

INSTALLATION AND INSTRUCTION MANUAL

← ARROW → TRAFFIC DIRECTORS

TD93DLXTARO Series



TD93DLXTARO-48



TD93DLXTARO2-48



TD93DLXTARO-60



TD93DLXTARO2-60



TD93DLXTARO-72



TD93DLXTARO2-72



TD93DLXTARO-84



TD93DLXTARO2-84



TD93DLXTARO-96



TD93DLXTARO2-96



TD93DLXTARO-S



TD93DLXTARO2-S

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. Star Headlight & Lantern Co., 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.

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Important: This product is used to **direct** traffic. Improper use may result in vehicular collision, personal injury and/or death. Star Headlight & Lantern Co., Inc., and its subsidiaries shall not be held responsible for damages directly or indirectly caused by improper use of this product. Always carefully consider the effect on traffic that the selected light pattern will have before engaging the lights.



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.

Before beginning the installation:

- Determine where the Traffic Director is to be mounted (on your lightbar, on your roof, in your rear window, etc).
- Check to see that there are no obstructions hindering the visibility of your traffic director.
- Then select a location to mount your controller. The controller must be located in a dry location out of direct sunlight, free of dirt and dust. Under the vehicle's instrument panel is usually the best choice.
- Once you have selected these locations, determine the path your cable, which connects the controller to the Traffic Director, will take. The cable should exit the left side of the Traffic Director when you are facing both the stick and the controller.



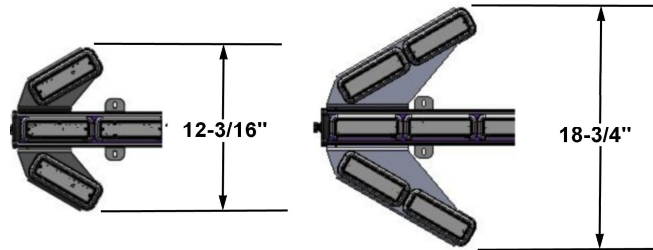
These traffic directors come with a short pigtail out of the side of the light that attaches to the main harness. The available lengths for the harnesses are 15', 30', 45', and 60'. Be sure the harness you ordered is long enough for proper installation. **Star does not recommend "splicing in" additional cable when the supplied cable is too short.** If it is too short, you will need to order a harness of the correct length.



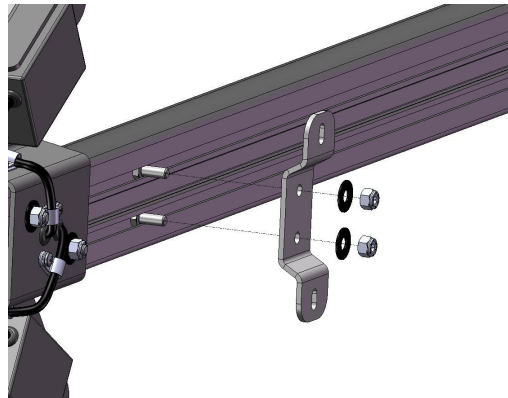
It is the sole responsibility of the owner to ensure the lightbar is mounted securely. Check your light every time you enter the vehicle to ensure that it is mounted securely. The manufacturer assumes no responsibility for the secure mounting of this light.

Mounting Instructions

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.

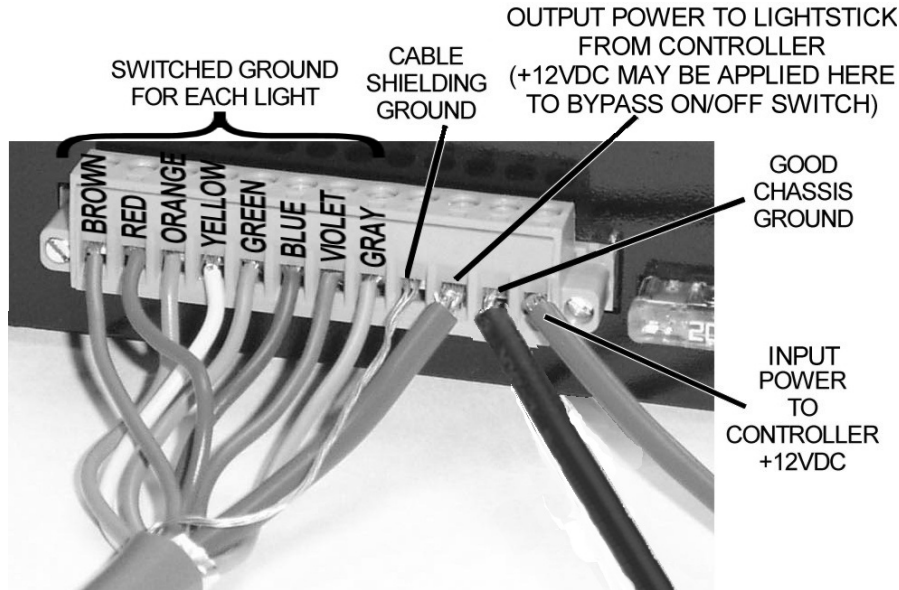


1. **Caution:** This light MUST be mounted such that the cable exits the left side of the light as you face it. Small weep holes have been designed into the bar that allow any condensation forming inside the extrusion to drain. These holes must remain on the bottom of the light. The light is clearly labeled as to which side must be mounted up. Mounting the light upside down will void the warranty.
2. Each bar light assembly comes equipped with slots along the entire length of the extrusion that will retain 1/4" hex head bolts. These bolts should come preinstalled on the light. The number of bolts will vary depending upon the length of your light.
3. Two or more surface mounting brackets are also included. Optional "L"-Brackets are also available for an additional charge.
4. Also included are several 1/4"-20 x 3/4" hex head bolts (pre installed on the extrusion), flat washers, and nuts to attach the brackets to your traffic director.
5. Slide each mounting bracket over two of the bolts and secure each bracket with two flat washers and nuts as shown to the right. Only hand tighten the nuts to allow for any necessary final adjustments. Repeat for all of the enclosed brackets.
6. Place the light against the mounting surface, aligning the mounting brackets where desired and mark the holes.
7. Remove the light and fully tighten the nuts that secure the mounting brackets to the light.
8. Use appropriate hardware (*user supplied*) to mount the bracket to your mounting surface.



CAUTION: Be sure to carefully inspect and test the integrity of your mount.

Electrical Connections



Please note: If you are connecting a 24VDC version, the Input Power (and bypass power) would be 24VDC in the diagram above.

1. The controller should be installed inside the vehicle where it will not be exposed to moisture.
2. The harness should have a black round weather proof connector on one end that will attach to the pigtail on the Arrow Traffic Director. The other end of the harness should have a green connector (part #CPSS-153) attached to it. Eight colored 18 AWG wires, one bare drain wire, and a large red 12AWG wire should already be connected from the harness to the connector. It may be necessary to remove the green connector when routing your harness. Use the diagram above when reconnecting the wires to ensure they are reinstalled in the same location they were removed from.
3. Route the harness to the controller ensuring that there are no sharp edges that may damage the harness.
4. Connect a ground wire to the interior empty terminal on the green connector. (See diagram above) The corresponding terminal plugs into the outlet on the back of the controller and is marked **BAT-**.



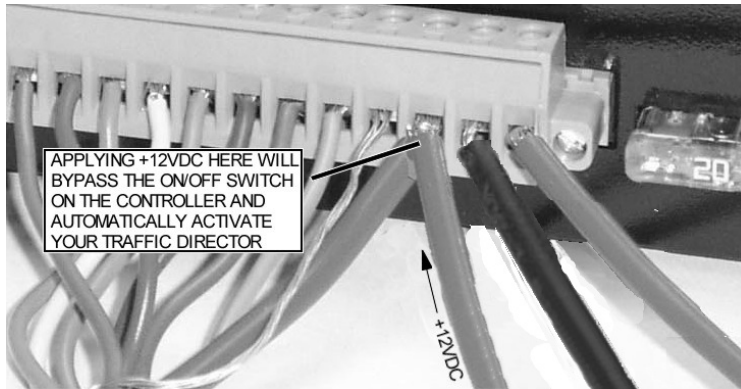
It is imperative that you supply a ground wire to the terminal marked "BAT -" on the controller. You must not let the controller's case supply ground. Use 12 AWG wire for all power and ground connections

5. Supply power for the unit from a **fused**, +12 VDC source (or 24VDC for applicable models) capable of delivering at least 15 amps of current (use a 20 amp fuse). Star recommends the use of an ignition switched supply to avoid the possibility of draining the vehicle's battery should the unit be accidentally left on.
6. Connect your power supply to the terminal on the green connector that corresponds to the outlet on the back of the controller marked **BAT+**.
7. Your Arrow Traffic Director should now be ready to operate.

(Wiring CONT'D)

Wiring for Optional Automatic Activation

1. The Traffic Director may also be wired to automatically bypass the TD77-2 (or TD77-2-24) controller On/Off switch and turn on through the use of an alternate power source (i.e. lightbar switch, siren switch, reverse switch, etc.).
2. When you apply +12VDC to the 12AWG wire supplying the stick with power, you will bypass the On/Off switch and activate the Traffic Director. When activated, the Traffic Director will automatically enter the "Warn" pattern. **Please note: If any other lights are connected to this "bypass" circuit they will activate any time the traffic director is powered up unless they are isolated in some way (e.g. diode or relay).**



Please note: If you are connecting a 24VDC version the bypass power would be 24VDC in the diagram above.

Operation

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1. Your new traffic director is a powerful tool that can aid you in traffic control; or if used *improperly*, it could direct traffic into a *dangerous situation*.

USE CAUTION!!!

TD77-2 or TD77-2-24Controller

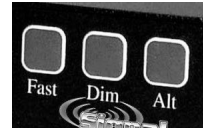
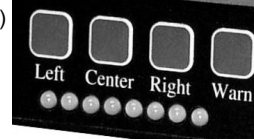
2. Operation of your Traffic Director is straightforward. The controls include an *On/Off* switch, four *Pattern Select* buttons, and three additional "option" buttons.



3. Turn the vehicle's ignition switch to the on or accessories position to supply power to the controller (if necessary) and press the On/Off switch on the control box. The LED display should begin to show the "Warn" pattern and the "Warn" label should glow red.

(Operation CONT'D)

- Select the desired pattern (if different from the current pattern) by using any of the *Pattern Select* buttons. The **Pattern Select** buttons include *Left*, *Center*, *Right*, and *Warn*. The selected pattern label should change to red and the light output should mimic exactly the display on the controller.
- The TD77-2 series controllers also have three "option" buttons: Fast, Dim, and Alt.



Dim

This Traffic Director has three different levels of "brightness". This allows the user the option to dim the light for nighttime operation. When the "Dim" button is pressed once the "Dim" label will change from green to red and the Traffic Director will dim slightly (50%). Pressing it a second time will change the button to orange and the traffic director will dim further (15%). Pressing it a third time will return the Traffic Director to full brightness.

Alt and Fast Buttons

The Alt and Fast buttons have a different effect on the Left, Center Out, and Right patterns than the effect they have on the Warn pattern.

Alt Function for Left / Center Out / Right Directional Patterns

Note: This option only applies if you have your controller in Standard Mode. When using the TD77-2 controller with the Arrow Traffic Directors, the controller MUST only be set for standard mode.

For any of the four patterns, the "Alt" button will scroll through 11 different alternate versions of each pattern.



ONLY PATTERNS A, B, C, or D SHOULD BE USED WITH THE Arrow Traffic Directors. PATTERNS E-K WILL ILLUMINATE THE END ARROWS POSSIBLY MISDIRECTING TRAFFIC.

7-Light Patterns

- A. Progressive 7 - Starts with one light and consecutively adds lights to the pattern until they are all lit. The first light (usually in the shape of an arrow) will not illuminate.
- B. End Blink 7 - Same as the Progressive 7 pattern with the exception that the last light will double blink.
- C. Dual Light 7 - Only two lights will be lit at the same time. The two lights will "roll" in the direction of the selected pattern. The first light will not illuminate in this pattern.
- D. Progressive 7 T13- Superfast Progressive 7 (CA Title 13 compliant w/approved stick).

DO NOT USE THE PATTERNS BELOW!!!!

8-Light Patterns

- E. Progressive 8 - Same as the 7-Light pattern above, except all lights are used.
- F. End Blink 8 - Same as the 7-Light pattern above, except all lights are used.
- G. Dual Light 8 - Same as the 7-Light pattern above, except all lights are used.
- H. Progressive 8 T13- Fast version of Progressive 8 (California Title 13 compliant).
- I. Quad Light 8 T13 - 4-Head rolling pattern (California Title 13 compliant).
- J. Snake 8 T13 - 8-head rolling pattern (Progressive on, then Progressive off) (California Title 13 compliant).

6-Light Pattern

- K. Outer Flashing - Same as the Progressive pattern, but only uses the six center lights. The outer two light alternate quickly back and forth.

(Operation CONT'D)

Fast Function for Left / Center Out / Right Patterns

The "Fast" button provides the user with the option to display any of the patterns (Left, Center Out, or Right) in a "faster" mode. Pressing the "Fast" button once should change the "Fast" label to red and speed up the pattern. Pressing the button again will change the "Fast" label back to green and revert the pattern to the standard speed.

Alt and Fast Functions for Warn Pattern (Standard Mode Only)

When the Traffic Director is in the Warn pattern, the Alt button will scroll through 10 different "Warning" type patterns. The 10 versions differ depending upon if you have the Fast button activated or not. Review the chart below for the different versions that can be scrolled through.

Fast Button De-Activated

1. 6-Head Warn Pattern
2. 6-Head Warn w/Alternating Ends
3. 8-Head Warn
4. Search Light
5. Side Band Alternate
6. Random 1 †
7. Random 2 †
8. 8-Head Warn T13 †
9. 8-Head X T13 †
10. 8-Head Jumble †

Fast Button Activated

1. 6-Head Random 1 †
2. 6-Head Warn w/Alternating Ends
3. 8-Head Random 2 †
4. Search Lights †
5. Side Band Alternate †
6. Hyper Random 1 †
7. Hyper Random 2 †
8. 8-Head Warn T13 †
9. 8-Head X T13 †
10. 8-Head Jumble †

† - These patterns are not recommended for use with the TD77 or other incandescent traffic directors
T13 - California Title 13 and SAE compliant patterns when used with approved sticks

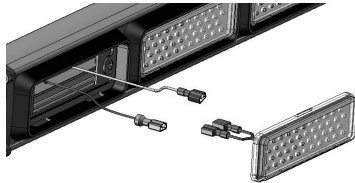
6. When using the Traffic Director, always be sure that the pattern selected is appropriate for the present hazard condition. **The potential danger in displaying an inappropriate pattern cannot be overstated.**
7. To avoid possible damage, the controller should be turned off prior to engine starting. It is possible, though not likely, to confuse the controller if the vehicle's battery is low and the engine is started with the controller running. If you notice that the controller's display shows something out of the ordinary, simply push the power switch to the off position and back on again. This should clear any fault caused by improper voltage being supplied to the unit.

Once your Traffic Director is installed, please test all the patterns, options, and alternate versions to familiarize yourself with the various patterns and the operation of the controller.

Replacement Parts

This light uses state-of-the-art light Emitting Diode (LED) technology. These Ultra-Bright LEDs that are operated in a multiplexed mode to efficiently produce light output with lifetimes up to 100,000 hours. Under normal circumstances, you will not need to replace any lights in these lightsticks.

The TD93DLXTARO series is designed such that if there is a failure in one of the heads, the head can easily be replaced without removing the lightstick from the vehicle. The replacement head is a part #TD93DLXTRH-* or TD93DLXT24RH-* (*=color).



Replacement Parts CONT'D)

TD77-2 Series Controllers

The TD77-2 controller, used with all of the traffic directors, contains two ATO "blade-type" fuses located in the back of the controller. The fuses are accessible from the rear of the controller. The 20 amp fuse controls power to the bar light assembly, while the 5 amp fuse powers the controller. If the 20-amp fuse blows the controller will continue to function normally, however, the roof lamps will not. It is important to note that under normal circumstances the only reason a fuse will blow is because there is a fault in the system. **If a fuse blows repeatedly it is a signal that something is wrong.** Do not replace a blown fuse with anything other than the same amperage rating as marked on the rear panel of the controller; doing so may damage the unit, or worse yet start a fire. Likely causes of blown fuses are improper wiring, harness damage, and/or improper bulb type.

Service

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 Star 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 Material Authorization number (RMA #) before you ship the product to Star. Please write the RMA # clearly on the package near the mailing label.



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