

INSTALLATION AND MAINTENANCE INSTRUCTIONS
FOR
VISTA® STROBE LIGHT ASSEMBLY, SERIES A

SAFETY MESSAGE TO INSTALLERS
OF
FEDERAL SIGNAL LIGHT SYSTEMS

⚠ WARNING

People's lives depend on your safe installation of our products. It is important to read, understand and follow all instructions shipped with the products. In addition, listed below are some other important safety instructions and precautions you should follow:

- To properly install a light assembly: you must have a good understanding of automotive electrical procedures and systems, along with proficiency in the installation and use of safety warning equipment.
- When drilling into a vehicle structure, be sure that both sides of the surface are clear of anything that could be damaged.
- A light system is a high current device. In order for it to function properly, a separate ground connection must be made. If practical, it should be connected to the negative battery terminal. At a minimum, it may be attached to a solid metal body or chassis part that will provide an effective ground path as long as the light system is to be used.
- Locate light system controls so the VEHICLE and CONTROLS can be operated safely under all driving conditions.
- This product contains high intensity LED devices. To prevent eye damage, DO NOT stare into the light beam at close range.
- You should frequently inspect the light system to ensure that it is operating properly and that it is securely attached to the vehicle.
- File these instructions in a safe place and refer to them when maintaining and/or reinstalling the product.

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

I. UNPACKING.

After unpacking the Vista lightbar, inspect it for damage that may have occurred in transit. If the unit has been damaged, file a claim immediately with the carrier, stating the extent of damage. Carefully check all envelopes, shipping labels and tags before removing or destroying them.

II. INSTALLATION.

A. General.

The lightbar is completely wired at the factory and does not require any additional internal wiring. All the conductors necessary for control of any and all basic and optional functions are contained in the cable.

The basic light functions of the unit must be controlled by a user-supplied control head.

Before proceeding, ensure that the lightbar has been installed on the vehicle roof in accordance with the instructions packed with the mounting kit.

⚠ WARNING

Light system controls must be located so that VEHICLE and CONTROLS can be operated safely under all driving conditions.

1. Route the control cable into the vehicle and under the dash, near the eventual location of the user-supplied control head.
2. For proper light operation, the control cable must be properly terminated inside the user-supplied control head. Using figure 1 and table 1 as a guide, make the appropriate electrical connections. Ensure that the lines are adequately fused as shown, and that switch capacity is adequate for the current requirement.

CAUTION

Reverse polarity may damage the power supply and prevent operation. Ensure that correct polarity is observed.

3. Connect the separate 8 gauge black lead to the vehicle battery ground (-) terminal.

Table 1. Electrical Connections.

Wire Color (Refer to Note 1)	Functions				
	4-head	6-head	8-head	10-head	12-head
BLK	Ground (-)	Ground (-)	Ground (-)	Ground (-)	Ground (-)
RED	Strobe Power	Strobe Power	Strobe Power- Front	Strobe Power- Front	Strobe Power- Front
WHT/RED	N.C.	N.C.	Strobe Power- Rear	Strobe Power- Rear	Strobe Power- Rear
WHT/BLU	Strobe Action Mode	Strobe Action Mode	Strobe Action Mode	Strobe Action Mode	Strobe Action Mode
WHT/YEL	Strobe Low Intensity	Strobe Low Intensity	Strobe Low Intensity	Strobe Low Intensity	Strobe Low Intensity
WHT/GRY	Front Cutoff	Front Cutoff	Refer to Note 2	Refer to Note 2	Refer to Note 2
WHT/ORG	Strobe Power- Center	Strobe Power- Center	Strobe Power- Center	Strobe Power- Center	Strobe Power- Center
VIO	Osc. or TCL- Center	Osc. or TCL- Center	Osc. or TCL- Center	Osc. or TCL- Center	Osc. or TCL- Center
WHT/VIO	Rotator- Center	Rotator- Center	Rotator- Center	Rotator- Center	Rotator- Center
BLU	VistaRay	VistaRay	VistaRay	VistaRay	VistaRay
YEL	Takedown/Spot Light	Takedown/Spot Light	Takedown/Spot Light	Takedown/Spot Light	Takedown/Spot Light
GRAY	Steady Burn (Calif.) Work Light	Steady Burn (Calif.) Work Light	Steady Burn (Calif.) Work Light	Steady Burn (Calif.) Work Light	Steady Burn (Calif.) Work Light
GRN	Right Alley	Right Alley	Right Alley	Right Alley	Right Alley
ORG	Left Alley	Left Alley	Left Alley	Left Alley	Left Alley
BRN	Speaker	Speaker	Speaker	Speaker	Speaker
WHT/BRN	Speaker	Speaker	Speaker	Speaker	Speaker
WHT/GRN	Flashing	Flashing	Flashing	Flashing	Flashing

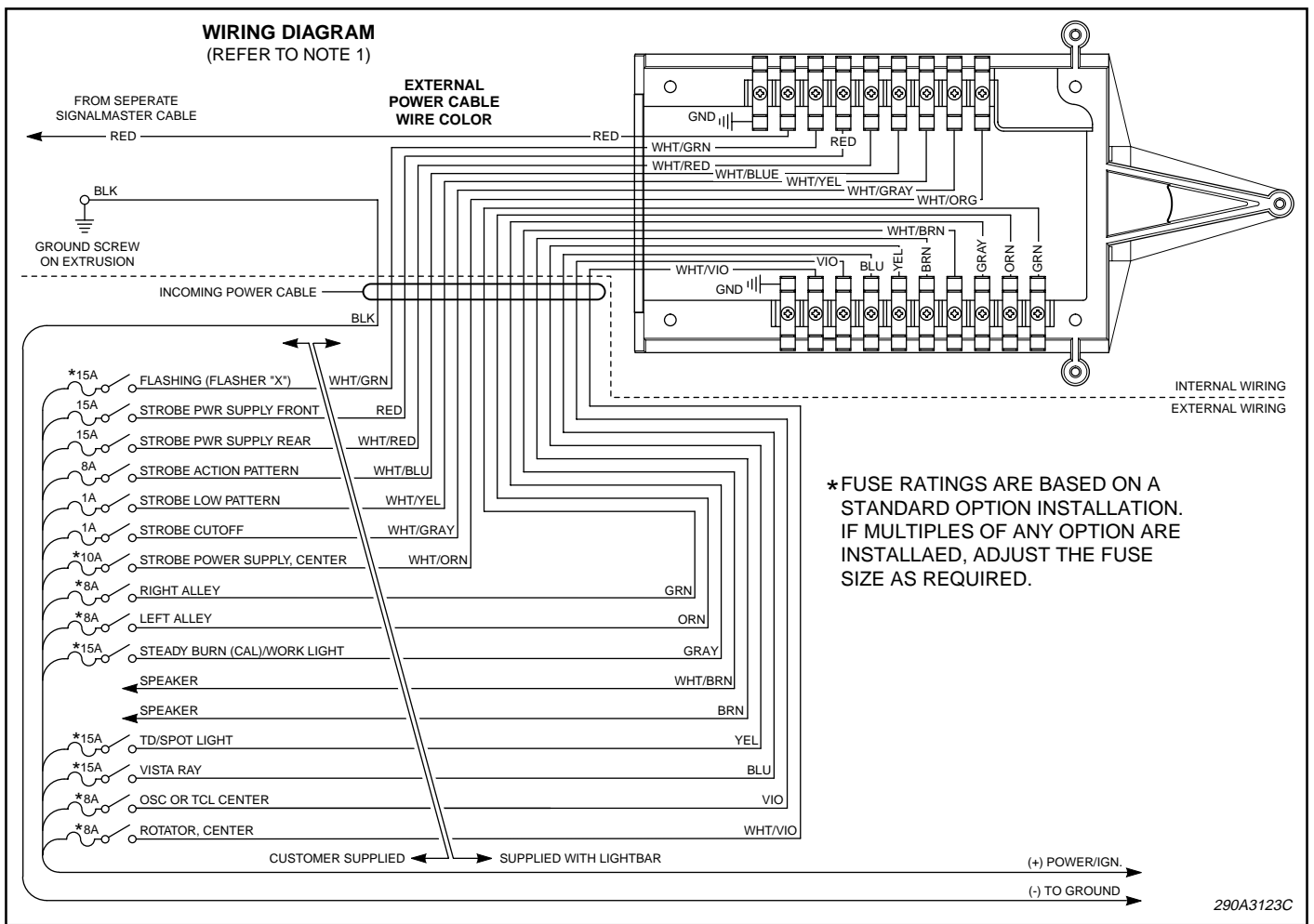


Figure 1.

NOTE 1. VARIATIONS TO WIRING DIAGRAMS MAY OCCUR WITH SOME OPTION COMBINATIONS. BEFORE CUTTING ANY POWER CABLE LEADS, PERFORM A FUNCTION CHECK BY APPLYING 12VDC TO THE APPROPRIATE CONTROL LEADS. THE HEAVY BLACK LEAD (-) MUST BE CONNECTED TO BATTERY GROUND, TO PERFORM A FUNCTION CHECK.

NOTE 2. THE FRONT CUTOFF WIRE (WHT/GRY) IS USED IN 4 AND 6 HEAD MODELS ONLY. IF THE FRONT CUTOFF WIRE (WHT/GRY) IS USED IN 8, 10, AND 12 HEAD MODELS, AN IMPROPER PATTERN WILL RESULT. TO ACTIVATE FRONT CUTOFF IN 8, 10, AND 12 HEAD MODELS, REFER TO PARAGRAPH II.B.4.

NOTE

All of the lightbar functions (except low power and action pattern) can be activated by applying 12VDC to the appropriate control line. The heavy black lead (-) must be connected to battery ground, to perform a function check.

B. *Function Activation-Primary Strobes.*

1. Standard (Quadruple Flashing) Mode.

The standard mode in four head and six head models is activated by applying 12VDC to the control cable's red wire. Activate the standard mode in eight, ten, and twelve head models by applying 12VDC to the control cable's red wire and to the white/red wire.

2. Action Mode (no-dark time).

Activate the standard mode (described above), and apply 12VDC to the control cable's white/blue wire.

3. Low Intensity Double Flash Mode.

Activate the standard, or action, mode and apply 12VDC to the control cable's white/yellow wire.

4. Front Cutoff.

Front cutoff in four and six head models is activated by applying 12VDC to the control cable's white/gray wire.

Front cutoff in eight, ten, and twelve head models is accomplished by disconnecting the 12VDC to the control cable's red wire.

Front cutoff can be used in conjunction with standard, action, or low intensity mode.

5. Rear Cutoff.

Rear cutoff (available only in eight and twelve head models) is activated by simultaneously applying 12VDC to the power cable red wire and disconnecting 12VDC from the white/red wire.

Rear cutoff can be used in conjunction with standard, action, or low intensity mode.

C. *Programming Intelli-Flash Flasher Option.*

⚠ WARNING

DO NOT connect flasher to brake light circuit of ANY vehicle.

DO NOT connect flasher to the headlight circuit of any vehicle.

Connection of aftermarket electrical equipment into this circuit may interfere with the brake shift interlock.

This could cause the vehicle to unexpectedly move forward causing possible property damage, injury or death to the vehicle operator or others.

The flasher will provide the end user with one of eight preselected flash patterns. It is recommended that the flash pattern be determined and programmed during lightbar installation.

The following procedure demonstrates the programming feature of the flasher (refer to table 1 and/or deviation sheet for proper wire colors for power inputs).

Remove the center lightbar dome. Locate the flasher and programming pins (see figure 2). Tempo-

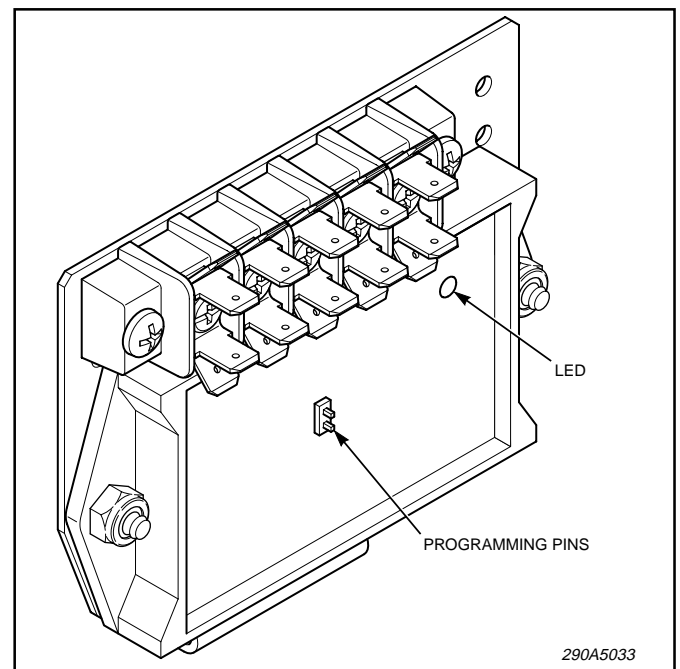


Figure 2.

rarily make ground connection and apply power to the input wire of the Intelli-Flasher. Momentarily short across pattern selection pins. This will cause the flasher to change flash pattern. Repeat until the desired pattern is running. Allow the pattern to run for 15-seconds; the flasher is now programmed. Replace the dome and continue installation.

III. BASIC MAINTENANCE.

⚠ WARNING

High voltages are present inside the lightbar. Wait at least ten (10) minutes, after shutting off power, before servicing this unit. Failure to do so may result in property damage, serious injury, or death to you or others.

Disconnect ALL power to the lightbar before any maintenance is performed.

A. *Cleaning the Plastic Domes.*

Ordinary cleaning of the plastic domes can be accomplished by using mild soap and a soft rag. Should fine scratches or a haze appear on the domes, they can ordinarily be removed with a non-abrasive, high quality automotive paste wax.

⚠ WARNING

Crazing (cracking) of domes will cause reduced effectiveness of light system. Do not use cleaning agents (which will cause crazing) such as strong detergents, solvents, or petroleum products. If crazing of domes does occur, reliability of light for emergency warning purposes may be reduced until domes are replaced.

B. *Halogen Lamp Replacement.*

⚠ WARNING

A serious injury may result if lamp is touched when hot. Always allow lamp to cool before removing. Halogen lamps are pressurized and if broken can result in flying glass. Always wear gloves and eye protection when handling the lamps.

CAUTION

Service life of lamp will be shortened if glass portion is touched. If glass has been handled, clean carefully with a grease solvent.

1. Primary Lamps.

See figure 3. Refer to table 2 and replace the defective lamp with an exact replacement only.

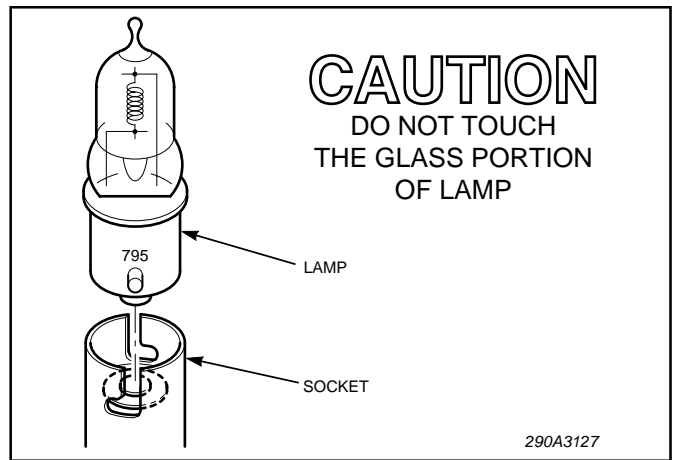


Figure 3.

Table 2.

FUNCTION	REPLACEMENT LAMP
Alley, Takedown, Steady Burn, Work, Spot Light	50W Halogen, GH-8 (bi-pin) Part No. 8107169
Flashing	35W Halogen, GH-9 (bi-pin) Part No. 8107170
SignalMaster	27W Halogen, bi-pin Part No. 8573007
VistaRay	50W Halogen, Sylvania #795 Part No. 8107A119 Part No. 8107191, Blue Part No. 8107191-01, Red
Brake/Tail Light	Incandescent Lamp #1157 Part No. 8107A095
TCL, Rotating, Oscillating	50W Halogen, Sylvania #795X Part No. 8107141
Directional Strobe	Strobe Tube Assy. Part No. 8583310
Primary Strobe	Linear Strobe Tube Part No. 8583022
Gen-1 LED	PCB, LED Assembly Red-Part No. 2005102 Amber-Part No. 2005102-01 Blue-Part No. 2005145
Gen-3 LED	Replacement Module Amber-Part No. 8583228-02 Blue-Part No. 8583228-03 Red-Part No. 8583228-04 White-Part No. 8583228-05
Gen-3 LED Economy	Replacement Module Amber-Part No. 8583228-02E Blue-Part No. 8583228-03E Red-Part No. 8583228-04E White-Part No. 8583228-05E

2. Secondary Lamps.

See figure 4. Refer to table 2 and replace the defective lamp with an exact replacement only.

C. Cleaning Reflector Assemblies.

Use a soft tissue to clean the reflectors. Avoid heavy pressure and the use of caustic or petroleum base solvents which will scratch or dull the surface.

D. Strobe Tube Replacement.

⚠ WARNING

High voltages are present inside the lightbar. Wait at least ten (10) minutes, after shutting off power, before servicing this unit. Failure to do so may result in property damage, serious injury, or death to you or others.

Disconnect ALL power to the lightbar before any maintenance is performed.

As strobe lights are used, flash tubes begin to darken, causing the light output to decrease. Also,

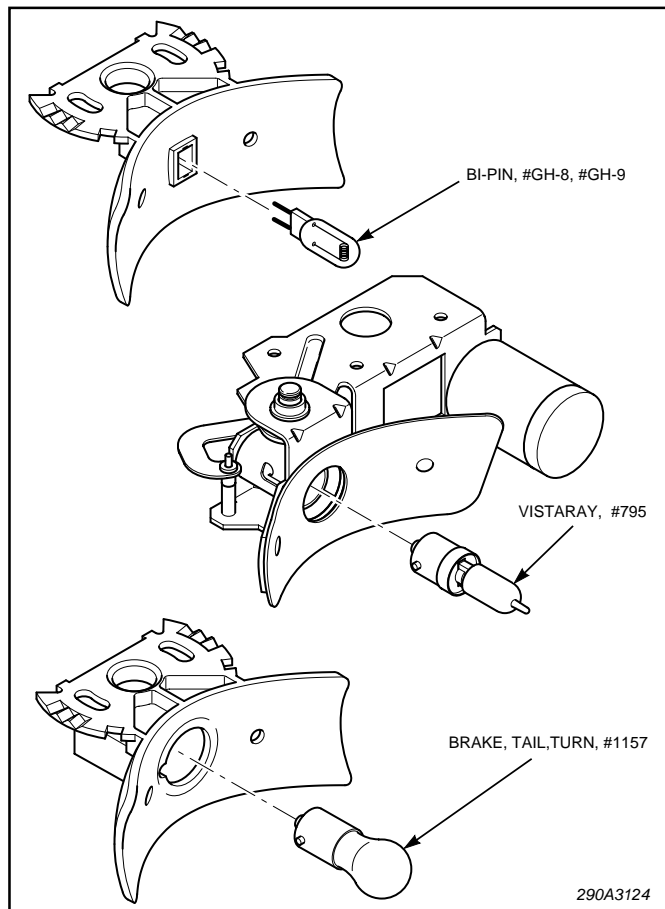


Figure 4.

as flash tubes age, they may have a tendency to misfire (not fire periodically).

After extended operation, occasionally check for flash tube degradation. Should the tube misfire, have a noticeable decrease in light output, glow continuously, or darken excessively, it should be replaced.

NOTE

Not replacing a strobe tube when any of the above conditions exist could cause a breakdown of other power supply components.

1. Primary Linear Strobe Tube.

See figure 5 and proceed as follows:

- a. Refer to table 2 for the correct strobe tube part number.
- b. Remove and retain the screw which secures the defective strobe head assembly to the dome. Remove and retain the two screws which secure the lens to the strobe head assembly.

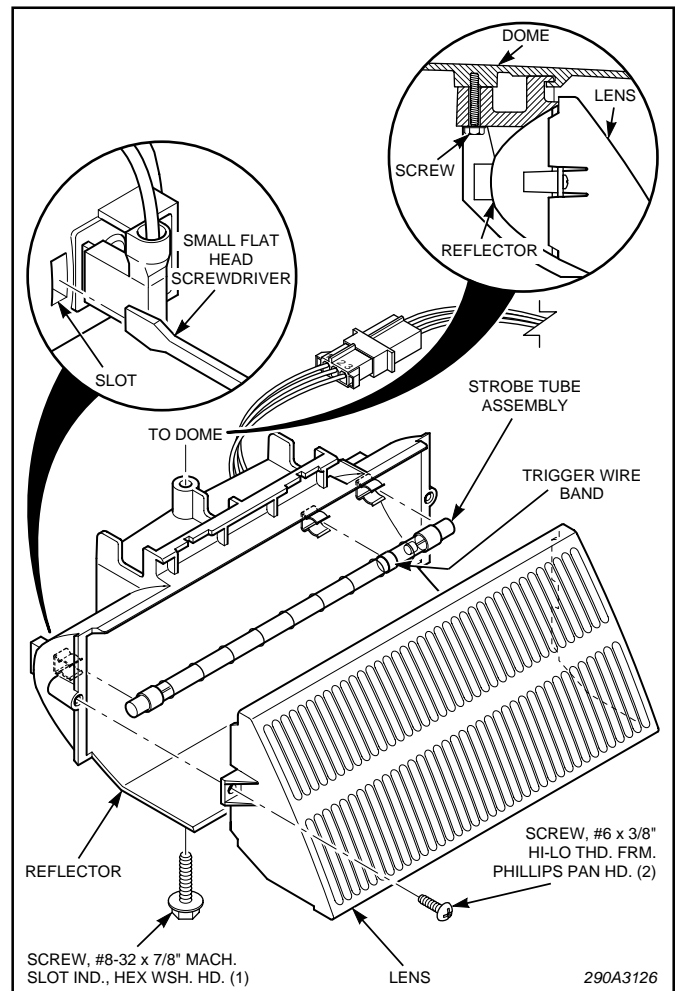


Figure 5.

c. Insert a small flat head screwdriver in the slot on the back of the reflector. Note the strobe tube's orientation and gently push forward to release the defective strobe tube.

d. Carefully install the new strobe tube. Ensure that the new strobe tube is properly oriented. See figure 5. The trigger wire band **MUST BE** aligned with the clip in the reflector and the trigger wire lacing, wrapped around the glass tube, faces the rear of the reflector.

CAUTION

Service life of strobe tube will be shortened if the trigger wire band is not aligned with the clip in the reflector. Ensure that the trigger wire band is aligned with the clip in the reflector.

e. Replace the lens and secure with the previously removed screws. Secure the strobe head assembly in the dome using the previously removed screw. Dress the strobe head wires neatly in the dome.

2. Secondary Strobe Tube Assembly.

See figure 6 and proceed as follows:

a. Refer to table 2 for the correct strobe tube part number.

b. Push the defective strobe tube assembly out of the reflector.

c. Disconnect the red 3-position connector at the end of the tube's wiring.

d. To facilitate assembly, apply a high temperature grease, or Vaseline, to the rubber edge of the strobe tube. **SLOWLY** insert the strobe tube into the reflector housing. Ensure that the flat on the strobe tube is aligned with the flat on the reflector.

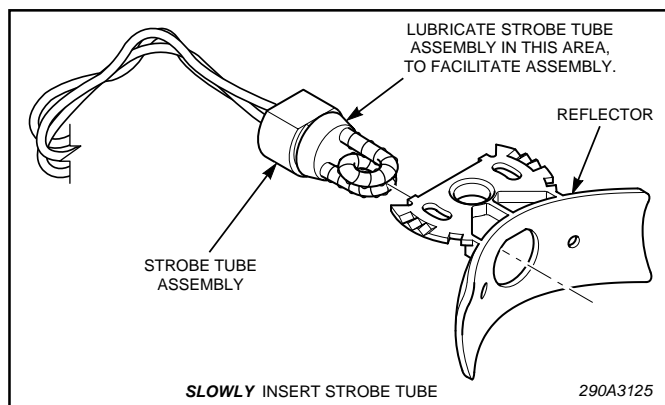


Figure 6.

e. Reconnect the red 3-position connector.

E. Strobe Power Supply Fuse Replacement.

⚠ WARNING

High voltages are present inside the lightbar. Wait at least ten (10) minutes, after shutting off power, before servicing this unit. Failure to do so may result in property damage, serious injury, or death to you or others.

Disconnect ALL power to the lightbar before any maintenance is performed.

Replace the fuse on the power supply's top with an EXACT replacement. The 15A fuse for the primary strobe power supply is Federal Part No. 148A142-06. The 10A fuse for the secondary strobe power supply is Federal Part No. 148A142-05.

F. Strobe Power Supply Replacement.

⚠ WARNING

High voltages are present inside the lightbar. Wait at least ten (10) minutes, after shutting off power, before servicing this unit. Failure to do so may result in property damage, serious injury, or death to you or others.

Disconnect ALL power to the lightbar before any maintenance is performed.

Other than the fuse, the strobe light power supply does not contain any user serviceable parts. Should a breakdown in the power supply occur, it should be returned to Federal for repair and replaced. To remove the power supply, proceed as follows:

1. Unplug the connectors from the power supply.

2. Remove the four #8 screws which secure the power supply.

3. Install the new power supply by performing the previous steps in reverse order.

G. Rotator Gear Service.

All rotator gears are lubricated at the factory. Depending on operating conditions, we recommend periodic inspection and lubrication of all gears. Use Dow Corning Molykote 33 or equivalent medium consistency grease. The special grease fitting

(Federal Signal part no. 8542A293) required to perform this operation can be purchased from the Federal Signal service department. The fitting can be attached to any grease gun having a 1/8" N.P.T. outlet. See figure 7 for grease port locations.

H. LED Assembly Replacement.

⚠ WARNING

A serious injury may result if LED assembly is touched when hot. Always allow LED assembly to cool before removing.

1. Gen-1 LED.

See figure 8. Refer to table 2 and replace the defective LED assembly with an exact replacement only.

2. Gen-3 LED and Gen-3 LED Economy.

See figure 9. Refer to table 2 and replace the defective LED assembly with an exact replacement only.

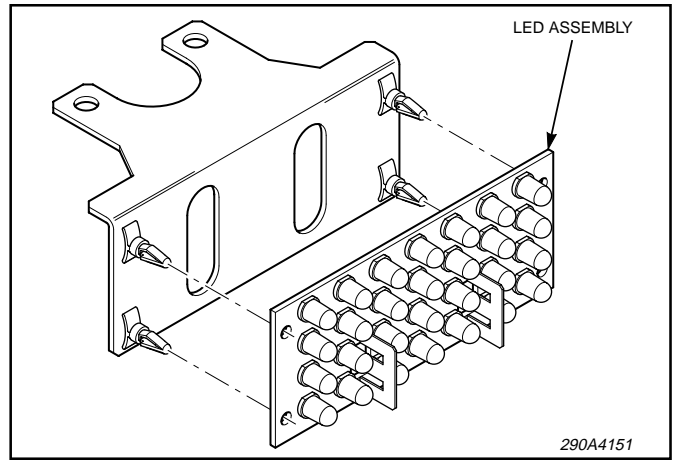


Figure 8.

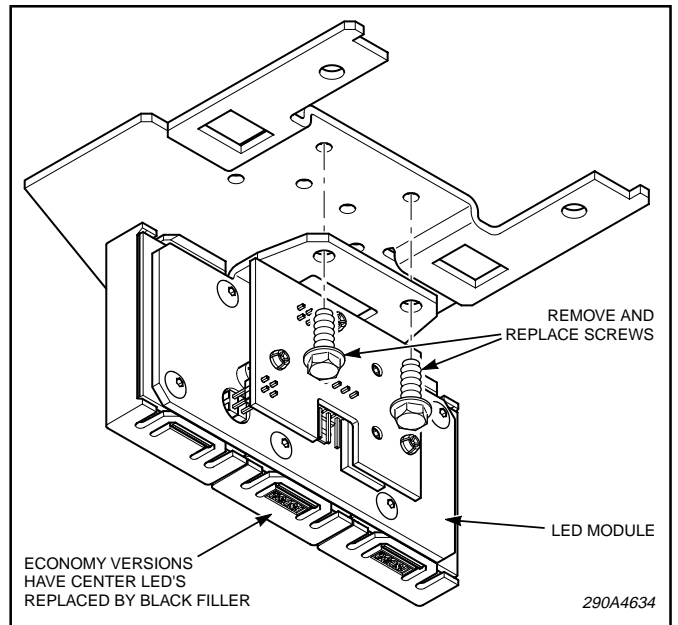


Figure 9.

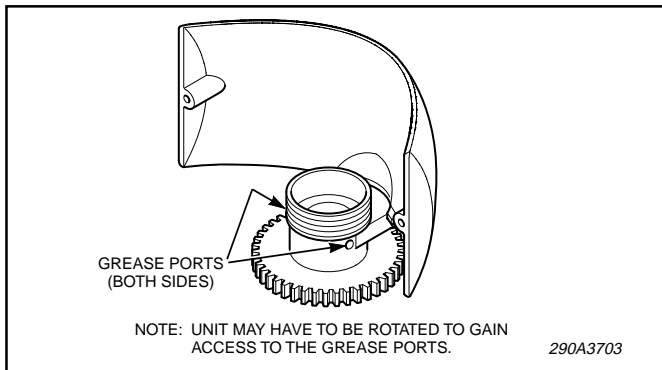


Figure 7.