

# WHELEN<sup>®</sup>

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### Installation Guide: Strobe Beacon Assembly S360D Series

#### 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 he can operate the system without taking his 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!**

The **S360D Series Strobe Beacon** features a combination base which may be used for either 1" (NPT) Pipe Mount, or Permanent Mount. The threading for a 1 inch (NPT) pipe mounting is precast in the die-cast base. A Magnetic Mount model is also available.

- **Input Voltage:**  
12.8VDC (25.6VDC) ±20%
- **Input Current:**  
High - 3 Amps @12VDC/1.5 Amps @ 24VDC  
Low - 2 Amps @ 12VDC / 1 Amp @ 24VDC
- **Output Power: 30 Watts**
- **4 Selectable Flash Patterns.**
- **Selectable Manual Hi/Low Intensity Mode.**
- **Automatic Photocell Hi/Low Intensity Mode (Optional).**
- **Pipe / Permanent Mounting Configurations (Standard).**
- **Branch guard / Magnetic Mount (Optional).**
- **Hi/Off/Low Intensity Switch (Optional).**
- **4-Pattern Beacon Controller with Diagnostix™ & Manual Hi/Low Intensity Control (Optional).**
- **Factory Installed Cruise Light (Optional).**

### Permanent Mounting:

Because of a wide variety of needs concerning the location of mounting holes, the cast aluminum base of the Model S360D is not pre-drilled for its mounting screws. Thus the holes must be drilled by the installer to conform to a particular need. For the convenience of the installer, three dimples are located inside the cast aluminum base which may be used as starter locations to drill the holes, if the location of these dimples meet the installation configuration.

1. Disassemble (see "S360D Disassembly Procedure").
2. Drill 0.218" (7/32") diameter holes into the three dimples inside base, or any other location to fit a particular mounting need. Remove shavings.

**Note: Make sure during this operation to keep drain hole in the base facing in the opposite direction of the direction of travel of the vehicle.**

3. Place the base in position on the mounting surface. Use base as a template to mark the location of the three mounting holes to be drilled, and the location of the center hole to be used as passage for the customer supplied connecting power cable.
4. At the pre-marked locations on the mounting surface, drill the mounting holes. At the marked location of the center hole, drill a 1/2" diameter hole to accommodate the customer supplied connecting power cable. Deburr the power cable hole to prevent damage to the cable. You should also install a rubber grommet.
5. Peel away paper backing from enclosed black neoprene base gasket, and affix to the bottom of base surface lining up the three holes in it with the three drilled holes in the base. Position the base on the mounting surface, lining up the drilled holes in the base with the holes located in the mounting surface. Use the three enclosed #10 x 3/4" Phillips pan head sheet metal screws to secure the base to the mounting surface.
6. Wire the strobe light power supply to the customer supplied power cable and reassemble the strobe beacon.

### Pipe Mount:

The cast aluminum base is a combination base which can be used for permanent, or 1" (NPT) pipe mounting.

7. Disassemble the strobe power supply assembly.
8. Feed customer supplied power cable through the 1" pipe and connect the cable to the wires of the strobe light assembly.
9. Screw the base to the threads of the 1" pipe and reassemble the strobe beacon.

**WARNING:** The use of any magnetically mounted warning beacon on the outside of a vehicle while in motion is not recommended and is at the sole discretion and risk of the user

**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!**

**WARNING:** The Strobe Power Supply is a high voltage device. Do not remove tubes or dismantle strobe light head assembly while in operation. Wait 10 minutes after turning off power before starting work or trouble shooting.

**WARNING:** The aluminum base has a small drain hole on the side, located toward the bottom. This hole must be positioned so that it faces the rear of the vehicle for proper drainage.

## CUSTOMER OPTIONS

### Hi/Low Intensity Option:

1. Take the dome and strobe power supply assembly apart (see “S360D Disassembly Procedure”).
2. Locate the violet (looped) wire, cut it at pin 2 and run it out of the bottom of the unit with the black and red wires (Fig. 7).
3. Reassemble the unit.
4. Connecting the violet wire to ground will cause the S360D to operate in high power mode. Removing this wire from ground forces the S360D into low power mode. A two-position switch can be installed so that the operator can easily alternate between high and low power operation (see “Switch Control Wiring Schematics Chart”).

### Flash Pattern Options:

The default flash pattern for the S360D is CometFlash®. You may choose from several other patterns by making a few simple changes.

1. First take the unit apart as described under “S360D Disassembly Procedure”.
2. Now find the input control pigtail assembly in your parts bag, and plug it in to the extra connector coming out of the strobe power supply assembly.
3. Next run the brown and white wires out through the center of the base as shown in Fig. 7.
4. Reassemble the unit and you are ready to choose your options. **IMPORTANT:** while re-assembling, make sure you line up the notch, wire slot and alignment tab (Fig. 3).

**To Select SingleFlash:** Ground the white wire and tape off the brown wire.

**To Select DoubleFlash:** Ground the brown wire and tape off the white wire.

**To Select ActionFlash™:** Ground both the white and brown wires.

### Dip Switch Options:

There are several options you can utilize by changing the dip switch settings.

**Manual High/Low Intensity Mode:** You may run your strobe at either high or low intensity by turning all the dip switches off then following the instructions under “Hi/Low Intensity”.

**Automatic Photocell High/Low Intensity Mode (optional):** The optional Photocell will automatically adjust the intensity of the strobe light according to the ambient light (darkness switches the beacon to low power, while daylight switches the beacon to high power). To engage this function you must turn dip switch 1 on. Then clip the violet wire and tape it off (see “Hi/Low Intensity Option”). Now the photocell option is always engaged. If you want to be able to turn this function on or off manually, you must also attach the violet wire to a switch that will ground or disconnect it. When you switch to “ground” the light will always be at high intensity. When you switch to “disconnect” the light will return to the photocell function.

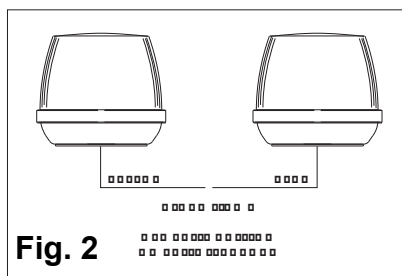
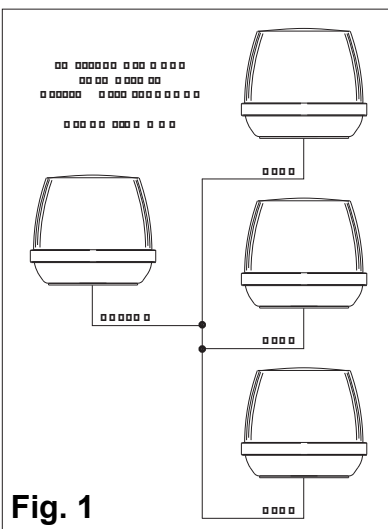
**Photocell Mode (Day On):** If you want your strobe to turn on automatically during the day and off at night, turn dip switch 2 on.

**Photocell Mode (Day Off):** If you want your strobe to turn off automatically during the day and on at night, turn dip switch’s 1 and 2 on.

**NOTE:** Both “C” and “D” are usually used for remote applications.

## DIP SWITCH VARIABLES

1	2	3	4	FUNCTION
OFF	OFF	OFF	OFF	MANUAL HI/LOW
ON	OFF	OFF	OFF	PHOTOCELL HIGH/LOW
OFF	ON	OFF	OFF	DAY ON - NIGHT OFF
ON	ON	OFF	OFF	DAY OFF - NIGHT ON
OFF	OFF	OFF	OFF	ALTERNATING SYNC
OFF	OFF	ON	OFF	SIMULTANEOUS SYNC



### Multiple Light Option: Synchronization:

#### To Run Several Lights in the Synchronized Mode:

Connect your lights as shown in figure 1. With dip switch 3 on, the lights will flash simultaneously. You may run up to 4 lights at a time.

#### Interfacing Multiple Units in an Alternating or Simultaneous Flash Pattern:

Connect your lights as shown in figure 2. With dip switch 3 OFF, the 2 lights will blink alternating. With dip switch 3 on, they will blink simultaneously.

**S360D Disassembly Procedure:**

1. Remove the clamp ring screw and the clamp ring (Fig. 7).
2. Carefully remove the optic dome, the inner optic lens and upper reflector.
3. Lift off the strobe tube assembly, unplug it and put it aside.
4. Remove the 3 screws holding the circuit board to the base casting, and lift the circuit board off.

**IMPORTANT:** Always be sure to tape or remove any unused wires.

**S360D Assembly Procedure:**

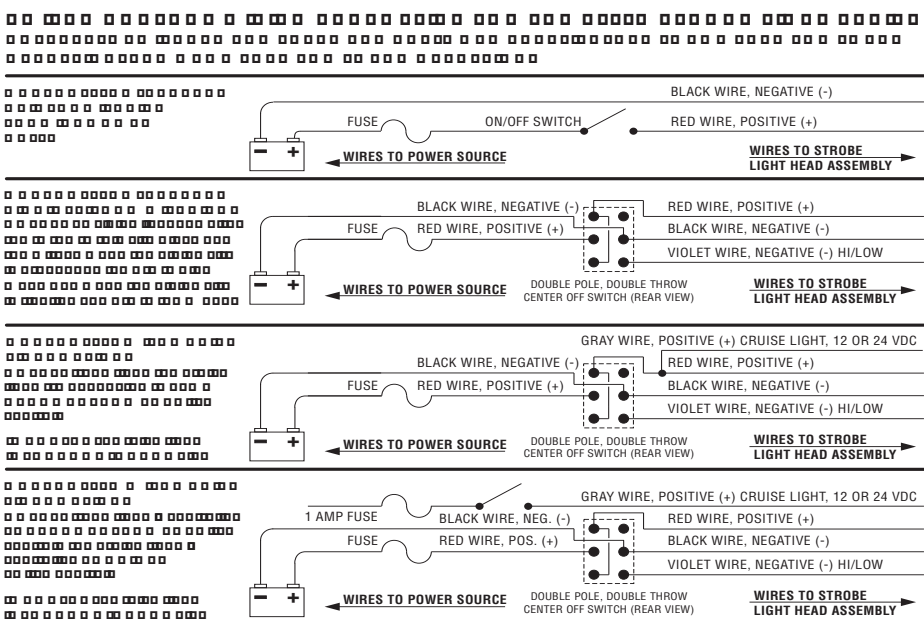
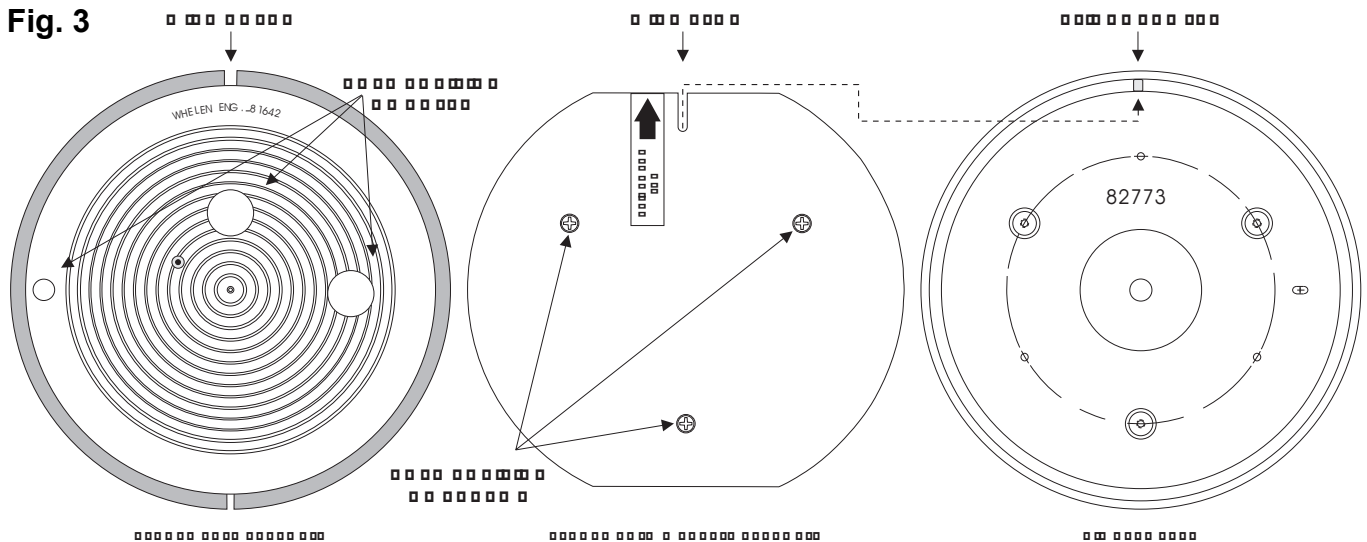
1. Feed the wires out through the wire slot in the strobe power supply assembly and attach the power supply assembly to the aluminum base using the 3 power supply screws and lockwashers.

**IMPORTANT:** Be sure the alignment tab in the aluminum base lines up with the wire slot in the strobe power assembly (Fig. 3).

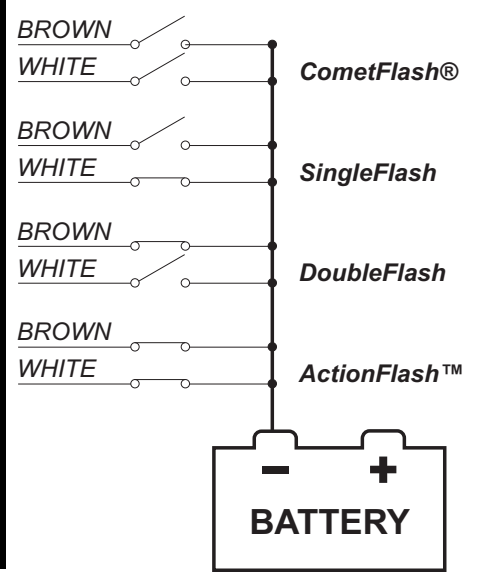
2. Connect the wires and place the strobe bulb assembly on top of the base (be careful to line the wide notch in the strobe bulb assembly up with the wire slot in the strobe power supply assembly as shown in Figure 3).
3. Place the inner optic lens on top of the strobe and the upper reflector on top of the optic lens.
4. Attach the optic dome to the base with the clamp ring and screw.

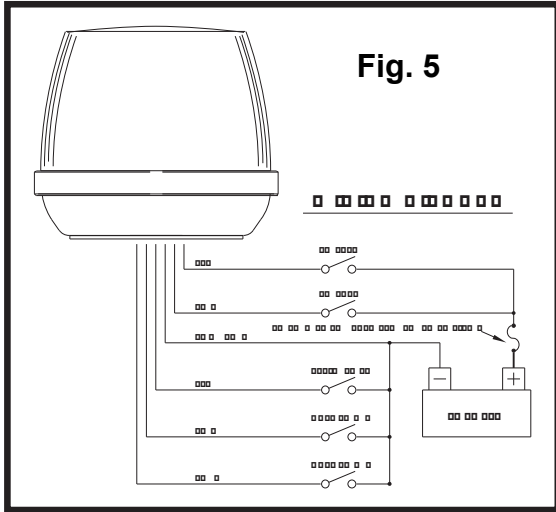
**Note:** Be sure to position the clamp ring with the screw facing the rear of the vehicle.

**Fig. 3**



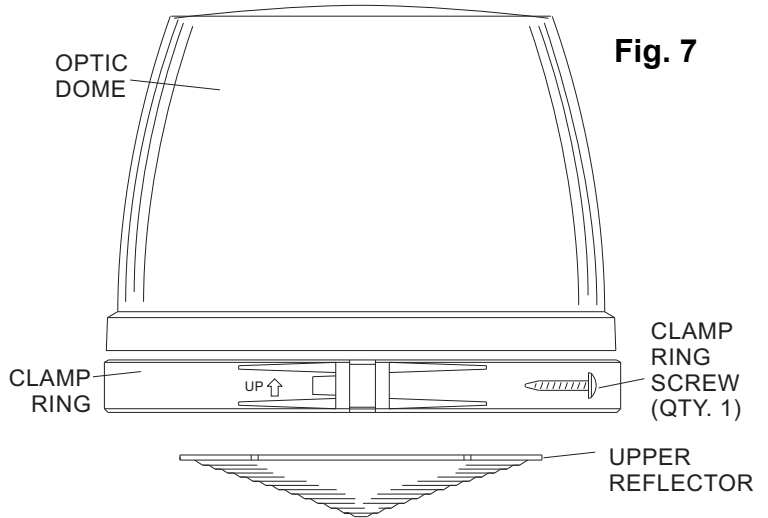
**Fig. 4**





**Fig. 5**

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.



**Fig. 7**

**Fig. 6**

