



**ELECTRIC LIGHT TOWER
with
WINCH LIFTING SYSTEM
MODEL ELT-4320
OPERATOR'S MANUAL**

AXIOM EQUIPMENT GROUP LIMITED WARRANTY

This limited warranty is issued by Metrolite for the supply of the following products: Metrolite ELT-4320 Light Tower.

Description and Warranty Period;

Machine:

Without prejudice to the legal warranty, Metrolite extends the warranty on manufacturing defects relating to the equipment supplied up to a period of 2 (two) years from the date of sale (invoice). Therefore, the total legal and limited warranty period will be 2 (two) years from the invoice date. The determination whether the product is defective will be made by Axiom Equipment Inc. in its sole discretion, considering the general performance given by the product.

Basic 320 LED Light:

Without prejudice to the legal warranty, Metrolite extends the warranty on manufacturing defects relating to the equipment supplied up to a period of 5 (five) years from the date of sale (invoice). Therefore, the total legal and limited warranty period will be 5 (five) years from the invoice date. The determination whether the product is defective will be made by Axiom Equipment Inc. in its sole discretion, considering the general performance given by the product. A product cannot be considered defective only as result of a malfunction of the single LED component that emits light, if the number of non-functioning components is less than 10% of the total number of LED components in the product. The reduction of the luminous flux is a phenomenon expected during the life of the LEDs and is therefore not covered by the warranty.

Warranty Terms and Conditions:

The guarantee is valid provided that:

- The products are stored, installed, used and maintained in compliance with the technical specifications indicated in the product marking (with specific reference to the voltage and operating temperature), to the instructions supplied with the product, to what is indicated in the respective catalogs and to the standards in force;
- Installation and maintenance are carried out by qualified technical personnel, all service records must be available for warranty purposes;
- The reported defect affects the functionality of the product;
- The product has not been modified, altered or treated with chemicals or in any other way in any way;
- The product covered by the guarantee is made available to Metrolite for further technical analysis for the time necessary to carry it out;
- The defect is reported in writing, by certified or registered email with return receipt to Metrolite within 30 (thirty) days from the receipt of the products (in the case of apparent defects) or from the discovery of the defect (in the case of hidden defects) by sending a photographic feedback of the label on the product;
In the event that the defect is recognized by Metrolite, Metrolite will choose at its discretion whether to repair or replace the defective product with the same product or an equivalent one, taking into consideration the technical evolution of the products and that of their components. Any technical intervention or replacement (partial or complete) of the product carried out pursuant to the warranty will not in any case give the right to extensions or renewals of the same beyond 2 (two) years from the invoice date. The repair and replacement of the product recognized as defective by Metrolite does not include costs or expenses for its removal or reinstallation. Metrolite is not responsible for, and therefore will not reimburse, any consequential loss or indirect, compensatory or other damage suffered due to a defective products, such as, by way of example and not limited to, shipping costs, assembly costs, on-site installation, any downtime costs, loss of profit or overall cost of buyers.

Exclusions and Limitations This limited warranty does not cover:

- Labour costs and expenses, equipment and warehouse costs and expenses, or any other extra costs relating to and/or resulting from any intervention necessary to repair the defect (such as, by way of example, costs / expenses for assembly, disassembly, and transport of defective appliances, to be repaired or new products which will be the sole responsibility of the customer);
- Electrical products subject to wear which are comparable to consumables;
- Products made on specific customer request;
- Damage to products due to negligence, transportation or unforeseen and unforeseeable events that do not fall within normal conditions of use (such as, for example, electric shock and lightning);
- Products switched on for a number of hours per year exceeding 5000;
- Appliances not used for the purpose for which they were made; This warranty does not guarantee the integrity of the painting when the product is used in a saline environment or in the presence of corrosive agents. In no event Metrolite will be liable for accidental, compensatory, consequential, indirect, special or other damages. The liability of Metrolite for a defect in the product will in any case be limited to the amount actually paid for that defective product. The performance and duration of the LEDs are not guaranteed if the fixtures are installed in environments with the presence of chemical substances that are not compatible with the LEDs themselves. Our technical office is available to check the compatibility of the LEDs we use in relations to the substances present in the environment where the luminaires are installed.

Applicable Law and Jurisdiction:

This limited warranty, as well as its execution, interpretation and all questions concerning the validity and effectiveness of the same, will be governed by Canadian Law.

WARRANTY VOID IF NOT REGISTERED

AXIOM EQUIPMENT GROUP

ELECTRIC LIGHT TOWER WITH WINCH LIFTING SYSTEM

WARRANTY REGISTRATION FORM & INSPECTION REPORT

WARRANTY REGISTRATION

This form must be filled out by the dealer and signed by both the dealer and the customer at the time of delivery.

Customer's Name _____

Dealer's Name _____

Address _____

Address _____

City, State/Prov., Code _____

City, State/Prov., Code _____

Phone Number (_____) _____

Light Tower Model _____

Serial Numbers ELT-4320 _____

Delivery Date _____

DEALER INSPECTION REPORT

_____ Tire Pressure Checked
_____ Wheel Bolts Torqued
_____ Inspect Electrical System
_____ Lubricate Machine

SAFETY

_____ Guards/Shields Installed & Secured
_____ All Decals Installed & Legible
_____ Review Operating and Safety Instructions

I have thoroughly instructed the buyer on the above described equipment which review included the Operator's Manual content, equipment care, adjustments, safe operation and applicable warranty policy.

Date _____

Dealer's Rep. Signature _____

Signature _____

The above equipment and Operator's Manual have been received by me and I have been thoroughly instructed as to care, adjustments, safe operation and applicable warranty policy.

Date _____

Owner's Signature _____

WHITE	YELLOW	PINK
AXIOM EQUIPMENT	DEALER	CUSTOMER

SERIAL NUMBER LOCATIONS

Always give your dealer the serial number of your Axiom Equipment Group ELT-4320 when ordering parts or requesting service or other information.

The serial number plate is located where indicated. Please mark the number in the space provided for easy reference.



Model ELT-4320

Serial Number Machine _____

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1 INTRODUCTION

Congratulations on your choice of a Axiom Equipment Group ELT-4320 Electric light tower and welcome to Axiom's quality line of lighting equipment. This equipment is designed and manufactured to meet the needs of a discriminating buyer in the industry for lighting worksites.

Safe, efficient and trouble free operation of your new Axiom ELT-4320 Electric light tower requires that you, and anyone else who will be operating or maintaining the machine, read, understand and practice ALL of the Safety, Operation, Maintenance and Trouble Shooting recommendations contained within this Operator's Manual.



This manual applies to all ELT-4320 Electric light towers manufactured by Axiom. Certain options may be available to specifically tailor the light tower to your operation and may not be included in this manual. Please contact the manufacturer regarding additional information about these options. Use the Table of Contents and Index as a guide to find specific information.

The information in this manual is accurate based on products produced at the time of publication. The manufacturer reserves the right to make technical updates, corrections and product revisions at any time without notice.

The warnings in this manual and on decals on the unit are not all inclusive. If using a procedure or operating techniques that the manufacturer does not specifically recommend, verify that it is safe for others. Also, make sure the procedure does not render the equipment unsafe.

Keep this manual handy for frequent reference and so that it will be passed on to new operators or owners. Call your Axiom dealer if you need assistance, information or additional copies of this manual.

MACHINE ORIENTATION - The electrical input end of the light tower is the front.

2 SAFETY

SAFETY ALERT SYMBOL

This Safety Alert symbol means
ATTENTION! BECOME ALERT!
YOUR SAFETY IS INVOLVED!



The Safety Alert symbol identifies important safety messages on your Axiom light tower and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you?

3 Big Reasons

Accidents Disable and Kill
Accidents Cost You Money
Accidents Can Be Avoided

SIGNAL WORDS:

Note the use of the signal words **DANGER**, **WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using the following guide-lines:

- | | |
|------------------|--|
| DANGER - | Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded. |
| WARNING - | Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices. |
| CAUTION - | Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. |

If you have any questions not answered in this manual or require additional copies or the manual is damaged, please contact your dealer or Axiom Equipment Group, Canada, Highway 18 East, Oxbow, SK S0C 2B0, Phone: 1-866-918-6976, Email: equipment@axiomequipmentgroup.com.

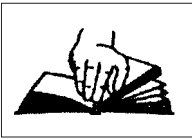

SAFETY


YOU are responsible for the **SAFE** operation and maintenance of your Axiom light tower. **YOU** must ensure that you and anyone else who is going to operate, maintain or work around the machine be familiar with the operating and maintenance procedures and related **SAFETY** information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices while operating the light tower.


Remember, **YOU** are the key to safety. Good safety practices not only protect you but, also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** operating this machine is familiar with the procedures recommended and follows safety precautions. Remember, most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- Read and understand the Operator's Manual and all safety signs before supplying power to, operating, maintaining or adjusting the light tower.
- light tower owners must give operating instructions to operators or employees before allowing them to operate the machine, and at least annually thereafter.
- The most important safety device on this equipment is a **SAFE** operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow these. Most accidents can be avoided.
- A person who has not read and understood all operating and safety instructions is not qualified to operate this machine. An untrained operator exposes himself and bystanders to possible serious injury or death.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- The manual is provided with the machine in the documentation package. We recommend keeping it all in a safe place and have qualified personnel to carry out operations. In case of transfer of equipment ownership, attach all the documentation, as it is an integral part of the product.
- Our customer service and technical assistance department is available to assist you in any way.
- Only use genuine parts in case replacement is required; failure to comply will void your warranty automatically.

2.1 GENERAL SAFETY

- Read and understand the Operator's Manual and all safety signs before supplying power to, operating, maintaining or adjusting the light tower. 
- Only trained, competent persons shall operate the light tower. An untrained operator is not qualified to operate this machine.
- Provide a first-aid kit for use in case of an accident. Store in a highly visible place. 

- Provide a fire extinguisher for use in case of an accident. Store in a highly visible place.
- Install and properly secure all guards and shields before operating. 

- Wear appropriate protective gear. This list includes but is not limited to:
 - Protective shoes with slip resistant soles
 - Protective glasses or goggles
 - Heavy gloves
- Turn machine OFF, place all controls in their OFF position, shut down and lockout power supply and wait for all moving parts to stop before servicing, adjusting, maintaining, repairing or cleaning.
- Do not damage this manual, do not remove or tear any pages and keep it away from moisture and heat sources. Please note that the drawings contained in the manual are merely to help you identify the parts described and, therefore, they might not correspond precisely to your product.
- Know the emergency medical center number for your area.
- Review safety related items with all operators annually.

2.2 EQUIPMENT SAFETY GUIDELINES

- Safety of the operator and bystanders is one of the main concerns in designing and developing a machine. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury or death, study the following precautions and insist those working with you, or for you, follow them.
- In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.
- Replace any safety sign or instruction sign that is not readable or is missing. Location of such safety signs is indicated in this manual.
- Never use alcoholic beverages or drugs which can hinder alertness or coordination while operating this equipment. Consult your doctor about operating this machine while taking prescription medications.
- **Under no circumstances should young children be allowed to work with this equipment. Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.** Review the safety instructions with all users annually.
- This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible, properly trained and physically able person familiar with farm machinery and trained in this equipment's operations. If the elderly are assisting with work, their physical limitations need to be recognized and accommodated.
- Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question - **DON'T TRY IT.**
- Do not modify the equipment in any way. Unauthorized modification result in serious injury or death and may impair the function and life of the equipment.
- The contents of this manual are not binding. The manufacturer reserves the right to make changes and improvements to accessories and details without altering the essential characteristics of the model described and illustrated here and without committing to promptly updating this manual.
- In addition to the design and configuration of this implement, including Safety Signs and Safety Equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the machine. Refer also to Safety Messages and operation instruction in each of the appropriate sections of the auxiliary equipment and machine Manuals. Pay close attention to the Safety Signs affixed to the auxiliary equipment and the machine.

2.3 SAFETY TRAINING

- Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator or bystander.
- In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of this equipment.
- It has been said, "The best safety feature is an informed, careful operator." We ask you to be that kind of an operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow these. Accidents can be avoided.
- **Working with unfamiliar equipment can lead to careless injuries. Read this manual, and the manual for your auxiliary equipment, before assembly or operating, to acquaint yourself with the machines. If this machine is used by any person other than yourself. It is the machine owner's responsibility to make certain that the operator, prior to operating:**
 - i. **Reads and understands the operator's manuals.**
 - ii. **Is instructed in safe and proper use.**
- Know your controls and how to stop light towers and any other auxiliary equipment quickly in an emergency. Read this manual and the one provided with your other equipment.
- Train all new personnel and review instructions frequently with existing workers. Be certain only a properly trained and physically able person will operate the machinery. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death. If the elderly are assisting with work, their physical limitations need to be recognized and accommodated.



2.4 SAFETY SIGNS

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or have become illegible.
- Replaced parts that displayed a safety sign should also display the current sign.
- Safety signs displayed in Section 3 each have a part number in the lower right-hand corner. Use this part number when ordering replacement parts.
- Safety signs are available from your authorized Distributor or Dealer Parts Department or the factory.

How to Install Safety Signs:

- Be sure that the installation area is clean and dry.
- Be sure temperature is above 50°F (10°C).
- Determine exact position before you remove the backing paper. (See Section 3).
- Remove the smallest portion of the split backing paper.
- Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

2.5 STORAGE SAFETY

- Store the light tower on a firm level surface.
- If required, make sure the unit is firmly blocked up.
- Make certain that all mechanical locks and jacks are safely and positively connected before storing.
- Store away from areas of human activity.
- Do not allow children to play on or around the stored light tower.
- Lock out power by turning off master control panel or junction box and padlocking the door shut to prevent electrocution or unauthorized start up of the light tower.

2.6 PREPARATION

- Never operate the light tower and auxiliary equipment until you have read and completely understand this manual, the auxiliary equipment Operator's Manual, and each of the Safety Messages found on the safety signs on the light tower and auxiliary equipment.

- Personal protection equipment including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, adjustment, maintaining, repairing, removal, or moving the machine. Do not allow long hair, loose fitting clothing or jewelry to be around equipment.



- **PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS!**

Motors or equipment attached can often be noisy enough to cause permanent, partial hearing loss. We recommend that you wear hearing protection on a full-time basis if the noise in the Operator's position exceeds 80db. Noise over 85db on a long-term basis can cause severe hearing loss. Noise over 90db adjacent to the Operator over a long-term basis may cause permanent, total hearing loss. **NOTE:** Hearing loss from loud noise (from tractors, chain saws, radios, and other such sources close to the ear) is cumulative over a lifetime without hope of natural recovery.



- Clear working area of debris, trash or hidden obstacles that might be hooked or snagged, causing injury, damage or tripping.
- Operate only in daylight or good artificial light.
- Be sure machine is properly anchored, adjusted and in good operating condition.
- Ensure that all safety shielding and safety signs are properly installed and in good condition.
- Before starting, give the machine a "once over" for any loose bolts, worn parts, cracks, leaks, frayed belts and make necessary repairs. Always follow maintenance instructions.

2.7 INSTALLATION SAFETY

- Review layout of the worksite. Position light tower where it can provide maximum illumination with minimal interference with the access and operation of other equipment. Select a different position if there is interference.
- Position light tower base on a solid, level surface to avoid tipping, sliding or falls during operation. Avoid placing the tower on a surface with a slope of over 10°.
- Do not position light tower close to overhead power lines or obstructions to prevent electrocution or other problems. Electrocution can occur without contact.
- Before raising mast, fully extend and pin/lock each outrigger. Lower each outrigger jack as required to level frame. Center both bubbles in spirit levels to position frame tower frame in a perfectly level plane.
- Do not raise or use light tower if wind speeds exceed specified safe speeds or if storms or thunderstorms are expected in the area.
- Lower tower when not in use.
- Use ground terminal inside frame to ground unit in compliance with local laws and regulations.
- Do not operate machine with wet hands or clothing.
- All electrical wires, plugs, sockets and other components must always be in good condition when operating.
- Do not turn heads on if protective glass is damaged or broken.
- Do not touch flood heads while they are on to prevent burns. Allow time for them to cool before touching to service or maintain.
- Turn lights off and disconnect power if a malfunction occurs. Identify and resolve the malfunction before turning machine on and resuming work.

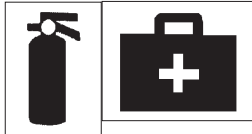
2.8 MAINTENANCE SAFETY

- Read and understand all the information contained in the Operator's Manual regarding operating, servicing, adjusting, maintaining and repairing.
- **Turn machine OFF, shut down and lock out power supply and wait for all moving parts to stop before servicing, adjusting, maintaining or repairing.**
- Follow good shop practices:

- Keep service area clean and dry.
- Be sure electrical outlets and tools are properly grounded.
- Use adequate light for the job at hand.



- Make sure all guards and doors are in place and properly secured when operating the light tower.
- Do not work on light tower electrical system unless the power cord is unplugged or the power supply is locked out. Lock-out tag-out power source before performing any maintenance work.
- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.
- Disconnect lamps from power supply and wait for them to cool before performing any service or maintenance or replacing them.
- Always replace guards and shields and close doors when service and repair work has been completed.



2.9 LOCK-OUT TAG-OUT SAFETY

- Establish a formal Lock-Out Tag-Out program for your operation.
- Train all operators and service personnel before allowing them to work around the light tower.
- Provide tags at the worksite and a sign-up sheet to record tag out details.
- Do not service or maintain the light tower unless motor is OFF and the power locked out with the master switch.

2.10 OPERATING SAFETY

- Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or repairing the light tower.
- Turn machine OFF, place master controls in their OFF position, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
- Keep all electrical components tight, dry and in good repair.
- Clear the area of bystanders, especially small children.
- Replace all worn or failed components immediately with Axiom approved parts.
- Install and secure all guards before operating.
- Keep hands, feet, hair and clothing away from moving parts.
- Review worksite. Position light tower to provide maximum lighting and minimal interference with other equipment.
- Extend and pin outriggers, lower jacks to level frame before raising tower.
- Stay away from overhead power lines and obstructions when raising or lowering light tower. Electrocutation can occur without direct contact.
- Do not stand or climb on machine when running. Keep others off.
- Keep the working area clean and dry.
- Review safety instructions annually.

2.11 TIRE SAFETY

- Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.
- Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
- Have a qualified tire dealer or repair service perform required tire maintenance.
- When replacing worn tires, make sure they meet the original tire specifications. Never under-size.

2.12 ELECTRICAL SAFETY

- Use the terminal inside the frame to ground unit in compliance with local laws and regulations.
- All electrical wires, plugs, sockets and other components must always be in good condition when operating.
- Turn master breakers and electrical switches off when shutting down unit.
- Allow light components to cool for several minutes before touching them for servicing or adjusting to prevent burns from hot components.
- Do not operate machine with wet hands or clothing.
- Do not position light tower close to overhead power lines or obstructions to prevent electrocution or the problems. Electrocution can occur without direct contact.

2.13 EMPLOYEE SIGN-OFF FORM

Axiom Equipment Group follows the general Safety Standards specified by the American Society of Agricultural and Biological Engineers (ASABE) and the Occupational Safety and Health Administration (OSHA). Anyone who will be operating and/or maintaining a Axiom built machine must read and clearly understand ALL Safety, Operating and Maintenance information presented in this manual.

Do not operate or allow anyone else to operate this equipment until such information has been reviewed. Annually review this information before the season start-up.

Make these periodic reviews of SAFETY and OPERATION a standard practice for all of your equipment. We feel that an untrained operator is unqualified to operate this machine.

A sign-off sheet is provided for your record keeping to show that all personnel who will be working with the equipment have read and understand the information in the Operator's Manual and have been instructed in the operation of the equipment. Copy this page and use it as your sign-off form

SIGN-OFF FORM

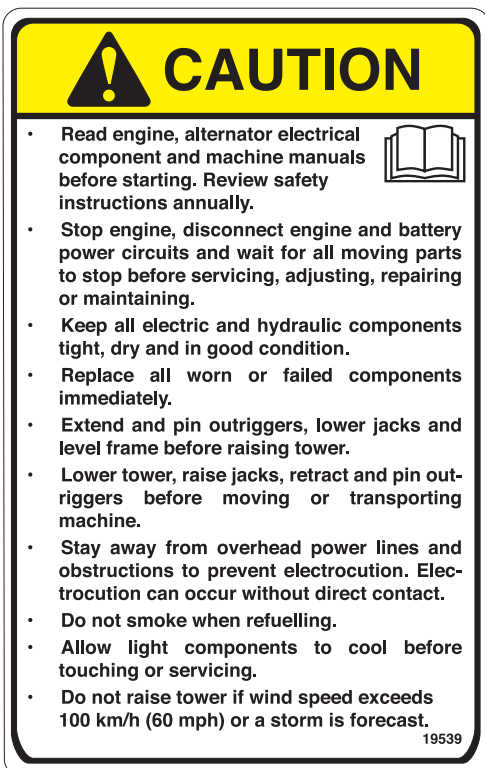
[illegible]

3 SAFETY SIGN LOCATIONS

The types of safety signs and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various Safety Signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!

A



B



REMEMBER - If Safety Signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

4 OPERATION



OPERATING SAFETY

- Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or repairing the light tower.
- Turn machine OFF, place master controls in their OFF position, relieve hydraulic pressure, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
- Keep all electrical components tight, dry and in good repair.
- Clear the area of bystanders, especially small children.
- Replace all worn or failed components immediately with Axiom approved parts.
- Install and secure all guards before operating.
- Keep hands, feet, hair and clothing away from moving parts.
- Review worksite. Position light tower to provide maximum lighting and minimal interference with other equipment.
- Extend and pin outriggers, lower jacks to level frame before raising tower.
- Stay away from overhead power lines and obstructions when raising or lowering light tower. Electrocution can occur without direct contact.
- Do not stand or climb on machine when running. Keep others off.
- Keep the working area clean and dry.
- Review safety instructions annually.

4.1 TO THE NEW OPERATOR OR OWNER

The Axiom light tower is designed to provide lighting over a large area by providing electrical power to banks of LED lights using worksite power.

It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the machine. In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, and prudence of personnel involved in the operation, transport, maintenance and storage of equipment or in the use of facilities.

Follow all safety instructions exactly. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the worksite. Untrained operators are not qualified to operate the machine.

Many features incorporated into this machine are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the machine safely and how to set it to provide maximum efficiency. By following the operating instructions in conjunction with a good maintenance program, your Axiom light tower will provide many years of trouble-free service.

4.2 MACHINE COMPONENTS

The Axiom light tower is a moveable frame with banks of LED lights on top of an extendable mast for illuminating a large area. Electrical power from the worksite is used to power the unit and the lights. The unit is designed to operate alone or in series with other units.

The mast is designed with a manual winch to raise and lower the light tower when appropriate. Two pinned extendable handles on the top sides of the frame are used to manually move the machine from location to location on the worksite.

Always load the unit on a trailer when moving from worksite to worksite. Forklift slots on each side should be used for forks to lift and load the machine on a transport vehicle. Brackets on top of the forklift slot frame and on each side of the mast are available to use as anchor points when lifting with a hoist.

Outriggers are located on each corner of the frame and are pinned in both extended and retracted. Manually operated jacks on the end of each outrigger frame are used to level the frame. Spirit levels on top of the frame are used to assist the operator to level the frame. The bubbles in both levels must be centred before the mast is raised.

The mast frame is pinned on top of the frame to prevent turning. The mast can be turned through a 330° arc to allow lighting in any direction.

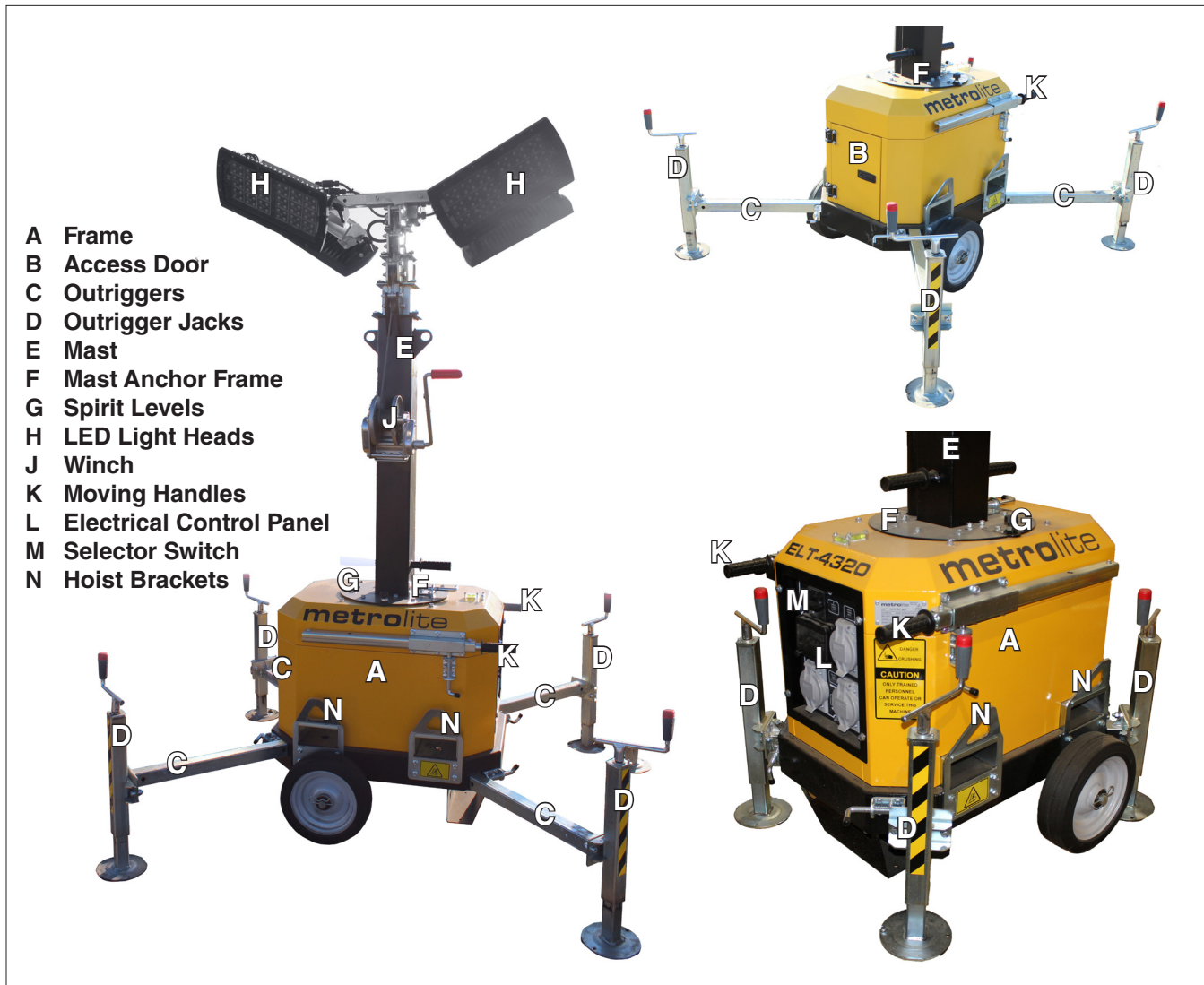


FIG. 1 MACHINE & TANK COMPONENTS

4.3 MACHINE BREAK-IN

Although there are no operational restrictions on the Axiom light tower when used for the first time, it is recommended that the following mechanical items be checked:

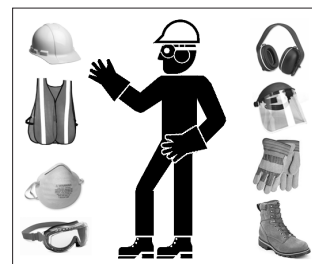
- A. Read the manual before starting.
- B. **After 2, 5 and 10 hours of operation:**
 - 1. Go to the regular servicing and maintenance schedule as defined in the Maintenance Section.

4.4 PRE-OPERATION CHECKLIST

Safe and efficient operation of your new light tower requires that each operator reads and follows all safety precautions and operating procedures contained in this section. Performing the following pre-operation checklist is important for personal safety as well as for continued mechanical soundness and longevity of your new Axiom light tower. The checklist should be performed before operating the light tower and prior to each operation thereafter.

- Lubricate the machine according to the schedule prescribed in the "Maintenance Section".

- Insure that proper protective gear is in good repair and available for use by each operator. Make certain that each operator uses the protective gear. Protective gear includes but, is not limited to:



- Leather gloves
 - Safety glasses or face shield
 - Full length protective clothing
 - Steel toed boots with slip resistant soles.
- Insure that all safety guards and shields are in good repair and securely in place.
 - Check that frame is level. Adjust as required.
 - Make sure that all electrical switches are in the OFF position before starting engine or supplying power.
 - Check that all electrical connections are tight and cords are routed out of the way or protected.
 - Be sure the working area is clean and dry to prevent tripping or slipping.

4.5 CONTROLS

It is recommended that operators review this section annually to remain familiar with the machine controls. Train new operators before permitting them to operate machine.

1. Electrical Control Panel:

This panel contains all the controls and input/output sockets for the light tower.

a. Selector Switch:

This 2 position rotary switch selects the single or multiple tower operating modes. Turn to position 1 to use in the multiple tower operating mode where 30A 125/250V input power is utilized.

Turn to position 2 to use in the single tower operating mode where 15A 120V input power is utilized.

b. Breakers:

The control panel is designed with 2 breakers on the control panel under the hinged plastic cover.

- Raise the cover and move the left bank up to engage the breakers that protect the electrical circuits from an overload condition. Move the left bank down to remove the breakers from the circuits and the electrical circuits will stop working. The breakers must be in their up position for the lights to work.
- Raise the cover and move the right breaker bank up to turn the lights on. Move the right breaker bank down to turn the lights off. The left breaker bank must always be in its up position for this breaker bank to turn the lights on and off.

c. Single Tower Input (15A 125V):

This plug in terminal is used when a 15A 125V land power cord is used as a power source. No other towers are connected to this unit.

d. Multiple Tower Input (30A 125/250V):

This plug in terminal is used when a 30A 125/250V power cord is available as a power source. It also enables up to 4 additional units to be connected in series with this one.

e. Multiple tower Outlet (30A 125/250V):

This plug in terminal is used to power the additional units connected in series with this unit.



FIG. 2 ELECTRICAL CONTROL PANEL

2. **Winch:**

The mast is designed with a manual winch to raise and lower it when required. Turn the crank handle clockwise to raise the mast. Turn counterclockwise to lower the mast.



FIG. 3 WINCH

4.6 MACHINE PREPARATION

4.6.1 PREPARATION

1. Lifting With Hoist:

The light tower is designed so it can be lifted with a hoist in two different ways:

- a. The upper stationary portion of the mast is equipped with an ear on both sides that the hoist can attach to. By attaching to both, the machine will be balanced and stay level when lifting.
- b. Each forklift frame is designed with a flange on the top that a hoist can connect to. However it is recommended that a spreader be used to prevent contacting the side of the frame when lifting.

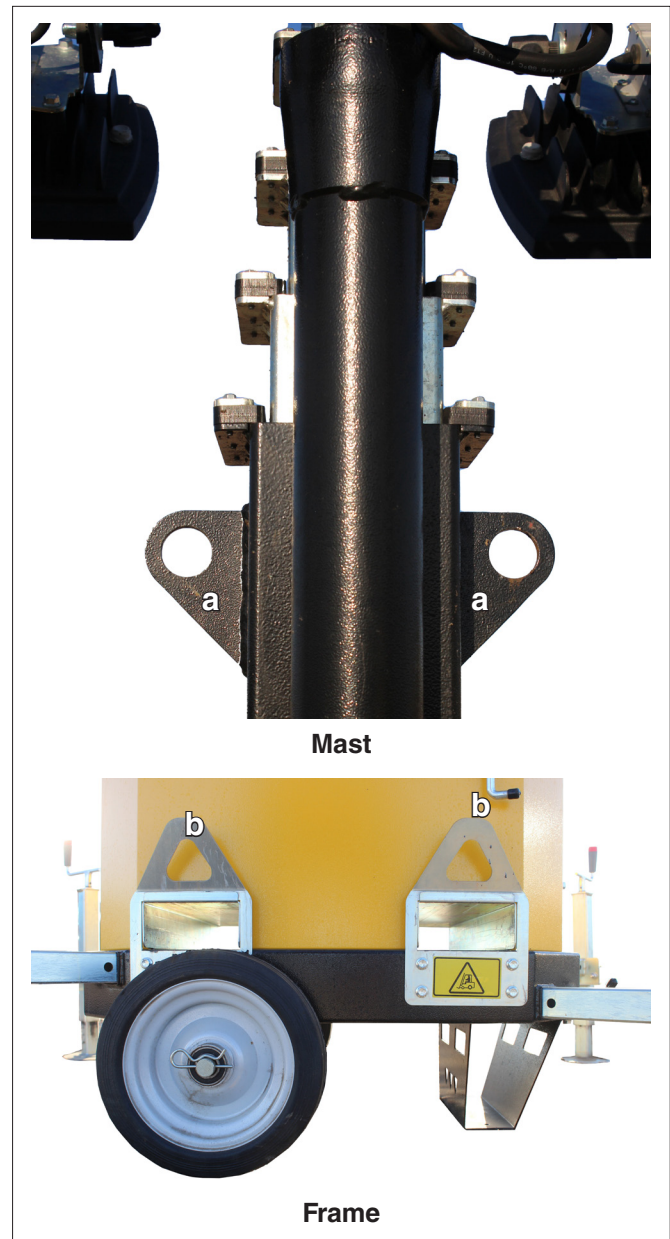


FIG. 4 LIFTING

2. **Forklifts:**

The frame is designed with 2 lateral pockets extending across the frame for lifting the machine. Push the forks completely through the frame until they extend out the other side to keep the machine level and even when lifted. Raise slowly and raise only as high as required. Use the signs on the frame as a guide for the fork positioning.

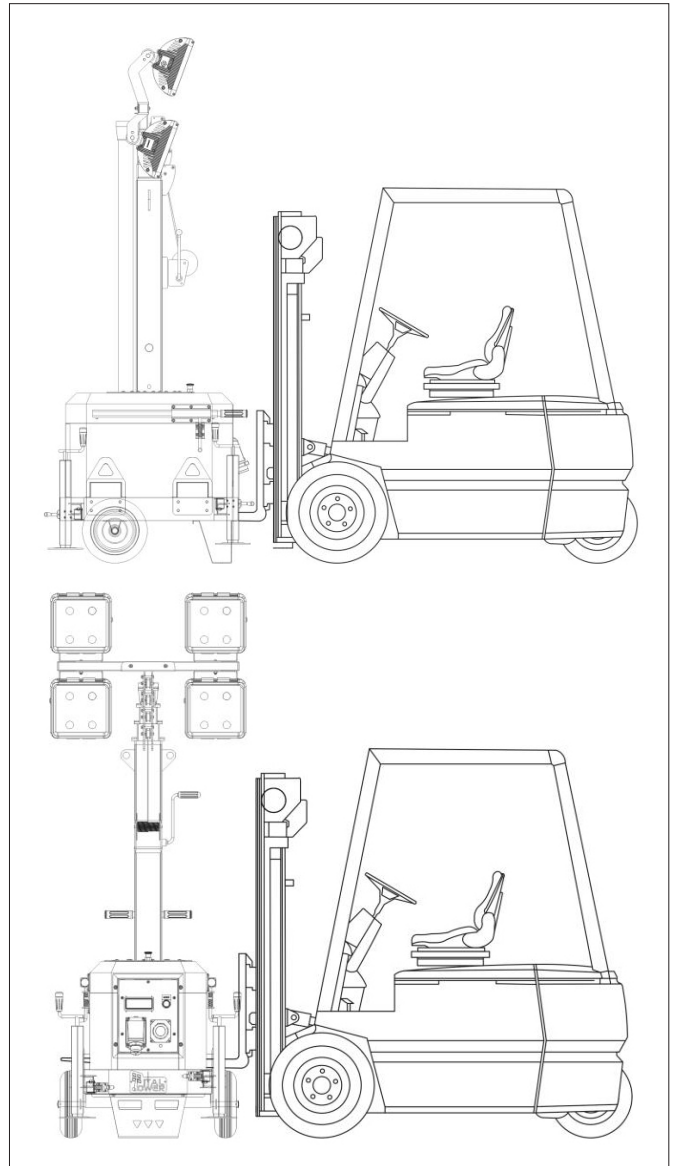


FIG. 5 FORKLIFT POSITIONING

3. **Manual Moving:**

The machine is not designed to be towed from location to location. It must be loaded on a transport vehicle with a hoist or forklift as described above. To move around the worksite, the machine is designed with 2 pinned and extendable arms the operator can use to lift the front of the frame and move unit on its wheels.

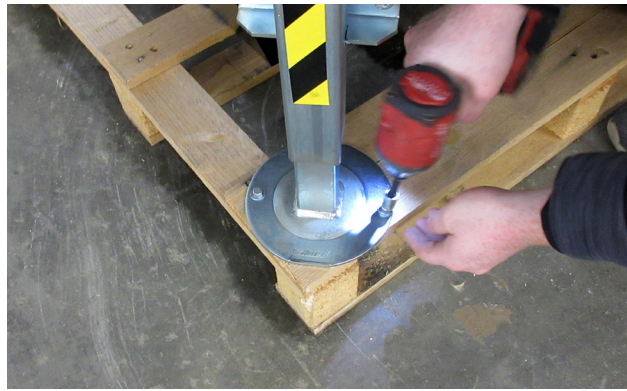


FIG. 6 ARMS

4. **Machine Preparation:**

The machine is shipped from the factory mounted on a pallet to allow for easy handling with a forklift. To prepare for use, follow this procedure:

- a. Move the machine into an open area with access from all sides.
- b. Remove all the anchor screws between the jack pads and the pallet.
- c. Drive a forklift through the forklift slots and lift the unit off the pallet.
- d. Back up until the pads clear the pallet and set the pads on the ground.
- e. The machine is now ready to use.



Anchor Screws



Forks



Cleared Pallet

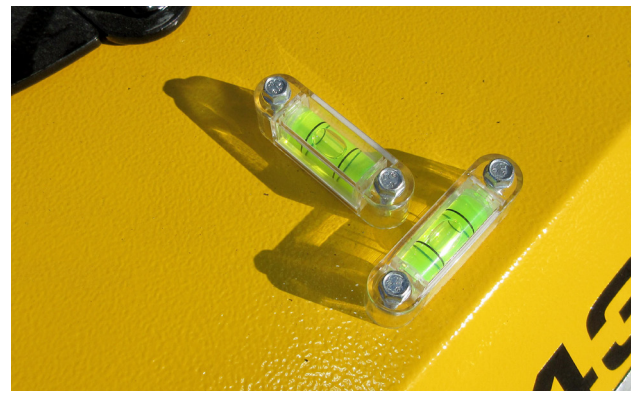
FIG. 7 SHIPPING

4.6.2 POSITIONING:

Machine positioning and placement are important to the functioning and reliability of the light tower. Since the tower rises to 7.0 m, the base machine must be set in a level position to support the mast.

When positioning machine, follow this procedure:

1. Review the worksite and select an area where the machine is out of the way and not interfere with the other equipment on the worksite and yet illuminate the required area.
2. Transport the machine to the selected spot (Refer to Transport Section) and unload.
3. Extend arms and move the machine to the desired spot.
4. Retract and pin arms.
5. Unpin and extend outrigger arms on each corner of the frame.
6. Use the spirit levels on top of the frame as a guide to lower jacks on each corner to level the frame.



Spirit Levels



Positioned



Jacks

FIG. 8 LEVELING

4.6.3 ELECTRICAL CONTROL PANEL:

This panel contains the switch for selecting the operating mode, breakers and input/output receptacles. Review the application and control panel details when preparing to operate.



FIG. 9 ELECTRICAL CONTROL PANEL

4.7 OPERATION



OPERATING SAFETY

- Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or repairing the light tower.
- Turn machine OFF, place master controls in their OFF position, relieve hydraulic pressure, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
- Keep all electrical components tight, dry and in good repair.
- Clear the area of bystanders, especially small children.
- Replace all worn or failed components immediately with Axiom approved parts.
- Install and secure all guards before operating.
- Keep hands, feet, hair and clothing away from moving parts.
- Review worksite. Position light tower to provide maximum lighting and minimal interference with other equipment.
- Extend and pin outriggers, lower jacks to level frame before raising tower.
- Stay away from overhead power lines and obstructions when raising or lowering light tower. Electrocution can occur without direct contact.
- Do not stand or climb on machine when running. Keep others off.
- Keep the working area clean and dry.
- Review safety instructions annually.

Follow this procedure when using the light tower:

1. Move unit to worksite and unload (refer to Transport Section).
2. Review Section 4.6 Machine Preparation and follow all the instructions.
3. Review and follow the pre-operation checklist (See Section 4.4).
4. Review the location and function of all controls (See Section 4.5).

5. **Operating Mode:**

The machine is designed to be operated in 2 different ways to allow the operator to set the operating mode appropriate for the application. Review the options and set appropriate for the application:

- a. Single tower.
- b. Multiple tower.

Use the selector switch to choose the appropriate operating mode.



FIG. 10 MACHINE (TYPICAL)



FIG. 11 SELECTOR SWITCH

6. Machine Preparation Steps:

- a. Refer to and follow the machine preparation and set-up sections. Be sure machine is located on a firm level base.
- b. Extend and pin the front and rear outrigger arms. Lower the jacks to level the frame. Use the bubbles in the spirit levels on top of the frame as a guide.

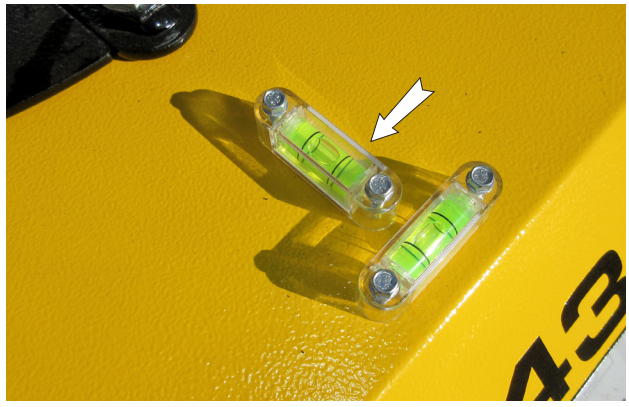


FIG. 12 SPIRIT LEVELS

- c. Adjust the tilt and angle of the light heads.



Tilt



Angles

FIG. 13 LIGHT BANKS

- d. Turn the mast to the desired angle by retracting the lock pin, turn the mast to the required lamp angle (use the handles on each side of the mast) and release the lock pin.



FIG. 14 MAST ANGLE

- e. Use the winch to raise the mast. Do not raise mast if there are overhead electrical power lines.

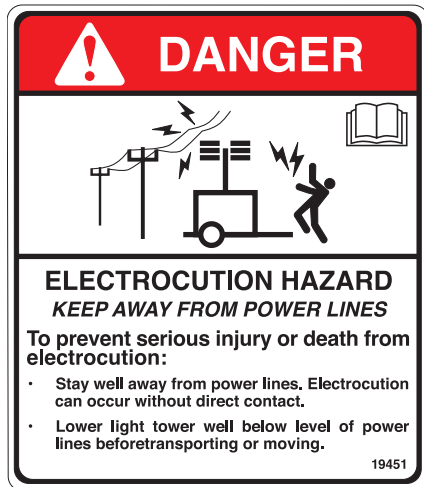


FIG. 15 WINCH

7. Operation:

Follow these steps when operating the light tower:

- a. Extend the moving handles and move the machine into position. Retract and pin handles.
- b. Extend outrigger arms and pin them in their extended position.
- c. Lower the jacks as required to level frame.
- d. Use the spirit levels on top of the frame to verify that the frame is level.
- e. Rotate mast to the required position and pin.
- f. Adjust lights to the appropriate angle and tilt for the application.
- g. Use the selector switch to select single or multiple tower application.
- h. For single tower, use a 15A 120V extension cord and plug into single tower input plug.
- i. For the multiple tower, use a 30A 125/250V extension cord to plug into the multiple tower input plug.
- j. Turn the main breaker on by moving it up.
- k. Use the winch to raise the mast to the desired height.
- l. Turn the light breaker to its on position by moving it up.
- m. To turn unit off, reverse the above procedure.
- n. Turn light breaker off by moving it down.
- o. Turn main breakers off by moving them down.
- p. Disconnect power cord.
- q. Lower mast to its lowest position.
- r. Raise jacks.
- s. Retract and pin outrigger arms.
- t. In an emergency, turn breakers off or unplug power cord. Correct emergency condition before resuming work.

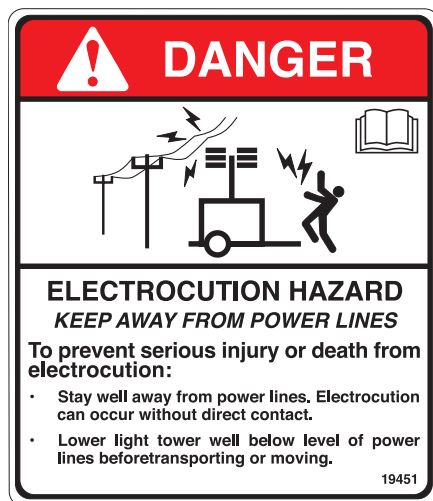


FIG. 16 OPERATING

8. Operating Hints:

a. Raising the Mast:

Use the winch to raise and lower the mast.
Stay away from overhead power lines to avoid electrocution.



Winch



Raising

FIG. 17 RAISING MAST

- b. Extend outrigger arms and pin. Lower jacks to level frame. Use bubbles in spirit levels when levelling frame.

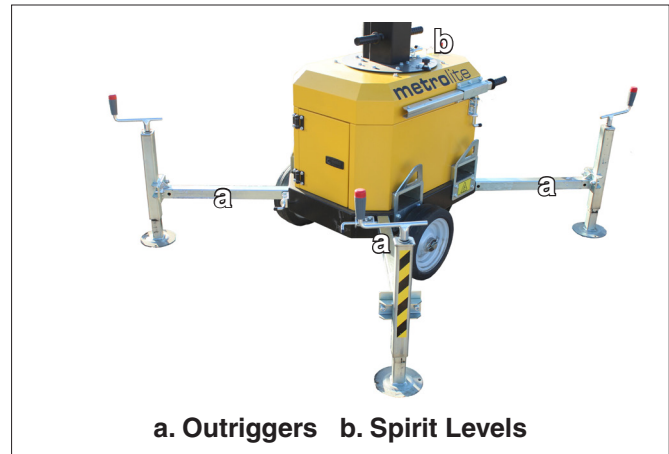


FIG. 18 LEVELLING

- c. The machine is moved manually by the operator.

To manually move the unit:

- i. Release anchor pin and extend the arms. Pin both arms.
 - ii. Lift the arms and move the machine on its wheels.
 - iii. Retract the arms and repin when positioned.
- d. The machine is not designed to be towed from worksite to worksite. It must be loaded on a transport vehicle and hauled to the next site. It is designed with extendable pinned arms that are used by personnel to move the unit around a worksite.



FIG. 19 MOVING ARMS RETRACTED

4.8 STORAGE



STORAGE SAFETY

- Store the light tower on a firm level surface.
- If required, make sure the unit is firmly blocked up.
- Make certain that all mechanical locks and jacks are safely and positively connected before storing.
- Store away from areas of human activity.
- Do not allow children to play on or around the stored light tower.

4.10.1 PLACING IN STORAGE

At the end of the season, the machine should be thoroughly inspected and prepared for storage. Repair or replace any worn or damaged components to prevent any unnecessary down time at the beginning of the next season. Follow this procedure:

- Thoroughly wash the machine using a pressure washer to remove all dirt, mud, debris or residue.
- Turn lights OFF.
- Lower mast into its fully DOWN position.
- Unplug power cord.
- Raise all outrigger jacks into their fully UP position, retract outriggers and pin in their retracted position.
- Touch up all paint nicks and scratches to prevent rusting.
- Select a storage area that is dry, level and free of debris.

4.10.2 REMOVING FROM STORAGE

When preparing to use the machine at the start of the season, follow this procedure:

- Transport or move to the working area.
- Check
 - a. All hardware. Tighten as required.
 - b. Air pressure in tires. Add as required.
- Replace any defective components.
- Go through the pre-operation checklist (section 4.4) before starting.



FIG. 20 STORED

5 SERVICE AND MAINTENANCE



MAINTENANCE SAFETY

- Read and understand all the information contained in the Operator's Manual regarding operating, servicing, adjusting, maintaining and repairing.
- **Turn machine OFF, shut down and lock out power supply and wait for all moving parts to stop before servicing, adjusting, maintaining or repairing.**
- Follow good shop practices:
 - Keep service area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job at hand.
- Make sure all guards and doors are in place and properly secured when operating the light tower.
- **Do not work on light tower electrical system unless the power cord is unplugged or the power supply is locked out. Lock-out tag-out power source before performing any maintenance work.**
- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.
- Disconnect lamps from power supply and wait for them to cool before performing any service or maintenance or replacing them.
- Always replace guards and shields and close doors when service and repair work has been completed.

5.1 SERVICE

5.1.1 FLUIDS AND LUBRICANTS

1. **Grease:**
Use an SAE multipurpose high temperature grease with extreme pressure (EP) performance. Also acceptable is an SAE multipurpose lithium base grease.
2. **Mast Lubricant:**
Use an anti-corrosive, water repellent lubricant spray.
3. **Storing Lubricants:**
Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture and other contaminants.

5.1.2 GREASING

Use the Maintenance Checklist provided to keep a record of all scheduled maintenance.

1. Use a hand-held grease gun for all greasing.
2. Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
3. Replace and repair broken fittings immediately.
4. If fittings will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.

5.1.3 SERVICING INTERVALS

8 Hours or Daily

1. Inspect machine.
 - a. Tighten any loose hardware.



FIG. 21 MACHINE

40 Hours or Monthly

1. Lubricate mast with anti-corrosive, water repellent spray.
2. Lubricate pulleys with multi-purpose lithium lubricant.



FIG. 22 MONTHLY

As Required

1. Clean machine.



FIG. 23 CLEAN MACHINE

5.1.4 SERVICE RECORD

See Lubrication and Maintenance sections for details of service. Copy this page to continue record.

ACTION CODE: CL CLEAN CK CHECK G GREASE R REPACK CH CHANGE

Maintenance

[illegible]

5.2 MAINTENANCE

By following a careful service and maintenance program on your machine, you will enjoy many years of trouble-free use.

5.2.1 ELECTRIC SYSTEM INSPECTION

Electricity provides power to all systems on the light tower. To maintain the integrity of each system and provide a safe working environment for the operator, it is important that a daily inspection be done to make sure that all systems and components are in good working condition.

When inspecting the electrical system and components, follow this procedure:

1. Place all controls in the OFF or neutral position.
2. Lockout before starting the inspection.
3. Inspect all electrical components looking for:
 - a. Damaged plugs.
 - b. Frayed or loose wires.
 - c. Cut or cracked insulation.
4. Replace any damaged components immediately.
5. Be sure all components are grounded.
6. Be sure there is not water or moisture in any junction box or enclosure. Dry the components before turning power on. Be sure that all compartments seal properly when closed.

6 TROUBLE SHOOTING

The Axiom ELT-4320 light tower is a lighting machine using a manual winch to raise and lower the mast. It is equipped with LED lights mounted on the top of the mast to illuminate the surrounding area, The worksite provides to power for the lights.

In the following section, we have listed many of the problems, causes and solutions to the problems that you may encounter.

If you encounter a problem that is difficult to solve, even after having read through this trouble shooting section, please contact your local Axiom dealer or the factory. Before you call, please have this Operator's Manual from your machine ready.

PROBLEM	CAUSE	SOLUTION
Lights don't work.	No power.	Turn electric switch ON. Pull emergency stop switch OUT.
	Low battery charge.	Connect machine to power supply to charge battery.

7 SPECIFICATIONS

7.1 MECHANICAL

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

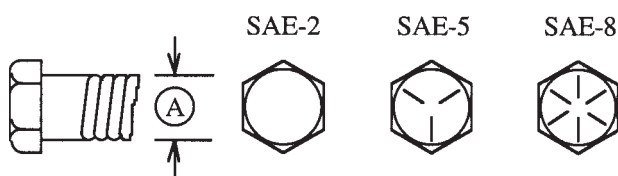
7.2 BOLT TORQUE

CHECKING BOLT TORQUE

The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

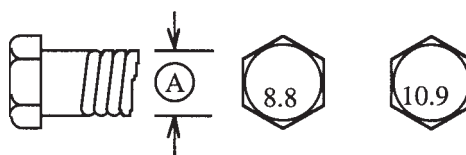
ENGLISH TORQUE SPECIFICATIONS

Bolt Diameter "A"	Bolt Torque*					
	SAE 2 (N.m) (lb-ft)		SAE 5 (N.m) (lb-ft)		SAE 8 (N.m) (lb-ft)	
1/4"	8	6	12	9	17	12
5/16"	13	10	25	19	36	27
3/8"	27	20	45	33	63	45
7/16"	41	30	72	53	100	75
1/2"	61	45	110	80	155	115
9/16"	95	60	155	115	220	165
5/8"	128	95	215	160	305	220
3/4"	225	165	390	290	540	400
7/8"	230	170	570	420	880	650
1"	345	225	850	630	1320	970



METRIC TORQUE SPECIFICATIONS

Bolt Diameter "A"	Bolt Torque*			
	8.8 (N.m) (lb-ft)		10.9 (N.m) (lb-ft)	
M3	.5	.4	1.8	1.3
M4	3	2.2	4.5	3.3
M5	6	4	9	7
M6	10	7	15	11
M8	25	18	35	26
M10	50	37	70	52
M12	90	66	125	92
M14	140	103	200	148
M16	225	166	310	229
M20	435	321	610	450
M24	750	553	1050	774
M30	1495	1103	575	1550
M36	2600	1917	3675	2710



Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

* Torque value for bolts and capscrews are identified by their head markings.

7.3 ELECTRICAL SCHEMATIC

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