

FITTING INSTRUCTIONS

BEHIND GRILLE LIGHTS

To suit Ford Ranger Raptor (V6 twin turbo), RA 2022+

2 x 13" Light bars

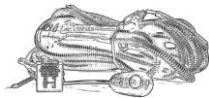


Approximate Fitting Time: 2 Hrs
NHBGF98RLB

LIGHT BAR KIT INCLUDES



2 x Night Hawk 13"
LED Light Bars
(NHT130VLI)



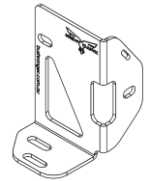
300W Wiring Harness
(NHW300DT)



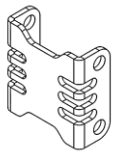
Cable Ties



Installation Manual



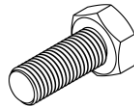
1x Right Hand Side
Bracket



1x Centre Bracket



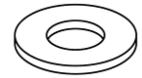
1x Left Hand
Side Bracket



4x M8x20mm Hex
Bolts



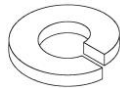
2x M6x20mm Button
Head Socket Screw



6x M8x16mm (OD)
Flat Washer (1.6mm
thick)



2x M6x12mm (OD)
Flat Washer (1.6mm
thick)



2x M8 Spring Washer
(1.6mm thick)



4x M8 Nyloc Nut



2x M6 Nyloc Nut

REQUIRED TOOLS



#2 Phillips Drive
Screwdriver



Trim Removal Tools



Side Cutters



Ring Spanner 13mm



Stubby Ratchet
Spanner 13mm



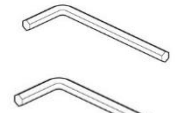
Stubby
Combination
Spanner 10mm



Socket Drive
Wrench



Sockets 8mm, 10mm
& 13mm



Hex Keys 4 & 5mm



Torx Key T30



Hacksaw

NOTES

GENERAL

- For the purpose of these fitting instructions, the left-hand side (LHS) and right-hand side (RHS) of the vehicle are from the view of sitting in the driver's seat looking forward.
- Please take the time to read the instructions thoroughly before proceeding with the fitment of this Night Hawk Behind Grille Light kit.
- Ensure all components, as listed above, are received prior to commencing the fitment. Please retain all hardware until fit-up is complete.
- All wiring should be completed by a qualified auto electrician. Bushranger bears no responsibility for any failure caused by the incorrect fitment of the light bar kit.
- Ensure these fitting instructions are passed onto the vehicle owner and/or operator.

WARNINGS

- Do not use this product for any other vehicle make or model, other than those specified for this application.
- Do not modify the light bars, brackets and wiring contained within this kit.
- All installations of driving lights and light bars to the front of a vehicle result in an obstruction to the airflow passing through the radiator. Consider your driving needs/habits prior to installation.

BEFORE INSTALLATION

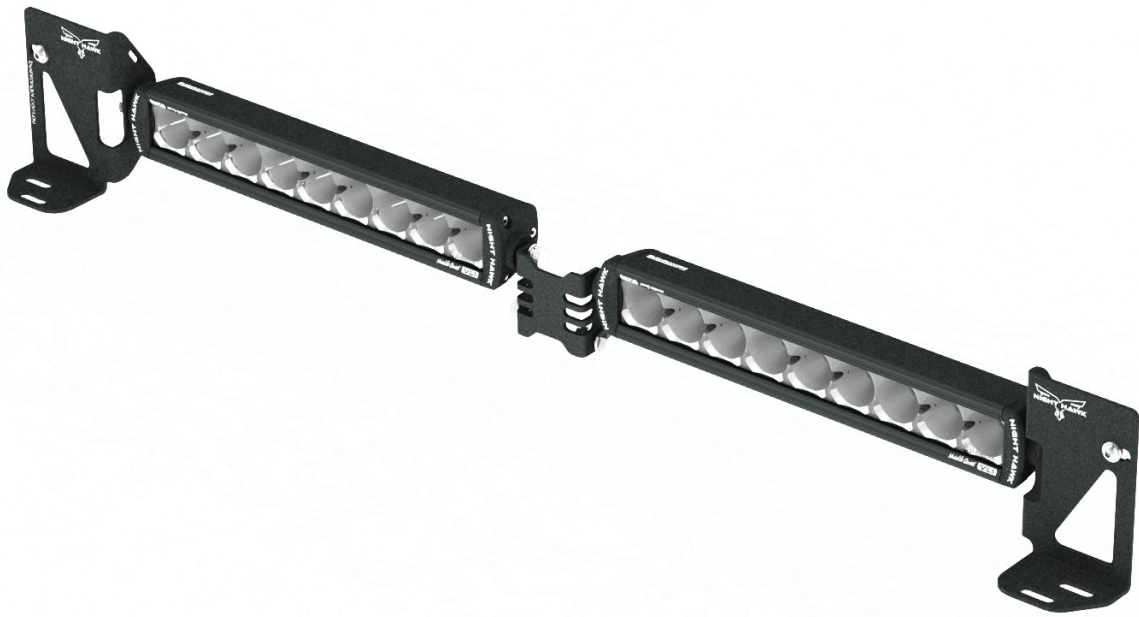
Please read these instructions carefully before installation, paying special attention to all 'Notes'. Failure to do so may result in damage of parts and/or injury.

CAUTION

Torque specifications unless otherwise stated:

- 10Nm for M6 fasteners
- 17Nm for M8 fasteners
- 44Nm for M10 fasteners
- 77Nm for M12 fasteners

Torque specifications specific to light fittings are available in the Night Hawk Manual provided with the lights.



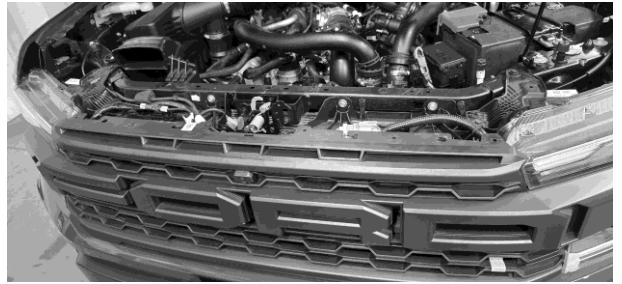
NHBGF98RLB Behind Grille Light Bar Kit

Configuration of the main components once installed in the vehicle

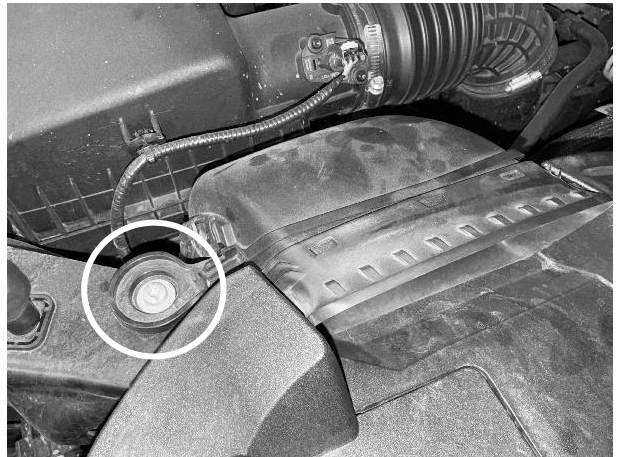
INSTALLATION PROCEDURE

Front Grille Removal

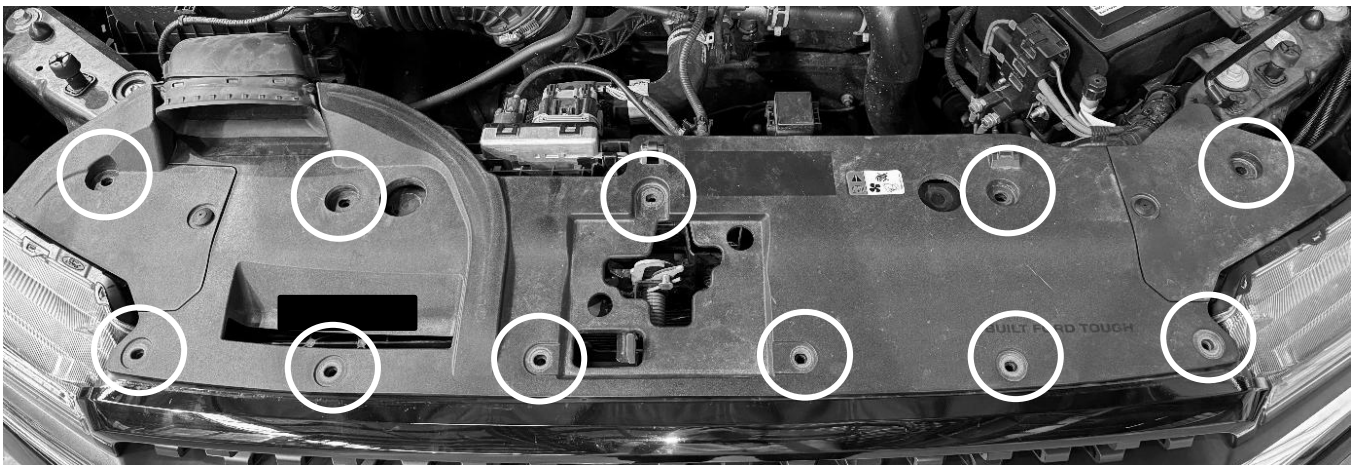
Raise the vehicle bonnet.



Remove the bolt securing the air inlet duct to the radiator support panel using a T30 Torx socket or key.

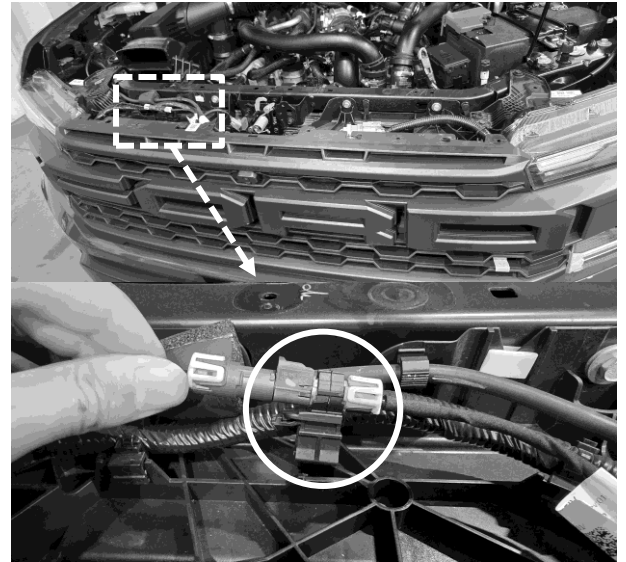


Using a #2 Phillips screwdriver and an appropriate trim removal tool, remove the eleven (11) screws from the radiator cowl and remove the cowl from the engine bay.



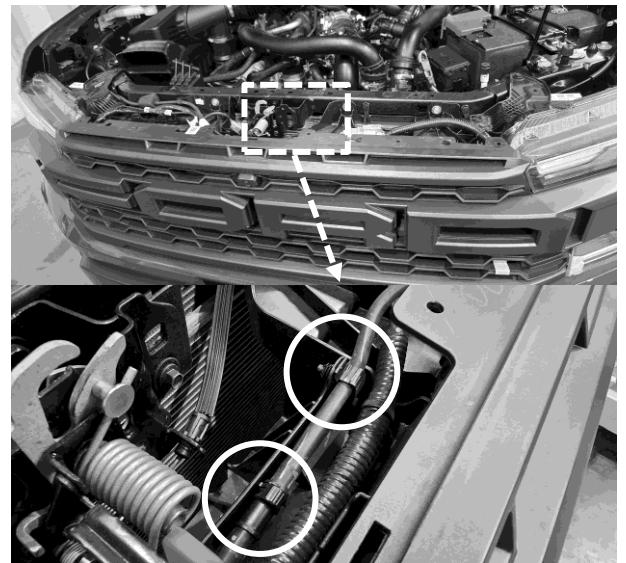
Release the retaining clip securing the front grille camera wiring to the cooling pack covering panel.

Disconnect the wiring at the brown connector.



Release the water hose from the plastic retaining clip also located on the cooling pack covering panel.

Disconnect the water hose at the black connector.



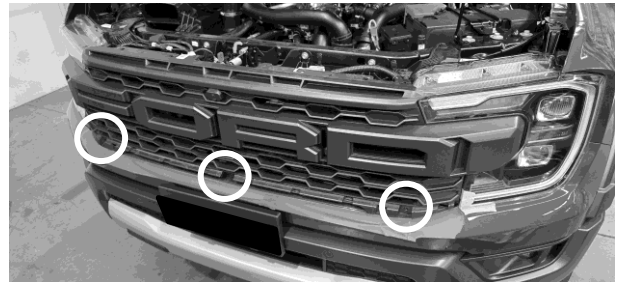
Using a socket wrench and 8mm socket, remove the two (2) M6 bolts securing the top of the grille assembly.



Using an appropriate trim removal tool, loosen the trim strip on the lower edge of the grille assembly and then pull forward to release the plastic tabs.

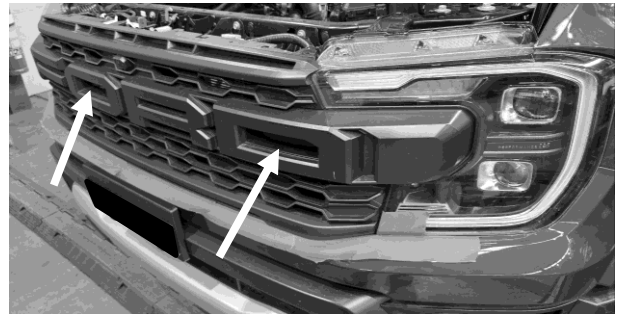


Using a socket wrench and 8mm socket, remove the three (3) bolts securing the bottom of the grille assembly, in the locations shown.



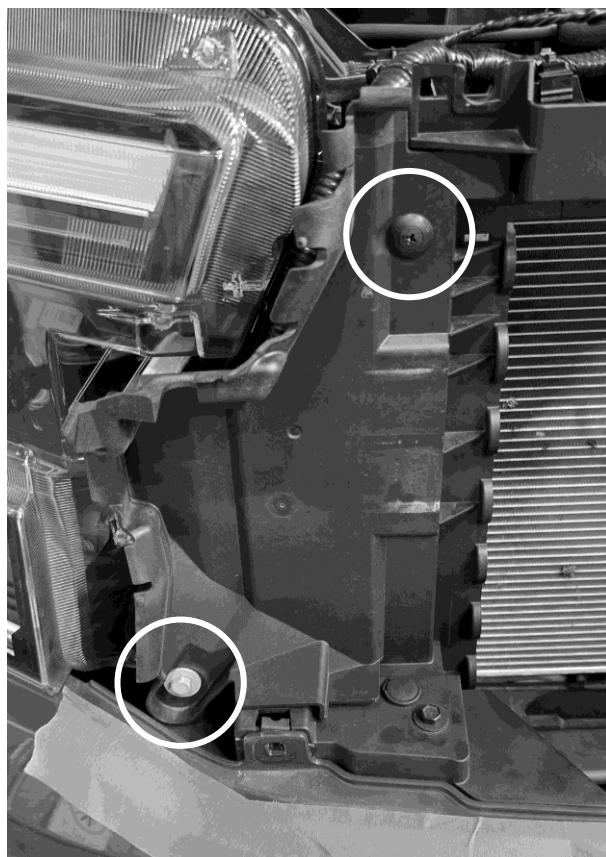
Using the locations shown to grip the grille assembly, release the grille extensions from the headlights by pulling forward.

Remove the grille assembly completely and set aside in a safe location.



Using a socket wrench and 10mm socket, remove the M6x30 hex head bolt securing the bottom of the plastic radiator end panel between the radiator opening and the RHS headlight assembly.

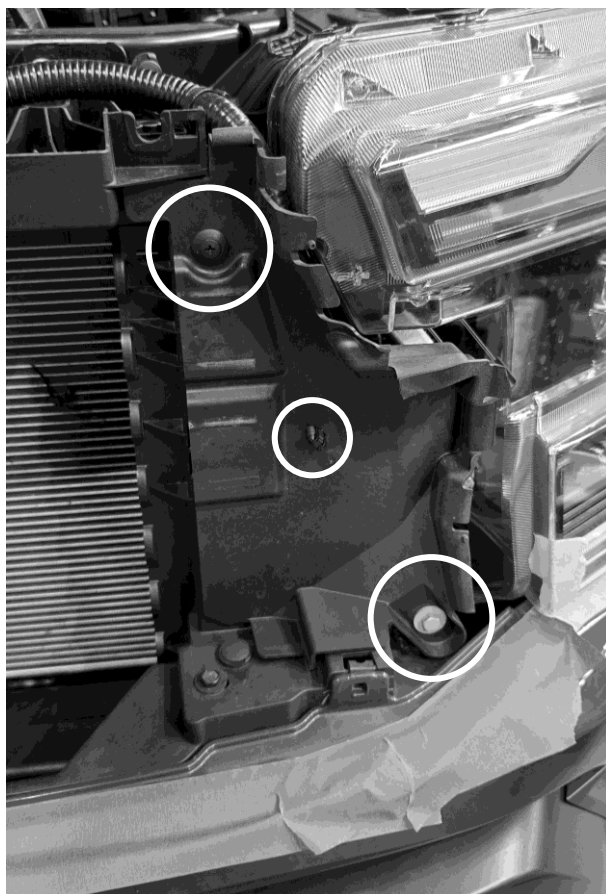
Using a #2 Phillips screwdriver remove the scrivet securing the top of the panel.



Using a socket wrench and 10mm socket, remove the M6x30 hex head bolt securing the bottom of the plastic panel between the radiator opening and the LHS headlight assembly.

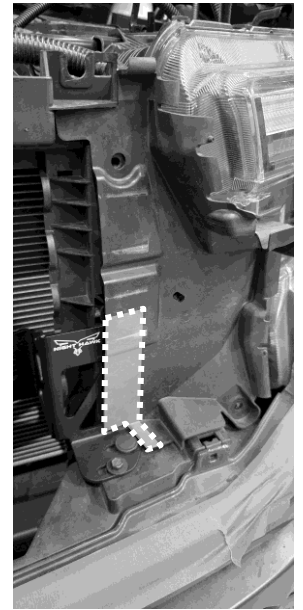
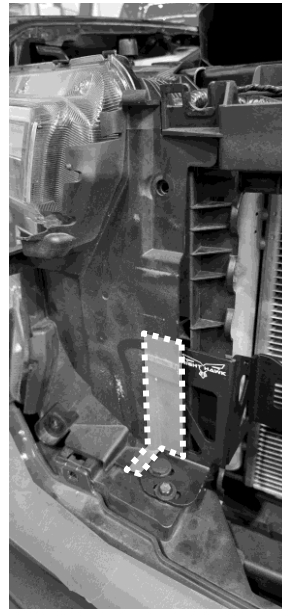
Using a #2 Phillips screwdriver remove the scrivet securing the top of the plastic panel.

Squeeze the legs of the push-in wiring clip to release it.



Radiator End Panel Trimming

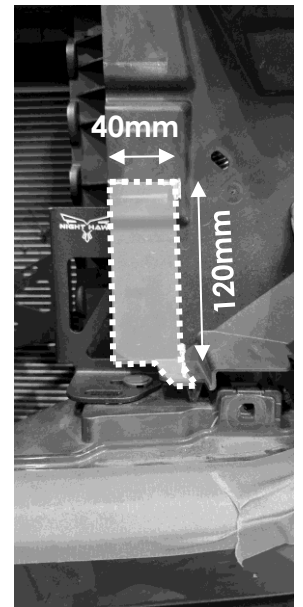
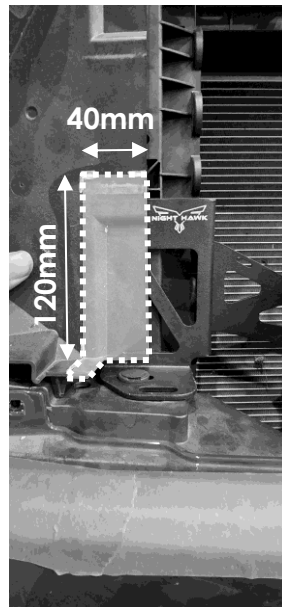
In order to correctly mount the light bar brackets, it is necessary to trim the plastic radiator end panels.



Mark a rectangle on the inside bottom of each panel, 40mm wide by 120mm high, as shown.

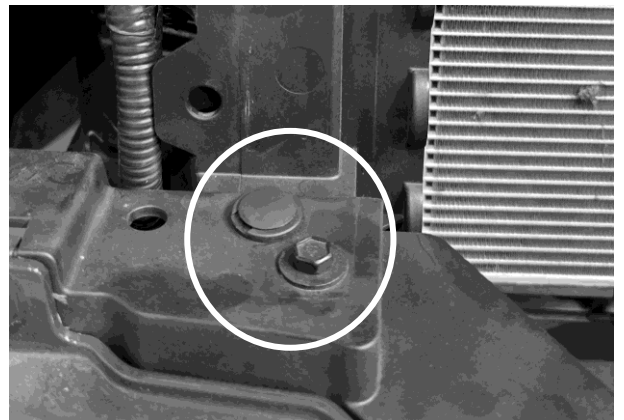
Trim the marked sections of each panel using a hacksaw.

This trimming will allow the light bar brackets to mount directly to the radiator support structure.



Using a socket wrench and 10mm socket, remove the two (2) M6x30 hex head bolts securing the top of the front bumper to the bumper support panel, one on each side.

Using a trim removal tool, remove the two (2) push-in trim clips that also secure the top of the front bumper to the bumper support panel, one on each side.

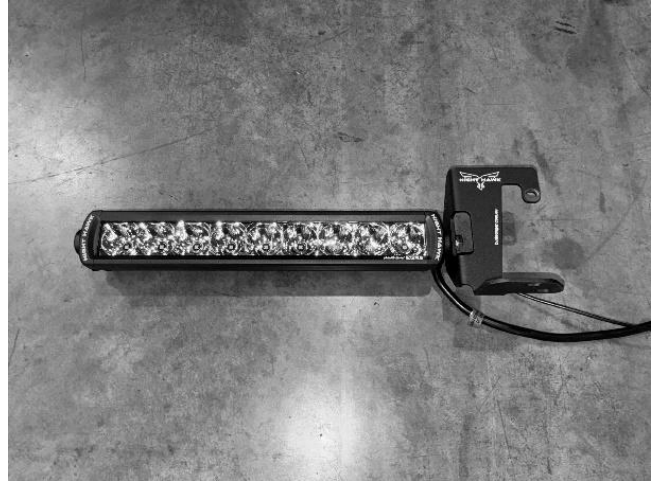


Light Bar Preassembly

Preassemble each light bar to the appropriate bracket using the M8x16 hex head bolts, spring washers and flat washers from the original light bar assembly, as shown. Ensure each light bar is installed such that the wiring loom exits from the LHS of the light bar. The fasteners should be lightly tightened to aid in the assembly process, but will be fully tightened at a later stage following final adjustment.



Right Hand Side Assembly

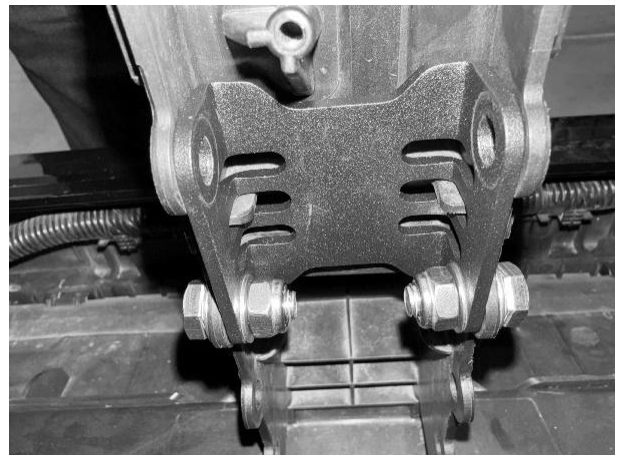


Left Hand Side Assembly

Install the centre bracket in the back of the vehicle grille support channel at the location shown (note the proximity of the moulded spigot above the bracket).

Secure the bracket with an M8x20 hex head bolt, two (2) flat washers and Nyloc nut in each of the lower holes of the centre bracket as shown.

NOTE: this image is the rear side of the vertical centre support behind the grille

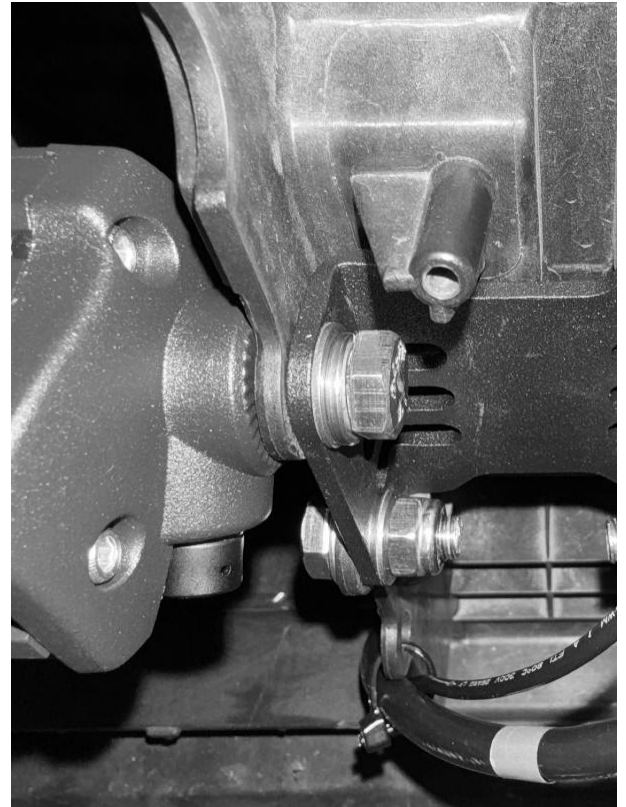


Light bar Assembly to Vehicle

To install each light bar assembly into the vehicle, it is recommended to start by positioning the light bar assemblies behind the vehicle grille support channel prior to aligning with the centre bracket mounting hole.



Install an M8x20 hex head bolt, spring washer and flat washer through the upper mounting hole of the centre bracket into the light bar mounting point and lightly tighten it.



Install an M6x20 button head socket screw and flat washer in the upper mounting hole of the main light bar bracket, securing it with an M6 lock nut from behind. The lock nut can then be held with a stubby 10mm open-end spanner while tightening the M6 button head socket screw.

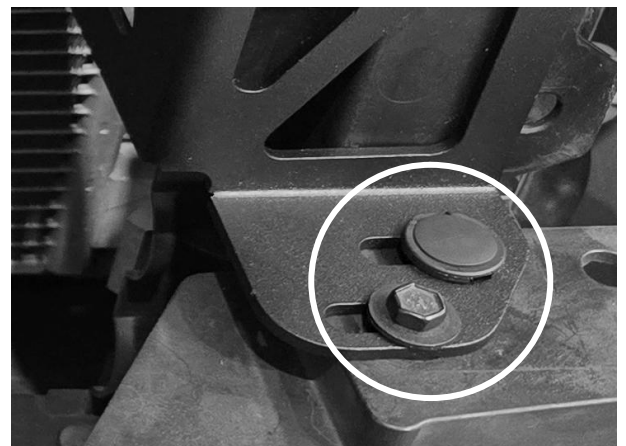


Front View



Top View

Reinstall the M6x30 hex head bolt and trim clip to secure the light bar bracket to the bumper support panel.



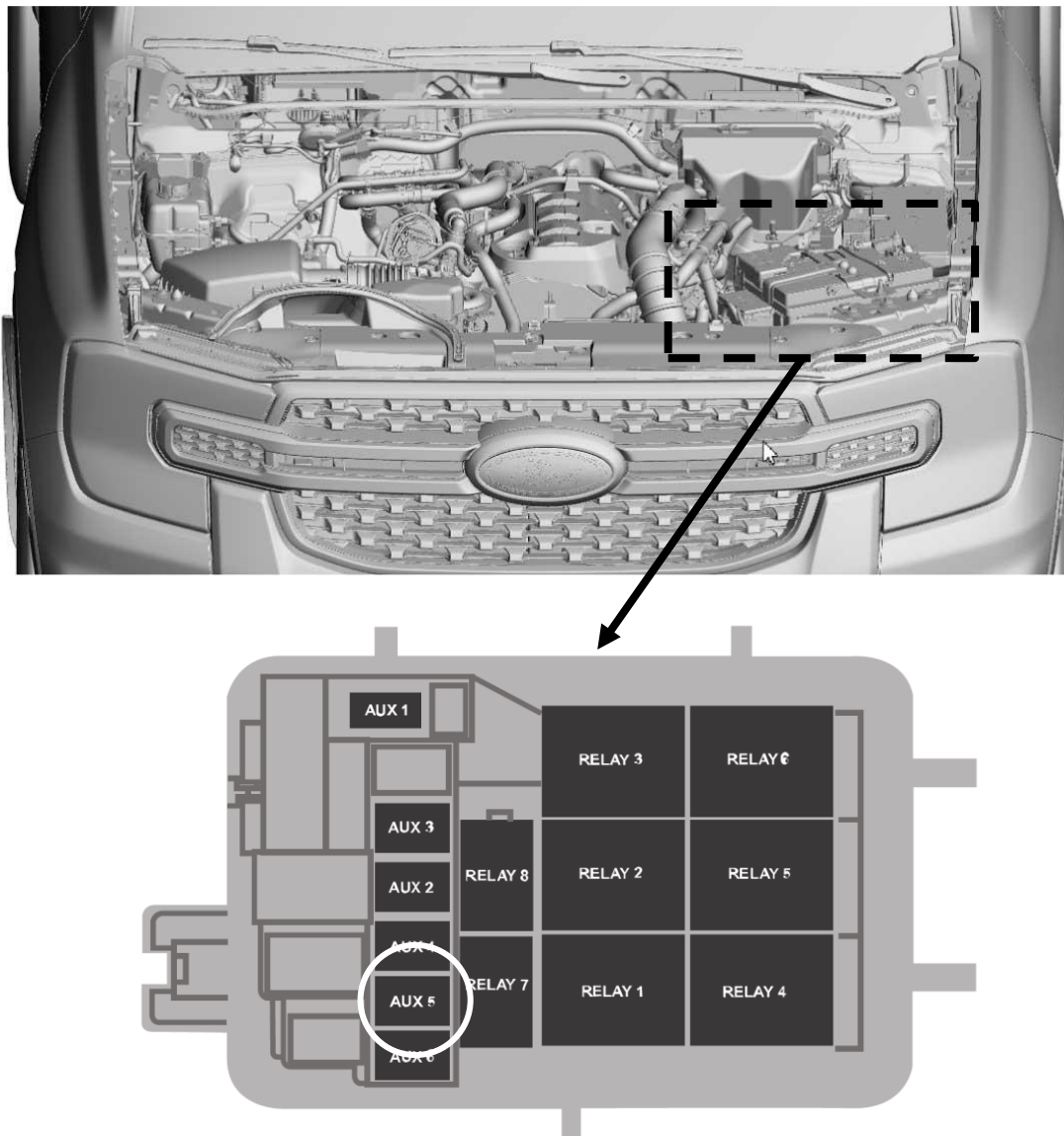
Repeat the steps above for the other light bar assembly.



Wiring Harness Installation

For further details of the wiring harness installation, refer to the wiring diagram supplied in the NHW300DT wiring loom owner's manual.

In order to control the driving lights using the auxiliary switch panel located in the overhead console of the vehicle, the wiring harness may be connected directly to the AUX 5 fused output within the Auxiliary Fuse Box. This is located in the engine bay as shown below.

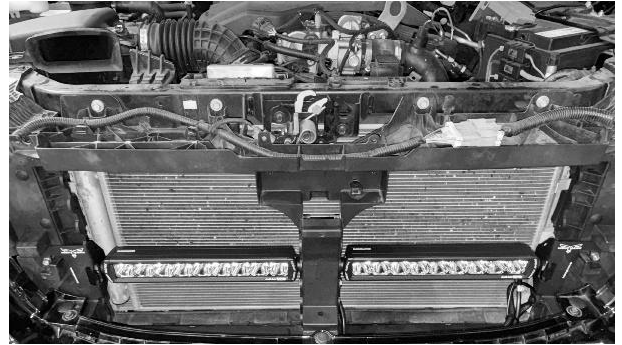


Final Assembly and Adjustment

There are two points of adjustment on the light bar assemblies –

- a. Adjusting the projection angle up or down.
- b. Adjusting the projection angle inwards or outwards.

To adjust the projection angle up or down, simply rotate the light bar on its mounting bolts to the desired angle and then fully tighten the mounting bolts at each end of the light bar.



To adjust the projection angle inwards or outwards, the outer end of the light bar can be moved forward or backward in the mounting slot on the main bracket. Once the desired projection angle is achieved, fully tighten the mounting bolt at each end of the light bar.



Once final adjustment is complete, fully tighten all fasteners to the appropriate torques as shown.



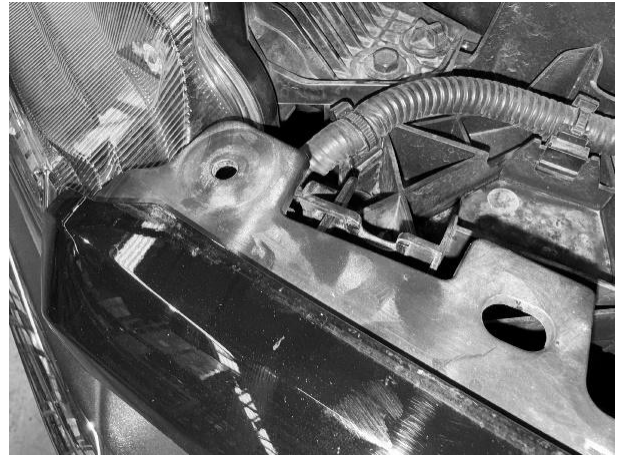
Secure the light bar cables and wiring loom using the cable ties supplied in the kit. Ensure that all cables and looms are secured in such a way as to prevent damage and to not impede the normal vehicle functions.

Final Checks

- Ensure that all fasteners are tensioned as specified in these instructions.
- Ensure that all wiring is clear of any sharp edges and other moving components to eliminate the possibility of abrasion damage during vehicle operation.
- Check the vehicle's original lighting and signalling systems are still functioning correctly after the installation of the light bar kit.

Vehicle Reassembly

Reinstall the grille assembly onto the vehicle, making sure to first align the posts near the top mounting bolts into their location holes.



Reattach the grille assembly by firmly pushing the headlight extensions to engage the clips in those areas.

Reinstall the factory hex head bolts into the three (3) mounting locations on the lower edge of the grille assembly.

Reinstall the trim strip and firmly push to engage the clips.



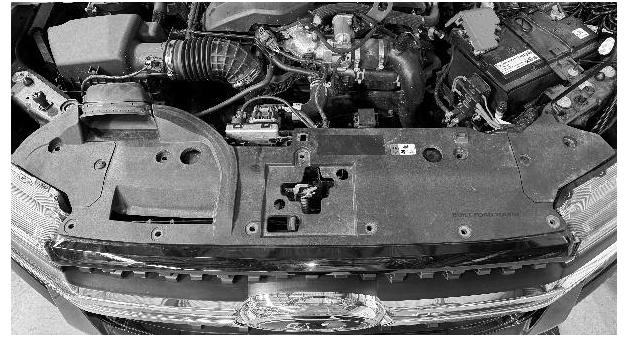
Reinstall the trim strip to the lower edge of the front grille.



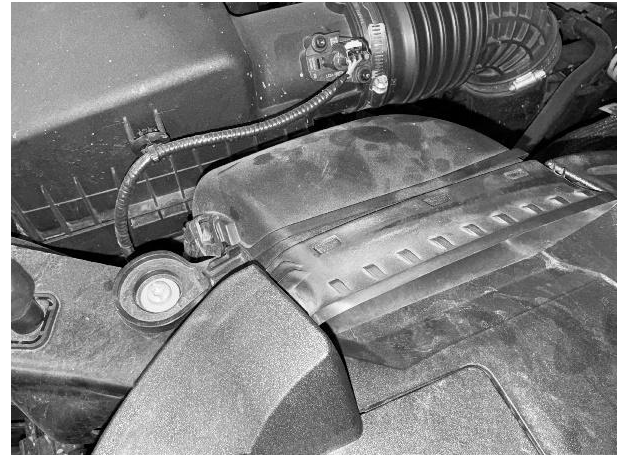
Reinstall the two (2) M6 hex head bolts and tighten using an 8mm socket to secure the grille assembly to the vehicle.



Replace the radiator cowling and reinstall the eleven (11) scriveners to secure it.



Reinstall the bolt securing the air inlet duct and tighten using a T30 Torx socket or key.



The installation of the Nighthawk Behind Grille Light Bar kit is now complete.



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