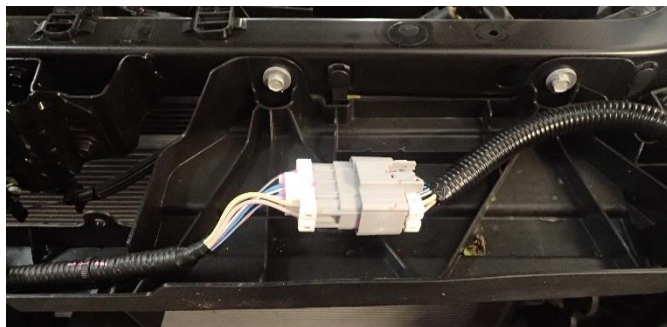


VEHICLES FOG LIGHT EQUIPPED ONLY

39. On the Engine Bay Harness, locate the connectors labelled "FOG CONNECT".

Connect the male "FOG CONNECTOR" into the mating vehicle 20-way connector.

Leave the female "FOG CONNECTOR" disconnected until bull bar is fitted to vehicle.





For vehicles *not* fitted with an ARB BATTERY TRAY, the harness is routed above the radiator cover panel.



For vehicles fitted with an ARB BATTERY TRAY, the harness is routed below the radiator cover panel.



ARB BATTERY TRAY VEHICLES ONLY.
Otherwise skip this step.

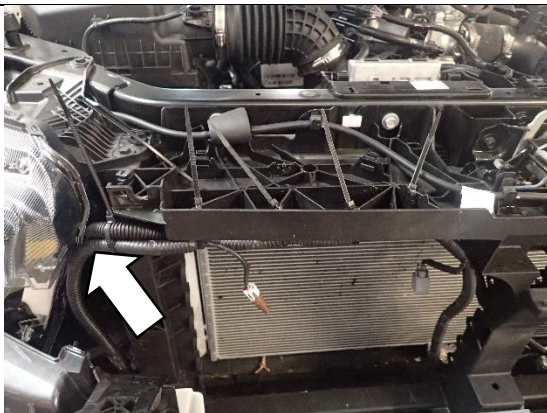
40. Remove cable ties securing the vehicle harness on top of the radiator trim panel.

Relocate the vehicle harness to beneath the radiator trim panel.

This harness will be secured in place in future STEPS.



41. locate the connectors labelled "RIGHT FORD LIGHT" and "RIGHT ARB LIGHT" ON THE Engine Bay Harness.



42. Route connectors and harness through the gap behind the right hand headlight and pull out above the headlight.



43. Disconnect the right hand vehicle headlight connector.

Pullout vehicle headlight connector to above the headlight



44. Connect the female connector labelled "RIGHT FORD LIGHT" with the vehicle headlight harness connector.



45. Connect the male connector labelled "RIGHT FORD LIGHT" into the vehicle headlight connector.

Route connector "RIGHT ARB LIGHT" down below vehicle headlight.

Secure loose cables behind headlight with cable ties. Ensure cables are not contacting any sharp or metal edges.



ARB BATTERY TRAY VEHICLES ONLY

For non battery tray vehicles, continue to STEP 48.

46. Pull excess harness length to front of radiator.

Position harness below radiator trim panel and secure with cable ties as per image.



ARB BATTERY TRAY VEHICLES ONLY

Otherwise skip this step.

47. Route harness to the passenger side of the vehicle, bundle harness beneath the radiator trim panel.

Secure harness bundle with cable ties.

Secure harness to the BCDC mounting bracket with two cable ties as shown.



48. Route remaining harness to left hand headlight.

For vehicles with battery tray, this should route through the gap between the headlight and front upright support panel as shown.

For vehicles without battery tray, the harness will route down from above the radiator trim panel.



49. Pull connectors labelled "LEFT FORD LIGHT" to above the left hand headlight.



50. Under the left hand front wheel arch, find the access window.

Using a screw driver, remove the three retaining scrivenets.

Remove the access window panel to gain access to the left hand vehicle headlight connector.



51. Reaching from above the headlight, press the vehicle connector release. While pressing, insert hand into access window and pull connector out from headlight.

Pull connector with vehicle harness to above the headlight.



52. Connect the female connector labelled "LEFT FORD LIGHT" with the vehicle headlight harness connector.



53. Connect the male connector labelled "LEFT FORD LIGHT" into the vehicle headlight connector. Again, use the wheel arch access window to assist.

Route connector "LEFT ARB LIGHT" down below vehicle headlight.

Secure loose cables behind headlight with cable ties. Ensure cables are not contacting any sharp or metal edges.



54. Replace wheel arch window panel.



55. Route remaining harness above headlight into the quarter panel cavity. Follow the left hand bonnet release cable and secure with cable ties.



56. Inside the left hand side foot well, find and remove the christmas tree plug as shown.

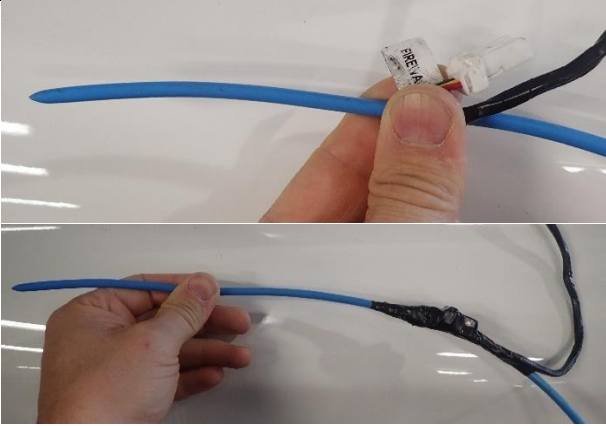




A screw driver may assist to lever the plug out.

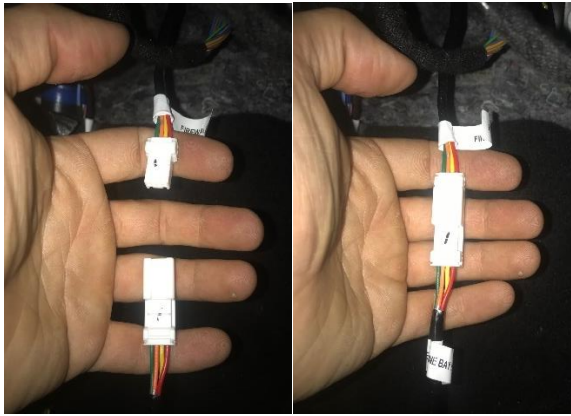


57. Lift the rubber seal surrounding the left hand side sill panel.

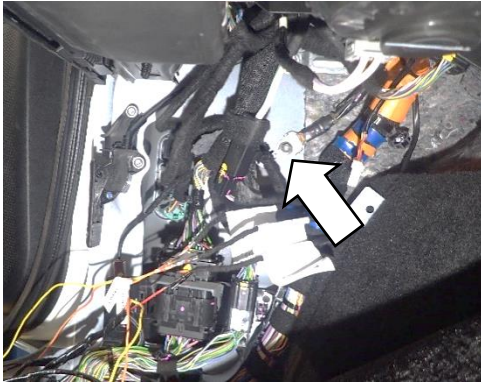


58. Remove door sill panel as shown. This can be removed by lifting the sill panel and then rotating up.

	<p>59. On the Engine Bay Harness, find connector labelled “FIREWALL”.</p> <p>Find a short length of plastic pipe or similar.</p> <p>On the end of the pipe, cut a sharp point.</p> <p>Join the “FIREWALL” connector to the pipe with electrical tape. Ensure the tape removes all sharp edges to ensure the taped connector can pass through the firewall grommet with ease.</p>
	<p>60. On the engine bay side of the firewall, locate the firewall grommet behind the left hand side fuse box.</p>
	<p>61. With a sharp blade, cut and remove the nipple from the firewall grommet.</p> <p>Spray the pipe and taped connector with lubricant.</p> <p>Feed pipe through firewall grommet nipple.</p>
	<p>62. From inside the vehicle, pull the pipe and “FIREWALL” connector through the firewall grommet.</p> <p>Remove tape and pipe leaving the “FIREWALL” connector inside the vehicle.</p> <p>Secure the harness in the engine bay with cable ties.</p>
	<p>63. On the Cabin Harness identify the connector labelled “ENGINE BAY HARNESS”.</p>



64. On the cabin harness, join connector labelled “ENGINE BAY HARNESS” with Engine Bay Harness connector labelled “FIREWALL”.



65. In the left hand side footwell, find existing ground point.

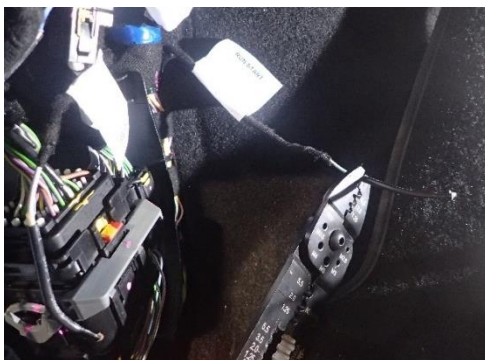
Remove ground bolt with 8mm socket.



66. Identify ring terminal labelled “GROUND” on the cabin harness.

Install ring terminal onto existing ground point and fasten with original bolt.

 **FOOTWELL GROUND - 12 Nm.**



67. Inside the left hand side footwell, on the vehicle harness, find the wire labelled “RUN START”.

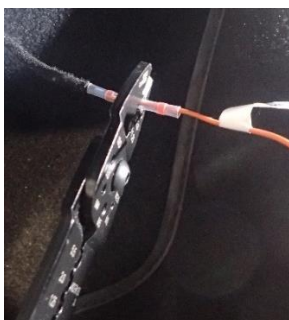
Cut and strip this wire in preparation for joining with the ARB harness.

On some vehicle variants, the wire does not include a label. In this case locate the green with white stripe wire. Confirm this wire is 12VDC with ignition ON, and 0VDC with ignition OFF.



68. Using a crimp joiner supplied in the ARB harness kit join the vehicle wire labelled “RUN START” with the Cabin Harness wire labelled “RUN START”.

Using a heat gun, apply heat to secure and seal the join.



69. Inside the left hand side footwell, on the vehicle harness, find the wire labelled “POS LIGHT”.

Cut and strip this wire in preparation for joining with the ARB harness.

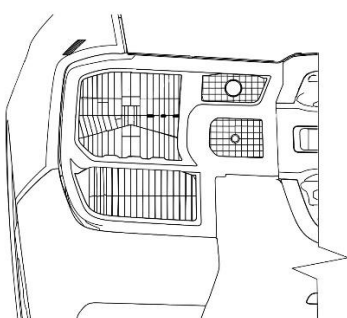
70. Using a crimp joiner supplied in the ARB harness kit join the vehicle wire labelled “POS LIGHT” with the Cabin Harness wire labelled “POS LIGHT PARKER LEVEL 1, 2 AND 3”.

Using a heat gun, apply heat to secure and seal the join.

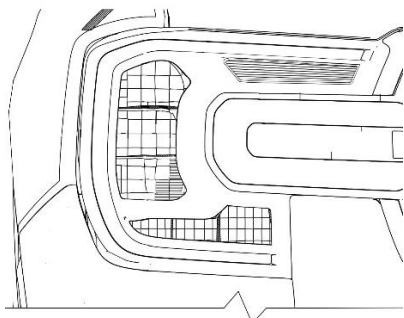
NOTE FOR LEVEL 1 HEADLAMPS:

For early looms with wire labelled “POS LIGHT PARKER” (without the note Level 1, 2 & 3), DO NOT complete Steps 69 to 70, DO NOT connect “POS LIGHT” wire to the ARB loom.

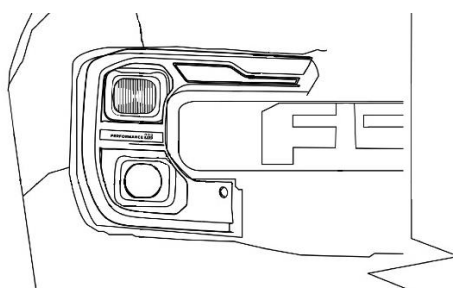
71. Review the vehicle headlight appearance and identify the vehicle headlight LEVEL, see images below.



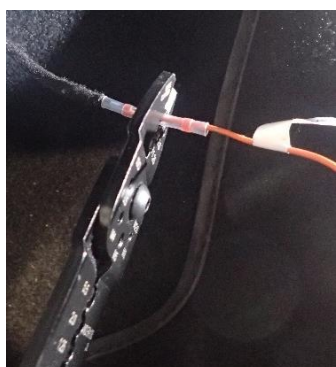
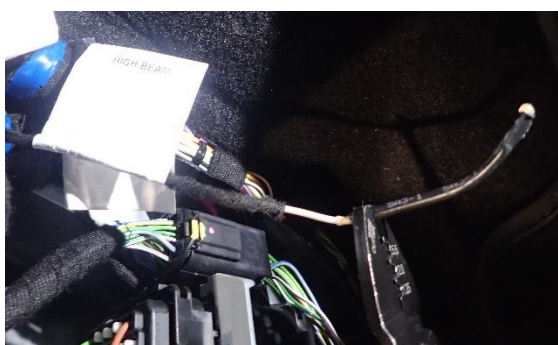
LEVEL 1



LEVEL 2



LEVEL 3



LEVEL 2 HEADLIGHT (DRIVING LIGHTS)

72. Inside the left hand side footwell, on the vehicle harness, find the wire labelled “HIGH BEAM”.

Cut and strip this wire in preparation for joining with the ARB harness.

73. Using a crimp joiner supplied in the ARB harness kit join the vehicle wire labelled “HIGH BEAM” with the Cabin Harness wire labelled “HIGH BEAM”.

Using a heat gun, apply heat to secure and seal the join.

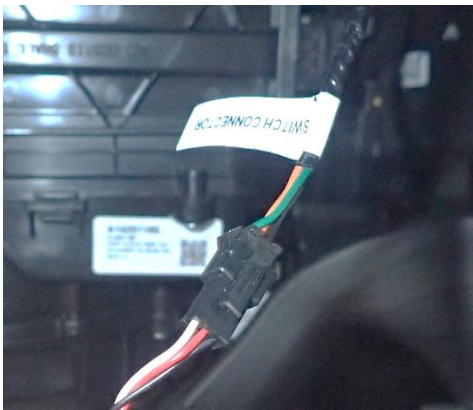


NON-OEM FOG LIGHTS ONLY

Factory equipped foglights Skip to STEP 85.

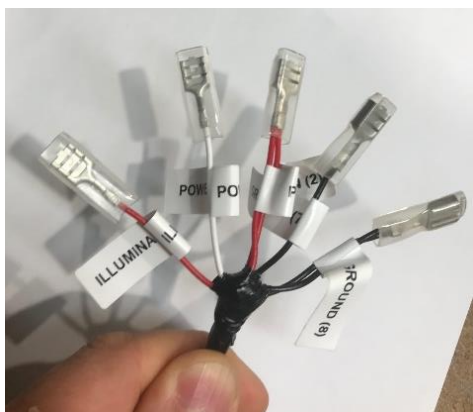
When the vehicle does not have an OEM fog light button, ARB offer two options for switching the ARB fog lights ON/OFF (both sold separately)

- i. ARB universal switch harness 6821430, Continue to next step. (Please note, this does not include a switch.)
- ii. ARB mouse switch 6821440, skip to step 76.



74. Identify the connector labelled "FOG SWITCH CONNECTOR" on the cabin harness.

Remove the tape and connect with the mating connector on harness 6821430.



75. Route harness 6821430 to location where switch is mounted.

Connect all spade terminals with appropriate switch terminals as per below:

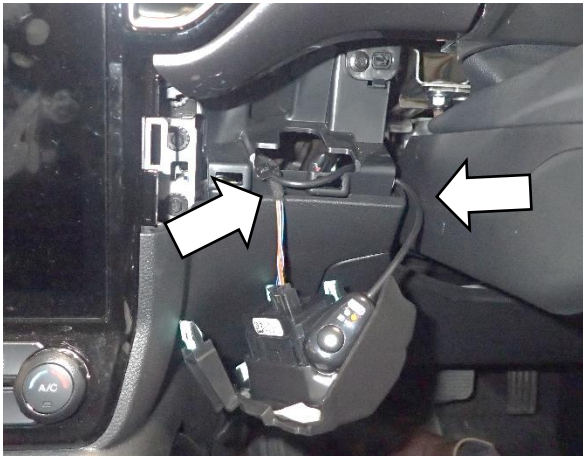
- I. GROUND (8) – illumination ground 1
 - II. GROUND (7) – illumination ground 2
 - III. POWER IN (2) – from parker circuit supply
 - IV. POWER OUT (3) – to fog lights
 - V. ILLUMINATION (6) – from parker circuit supply
- Continue to STEP 85.



ARB MOUSE SWITCH 6821440 ONLY

76. On the drivers side of the vehicle, remove the left hand switch panel.

Pull from the base of the panel as shown.



77. Route the harness and connector through the left side of the steering column.

Cable tie to the existing vehicle harness leaving slack in the harness for mounting below the switch panel.



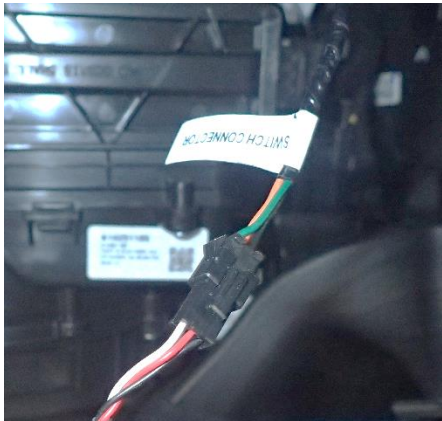
78. Route harness and connector toward the front of the vehicle. Secure with cable ties ensuring the harness is not contacting any sharp or hot objects.

Feed harness and connector behind the vehicle centre console.



79. Remove vehicle glove compartment.

To remove, the two clips on each side of the glove compartment must be released as shown.



80. From the glovebox side of the vehicle, reach behind the vehicle centre console and grab hold of the harness and connector. Pull through connector.

Connect 6821440 with mating connector on Cabin Harness labelled "FOG SWITCH CONNECTOR".



81. Behind the glovebox compartment, route Cabin Harness on existing vehicle harness and secure with cable ties.



82. From the steering column side of the vehicle, reinstall the vehicle switch panel.

Install mouse switch below the switch panel as shown.

IMPORTANT:

use primer on the dash surface before adhesion.



83. In the left hand side footwell, bundle all cables and relay to existing vehicle harness.

Secure with cable ties.



84. Refit the passenger side footwell panel. Press at various locations to ensure all clips are engaged.

Refit the footwell christmas tree plug.

Reinstall the rubber seal. Press at various locations to ensure all is secure.

Refit glove box into vehicle.



INSTRUCTION FOR DRIVING LIGHTS INSTALLATION ONLY.

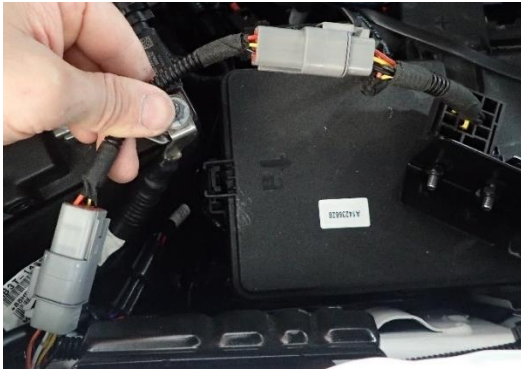
This harness includes a 6-way connector for driving light installation. The 6-way connector labelled ARB DRIVING LIGHTS has two fitment options:

Fitment with ARB SOLIS driving lights. This requires harness SJBHARNFRD (sold separately). Continue to next step.
Fitment with all other driving lights. (sold separately). See STEP 88.



85. The SJBHARNFRD harness is supplied with three patch looms as shown. Each patch loom is labelled accordingly. Select the patch loom required for the vehicle headlight LEVEL as per below.

- I. "UPFITTER" For vehicle fitted with Upfitted switch panel.
- II. "LEVEL2, LEVEL3" For vehicles with LEVEL 2 or LEVEL 3 headlights.
- III. "LEVEL1" For vehicles with LEVEL 1 headlights.



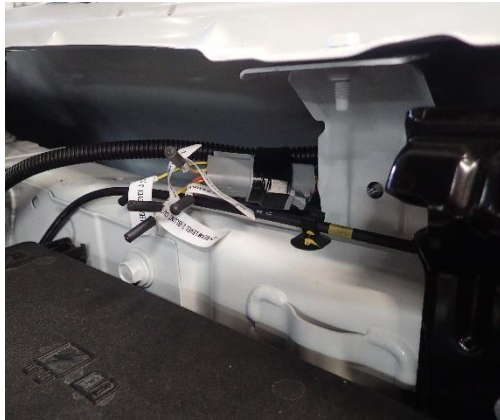
86. Remove the flylead connector labelled "DRIVING LIGHT CONNECTOR" from the Engine Bay Harness. Discard flylead connector.

This should be located above the passenger side wheel arch, adjacent to the fuse box.

Install the correct patch loom between the SJBHARNFRD harness connector and the Engine Bay Harness connector labelled "DRIVING LIGHT CONNECTOR"



87. Complete the instructions provided with the SJBHARNFRD harness.



ALL OTHER DRIVING LIGHTS INSTALLATION

88. Locate the flylead connector labelled “DRIVING LIGHT CONNECTOR” from the Engine Bay Harness.

The “DRIVING LIGHT CONNECTOR” flylead has various wires with labels attached. Select the wire required for the vehicle headlight LEVEL and driving light harness requirements as per below.

- I. POS LIGHT PARKER. For driving lights which require a parker light signal +12VDC.
- II. HIGH BEAM LEVEL 1. High beam signal for vehicles with LEVEL 1 headlights.
- III. HIGH BEAM LEVEL 2. High beam signal for vehicles with LEVEL 2 headlights.
- IV. HIGH BEAM LEVEL 3. High beam signal for vehicles with LEVEL 3 headlights.
- V. RUN START IGNITION. For driving lights which require an ignition signal +12VDC.

Strip the required wires on the “DRIVING LIGHT CONNECTOR” flylead and connect with the driving light harness (supplied separately). Use the supplied crimp joiners to ensure a secure join.

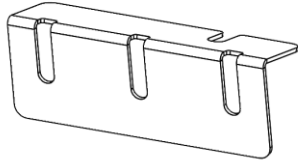


89. Reconnect the negative battery terminal to the battery.

90. Test and validate all light features as per below. (temporarily connect ARB fog cluster)

Check both vehicle headlights and ARB light clusters for correct operation.

- I. DRL. Note, the ARB DRL is triggered with vehicle ignition and may perform differently to the vehicle DRL.
- II. PARKER.
- III. FOG. For non OEM fog lights, check fog switch functionality with vehicle Parkers ON.
- IV. LOW BEAM. Vehicle headlight only.
- V. HIGH BEAM. Vehicle headlight and driving lights (if fitted) only.
- VI. LEFT INDICATOR & RIGHT INDICATOR.



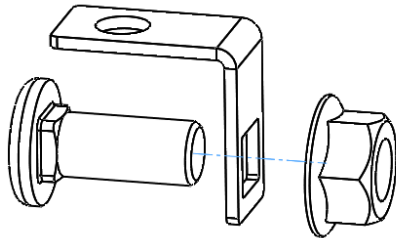
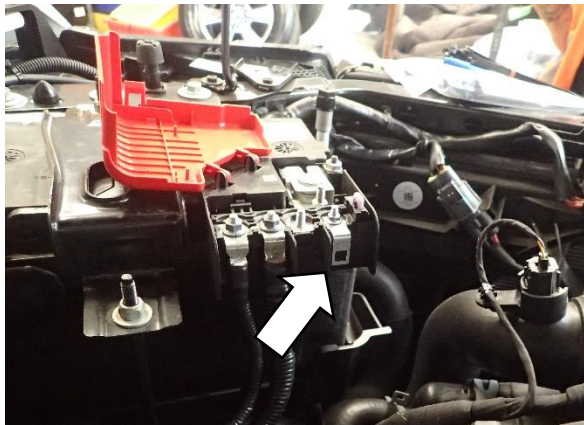
For future installation of accessories, supplied with this kit is a RELAY & FUSE MOUNTING BRACKET.

91. On the passenger quarter panel, locate the panel bolt securing the quarter panel together. Loosen this bolt.

Find the MOUNTING BRACKET, slide mounting bracket between metal panels on the quarter panel.

Tighten the bolt, securing the MOUNTING BRACKET between the metal panels.

 QTR PANEL HARDWARE - **9 Nm.**



For winch and dual battery installation, supplied with this kit is a BUSBAR POSITIVE.


92. On the battery positive terminal, remove one of the terminal nuts. If no terminal nuts are fitted, source M5 flange nut to suit terminal stud.

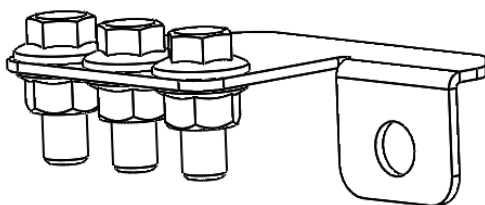
Install the BUSBAR POSITIVE onto the vacant terminal stud.

Refit flange nut securing the BUSBAR POSITIVE.

Note, this kit includes a coach bolt and nut. These are used for the BUSBAR POSITIVE for ring terminal installation.

 +VE BATTERY STUD – **5.4 Nm.**

 M8 - **22 Nm.**




For future installation of accessories, supplied with this kit is a BUSBAR EARTH and M8 hardware.

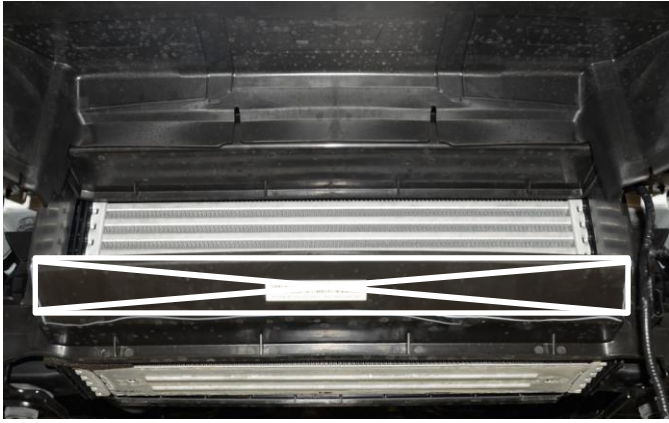
93. On the body earth point, remove the bolt securing the earth cable to the body.

Remove the ring terminal from the earth point and install the BUSBAR EARTH beneath the earth ring terminal.

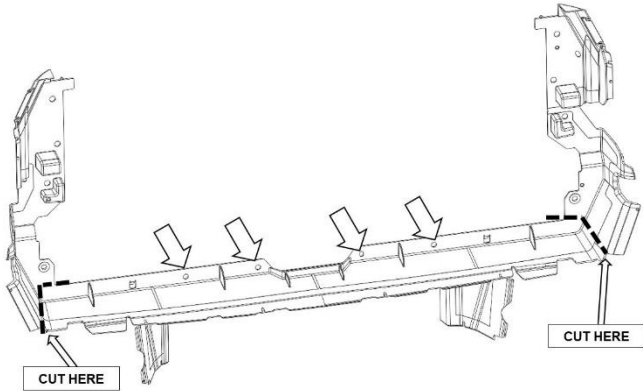
Refit the ring terminal and secure with original bolt.

 BATTERY/BODY GROUND - **20 Nm.**

 M8 - **22 Nm.**



94. Using an oscillating multitool, remove the lower return on the intercooler shroud as shown. (50mm x 480mm)

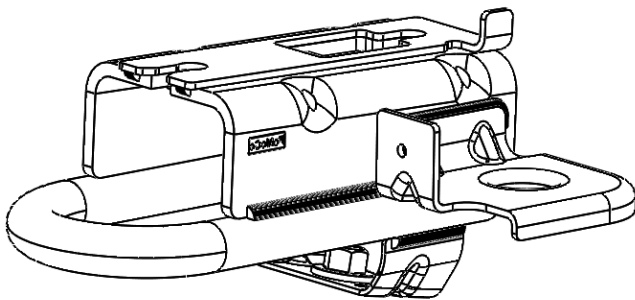
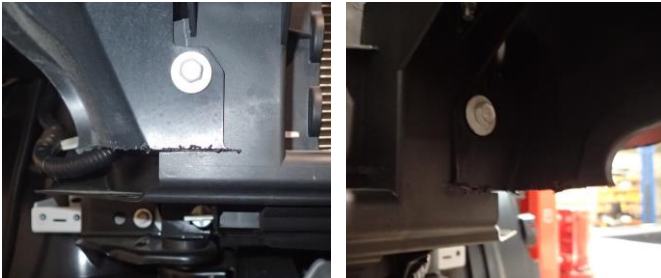
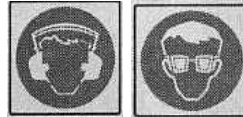


FOR WINCH INSTALLATION ONLY

95. For Winch installation, the horizontal section of rubber radiator shroud needs to be removed.

Using an oscillating multitool, cut and remove as shown. This can be performed on the vehicle.

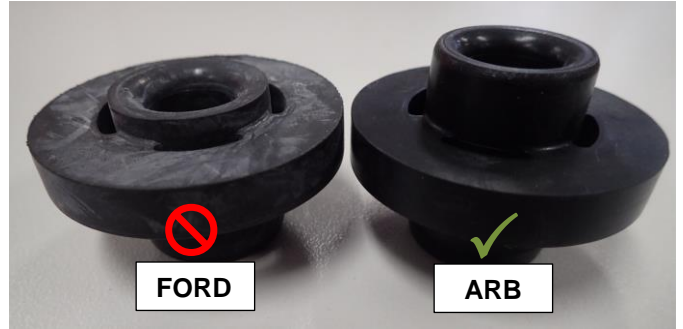
4x Scrivets will also need to be removed.



96. Using a transmission jack or similar, support the intercooler before removing both Ford tow points.



97. If you are **not** fitting an ARB recovery point, replace the two rubber isolators on the bottom of the intercooler with the 8mm longer ARB variants supplied.




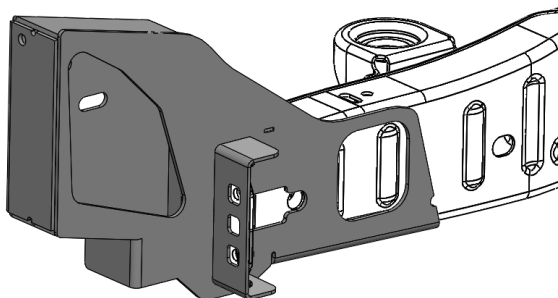
98. Remove lower bumper retaining brackets from both sides and discard.



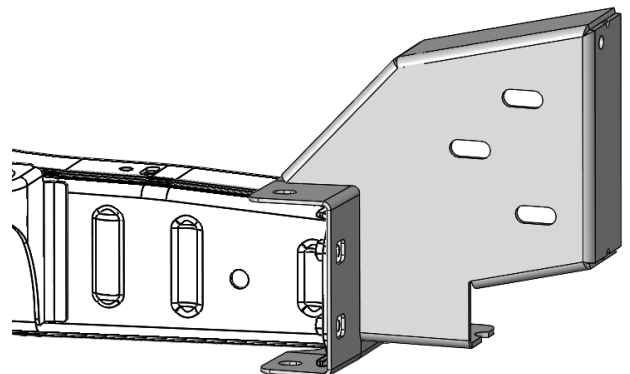
99. Unbolt horn retaining bracket and discard. Fasten horns directly onto body in order to clear wing underpanel.

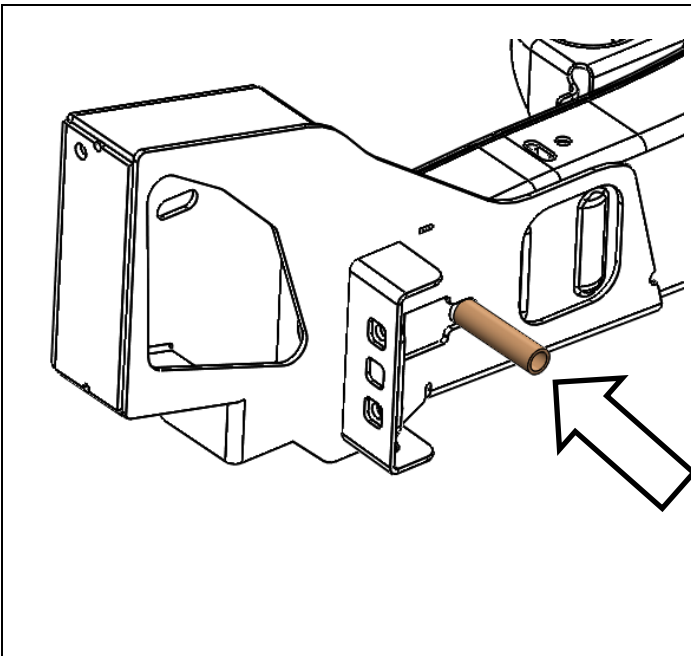


 M6 - 9 Nm.



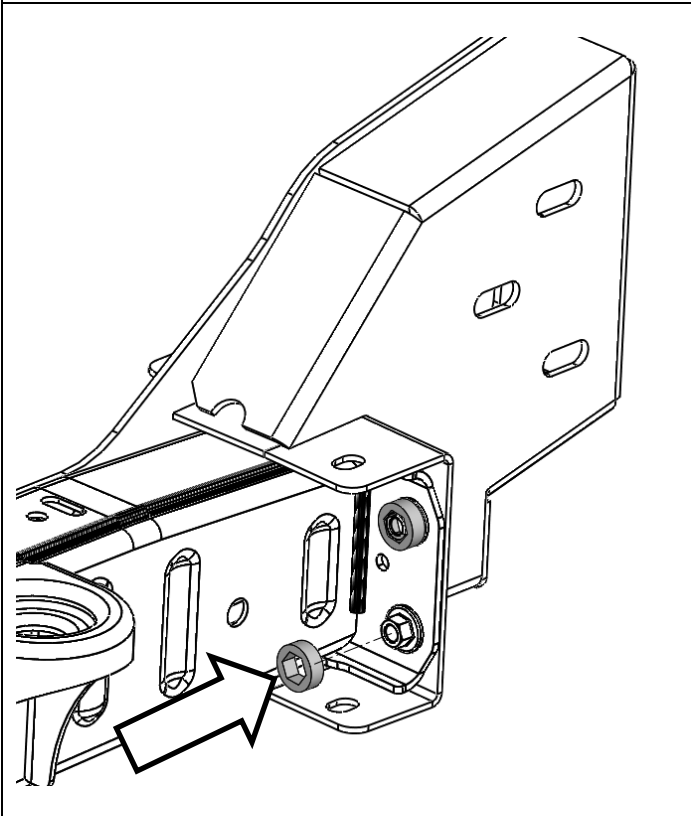
100. Loosely assemble the RHS bull bar mount onto the RHS chassis rail as shown.



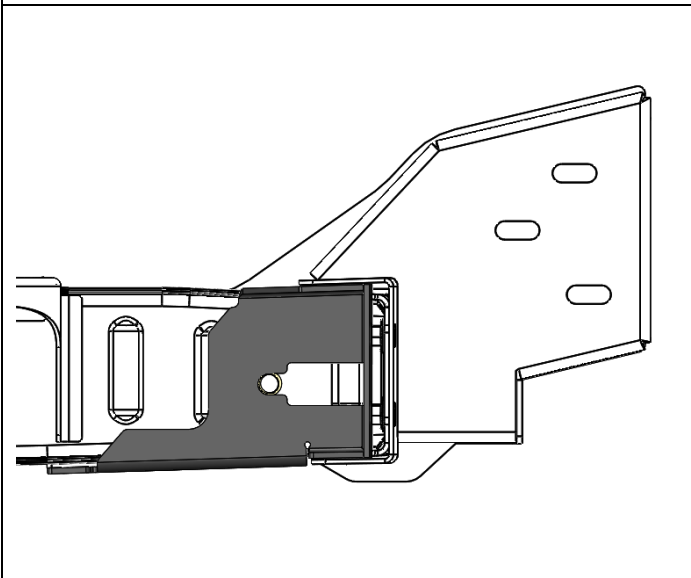
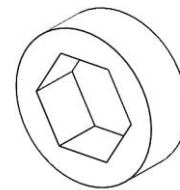


101. Carefully assemble the supplied crush tube into the chassis through the mounting bracket from the inside face of the chassis.

Do not push completely home, leave 15mm sitting out to prevent falling into the chassis and to help position the mounting bracket.

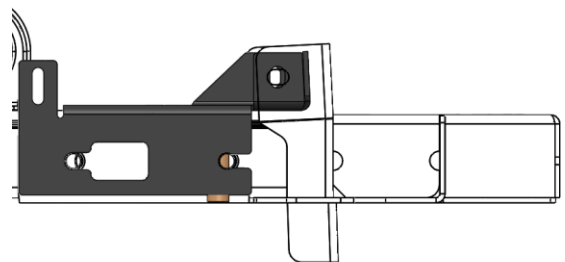


102. Assemble two 8mm thick packers onto the outside chassis weld nuts as shown.

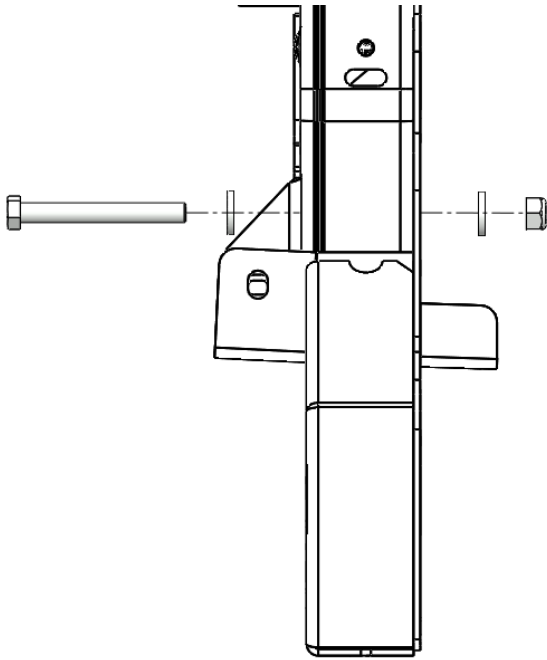


103. Loosely assemble the RHS chassis bracket onto the outboard side of the chassis.

Make sure the lower return is below the bull bar mount fitted in step 100.



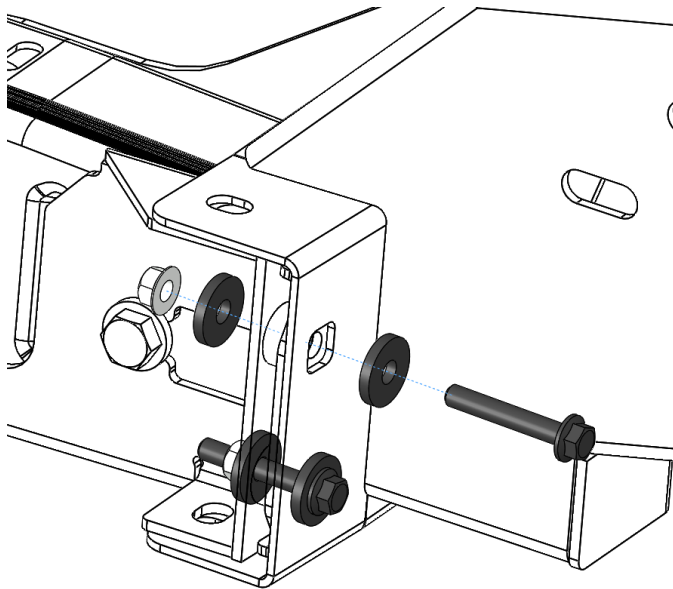
VIEW FROM UNDERNEATH



104. Loosely assemble an M12x100 hex head bolt, two M12x26x4 hardened washers & an M12 nyloc nut through the crush tube, both brackets and chassis.

Do not fully tighten yet.

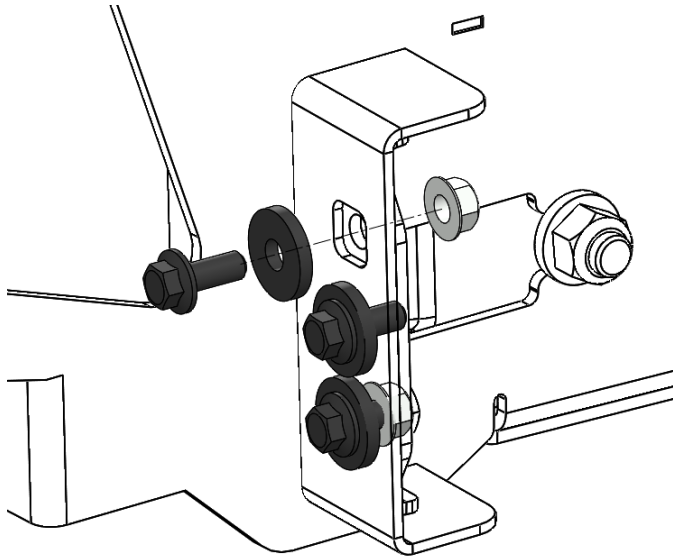
IF FITTING RECOVERY POINTS 2480060 / 2480070 REFER TO FITTING INSTRUCTION 37800142 AT THIS POINT – WITH RECOVERY POINTS FITTED CONTINUE FROM STEP 119



105. Loosely assemble two M8x50 flange bolts and two M8x26x4 hardened washers into the two captive weld nuts on the outboard side of the chassis as shown.

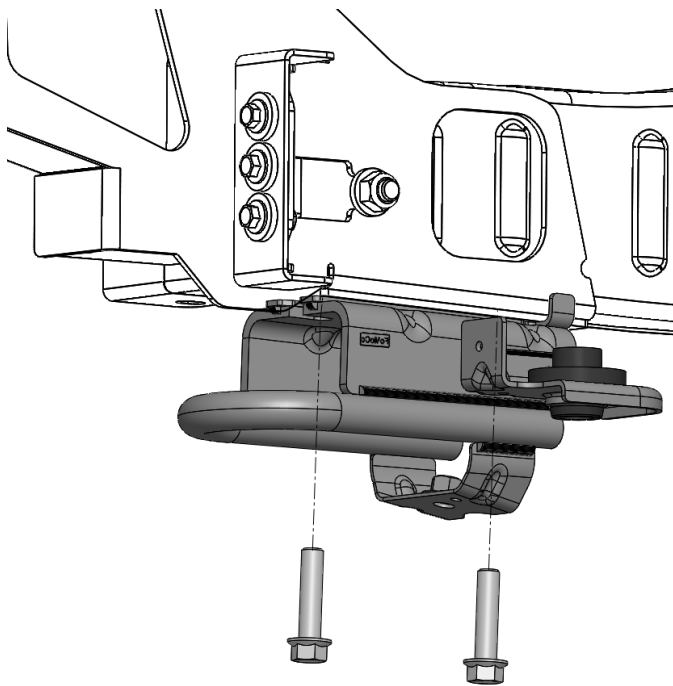
106. Loosely assembly two M8 flange nuts and two M8x26x4 hardened washers onto the flange bolts assembled in previous step.

DO NOT TIGHTEN YET

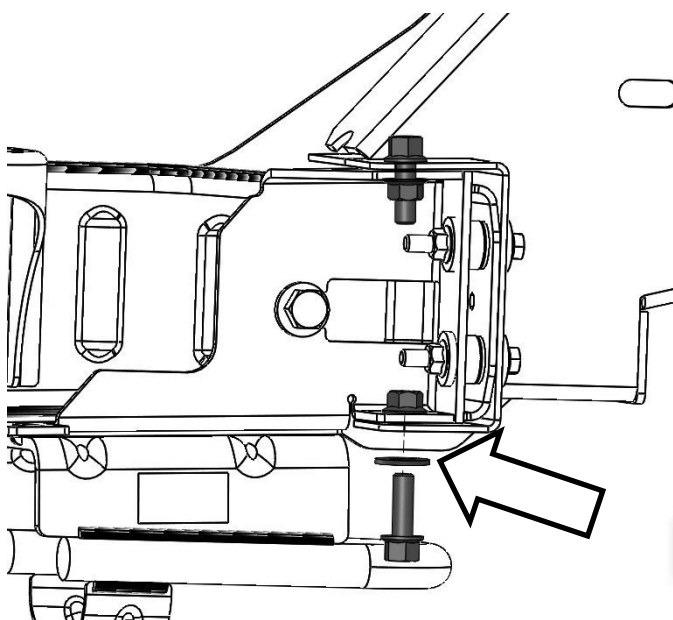


107. On the inboard side of the chassis, loosely assemble one M8x20 flange bolt and M8x26x4 hardened washer into the captive weld nut in the middle position.
108. Assemble two M8x20 flange bolts, M8x26x4 hardened washers and M8 flange nuts into the top and bottom positions shown.

DO NOT TIGHTEN YET

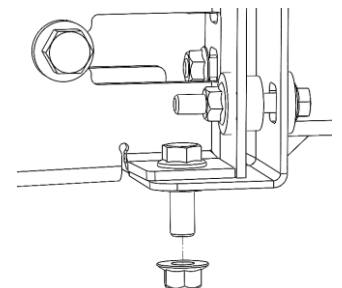


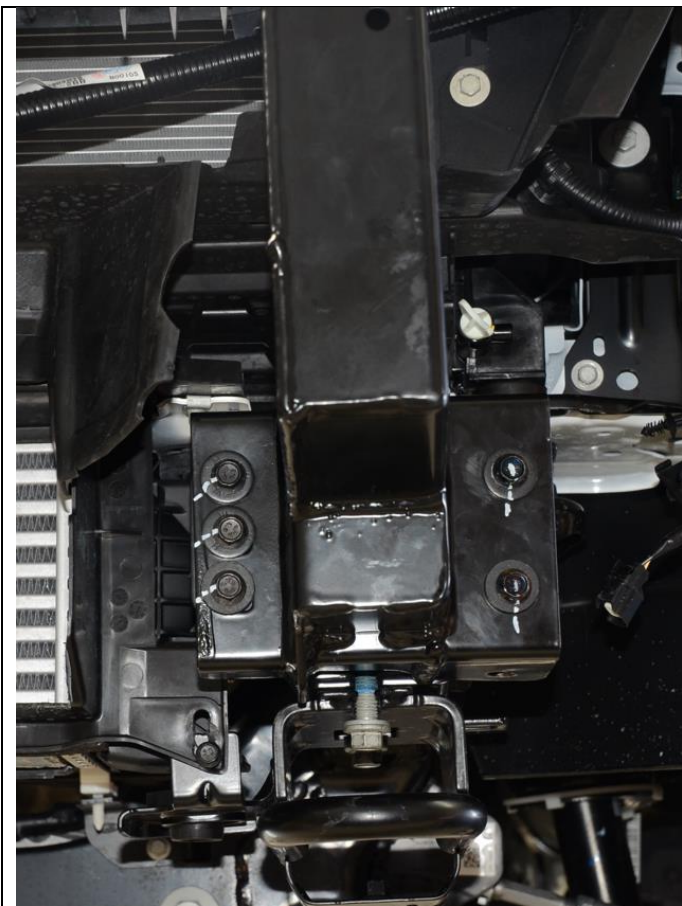
109. Loosely assemble tow point removed in step 96 with two M12x50 Flange Head bolts per side. Ensure that rubber intercooler isolator seats into aperture.



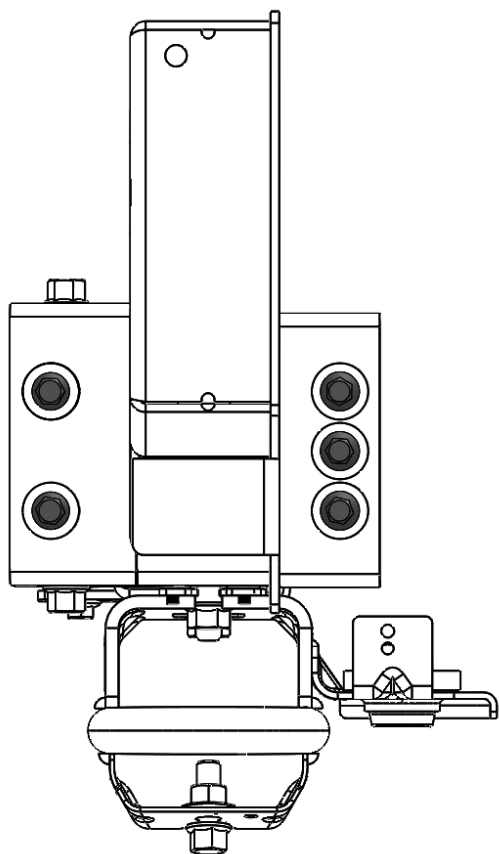
110. Loosely assemble two M10x30 flange head bolts and flange nuts into top and bottom mounting brackets as shown, fitting one M10x22x2 flat washer with the lower bolt as shown.

Alternatively, if the thread of the lower M10 bolt contacts the M8 bolt above, invert the M10 bolt and assemble from the top down.




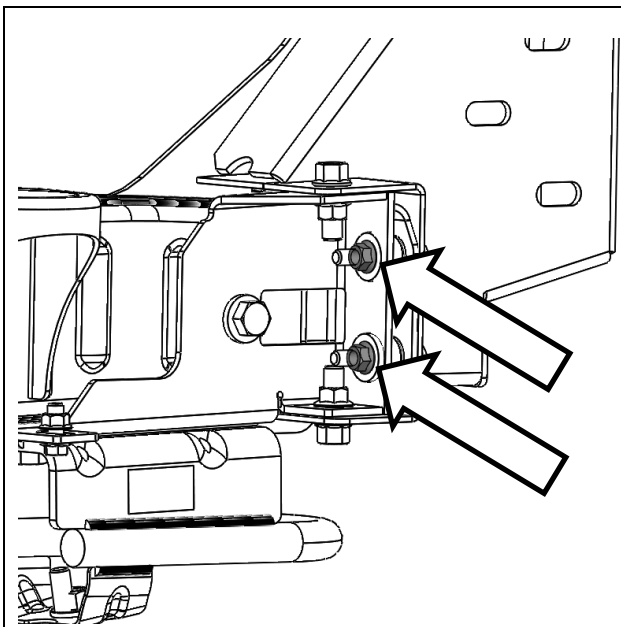


111. REPEAT STEPS 100-110 FOR LHS.




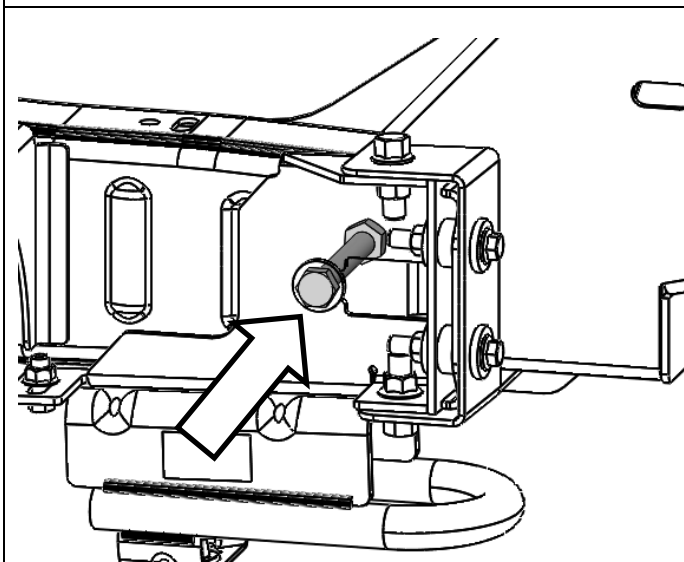
112. Tension M8 Flange bolts on the front of the mount to torque specified.

 M8 - 22 Nm.



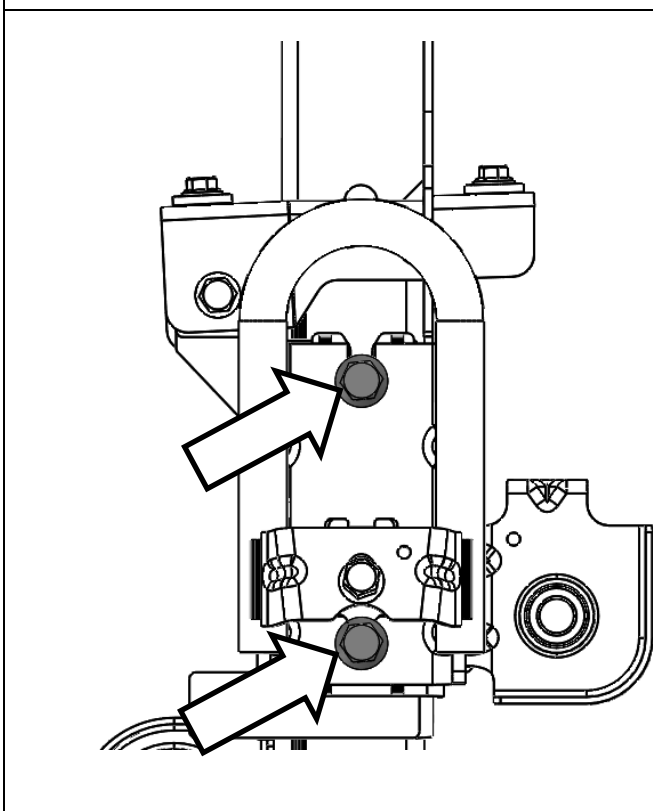
113. Tension M8 Flange nuts behind chassis bracket, ensure flange bolts don't undo.

 M8 - 22 Nm.



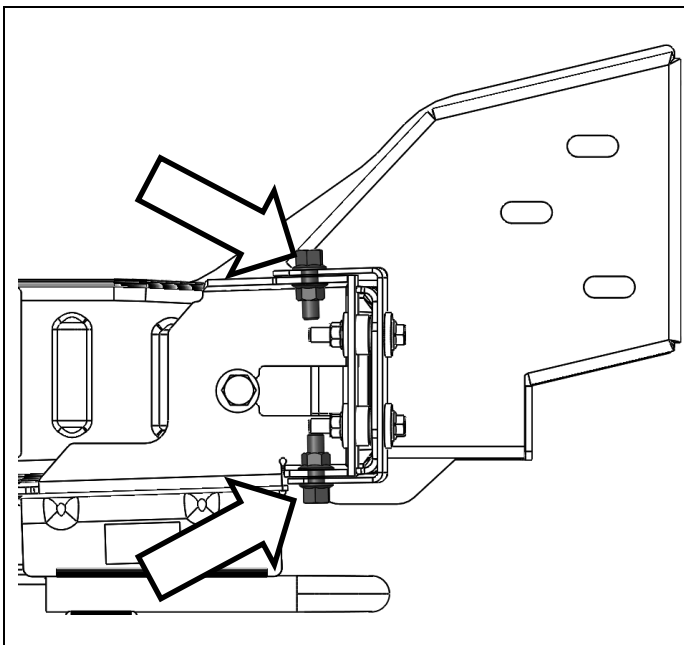
114. Tension M12x100 PC10.9 bolt running through the chassis.

 M12 PC10.9 - 92 Nm.




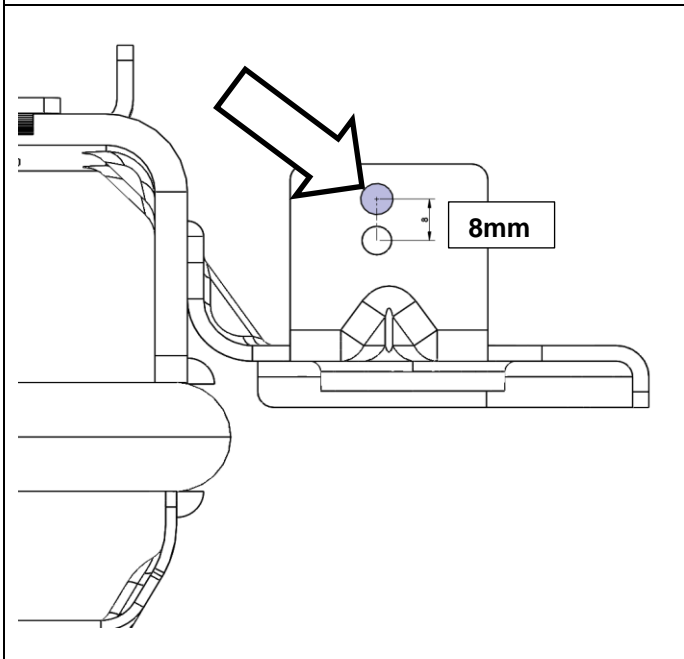
115. Tension M12x50 Flange bolts.

 M12 PC10.9 - 92 Nm.



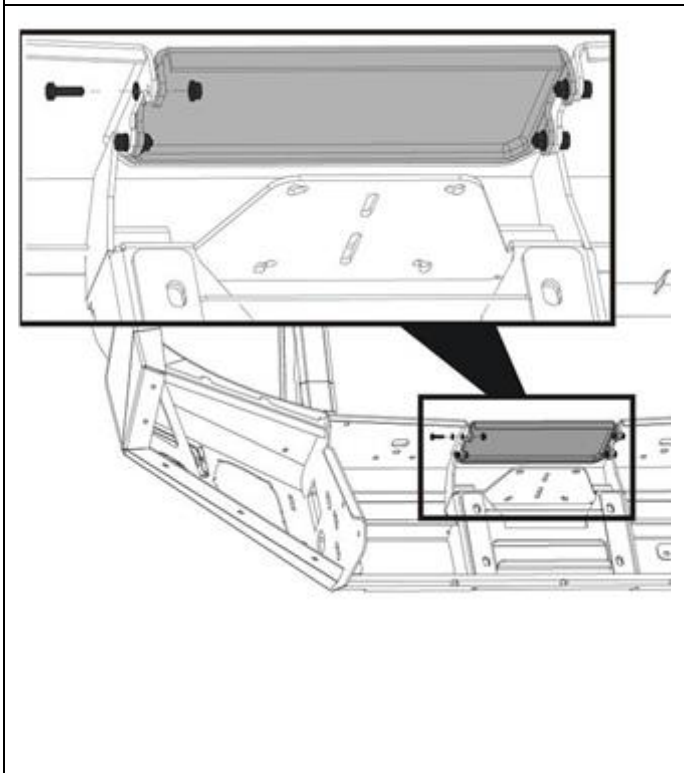
116. Tension M10 flange bolts top and bottom locations.

 M10 - 44 Nm.



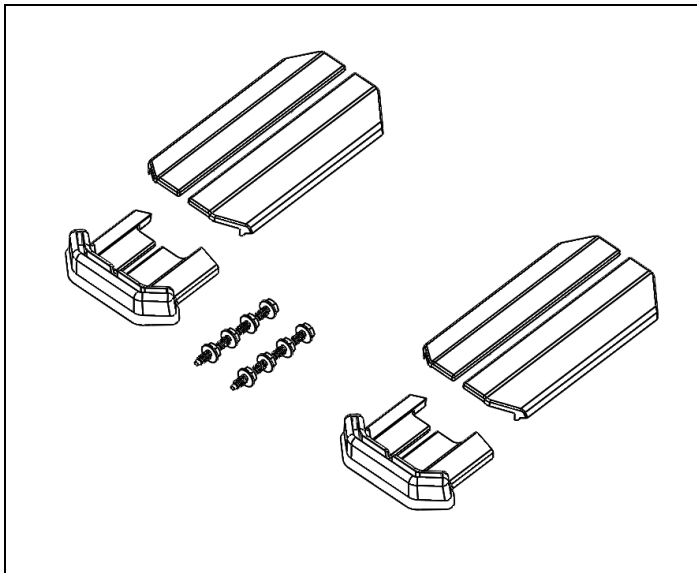
117. Measure, mark and drill a $\text{\O}6\text{mm}$ hole in the lower intercooler brackets, 8mm above the original hole.

118. Fasten intercooler shroud to lower bracket using hole drilled in previous step and M6x 20 bolt, M6x12 washer and nyloc nut.

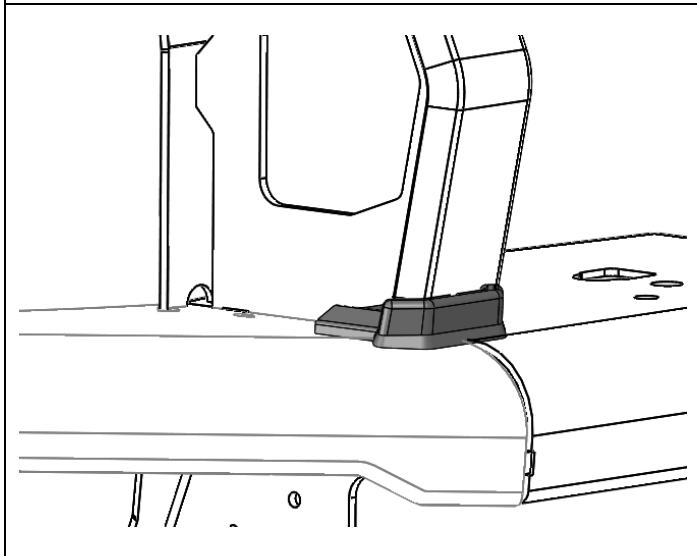


119. If fitting a winch refer to instruction 3789883 supplied with winch fitting kit 3540240.
If not fitting a winch, assemble the winch cover panel to the bar using four M6 x 20 hex bolts, 12mm flat washers and nyloc nuts.

 M6 - 9 Nm.

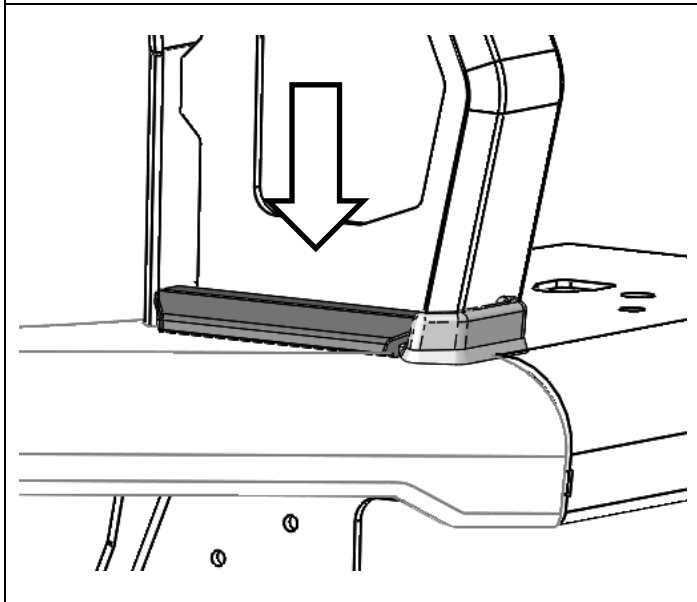


120. Identify the cover strap plastics kit, 3163294.

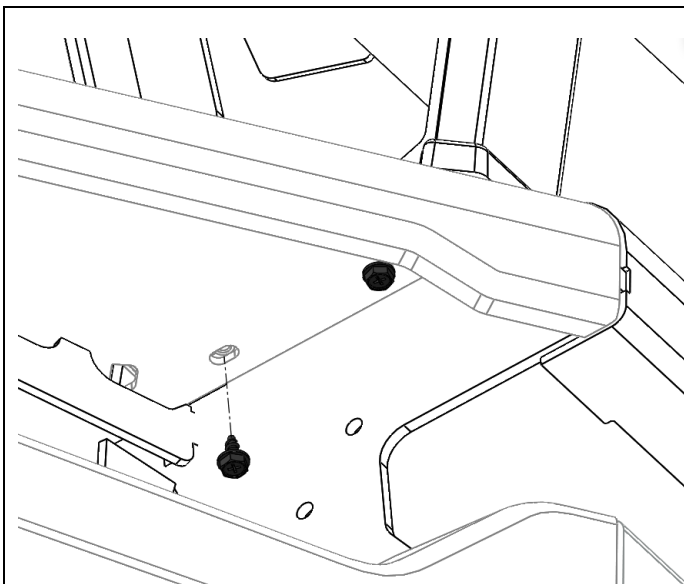


121. Fit the rubber intersection mouldings to the base of each upright coverstrap.

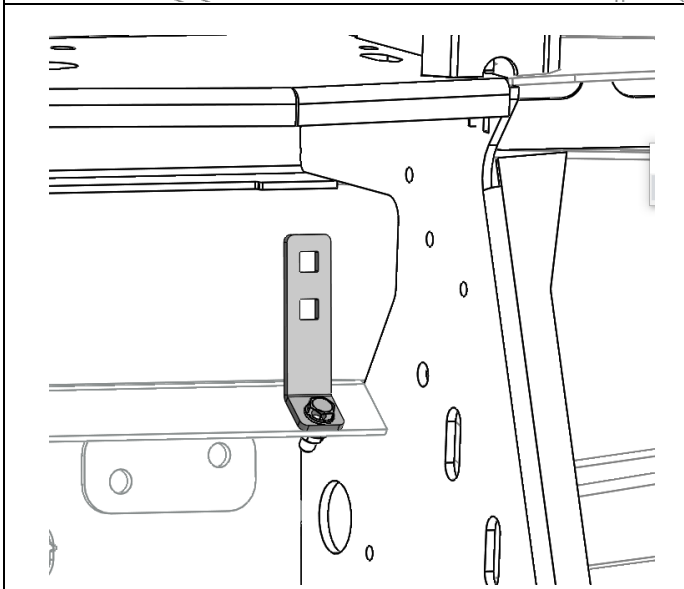
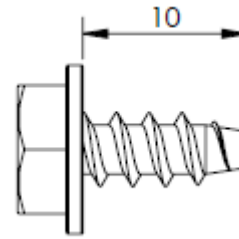
Ensure that the skirt of the rubber moulding is not folded back on itself and is sitting flat against the bull bar.




122. Place the plastic cover down onto the rubber moulding, repeat on both sides of the coverstraps.

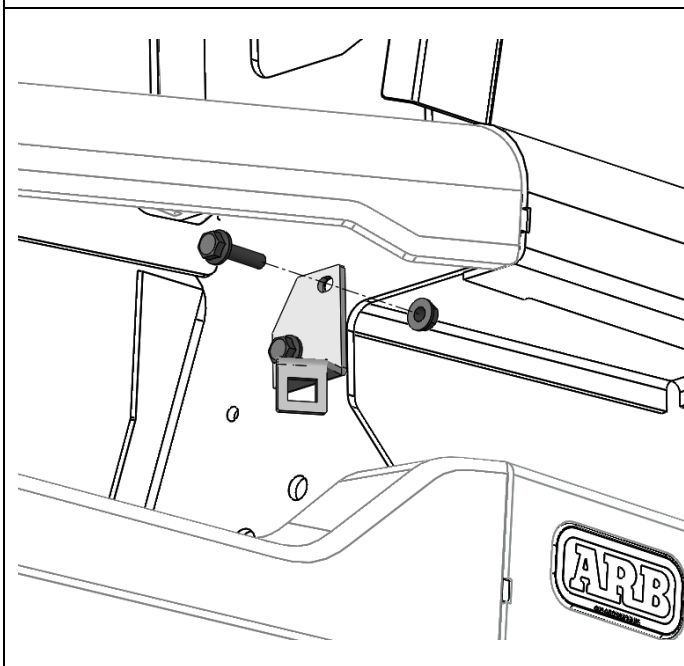


123. From underneath, fit two screws into each plastic cover. Tighten until the covers are secure and have firmly clamped the rubber moulding.




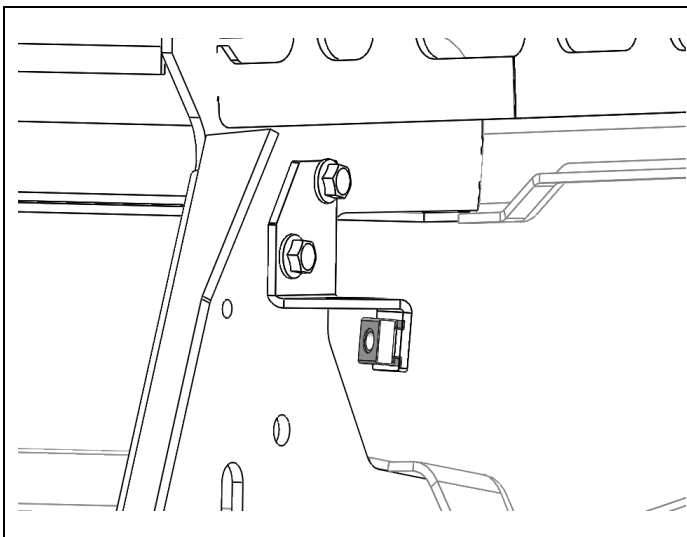
124. Assemble both grille retaining brackets onto the inside of the lower pan with M6x20 bolt, 12mm washer and flange nut. Torque to specification.

 M6 - 9 Nm.

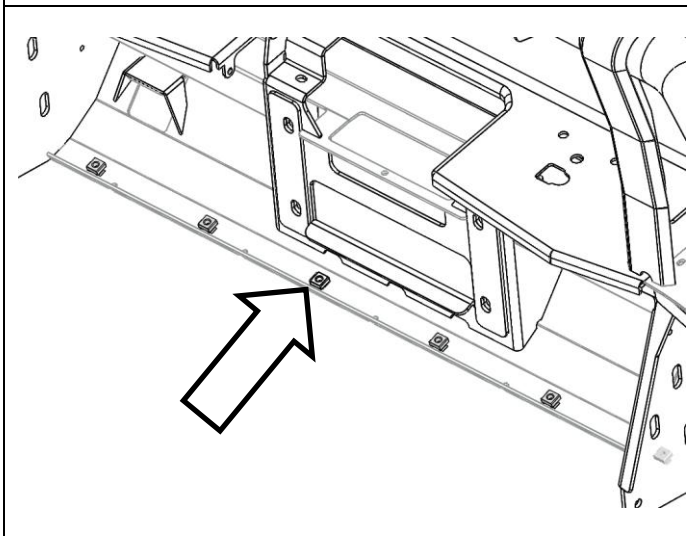


125. Assemble both fog cluster mounting brackets onto the outside of the uprights with M6 flange bolts and flange nuts. Torque to specification.

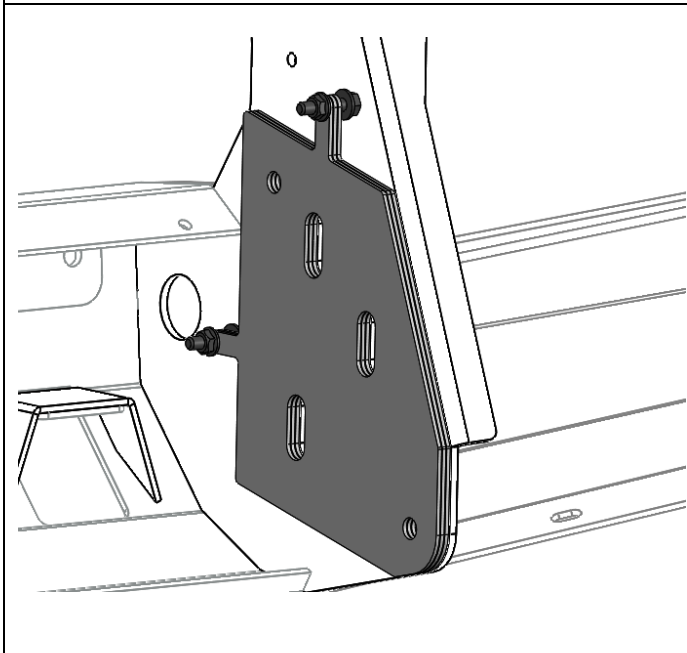
 M6 - 9 Nm.



126. Assemble silver M6 cage nuts into both fog cluster mounting brackets.



127. Assemble six silver M6 cage nuts into lower return of bull bar pan.

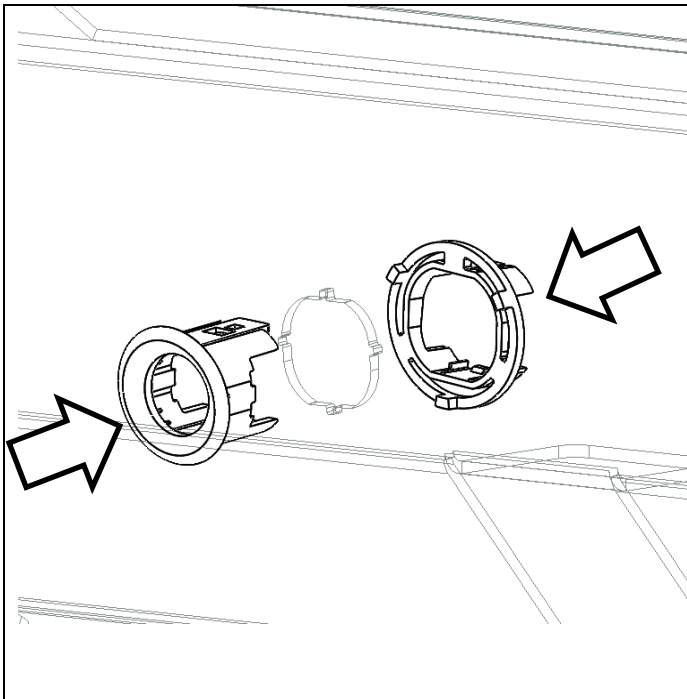


128. Use a tape measure to check the distance across the two internal mounting faces of the bull bar.

Similarly measure the distance between the mounting faces on the chassis mounts.

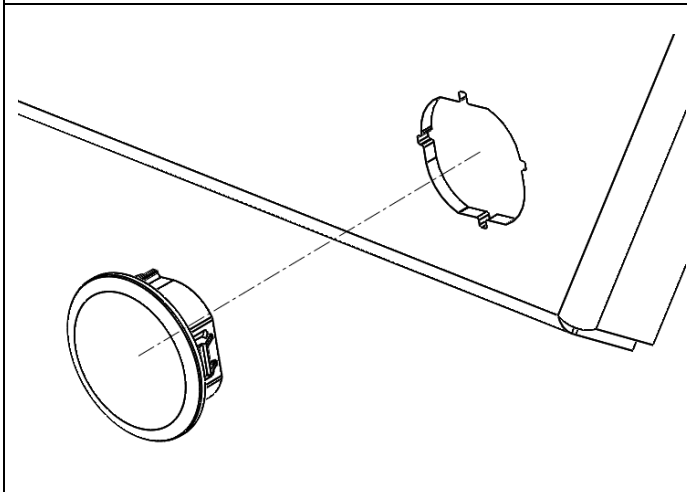
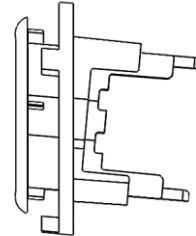
Select an appropriate number of 2.5mm shims to take up the difference in the two dimensions taken and pre assemble onto bull bar uprights using M6x25 flange bolts and flange nuts.

(2-3 shims per side should achieve a smooth sliding fit between bull bar and mounts)

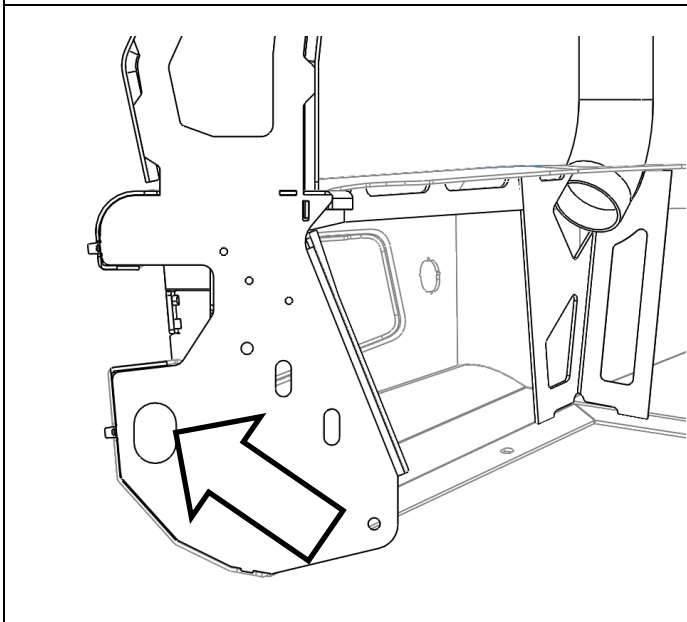


129. Fit the 4/6 front sensor housings to the bull bar. Placing the housing through the bar from the front of the vehicle.

From the rear of the bar, clip the rear sensor housings onto the front housings. Check that both clips are engaged properly. If clips don't engage apply pressure on the outer ring of the rear housing.

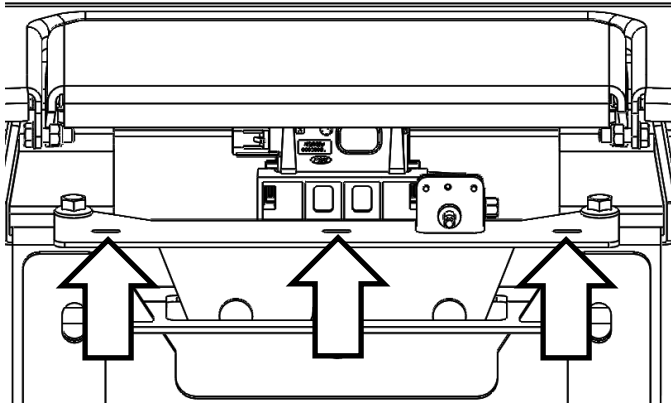


130. For any parking sensor apertures not used, blanking plugs have been supplied. Assemble from front of bull bar.



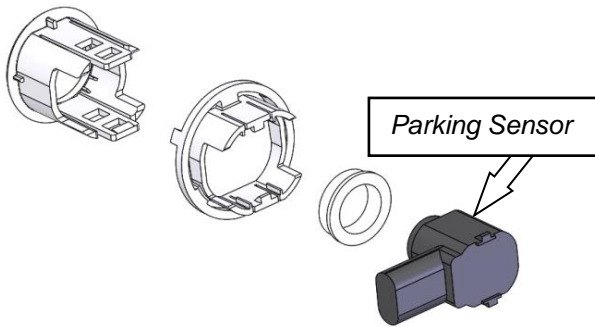
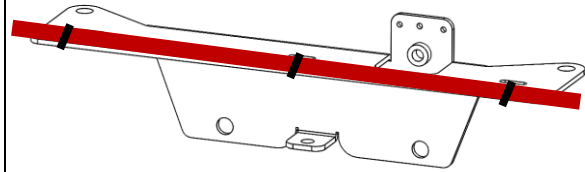
131. Route vehicle front harness (removed in step 24.) from left to right through the apertures in bull bar uprights and across top face of radar bracket.

20 way connector should remain on outside of LH upright.



132. Secure harness with cable ties supplied and original edge clips attached to harness. Slots in radar bracket are for cable ties.

If fitted, winch positive should also be routed across top face of radar bracket.



133. Assemble parking sensors into housings installed in step [129](#).

Check that both clips are engaged properly and silicone decoupling ring is seated properly.

Tail of sensor should point towards the uprights of the bull bar.

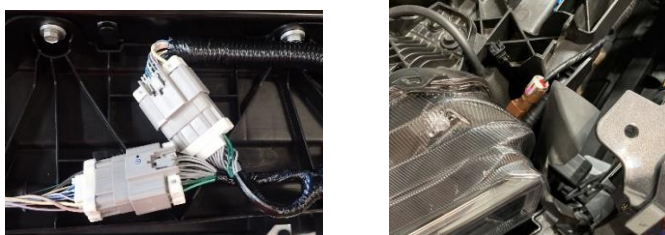


IMAGE DEPICTS INSTALLATION WITHOUT ARB BATTERY TRAY



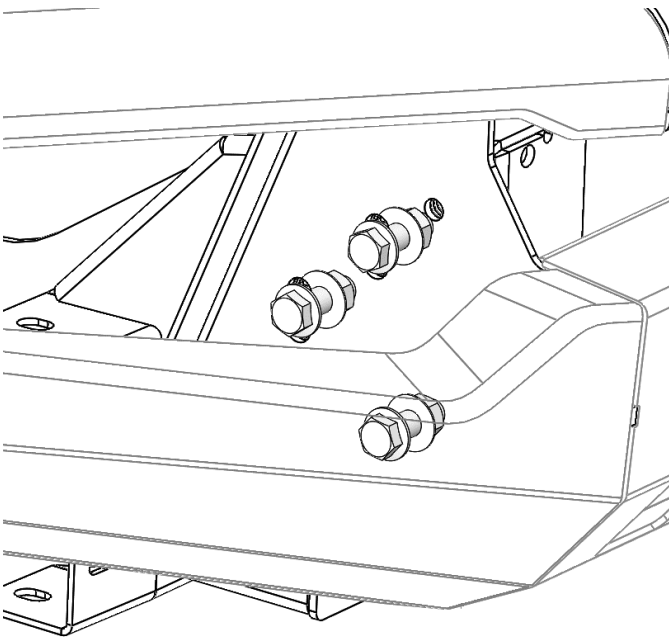
134. Position the bull bar close enough to the vehicle to connect camera cable, washer line and front sensor harness to vehicle.

The camera cable and washer line should be routed up the RHS of the grille. The front sensor harness should be routed up the LHS of the grille as per its original pathway.

Secure with cable ties.

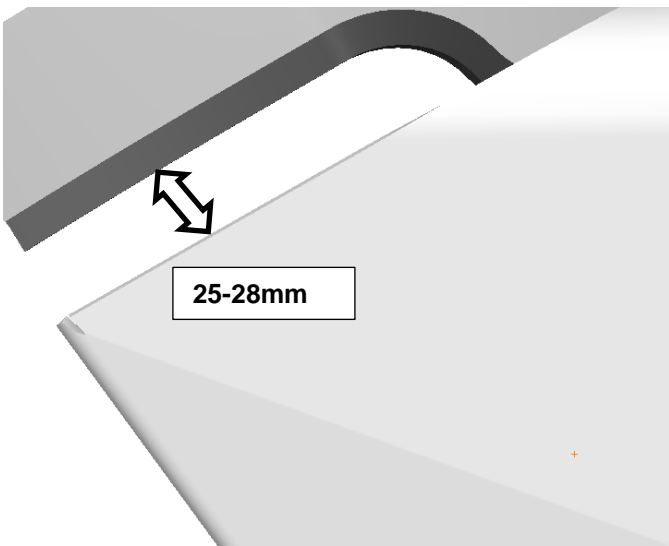


135. Refit grille to vehicle. Follow steps 21 – 23 in reverse order.



136. Using a mechanical lifting aid, loosely assemble bull bar onto chassis mounts using three sets of M12x1.25x35 flange bolts and flange nuts per side.


If bull bar is not central to quarter panels, remove and adjust shims from one side to the other in order to adjust bull bar across the vehicle.

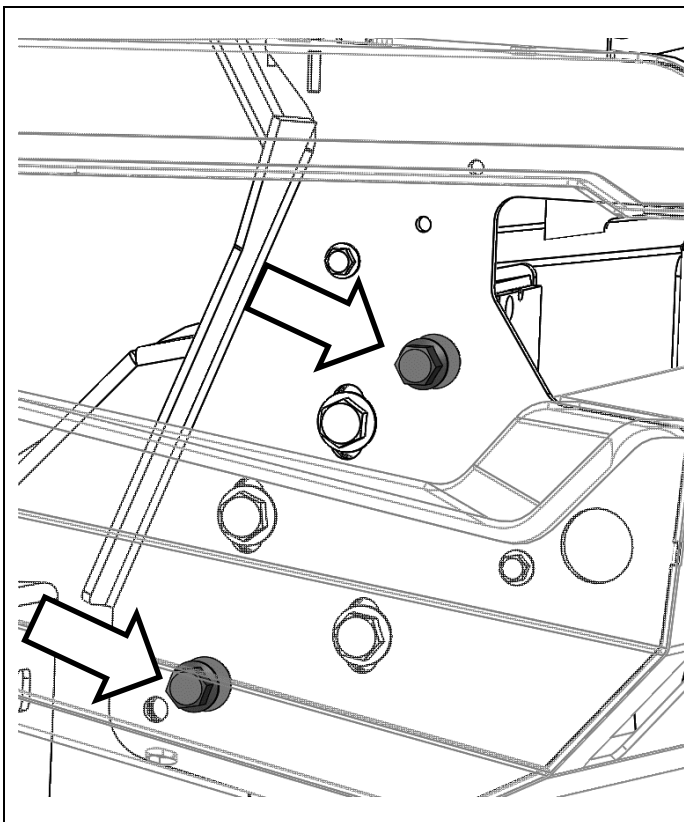


137. Once shim position has been confirmed, adjust bull bar on mounting slots to achieve a parallel 25-28mm gap between wings and bumper cut profile.

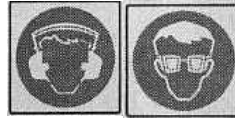
Wing return should align to wheel arch tangent.

Torque M12 mounting bolts to specification.

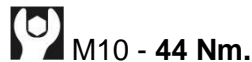
 M12 - 77 Nm.



138. Drill 4 x Ø10mm holes (2 per side) through mount assembly using existing holes in bull bar as guide. This may require a right-angled drill.

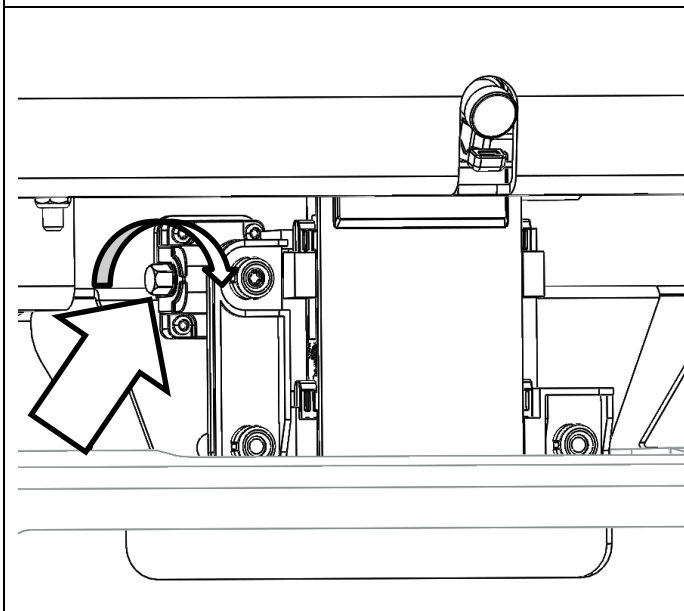


139. Add anti-corrosion touch up paint to areas drilled, then assemble and tension four M10x30 flange bolts and flange nuts to specification.

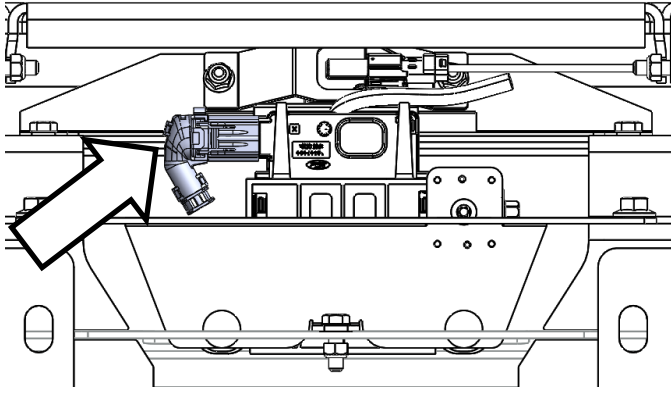


IMPORTANT: Front face of radar should be perpendicular to ground. If not, adjust accordingly.

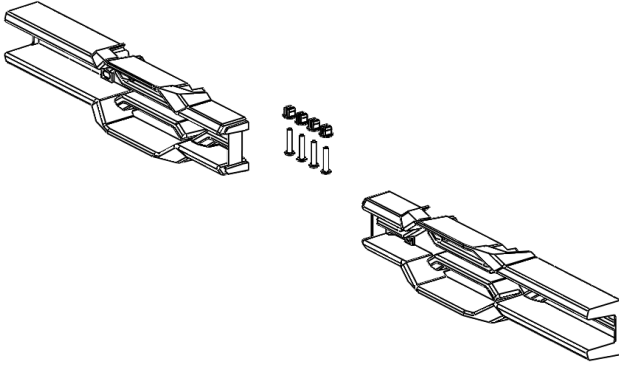
140. Place a level on the front face of the sensor. The front face should be 90° degrees to level ground with a tolerance of $\pm 1^\circ$. If it is not within this tolerance, proceed to the next step. If it is within tolerance, no further action is required skip to step 142.



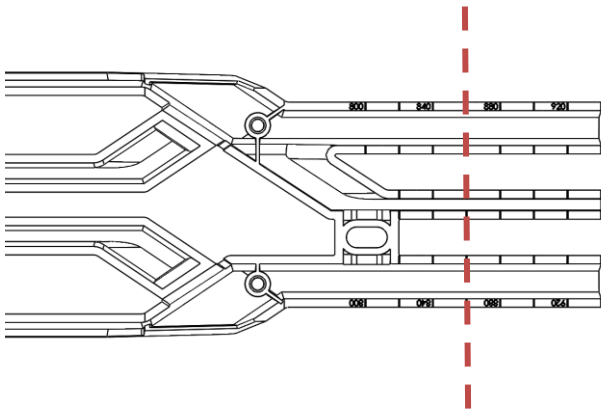
141. Using an 8mm socket, wind the adjustment screw to achieve correct angle.



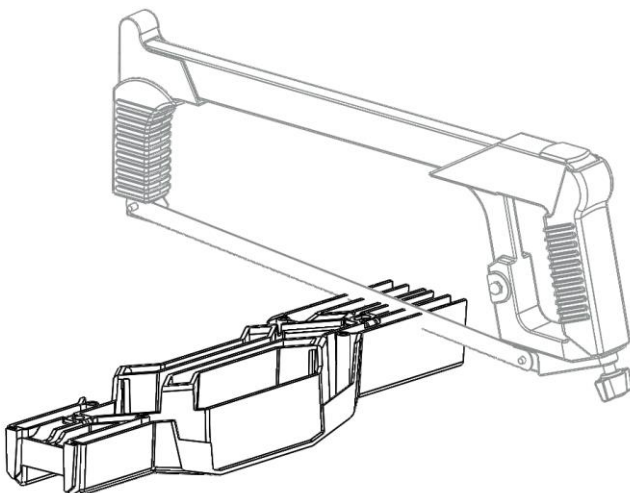
142. Connect radar to vehicle harness.



143. Identify the outer grille section kit, 3163295.

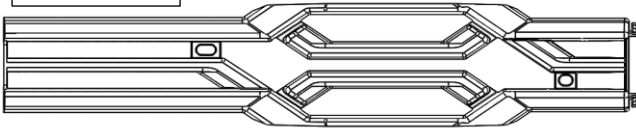


144. Mark both grille panels to be cut at the 860mm markings on the back face.

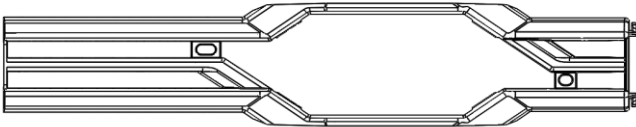


145. Use a hacksaw or similar cutting tool to carefully cut the grille panel at the positions marked in the step above.
Discard the off cuts and clean up the cut edges using a file or sandpaper.

BEFORE

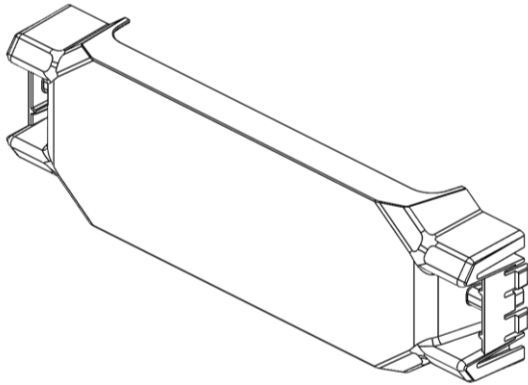


AFTER

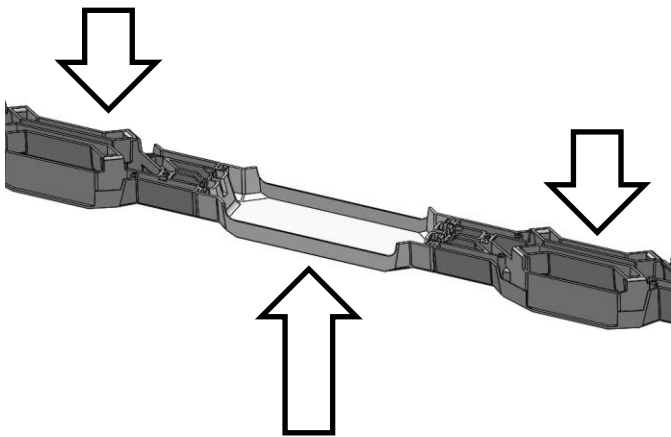


146. If fitting a winch, remove grille sections shown for access to clutch lever.

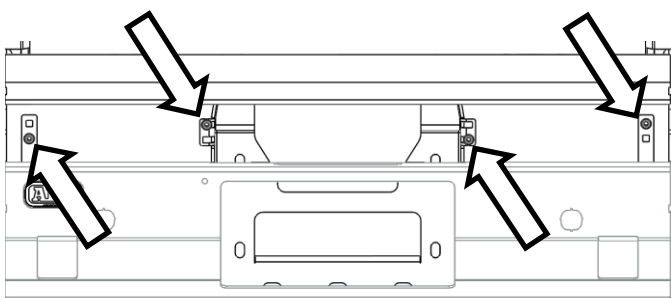
Cut from rear with an oscillating multi-tool.



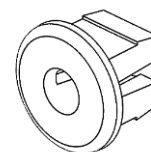
147. Identify the inner grille section kit, 3163316.

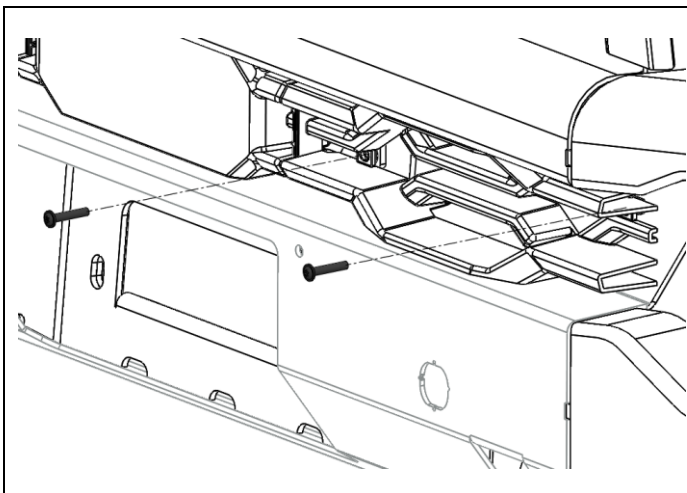


148. Assemble centre section into both outer sections, make sure clips are fully engaged.

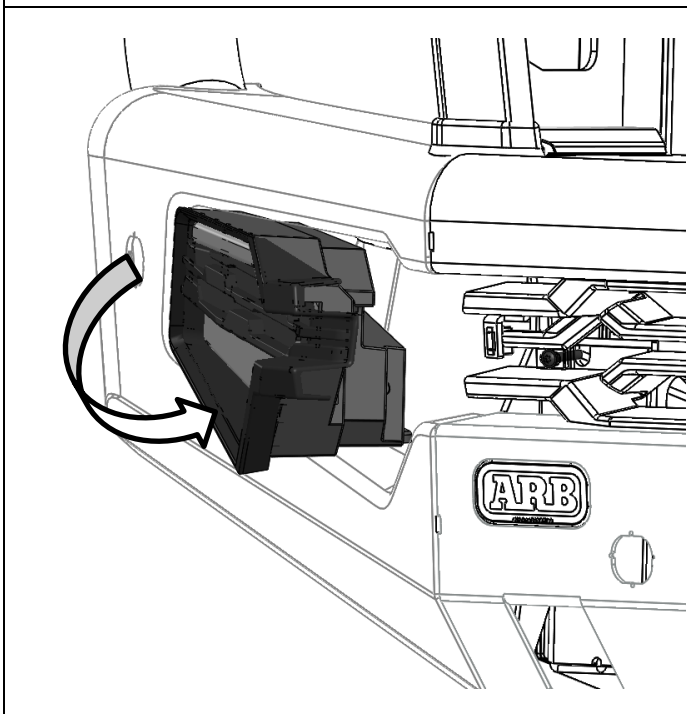
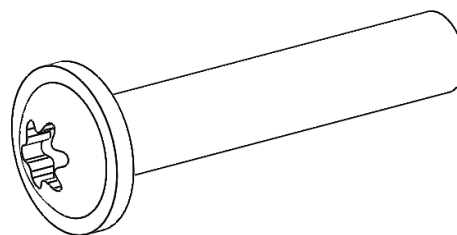


149. Press four round plastic grommets from grille kit into the square cut-outs seen from the front of the bull bar.

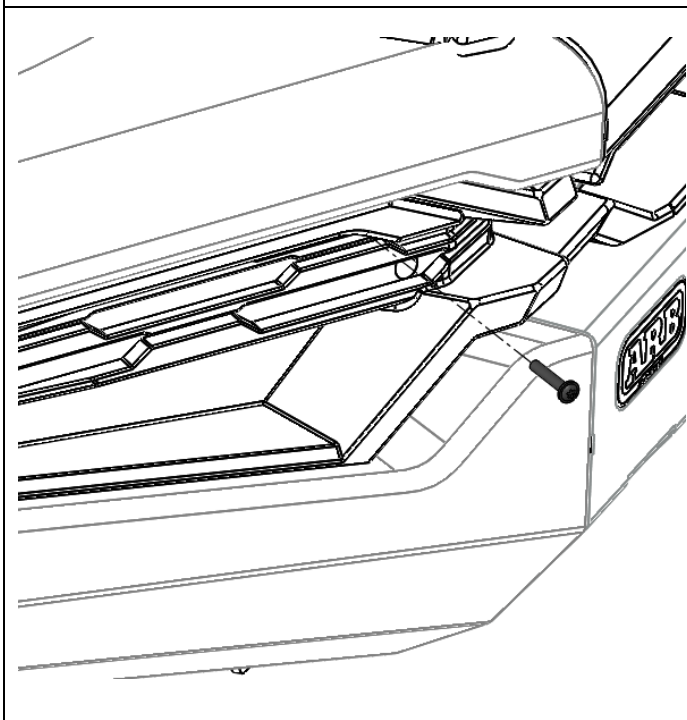
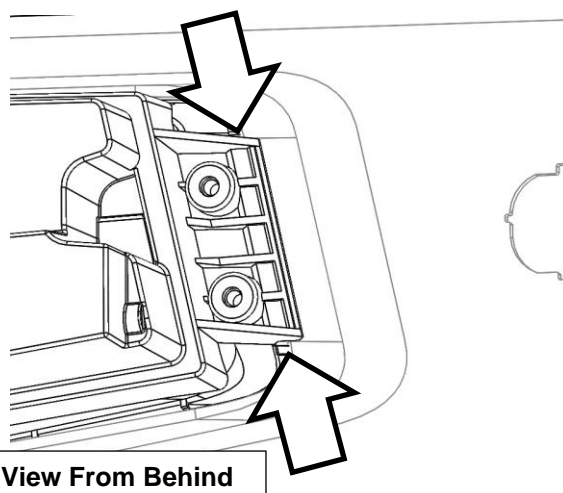




150. Attach grille assembly to bull bar using four Torx head screws supplied in grille kit.



151. Index the outside groove of the lamp cluster over the edge of the aperture in the bull bar wing. Then rotate the lamp cluster into place.

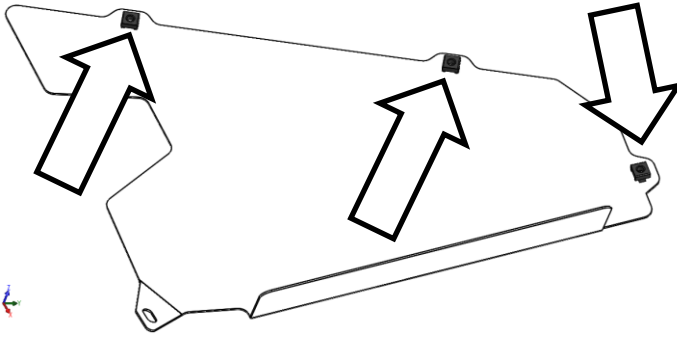


152. Secure lamp cluster with M6 Torx head screw.

Connect lighting harness into the back of each fog light cluster.



 M6 - 9 Nm.



153. Assemble three black M6 cage nuts onto each wing under panel. The nuts should be on the same side as the rear return fold.

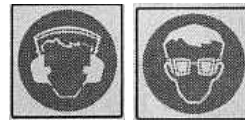
Ensure these are the correct cage nuts with shorter legs for 2mm material.



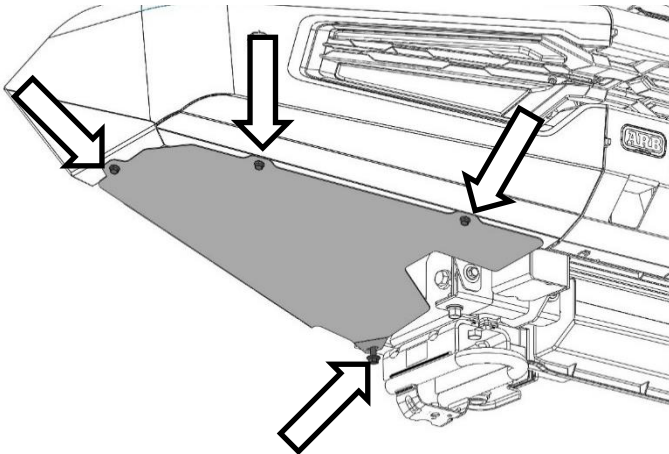
154. Loosely fit wing under panels inside lower return of wings.

Using the lower edge of the panel, scribe a cutting line onto the plastic wheel arch liner.

Remove panel and cut along marked line with oscillating multitool.





Once cut, tuck the wheel liner behind the return on the wing panel and wing.

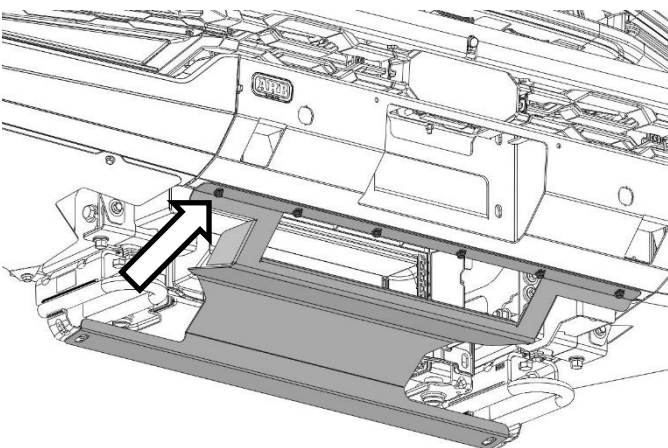


155. Fasten wing under panels into wings with three M6x20 flange bolts.


Fasten to chassis mounts with one M8x20 flange bolt and flange nut.

 M6 - 9 Nm.

 M8 - 22 Nm.




156. Begin to fasten centre panel to lower edge of bull bar using six M6x25 flange bolts.

 M6 - 9 Nm.

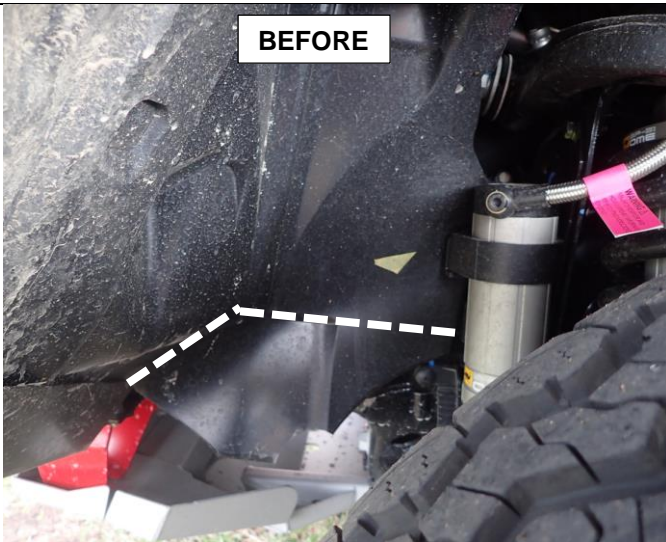


157. Fit the OE stone shield over the ARB centre panel and fasten to the tow points with two M10x30 flange bolts. Refit the OEM M10 bolts at the rear of the OE stone shield which were removed at step 10.
Note reduced torque and Loctite requirement for OEM plastic stone shield.

 M10 - 44 Nm.

FORD Plastic Stone Shield

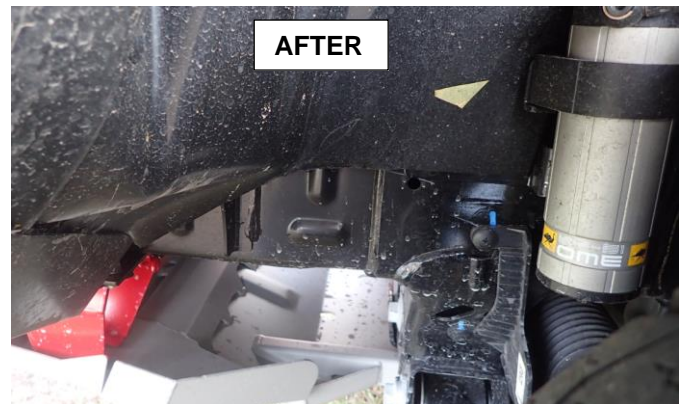
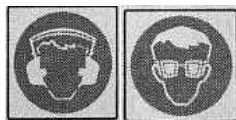
 16 Nm & Loctite 222.



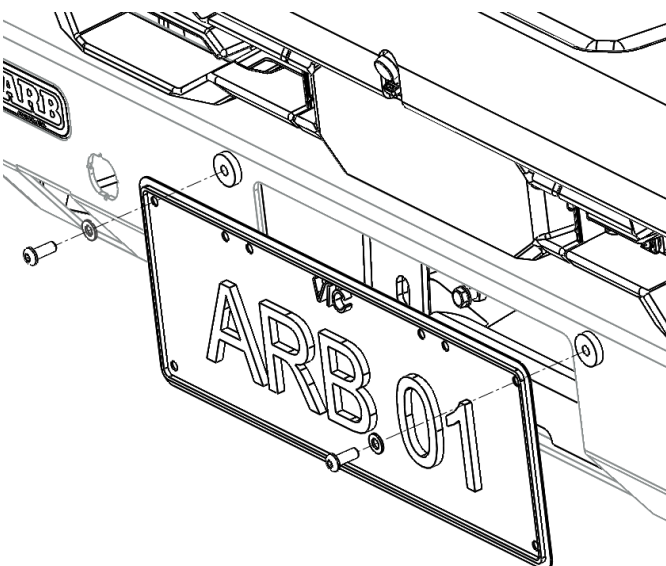
BEFORE

158. An additional cut to the wheel arch liner is required on the LHS of the vehicle.

Using an oscillating multi-tool Follow the creases in the lower section of wheel liner from the corner of the wing underpanel back to the shock tower as shown.



AFTER



159. Fit the number plate to the front face of the lower pan on the bar using two M6 button head screws, two flat washers, two Nylon packers and two M6 flange nuts as shown.

Note: Non-winch application shown.

Hint: A 10mm open ended spanner can be used to hold the flange nuts in place from the fairlead aperture.

FITTED PRODUCT

ONCE SUMMIT BAR IS FITTED:

- Ensure all bolts are tensioned correctly.
- All wiring is clear of sharp edges or moving surfaces and secured properly.
- Piping is secured well away from sharp or moving components.
- Check operation of winch, if fitted.
- Check all wiring and connections to turn signal lamps, parking sensors, camera, washers etc. are functioning correctly.
- **IMPORTANT: CALIBRATION CARD 37801181 MUST be completed, explained and provided to the driver during vehicle handover.**



SERVICE PARTS LISTING

SERVICE PART #	CONTENTS	QTY	DESCRIPTION
3540390 CAMERA RELOCATION KIT	3750987	1	CAMERA RELOCATION BRACKET
	3195389	1	CAMERA RELOCATION BRACKET
	6151496	2	BOLT HXHD M6x10 ZINC SILVER
	6151173	2	NUT FLANGE M6 ZNB480 SERRATED
	6821439	2	CAMERA CABLE EXTENSION
	4721820	1	HOSE 4.5MM ID 500mm
S3753232 RADAR RELOCATION KIT	3753232	1	RADAR MOUNTING BRACKET
	6151730	2	BOLT HXHD FL M8x1.25x20 FT PC8.8 BZP480
	6151655	2	NUT FLANGE M8x1.25 PC8 TZP480
	6151213	1	BOLT HXHD M6x1.0x20 PC8.8 ZNB480
	6151223	1	NUT HEX NYLOC M6x1.0 ZNB480
	4584329	1	WASHER FLAT M6x12.2x1.2 BTZP480
S3195508 ELECTRICAL BRACKET KIT	3195508	1	BUSBAR WINCH POSITIVE
	3195561	1	BUSBAR WINCH EARTH
	3753231	1	RELAY FUSE MOUNTING BRACKET
	6151730	3	BOLT HXHD FL M8x1.25x20 FT PC8.8 BZP480
	6151655	4	NUT FLANGE M8x1.25 PC8 TZP480
	6151921	1	BOLT COHD M8x20 ZNB480 LWHD
S6365081 OEM TOW POINT KIT	6365081	2	INTERCOOLER ISOLATING BUSH
	6152066	4	BOLT HXHD FL M12x1.75x50 FT PC10.9 ZAS1000
S3753258 LAMP/GRILLE MNT BRKT KIT	3753258R/L	1 PAIR	CLUSTER MOUNTING BRACKET
	3753259	2	GRILLE RETAINING BRACKET
	6151300	2	NUT CAGED M6 2.6-3.5 956-C
	6152094	2	SCREW PHD M6x1.0x30 PC8.8 TX ZNB 480
	6152008	6	BOLT HXHD FL M6x1.0x25 PC8.8 ZNB480
	6151173	6	NUT FLANGE M6 ZNB480 SERRATED
S6523506L LEFT WING UNDERPANEL KIT	6523506L	1	UNDER WING PANEL LHS
	6151526	3	NUT CAGED M6 1.8-2.7 BZP480
	6152008	3	BOLT HXHD FL M6x1.0x25 PC8.8 ZNB480
	6151730	1	BOLT HXHD FL M8x1.25x20 FT PC8.8 BZP480
	6151655	1	NUT FLANGE M8x1.25 PC8 TZP480
S6523506R RIGHT WING UNDERPANEL KIT	6523506R	1	UNDER WING PANEL RHS
	6151526	3	NUT CAGED M6 1.8-2.7 BZP480
	6152008	3	BOLT HXHD FL M6x1.0x25 PC8.8 ZNB480
	6151730	1	BOLT HXHD FL M8x1.25x20 FT PC8.8 BZP480
	6151655	1	NUT FLANGE M8x1.25 PC8 TZP480
S6523507 CNTR STONE SHIELD KIT	6523507	1	CENTRE PANEL
	6151300	6	NUT CAGED M6 2.6-3.5 956-C
	6152008	6	BOLT HXHD FL M8x1.25x20 FT PC8.8 BZP480
	6151965	2	BOLT HXHD FL M10x1.5x30 PC8.8 ZNB480
S37801181	37801181	1	CALIBRATION INFORMATION NOTICE
	3501060	1	SENSOR SURROUND KIT (6)
	3163222	1	PLUG SNSR BLANKING PAIR
	6821426	1	HARNESS BULLBAR FORD ENG
	6821427	1	HARNESS BULLBAR FORD BCM
	6821430	1	UNIVERSAL SWITCH HARNESS
	3163294	1	COVER STRAP KIT SUMMIT
	3163295	1	OUTER GRILLE KIT SUMMIT
	3163316	1	RADAR COVER LARGE SUMMIT
	3500991	1	ARB LAMP CLUSTER KIT SUMMIT