

# WHELEN<sup>®</sup>

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## Installation Guide for the Edge<sup>®</sup> 9M Lightbar

### 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.

- **Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.**
- **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 any 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 tape or Velcro<sup>™</sup>, 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 owners 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.**
- **If this product uses a remote device to activate or control this product, make sure that this control is located in an area that allows both the vehicle and the control 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!**

## Mounting your Edge® Lightbar

Refer to the Lightbar mounting guide included with your lightbar.

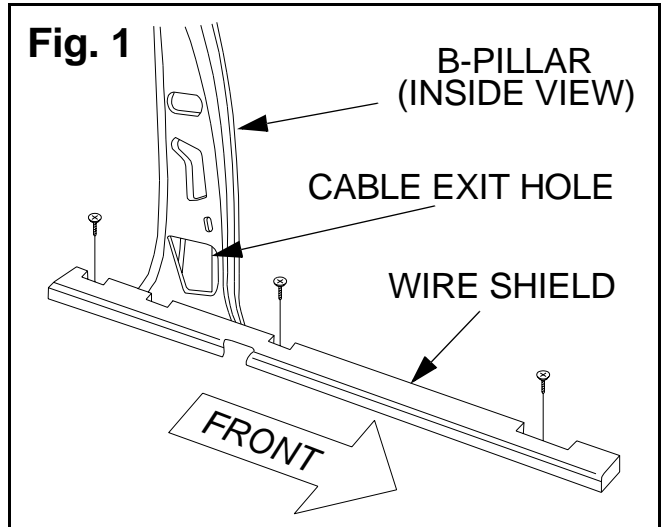
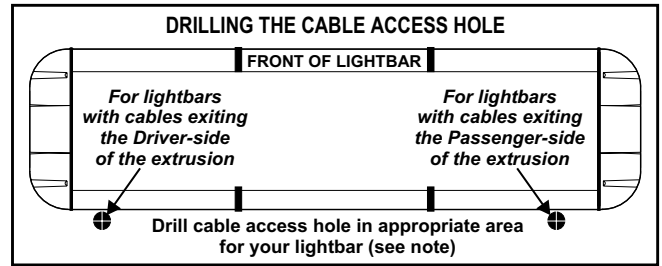
## Routing your Edge® Lightbar Cable(s)

1. To protect the headliner from damage caused by drilling the cable access hole through the vehicle roof, allow a 5" to 7" distance between roof and headliner by lowering the headliner before drilling.
2. Using a 1" hole saw, drill the cable access hole.

**NOTE:** There may be a roof support member that spans the distance between the driver's and passenger's side. **DO NOT DRILL THROUGH THIS MEMBER!** Adjust the location until the hole can be drilled without contacting this support member.

3. Use a round file to smooth and de-burr the edges of the hole.
4. Insert a 1" grommet (user supplied) into the cable access hole.
5. Insert the cable(s) through the cable access hole into the vehicle. Use RTV silicone to weatherproof the access hole after the cable(s) are pulled completely into the vehicle.
6. Route the cable(s) down through the B-pillar. The cable(s) must make a 90° turn to enter the B-pillar. Although routing the cable in this manner may be difficult, this has been determined to be the best procedure. It is up to the installation technicians discretion whether to route the cable(s) as recommended or use an alternative route. Pull the full length of the cable(s) out of the hole at the base of the B-pillar (Fig. 1) and route towards your switch panel. Refer to the instructions included with your switches for switch wiring information.

**NOTE:** The outer surfaces of this product may be cleaned with mild soap and water. Use of any other chemicals may void product warranty. Do not use a pressure washer.



## Connecting the Cables

**WARNING!** All Customer supplied wires that connect to the positive terminal of the battery, must be sized to supply at least 125% of the maximum operating current and be fused at the battery to carry the load.

### Power Cable:

1. Open the wiring shield lid (Fig. 1) and route the power cable into the wiring shield and towards the firewall. Follow the factory wiring harness through the firewall. It may be necessary to drill a hole in the firewall. If so, be absolutely sure that there are no components that could be damaged by drilling. After the hole has been drilled, insert a grommet to protect the cable.
2. Route the cable along the factory wiring harness towards the battery. Install a 40 amp fuse block (customer supplied) on the end of the RED wire in the power cable. Remove the fuse from the fuse block before connecting any wires to the battery.
3. Connect the fuse block to the POSITIVE (+) terminal on the battery. There can not be more than two (2) feet of wire between the fuse block and the battery. The wire between the fuse block and the battery is "unprotected", do not allow this wire to come into contact with any other wires.
4. Connect the BLACK wire to the factory chassis ground adjacent to the battery.

### Control Cable:

Extend the control cable to your switch panel and make the appropriate connections, using the information provided on pages 4 or 5, depending on which lightbar you have. *When you apply +12 VDC to a Control Cable wire, you activate its function.* The control cable connects to your control head or switch box and is fused there. Typical fusing is 5 Amps.

**NOTE:** The wire functions listed in this manual are the factory default settings for a fully loaded lightbar. To find the correct wire functions for the lightbar you ordered, refer to the switch operations sheet included with your lightbar.

## Troubleshooting:

Your lightbar should now be fully operational. If your lightbar is not functioning properly, check the following:

- The positive wire (RED) is properly connected to the battery, by way of the user supplied fuse block.
- A working fuse of the correct amperage (40 amp) is installed in the fuse block.
- The ground wire (BLACK) is properly connected to the factory ground.

If all of these connections are good, contact your Whelen representative for further assistance.

## Changing Flash Patterns Without a Scan-Lock™ Cable:

The 9M lightbar is capable of displaying a variety of flash patterns. These patterns can be changed at the users discretion using one of two different methods. The first (and easiest) is through the use of the optional Scan-Lock™ pattern cable. Because this allows the user to change patterns from within the vehicle, this method is preferred by customers who need to be able to easily change their flash patterns when the need arises.

For users who rarely or infrequently change patterns and therefore do not require a Scan-Lock™ cable, it is necessary to partially disassemble the lightbar so as to change patterns manually.

**WARNING! THIS PROCEDURE REQUIRES THE LIGHTBAR TO BE ACTIVE WHILE IN A PARTIALLY DISASSEMBLED STATE. DO NOT TOUCH ANY LIGHTBAR COMPONENTS EXCEPT FOR THOSE REFERENCED IN THIS PROCEDURE.**

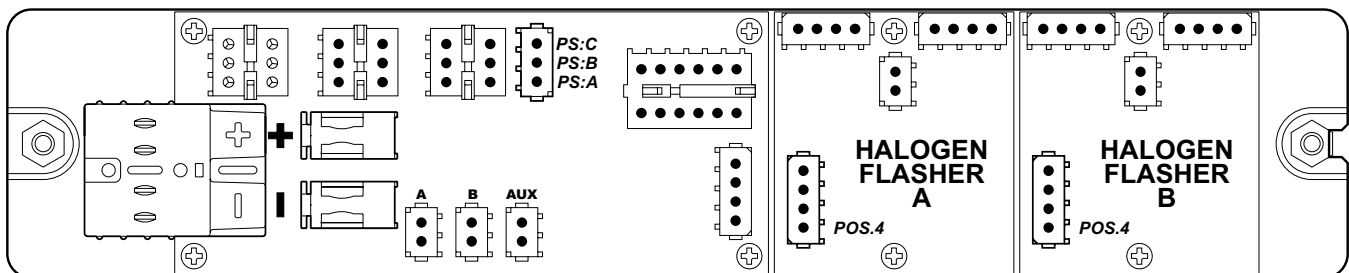
1. Notice where the cable enters the bottom of the extrusion. If it enters on the driver side of the extrusion, the Power Distribution Board will be facing the rear of the vehicle. If it enters on the passenger side, it will be facing the front of the vehicle.
2. Remove the endcap nearest to the cable entry. On the appropriate side (front or rear) of the lightbar, remove lenses and move lighthoods away from the extrusion until clear access to the Power Distribution Board has been gained.

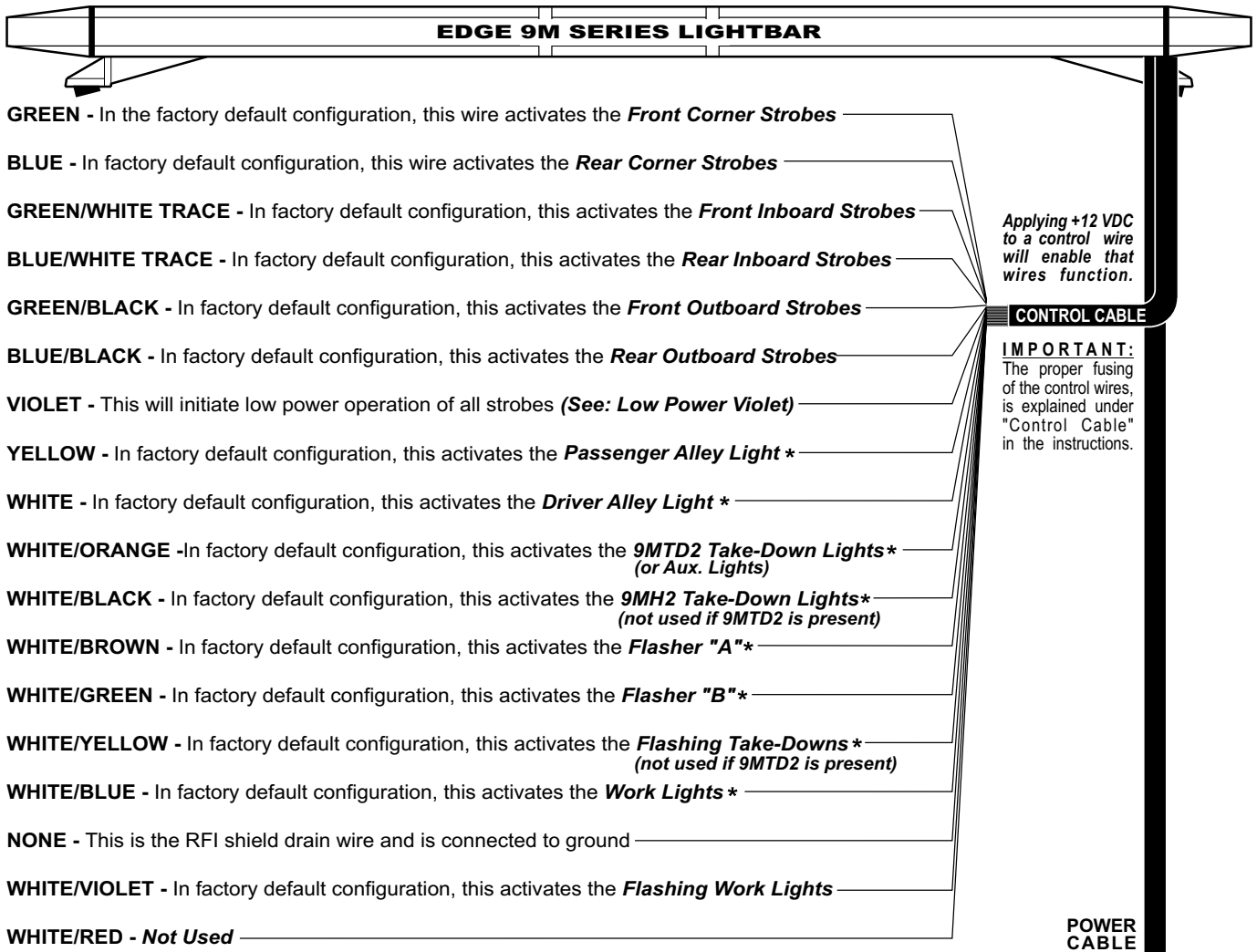
**Note: Be sure to record the exact position of each component to ensure proper re-assembly.**

3. **Changing Strobe Lighthouse Patterns** - Locate the 3-position connector indicated below. As shown, each of the three sockets control pattern selection for each of the lightbar's three strobe power supplies (PS:A, PS:B and PS:C). In the default configuration, the corner strobes use Power Supply A, the inboard strobes use Power Supply B and the end strobes use Power Supply C. Activate the strobe lighthoods that are to receive the new flash pattern. Momentarily applying +12VDC to the appropriate socket will cycle that power supply's current flash pattern to the next flash pattern. Repeat this procedure until the desired pattern is displayed. Allowing this pattern to flash for a minimum of 5 seconds will make this pattern the default pattern.
4. **Changing Halogen Lighthouse Patterns** - Locate the 4-position connector on the appropriate halogen flasher (A or B). As shown, the socket located in position 4 controls pattern selection for the halogen lighthoods connected to that flasher. Momentarily applying +12VDC to this socket will cycle that halogen flasher's current flash pattern to the next flash pattern. Repeat this procedure until the desired pattern is displayed. Allowing this pattern to flash for a minimum of 5 seconds will make this pattern the default pattern.
5. **Restoring the Factory Default Pattern** - To restore the factory default flash pattern, make sure that the lighthoods to be restored are off. For strobe lighthoods, apply +12VDC to the appropriate socket (see strobe lighthouse procedure above) while powering up the corresponding lighthoods. Allow pattern to be displayed for a minimum of 5 seconds to make this the default pattern.

For halogen lighthoods, use the same procedure as outlined for strobe lighthoods, substituting the halogen selection socket(s) where the strobe socket is referenced. Allow pattern to be displayed for a minimum of 5 seconds to make this the default pattern.

### Power Distribution Board





### MAIN FUSE CHART

To use the chart below: After determining which function wires you will use, add up the amp rating of each function wire. You must then multiply this by 1.25 (see warning) and fuse the RED power wire at this rating.

WIRE COLOR	FUNCTION	AMP RATING
GREEN	Front Corner Strobes	3 amps
BLUE	Rear Corner Strobes	3 amps
GREEN/WHITE TRACE	Front Inboard Strobes	3 amps
BLUE/WHITE TRACE	Rear Inboard Strobes	3 amps
GREEN/BLACK	Front Outboard Strobe	3 amps
BLUE/BLACK	Rear Outboard Strobe	3 amps
YELLOW	Passenger Alley Light	2.5 amps
WHITE	Driver Alley Light	2.5 amps
WHITE/BLACK	Take-Down Lights	5 amps
WHITE/BROWN	Flasher "A"	5 amps
WHITE/GREEN	Flashers "B"	5 amps
WHITE/ORANGE	Auxiliary Option	5 amps
WHITE/YELLOW	Flashing Take-Downs	2.5 amps
WHITE/BLUE	Work Lights	5 amps
WHITE/VIOLET	Flashing Work Lights	2.5 amps

**EXAMPLE:** Using the WHITE/BLACK, WHITE, & WHITE/ORANGE function wires, the total amp draw is 17.5 amps. Multiply this by 1.25 which comes out to 21.87 amps. You must fuse the RED power wire at 25 amps.

See "Main Fuse Chart" for fuse value

- RED - +12 VDC/8 AWG
- BLACK - Ground/8 AWG
- NONE - RFI Shield Drain

\* = Optional Equipment: May not be present on all Light Bars

**WARNING:** All Customer supplied wires that connect to the positive terminal of the battery, must be sized to supply at least 125% of the maximum operating current and be fused at the battery to carry the load.

**LOW POWER / VIOLET** The type of switch used is dependant on how the operator wishes the Hi/Lo feature to function:  
**Latching Mode:** By applying +12 VDC voltage to the Violet wire for less than 1 sec., the power supply is "latched" into low power operation. The unit must be turned off and then back on to restore normal, Hi power operation. (A Momentary Switch is Preferred)  
**Level Mode** - Applying +12 VDC voltage to the Violet wire for more than 1 sec. holds the power supply in low power mode until voltage is removed. (A Toggle Switch is Preferred)

**EDGE 9M SERIES LIGHTBAR for MODELS EQUIPPED with STROBE TRAFFIC ADVISOR**

- GREEN - In the factory default configuration, this wire activates the *Front Corner Strobes*
- BLUE - In factory default configuration, this wire activates the *Rear Corner Strobes*
- GREEN/WHITE TRACE - In factory default configuration, this activates the *Front Inboard Strobes*
- BLUE/WHITE TRACE - In factory default configuration, this activates the *Rear Inboard Strobes*
- WHITE/GREEN TRACE - In factory default configuration, this activates the *2 Strobe T.A. Flash*
- WHITE/BLUE - In factory default configuration, this activates the *4 Strobe T.A. Flash*
- VIOLET - This will initiate low power operation of all strobes *See: Low Power Violet*
- YELLOW - In factory default configuration, this activates the *Passenger Alley Light \**
- WHITE - In factory default configuration, this activates the *Driver Alley Light \**
- WHITE/ORANGE -In factory default configuration, this activates the *9MTD2 Take-Down Lights \* (or Aux. Lights)*
- WHITE/BLACK - In factory default configuration, this activates the *9MH2 Take-Down Lights \* (not used if 9MTD2 is present)*
- WHITE/BROWN - In factory default configuration, this activates the *Flasher "A" \**
- GREEN/BLACK - In factory default configuration, this activates the *Right Traffic Advisor \**
- WHITE/YELLOW - In factory default configuration, this activates the *Flashing Take-Downs \* (not used if 9MTD2 is present)*
- BLUE/BLACK - In factory default configuration, this activates the *Left Traffic Advisor \**
- NONE - This is the RFI shield drain wire and is connected to ground
- WHITE/RED - *Not Used*

Applying +12 VDC to a control wire will enable that wires function.

**CONTROL CABLE**

**IMPORTANT:**  
The proper fusing of the control wires, is explained under "Control Cable" in the instructions.

**MAIN FUSE CHART**

To use the chart below, add up the amp rating of each function wire used. You must then multiply this by 1.25 (see warning) and fuse the RED power wire at this rating.

WIRE COLOR	FUNCTION	AMP RATING
GREEN	Front Corner Strobes	3 amps
BLUE	Rear Corner Strobes	3 amps
GREEN/WHITE TRACE	Front Inboard Strobes	3 amps
BLUE/WHITE TRACE	Rear Inboard Strobes	3 amps
WHITE/GREEN TRACE	T.A. / 2 Strobe Flash	3 amps
WHITE/BLUE	T.A. / 4 Strobe Flash	6 amps
YELLOW	Passenger Alley Light	2.5 amps
WHITE	Driver Alley Light	2.5 amps
WHITE/BLACK	Take-Down Lights	5 amps
WHITE/BROWN	Flasher "A"	5 amps
GREEN/BLACK	Right Traffic Advisor	6 amps
WHITE/ORANGE	Auxiliary Option	5 amps
WHITE/YELLOW	Flashing Take-Downs	2.5 amps
BLUE/BLACK	Left Traffic Advisor	6 amps

**EXAMPLE:** Using the WHITE/BLACK, WHITE, & WHITE/ORANGE function wires, the total amp draw is 17.5 amps. Multiply this by 1.25 which comes out to 21.87 amps. You must fuse the RED power wire at 25 amps.

See "Main Fuse Chart" for fuse value

- RED - +12 VDC/8 AWG
- BLACK - Ground/8 AWG
- NONE - RFI Shield Drain

POWER CABLE

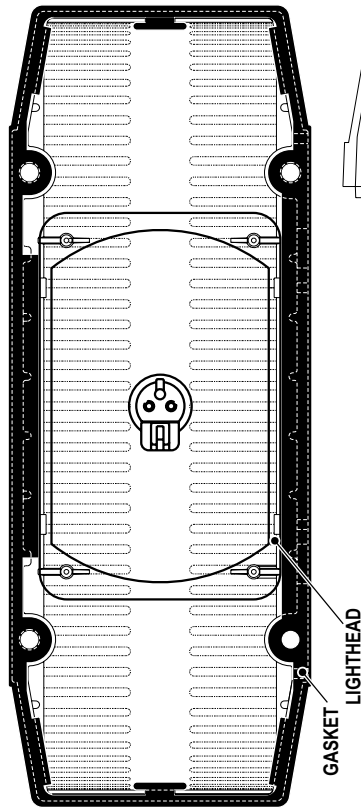
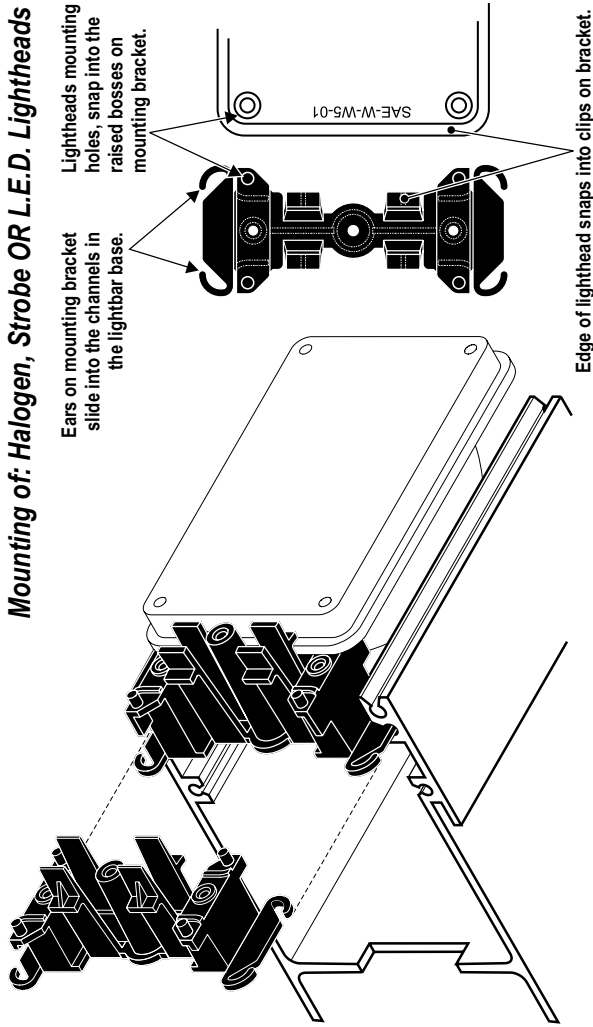
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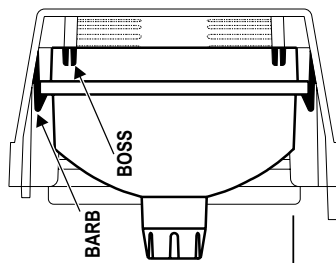
The lightbar owner should familiarize himself with the following component replacement procedures to assure proper assembly and re-assembly of this product.

### Mounting of: Halogen, Strobe OR L.E.D. Lighthoods



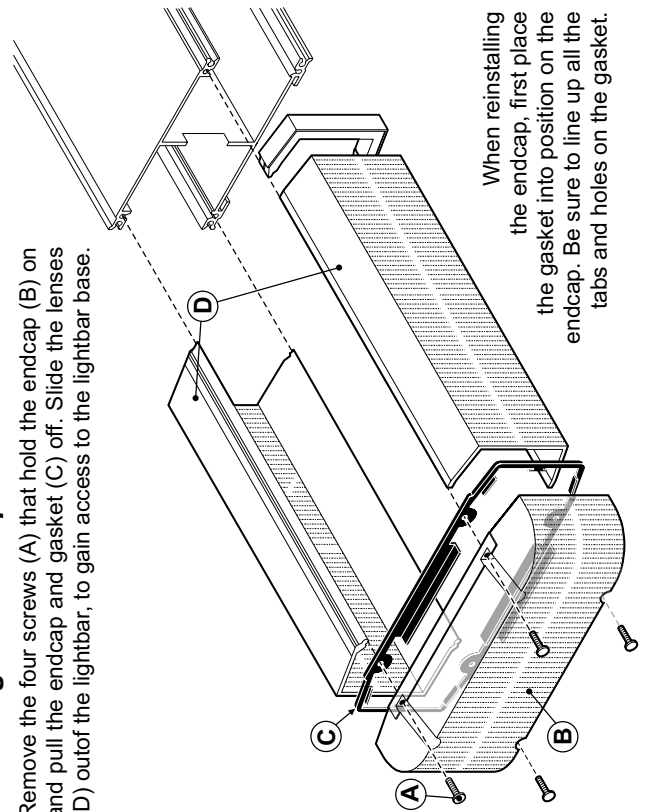
### Installing Endcap Gasket & Alley Light BARB

Place the endcap gasket into position on the endcap, locating all tabs and holes.  
Align the reflector assembly of the alley light with the 4 bosses in the endcap and press the reflector in place until the 4 barbs engage around the reflector.

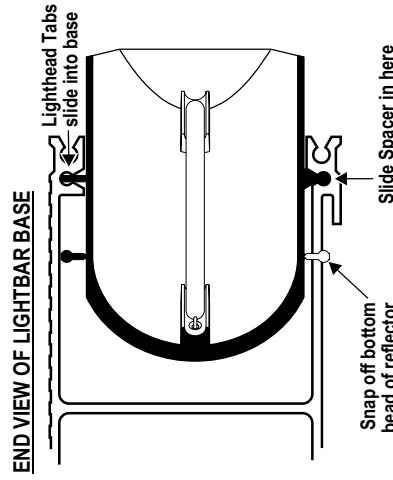
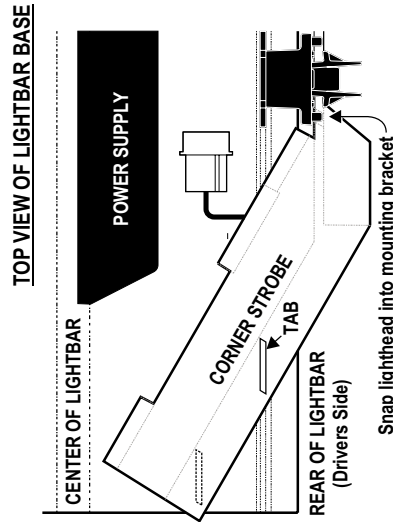


### Removing the Endcap and Lenses

Remove the four screws (A) that hold the endcap (B) on and pull the endcap and gasket (C) off. Slide the lenses (D) out of the lightbar, to gain access to the lightbar base.



### Installing a Corner Strobe



Before working on your strobe lights, disconnect the lightbar from power and remove the endcap.  
**WARNING:** The strobe light power supply is a high voltage device. Do not remove the strobe tubes or dismantle the strobe lighthoods in the system while the unit is in operation. Wait 10 minutes after turning off power before working on the system. To remove the lighthood, unsnap it from the mounting bracket, unplug it, and slide it out of the side of the lightbar base. If you are replacing the lighthood, snap off the bottom bead on the new lighthood as shown. Plug the new lighthood into the lightbar, slide it into the base and snap it into the mounting bracket.