

# FITTING INSTRUCTIONS

Fitting Time : Approx 5 hours

Product

Bull Bar

Description

**Frontal Protection Bar** 

Part Number

ST35MT19V1 & ST37MT19V1

Suits vehicle

Mitsubishi Triton MR (MY19-on)

PLEASE READ ALL INSTRUCTIONS AND ENSURE THAT ALL IS UNDERSTOOD PRIOR TO FITMENT. PLACE THESE INSTRUCTIONS IN THE VEHICLE AFTER INSTALLATION IS COMPLETED.





#### **Corporate Head Office**

327 Ferntree Gully Road

Phone: 03 8687 1721

Mount Waverley VIC 3149



#### **BULL BAR SAFETY NOTICE:**

#### INSTALLATION SHOULD ONLY BE DONE BY APPROPRIATELY QUALIFIED OR EXPERIENCED PERSONS IN ACCORD-ANCE WITH THESE INSTRUCTIONS.

IT IS THE RESPONSIBILITY OF THE INSTALLER TO ENSURE THAT THE PRODUCT IS CORRECTLY FITTED.

Installation can be performed by an authorised Raxar reseller\*.

#### WARNING:

Do not attach Vehicle Frontal Protection System (**VFPS**) And Tow Points to the vehicle using anchorages not intended for this purpose. (e.g. engine mounting bolts)

Do not use this product for any vehicle make or model, other than those specified by the VFPS manufacturer.

Do not remove the plaque or label from the VFPS or Tow Points.

Do not modify the structure of the VFPS or Tow Points in any way.

The VFPS has been produced to provide continued functionality of parking sensors and other "driver assist" features as closely as possible to Original Equipment. However, as all possible road conditions and combination of other accessories fitted to the vehicle which may affect functionality characteristics cannot be anticipated, *the driver remains responsible at all times for properly controlling the vehicle, monitoring all "driver assist" features and intervening where required to ensure the vehicle is safely operated*.

#### **IMPORTANT INFORMATION:**

Before installing the VFPS & Tow Points:

Check that all components, as listed in the assembly table, are available.

Thoroughly read all instructions.

This product or its fasteners must not be modified in any way.

These instructions are accurate as at the revision date and do not take into account any changes made by the vehicle manufacturer to vehicle design after the revision date or other accessories that are or have been fitted to the vehicle. Raxar cannot be held responsible for such changes and appropriate enquiries should be made before installation.

Before installing, inspecting and/or maintaining the VFPS, the work space should be safe and clear of fuel, debris, electrical or other components.

During installation:

It is the responsibility of the installer to confirm correct operation/clearance of all components.

All holes drilled shall have all burrs and swarf removed then coated with a suitable rust preventative paint.

Ensure that all hardware is fastened to torque list as detailed in these instructions.



#### **MAINTENANCE AND CARE:**

To ensure continued safety and correct operation of the product, the VFPS & the Tow Points must be routinely inspected and regularly serviced (including bolt torque checked for correct tension, chassis and Tow Point inspected for ware and integrity) by an appropriately qualified or experienced person. This service can be done by an authorised Raxar reseller\*.

The high tensile fasteners supplied with this product were used to achieve the specified rating. If replacement of the fasteners is required, fasteners of the same rating and quality must be used.

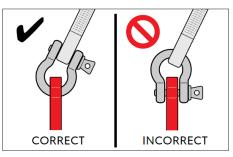
If this VFPS is fitted with a hinged number plate bracket, extra care must be taken when returning back to public roads following the use of the winch or conducting a deep water crossing.

The driver must ensure that the number plate bracket is returned back to the down position allowing full visibility of the number plate when returning to public roads.

#### SAFETY GUIDELINES FOR USE OF TOW POINTS :

All tow points have been designed and tested for straight line pull. The Tow Points have not been tested for lifting purposes & should not be used for lifting, the forces applied differ between lifting and straight line pull type recoveries. The Tow Points are tested during development to establish Working Load Limits of each point.

If you need to perform a recovery, it is imperative that both Tow Points are utilized, by means of a Bridal Strap and either 4.75T rated bow shackles or soft shackles, see image below for correct bow shackle setup on Tow Point.



The Tow Points are designed to be used in unison, by using a bridle to spread the load between both points and the chassis of the vehicle. Failure to use tow points correctly can result in Tow Point fatigue and bending and voiding your warranty.

Always INSPECT the Mounting Points and shackles before each use. Do not use if there are visible signs of damage or wear (including cracking or elongation). Do not exceed the Working Load Limit (WLL) of the shackle or Tow Points. Always STAY A SAFE DISTANCE away from the recovery area – at least 1.5 times the length of the recovery strap. Incorrect use of recovery equipment can result in serious injury or death.

Always ensure everyone involved carries out sufficient preparation for any recovery, to minimise the strain on all vehicles being used, i.e. Digging, strap placement, moving or minimizing obstructions etc. If you do not fully understand how to safely use or apply the safety or recovery equipment or if you are uncomfortable with your abilities in the use of recovery equipment, please complete a course that specialises in four-wheel driving & 4WD vehicle recovery.



#### **EQUIPMENT:**

These safety products should, at a minimum, be used when fitting or working on the product.



Protective Glasses



Hearing Protection

Installation in accordance with these instructions and adherence to warnings will ensure compliance with relevant regulatory and safety standards as at the revision date.

Failure to adhere to these instructions may affect the roadworthiness of the vehicle or cause personal injury, death or damage to property.

BY USING THIS PRODUCT YOU ACKNOWLEDGE AND AGREE THAT TO THE EXTENT PERMITTED BY LAW OPPO-SITE LOCK WILL NOT ACCEPT LEGAL OR OTHER LIABILITY FOR ANY LOSS, INJURY OR DAMAGE CAUSED BY INCORRECT OR INAPPROPRIATE INSTALLATION OR USE OF THE PRODUCT.

•	these services are performed by Opposite Lock at additional cost
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Torque Settings				
Bolt Diameter (mm.)	Torque ( Nm )		Torque ( ft.lb )	
M6	9		7	
M8	22		16	
M10	44		32	
N12	8.8 Grade	77	57	
M12	10.9 Grade*	109	80	

#### Tools required

- 1. Metric socket and spanners
- 2. Phillips and flat head screwdrivers
- 3. Torque wrench
- 4. Marking pen
- 5. Rust inhibiting paint
- 6. 2" Masking tape

- 7. Air hacksaw
- 8. Drill and metric drill bits
- 9. Solder and Soldering Iron
- 10. Electrical Tape/ Heat Shrink
- 11. Test Light



# Parts List

**Important** : Check contents of fitting kit before commencing fitment.

Frontal Protection Bar						
Item	Component Name	Q'ty	Remarks			
	Triton Bull bar ST35MT19V1					
1		1	ST35MT19V1 = Looped Bar ST37MT19V1 = No Loop Bar			
	Or ST37MT19V1					

ltem	Component Name	Q'ty	
2	Bull Bar Mount	1	
3	Underbody Protection Center	1	
4	Welded Nut Plate RH	1	
5	Offset Hinged Number Plate	1	
6	Camera bracket	1	
7	Grille Bracket	2	
8	Welded Nut Plate LH	1	
9	Tow Point LH	1	
10	Chassis Support Bracket RH	1	
11	Tow Point Support Bracket Assembly	1	
12	Tow Point RH	1	
13	Chassis Support Bracket Inside LH	1	
14	Underbody Protection Side LH	1	
15	Parker Indicator Lights OLIP80	2	
16	Hose Fitting Straight Connector 5mm	2	
17	Washer Bottle Welded Assembly	1	
18	Washer Bottle Mounting Bracket	1	
19	Filler Neck Attachment	1	
20	Washer Motor Bracket 2	1	
21	Headlight Washer Pump Bracket	1	
22	Rubber Washer Neck Flexible Extension	1	
23	Wiring Extension with Split Tubing 250mm	1	
24	5mm ID Tube Extension	2	
25	M6 Spring Washer - Black	21	
26	M6 x 20 hex bolt	23	
27	M6 x 20 x 1.5 Panel Washer - Black	19	

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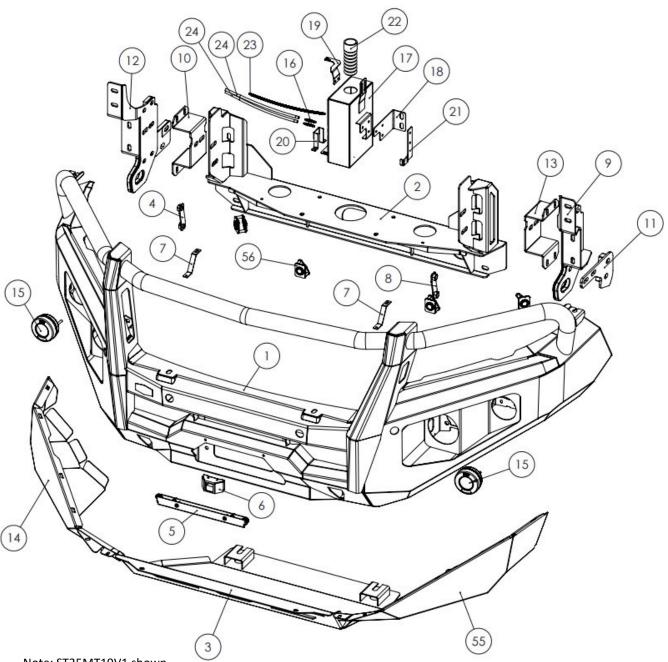


# Fasteners

rastener			
ltem	Component Name	Q'ty	
28	M8 Spring washer	2	
29	M8 Flat washer 20mm	2	
30	M8 x 1.25 x 25mm Hex bolt	2	
31	M6 Flange Nut	14	
32	M8 Cage Nut	2	
33	M8 Spring Washer	2	
34	M8 x 1.25 x 35mm Hex bolt	2	
35	M10 Spring washer	27	
36	M10 x 1.25 x35 Hex Head	16	
37	M10 x 26 x 2.0 Flat Washer	26	
38	M10 x 1.25 Flange Nut	20	
39	M8 Flat washer 20mm	2	
40	Crush Tube Chassis 48mm	4	
41	Crush Tube Chassis 57mm	2	
42	M6 Cage Nut	12	
43	M10 x 1.5 x 50 Hex Head	2	
44	M10 x 1.5 x 45 Hex bolt	6	
44	M10 x 1.25 x 30 Hex Bolt Black	2	
46	M12 x 33 x 3.0 Flat Washer Black	10	
47	M12 Spring Washer	10	
48	M12 x 1.75 x 80 Hex Bolt	4	
49	M12 x 1.75 Flange Nut	6	
50	M12 x 1.75 x110 Hex Bolt	2	
51	M12 x 1.25 x35 Hex Bolt	4	
52	M10 x 1.25 x55 Hex Bolt	2	
53	M10 x 1.5 x 40 Hex Bolt	2	
54	M6 x 14 x 1.6 Flat washer	4	
55	Underbody Protection Side LH	1	
56	Universal Parking Sensor Housing	4	
57	Raxar Plate	1	
58	Customer Envelope	1	
59	Fitter Envelope	1	
60	Fitting Instructions	2	
61	Rubber Grommet	2	
62	Warning Label	1	
63	Bull Bar Compliance Plate	1	
64	Triton Bullbar Harness	1	



# **Component overview**



Note: ST35MT19V1 shown

## Fitting Procedure

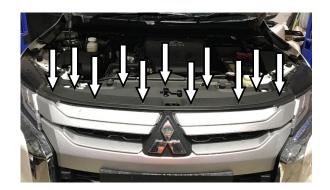


Locate vehicle in a suitable area to 1. commence work.





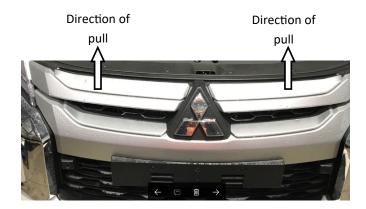
- 2. Open the bonnet of the vehicle and disconnect the battery
- 3. Remove the front number plate where fitted.



4. Remove and retain the clips securing the plastic cover between the grille and radiator support panel.

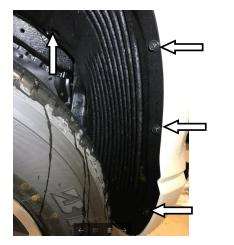


5. Remove and retain the two clips (one either side) securing the top of the grille.

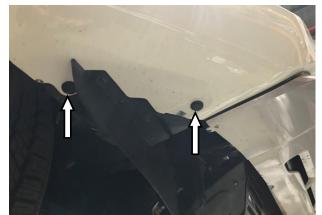


6. Remove and retain grille. To remove, pull grille in an upwards direction to dislodge the internally sprung clips from bumper.

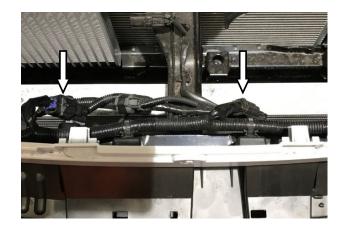


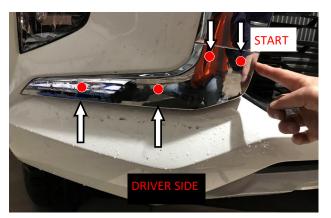


7. Remove forward section of wheel Liner and retain . (Each side)



8. Remove and discard the rivet clips underneath on the corner of the bumper bar. (Each side)





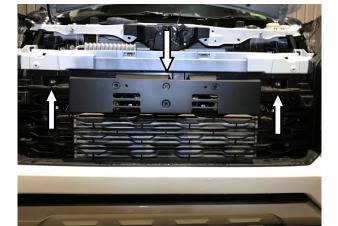
9. Disconnect parking sensor and Indicator harnesses located behind grille.

- Remove and discard lower fog light surround (Both sides).
   Use a 5mm spanner and press the 4 clips from inside the bumper. Start off with the 2 clips which are towards the center of the vehicle & slowly pry out the chrome panel while pressing against the clips.
- 11. Repeat on Passenger side.











Note: Location of 4 trim clips inside the bumper.

12. Remove the M5 hex-head bolt on both sides and discard of it.

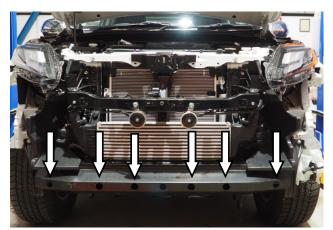
13. Remove the remaining three bolts securing the bumper to the bumper support beam.

14. With all fasteners removed gently pull on the bumper to release it from the final clips retaining it to the vehicle. Set the bumper aside as components attached to it will need to be reused.





15. Remove and discard the inner guard support brackets from both sides of the vehicle.



16. Remove and discard the panel from the front of the impact beam.



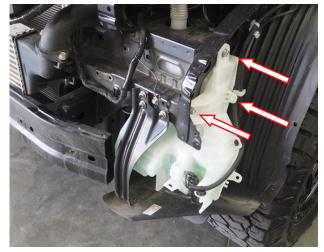
17. Remove the plastic Air Deflectors from both sides.



18. Remove the undertrays from the vehicle







19. Remove the washer bottle filler neck from the engine bay

- 20. Disconnect the hose and drain fluid from the bottle
- 21. Unplug all connectors
- 22. Remove the washer bottle from the vehicle by removing the three bolts outlined

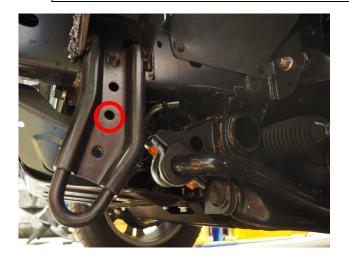
23. Remove and discard the outer bumper clips from the front guards





- 24. On the right hand factory tow point, locate the position circled in the image. Using an 11mm drill bit, drill through the second layer of steel.
- 25. De-burr and treat holes with rust preventative paint





- 26. On the left hand factory tow point, locate the position circled in the image. Drill through the specified hole using an 11mm drill bit.
- 27. De-burr and treat hole with rust preventative paint

28. On both sides of the vehicle hang the chassis support bracket over the chassis rail

29. On the left hand side of the vehicle, bolt the tow point and support bracket to the chassis support bracket using the following hardware. <u>Start with location D</u>

Location A M10x1.25x35 M10 Flat washer M10 Spring washer M10x1.25 Flange Nut Location C M10x1.5x50 M10 Flat washer M10 Spring washer M10x1.5 Flange Nut Location E M10x1.5x55 M10 Flat washer M10 Spring washer M10x1.5 Flange Nut

Location B M10x1.25x35 M10 Flat washer M10 Spring washer Location D M12x1.75x110 M12 Flat washer M12 Spring Washer 57mm crush tube M12x1.75 Flange Nut

30. On the right hand side of the vehicle, bolt the tow point to the chassis support bracket using the following hardware. *Start with location D* 

Location A M10x1.25x35 M10 Flat washer M10 Spring washer M10x1.25 Flange Nut

Location B

M10x1.25x35

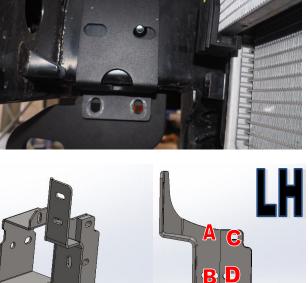
M10 Flat washer

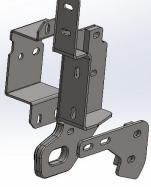
M10 Spring washer

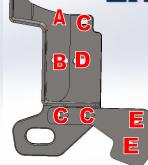
Location C M10x1.5x45 M10 Flat washer M10 Spring washer M10x1.5 Flange Nut

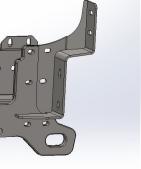
Location D M12x1.75x110 M12 Flat washer M12 Spring Washer 57mm crush tube M12x1.75 Flange Nut Location E M10x1.5x40 M10 Flat washer M10 Spring washer M10x1.5 Flange Nut

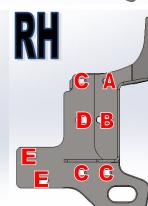
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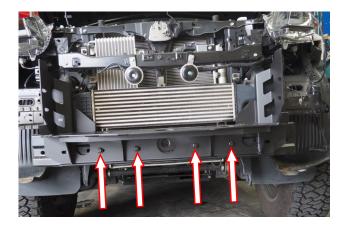




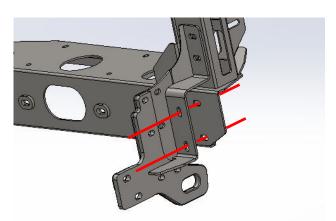




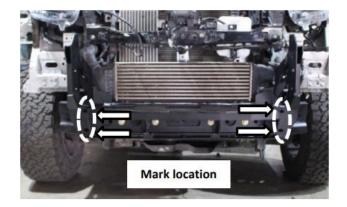




- 31. Lift the mount onto the vehicle and loosely secure using the following hardware in the locations pictured
  - 4x M10x1.25x35
  - 4x M10 Spring Washer
  - 4x M10 Flat Washer



32. To align the bar mount, ensure the notches between the mount and tow hook bracket are in line.

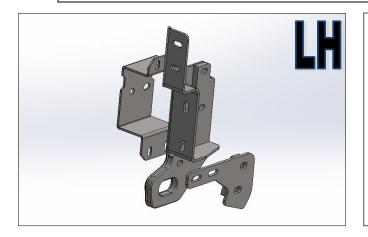


- 33. Once the desired alignment is found, mark the front of the impact beam
  24. Demous the hermount and tour
- 34. Remove the bar mount and tow hooks from the vehicle



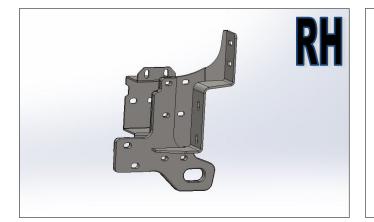
- 35. Drill a pilot hole through both marked locations on the impact beam
- 36. Using a step drill or similar, enlarge the holes to 18mm
- 37. De-burr and treat holes with rust preventative paint





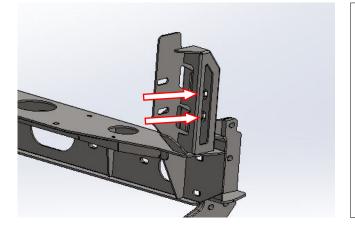
38. On the left hand side of the vehicle, reinstall the tow point, tow point support bracket and chassis support backet as previously outlined.

Note: When torquing the bolts to the factory tow hook, slight deformation will occur to the inner layer of the tow hook. To ensure bolt is tight, please loosen and retorque several times.



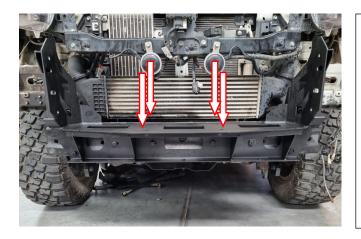
39. On the right hand side of the vehicle, reinstall the tow point and chassis support backet as previously outlined.





- 40. Insert the four 48mm crush tubes into the holes made in the impact beam.
- 41. Reinstall the bar mount using the fasteners outlined previously. In addition, add the following hardware through the crush tubes
  - 4x M12x1.75x80
  - 4x M12 Spring Washer
  - 4x M12 Flat Washer
  - 4x M12x1.75 Flange Nut
- 42. Using the following hardware, bolt the bar mount to the tow hook on both sides
  - 4x M10x1.25x35
  - 4x M10 Flat washer
  - 4x M10 Spring washer
  - 4x M10x1.25 Flange Nut





- 43. If a winch is to be fitted, it is to be mounted to the top side of the bar mount in the location pictured.
- 44. Install the winch controller and associated components in accordance with your chosen winch's instructions.



- 45. Carefully remove wiring loom from bumper .
- 46. Where fitted, carefully remove the front camera.



- 47. If parking sensors are not to be fitted, please skip to step 51
- 48. Take note of the parking sensor orientation and carefully remove the sensors from the bar

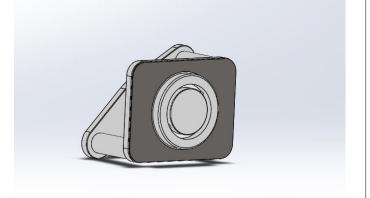
**Note:** It is suggested to remove one sensor and complete the following two steps before removing the next sensor. This will help ensure the correct location and orientation is maintained.



49. Remove the center section of the supplied blank. Retain each sensor with 2 screws as pictured.

**Note:** Supplied parking sensor will differ from image shown





50. Using the double sided tape provided with the parking sensor housings, carefully mount them to the inside of the bumper. To maintain correct functionality the sensors must be installed in the correct location and orientation when compared to the original bumper.

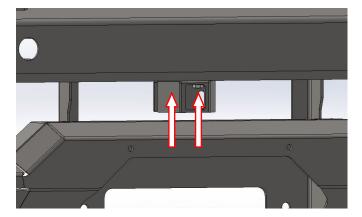


51. On the bull bar, insert 2 M8 cage nuts and 4 M6 cage nuts into the slots along the bumpers lower lip which will allow the mounting of underbody plates.



- 52. Install fog lights to Bull Bar using the supplied hardware
- 53. Install the loom into the rear side of the bumper. Use cable ties where required to ensure the loom secured to avoid damaged operation of the vehicle.

Note: Plug and Connect all sensors while securing the loom.



- 54. Where required, install the front camera with the supplied bracket. The bracket is to be mounted to the center of the bullbar using the following hardware
  - 2x M6 x 20mm Hex bolts
  - 2x M6 Spring Washer
  - 2x M6 Panel Washer
  - 2x M6 Flange Nuts





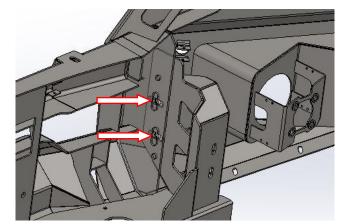
55. At this stage, install the Indicator/ Parking light harness.

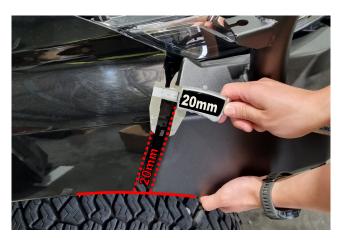
Refer to the fitting instructions at the end of this document. (Page 25)



56. Position the bull bar on the vehicle.

**Note:** Masking tape can be used to protect any potential areas the protection bar could strike and damage before fitting.



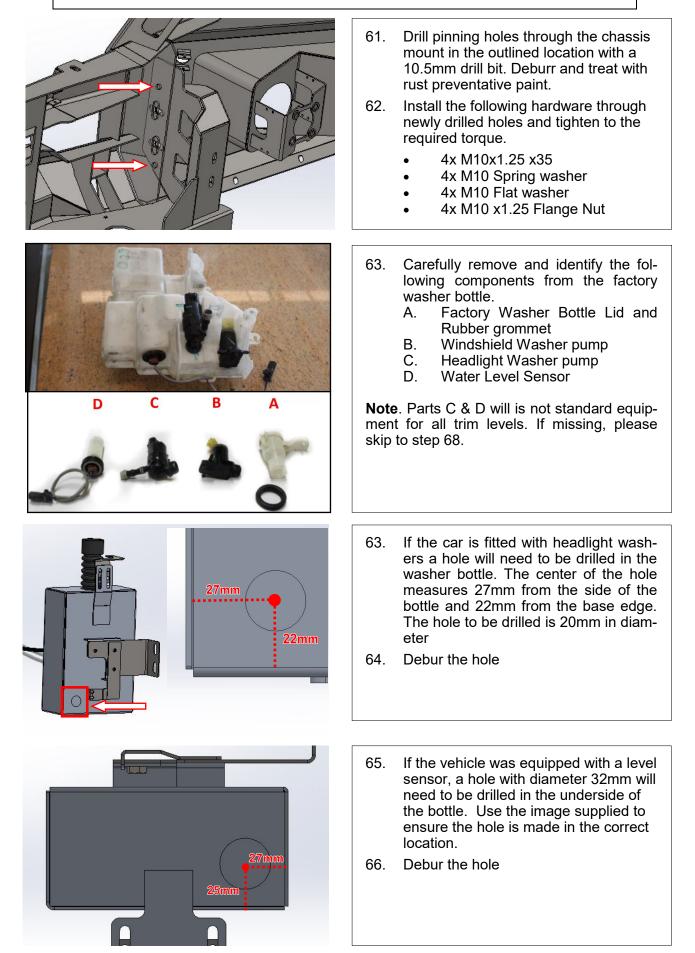


- 57. Secure the protection bar to the chassis mounts using the following hardware
  - 4x M12x1.25x35
  - 4x M12 Spring washer
  - 4x M12 Flat washer
  - LH and RH Nut plates

Note : Do not fully tighten.

- 58. Align the protection bar so there is a M-MINIMUM 20mm gap between the vehicles fender and wing. Ensure the end of the wing is in line with the wheel arch as shown.
- 59. If the bar does not sit centrally across the front of the vehicle, loosen the chassis mount and adjust accordingly.
- 60. Once the protection bar has been aligned correctly fully tighten the mounting bolts to the required torque.

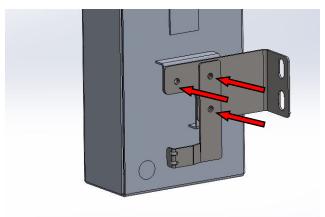




Revision 02 (June 2023)

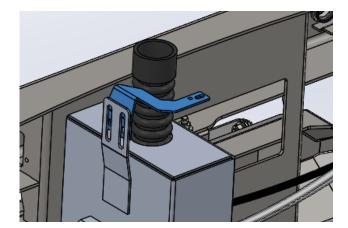






67. Install level sensor into the drilled hole using the factory rubber.

- 68. Install the mounting bracket and headlight washer motor where required. Use the following hardware
  - 3x 20mm M6 Bolts
  - 3x M6 Panel washers
  - 3x M6 Spring washers

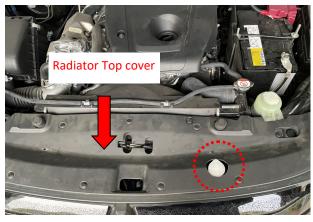




- 69. Insert the rubber filler neck into the top of the bottle reusing grommet A from step #63. Using M6 hardware, bolt the filler cap bracket to the bottle.
- 70. Slide the base of the washer bottle filler cap into the rubber hose and retain it using a bolt into the support bracket.
- **Note**: Place the radiator top cover and check for the correct height and adjust the rubber filler neck
- 71. Locate the two bolts outlined in the passenger side corner of the radiator support. Remove both nuts and retain them for reinstallation.
- 72. Bolt the washer bottle into position reusing the original hardware.







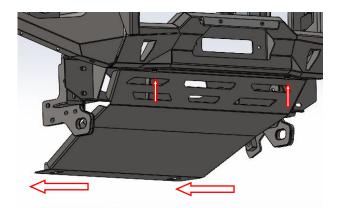
- Extend the wiring to the washer pump motor with the supplied harness. (Item 23)
- 74. If needed extend the fluid hoses with supplied hoses & connectors.
- 75. Connect all hoses and ensure the system is free of leaks and functions as intended.

**Note**: If there are leaks, use Sikaflex or similar sealant.

- 76. Fit the radiator top cover and cutout a hole to access the washer bottle opening cap.
- 77. Once the cutout has been made, remove the top cover again to continue with the fitment of grille.



78. Refit the vehicles factory underbody protection plate and leave the front 2 bolts loose for next step.



79. Install the center underbody plate. Slide the lower edge to the factory bolts.

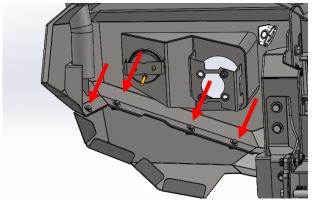
**Note**: Make sure to sandwich the rubber in between the two metal surfaces

For the upper edge where the plate bolts to the bumper use

2x M8x20mm bolt 2x M8 flat washer 2x M8 spring washer







80. Install four M6 cage nuts in the locations outlined on both wing plates

**Note**: Fasteners to be installed from the top of bullbar wing.

- 81. Using the following hardware bolt the wing undertrays to the bar. 12x 20mm M6 Bolts 12x M6 Flat washer 12x M6 Spring washer

Note: The two centrally located bolts are accessible externally, the remaining 4 will need to be accessed from the rear side of the bar.



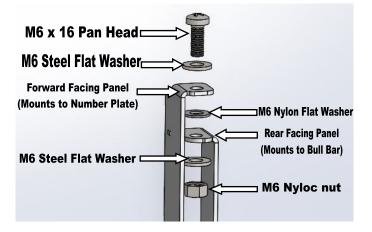
- 82. With the outer protection plates fitted, mark a line on the inner guard liners along the bottom edge of the protection plate.
- 83. Trim the inner guard liners and place behind the rear flange of the outer protection plates.



<image/>	84. Locate and identify the 2x factory M6 bolt on the front body rail.
UPPLIED BRACKET M6 HARDWARE	<ul> <li>85. Locate and identify the holes in the bottom of grille and attach the supplied bracket to the grille with the following hardware.</li> <li>M6 flange nut</li> <li>M6 washer</li> <li>M6 bolt</li> <li>M6 spring washer</li> </ul> Repeat on other side.
GRILLE           Body rail	<ul> <li>86. Attach the grille to the vehicle with the 2x top clips.</li> <li>87. Secure the bottom of grille by bolting the other end of bracket using the existing M6 hardware on the body rail.</li> </ul>
	<ul> <li>88. Check if the Bullbar harness is plugged to the factory bumper loom and check all other connections are done. Secure all hanging wires with cable ties.</li> <li>89. Refit the grille and top cover using the retained clips.</li> </ul>

FAL







90. Assemble the hinged number plate mount

**Note:** Ensure nylon washers are between both rotating surfaces

91. Fit the number plate to the bar with two M6 x 16mm pan head screws.



- 92. Once finished check that all wiring is correct, connected and secure, check that all lights function properly.
- 93. **Important :** Test parking sensors and radar function (if fitted) to ensure they are functioning properly. **(Finish)**

**Note:** As all configurations and accessory types have not been able to be tested it is recommended that the vehicle is test driven to confirm nothing interferes with the vehicle safety systems

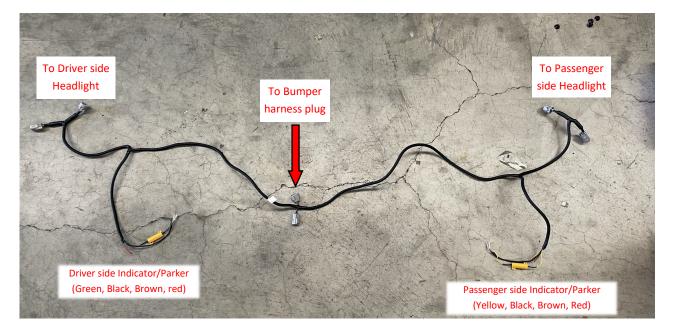


#### INDICATOR/PARKER WIRING HARNESS Fitting Procedure

#### Parts List

Important : Check contents of fitting kit before commencing fitment.

Indicator/Parker Wiring Harness Kit					
Item	Component Name	Qty.	Remarks		
1	Triton Bullbar Harness	1			
2	150mm Cable Ties	10			



The following instructions assumes that the vehicle bumper has been removed/trimmed for bullbar fitment and all other bullbar mounts and brackets have already been fitted.



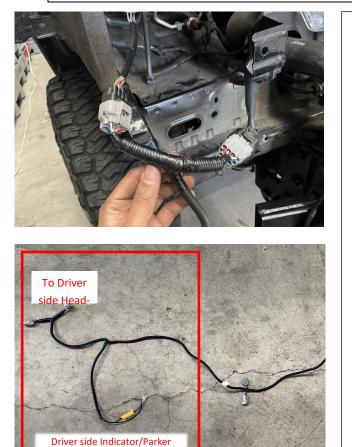
1. Locate and identify the OEM headlight plug connectors under the headlight. Carefully unclip and unplug.

Note: To unclip from headlight, slide it towards the back of the car.

(Driver side shown)



#### INDICATOR/PARKER WIRING HARNESS Fitting Procedure



2. After unplugging, connect the driver side grey plug pair in Bullbar harness with the corresponding male and female ends in the driver side headlight plugs.

**Note**: Driver side can be identified by the Green, Black, brown and Red color wire tails.

3. Repeat on Passenger side.



(Green, Black, Brown, red)

INDICATOR	(Driver Side)	Parking Lights		
Harness Side	Bullbar side	Harness Side	Bullbar side	
Green	Yellow	Brown	Black	
Black (GND)	White			
INDIC (Passeng		Fog Lights		
Harness Side	Bullbar side	Connect the c	orresponding	
Yellow	Yellow	wires in the factory bump		
Black (GND)	White	loom		

4. Pair of Grey plug connectors located in the middle of Bullbar harness; connect one side to the factory body plug and the other one connects to the OEM bumper loom on bullbar.



5. Once all the plugs have been connected, refer to the wiring diagram on left and solder the bullbar parker/indicator wire tails to the wire tails of the harness.

Note: Red wire in the harness is a high beam trigger & can be used for driving lights

6. Insulate the solder joints with electrical tape or heat shrink tubing.



#### INDICATOR/PARKER WIRING HARNESS Fitting Procedure



- 7. Secure the resistors in bullbar harness with cable ties allowing enough ventilation and safe from water and any debris.
- 8. Secure all hanging wires with cable ties
- 9. Wiring harness installation is now complete. Continue with the bullbar installation and check correct function of all lights and other electronics once bullbar is mounted to the vehicle.

