

WHELEN[®]

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System Overview:
Kansas DOT System
Model KDOTL16

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 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.**
- **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.**
- **If this product contains strobe light(s), halogen light(s) or high-intensity LEDs, do not stare directly into these lights at a close distance. 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. Lens 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

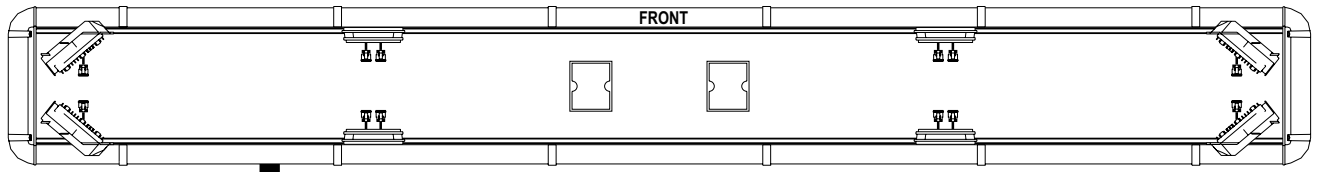
WARNING!

DISCONNECTING THE VEHICLE BRAKE LAMP CIRCUIT USING ANY SIRENS WITH RELAY OUTPUTS OR SWITCH CONTROLLERS COULD CAUSE VEHICLE OR PROPERTY DAMAGE, SERIOUS INJURY OR EVEN DEATH.

DISABLING THIS CIRCUIT IS A VIOLATION OF THE FEDERAL MOTOR VEHICLE SAFETY STANDARD FOR THE THIRD BRAKE LIGHT, AS WELL AS REAR BRAKE LIGHTS.

FUNCTIONS THAT BLACK OUT THE REAR BRAKE LIGHTS (SOMETIMES CALLED “BRAKE LIGHT CUT OUT”) MAY INTERFERE WITH THE BRAKE SHIFT LOCK MECHANISM, AND CAUSE THE VEHICLE TO MOVE UNEXPECTEDLY AND DANGEROUSLY.

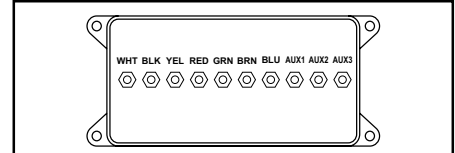
DISCONNECTING THE BRAKE LIGHTS IN ANY WAY IS AT YOUR OWN RISK AND IS NOT RECOMMENDED BY WHELEN.



- CONTROL CABLE**
- BLK - Rear LED Ground
 - WHT/BLK - Front LED Ground
 - YEL - Front LED / +12 volts
 - WHT/VIO - No Connection
 - WHT/BLU - No Connection
 - VIO - Low Power
 - RED - Rear LED / + 12 volts
 - BLK/WHT - No Connection
 - BLK/YEL - No Connection
 - GRY - No Connection
 - WHT - No Connection

LOW POWER / VIOLET The type of switch used is dependant on how the operator wishes the Hi/Low 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)

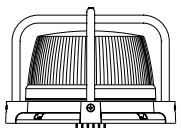
Note:
All Fuses and Switches are customer supplied.



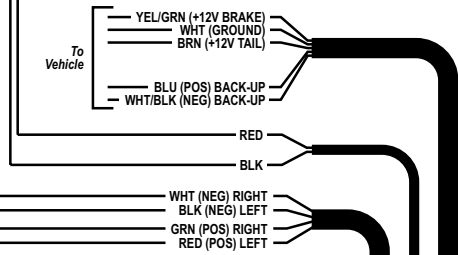
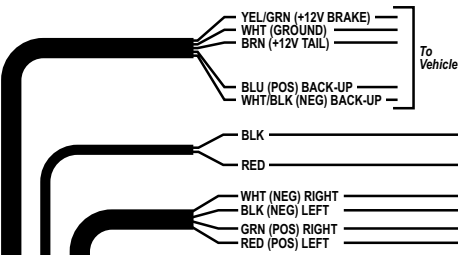
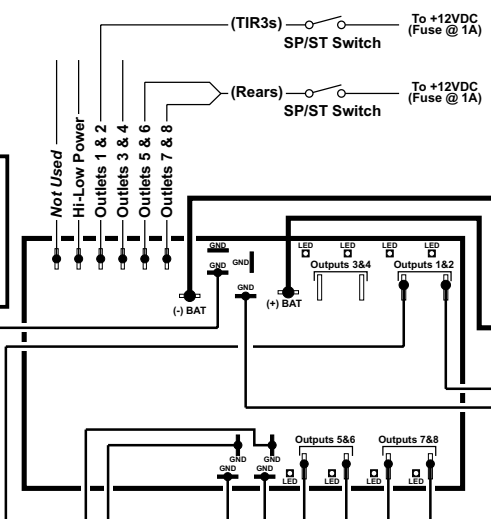
This junction box will allow function (or power) wires to be tied together to customize your DOT system.

IMPORTANT! Do NOT mount the Junction Box where it could be exposed to moisture. The recommended mounting location is within the passenger compartment.

Hi-Low Power:
 Apply +12VDC to the wire shown for low power operation. Remove +12VDC for normal, high power operation.

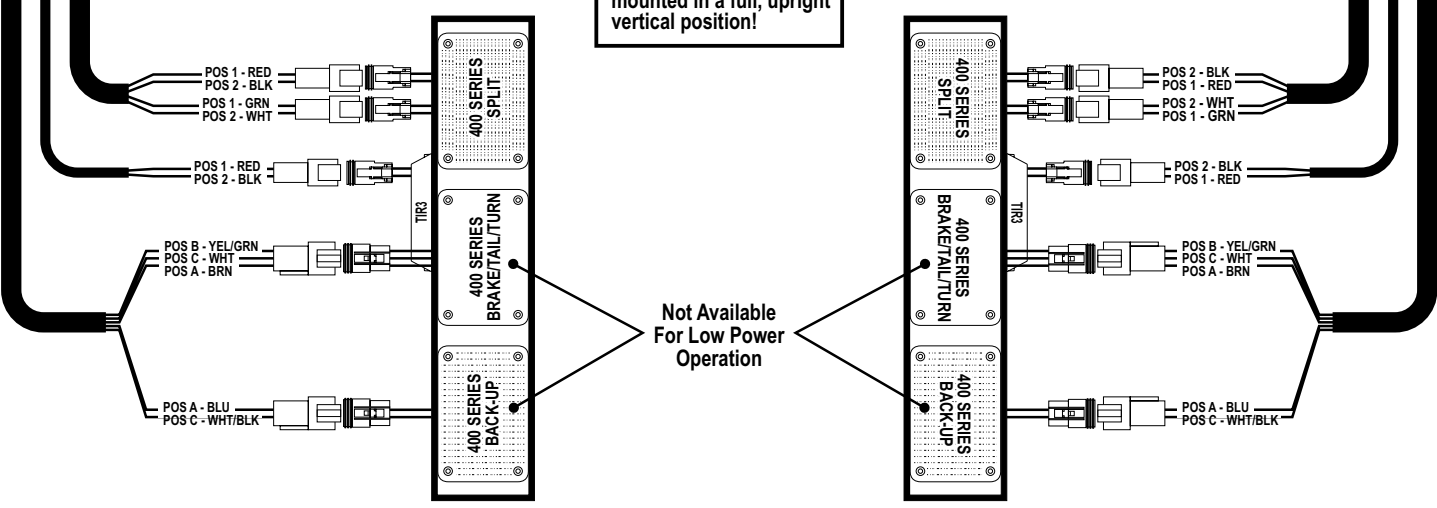


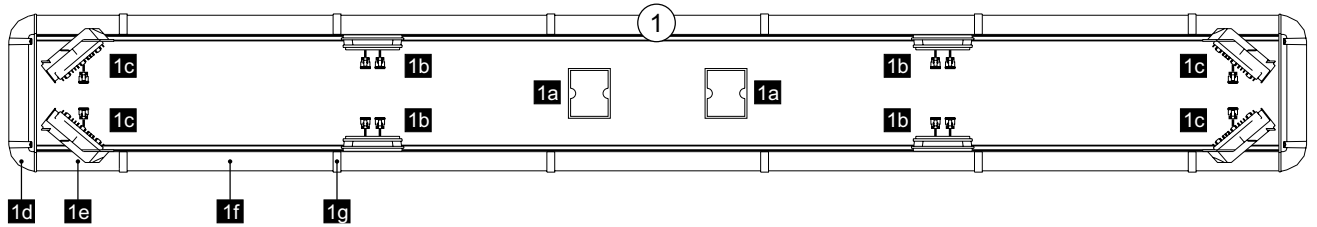
- WHT/VIO - Not Used
- VIO - Hi-Low Power
- WHT/ORG - Cruise Light
- GRY - SYNC
- RED - POWER
- BLK - GROUND



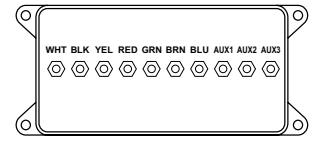
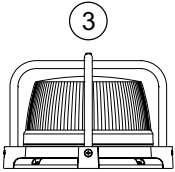
Note:
 Rear housings must be mounted in a full, upright vertical position!

Not Available For Low Power Operation

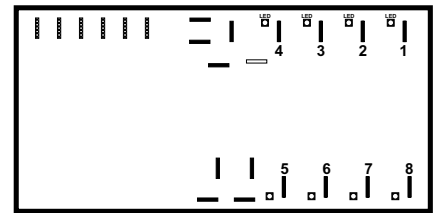




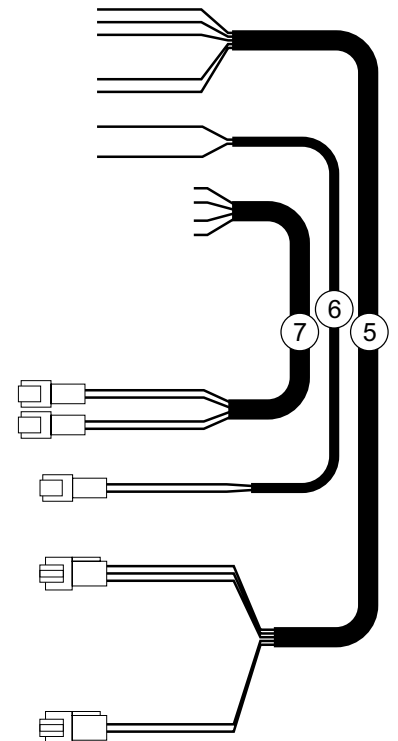
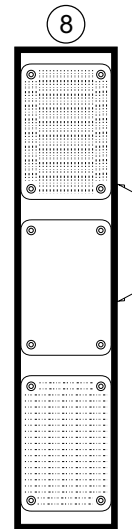
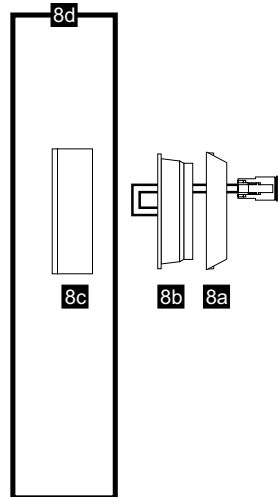
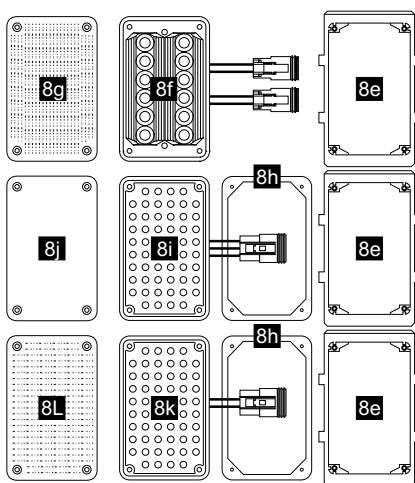
ITEM	QTY	per	PART NUMBER	DESCRIPTION
1	1	-	01-1517354132	Kansas Model KDOTL16 LED DOT System (2006)
1a	→ 2		01-0269857-1S	Freedom™ Lightbar (Kansas)
1b	→ 4		01-0286361411	LED 2-channel Flasher
1c	→ 4		01-0263814-1D	400 Series Split LED Lighthead (Amber/Amber)
1d	→ 2		68-1183369-10	Corner Linear LED (Amber)
1e	→ 4		68-1983817-10	Endcap (Amber)
1f	→ 10		68-1984105-10	Lens w/Optics 6.652" (Amber)
1g	→ 12		68-1984105-10	Lens w/Optics 15.750" (Amber)
2	1	-	02-0341448-00	Divider w/Gasket
3	1	-	12-3417248-02	Junction Box (10 Pole)
4	1	-	01-0685953-AF	L31 Beacon (Amber/Amber) w/Brush Guard
5	1	-	01-0264258-00	DOT Flasher
6	2	-	46-0764073-15	Cable (5-conductor) / 18 AWG / 35'
7	2	-	46-0764072-10	Cable (2-conductor) / 18 AWG / 35'
8	2	-	46-0764547130	Cable (4-conductor) / 14 AWG / 35'
8a	→ 2		01-0684198AXV	DOT 'D' Housing (400-series)
8b	→ 2		11-763742-001	Surface Mount Flange (Black)
8c	→ 2		02-03637524A2	TIR3™ Lighthead (Amber)
8d	→ 2		07-263780-0SS	TIR3™ Mounting Bracket
8e	→ 1		11-484197-1SS	Triple Lighthead Stainless Steel Housing (square)
8f	→ 3		11-483984-000	400 Series Mounting Faceplate
8g	→ 1		02-0363769411	400 Series Linear LED DOT Lighthead (Amber)
8h	→ 1		68-1964039-1S	Lens, Vertical w/Optics (Amber)
8i	→ 2		38-0262867-00	400 Series Linear Lighthead Gasket
8j	→ 1		02-038345815B	400 Series B/T/T LED Lighthead (Red)
8k	→ 1		68-3183725-5S	Lens, w/Seal (Red)
8l	→ 1		02-0383458137	400 Series LED Back-up Lighthead
8l	→ 1		68-1183726-3S	Lens, w/Optics (Clear)



2



4



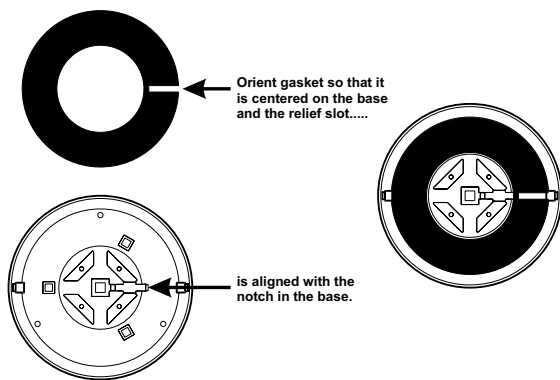
Beacon Mounting:

This beacon uses a base that may be mounted one of three ways. It is designed to be mounted in a normal dome-up position.

Permanent Surface Mount:

Caution: Permanent mounting of this product will require drilling. It is absolutely necessary to make sure that no other vehicle components could be damaged by this process. Check both sides of the mounting surface before starting. If damage is likely, select a different mounting location.

1. Remove the mounting gasket from the beacon base (if present) and discard.
2. Install the 3 fin pine tree clips into the drain holes of the beacon base by pushing them firmly into the 3 holes indicated in figure 1.
3. Install the Fastex grommets into the 3, square mounting holes in the bottom of the beacon base (Fig. 1).
4. Secure the base plate to the beacon base by screwing the 3 sheet metal screws into the Fastex grommets you installed in step 3.



NOTE: The way you re-assemble the beacon will determine which way the beacon faces when mounted to the vehicle. Take note in figure 1 as to where the cable exit slot and cage bars should be located when assembled correctly. If assembled improperly, the cage will block the LED display and front and rear flash patterns will be reversed.

5. Place the base plate (with beacon) onto the mounting surface in the exact mounting location and mark the 4 mounting holes off onto the mounting surface.
6. Remove the base plate and drill the 4 mounting holes into the mounting surface using an appropriately sized drill for the #10 X 3/4" sheet metal screws.
7. Place the mounting gasket onto the mounting surface lining up the mounting holes you drilled in step 5 with the holes in the gasket.
8. Place the assembled beacon and base plate onto the mounting surface lining up the mounting holes with the holes in the base plate and secure the beacon to the surface with the #10 X 3/4" sheet metal screws.
9. Insert the cage bars into the base plate as shown and secure them with the set screws.
10. Extend the wires to your power source and refer to the beacons manual for wiring and operation.

The beacon wires function as outlined below:

Color	Function	Connect to:	Switch Type	Fuse @
RED	Power	+VBAT	SP/ST	.5 Amp
BLK	Ground	Chassis Ground	n/a	N/A
VIO	Low Power	+VBAT	SP/ST	.1 Amp
GRY	Sync	See text	n/a	N/A
WHT/VIO	Scan-Lock™	+VBAT	MOM (N.O.)	.1 Amp
WHT/ORN	Cruise Light	+VBAT	SP/ST	.1 Amp

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!

Refer to the "Operation" section for wire function information.

1" N.P.T. Pipe Mount (optional):

1. Turn the beacon upside-down and remove the base gasket from the base and discard it. Install the Fastex grommets into the 3, square mounting holes in the bottom of the base.
2. Install the 3 fin pine tree clips into the drain holes of the base by pushing them firmly into the 3 holes (Fig. 1).
3. Feed the beacon wires through the base plate and secure the base plate to the beacon base, by screwing the 3 sheet metal screws into the Fastex grommets you installed in step 3. **(See re-assembly note in step 3 perm. mount)**
4. Feed the beacon wires through the pipe then screw the beacon onto the pipe, being careful not to pinch or strain the wires. *Hand tighten* the unit onto pipe.
5. Extend the wires to your power source and refer to the beacons manual for wiring and operation.

Operation:

This beacon features variable intensity cruise light operation, low power operation, Scan-Lock™ pattern control and SYNChronization capabilities. These functions operate as outlined below.

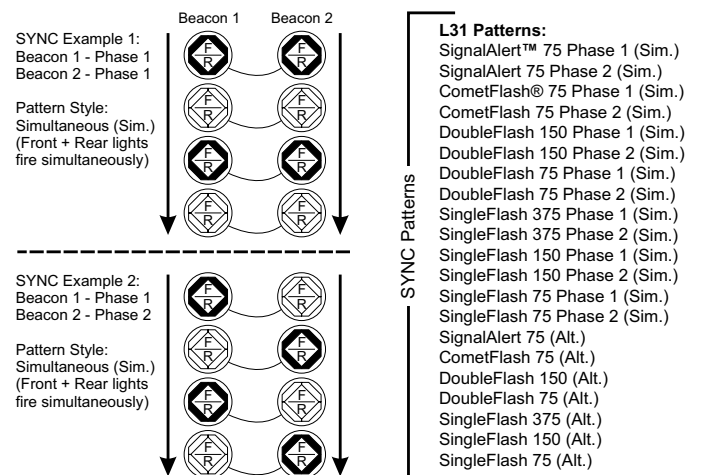
NOTE: THE TWO BRIGHTEST CRUISE LIGHT DISPLAYS WILL BE TEMPORARILY DISABLED WHILE FLASHING PATTERNS ARE ACTIVE!

Cruise Light - Activate the WHT/ORN wire to turn on the cruise light. There are 4 intensity levels that are selected by momentarily activating the WHT/VIO wire.

Low Power - Activate the VIO wire to put the beacon into low power operation. Disable this wire to restore normal, high power operation.

Scan-Lock™ - Activate the RED wire to turn on the beacon. Activate the WHT/VIO wire for less than 1 second and release to cycle forward through patterns. Activating the WHT/VIO wire for more than 1 second will cause the lighthouse to cycle backward through patterns. When the desired pattern is displayed, allow it to run for more than 5 seconds. The lighthouse will now display this pattern when active. To reset to the factory default pattern, turn off power, activate the WHT/VIO wire, then turn power back on.

See below for pattern information:



All lighthead configured to display the Phase 1 mode of a given pattern will flash simultaneously. Any lighthead configured to display the Phase 2 mode of a pattern, will alternate with any Phase 1 lighthead with the same pattern.

Sync - To sync two lighthead, configure both lighthead to display the same Phase 1 pattern. With the power off, connect the GREY wires from each lighthead together. When the lighthead are activated, their patterns will be synchronized. To configure the two lighthead to alternate their patterns, advance the pattern of either lighthead to the Phase 2 mode of the current pattern.

The following example will demonstrate how to use the SYNC feature with more than 2 lighthead. In this sample system, there are 4 lighthead. 2 are mounted on the rear, driver side of the vehicle and 2 mounted on the rear, passenger side of the vehicle.

With all the wiring complete, turn on the 4 lighthead. As shipped from the factory, all the lighthead will simultaneously display the same pattern (SignalAlert™ 75 Phase 1).

To configure, for example, the passenger side lighthead to alternate with the driver side lighthead, change the flash patterns for either the passenger or driver side lighthead to Phase 2 mode of the same pattern. **Do not SYNC more than 8 (eight) beacons!**

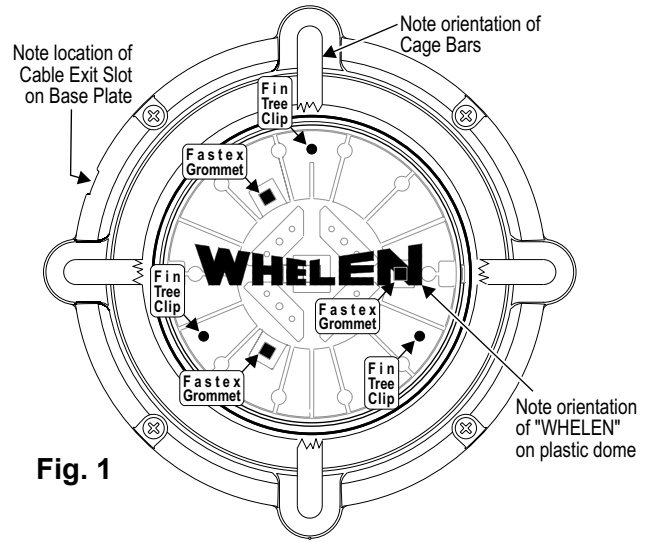
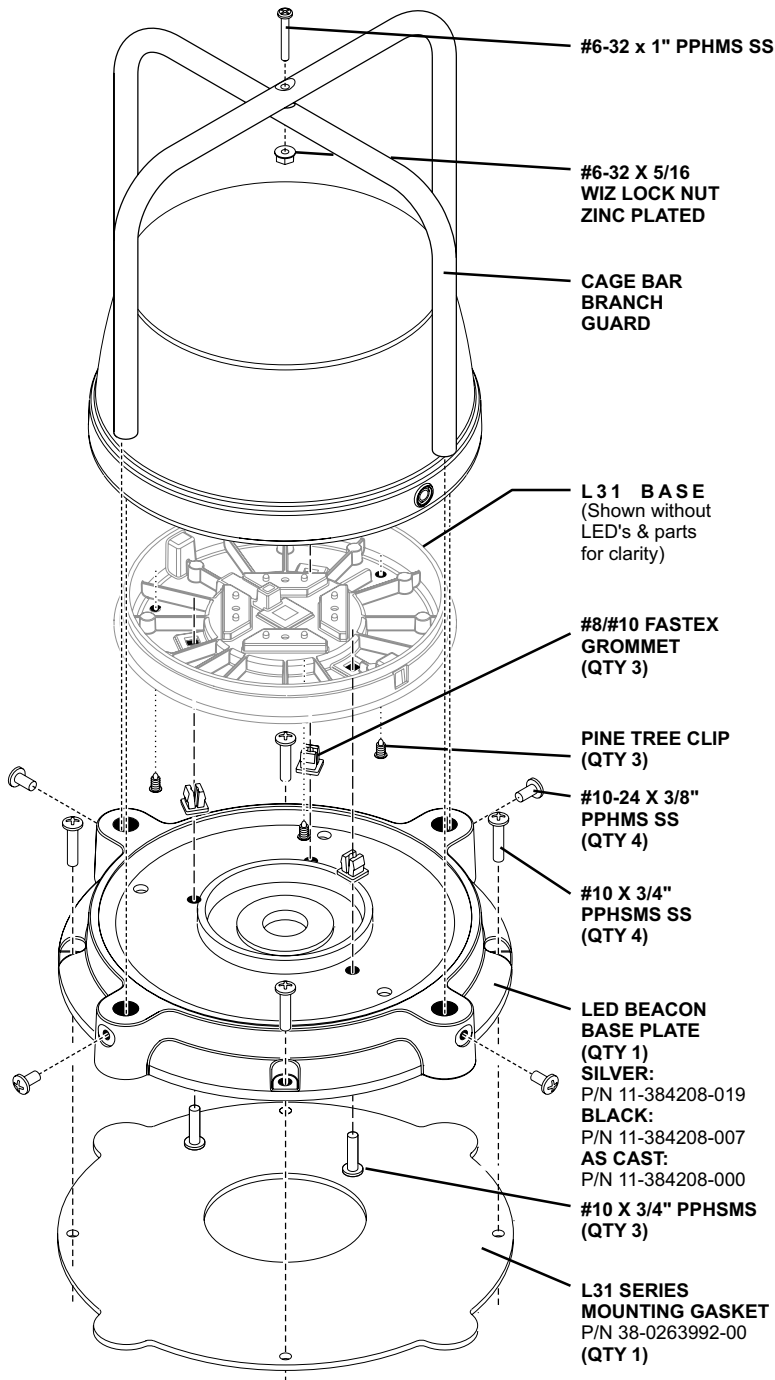


Fig. 1