

# WHELEN<sup>®</sup>

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**Installation Guide:  
Avenger<sup>®</sup> Series  
Tri-Color Dash Light**

### 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.

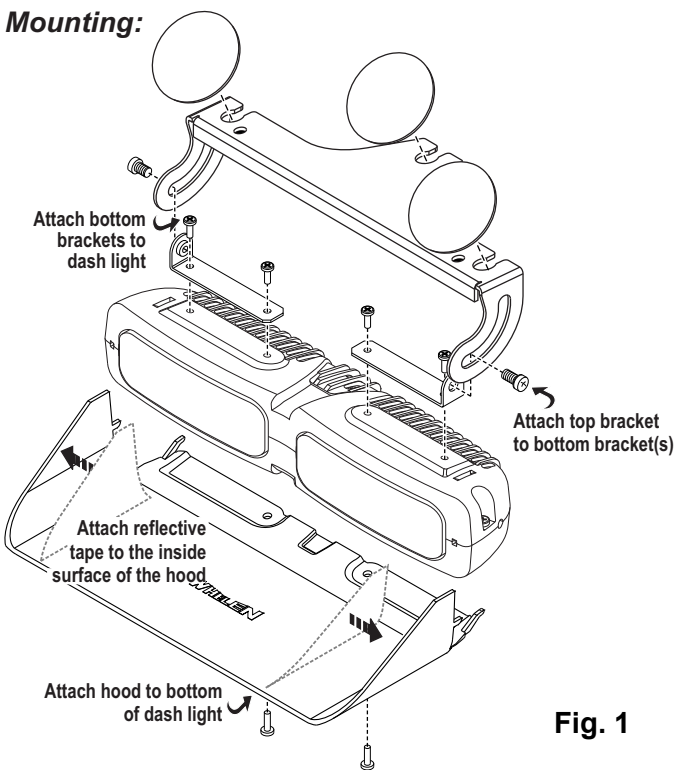
### Safety First

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<sup>®</sup>, 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!**

**NOTE: Dual Avengers are shown for reference only!**

**Mounting:**



**Fig. 1**

**CAUTION! Nighttime operation of this product may produce reflected light within the vehicle! Use with caution!**

**CAUTION: This product has been designed to rest on top of the vehicle dashboard. Suction cups are used to prevent lateral movement while the vehicle is in motion. These suction cups should not be used to suspend this product above the dashboard.**

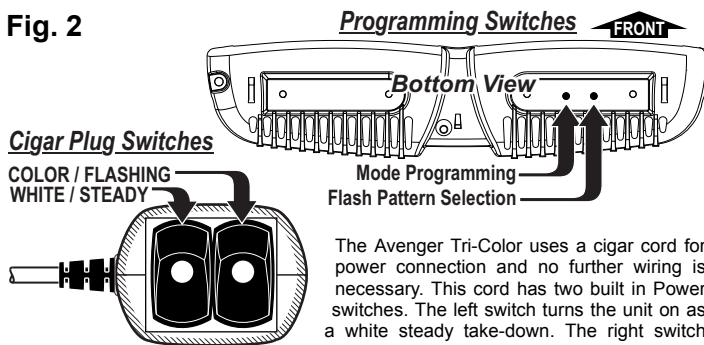
1. Secure the lower mounting brackets to the Avenger®.
2. Slide the suction cups onto the upper mounting bracket and secure the upper mounting bracket onto the lower mounting bracket.
3. Attach the reflector tape to the visor hood and secure the visor hood to the unit.
4. With the Avenger resting on the top of the dashboard, apply the suction cups to the windshield. **Do not locate the Avenger in any location where it will interfere with the drivers ability to safely operate the vehicle. Refer to the safety warnings on the cover of this manual.**
5. Adjust the angle of the Avenger bracket until the visor hood is in full contact with the windshield.

There are holes on the upper bracket to be used if permanent mounting is desired. Using the upper bracket as a template, mark the areas where the mounting holes are to be drilled. Secure the unit using the appropriate hardware (customer supplied).

**Wiring:**

**IMPORTANT AIR BAG WARNING!** Do not install this product or route any wires in the air bag deployment zone of your vehicle. Equipment mounted or located in air bag deployment zones 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 owners manual to learn the air bag deployment zones for the vehicle. The User/Installer assumes full responsibility to determine proper mounting location, based on providing ultimate safety to all passengers inside the vehicle.

**Fig. 2**



The Avenger Tri-Color uses a cigar cord for power connection and no further wiring is necessary. This cord has two built in Power switches. The left switch turns the unit on as a white steady take-down. The right switch turns the unit on in the flashing color option.

With this switch on you may choose from 10 separate modes using the momentary switch located under the unit. Once you choose from one of the ten modes, use the other momentary switch to choose a flash pattern (Fig. 2).

**Mode Selection:**

Press the momentary switch on the bottom of the unit using a pen or other appropriate object to cycle through all ten modes.

- MODE 1** Both lights flash COLOR 1
- MODE 2** Both lights flash COLOR 2
- MODE 3** Both lights flash COLOR 3
- MODE 4** Both lights alternate COLOR 1 & 2
- MODE 5** Both lights alternate COLOR 1 & 3
- MODE 6** Both lights alternate COLOR 2 & 3
- MODE 7** Light 1 flashes COLOR 1, Light 2 flashes COLOR 2
- MODE 8** Light 1 flashes COLOR 1, Light 2 flashes COLOR 3
- MODE 9** Light 1 flashes COLOR 2, Light 2 flashes COLOR 3
- MODE 10** Both lights repeatedly sequence through all colors

**Flash Pattern Selection:**

To advance to the next flash pattern, press the pattern selection switch for less than 1 second. To cycle backwards to previous patterns, press the pattern selection switch for more than 1 second.

To reset to the factory default pattern: With power to the light off, press and hold the pattern selection switch. Turn the light on and keep the pattern selection switch depressed for at least 5 seconds before releasing.

**Pattern List (Dual)**

- |                         |                         |  |
|-------------------------|-------------------------|--|
| 1. SignalAlert™ ALT     | 21. SingleFlash 300 ALT | 41. ActionFlash S/T ALT                |
| 2. SignalAlert SIM      | 22. SingleFlash 300 SIM | 42. ActionFlash S/T SIM                |
| 3. CometFlash® ALT      | 23. DoubleFlash 120 ALT | 43. CalScan™ ALT                       |
| 4. CometFlash SIM       | 24. DoubleFlash 120 SIM | 44. CalScan SIM                        |
| 5. DoubleFlash 75 ALT   | 25. ComAlert™ ALT       | 45. ModuFlash™ ALT                     |
| 6. DoubleFlash 75 SIM   | 26. ComAlert SIM        | 46. ModuFlash SIM                      |
| 7. SingleFlash 75 ALT   | 27. PingPong 120 ALT    | 47. ActionScan™ ALT                    |
| 8. SingleFlash 75 SIM   | 28. PingPong 120 SIM    | 48. ActionScan SIM                     |
| 9. ComAlert™ 75 ALT     | 29. TripleFlash™ 75 ALT | 49. CalComet™ ALT                      |
| 10. ComAlert 75 SIM     | 30. TripleFlash 75 SIM  | 50. CalComet SIM                       |
| 11. LongBurst™ ALT      | 31. TripleFlash 120 ALT | 51. SteadyFlash™ 60                    |
| 12. LongBurst SIM       | 32. TripleFlash 120 SIM | 52. SteadyFlash 75                     |
| 13. PingPong™ 75 ALT    | 33. ActionFlash™ 50 ALT | 53. SteadyFlash 90                     |
| 14. PingPong 75 SIM     | 34. ActionFlash 50 SIM  | 54. SteadyFlash 120                    |
| 15. SingleFlash 60 ALT  | 35. ActionFlash 150 ALT | 55. Steady                             |
| 16. SingleFlash 60 SIM  | 36. ActionFlash 150 SIM |  |
| 17. SingleFlash 90 ALT  | 37. SignalAlert CAL ALT | ALT = Alternating                      |
| 18. SingleFlash 90 SIM  | 38. SignalAlert CAL SIM | SIM = Simultaneous                     |
| 19. SingleFlash 120 ALT | 39. ActionFlash S/S ALT | <b>Bold = Cal Title XIII Compliant</b> |
| 20. SingleFlash 120 SIM | 40. ActionFlash S/S SIM |  |

**Pattern List (Single)**

- |                     |                     |  |
|---------------------|---------------------|--|
| 1. SignalAlert™     | 11. SingleFlash 300 | 21. ActionFlash S/T                    |
| 2. CometFlash®      | 12. DoubleFlash 120 | 22. CalScan™                           |
| 3. DoubleFlash 75   | 13. ComAlert™ 150   | 23. ModuFlash™                         |
| 4. SingleFlash 75   | 14. PingPong 120    | 24. ActionScan™                        |
| 5. ComAlert™ 75     | 15. TripleFlash™ 75 | 25. CalComet™                          |
| 6. LongBurst™       | 16. TripleFlash 120 | 26. Steady                             |
| 7. PingPong™ 75     | 17. ActionFlash™ 50 |  |
| 8. SingleFlash 60   | 18. ActionFlash 150 | <b>Bold = Cal Title XIII Compliant</b> |
| 9. SingleFlash 90   | 19. SignalAlert CAL |  |
| 10. SingleFlash 120 | 20. ActionFlash S/S |  |

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