



Operation and Safety Manual

Models 4108AN

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Company

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INTRODUCTION

This manual provides the information necessary for the safe use and operation of the JLG Model 4108AN Lighting Tower.

Specific operating details are contained in this publication to familiarise the operating personnel with the correct and safe procedures necessary to operate this equipment.

A separate Illustrated Parts and Service Manual is also available to easily identify the component parts required for service and maintenance purposes.

Take time to read this book thoroughly. If you are uncertain about any of the information presented, contact your JLG Service Office before operations commence.

All instructions in this manual are based on the machine being used under the operating conditions for which it was designed. In reading this manual, particular attention should be given to safety related Cautions and Warnings. Proper use and care will see this machine providing years of reliable service.

CONTENTS

Section One Operator and Safety

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SECTION ONE

OPERATORS AND SAFETY MANUAL

CONTENTS

	Page
• General	1-1
• Safety alert symbols	1-2
• Safety precautions	1-3
• Preparation for use	1-5
• Delivery and periodic inspection	1-5
• Controls identification	1-6
• Machine set up/pack up instructions.	1-8
• Forklifting machine	1-11
• Craning machine	1-11
• Towing Instructions	1-12

GENERAL

This section prescribes the proper and safe practices for machine operation. In order to promote proper usage of the machine, it is mandatory that a daily routine be established based on instruction given in this section. A maintenance program shall also be established by a qualified person and should be followed to ensure that the machine is safe to operate.

The user/operator of the machine shall not accept operating responsibility until this manual has been read and operation of the machine under the supervision of an experienced and qualified operator has been completed. If there is a question on application and/or operation, JLG Industries Customer Support Department should be consulted on (02) 6581 1111 (Australia).



MODIFICATION OF THE MACHINE WITHOUT THE PRIOR WRITTEN APPROVAL OF JLG INDUSTRIES (AUSTRALIA) IS PROHIBITED.

SAFETY ALERT SYMBOLS AND SAFETY SIGNAL WORDS



This is the Safety Alert Symbol. It is used to alert you to the potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

! DANGER

INDICATES AN IMMINENTLY HAZARDOUS SITUATION. IF NOT AVOIDED, WILL RESULT IN SERIOUS INJURY OR DEATH. THIS DECAL WILL HAVE A RED BACKGROUND.

! WARNING

INDICATES A POTENTIALLY HAZARDOUS SITUATION. IF NOT AVOIDED, COULD RESULT IN SERIOUS INJURY OR DEATH. THIS DECAL WILL HAVE AN ORANGE BACKGROUND.

! CAUTION

INDICATES A POTENTIALLY HAZARDOUS SITUATION. IF NOT AVOIDED, MAY RESULT IN MINOR OR MODERATE INJURY. IT MAY ALSO ALERT AGAINST UNSAFE PRACTICES. THIS DECAL WILL HAVE A YELLOW BACKGROUND.

IMPORTANT

INDICATES PROCEDURES ESSENTIAL FOR SAFE OPERATION. THIS DECAL WILL HAVE A GREEN BACKGROUND.

SAFETY PRECAUTIONS

SAFETY PRECAUTIONS

This section outlines the safety precautions applicable to the general use of this product.

Throughout the Operator and Safety section of this manual, cautions and warnings are shown in **BOLD TYPE**. These outline where special care is required when undertaking the various procedures outlined.

NOTE: The safety precautions applicable to the service and maintenance of the machine are covered in the SAFETY PRECAUTIONS section of the Service and Maintenance Manual.

The user of this machine should read this manual thoroughly to ensure that all operating procedures are clearly understood prior to accepting responsibility.

- Modifications or alterations to the lighting tower are not permitted without the prior written permission of the manufacturer.
- Failure to comply with the safety precautions listed here and elsewhere in the manual may result in injury or death.
- When handling the lighting tower other than towing for the purposes of lifting or manoeuvring, there are forklift pockets provided at the rear of the machine and 4 lifting points provided on the main frame for lifting by a crane. Ensure that the forklift or crane is of suitable capacity prior to attempting the lift. Refer to the diagrams shown elsewhere in this manual for correct handling procedures using a crane and forklift.

- Prior to erecting the mast the operator should ensure that no overhead obstructions are within a 6-metre radius of the base of the machine.

In particular be aware of the dangers of overhead power lines. The following chart is a guide to the applicable safe operating distances from overhead power lines.

Voltage Range	Minimum Safe Distance
0-300V	5 Metres
300-50KV	8 Metres
Over 50KV	10 Metres

Be aware of the radius of the mast when telescoped out and lowered. Be aware of swaying power lines and swaying tree branches in strong winds.

- Be familiar with all controls on the machine prior to operation. The machine incorporates powerful hydraulic mechanisms that can cause serious mechanical damage if the machine is allowed to strike external structures such as buildings etc.
- Ensure that the ground is suitable to support the machine, particularly under each of the outrigger pads. A suitable packing material such as a timber block may be required on soft surfaces to ensure that the outriggers do not sink under the weight.



FAILURE OF THE OUTRIGGERS TO SUPPORT THE MACHINE DUE TO SOFT SURFACES COULD CAUSE THE MACHINE TO TIP OVER IN WINDY CONDITIONS.

SAFETY PRECAUTIONS

- Do not erect the machine in winds greater than 118kmh. Tipping of the machine is possible.

 WARNING

NEVER RAISE THE MAST FULLY WITHOUT FIRST SETTING ALL 4 OUTRIGGERS AND ENSURING THE LIGHTING TOWER IS LEVEL. A BUBBLE LEVEL IS MOUNTED AT THE FRONT OF THE MACHINE NEAR THE BASE OF THE MAST TO AID IN LEVELLING OF THE MACHINE.

- The model 4108AN Lighting Tower incorporates an A.C. alternator which generates lethal voltages. Do NOT operate the machine without all safety covers in place covering all wiring and electrical devices.
- Do not alter the electrical wiring type, size or standard in any way without prior written approval from the manufacturer.
- The lighting tower is NOT a mobile generator set. It should only be used for the specific purpose for which it was designed.
- The Hydraulically operated mast has hazardous crushing/pinch points. Do NOT put arms, hands etc. near the mast structure while it is in operation.
- The metal halide lamp fixtures can get extremely hot during operation. Do not operate the lights in easy reach of people's hands. Even after lights have extinguished, the lamp fixtures can remain hot for up to 20 minutes.
- The mast of the Lighting Tower is designed specifically to carry the 4 lights supplied. Alternative lights should not be adopted unless specifically authorised by the manufacturer.
- The mast is not a crane. Do not attempt to lift any objects by using the mast and hydraulic system.
- There are moving parts in and around the engine and alternator area of the unit. Prior to carrying out any maintenance or checks ensure engine is shut down and the mast retracted prior to accessing the engine area.

PREPARATION FOR USE

PREPARATION FOR USE

Before a new machine is put into operation it must be carefully inspected for any evidence of damage resulting from shipment.

Preparation for use of the machine requires good common sense principles ensuring that a run up check together with visual inspections show that everything is working correctly.

Prior to use all fluid levels should be checked including

- Radiator coolant
- Engine oil level
- Fuel level.

Ensure that all warning decals have been read and understood prior to operating machine.

Ensure that machine set up location is clear of any dangers such as roadways with moving traffic, moving machinery etc.

Some locations may require that checks are made with the regulatory authority such as councils prior to the set up and use of this lighting tower.

Ensure that machine is securely parked prior to use. Barriers, fences and warning signs may need to be erected to ensure awareness of the unit in operation.

DELIVERY AND PERIODIC INSPECTION

IMPORTANT

This machine requires periodic safety and maintenance inspections by a qualified person.

Particular attention is required during checks to ensure that the machine functions as it was designed to. There should be no abnormal noises or vibrations evident during the machine's operation. In the event that an operator becomes aware of any abnormal operation while using the machine, then it should be shutdown immediately, stowed safely and the problem reported to an authorised person.

Reference should be made to Section 2 (Service and Maintenance) for procedures in regular and periodic inspections of this machine. All machines require both preventive and corrective maintenance throughout their useful service life to maintain the machine in a safe and reliable condition.

CONTROLS IDENTIFICATION

CONTROLS IDENTIFICATION

Engine Control Panel

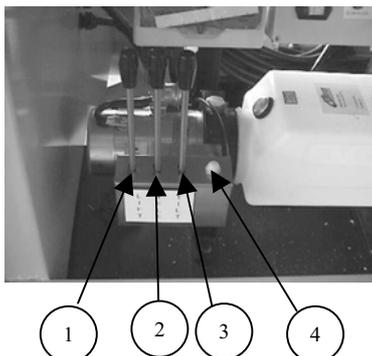


1. Ignition on – emergency shutdown switch.
2. Circuit breaker 20 Amp master D.C. circuit protection.
3. Alternator warning light. This light will illuminate if loss of alternator charge is experienced.
4. Keyswitch. Turn left for engine glow preheat. Then turn the key to the right to start the engine.
5. Hourmeter. Shows number of hours that the machine has been on.

Light Control Panel

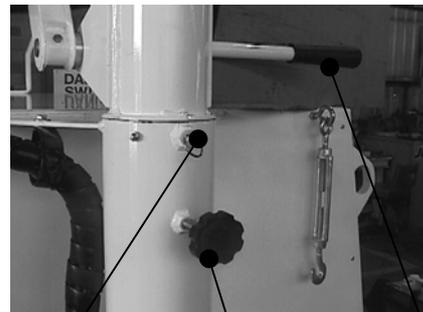
1. A.C. Main Circuit Breaker and R.C.D. provides overload protection to all A.C. circuits connected to the Alternator.
2. Switch/circuit breaker for lights one to four. Also protects against overload on these lights.
3. RCD/circuit breaker for G.P.O option when fitted.

Hydraulic Controls for Mast



1. Mast raise and lower control lever. Pushing forward or pulling back will raise and lower the mast respectively. Speed of the raise and lower function can be controlled by pushing or pulling the lever further away from the centre off position.
2. Telescope in/out control lever. Operating this lever will telescope the upper boom extend in and out.
3. Tilt mechanism control lever. Operating this lever will allow the light bar head to be tilted up and down for aiming lights. It is also used when stowing the mast to ensure the lighting bar head is tucked in for transport.
4. Hydraulic controls Enable Switch which must be pressed during the operation of any of the hydraulic control levers.

Mast Rotate Mechanism



3. Rotate Lockpin 1. Rotate Lock 2. Rotate Handle

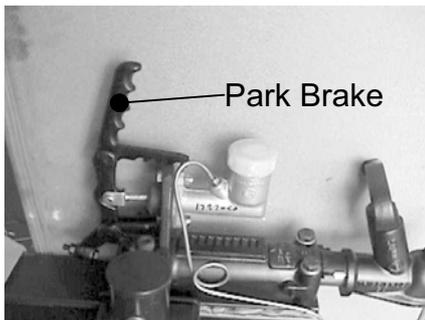
1. Mast rotate locking Mechanism. Rotate this knob anti-clockwise to release mast lock prior to rotating.
2. Mast Rotate Handle. Use this control to manually rotate mast through 350 degrees to desired position. Ensure mast lock is

CONTROLS IDENTIFICATION

rotated clockwise to lock mast prior to use.

3. Mast rotate lockpin. This pin is spring loaded into the locked position. It must be pulled out prior to rotating mast. The pin locks the mast every 15 degrees. The mast may be locked in any position by using the rotate lock, however, in exceptionally high winds the mast may move slightly if it is positioned between the 15° lockpin indents. It will move to the nearest lockpin position and the lockpin will engage to prevent further movement.

Park Brake



The Park brake handle shown above acts on the hydraulic master cylinder. It is locked into position by the ratchet locking bar. To apply the park brake, pull the handle forward and lock the ratchet bar into place as shown.

⚠ WARNING

PRIOR TO TOWING THE VEHICLE, ENSURE THE PARK BRAKE IS RELEASED AND THAT THE RATCHET BAR IS SWUNG WELL OUT OF THE WAY. FAILURE TO DO THIS COULD CAUSE THE BRAKES TO LOCK ON DURING TOWING.

MACHINE SET UP AND PACK UP

MACHINE SET UP AND PACK UP INSTRUCTIONS

IMPORTANT

The following setup instructions are applicable when the Light Tower is towed into position. When the machine is transported by truck and then forklifted into position, ensure that the retractable drawbar is extended and pinned prior to setup and raising the mast. Failure to do so may affect the stability of the machine under some operating conditions. The front outrigger leg may then be lowered to support the front of the machine and the transport leg raised and pinned in the upper position. Do not use the transport leg to support the machine when raising the mast.

To set up machine for operation:

1. Select a flat level area to park the machine.
2. Ensure parking brake is applied prior to unhitching unit, removing safety chain and electrical cable.
3. Lower the front jack to take the weight of the unit. Raise unit until it unhitches from the towing vehicle. Drive the towing vehicle forward clear of the draw bar.
4. Lower the front jack down until the draw bar is sloping forward slightly.
5. At the rear of the unit, locate and slide out the left outrigger arm and lock pin into position. Rotate the jack from the stowed position through 180° until the foot is just above the ground. Wind the jack handle to lower the foot against the ground.
6. Repeat step 5 for the right hand outrigger arm and jack.
7. Raise the front of the machine by adjusting the front jack until the machine is level and each outrigger

support jack is pressing firmly against the ground. Located behind the flip up number plate is a fourth outrigger leg. Release the remote locking pin and flip up the number plate. Withdraw the outrigger leg outwards to the locked position approx. 0.7 metre. Rotate the outrigger leg through 90 degrees and adjust by winding the handle clockwise until the leg is in firm contact with the ground. (Approx. 2 turns after contact). Do not attempt to jack up the machine by overextending.



IMPORTANT

It is not necessary to raise the wheels of the machine off the ground when lowering the outrigger jacks. When set up correctly the wheels may still be in firm contact with the ground. If the surface is uneven though, one wheel may need to be raised off the ground to level the machine. A bubble level is provided on the front of the machine to assist in levelling.

8. Ensure that the light bar assembly is clear to swing out and away from its stowed position. Unlatch the transport turnbuckles.

MACHINE SET UP AND PACK UP

⚠ CAUTION

THE NEXT STEPS REFER TO RAISING THE MAST. CHECK AND ENSURE THAT NO OBSTRUCTIONS ARE LOCATED ABOVE THE UNIT TO A HEIGHT OF 10 METERS. REFER ALSO TO SAFE DISTANCES FROM POWER LINES AS DESCRIBED IN SECTION 1 (SAFETY PRECAUTIONS).



9. Slowly operate the light bar tilt hydraulic lever and hydraulic controls enable switch to move the light bar forward, up and away from the front of the tow hitch.
10. Operate the lift control lever and hydraulic controls enable switch to continue to raise the mast to full elevation.
11. Operate the telescope lever and hydraulic controls enable switch to extend the mast to desired height.
12. Finally, adjust the light bar tilt to the desired angle by operating the tilt control lever and hydraulic controls enable switch.

⚠ CAUTION

TO AVOID CRUSHING INJURY KEEP HANDS AND ARMS AWAY FROM MOVING PARTS OF THE MAST.

Turning Lights On

13. Start the engine by switching on the ignition switch, turning the key anti clockwise to the Glow Preheat position for 10 seconds and then turn to the right to start the Engine.

Once started, allow the engine to warm for a minute prior to using.

14. Switch on main circuit breaker to switch on the lights.
15. Allow lights to warm up and reach full brightness (about 3 minutes).
NOTE: The lamps used are a Metal Halide Gas Discharge type. If they are switched off and back on again after they have been running they may take up to 15 minutes to re-ignite. This is normal for this type of lamp.

MACHINE SET UP AND PACK UP

Machine Pack Up

To pack up the machine ready for towing or transport, reverse the above steps. Take special care when lowering the boom and ensure it rests neatly in the boom cradle at the rear of the machine.



Ensure the light bar is stowed in towards the mast and is locked against the stop prior to towing.

IMPORTANT

The light bar tilt mechanism is hydraulically locked into place during transport. Two turn buckles attached to the front of the machine provide rigid support for extended transport. The turnbuckles need only be tightened "lightly" to provide adequate support.

When retracting the rear outrigger legs, ensure that they are pinned and locked in the retracted position. Rotate the outrigger jack 180 degrees and wind the handle so that the jack pulls down lightly on the rubber anti shake pads as shown below.



LIFTING MACHINE**FORKLIFTING MACHINE****Forklifting Procedure****⚠ CAUTION**

WHEN USING A FORKLIFT TO MOVE THE MACHINE ONLY THE FORKLIFT POCKETS LOCATED AT THE REAR OF THE MACHINE SHOULD BE USED.

Prior to using a forklift to lift the machine, ensure that the mast is lowered to the stowed position, the lights are stowed and the engine generator is shut down.

The machine can weigh up to 1700kg depending on options. Ensure that only a suitable forklift with adequate capacity is used to lift the machine.

When positioning the forklift tines into the forklift pockets, ensure the tines go through far enough to pick up the tine support bar located across the main frame of the unit. Tine penetration should be at least 800mm from the rear wall of the light tower.

CRANING MACHINE**Craning Procedure****⚠ WARNING**

USE ONLY THE 4 LIFTING POINTS PROVIDED TO LIFT THE LIGHTING TOWER WITH A CRANE. DO NOT LIFT THE ASSEMBLY BY THE MAST. DOING SO WILL RESULT IN SEVERE DAMAGE TO THE UNIT AND POSSIBLE INJURY TO THE PERSONNEL UNDERTAKING THIS TASK.

The mast and lights should be in the stowed position and the engine generator shut down prior to lifting the machine off the ground. Ensure all outrigger legs and the draw bar are in the retracted and locked position.

Using suitable lifting equipment attached to the lifting lug at each corner of the machine, proceed to lift the machine as per the instructions provided for the lifting crane.

TOWING INSTRUCTIONS

⚠ CAUTION

PRIOR TO TOWING THE LIGHT TOWER UNIT THIS MANUAL SHOULD BE READ AND UNDERSTOOD.

THE LIGHT TOWER HAS A GROSS VEHICLE MAXIMUM WEIGHT OF UP TO 1700 KGS. ENSURE THAT THE TOWING VEHICLE AND TOW BAR ARE RATED TO TOW A VEHICLE OF THIS WEIGHT SAFELY.

The standard tow coupling is 2 inch 51mm ball type. Others are available as an option on request. The light tower uses an hydraulic overriding brake mechanism. You should make sure you understand the operation of this mechanism prior to use.

⚠ WARNING

FAILURE TO PROPERLY ENGAGE THE OVERRIDING BRAKE MECHANISM COULD CAUSE THE VEHICLE TO GET OUT OF CONTROL AND CAUSE DEATH OR SERIOUS INJURY.

Prior to Towing

- Ensure that machine is shut down, the mast correctly stowed and access doors closed.
- Retract and stow the three rear outriggers.
- Ensure the extendable tow bar is extended and locked.
- Ensure that the transport leg is pinned in the up position.
- Attach the Light Tower to the towing vehicle and ensure ball coupling is locked in.
- Attach the safety chain.
- Connect and test the lights including turn indicators and brake lights.
- Disconnect the hand brake by unlocking and swinging the toothed ratchet up and towards the rear.

- Swing the front jack up into the horizontal stowed position.
- Ensure that the overriding brake lockout lever is swung up to allow brakes to work.

NOTE: For reversing the unit the overriding brake lockout lever may need to be swung down to prevent brakes being applied when reversing.

- Move off slowly and apply the brake gently to test the coupling and brake action.

