



Ultra Low Profile Modular Towbar Installation Manual



Please Note: These instructions are provided as a general guideline only. *Some vehicles may require special mounting, wiring, and/or weather-sealing. This is the sole responsibility of the installer.* Star Headlight & Lantern Co., Inc. assumes no responsibility for the integrity of the installation for this or any of its products.



WARNING!

This light utilizes high-intensity LED Lamps. **DO NOT** stare directly into the light while it is on, as momentary blindness and/or permanent eye damage may occur.



PROUDLY MADE IN THE USA
An ISO 9001:2008 Certified Company



WARNING!

It is the sole responsibility of the owner to ensure the lightbar is mounted securely. Check your light every time you enter the vehicle to ensure that it is mounted securely. The manufacturer assumes no responsibility for the secure mounting of this light.

NOTICE

Due to continuous product improvements, we must reserve the right to change any specifications and information, contained in this manual at any time without notice. Star Headlight & Lantern Co., Inc. makes no warranty of any kind with regard to this manual, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Signal Vehicle Products, Inc. shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this manual.



Star Headlight & Lantern Co., Inc.

455 Rochester Street Avon, NY 14414 Phone: 585-226-9787 FAX: 888-478-2797

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Mounting Instructions

Please review the separate Mounting Bracket manual that is also enclosed with your bar for mounting instructions.



PLEASE NOTE: THE DIRECT MOUNT IS THE STANDARD MOUNT INCLUDED WITH THE LIGHTBAR. THE HOOK MOUNTS MUST BE USED ON ALL POLICE AND/OR OTHER EMERGENCY VEHICLES!!! THE HOOK MOUNTS ARE SOLD SEPARATELY. THEY ARE NOT INCLUDED WITH EACH LIGHTBAR. THEY MUST BE ORDERED SEPARATELY. SEE THE ACCOMPANYING HOOK MOUNT SHEET FOR A COMPLETE LIST OF AVAILABLE MOUNTS AND KNOWN VEHICLE APPLICATIONS.

Wiring Instructions

All standard lightbar models are designed for 12VDC negative ground vehicles only. Reverse polarity may cause serious damage to the lightbar and/or vehicle. Contact the automotive dealer if there are any doubts about the polarity of your vehicle.



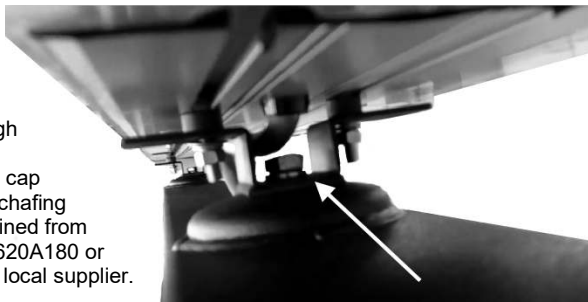
RF INTERFERENCE

Please take the following steps to help eliminate any Radio Frequency Interference (RFI) with your two-way radio.

- **DO NOT** run the power wire for the lightbar along same path as any antenna wires.
 - **DO NOT** run the power wire for the lightbar along same path as any radio power wires.
 - **DO NOT** tap power for the lightbar off of the radio power wires.
 - **DO NOT** mount the lightbar within 20" of any antennae. Sometimes mounting the lightbar or antenna over by just one foot can make a large difference in the interference.
 - Ensure the black wire from the lightbar has a good connection to the **negative side of the battery**.
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- All Phazer Towbars come with a 15' 8-conductor cable (plus a shield/drain wire) that is used to control the various functions of the lightbar. All wires are color coded and sized at the correct gauge. If this length is not sufficient, it is recommended that the wire harnesses be completely replaced, rather than splicing onto the current cable. This will reduce the number of wire connections and help prevent any weathering problems on these connections.
 - **CAUTION:** All wires and switches should be rated for at least 125% of their maximum current load. |
 - **TESTING THE LIGHTBAR BEFORE IT IS PROPERLY FUSED WILL VOID THE WARRANTY!!**
 - The black ground wire should be connected to the negative terminal of your vehicle's battery. This wire should be at least #10 AWG wire and be as short as possible in order to minimize the voltage loss in this wire and reduce any chance of overheating.
 - The *Wire Functions* section on the next page lists the different wire colors and the lights controlled by those wires. Your harness WILL contain all of the colored wires, the drain wire, and a foil shield, although they may not all be utilized.

(Wiring Instructions CONT'D)

Please Note: If you are using a bolt with sharp corners on the head, and if routing the power cable through the towbar mounting foot, we recommend adding a snap on cap over your bolt heads to avoid chafing the cable. These can be obtained from McMaster-Carr (7/16"-P/N 91620A180 or 1/2" P/N 91620A190) or other local supplier.



Wire Functions


PLEASE NOTE:

- All power wires should be fused with a 5 amp fuse, or alternately, if they are all running through a powered switchbox, it can be fused with a 20 amp fuse.
- This lightbar is shipped the wiring harness installed. Please review the **Cable Assembly Checklist** enclosed with your bar for proper identification of your wires. Each lightbar will have its own unique wiring key.
- This harness(es) will contain a ground wire (black) and 7 colored wires for various functions.

Black: (GROUND) - The black wire is the ground wire and MUST be connected to the negative terminal of the battery.

Bare Wire: (Drain/Shield/GROUND) - This wire will help eliminate RFI. We recommend that it be connected to ground.

Red w/Green: (Pattern Select/Touch and Release to +12VDC) - The red w/green stripe wire is used to select the flash pattern of your LEDs. **It will normally remain unconnected.** (For more detailed instructions, review the **Pattern Programming** section on the following page).

 **Please note:** The Red w/Green Stripe wire is only used when programming flash patterns. This wire MUST NOT be connected to continuous +12VDC!!! Once all of the patterns have been selected, tape the end of this wire off.

Red: (Warning 1) - Enables programmed flashing light group 1. Connect to +12VDC through a switch.

Red w/White: (Warning 2) - Enables programmed flashing light group 2. Connect to +12VDC through a switch.

White w/Orange: (Work Lights) - Enables all steady burn lights. Connect to +12VDC through a switch.

Yellow: (Left Turn/Brake) - Enables the left head for brake and left turn signal. Connect to your +12VDC left turn signal wire.

Green: (Right Turn/Brake) - Enables the right head for brake and right turn signal. Connect to your +12VDC left turn signal wire.

Brown: (Tail Lights) - Enables both turn heads in dim mode. Connect to the +12VDC tail light/running light wire.

Pattern Programming

Note: The front and rear flashing lights flash the same pattern as one another.

1. Connect the BLACK wire to GROUND and connect the RED wire to POWER (+12VDC). The front flashing lights will flash the current pattern.
2. Briefly touch and release the Pattern Select Wire (red w/green stripe) to +12VDC to scroll through the patterns. You can "jump" to various patterns by holding the Pattern Select Wire to power (+12VDC) for the length of time indicated in the chart below.
3. Once you have the pattern you like, disconnect the function wire from power and tape the end of the red w/green stripe wire so that it does not come into contact with +12VDC.

Patterns for Warning Lights

- 1 Quintflash w/Fast Single * (DEFAULT)
- 2 Fast Doubleflash
- 3 Fast Tripleflash
- 4 ECE Doubleflash τ_{13}
- 5 ECE Quadflash** τ_{13}
- 6 Standard Quadflash † τ_{13}
- 7 Quadflash w/Post Pop † τ_{13}
- 8 Singleflash † τ_{13}
- 9 Slow Doubleflash*** † τ_{13}
- 10 Variable Delta-Omega
- 11 Fast Quadflash w/Post Pop τ_{13}
- 12 Flicker

- * Shortcut to Pattern #1 (3 sec/1 flash)
- ** Shortcut to Pattern #5 (6 sec/2 flashes)
- *** Shortcut to Pattern #9 (6 sec/2 flashes)
- † SAE J595 Compliant Patterns
- τ_{13} California Title 13 approved Patterns

Alternating/Simultaneous Phase Programming

By default, some heads on the lightbar will flash alternately from the other heads. If you would like all of the heads to flash on and off together, please follow the instructions below.

1. Connect the BLACK wire to GROUND and connect the RED wire to POWER (+12VDC). The front flashing lights will flash the current pattern.
2. Hold the Pattern Select Wire (red w/green stripe) to +12VDC for 12 seconds (lights will flash 4 times) and release it. All of the heads should now flash simultaneously.
3. Repeat Step 2 to change back to alternating flashing.

LED FIVE YEAR LIMITED WARRANTY

The manufacturer warrants this LED light against factory defects in material and workmanship for five years after the date of purchase. The owner will be responsible for returning to the Service Center any defective item(s) with the transportation costs prepaid. The manufacturer will, without charge, repair or replace at its option, products, or part(s), which its inspection determines to be defective. Repaired or replacement item(s) will be returned to the purchaser with transportation costs prepaid from the service point. A copy of the purchaser's receipt must be returned with the defective item(s) in order to qualify for the warranty coverage. Exclusions from this warranty include, but are not limited to, domes, and/or the finish. This warranty shall not apply to any light, which has been altered, such that in the manufacturer's judgment, the performance or reliability has been affected, or if any damage has resulted from abnormal use or service.

There are no warranties expressed or implied (including any warranty of merchantability or fitness), which extend this warranty period. **The loss of use of the product, loss of time, inconvenience, commercial loss or consequential damages, including costs of any labor, are not covered.** The manufacturer reserves the right to change the design of the product without assuming any obligation to modify any product previously manufactured.

This warranty gives you specific legal rights. You might also have additional rights that may vary from state to state. Some states do not allow limitations on how long an implied warranty lasts. Some states do not allow the exclusion or limitation of incidental or consequential damages. Therefore, the above limitation(s) or exclusion(s) may not apply to you.

If you have any questions concerning this or any other product, please contact our **Customer Service Department** at (585) 226-9787.

If a product must be returned for any reason, please contact our Customer Service Department to obtain a Returned Materials Authorization number (RMA #) before you ship the product back. Please write the RMA # clearly on the package near the mailing label.