

WHELEN[®]

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Installation Guide: L22 LED Beacon (Encapsulated) Models L22H*** and L22L***

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.**
- **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!**

For warranty information regarding this product, visit www.whelen.com/warranty

The **L22 Beacon** has fully encapsulated electronics that are impervious to damage from moisture and vibration. Some units feature an automatic photocell High Power override. This beacon also features Scan-Lock™ which allows you to choose between 25 available flash patterns. You have 6 mounting options: mirror mount, permanent mount, pipe mount, J-hook mount, magnetic mount and Vacuum mount. (Magnetic and Vacuum mount do not include SYNC) All models are SAE certified.

IMPORTANT! All beacons in this manual should be fused at 3 AMPS.

IMPORTANT! Always be sure the drain hole (located on the bottom of the base) is facing the rear of the vehicle after mounting.

Electrical Specifications

Power	12V	24V
Input Voltage	12.8 VDC ± 20%	25.6 VDC ± 20%
Input Current	Peak: .75 amps	Peak: .35 Amps
	Avg: .3 amps	Avg: .14 amps
Default Flash Pattern	SignalAlert™ / Sim.	SignalAlert™ / Sim.

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!

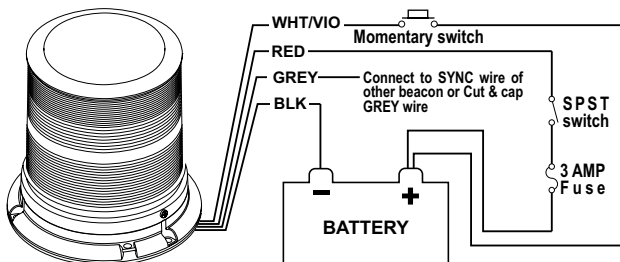
Wiring:

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
GREY	18 or 22 AWG	SYNC
WHITE-VIOLET	18 or 22 AWG	Scan-Lock™

Mounting:

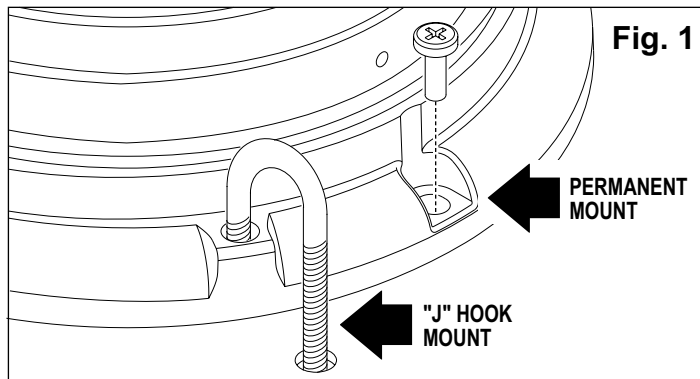
“J” HOOK MOUNT:



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).

PERMANENT MOUNT:

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



2. Drill the mounting holes with a #16 drill bit. Drill the wire access hole using a 3/8” drill bit. Remove any burrs from the wire access hole and it is also recommended that you install a rubber grommet (*customer supplied*) into the wire hole to protect the wires.
3. A base seal is used between the beacon base and 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.

1 INCH (NPT) PIPE MOUNT:

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

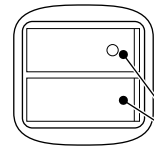
1. Feed power cable through the 1 inch pipe and connect the cable to the wires of the beacon.
2. Screw the beacon into the threads on the 1” pipe, taking precaution not to damage the connected power wires. Do not tighten base too hard as not to damage threads on base.

TEMPORARY MOUNT:

IMPORTANT WARNING: The use of any magnetically mounted warning device on the outside of a vehicle in motion is not recommended and is at the sole risk and responsibility of the user.

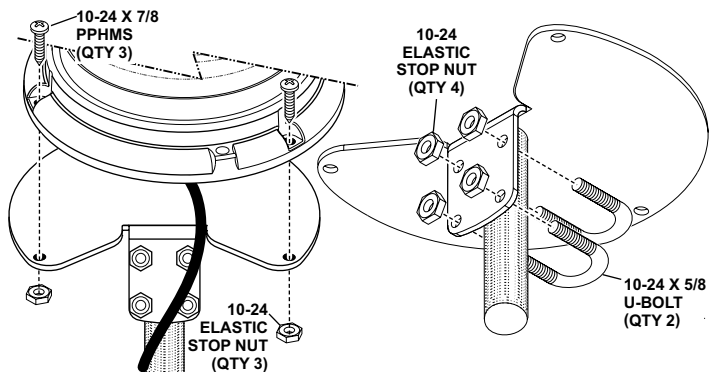
Magnetic/suction: Thoroughly clean the proposed mounting surface prior to mounting. For suction cup mounting, wipe the suction cup clean, place the beacon onto its mounting surface and apply gentle pressure to ensure a good seal has been achieved. Magnetic/Suction Cups mount the same as standard suction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

Magnetic: Place the beacon onto the mounting surface and plug it into the vehicle cigar lighter. Magnetic mount models do not offer SYNC.



NOTE: The cigar cord adaptor is equipped with an 8 Amp fuse. Use a replacement fuse with an identical value.
Switch Functions:
 SW1 = ON/OFF
 SW2 = Scan-Lock™ / Momentary (12 volt model only)

MIRROR MOUNT:



1. Secure the bracket to the mirror or other part of the vehicle using the two supplied U-Bolts and elastic stop nuts.
2. Secure the beacon to the bracket using the supplied sheet metal screws and elastic stop nuts.

Operation: SYNC:

To SYNC two beacons, configure both beacons to display the same Phase 1 (Simultaneous) pattern. Turn the power off and connect the GREY wire from each beacon together. When the beacons are activated their patterns will be synchronized. To configure two beacons to alternate their patterns, advance the pattern of either beacon to Phase 2 (Alternating) of the current pattern. (Not available on cigar plug models)

Hi/Lo Power: Photocell

If this beacon is equipped with photocell Hi-Lo, the beacon will automatically step down to low power at night. This feature is optional.

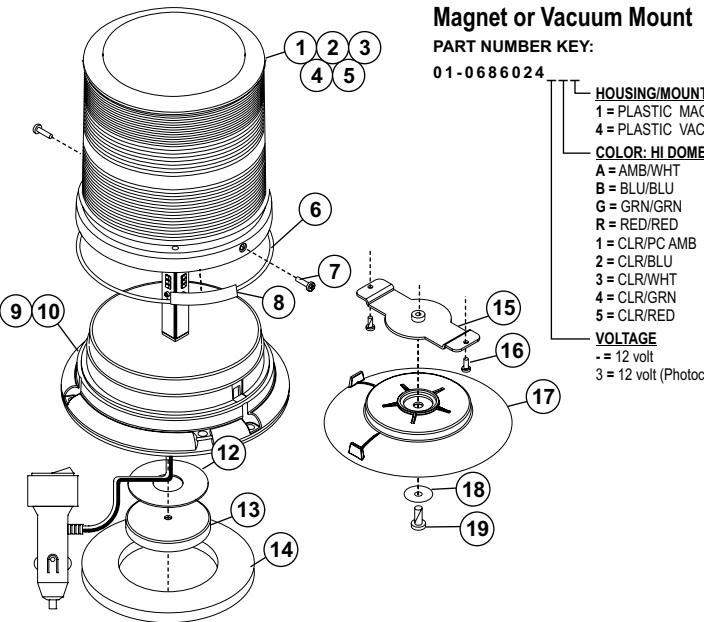
Programming / Scan-Lock™ / White-Violet:

To cycle forward through all patterns: With the beacon switched on, apply Positive (+) voltage to the WHT-VIO wire for less than 1 second and release. **To cycle backward through all patterns:** Apply Positive (+) voltage to the WHT-VIO wire for more than 1 second and release.

To set a pattern as default: When the desired pattern is displayed, allow it to run for more than 5 seconds. The beacon will now display this pattern when activated.

To reset to the factory default pattern: Turn off power. Now, while applying Positive (+) voltage to the WHITE-VIOLET wire, turn power on.

NOTE: Cigar cord models have a momentary switch on the plug to control Scan-Lock™ as well as an On-Off switch.



Magnet or Vacuum Mount

PART NUMBER KEY:

01-0686024

- HOUSING/MOUNT**
- 1 = PLASTIC MAG. MT
- 4 = PLASTIC VAC. MT
- COLOR: HI DOME / LED:**
- A = AMB/WHT
- B = BLU/BLU
- G = GRN/GRN
- R = RED/RED
- 1 = CLR/PC AMB
- 2 = CLR/BLU
- 3 = CLR/WHT
- 4 = CLR/GRN
- 5 = CLR/RED
- VOLTAGE**
- = 12 volt
- 3 = 12 volt (Photocell)

Available Scan-Lock™ Patterns:

#	Flash Pattern	Phase	9 - ComAlert™ 75 Phase 1	18 - SingleFlash 300
1	SignalAlert™ 75 Phase 1		10 - ComAlert™ 75 Phase 2	19 - DoubleFlash 150
2	SignalAlert™ 75 Phase 2		11 - LongBurst™ 75 Phase 1	20 - ComAlert™ 150
3	CometFlash® 75 Phase 1		12 - LongBurst™ 75 Phase 2	21 - ActionFlash™ 1
4	CometFlash® 75 Phase 2		13 - PingPong™ 75 Phase 1	22 - ActionFlash™ 2
5	DoubleFlash 75 Phase 1		14 - PingPong™ 75 Phase 2	23 - ModuFlash™
6	DoubleFlash 75 Phase 2		15 - SingleFlash 60	24 - ActionScan™
7	SingleFlash 75 Phase 1		16 - SingleFlash 90	25 - Steady
8	SingleFlash 75 Phase 2		17 - SingleFlash 120	

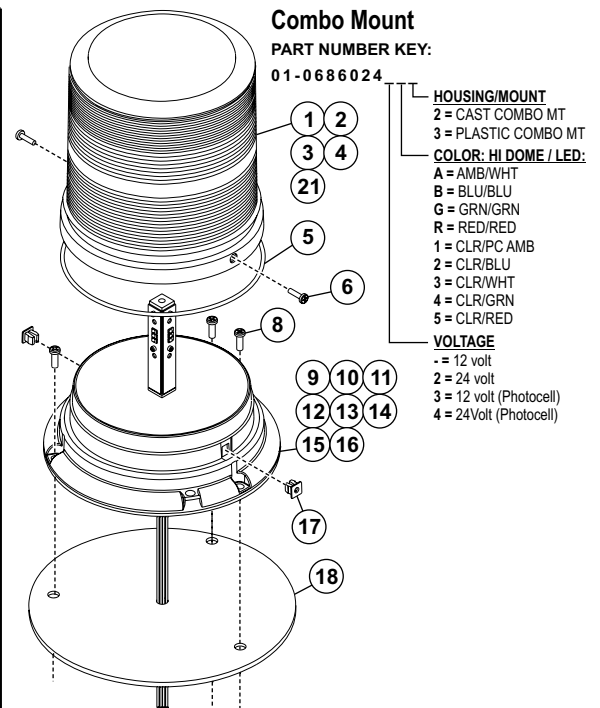
IMPORTANT! It is the responsibility of the installation technician to make sure that the installation and operation of this product will not interfere with or compromise the operation or efficiency of any vehicle equipment! Before returning the vehicle to active service, visually confirm the proper operation 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!

QTY	QTY	QTY	QTY	ITEM	PART NUMBER	DESCRIPTION
			*		01-0686024-1	L22E LED BEACON 12V PLASTIC / MAG MT.
		*			01-06860243-1	L22E LED BEACON 12V PLASTIC / MAG MT. / PHOTOCELL
	*				01-0686024-4	L22E LED BEACON 12V PLASTIC / VAC MT.
*					01-06860243-4	L22E LED BEACON 12V PLASTIC / VAC MT. / PHOTOCELL
A/R	A/R	A/R	A/R	1	68-2180483-10	LENS OPTIC / MODEL #1079 AMBER HI
A/R	A/R	A/R	A/R	2	68-2180483-30	LENS OPTIC / MODEL #1079 CLEAR HI
A/R	A/R	A/R	A/R	3	68-2180483-20	LENS OPTIC / MODEL #1079 BLUE HI
A/R	A/R	A/R	A/R	4	68-2180483-40	LENS OPTIC / MODEL #1079 GREEN HI
A/R	A/R	A/R	A/R	5	68-2180483-50	LENS OPTIC / MODEL #1079 RED HI
1	1	1	1	6	38-0443007-00	O RING / 4.724 ID X .079 THK 70 DUROMETER BLK
2	2	2	2	7	15-065419-080	SCREW / #6 X 1/2 PPH PLASTIC-LOC
1	1	1	1	8	10-0323283-14	LABEL / MODEL L22E
-	1	-	1	9	01-02863451-1	SUB ASSY BLST / L22E 12V PLAS. / CIG. PLUG
1	-	1	-	10	01-02863451-3	SUB ASSY BALLAST / L22E 12V PLAS. / CIG. PLUG / PHOTO.
1	1	1	1	11	10-0543602-__	LABEL / M-N P-N S-N
-	-	1	1	12	66-0421273-00	TAPE / MOUNTING / 90LB MAGNET
-	-	1	1	13	65-0010192-00	MAGNET / X-80
-	-	1	1	14	38-0143340-00	PAD / MOUNTING / MAGNETIC MOUNT
1	1	-	-	15	07-764648-023	PLATE / ADAPTER MAG/SUCTION CUP
2	2	-	-	16	15-081416-080	SCREW / 8 X 1/2 PPHSMS
1	1	-	-	17	08-1583927-05	SUCTION CUP / MAGNET MOUNT
1	1	-	-	18	16-1302820-06	WASHER / FLAT 1/4" 7/8 OD SS
1	1	-	-	19	14-130216-120	SCREW / 1/4-20 X 3/4 PPHMS SS

QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	ITEM	PART NUMBER	DESCRIPTION
								*		01-0686024-2	L22E LED BEACON / COMBO / 12V CAST
								*		01-06860242-2	L22E LED BEACON / COMBO / 24V CAST
								*		01-0686024-3	L22E LED BEACON / COMBO / 12V PLASTIC
								*		01-06860242-3	L22E LED BEACON / COMBO / 24V PLASTIC
								*		01-06860243-2	L22E LED BEACON / COMBO / 12V CAST / PHOTOCELL
								*		01-06860244-2	L22E LED BEACON / COMBO / 24V CAST / PHOTOCELL
								*		01-06860243-3	L22E LED BEACON / COMBO / 12V PLASTIC / PHOTOCELL
								*		01-06860244-3	L22E LED BEACON / COMBO / 24V PLASTIC / PHOTOCELL
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	1	68-2180483-10	LENS OPTIC / MODEL #1079 AMBER HI
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	2	68-2180483-30	LENS OPTIC / MODEL #1079 CLEAR HI
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	3	68-2180483-20	LENS OPTIC / MODEL #1079 BLUE HI
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	4	68-2180483-40	LENS OPTIC / MODEL #1079 GREEN HI
1	1	1	1	1	1	1	1	1	5	38-0443007-00	O RING / 4.724 ID X .079 THK 70 DUROMETER BLK
2	2	2	2	2	2	2	2	2	6	15-065419-080	SCREW / #6 X 1/2 PPH PLASTIC-LOC
1	1	1	1	1	1	1	1	1	7	10-0323283-14	LABEL / MODEL L22E
-	-	-	-	-	-	-	-	1	9	01-02863452-1	SUB ASSY BALLAST / L22E 12V CAST
-	-	-	-	-	-	-	-	1	10	01-02863452-2	SUB ASSY BALLAST / L22E 24V CAST
-	-	-	-	-	-	-	-	1	11	01-02863453-1	SUB ASSY BALLAST / L22E 12V PLASTIC
-	-	-	-	-	-	-	-	1	12	01-02863453-2	SUB ASSY BALLAST / L22E 24V PLASTIC
-	-	-	-	-	-	-	-	1	13	01-02863452-3	SUB ASSY BALLAST / L22E 12V CAST / PHOTOCELL
-	-	-	-	-	-	-	-	1	14	01-02863452-4	SUB ASSY BALLAST / L22E 24V CAST / PHOTOCELL
-	-	-	-	-	-	-	-	1	15	01-02863453-3	SUB ASSY BALLAST / L22E 12V PLASTIC / PHOTOCELL
1	-	-	-	-	-	-	-	-	16	01-02863453-4	SUB ASSY BALLAST / L22E 24V PLASTIC / PHOTOCELL
-	-	2	2	-	-	2	2	2	17	13-062C40-16J	SCREW / GROMMET #6 #8 FASTEX
1	1	1	1	1	1	1	1	1	18	38-0241596-00	SEAL / BASE MODEL 2000 SERIES B
1	1	1	1	1	1	1	1	1	19	10-0323189-00	LABEL / NASCAR BAR LOGO
1	1	1	1	1	1	1	1	1	20	10-0543602-__	LABEL / M/N P/N S/N
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	21	68-2180483-50	LENS OPTIC / MODEL #1079 RED HI

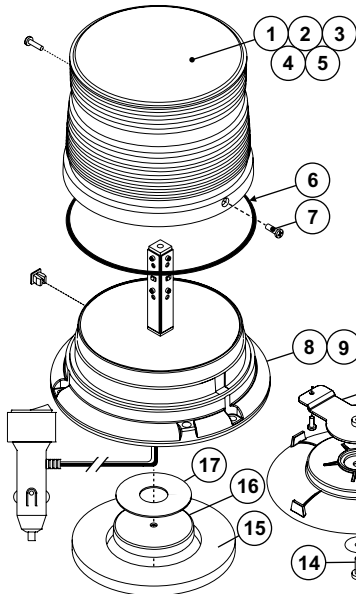


Combo Mount

PART NUMBER KEY:

01-0686024

- HOUSING/MOUNT**
- 2 = CAST COMBO MT
- 3 = PLASTIC COMBO MT
- COLOR: HI DOME / LED:**
- A = AMB/WHT
- B = BLU/BLU
- G = GRN/GRN
- R = RED/RED
- 1 = CLR/PC AMB
- 2 = CLR/BLU
- 3 = CLR/WHT
- 4 = CLR/GRN
- 5 = CLR/RED
- VOLTAGE**
- = 12 volt
- 2 = 24 volt
- 3 = 12 volt (Photocell)
- 4 = 24V (Photocell)



MAGNET OR VACUUM MOUNT

PART NO. KEY:
01-0686346

VOLTAGE
COLOR LO DOME / LED HOUSING/MOUNT

VOLTAGE
- = 12V
3 = 12V (PHOTOCELL)
COLOR LO DOME / LED
A = AMBER/AMBER
B = BLUE/BLUE
G = GREEN/GREEN
R = RED/RED
1 = CLEAR/AMBER
2 = CLEAR/BLUE
3 = CLEAR/WHITE
4 = CLEAR/GREEN
5 = CLEAR/RED
HOUSING/MOUNT
1 - PLASTIC/MAGNET MOUNT
4 - PLASTIC/VACUUM MOUNT

QTY	QTY	QTY	QTY	ITEM	PART NUMBER	DESCRIPTION
			*		01-0686346-1	L22E LED BEACON 12V PLASTIC (MAG MT.)
		*			01-06863463-1	L22E LED BEACON 12V PLASTIC (MAG MT.) PHOTOCELL
	*				01-0686346-4	L22E LED BEACON 12V PLASTIC (VAC MT.)
	*				01-06863463-4	L22E LED BEACON 12V PLASTIC (VAC MT.) PHOTOCELL
A/R	A/R	A/R	A/R	1	68-2180452-10	LENS OPTIC, AMBER LO
A/R	A/R	A/R	A/R	2	68-2180452-20	LENS OPTIC, BLUE LO
A/R	A/R	A/R	A/R	3	68-2180452-30	LENS OPTIC, CLEAR LO
A/R	A/R	A/R	A/R	4	68-2180452-40	LENS OPTIC, GREEN LO
A/R	A/R	A/R	A/R	5	68-2180452-50	LENS OPTIC, RED LO
1	1	1	1	6	38-0443007-00	O RING, 4.724 ID X .079 THK 70 DUROMETER BLK
2	2	2	2	7	15-065419-080	SCREW, #6 X 1/2 PPH PLASTIC-LOC
-	1	-	1	8	01-02863451-1	SUB ASSY BALLAST, L22E 12V PLASTIC (CIGAR PLUG)
1	-	1	-	9	01-02863451-3	SUB ASSY BALLAST, L22E 12V PLASTIC, CIGAR PLUG (PHOTOCELL)
1	1	-	-	10	07-764648-023	PLATE, ADAPTER MAG/SUCTION CUP
2	2	-	-	11	15-081416-080	SCREW, 8 X 1/2 PPHSMS
1	1	-	-	12	08-1583927-05	SUCTION CUP, MAGNET MOUNT
1	1	-	-	13	16-1302820-06	WASHER, FLAT 1/4" 7/8 OD SS
1	1	-	-	14	14-130216-120	SCREW, 1/4-20 X 3/4 PPHMS SS
-	-	1	1	15	38-0143340-00	PAD, MOUNTING, MAGNETIC MOUNT
-	-	1	1	16	65-0010192-00	MAGNET, X-80
-	-	1	1	17	66-0421273-00	TAPE, MOUNTING (90LB MAGNET)

QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	ITEM	PART NUMBER	DESCRIPTION
								*		01-0686346-2	L22E LED BEACON (COMBO) 12V CAST
								*		01-06863462-2	L22E LED BEACON (COMBO) 24V CAST
								*		01-0686346-3	L22E LED BEACON (COMBO) 12V PLASTIC
								*		01-06863462-3	L22E LED BEACON (COMBO) 24V PLASTIC
			*							01-06863463-2	L22E LED BEACON (COMBO) 12V CAST (PHOTOCELL)
		*								01-06863464-2	L22E LED BEACON (COMBO) 24V CAST (PHOTOCELL)
	*									01-06863463-3	L22E LED BEACON (COMBO) 12V PLASTIC (PHOTOCELL)
*										01-06863464-3	L22E LED BEACON (COMBO) 24V PLASTIC (PHOTOCELL)
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	1	68-2180452-10	LENS OPTIC, AMBER LO
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	2	68-2180452-20	LENS OPTIC, BLUE LO
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	3	68-2180452-30	LENS OPTIC, CLEAR LO
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	4	68-2180452-40	LENS OPTIC, GREEN LO
A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	5	68-2180452-50	LENS OPTIC, RED LO
1	1	1	1	1	1	1	1	1	6	38-0443007-00	O RING
2	2	2	2	2	2	2	2	2	7	15-065419-080	SCREW, #6 X 1/2 PPH PLASTIC-LOC
3	3	3	3	3	3	3	3	3	8	15-101416-100	SCREW, 10 X 5/8 PPHSMS 410 SS
-	-	-	-	-	-	-	-	1	9	01-02863452-1	SUB ASSY BALLAST, L22E 12V CAST
-	-	-	-	-	-	-	1	-	10	01-02863452-2	SUB ASSY BALLAST, L22E 24V CAST
-	-	-	-	-	-	-	1	-	11	01-02863453-1	SUB ASSY BALLAST, L22E 12V PLASTIC
-	-	-	-	-	-	-	1	-	12	01-02863453-2	SUB ASSY BALLAST, L22E 24V PLASTIC
-	-	-	-	-	-	-	1	-	13	01-02863452-3	SUB ASSY BALLAST, L22E 12V CAST (PHOTOCELL)
-	-	1	-	-	-	-	-	-	14	01-02863452-4	SUB ASSY BALLAST, L22E 24V CAST (PHOTOCELL)
-	1	-	-	-	-	-	-	-	15	01-02863453-3	SUB ASSY BALLAST, L22E 12V PLASTIC (PHOTOCELL)
1	-	-	-	-	-	-	-	-	16	01-02863453-4	SUB ASSY BALLAST, L22E 24V PLASTIC (PHOTOCELL)
-	-	2	2	-	-	-	-	2	17	13-062C40-16J	SCREW, GROMMET #6 #8 FASTEX
1	1	1	1	1	1	1	1	1	18	38-0241596-00	SEAL, BASE MODEL 2000 SERIES B

COMBO MOUNT

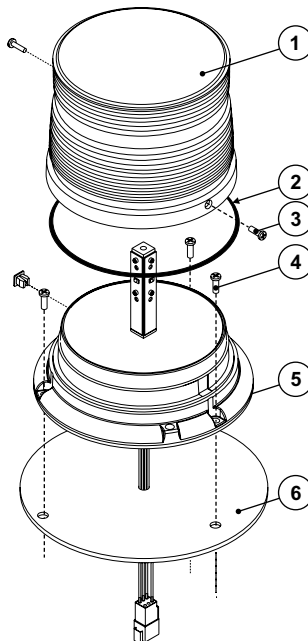
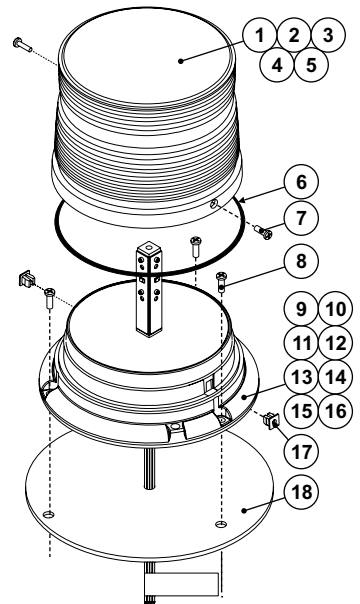
PART NO. KEY:
01-0686346

VOLTAGE
COLOR LO DOME / LED HOUSING/MOUNT

VOLTAGE
- = 12V
2 = 24V
3 = 12V (PHOTOCELL)
4 = 24V (PHOTOCELL)

COLOR LO DOME / LED
A = AMBER/AMBER
B = BLUE/BLUE
G = GREEN/GREEN
R = RED/RED
1 = CLEAR/AMBER
2 = CLEAR/BLUE
3 = CLEAR/WHITE
4 = CLEAR/GREEN
5 = CLEAR/RED

HOUSING/MOUNT
2 = CAST / COMBO MOUNT
3 = PLASTIC / COMBO MOUNT



QTY	ITEM	PART NUMBER	DESCRIPTION
		01-0686684-A0	L22E LED BEACON (GRADALL)
1	1	68-2180452-10	LENS
1	2	38-0443007-00	O RING
2	3	15-065419-080	SCREW, #6 X 1/2 PPH PLASTI-LOC
3	4	15-101416-100	SCREW, #10 - 5/8 PPHSMS
1	5	01-0286345311	SUB-ASSY BALLAST, L22E 12V PLASTIC
1	6	38-0241596-00	SEAL, BASE MODEL 2000 SERIES B