

AEROSTARTM

Owner's Manual & Installation Instructions



PROUDLY MADE IN THE USA
An ISO 9001-2000 Certified Company

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PLITSTR335 REV. F 11/1/07



WARNING!

These lightbars contain one or more of the following light sources: Strobe Lights, Halogen Lamps, and/or High Intensity LED Lamps. **DO NOT** stare directly into any of these light sources as temporary blindness and/or permanent eye damage may occur.



CAUTION: All of our DC powered warning lights are polarity sensitive. These lights are polarity protected *only if the appropriate fuse* is used. All wires connected to the positive terminal of the battery should be fused at the battery for their rated load. **Testing the light before this fuse is properly installed will void the warranty on the light.**



When mounting your lightbar, please be sure to keep any radio frequency sensitive equipment at least 20" from the bar and power cable(s). This is especially critical in lightbars utilizing strobes. Our strobe power supplies have been designed to limit RFI emissions, but certain very sensitive equipment may still be affected. Symptoms may include, but are not limited to, sporadic operation and degraded performance. Star Headlight & Lantern Co., Inc. cannot assume any responsibility for any radio frequency induced malfunction or damage to any radios, sirens, lightbars, or any other equipment mounted within 20" a strobe lightbar. Any antennae mounted in the proximity of the lightbar may cause your radio to suffer the aforementioned results.



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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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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.



MOUNTING INSTRUCTIONS

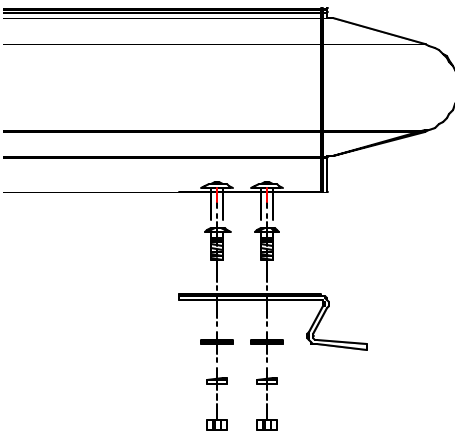
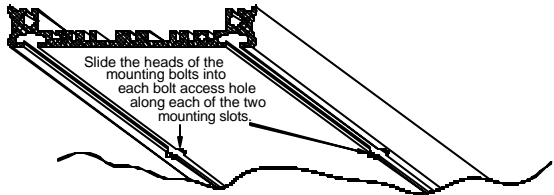


When mounting the power pack and accessories, please be sure to keep any radio frequency sensitive equipment at least 20" from the power pack, cables, and/or wires which make up your strobe system. The pack has been designed to limit RFI emissions, but certain very sensitive equipment may still be affected. Symptoms may include, but are not limited to, sporadic operation and degraded performance. Star Headlight & Lantern Co., Inc. cannot assume any responsibility for any radio frequency induced malfunction or damage to any radios, sirens, lightbars, or any other equipment mounted within 20" of this strobe system. Any antennae mounted in the proximity of the system may cause your radio to suffer the aforementioned results.

1. Please read all of the following instructions before continuing.
2. Carefully remove the lightbar and the direct mount kit included with the bar from its shipping carton. Place it on a clean, flat surface while taking care not to damage the lightbar or wiring cable. Examine the unit for any possible damage during transit.
3. All lightbars come complete with the *direct* roof mount kit, for direct mounting to your rooftop.

For optional hook mounts, order the P/N that corresponds to your vehicle style. These can be found in the **Hook Mount Manual** also enclosed with your lightbar.

4. Slide the eight enclosed stove bolts into the channels running underneath the lightbar. Use four stove bolts for each mounting bracket.

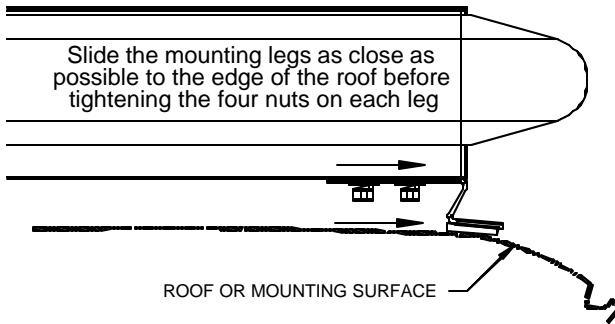


5. Position one bracket on the four bolts at each end of the lightbar in the approximate locations to match up with the roof area where you will mount your lightbar. Be aware of your wire access to the lightbar when choosing the location of these brackets.
6. After the bracket has been placed on the four stove bolts, install one flat washer, one lock washer, and one hex-nut on each stove bolt. Tighten hex nuts until snug, but loose enough that the mounting bracket can still slide for accurate pre-positioning.

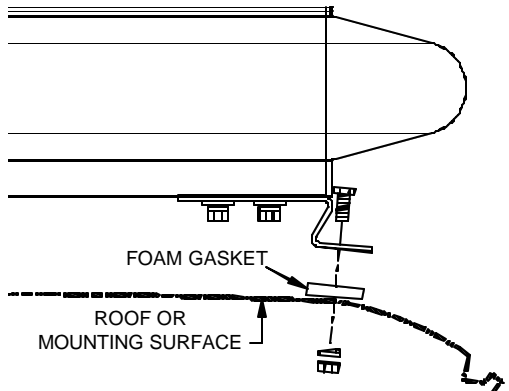
7. For permanent mounting continue to the next page, or for gutter or gutterless hook mounting refer to the **Hook Mounting Manual** also included with your lightbar.

DIRECT MOUNT

1. Carefully place your lightbar in position onto the roof of the vehicle while using the foot gasket or a pad to protect the roof from scratches. The tabs on the mounting brackets can be bent slightly to an angle that matches the curvature of the roof.
2. Slide the brackets as close to the edge of the roof as possible.



3. Once the lightbar is in the correct position, level front to back and centered side-to-side, slide the mounting brackets into position, and fully tighten hex nuts.
4. Using the mounting bracket feet as templates, mark the areas for the holes to be drilled. Take care to ensure that the bases do not move while you are marking each of the holes.
5. Remove the lightbar, and drill holes in the roof of the vehicle. **CAUTION: Take care not to drill through the headliner below.** Remove any burrs.
6. Use the two foam gaskets attached to each leg. Place them between the leg and the roof of the vehicle. The gaskets will provide a barrier that separates the metal of the leg from the metal of the roof. It will also help absorb any excess vibration and provide a barrier against any leakage. Attach the lightbar and brackets to the vehicle using four suitable fasteners obtained locally.



MAGNET MOUNT (20" models only!!!)

*If you are mounting the light on the roof of your vehicle, take extreme care to ensure that the magnet is firmly seated on your roof, and that the pull of the magnet is sufficient to secure the light in place. As the composition of the metal in the roofs of different vehicles may vary, as well as the contour, texture and/or condition, Star cannot guarantee the ability of the light to remain in place upon a moving vehicle. **It is the sole responsibility of the owner to ensure the warning light is secure.***

WIRING INSTRUCTIONS

All standard lightbar models are designed for 12VDC negative ground vehicles only. Reverse polarity will cause serious damage to the lightbar and/or vehicle. Contact the automotive dealer if there are any doubts about the polarity of your vehicle. A 12VDC positive ground lightbar can be custom ordered and it will be clearly labeled as such.



RF INTERFERENCE

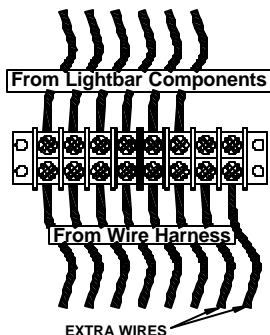
Please take the following steps to help eliminate any Radio Frequency Interference (RFI) with your two-way radio.

- *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.
-
- For quick and easy installation, 15 feet of cable is supplied standard with all models. All wires are color coded and sized at the correct gauge. **If this length is not sufficient, refer to the Direct Wiring Guide on page 5.**
 - **CAUTION: All wires and switches should be rated for at least 125% of their maximum current load.** All wires connected to the positive terminal of the battery should be fused at the battery for 125% of their rated load. The load can be calculated by adding all lamp wattages and dividing by 13. (Load <Amps> = Total Watts / 13 volts) A table of recommended wire colors and wire sizes is provided on the following page. If you are unsure of the current draw, please contact our Customer Service Department.
 - Since switches rated for a very high continuous current are not very common, lightbars with high current draw may contain two wires of the same color exiting the base of the bar. If the switch being used is rated for a high enough current, these wires may be connected together and run through the same switch. Otherwise, either two separate switches or one switch with two separate poles should be used.
 - 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 Usage Table below lists wire colors and standard functions controlled by those wires.

Your wiring harness may contain extra wires that are not utilized in your bar.

These “extra” wires will be connected to the “harness side” of the terminal block inside your lightbar, but there will be no wires connected to the terminals across from them (on the “lightbar side” of the terminal block). These extra wires can be used for additional components that may be added at some point in the future, or the extra wires may be used to separate components currently wired together.



Since many of the lightbars we build have custom components, occasionally wire colors may slightly vary. If you are unsure of the function of a particular wire, refer to the **Wire Cable Assembly Sheet** that is sent with every lightbar. It will denote any special wire colors. Be sure to use a 20-amp fuse when testing.

TESTING THE SYSTEM BEFORE IT IS PROPERLY FUSED & INSTALLED WILL VOID THE WARRANTY.

Do not use 1/4" diameter glass fuses, as they are not suitable for continuous duty above 20A.

WIRE USAGE TABLE

LIGHT(S)	WIRE COLOR	Minimum AWG
<u>Connect to Negative Side of Battery</u>		
-12 VDC /Ground/Neutral	Black	10
<u>Connect to +12VDC</u>		
Rotating Halogen Lights	Orange	14
Secondary Rotator	Orange w/Black Stripe	14
360° Strobe or Strobe Power Pack (LED Power in LED Only Bars)	Red	14
Front Strobe Heads On/Off (4-Head Packs Only)*	White w/Green Stripe	22
Rear Strobe Heads On/Off (4-Head Packs Only)*	Black w/Green Stripe	22
Strobe Pack and/or LED Pattern Select	Red w/Green Stripe	22
Alternate Strobe Pack Power	Red w/Black Stripe	14
LED Flasher Power	Orange w/Red Stripe	18
LED High/Low Control	Purple	22
Front Take-Down/Work Lights	Green w/Yellow Stripe	14
Rear Floods/Work Lights	White w/Orange Stripe	14
Front Alternating Flashers	White w/Brown Stripe	16
Rear Alternating Flashers	White	16
Driver Side Alley Light	Light Blue	16
Passenger Side Alley Light	Gray	16
Left Turn Signal	Yellow	16
Right Turn Signal	Green	16
Tail Lights & ID Marker Lights	Brown	18
Intersection Clearing Lights	White w/Blue Stripe	18
+ Side to Siren (red on siren)	Pink	18
- Side to Siren (black on siren)	Pink w/White Stripe	18
Alternate Power	Red w/White Stripe	14
Traffic Director	†	†

† Separate Bundled 9-Conductor Cable

* See Remote Strobe Power Supply section on pages 7-10

*** Please note: If you have a lightbar with a strobe pack, the Red w/Green Stripe wire is only used when programming the strobe pack flash pattern. This wire MUST NOT be connected to continuous +12VDC!!! Once the pattern has been selected, tape the end of this wire off. (See pages 7-10)**



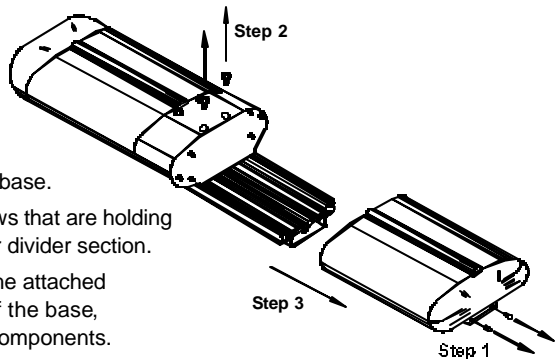
Direct Wiring Guide

(When more than the supplied 15 ft of cable are needed, follow these instructions to remove the pre-installed cable and install your own.)

If the wire supplied is too short, Star recommends direct wiring to the terminal block on the inside of the lightbar, rather than making connections to (splicing onto) the end of the wire which is supplied. This lightbar is designed so that no wire connectors are needed and only a few common tools are necessary in order to do this. Direct wiring allows the wire connections to the lightbar to be made in a clean and dry environment, avoiding any problems that may arise due to weathering on external connections. There is also an increase in voltage loss with the addition of each connection. Wiring directly inside the lightbar reduces the number of connections. However, making connections to the wires already provided is an acceptable alternative, as long as these connections are good electrical connections and are resistant from weathering effects. For direct wiring into the lightbar, follow the instructions listed below.

1. Determine the number of wires that you will need to run by reviewing the checklist enclosed with your bar. It will show you which wires are "in use".
2. Using the **Wire Usage Table** shown on page 4, identify your wires and select appropriate wire sizes and colors.
3. Locate the end of the lightbar that has the external wires entering the base of the lightbar. The black terminal block(s), which you will be making your wire terminations to, should also be located at this same end.

4. Remove the outer dome to expose the terminal block.



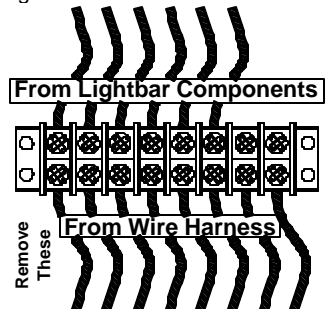
Step 1 : Remove the two screws holding the endcap to the lightbar base.

Step 2 : Loosen the two screws that are holding the dome to the center divider section.

Step 3 : Slide the dome (with the attached endcap) off the end of the base, exposing the interior components.

Step 4 : When all work is completed, reverse the steps to reinstall the dome, taking care that the gasket is properly aligned.

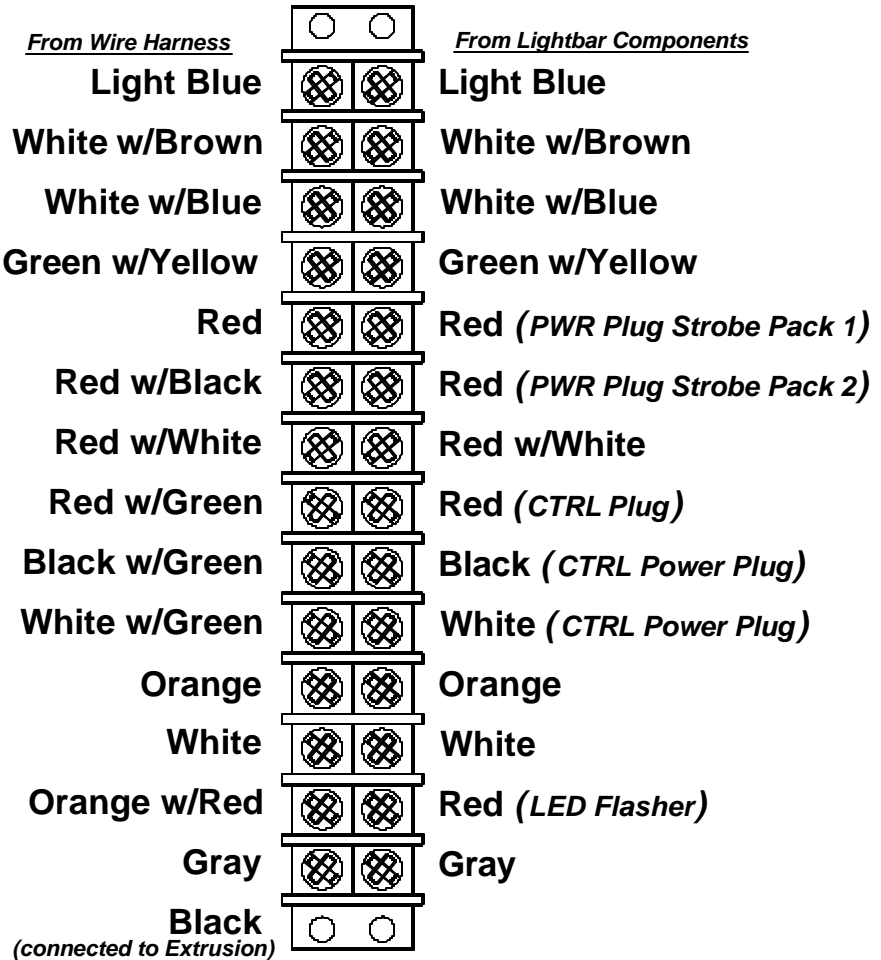
5. All of the wires coming from outside of the lightbar are terminated on the same side of the terminal block and the wires leading to the internal components terminate on the opposite side of the terminal block. Loosen the screws on the terminal block and remove **only those wires that exit the lightbar through the hole in the base.**
6. Run the new external wires up through the wire bushing into the base and into the terminal block(s). The function of each color wire in the lightbar is listed in the **Wire Usage Table** on page 4.



7. Align each external wire on the terminal block directly across from the corresponding internal wire with the same function. If there is more than one internal wire of the same color connected to the terminal block, you will need to trace the internal wire back to its origin to be sure of its function.

8. Strip each wire 1/4". Connect the external wires to the proper poles of the terminal block by inserting the stripped portion of the wire under the rising clamp screw and tightening down the screw. **No** wire terminals are needed for connecting wires to this terminal block. **Be sure to check that no strands of wire are loose and shorting to the adjacent terminal or to the base of the lightbar.**

Please find below a sample of the terminal block, showing the correct wire colors from a lightbar using the 271STROBE cable.

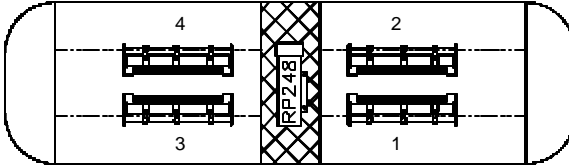


Remote Strobe Power Supply Connections For Linear Strobe Heads

If your lightbar contains linear strobe heads, follow the instructions on pages 7-10 for proper wiring of the strobe power supply. **Please note that any additional lights in your lightbar must also be connected to +12VDC through a switch.** This section only discusses the proper wiring of the strobe power supplies. For each strobe head configuration, you will be shown two ways to wire the lightbar:

1. All strobe heads turn On and Off together
2. Separate activation of Front and Rear facing strobe heads

Lightbars with Two or Four Linear Strobe Heads



(Pictured above is one example of a bar with four linear strobe heads)

Four wires in your cable harness control the strobe power supply and the strobe heads connected to it. The functions of those wires are as follows:

Connect to +12VDC

Red - Power to the strobe power supply

White w/Green Stripe - On/Off control for Front Linear Strobe Heads

Black w/Green Stripe - On/Off control for Rear Linear Strobe Heads

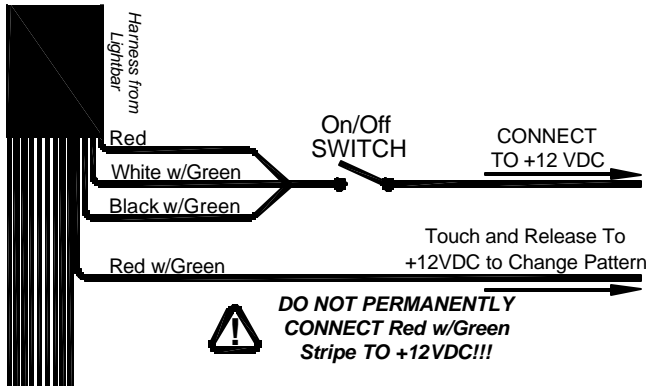
Touch and release to +12VDC

Red w/Green Stripe - Pattern Select

Activating All Strobe Heads Together

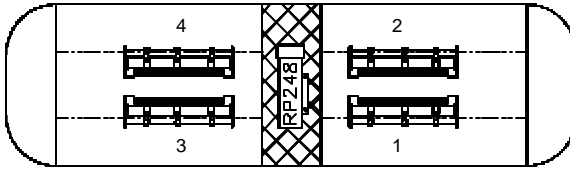
(MOST APPLICATIONS)

To activate all four heads connected to the power supply together, connect the Red, White w/Green Stripe, and Black w/Green Stripe wires together through your switch. When the switch is thrown, all of your strobes will flash. (#1 & #4 will alternate with #2 & #3)



Proceed to the **Strobe Head Pattern Selection** section on page 10 to program the flash pattern of your strobe pack.

Lightbars with Four Linear Strobe Heads (cont'd)



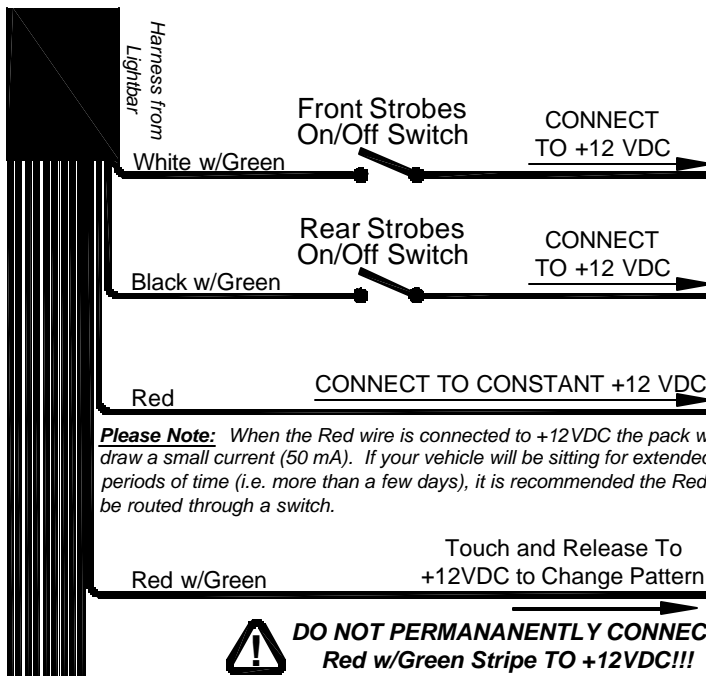
(Pictured above is one example of a bar with four linear strobe heads)

Activating the Front and Rear Strobes Separately

If you would like the ability to switch the front strobes On and Off separate from the rear strobes, connect the White w/Green Stripe wire to the switch that will activate your front strobes, and connect the Black w/Green Stripe wire to the switch that will activate your rear strobes.

The Red wire must be connected to constant +12VDC.

Please Note: When the red wire is connected to +12VDC the pack will draw a small current (50 mA). If your vehicle will be sitting for extended periods (i.e. more than a few days), it is recommended this wire be routed through a switch.

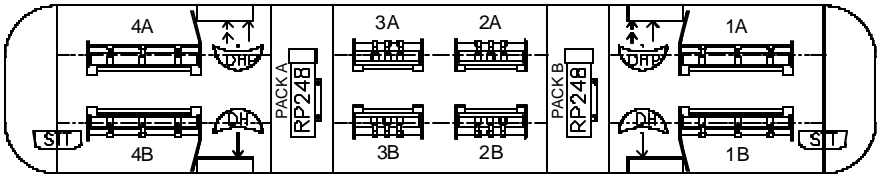


Please Note: When the Red wire is connected to +12VDC the pack will draw a small current (50 mA). If your vehicle will be sitting for extended periods of time (i.e. more than a few days), it is recommended the Red wire be routed through a switch.

Note: If you have power to both White w/Green and Black w/Green #1 & #4 will flash together alternating with #2 & #3. For two outlet packs, the two heads will alternate.

Proceed to the **Strobe Head Pattern Selection** section on page 10 to program the flash pattern of your strobe pack.

Lightbars with Eight Linear Strobe Heads



(Pictured above is one example of a bar with 8 linear strobe heads)

Three wires in your cable harness control the strobe with 8 power supplies and the strobe heads connected to them. The functions of those wires are as follows:

Connect to +12VDC

Red - Front Linear Strobe Heads On/Off

Red w/Black Stripe - Rear Linear Strobe Heads On/Off

Touch and release to +12VDC

Red w/Green Stripe - Pattern Select

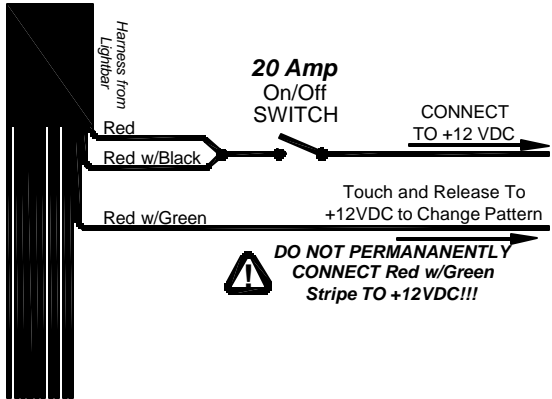
Note: Heads #1 & #4 will flash together alternating with #2 & #3.

Activating All Strobe Heads Together

(MOST APPLICATIONS)

To activate all eight heads connected to both power supplies together, connect the Red and Red w/Black Stripe wires together through your On/Off switch (**must be rated for at least 20 amps**). When the switch is thrown, all of your strobes will flash. (#1 & #4 will alternate with #2 & #3)

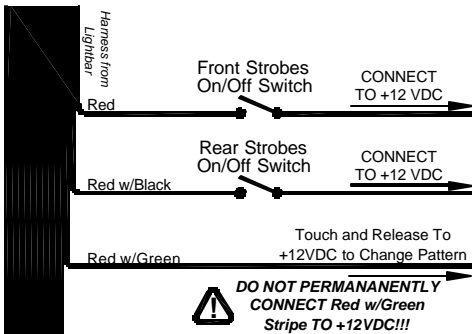
Proceed to the **Strobe Head Pattern Selection** section on page 10 to program the flash pattern of your strobe packs.



Activating Front and Rear Strobes Separately

To activate your front strobes separately from your rear strobes, connect the Red and Red w/Black Stripe wires through two separate switches. When one switch is thrown, only the front strobes will flash. (#1 & #4 will alternate with #2 & #3). When the other switch is thrown, the rear strobes will flash.

Proceed to the **Strobe Head Pattern Selection** section on page 10 to program the flash pattern of your strobe pack.



Strobe Head Pattern Selection

The Red w/Green Stripe wire allows you to select the flash pattern you wish to have your linear strobe heads display. Each pack is **defaulted for Five-Flash mode**. You can scroll through five patterns by turning your strobe lights on (applying power to the strobe pack through the necessary wire(s)) and briefly touching the Red w/Green stripe wire to +12VDC and releasing it. Continue to briefly touch and release this wire to +12VDC until you find the pattern desired. Once you have the pattern you like, tape the end of the Red w/Green Stripe wire so that it does not come into contact with +12VDC.

Strobe Patterns

Pseudo-Random

Singleflash

Doubleflash

Quadflash

Five-Flash



Please note: *If you have a lightbar with a strobe pack, the Red w/Green Stripe wire is only used when programming the strobe pack flash pattern or the LED flash pattern. This wire MUST NOT be connected to continuous +12VDC. Once the pattern has been selected, tape the end of this wire off.*

Automatic Power Up Strobe Head Check

Your new power pack comes with a safety feature that checks for proper operation of each individual strobe head each time you turn on the strobe pack. This feature works by quickly flashing each head once separately and determining if any of the heads did not flash. If two heads normally flash together and one should fail and does not flash during the start up test, the strobe pack will automatically reduce the output power to that particular side so that the "other" remaining head(s) isn't over powered. The power to that side will be cut in half until the strobe pack is turned off and on again.

The strobe pack will check all of the heads each time the pack is turned on EVEN if the head select feature is being used and only two heads are to be activated. After checking all of the heads, the pack will begin flashing normally. It takes approximately 0.250 sec. to check all of the heads.

Note: *If you replace the non-working head, it is necessary to cycle power to the pack before that head and the one that flashes with it will start flashing again at full power.*

LED Connections

If your lightbar contains LED heads, please review the section below for correct wiring and pattern selection.

Black..... Ground

The black wire provides a ground for all of the components in your lightbar.

Red or Orange w/Red Stripe .. LED power

If your lightbar only contains LEDs, this wire will be red. If your bar has strobes, the red wire will power the strobes and the Orange w/Red stripe wire will power the LEDs. Connect this wire to the switch you will use to turn your LEDs ON and OFF.

Purple High/Low Power Control (Connect to Ground for Low Power)

This wire allows you the capability to run the LEDs under High Power (normal operation), Low Power (optional nighttime operation), or to select between either. To run under High Power all of the time, leave the purple wire disconnected. To run under constant Low Power (nighttime mode), connect the purple wire to a Good Chassis Ground. If you would like to switch between High and Low power, connect the purple wire to Ground through a switch.

Red w/Green Stripe..... (Touch and Release to +12VDC)

Use the Red w/Green Stripe wire to select the desired LED flash pattern (see below).

LED Pattern Selection

1. To begin the programming sequence, check that your black wire is grounded.
2. Turn the LEDs on by applying power (+12VDC) to the Red wire or the Orange w/Red stripe wire, depending upon which lightbar you have.
3. Briefly connect the Red w/Green Stripe wire to +12VDC and release it, repeating this to scroll through the patterns listed below. The cycle will repeat itself after the last pattern.
4. Once you find the pattern you wish to select, leave the Red w/Green Stripe wire disconnected, and turn off the LEDs. This will store the selected pattern into the memory.

NOTE: *If at any time you would like to reset the pattern to the factory default (Pattern 28), simply connect the Red w/Green Stripe wire to +12VDC for five seconds, then release it, and the default pattern will be restored.*

1	Slow Warn	19	Comet 2
2	Fast Warn	20	Delta Omega (Flash Rate Sweep)
3	Superfast Warn	21	Slow Warn, Alt. Tripleflash
4	Warn Fade	22	Slow Warn, Super Fast Warn
5	Pre-Pop Warn	23	All Doubleflash, Alt. Doubleflash
6	All Singleflash	24	All Doubleflash, Alt. Doubleflash, Flicker
7	Alt. Tripleflash	25	Alt. Doubleflash, Flicker
8	All Tripleflash	26	All Double, Alt. Pre-Pop Tripleflash, Slow Warn
9	Alt. Quadflash w/Post Pop	27	Alt. Non-Synch Doubleflash
10	All Quadflash w/Post Pop	28	Alt. Triple, Alt. Non-Synch Double, Alt. Quint, Flicker †
11	Alt. Quintflash	29	Alt. Quadflash, Flicker, Alt. Doubleflash, Flicker
12	All Quintflash	30	Alt. Pre-Pop Quintflash, Alt. Quintflash, Flicker
13	Alt. Pre-Pop Quintflash	31	One Side Steady -----One Side Singleflash
14	All Flicker	32	One Side Steady -----Other Side Short-Long
15	Alt. PSU Flicker	33	Medium Warn (Alternating Long Singleflash)
16	One Side Pop, Other Rapid Fire	34	Alternating Short - Alternating Long
17	One Side Rapid Fire, Other Pop	35	Demo Mode – Loop All Patterns
18	Comet 1		

† Default Pattern

TROUBLESHOOTING GUIDE



CAUTION: High voltages exist in electronic strobe lights. Before attempting service on any strobe light, be sure to disconnect the power for at least five minutes to allow the capacitor to discharge. Failure to heed this warning may result in severe electrical shock and/or injury.

Please Note: Most strobe and rotating beacon failures can be traced to wiring and battery problems. Before attempting any service on the circuit itself, please be sure to check all connections and wiring to ensure the correct voltage and/or polarity is reaching your light or remote head.

The chart below contains some basic guidelines for troubleshooting any problems you may experience with your bar. The section following the chart will explain in further detail how to perform some of the troubleshooting tasks.

If components on your lightbar are not operating, follow these steps to determine the problem:

Check all fuses, including those at the battery, at the switch panel, in the dash, and on the pack (if applicable). The RP248 and RP248A strobe power supplies both have automotive “blade” type fuses. Remove these fuses, and check them to confirm they have not blown. Replace any blown fuses with only fuses of identical values. Replacing the fuse with the wrong rating may damage your power supply and/or vehicle, and will void your warranty.

<u>Symptom:</u>	<u>Possible Solutions</u>
One rotator spins but won't light up	Check bulb
One rotator does not spin and does not light up	Check the power wire running between the rotator and the terminal block Check the ground wire on the rotator
More than one rotator does not spin and does not light up	Check power to terminal block Check the ground
One single LED light is out	LED Head needs to be replaced
One LED head does not flash	Check wiring between LED head and flasher unit Check LED head
Multiple LED heads not flashing	Check power to terminal block Check that the bar is properly grounded Check power from terminal block to LED flasher unit Check that the LED flasher unit is grounded properly
One flashing light out	Check bulb Check power wire from flasher unit to bulb Check that the bulb is grounded
Multiple flashing lights out	Check power to terminal block Check that the bar is properly grounded Check power from terminal block to flasher unit Check that the flasher unit is grounded properly
One remote strobe head out	Check the strobe head Check the cable from the remote pack to the strobe head
Multiple strobe heads out	Check power to terminal block Check power to strobe pack Power Outlet (PWR) Check power to strobe pack Control Outlet (CTRL) Check that the pack is properly grounded

TROUBLESHOOTING GUIDE (cont'd)

Determining if the bar is properly grounded:

1. While the bar is turned on, using a test meter, measure the voltage from the base of the bar itself to the negative post of the battery.
2. If the difference shown is greater than .25 volts, then your ground is not sufficient.
3. If the ground is insufficient, locate the ground wire connection in your lightbar by removing the dome over the section where the wires enter the bar. Please follow the appropriate dome removal instructions listed earlier in this manual when removing this dome. The ground wire is the large (10AWG) black wire attached to the inside of the lightbar base with a ring terminal. Check the integrity of the connection of the ground wire to both the lightbar base and at the other end.
4. While inspecting the ground wire connections you should also check that the wire itself is not damaged. Carefully inspect the wire along its entire length, paying special attention to those areas where the wire passes through any holes that may have sharp edges that can damage the wire and the areas where the wire makes any sharp bends.

Checking the power to the terminal block

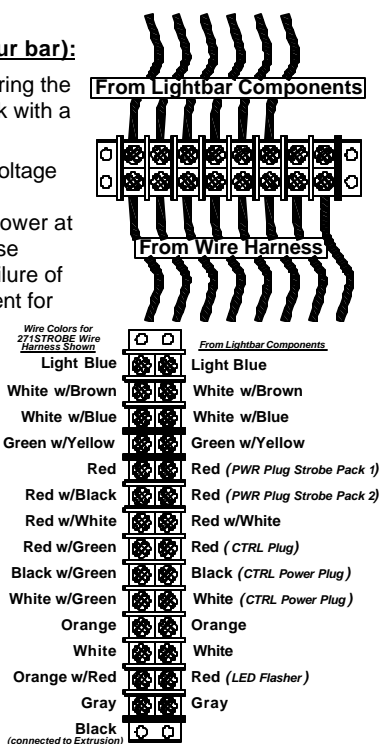
(Determining if the proper voltage is reaching your bar):

1. Locate the terminal block in your lightbar. After entering the bar, the wires will be connected to the terminal block with a number of small Phillips head screws.
2. With the bar turned on, use a test meter to test the voltage at the terminal block. A nominal 12.5 volts should be present on all of the wires you have connected to power at the other end of the harness. Low voltage can cause erratic flashing in strobe heads or even complete failure of the heads. A minimum of 10.5 volts should be present for the pack to operate properly. Low voltage in rotating lights, flashing light, or LED can result in lowered intensity or even complete failure.
3. Be sure to test each wire that comes into the terminal block for proper voltage.
4. Carefully inspect each wire in the terminal block. Check that the ends of the wires have not frayed and shorted against one another or against the base. This may cause lights to operate inadvertently or may result in the failure of lights.

Checking one non-working halogen or incandescent light:

If a problem exists in only one light, a bulb may have burned out or there may be an open electrical connection in the wiring harness.

1. Check connections at and between the flasher unit or terminal block and the faulty light, including all wiring. If your wiring is fine, continue below.
3. Check the faulty bulb by swapping it with one that is working. If the faulty bulb still does not work, then the bulb is bad and will need to be replaced.
4. If the bulb that was not lighting before now works in the new socket, the problem probably lies in the flasher itself. Verify this by plugging the other bulb (the original working bulb you just unplugged) into the socket that previously had the non-working bulb.
5. If the problem is not with a bad bulb and if proper voltage is reaching the flasher unit, the problem is most likely internal to the flasher unit.



TROUBLESHOOTING GUIDE (cont'd)

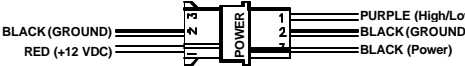
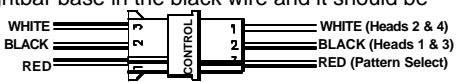
Checking one non-working strobe head:

If a problem exists in only one head, a strobe tube may have burned out, or there may be an open electrical connection in the wiring harness or strobe head.

1. Check connections at and between the strobe pack and the faulty strobe head, including all wiring.
2. Unplug both the faulty strobe head and a working strobe head.
3. Check the faulty head by plugging it into the outlet you just unplugged the working head from. If the faulty head still does not work, then the head is bad and will need to be replaced.
4. If the head that was not flashing now works in the new outlet, the problem probably lies in the power pack. Verify this by plugging the other head (the original working head you just unplugged) into the outlet that previously had the non-working head.

Checking multiple non-working strobe heads:

If the problem exists in only your strobe heads, and none of your strobe heads are flashing, follow these steps to determine the problem:

1. **Check all fuses**, including those at the battery, at the switch panel, in the dash, and on the pack (if applicable). The strobe power supplies all have automotive "blade" type fuses. Remove these fuses, and check them to confirm they have not blown. Replace any blown fuses with only fuses of identical values. Replacing the fuse with the wrong rating may damage your pack and/or vehicle, and will void your warranty.
2. **Check the power and ground wires to your pack.** With the vehicle turned off and while the pack is running, measure the voltage across the red wire (pin 1) and the black wire (pin 2) of the **PWR** connector on the power pack (the one with the Black, Black, and Purple wires). Push the probes of the test meter down into the connector at the wire entry points to contact the terminals for the measurement. A nominal 12.5 volts should be present. Low voltage to the pack can cause erratic flashing or even complete failure of the heads. A minimum of 10.5 volts should be present for the pack to operate properly. If you do not have proper voltage present, your power or ground is bad. Continue to step 3. If your pack is receiving sufficient voltage then skip to step 5.
3. **Test the Power to the power supply from the terminal block.** If sufficient voltage is not reaching the pack, and you have already determined that proper voltage is reaching your terminal block, perform the following tests: With the vehicle turned off and while the pack is running, measure the voltage drop in the red wire by taking a reading from pin 1 of your Power connector (Red wire) and the corresponding wire on the terminal block. If this reading exceeds 0.25 volts then there is a poor connection between the terminal block and your power supply in the red wire and it should be checked.
4. **Check the Ground wire on the pack.** If you still have not located the problem, troubleshoot the connections between pin 2 (black wire) of the **PWR** connector on the power pack and the lightbar base, while the lightbar is running. If this reading exceeds 0.25 volts then there is a poor connection between the pack and the lightbar base in the black wire and it should be checked.
5. **Check that the proper voltage is reaching the necessary CTRL inputs.**

Check that the proper voltage is reaching the Black wire (across from the Black w/Green stripe wire on the Terminal Block) and White wire (across from the White w/Green stripe wire on the Terminal block) of the **CTRL** plug on your strobe pack with the vehicle turned off, and while the bar is running. Measure the voltage across the Black wire (pin 2) on the CTRL plug (**NOT THE POWER PLUG**) and the negative terminal of your battery. Push the probes of the test meter down into the connector at the wire entry points on the pack side of the connectors to contact the terminals for the measurement. Note this reading. A nominal 12.5 volts should be present. A minimum of 10.5 volts should be present for the pack to operate properly. Also, check the voltage on the White wire. If your pack is receiving sufficient voltage to both wires then continue to step 6. If you do not have proper voltage present on either wire, check the wiring to the connector.

TROUBLESHOOTING GUIDE (cont'd)

6. **Check the CTRL connector to be sure that +12VDC is not applied the Red wire.** The Red wire on the CTRL connector of the RP248 is used for pattern select. The patterns are changed by touching AND RELEASING this wire to +12VDC. A constant voltage applied to the Red wire on the CTRL connector will prevent the strobe pack from flashing.
7. **Check each strobe head.** If the leads in one of the heads have shorted out, the output voltage of the other heads may be held down as well. To test for this, unplug all of the heads and plug them in individually, one at a time. If your problem is a result of a shorted head, then the other heads should function properly if the faulty head is no longer connected. Note: A burned out strobe tube does not cause a short and will not affect the operation of the remaining heads. If the problem is not with a shorted head and if proper voltage is reaching the pack, the problem is most likely internal to the pack.

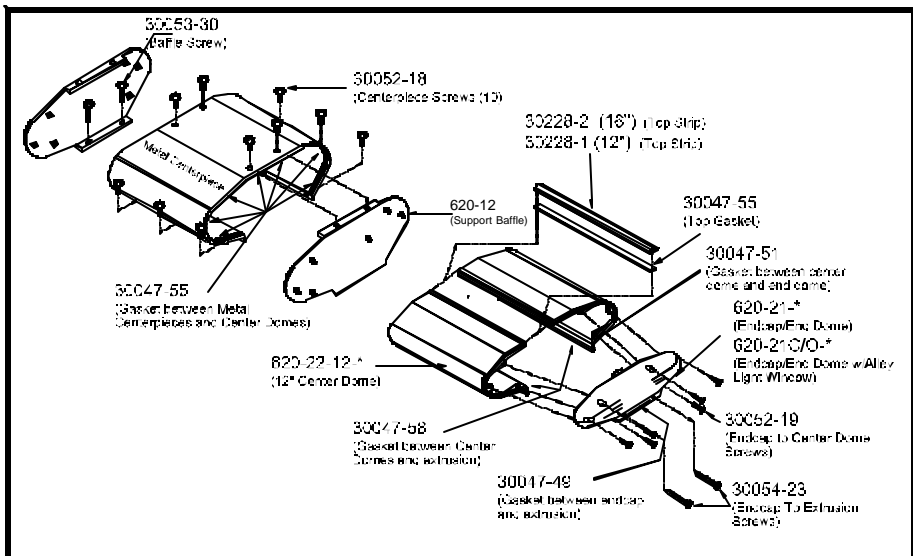


RF INTERFERENCE

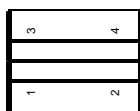
If you are experience Radio Frequency Interference (RFI) with your two-way radio, please take the following steps to help eliminate the problem.

- **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.**

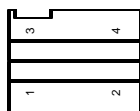




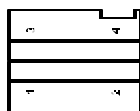
16" Center Domes



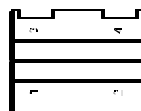
620-22-0*



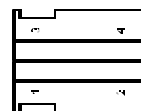
620-22-3*



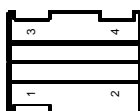
620-22-4*



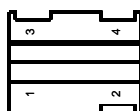
620-22-34*



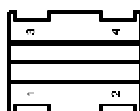
620-22-13*



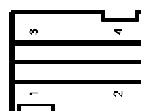
620-22-134*



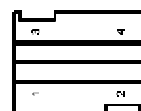
620-22-234*



620-22-1234*



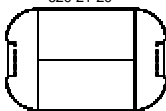
620-22-14*



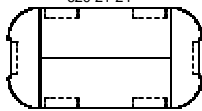
620-22-23*

Full Domes

Full 20" Outer Dome
620-21-20*

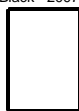


Full 24" Outer Dome
620-21-24*



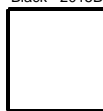
Center Shrouds

8" Centerpiece
Silver - 2007
Black - 2007B



3-HOLE

12" Centerpiece
Silver - 2015
Black - 2015B



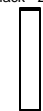
4-HOLE

16" Centerpiece
Silver - 2010
Black - 2010B



5-HOLE

2-3/8" Centerpiece
Silver - 2003
Black - 2004



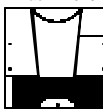
2-HOLE
4" AND 5" LIGHT BARS

8" Speaker Centerpiece
Silver - 2009
Black - 2008



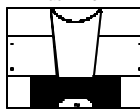
3-HOLE

12" Speaker Centerpiece
Silver - 2012
Black - 2013



4-HOLE

16" Speaker Centerpiece
Silver - 2016
Black - 2017



5-HOLE

4" Centerpiece
Silver - 2011
Black - 2014



2-HOLE

AEROSTAR™ PARTS LIST

Bulbs and Tubes



2073-795X
50-WATT HALOGEN BULB
(Rotators, Work Lights, Takedowns, Flashers, etc.)



ST3901-7
360° STROBE HEAD



LST129-4
4.5" LINEAR STROBE TUBE



LST129-7
7" LINEAR STROBE TUBE



2073-795S
65-WATT HALOGEN BULB w/Black Top
(for Metal Alley Lights)



2073-H27
27-WATT HALOGEN BULB
(for Plastic Alley Lights)



2073-1157
STOP-TURN-TAIL BULB

Power Supplies/Flashers



620-181-MPQ
2-HEAD WALL MIRROR/POWER PACK
ASSEMBLY FOR 6020S and 6222S



RP310-SBQ
2-HEAD REPLACEMENT STROBE
POWER SUPPLY w/MOUNTING PLATE



RP248A
2-OUTLET STROBE PACK FOR LINEAR
STROBE HEADS



RP248
4-OUTLET STROBE PACK FOR LINEAR
STROBE HEADS



FM3661
1.9 FPS HALOGEN FLASHER



FM3662
2.9 FPS HALOGEN FLASHER



LDF369
2-OUTPUT LED FLASHER
(8 OUTPUT TERMINALS)

Filters and Lenses



920-100-*
COLOR FILTER FOR ROTATORS
& STATIONARY LIGHTS



LSF4.5-*
COLOR FILTER FOR 4.5" STROBE HEAD
(SH3964)



LSF7-*
COLOR FILTER FOR 7" STROBE HEAD
(SH3967)



330-1-*
330-* DOME w/P30165-5 DOME RING
FOR ST3901-7 360 DEGREE
STROBE HEADS



620-7-*
END DOME WINDOW FOR
ALLEY LIGHTS

Mirrors



620-30
WALL MIRROR FOR AEROSTAR
(* = L or R)

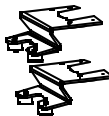


820-29
MEDIUM V-MIRROR FOR AEROSTAR,
INTERCEPTOR, & STROBE MINBARS



820-292
MEDIUM DOUBLE V-MIRROR FOR
AEROSTAR, INTERCEPTOR,
& STROBE MINBARS

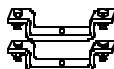
Mounts



920-39
DIRECT MOUNT KIT



177-BK-1
MAGNETIC MOUNT
FOR 20" BARS ONLY




































920-39T
LOW PROFILE TOW MOUNT



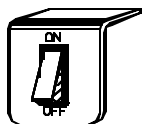
HOOK MOUNTS
THESE ARE PICTURED IN THE
HOOK MOUNT MANUAL ALSO
ENCLOSED WITH YOUR LIGHTBAR
AND WORK IN CONJUNCTION
WITH THE 820-39P*
* = COLOR (White, Black, Clear, or Gray)

AEROSTAR™ PARTS and ADD-ON KITS LIST

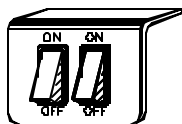
Interior Components

- | | | | |
|---|--|---|--|
|  | 920-99 OR 920-99F
80FPM OR 160FPM HALOGEN ROTATOR |  | ST3901-7 and 333-* DOME
360° REMOTE STROBE HEAD w/DOME |
|  | 240SFQ
360° STROBE |  | RSK620-SBQ
2-HEAD LINEAR STROBE KIT w/RP310-SBQ
Power Pack, 820-292 Medium Diamond Mirror
and two ST3901-7 360 Degree Strobe Heads for
Aerostar or Interceptor |
|  | SH3964
4.5" LINEAR STROBE HEAD |  | 620-D1-*
M-Tech LED Lighthouse w/No Endcaps
for Aerostar and Interceptor |
|  | RSK248A-4K
4.5" 2-HEAD LINEAR STROBE KIT w/RP248A
POWER SUPPLY FOR AEROSTAR |  | 620-D1AL-*
M-Tech LED Lighthouse w/Left Angle Reflector
for Aerostar and Interceptor |
|  | RSK248-4K
4.5" 4-HEAD LINEAR STROBE KIT w/RP248
POWER SUPPLY FOR AEROSTAR |  | 620-D1AR-*
M-Tech LED Lighthouse w/Right Angle Reflector
for Aerostar and Interceptor |
|  | SH3967
7" LINEAR STROBE HEAD |  | 620-D1LEC-*
M-Tech LED Lighthouse w/Left Endcap
for Aerostar and Interceptor |
|  | RSK248A-7K
7" 2-HEAD LINEAR STROBE KIT w/RP248A
POWER SUPPLY FOR AEROSTARS |  | 620-D1REC-*
M-Tech LED Lighthouse w/Right Endcap
for Aerostar and Interceptor |
|  | RSK248-7K
7" 4-HEAD LINEAR STROBE KIT w/RP248
POWER SUPPLY FOR AEROSTARS |  | 620-D1EC-*
M-Tech LED Lighthouse w/Endcaps
for Aerostar and Interceptor |
|  | LDH3966-*
STARBLAST™ LINEAR LED HEAD
(*=A,B,C,R) |  | 620-D3-*
M-Tech LED 3-Lighthouse End Assembly
for Aerostar and Interceptor |
|  | LDH3966K2-*
2-HEAD LINEAR LED KIT W/
LDF399 FLASHER
(*=A,B,C,R,BR) |  | 620-D2-*
M-Tech LED 2-Lighthouse End Assembly
for Aerostar and Interceptor |
|  | LDH3966K4-*
4-HEAD LINEAR LED KIT W/
LDF399 FLASHER (*=A,B,C,R,BR) |  | 620-D2EC-*
M-Tech LED 2-Lighthouse End Assembly
w/Endcaps for Aerostar and Interceptor |
|  | 920-51
DIRECTIONAL HALOGEN
FLOOD/TAKEDOWN LIGHT |  | 920-32*
STOP/TAILO/TURN LIGHT
(Specify R or L) |
|  | 920-51F
DIRECTIONAL HALOGEN
FLASHING LIGHT |  | 620-50
OLD STYLE METAL ALLEY LIGHT FOR
AEROSTAR LIGHTBARS |
|  | 920-51FK*
2-LIGHT HALOGEN FLASHER KIT
w/FM3662 FLASHER
FRONT or REAR (*=F or R) |  | 620-14
NEW STYLE PLASTIC ALLEY LIGHT
FOR AEROSTAR LIGHTBARS |
|  | 920-51HP
DIRECTIONAL HALOGEN
TAKEDOWN/PURSUIT LIGHT |  | 620-36
TRIPLE MARKER LIGHT BRACKET
STRIP FOR AEROSTAR EXTRUSION |
| | |  | 920-37
SINGLE ID LIGHT FOR TRIPLE
EXTRUSION BRACKET |
| | |  | 620-38-1
620-36 w/3 (920-37) ID LIGHTS |
| | |  | 620-SPKK
AEROSTAR SPEAKER KIT |

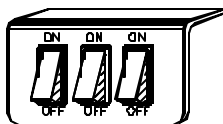
SWITCH PANELS AND SWITCH BRACKETS



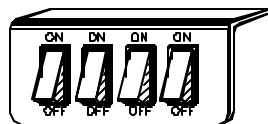
SP3860-1



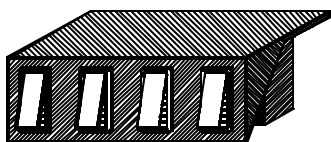
SP3860-2



SP3860-3



SP3860-4



SP1515



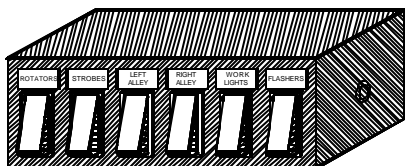
SB1515



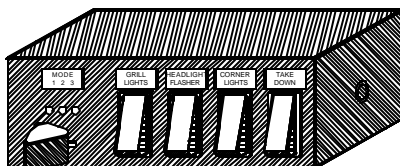
SP3015



SB3015



SB4020



SB4040

ONE YEAR LIMITED WARRANTY

The manufacturer warrants each new product, under normal use, against factory defects in material and workmanship for one year 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, bulbs, strobe tubes, 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. This warranty does not apply to defect or damage occurring as a result of disaster, accident, abuse, misuse, lightning, power surges, or failure to follow instructions in any enclosed manuals. Any damage or defects occurring as a result of any unauthorized service or repairs by unauthorized persons shall be excluded from this warranty.

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





PROUDLY MADE IN THE USA
An ISO 9001 Certified Company