

## **FORD RANGER RAPTOR**

### **PX3 MY2019-2022**

### **REAR BAR**

#### **IMPORTANT! – READ BEFORE INSTALLATION**

- When installed in accordance with these instructions, the rear protection tow bar maintains the factory tow rating of your vehicle.
- This product must be installed exactly as per these instructions using only hardware supplied.
- Take a few moments to read instructions thoroughly before beginning work.
- In the event of damage to any bar component please contact OFFROAD ANIMAL to arrange repair/replacement of components.
- Do not use this product for any vehicle make or model other than that specified on these instructions.
- Do not remove labels from this product.
- This product and its fixings must not be modified in any way unless stated in these fitting instructions.
- The installation of this product is recommended for trained personnel.
- These instructions are correct at time of publication. OFFROAD ANIMAL cannot be held responsible for the impact of any changes subsequently made by the vehicle manufacturer. If you find something has changed please contact us to let us know!
- During installation it is the duty of the installer to check correct operation/clearances of all components.
- If Instructions are to be printed for reference in the workshop, it is recommended that they are printed in colour, for best legibility.

## GENERAL CARE AND MAINTENANCE

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

Plastic parts may be maintained with silicone spray.

Do not use acidic or alkaline based cleaning products.

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

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

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

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

## BOLT TORQUE SETTINGS

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

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

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

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

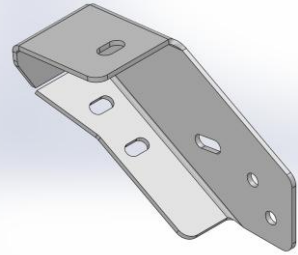
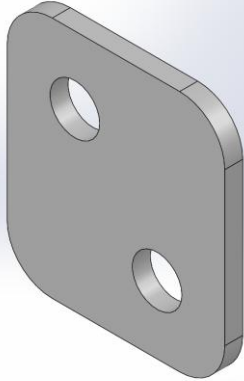
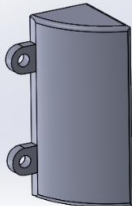
**Always use a torque wrench to set correct torque settings. Ensure torque wrench is set to Nm unit of measurement. Otherwise perform conversion to lb-ft.**

## PARTS LISTING

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

### Main Parts – In the Box

Qty	Part Number	Description	Image
1	RB-FRR-PX3-19-ASM1	Ranger Raptor Rear Bar Weldment	
2	B-0197	PX Ranger Center Rear Sensor Bracket	
1	B-0349L	Raptor Rear Bar - Wing Brace	
1	B-0349R	Raptor Rear Bar - Wing Brace	
1	B-0348L	Raptor Rear Bar - Chassis Bracket	

<b>1</b>	B-0348R	Raptor Rear Bar - Chassis Bracket	
<b>2</b>	P-0129	Raptor Rear Bar Nut Plate	
<b>2</b>	PW-P-14X9-670	Pinch Weld - Plain 14X9MM, Rubber, 670mm Length	
<b>2</b>	BR25B	LED NUMBER PLATE LIGHT	

**Small Parts – Contained in Small Parts Kit Bag**

Qty	Part Number	Description
10	M10 FLANGE NUT	Flange Nut, M10x1.5 G8.8 ZP
31	M10 FW LHD	WASHER, FLAT M10X28.5X2.5
10	M10 x 25	Bolt Hex, M10X25x[1.5], GR8.8 ZP
4	M8 X 20 BHCS BLACK ZINC	SCREW, BUTTON HEAD CAP, M8X20X1.25 BLACK ZP
4	M8 FLAT WASHER- BLACK ZINC	M8 FW- BLACK ZINC
4	M8 FLANGE NUT	Flange Nut, M8x1.25 G8.8 ZP
4	M6 FLANGE NUT	Flange Nut, M6x1 G8.8 ZP
4	M6 FLAT WASHER BLACK ZINC	M6 FW BLACK ZP
4	M6x16 BHCS BLACK ZINC	SCREW, BUTTON HEAD CAP, M6X16X1 GR12.9 BLACK ZP
2	BR25B	LED NUMBER PLATE LIGHT
8	M10 x 30	Bolt Hex, M10X30x[1.5], GR8.8 ZP
10	M10 NUT	Hex Nut, M10x1.5 G8.8 ZP
2	M10 X 50	Bolt Hex, M10X50X1.5, GR8.8 ZP
2	M5X15 PAN	SCREW, PAN HEAD PHILLIPS, M5X15X0.8 GR4.6 ZP
2	M5 Flat washer	M5 FW
2	M5 FLANGE NUT	Flange Nut, M5x0.8 G8.8 ZP
1	M10 X 40	Bolt Hex, M10X40X1.5, GR8.8 ZP
1	NP-COM-M10- 190-ASMO	M10 LOLLYPOP NUT PLATE 190MM LONG
1	OFA-LOGO	OFFROAD ANIMAL METAL LOGO

TOOLS REQUIRED

The following tools will be required to install the product.

Hand Tools	Power Tools	Workshop Equipment
Metric Socket Set 8-19mm Metric Spanner Set 8-19mm Hex (Allen) Key Set 4-8mm Trim Tool Utility Knife Side Cutters Wire Strippers	Soldering Iron Heat Gun Or Crimping tools  Electric / Air Impact Driver (Optional but speeds up fitting process)	Lift Trolley (Optional) Solder Heat Shrink Or Crimp Connectors

## WORKSHOP SAFETY

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

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



<div>1. Before beginning work, remove factory tow ball mount if fitted for easier access. 17mm spanner may be required to loosen anti rattle bolt on bottom of hitch.</div>	<div>TOOLS REQUIRED</div> <div>17mm spanner</div>
	<div>FASTENERS</div>





2. Remove the trim strip that conceals the bottom mounting bolts by levering corner with trim tool or flat head screwdriver as shown.
3. Remove trim strips on both sides of vehicle.

**TOOLS REQUIRED**

Trim Tool  
or  
Flat head screwdriver

**FASTENERS**



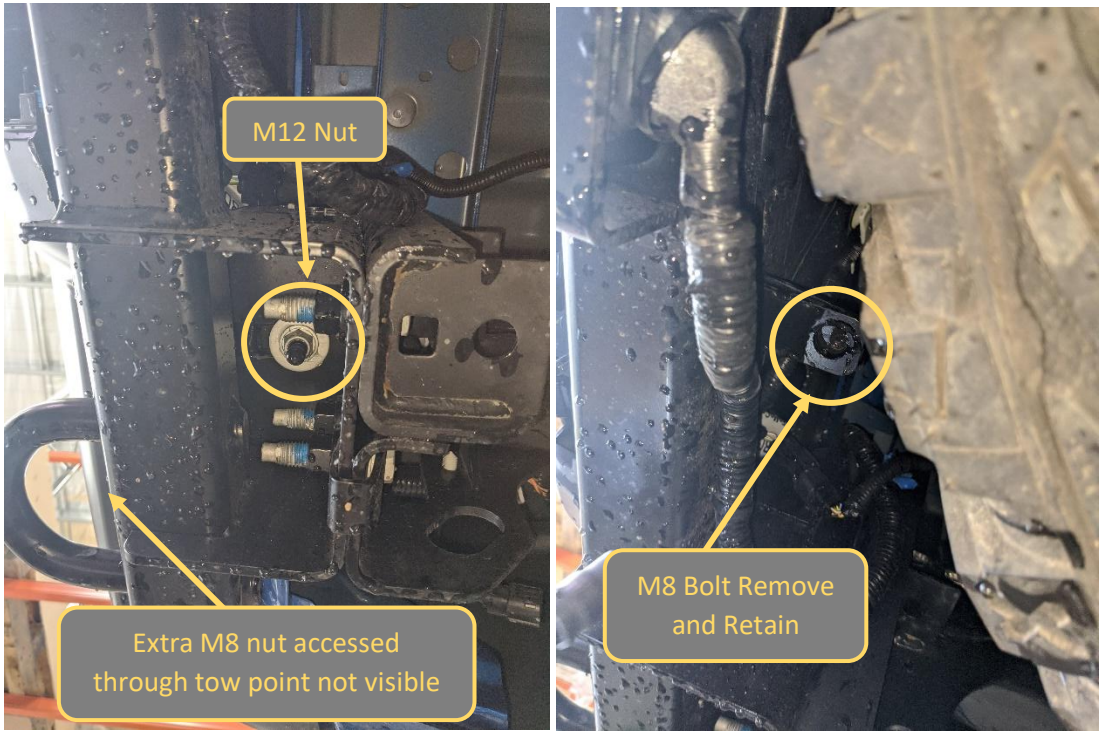
4. Remove 4x M8 nuts side securing the bottom edge of the rear bar. to the Chassis. Due to length of the studs use a deep socket for easy removal.

**TOOLS REQUIRED**

13mm Deep Socket or  
spanner

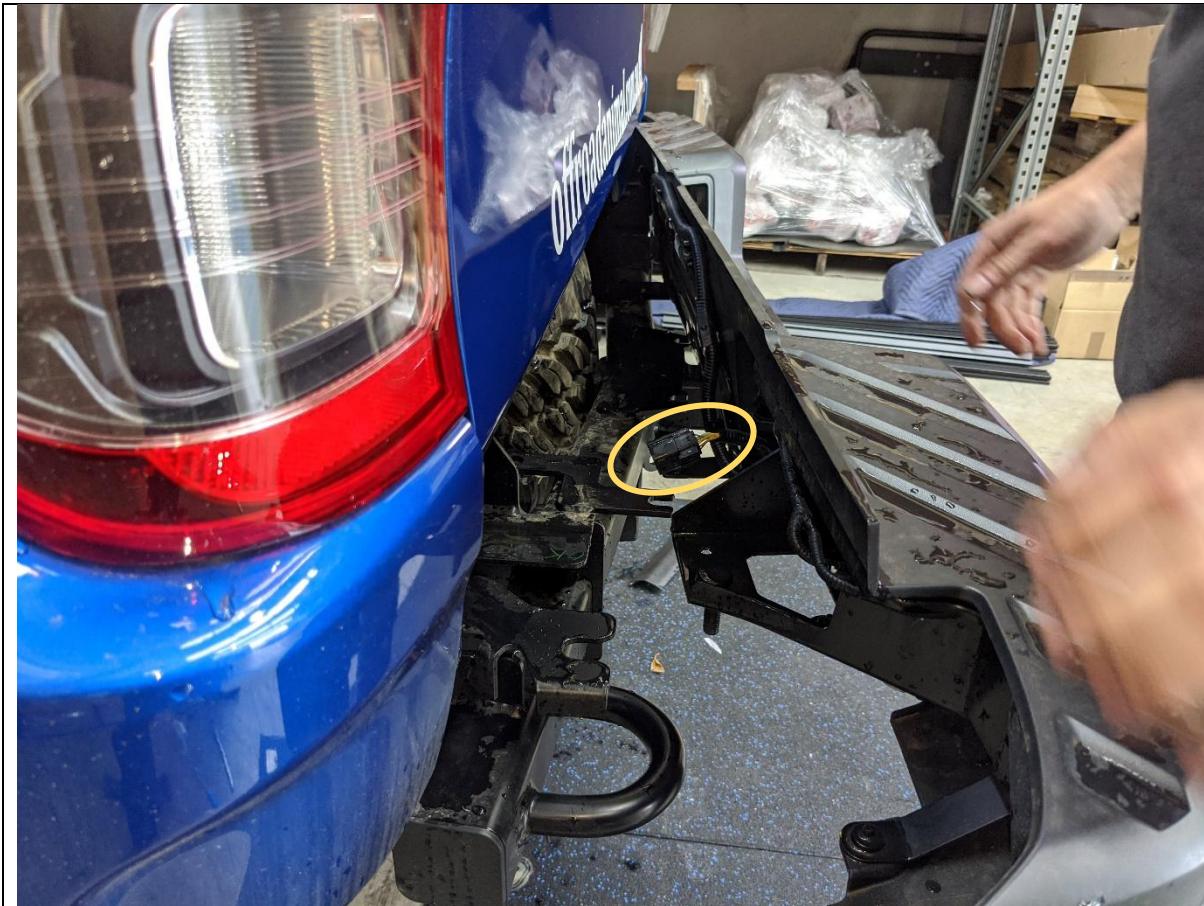
**FASTENERS**

4x M8 Large Flange Nuts



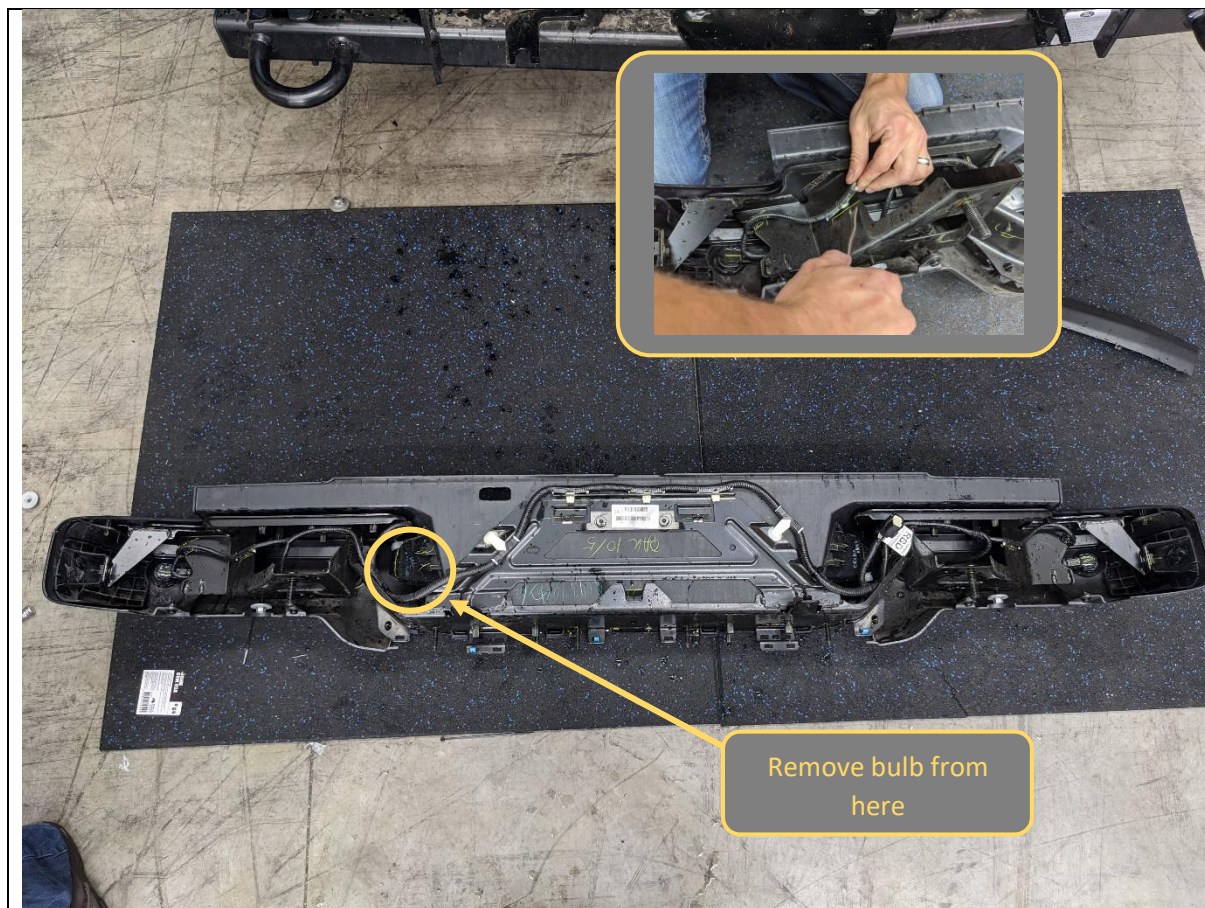
<div>5. Remove the remaining fasteners securing the factory rear bar. There is 1x M12 nut on the underside of tow bar, One M8 Nut directly above the tow point on tow bar and one M8 bolt inboard, behind the tow bar near the spare tyre on each side.</div> <div>6. Use 13mm socket on M8 and 18mm Socket on M12.</div> <div>7. Complete on both sides of the vehicle. Retain the M8 Bolts for re-use.</div>	<div>TOOLS REQUIRED</div> <div>18mm Deep Socket 13mm Deep Socket</div>
	<div>FASTENERS</div> <div>1xM8 Large Flange Nut 1x M12 Large Flange Nut 1x M8 Bolt</div> <div>Per Side</div>





8. Carefully pull the bar rearward. Disconnect the sensor wiring harness, then lift factory rear bar off car and set aside.
9. The bar is light enough to lift by one person, however, it may be easier with assistance.

**TOOLS REQUIRED****FASTENERS**



Remove bulb from  
here

10. Remove bulbs from Number plate lamps. Bulbs are secured with spring loaded bayonet type attachment, Push and turn to release.

11. Unclip and remove number plate light loom.

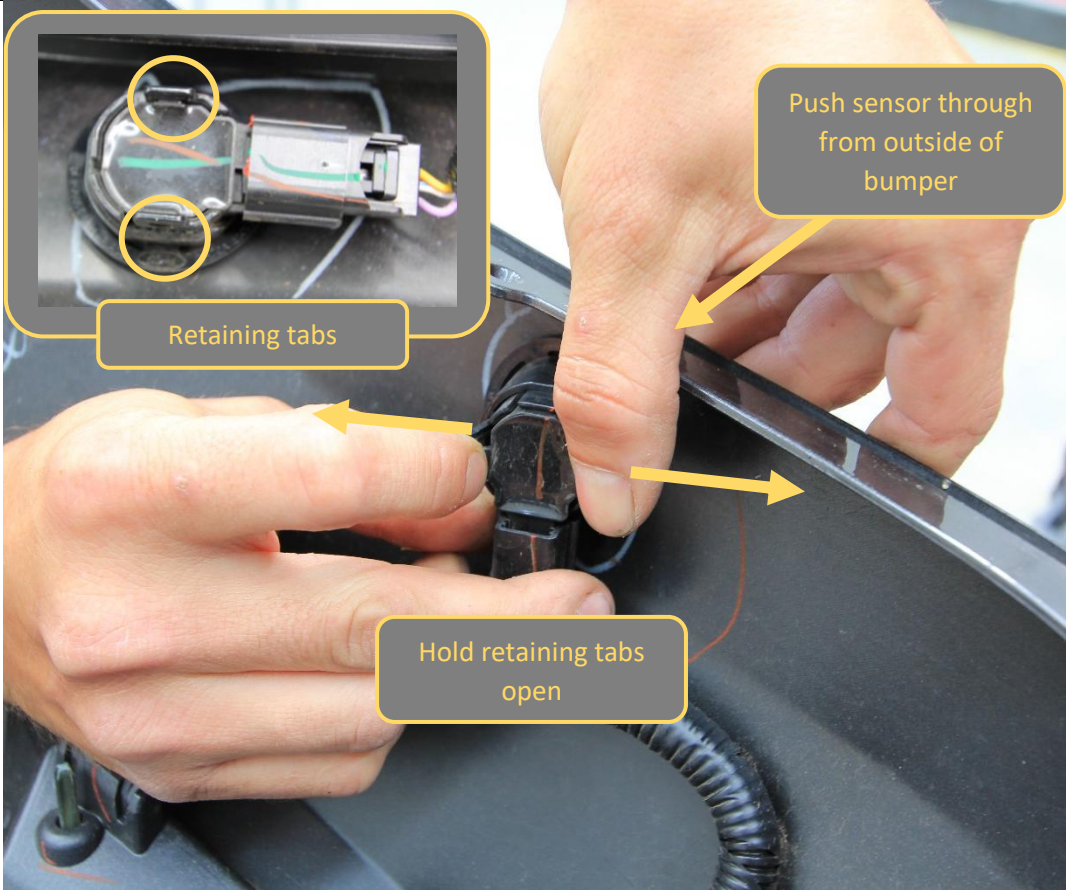
12. Remove number plate from original rear bar.

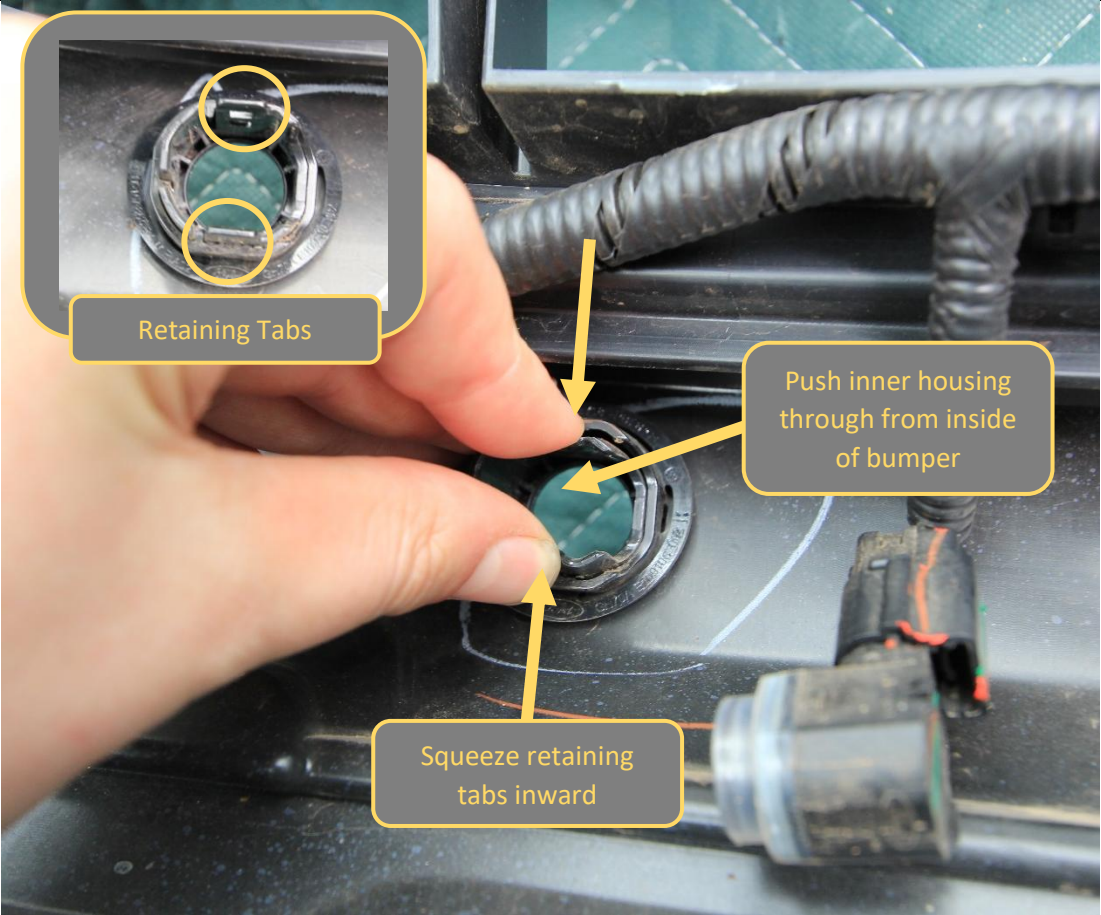
#### TOOLS REQUIRED

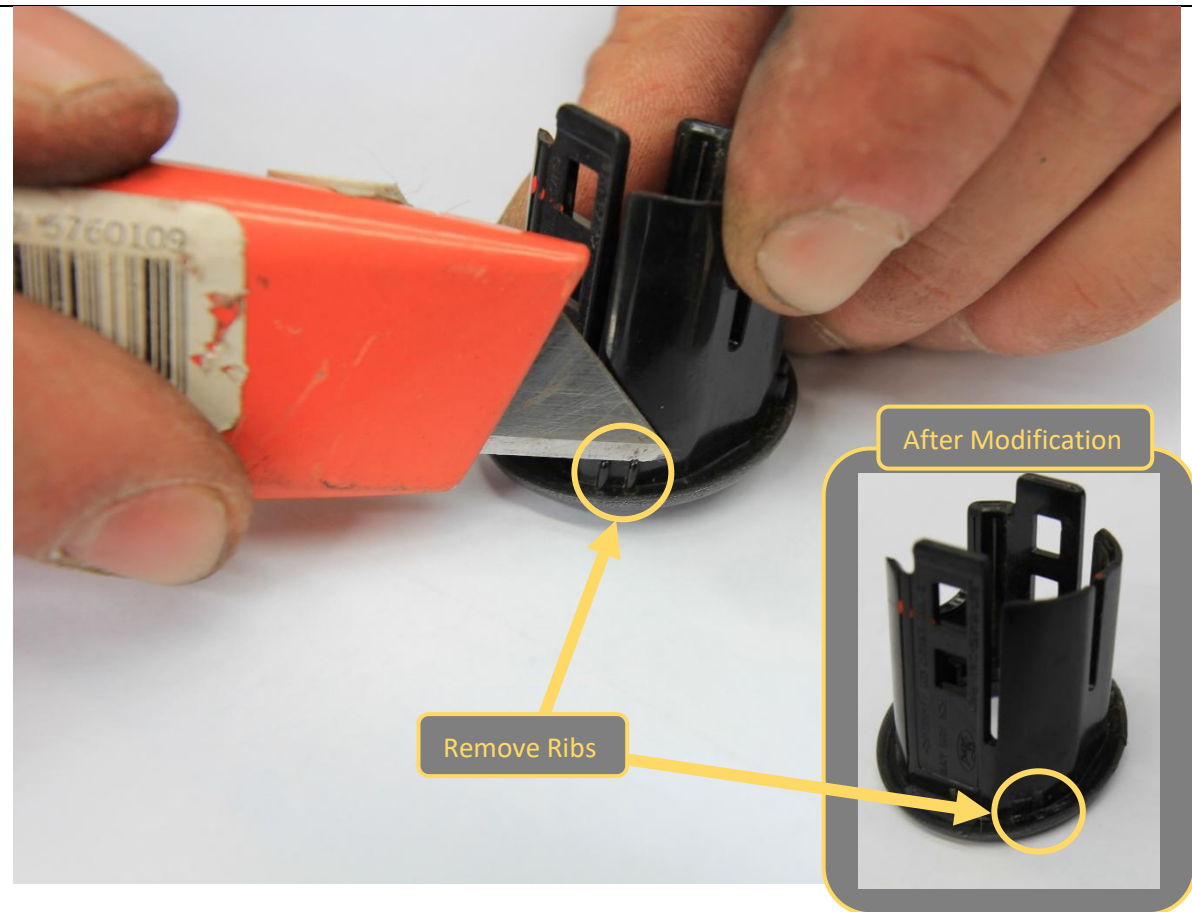
Phillips Screwdriver

#### FASTENERS



 <p>Retaining tabs</p> <p>Push sensor through from outside of bumper</p> <p>Hold retaining tabs open</p>	
<p>13. Remove parking sensors from housings, by holding open the retaining tabs, whilst pushing the sensor through the housing from the outside of the bumper</p> <p>14. Repeat for all sensors in the bumper.</p>	<b>TOOLS REQUIRED</b>
	<b>FASTENERS</b>

	
<p>15. Remove parking sensor housings from bumper by squeezing the retaining tabs whilst pushing the inner housing through the bumper from the inside.</p> <p>16. Repeat for all sensors in the bumper. Take care to ensure that each inner and outer housing are matched. Label positions of housings to aid with re-fitment to bar.</p>	<b>TOOLS REQUIRED</b>
	<b>FASTENERS</b>

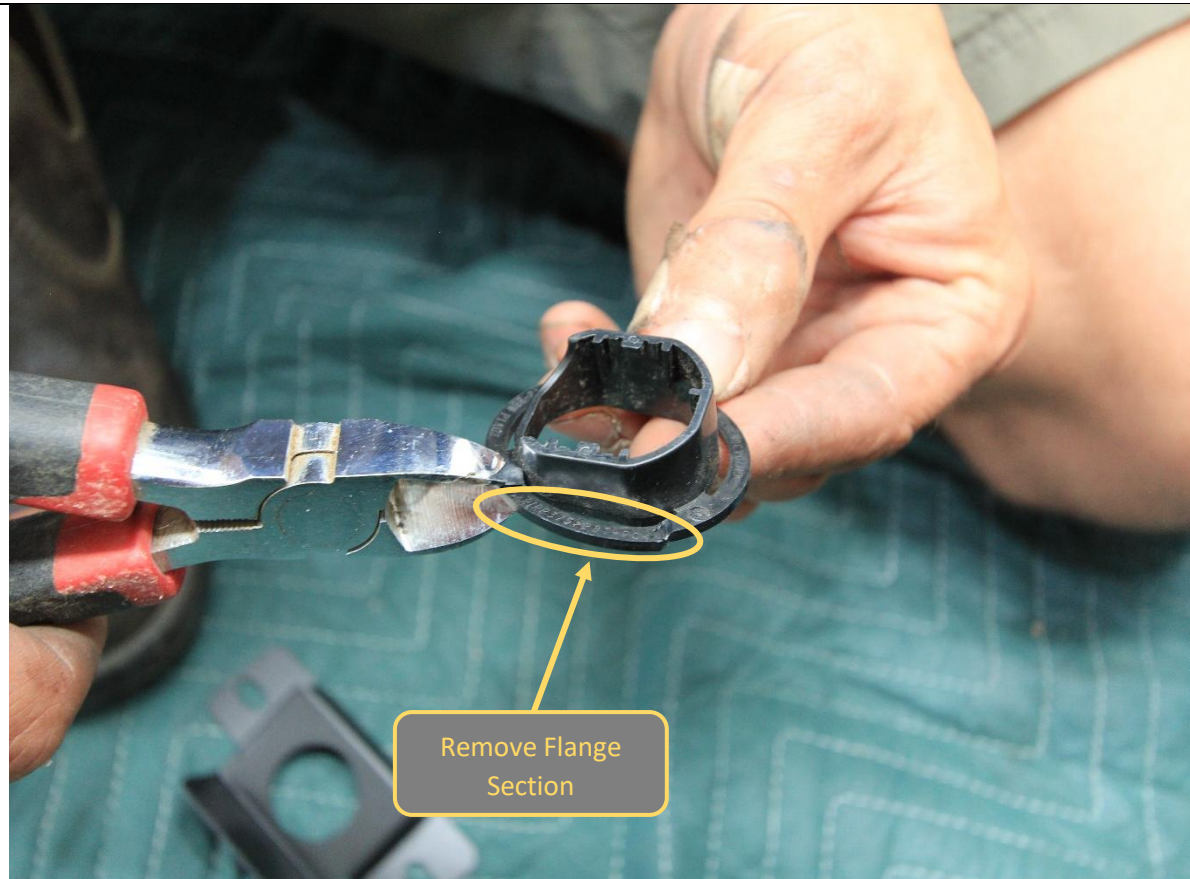


17. On the outside sensor housings only, modify sensor housings to fit in rear bar by removing the small locating ribs using a utility knife.
18. Complete these modifications for the OUTSIDE two sensor housings ONLY.

**TOOLS REQUIRED**  
Utility Knife

**FASTENERS**



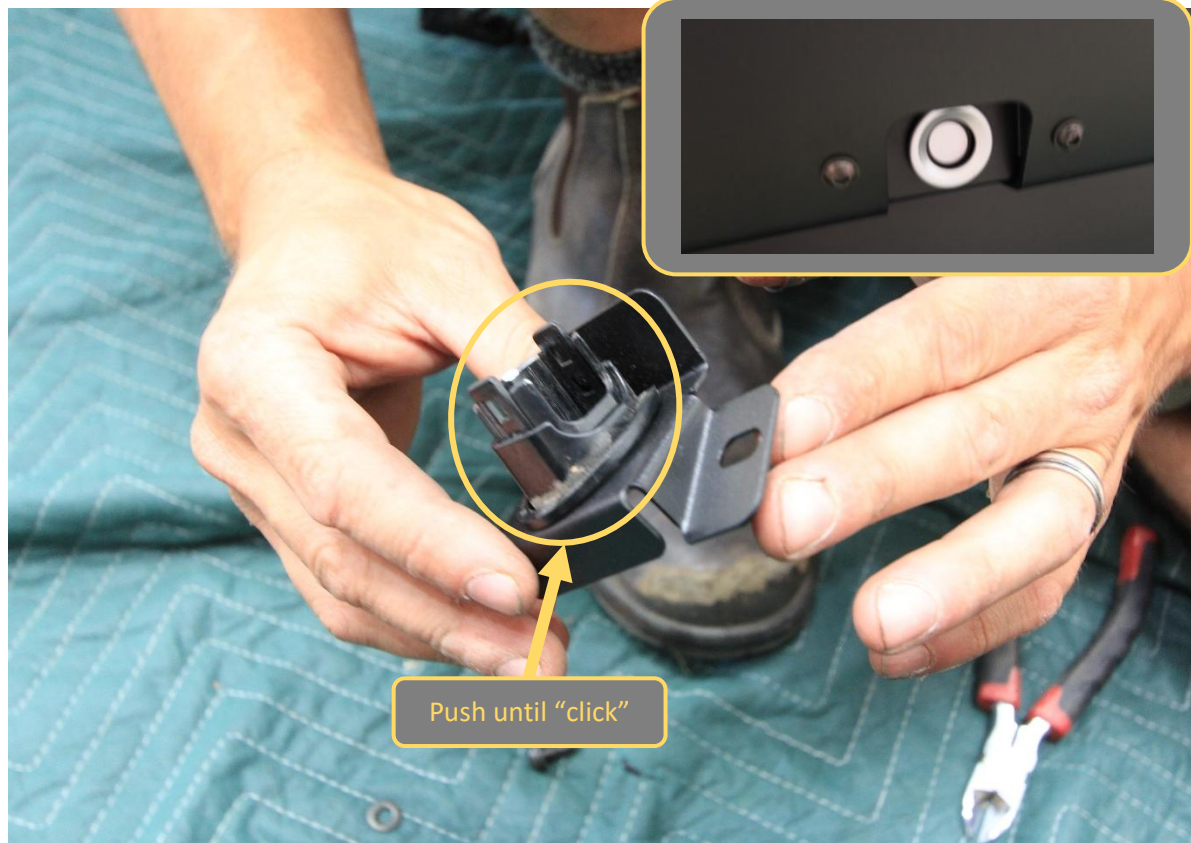


19. Modify inner sensor housings to fit in rear bar sensor brackets by removing lower section of the outer flange using side cutters.
20. Complete these modifications for the CENTER two sensor housings ONLY.

**TOOLS REQUIRED**

Side Cutters

**FASTENERS**



21. Fit the center housings into the sensor brackets. Insert outer housing from outside then replace inner bracket and press until an audible "Click" is heard.
22. Complete the same process to install the outer sensor brackets directly in the wing of the rear bar.
23. Install sensor brackets in rear bar using M6x16 Button head bolt, Flat washer and M6 Flange Nut.
24. If sensor housings are loose use small amount of automotive grade adhesive, such as Sikaflex 227 to prevent housing from moving.

**TOOLS REQUIRED**

Utility Knife  
4mm Hex  
10mm Spanner

**FASTENERS**

4x M6x16 Button Head Bolt  
4x M6 Flat Washer  
4x M6 Flange Nut



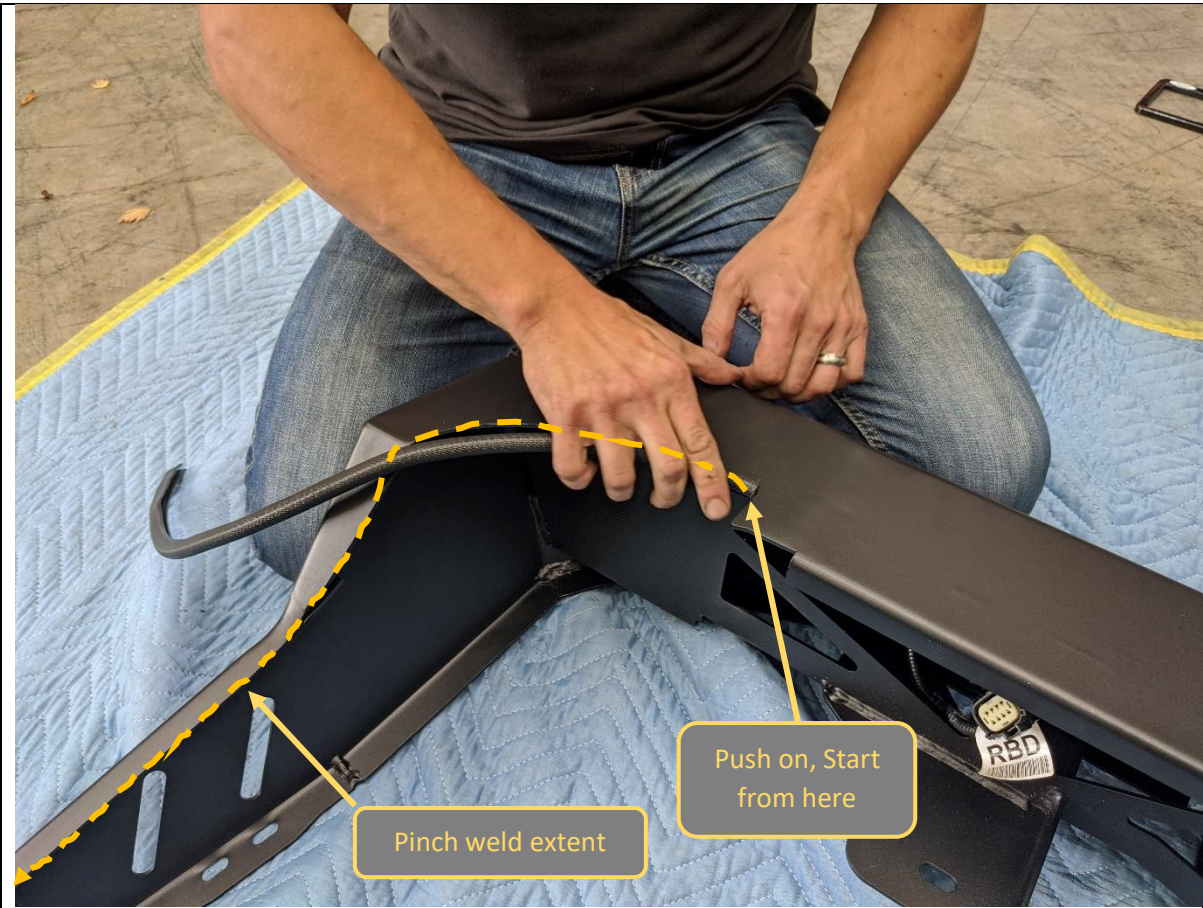
<div>25. Fit the number plate lamps to the rear bar, by first feeding the cable the bar, then securing with screws and nuts supplied in the lamp box.</div> <div>26. Cut off lamp holders from the factory loom. Strip ends and solder to new LED number plate lamp cables. Use heat shrink or electrical tape to insulate solder connections.</div> <div>27. Complete for both sides of vehicle.</div> <div>28. Fit number plate to rear bar using M5x15 pan head screws and flange nuts.</div>	<div>TOOLS REQUIRED</div> <div>Soldering Iron</div> <div>Solder</div> <div>Heat Shrink / Gun</div> <div>Electrical Tape</div> <div>Side cutters</div> <div>Wire strippers</div> <div>Phillips head screwdriver</div>
	<div>FASTENERS</div> <div>Screws supplied with Lights</div> <div>2x M5x15 pan head screw</div> <div>2x M5 flange nut</div>





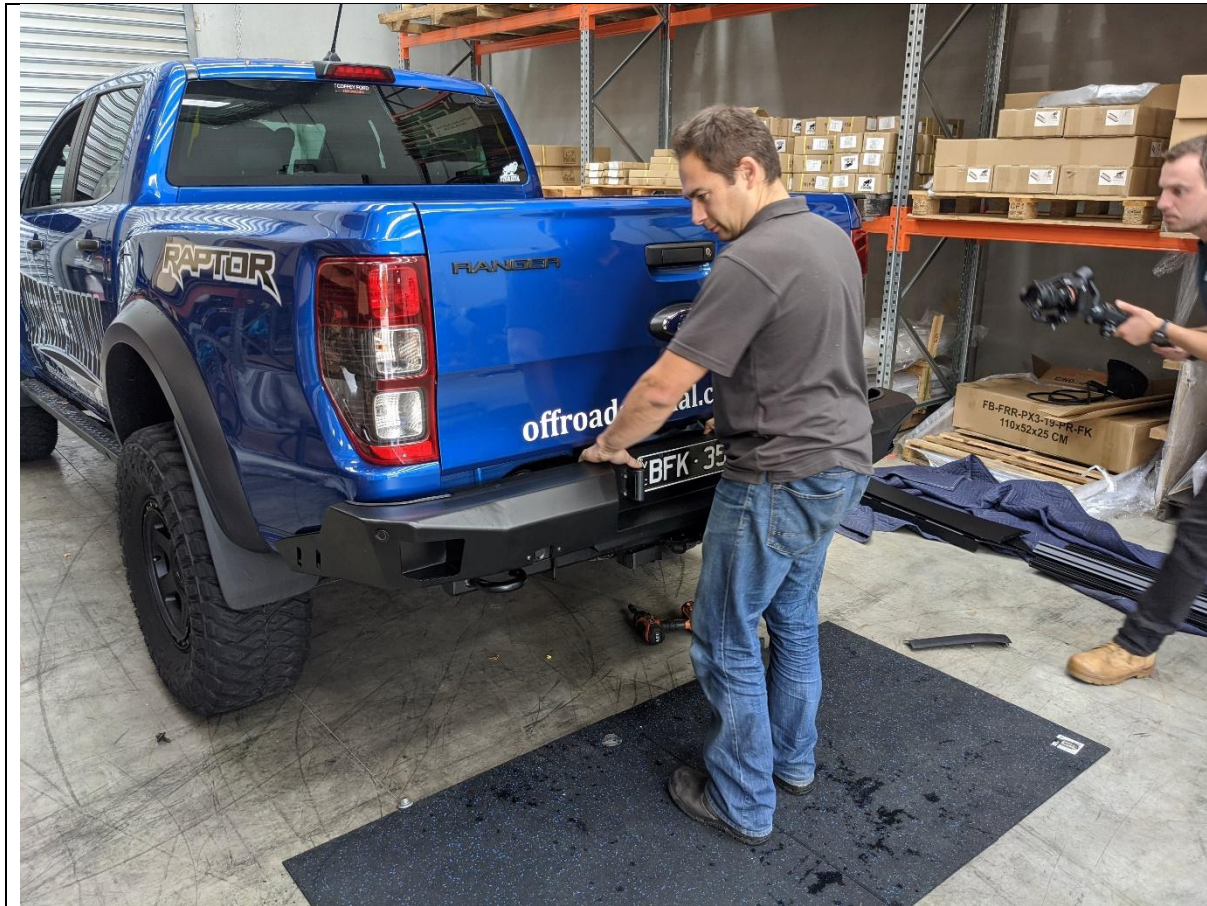
29. Install sensors in housings by inserting into housing from rear of bar and pushing until audible "Click" is heard.
30. Run the loom neatly around the bar, Secure with cable ties if required.
31. Complete for both sides of vehicle.

**TOOLS REQUIRED****FASTENERS**



<p>32. Fit rubber pinch weld to lower edges of wing, in the location shown by pushing rubber over the edge.</p> <p>33. Complete for both sides of bar.</p>	<b>TOOLS REQUIRED</b>
	<b>FASTENERS</b>





34. Lift the rear bar into position on the car. This can be done alone but will be easier with the assistance of another person. The bar should sit on top of the securing tabs on the tow bar.

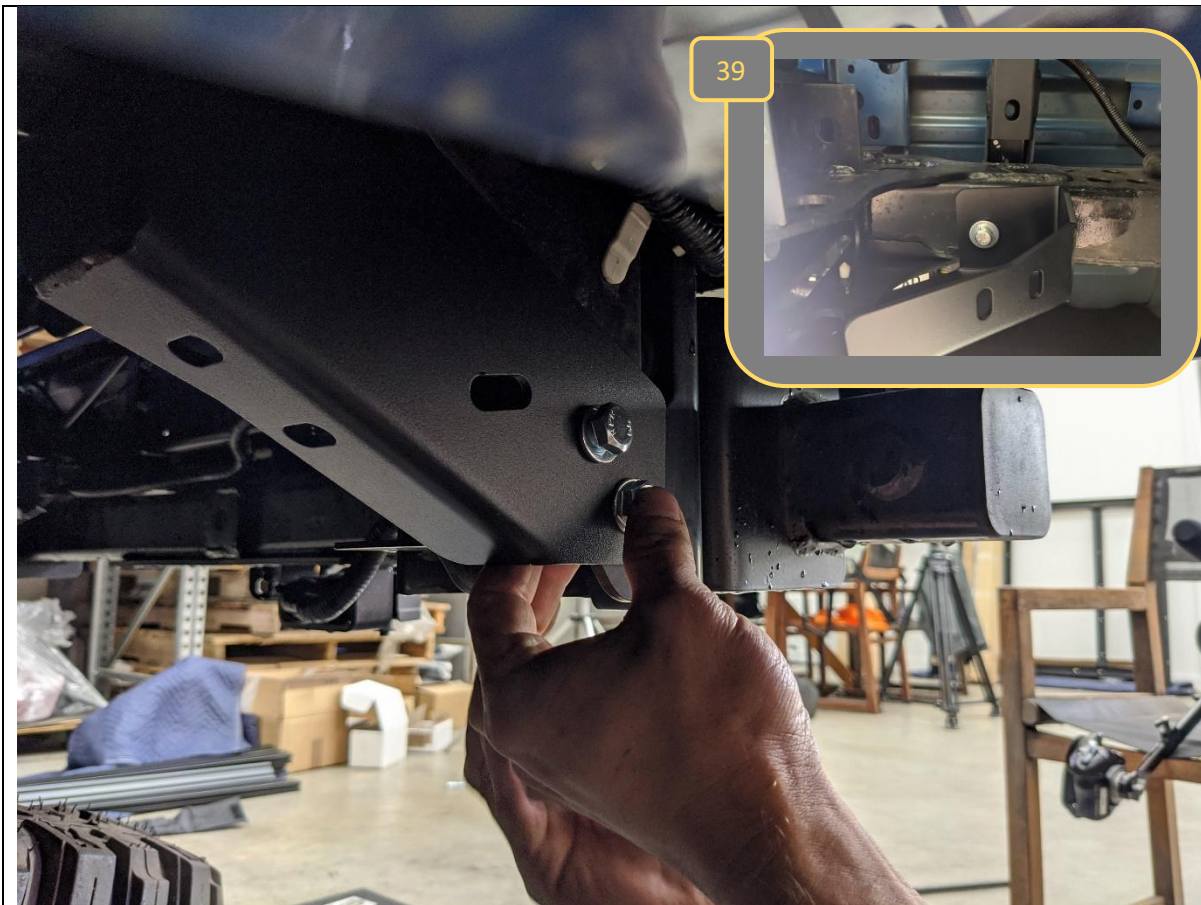
35. Reconnect sensor wiring harness to vehicle.

**TOOLS REQUIRED****FASTENERS**



<p>36. Secure Offroad Animal Bar to factory tow bar using M10x30 Bolts, M10 Large washers and M10 nuts in original factory locations.</p> <p>The outboard bolts behind the factory tow bar require M10x50 bolts. Using a socket and extension bar is easiest way to insert these bolts.</p> <p>37. It is necessary to drop the spare tyre to allow access for the inboard bolts.</p> <p>38. Leave all bolts finger tight at this stage.</p>	<p><b>TOOLS REQUIRED</b></p> <p>16mm Socket Extension Bar</p>
	<p><b>FASTENERS</b></p> <p>6x M10x30 bolts 2x M10x50 bolts 16x M10 Large Washer 8x M10 Nut 1x Factory tow bar nut plate</p> <p>Per side</p>





39. On LHS of vehicle, use factory M8 bolt retained from disassembly to fit the Chassis bracket to the underside of the chassis rail, to the M8 threaded insert in the chassis.

40. Secure through large slot on tow bar using the Nut plate, M10x25 bolts and M10 Flange Nuts.

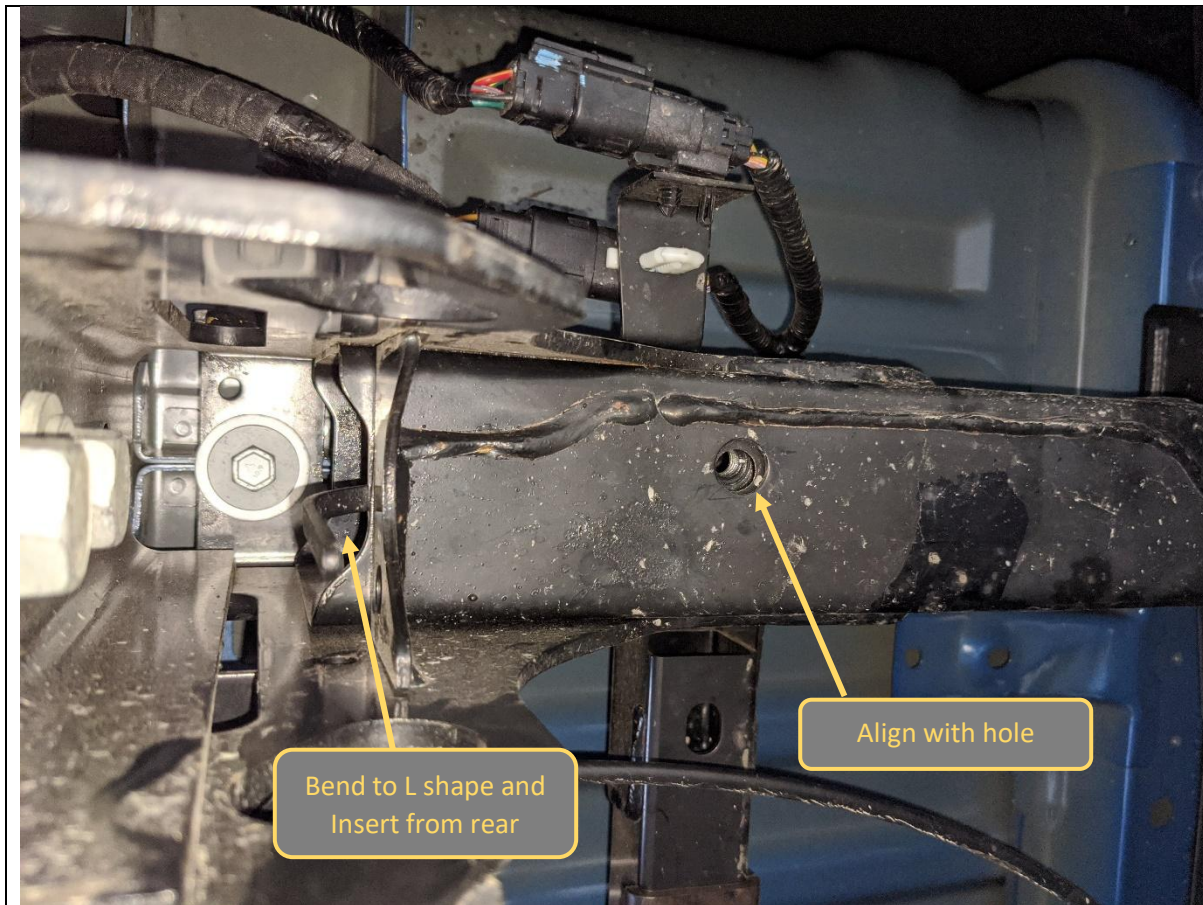
41. Leave finger tight at this stage.

#### TOOLS REQUIRED

#### FASTENERS

Factory M8 Bolt  
2x M10x25 Bolt  
2xM10 Flat Washer  
2x M10 Flange Nut





42. On RHS of vehicle there is no M8 threaded insert in the chassis rail. Position M10 Lollypop nut plate behind the hole in chassis rail as shown.
43. Repeat steps as per LHS of vehicle, using M10x40 Bolt and flat washer into the nut plate to secure the bracket to the chassis in lieu of the M8 Bolt and chassis thread.

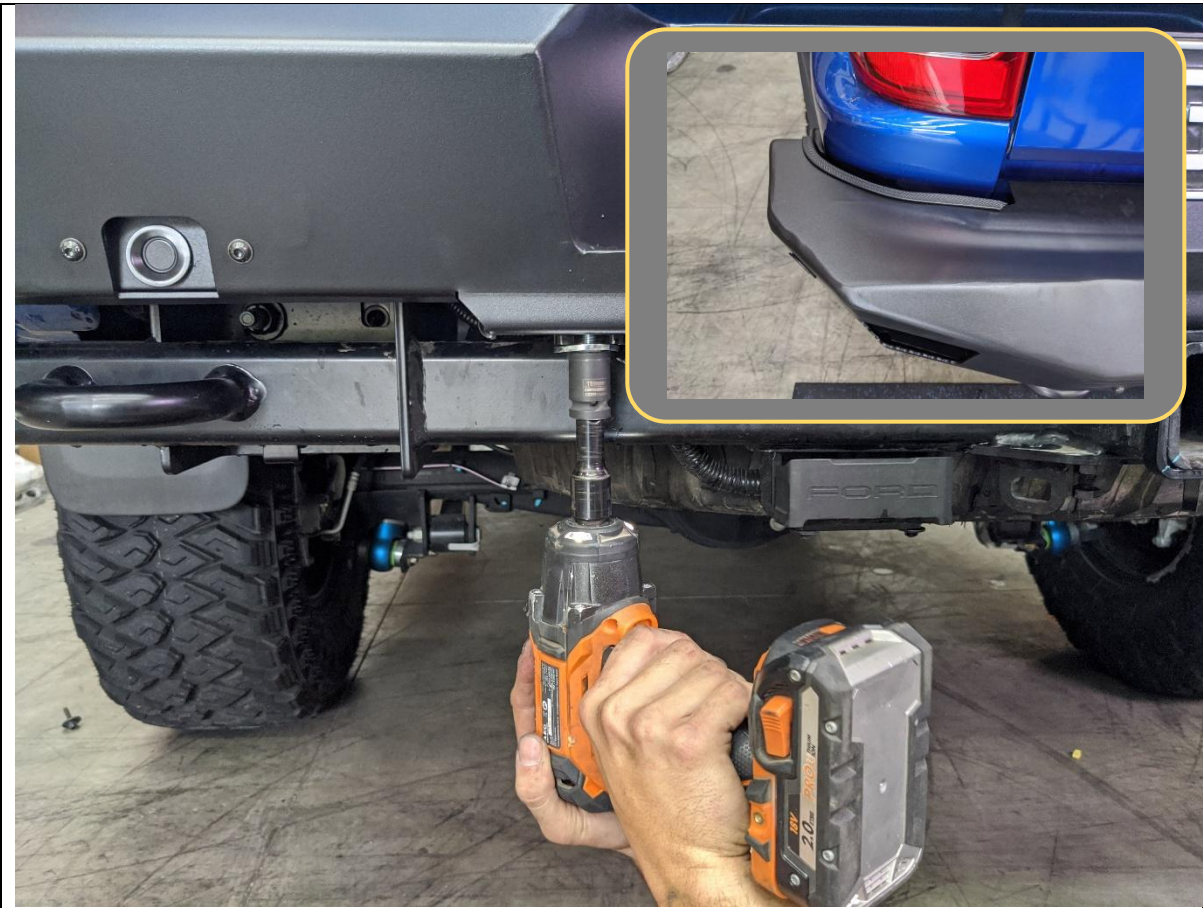
**TOOLS REQUIRED****FASTENERS**

M10 Lollypop Nut Plate  
M10x40 Bolt  
2x M10x25 Bolt  
3xM10 Flat Washer  
2x M10 Flange Nut



<p>44. Fit wing brace to chassis bracket using 3x M10x25 Bolts, Flat washer and flange nuts.</p> <p>45. Secure wing brace to wing using M8X20 Button head bolts, flat washers and Flange Nuts.</p> <p>46. Repeat for other side of vehicle.</p>	<p><b>TOOLS REQUIRED</b></p>
	<p><b>FASTENERS</b></p> <p>3x M10X25 Bolts 3xM10 Flat washer 3x M10 Flange Nuts 2x M8x20 Black BHCS 2xM8 Black Washer 2xM8 Flange Nut</p>





<p>47. With everything fitted inspect alignment of bar with tub. Adjust as nessacary to achieve an even gap between bar and tub.</p> <p>48. Tighten all fasteners, beginning with Fasteners securing Offroad animal bar to tow bar.</p>	<p><b>TOOLS REQUIRED</b></p> <p>16mm Socket 15&amp;16mm Spanner 5mm Hex Key 13mm Socket</p>
	<p><b>FASTENERS</b></p>



<p>49. Return spare tyre to stowed position.</p> <p>50. Replace TBM and secure with factory Pull Pin and R Clip.</p> <p>51. Attach Offroad Animal Logo plate to chamfered face, using attached adhesive backing.</p> <p>52. With that you are done!</p>	<b>TOOLS REQUIRED</b>
	<b>FASTENERS</b>



**Congratulations!**  
**Head for the tracks and enjoy your newly protected Ford Ranger Raptor!**