



3-Pod and Split Vision SLR™ Lightbars



Installation, Maintenance, and Service Manual

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CHAPTER 1

Safety Messages for Installers and Operators

For your safety, read and understand this manual thoroughly before installing, operating, and servicing the Vision SLR™ lightbar. The safety messages presented in this chapter and throughout the manual are reminders to exercise extreme care at all times. In addition, read and understand the safety instructions to installers (doc. no. 256A692), and keep it close at hand for reference.

To download copies of this manual, go to www.fedsig.com or call the Federal Signal Service Department at 1-800-433-9132, 7 a.m. to 5 p.m., Monday through Friday (CT).

Safety Messages to Installers of Warning Light Equipment

WARNING

People's lives depend on your proper installation and servicing of Federal Signal products. It is important to read and follow all instructions shipped with this product. In addition, listed below are some other important safety instructions and precautions you should follow:

Before Installation

Qualifications

- To properly install or service this equipment, you must have a good understanding of automotive mechanical and electrical procedures and systems along with proficiency in the installation and service of safety warning equipment. Always refer to the vehicle service manuals when performing equipment installations on a vehicle.

Light Hazards

- To be an effective warning device, this product produces bright light that can be hazardous to your eyesight when viewed at a close range. Do not stare directly into this lighting product at a close range or permanent damage to your eyesight may occur.
- Do not install the light system in an area that would block, impair, or blind the driver's vision. Ensure that the light system is mounted in a position that is outside of the driver's field of vision, so the driver can safely operate the vehicle.
- Federal Signal power supplies and lightheads are designed to work together as a system. Combining lightheads and a power supply from different manufacturers may reduce the warning effectiveness of the lighting system and may damage the components. You should verify or test your combination to ensure the system works together and meets federal, state, and local standards or guidelines.

Electrical Hazards

- A light system is a high current system. In order for the system to function properly, a separate negative (–) connection and positive (+) connection must be made. All negative connections should be connected to the negative battery terminal and a suitable fuse should be installed on the positive battery terminal connection as close to the battery as possible. Ensure that all wires and fuses are rated correctly to handle the device and system amperage requirements.
- Never attempt to install aftermarket equipment that connects to the vehicle wiring without reviewing a vehicle wiring diagram available from the vehicle manufacturer. Ensure that your installation will not affect vehicle operation or mandated safety functions or circuits. Always check the vehicle for proper operation after installation.
- The lighting system components, especially light bulbs, strobe tubes, LEDs, and the outer housing, get hot during operation. Be sure to disconnect power to the system and allow the system to cool down before handling any components of the system.
- Do not mount a radio antenna within 18 inches (45.7 cm) of the lighting system. Placing the antenna too close to the lighting system could cause the lighting system to malfunction or be damaged by strong radio fields. Mounting the antenna too close to the lighting system may also cause the radio noise emitted from the lighting system to interfere with the reception of the radio transmitter and reduce radio reception.
- Do not attempt to wash any unsealed electrical device while it is connected to its power source.

During Installation and Service

- A light system is a high current system. Disconnect ALL power to the lightbar before any maintenance is performed. Failure to do so may result in property damage, serious injury, or death.
- DO NOT get metal shavings inside the product. Metal shavings in the product can cause the system to fail. If drilling must be done near the unit, place an ESD-approved cover over the unit. Inspect the unit after mounting to be sure there are no shavings present in or near the unit.
- To avoid a battery explosion, always disconnect the negative battery cable first and reconnect it last. Avoid causing a spark when connecting near or to the battery. The gases produced by a battery can cause a battery explosion that could result in vehicle damage and serious injury.
- DO NOT connect this system to the vehicle battery until ALL other electrical connections are made, mounting of all components is complete, and you have verified that no shorts exist. If the wiring is shorted to the vehicle body or frame, high current conductors can cause hazardous sparks resulting in electrical fires or flying molten metal.
- DO NOT install equipment or route wiring (or the plug-in cord) in the deployment path of an airbag.
- If a vehicle seat is temporarily removed, verify with the vehicle manufacturer if the seat needs to be recalibrated for proper airbag deployment.
- Before mounting any components, check the manual to be sure that the component you are installing is suitable for use in that area of the vehicle. Many components are not suitable for use in the engine compartment or other extreme environmental exposure areas.

- When drilling into a vehicle structure, be sure that both sides of the surface are clear of anything that could be damaged. Remove all burrs from drilled holes. To prevent electrical shorts, grommet all drilled holes through which wiring passes. Also, ensure that the mounting screws do not cause electrical or mechanical damage to the vehicle.
- Refer to the manual packed with the lighting system for proper electrical connections, additional precautions, and information.
- To avoid denting the roof of the vehicle, place the lightbar mounting feet as close to the outer edge of the roof as possible.
- Roof damage can occur if the hook adjustment bolts are over-tightened. On Arjent lightbars tighten the hook-adjustment bolts 10 ft-lb to 11 ft-lb. On all other lightbars tighten the adjustment bolts 6 ft-lb to 7 ft-lb. Install keeper plates.
- Locate the light system controls so the VEHICLE and CONTROLS can be operated safely under all driving conditions.

After Installation or Service

- After installation, test the light system to ensure that it is operating properly.
- To ensure proper operation, test all vehicle functions, including horn operation, vehicle safety functions, and vehicle light systems. Ensure that the installation has not affected the vehicle operation or changed any vehicle safety function or circuit.
- Scratched or dull reflectors, mirrors, or domes will reduce the effectiveness of the lighting system. Avoid heavy pressure and use of caustic or petroleum based products when cleaning the lighting system. Replace any optical components that may have been scratched or crazed during system installation.
- Do not attempt to activate or de-activate the light system control while driving in a hazardous situation.
- You should frequently inspect the light system to ensure that it is operating properly and that it is securely attached to the vehicle.
- After installation and testing are complete, provide a copy of these instructions to instructional staff and all operating personnel.
- File these instructions in a safe place and refer to them when maintaining and/or re installing the product.

Failure to follow these precautions may result in property damage, serious injury, or death.

Safety Message to Operators of Warning Light Equipment

People's lives depend on your safe use of our products. Listed below are some important safety instructions and precautions you should follow:

- Do not attempt to activate or de-activate the light system control while driving in a hazardous situation.
- Although your warning system is operating properly, it may not be completely effective. People may not see or heed your warning signal. You must recognize this fact and continue driving cautiously.
- Also, situations may occur which obstruct your warning signal when natural and man-made objects are between your vehicle and others, such as raising your hood or trunk lid. If these situations occur, be especially careful.
- All effective sirens and horns produce loud sounds that may cause, in certain situations, permanent hearing loss. You and your passengers should consider taking appropriate safety precautions, such as wearing hearing protection.
- In order to be an effective warning device, this product produces bright light that can be hazardous to your eyesight when viewed at a close range. Do not stare directly into this lighting product at a close range or permanent damage to your eyesight may occur.
- It is important that you fully understand how to safely operate this warning system before use.
- You should only operate your vehicle and its light/sound system in accordance with your department's Standard Operating Procedures.
- If a selected function does not perform properly or if any of the lamps remain illuminated when the control is off, disconnect the power connector from the control unit and contact the nearest service center.
- At the start of your shift, you should ensure that the entire warning light system and the siren system is securely attached and operating properly.
- Ensure that the mounting surface is flat.

Failure to follow these precautions may result in property damage, serious injury, or death.

CHAPTER 2

An Overview of the 3-Pod and Split Vision Lightbars

The 3-Pod and Split Vision SLR are rotating LED lightbars, employing fixed LED boards and rotating Solaris® S2 reflectors. V-shaped construction lets the Vision SLR warning system maximize light warning efficiency at crucial intersection angles. The individual domes are shaped to eliminate critical dome angles, which reflect rather than transmit light in other lightbars, significantly improving light transmission (brightness). Vision SLR continues and improves its predecessor's revolutionary aerodynamic styling to provide superior vehicle fuel efficiency and top speed.

LED Lights and Colors

The LED pods are positioned to provide 360-degree coverage. The warning system's LED pods are available in multicolor. Exclusive to Federal Signal, Spectralux technology provides for entirely new color combinations. One pod can have more than one color, for example, rotating red, then switching to blue, and then to white when the takedown function is activated. Single color pods are also available. All pods are Smart Pods and are pre-programmed to provide a wide selection of warning light patterns. Pattern selection can be performed during or after installation.

LED Flash Rates and Positions

Quiet, smooth, precise, and efficient positioning stepper motors control the Solaris S2 reflectors and have a longer life than conventional DC motors. The motors provides a variety of flash rate options and oscillation angles. In addition, each reflector allows two LEDs to shine upward for the aerial location of the vehicle. The lightbar is protected against reverse damage. The Vision SLR lightbar may be installed in any vehicle with a 12 Vdc NEGATIVE-ground electrical system.

Control Options

The lightbar is completely wired at the factory and does not require any additional internal wiring. All the conductors necessary to control the functions of the lightbar are contained in the 2-conductor power cable and 6-conductor control cable.

Other advanced features of the Vision SLR lightbar include:

- A high degree of reliability through the use of advanced microprocessors and other integrated circuits.
- Modular construction with easily replaceable pods and domes to greatly reduce spare parts inventory.
- High output, long-life LEDs with no bulbs to change.

Dimensions

Model	Length	Height	Depth	Weight*
VSLR3	22.4 in (56.9 cm)	4.6 in (11.7 cm)	17.8 in (45.2 cm)	21.6 lb (9.8 kg)
VSLR6 (each half)	21.1 in (53.6 cm)	4.6 in (11.7 cm)	21.7 in (55.1 cm)	18.9 lb (8.6 kg)
VSLR8 (each half)	26.8 in (68.1 cm)	4.6 in (11.7 cm)	26.5 in (67.3 cm)	23.8 lb (10.8 kg)

**Less mounting feet*

Light Specifications

Lighting Option	LED (all heads)
Current Draw	2.2 A per pod
Lamp Technology	High-brightness LED
Reflector Style	Offset, compound curve, polished reflector
Maximum Amperage*	18 A (VSLR8), 14 A (VSLR6), 7 A (VSLR3)
Operating Temperature	40 °F to 149 °F (–40 °C to 65 °C)

**Steady Burn Mode*

CHAPTER 3

Preparing for the Lightbar Installation

Taking the preparatory steps in this chapter before mounting and wiring the lightbar to a vehicle will help ensure that your installation is fast, easy, and error free.

Unpacking the Lightbar

CAUTION

HEAVY OBJECT—Use lifting aids and proper lifting techniques when removing or replacing this product. Failure to follow this warning may cause personal injury.

Carefully unpack the lightbar assembly and any other products included in the shipment. Inspect them for damage that may have occurred during shipping. If a product has been damaged, do not install or operate it. Immediately file a claim with the carrier describing the damage. Carefully check all envelopes, shipping labels, and tags before removing or destroying them. If you are missing any parts, contact Customer Support at 1-800-264-3578, 7 a.m. to 5 p.m., Monday through Friday (CT).

Determining the Mounting Location and Wire Routings

To prepare for installing the lightbar:

1. Ensure that the battery voltage is the same as the voltage rating of the lightbar.
2. Verify that the lightbar and mounting hardware fit the vehicle.
3. Determine where to mount the lightbar on the vehicle.

WARNING

LOCATING OPERATOR CONTROLS—The controls for the light system must be located so that the **VEHICLE** and **CONTROLS** can be operated safely under all driving conditions.

WARNING

AIRBAG DEPLOYMENT—Do not install equipment or route wiring in the deployment path of an airbag. Failure to observe this warning will reduce the effectiveness of the airbag or potentially dislodge the equipment, causing serious injury or death.

4. Decide where to route wiring around airbag areas.
5. Decide where to route the power and ground wires from the lightbar.

⚠ WARNING

SEAT REMOVAL PRECAUTION—*If a vehicle seat is temporarily removed, verify with the vehicle manufacturer if the seat needs to be recalibrated for proper airbag deployment. Failure to follow this warning cause serious injury or death.*

6. To make wiring easier, remove the seats, spare tire, and pull down the headliner where needed.
 7. Separate all electronic equipment wiring from two-way radio equipment wiring.
-

NOTICE

INSTALLATION PRECAUTIONS—*The warning system and/or two-way radio system may operate improperly if a two-way radio antenna installed on or within 18 inches of the lightbar. Before permanently installing the lightbar or a two-way radio antenna, test the warning system and two-way radio system. DO NOT install a two-way radio antenna on the lightbar. Some installations may require the relocation of the two-way radio antenna to a trunk or fender location. DO NOT drill holes in the lightbar or install auxiliary devices on the lightbar or the warning system may fail.*

8. To avoid interference, keep two-way radio antennas a minimum of 18 in (45.7 cm) away from warning equipment.
9. Whenever possible, run full wire lengths. DO NOT splice the wires.
10. Do not coil excess wire. Leave a drain loop for servicing.
11. After drilling holes for wires, deburr them, smooth sharp edges, and insert grommets to protect the wires from chafing.
12. When you frame-ground the equipment, use the manufacturer-supplied ground locations in the vehicle.

IMPORTANT: After the installation, frequently inspect the lightbar and mounting feet to ensure that all fasteners and brackets are tight.

CHAPTER 4

Wiring the Lightbar in the Vehicle

Before wiring the lightbar in the vehicle, ensure that the lightbar has been installed on the vehicle roof in accordance with the instructions included with the mounting kit. Installation of options such as an Opticom® require additional wiring to the warning light system and vehicle battery not covered in this manual. Review the electrical requirements of the lightbar and use an installer-supplied switch or relay rated at 30 A for the connection between the red power lead of the lightbar and the fused power source. If additional wire length is needed, splice wire of the same gauge or heavier to the leads.

NOTE: The lightbar is not internally fused.

Connecting Power to the Lightbar

WARNING

BATTERY EXPLOSION—To avoid a battery explosion, always disconnect the negative cable first and reconnect it last. Avoid causing a spark when connecting near or to the battery. The gases produced by a battery can cause an electrical explosion that could result in vehicle damage and serious injury.

To connect the power and ground wires from the lightbar:

1. Route the power and control cable into the vehicle and under the dash, near the eventual location of the installer-supplied control head. Apply sealant to all drilled holes.
2. For the lightbar to operate properly, the control cable must be properly terminated inside the installer-supplied control head. The current capacities of the switch for the control head should be at least 15 amperes. See Tables 4.1 on page 15 for the wire colors and functions.

WARNING

PROPER GROUNDING—The lightbar **WILL NOT** light up or flash if it is improperly grounded. Be sure that the lightbar is connected to a good vehicle ground. Failure to observe this warning can lead to equipment failure and may result in serious injury or death.

3. Connect the black 14 AWG ground lead to a good battery or chassis ground.

WARNING

SPARK HAZARD—If wires are shorted to the vehicle frame or each other, high current conductors can cause hazardous sparks resulting in electrical fires and molten metal. Verify that no short circuits exist before connecting to the positive (+) battery terminal.

⚠ WARNING

CURRENT CAPABILITY—To provide safe operation of the lightbar, the power control switch and wiring must be capable of handling the rated current of the fuse at the source.

⚠ WARNING

HIGH CURRENT ARCING—Do not connect this system to the vehicle battery until ALL other electrical connections are completed, the mounting of all components is complete, and you have verified that no shorts exist. High-current shorts can cause hazardous sparks or burning wire resulting in an electrical fire.

NOTICE

FUSE ELECTRICAL SOURCES—Always fuse the current/voltage sources with a fuse connected near the power source. Be sure that the fuse is properly rated to protect the electrical load, the wiring, and the connectors in the circuit. Failure to follow this notice could result in vehicle or equipment damage.

4. Connect the red 14 AWG power lead from the lightbar to an installer-supplied switch or relay rated at 30 A.
5. Connect the other side of the fuse/circuit breaker to the +12 Vdc supply. The lightbar is not internally fused.

Wiring the Control Cable for the Standard VSLR Lightbar

All of the lightbar controls are integrated in the VSLR control board. Lightbars are manufactured with a 2-conductor power cable and a 6-conductor control cable. See Table 4.1 on page 15 for the functions of the control wires. You can activate any of the lightbar functions by applying +12 Vdc or GND (–) to the wire that controls the function.

For information on the option to enable the lightbar to cut off certain lights, see “Wiring the Controls for White Light and Rear Light Cutoff” on page 15.

Table 4.1 Functions of 2-conductor power cable and 6-conductor control cable

Wire Color	Function
Red	PRIMARY MODE: +12 Vdc activates the lightbar in Primary Mode.
Black	GND (–): Connects to a good battery/chassis ground.
Gray	FLOOD: Applying +12 Vdc will turn any rotating white heads into a flood light if the lightbar is powered up in Primary or Secondary Mode.
White	REAR LIGHT CUTOFF: Applying +12 Vdc will turn off any light from flashing to the rear of the bar.
Blue	SECONDARY MODE: Applying +12 Vdc changes the pattern of the lightbar to the pattern selected for Secondary Mode. The function is only active if the lightbar is flashing in Primary Mode.
Orange	PROGRAM: Touching GND (–) for 1 second advances the flash pattern to the next pattern in the library and stores it in memory. For a description of the flash patterns, see the tables on pages 18 through 20. Holding the orange Program wire to GND for 5 seconds reprograms the lightbar to Flash Pattern 1.
Yellow	WHITE LIGHT CUTOFF: White lights flash with the rest of the lightbar when +12 Vdc is applied to the yellow wire. White warning lights are cut off when disconnected or power is removed.
Brown	ALLEY LIGHT: Applying +12 Vdc will turn a single white pod into an alley light if the lightbar is powered up in Primary or Secondary Mode.

Wiring the Controls for White Light and Rear Light Cutoff

The standard lightbar is configured from the factory with options that turn off white lights to the front and turn off light to the rear of the lightbar. The options are controlled by applying and removing power to the control wire of the function in the lightbar cable.

White Light Cutoff

The option to cut off the standard white warning lights in the lightbar is programmed at the factory. The option is controlled by the yellow wire in the lightbar control cable. When +12 Vdc is applied to the wire, the white lights flash in the same flash pattern as the rest of the lightbar. When +12 Vdc is removed from the wire, the white lights turn off. For white light to flash in the lightbar, +12 Vdc must be present on the yellow lead.

Rear Light Cutoff

The lightbar is equipped to shut off the rear of the lightbar while the rest of the lightbar continues to flash. The option is controlled by the white wire in the lightbar control cable. When +12 Vdc is applied to the wire, the rear light is shut off. When +12 Vdc is removed from the wire, the lights turn back on. If rear-light cutoff is not needed, fold and insulate the wire.

CHAPTER 5

Programming Flash Patterns

Although the standard VSLR lightbar is shipped with preselected flash patterns for Primary and Secondary Mode, you can select new patterns from the lightbar's internal library of flash patterns. A pattern displayed in Primary Mode is typically more active than the pattern displayed in Secondary Mode. It indicates the primary purpose of the vehicle; for example, the vehicle is on its way to the scene of an emergency or is towing a vehicle. A pattern displayed in Secondary Mode is a more relaxed pattern, indicating that the vehicle is returning from the scene.

The default pattern in Primary Mode is Pattern 1. The default pattern in Secondary Mode is Pattern 2. Tables 5.2, 5.3, and 5.4 beginning on page 18 list the flash patterns in the lightbar pattern library for the 3-Pod V-Bar and 6-Pod and 8-Pod Split V-Bars.

We recommended that you select flash patterns for both Primary and Secondary Mode during the installation of the lightbar.

NOTE: To return to Flash Pattern 1 while programming Primary or Secondary Mode, apply GND (–) to the orange wire for 5 seconds.

Programming Primary Mode

For flash patterns in the lightbar library, refer to the table for your model of lightbar. See the tables on pages 18 through 20.

⚠ WARNING

LIGHT HAZARD—To be an effective warning device, this product produces bright light that can be hazardous to your eyesight when viewed at a close range. Do not stare directly into this lighting product at a close range or permanent damage to your eyesight may occur.

1. Apply +12 Vdc to the red Primary Mode wire in the lightbar cable.
2. Apply GND (–) to the orange wire in the lightbar cable for one second to display the next pattern in the library.
3. Remove the orange wire for a few seconds and observe the pattern.
4. To select the pattern, allow it to run for at least 15 seconds to save it in memory.

Programming Secondary Mode

For flash patterns in the lightbar library, refer to the table for your model of lightbar.

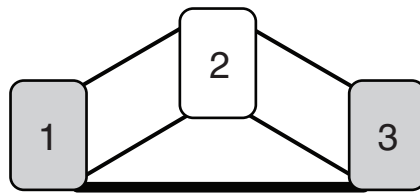
⚠ WARNING

LIGHT HAZARD—*To be an effective warning device, this product produces bright light that can be hazardous to your eyesight when viewed at a close range. Do not stare directly into this lighting product at a close range or permanent damage to your eyesight may occur.*

1. Apply +12 Vdc to both the red Primary and the blue Secondary Mode wires to turn on the lightbar in Secondary Mode.
2. Apply GND (–) to the orange wire in the lightbar cable for one second to display the next pattern in the library.
3. Remove the orange wire for a few seconds and observe the pattern.
4. To select a pattern, allow it to run for at least 15 seconds to save it in memory.

Table 5.1 Legends for VSLR flash patterns

NOTE: See Tables 5.2 (page 18), 5.3 (page 19), and 5.4 (page 20)	
Key	Definition
75	75 FPM rotation
90	90 FPM rotation
120	120 FPM rotation
OSC F	Oscillation to front
OSC R	Oscillation to right
OSL L	Oscillation to left
OSC FL	Oscillation to front left
OSC FR	Oscillation to front right
OSC LF	Oscillation to left front
OSC RF	Oscillation to right front

Table 5.2 3-Pod VSLR Flash Patterns

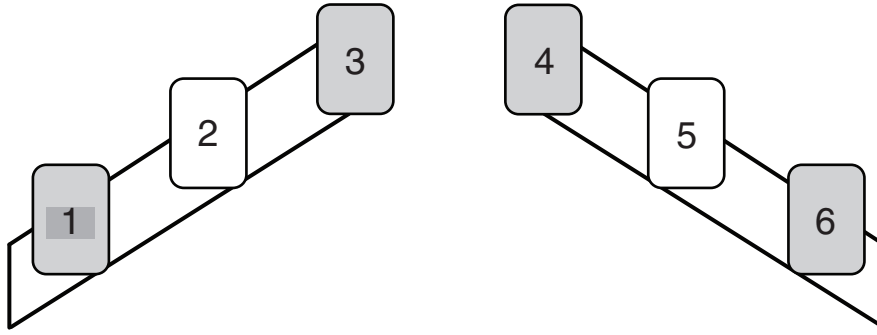
Pattern	Pod 1	Pod 2	Pod 3	
1	120	75	120	*
2	90	75	90	*
3	75	OSC F	75	
4	90	90	90	*
5	90	OSC F	90	
6	OSC FL	OSC F	OSC FR	
7	75	75	75	*
8	OSC FL	75	OSC FR	*
9	OSC F	75	OSC F	*
10	75	90	75	*
11	OSC FL	90	OSC FR	*
12	OSC F	90	OSC F	*
13	90	120	90	*
14	OSC F	OSC F	OSC F	
15	75	120	75	*

VSLR3 programming assumes Pod 2 is multicolor with a clear dome.

Pods 1 and 3 are red LEDs.

Programming remains the same regardless of colors in these pods.

* White rotations must be red to the rear.

Table 5.3 6-Pod VSLR Flash Patterns

Pattern	Pod 1	Pod 2	Pod 3	Pod 4	Pod 5	Pod 6	
1	120	75	90	90	75	120	*
2	75	90	75	75	90	75	*
3	OSC L	75	OSC F	OSC F	75	OSC R	* & **
4	90	90	90	90	90	90	*
5	OSC L	90	OSC F	OSC F	90	OSC R	* & **
6	OSC LF	OSC FL	OSC F	OSC F	OSC FR	OSC RF	**
7	75	75	75	75	75	75	*
8	75	OSC L	75	75	OSC R	75	*
9	75	OSC F	75	75	OSC F	75	
10	90	75	90	90	75	90	*
11	90	OSC L	90	90	OSC R	90	*
12	90	OSC F	90	90	OSC F	90	
13	90	120	75	75	120	95	*
14	OSC L	OSC L	OSC L	OSC R	OSC R	OSC R	**
15	75	OSC F	90	90	OSC F	75	

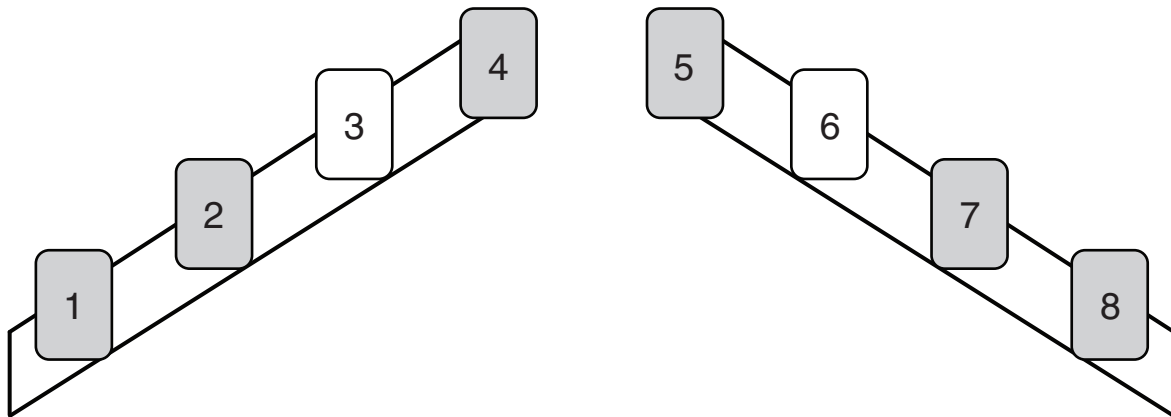
VSLR6-NFPA programming assumes Pods 2 and 5 are multicolor with clear domes.

Pods 1, 3, 4, and 6 are red LEDs with red domes.

Programming remains the same regardless of colors in these pods

* White rotations must be red to the rear.

** Not NFPA compliant,

Table 5.4 8-Pod VSLR Flash Patterns

Pattern	Pod 1	Pod 2	Pod 3	Pod 4	Pod 5	Pod 6	Pod 7	Pod 8	
1	90	120	75	90	90	75	120	90	*
2	90	75	90	75	75	90	75	90	*
3	75	OSC L	75	OSC F	OSC F	75	OSC R	75	* & **
4	90	90	90	90	90	90	90	90	*
5	90	OSC L	90	OSC F	OSC F	90	OSC R	90	* & **
6	OSC L	OSC LF	OSC FL	OSC F	OSC F	OSC FR	OSC RF	OSC R	**
7	75	75	75	75	75	75	75	75	*
8	75	75	OSC L	75	75	OSC R	75	75	*
9	75	75	OSC F	75	75	OSC F	75	75	
10	75	90	75	90	90	75	90	75	*
11	90	90	OSC L	90	90	OSC R	90	90	
12	90	90	OSC F	90	90	OSC F	90	90	
13	75	90	120	75	75	120	90	75	*
14	90	OSC L	OSC L	OSC L	OSC R	OSC R	OSC R	90	**
15	90	75	OSC F	90	90	OSC F	75	90	

VSLR8 programming assumes Pods 3 and 6 are multicolor with clear domes.

Pods 1, 2, 4, 5, 7, and 8 are red LEDs.

Programming remains the same regardless of colors in these pods.

* White rotations must be red to the rear.

** Not NFPA compliant.

CHAPTER 6

Maintaining and Servicing the Lightbar

This chapter describe how to maintain and service the Vision SLR lightbar. Establishing a regular maintenance and inspection schedule extends the life of the lightbar and ensures safety. For service, support, or replacement parts, contact the Federal Signal Service Department at 1-800-433-9132, 7 a.m. to 5 p.m, Monday through Friday (CT). See Table 6.1 on page 29 for troubleshooting tips and Table 6.2 on page 30 for replacement parts.

⚠ WARNING

SHOCK HAZARD—A lighting system is a high-current system. Disconnect ALL power to the lightbar before any maintenance is performed. Failure to do so may result in property damage, serious injury, or death.

⚠ CAUTION

BURN HAZARD—After prolonged operation, the lightbar gets hot and can cause burns. Do not touch the lightbar while or shortly after it has been operating. Always allow it to cool before handling it.

Cleaning the Lightbar Domes

⚠ WARNING

CRAZING/CLEANING SOLUTIONS—The use of other materials such as strong detergents, solvents, petroleum products, etc. can cause crazing (cracking) of the plastic domes. If crazing of domes does occur, reliability of light for emergency purposes may be reduced until domes are replaced. Failure to follow this warning can damage the domes, reducing the effectiveness of the lighting system, and may result in injury or death.

⚠ WARNING

CRAZING/CHEMICALS—Crazed, cracked or faded domes reduce the light output and the effectiveness of the lighting system. Domes or reflectors showing this type of aging must be replaced. Failure to follow this warning may result in injury or death.

To clean the lightbar domes:

1. Rinse the domes with lukewarm water to loosen dirt and debris.
2. Use a mild detergent, lukewarm water, and a soft cloth to gently clean the domes. To avoid damaging the finish, do not use heavy pressure or caustic, abrasive, or petroleum-based cleaners.
3. Rinse and dry the domes with a soft cloth to prevent water spotting.
4. To remove fine scratches and haze, use a soft cloth and a high quality automotive paste cleaner/wax

that is non-abrasive or a plastic polish like Plexus®.

Replacing a Dome

The lightbar domes filter the LED lights and protect the LED and circuitry. If a dome is damaged, it must be replaced.

Tool required:

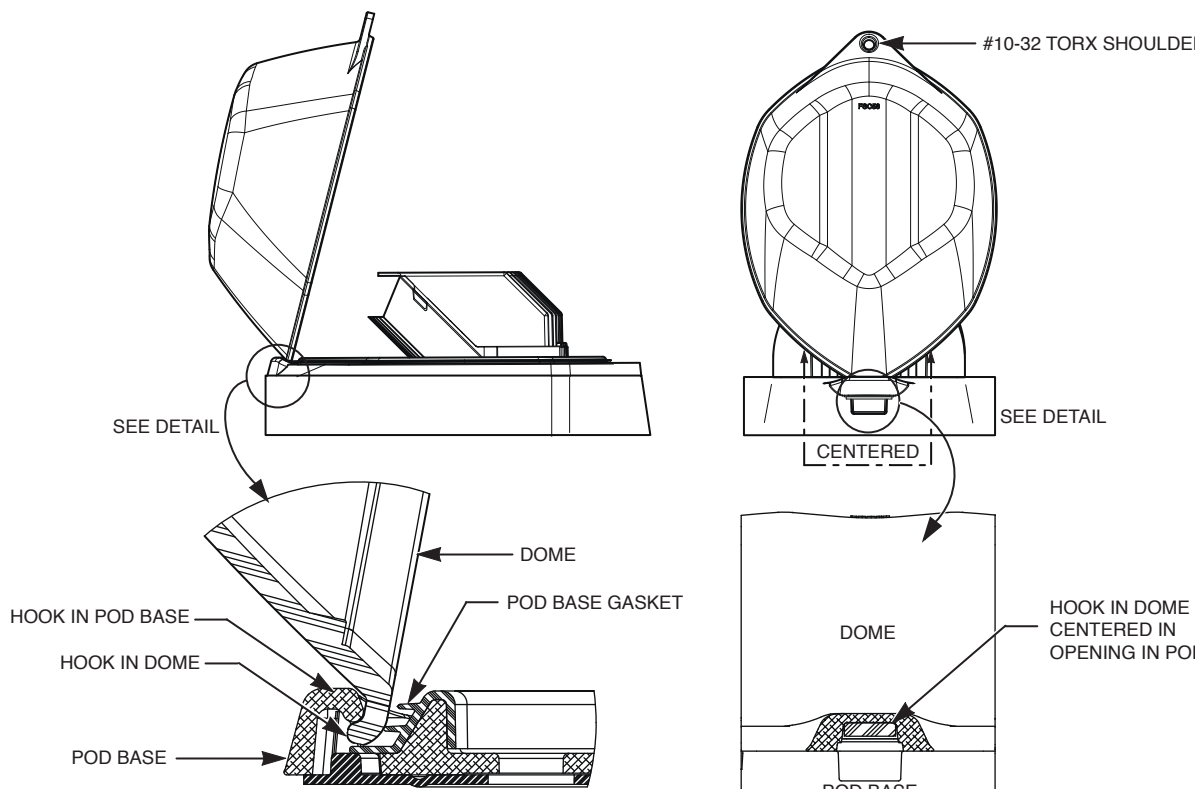
T25 Torx driver

Removing a Dome

To remove a lightbar dome:

1. Disconnect all power to the lightbar at the battery.
2. See Figure 6.1. Use a T25 Torx driver to remove the #10-32 Torx shoulder screw.
3. Carefully lift the dome from the back and rotate it to a vertical position to avoid damaging the pod hook and pod base gasket.
4. Inspect the gasket on the base of the pod to insure it is not torn, brittle, or damaged. Replace it, if necessary.

Figure 6.1 Dome removal and replacement



Installing a Dome

To install a dome:

NOTICE

DO NOT FORCE THE DOME DOWNWARD—If there is resistance to the dome dropping into position on the base, do not force it downward. To avoid damaging the dome, ensure that the dome hook is properly centered with the mating recess in the pod base so that it drops down from the vertical position.

1. See Figure 6.1 on page 22. Hold the dome at an angle and insert the pod hook into the mating recess in the pod base. Ensure the dome hook is properly centered with the mating recess in the pod base. The dome drops from the vertical position when the dome hook is properly aligned.

NOTICE

DO NOT OVERTIGHTEN SCREW—Do avoid damaging the pod, do not overtighten the #10-32 screw securing it to the pod base.

2. Insert the #10-32 Torx shoulder screw into the hole through the tip of the dome and into the pod base. To prevent cross-threading, back the screw counterclockwise until you hear the click of the threads engaging, then tighten the screw.
3. Reconnect power to the lightbar.

Replacing a Pod

Each lightbar pod contains the LED light and printed circuit board. The pod is replaceable in one piece.

Tool required:

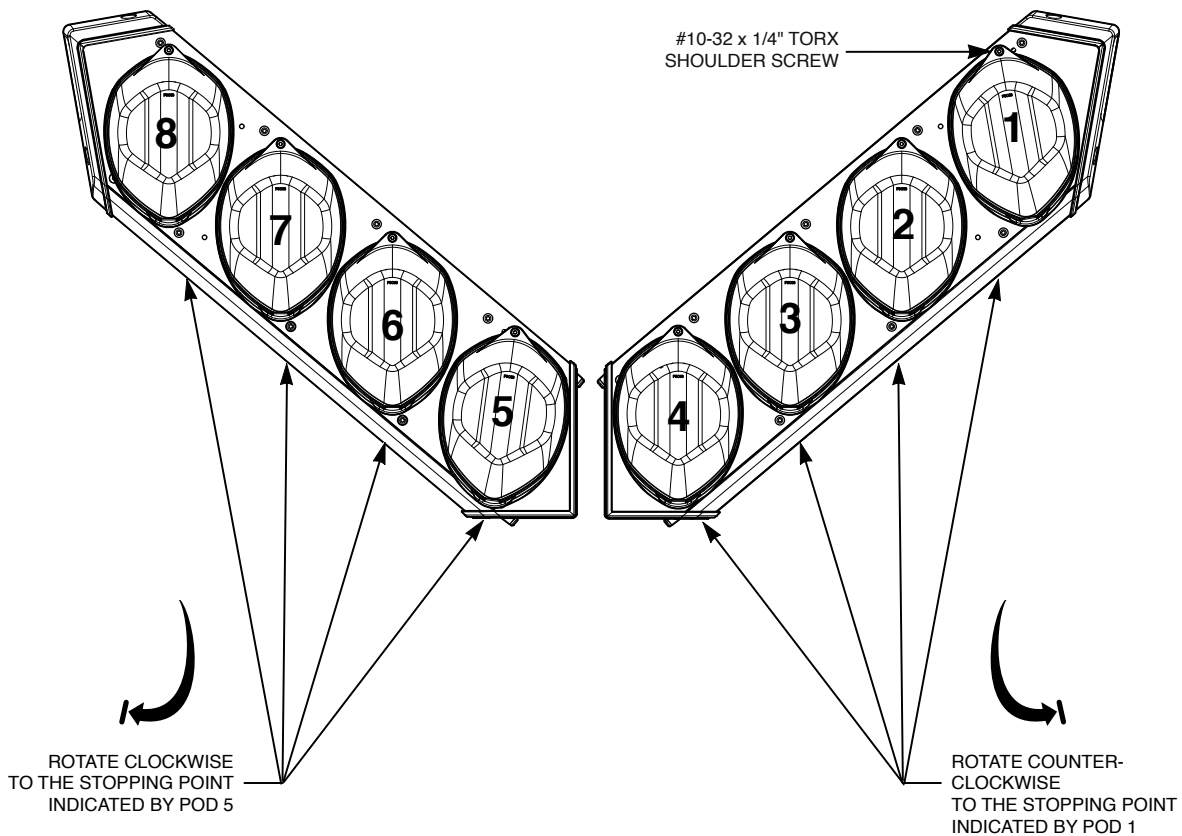
T25 Torx driver

Removing a Pod

To remove a pod:

1. Disconnect all power to the lightbar at the battery.
2. See Figure 6.2 on page 24. Use a T25 Torx driver to loosen the #10-32 Torx shoulder screw by 1/4 inch, just enough for the tip of the screw to clear the top plate.
3. Rotate the pod to the stopping point (counterclockwise for driver-side pods, clockwise for passenger-side pods).
4. Lift the pod from the lightbar and unplug the electrical connector from the pod. If removing more than one pod, note which connector goes to which pod. See the figures on pages 26 through 28 for the controller connectors for the pods.
5. Inspect the gasket on the base of the pod to insure it is not torn, brittle, or damaged. Replace it if necessary.

Figure 6.2 Pods rotated for removal



Installing a Pod

To install a pod:

1. Reconnect the electrical connector to the pod.
2. Place the pod atop in the correct location in the lightbar and rotate it counterclockwise for driver-side pods or clockwise for passenger-side pods.
3. Insert the #10-32 Torx shoulder screw into the hole through the tip of the dome and into the pod base. To prevent cross-threading, back the screw counterclockwise until you hear the click of the threads engaging, then tighten the screw.
4. Reconnect power to the lightbar.

Replacing a Lightbar Controller

The lightbar controller controls the flash patterns and auxiliary light functions. If a lightbar problem cannot be traced to a pod, a wiring connection, or the vehicle battery, the problem may lie with the controller. To order a replacement controller for your model of lightbar see "Replacing a Lightbar Controller" on page 25.

NOTICE

STATIC SENSITIVE DEVICE—*This unit's circuitry can be damaged by an electrostatic discharge (ESD). Follow anti-static procedures while installing this unit.*

Tool required:

T25 Torx driver

Removing the Controller

For the location of the controller, see the figures on pages 26 through 28 for your model of lightbar. To remove a controller:

1. Disconnect all power to the lightbar at the battery.
2. Remove the pods on both sides of the controller as described in "Removing a Pod" on page 23.
3. Note the locations of the connectors on the controller, then unplug all the cables from the controller.
4. Carefully pop the controller from the snap top fasteners. Slide the controller out through a pod opening.

Installing the Controller

To install a controller:

1. Orient the controller with the connectors down and the pod connections towards the front of the lightbar. Slide the controller through the pod opening and snap it onto the snap top fasteners.
2. Reconnect the cables to the controller.
3. Reinstall the pods as described in "Installing a Pod" on page 24.
4. Reconnect power to the lightbar.

Figure 6.3 Location of VSLR3 PCBA

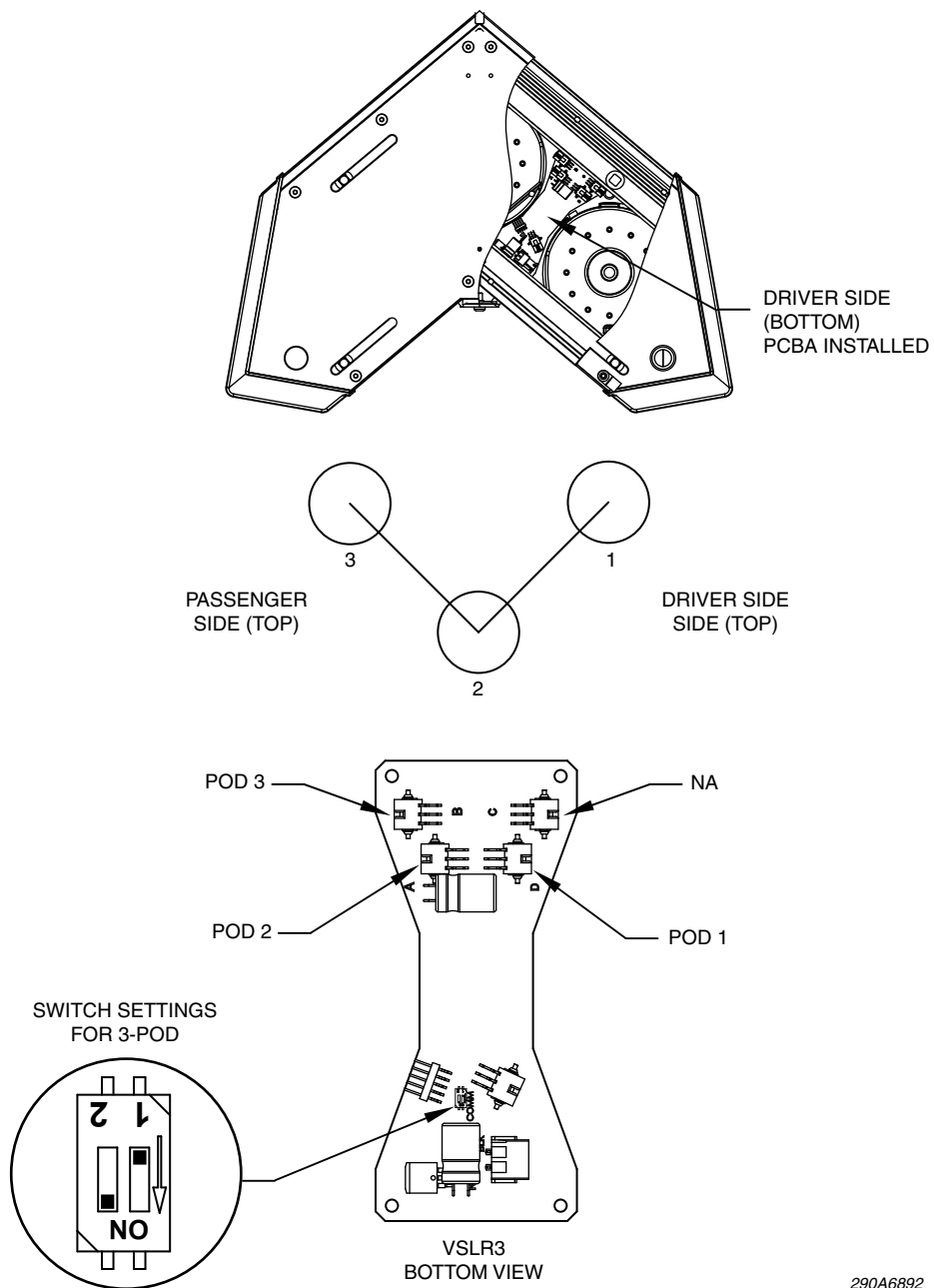
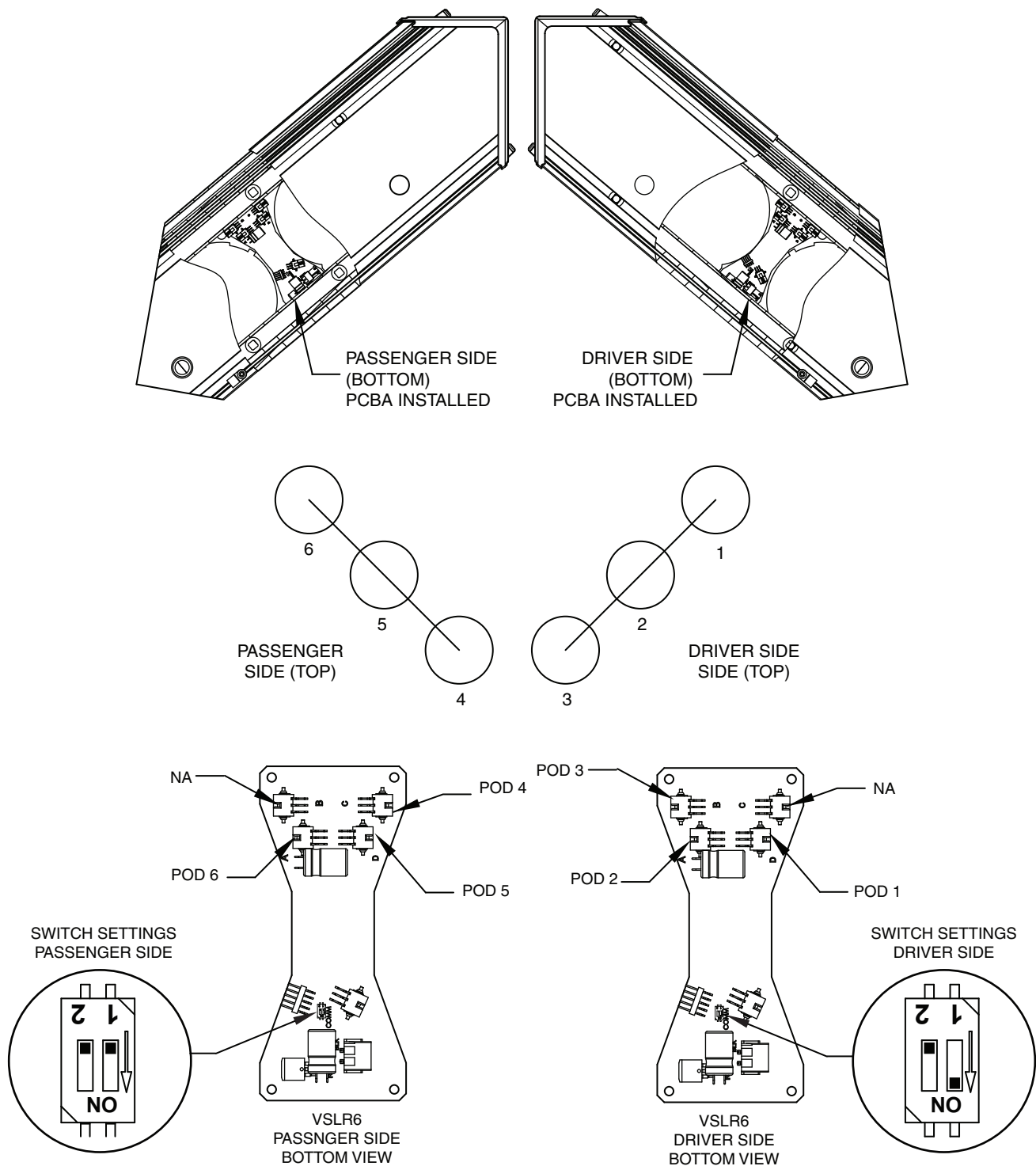
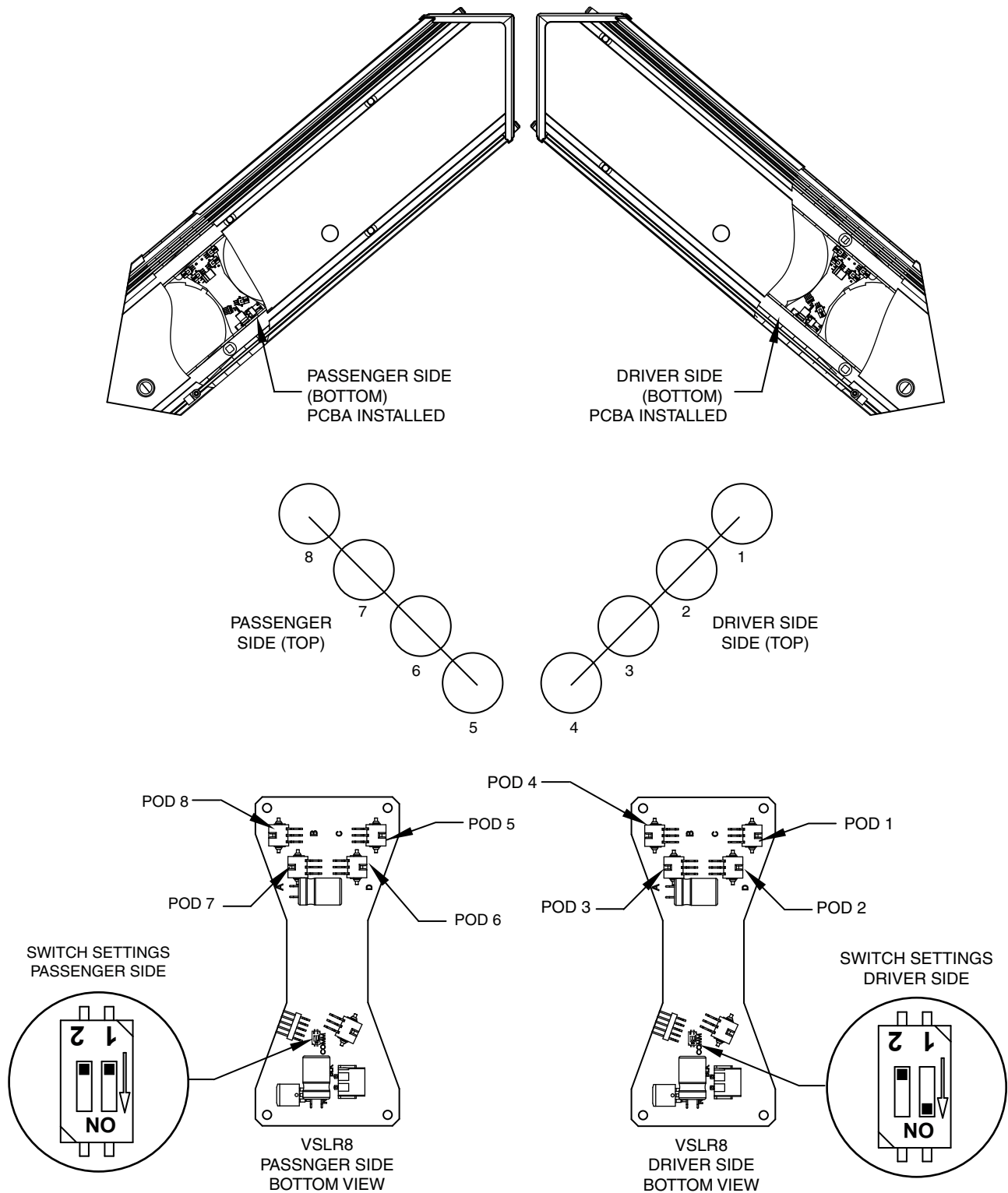


Figure 6.4 Location of VSLR3 PCBA



290A6894

Figure 6.5 Location of VSLR8 PCBA



290A6891

Troubleshooting the Lightbar

This section provides troubleshooting assistance for common problems. If you have any questions left unanswered, call the Federal Signal Service Department at 1-800-433-9132, 7 a.m. to 5 p.m., Monday through Friday (CT).

Table 6.1 Troubleshooting tips

Problem	Corrective Action
The lightbar does not light.	✓ Check that the red power line (+BAT) and the black ground power line (–GND) from the lightbar are properly connected to a good, fully charged 12 Vdc battery. ✓ Check the fuse. ✓ Ensure that the ground connection from the lightbar controller to the aluminum extrusion is good.
A pod does not light.	✓ Check the connections from the lightbar cable to the pod.
Only one take-down light turns on.	✓ Check that the connections from the lightbar controller to the pods are in the proper locations.

Getting Technical Support and Service

Federal Signal Corporation will service your equipment or provide technical assistance with any problems that cannot be handled locally. Any product returned to Federal Signal for service, inspection, or repair must be accompanied by a Return Material Authorization number. The RMA number can be obtained from your local distributor or Federal Signal. Please provide a brief explanation of the service requested or the nature of the malfunction. Contact your local dealer/distributor for replacement parts availability or contact the Federal Signal Service Department (7 a.m. to 5 p.m., Monday through Friday, CT) at:

Service Department
 Federal Signal Corporation
 2645 Federal Signal Drive
 University Park, IL 60484-3167
 800-433-9132
 800-343-9706 (fax)
www.fedsig.com

Ordering Replacement Parts

To order replacement parts, please contact your local dealer/distributor or:

Customer Support

Federal Signal Corporation

Phone: 1-800-264-3578

(7 a.m. to 5 p.m., Monday through Friday, Central Time)

Table 6.2 Replacement parts

Description	Part Number
PCB Assembly, Controller	Contact Service
Pod Assembly	Contact Service
Dome, Clear	8652106
Dome, Amber	8652106-02
Dome, Blue	8652106-03
Dome, Red	8652106-04
Seal, Pod	8652107
Gasket, Pod Base	8652108

Returning a Product to Federal Signal

Before returning a product to Federal Signal, call 800-264-3578, 800-433-9132, or 800-824-0254 to obtain a Returned Merchandise Authorization number (RMA number). To expedite the process, please be prepared with the following information:

- Your Federal Signal customer or account number.
- The purchase order number under which the items were purchased.
- The shipping method.
- The model or part number of the product being returned.
- The quantity of products being returned.
- Drop ship information as needed.
- Any estimate required.

When you receive your RMA Number:

- Write the RMA number on the outside of the box of returned items.
- Reference the RMA number on your paperwork inside of the box.
- Write the RMA number down, so that you can easily check on status of the returned equipment.

Send all material with the issued RMA Number to:

Federal Signal Corporation
Public Safety Systems
2645 Federal Signal Drive
University Park, IL 60484-3167
Attn: Service Department
RMA: # _____
www.fedsig.com
Tel.: (800) 264-3578 • Fax: (800) 682-8022



2645 Federal Signal Drive, University Park, IL 60484-3167

Tel.: (800) 264-3578 • Fax: (800) 682-8022

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