



DLHTHR and DLHTHU Hazard/Turn Signal LED Lights



IMPORTANT: Please read all of the following instructions before installing your new light. Failure to follow these safety precautions may result in damage to your light or vehicle and may result in serious injury or death to you and your passengers.

Installation Notes

- Installer must have firm knowledge of vehicle electrical systems & emergency equipment. **It is the sole responsibility of the installer to ensure the warning light is secure. The manufacturer assumes no responsibility for the secure mounting of this light.**
- If you need to drill any holes when installing this light, please take care to check that BOTH SIDES of your drilling surface are clear from obstructions.
- Choose a mounting location away from any air bag deployment areas.
- Controls should be placed within convenient reach of the driver.
- Use only soap and water when cleaning product. Use of other chemicals may discolor lens and/or housing, diminishing light output. Replace discolored lenses immediately!

Functionality

- These lights are NOT designed to replace the standard Turn Signals or Hazard lights on your vehicle.
- These lights, when activated via a user-supplied switch, will flash in a pre-programmed warning pattern that is selected at the time of installation.
- If these lights are powered up, and a Turn Signal (blinker) is activated, the corresponding light will mimic the flashing of the Turn Signal. The opposite light will either remain in the warning pattern mode, deactivate (turn OFF), or become Steady Burn, depending upon initial programming of your lights at the time of installation.
- These lights are NOT designed to act as STOP or Brake lights.

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.

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.



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Mounting Instructions

DLHTHR-1

1. Review the mounting diagram below.

- Use the #6 x 3/4" self tapping screws for applications where the mounting surface is a minimum of .060" (1/16") thick and is composed of a material that will provide sufficient "bite" for the self tapping screw.
- Use the #6-32 x 1/2" machine screws and well nuts if your surface is less than .060" thick and/or composed of a material insufficient for securing a self tapping screws.

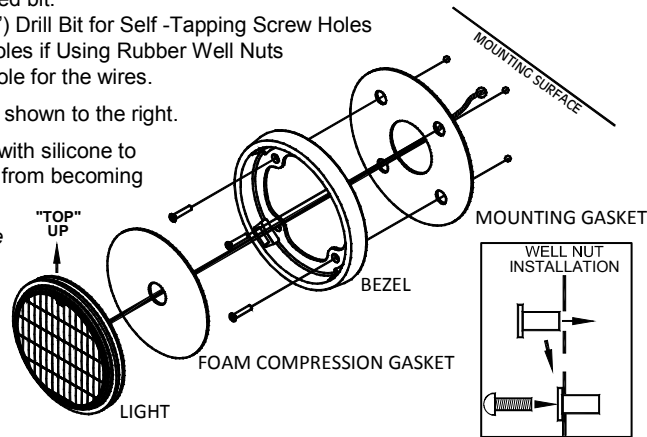


2. Use the gasket as a template to mark the mounting and wire holes and drill them with the appropriate sized bit.
- #36 (0.1065") Drill Bit for Self -Tapping Screw Holes
 - Drill 5/16" Holes if Using Rubber Well Nuts
 - Drill a 3/8" hole for the wires.

3. Route the wires as shown to the right.

4. Seal the wire hole with silicone to prevent your wires from becoming damaged.

5. *If you are using the well nuts, push the enclosed rubber well nuts through the holes until the bottom side of the wider lip rests on the surface of the vehicle.*



6. Review the mounting diagram and use the appropriate screws to mount the bezel.



- **Check the gasket to ensure it is resting flat and that there are no gaps between the light and the mounting surface.**
- **Take extreme caution not to over tighten the screws!!! Over tightening of the screws can strip the holes and result in a faulty mount.**

7. Once the bezel is firmly attached to the mounting surface, seat the foam compression gasket inside of it. Carefully feed any loose wire into the wire hole and press the LED head into the bezel taking care to ensure the text "TOP" is located at the top.

DLHTHR-4, DLHTHU-4, and DLHTHR-5

These lights are designed to fit into the standard 4 1/2" round or oval mounting holes that are common to most commercial vehicles.



Rubber Grommet (DLHTHR-4 and DLHTHU-4)

1. Insert the rubber grommet into the mounting hole.
2. Snap the light into the grommet taking care to ensure the text "TOP" is located at the top (round only).



Chrome Ring (DLHTHR-5)

1. Insert the light into the chrome ring taking care to ensure the text "TOP" is located at the top.
2. Snap the light/ring assembly into the mounting hole.

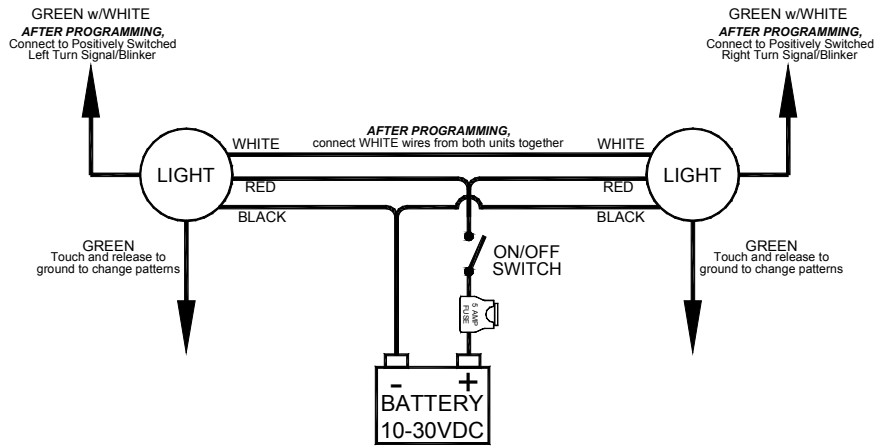
Wiring Notes



When wiring your lights, it is recommended that you take the following precautions to reduce any Electromagnetic Interference (EMI).

- Keep LED modules and any radios as far away from each other as possible.
- Separate the radio wires and the LED wires.
- Any excess wires should be cut short.
- The Ground wire, Power wire, and Synchronization wire should be bound tightly together as they run from light to light, through your switchbox, and to the battery.
- Do not ground each unit independently to the chassis. Run the ground for each unit in a "bus" like structure, to the negative terminal on the battery.

Note: The total wire length between the two farthest units should be no more than 40 feet.



Flash Pattern #	Phase 1	Phase 2	Pattern Type	S-LINK SYSTEM Pattern Description	Shortcut
1	13	K	Flicker (1.0 CPS) †		←
2	14	L	Fast Doubleflash (3.3 CPS)		Pattern 1 (Phase 1): 3 sec or 1 flash
3	15	M	Tripleflash (2.5 CPS)		
4	16	N	PSU Flicker (0.7 CPS)		Pattern 13 (Phase 2): 9 sec or 3 flashes
5	17	O	PSU Random (0.6 CPS)		
6	18	F	Quadflash (1.0 CPS) †		←
7	19	G	Quadflash w/Post-Pop (1.0 CPS) †		
8	20	H	Singleflash (1.0 CPS) †		Pattern 6 (Phase 1): 6 Sec or 2 flash
9	21	I	Doubleflash (1.0 CPS) †		
10	22	J	Variable AKA Delta-Omega (0.3CPS)		Pattern 18 (Phase 2): 12 sec or 4 flashes
11	23	C	Post pop(1.4 CPS)		
12	24	E	Random (0.4 CPS)		
N/A			Steady (see below)		18 sec or 6 flashes

† - Approved patterns for SAE J845 and California Title 13 when properly configured

Pattern Shortcuts: Hold Green wire to ground for indicated time.

Steady Burn: Not in pattern cycle. Only accessible through shortcut. Hold Green wire to ground for 18 seconds (light will flash 6 times).

Programming

After the lights have been installed, and prior to connecting all of your wires, there are two options you will need to decide upon and program.

The options **MUST BE PROGRAMMED IN THE PROPER ORDER** before use:

- A. **Opposite Light Function** - When your lights are activated in Warning Mode and you turn on your Turn Signal (blinker), what do you want the opposite light to do:
 - Continue flashing in the pre-programmed warning pattern
 - Turn off
 - Become steady burn
- B. **Warning Pattern** - Which warning pattern do you want displayed when you activate the lights without the Turn Signal on?

Opposite Light Function

When your lights are activated in Warning Mode and you turn on your Turn Signal (blinker), the corresponding head will flash in conjunction with your turn signal. By default, when you activate your Turn Signal the opposite light will illuminate in a steady burn mode. If instead you would like the opposite light to continue flashing in the pre-programmed warning pattern or turn OFF when the Turn Signal is activated, proceed below:

After connecting the wires as listed below, the light will flash every three (3) seconds. After 3 seconds it will blink once, after six seconds it will blink twice, after 9 seconds it will blink 3 times, and so on. Use the chart below to determine the proper length to Hold the Green wire to program the desired mode.

Opposite Turn Signal Programming Summary

<p>Black - Ground Red - +10-30VDC White - +10-30VDC Green - To program touch to Ground</p>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-bottom: 1px solid black;">Release Green After:</td> <td style="border-bottom: 1px solid black;">Opposite Light Mode</td> </tr> <tr> <td>Triple Blink (9 sec)</td> <td>Steady Burn Mode</td> </tr> <tr> <td>Quad (4) Blink (12 sec)</td> <td>OFF</td> </tr> <tr> <td>Quint (5) Blink (15 sec)</td> <td>Warning Pattern</td> </tr> </table>	Release Green After:	Opposite Light Mode	Triple Blink (9 sec)	Steady Burn Mode	Quad (4) Blink (12 sec)	OFF	Quint (5) Blink (15 sec)	Warning Pattern
Release Green After:	Opposite Light Mode								
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Quint (5) Blink (15 sec)	Warning Pattern								

Once the light flashes the appropriate number of times, remove the Green wire from Ground, then wait 1 second and remove the White wire from power.

Synchronizing Two Lights

SYNCHRONIZATION

You can synchronize up to six lights with compatibility.

DO NOT CONNECT WHITE WIRES UNTIL PROGRAMMING HAS BEEN COMPLETED FOR ALL LIGHTS!!

1. Power up the first unit and select a Phase 1 pattern. Touch and release the green wire to ground to change patterns.

2. Program the second light with the same **Pattern Type**.

Lights with the **SAME** phase flash together (simultaneous).

Lights with **DIFFERENT** phases flash opposite one another (alternate).

3. After programming all lights, tie off the green wires and connect the white wires together.

4. Test lights by applying power to all of them at the same time.

