11111

ERET-CB Incandescent Elevated Runway Edge/Threshold Light HIGH-INTENSITY, CLAMP BAND

User Manual

96A0195, Rev. O, 2020/09/10





A.0 Disclaimer / Standard Warranty

CE certification

The equipment listed as CE certified means that the product complies with the essential requirements concerning safety and hygiene. The European directives that have been taken into consideration in the design are available on written request to ADB SAFEGATE.

ETL certification

The equipment listed as ETL certified means that the product complies with the essential requirements concerning safety and FAA Airfield regulations. The FAA directives that have been taken into consideration in the design are available on written request to ADB SAFEGATE.

All Products Guarantee

ADB SAFEGATE will correct by repair or replacement per the applicable guarantee above, at its option, equipment or parts which fail because of mechanical, electrical or physical defects, provided that the goods have been properly handled and stored prior to installation, properly installed and properly operated after installation, and provided further that Buyer gives ADB SAFEGATE written notice of such defects after delivery of the goods to Buyer. Refer to the Safety section for more information on Material Handling Precautions and Storage precautions that must be followed.

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ADB SAFEGATE's obligation under this guarantee is limited to making repair or replacement within a reasonable time after receipt of such written notice and does not include any other costs such as the cost of removal of defective part, installation of repaired product, labor or consequential damages of any kind, the exclusive remedy being to require such new parts to be furnished.

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Standard Products Guarantee

Products of ADB SAFEGATE manufacture are guaranteed against mechanical, electrical, and physical defects (excluding lamps) which may occur during proper and normal use for a period of two years from the date of ex-works delivery, and are guaranteed to be merchantable and fit for the ordinary purposes for which such products are made.



See your sales order contract for a complete warranty description.

FAA Certified product installed in the United States and purchased or funded with monies through the Airport Improvement Program (AIP) installations guarantee

ADB SAFEGATE L858 Airfield Guidance Signs are warranted against mechanical and physical defects in design or manufacture for a period of 2 years from date of installation, per FAA AC 150/5345-44 (applicable edition).

ADB SAFEGATE L858(L) Airfield Guidance Signs are warranted against electrical defects in design or manufacture of the LED or LED specific circuitry for a period of 4 years from date of installation, per FAA EB67 (applicable edition).

ADB SAFEGATE LED light fixtures (with the exception of obstruction lighting) are warranted against electrical defects in design or manufacture of the LED or LED specific circuitry for a period of 4 years from date of installation, per FAA EB67 (applicable edition).



See your sales order contract for a complete warranty description.

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WARNING

Use of the equipment in ways other than described in the catalog leaflet and the manual may result in personal injury, death, or property and equipment damage. Use this equipment only as described in the manual.

ADB SAFEGATE cannot be held responsible for injuries or damages resulting from non-standard, unintended uses of its equipment. The equipment is designed and intended only for the purpose described in the manual. Uses not described in the manual are considered unintended uses and may result in serious personal injury, death or property damage.

Unintended uses, includes the following actions:

- Making changes to equipment that have not been recommended or described in this manual or using parts that are not genuine ADB SAFEGATE replacement parts or accessories.
- Failing to make sure that auxiliary equipment complies with approval agency requirements, local codes, and all applicable safety standards if not in contradiction with the general rules.
- Using materials or auxiliary equipment that are inappropriate or incompatible with your ADB SAFEGATE equipment.
- · Allowing unskilled personnel to perform any task on or with the equipment.

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1.0 Safety

Introduction to Safety

This section contains general safety instructions for installing and using ADB SAFEGATE equipment. Some safety instructions may not apply to the equipment in this manual. Task- and equipment-specific warnings are included in other sections of this manual where appropriate.

1.1 Safety Messages

HAZARD Icons used in the manual

For all HAZARD symbols in use, see the Safety section. All symbols must comply with ISO and ANSI standards.

Carefully read and observe all safety instructions in this manual, which alert you to safety hazards and conditions that may result in personal injury, death or property and equipment damage and are accompanied by the symbol shown below.

	WARNING Failure to observe a warning may result in personal injury, death or equipment damage.
4	DANGER - Risk of electrical shock or ARC FLASH Disconnect equipment from line voltage. Failure to observe this warning may result in personal injury, death, or equipment damage. ARC Flash may cause blindness, severe burns or death.
	WARNING - Wear personal protective equipment Failure to observe may result in serious injury.
	WARNING - Do not touch Failure to observe this warning may result in personal injury, death, or equipment damage.
	CAUTION Failure to observe a caution may result in equipment damage.

Qualified Personnel



Important Information

The term **qualified personnel** is defined here as individuals who thoroughly understand the equipment and its safe operation, maintenance and repair. Qualified personnel are physically capable of performing the required tasks, familiar with all relevant safety rules and regulations and have been trained to safely install, operate, maintain and repair the equipment. It is the responsibility of the company operating this equipment to ensure that its personnel meet these requirements.

Always use required personal protective equipment (PPE) and follow safe electrical work practice.

CAUTION

1.1.1 Introduction to Safety

Unsafe Equipment Use

This equipment may contain electrostatic devices, hazardous voltages and sharp edges on components

- Read installation instructions in their entirety before starting installation.
- Become familiar with the general safety instructions in this section of the manual before installing, operating, maintaining or repairing this equipment.
- Read and carefully follow the instructions throughout this manual for performing specific tasks and working with specific equipment.
- Make this manual available to personnel installing, operating, maintaining or repairing this equipment.
- Follow all applicable safety procedures required by your company, industry standards and government or other regulatory agencies.
- Install all electrical connections to local code.
- Use only electrical wire of sufficient gauge and insulation to handle the rated current demand. All wiring must meet local codes.
- Route electrical wiring along a protected path. Make sure they will not be damaged by moving equipment.
- Protect components from damage, wear, and harsh environment conditions.
- Allow ample room for maintenance, panel accessibility, and cover removal.
- · Protect equipment with safety devices as specified by applicable safety regulations
- If safety devices must be removed for installation, install them immediately after the work is completed and check them for proper functioning prior to returning power to the circuit.

Failure to follow this instruction can result in serious injury or equipment damage

Additional Reference Materials

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Important Information

- IEC International Standards and Conformity Assessment for all electrical, electronic and related technologies.
- IEC 60364 Electrical Installations in Buildings.
- FAA Advisory: AC 150/5340-26 (current edition), Maintenance of Airport Visual Aid Facilities.
- Maintenance personnel must refer to the maintenance procedure described in the ICAO Airport Services Manual, Part 9.
- ANSI/NFPA 79, Electrical Standards for Metalworking Machine Tools.
- National and local electrical codes and standards.

1.1.2 Intended Use



CAUTION

Use this equipment as intended by the manufacturer

This equipment is designed to perform a specific function, do not use this equipment for other purposes

• Using this equipment in ways other than described in this manual may result in personal injury, death or property and equipment damage. Use this equipment only as described in this manual.

Failure to follow this instruction can result in serious injury or equipment damage



1.1.3 Material Handling Precautions: Storage



CAUTION

Improper Storage

Store this equipment properly

• If equipment is to be stored prior to installation, it must be protected from the weather and kept free of condensation and dust.

Failure to follow this instruction can result in equipment damage

1.1.4 Maintenance Safety



DANGER

Electric Shock Hazard

This equipment may contain electrostatic devices

- Do not operate a system that contains malfunctioning components. If a component malfunctions, turn the system OFF immediately.
- Disconnect and lock out electrical power.
- Allow only qualified personnel to make repairs. Repair or replace the malfunctioning component according to instructions provided in its manual.

Failure to follow these instructions can result in death or equipment damage

1.1.5 Material Handling Precautions, ESD



CAUTION

Electrostatic Sensitive Devices

This equipment may contain electrostatic devices

- Protect from electrostatic discharge.
- Electronic modules and components should be touched only when this is unavoidable e.g. soldering, replacement.
- Before touching any component of the cabinet you shall bring your body to the same potential as the cabinet by touching a conductive earthed part of the cabinet.
- Electronic modules or components must not be brought in contact with highly insulating materials such as plastic sheets, synthetic fiber clothing. They must be laid down on conductive surfaces.
- The tip of the soldering iron must be grounded.
- Electronic modules and components must be stored and transported in conductive packing.

Failure to follow this instruction can result in equipment damage

1.1.6 Arc Flash and Electric Shock Hazard

DANGER



Series Circuits have Hazardous Voltages

This equipment produces high voltages to maintain the specified current - Do NOT Disconnect while energized.

- Allow only qualified personnel to perform maintenance, troubleshooting, and repair tasks.
- Only persons who are properly trained and familiar with ADB SAFEGATE equipment are permitted to service this equipment.
- An open airfield current circuit is capable of generating >5000 Vac and may appear OFF to a meter.
- Never unplug a device from a constant current circuit while it is operating; Arc flash may result.
- Disconnect and lock out electrical power.
- Always use safety devices when working on this equipment.
- Follow the recommended maintenance procedures in the product manuals.
- Do not service or adjust any equipment unless another person trained in first aid and CPR is present.
- Connect all disconnected equipment ground cables and wires after servicing equipment. Ground all conductive equipment.
- Use only approved ADB SAFEGATE replacement parts. Using unapproved parts or making unapproved modifications to equipment may void agency approvals and create safety hazards.
- Check the interlock systems periodically to ensure their effectiveness.
- Do not attempt to service electrical equipment if standing water is present. Use caution when servicing electrical equipment in a high-humidity environment.
- Use tools with insulated handles when working with airfield electrical equipment.

Failure to follow these instructions can result in death or equipment damage



2.0 Incandescent Elevated Runway Edge/Threshold Light

This section describes the L-862/L-862E high intensity runway/threshold lights. The ADB Airfield Solutions L-862 white-white, white-yellow, red-blue, or white-red light fixture is used for runway edge lighting. The L-862E light fixture with red-green, red-red, or green-green outer globe is used for runway threshold and runway end lighting.

2.1 About this manual

The manual shows the information necessary to:

• Install and maintain the ERET-CB elevated light.

2.2 How to work with the manual

- 1. Become familiar with the structure and content.
- 2. Carry out the actions completely and in the given sequence.

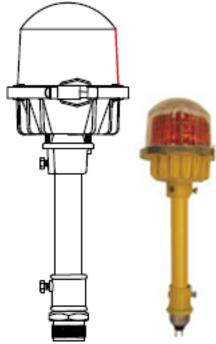


3.0 Introduction

This section describes the L-862/L-862E high intensity runway/threshold lights. The ADB Safegate L-862 white-white, whiteyellow, red-blue, or white-red light fixture is used for runway edge lighting. The L-862E light fixture with red-green, red-red, or green-green outer globe is used for runway threshold and runway end lighting.

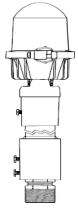
See Figure 1 for the standard L-862 light fixture with 1-in. column for installation in a base plate with a 1.5–12 threaded hub.

Figure 1: L-862/L-862E Light Fixture (Standard 1-in. [25.4-mm] Column)



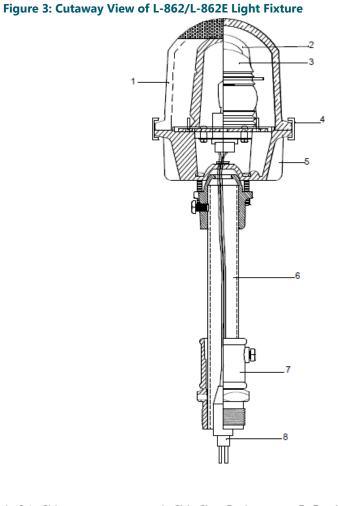
See Figure 2 for light fixture with optional 2-inch (50.8-mm) column assembly for installation in an L-867 base cover plate with a 2-inch (50.8-mm) threaded hub.

Figure 2: L-862/L-862E Light Fixture (2-in. [50.8-mm] Column)



See Figure 3 . The L-862/L-862E light fixture consists of the following: a pair of inner lens doublets (3) coupled with an outer globe (1) continuous clamping band (4) inner spring clip (2) to hold two 180-degree inner lens segments frangible coupling (7) that threads into a 1-1/2–12 NPT tapped hole in either a 30-inch (762-mm) stake assembly or a 12-inch-diameter L-867 base cover plate.





1.	Outer Globe	4.	Globe Clamp Band	7.	Frangible Coupling
2.	Inner Spring Clip	5.	Head Assembly	8.	L-823 Cordset
3.	Inner Lens Segments	6.	Column		

The cast aluminum head and base assembly can be mounted on a standard L-867 base plate or on a steel stake. Base mounting is easier to maintain and provides added protection for the equipment. Stake-mounted lights require transformers, cables, and connectors that are designed for direct earth burial. Refer to Table 1 for mounting heights.

Note

The measurements in Table 1 are taken from the grade to the top of the light fixture.

Table 1: Mounting Heights			
Туре	Height (in.)	Height (mm)	
Standard (FAA minimum)	14	355.6	
Standard	24	610	
Standard (FAA maximum)	30	762	

The L-862/L862E light fixture is available with bidirectional red-green, clear-yellow, red- yellow, green-yellow, clear, red, yellow, green, and blue lenses.



3.1 Incandescent Elevated Runway Edge/ Threshold Light

Compliance with Standards

FAA:	L-862 and L-862E AC 150/5345-46 (Current Edition). ETL Certified.		
Uses			
FAA L-862	Runway edgePrecision approach runways		
FAA L-862E	Runway threshold/endPrecision approach runways		

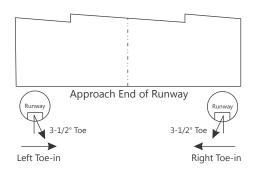
Features

- Light fixture is designed to withstand jet blast.
- Lamp Life: Rated at 500-1,000 hours at 6.6 A. 1,000 hour rating valid on 110W lamp only.
- Top casting holds the outer globe, which is indexed to the fixture and held in place by a continuous clamping band. Two prismatic inner lens segments are mounted inside on the socket mounting plate.
- Three screws allow a 4° leveling adjustment of the fixture after installation.
- Fixture uses aluminum castings, stainless steel hardware, and is protected with aviation yellow gloss enamel paint.

Operating Conditions

Temperature:	-40 °F to +131 °F / -40 °C to +55 °C
Wind:	Withstands wind velocities up to 300 mph / 480 kph

Installation of L-862E to Runway Centerline

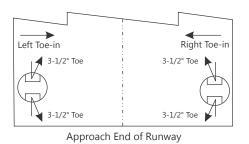


Note

1

- L-862E is toed on one side only
- Position the fixtures on either side of the runway so that the arrow embossed on the top of the outer glassware points to the runway centerline

Installation of L-862 to Runway Centerline



Note

- L-862 is toed on two sides
- Position the fixtures on either side of the runway so that the arrow embossed on the top of the outer glassware points to the runway centerline
- Fixtures can also be supplied with one side obscured
- Unless otherwise specified, bicolored fixtures will be provided with half of the number ordered for right side of runway and the other half for the left side. For odd quantities please specify colored lens side as right or left as viewed from runway centerline.

Packaging

Assembled Fixtures	Dimensions of Cartons in ((cm)	Indiv. Weight
	Individual	8 Per Box	
14-inch OAH	6.5 × 6.5 × 20.5	19.5 × 19.5 × 20.5	5 lb
	(17 × 17 × 52)	(50 × 50 × 52)	2.3 kg
24-inch OAH	6.5 × 6.5 × 31	19.5 × 19.5 × 31	6.25 lb
	(17 × 17 × 79)	(50 × 50 × 79)	2.8 kg
30-inch OAH	6.5 × 6.5 × 37	19.5 × 19.5 × 37	7 lb
	(17 × 17 × 94)	(50 × 50 × 94)	3.2 kg

Note: If the two-inch coupling is used instead of the one-and-half-inch coupling, the couplings are packed separately and not pre-assembled on the fixture. Box size depends on quantity.

3.2 L-862/L-862E Light Fixture: Required Equipment

Refer to Table 2 for required equipment that is supplied. Refer to Table 3 for required equipment that is not supplied. Refer to the *Parts* section for ordering information.

Table 2: Required Equipment Supplied

Description	Quantity
L-862/L-862E light fixture (includes lamp, column, frangible coupling, and L-823 cordset)	1
Instruction manual	1 per order



Table 3: Required Equipment Not Supplied

Description	Quantity
Torque wrench (0—200 inch-pounds) with 9/16 socket	1
Screwdriver, #2 Phillips	1
L-867 base plate (12 or 16 inches in diameter) and L-867 base when base mounted.	1
Stake assembly, 30-inch galvanized steel. Used only when fixture is stake mounted.	1
L-830 isolation transformer for series circuit. Refer to Table 4 for the appropriate transformer.	1
Single conductor (primary) connector kit	1
Loctite Grade AV or equivalent	As required

Table 4: Isolation Transformers

For a	When you use this lamp	Then use this isolation transformer
6.6 A series circuit	100 W, 110 W, 115 W and 120 W	L-830-4, 100 W 6.6/6.6
	150 W, 200 W	L-830-18, 150 W, 6.6/6.6
20 A series circuit	110 W-120 W	L-830-5, 100 W, 20/6.6
	150 W, 200 W	L-830-19, 150 W, 20/6.6

Table 5: Lamp used

Assembly Order Code	Lamp Part Number	Lamp Description	
44A2071/0XXX		NO LAMP	
44A2071/1XXX	48A0069 ¹	LAMP, 110-120W	
44A2071/2XXX	48A0044	LAMP, 150W	
44A2071/4XXX	48A0145	LAMP, 200W	
44A2071/5XXX	48A0380	LAMP, 100W, PKX30d	

Notes

¹ Can be supplied with 110W, 115W or 120W lamp based on availability.

3.3 Specifications

This subsection provides specifications for the L-862/L-862E light fixtures.

3.3.1 Lamp

Refer to Table 5. Rated Lamp Life

500 hours (minimum)



4.0 Installation



WARNING

Allow only qualified personnel to perform the following tasks. Observe and follow the safety instructions in this document and all other related documentation.

Using this equipment in ways other than described in this manual may result in personal injury, death or property and equipment damage. Use this equipment only as described in this manual.

4.1 Introduction

This section provides instructions for installing the L-862/L-862E light fixture. Refer to the airport project plans and specifications for the specific installation instructions.

4.2 Unpacking

The equipment is shipped ready for installation. Handle equipment very carefully to prevent component damage. Unpack the carton upon receipt and check the contents and their condition. Note any exterior damage to the carton that might lead to detection of equipment damage.

If you note any damage to any equipment, file a claim with the carrier immediately. The carrier may need to inspect the equipment.

4.3 Assembly Instructions

This subsection describes procedures for assembling the L-862/L-862E light fixture.



Check the packing list with the parts list to verify that all parts are present before proceeding. Refer to the *Parts* section.



Note

The light fixtures are completely assembled at the factory. Use the assembly instructions below if assembly for repair or maintenance is necessary.

To assemble the parts, perform the following procedure:

- 1. See Figure 3 . Place the L-823 cordset into the column.
- 2. See Figure 4. Insert the column into the end of the lower casting of the head assembly. Secure the head to the column by tightening the Phillips head screws. Apply Loctite to the Phillips head screws and hex head screws.
- 3. Insert the end of the column into the frangible coupling and secure by tightening the hex head screw.



WARNING

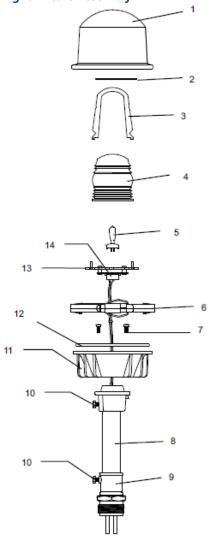
Do not install lamp, inner lenses, and lens assembly until you have mounted the fixture on a stake or base plate for the L-867 base. If you do not mount the fixture first, you may twist the cordset off the socket or break the socket prongs. Refer to Base Mounting and Stake Mounting in this section.

Insert the lamp into the socket. Refer to the Repair section.

Touching quartz lamps with bare fingers may seriously shorten lamp life. If the lamp is accidentally touched with bare fingers, clean with a tissue moistened with isopropyl alcohol.

- 4. Install the inner lens segments using the lens divider and inner spring clip against the socket plate.
- 5. Place the outer globe on the base and secure by tightening the lens clamp band.

Figure 4: L-862/L-862E Light Fixture Assembly



- Outer Globe 1.
 - 5. 6.
- 2 Inner Spring Clip 3. Lens Divider
- 4
- 7.

9

Lens Clamp Band Phillips Head Screw Column

Lamp

- Inner Lens Segments 8
- 12. Gasket

Socket

10. Hex Head Screw

Socket Plate 13

Frangible Coupling 14

4.4 Placement

The L-862 edge light fixtures are located 2–10 feet (.61–3.048 m) from the edge of the full strength pavement runway and in a straight line on each side of the runway. The fixtures are spaced longitudinally not more than 200 feet (61 m) apart on a line such that the light units on opposite sides of the runway are perpendicular to the runway centerline.

11. Lower Casting of Head Assembly

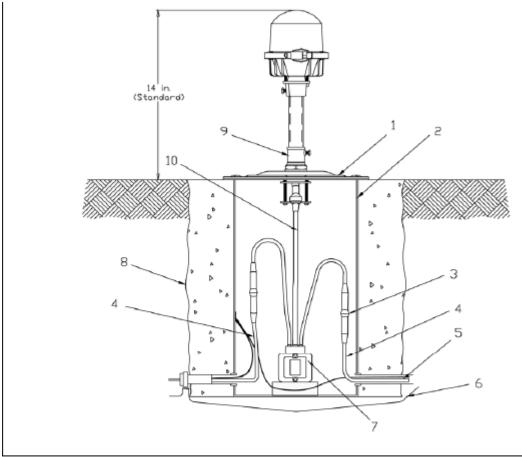
The L-862E runway threshold light fixtures are located perpendicular to the runway centerline and parallel to the displaced threshold. The L-862E runway end light fixtures are located perpendicular to the runway centerline and parallel with the end of the runway.



4.5 Base Mounting

See Figure 5. The L-862/L862E light fixtures can be mounted on an L-867 base mated with a base plate with a diameter and bolt-hole circle corresponding to either a 12-inch (304.8-mm) or 16-inch (406.4-mm) L-867 base. The base plate has a female thread to receive a frangible coupling. A gasket is used with the base plate to form a watertight seal between the base plate and the L-867 base.

Figure 5: Base Mounting



- 1. Base Plate
- L-867 Base
- 3. L-823 Primary Connector
- 4. Two-foot Slack for Connections (Minimum)
- 6. Optional Bare Copper Counterpoise Wire
- L-830 Transformer
- 8. Four-Inch Concrete Backfill Recommended
- 9. Frangible Coupling and Disconnect Plug

- 5. KV, L-824 Cable
- L-823 Secondary Connector

To install the light fixture on the L-867 base, perform the following procedure:

1. See Figure 5 . Install the L-867 base on undisturbed soil. If the soil is unsuitable, remove soil to an adequate depth and replace with compacted acceptable material.

Note

In closed duct systems, install in soil conditions with good drainage. Use light bases having a drain hole to prevent water accumulation.

- 2. Orient the cable entrance hubs of the base in the proper directions.
- 3. Level the light base so that the mounting flange surface is level with the finished grade.
- 4. With the base at the proper orientation and held at proper elevation, place approximately 4 inches (10.16 cm) of concrete backfill around the outside base.

Note

If the concrete backfill is omitted, the earth backfill must be compacted to maintain proper elevation and orientation of the base.

- 5. Slope the top of the concrete away from the flange portion of the base so the sloped outer edges of the concrete are at surface grade.
- 6. To install the light fixture on the base, connect the primary power line to the appropriate L- 830 isolation transformer. Refer to Table 4 for the appropriate transformer.



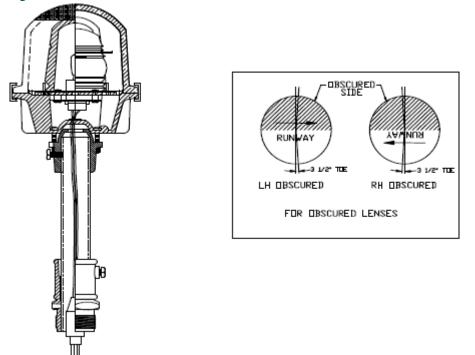
Use a brick to raise the isolation transformer so that it is about 3 inches (76.2 mm) above the bottom surface of the L-867 base to avoid the possibility of the transformer being partially immersed in water in case water accumulates under the level of the ducts or pipes.

- 7. After you have connected the transformer, check the continuity of the series loop.
- 8. Wrap the connector joints in the primary circuit with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape one-half lapped, extending at least 1- 1/2 inches (3.81 mm) on each side of the joint.
- 9. Clamp the female secondary plug from the L-830 transformer to the L-867 base plate fitting.
- 10. Bolt the base plate with the base plate gasket to the L-867 base using six 3/8–16 stainless steel bolts. Apply a drop of Loctite Grade AV to each bolt thread and use a torque wrench to torque bolts to 100 inch-pounds (11.3 N•m).
- 11. Connect the male L-823 plug from the light fixture to the female transformer plug on the secondary lead of the L-830 transformer.
- 12. See Figure 4. Loosen the frangible coupling screw (10) holding the coupling to the light fixture column. Screw the coupling into the female thread on the base plate.
- 13. Install the column with light fixture attached on the frangible coupling and tighten the coupling screw. Refer to *Assembly Instructions* in this section.
- 14. Remove the outer globe, if installed. Place a level (such as a circle bubble level) on top of the head assembly and level the light fixture by adjusting the four Phillips head screws in the lower casting.
- 15. See Figure 6. Place the outer globe on the fixture, and check for outer globe and inner lens direction.



• Note

To verify that the lens is oriented correctly, the arrows on top of the lens must point to the runway side. Arrows should point toward the runway when the fixture is installed parallel with the runway or when the fixtures are installed perpendicular to the runway to mark a displaced threshold. When fixtures are located at the end of the runway, the arrows should point to the imaginary extension of the runway centerline. Always make sure that the colored lens location is in compliance with the airport project plans and specifications.

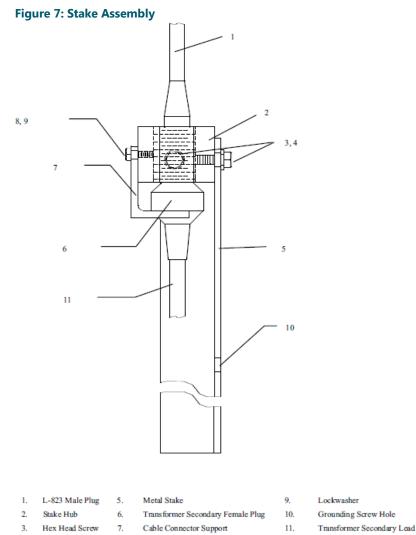


4.6 Stake Mounting

Mount the column light fixtures on 30-inch (762-mm) galvanized steel stakes with a fitting attached to the top of each stake to receive the male thread of the frangible coupling. Stake mounting requires cables and connections that are designed for direct earth burial. Install according to appropriate FAA and local contractor specifications.

To mount the L-862 light fixture on a stake, perform the following procedure:

1. See Figure 7. Assemble the stake by attaching the stake hub to the metal stake using two 3/8–16 x 3/4-in. hex head screws and 3/8-in. lockwashers.



2. See Figure 8. Install the stake in 6-inch (152.4-mm) diameter holes in the ground at a depth of 30 inches (762 mm) so that the mounting hub (8) of the stake is level.

Note

Lockwasher

8.

Hex Head Screw

4.

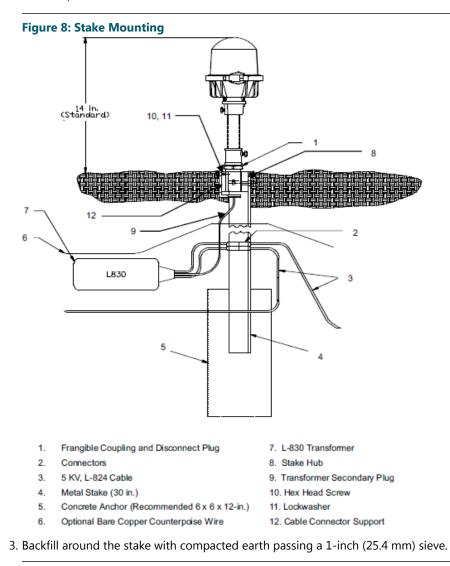
The top of the stake should be even with the ground within one degree of the vertical. In areas where frost may cause heaving, anchor the stake with concrete and use a permeable backfill material such as sand around the buried electrical components. Cover the top surface with an impervious material to reduce moisture penetration.





WARNING

Do not drive stakes. Driving stakes may damage the stake and cause light fixture misalignment. Refer to FAA specification AC 150/5340-30.





Note

Use a bubble level or carpenter's level to ensure the stake is vertical before backfilling around stake. Backfill with concrete in case of unstable soil conditions.

4. Make electrical connections by installing the transformer primary cables to the field circuit. Then insert the transformer secondary plug in the cable connector support's forked tine and attach the cable connector support to the stake hub using 1/4–20 x 3/4-in. hex head screw and 1/4-in. split lockwasher.



Note

The small hole at the lower end of the stake is provided for counterpoise wire connection.

5. Install the light fixture on the stake.



5.0 Maintenance



WARNING

Allow only qualified personnel to perform maintenance, troubleshooting, and repair tasks.

- Only persons who are properly trained and familiar with ADB Safegate equipment are permitted to service this equipment.
- Disconnect and lock out electrical power.
- Always use safety devices when working on this equipment.
- Follow the recommended maintenance procedures in the product manuals.
- Do not service or adjust any equipment unless another person trained in first aid and CPR is present.
- Connect all disconnected equipment ground cables and wires after servicing equipment. Ground all conductive equipment.
- Use only approved ADB Safegate replacement parts. Using unapproved parts or making unapproved modifications to equipment may void agency approvals and create safety hazards.
- Check interlock systems periodically to ensure their effectiveness.
- Do not attempt to service electrical equipment if standing water is present. Use caution when servicing electrical equipment in a high-humidity environment.
- Use tools with insulated handles when working with electrical equipment.

To keep L-862/L862E light fixtures operating efficiently, follow a preventive maintenance schedule. Refer to Table 6. Refer to FAA AC 150/5340-26 for more detailed information.

Interval	Maintenance Task	Action
	Check for burned out lamp.	After turning off power, replace burned-out lamps. Refer to the <i>Repair</i> section.
Daily	Check for dim lamp.	After turning off power, replace burned-out lamps. Check isolation transformer on series circuit. Refer to the <i>Repair</i> section.
	Check for broken lens.	Replace lens or lens assembly.
Weekly	Check for vegetation.	Remove vegetation. Use weed killer.
	Check for dirty lens.	Clean with glass cleaner.
	Check for misaligned fixture.	Straighten, level, and align.
	Check for dirty lamp socket.	After turning off power, clean lamp socket.
Monthly	Check for dirty frangible coupling weep holes (stake-mounted fixtures only).	Clean frangible coupling weep holes.
	Check for dirt on fixture drain holes.	Clean drain holes.
	Check for improper ground elevation.	Grade so frangible point is level with ground elevation.
	Check for improper light elevation.	Maintain the same elevation for all light fixtures.
Semi-Annually	Check for moisture present in light housing or on L- 867 base.	Check drain holes and clamps for dirt. Clean drain holes and clamps, if necessary. Check lens for cracks. If damaged, replace. Use water pump to remove water from the base.
	Check for corrosion or loose or chipped paint.	Scrape and repaint.

Table 6: L-862 Light Fixture Maintenance

Interval	Maintenance Task	Action	
	Check for cracks, corrosion, and shorts.	Repair or replace.	
Annually	Check for dirty contacts.	After turning off the power, clean contacts.	
	Check for loose wire connections.	Tighten wire connections.	
Make prediction of heavy snowfall, if Unscheduled necessary.		Use red flags or sticks to mark the location of fixtures to facilitate snow removal and lessen the chance of damage to fixtures by snow removal equipment.	

Table 6: L-862 Light Fixture Maintenance (continued)



6.0 Troubleshooting



WARNING

Allow only qualified personnel to perform maintenance, troubleshooting, and repair tasks.

- Only persons who are properly trained and familiar with ADB Safegate equipment are permitted to service this equipment.
- Disconnect and lock out electrical power.
- Always use safety devices when working on this equipment.
- Follow the recommended maintenance procedures in the product manuals.
- Do not service or adjust any equipment unless another person trained in first aid and CPR is present.
- Connect all disconnected equipment ground cables and wires after servicing equipment. Ground all conductive equipment.
- Use only approved ADB Safegate replacement parts. Using unapproved parts or making unapproved modifications to equipment may void agency approvals and create safety hazards.
- Check interlock systems periodically to ensure their effectiveness.
- Do not attempt to service electrical equipment if standing water is present. Use caution when servicing electrical equipment in a high-humidity environment.
- Use tools with insulated handles when working with electrical equipment.

This section contains troubleshooting information. This information covers only the most common problems that you may encounter. If you cannot solve the problem with the information given here, contact your local ADB Safegate representative for help.

Problem	Possible Cause	Corrective Action	
	Defective lamp	Replace lamp. Refer to Lamp Replacement in the Repair section.	
	Loose wire connection(s)	Tighten wire connection(s).	
Lamps not turning	Isolation transformer bad	Replace transformer.	
on	Deteriorated wire insulation	Replace wires.	
	Moisture present in fixture	Open up and dry. Inspect lens for cracks. Replace lamp and any damaged parts. Refer to <i>Lamp Replacement</i> in the <i>Repair</i> section.	

6.1 Repair

This section provides instructions for replacing lamps for the L-862/L-862E light fixtures.

6.1.1 Lamp Replacement

To replace a lamp, perform the following procedure:

- 1. See Figure 4. Remove the outer globe from the fixture by loosening the clamp band (6) holding the lens to the base.
- 2. Remove the two inner lens segments by unclipping the inner spring clip.
- 3. Pull the lamp from the socket.
- 4. Wearing clean, lint-free gloves, insert the new 2-pin lamp into the lamp socket.



WARNING

• Touching quartz lamps with bare fingers may seriously shorten lamp life. If the quartz lamp has been touched, clean the lamp with tissue moistened with isopropyl alcohol.

5. Reinstall the inner lens segments and outer globe by reversing the removal procedure.



7.0 Parts

To order parts, call ADB Safegate Customer Service or your local representative. Use this five-column parts list, and the accompanying illustration, to describe and locate parts correctly.

	L-862 Ordering Code 44A2071 - X X X X
	Lamp 0 = None 1 = 110-120 W/6.6 A Quartz ^{5.6} 2 = 150 W/6.6 A Quartz (ETL Certified) ⁵ 4 = 200 W/6.6 A Quartz (ETL Certified) ⁴ 5 = 100 W/6.6 A, PK30d ⁵
	Inner Lens Color 0 = None 1 = Bidirectional White/White (ETL Certified) 2 = Bidirectional White/Yellow (ETL Certified) ³ 3 = Red/Red ² 4 = Yellow/Yellow ² 5 = Green/Green ² 7 = Bidirectional Red/Yellow ³ 8 = Bidirectional Yellow/Green ³ A = Bidirectional White/Red ³
L-862E Ordering Code 44A2071 - X 1 X X	Fixture Height 1 = 14 in (35.6 cm) with 1.5" coupling, 12 TPI 2 = 24 in (61.0 cm) with 1.5" coupling, 12 TPI 3 = 30 in (76.2 cm) with 1.5" coupling, 12 TPI 4 = 14 in (35.66 cm) with 2" swivel head, 11.5 TPI ¹ 5 = 24 in (61.0 cm) with 2" swivel head, 11.5 TPI ¹ 6 = 30 in (76.2 cm) with 2" swivel head, 11.5 TPI ¹ 7 = 14 in (35.6 cm) with 2" coupling, 11.5 TPI
4 = 200 W/6.6 A Quartz (ETL Certified)	Outer Lens 1 = White/White (ETL Certified)
1 = White/White Fixture Height 1 = 14 in (35.6 cm) with 1.5" coupling, 12 TPI 2 = 24 in (61.0 cm) with 1.5" coupling, 12 TPI 3 = 30 in (76.2 cm) with 1.5" coupling, 12 TPI 4 = 14 in (35.66 cm) with 2" swivel head, 11.5 TPI ¹ 5 = 24 in (61.0 cm) with 2" swivel head, 11.5 TPI ¹ 6 = 30 in (76.2 cm) with 2" swivel head, 11.5 TPI ¹	9 = Red/Obscured Right Hand (ETL Certified) 0 = Red/Obscured Left Hand (ETL Certified) A = Red/White Right Hand (ETL Certified) B = Red/White Left Hand (ETL Certified) C = Green/Yellow Right Hand (ETL Certified) D = Green/Yellow Left Hand (ETL Certified) E = Red/Yellow Right Hand (ETL Certified) F = Red/Yellow Left Hand (ETL Certified)
 7 = 14 in (35.6 cm) with 2" coupling, 11.5 TPI Outer Lens 4 = Red/Green Right Hand (ETL Certified) 5 = Red/Green Left Hand (ETL Certified) 6 = Red/Red (ETL Certified) 7 = Green/Obscured Right Hand (ETL Certified) 8 = Green/Obscured Left Hand (ETL Certified) 9 = Red/Obscured Right Hand (ETL Certified) 0 = Red/Obscured Left Hand (ETL Certified) 	 Notes for L-862 and L-862E See Ordering Code for ETL Certification. ¹ This option is for a fixture with 2-inch column where robust applications are required. ² Color and/or color configuration not recognized by the FAA. ³ When ordering fixtures with two different inner lens colors, indicate the number of fixtures to be toed left and the number to be toed right. Unless specified, order will be filled with half right toed and half left toed fixtures. ⁴ For 200 W lamps, inner lenses must be white or white/yellow. ⁵ For 100 W, 110-120 W and 150 W lamps, outer lenses must be white. ⁶ Can be supplied with 110 W, 115 W or 120 W lamp based on availability

Table 7: Lamp used

Assembly Order Code	Lamp Part Number	Lamp Description	
44A2071/0XXX		NO LAMP	
44A2071/1XXX	48A0069	LAMP, 110-120W	
44A2071/2XXX	48A0044	LAMP, 150W	
44A2071/4XXX	48A0145	LAMP, 200W	
44A2071/5XXX	48A0380	LAMP, 100W, PKX30d	

7.1 44A2071- X 1 X X.

Figure 9: L-862 Light Fixture Ordering Code

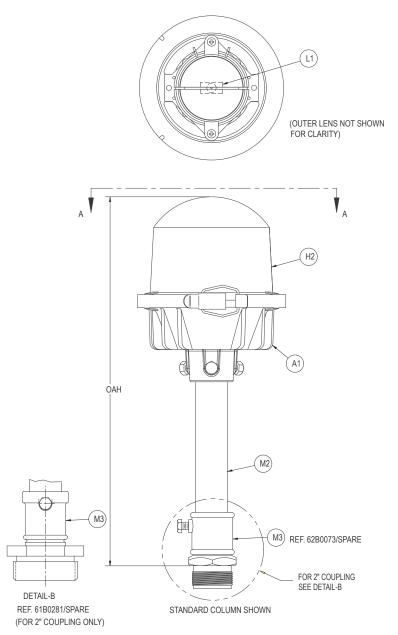


Table 8: Inner Lens Assembly

ASSEMBLY NUMBER	PART NUMBER	ITEM NO.	PART NAME/DESCRIPTION	QTY.
44A2071/X0XX	-	H1L	(NO LENS)	0
44A2071/X0XX	-	H1R	(NO LENS)	0
444 2071 (V1 VV	63B0415/1	H1L	INNER LENS, CLEAR	1
44A2071/X1XX	63B0415/1	H1R	INNER LENS, CLEAR	1
	63B0415/1	H1L	INNER LENS, CLEAR	1
44A2071/X2XX	63B0415/2	H1R	INNER LENS, YELLOW	1



Table 8: Inner Lens Assembly (continued)

ASSEMBLY NUMBER	PART NUMBER	ITEM NO.	PART NAME/DESCRIPTION	QT
44A2071/X3XX	63B0415/3	H1L	INNER LENS, RED	1
44A2071/X3XX	63B0415/3	H1R	INNER LENS, RED	1
44A2071/X4XX	63B0415/2	H1L	INNER LENS, YELLOW	1
44A2071/7477	63B0415/2	H1R	INNER LENS, YELLOW	1
44A2071/X5XX	63B0415/4	H1L	INNER LENS, GREEN	1
44A2071/X3XX	63B0415/4	H1R	INNER LENS, GREEN	1
44A2071/X6XX	63B0415/3	H1L	INNER LENS, RED	1
44A2071/X0XX	63B0415/4	H1R	INNER LENS, GREEN	1
44A2071/X7XX	63B0415/3	H1L	INNER LENS, RED	1
44A2071/X7XX	63B0415/2	H1R	INNER LENS, YELLOW	1
44A2071/X8XX	63B0415/4	H1L	INNER LENS, GREEN	1
44A2071/X6XX	63B0415/2	H1R	INNER LENS, YELLOW	1
44A2071/X9XX	63B0415/5	H1L	INNER LENS, BLUE	1
44A2071/X9XX	63B0415/5	H1R	INNER LENS, BLUE	1
44A2071/XAXX	63B0415/1	H1L	INNER LENS, CLEAR	1
44A2U/1/AAAA	63B0415/3	H1R	INNER LENS, RED	1
44A2071/XBXX	63B0415/5	H1L	INNER LENS, BLUE	1
44A2U/1/ADAA	63B0415/3	H1R	INNER LENS, RED	1
4442071 (VCVV	63B0415/2	H1L	INNER LENS, YELLOW	1
44A2071/XCXX	63B0415/5	H1R	INNER LENS, BLUE	1

Table 9: Head and Column Assembly

14A2066/1	A1		
	711	HEAD ASSY FOR 14" OAH	1
52A0007/7	M2	7 1/4" COLUMN FOR 14" OAH	1
14A2066/2	A1	HEAD ASSY FOR 24" OAH	1
52A0007/17	M2	17 1/4" COLUMN FOR 24" OAH	1
14A2066/3	A1	HEAD ASSY FOR 30" OAH	1
52A0007/23	M2	23 1/4" COLUMN FOR 30" OAH	1
I4A6241/1	A1	L862Q HEAD ASY 14" OAH PK30d LAMP	1
52A0007/7	M2	7 1/4" COLUMN FOR 14" OAH	1
14A6241/2	A1	L862Q HEAD ASY 24" OAH PK30d LAMP	1
52A0007/17	M2	17 1/4" COLUMN FOR 24" OAH	1
14A6241/3	A1	L862Q HEAD ASY 30" OAH PK30d LAMP	1
52A0007/23	M2	23 1/4" COLUMN FOR 30" OAH	1
	4A2066/2 2A0007/17 4A2066/3 2A0007/23 4A6241/1 2A0007/7 4A6241/2 2A0007/17 4A6241/3	4A2066/2 A1 2A0007/17 M2 4A2066/3 A1 2A0007/23 M2 4A6241/1 A1 2A0007/7 M2 4A6241/2 A1 2A0007/17 M2 4A6241/2 A1 2A0007/17 M2	4A2066/2 A1 HEAD ASSY FOR 24" OAH 2A0007/17 M2 17 1/4" COLUMN FOR 24" OAH 4A2066/3 A1 HEAD ASSY FOR 30" OAH 2A0007/23 M2 23 1/4" COLUMN FOR 30" OAH 4A6241/1 A1 L862Q HEAD ASY 14" OAH PK30d LAMP 2A0007/7 M2 7 1/4" COLUMN FOR 14" OAH 4A6241/2 A1 L862Q HEAD ASY 24" OAH PK30d LAMP 2A0007/17 M2 17 1/4" COLUMN FOR 24" OAH 4A6241/2 A1 L862Q HEAD ASY 24" OAH PK30d LAMP 2A0007/17 M2 17 1/4" COLUMN FOR 24" OAH

	44A2066/4	A1	HEAD ASSY FOR 14" OAH	1
44A2071/XX4X	44A0907/3	M2	EXTENSION FOR 14" OAH	1
	44A2066/5	A1	HEAD ASSY FOR 24" OAH	1
44A2071/XX5X	44A0907/4	M2	EXTENSION FOR 24" OAH	1
44A2071/XX6X	44A2066/6	A1	HEAD ASSY FOR 30" OAH	1
	44A0907/5	M2	EXTENSION FOR 30" OAH	1
	44A6241/4	A1	L862Q HEAD ASY 14" OAH PK30d LAMP	1
44A2071/XXDX	44A0907/3	M2	L862Q EXT FOR 14"OAH	1
	44A6241/5	A1	L862Q HEAD ASY 24" OAH PK30d LAMP	1
44A2071/XXEX	44A0907/4	M2	L862Q EXT FOR 24"OAH	1
44A2071/XXFX	44A6241/6	A1	L862Q HEAD ASY 30" OAH PK30d LAMP	1
	44A0907/5	M2	L862Q EXT FOR 30"OAH	1

Table 11: Outer Lens Assemblies

ASSEMBLY NUMBER	PART NUMBER	ITEM NO.	PART NAME/DESCRIPTION	QTY.
44A2071/XXX1	63B0416	H2	OUTER LENS, CLEAR	1
44A2071/XXX2	63B0545/1	H2	OUTER LENS, OBSCURED LH*	1
44A2071/XXX3	63B0545/2	H2	OUTER LENS, OBSCURED RH*	1
44A2071/XXX4	63A0601	H2	OUTER LENS, RED/GREEN RH*	1
44A2071/XXX5	63A0602	H2	OUTER LENS, RED GREEN LH*	1
44A2071/XXX6	63A0607	H2	OUTER LENS, RED/RED	1
44A2071/XXX7	63A0606/2	H2	OUTER LENS, GREEN/OBSCURED, RH	1
44A2071/XXX8	63A0606/1	H2	OUTER LENS, GREEN/OBSCURED, LH	1
44A2071/XXX9	63A0608/2	H2	OUTER LENS, RED/OBSCURED, RH	1
44A2071/XXX0	63A0608/1	H2	OUTER LENS, RED/OBSCURED, LH	1
44A2071/XXXA	63A1057/1	H2	OUTER LENS, RED/CLEAR, RH	1
44A2071/XXXB	63A1057/2	H2	OUTER LENS, CLEAR/RED, LH	1
44A2071/XXXC	63A1105/1	H2	OUTER LENS, YELLOW/GREEN, RH	1
44A2071/XXXD	63A1105/2	H2	OUTER LENS, YELLOW/GREEN, LH	1
44A2071/XXXE	63A1105/3	H2	OUTER LENS, RED/YELLOW, RH	1
44A2071/XXXF	63A1105/4	H2	OUTER LENS, RED/YELLOW, LH	1

Table 12: Coupling

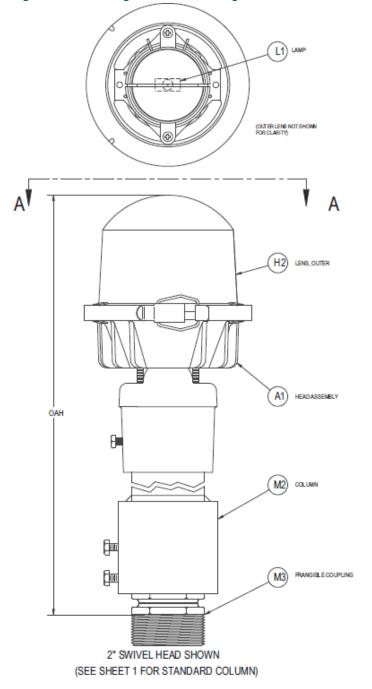
ASSEMBLY NUMBER	PART NUMBER	ITEM NO.	PART NAME/DESCRIPTION	QTY.
44A2071/XX1X	62B0073/SPARE	M3	14" OAH, 1-1/2" COUPLING	1
44A2071/XX2X	62B0073/SPARE	M3	24" OAH, 1-1/2" COUPLING	1
44A2071/XX3X	62B0073/SPARE	M3	30" OAH, 1-1/2" COUPLING	1
44A2071/XX7X	61A0281/SPARE	M3	14" OAH, 2" COUPLING	1



Table 12: Coupling (continued)

ASSEMBLY NUMBER	PART NUMBER	ITEM NO.	PART NAME/DESCRIPTION	QTY.
44A2071/XX8X	61A0281/SPARE	M3	24" OAH, 2" COUPLING	1
44A2071/XX9X	61A0281/SPARE	M3	30" OAH, 2" COUPLING	1
44A2071/XXGX	61A0350/SPARE	M3	14" OAH, 2" 11 TPI COUPLING	1

Figure 10: L-862E Light Fixture Ordering Code

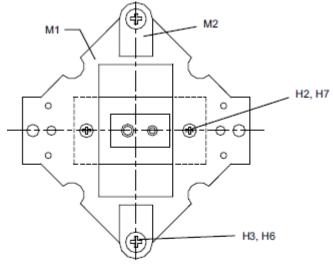


7.2 Socket Mounting Plate Assembly Parts List

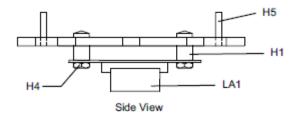
See Figure 11. The socket mounting plate assembly part number is 44A2089.

Item	Description	Part Number	Quantity
M2	Filter clip, L-862	60C2041	2
H1	Spacer	61A0282	2
LA1	Socket, lamp	49A0032	1
M1	Socket plate	60C1173	1
H2	Screw, pan head, 8–32 x 3/8 in.	64A0191-6	2
H6	Washer, #4	66A0026-7	2
H3	Screw, pan head, 4–40 x 5/8 in.	64A0169-10	2
H7	Washer, #8	66A0026-15	2
H5	Pin, spring, 3–32 x 1/2	65A0218	4
H4	Nut, hex, 4–40	65A0015-7	2

Figure 11: Socket Mounting Plate Assembly



Top View



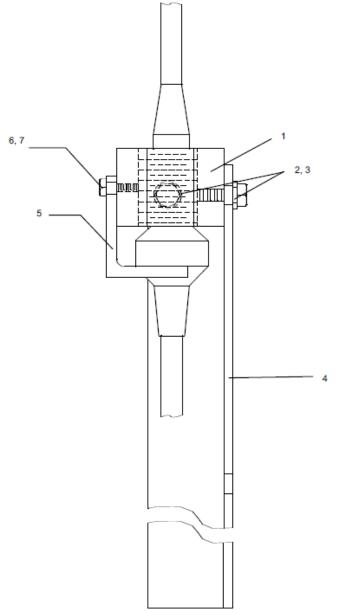


7.3 Optional Stake Assembly Parts List

See Figure 12. The stake assembly part number is 44B03	348.
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Item	Description	Part Number	Quantity
1	Stake hub	62B0268-1	1
2	Hex head screw, 3/8–16 x 3/4 in.	64A0176-12	1
3	Split lockwasher, 3/8 in.	66A0026-29	1
4	Stake	62B0284	1
5	Cable connector support	62B0269	1
6	Hex head screw, 1/4–20 x 3/4 in.	64A0173-12	1
7	Split lockwasher, 1/4 in.	66A0026-24	1

Figure 12: Stake Assembly



7.4 L-867 Base Plate Parts List

Refer below for the L-867 base plate parts list.

Part Number	Description	Quantity	Note
1935	12-inch-diameter base plate, 1.5–12 UNF tap	1	А
NOTE A: Supplied with gasket.			

7.5 Recommended Spare Parts

Table 13: Possible Spare Parts

Description	Part No.
Column 1", 7.25" (18.42 cm) for 14" OAH	62A0007-7
Column 1", 17.25" (43.82 cm) for 24" OAH	62A0007-17
Column 1", 23.25" (59.06 cm) for 30" OAH	62A0007-23
Column 2", 7.25" (18.42 cm) for 14" OAH	44A0907-3
Column 2", 17.25" (43.82 cm) for 24" OAH ¹	44A0907-4
Column 2", 23.25" (59.06 cm) for 30" OAH ¹	44A0907-5
Filter clip	60C2041
Frangible coupling, 1.5 inch, 12 TPI	62B0073/SPARE
Frangible coupling, 1.5 inch, 12 TPI, with slot	62B0461/SPARE
Frangible coupling, 2 inch, 11.5 TPI	44A7239
Clamp band assembly	44A2060
Gasket	63A0640
Head assembly	44A2066-X
Lamp, 100 W/6.6 A, PK30d	48A0380
Lamp, 110-120 W/6.6 A	48A0069
Lamp, 150 W/6.6 A (ETL Certified)	48A0044
Lamp, 200 W/6.6 A (ETL Certified)	48A0145
Lamp socket	49A0032
Lens, inner - 180° segment, white	63B0415-1
Lens, inner - 180° segment, yellow ³	63B0415-2
Lens, inner - 180° segment, red ³	63B0415-3
Lens, inner - 180° segment, green ³	63B0415-4
Lens, inner - 180° segment, obscured	63B0415-6
Lens, inner bracket	61A0146
Lens, inner spring clip	65A0163
Outer lens, clear bidirectional (L-862) ³	63B0416
Outer lens, red-green, left hand (L-862E) ³	63A0602
Outer lens, red-green, right hand (L-862E) ³	63A0601
Socket mounting plate assembly	44A2089
Wire grommet	63A0042-4



Table 13: Possible Spare Parts (continued)

Description

Part No.

Notes

- ¹ Contact the ADB SAFEGATE Sales Department for additional details on this application
- ² Slot across threaded end allows easy replacement of broken frangible coupling
- $^{\rm 3}$ $\,$ See Ordering Code for ETL Certification $\,$
- ⁴ Color and/or color configuration not recognized by the FAA



Appendix A: SUPPORT

Our experienced engineers are available for support and service at all times, 24 hour/7 days a week. They are part of a dynamic organization making sure the entire ADB SAFEGATE is committed to minimal disturbance for airport operations.

ADB SAFEGATE Support

Live Technical Support - Americas

If at any time you have a question or concern about your product, just contact ADB SAFEGATE's technical service department. Trained in all areas of system issues, troubleshooting, guality control and technical assistance, our highly experienced Technical support specialists are available 24 hours a day, seven days a week to provide assistance over the phone.

ADB SAFEGATE Americas Technical Service & Support (US & Canada): +1-800-545-4157 ADB SAFEGATE Americas Technical Service & Support (International): +1-614-861-1304 During regular business hours, you can also Chat with a Service Technician. We look forward to working with you!

Before You Call

When you have an airfield lighting or system control system problem it is our goal to support airfield maintenance staff as quickly as possible. To support this effort we ask that you have the following information ready before calling.

- The airport code
- If not with an airport, then company name (prefer customer id number) •
- Contact phone number and email address •
- Product with part number preferable or product number
- Have you reviewed the product's manual and troubleshooting guide
- Do you have a True RMS meter available (and any other necessary tools)
- Be located with the product ready to troubleshoot





Note

For more information, see www.adbsafegate.com, or contact ADB SAFEGATE Support via email at support@adbsafegate.com or Brussels: +32 2 722 17 11 Rest of Europe: +46 (0) 40 699 17 40 Americas: +1 614 861 1304. Press 3 for technical service or press 4 for sales support. China: +86 (10) 8476 0106

A.1 ADB SAFEGATE Website

The ADB SAFEGATE website, www.adbsafegate.com, offers information regarding our airport solutions, products, company, news, links, downloads, references, contacts and more.

A.2 Recycling

A.2.1 Local Authority Recycling

The disposal of ADB SAFEGATE products is to be made at an applicable collection point for the recycling of electrical and electronic equipment. The correct disposal of equipment prevents any potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling. The recycling of materials helps to conserve natural resources. For more detailed information about recycling of products, contact your local authority city office.

A.2.2 ADB SAFEGATE Recycling

ADB SAFEGATE is fully committed to environmentally-conscious manufacturing with strict monitoring of our own processes as well as supplier components and sub-contractor operations. ADB SAFEGATE offers a recycling program for our products to all customers worldwide, whether or not the products were sold within the EU.

ADB SAFEGATE products and/or specific electrical and electronic component parts which are fully removed/separated from any customer equipment and returned will be accepted for our recycling program.

All items returned must be clearly labeled as follows:

- For ROHS/WEEE Recycling
- Sender contact information (Name, Business Address, Phone number).
- Main Unit Serial Number.

ADB SAFEGATE will continue to monitor and update according for any future requirements for *EU directives* as and when *EU member states* implement new *regulations* and or *amendments*. It is our aim to maintain our *compliance plan* and assist our customers.



Company Addresses

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