

WHELEN[®]

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Installation Guide:
LFL Liberty Mini Edge[®]

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.

- **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.**
- **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!**

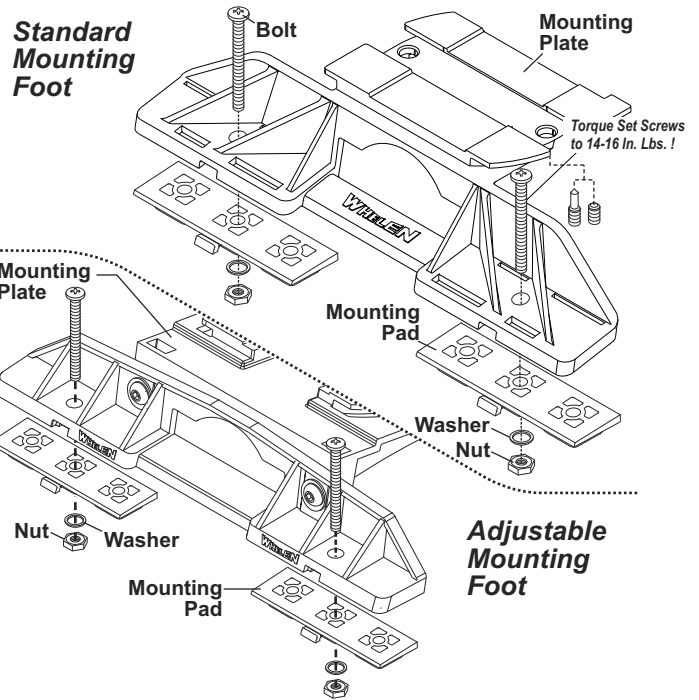
IMPORTANT! The lightbar should be a minimum of 16" from any radio antennas!

Permanent Mounting:

1. Locate the mounting foot and plate included with your lightbar. If not already present, install the mounting plate onto the foot. When properly positioned, this plate is centered from side-to-side on the mounting foot.
2. Flip the lightbar upside-down to expose the bottom of the extrusion and place the mounting foot onto the extrusion.
3. Rotate the mounting foot 90° in a counter-clockwise direction. Make sure that the edges of the mounting foot swing into position under the extrusion mounting lip.
4. Repeat this procedure for the remaining mounting foot and return the lightbar to its right side-up position.
5. Position the lightbar onto the vehicle roof in the desired mounting location. One often selected location is directly above the B-pillars. This area is the strongest part of the roof. Refer to your lightbar manual for cable exit location, to be sure that the lightbar is facing the proper direction.
6. Adjust the two mounting feet outwards so that they are as close to the edge of the roof as possible. Make sure that both mounting feet are in full contact with the roof. Be sure that there is no less than 1/2" clearance between the roof and the lightbar at the closest point. With the mounting feet in their proper position, lightly tighten the foot allen head set screws.
7. Turn the lightbar upside-down and tighten all of the set screws from step 6 (2 or 4 per side) to 14-16 In. Lbs.
8. Note that on the adjustable foot, use the hole in the pad as a guide to drill the two holes into the mounting foot at the locations shown.
9. Place the lightbar in its final mounting position on the vehicle, mark the mounting hole locations off onto the mounting surface, remove the lightbar and drill the mounting holes.

Strap Mounting:

1. Locate the mounting foot, mounting plate and tinnerman plate included with your lightbar. If not already present, install the mounting plate onto the mounting foot. When properly positioned, this plate is centered from side-to-side on the mounting foot.
2. Flip the lightbar upside-down to expose the bottom of the extrusion and place the mounting foot onto the extrusion.
3. Rotate the mounting foot 90° in a counter-clockwise direction. Make sure that the edges of the mounting foot swing into position under the extrusion mounting lip. Install a tinnerman plate onto the extrusion in the same manner.
4. Repeat this procedure for the remaining mounting foot and tinnerman plate and return the lightbar to its right side-up position.
5. Position the lightbar onto the vehicle roof in the desired mounting location. One often selected location is directly above the B-pillars. This area is the strongest part of the roof. Refer to your lightbar manual for cable exit location, to be sure that the lightbar is facing the proper direction.
6. Adjust the two mounting feet outwards so that they are as close to the edge of the roof as possible. Both mounting feet must be in full contact with the roof. Be sure that there is no less than 1/2" clearance between the roof and the lightbar at their closest point. With the mounting feet in their proper position, lightly tighten the foots allen head set screws.
7. Return the lightbar to an upside-down position. Slide each tinnerman plate outwards until it is fully engaged with its corresponding mounting foot. With the



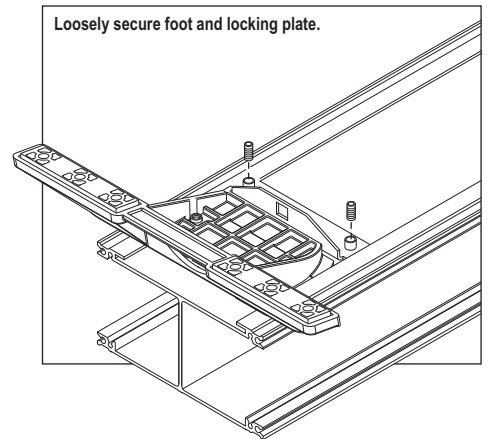
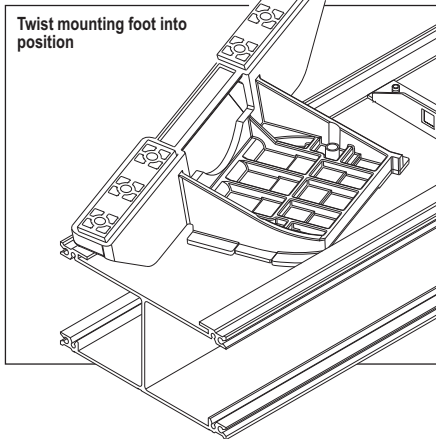
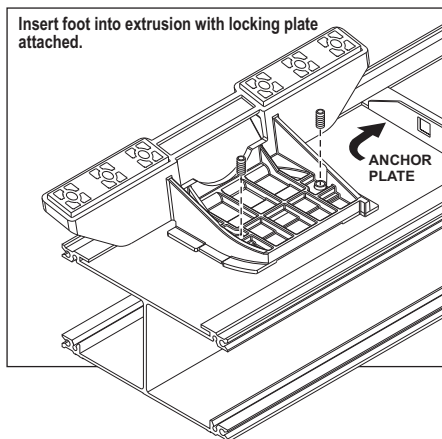
10. Place the lightbar back onto the vehicle lined up with the mounting holes and secure the mounting feet to the vehicle using the supplied hardware.

mounting feet and tinnerman plates in their proper positions tighten all of the set screws (2 or 4 per side) to 14-16 In. Lbs. Flip the lightbar right side-up and return it to its mounting position.

8. Open both drivers side doors. In the area directly below the mounting foot, carefully pull the drivers side weatherstrip away from the vehicle. Remove enough so that the area where the mounting strap will be secured to the vehicle is exposed. Repeat procedure for passenger side.
9. Insert the mounting strap through the mounting foot. Be sure that the strap fits flush against the area where it will be secured onto the vehicle. Insert the tension bolt through the mounting strap and into the tinnerman nut on the tinnerman plate. Tighten slightly with a long shafted, Phillips screwdriver. Repeat procedure for passenger side.
10. If your mounting strap has mounting holes in the end of the strap, use these holes as a template to drill appropriately sized pilot holes through the strap and into the vehicle. Repeat for passenger side of the vehicle.
11. Firmly tighten the tension bolts to secure the lightbar to the vehicle.

NOTE: Model MKAJ is an adjustable mounting foot. You may loosen the screws on the rear of the foot and adjust the angle of the lightbar. This feature can be used if the angle of the roof is not level with the road.

IMPORTANT: To adjust the leveling screws you must use a torque wrench set at 35 to 40 in./lbs.

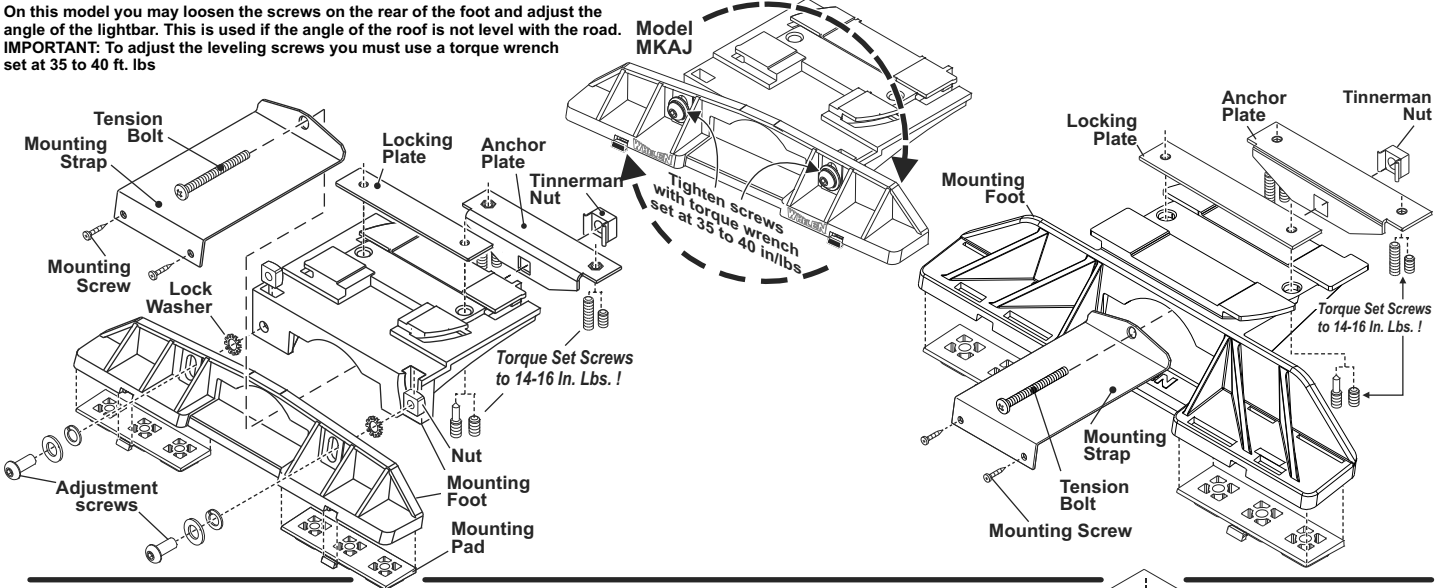


Adjustable Mounting Foot / Model MKAJ

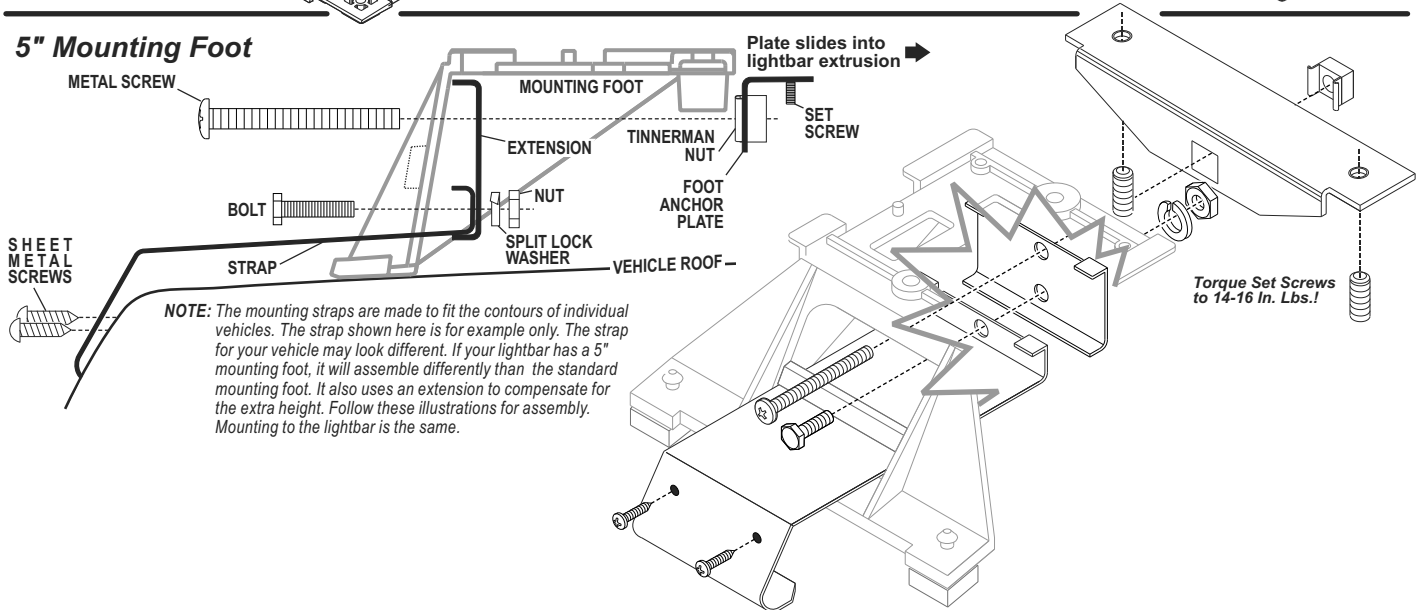
◀ For Reference Only ▶

Standard Mounting Foot / Model MKEZ

On this model you may loosen the screws on the rear of the foot and adjust the angle of the lightbar. This is used if the angle of the roof is not level with the road. **IMPORTANT:** To adjust the leveling screws you must use a torque wrench set at 35 to 40 ft. lbs



5" Mounting Foot

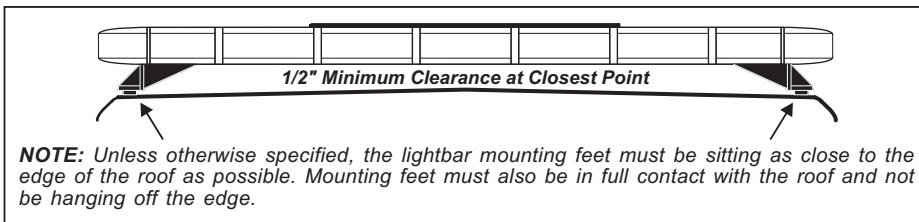
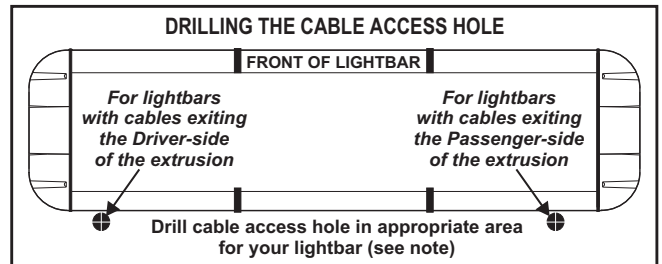


CAUTION: Permanent mounting will require drilling. The installer must be sure that no vehicle components or other vital parts will be damaged. Be aware of the location of any front, side or upper air bags.

CAUTION: 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 of the cable access hole until the hole can be drilled without contacting this support member.

IMPORTANT! It is the responsibility of the installation technician to make sure that the installation and operation of this product will not interfere with or compromise the operation or efficiency of any vehicle equipment!

CAUTION: Using a magnetic mounted light on the outside of a vehicle, while in motion, is not recommended and is at the sole risk of the user.



Installation:

- 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.
- Using a 1" hole saw, drill the cable access hole. Use a round file to smooth and de-burr the edges and insert a 1" grommet (user supplied).
- 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 into the vehicle.
- When routing the cable(s), be sure to use a path that avoids any vehicle components or other vital parts that may be damaged. Also be careful not to interfere with any vehicle air bags (front, side, etc.). Route the cable(s) towards your switch panel and refer to the instructions included with the switch panel for wiring information.

Wiring:

The cigarette plug model plugs it into your cigarette lighter and requires no further wiring.

If you have a lightbar that has an 11-conductor cable, refer to the chart below for important wiring information.

NOTE: For internal fuse replacement see information on next page.

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 FUSED at the battery to carry that load. DO NOT USE CIRCUIT BREAKERS WITH THIS PRODUCT!

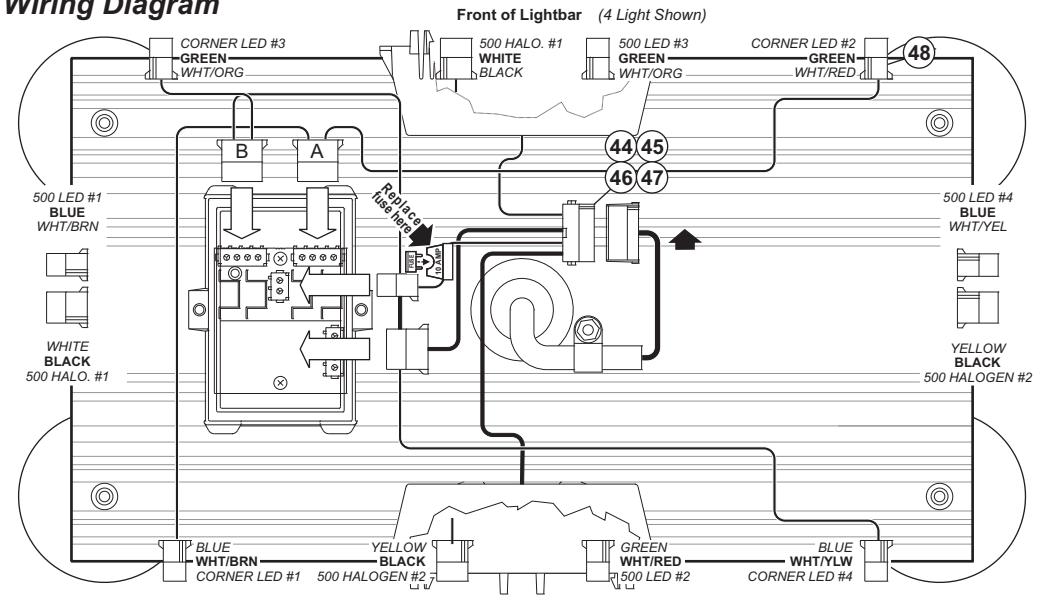
WIRE COLOR (VOLTAGE)	FUNCTION	FUSE @
RED (+12VDC)	LED Flasher (+) Positive	5 Amps
BLK / YEL (+12VDC)	Scan-Lock™	1 Amp
GRY (+12VDC)	Front Corner LEDs	1 Amp
WHT (+12VDC)	Halogen 1	5 Amps
WHT/BLK (+12VDC)	Inboard LEDs	5 Amps
YEL (+12VDC)	Halogen 2	5 Amps
WHT / BLU (+12VDC)	Rear Corner LEDs	1 Amp
BLK / WHT (-)	Halogen 1 & 2 Ground	N/A
WHT / VIO (+12VDC)	Endcap LEDs	1 Amp
VIO (+12VDC)	Low Power	1 Amp
BLK (-)	LED Flasher (-) Negative	N/A

Hi/Low Control:

Option 1: Latching Mode: By applying +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 best for this method.

Option 2: Level Mode: Applying +voltage to the VIOLET wire for more than 1 sec. holds the power supply in Low power mode until that voltage is removed. A toggle switch is best for this method.

Wiring Diagram



Scan-Lock™:

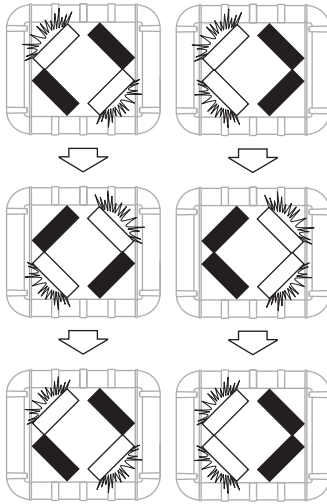
To cycle forward through all patterns: Apply power to the control wire of the function you want to change, then apply power to the BLK/YEL (Scan-Lock™) wire for less than 1 second and release. This will change the pattern. Repeat for next pattern.

To choose a pattern: While cycling through the patterns, when you find the pattern you want let it run for more than 5 seconds and it will lock in and become the default pattern.

To reset to the factory default pattern: Turn off power. While applying power to the Scan-Lock™ wire, turn power on to the light(s) you want to reset.

Scan-Lock can be connected to a customer supplied SPST switch.

Corners / Cross Corners / Alternating



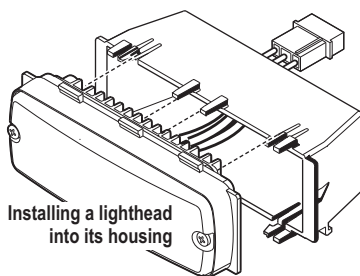
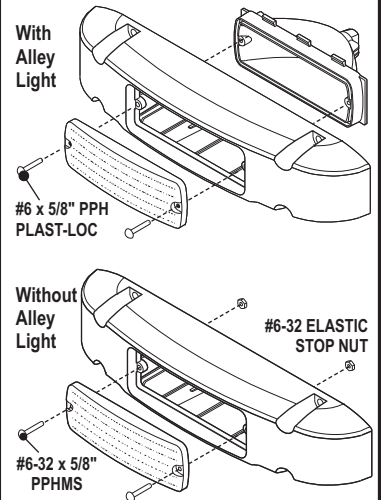
NOTE: The available flash patterns are shown here. This will show how FRONT LEDs (optional) and CORNER LEDs react to Alternating and Cross flash patterns.

Available Flash Patterns:

- 1A SignalAlert™ Alternating
- 1B SignalAlert™ Cross
- 1C SignalAlert™ 3 cycles of 1A & 3 cycles of 1B
- 2A CometFlash® Alternating
- 2B CometFlash® Cross
- 2C CometFlash® 3 cycles of 1A & 3 cycles of 1B
- 3A DoubleFlash Alternating
- 3B DoubleFlash Cross
- 3C DoubleFlash 3 cycles of 1A & 3 cycles of 1B
- 4A SingleFlash Alternating
- 4B SingleFlash Cross
- 4C SingleFlash .. 3 cycles of 1A & 3 cycles of 1B
- 6 SteadyFlash 1 & 2 Steady 3 & 4
SingleFlash (SIM.)
- 7 Steady 1, 2, 3 & 4 Steady

Servicing your Lightbar

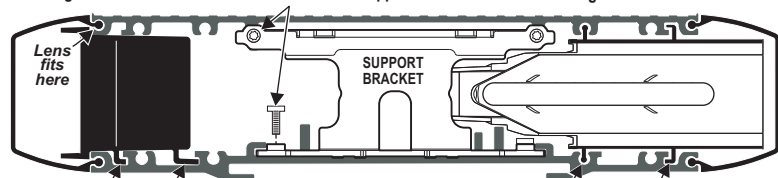
Use the illustrations shown if you need to gain access to the lightbar to service or replace parts.



Installing Lens and Lighthouse Housing into extrusion

Top and bottom of extrusion secure to Support Bracket.

Installing Corner Linear-LED® Lighthouse into extrusion



Insert the tabs on the lighthouse housing, into the channels in the extrusion.

Insert the tabs on the lighthouse housing, into the channels in the extrusion.

QTY	QTY	QTY	QTY	ITEM	PART NUMBER	DESCRIPTION
		*			01-0684207-()	PERM MT (Liberty™) 4 LED LIGHTHEADS
		*			01-0684207-()	MAG MT (Liberty™) 4 LED LIGHTHEADS
	*				01-0684207-()	PERM MT (Liberty™) 8 LED LIGHTHEADS
	*				01-0684207-()	MAG MT (Liberty™) 8 LED LIGHTHEADS
1	1	1	1	1	11-363336-017	BASE EXTRUSION
4	-	4	-	2	08-0640834-01	MOUNTING PAD
4	-	4	-	3	65-0010192-00	MAGNET X-80
4	-	4	-	4	14-130216-100	1/4-20 x 5/8" PPHMS
A/R	-	A/R	-	5	66-0715403-00	THREADLOCKER, LOCTITE 242
-	1	-	1	6	46-0742901-00	INPUT CABLE ASS'Y. (11C COMPOSITE)
1	1	1	1	7	21-11245004-1	GROMMET, 1.562"
1	1	1	1	8	14-104216-080	SCREW, 10-24 x 1/2" PPHMS
1	1	1	1	9	13-104111-063	#10-24 WHIZ NUT
-	1	-	1	10	26-0115037-07	CABLE CLAMP, 7/16"
2	2	1	1	12	11-443158-000	HOUSING, LED FLASHER
2	2	1	1	13	02-0169672-00	FLASHER, LIGHTBAR LED
2	2	2	2	14	11-483564-000	HOUSING, LIGHTHEAD (SNAP-IN)
A/R	A/R	A/R	A/R	15	02-0383577-03	SUB-ASS'Y., 500 HALOGEN W/3 POS.
A/R	A/R	A/R	A/R	16	01-026B625210	ASS'Y-CORNER LINEAR (12) LED -AMBER
A/R	A/R	A/R	A/R	17	01-026B625220	ASS'Y-CORNER LINEAR (12) LED -BLUE
A/R	A/R	A/R	A/R	18	01-026B625230	ASS'Y-CORNER LINEAR (12) LED -WHITE
A/R	A/R	A/R	A/R	19	01-026B625240	ASS'Y-CORNER LINEAR (12) LED -GREEN
A/R	A/R	A/R	A/R	20	01-026B625250	ASS'Y-CORNER LINEAR (12) LED -RED
1	1	1	1	21	11-26B607-017	TOP EXTRUSION
4	4	2	2	22	15-065419-080	SCREW, 6 X 1/2 PPH PLASTI-
2	2	2	2	23	68-1983818-30	LENS, 5-1/16" (CLEAR)
4	4	4	4	24	02-0342791-30	ASS'Y., LENS DIVIDER
4	4	4	4	25	68-1983819-30	LENS, 5-11/16" (CLEAR)
2	2	2	2	26	38-0283572-00	GASKET, ENDCAP

QTY	QTY	QTY	QTY	ITEM	PART NUMBER	DESCRIPTION
2	2	2	2	28	68-1963237-30	LENS, 500 SERIES OPTIC (CLEAR)
A/R	A/R	A/R	A/R	29	15-065410-100	#6 x 5/8" PPH PLAST-LOC
A/R	A/R	A/R	A/R	30	14-062216-100	#6-32 x 5/8" PPHMS
4	4	2	2	31	13-062120-052	#6-32 ELASTIC STOP NUT
1	-	1	-	32	26-0115037-04	CABLE CLAMP, 1/4"
1	-	1	-	33	02-0240837-01	INPUT CABLE ASS'Y. with CIGAR PLUG
1	-	1	-	34	10-0220700-02	LABEL, CAUTION-MAGNET MTG.
8	8	8	8	35	14-104286-16J	#10-24 x 1-1/4" TX. PHD. with SHOULDER
1	1	1	1	36	39-0416323-04	16 POS SOCKET
4	4	4	4	37	20-0042765-00	SPACER, CORNER RETENTION
1	1	1	1	38	10-0522960-00	LABEL, MODEL & SERIAL NO.
-	1	-	1	39	01-0483969007	MOUNTING KIT 7S
4	4	2	2	40	13-062111-053	NUT / 6-32 X 5/16 WHIZ LOCK
4	4	2	2	41	14-062116-120	SCREW / 6-32 X 3/4 PFMS
-	-	2	2	42	09-1363542-00	FILLER PANEL / 500 SERIES
2	2	1	1	43	20-0608089304	SPACER / 3/16 LG X 1/4 OD X .166 ID
-	-	-	1	44	46-0784200-02	HARNESS / 4 LED POWER/CONTROL / 11C
-	-	1	-	45	46-0784200-03	HARNESS / 4 LED POWER/CONTROL / CIG
-	1	-	-	46	46-0784200-00	HARNESS / 8 LED POWER/CONTROL / 11C
1	-	-	-	47	46-0784200-01	HARNESS / 8 LED POWER/CONTROL / CIG
2	2	1	1	48	46-0763985-01	HARNESS / 4 LED / 30"
A/R	A/R	A/R	A/R	49	01-026B827650	LINEAR 500 LED RED
A/R	A/R	A/R	A/R	50	01-026B827640	LINEAR 500 LED GREEN
A/R	A/R	A/R	A/R	51	01-026B827630	LINEAR 500 LED WHITE
A/R	A/R	A/R	A/R	52	01-026A068220	LINEAR 500 LED BLUE
A/R	A/R	A/R	A/R	53	01-026B827610	LINEAR 500 LED AMBER
A/R	A/R	A/R	A/R	54	10-0323206-00	LABEL, NASCAR BAR LOGO CLEAR
2	2	2	2	55	02-036B855-00	SUB ASSY, END SUPPORT BRACKET
4	4	4	4	56	14-104216-06J	SCREW, 10-24 X 3/8 PPH TRILOBULAR

