

# WHELEN<sup>®</sup>

## ENGINEERING COMPANY INC.

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Installation Guide:  
Mirror-Beam™ ION™ Series™ and  
ION™ V-Series™  
Super-LED® Lighthouse  
2011 Dodge Charger

### 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.

**⚠ WARNING:** This product can expose you to chemicals including Methylene Chloride which is known to the State of California to cause cancer, and Bisphenol A, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

- 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!**


## To Remove the Side Mirror Assembly:

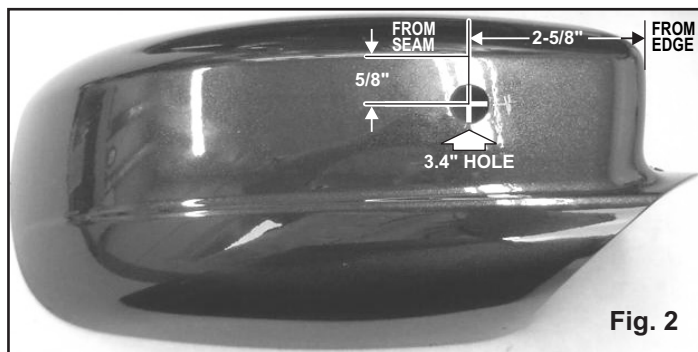
1. Remove the two clips (Fig. 1) from behind the top of the door panel, which hold the door panel on (A). Carefully pull the door panel out, just enough so that the panel covering the mirror base can be pulled away to access the mirror base (B). The panel covering the mirror base snaps in.



2. Carefully pull the panel covering mirror base away and remove the three nuts holding the mirror assembly on, unplug the wiring and remove the mirror assembly from the vehicle.

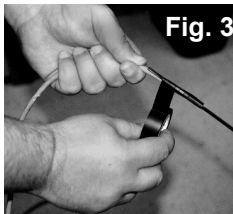
## Preparing Mirror Assembly:

1. Remove the cover from the front of the mirror assembly. The cover snaps off. Be careful not to brake the snaps. The safest method of removing the cover is to carefully insert a small screwdriver around the edge of the mirror and disengage the snaps (See above). 
2. Measuring from the seam across the top and the inner edge of the mirror assembly cover, mark off the wire hole location (Fig. 2). Drill the wire hole through the cover using a 3/4" drill.



## Preparing the Wire Harness:

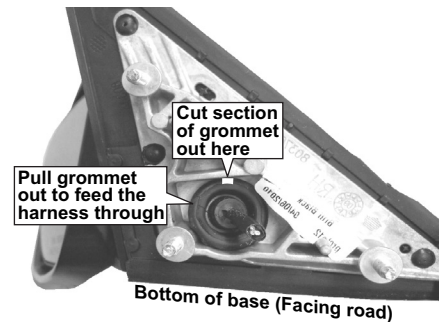
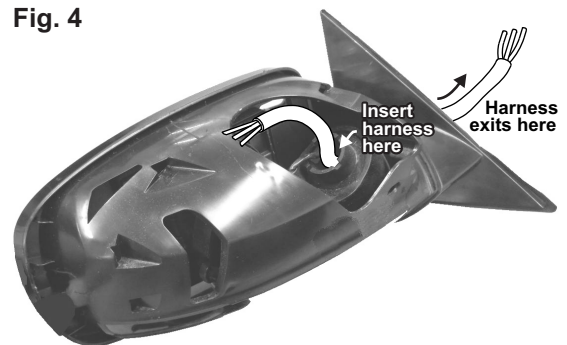
Because the harness cable must be routed through a specific, narrow and twisting path within the mirror assembly, it may be necessary to temporarily extend the length of the harness.

1. Locate the ty-wrap (included) and cut the fastener-end off. 
2. Locate the end of the harness cable that has PIN-type terminals installed on the free wires. Cut off the non-insulated wire (not used in this application).
3. Strongly secure the ty-wrap to the harness cable with electrical or similar tape. It is important to have a sufficient length of the ty-wrap secured to the harness (2" minimum) (Fig. 3).

## Routing Harness Cable:

First, carefully pull the grommet that holds the mirror power cable, out of the base so that you will be able to feed the Mirror-Beam™ cable through the wire hole. The power cable wires are attached to the grommet so be careful not to pull the wires out of their connection to the mirror.

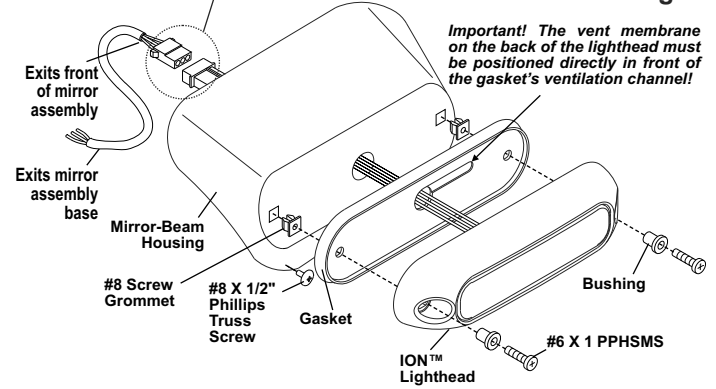
1. Insert the ty-wrap into the front of the mirror assembly via the same pathway as the mirror power cable. Push the ty-wrap through this opening until the end of the ty-wrap comes out of the mirror base. Pull the ty-wrap until slack in the harness is gone (Fig. 4).



2. Pull the harness through the mirror assembly and out the wire exit hole in the base. There should not be more than 4 - 5" of harness protruding from the front of the mirror assembly.
3. Snap the grommet with the mirror power cable back into its hole. You will have to cut out a small amount of the outside of the grommet to accommodate the Mirror-Beam™ cable (Fig. 4). Apply a small amount of RTV sealant around the cable where you cut the grommet.
4. Insert the end of the harness into the 3/4" hole you drilled in the mirror assembly cover and snap the cover back onto the mirror assembly.

Position connectors between Mirror-Beam™ housing and mirror housing

Fig. 5



5. Remove the ty-wrap from the harness. Install the socket connector (supplied) onto the end of the cable coming out of the front of the mirror assembly (Fig. 5). (see wiring diagram).

## Affixing Mirror-Beam™ Housing to Mirror Assembly:

1. Reconnect the mirror power cable and remount the mirror assembly onto the vehicle using the original hardware. Route the Mirror-Beam™ harness through the door, along the same path as the vehicle's main power harness. Make sure that neither of the harness cables are crimped or pinched. Tighten the nuts firmly and reattach the door panel and the panel covering the mirror assembly base.
2. With the lighthead and its gasket properly oriented (see fig.5), secure the lighthead to the Mirror-Beam™ housing. Plug the lighthead into the cable and tuck this connection between the Mirror-Beam™ housing and the mirror assembly (Fig. 5).
3. **NOTE: The following procedure requires that the mirror assembly be no colder than 60°F (18°C).** Thoroughly clean the plastic mirror assembly and the inside surface of the Mirror-Beam™ housing using a 50/50 mixture of isopropyl (not rubbing) alcohol and water. Dry completely.
4. Locate the three, 6" strips of double-sided adhesive tape (included) and position one 6" strip on the top and one on the bottom of the mirror assembly. When properly positioned, the tape will be centered between the inboard and outboard ends of the mirror assembly and the leading edge of the tape will be set back approximately 1/4" from the rear (mirror side) edge of the assembly. After the tape is positioned, it is important to apply pressure to the protective backing so that the tape adheres to the surface.
5. Cut the remaining 6" length of tape in half. Using the procedure outlined in the previous step, adhere one 3" length of tape to the outboard end of the mirror assembly and the remaining 3" length to the curved "neck" of the mirror assembly.
6. Fold the protective backing strips on the top, bottom and outboard tape strips so that 1/2" to 3/4" of backing is extended over the rear edge of the mirror assembly. Trim and remove the exposed tape. Remove protective backing from tape strip on "neck" of mirror.
7. Mount the Mirror-Beam™ housing onto the mirror assembly. **The housing must fully engage the mirror assembly.** Press the housing firmly onto the exposed tape on the "neck" of the mirror.
8. Remove the remaining protective backing strips. The housing must not be in contact with the backing strips. Starting with the outboard strip, using a small, flat blade screwdriver gently pry the housing about 1/4" away from the mirror assembly. Carefully pull the protective strip "tab" created in step 6, and remove it completely from the tape strip. Do not allow the strip to tear while being removed. Repeat for the tape strips on the top and bottom of the assembly.

9. Apply pressure to the Mirror-Beam™ housing at the tape locations. Maintain pressure for a minimum of 20 minutes to allow the tape to properly setup. This can be accomplished by wrapping the Mirror-Beam™/mirror assembly tightly with adhesive tape.

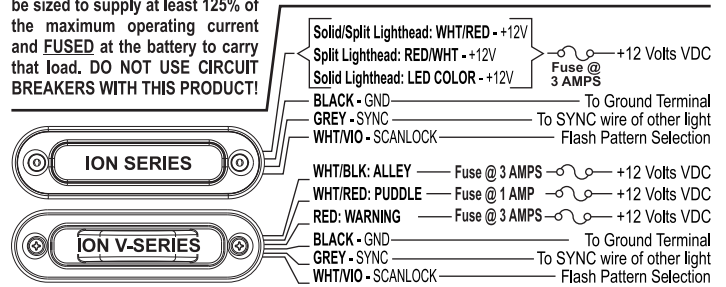
**WARNING: The tape adhesive used in this procedure is fully bonded after 72 hours @ 70°F (21°C). During this period, do not expose the Mirror-Beam™ to any unnecessary force, such as the high-pressure water from a car wash.**

**WARNING: The outer surfaces of this product may be cleaned with mild soap and water. Use of any other chemicals may void product warranty. Do not use a pressure washer.**

10. Using the factory-drilled hole in the Mirror-Beam™ housing as a guide, drill a hole into the mirror housing (1/8" drill bit). Secure the Mirror-Beam™ housing to the mirror housing with the supplied #8 X 1/2" black phillips truss screw.

## Connecting the Mirror-Beam™ to Power:

**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!**

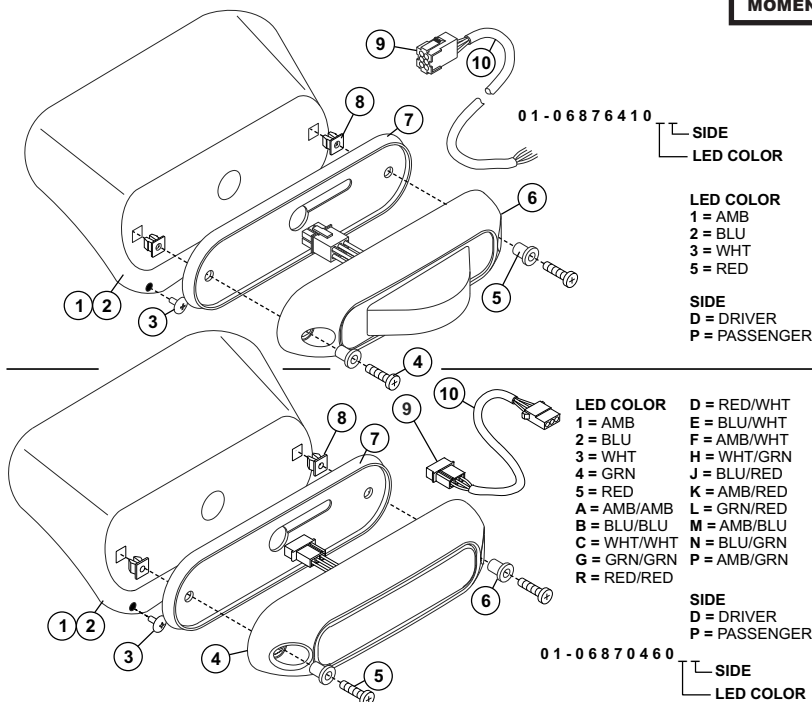


1. Re-connect the mirror assembly to it's main power harness. Route the Mirror-Beam™ harness through the door, along the same path as the vehicle's main power harness and connect to power.
2. Cut the non-insulated wire off the harness. After the connections are complete, confirm proper operation.

**IMPORTANT: It is the responsibility of the installation technician to make sure that the installation and operation of this product will not interfere with or compromise the operation or efficiency of any vehicle equipment! Before returning the vehicle to active service, visually confirm the proper operation of this product, as well as all vehicle components/equipment.**

## IMPORTANT WARNING!

**CAUTION! DO NOT LOOK DIRECTLY AT THESE LED'S WHILE THEY ARE ON. MOMENTARY BLINDNESS AND/OR EYE DAMAGE COULD RESULT!**



QTY	ITEM	PART NUMBER	DESCRIPTION
*		01-06876410	MIRROR-BEAM ION V-SERIES 2011 CHARGER
A/R	1	11-487336-L00	HOUSING, MIRROR-BEAM DRIVER 2011 CHARGER
A/R	2	11-487336-R00	HOUSING, MIRROR-BEAM PASSENGER 2011 CHARGER
1	3	15-081C1B-081	SCREW, 8 X 1/2 PHIL TRUSS SS, BLACK OXIDE
2	4	15-061416-160	SCREW, #6 X 1" PPHSMS TYPE A SS
2	5	21-0200237080	BUSHING
1	6	01-026E782-0	SUB ASSY, SURFACE MOUNT ION V-SERIES
1	7	38-0444165-00	GASKET
2	8	21-12080905-1	SCREW GROMMET, #8
1	9	01-0447089-00	KIT, CABLE INSTALLATION
1	10	46-0747089-15	ASSY, CABLE 3/C 18 GA 15'

QTY	ITEM	PART NUMBER	DESCRIPTION
*		01-06870460	MIRROR-BEAM ION SERIES 2011 CHARGER
A/R	1	11-487041-L01	HOUSING, MIRROR-BEAM DRIVER 2011 CHARGER
A/R	2	11-487041-R01	HOUSING, MIRROR-BEAM PASSENGER 2011 CHARGER
1	3	15-081C1B-081	SCREW, 8 X 1/2 PHIL TRUSS SS, BLACK OXIDE
1	4	01-026D363-0	SUB ASSY, SURFACE MOUNT ION
2	5	15-061416-160	SCREW, #6 X 1" PPHSMS TYPE A SS
2	6	21-0200237080	BUSHING
1	7	38-0444165-00	GASKET
2	8	21-12080905-1	SCREW GROMMET, #8
1	9	01-0415532-00	KIT, CABLE INSTALLATION
1	10	46-0742172-15	ASSY, CABLE 3/C 18 GA 15'