

# WHELEN<sup>®</sup>

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**Installation Guide:**  
**Avenger™ Series Interior Lightbar**  
**2005 - 2009 Crown Victoria**  
**Model AVNCV9\*\* (Rear Deck)**

### 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!**

## Installation / 2005 to 2009 Crown Victoria:

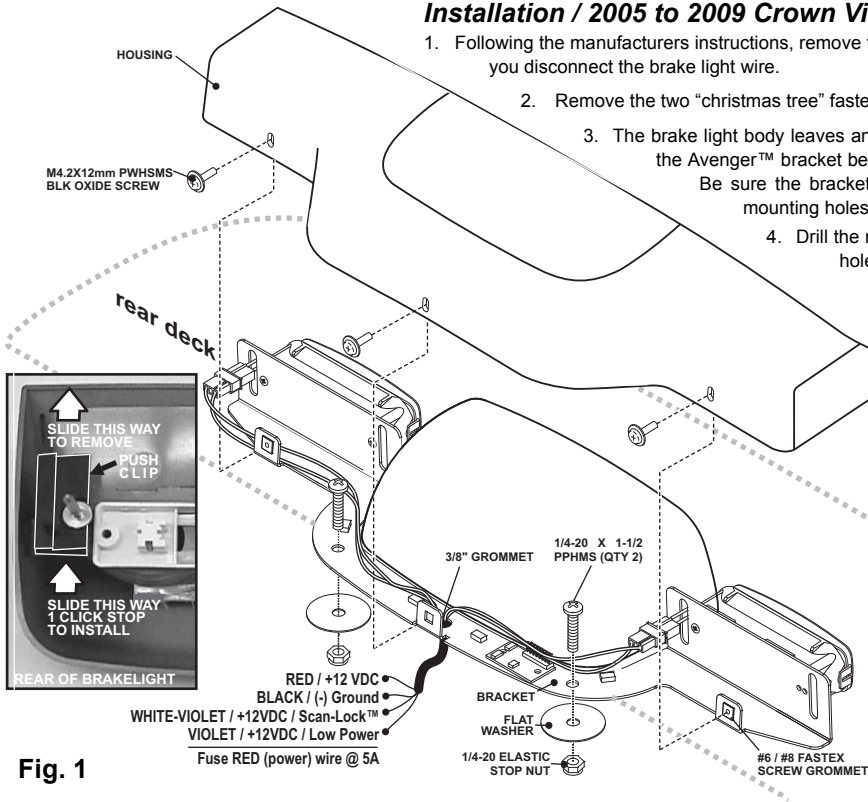


Fig. 1

- Following the manufacturers instructions, remove the rear seat. Pry the brake light straight up and off of the rear deck as you disconnect the brake light wire.
- Remove the two "christmas tree" fasteners securing the deck and remove the deck.
- The brake light body leaves an indented mark in the rear deck. Using this mark as a guide, position the Avenger™ bracket behind the brake light approximately 1/8 of an inch away from this mark. Be sure the bracket is square with the rear window and mark off the location of the 2 mounting holes and the wire access hole onto the deck.
- Drill the mounting holes and wire access hole. Use a 9/32" bit for the mounting holes and a 1/2" bit for the wire hole. Secure the bracket to the deck using the hardware provided and reinstall the deck onto the vehicle.

- Slide the 2 push clips off of the center brake light then slide them back on until they click once (fig. 1). Reconnect and reinstall the rear brake light.
- Feed the lighthouse wires through the access hole and extend the RED (Positive) wire and the BLACK (Ground) wire to your switched power source. Fuse the RED wire 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 that load. **DO NOT USE CIRCUIT BREAKERS WITH THIS PRODUCT!**

| #  | PATTERN      | FUNCTION                        |
|----|--------------|---------------------------------|
| 1A | SignalAlert™ | 1 Alternates with 2             |
| 1S | SignalAlert™ | 1 & 2 Simultaneous              |
| 1C | SignalAlert™ | 3 Cycles of 1A & 3 Cycles of 1S |
| 2A | CometFlash®  | 1 Alternates with 2             |
| 2S | CometFlash®  | 1 & 2 Simultaneous              |
| 2C | CometFlash®  | 3 Cycles of 2A & 3 Cycles of 2S |
| 3A | DoubleFlash  | 1 Alternates with 2             |
| 3S | DoubleFlash  | 1 & 2 Simultaneous              |
| 3C | DoubleFlash  | 3 Cycles of 3A & 3 Cycles of 3S |
| 4A | SingleFlash  | 1 Alternates with 2             |
| 4S | SingleFlash  | 1 & 2 Simultaneous              |
| 4C | SingleFlash  | 3 Cycles of 4A & 3 Cycles of 4S |
| 5  | Steady Flash | 1 Steady, 2 SingleFlash         |
| 6  | Steady       | 1 & 2 Steady                    |

### Low Power / VIOLET:

The type of switch used is dependant on how the operator wishes the Hi/Lo feature to function:

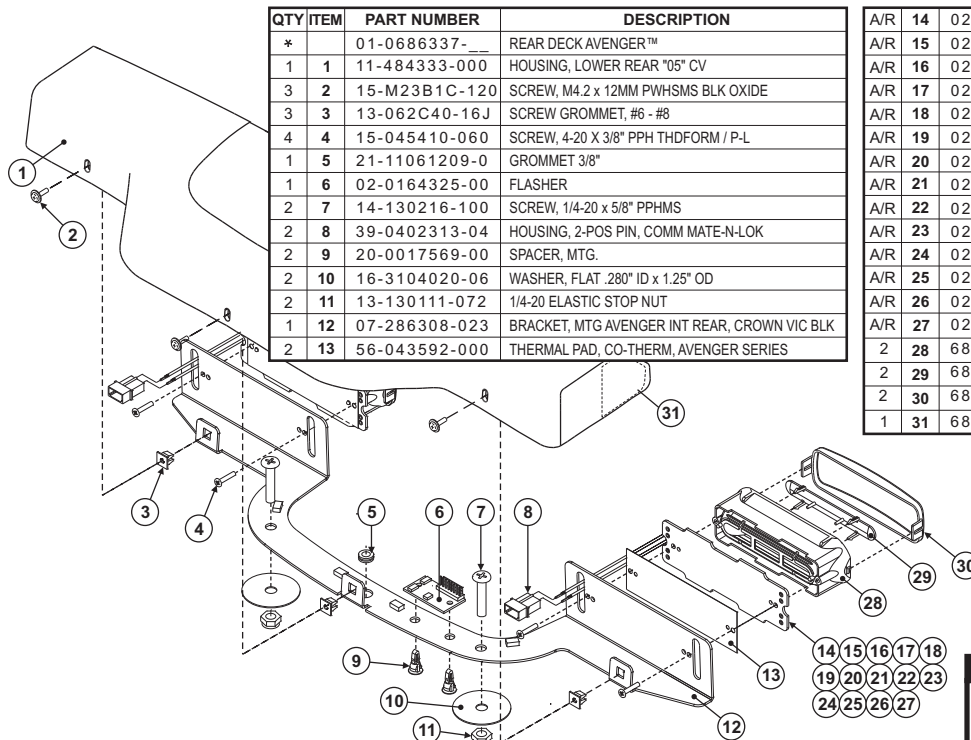
**Latching Mode:** By applying +12VDC to the VIOLET wire for less than 1 sec., the light is "latched" into low power operation. Turn the unit off and then back on to reset to high power. A momentary switch is preferred for this function.

**Level Mode:** Applying +12 VDC to the VIOLET wire for more than 1 sec. places the lightbar in low power mode until voltage is removed. A toggle switch is preferred for this function.

### Scan-Lock™ / WHITE-VIOLET:

**TO CYCLE FORWARD THROUGH AVAILABLE PATTERNS:** Activate the lighthoods. Apply +12VDC to the Scan-Lock™ wire for less than 1 second and release. This will change the pattern. Repeat this procedure until the desired pattern is displayed. Let this pattern run for at least 5 seconds and it will become the default pattern. Repeat to advance to the next pattern.

**TO RESET TO THE FACTORY DEFAULT PATTERN:** Turn the unit off. While applying +12 volts to the Scan-Lock™ wire turn the unit back on. The lighthoods are now restored to there factory default pattern.



| QTY | ITEM | PART NUMBER   | DESCRIPTION                                  |
|-----|------|---------------|--|
| *   |      | 01-0686337-__ | REAR DECK AVENGER™                           |
| 1   | 1    | 11-484333-000 | HOUSING, LOWER REAR "05" CV                  |
| 3   | 2    | 15-M23B1C-120 | SCREW, M4.2 x 12MM PWHMS BLK OXIDE           |
| 3   | 3    | 13-062C40-16J | SCREW GROMMET, #6 - #8                       |
| 4   | 4    | 15-045410-060 | SCREW, 4-20 X 3/8" PPH THDFORM / P-L         |
| 1   | 5    | 21-11061209-0 | GROMMET 3/8"                                 |
| 1   | 6    | 02-0164325-00 | FLASHER                                      |
| 2   | 7    | 14-130216-100 | SCREW, 1/4-20 x 5/8" PPHMS                   |
| 2   | 8    | 39-0402313-04 | HOUSING, 2-POS PIN, COMM MATE-N-LOK          |
| 2   | 9    | 20-0017569-00 | SPACER, MTG.                                 |
| 2   | 10   | 16-3104020-06 | WASHER, FLAT .280" ID x 1.25" OD             |
| 2   | 11   | 13-130111-072 | 1/4-20 ELASTIC STOP NUT                      |
| 1   | 12   | 07-286308-023 | BRACKET, MTG AVENGER INT REAR, CROWN VIC BLK |
| 2   | 13   | 56-043592-000 | THERMAL PAD, CO-THERM, AVENGER SERIES        |

|     |    |               |  |
|-----|----|---------------|--|
| A/R | 14 | 02-016C324-10 | REAR DECK AVENGER, 9-LED ARRAY, AMBER          |
| A/R | 15 | 02-016C324-20 | REAR DECK AVENGER, 9-LED ARRAY, BLUE           |
| A/R | 16 | 02-016C324-30 | REAR DECK AVENGER, 9-LED ARRAY, WHITE          |
| A/R | 17 | 02-016C324-40 | REAR DECK AVENGER, 9-LED ARRAY, GREEN          |
| A/R | 18 | 02-016C324-50 | REAR DECK AVENGER, 9-LED ARRAY, RED            |
| A/R | 19 | 02-016C355-11 | PCB, REAR DECK AVENGER, SPLIT COLOR, AMB-AMB   |
| A/R | 20 | 02-016C355-12 | PCB, REAR DECK AVENGER, SPLIT COLOR, AMB-BLUE  |
| A/R | 21 | 02-016C355-15 | PCB, REAR DECK AVENGER, SPLIT COLOR, AMB-RED   |
| A/R | 22 | 02-016C355-22 | PCB, REAR DECK AVENGER, SPLIT COLOR, BLUE-BLUE |
| A/R | 23 | 02-016C355-23 | PCB, REAR DECK AVENGER, SPLIT COLOR, BLUE-WHT  |
| A/R | 24 | 02-016C355-25 | PCB, REAR DECK AVENGER, SPLIT COLOR, BLUE-RED  |
| A/R | 25 | 02-016C355-33 | PCB, REAR DECK AVENGER, SPLIT COLOR, WHT-WHT   |
| A/R | 26 | 02-016C355-35 | PCB, REAR DECK AVENGER, SPLIT COLOR, WHT-RED   |
| A/R | 27 | 02-016C355-55 | PCB, REAR DECK AVENGER, SPLIT COLOR, RED-RED   |
| 2   | 28 | 68-596A596-01 | REFLECTOR, LINEAR LED MET, AVENGER SERIES      |
| 2   | 29 | 68-1943588-30 | LENS, CLEAR OPTIC COLLIMATOR, AVENGER          |
| 2   | 30 | 68-396A597-30 | LENS, CLEAR NON-OPTIC LINEAR, AVENGER          |
| 1   | 31 | 68-5943246-01 | MIRROR   |

| PART NUMBER KEY: |                       |                    |
|------------------|-----------------------|--------------------|
| 01-0686337-__    |                       |                    |
| LED COLOR        | PASSENGER SIDE OPTION | DRIVER SIDE OPTION |
| 1 = AMB          | 4 = GREEN             | K = AMB/RED        |
| 2 = BLU          | 5 = RED               | B = BLU/BLU        |
| 3 = WHT          | M = AMB/BLU           | E = BLU/WHT        |
|                  |                       | J = BLU/RED        |
|                  |                       | C = WHT/WHT        |
|                  |                       | D = WHT/RED        |
|                  |                       | R = RED/RED        |

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