

## Warnings to Installers

Whelen's emergency vehicle warning devices must be properly mounted and wired in order to be effective and safe. Read and follow all of Whelen's written instructions when installing or using this device. Emergency vehicles are often operated under high speed stressful conditions which must be accounted for when installing all emergency warning devices. Controls should be placed within convenient reach of the operator so that they can operate the system without taking their eyes off the roadway. Emergency warning devices can require high electrical voltages and/or currents. Properly protect and use caution around live electrical connections. Grounding or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or vehicle damage, including fire. Many electronic devices used in emergency vehicles can create or be affected by electromagnetic interference. Therefore, after installation of any electronic device it is necessary to test all electronic equipment simultaneously to insure that they operate free of interference from other components within the vehicle. Never power emergency warning equipment from the same circuit or share the same grounding circuit with radio communication equipment. All devices should be mounted in accordance with the manufacturer's instructions and securely fastened to vehicle elements of sufficient strength to withstand the forces applied to the device. Driver and/or passenger air bags (SRS) will affect the way equipment should be mounted. This device should be mounted by permanent installation and within the zones specified by the vehicle manufacturer, if any. Any device mounted in the deployment area of an air bag will damage or reduce the effectiveness of the air bag and may damage or dislodge the device. Installer must be sure that this device, its mounting hardware and electrical supply wiring does not interfere with the air bag or the SRS wiring or sensors. Mounting the unit inside the vehicle by a method other than permanent installation is not recommended as unit may become dislodged during swerving; sudden braking or collision. Failure to follow instructions can result in personal injury. Whelen assumes no liability for any loss resulting from the use of this warning device. PROPER INSTALLATION COMBINED WITH OPERATOR TRAINING IN THE PROPER USE OF EMERGENCY WARNING DEVICES IS ESSENTIAL TO INSURE THE SAFETY OF EMERGENCY PERSONNEL AND THE PUBLIC.

## Warnings to Users

Whelen's emergency vehicle warning devices are intended to alert other operators and pedestrians to the presence and operation of emergency vehicles and personnel. However, the use of this or any other Whelen emergency warning device does not guarantee that you will have the right-of-way or that other drivers and pedestrians will properly heed an emergency warning signal. Never assume you have the right-of-way. It is your responsibility to proceed safely before entering an intersection, driving against traffic, responding at a high rate of speed, or walking on or around traffic lanes. Emergency vehicle warning devices should be tested on a daily basis to ensure that they operate properly. When in actual use, the operator must ensure that both visual and audible warnings are not blocked by vehicle components (i.e.: open trunks or compartment doors), people, vehicles, or other obstructions. It is the user's responsibility to understand and obey all laws regarding emergency warning devices. The user should be familiar with all applicable laws and regulations prior to the use of any emergency vehicle warning device. Whelen's audible warning devices are designed to project sound in a forward direction away from the vehicle occupants. However, because sustained periodic exposure to loud sounds can cause hearing loss, all audible warning devices should be installed and operated in accordance with the standards established by the National Fire Protection Association.

## Safety First

This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator must read this manual completely. Important information is contained herein that could prevent serious injury or damage.

**⚠ WARNING:** This product can expose you to chemicals including Methylene Chloride which is known to the State of California to cause cancer, and Bisphenol A, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

- Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.
- Whelen Engineering requires the use of waterproof butt splices and/or connectors if that connector could be exposed to moisture.
- Any holes, either created or utilized by this product, should be made both air- and watertight using a sealant recommended by your vehicle manufacturer.
- Failure to use specified installation parts and/or hardware will void the product warranty.
- If mounting this product requires drilling holes, the installer MUST be sure that no vehicle components or other vital parts could be damaged by the drilling process. Check both sides of the mounting surface before drilling begins. Also de-burr the holes and remove any metal shards or remnants. Install grommets into all wire passage holes.
- If this manual states that this product may be mounted with suction cups, magnets, tape or Velcro®, clean the mounting surface with a 50/50 mix of isopropyl alcohol and water and dry thoroughly.
- Do not install this product or route any wires in the deployment area of your air bag. Equipment mounted or located in the air bag deployment area will damage or reduce the effectiveness of the air bag, or become a projectile that could cause serious personal injury or death. Refer to your vehicle owner's manual for the air bag deployment area. The User/Installer assumes full responsibility to determine proper mounting location, based on providing ultimate safety to all passengers inside the vehicle.
- For this product to operate at optimum efficiency, a good electrical connection to chassis ground must be made. The recommended procedure requires the product ground wire to be connected directly to the NEGATIVE (-) battery post (this does not include products that use cigar power cords).
- If this product uses a remote device for activation or control, make sure that this device is located in an area that allows both the vehicle and the device to be operated safely in any driving condition.
- Do not attempt to activate or control this device in a hazardous driving situation.
- This product contains either strobe light(s), halogen light(s), high-intensity LEDs or a combination of these lights. Do not stare directly into these lights. Momentary blindness and/or eye damage could result.
- Use only soap and water to clean the outer lens. Use of other chemicals could result in premature lens cracking (crazing) and discoloration. Lenses in this condition have significantly reduced effectiveness and should be replaced immediately. Inspect and operate this product regularly to confirm its proper operation and mounting condition. Do not use a pressure washer to clean this product.
- It is recommended that these instructions be stored in a safe place and referred to when performing maintenance and/or reinstallation of this product.
- FAILURE TO FOLLOW THESE SAFETY PRECAUTIONS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT OR VEHICLE AND/OR SERIOUS INJURY TO YOU AND YOUR PASSENGERS!

# Field Series™ Brow Light

- The Field Series brow light is a completely modular system with advanced functionality and power options. See *Field Series Power Supply manual 14G47* for more information:

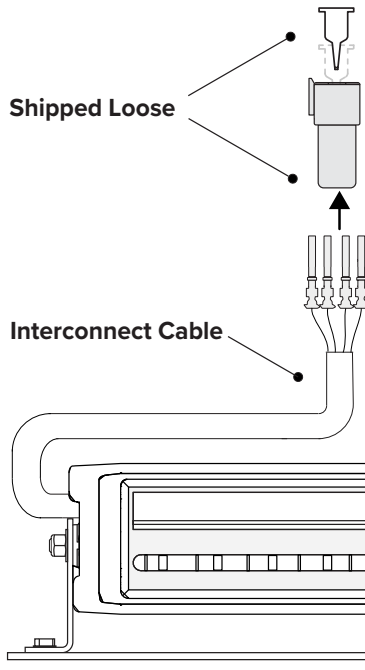


- You may assemble anywhere from two to thirteen modules on a single assembly, or attach multiple module assemblies together.
- Each page will highlight different mounting options depending on your lightbar needs. Mounting bracket kits are sold individually.
- The recommended amount of brackets to use for your size lightbar are listed below:

Modules	Brackets
2 through 6	2
7 through 10	3
11 through 12	4
13	5

Maximum Recommended Interconnect Cable Length*	
Modules	Distance (in ft.)
2	250
3	170
4	130
5	100
6	85
7	75
8	65
9	57
10	51
11	47
12	43
13	40

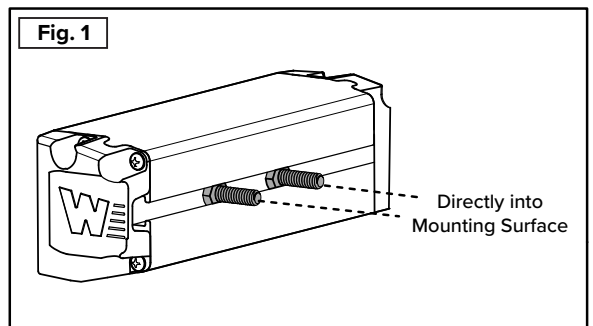
\*For the sum of all interconnect cables and modules in daisy-chained installations.



System Specifications	
Power and Control Input Voltage.....	10-30 VDC
Operating Current* (for 2 Modules)...	2.7 Amps
For each additional module.....	1.4 Amps
Operating Temperature.....	-30°C to + 60°C
Sleep Current*.....	< 10 mA
* As Measured in a 12V System	

## Stud Mount Installation:

- 1 Mark the mounting holes on the desired mounting location. Drill holes for 1/4" hardware into the mounting surface.
- 2 Slide the heads of the 1/4-20 hex screws into the back of the lightbar extrusion.
- 3 Fasten to the mounting surface with proper hardware.

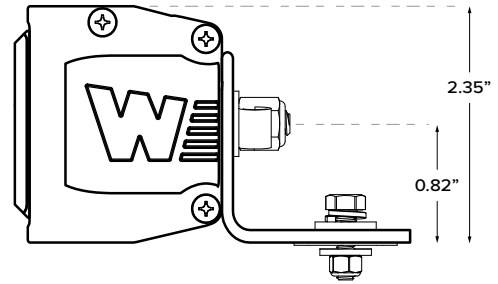


4 Pos DTM Socket	
Pos	Color
1	White
2	Black
3	Grey
4	Blue

# Low Profile Mount

## Installation:

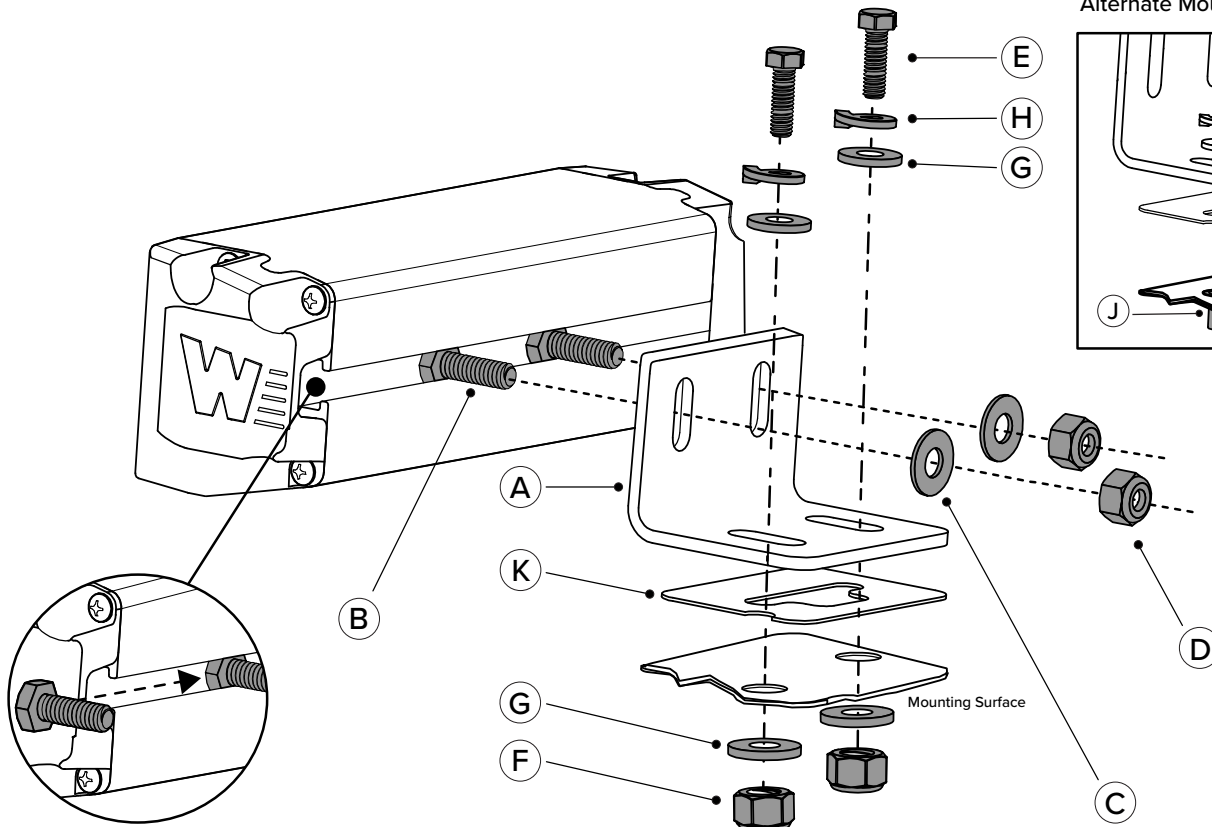
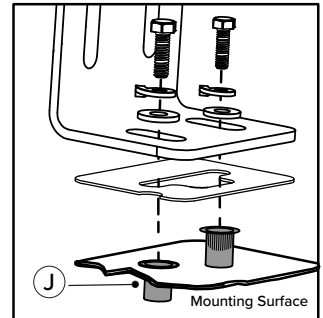
- ① Using the mounting bracket as your guide, drill holes for 5/16" hardware into the mounting surface.
  - ② Place the gasket underneath the mounting bracket, and align both slotted holes with the drilled holes in Step 1. Place the two 5/16" hex bolts vertically through the 5/16" split lock washer, 5/16" flat washer, bracket and gasket.
  - ③ Secure the bracket and gasket to the mounting surface with the 5/16" washer, then the 5/16" nut from the bottom.
- Note:** If mounting to a surface that cannot be secured from the bottom, two 5/16" Rivet Nuts are supplied to be fastened into. See "Rivet Nut Installation" below.
- ④ Slide the heads of the 1/4-20 hex screws into the back of the lightbar extrusion.
- Note:** You may have to nudge the cable out of the way to fit the screws into the slot of the extrusion.
- ⑤ Align the slotted holes of the bracket with the hex screws to secure to lightbar in position.
  - ⑥ Secure the brackets with 1/4-20 mounting hardware: a 1/4" flat washer, and 1/4-20 nylon-stop nut.



## Parts List

Location	Description	Part Numbers	Qty.
A	Bracket, Mounting Low Profile	07-248596-0**	1
B	Screw, 1/4-20x 3/4" HEX	14-130436-1200	2
C	Washer, 1/4" Flat	16-1301820-600	2
D	Nut, 1/4-20 Elastic Stop	13-130132-0720	2
E	Bolt, 5/16-18 x 1 HEX	14-148436-1600	2
F	Nut, 5/16-18 Elastic Stop	13-148132-0820	2
G	Washer, 5/16" Flat .875 OD SS	16-1402820-030	4
H	Washer, 5/16 Split Lock	16-1431920-08	2
J	Rivet Nut, 5/16-18	13-148F18-0000	2
K	Gasket, Mounting Bracket	38-0248602-00	1

## Alternate Mounting: Rivet Nuts



# Universal Mount

## Installation:

- ① Using the mounting bracket as your guide, drill holes for 5/16" hardware into the mounting surface.
- ② Place the gasket underneath the mounting bracket, and align both slotted holes with the drilled holes in Step 1. Place the two 5/16" hex bolts vertically through the 5/16" split lock washer, 5/16" flat washer, bracket and gasket.
- ③ Secure the bracket and gasket to the mounting surface with the 5/16" washer, then the 5/16" nut from the bottom.

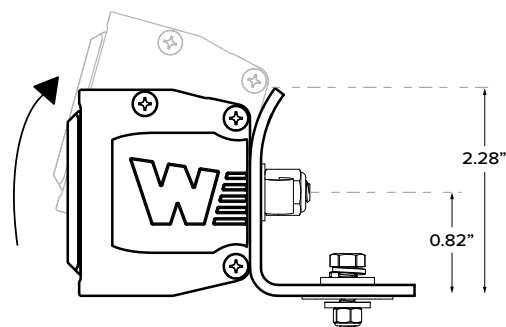
**Note:** If mounting to a surface that cannot be secured from the bottom, two 5/16" Rivet Nuts are supplied to be fastened into. See "Rivet Nut Installation" below.

- ④ Slide the heads of the 1/4-20 hex screws into the back of the lightbar extrusion.

**Note:** You may have to nudge the cable out of the way to fit the screws into the slot of the extrusion.

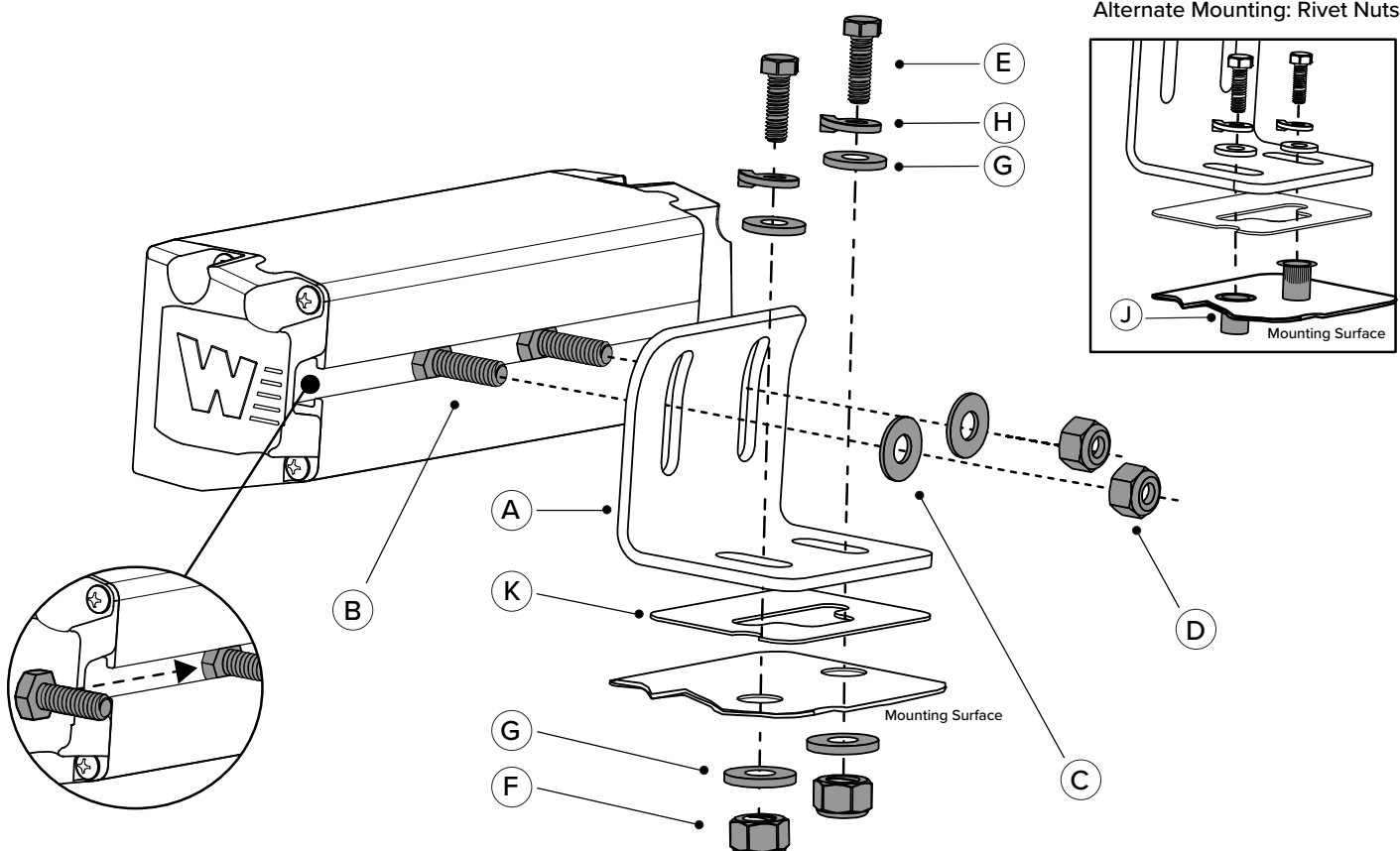
- ⑤ Align the slotted holes of the bracket with the hex screws to secure to lightbar in the desired position.

- ⑥ Secure the brackets with 1/4-20 mounting hardware: a 1/4" flat washer, and a 1/4" nylon-stop nut.



## Parts List

Location	Description	Part Numbers	Qty.
A	Bracket, Mounting Universal	07-248595-0**	1
B	Screw, 1/4-20x 3/4" HEX	14-130436-1200	2
C	Washer, 1/4" Flat	16-1301820-600	2
D	Nut, 1/4-20 Elastic Stop	13-130132-0720	2
E	Bolt, 5/16-18 x 1 HEX	14-148436-1600	2
F	Nut, 5/16-18 Elastic Stop	13-148132-0820	2
G	Washer, 5/16" Flat .875 OD SS	16-1402820-030	4
H	Washer, 5/16" Split Lock	16-1431920-08	2
J	Rivet Nut, 5/16-18	13-148F18-0000	2
K	Gasket, Mounting Bracket	38-0248602-00	1



# Lightbar Mount

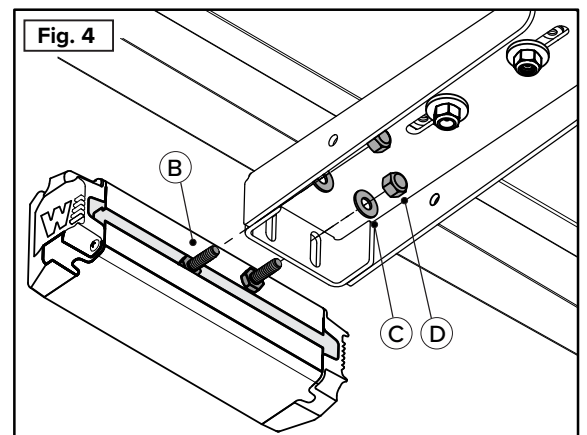
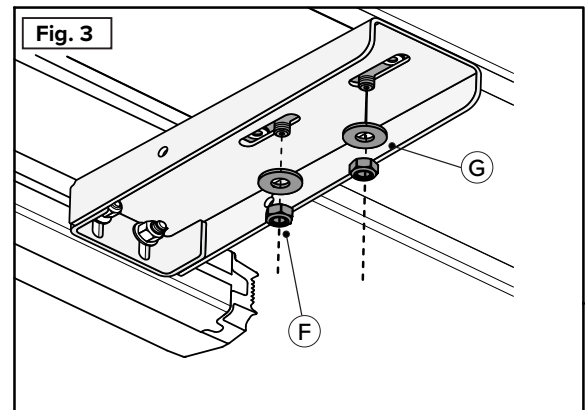
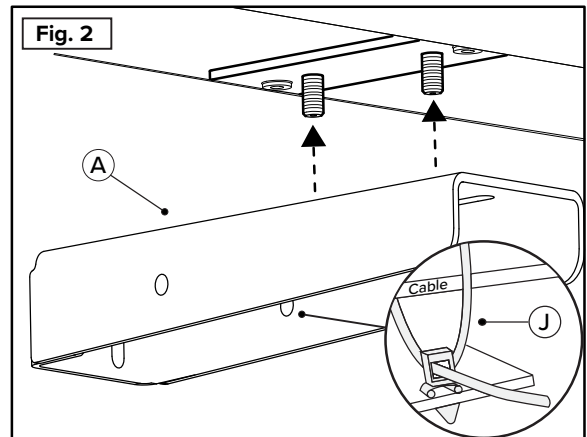
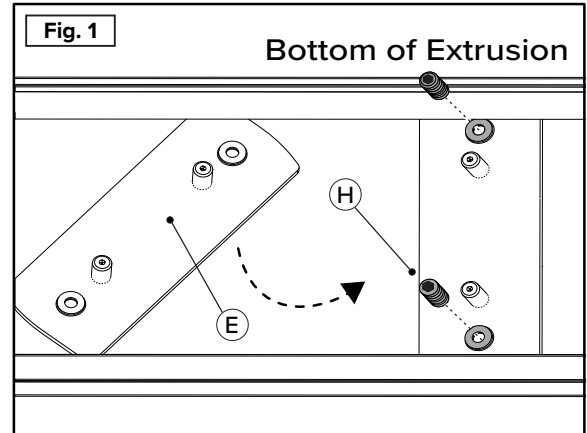
## Installation:

- ① Insert the lock plate under the lip of the lightbar extrusion. Twist into place and secure the locking plate to the extrusion with two allen screws (Fig. 1).
- ② Align the mounting studs with the mounting holes of the Freedom IV bracket (Fig. 2).
- ③ Using the proper hardware selection, secure the mounting bracket to the extrusion with the 5/16" washer, then the 5/16-18 stop nut (Fig. 3).
- ④ Slide the heads of the 1/4" hex screws into the back of the lightbar extrusion.
- ⑤ Secure the bracket to the lightbar with the 1/4-20 mounting hardware: a 1/4" flat washer, and 1/4" nylon-stop nut (Fig. 4).

**Note:** You may have to nudge the cable out of the way to fit the screws into the slot of the extrusion.

## Parts List

Location	Description	Part Numbers	Qty.
A	Bracket, Mounting Freedom IV	07-248599-0**	1
B	Screw, 1/4-20x 3/4" HEX	14-130436-1200	2
C	Washer, 1/4" Flat	16-1301820-600	2
D	Nut, 1/4-20 Elastic Stop	13-130132-0720	2
E	Plate, Lock Under Bar Mount	07-747963-000	1
F	Nut, 5/16-18 Elastic Stop	13-148132-0820	2
G	Washer, 5/16" Flat .875 OD SS	16-1402820-030	2
H	Screw, 1/4-20x1/2 Set Allen	14-130526-08m0	2
J	Cable Tie, Fir Tree Mt w/Disk	26-0219832-000	1



# Bail Mount: End Brackets

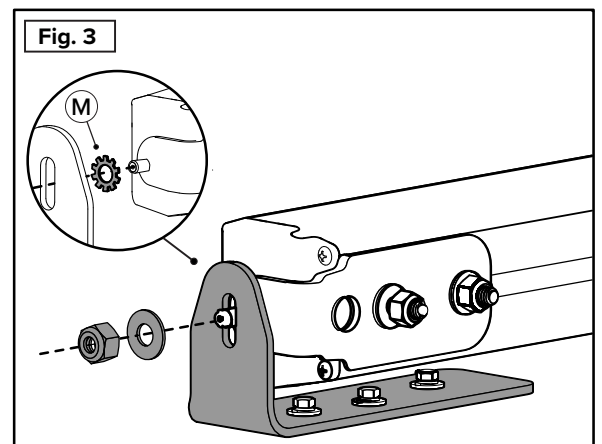
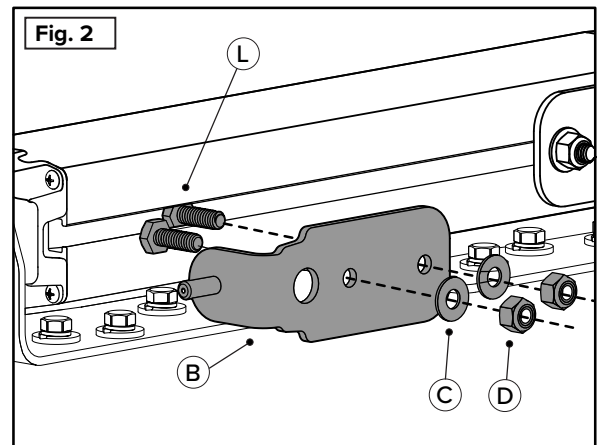
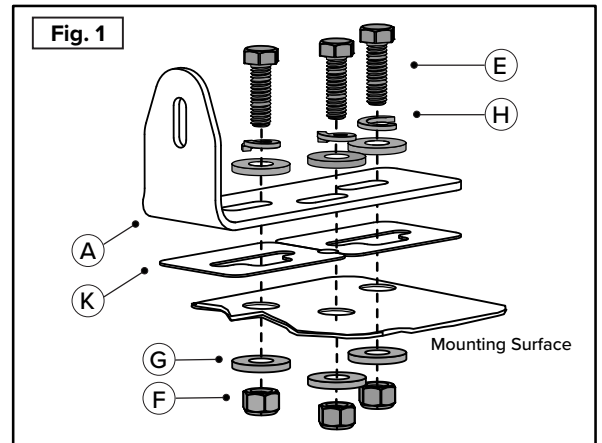
## Installation:

- ① Using the holes as your guide, align your two bracket gaskets, and swivel bracket together against your desired mounting location. Now drill proper holes for 5/16" hardware. Repeat for both ends.
- ② Using the proper hardware selection, *loosely* fasten the three 5/16" bolts, 5/16" split lock washers and 5/16" flat washers from the top, through the bracket, gasket holes, and mounting surface, and into the 5/16" flat washer and elastic stop nut on the bottom (or 5/16" Rivet Nut). Now, slide both brackets outward to their limits. Repeat this step for both ends of the light stick (**Fig. 1**).
- ③ Slide the heads of the 1/4-20 hex screws into the back of the lightbar extrusion.
 

**Note:** You may have to nudge the cable out of the way to fit the screws into the slot of the extrusion.
- ④ Position the lightbar and hex screws through the L-shape of the bracket strap.
- ⑤ Secure the bracket to the lightbar with the 1/4-20 mounting hardware: a 1/4" flat washer, and 1/4" nylon-stop nut (**Fig. 2**).
- ⑥ At this point you may slide your loosely fastened swivel brackets inward to accommodate the newly fastened lightbar and bracket straps, sliding the end through the slotted hole (**Fig. 3**). Place the external tooth washer at the end of the swivel bracket so that it's in between the two brackets.
- ⑦ Once in place, you may now fasten the swivel bracket firmly in place. Then to secure the two brackets together, fasten the 1/4" elastic stop nut and flat 1/4" washer to the threaded end of the strap bracket (**Fig. 4**).

## Parts List

Location	Description	Part Numbers	Qty.
A	Bracket, Swivel	07-248597-0**	2
B	Bracket, Strap	07-248598-0**	2
C	Washer, 1/4" Flat	16-1301820-600	4
D	Nut, 1/4-20 Elastic Stop	13-130132-0720	4
E	Bolt, 5/16-18 x 1 HEX	14-148436-1600	6
F	Nut, 5/16-18 Elastic Stop	13-148132-0820	6
G	Washer, 5/16" Flat .875 OD SS	16-1402820-030	12
H	Washer, 5/16 Split Lock	16-1431920-08	6
J	Rivet Nut, 5/16"-18	13-148F18-0000	6
K	Gasket, Mounting Bracket	38-0248602-00	4
L	Screw, 1/4-20x 3/4" HEX	14-130436-1200	4
M	Washer, External Tooth	16-1310820-020	2



**Note:** If mounting to a surface that cannot be secured from the bottom, six 5/16" Rivet Nuts are supplied to be fastened into the mounting surface. See "Alternate Mounting" on page 7 for an example.

# Bail Mount: Center Brackets

## Installation:

- ① Using the holes as your guide, align your swivel bracket with the seal gasket to the desired mounting location. Next, drill proper holes for 5/16" hardware.
- ② Using the proper hardware selection, fasten the three 5/16" bolts, and three 5/16" split lock washers from the top, through the bracket and seal holes, through the mounting surface, and into the 5/16" flat washer and elastic stop nut on the bottom (Fig. 1).

**Note:** If mounting to a surface that cannot be secured from the bottom, three 5/16" Rivet Nuts are supplied to be fastened into the mounting surface. See "Alternate Mounting," below.

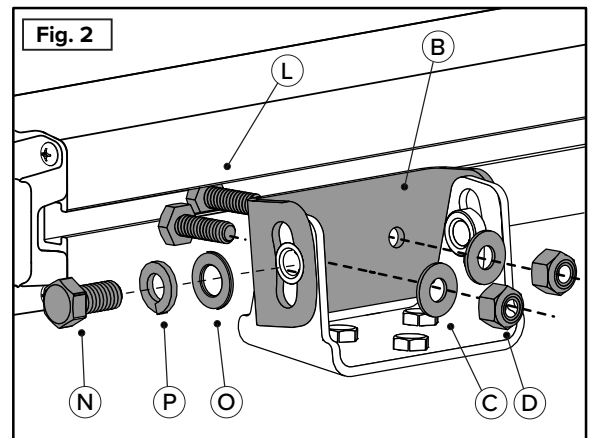
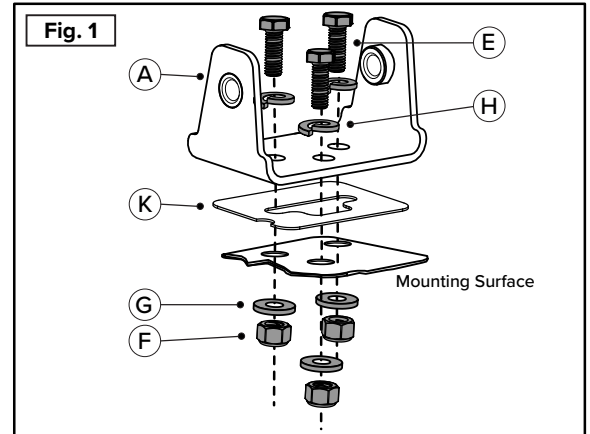
- ③ Slide the heads of the two 1/4-20 hex screws into the back of the lightbar extrusion. Slide the other ends of the screws through the bracket and fasten with a 1/4" washer and 1/4" elastic stop nut (Fig. 2).

**Note:** You may have to nudge the cable out of the way to fit the screws into the slot of the extrusion.

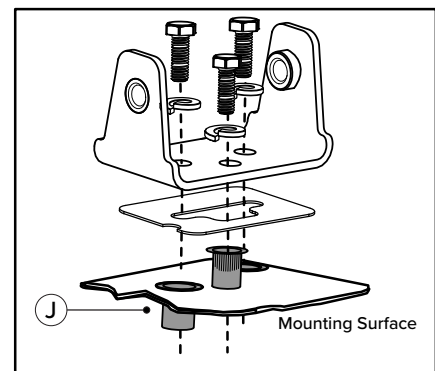
- ④ Secure the two brackets together by fastening the 3/8" bolt into a 3/8" split lock washer, then a 3/8" flat washer on each end of the brackets.

## Parts List

Location	Description	Part Numbers	Qty.
A	Bracket, Center Swivel	07-248601-0**	1
B	Bracket, Center Strap	07-248600-0**	1
C	Washer, 1/4" Flat	16-1301820-600	2
D	Nut, 1/4-20 Elastic Stop	13-130132-0720	2
E	Bolt, 5/16-18 x 1 HEX	14-148436-1600	3
F	Nut, 5/16-18 Elastic Stop	13-148132-0820	3
G	Washer, 5/16" Flat .875 OD SS	16-1402820-030	3
H	Washer, 5/16" Split Lock	16-1431920-08	3
J	Rivet Nut, 5/16-18	13-148F18-0000	3
K	Gasket, Mounting Bracket	38-0248602-00	1
L	Screw, 1/4-20x 3/4" HEX	14-130436-1200	2
N	Bolt, 3/8-16x 3/4 HXHD	14-156436-1200	2
O	3/8" Flat Washer	16-1503220-600	2
P	3/8" Split Lock Washer	16-1532220-100	2



### Alternate Mounting: Rivet Nuts





# Serviceability

Your lightbar is designed to be serviced from the field, while installed on a vehicle.

**Required tools:** Two flat tip screw drivers or other small prying tools.

## Replacing a Light Module:

- 1 Be sure that power to the light is disconnected.  
↳ See recommended service/installation sequence on page 9.

- 2 Locate the Release Tab, accessible through the bottom lens relief, a narrow undercut (**Fig. 1**).

- 3 Wedge one tool into the Release Tab, a small black slot visible in the bottom lens relief (**Fig. 2**), as a stationary wedge to lift the Release Tab above the metal enclosure. The second tool simultaneously goes in the relief and lightly jostles the module until free (**Fig. 3**).

**Note:** Both top and bottom relief will work to remove the module, however the bottom relief is recommended.

- 4 Detach the module far enough to reach the cables. Disconnect the two cable connectors by pushing in their relief tabs.

- 5 Pay careful attention to the removed light head's wire orientation. They will be either parallel or crossed. The new module going in should match that orientation (**Fig. 4**).

- 6 Be mindful of wires while inserting the module back into the extrusion in a very straight manner. Snap in place and push it in until flush.

- 7 Re-establish connection to power.

Fig. 1

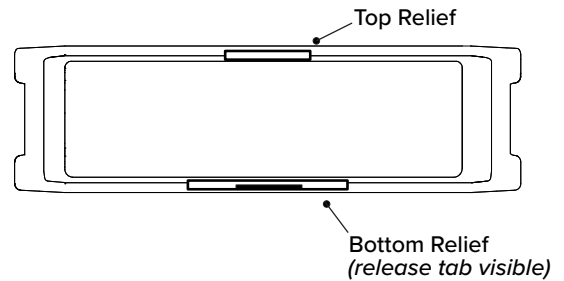


Fig. 2

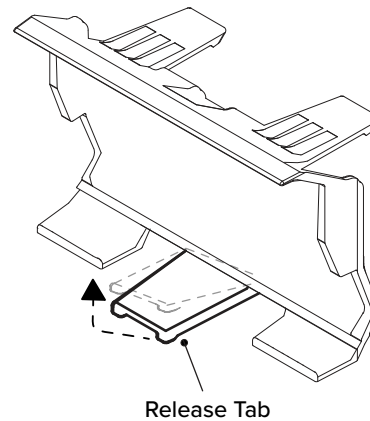


Fig. 3

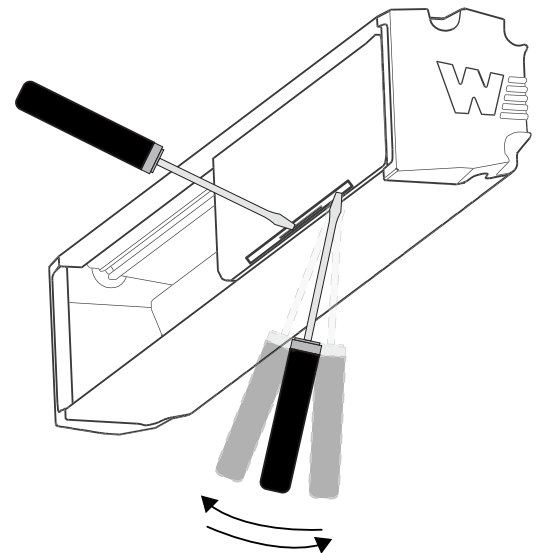
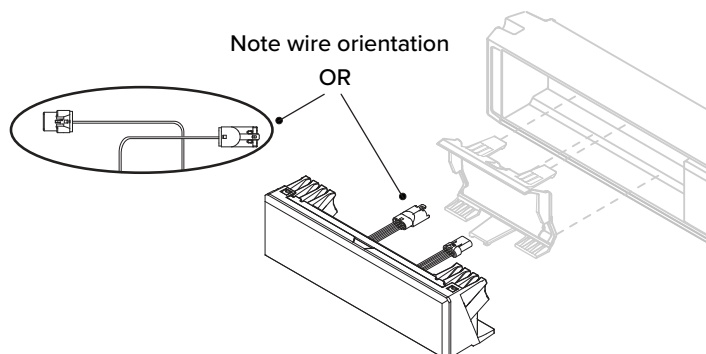


Fig. 4





# Recommended Service Sequence

## Caution

While installing or servicing the Field Series, DO NOT connect or disconnect the Power/Comm cable(s) while the Field Series power supply (Model FSBPS) is actively powered.

## Recommended Service/Installation Sequence

- ① De-activate all inputs and disconnect the power input cable from the FSBPS.
- ② Wait at least 30 seconds for the higher voltage to dissipate.
- ③ It is now safe to connect or disconnect the Power/Comm cable between the FSBPS and the brow light.
- ④ Ensure that all connections of the Power/Comm cable(s) are properly seated.
- ⑤ Power to the FSBPS can be re-established.