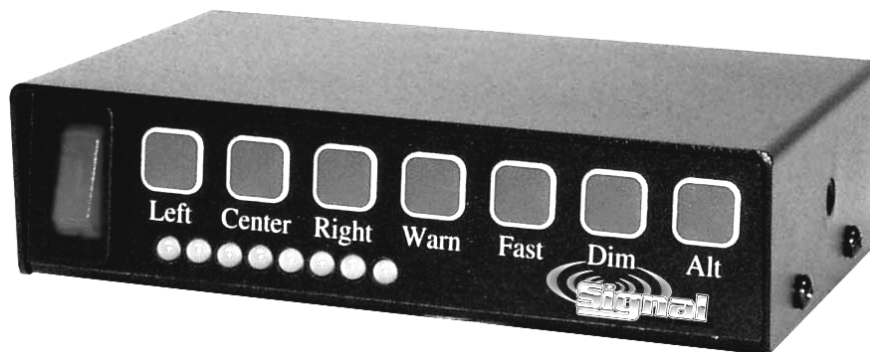


# TD77-2

## TRAFFIC DIRECTOR CONTROL BOX

(Operates 6 or 8 Head Ground-Side Switched Dummy Sticks)



**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.



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



**Star Headlight & Lantern Co., Inc.**

455 Rochester Street

Avon, NY 14414

Phone: 585-226-9787

FAX: 888-478-2797

**STAR**  
WARNING  
SYSTEMS

**STAR**  
SIGNAL  
VEHICLE PRODUCTS

**BRADFORD**  
Vehicle Solutions

[www.starheadlight.com](http://www.starheadlight.com)

## **Jumper Settings**

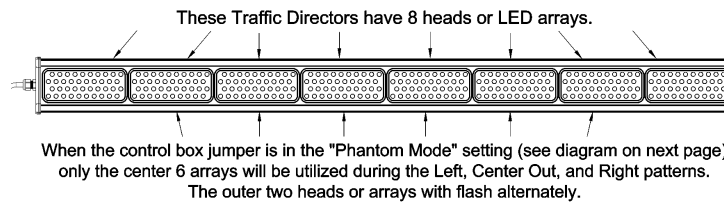
The TD77-2 control box has a jumper located inside the control box. This jumper will control the output of the two arrays on each end. The TD77-2 comes with the jumper defaulted for standard operation.



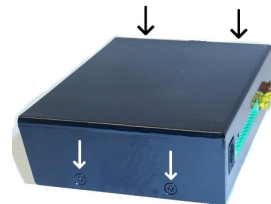
When this control box is used in the "standard" mode, the end lights of your arrowstick will follow the normal "traffic directing" pattern. There is also an option to operate your 8-head arrowstick in "Phantom" mode. In the "Phantom" mode the arrowstick will function as follows:

- 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.

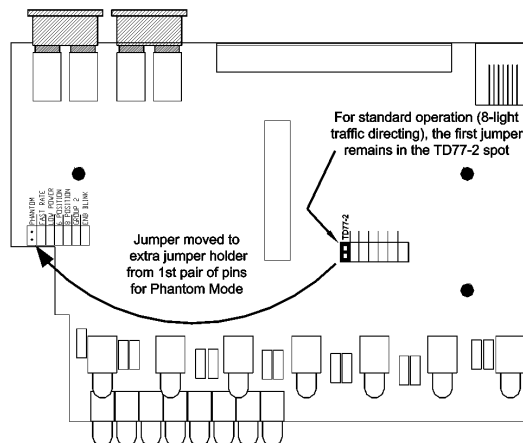
If you wish to set your control box to operate in Phantom Mode, (6-head traffic directing), follow the instructions below to change the jumper setting. If using standard mode, skip this section.



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.



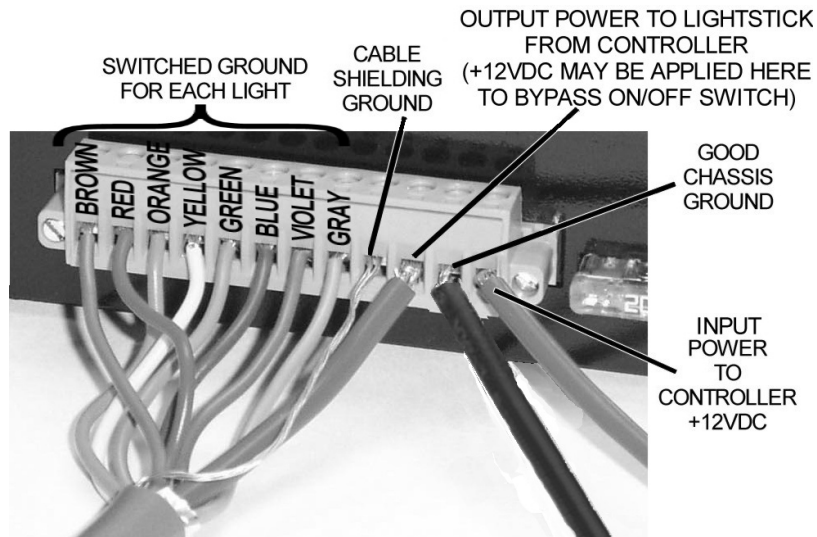
Locate the extra jumper location near the fuses. Move the jumper from the "Option" jumper location near the center of the board over to the extra jumper section. (See diagram below).



## Mounting

- Select a place to mount your controller that is a dry location out of direct sunlight, free of dirt and dust. Under the vehicle's instrument panel is usually the best choice.
- After identifying where your bar will be mounted, 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.

## Electrical Connections



**Please Note:** If you are connecting a TD77-2-24 (which operates only on 24VDC) the Input Power (and bypass power) would be 24VDC in the diagram above.

1. The cable attached to your Traffic Director 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 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-**.



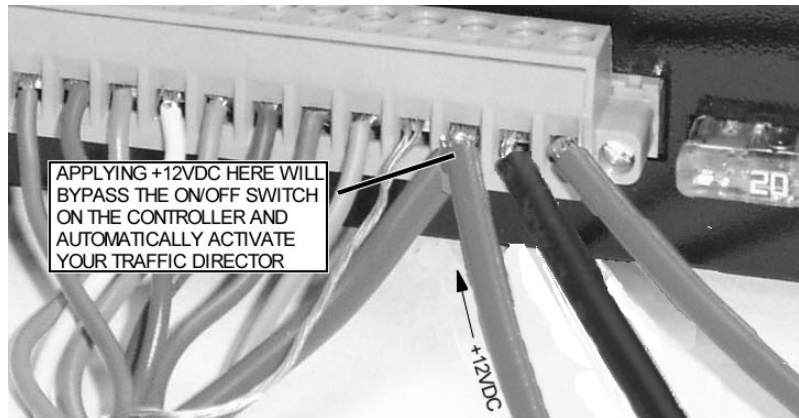
**It is imperative that you supply a ground wire to the terminal marked "BAT -" on the controller. You must not let the controller's case supply ground. Use 12 AWG wire for all power and ground connections**

***(Electrical Connections CONT'D)***

3. Supply power for the unit from a **fused**, +12 VDC source (or 24VDC if labeled as such) capable of delivering at least 15 amps of current (use a 20 amp fuse). It is recommended that you use an ignition switched supply to avoid the possibility of draining the vehicle's battery should the unit be accidentally left on.
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. If voltage drop is a problem, use a relay to control a direct battery feed. A generic relay designed for automotive lamp service should be available from most automotive stores for this purpose. If using a relay, 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 12 AWG wire for all power and ground connections.
6. Your Traffic Director should now be ready to operate.

**Wiring for Optional Automatic Activation**

1. The Traffic Director may also be wired to automatically bypass the 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 into 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 TD77-2-24 (which operates only on 24VDC) the bypass power would be 24VDC in the diagram above.***

## Operation



### Power Switch

Turns the lightstick On and Off. By default the Warn Pattern is active when the Power switch is turned on .

### Left, Center, Right

Activates directional pattern. Red when active.

### Warn

Activates the Warn pattern that you program below. Red when active.

### Fast

#### **Left / Center Out / Right Patterns -**

Steps up directional patterns (Left, Center Out, or Right) into a "faster" mode.

**Green = Standard Speed                      Red = Fast Mode**

#### **Warn Pattern (Excludes Phantom Mode)**

Provides a secondary pattern with stepped up urgency (some patterns/see next page).

### Alt (When Directional Function Activated)

Changes the Traffic Director pattern style.

**Note:** If you set the jumper for Phantom Mode (as described on page 4) the Alt button will only enable or disable the two outer flashing arrays/heads.

### Directional Pattern Styles

1. **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.
2. **End Blink 7** - Same as the Progressive 7 version with the exception that the last light will double blink.
3. **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.
4. **Progressive 7 T13** - Superfast Progressive 7 (**California Title 13 and SAE compliant \***).
5. **Progressive 8** - Same as the 7-Light version above, except all 8 lights are used.
6. **End Blink 8** - Same as the 7-Light version above, except all 8 lights are used.
7. **Dual Light 8** - Same as the 7-Light version above, except all 8 lights are used.
8. **Progressive 8 T13** - Superfast version of Progressive 8 (**California Title 13 and SAE compliant \***)
9. **Quad Light 8 T13** - 4-Head rolling version (**California Title 13 and SAE compliant \***)
10. **Snake 8 T13** - 8-head rolling version (aka Progressive On, then Progressive Off) (**California Title 13 and SAE compliant \***)
11. **Outer Flashing** - Same as the Progressive pattern, but only uses the six center lights. The outer two light alternate quickly back and forth.

\* When used with an approved lightstick

(Operation CONT'D)

**Alt (When Warn Function Activated)**

Changes the Warn pattern.

**Warn Patterns**

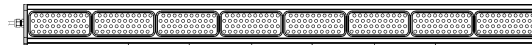
**Fast Button De-Activated**

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
11. 6-Head Simultaneous 1hZ Single Flash

**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
11. 6-Head Simultaneous 2hZ Single Flash

T13 - California Title 13 and SAE compliant patterns when used with approved sticks



6-Head WARN patterns only utilize the center 6 arrays

**Dim**

Dims the light output for nighttime use. Cycle through three different levels:

**100% (Green) ► 50% (Red) ► 15% (Orange).**

Pressing it a third time will return the Traffic Director to full brightness.



*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.**

## **Troubleshooting**

The majority of issues that cause the lightstick to function improperly can be caused by faulty wiring. Review the wiring positions illustrated on page two and ensure that all wires are secured tightly in their proper location. Also check that no wires are frayed with loose strands that could result in a short.

### **Fuses**

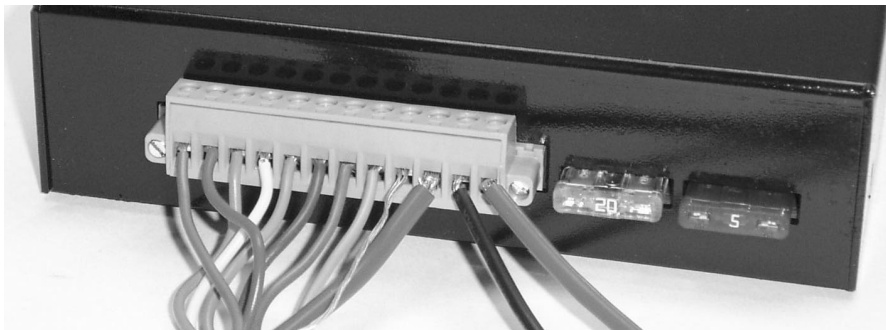
There are two automotive-type blade fuses located on the rear of the controller that are necessary for proper operation of the lightstick:

#### **Controller illuminates, but lightstick does not:**

The 20 amp fuse is connected to the lightstick. If it has blown, usually the controller will still function properly, but the lightstick will not illuminate.

#### **Neither the controller nor the lightstick illuminate:**

The 5 amp fuse is for the controller itself. If it has blown, the controller and lightstick will not work.



## 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.



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

### 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.



**Star Headlight & Lantern Co., Inc.**

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

**STAR**  
WARNING  
SYSTEMS®

**STARSIGNAL®**  
VEHICLE PRODUCTS

**BRADFORD**  
Vehicle Solutions

[www.starheadlight.com](http://www.starheadlight.com)