WHELEN®
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Installation Guide:
L22 LED Beacon

Automotive: Beacons

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.

- **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!**

The **L22 Beacon** features Scan-Lock™ which allows you to choose between 15 available flash patterns. You have 5 mounting options permanent, pipe, J-hook, magnetic and magnetic suction mount. Magnetic mount models do not include Scan-Lock.

Wiring:

Note: All beacons in this manual should be fused at 5 AMPS.

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 the load. **DO NOT USE CIRCUIT BREAKERS WITH THIS PRODUCT**

Listed below are the wire designations for the L22 beacon. To extend the beacons wires, use the wire gauge indicated.

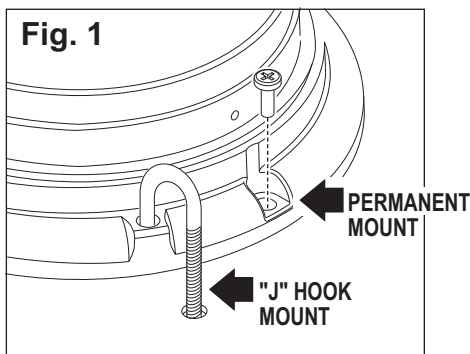| WIRE COLOR	WIRE GAUGE	FUNCTION
RED	18 AWG	Positive
BLACK	18 AWG	Ground
WHITE-VIOLET	18 or 22 AWG	Scan-Lock

Mounting:

1 Inch (NPT) Pipe Mount:

Threading for a 1 inch *(NPT)* pipe mounting is precast in the base.

1. Feed power cable through the 1 inch pipe and connect the cable to the wires of the beacon.

2. Screw the beacon into the threads on the 1" pipe, taking precaution not to damage the connected power wires. Do not tighten base too hard as not to damage threads on base.

Permanent Mount:

1. Use the base as a template and mark off the three mounting holes onto the mounting surface. After removing the base, in the center between the three mounting holes, mark the location of the wire access hole.

2. Drill mounting holes into the mounting surface with a drill sized for the #10 mounting screws supplied. Drill the wire access hole using a 3/8" drill *(.375 inch)*. Remove any burrs from the wire access hole as not to damage wires. It is also recommended that you install a rubber grommet *(customer supplied)* into the wire hole to further protect the wires.

3. The base seal *(ITEM 14)* will be used between the LED beacon base and the mounting surface.

4. Feed the wires first through the base seal and then through the cable access hole and place the base *(with seal)* on the mounting surface *(while lining up the mounting holes in the base with the mounting holes you drilled into the mounting surface)*. Secure the beacon firmly to the mounting surface with the supplied mounting screws (ITEM 8).

Fig. 1

PERMANENT MOUNT

"J" HOOK MOUNT

"J" Hook Mount:

This beacon is equipped to handle the "J" hook mount available on some beacons. Be sure to use the correct "J" hook mounting holes (Fig. 1).

Temporary Mount (Magnetic, Suction Cup, etc.)

With the magnetic or magnetic/suction cup mounting options you will be able to mount your strobe so that you can remove it if necessary and avoid drilling.

Magnetic/suction: Thoroughly clean the proposed mounting surface prior to mounting. For suction cup mounting, wipe the suction cup clean, place the beacon onto its mounting surface and apply gentle pressure to ensure a good seal has been achieved. The Magnetic/Suction Cups mount the same way as standard suction cups but are best suited to a flat, steel surface.

Magnetic: Simply place the beacon onto the mounting surface and plug it into the vehicle cigar lighter.

WARNING! Beacons equipped with cigar cords are intended for short duration, intermittent operation only! Prolonged operation requires the beacon to be wired to the vehicle.

WARNING! The presence of any temporarily mounted warning light on the outside of a vehicle in motion is not recommended and is at the sole discretion and liability of the user!

Note: The magnetic mount model does not offer Scan-Lock and comes with SignalAlert™ 75.

Programming / Scan-Lock™ / White-Violet:

When the lighthead is turned on, the default pattern is displayed.

TO CHANGE PATTERNS: Apply +12 volts to the WHT-VIO wire for less than 1 second and release to cycle forward to the next available pattern. Apply +12 volts to the WHT-VIO wire for more than 1 second and release to cycle back to the previous pattern.

TO CHANGE THE DEFAULT PATTERN: When the desired pattern is displayed, allow it to run for more than 5 seconds. The lighthead will now display this pattern when initially activated.

TO RESTORE THE FACTORY DEFAULT PATTERN: With the power to the lighthead off, apply +12 volts to the WHT-VIO wire. Now turn power to the lighthead on. The factory default pattern should now be displayed.

A Normally Open momentary switch can be used to control Scan-Lock operation.
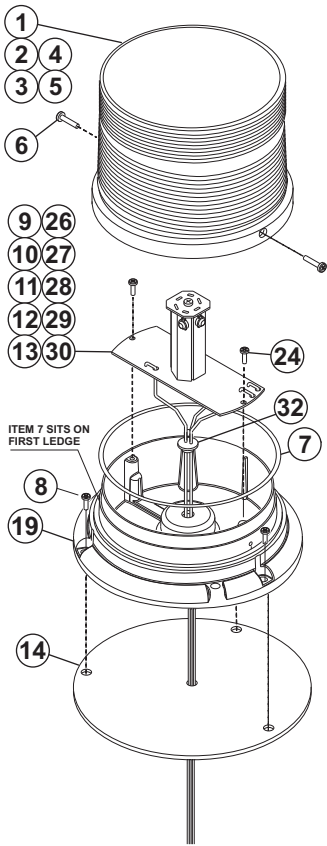
Available Scan-Lock Patterns:

SignalAlert™ 75 > SignalAlert™ 150 > SingleFlash 375 > SingleFlash 150 > SingleFlash 75 > DoubleFlash 150 > DoubleFlash 75 > CometFlash® 75 > ActionFlash™ > ModuFlash™ 70 > ComAlert™ > ActionScan™ > SignalAlert™ Steady > Steady Brake > Steady
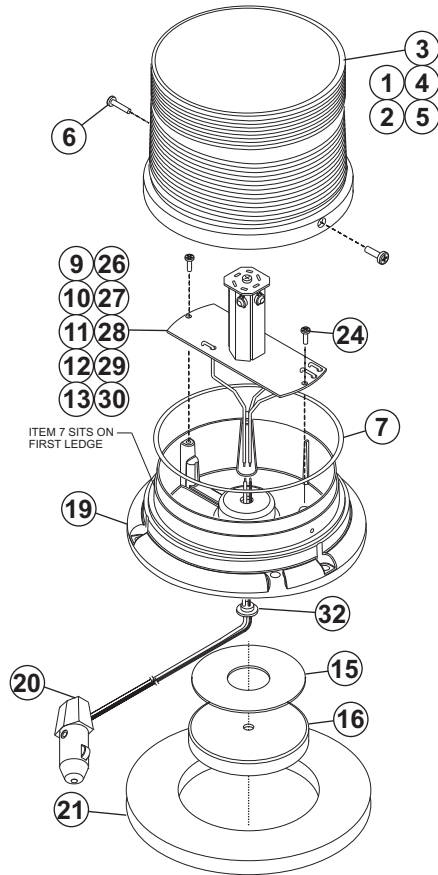
IMPORTANT! Before returning this vehicle to active service, visually confirm the proper operation of this product, as well as all vehicle components/equipment.

IMPORTANT WARNING!
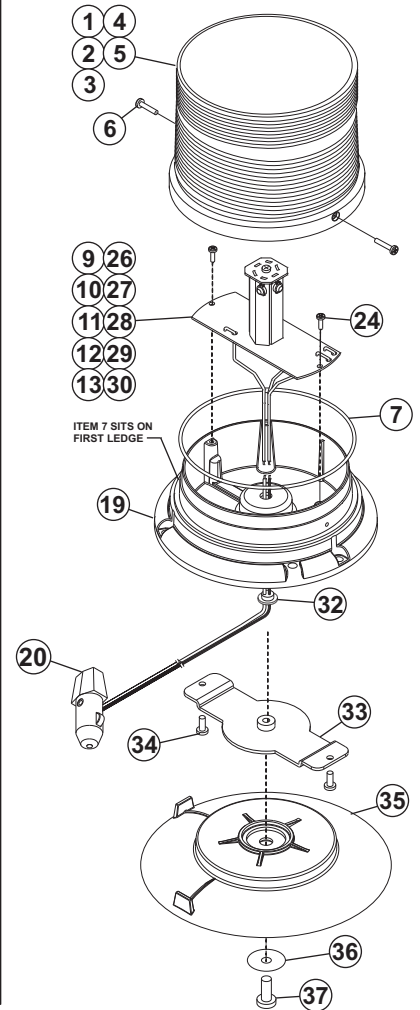**CAUTION! DO NOT LOOK DIRECTLY AT THESE LED'S WHILE THEY ARE ON. MOMENTARY BLINDNESS AND/OR EYE DAMAGE COULD RESULT!**

COMBO MOUNT ASSEMBLY

MAG MOUNT ASSEMBLY

VACUUM MOUNT ASSEMBLY

ITEM 7 SITS ON FIRST LEDGE

QTY	QTY	QTY	ITEM	PART NUMBER	DESCRIPTION
		*		01-0684243__1	LED BEACON / L22 SERIES / PLASTIC
	*			01-0684243__2	LED BEACON / L22 SERIES / MAGNET
*				01-0684243__3	LED BEACON / L22 SERIES / VACUUM
A/R	A/R	A/R	1	68-2180483-10	DOME / AMBER 1079
A/R	A/R	A/R	2	68-2180483-20	DOME / BLUE 1079
A/R	A/R	A/R	3	68-2180483-30	DOME / CLEAR 1079
A/R	A/R	A/R	4	68-2180483-40	DOME / GREEN 1079
A/R	A/R	A/R	5	68-2180483-50	DOME / RED 1079
2	2	2	6	15-065419-080	SCREW / 6 X 1/2 PPH PLASTI SS
1	1	1	7	38-0443007-00	O RING / 4.724 ID X .079 THK 70 DUROMETER BLK
-	-	3	8	15-101416-100	SCREW / 10 X 5/8 PPHSMS
A/R	A/R	A/R	9	02-0169964-10	PCB BALLAST 12V 6LED AMB L22 SER. SMT
A/R	A/R	A/R	10	02-0169964-20	PCB BALLAST 12V 6LED BLU L22 SER. SMT
A/R	A/R	A/R	11	02-0169964-30	PCB BALLAST 12V 6LED WHT L22 SER. SMT
A/R	A/R	A/R	12	02-0169964-40	PCB BALLAST 12V 6LED GRN L22 SER. SMT
A/R	A/R	A/R	13	02-0169964-50	PCB BALLAST 12V 6LED RED L22 SER. SMT
-	-	1	14	38-0143340-00	SEAL / BASE MODEL 2000 SERIES
-	1	-	15	66-0423038-00	TAPE / DISC 3.00 OD X 1.13 ID .062 THK
-	1	-	16	65-0010192-00	MAGNET / X-80 NEW DMS / RB80 / NICKLE PLATED
2	2	-	17	25-0910223-03	BUTT TAIL / 22-14 GA, INS
1	1	-	18	10-0322783-02	LABEL / AIRBAG & MAG MT WARNING not shown
1	1	1	19	11-483963-000	HOUSING / BASE ENCAPSULATED 2500 SER. STROBE
-	1	-	20	69-1317241-00	CORD / CIGAR PLUG STRGHT 10' with ON-OFF SWITCH
-	1	-	21	38-0143340-00	PAD / MOUNTING MODEL 2000 SERIES B MAG/MT
1	1	1	23	10-0321846-00	LABEL / WARNING not shown
2	2	2	24	15-M1721B-100	SCREW / M3 X 10mm PPH DELTA PT
1	1	1	25	10-0546515___	LABEL / PN-MN-SN L22 SERIES not shown
A/R	A/R	A/R	26	02-0169965-10	ASSY / PCB BALLAST 24V 6LED AMB L22 SER. SMT
A/R	A/R	A/R	27	02-0169965-20	ASSY / PCB BALLAST 24V 6LED BLU L22 SER. SMT
A/R	A/R	A/R	28	02-0169965-30	ASSY / PCB BALLAST 24V 6LED WHT L22 SER. SMT
A/R	A/R	A/R	29	02-0169965-40	ASSY / PCB BALLAST 24V 6LED GRN L22 SER. SMT
A/R	A/R	A/R	30	02-0169965-50	ASSY / PCB BALLAST 24V 6LED RED L22 SER. SMT
A/R	A/R	A/R	31	10-0323189-00	LABEL / NASCAR® BAR LOGO not shown
1	1	1	32	21-1142757-00	GROMMET / MULTI HOLE 4 WIRE 11/32 HOLE 18 GA
1	-	-	33	07-764648-023	PLATE / ADAPTER MAG/SUCTION CUP
2	-	-	34	15-081416-080	SCREW / 8 X 1/2 PPHSMS
1	-	-	35	08-1583927-05	SUCTION CUP / MAGNET MOUNT
1	-	-	36	16-1302820-06	WASHER / FLAT 1/4" 7/8 OD SS
1	-	-	37	14-130216-120	SCREW / 1/4-20 X 3/4 PPHMS SS

PART N0. KEY:

VOLTAGE & N0. OF LEDS	LED COLOR & DOME COLOR	HOUSING & MOUNT

0 1 - 0 6 8 4 2 4 3

VOLTAGE & NUMBER OF LEDS
1 - 12V / 6LED
2 - 24V / 6LED

LED COLOR / DOME COLOR
A - AMBER/AMBER
B - BLUE/BLUE
C - WHITE/CLEAR
G - GREEN/GREEN
R - RED/RED
1 - AMBER/CLEAR
2 - BLUE/CLEAR
4 - GREEN/CLEAR
5 - RED/CLEAR

HOUSING / MOUNT
1 - PLASTIC-COMBO MOUNT
2 - PLASTIC-MAG MOUNT
3 - PLASTIC VACUUM MOUNT

Mounting Plan / Combo Mount

3/8" DIA. WIRE ACCESS HOLE

5 - 15/16" DIA. B.C.

MTG. HOLES FOR #10 SCREWS 3 HOLES EQ. SPACED