

# WHELEN<sup>®</sup>

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### Installation Guide: Front and Rear Upper Light Array Housings (For 700 and C7 Series lighthoods) 2015-18 Ford Mid and High Roof Transit

#### 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 they can operate the system without taking their 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.**
- **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 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 / Rear Light Array:

**IMPORTANT! The lightbar should be a minimum of 16" from any radio antennas!**

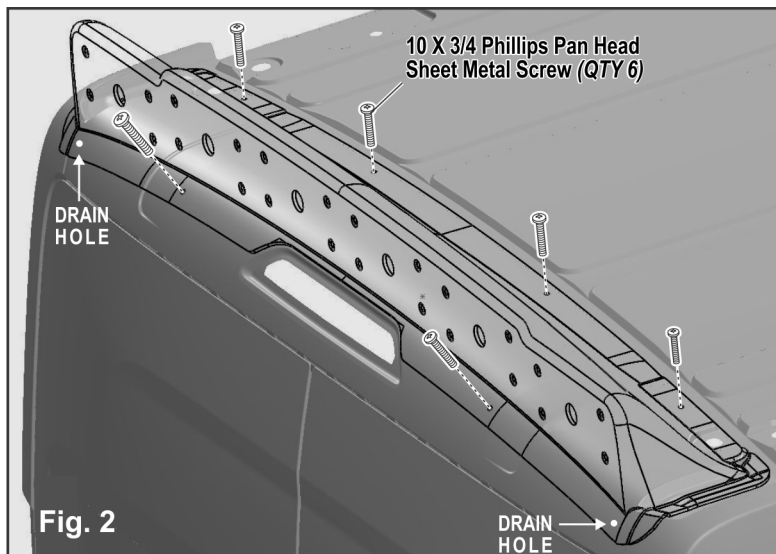
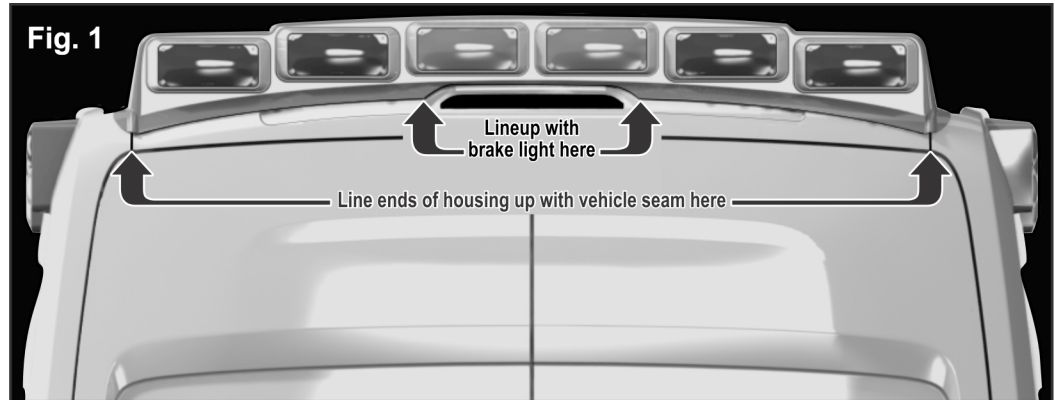
This housing will hold six 700 Series lightheads (Purchased separately). Because of the variety of options available, this manual only covers mounting the housing. Before mounting you will need to drill the hole for the wire harness to enter the vehicle and route the harness into the vehicle with the connectors positioned to plug into the lightheads. Due to the size of the housing it is recommended to use two installers for this installation.

### Installation:

1. Paint the housing (if desired).
2. Place the housing in its exact mounting position. The housing is contoured to the vehicle.

**NOTE: The vehicle should be parked on a level surface, the face of the housing where the lightheads are mounted must be vertically level.**

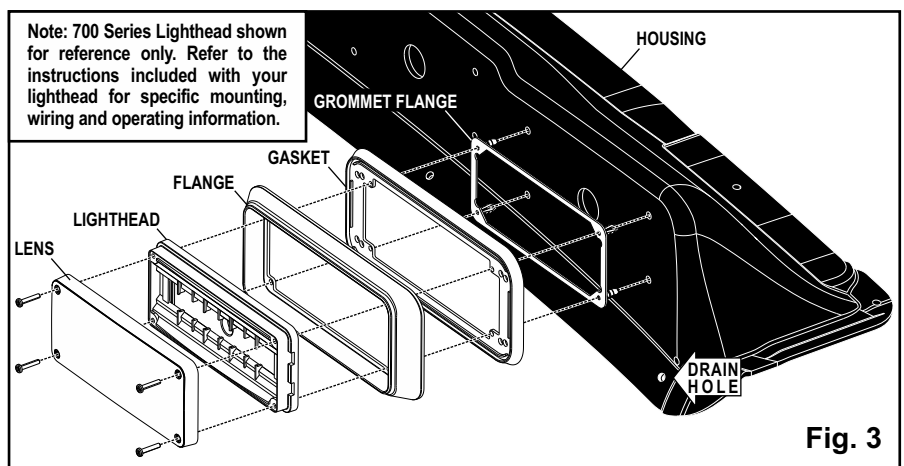
Use the vehicle contours and brake light to locate the housing as shown in figure 1. With the housing in place on the vehicle, mark the outer boundaries of the housing onto the vehicle with masking tape to indicate the area to apply the primer (step 4) then remove the housing from the vehicle.



3. Drill a hole for the wire harness, install a rubber grommet (customer supplied) into the hole and route the harness into the vehicle to your switch panel. Apply RTV sealer to waterproof this hole. It is left to the installation technician's discretion to select a path that will both protect the wiring from possible damage and not interfere with the operation of any vehicle components or equipment.
4. Using isopropyl alcohol wipes (included), clean the vehicle where it comes in contact with the mounting tape then prime those areas with the supplied 3M Keel Primer. Allow the primer to dry 5 minutes. Ready the leaders on the pre-applied tape. Be sure the leaders are protruding from under the housing so that you can pull the tape backing off once the housing is in place. **IMPORTANT! Once mounted, the housing is not easily removed.**

**IMPORTANT: The mounting tape on the other side of the housing is not a continuous loop. Several gaps in the tape allow for the drainage of condensation from the housing. If a sealant is applied to the perimeter of the housing you must be absolutely sure you do not cover the drain holes in the housing.**

5. Insert the lighthead connectors from the harness into the wire holes in the housing and temporarily tack them to the housing with tape. It is also a good idea to tape the harness and wiring to the vehicle or the inside of the housing so they do not move around after installation.
6. Hold the housing firmly in place in the exact mounting location while you pull the backing off of the tape. *Be very careful not to move the housing.*
7. With the backing removed, press the housing firmly against the mounting surface where tape is, to secure it. **WARNING! The adhesive used in this procedure is fully bonded after 72 hours @ 70°F (21°C). During this period, do not expose the housing to any unnecessary force, such as a high-pressure car wash.**
8. There are 6 pre-drilled holes in the housing. Using the housing as a template, carefully drill the six holes sized for the supplied 10 X 3/4 Phillips Pan Head Sheet Metal Screws and install the screws. This will help hold the housing down while the adhesive cures as well as keeping the housing mounted firmly when in use (Fig. 2). **NOTE: You have the option to install extra screws (customer supplied) if you wish to further secure the housing.**
9. Plug the lightheads into their connectors and install the lightheads to the housing (Fig. 3).
10. Extend the control cable to your power source and refer to the instructions included with your switches for switch wiring information.

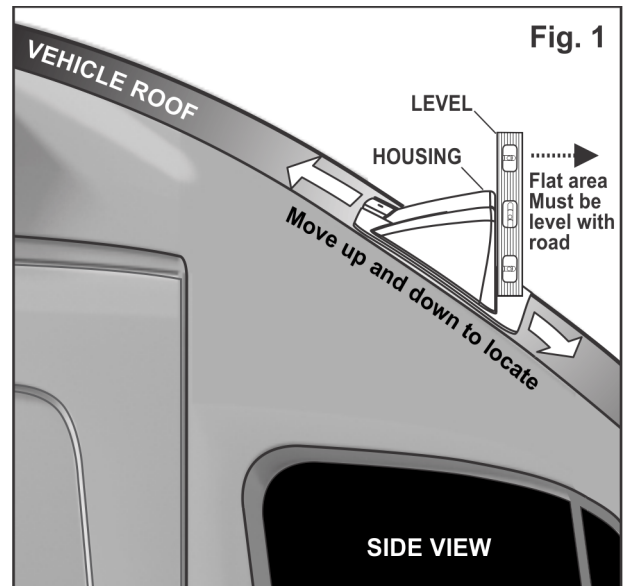


## Installation / Front Light Array:

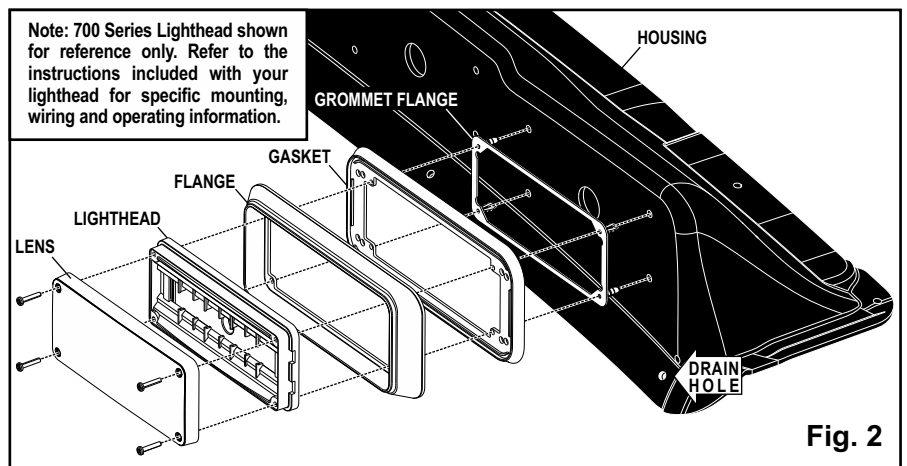
**IMPORTANT! The lightbar should be a minimum of 16" from any radio antennas!**

This housing will hold six 700 Series lightheads (Purchased separately). Because of the variety of options available, this manual only covers mounting the housing. Before mounting you will need to drill the hole for the wire harness to enter the vehicle and route the harness into the vehicle with the connectors positioned to plug into the lightheads. Due to the size of the housing it is recommended to use two installers for this installation.

1. Paint the housings (if desired).
2. **NOTE: The vehicle should be parked on a level surface. The face of the housing where the lightheads are mounted must be vertically level.** Place the housing in its approximate mounting position on the front of the vehicle. The housing should be centered left to right on the vehicle.
3. With the housing in place, put a level on the front flat area of the housing. With the level in place as shown (Fig. 1) move the housing up or down on the vehicle until the front flat area is level. The housing is fitted to the vehicle contours so that when it is in the exact mounting location, the front flat area will be level. Once you have the front level, check to make sure it is still centered and level side to side.
4. With the housing in place on the vehicle, mark the outer boundaries of the housing onto the vehicle with masking tape to indicate the area to apply the primer (step 6) then remove the housing from the vehicle.
5. Drill a hole for the wire harness, install a rubber grommet (customer supplied) into the hole and route the harness into the vehicle to your switch panel. Apply RTV sealer to waterproof this hole. It is left to the installation technician's discretion to select a path that will both protect the wiring from possible damage and not interfere with the operation of any vehicle components or equipment.
6. Using isopropyl alcohol wipes (included), clean the vehicle where it comes in contact with the mounting tape then prime those areas with the supplied 3M Keel Primer. Allow the primer to dry 5 minutes. Ready the leaders on the pre-applied tape. Be sure the leaders are protruding from under the housing so that you can pull the tape backing off once the housing is in place. **IMPORTANT! Once mounted, the housing is not easily removed. IMPORTANT: The mounting tape on the other side of the housing is not a continuous loop. Several gaps in the tape allow for the drainage of condensation from the housing. If a sealant is applied to the perimeter of the housing you must be absolutely sure you do not cover the drain holes in the housing.**



7. Insert the lighthead connectors from the harness into the wire holes in the housing and temporarily tack them to the housing with tape. It is also a good idea to tape the harness and wiring to the vehicle or the inside of the housing so they do not move around after installation.
8. Hold the housing firmly in place in the exact mounting location while you pull the backing off of the tape. *Be very careful not to move the housing.*
9. With the backing removed, press the housing firmly against the mounting surface where tape is, to secure it. **WARNING! The adhesive used in this procedure is fully bonded after 72 hours @ 70°F (21°C). During this period, do not expose the housing to any unnecessary force, such as a high-pressure car wash.**



10. There are 4 to 6 pre drilled holes in the housing. Using the housing as a template, carefully drill the six holes sized for the supplied 10 X 3/4 Phillips Pan Head Sheet Metal Screws and install the screws. This will help hold the housing down while the adhesive cures as well as keeping the housing mounted firmly when in use.

**NOTE: You have the option to install extra screws (customer supplied) if you wish to further secure the housing.**

11. Plug the lightheads into their connectors and install the lightheads to the housing (Fig. 2).
12. Extend the control cable to your power source and refer to the instructions included with your switches for switch wiring information.