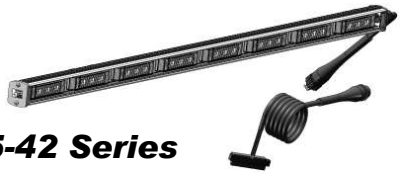
TDDL15 and TDLIN Series
TRAFFIC DIRECTORS

TDDL15-36 Series



TDDL15-42 Series

TDDL15-47 Series

TDLIN-47 Series

TDLIN-36 Series

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

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SINCE 1889 STAR WARNING SYSTEMS® STARSIGNAL® VEHICLE PRODUCTS BRADFORD Vehicle Solutions www.starheadlight.com

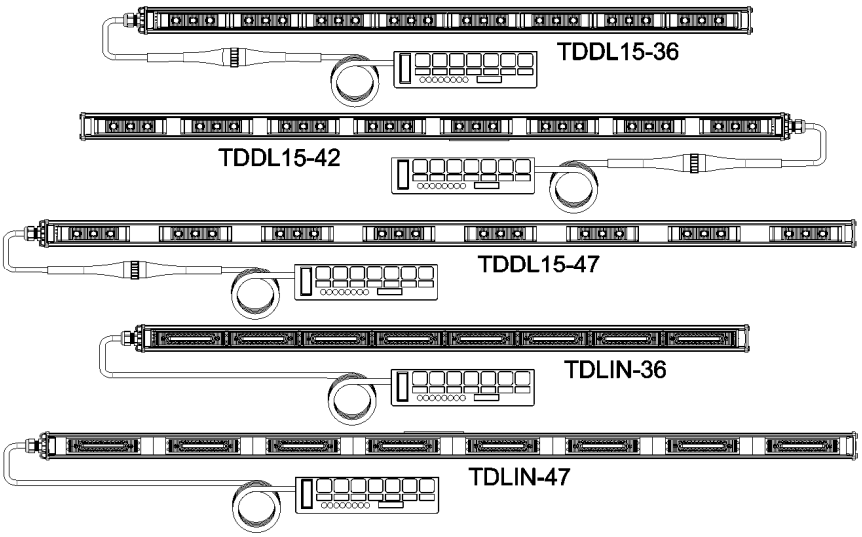
PLITSTR192 REV. E 3/10/16

Please Note: **These instructions are provided as a general guideline only. Specific mounting and/or wiring, may be necessary and are 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.**

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. If you are installing a TDDL15-47 or TDDL15-36 the cable should exit the left side of the Traffic Director when you are facing both the stick and the controller. If you are installing the TDDL15-42 the cable should exit the right side of the Traffic Director when you are facing both the stick and the controller.



- **TDDL Series Only -** Be sure the cable attached to your Traffic Director is long enough for proper installation. If it is too short, you will need to order a longer harness to replace the one that came with the lightstick. ***Star does not recommend "splicing in" additional cable when the supplied cable is too short (or if you damage the original harness during installation).***
  Available lengths include:

15'	SWH-271-ARO-15
22'	SWH-271-ARO-22
30'	SWH-271-ARO-30
45'	SWH-271-ARO-45
60'	SWH-271-ARO-60

Mounting Instructions

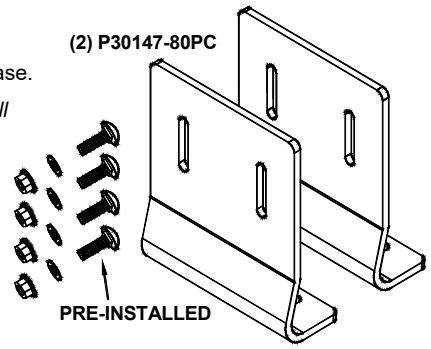
The following mounting instructions describe the standard, most common way to mount this light. This method may or may not apply to your vehicle. Because vehicles can vary widely in their design, it may be necessary to configure the brackets differently than described. Some applications may require you to design your own custom brackets. The installer assumes all responsibility for the integrity of the installation. ***It is the sole responsibility of the owner to ensure the traffic director is secure.***

***Standard Mounting** (excluding CV and TA models)*

1. These traffic directors come with two "L"-Brackets (P/N P30147-80PC) to assist in mounting it to a lightbar or other secure base.

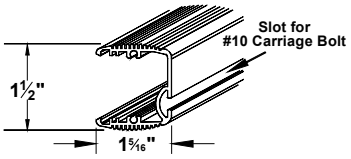
   The TDDL15-47CV and TDDL15-42TA will use alternate mounting (see pages 3-5).

   Also included are four flat washers and four flanged nuts to use the with the four #10 carriage bolts pre-installed on your traffic director.



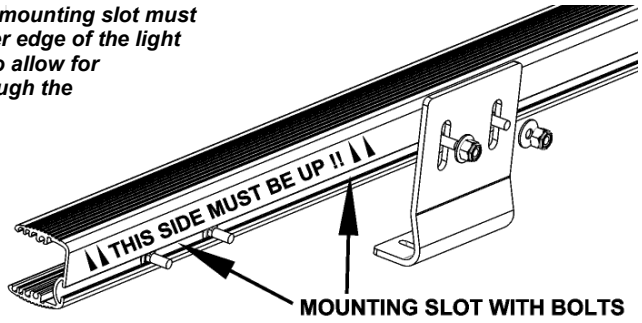
2. Locate the four #10 carriage bolts in the slot along the back of the extrusion.

   Use these bolts to mount the lightstick directly to your mounting surface, or you can mount the lightstick to the "L" brackets.



   Please note that the mounting slot must be closer to the lower edge of the light when you mount it to allow for proper draining through the weep holes.

   Failure to mount this bar with the slot towards the bottom will void the warranty.

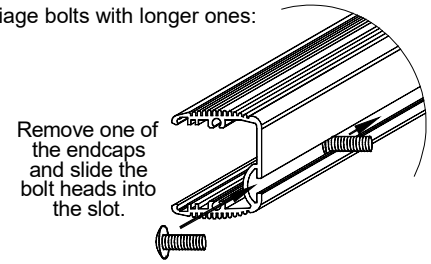


3. OPTIONAL: To replace the preinstalled carriage bolts with longer ones:

   A. Remove the end-cap on the opposite end of the cable and slide the original bolts out of the channel.

   B. Remove old bolts from the channel and slide in the new bolts.

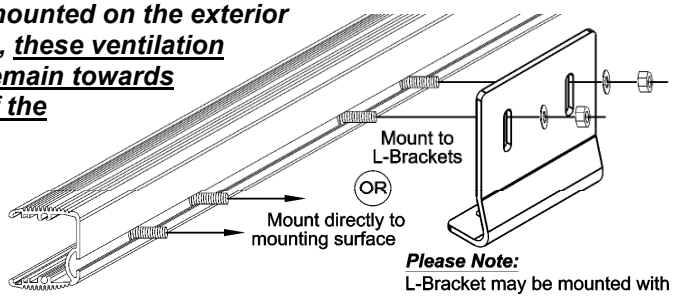
   C. Reattach the endcap. When reinstalling the end-cap make certain the gasket is positioned correctly.



(Mounting CONT'D)

4. Whether you are using the L-Brackets or not, slide the bolts to their desired location along the track and mount the bolts through pre-drilled holes in your vehicle or through the mounting brackets. Use one each of the enclosed flat washer and nut on each bolt. If you are using the L-brackets provided, you will need to supply the appropriate bolts or other fasteners to attach the brackets to your mounting surface.

Please note that there is a label on the extrusion that indicates which side should be facing up. If you do not have the proper side up, the lightstick will direct traffic in the opposite direction. In addition, there are ventilation holes in the endcaps to help eliminate any condensation. If the lightstick is mounted on the exterior of the vehicle, these ventilation holes must remain towards the bottom of the lightstick.



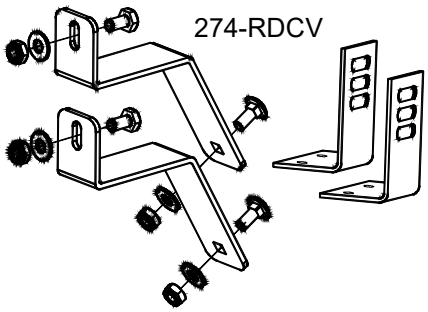
Please Note:
L-Bracket may be mounted with the bend to the front or rear and top or bottom, depending upon your application.

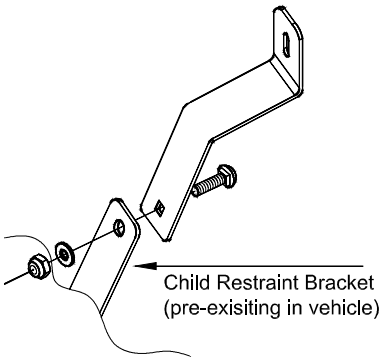
CAUTION: Be sure to carefully inspect and test the integrity of your mount.

TDDL15-47CV Mounting

(Ford Crown Victoria Mounting)

1. The 274-RDCV mounting brackets enclosed with the 47" TDDL15-47CV are designed to mount directly to the child restraint fixtures inside the vehicle on the rear deck, facing out the rear window.

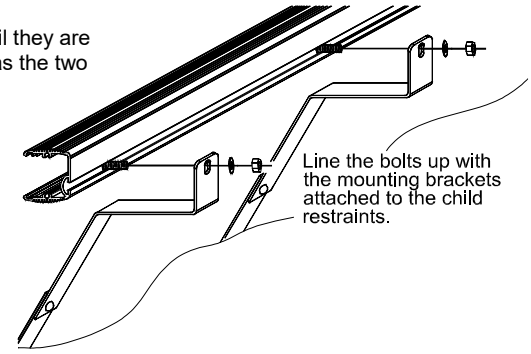




2. Using the carriage bolt enclosed with the brackets, mount one of the 274-RDCV brackets to each of the child restraint fixtures located on the rear deck of the vehicle. Secure them with the washers and lock nuts provided.

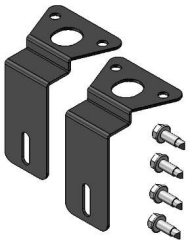
(Mounting CONT'D)

3. Slide the bolts along the track until they are spaced the same distance apart as the two child restraint fixtures. Use a flat washer and nut on the bolt to mount the lightstick to the brackets now attached to the child restraint fixtures. Leave the nuts loose until you adjust the bar horizontally, centering it in the rear window. Once it has been adjusted to the desired location, tighten the nuts, securing the lightstick.



4. The TD77-2 Controller comes with a "U"-Bracket. If that bracket will not work for your application, the two "L"-Brackets included in the 274-RDCV kit can be used instead.

TD92-7KTA
TAHOE BRACKET KIT

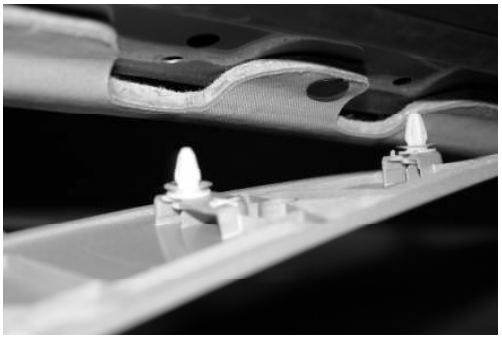


TDDL15-42TA *(Chevy Tahoe Mounting)*

1. The TD92-7KTA is included with the TDDL15-42TA. It includes
   (2) lightstick mounting brackets and
   (4) 1/4" x 3/4" self-drilling hex head screws.

2. These brackets are designed to mount to the roof framework at the rear of the vehicle. Pull down the overhead plastic trim from the rear of the Chevy Tahoe.

3. Locate the third upholstery "push-it" mounting hole from end.



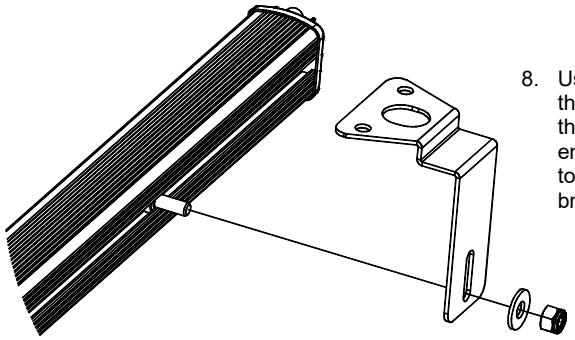
(Mounting CONT'D)

4. Place the large, oblong hole in the bracket over the upholstery mounting hole, with the wider edge of the bracket facing towards the rear of the vehicle.

5. Secure the bracket with two ¼" x ¾" self-drilling hex head screws through the two smaller holes in the corners of the bracket.

6. Repeat steps 3-5 on other side of vehicle.

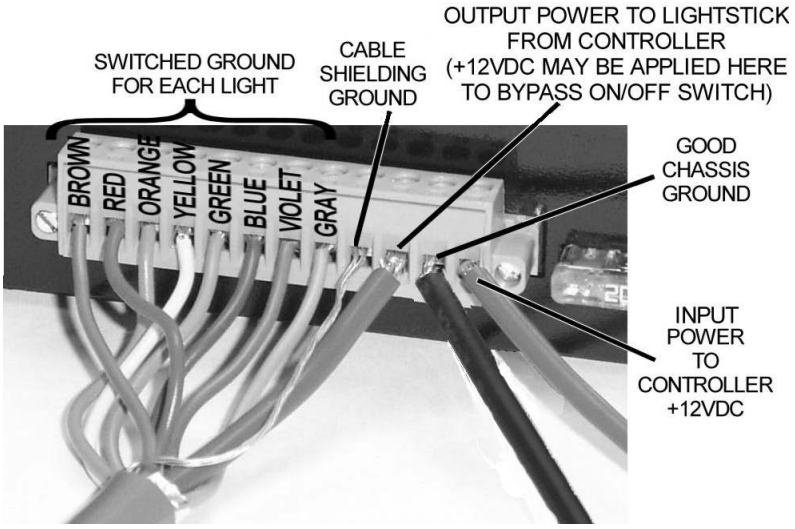
7. Replace the plastic trim piece.



8. Use the 1/4-20 Bolts installed on the back of the traffic director with the washers and lock nuts enclosed with the traffic director, to secure the traffic director to the bracket.

Because of the wide variety of mounting applications, Star Headlight & Lantern Co., Inc. assumes no responsibility for the secure mounting of this light. It is the responsibility of the installer and/or owner to ensure the lightbar is mounted securely. Check your light every time you use the vehicle to ensure that it is mounted securely.

Electrical Connections



<u>For the TD77-2-24</u> - Please substitute +24VDC for all references to +12VDC.

1. The cable attached to your Traffic Director should have a green connector (part #CPSS-153) attached to it. Eight colored wires, one bare drain wire, and a large red wire should already be connected from the cable to the connector.
2. 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

3. Supply power for the unit from a ***fused***, +12 VDC source 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.

   If you are utilizing the On/Off Switch bypass option AND you have other devices connected to the same bypass switch, you MUST connect the bypass power through a relay to prevent the other devices from powering up when you use the standard On/Off switch on the TD controller. Please contact our Customer Service Department if you need further details on this.

4. Connect your power supply to the terminal on the green connector that corresponds to the outlet on the back of the controller marked **BAT+**.
5. The lamp brightness will be somewhat diminished if a large voltage drop exists between the vehicle's battery and the controller. Don't forget to **fuse the feed *and* signal wires** at their source, with appropriate values. 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 16 AWG ***(14AWG for 40'+)*** wire for all power and ground connections.
6. Your Traffic Director should now be ready to operate.

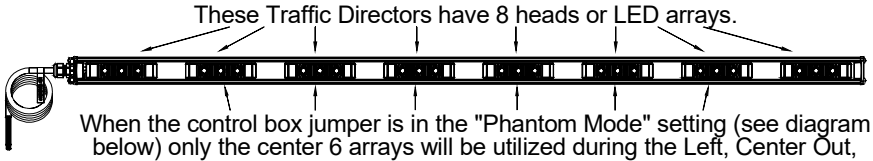
Optional Jumper Settings

If the standard traffic directing mode is acceptable, skip this section.

The TD77-2 control box and the ULB42-TD-2 control box are identical except for the factory default setting of a jumper located inside the control box. This jumper will control the output of the two arrays on each end. The TD77-2 comes with the jumper defaulted for standard operation.

TD77-2

Optionally you may wish to set the jumper so that your arrowstick operates in "Phantom" mode. In the “Phantom” mode, the end lights are not part of the “traffic directing” patterns. When the Alt button is pressed, both of the end lights will flash back and forth in a “warn” type display. (In the "standard" mode, the end lights will follow the normal “traffic directing” pattern you select on the control box.) If you wish to operate your traffic director in Phantom Mode, (6-head traffic directing), follow the instructions below to remove the cover and change the jumper setting. If the standard mode is acceptable, skip this section**.**



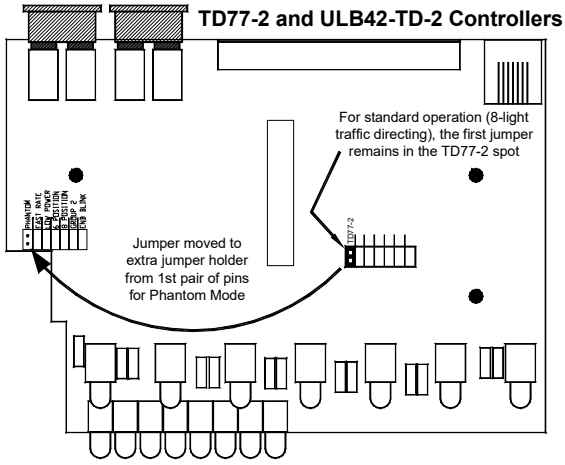
When the control box jumper is in the "Phantom Mode" setting (see diagram below) only the center 6 arrays will be utilized during the Left, Center Out, and Right patterns. The outer two heads or arrays with flash alternately.

Arrow stick Control Box Cover Removal

Remove the four recessed Philip head screws (two on each side of the arrow stick control box). Remove the top cover by sliding it towards the front of the unit.

TD77-2 and ULB42-TD-2 Controllers

Locate the extra jumper location near the fuses. Move the jumper from the “Option” jumper location near the center of the board over to the extra jumper section.



Operation

> ***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.

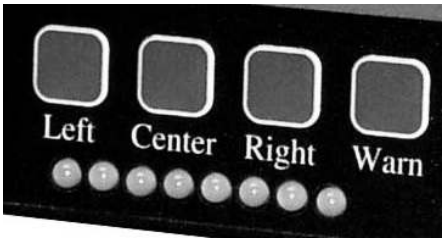
1. Your new traffic director is a powerful tool that can aid you in traffic control; or if used *improperly*, it could direct traffic into a *dangerous situation.*
   USE CAUTION!!!

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

TD77-2 or TD77-2-24 Controller

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.

4. 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 roof display should mimic exactly the display on the controller.



5. The ULB42-TD-2 controller also has three "option" buttons: ***Fast***, ***Dim***, and ***Alt***.

Dim Button

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: *The options described below only apply if you have your controller in Standard Mode. If you set the jumper for Phantom Mode (as described on page 7) the Alt button will only enable or disable the two outer flashing arrays/heads and you should skip to the next page.*

When your controller has the jumper set for ***Standard Mode*** (default), and when you have the *Left*, *Center-Out*, or *Right* pattern selected, the "Alt" button will scroll through eleven different alternate *versions* of that pattern. The version selected will apply to all three directional patterns and will remain selected even if the unit is powered off.

- The first four versions (A-D) are 7-light versions designed for use with traffic directors that may have an arrow painted on each end *(not applicable to TDDL15)*.
- The next four (E-H) are the same as the first four, but utilize all eight lights.
- I and J provide two additional 8-light versions.
- The final version (K) uses only the center six lights. The outer two lights are rapidly flashed (similar to Phantom mode).

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 version 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 ***(California Title 13 and SAE compliant *)***.

8-Light Patterns

E. Progressive 8 - Same as the 7-Light version above, except all 8 lights are used.

F. End Blink 8 - Same as the 7-Light version above, except all 8 lights are used.

G. Dual Light 8 - Same as the 7-Light version above, except all 8 lights are used.

H. Progressive 8 T13 - Superfast version of Progressive 8 ***(California Title 13 and SAE compliant *)***

I. Quad Light 8 T13 - 4-Head rolling version ***(California Title 13 and SAE compliant *)***

J. Snake 8 T13 - 8-head rolling version (aka Progressive On, then Progressive Off) ***(California Title 13 and SAE compliant *)***

6-Light Pattern

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

**** When used with an approved lightstick***

Fast Function for Left / Center Out / Right Patterns

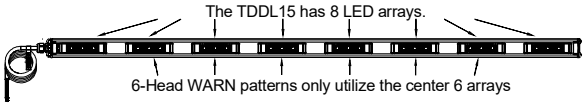
The "Fast" button provides the user with the option to display any of the patterns (Left, Center Out, or Right) in a "faster" mode. Pressing the "Fast" button once should change the "Fast" label to red and speed up the pattern. Pressing the button again will change the "*Fast*" label back to green and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

Alt and Fast Functions for Warn Pattern

When the Traffic Director is in the Warn pattern, the Alt button will scroll through 10 different versions of "WARN" 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	***Fast Button Activated***
1. 6-Head Warn Pattern	1. 6-Head Random 1 †
2. 6-Head Warn w/Alternating Ends	2. 6-Head Warn w/Alternating Ends
3. 8-Head Warn	3. 8-Head Random 2 †
4. Search Light	4. Search Lights †
5. Side Band Alternate	5. Side Band Alternate †
6. Random 1 †	6. Hyper Random 1 †
7. Random 2 †	7. Hyper Random 2 †
8. 8-Head Warn T13 †	8. 8-Head Warn T13 †
9. 8-Head X T13 †	9. 8-Head X T13 †
10. 8-Head Jumble †	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.**

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.

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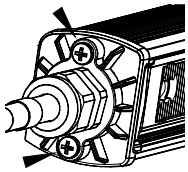
Removable Harness *(TDDL15 series only)*

The TDDL15 series lights come equipped with a removable harness. If for any reason you need to remove the light from the vehicle, or need to replace the harness, you can remove either, without having to remove both. Approximately 6" from the light, along the harness, there is a quick disconnect that can separated. See page 2 for a list of harness lengths available.

Troubleshooting



These lightsticks can be easily disassembled for troubleshooting purposes. To gain access to the interior of the light, remove the two screws in the endcap with the wire harness. The entire assembly should slide out of the housing allowing you to inspect the internal wiring looking for broken connections. ***DO NOT OVERTIGHTEN SCREWS WHEN REASSEMBLING!!!***

The TD77-2 controller 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 2 amp fuse powers the controller. If the 20 amp fuse blows the controller will continue to function normally, however, the lightstick 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 start a fire. Likely causes of blown fuses are improper wiring or harness damage.

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 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.

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.