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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.

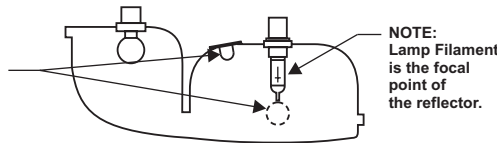
- Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.
- If mounting this product requires drilling holes, the installer **MUST** be sure that no vehicle components or other vital parts could be damaged by the drilling 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!**

Standard Mount (composite headlight or taillight housing) Installation:

1. Follow manufacturers instructions to remove the headlight (or taillight) reflector assembly from the vehicle.

Fig. 1

Insert the Vertex from the back or bottom of the headlight or rear taillight housing, as close to the focal point as possible.



Top view of automotive composite headlight or taillight housing.

2. Select the mounting location for the Vertex, keeping in mind the following:
 - The Vertex may share the same reflector as the headlight, brake light, or signal light. Make sure the Vertex does not interfere with the operation of these lights.
 - The Vertex must not be installed above the horizontal centerline of the reflector.
 - The Vertex must not be installed above any OEM-supplied light.
3. Choose a surface in the rear or bottom of the housing which is as flat as possible. Using a hole saw, cut a 1" hole in the housing as shown (Fig. 1 & 2) and de-burr the hole.
4. Insert the LED lamp assembly into the reflector housing. Mark the location for the two mounting holes (3/32" dia.). Remove the lamp assembly and drill the holes.
5. Install the lamp assembly and gasket using the two provided #4 sheet metal screws and secure the lamp to the reflector assembly.
7. Remount both headlight assemblies to the vehicle and route the connector cables to their designated control switches (power and Scan-Lock™).
8. The lamp driver should now be secured to the vehicle using the double-sided adhesive tape provided.

IMPORTANT NOTE: If the Vertex is being used in an area previously occupied by an S30HA light assembly, it is important to seal the mounting holes used by the previous assembly with RTV or other suitable material.

Flange Mount Installation:

Using the dimensions shown, drill appropriately sized wire access and mounting holes. Refer the "FLANGE MOUNT" illustration shown for proper assembly order and secure the Vertex using the hardware provided. Route the connector cables to their designated control switches (power and Scan-Lock™) and secure the lamp driver to the vehicle using the double-sided tape provided.

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!**

Wiring & Operation:

The Vertex is powered & controlled by the 4-wire cable coming from the light assembly. Their functions are as follows:

RED: Positive - Extend the RED wire to a +12VDC power source (fuse @ 3 amps).

BLACK: Ground - Extend the BLK wire to the negative terminal of the battery.

GREEN: SYNC - Connect the GRN wire to other SYNC capable devices to synchronize their output. Cap off this wire if it is not used.

WHITE: Scan-Lock™ - Extend the WHT wire to a customer supplied momentary switch (fuse @ 1 amp). See Scan-Lock section for operation.

IMPORTANT WARNING: DO NOT ATTEMPT TO USE THE VERTEX WITHOUT THE LAMP DRIVER MODULE CONNECTED.

Scan-Lock

In order to program flash patterns, the lighthouse must be on. With the appropriate lighthouse(s) activated:

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

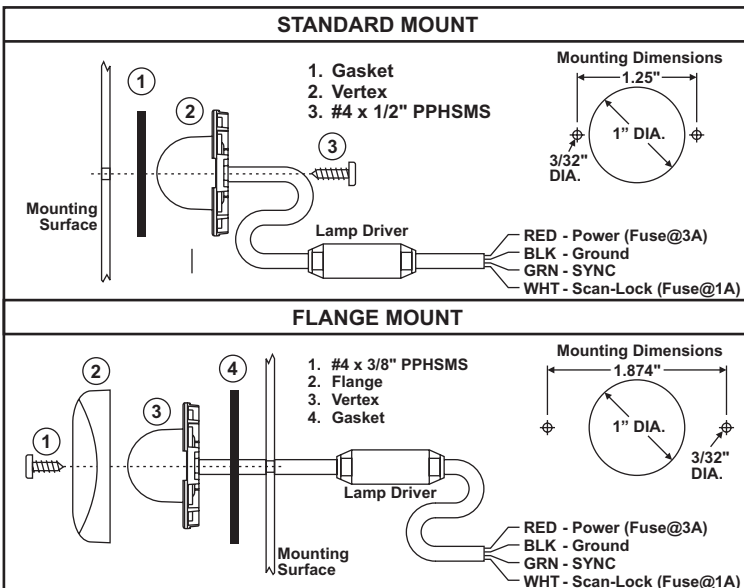
TO CHANGE THE DEFAULT PATTERN: When the desired pattern is displayed, allow it to run for more than 5 seconds. The lighthouse will now display this pattern when initially activated.

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 wire. With power applied to the WHT wire, turn light on. Allow the unit to run for 3 seconds before removing power from the WHT wire.

A normally open momentary switch should be used to control Scan-Lock operation.

Flash Patterns -

The following is a list of all the available flash patterns:



SYNC Patterns

- | | | | |
|--------------------|------|-------------------|------|
| 1. SignalAlert™ 75 | PH.1 | 8. SingleFlash 75 | PH.2 |
| 2. SignalAlert 75 | PH.2 | 9. ComAlert™ | PH.1 |
| 3. CometFlash@75 | PH.1 | 10. ComAlert | PH.2 |
| 4. CometFlash 75 | PH.2 | 11. LongBurst™ | PH.1 |
| 5. DoubleFlash 75 | PH.2 | 12. LongBurst | PH.2 |
| 6. DoubleFlash 75 | PH.1 | 13. PingPong™ | PH.1 |
| 7. SingleFlash 75 | PH.1 | 14. PingPong | PH.2 |

Non-SYNC Patterns

- | |
|---------------------|
| 15. SingleFlash 60 |
| 16. SingleFlash 90 |
| 17. SingleFlash 120 |
| 18. SingleFlash 300 |
| 19. DoubleFlash 150 |
| 20. ComAlert 150 |
| 21. ActionFlash™ 1 |
| 22. ActionFlash 2 |
| 23. ModuFlash™ |
| 24. ActionScan™ |
| 25. Steady |

Phase Operation

Phase 1 (PH.1) flashes **simultaneously** with PH.1
Phase 2 (PH.2) flashes **simultaneously** with PH.2
PH.1 alternates with PH.2