

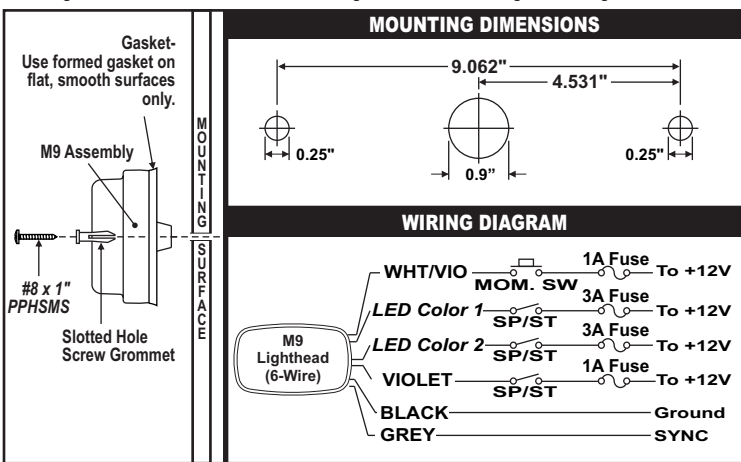
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**Safety First:** This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator must read this manual completely. Important information is contained herein that could prevent serious injury or damage.

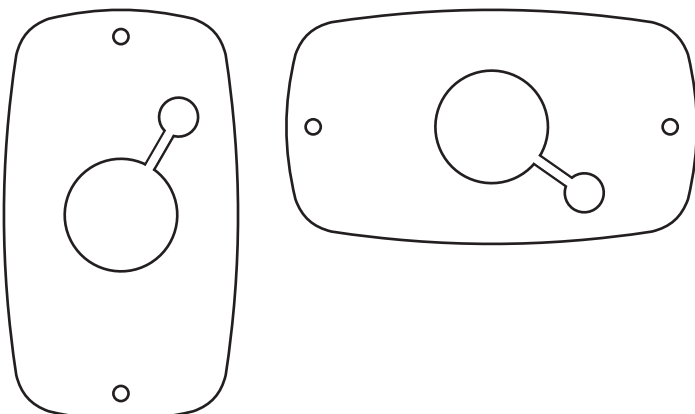
- Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.
- Whelen Engineering requires the use of waterproof butt splices and/or connectors if that connector could be exposed to moisture.
- Any holes, either created or utilized by this product, should be made both air- and watertight using a sealant recommended by your vehicle manufacturer.
- 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 any holes and remove any metal shards or remnants. Install grommets into all wire passage holes.
- 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.
- 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.
- **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!**
- **FAILURE TO FOLLOW THESE PRECAUTIONS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT OR VEHICLE AND/OR SERIOUS INJURY TO YOU AND YOUR PASSENGERS!**

## Installation

- Using the dimensions below, mark the mounting and wire hole locations onto the proposed mounting surface. Drill two, .250" diameter mounting holes and a .9" (minimum) wire access hole into the mounting surface.
- Place the gasket into position on the rear of the M9 assembly. Insert the slotted hole screw grommet through the mounting holes on the M9/Gasket assembly. Feed the M9 wires through the wire access hole in the mounting surface. Press the M9/Gasket/Grommet assembly onto its mounting location so that it is flat against the mounting surface.
- With the assembly in position and using the hardware provided, tighten the mounting screws until the lighthead assembly is drawn firmly against the mounting surface. **DO NOT OVERTIGHTEN!**
- Using appropriately sized wires (minimum 18 AWG), extend the M9 wires to their designated connections. Refer to the diagram below for wiring and fusing information.



## Gasket orientation:



## Wiring

**Note:** The dual-color M9 has 3 individual flash pattern modes; one for Color 1, one for Color 2 and one for Color 1 + 2. For example, when only Color 1 is activated, it can be configured to flash SignalAlert 75. When only Color 2 is activated, it can be configured to flash LongBurst. When Color 1 and Color 2 are simultaneously activated, they can be configured to flash ComAlert.

**LED Color - Flash Mode (The wire will be the color of the LED in the lighthead) :** Apply +VBAT to a LED Color wire to activate the lighthead in "flash mode". In flash mode, you may change the flash pattern using Scan-Lock™.

**DUO Mode -** When both colors are enabled and set to non-steady patterns, the colors will alternate after each cycle.

**GREY - SYNC:** To SYNC 2 lightheads, configure both lightheads to display the same Phase 1 (Simultaneous) pattern. Turn power off and connect the GREY wire from each lighthead together. Activate the lightheads and their patterns will be synchronized. To configure 2 lightheads to alternate their patterns, advance either lighthead to Phase 2 (Alternating) of the current pattern.

**VIOLET - Low Power Mode:** Applying +VBAT to the VIO wire while Flash Mode is active sets the lighthead to Low Power Mode. Low Power Mode flash pattern can be set to a different flash pattern than Flash Mode using Scan Lock. By default, Low Power Mode flash pattern is #149, DVI Single Flash 75 Lo Intensity All On. Low power mode can be applied to only Color 1, only Color 2, or both Color 1 and Color 2.

**WHITE/VIO - Scan-Lock™ Pattern Selection:** This feature allows the user to select from several available flash patterns. Lighthead must be powered on for Scan-Lock to work. Each color and combination has it's own ScanLock register. **NOTE: High and Low power patterns are chosen separately. Scan-Lock™+ can be used for easier pattern selection.**

**TO CYCLE THROUGH ALL PATTERNS:** Apply +VBAT to the WHT/ VIO wire for less than 1 second and release. To cycle backward through patterns apply +VBAT to WHT/VIO wire for over 1 second and release.

**TO SET A PATTERN AS DEFAULT:** Allow pattern to run over 5 seconds to make it the default pattern.

**TO RESET TO THE FACTORY DEFAULT PATTERN:** Turn off power. While applying +VBAT to the WHT/VIO wire, turn power on. The lighthead will reset to it's default pattern.

**Steady-Lock™** - When connected to a Core™ control system, a lighthead doesn't require manually scanlocking to the steady pattern. All populated outputs can be sent a Steady-Lock™ signal from Whelen Command®, automatically setting their pattern to Steady. A minimum Whelen Command® version of 2.2.9 is required for this Steady-Lock™ feature.

If Color 1 pattern is	And color 2 pattern is	The Override Color is	Steady Pattern operation with both colors active.
Steady	Not Steady	Color 1	<b>NOTE: When one of the colors is STEADY, two color operation is not available.</b>
Not Steady	Steady	Color 2	
Steady	Steady	Color 2	

**M9 Sequencing & Phasing:** The M9 lighthead has 8 sets of 6 LEDs. These sets cycle through the 5 sequences shown below.

Sequences	Operation of LED sets
	<b>Solid</b> All On Alternates with All Off
<b>Left to Right (L/R)</b>	1 - 2 - 5 - 6 Alternates with 3 - 4 - 7 - 8
<b>Top to Bottom (T/B)</b>	1 - 2 - 3 - 4 Alternates with 5 - 6 - 7 - 8
<b>In and Out (I/O)</b>	2 - 3 - 6 - 7 Alternates with 1 - 4 - 5 - 8
<b>Diagonal (Diag)</b>	1 - 2 - 7 - 8 Alternates with 5 - 6 - 3 - 4