Electronics, Inc.
36 Doctor Foote Rd. Colchester CT 06415 Phone: 860-537-3471 Fax: 860-537-0656

◎ Troubleshooting Guide ◎

Listed below are problems that commonly occur in strobelighting systems.
To use this guide: First, find the problem that matches your own.
Then, perform the tests and fix the problem.

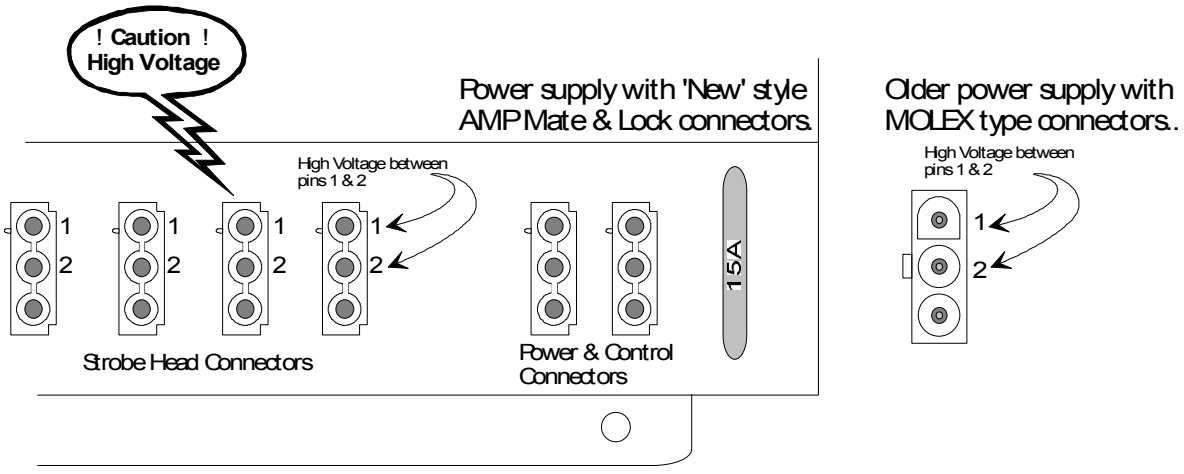
These procedures apply to all Nova strobelighting systems as well as self contained strobe beacons such as the Lonestar 810.

Table of contents: Page:

Safety Precautions:

The power supply in a strobelighting system converts 12 (or 24) volts into the *high voltage* needed to flash a strobe-tube.

This *high voltage* exists at each of the four connectors on the left hand side of the power supply, as shown in the diagram below.



!!!! There is danger of electric shock !!!!

Please follow safety instructions printed on product label.

Do not use a 12 volt test light to test the Strobe Head Connectors of the power supply. This will only burn out the test light.

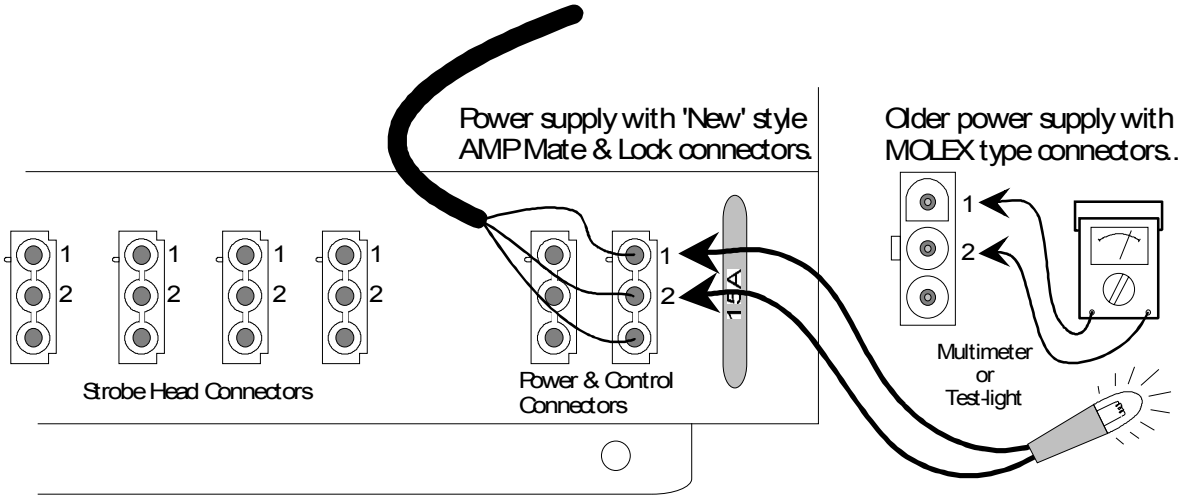
Section 1

No lights are flashing when the system is turned on, or, System works intermittently.

If the strobelighting system has failed completely, please perform the following tests before returning the power supply.

A) <u>Make sure that the power supply is receiving power from the vehicle</u>. (See diagram below for testing instructions)

- **Check the wiring harness**. Are the wires in good condition? If they were spliced too many times, there may be a bad connection.
- **Check the (-GROUND) connection (Black wire);** If the wire is attached to the chassis of the vehicle, make sure there is no rust in the connection.
- **Is the ON/OFF switch working properly?**
- **Is the power supply wired on the same circuit as another accessory?** This can cause erratic operation.
- **Is the vehicle's charging system large enough to supply all the accessories?** Too many accessories, Plows, lights, etc., can load down the charging system and cause the battery voltage to drop. The power supply will not operate correctly on voltages lower than 10 volts.
- **If this is a new installation** with an older power supply, (Pre-1994) you should check the wiring of the HI/LOW power control wire. (VIOLET or WHITE wire; pin 3 of the power connector) If this wire is connected to +12 volts it will shut the power supply off. (Older power supplies only.) This wire should either be disconnected, connected to -GROUND, or wired to a special HI/LOW switch.



With POWER connector plugged into power supply, apply test probes to back of connector, at pins 1 & 2.

B) Check for problems caused by water.

The most common cause of failure in strobe systems is ***WATER***. The cables running from the power supply to the strobe heads are carrying high voltage. If water, especially salt water, seeps into the connections, the high voltage will travel through the water. The power supply sees this as a **short circuit** in the wiring. **It is designed to shut down if this happens**.

These are the symptoms:

At first, the strobe heads may flash erratically.
Then, the entire system may shut down, but when the water has dried out, the system will work fine.
Eventually, the water will cause a permanent short circuit, and the system will stop working completely.

If the system stops working (lights not flashing anymore), DO NOT continue to run the power supply. If you continue to run a system which is shorted, it *WILL* damage the power supply.

If the power supply itself has been exposed to water, and has stopped working, it will have to be repaired. **Note:** Standard Nova power supplies are not waterproof and should not be mounted where it might get wet.

To find the short circuit:

- Unplug all of the strobe heads. (At the power supply end.)
- Plug in **just one** strobe head at a time, and turn the power on.
- Repeat until all the strobe heads have been checked.

If none of the strobe heads work:
It is unlikely that all of the strobe heads have failed at the same time.
The power supply is the cause of the problem, and should be returned for service. (Note: Make sure you have performed the tests in Section 1 before returning the power supply.)

If some heads worked, and the other heads did not:
There is nothing wrong with the power supply.
There is a short circuit in either the malfunctioning strobe head, or the cable.
Check the following to locate the short circuits:

- **Was RTV sealant used on the connectors when the system was installed?** Improper installation and sealing of WIC-3 connectors voids the Nova warranty. (Note: RTV should have been applied to the connectors on the **strobe head end only**. Since the power supply must be installed in a dry location, there is no need to apply RTV to these connectors.)
- **Check all of the connectors which have been exposed to water.** Even if they have been sealed with RTV, the water may have seeped in over time. Replace any connector pins that show signs of heavy corrosion. Reseal with Silicone RTV sealant.

- **Check the cables.** Examine the cables for any cuts, or scrapes. A piece of multi-strand wire will act just like a lamp wick and soak up liquids. Water will travel up inside any exposed section of wire. If it is salt water, the wire will corrode and the cable will fail within a very short time.
  Look for burn marks on the cables. If the cable was spliced, this is the most likely place for a short circuit to develop. Strobe cables should never be spliced. *This voids the system warranty.* To run the cable through a narrow area; remove the connector with a pin extractor, then reinstall the connector when you are done.
- **Replace the strobe head. If** you did not find any problems with the cables or connectors, then it is probable that the strobe head has failed. If the head is still under warranty, it may be returned for repair or replacement.

Section 2

One strobe head is not flashing, or, flashing irregularly.

If one of the strobe heads in a system has stopped working, or works intermittently, but the other strobe heads are working properly, please check the following:

- **Check the flashtube.** The electrodes in a flashtube will wear out over time. This will show up as a large black spot in one end of the tube. If the strobe head has a replaceable flashtube, replace it. If it does not have a replaceable flashtube, replace the entire strobe head.
- **Check the cable.** Check for a cut wire, corrosion in the connectors, or an incorrectly wired cable.
- **Check for a bad output on the power supply.** Plug the strobe head which does not work into a spare output connector on the power supply. If it works, there is a problem inside the power supply. Please return it for service.
- **Weak flashtube.** There have been a few cases where one strobe head would not work when used with one or more other heads. It would work by itself, but not when the other heads were hooked up.
  When two flashtubes flash at the same time, they divide the power equally between them. (Two heads flashing on a 60 watt power supply; each head will only get 30 watts.) This problem occasionally happens when a new head is used with an old head. The solution: Replace the old strobe head. (Or flashtube)

Section 3

The strobe system interferes with radio equipment.

Note: It may not be possible to prevent the strobe system from interfering with **AM** (amplitude modulation) radio equipment.
However, for other equipment:

- **Make sure the chassis of the power supply has a good connection to the vehicle chassis.** The power supply should be bolted to a flat metal surface such as the vehicle firewall. If it cannot be mounted like this, a wire should be run from the power supply chassis to the vehicle chassis. This will filter out radio interference.
- **Keep antenna cables away from the power supply and strobe cables.** The power supply produces a lot of high frequency noise and magnetic fields.
- **Try a new power supply.** As of 1994, the Nova power supplies have been internally redesigned. New circuitry has been added to reduce noise output. A number of customers have solved radio interference problems by using the newest power supplies.

Section 4

The fuse keeps blowing.

- **If this is a new installation, make sure the power supply is wired correctly.** The power supply is designed to blow the fuse if it is connected to the battery backwards. Once the wiring is corrected and the fuse is replaced, it will work fine; there will be no damage to the power supply.
- **The power supply has been replaced, but the new one blows fuses also.** Make sure the power supply has a strong connection to the battery voltage.
  Occasionally, there will be a problem if:
  - The wires that run to the battery voltage are too small (Must be at least 16 guage.)
  - The power supply is wired on the same circuit as another accessory.
  - There is a bad connection somewhere.

  If this is the case, the power supply will not receive the voltage it requires to operate properly.
- **The power supply may need to be repaired.** If the power supply is connected properly but continues to blow fuses, return the power supply for repair.
- **The power supply works for a while (3 days to a few weeks) and then the fuse keeps blowing.** This is caused by running the power supply on a strobe system which has a short circuit in one of the strobe heads. When the system was first installed, the connections at the end of the strobe head cables (not at the power supply itself) should have been sealed with RTV silicone. If they were not then water is getting into the connections and shorting out the power supply. See the diagram below for proper sealing of connectors: (See also section B)

If you have any questions please call:
(860)-537-3471
(Ask for technical assistance.)