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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 recommends 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 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.
- Do not attempt to activate or control this device in a hazardous driving situation.
- 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.
- 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!**

**IMPORTANT! BEFORE MOUNTING READ ALL THE ABOVE WARNINGS FOR MOUNTING, VEHICLE DAMAGE AND WIRE ROUTING.**

**Mounting (Standard Bracket)**

1. Place the bracket against the mounting surface and mark the two mounting hole locations. **Confirm that no vehicle parts could be damaged by the drilling process.**
2. Drill two mounting holes sized for a #8 sheet metal screw. A wire passage hole may also be needed. De-burr this hole and install a grommet to protect the wires.  
**NOTE:** VHB adhesive tape is provided as an alternative to securing the ION™ with screws. Remove the protective backing from this tape and press it firmly onto the bottom of the bracket as shown. Clean the mounting surface with a 50/50 mix of isopropyl alcohol and water and dry thoroughly before mounting the bracket onto the mounting surface.
3. Route the wires through the hole in the bracket and through the wire passage hole. Secure the ION™ to the bracket using the hardware provided. Wire as outlined below.

**Mounting (Gripper Bracket)**

1. Apply the protective pads to the bracket in the location shown (side view). Secure the ION™ to the bracket in the same fashion as outlined for the standard bracket.
2. Position the bracket onto the proposed mounting surface as shown. Apply a drop of Loctite 222 to the threads of the #6 x 1/2" PPHMS provided.
3. Thread the screws into the underside of the bracket and secure the bracket to the mounting surface.

**Wiring**

**IMPORTANT! BEFORE WIRING READ ALL THE ABOVE WARNINGS FOR WIRE SIZE AND THE ROUTING OF WIRES.**

**Ground (BLK)** - Extend the BLK wire to Chassis Ground.

**Warning Light (RED)** - Extend the RED wire to +12VDC via an SP/ST switch. (3 amp fuse)

**Alley Light (WHT/BLK)** - Extend the WHT/BLK wire to +12VDC via an SP/ST switch. (3 amp fuse).

**Puddle Light (WHT/RED)** - Extend the WHT/RED wire to +12VDC via an SP/ST switch. (1 amp fuse).

**Scan-Lock™ (WHT/VIO)** - Extend the WHT/VIO wire to +12VDC via a momentary switch (1 amp fuse). Refer to the Scan-Lock section for operational information.

**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.

**NOTE: ALL SWITCHES AND FUSES ARE CUSTOMER SUPPLIED**

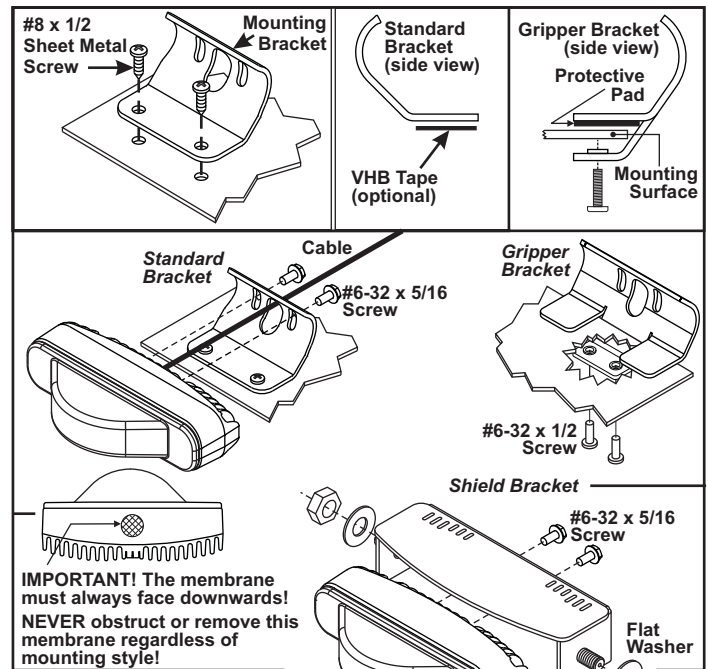
**Scan-Lock**

Note: In order to change flash patterns, the lighthead must be on.

**TO CHANGE PATTERNS:** To advance to the next pattern apply +12VDC to the WHT/VIO wire for less than 1 second and release. To cycle back to the previous pattern apply +12VDC to the WHT/VIO wire for more than 1 second and release.

**TO CHANGE THE DEFAULT PATTERN:** When the desired pattern is displayed, allow it to run for more than 5 seconds. The lighthead will now display this pattern when initially activated.

**TO RESTORE THE FACTORY DEFAULT PATTERN:** This will reset all patterns back to their default settings. With the light turned off, apply power to the WHT/VIO wire. With power applied to the WHT/VIO wire, turn light on. Allow the unit to run for 3 seconds before removing power from the WHT/VIO wire.



**Flash Patterns (SYNC)**

1. SignalAlert™ 75 / phase 1
2. SignalAlert™ 75 / phase 2
3. CometFlash® 75 / phase 1
4. CometFlash® 75 / phase 2
5. DoubleFlash 75 / phase 1
6. DoubleFlash 75 / phase 2
7. SingleFlash 75 / phase 1
8. SingleFlash 75 / phase 2
9. ComAlert™ 75 / phase 1
10. ComAlert™ 75 / phase 2
11. LongBurst™ 75 / phase 1
12. LongBurst™ 75 / phase 2
13. PingPong™ 75 / phase 1
14. PingPong™ 75 / phase 2

**Flash Patterns (NON SYNC)**

15. SingleFlash 60
16. SingleFlash 90
17. SingleFlash 120
18. SingleFlash 300
19. DoubleFlash 150
20. ComAlert™ 150
21. ActionFlash™ 50
22. ActionFlash™ 150
23. ModuFlash™
24. ActionScan™
25. Steady

**WIRING DIAGRAM**

