

## INSTALLATION AND MAINTENANCE INSTRUCTIONS FOR JETSTROBE™ PLUS MODELS SJ1P, SJL1P, SJ2P, SJL2P, SJ3P, AND SJL3P

### SAFETY MESSAGE TO INSTALLERS OF FEDERAL SIGNAL LIGHT SYSTEMS

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.
- 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. GENERAL.

The Federal JetStrobe™ Plus Lightbar is the most aerodynamic strobe bar available today. It utilizes the latest in solid-state electronics and strobe

technology. The highly effective quadruple flash pattern is produced by powerful, highly efficient, and reliable power supplies. The ten head models feature an innovative no-dark action pattern. All models incorporate a low intensity double flash mode which reduces power consumption by 60%.

Six base model bars are available: a ten head (SJ3P, SJL3P), six head (SJ2P, SJL2P), and four head (SJ1P, SJL1P).

JetStrobe Lightbar Models SJ1P/SJL1P utilize a four head quadruple flash power supply, and Models SJ2P/SJL2P utilize a six head quadruple flash power supply. Models SJ3P/SJL3P are powered by four head and six head quadruple flash power supplies.

The center section and sections not consumed by strobe heads are available to place the following options: takedown light, halogen flashing lamp, steady burn red, brake/tail light, and work light.

Options also available for the center section *only* include: Meteor-traffic clearing light, 90 FPM rotator, or above 175 FPM rotator.

#### II. UNPACKING.

After unpacking the JetStrobe 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.

#### III. 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. Route the lightbar cable as described below.

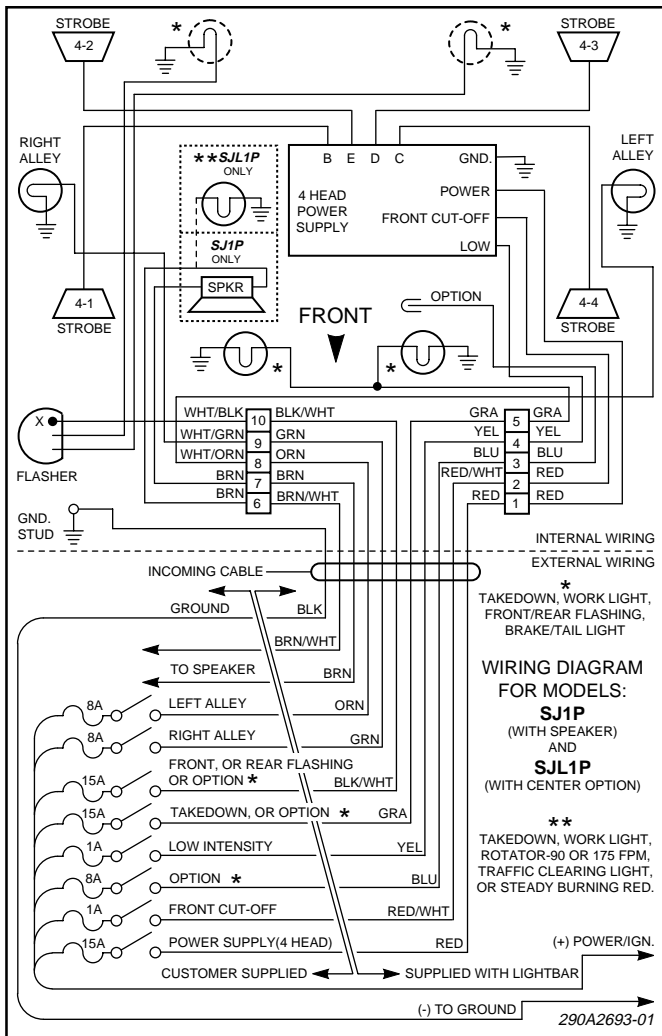


Figure 1. SJ1P and SJL1P Wiring Diagram.

**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 the appropriate wiring diagram (figures 1 through 4) as a guide, make the appropriate electrical connections shown in Table 1. Ensure that the lines are adequately fused as shown in the appropriate figure.

**CAUTION**

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

3. Connect the black lead to chassis ground.

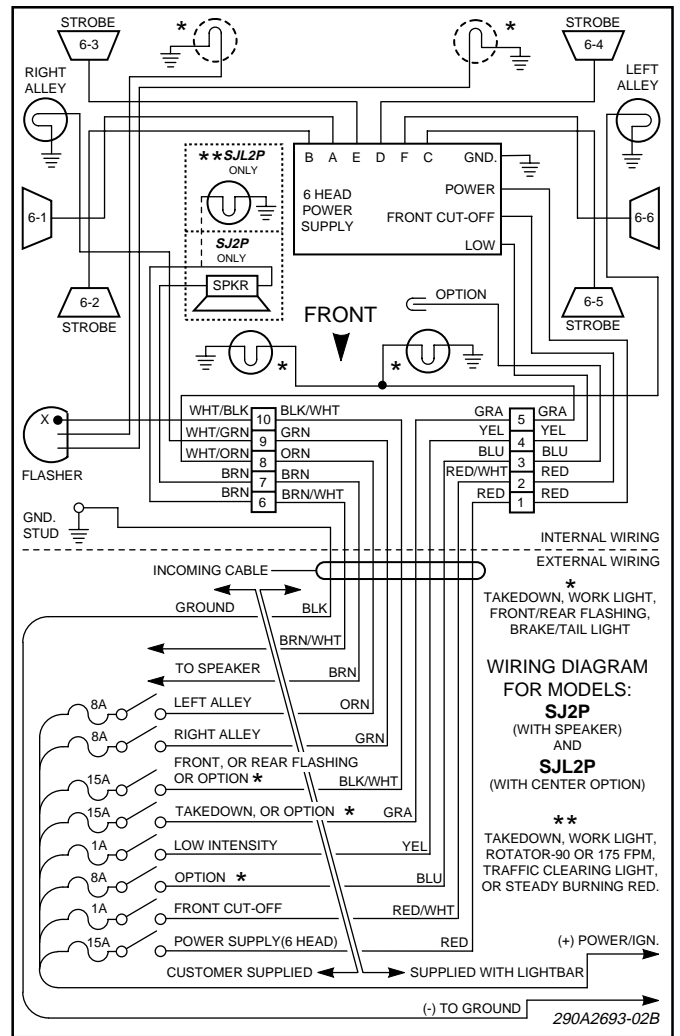


Figure 2. SJ2P and SJL2P Wiring Diagram.

**NOTE**

Most of the lightbar functions can be activated by applying 12VDC to the appropriate control line. The heavy black lead (-) must be connected to vehicle ground, to perform a function check.

B. Side Facing Strobe Insert (JSFEI) Installation for Six and Ten Head Models.

**NOTE**

The four insert clips and four #4 screws contained in the packing carton will be used in the following steps.

1. See figure 5. Position two insert clips on the side facing reflector/flash tube assembly and press the clips until they slide into position.

2. Position the separately purchased insert as shown in figure 5. Align the holes in the insert with the holes in the clips and secure with two #4 screws.

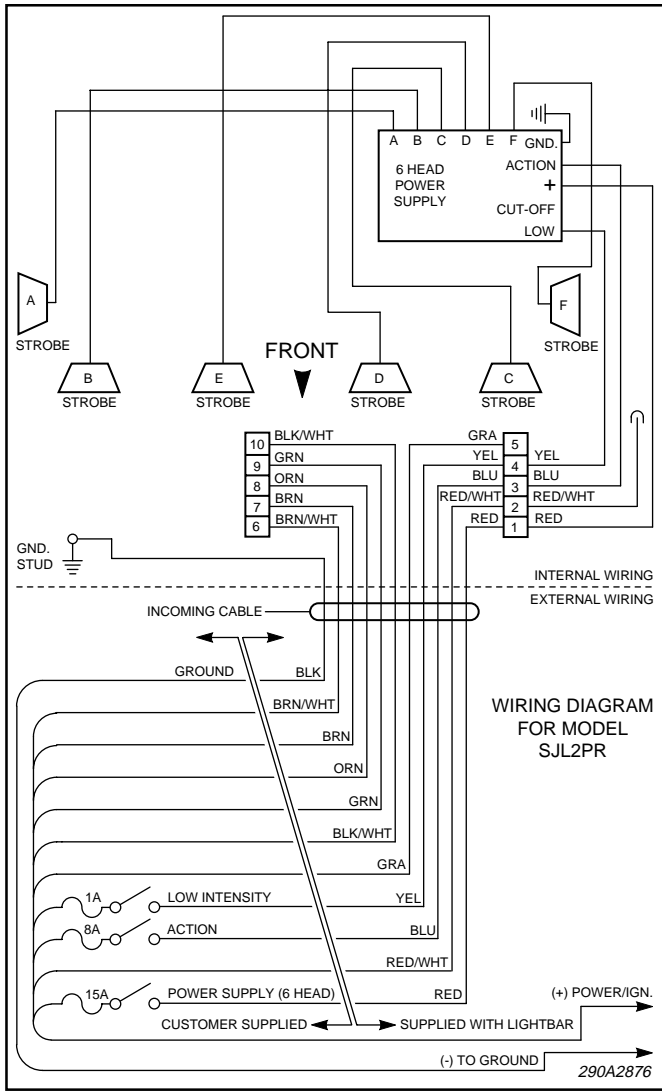


Figure 3. SJL2PR Wiring Diagram.

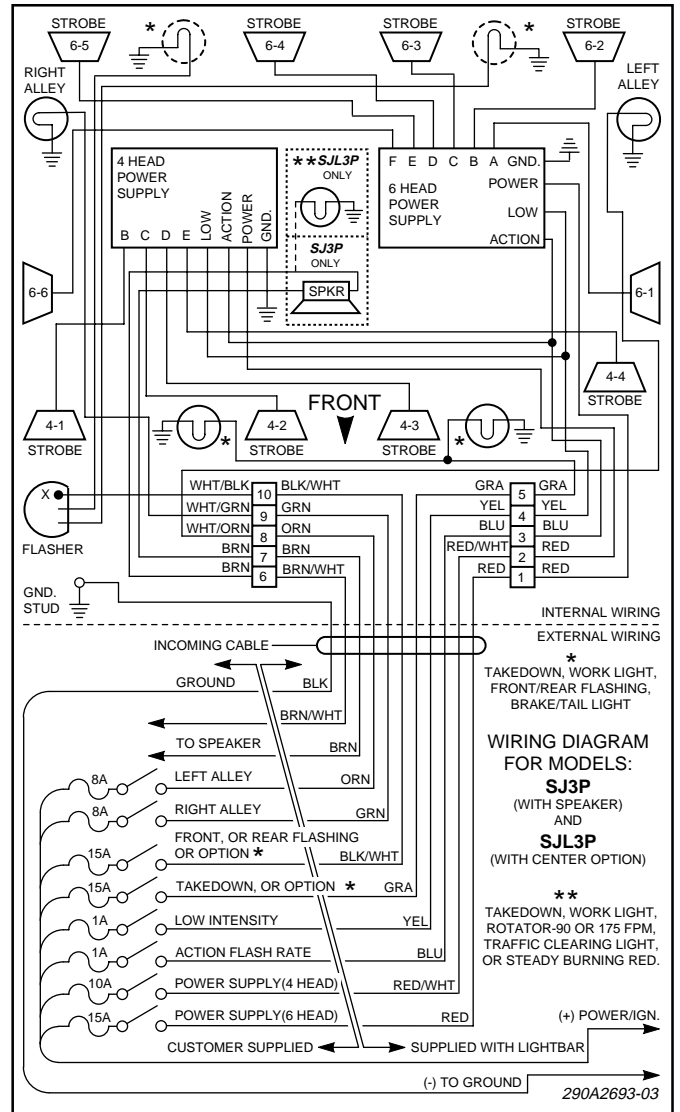


Figure 4. SJ3P and SJL3P Wiring Diagram.

Table 1. Electrical Connections.

Wire Color	Functions		
	<i>Models SJ1P &amp; SJL1P</i>	<i>Models SJ2P , SJL2P &amp; SJL2PR</i>	<i>Models SJ3P &amp; SJL3P</i>
BLK	Ground (-)	Ground (-)	Ground (-)
RED	Strobe Power	Strobe Power	Strobe Power (Rear and Side)
RED/WHT	Front Cutoff	Front Cutoff	Strobe Power (Front)
BLU	Option*	Option* or Action Mode	Action Mode
YEL	Low Intensity	Low Intensity	Low Intensity
GRAY	Takedown or Option*	Takedown or Option*	Takedown or Option*
BLK/WHT	Halogen Flashing or Option*	Option*	Option*
GRN	Right Alley	Right Alley	Right Alley
ORG	Left Alley	Left Alley	Left Alley
BRN	Option*, Speaker (SJ1P)	Option*, Speaker (SJ2P)	Option*, Speaker (SJ3P)
BRN/WHT	Option*, Speaker (SJ1P)	Option*, Speaker (SJ2P)	Option*, Speaker (SJ3P)

\* Options Include: Rotators, Traffic Clearing Light, Brake/Turn, Steady Burning Red

3. Repeat the above steps for the other side facing reflector/flash tube assembly.

C. *Function Activation.*

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 heavy red wire. Activate the standard mode in ten head models by applying 12VDC to the control cable's heavy red wire and to the red/white wire.

2. No-Dark Time Action Mode.

**NOTE**

Available ONLY in ten head models (SJ3P and SJL3P).

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

3. Front Cutoff.

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

Front cutoff in ten head models is accomplished by disconnecting the 12VDC to the control cable's red/white wire. Standard or action front cutoff modes are obtained depending on the voltage applied to the control cable's blue wire.

4. Low Intensity Double Flash Mode.

Activate the standard, action, or front cutoff mode (described above), and apply 12VDC to the control cable's yellow wire.

5. Front Only Mode.

Front only mode (available only in ten head models) is activated by simultaneously applying 12VDC to the power cable red/white wire and disconnecting 12VDC from the red wire. Standard, action, or low intensity modes are obtained depending on the voltage applied to the blue and yellow wires.

**IV. 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.

Replace 50-watt halogen lamps with Federal Part Number 8107A119 and 35-watt with 8548A028.

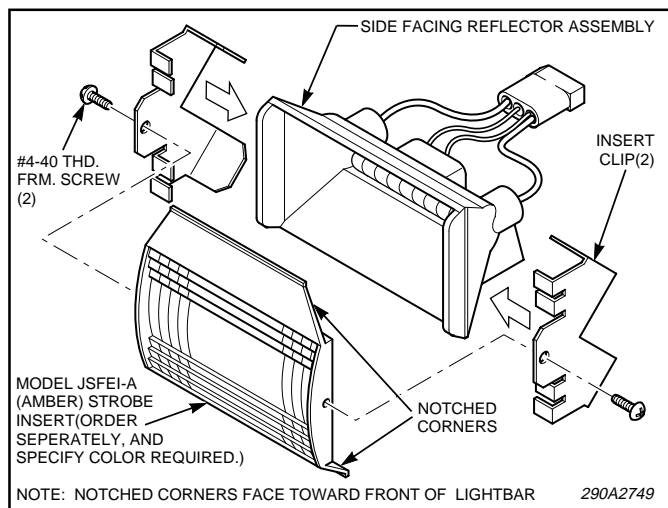


Figure 5. JSFEI Installation.

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. *Reflector/Flash Tube Assembly 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, 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 the reflector/flash tube assembly when any of the above conditions exist could cause a break-down of other power supply components.

To replace a reflector/flash tube assembly, proceed as follows:

1. Unplug the reflector/flash tube assembly's connector from the wiring harness.
2. Remove and retain the two #8 thread-forming screws which secure the reflector/flash tube assembly.
3. Install the new reflector/flash tube assembly (Part No. 8552443) by performing the previous steps in reverse order.

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 is Federal Part No. 148A142-06.

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. *Speaker Driver and Cone Replacement.*

To replace the speaker driver and cone, proceed as follows (see figure 6):

1. Remove the grille and rear cover from the speaker housing.

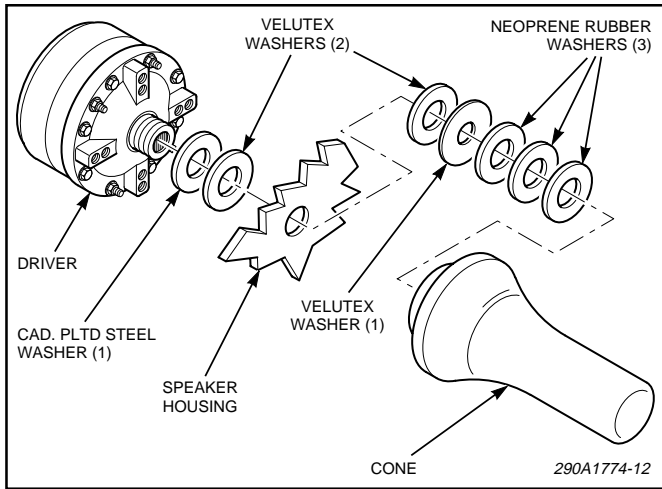


Figure 6. Speaker Driver and Cone Replacement.

2. Unscrew the cone, being careful not to lose the five (5) washers.

3. Unscrew the wirenuts which connect the driver lead wires to the light assembly feed wires.

4. Remove the two (each) 1/4-20 screws, washers and lockwashers which secure the driver to the housing.

5. Remove the driver, being careful not to lose the two (2) washers.

6. Remove the leads from the old driver and connect to the new driver. 58-watt driver must be unsoldered and then re-soldered.

7. Reinstall the driver. Ensure that washers are installed correctly (see figure 5). Reconnect the driver lead wires to the light assembly feed wires. Secure connections with wirenuts.

8. Reinstall cone. Ensure that washers are installed correctly (see figure 6).

9. Replace grille and rear cover (removed in step 1).