



L-860 Low Intensity Elevated Light (Constant Voltage)

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ADB Airfield Solutions, LLC

P.O. Box 30829
977 Gahanna Parkway
Columbus, OH 43230

Tel: (614) 861-1304
Fax: (614) 864-2069

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Warranties

Products of ADB Airfield Solutions manufacture are guaranteed against mechanical, electrical, and physical defects (excluding lamps) for a period of one year from the date of installation or a maximum of two years from the date of shipment and are guaranteed to be merchantable and fit for the ordinary purposes for which such products are made.

ADB Airfield Solutions will correct by repair or replacement, 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 Airfield Solutions written notice of such defects after delivery of the goods to Buyer.

ADB Airfield Solutions reserves the right to examine goods upon which a claim is made. Said goods must be presented in the same condition as when the defect therein was discovered. ADB Airfield Solutions further reserves the right to require the return of such goods to establish any claim.

ADB Airfield Solutions' 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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This is ADB Airfield Solutions' sole guarantee and warranty with respect to the goods; there are no express warranties or warranties of fitness for any particular purpose or any implied warranties of fitness for any particular purpose or any implied warranties other than those made expressly herein. All such warranties being expressly disclaimed.

Disclaimers

This manual could contain technical inaccuracies or typographical errors. ADB Airfield Solutions reserves the right to revise this manual from time to time in the contents thereof without obligation of ADB Airfield Solutions to notify any person of such revision or change.

Details and values given in this manual are average values and have been compiled with care. They are not binding, however, and ADB Airfield Solutions disclaims any liability for damages or detriments suffered as a result of reliance on the information given herein or the use of products, processes or equipment to which this manual refers. No warranty is made that the use of the information or of the products, processes or equipment to which this manual refers will not infringe any third party's patents or rights. The information given does not release the buyer from making their own experiments and tests.

L-860 Low Intensity Elevated Light (Constant Voltage)

1. Safety

This section contains general safety instructions for using your ADB Airfield Solutions equipment. Task- and equipment-specific warnings are included in other sections of this manual where appropriate. Note all warnings and follow all instructions carefully. Failure to do so may result in personal injury, death, or property damage.

To use this equipment safely,

- refer to the FAA Advisory Circular AC 150/5340-26, *Maintenance of Airport Visual Aids Facilities*, for instructions on safety precautions.
- observe all safety regulations. To avoid injuries, always remove power prior to making any wire connections and touching any parts. Refer to FAA Advisory Circular AC 150/5340-26.
- read and become familiar with the general safety instructions provided in this section of the manual before installing, operating, maintaining, or repairing this equipment.
- read and carefully follow the instructions given throughout this manual for performing specific tasks and working with specific equipment.
- store this manual within easy reach of 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.
- obtain and read Material Safety Data Sheets (MSDS) for all materials used.

Safety Symbols

Become familiar with the safety symbols presented in this section. These symbols will alert you to safety hazards and conditions that may result in personal injury, death, or property and equipment damage.



WARNING: Failure to observe this warning may result in personal injury, death, or equipment damage.



WARNING: Risk of electrical shock. Failure to observe this warning may result in personal injury, death, or equipment damage.

Safety Symbols (*contd.*)

WARNING: Disconnect equipment from line voltage. Failure to observe this warning may result in personal injury, death, or equipment damage.



WARNING: Wear safety goggles. Failure to observe may result in serious injury.



CAUTION: Failure to observe may result in equipment damage.

Qualified Personnel

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 see that its personnel meet these requirements.

Intended Use

WARNING: Use of 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.

ADB Airfield Solutions cannot be responsible for injuries or damages resulting from nonstandard, unintended applications of its equipment. This equipment is designed and intended only for the purpose described in this manual. Uses not described in this manual are considered unintended uses and may result in serious personal injury, death, or property damage. Unintended uses may result from taking 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 Airfield Solutions replacement parts
- failing to make sure that auxiliary equipment complies with approval agency requirements, local codes, and all applicable safety standards
- using materials or auxiliary equipment that are inappropriate or incompatible with your ADB Airfield Solutions equipment
- allowing unqualified personnel to perform any task

Installation

Read the installation section of all system component manuals before installing your equipment. A thorough understanding of system components and their requirements will help you install the system safely and efficiently.



WARNING: Failure to follow these safety procedures can result in personal injury or death.

- Allow only qualified personnel to install ADB Airfield Solutions and auxiliary equipment. Use only approved equipment. Using unapproved equipment in an approved system may void agency approvals.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Follow all instructions for installing components and accessories.
- 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.

Operation

Only qualified personnel, physically capable of operating the equipment and with no impairments in their judgment or reaction times, should operate this equipment.

Read all system component manuals before operating this equipment. A thorough understanding of system components and their operation will help you operate the system safely and efficiently.

Operation *(contd.)*

- Before starting this equipment, check all safety interlocks, fire-detection systems, and protective devices such as panels and covers. Make sure all devices are fully functional. Do not operate the system if these devices are not working properly. Do not deactivate or bypass automatic safety interlocks or locked-out electrical disconnects or pneumatic valves.
- Never operate equipment with a known malfunction.
- Do not attempt to operate or service electrical equipment if standing water is present.
- Use this equipment only in the environments for which it is rated. Do not operate this equipment in humid, flammable, or explosive environments unless it has been rated for safe operation in these environments.
- Never touch exposed electrical connections on equipment while the power is ON.

Action in the Event of a System or Component Malfunction

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.

Maintenance and Repair

Allow only qualified personnel to perform maintenance, troubleshooting, and repair tasks. Only persons who are properly trained and familiar with ADB Airfield Solutions equipment are permitted to service this equipment.

- Always use safety devices when working on this equipment.
- Follow the recommended maintenance procedures in your equipment 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 Airfield Solutions replacement parts. Using unapproved parts or making unapproved modifications to equipment may void agency approvals and create safety hazards.

Maintenance and Repair*(contd.)*

- Check interlock systems periodically to ensure their effectiveness.
- Do not attempt to service electrical equipment if standing water is present. Do not service electrical equipment in a high-humidity environment.
- Use tools with insulated handles when working with electrical equipment.

2. Description

See Figure 1. This section describes the L-860 low intensity elevated light fixture. The L-860 light fixtures are intended for general aviation airport VFR runway, threshold or taxiway applications.

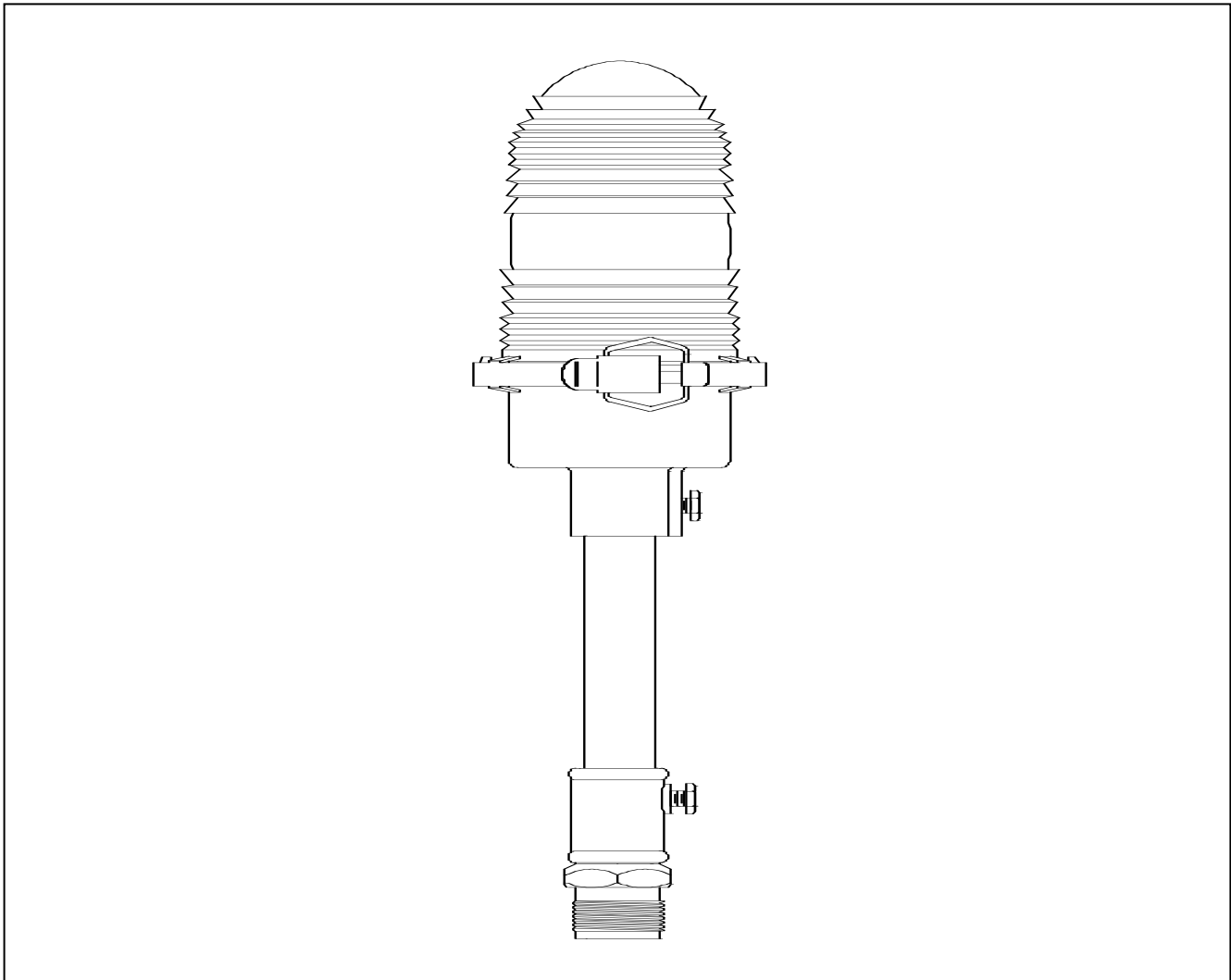


Figure 1. L-860 Light Fixture

2. Description *(contd.)*

The light fixtures are available in a number of color or color combination lenses and lamp wattages. All light fixtures have the following physical configuration:

- cast aluminum head assembly
- stainless steel encircling clamp band to hold the heat- and shatter-resistant glass or nonbreakable plastic lens
- a standard steel mounting column
- a single gasket between the lens and the head assembly to form a tight seal

The mounting column is available in three lengths. Refer to Table 1.

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

Table 1. Mounting Columns

Type	Height (in.)	Height (mm)
Standard (FAA minimum)	14	355.6
Standard	24	610
Standard (FAA maximum)	30	762

The L-860 light fixtures are protected with aviation yellow alkyd enamel paint. The fixture is normally stake-mounted on a 30-inch (762-mm) galvanized steel stake.

L-860 Low Intensity Elevated Lights: 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 part numbers.

Table 2. Required Equipment Supplied

Description	Quantity
L-860 light fixture (includes steel column, lamp, frangible fitting, and electrical leads)	1
Instruction manual	1

Table 3. Required Equipment Not Supplied

Description	Quantity
Screw driver (medium blade)	1
Nut driver, 7/16-in. and 8/13-in.	1 each
Wrench for 1 13/16-inch (46.0375-mm) hex screw on frangible coupling	1
Optional stake assembly (30-inch (762-mm) galvanized steel)	1

Specifications

This subsection provides specifications for the L-860 low intensity light fixtures.

Input

115—120 Vac

Lamps

NOTE: Refer to the *Parts* section for part numbers.

Lamp	Voltage	Note
15 W (15 A/CL)	120 Vac	
25 W (25 A/CL)	120 Vac	
54/60 W (60 A/CL)	120 Vac	

Rated Lamp Life

1000 hours (minimum)

Lamps and Lens Colors

Refer to Table 4.

Table 4. Lamps and Lens Colors

Type (Use)	Available Lamps	Light Direction	Lens Color	Note
L-860 (Runway Edge VFR Runways)	15 W/120 Vac 25 W/120 Vac 54/60 W/120 Vac	Omnidirectional	White Red Blue Green Yellow	
		Bidirectional	White-Green White-Red White-Yellow	
L-860E (Runway Threshold/End, VFR Runways)	15 W/120 Vac 25 W/120 Vac 54/60 W/120 Vac	Bidirectional	Red-Green Red-Red	
		Unidirectional	Green	

Environmental Operating Conditions

The L-860 low intensity light fixture is designed to operate under the conditions presented below for temperature, wind, altitude, and relative humidity.

Temperature

-55 to +55 °C (-67 to +131 °F)

Wind

Velocities up to 350 mph (560 kph)

Altitude

Sea level to 10,000 feet (3000 m)

Relative Humidity

Up to 100 %

Weight

4 lb (1.81 kg) (approximately)

Weather

The L-860 elevated light is designed for exposure to rain, snow, ice, and standing water.

Lens

Heat- and shatter-resistant glass lens

Photometric Data

Refer to the table below for photometric data.

Type	Color	Intensity Candelas (cd)		Note	
		2-10 Degrees Vertical (min)	25 (avg)		10-15 Degrees Vertical (min)
L-860	White	15	25	10	
L-860E	Green	10	15	5	
L-860E	Red	3	5	1	

3. 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.

Introduction

This section provides instructions for installing the L-860 low intensity elevated light fixture. Refer to the airport project plans and specifications for the specific installation instructions.

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.

Assembly Instructions

NOTE: Check the packing list with the parts list to verify that all parts are present before proceeding. Refer to the *Parts* section for ordering information.

To assemble parts, perform the following procedure:

1. See Figure 2. Place wire leads (7) into the column (10), and insert the column into the base of the head assembly (3).

Assembly Instructions (contd.)

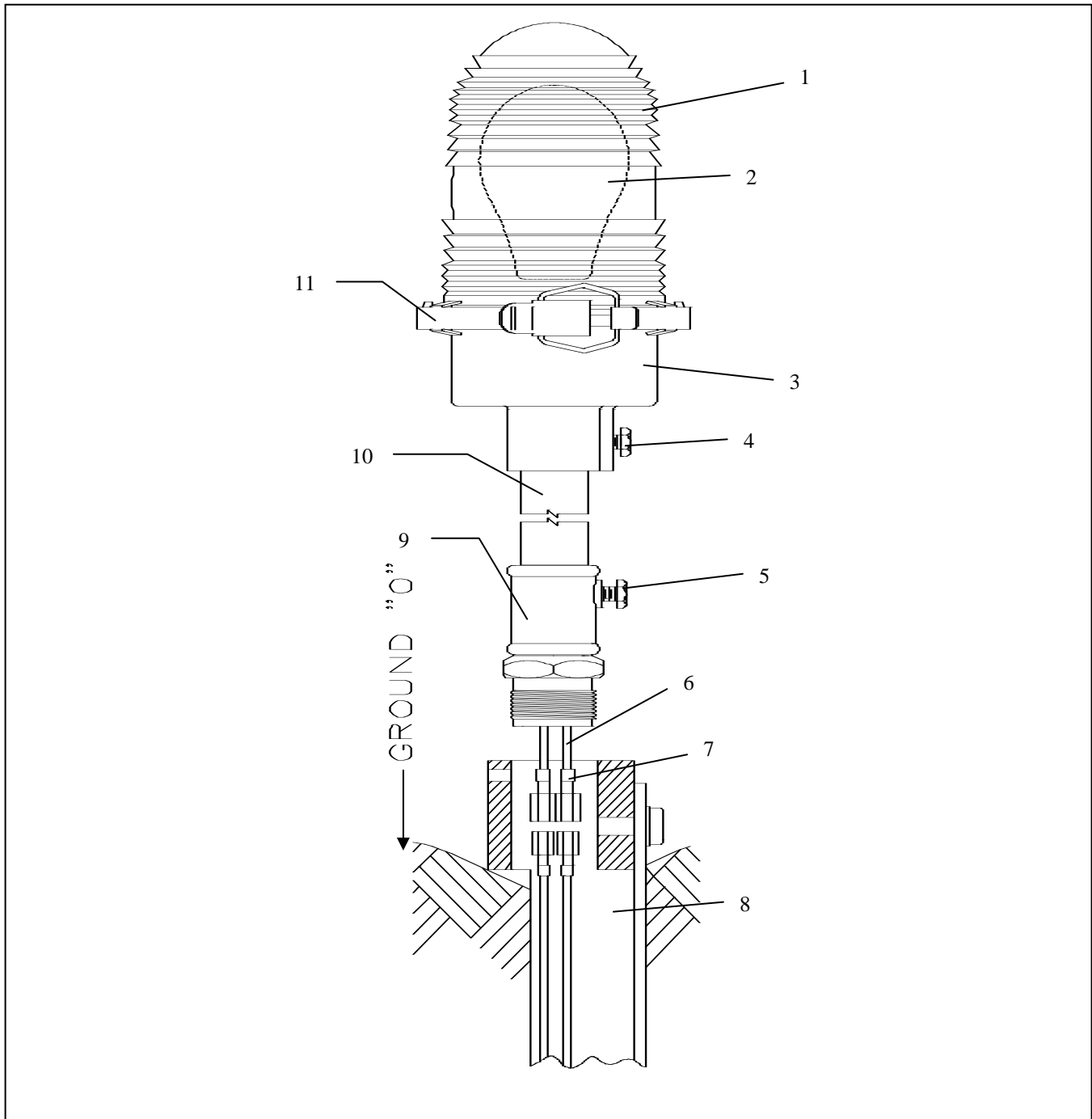


Figure 2. Assembling L-860 Light Fixture

- | | | |
|------------------|-------------------------|-----------------------|
| 1. Lens | 5. Hex Bolt | 9. Frangible Coupling |
| 2. Lamp | 6. L-823 Cordset | 10. Column |
| 3. Head Assembly | 7. Secondary Wire Leads | 11. Clamp Band |
| 4. Locking Screw | 8. Stake Assembly | |

Assembly Instructions *(contd.)*

2. Secure the column to the base by tightening the locking screw (4) located on the side of the base.
3. Insert the lamp (2) into the socket. Refer to the *Repair* section.
4. Place the lens (1) on the upper base of the head assembly and secure to the head assembly by tightening the lens clamp band (11).
5. Insert the end of the column into the frangible coupling (9) and secure by tightening the hex bolt (5).

Stake Mounting

When using 120 Vac parallel-powered lighting systems, mount the light fixtures on the 30-inch (762-mm) 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.

Stake Assembly

See Figure 3. To assemble the stake, attach the stake hub (2) to the metal stake (1) using two 3/8-16 x 3/4-in. hex head screws (3) and 3/8-in. lockwashers (4).

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

The stake assembly is now ready to install in the ground.

Stake Assembly (contd.)

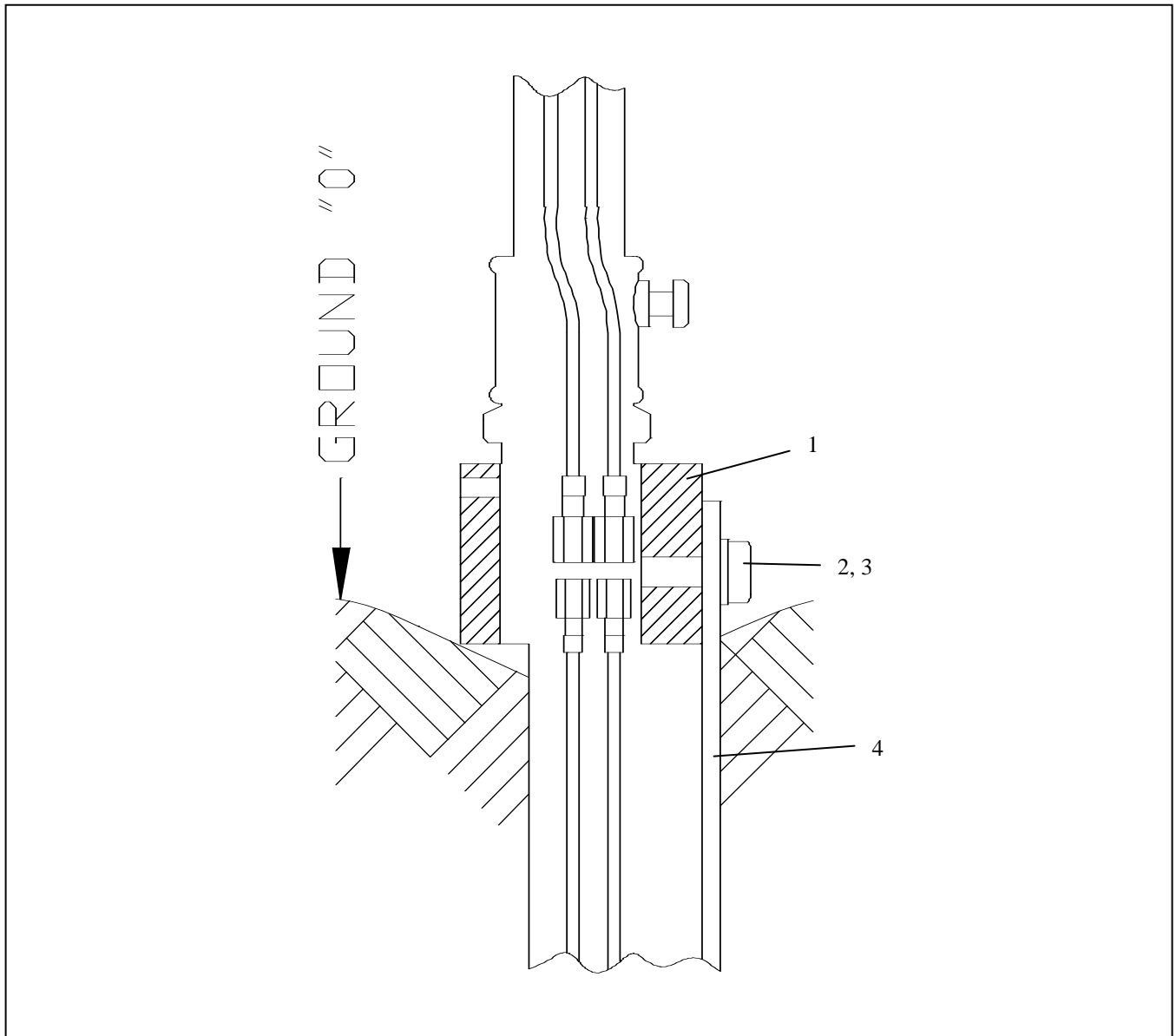


Figure 3. Stake Assembly

- 1. Stake Hub
- 2. Hex Head Screw
- 3. Lockwasher
- 4. Metal Stake

Stake Assembly *(contd.)***Stake Installation**

To install a stake, perform the following procedure:

1. See Figure 3. Install the stake in 6-inch- (152.4-mm-) diameter holes at a depth of 30 inches (762 mm) so that the mounting hub of the stake is level.

NOTE: Do not drive stakes. Driving stakes may damage the stake and cause light fixture misalignment. Refer to FAA specification AC 150/5340-24.

2. Make electrical connections as required and backfill around the stake with compacted earth passing a 1-inch (25.4 mm) sieve.

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.

3. Install the top of the stake even with, or not more than 1/2 inch (12.7 mm) above ground level and maintain within one degree of the vertical.

NOTE: 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.

4. Maintenance

To keep L-860 low intensity light fixtures operating efficiently, follow a preventive maintenance schedule. Refer to Table 5. Refer to FAA AC 150/5340-26 for more detailed information.

Table 5. L-860 Low Intensity Light Fixture Maintenance

Interval	Maintenance Task	Action
Daily	Check for burned out lamp.	After turning off power, replace burned-out lamps. Refer to the <i>Repair</i> section.
	Check for broken lens.	Replace lens.
Weekly	Check for vegetation.	Remove vegetation. Use weed killer.
	Check for dirty lens.	Clean with glass cleaner.
Monthly	Check for misaligned fixture.	Straighten, level, and align the light fixture.
	Check for dirty lamp socket.	After turning off power, clean lamp socket.
	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.

Continued on next page

4. Maintenance *(contd.)*

Table 5. L-860 Low Intensity Light Fixture Maintenance

Interval	Maintenance Task	Action
Semi-Annually	Check for improper ground elevation. Check for improper light elevation. Check for moisture present in light housing or base. Check for corrosion or loose or chipped paint.	Grade so frangible point is approximately 1 inch (25.4 mm) above ground elevation. Maintain the same elevation for all light fixtures. Check drain holes and clamps. Check lens for cracks. If damaged, replace. Use water pump to remove water from the base. Scrape and repaint.
Annually	Check for cracks, corrosion, and shorts. Check for dirty contacts. Check for loose wire connections.	Repair or replace. After turning off power, clean contacts. Tighten wire connections.
Unscheduled	Make prediction of heavy snowfall, if 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.

5. Troubleshooting



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



WARNING: De-energize the circuit and lock out the circuit so that the circuit cannot be energized by remote means before attempting to service the fixture.

5. Troubleshooting *(contd.)*

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 Airfield Solutions representative for help.

Problem	Possible Cause	Corrective Action
Lamps will not turn on.	Defective lamp	Replace lamp. Refer to the <i>Repair</i> section.
	Loose wire connection(s)	Tighten wire connection(s).
	Moisture present in fixture	Open up and dry. Inspect lens for cracks. Replace lamp and any damaged parts. Refer to the <i>Repair</i> section.

6. Repair

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



WARNING: De-energize the circuit and lock out the circuit or regulator so that the circuit cannot be energized by remote means before attempting to service the fixture.

Introduction

This section provides instructions for replacing lamps for the L-860 low intensity light fixture.

Lamp Replacement

WARNING: De-energize the circuit and lock out the circuit or regulator so that the circuit cannot be energized by remote means before attempting to service the fixture.

To replace a lamp, perform the following procedure:

1. Remove the outer lens from the fixture by loosening the lens clamp band holding the lens to the base.
2. Unscrew the lamp from the socket and install the new lamp in the socket.
3. Replace the lens and make sure the lens clamp band is tight.
4. Re-energize the circuit.

7. Parts

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

Using the Illustrated Parts List

The Item column numbers correspond to the numbers that identify parts in illustrations following each parts list. NS (not shown) indicates that a listed part is not illustrated.

The Description column gives the part name, as well as its dimensions and other characteristics when appropriate. Indentions show relationships between parts, assemblies, and subassemblies.

The Part Number column gives the ADB Airfield Solutions part number.

Item	Description	Part Number	Note
NS	Assembly	XXXXXXXX	A
T1	Assembly Part Part	XXXXXXXX XXXXXXXX	

The Note column contains letters that refer to notes at the end of each parts list. Notes contain special ordering information.

L-860 Light Fixture Part Numbering System

Figure 4 shows how to determine the part number for a particular L-860 low intensity light fixture.

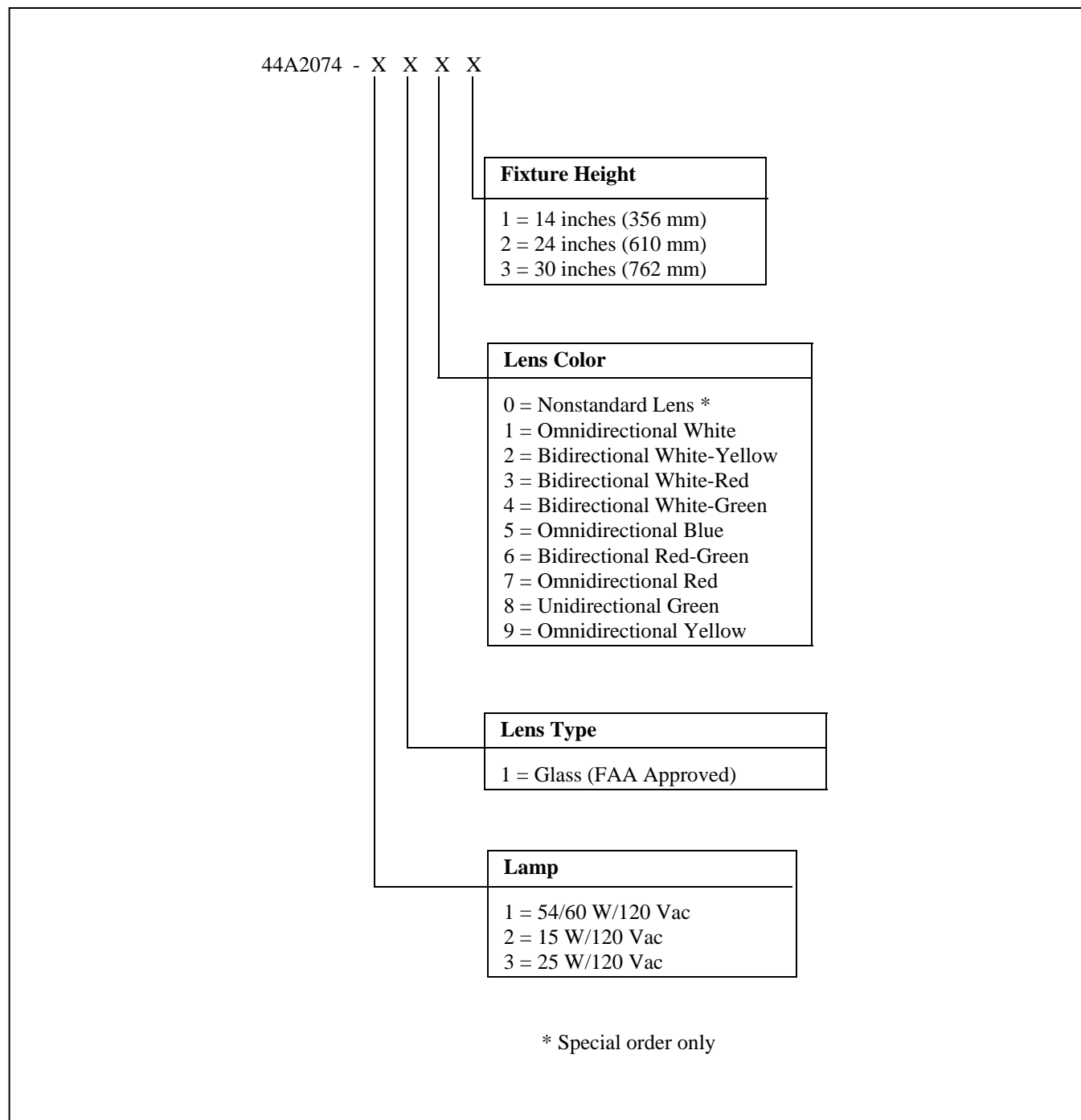


Figure 4. L-860 Light Fixture Part Numbers

**L-860 Light Fixture Parts
List**

See Figure 5.

Item	Description	Part Number	Note
H2	Lens		
	Lens, white	63A0141	
	Lens, white-yellow	63A0142	
	Lens, white-red	63A0144	
	Lens, white-green	63A0146	
	Lens, blue	63A0151	
	Lens, red-green	63A0148	
	Lens, red	63A0149	
	Lens, green	63A0150	
	Lens, yellow	63A0143	
L1	Lamp		
	Lamp, 15 W/120 Vac (15 A/CL)	48A0024	
	Lamp, 25 W/120 Vac (25 A/CL)	48A0008	
	Lamp, 54/60 W/120 Vac (60 A/CL)	48A0347	
A1	Head assembly	44C0375	A
M1	Column		
	Column (steel) 6-inch (152.4 mm)	62A0007-6	
	Column (steel) 12-inch (304.8 mm)	62A0007-12	
	Column (steel) 16-inch (406.4 mm)	62A0007-16	
	Column (steel) 22-inch (558.8 mm)	62A0007-22	
M2	Frangible coupling	62B0073	
NOTE A: When ordering head assembly, specify cordset length.			

L-860 Light Fixture Parts

List (contd.)

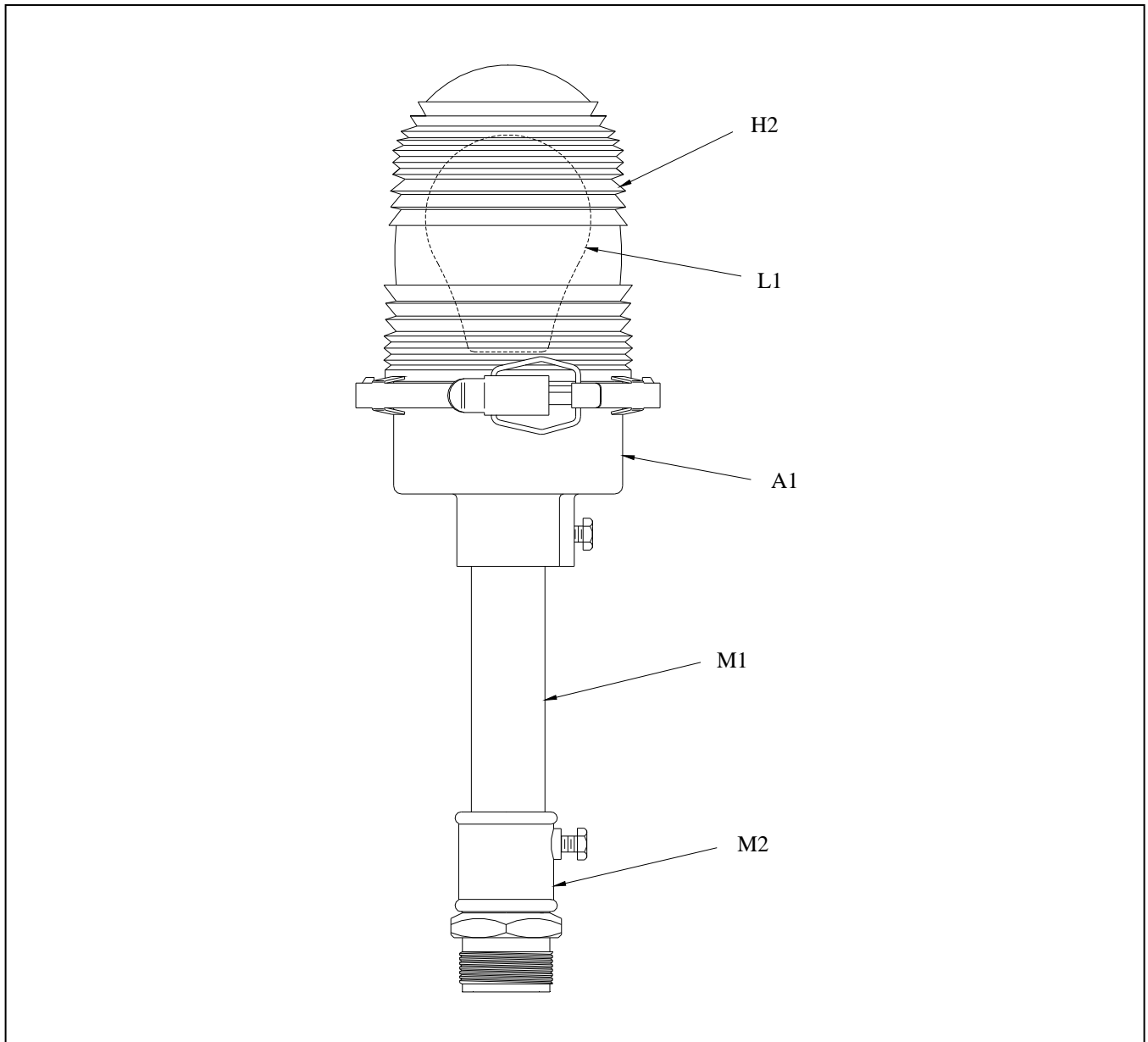


Figure 5. L-860 Light Fixture

L-860 Head Assembly Parts List

See Figure 6.

Item	Description	Part Number	Note
M2	Gasket	63B0015	
H1	Lamp socket, porcelain	49A0014	
A1	Lens clamp assembly	44B0023	
M1	Lamp base	62C0270-2	

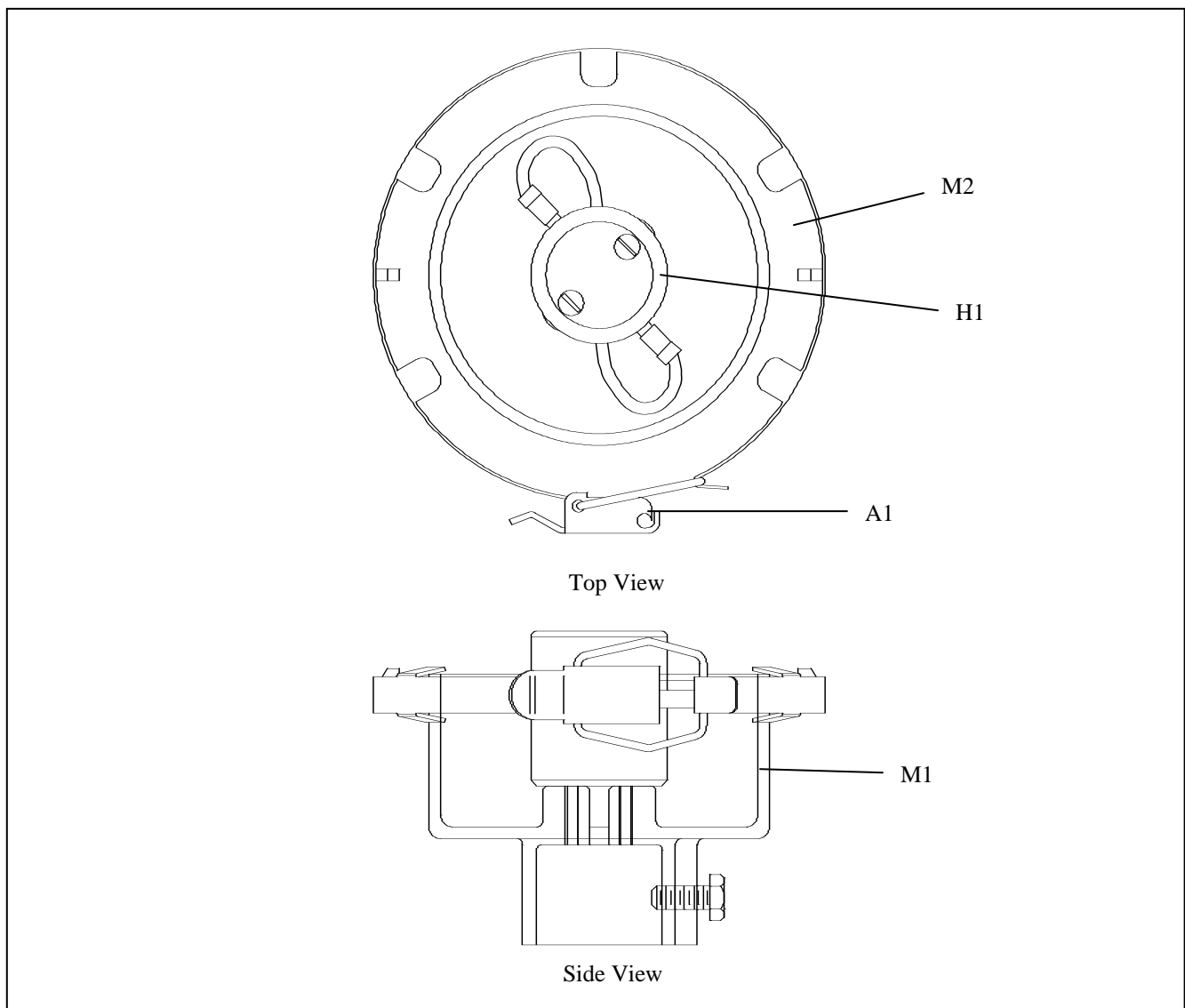


Figure 6. L-860 Head Assembly

L-860 Stake Assembly Parts List

See Figure 7.

Item	Description	Part Number	Note
1	Stake hub	62B0268-1	
2	Hex-head screw, 3/8—16 x 3/4 in.	64A0176-12	
3	Split lockwasher, 3/8 in.	66A0026-29	
4	Stake	62B0284	

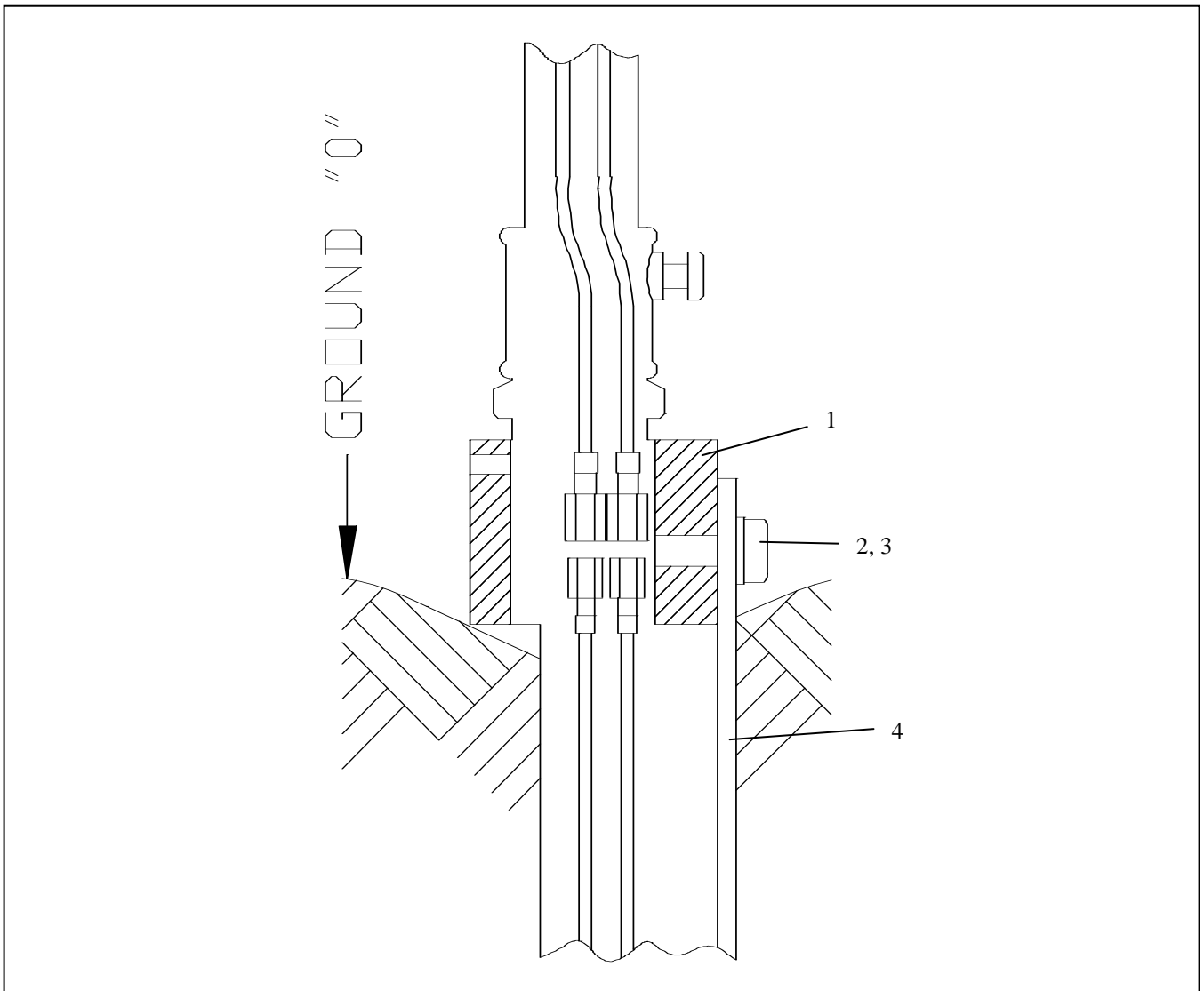


Figure 7. Stake Assembly