

advanced FLOW engineering

Instruction Manual P/N: 79-21002L

Scorpion Grille with Camera Provision

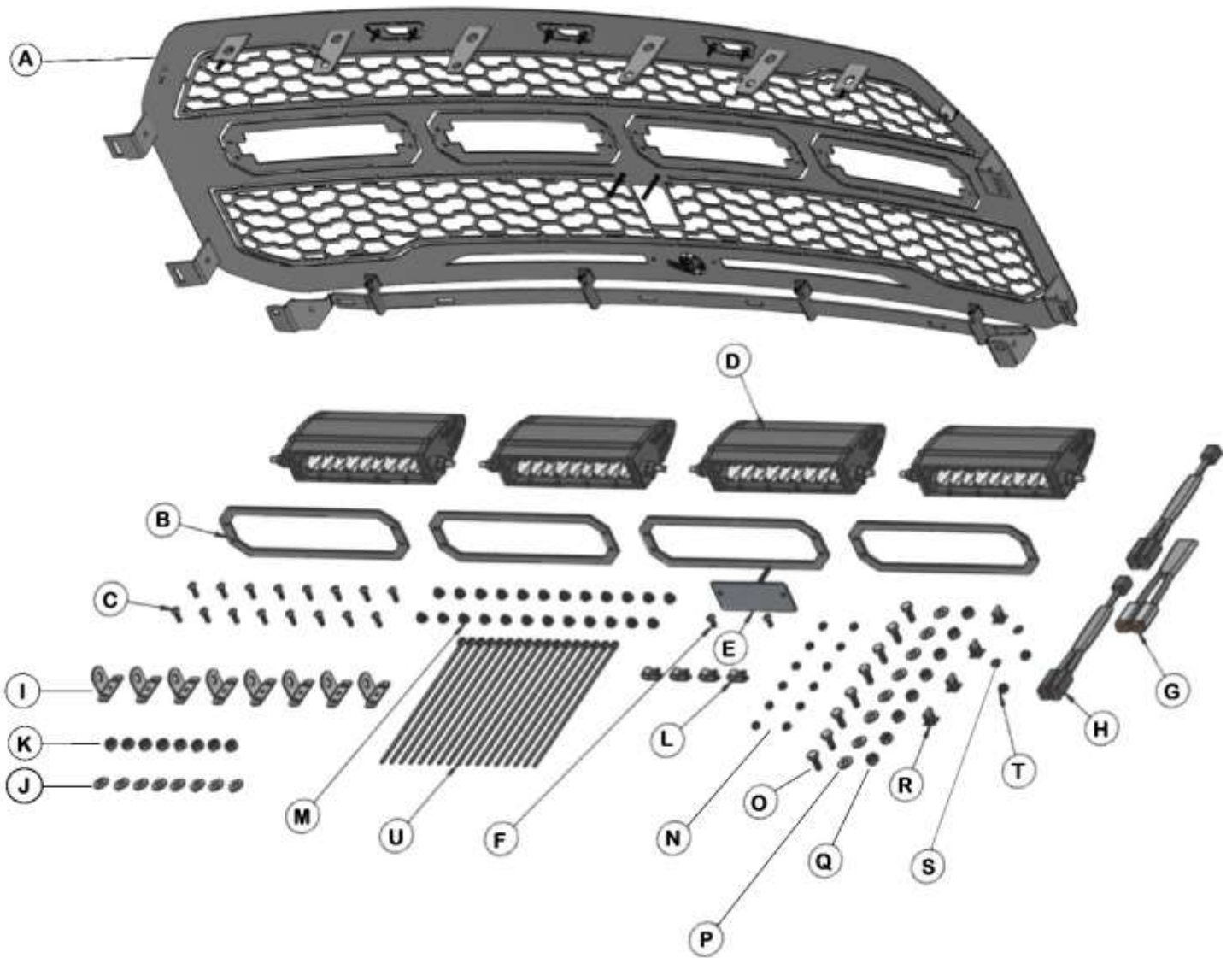
Make: **Ford** Model: **F-150 Raptor** Year: **17-19** Engine: **V6 – 3.5L (tt)**

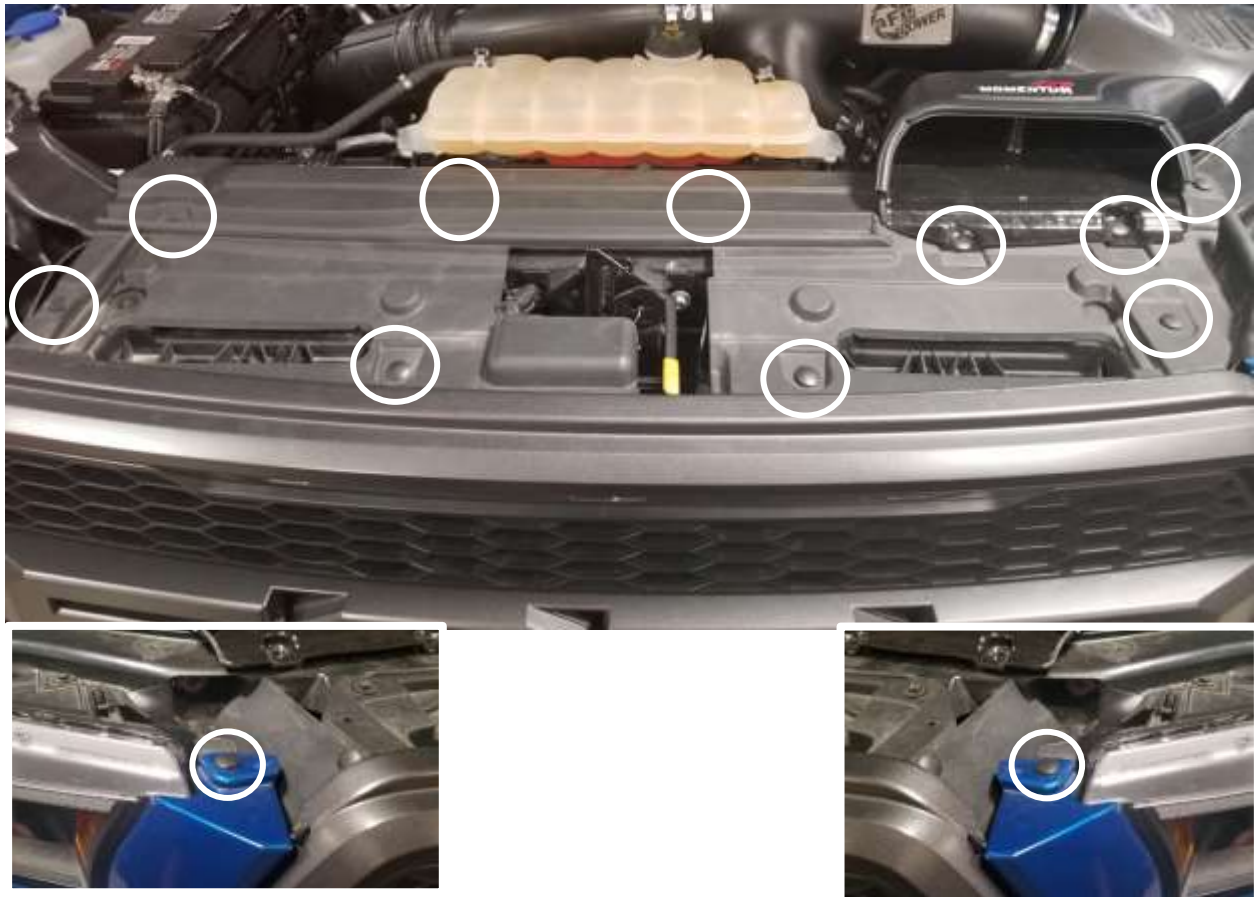


- Please read the entire instruction before proceeding.
- Ensure all components listed are present.
- Ensure you have all necessary tools before proceeding.
- Disconnect the negative battery terminal before proceeding.
- If you are missing any of the components, call customer support 951 493 7100

Label	Qty.	Description
A	1	aFe Scorpion Grille
B	4	Raw Aluminum Trim Ring
C	16	Screw, 10-32 x 5/8"
D	4	6" single row LED
E	1	Back plate aFe logo + stud
F	2	Screw, 10-32 x 1/2" button head (black)
G	1	Power Harness
H	2	Y-adapter
I	8	Bracket, #5 LED bar
J	8	Washer, 1/4" (black)
K	8	Locknut, 1/4" Nylon (black)
L	4	Cable Clamp
M	24	Nut, 10-32 Flange
N	12	Locknut, 6-32 Nylon
O	8	Screw, 1/4" - 20 X3/4"
P	8	Washer, 1/4"
Q	8	Locknut, 1/4" Nylon
R	4	Panel Retainer Clip
S	2	Washer, #10 SS
T	2	Locknut, 10-32 Nylon
U	17	Cable tie 8"

- Applications models vary. We recommend verifying fitment before beginning installation process.
- Images featured in the instruction documents may not always exactly match your grille.





Note: Before you begin, use "Painters Tape" to apply a protective guard around the work areas (fender and bumper valance). This will help protect the paint and finish of your vehicle.

1. Disconnect the negative battery terminal.
2. Locate ten (10) plastic clips on top of plastic shroud and one (1) additional on each side located at the top of the headlight body panel cover. Carefully pry off to remove and then set aside for reinstallation later.
3. Remove plastic shroud and then set aside for reinstallation later.



4. The headlight body panel needs to be removed. You will need to gently pull the panel out of the clips on the lower grille and the headlight. After the clips are out, continue to pull carefully until the headlight body panel is out from behind the headlight. Pull the headlight body panel straight out of the clips on the fender.



5. Remove the one (1) bolt located on each side of the grille. Save for reinstallation.
6. Located near the hood latch, disconnect the two (2) electrical connectors and the camera washer hose connection.



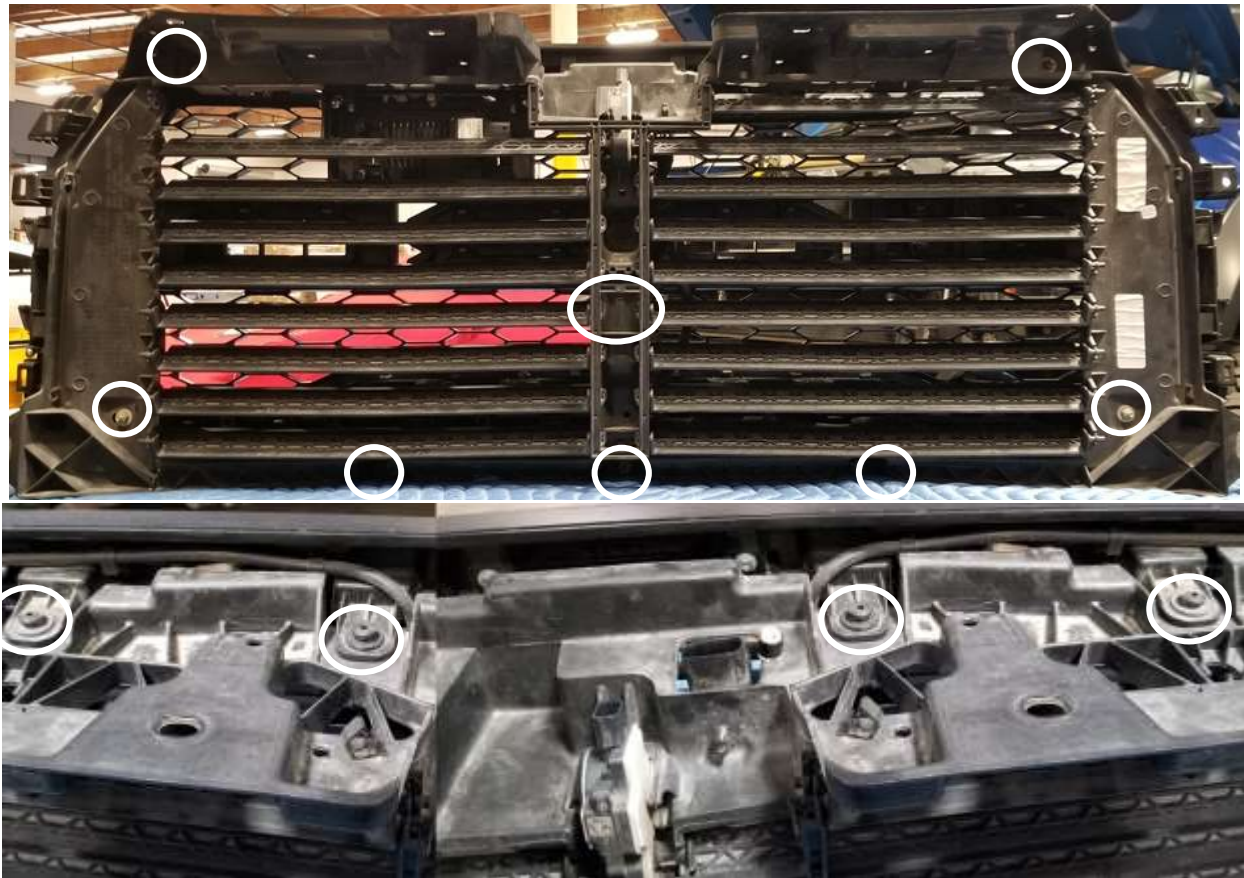
7. Remove the four (4) bolts across the top of the grille. Save for reinstallation.
8. Remove three (3) push pins on each side of the grille. Save for reinstallation.



9. Remove the grille from the truck.



10. Remove the lower trim body panel from the factory grille by pulling gently. Save for reinstallation.



11. Remove the seven (7) nuts that line the outside edge and the one (1) 8mm bolt that secures the active shutter assembly.
12. Remove the four (4) plastic clips located on the top lip.
13. Remove the air temperature sensor from the active shutter assembly.
14. Separate the active shutter assembly from the factory grille.
15. Set the active shutter assembly to the side. Save for reinstallation.



16. Remove the wire loom from the grille that connects the running lights and the forward-facing camera.
17. Mark the three (3) running lights before removing them so you know the location (Left, Center, Right). Remove the three (3) running lights from the grille.
18. Remove the forward-facing camera from the grille.
19. Remove the camera washer hose from the grille.
20. Set factory grille aside.

Note: Save all the parts that are removed for reinstallation.



Note: To prevent scratching the aFe Scorpion Grille while performing assembly, use a protective covering between the grille and a flat surface.

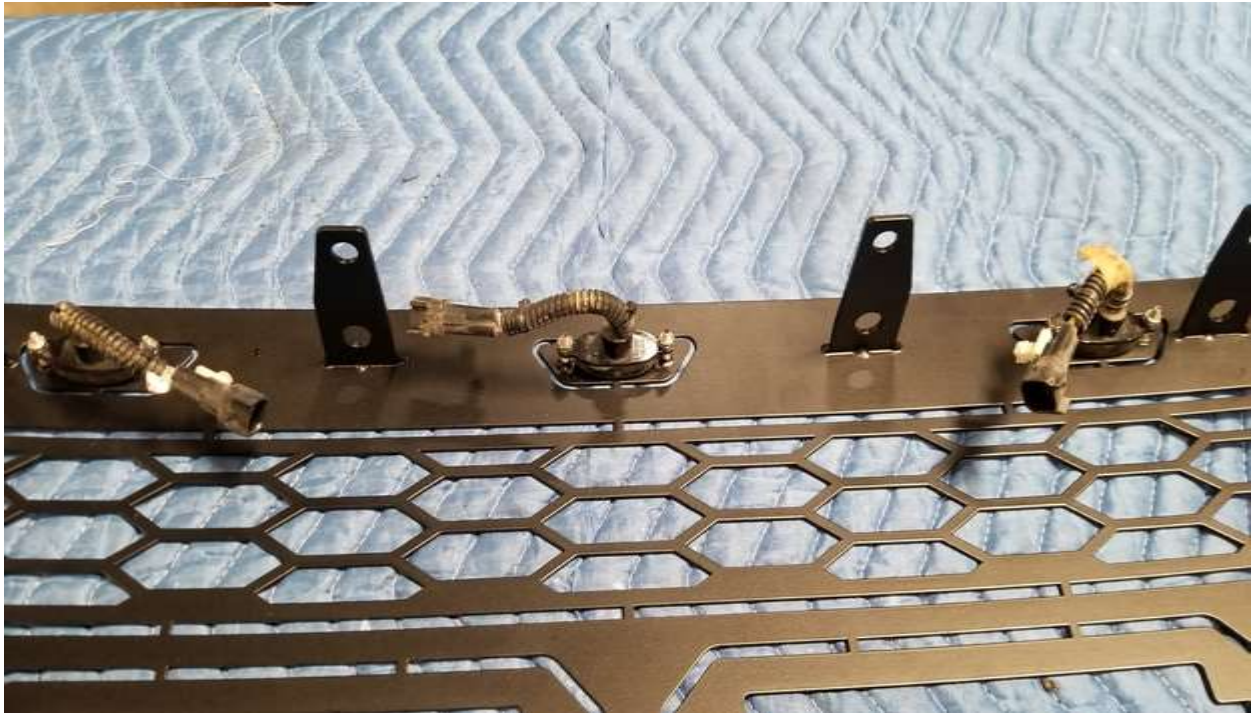
21. Remove the supplied aFe Scorpion Grille from the box and place it on a flat surface for assembly.



22. Install the main lower grille bracket using four (4) of the supplied 10-32 flange nuts and tighten.



23. Install six (6) of the supplied 6-32 nylon locknuts 3/8" (.375) from the grille. This will act as a stop for the light when it is installed. Make sure that the outside flat edges of the nuts are facing towards each other.



24. Install the factory running lights (removed in Step 17) onto the studs. Use the six (6) remaining 6-32 nylon locknuts to secure the running lights to the aFe Scorpion Grille. Tighten the nuts.



25. Install the supplied back plate aFe logo + stud using the two (2) supplied 10-32 x 1/2" button head screws (black) and two (2) supplied 10-32 flange nuts. Tighten the back plate aFe logo + stud to the aFe Scorpion Grille.



Middle Studs

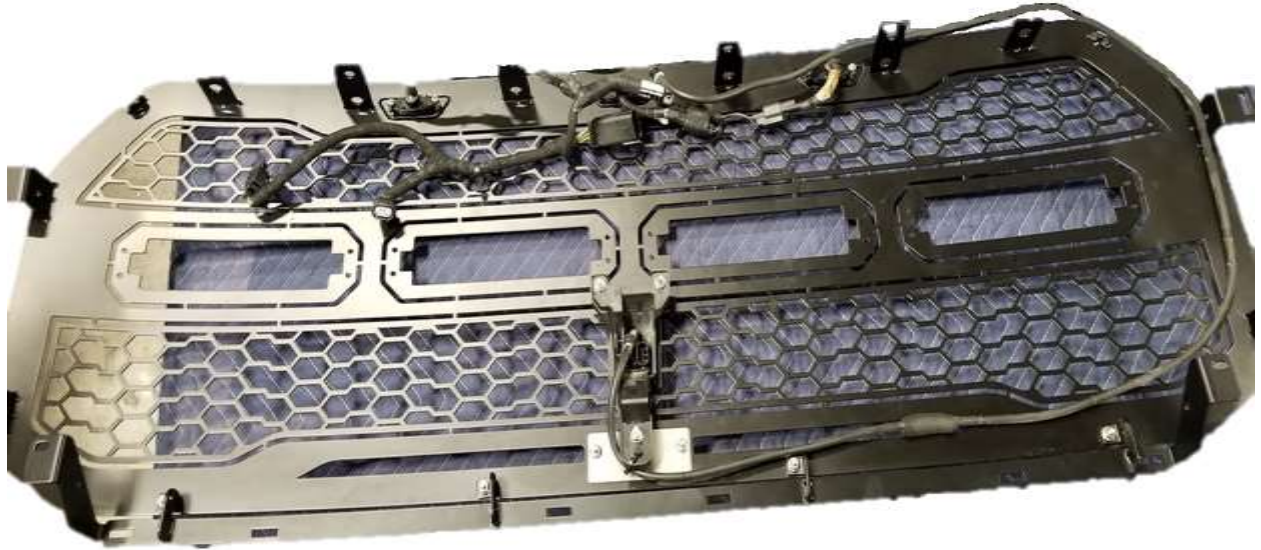


Back plate Stud

26. On the two middle studs on the grille, install two (2) 10-32 flange nuts 15/16" from the backside face of the grille. Make sure to install them with the flange facing away from the grille.
27. Install one (1) 10-32 flange nut 5/8" from the backside face of the back plate aFe logo + stud attached in Step 25. Make sure to install it with the flange facing away from the grille.



28. Install the forward-facing camera, removed in Step 18, and tighten using three (3) 10-32 flange nuts.



29. Route the camera washer hose around the outside edge of the grille (on the right side). Do not attach the hose to anything yet.
30. Attach the factory wiring harness to the running lights and connect the harness to the forward-facing camera.



31. Remove and discard the two (2) nuts from each of the supplied 6" single row LED lights.

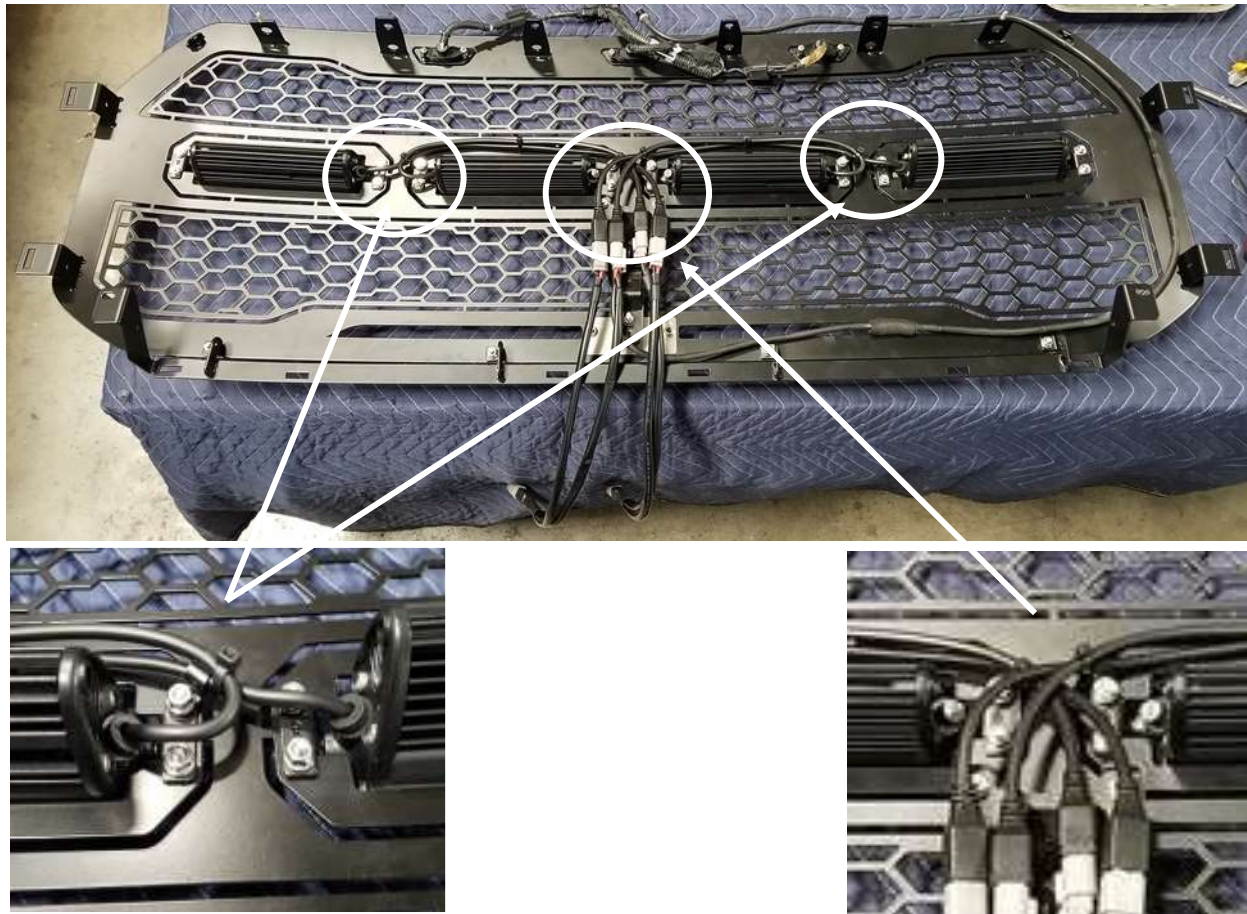


Note: Depending on your preferred look of the vehicle, you have the option to install the raw aluminum trim pieces or leave them off.

Note: Please read the instruction below prior to installation.

32. Begin by taping one (1) of the supplied raw aluminum trim pieces on the front of the aFe Scorpion Grille using two (2) pieces of painter's tape (one on the top and one on the bottom). This will help hold the raw aluminum trim piece while you install the light onto the aFe Scorpion Grille.

33. Install one (1) supplied 6" single row LED light through the front of the aFe Scorpion Grille (over the trim ring if installed). While holding the 6" single row LED light, install two (2) supplied #5 LED bar brackets (bracket feet point away from each other) from the back of the aFe Scorpion Grille and onto the studs on the 6" single row LED light. Install two (2) supplied 1/4" washers (black) and two (2) supplied 1/4" nylon locknuts (black) on the lights. Do not tighten. From the front, install four (4) 10-32 x 5/8" screws through the raw aluminum trim piece (if installed) and the aFe Scorpion Grille. Turn the aFe Scorpion Grille around and make sure the 10-32 x 5/8" screws pass thru the #5 LED bar brackets. Use four (4) 10-32 flange nuts on the 10-32 x 5/8" screws. Tighten all the hardware. Repeat Steps 32 and 33 for the three (3) remaining supplied 6" single row LED lights.



34. Install the four (4) supplied cable clamps and four (4) supplied 8" cable ties to support the wires from the lights.

35. Plug the two (2) supplied Y-adapters into the light wiring harness.



36. Reconnect the factory wire harness to the three (3) running lights. Run the harness down over the off-road lights wiring.

37. Secure all the wires and camera washer hose with ten (10) supplied 8" cable ties.



38. Start the reassembly by reattaching the temperature sensor to the active shutter assembly.



39. Lay the active grille assembly over the aFe Scorpion Grille and center. Make sure that when you are laying the active shutter grille over the aFe Scorpion Grille, the metal tabs on the top (of the aFe Scorpion Grille), go over the active shutter grille.
40. Attach the active shutter grille to the aFe Scorpion Grille using two (2) supplied 10-32 nylon locknuts and two (2) supplied #10 washers on the top studs. Use the two (2) supplied 1/4-20 X 3/4" hex screws, two (2) supplied 1/4" washers, and two (2) supplied 1/4" nylon locknuts at the bottom (top photo). Tighten all hardware.
41. At the top of the active shutter grille use the four (4) supplied 1/4-20 X 3/4" screws, four (4) supplied 1/4" washers, and four (4) supplied 1/4" nylon locknuts (bottom photo). Tighten all hardware.



42. Before installing the aFe Scorpion Grille, install the supplied power harness. The Red wire goes on the positive battery terminal (+) and the black wire goes on the negative battery terminal (-). You will need to mount the switch inside the cab or to an available prewired switch. Use four (4) 8" cable ties to secure the wiring loom to the vehicle.

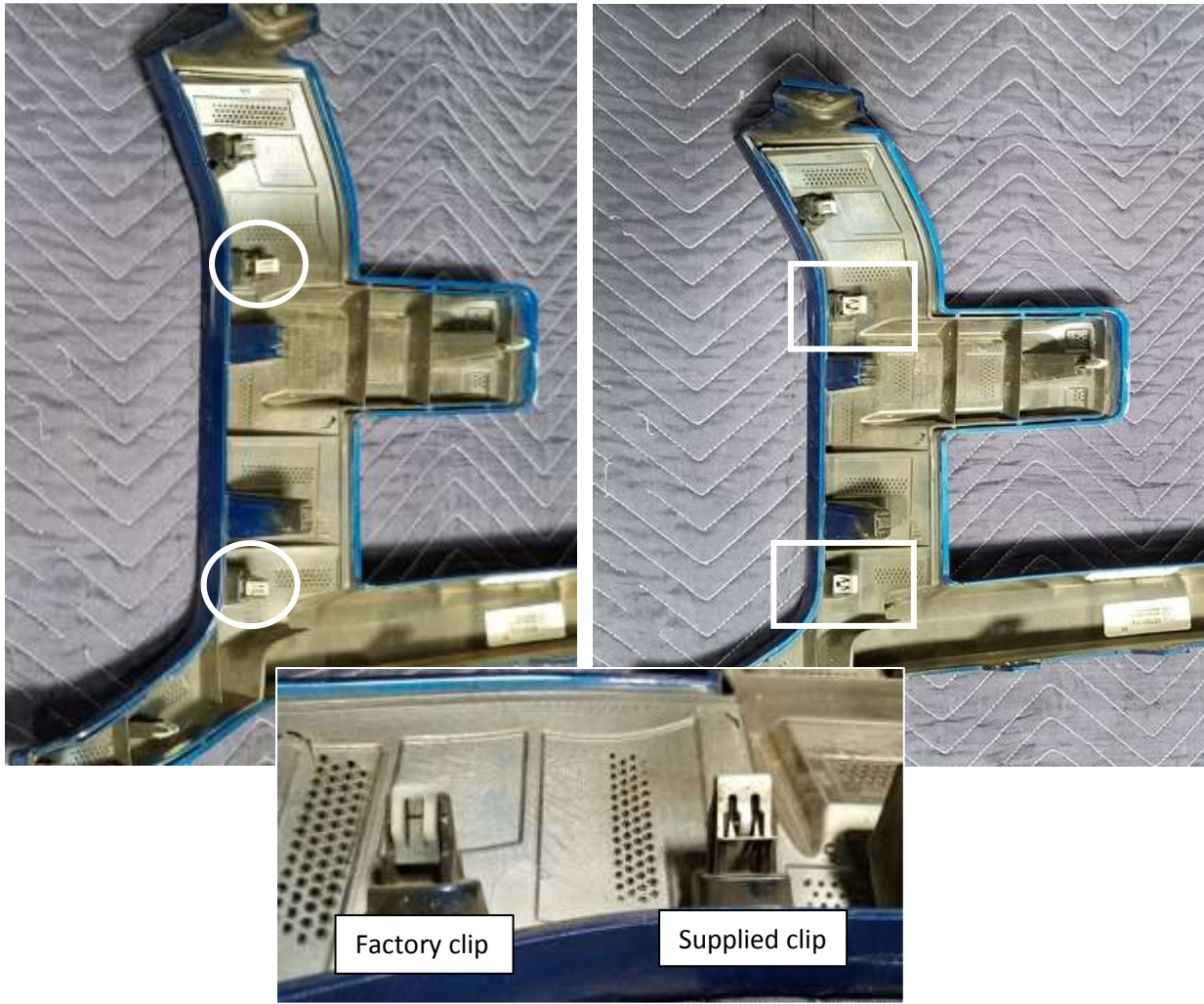
Note: The picture above is only a suggestion on how to run the wiring loom.



43. Place the grille assembly on the truck. It should hang when it is in the proper position.



44. Center the grille assembly and install the four (4) factory screws removed in Step 7. Tighten to factory specifications.



Note: The left photo is what the stock headlight body panel clips look like. The right photo is what the headlight body panel will look like after the new clips are installed.

45. Remove two (2) factory (circled) headlight body panel retainer clips from each of the left and the right headlight body panels.
46. Install two (2) supplied (square) headlight body panel retainer clips on each of the left and the right headlight body panel where the factory clips were removed.



47. Reinstall the three (3) push pins removed in Step 8 on each side of the grille.

48. Reinstall the factory bolts that were removed in Step 5 on each side of the grille.



49. Reinstall both headlight body panels by carefully pushing them into place.



50. Use two (2) supplied 1/4-20 X 3/4" screws, two (2) supplied 1/4" washers, and two (2) supplied 1/4" nylon locknuts to secure the head light body panel on both sides (one per side). Tighten all the hardware.



51. Plug the power harness into the two (2) Y-harnesses on the aFe Scorpion Grille. Secure the assembled wire harness with three (3) 8" cable ties.



52. Plug the camera washer hose and the two wire connections back in on the top of the grille assembly.



53. At this point you want to look over your work and examine the gap alignments around all edges and in between the new aFe Scorpion Grille. Carefully close the hood for a complete visual inspection. If adjustment is needed, you can loosen the top mounts and shift side to side for even gaps.



54. Reinstall the radiator shroud cover and reinstall the push pins to secure it into position.

55. Reconnect the negative battery terminal.



56. Remove all the painter's tape if any was applied.

57. Installation is now complete.

WARNING



PLEASE CONSULT YOUR LOCAL AUTOMOTIVE ELECTRICAL PROFESSIONAL FOR INSTALLATION SERVICES AND ADVICE. aFe Power IS ONLY EQUIPPED TO PROVIDE BASIC TECHNICAL ASSISTANCE DUE TO THE DIVERSITY OF VEHICLES, VEHICLE OPTIONS & MODIFICATIONS AND LIGHTING.

CONFIGURATION OPTIONS AVAILABLE. aFe Power products cannot be held liable due to improper component installation and / or faulty wiring.

GENERAL GUIDELINES:

LED Lights & LED Light Bars operate at relatively high currents and should only be installed by qualified personnel with experience in switched / relayed high draw DC Circuits.

- Light Bars are designed for use only with standard 12v DC power systems
- Light Bars are for OFF-ROAD USE ONLY. Check your local laws & regulations regarding vehicle mounted lights.
- Some Light Bars are equipped with waterproof connectors while others are simply pig-tailed
- Red Wires = POSITIVE | Black Wires = NEGATIVE
- ALWAYS install your lights on a fused circuit. Basic fusing guidelines: maximum 5A for every 10" of LED Light Bar.

GENERAL USE, INSTALL AND ADJUSTMENT TIPS

NOTE 1: aFe Scorpion Grilles (with LED Light Bars installed), and LED Light Bars themselves are for OFF-ROAD USE ONLY.

NOTE 2: To adjust the angle of your light bars simply loosen the mounting hardware on either side of each Light Bar, rotate the Light Bar to adjust the angle, then tighten the hardware once the desired angle is achieved (please be careful not to over-tighten the mounting hardware or scratch the protective powder-coat finish). It is best to adjust the angle with the vehicle on level ground with the lights facing a wall, garage door or other solid barrier at approximately 25-30 feet.

NOTE 3: Please consult a qualified automotive electrical professional for light bar wiring installation.



GRILLE CARE INFORMATION

aFe Power Scorpion Grilles are the finest in the industry but do require normal care. Wash regularly as you would when caring for your vehicles. Never use dish soap.

GLOSS BLACK FINISH

aFe Power Scorpion Grilles with gloss black powder coated finish may be washed regularly as you would when caring for your vehicles finish using soap and water. aFe Power Scorpion Grilles should be waxed at the same time that you wax the vehicle. As a rule, anything you use to clean your vehicles painted surfaces can be used to clean and maintain your aFe Power Scorpion Grille. A gloss powder coated finish can be cared for in the same fashion that you would care for your vehicle's factory paint job. Never leave wet water spots as that may leave a blemish.

MATTE BLACK FINISH

Paint warranty applies to defects in material and / or workmanship, it does not cover the matte finish surface appearance. To enjoy the matte appearance for many years to come, please follow these owner care and maintenance tips. Get a no-shine matte car wash soap that uses no fillers, no silicone, and won't strip your matte paint of its layer of protection. Do not use wax, detail spray, armor all®, or any products made for normal paint. Use only products specifically developed for matte finish paint. Do not use products that are even mildly abrasive, such as polishes, glazes, or rubbing compounds. do not use mechanical cleaners or polishers. Do not use terrycloth, cloth, or paper towels. Do not rub the finish vigorously, this will burnish the paint finish, causing a permanent shiny spot. Shiny spots cannot be removed.

Do not use commercial car wash facilities or their shine enhancement products. Most car wash brushes, large mechanized "towels," and shine enhancement products can damage matte paint. Remove foreign substances such as insect remains, tar, and road debris using a soft applicator and a mild solvent; saturate and soak area before cleaning—rub lightly.

Hand-wash with a soft wash mitt and mild cleaning product safe for matte paint. Use microfiber cleaning cloths with alcohol-based window cleaner for basic surface clean-up.

aFe Scorpion Grilles product warranty:

aFe Power warrants its grille products to be free from defects in material and workmanship for the lifetime of the grille. aFe Power products warrants the finish of its grille products for a 3-year period beginning at the time of sale to the end user. These warranties are limited warranties and do not cover abuse, modification or improper installation nor do they cover finish failure caused by caustic cleaning agents, road salts or other chemicals. aFe Power reserves the right to repair or replace a defective product at its sole discretion. Any aFe Power product must be returned to aFe Power for warranty consideration and must be returned at the customer's expense. In the event that the product is deemed to be defective, the repaired or replaced item will be returned via a surface shipping method to the customer at aFe Power's expense. No provision is made for any labor, rental car or other costs incurred by the failure of its products.



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