

Operator's Manual

Light Tower

LTN 6K / 8K LTN 6K-P / 8K-P



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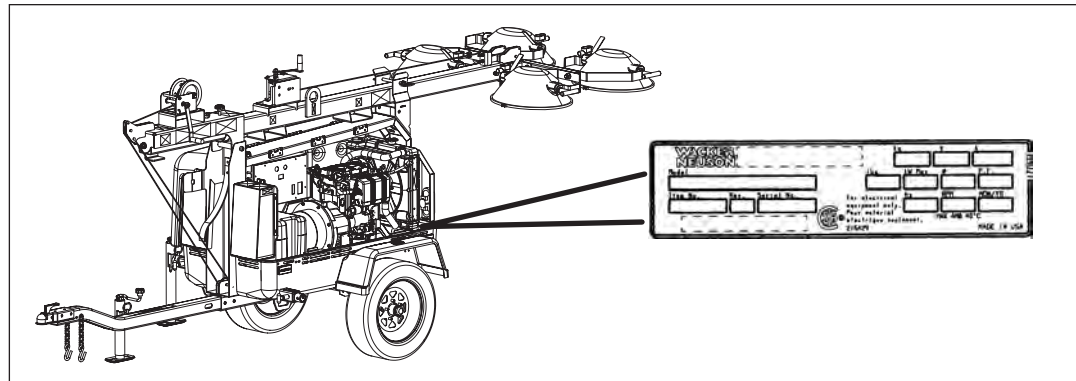
Original instructions

This Operator's Manual presents the original instructions. The original language of this Operator's Manual is American English.

Foreword

SAVE THESE INSTRUCTIONS—This manual contains important instructions for the machine models below. These instructions have been written expressly by Wacker Neuson Production Americas LLC and must be followed during installation, operation, and maintenance of the machines.

Item number	Model
0620734	LTN 6K, 120V/240V 60Hz
0620938	LTN 6K, 120V/240V 60Hz Custom
0620893	LTN 8K, 120V/240V 60Hz
0620939	LTN 8K, 120V/240V 60Hz Custom
5200004092	LTN 6K, 120/240 Cold Weather
5200004093	LTN 8K, 120V/240V 60Hz Cold Weather
5200004769	LTN 6K



wc_gr011026

Machine identification

A nameplate listing the model number, item number, revision number, and serial number is attached to this machine. The location of the nameplate is shown above.

Serial number (S/N)

For future reference, record the serial number in the space provided below. You will need the serial number when requesting parts or service for this machine.

Serial Number:

Foreword

Machine documentation

- From this point forward in this documentation, Wacker Neuson Production Americas LLC will be referred to as Wacker Neuson.
- Keep a copy of the Operator's Manual with the machine at all times.
- Use the separate Parts Book supplied with the machine to order replacement parts.
- Refer to the separate Repair Manual for detailed instructions on servicing and repairing the machine.
- If you are missing any of these documents, please contact Wacker Neuson to order a replacement or visit www.wackerneuson.com.
- When ordering parts or requesting service information, be prepared to provide the machine model number, item number, revision number, and serial number.

Expectations for information in this manual

- This manual provides information and procedures to safely operate and maintain the above Wacker Neuson model(s). For your own safety and to reduce the risk of injury, carefully read, understand, and observe all instructions described in this manual.
- Wacker Neuson expressly reserves the right to make technical modifications, even without notice, which improve the performance or safety standards of its machines.
- The information contained in this manual is based on machines manufactured up until the time of publication. Wacker Neuson reserves the right to change any portion of this information without notice.
- The illustrations, parts, and procedures in this manual refer to Wacker Neuson factory-installed components. Your machine may vary depending on the requirements of your specific region.

CALIFORNIA Proposition 65 Warning

Combustion exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Laws pertaining to spark arresters

NOTICE: State Health Safety Codes and Public Resources Codes specify that in certain locations spark arresters be used on internal combustion engines that use hydrocarbon fuels. A spark arrester is a device designed to prevent accidental discharge of sparks or flames from the engine exhaust. Spark arresters are qualified and rated by the United States Forest Service for this purpose. In order to comply with local laws regarding spark arresters, consult the engine distributor or the local Health and Safety Administrator.

Manufacturer's approval

This manual contains references to *approved* parts, attachments, and modifications. The following definitions apply:

- **Approved parts or attachments** are those either manufactured or provided by Wacker Neuson.
- **Approved modifications** are those performed by an authorized Wacker Neuson service center according to written instructions published by Wacker Neuson.
- **Unapproved parts, attachments, and modifications** are those that do not meet the approved criteria.

Unapproved parts, attachments, or modifications may have the following consequences:

- Serious injury hazards to the operator and persons in the work area
- Permanent damage to the machine which will not be covered under warranty

Contact your Wacker Neuson dealer immediately if you have questions about approved or unapproved parts, attachments, or modifications.

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1 Safety Information

1.1 Signal Words Used in this Manual

This manual contains DANGER, WARNING, CAUTION, *NOTICE*, and NOTE signal words which must be followed to reduce the possibility of personal injury, damage to the equipment, or improper service.



This is the safety alert symbol. It is used to alert you to potential personal hazards.
▶ Obey all safety messages that follow this symbol.



DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

- ▶ To avoid death or serious injury from this type of hazard, obey all safety messages that follow this signal word.
-



WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

- ▶ To avoid possible death or serious injury from this type of hazard, obey all safety messages that follow this signal word.
-



CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

- ▶ To avoid possible minor or moderate injury from this type of hazard, obey all safety messages that follow this signal word.
-

NOTICE: Used without the safety alert symbol, NOTICE indicates a situation which, if not avoided, could result in property damage.

Note: A Note contains additional information important to a procedure.

1.2 Machine Description and Intended Use

This machine is a mobile, trailer-mounted light tower. The Wacker Neuson Light Tower consists of a trailer with a cabinet containing a diesel engine, a fuel tank, a control panel, and an electric alternator. A telescoping tower with four metal halide lights is mounted to the top of the cabinet. Dual winches tilt, raise, and lower the telescoping tower. As the engine runs, the generator converts mechanical energy into electric power. The metal halide lights run off this power. Receptacle(s) are also present to power auxiliary loads. The operator uses the control panel to operate and monitor the machine.

This machine is intended for the illumination of outdoor areas. This machine is also intended for the purpose of supplying electrical power to connected loads. Refer to the product specifications for the output voltage and frequency of this Light Tower, and for the maximum output power limit of this Light Tower.

This machine has been designed and built strictly for the intended use described above. Using the machine for any other purpose could permanently damage the machine or seriously injure the operator or other persons in the area. Machine damage caused by misuse is not covered under warranty.

- The following are some examples of misuse:
 - Connecting a load that has voltage and frequency requirements that are incompatible with the machine output
 - Overloading the machine with a device that draws excessive power during either continuous running or start-up
 - Operating the machine in a manner that is inconsistent with all federal, state and local codes and regulations
 - Using the machine as a ladder, support, or work surface
 - Using the machine to carry or transport passengers or equipment
 - Using the machine to tow other machines (unless factory equipped)
 - Using the machine as a hoist or hanging items from the tower
 - Operating the machine outside of factory specifications
 - Operating the machine in a manner inconsistent with all warnings found on the machine and in the Operator's Manual
-

This machine has been designed and built in accordance with the latest global safety standards. It has been carefully engineered to eliminate hazards as far as practicable and to increase operator safety through protective guards and labeling. However, some risks may remain even after protective measures have been taken. They are called residual risks. On this machine, they may include exposure to:

- Heat, noise, exhaust, and carbon monoxide from the engine
- Heat from the lights
- Ultraviolet radiation from the lights
- Fire hazards from improper refueling techniques
- Fuel and its fumes
- Electric shock and arc flash
- Personal injury from improper lifting the trailer tongue

- Glare from lights (lights may blind drivers of nearby motor vehicles if the lights are incorrectly positioned)
- Typical hazards related to towing a trailer on roads and highways

To protect yourself and others, make sure you thoroughly read and understand the safety information presented in this manual before operating the machine.

1.3 Safety Guidelines for Operating the Machine

Operator training

Before operating the machine:

- Read and understand the operating instructions contained in all manuals delivered with the machine.
- Familiarize yourself with the location and proper use of all controls and safety devices.
- Contact Wacker Neuson for additional training if necessary.

When operating this machine:

- Do not allow improperly trained people to operate the machine. People operating the machine must be familiar with the potential risks and hazards associated with it.

Operator qualifications

Only trained personnel are permitted to start, operate, and shut down the machine. They also must meet the following qualifications:

- have received instruction on how to properly use the machine
- are familiar with required safety devices

The machine must not be accessed or operated by:

- children
- people impaired by alcohol or drugs

Application area

Be aware of the application area.

- Keep unauthorized personnel, children, and pets away from the machine.
- Remain aware of changing positions and the movement of other equipment and personnel in the application area/job site.

Be aware of the application area.

- Do not operate the machine in areas that contain flammable objects, fuels, or products that produce flammable vapors.

Safety devices, controls, and attachments

Only operate the machine when:

- All safety devices and guards are in place and in working order.
- All controls operate correctly.
- The machine is set up correctly according to the instructions in the Operator's Manual.
- The machine is clean.
- The machine's labels are legible.

To ensure safe operation of the machine:

- Do not operate the machine if any safety devices or guards are missing or inoperative.
 - Do not modify or defeat the safety devices.
 - Only use accessories or attachments that are approved by Wacker Neuson.
-

Safe operating practices

When operating this machine:

- Remain aware of the machine's moving parts. Keep hands, feet, and loose clothing away from the machine's moving parts.

When operating this machine:

- Do not operate a machine in need of repair.
-

Personal Protective Equipment (PPE)

Wear the following Personal Protective Equipment (PPE) while operating this machine:

- Close-fitting work clothes that do not hinder movement
 - Safety glasses with side shields
 - Hearing protection
 - Safety-toed footwear
-

Before Starting

- Be sure the machine is on a firm, level surface and will not tip, roll, slide, or fall while operating.
 - Never connect machine to other power sources, such as supply mains of power companies.
 - Never use the machine if the insulation on the electrical cord is cut or worn through.
 - Never raise the tower or operate the machine in high winds.
 - The tower extends up to 8.7 m (28.54 ft.). Make sure the area above the trailer is open and clear of overhead wires and obstructions.
-

Operation

- Keep the area under and around the lights clear of people while raising and lowering the tower.
 - Do not move the Light Tower while it is operating.
-

After Use

- Stop the engine when the machine is not being operated.
 - Close the fuel valve on engines equipped with one when machine is not being operated.
 - Ensure that the machine will not tip over, roll, slide, or fall when not being operated.
 - Store the machine properly when it is not being used. The machine should be stored in a clean, dry location out of the reach of children.
 - Lower the tower when not in use, or if high winds or electrical storms are expected in the area.
 - The lamps become extremely hot in use! Allow the lamp and fixture to cool 10,Ä15 minutes before handling.
 -
-

1.4 Lamp Safety

Description The lamps provided with your Light Tower are electric discharge lamps. They are designed for use with metal halide ballasts only, and require time to reach full brightness on initial startup and after a power interruption. These lamps comply with FDA regulation performance standards 21 CFR 1040-30.



WARNING

Personal injury hazard. Broken or punctured lamps can cause serious skin burns and eye inflammation from shortwave ultraviolet radiation.

- ▶ Do not operate the Light Tower if a lamp is damaged.
 - ▶ Replace damaged lamps immediately.
-

Operating safety

- Replace damaged lamps according to the instructions in section *Removing / Replacing Lamps*.
- Alternative lamps that automatically extinguish when the outer envelope is broken or punctured are commercially available.

1.5 Service Safety

Service training

Before servicing or maintaining the machine:

- Read and understand the instructions contained in all manuals delivered with the machine.
- Familiarize yourself with the location and proper use of all controls and safety devices.
- Only trained personnel shall troubleshoot or repair problems occurring with the machine.
- Contact Wacker Neuson for additional training if necessary.

When servicing or maintaining this machine:

- Do not allow improperly trained people to service or maintain the machine. Personnel servicing or maintaining the machine must be familiar with the associated potential risks and hazards.

Precautions

Follow the precautions below when servicing or maintaining the machine.

- Read and understand the service procedures before performing any service to the machine.
- All adjustments and repairs must be completed before operating the machine. Do not operate the machine with a known problem or deficiency.
- All repairs and adjustments shall be completed by a qualified technician.
- Turn off the machine before performing maintenance or making repairs.
- Remain aware of the machine's moving parts. Keep hands, feet, and loose clothing away from the machine's moving parts.
- Re-install the safety devices and guards after repair and maintenance procedures are complete.

Machine modifications

When servicing or maintaining the machine:

- Use only accessories/attachments that are approved by Wacker Neuson.

When servicing or maintaining the machine:

- Do not defeat safety devices.
- Do not modify the machine without the express written approval of Wacker Neuson.

Replacing parts and labels

- Replace worn or damaged components.
 - Replace all missing and hard-to-read labels.
 - When replacing electrical components, use components that are identical in rating and performance to the original components.
 - When replacement parts are required for this machine, use only Wacker Neuson replacement parts or those parts equivalent to the original in all types of specifications, such as physical dimensions, type, strength, and material.
-

Cleaning

When cleaning and servicing the machine:

- Keep the machine clean and free of debris such as leaves, paper, cartons, etc.
- Keep the labels legible.

When cleaning the machine:

- Do not clean the machine while it is running.
- Never use gasoline or other types of fuels or flammable solvents to clean the machine. Fumes from fuels and solvents can become explosive.

Personal Protective Equipment (PPE)

Wear the following Personal Protective Equipment (PPE) while servicing or maintaining this machine:

- Close-fitting work clothes that do not hinder movement
- Safety glasses with side shields
- Hearing protection
- Safety-toed footwear

In addition, before servicing or maintaining the machine:

- Tie back long hair.
- Remove all jewelry (including rings).
- Before servicing the Light Tower, make sure the engine start switch is turned to the OFF position, the circuit breakers are open (off), and the negative terminal on battery is disconnected. Do not perform even routine service (oil/filter changes, cleaning, etc.) unless all electrical components are shut down.
- Always turn off light circuit breakers and shut down engine before disconnecting light fixtures or changing light bulbs.

1.6 Operator Safety while Using Internal Combustion Engines

**WARNING**

Internal combustion engines present special hazards during operation and fueling. Failure to follow the warnings and safety standards could result in severe injury or death.

- ▶ Read and follow the warning instructions in the engine owner's manual and the safety guidelines below.

**DANGER**

Exhaust gas from the engine contains carbon monoxide, a deadly poison. Exposure to carbon monoxide can kill you in minutes.

- ▶ NEVER operate the machine inside an enclosed area, such as a tunnel, unless adequate ventilation is provided through such items as exhaust fans or hoses.

Operating safety

When running the engine:

- Keep the area around exhaust pipe free of flammable materials.
- Check the fuel lines and the fuel tank for leaks and cracks before starting the engine. Do not run the machine if fuel leaks are present or the fuel lines are loose.

When running the engine:

- Do not smoke while operating the machine.
- Do not run the engine near sparks or open flames.
- Do not touch the engine or muffler while the engine is running or immediately after it has been turned off.
- Do not operate a machine when its fuel cap is loose or missing.
- Do not start the engine if fuel has spilled or a fuel odor is present. Move the machine away from the spill and wipe the machine dry before starting.

Refueling safety

When refueling the engine:

- Clean up any spilled fuel immediately.
- Refill the fuel tank in a well-ventilated area.
- Replace the fuel tank cap after refueling.
- Use suitable tools for refueling (for example, a fuel hose or funnel).

When refueling the engine:

- Do not smoke.
- Do not refuel a hot or running engine.
- Do not refuel the engine near sparks or open flames.

1.7 Safety Guidelines for Lifting and Transporting the Machine

When lifting the machine:

- Make sure slings, chains, hooks, ramps, jacks, forklifts, cranes, hoists, and any other type of lifting device used is attached securely and has enough weight-bearing capacity to lift or hold the machine safely. See section *Technical Data* for machine weight.
- Remain aware of the location of other people when lifting the machine.
- Only use the lifting points and tie-downs described in the Operator's Manual.
- Make sure the transporting vehicle has sufficient load capacity and platform size to safely transport the machine.

To reduce the possibility of injury:

- Do not stand under the machine while it is being lifted or moved.
- Do not get onto the machine while it is being lifted or moved.

1.8 Safety Guidelines for Towing the Machine



WARNING

Risk of severe injury or death. Improper trailer condition and towing technique can lead to an accident.

- ▶ Obey the trailer manufacturer's instructions and the instructions below to reduce the risk of an accident.
-

When towing the machine:

- Do not tow the machine if the towing vehicle's hitch or the trailer's coupler are damaged.
- Do not tow the machine if any of the trailer's lug nuts are missing.
- Do not tow the machine if the trailer's tires have less than 1.5 mm (1/16 inch) of tread.
- Do not tow the machine unless the trailer's brakes are functioning properly.
- Do not exceed the trailer manufacturer's speed limitations.

When towing the machine:

- Only tow the machine when the trailer's lug nuts are properly torqued.
 - Only tow the machine when the trailer's tires are properly inflated.
 - Only tow the machine when all trailer lights are functioning correctly.
 - Only tow the machine when the trailer's safety chains are connected to the towing vehicle in a crisscross pattern.
 - Maintain extra distance between the towing vehicle and other vehicles.
 - Avoid soft shoulders, curbs, and sudden lane changes.
 - Abide by all licensing requirements for your area.
-

If you have not driven a towing vehicle with trailer before, practice turning, stopping, and backing up the towing vehicle with trailer in an area away from traffic. Only drive the towing vehicle with trailer when you are confident in your ability to do so.

1.9 Reporting Safety Defects

If you believe your trailer has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Wacker Neuson.

If NHTSA receives similar complaints, it may open an investigation; and if it finds that a safety defect exists in a group of trailers, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Wacker Neuson.

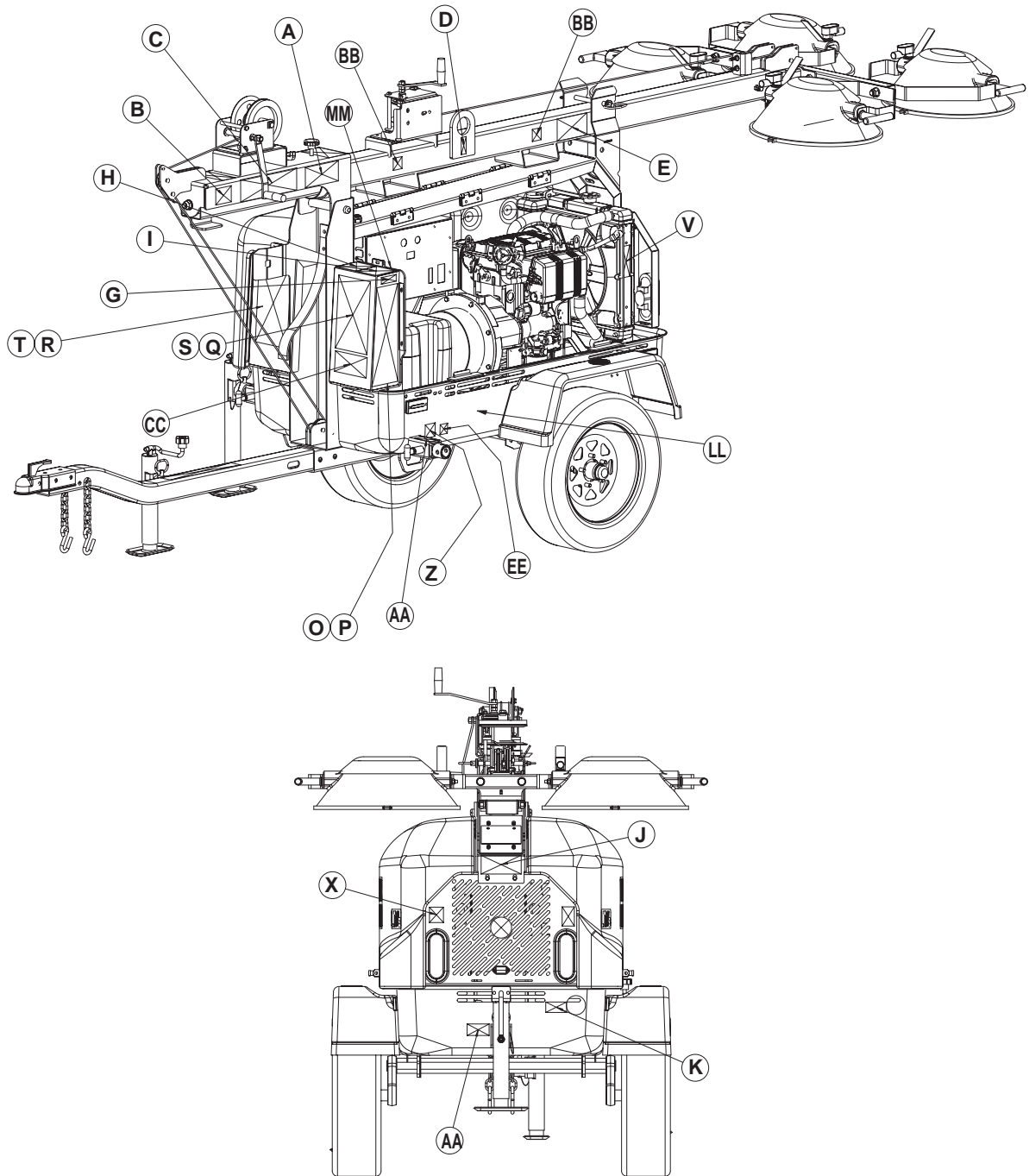
To contact NHTSA, you may either contact the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to <http://www.safercar.gov>; or write to:

Administrator
NHTSA
1200 New Jersey Avenue S.E.
Washington, DC 20590

You can also obtain other information about your motor vehicle safety from <http://www.safercar.gov>


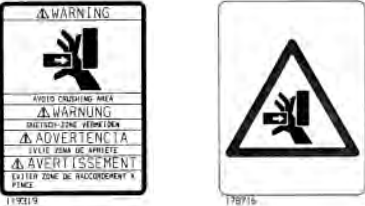
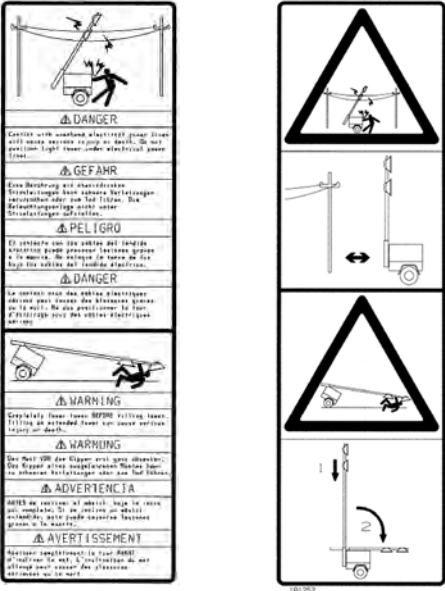
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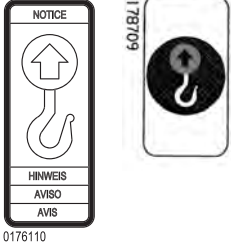

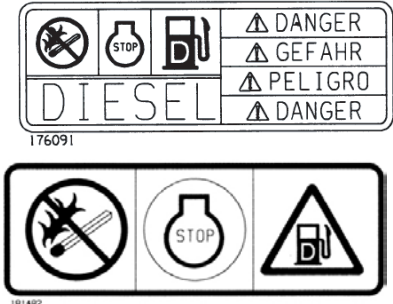

2.1 Label Locations









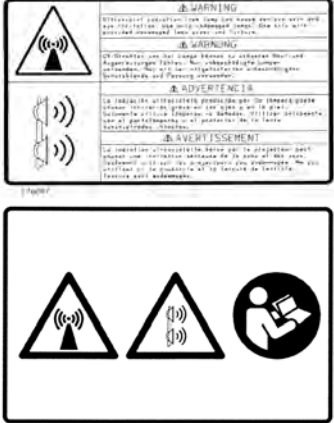
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2.2 Label Meanings

<p>A</p>		<p>WARNING Automatic locking pin. A non-secured, falling tower can cause serious injury or death if a person is hit. To secure tower, verify automatic locking pin has been engaged.</p>
<p>B</p>		<p>WARNING Avoid crushing area.</p>
<p>C</p>		<p>DANGER Contact with overhead electrical power lines will cause serious injury or death. Do not position Light Tower under electrical power lines. WARNING Completely lower tower BEFORE tilting tower. Tilting an extended tower can cause serious injury or death.</p>

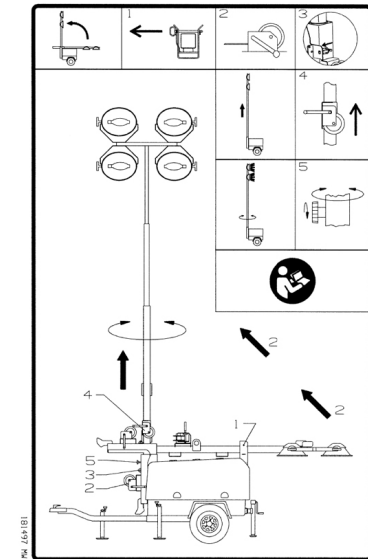
<p>D</p>		<p>NOTICE Lifting point</p>
<p>E</p>		<p>WARNING Secure tower in transport lock before lifting or towing. A loose swinging tower could cause personal injury or machine damage.</p>
<p>F</p>		<p>DANGER No sparks, flames, or burning objects near machine. Stop the engine before adding fuel. Use only diesel fuel.</p>
<p>G</p>		<p>DANGER Using a generator indoors CAN KILL YOU IN MINUTES. Generator exhaust contains carbon monoxide. This is a poison you cannot see or smell. NEVER use inside a home or garage, EVEN IF doors and windows are open. Only use OUTSIDE and far away from windows, doors, and vents.</p>

<p>H</p>	 <p>181485</p>	<p>WARNING Electric shock and arc flash can cause serious injury or death. Electrical storage device within. Contact a qualified electrician for service or to open electrical box.</p>
<p>I</p>	 <p>176103</p>	<p>Read and understand the supplied Operator's Manual before operating this machine. Failure to do so increases the risk of injury to yourself and others.</p>
<p>J</p>	 <p>181254</p>	<p>WARNING Stand clear of front and rear of machine when tower is being tilted up or down.</p>

<p>K</p>	 <p>117037</p>  <p>178732</p>	<p>WARNING Hot surface</p>
<p>L</p>	 <p>181505</p>	<p>WARNING Hot surface</p>
<p>N</p>	 <p>181255</p>	<p>WARNING Ultraviolet radiation from lamp can cause serious skin and eye irritation. Use only with undamaged lamps. Use only with provided undamaged lens cover and fixture.</p>

<p>O</p>		<p>See Operator's Manual for metal halide lamp information and troubleshooting.</p> <p>Before starting engine</p> <p>Check levels of: Engine oil Fuel Coolant</p> <p>Circuit breakers off</p> <p>Start engine</p> <p>Engine control panel Auto heating Preheat</p> <p>Light on Start, 15 sec. max.</p> <p>Circuit breakers on</p> <p>Shut down Circuit breakers off Stop engine</p>
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Q



Manual Winch System

To raise tower:

1. Release transport lock.
2. Tilt tower using winch.
3. Tilt tower until automatic locking pin snaps into place.

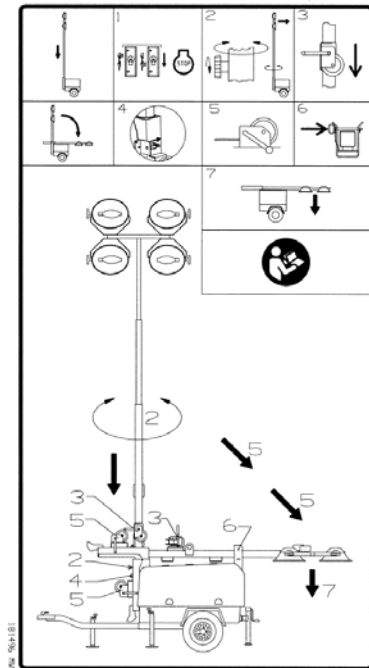
To increase height of tower:

4. Raise tower using winch.

To aim lights:

5. Rotate tower and tighten knob.

R



Manual Winch System

To lower tower:

1. Turn off all lights and engine.
2. Rotate tower and tighten knob.
3. Lower tower using winch.

To tilt tower for transport:

4. Release and hold spring-loaded pin.
5. Tilt tower using winch.

To secure tower for transport:

6. Insert pin through transport lock and secure with pin.
7. Position light fixtures down.

S

TO RAISE TOWER: 1. Release transport lock. 2. Tilt tower using winch. 3. Tilt tower until automatic locking pin snaps into place. TO INCREASE HEIGHT OF TOWER: 4. Raise tower using winch. TO AIM LIGHTS: 5. Rotate tower and tighten knob.

ZUM AUFRICHTEN DES MASTES: 1. Die Transportsicherung öffnen. 2. Den Mast mit einer Hebewinde kippen. 3. Den Mast soweit kippen, bis der automatische Sperrstift einrastet. FÜR EINE HÖHERE MASTHÖHE: 4. Den Mast mit einer Hebewinde anheben. ZUM AUSRICHTEN DER LAMPEN: 5. Den Turm drehen und den Knopf festziehen.

PARA ELEVAR LA TORRE: 1. Libere el seguro del transporte. 2. Incline la torre con el cabrestante. 3. Incline la torre hasta que los clavijos de bloqueo queden trabados en el lugar. PARA ELEVAR LA ALTURA DE LA TORRE: 4. Eleve la torre con el cabrestante. PARA APUNTAR LAS LUCES: 5. Gire la torre y ajuste la perilla.

POUR ÉLEVER LA TOUR: 1. Relâcher le verrou de transport. 2. Incliner la tour à l'aide du treuil. 3. Incliner la tour jusqu'à ce que le goujon de verrouillage automatique s'enclenche. POUR AUGMENTER LA HAUTEUR DE LA TOUR: 4. Lever la tour à l'aide du treuil. POUR POINTER LES PROJECTEURS: 5. Tourner la tour et resserrer la poignée.

TO RAISE TOWER / ZUR AUFRICHTUNG DES MASTES / PARA ELEVAR LA TORRE / POUR ÉLEVER LA TOUR

176084

Power Winch System

To raise tower:

1. Release transport lock.
2. Tilt tower using winch.
3. Tilt tower until automatic locking pin snaps into place.



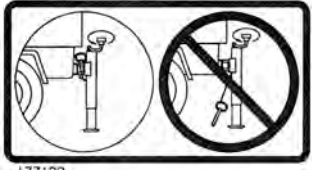

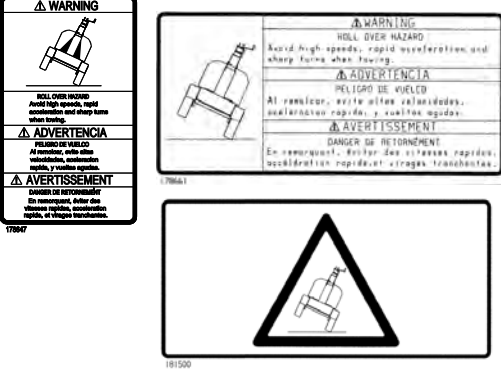
To increase height of tower:

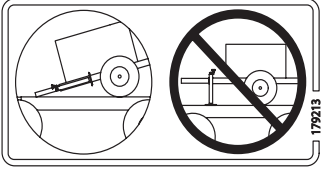




















4. Raise tower using winch.

To aim lights:

5. Rotate tower and tighten knob.

<p>T</p>	<p>TO LOWER TOWER / ZUM SENKEN DES MASTES / PARA BAJAR LA TORRE / POUR ABAISSER LA TOUR</p> <p>TO LOWER TOWER: 1. Turn off all lights and engine. 2. Rotate tower and tighten knob. 3. Lower tower using winch. TO TILT TOWER FOR TRANSPORT: 4. Release and hold spring-loaded pin. 5. Tilt tower using winch. TO SECURE TOWER FOR TRANSPORT: 6. Insert pin through transport lock and secure with pin. 7. Position light fixtures down.</p> <p>ZUM SENKEN DES MASTES: 1. Alle Lampen und den Motor ausschalten. 2. Den Mast drehen und den Knopf festziehen. 3. Den Mast mit einer Hebewinde absenken. ZUM KIPPEN DES MASTES FÜR DEN TRANSPORT: 4. Den federbelasteten Stift lösen und festhalten. 5. Den Mast mit einer Hebewinde neigen. ZUM SICHERN DES MASTES FÜR DEN TRANSPORT: 6. Den Stift durch die Transportsicherung einführen und mit der Klemme sichern. 7. Mit den Lampen nach unten ausrichten.</p> <p>PARA BAJAR LA TORRE: 1. Apague el motor y todas las luces. 2. Gire la torre y ajuste la perilla. 3. Baje la torre con el cablestante. PARA INCLINAR LA TORRE PARA TRANSPORTARLA: 4. Libere y sujete la clavija accionada por resorte. 5. Incline la torre con el cablestante. PARA ASEGURAR LA TORRE PARA TRANSPORTARLA: 6. Inserte la clavija a través del seguro de transporte y trábela con un sujetador. 7. Incline los portálamparas hacia abajo.</p> <p>POUR ABAISSER LA TOUR: 1. Éteindre tous les projecteurs et le moteur. 2. Tourner la tour et resserrer la poignée. 3. Abaisser la tour à l'aide du treuil. POUR INCLINER LA TOUR POUR LE TRANSPORT: 4. Relâcher et retenir la broche à ressort. 5. Incliner la tour à l'aide du treuil. POUR ASSURER LA TOUR PENDANT LE TRANSPORT: 6. Insérer la broche à travers le verrou de transport et refermer l'agrafe. 7. Orienter les projecteurs vers le bas.</p> <p>176089</p>	<p>Power Winch System</p> <p>To lower tower:</p> <ol style="list-style-type: none"> 1. Turn off all lights and engine. 2. Rotate tower and tighten knob. 3. Lower tower using winch. <p>To tilt tower for transport:</p> <ol style="list-style-type: none"> 4. Release and hold spring-loaded pin. 5. Tilt tower using winch. <p>To secure tower for transport:</p> <ol style="list-style-type: none"> 6. Insert pin through transport lock and secure with pin. 7. Position light fixtures down.
<p>U</p>	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>Coolant overflow bottle only, not a return system. Nur Kühlmittelüberlaufflasche – kein Rückholsystem! Botella de rebosé del enfriador solamente – no es un sistema de retorno. Bouteille de trop-plein de l'agent réfrigérant seulement: ce n'est pas un système de retour.</p> </div> <p>176105</p>	<p>Coolant overflow bottle only, not a return system.</p>
<p>V</p>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px;"> <p>⚠ WARNING ⚠ WARNUNG ⚠ ADVERTENCIA ⚠ AVERTISSEMENT</p> <p>178775</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p>181483</p> </div> </div>	<p>WARNING Pinching hazard. Rotating machinery.</p>

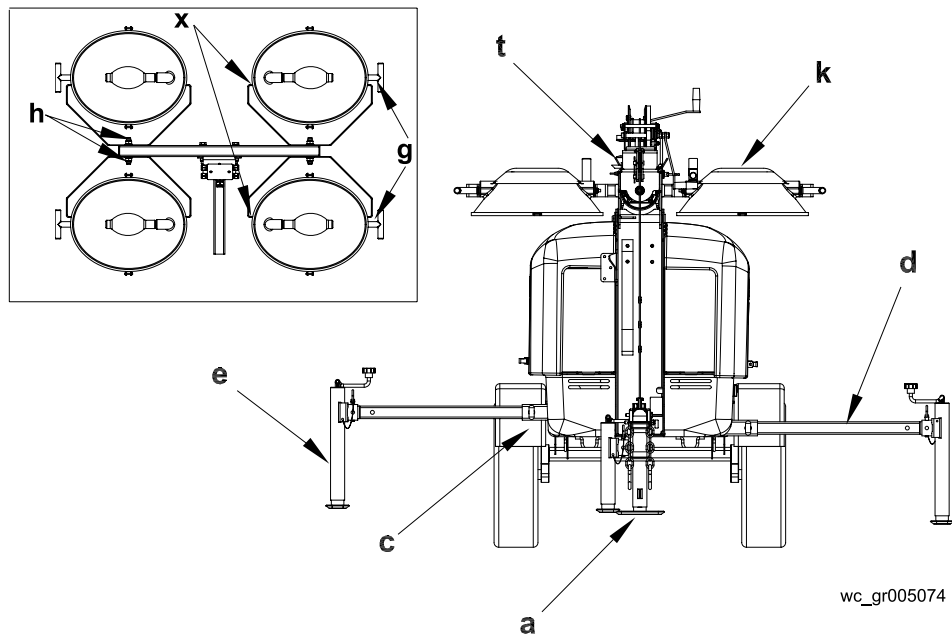
<p>X</p>		<p>Guaranteed sound power level in db(A)</p>								
<p>Y</p>	<table border="1" data-bbox="289 394 808 483"> <thead> <tr> <th>TOWING INSTRUCTIONS</th> <th>ABSCHLEPPINSTRUKTIONEN</th> <th>INSTRUCCIONES DE REMOLQUE</th> <th>INSTRUCTIONS DE REMORQUAGE</th> </tr> </thead> <tbody> <tr> <td> <p>PLEASE OPERATORS MANUAL FOR ALL MODELS FOR TRAILERS TOGETHER WITH THE TOWING INSTRUCTIONS FOR THE TRAILER PARTIAL TO CHECK THE WEIGHTS</p> </td> <td> <p>LESER DAS GEBRAUCHS- HANDBUCH FÜR ALLE MODELLS FÜR ANHÄNGER ZUSAMMEN MIT DEN ANHÄNGER-LEISTUNGS- ANWEISUNGEN ZUSAMMEN MIT DEN ANHÄNGER-GEWICHTEN ZUR ÜBERPRÜFUNG DER GEWICHTE</p> </td> <td> <p>LEA EL MANUAL DE OPERA- DORES PARA TODOS LOS MODELOS PARA CARAVANES JUNTAMENTE CON LAS INSTRUCCIONES PARA REMOLCAR EL CARAVAN PARCIALMENTE CON LAS INSTRUCCIONES PARA REVISAR LOS PESOS</p> </td> <td> <p>LIRE LA NOTICE D'EM- PLOI POUR TOUS LES MODELS POUR CARAVANES ENSEMBLE AVEC LES INSTRUCTIONS DE REMORQUAGE PARTIELLEMENT AVEC LES INSTRUCTIONS POUR VÉRIFIER LES POIDS</p> </td> </tr> </tbody> </table>	TOWING INSTRUCTIONS	ABSCHLEPPINSTRUKTIONEN	INSTRUCCIONES DE REMOLQUE	INSTRUCTIONS DE REMORQUAGE	<p>PLEASE OPERATORS MANUAL FOR ALL MODELS FOR TRAILERS TOGETHER WITH THE TOWING INSTRUCTIONS FOR THE TRAILER PARTIAL TO CHECK THE WEIGHTS</p>	<p>LESER DAS GEBRAUCHS- HANDBUCH FÜR ALLE MODELLS FÜR ANHÄNGER ZUSAMMEN MIT DEN ANHÄNGER-LEISTUNGS- ANWEISUNGEN ZUSAMMEN MIT DEN ANHÄNGER-GEWICHTEN ZUR ÜBERPRÜFUNG DER GEWICHTE</p>	<p>LEA EL MANUAL DE OPERA- DORES PARA TODOS LOS MODELOS PARA CARAVANES JUNTAMENTE CON LAS INSTRUCCIONES PARA REMOLCAR EL CARAVAN PARCIALMENTE CON LAS INSTRUCCIONES PARA REVISAR LOS PESOS</p>	<p>LIRE LA NOTICE D'EM- PLOI POUR TOUS LES MODELS POUR CARAVANES ENSEMBLE AVEC LES INSTRUCTIONS DE REMORQUAGE PARTIELLEMENT AVEC LES INSTRUCTIONS POUR VÉRIFIER LES POIDS</p>	<p>Towing Instructions Read Operator's Manual. Use hitch rated from trailer's "Gross Vehicle Weight Rating". Securely attach trailer to tow vehicle. Attach safety chains using cross pattern. Attach breakdown chain to vehicle. Check trailer lights.</p>
TOWING INSTRUCTIONS	ABSCHLEPPINSTRUKTIONEN	INSTRUCCIONES DE REMOLQUE	INSTRUCTIONS DE REMORQUAGE							
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<p>Z</p>		<p>Electrical ground</p>								
<p>AA</p>	 <p>177123</p>	<p>Insert jack locking pin before extending jack.</p>								
<p>BB</p>	 <p>177124</p>	<p>Fork lift pocket</p>								
<p>CC</p>	 <p>17967 17968 181500</p>	<p>WARNING Roll-over hazard To prevent injury or equipment damage, avoid high speeds and sharp turns when towing.</p>								

<p>DD</p>		<p>Transport position of the jack</p>			
<p>EE</p>	 <p>113726</p>	<p>Tie-down point</p>			
<p>FF</p>	<p>ULTRA LOW SULFUR FUEL ONLY. NUR ULTRANIEDRIGEN SCHWELKRAFTSTOFF. SOLAMENTE COMBUSTIBLE DE ULTRA BAJO CONTENIDO DE AZUFRE. SEULEMENT CARBURANT DE SOUFRE ULTRA BAS.</p>  <p>0180563</p>	<p>Ultra low sulfur fuel only</p>			
<p>GG</p>	<p>U.S.PAT.Nos.: 6012285, 6471476, D416858, D454357 OTHER U.S. AND FOREIGN PATENTS PENDING UTILITY 159116</p>	<p>This machine may be covered by one or more patents.</p>			
<p>JJ</p>	<table border="1"> <tr> <td data-bbox="332 1087 560 1312"> <p>⚠ DANGER</p> <p>L'utilisation d'une Tour d'éclairage à l'intérieur PEUT VOUS FAIRE MOURIR EN MINUTES. L'échappement contient le monoxyde de carbone. C'est un toxique que vous ne pouvez ni voir ni sentir.</p>  <p>N'employer JAMAIS dans un bâtiment, MÊME si les portes et les fenêtres sont ouvertes.</p>  <p>Employer seulement DÉCHORS et loin des fenêtres, des portes, et des ventilateurs.</p> <p>183803</p> </td> <td data-bbox="560 1087 787 1312"> <p>⚠ PELIGRO</p> <p>Si utilizar una Torre de Iluminación en un lugar cerrado PUEDEN CAUSAR LA MUERTE EN MINUTOS. Los gases de escape contienen monóxido de carbono. Esto es un veneno que no puede ni ver, ni oler.</p>  <p>NINGUNA lo utilice dentro de un edificio, AUN si las puertas y ventanas están abiertas.</p>  <p>Sólomente utilice en LUGARES ABIERTOS y lejos de ventanas, puertas y conductos de ventilación.</p> </td> </tr> </table>	<p>⚠ DANGER</p> <p>L'utilisation d'une Tour d'éclairage à l'intérieur PEUT VOUS FAIRE MOURIR EN MINUTES. L'échappement contient le monoxyde de carbone. C'est un toxique que vous ne pouvez ni voir ni sentir.</p>  <p>N'employer JAMAIS dans un bâtiment, MÊME si les portes et les fenêtres sont ouvertes.</p>  <p>Employer seulement DÉCHORS et loin des fenêtres, des portes, et des ventilateurs.</p> <p>183803</p>	<p>⚠ PELIGRO</p> <p>Si utilizar una Torre de Iluminación en un lugar cerrado PUEDEN CAUSAR LA MUERTE EN MINUTOS. Los gases de escape contienen monóxido de carbono. Esto es un veneno que no puede ni ver, ni oler.</p>  <p>NINGUNA lo utilice dentro de un edificio, AUN si las puertas y ventanas están abiertas.</p>  <p>Sólomente utilice en LUGARES ABIERTOS y lejos de ventanas, puertas y conductos de ventilación.</p>	<p>DANGER</p> <p>Using a light tower indoors CAN KILL YOU IN MINUTES. Light tower exhaust contains carbon monoxide. This is a poison you cannot see or smell.</p> <p>NEVER use inside a home or garage, EVEN IF doors and windows are open.</p>	
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3 Lifting and Transporting

Lifting the machine

Follow the procedure below to lift the machine.



1. Check that the tower cradle lock pin (**j**) is in place and secured with the safety pin.
2. Ensure that the tower is completely nested inside the transport cradle and the pin (**t**) is secure.
3. Make sure the doors are properly latched.
4. Return the outriggers to their travel position. Check that the outrigger bars and jacks are locked in place.
5. Crank the rear jack (**f**) all the way in and rotate it 90°.
6. The Light Tower is now ready to lift.

This procedure continues on the next page.

Continued from the previous page.

Towing the machine

1. Use the tongue jack **(a)** to raise the trailer tongue up and then lower it over hitch on towing vehicle. Lock the hitch to coupling and attach the safety chains. Swivel the tongue jack 90° and lock it in place.
2. Connect the trailer wiring to the towing vehicle. Check the brake, turn, and tail lights for proper operation.
3. Position the light fixtures **(k)** down. For rough, off-road transportation remove lamps from fixtures to avoid damage.
4. Check the tire inflation.

NOTICE: Maximum recommended speed for highway towing is 72 km/hour (45 MPH). Recommended off-road towing speed is not to exceed 16 km/hour (10 MPH) or less depending on terrain.

4 Operation**4.1 Preparing the Machine for First Use**

1. Make sure all loose packaging materials have been removed from the machine.
2. Check the machine and its components for damage. If there is visible damage, do not operate the machine! Contact your Wacker Neuson dealer immediately for assistance.
3. Take inventory of all items included with the machine and verify that all loose components and fasteners are accounted for.
4. Attach component parts not already attached.
5. Add fluids as needed and applicable, including fuel, engine oil, and battery acid.
6. Move the machine to its operating location.

4.2 Positioning the Machine



DANGER

Asphyxiation hazard. Exhaust gas from the machine contains carbon monoxide, a deadly poison you cannot see or smell. Exposure to carbon monoxide can kill you in minutes.

- ▶ Position the machine so that exhaust will not enter any nearby structures.



WARNING

Fire hazard. Do not move the machine while it is running.

- ▶ Shut down the machine before moving or repositioning it.



WARNING

Electric shock hazard. The tower extends up to 9 m (30 ft.) and could contact overhead wires or obstructions.

- ▶ Position the trailer on a firm, flat surface clear of overhead wires and obstructions.



WARNING

Fire hazard. Machines positioned on a hill or an incline may slide, break away or roll over.

- ▶ Do not position the machine on a hill or an incline.



WARNING

Explosion and fire hazard. Risk of severe injury or death.

- ▶ Do not operate the machine near flammable vapors, fuels, or combustibles.

CO Alarms

Because this machine produces carbon monoxide (CO), Wacker Neuson recommends that CO alarms be installed in all structures in close proximity to the machine. CO alarms provide an extra measure of protection against this poison that you cannot see or smell.

Install battery-operated CO alarms or plug-in CO alarms with battery backup, according to the manufacturer's instructions. CO alarms should be certified to the requirements of the latest safety standards (UL 2034, IAS 6-96, or CSA 6.19.01). Test the CO alarm batteries monthly.

Requirements

Position the machine:

- so that machine exhaust will not enter nearby structures.
- so that the machine does not block traffic.
- so that the machine is not near any combustible material or flammable vapor.
- so that all of the machine's access doors/panels may be accessed.
- so that the area to be illuminated is at or below the level of the lights.
- so that there is room around the machine for the outriggers to be extended.

4.3 Leveling the Trailer

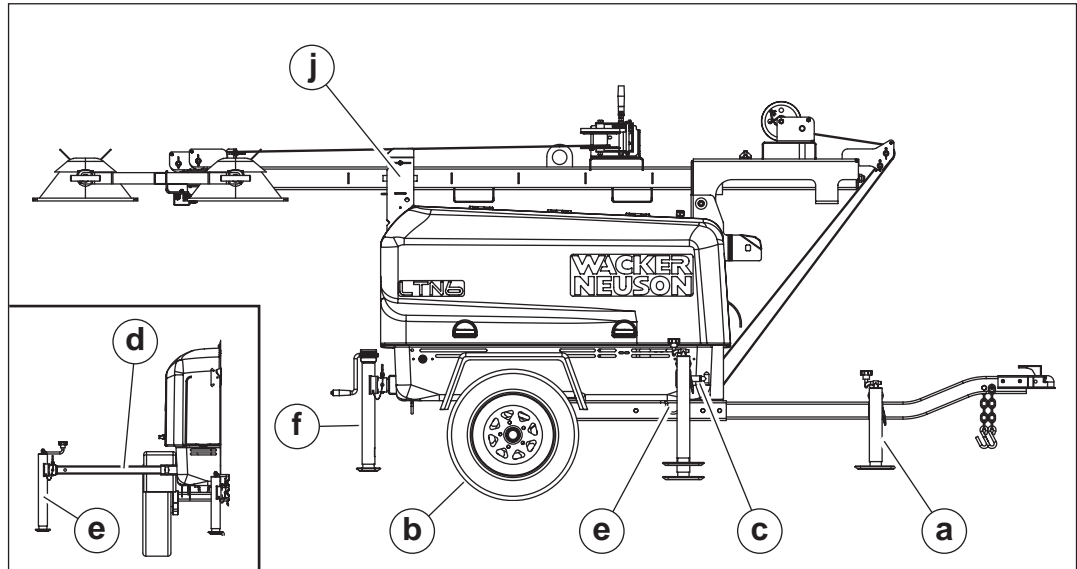


WARNING

Failure to level the trailer or extend the outriggers will severely reduce the stability of the unit and could allow the tower to tip and fall.

- ▶ The trailer must be leveled and the outriggers extended before raising the tower. The outriggers must remain extended while the tower is up.

1. Pull the locking pin on the tongue jack (**a**) and rotate the tongue jack 90° as shown. Make sure the tongue jack snaps into position.

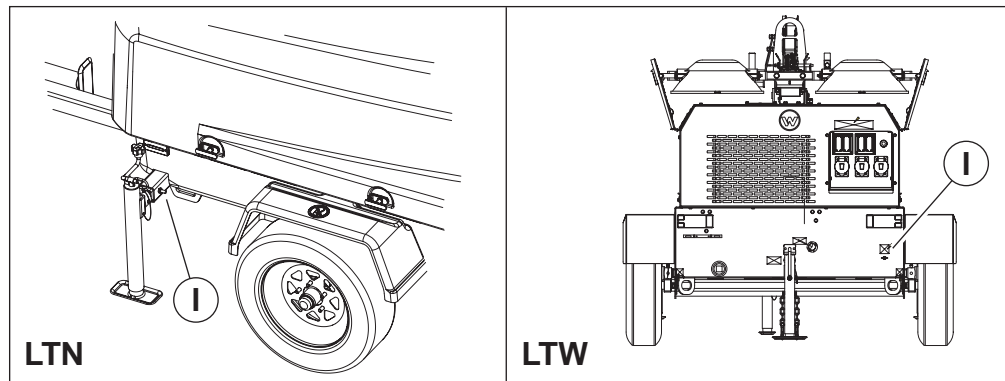


wc_gr011027

2. Block or chock the trailer wheels (**b**).
3. Crank the tongue jack down to raise the trailer tongue off the vehicle.
4. Pull the outrigger lock pin (**c**) to release the outrigger. Pull both outrigger extensions (**d**) out until you feel the outrigger lock pin lock back into place. Rotate jacks (**e**) down until they snap into position.
5. Rotate rear jack (**f**) down, as shown, making sure it snaps into place.
6. Extend the jack(s) on the highest side(s) of the trailer until they rest firmly on the ground. Extend the remaining jacks until the trailer is level.

4.4 Ground Connection

A ground connection (I) is located on the trailer frame.



wc_gr005225

Function

This ground connection is used for electrically grounding the Light Tower when necessary to comply with the National Electrical Code and other federal, state, and local regulations. For grounding requirements in your area, consult with a qualified electrician, electrical inspector, or local agency having jurisdiction over electrical compliance.

- If the Light Tower is used at a construction site, there may be additional regulations which must be observed.

4.5 Refueling the Machine

- Requirements**
- Machine shut down
 - Engine cool
 - Machine/fuel tank level with the ground
 - Fresh, clean fuel supply

Procedure Perform the procedure below to refuel the machine.

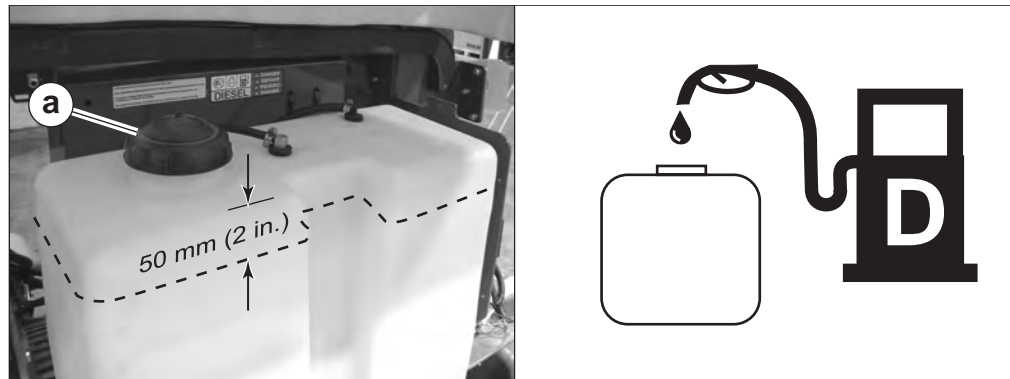


WARNING

Fire hazard. Fuel and its vapors are extremely flammable. Burning fuel can cause severe burns.

- ▶ Keep all sources of ignition away from the machine while refueling.
- ▶ Refuel only when the machine is outdoors.
- ▶ Clean up spilled fuel immediately.

1. Remove the fuel cap (a).



wc_gr008825

2. Fill the fuel tank, allowing a minimum of 50 mm (2 in.) expansion space between the fuel level and the top of the tank.



CAUTION

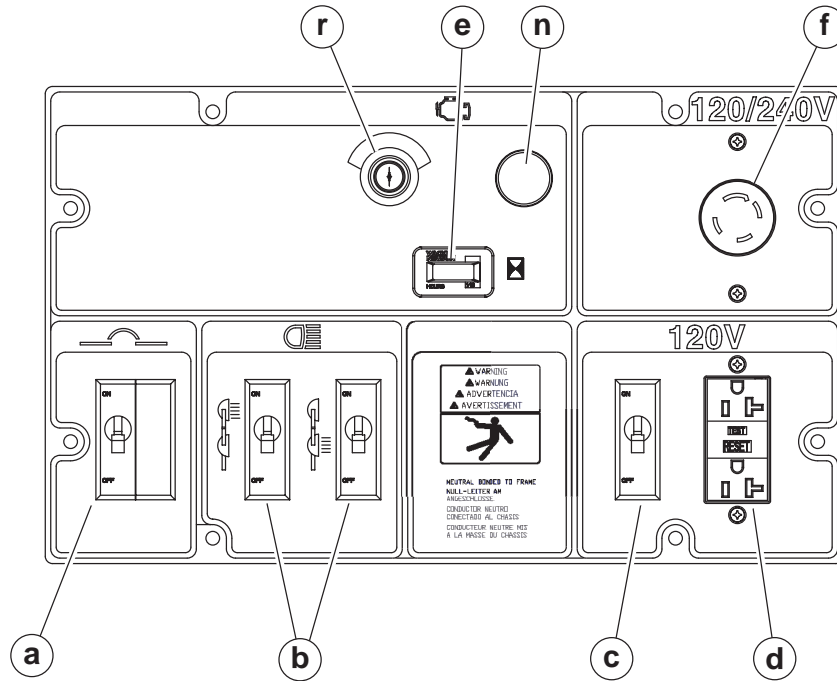
Fire and health hazard. Fuel expands when heated. Expanding fuel in an over-filled tank can lead to spills and leaks.

- ▶ Do not fill the fuel tank completely.

3. Reinstall the fuel cap.

Result The procedure to refuel the machine is now complete.

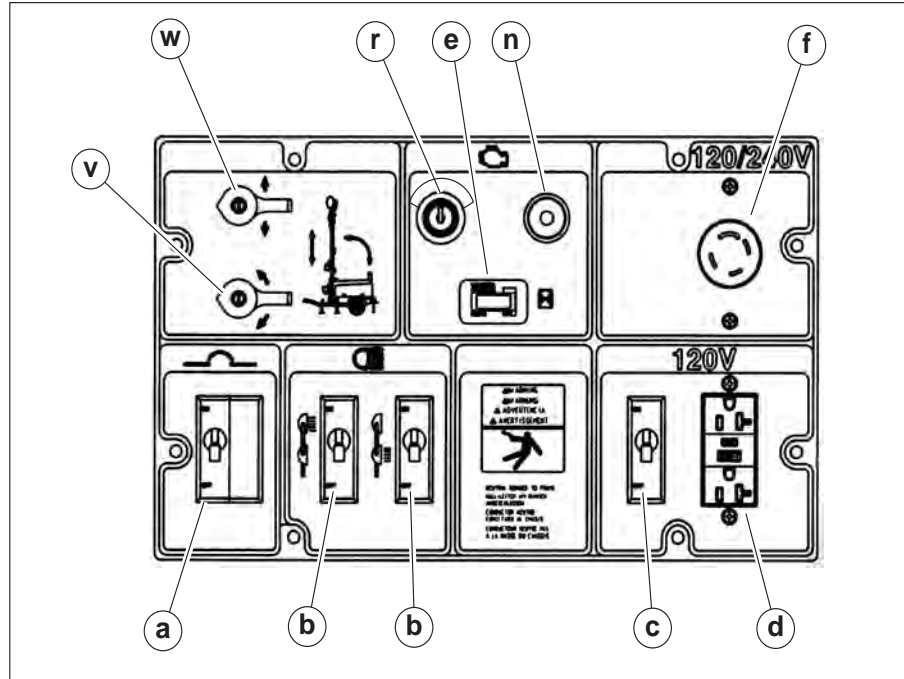
4.6 Control Panel - LTN 6K (Manual Winch)



wc_gr006328

Ref.	Description	Ref.	Description
a	25A main circuit breaker	e	Hour meter
b	30A lights circuit breaker	f	240V receptacle
c	20A circuit breaker	n	Glow plug indicator
d	120V, 20A GFCI outlet	r	Key switch

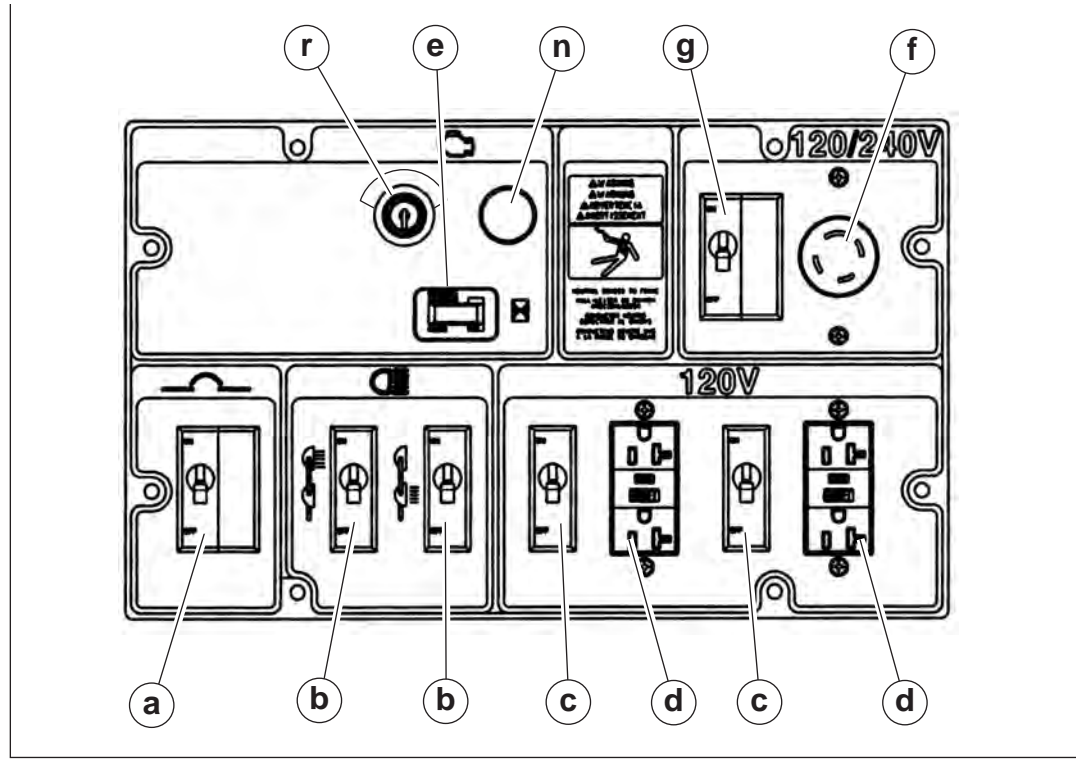
4.7 Control Panel - LTN 6K (Power Winch)



wc_gr007225

Ref.	Description	Ref.	Description
a	25 Amp main circuit breaker	f	240V receptacle
b	30 Amp lights circuit breaker	n	Glow plug indicator
c	20 Amp circuit breaker	r	Key switch
d	120V, 20 Amp GFI outlet	v	Vertical rotary switch
e	Hour meter	w	Telescope rotary switch

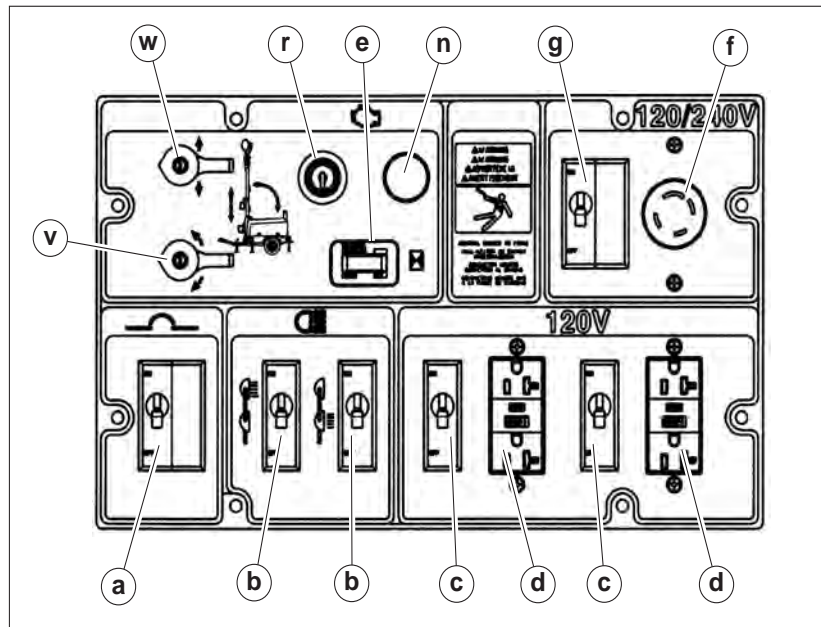
4.8 Control Panel - LTN 8K (Manual Winch)



wc_gr007226

Ref.	Description	Ref.	Description
a	33 Amp main circuit breaker	f	240V receptacle
b	30 Amp lights circuit breaker	g	240V, 30 Amp receptacle breaker
c	20 Amp circuit breaker	n	Glow plug indicator
d	120V, 20 Amp GFI outlet	r	Key switch
e	Hour meter	—	—

4.9 Control Panel - LTN 8K (Power Winch)



wc_gr007227

Ref.	Description	Ref.	Description
a	33 Amp main circuit breaker	g	30 Amp receptacle breaker
b	30 Amp lights circuit breaker	n	Glow plug indicator
c	20 Amp circuit breaker	r	Key switch
d	120V, 20 Amp GFI outlet	v	Mast vertical (tilting) switch
e	Hour meter	w	Mast telescope (extending) switch
f	240V receptacle	—	—

4.10 Before Starting

Before putting the Light Tower into service, review each item on the following checklist. Light Towers often run unattended for long periods of time. Therefore, it is important to make sure that the machine is set up properly to avoid possible operating problems.



CAUTION

Improper machine setup may cause injury or equipment damage.

- ▶ Perform all pre-start checks listed below. Do not operate the machine until all items on the checklist have been addressed.

Check machine condition

- Verify that the machine is level and positioned on a stable surface.
- Perform a walk-around to check for visible damage.
- Inspect the lights and lamps: ensure that glass is not broken or cracked.
- Ensure that all electrical connections are tight.
- Verify that all electrical cords are in serviceable condition with no exposed wires, cuts, or cracks in the insulation.
- Close and secure access covers before starting the machine.

Check the engine

- Check fuel, engine oil, and coolant levels. Add fluids if necessary.
- Verify that the air filter element is clean and undamaged. Replace if necessary.
- Check to make sure no debris has lodged in vents, near the radiator, or around the fan.
- Check to make sure that the exhaust compartment is clean and nothing is touching the muffler or exhaust pipes.
- Check fan belt and hoses on engine for loose connections or fraying. Tighten or replace as required.

Review safety information

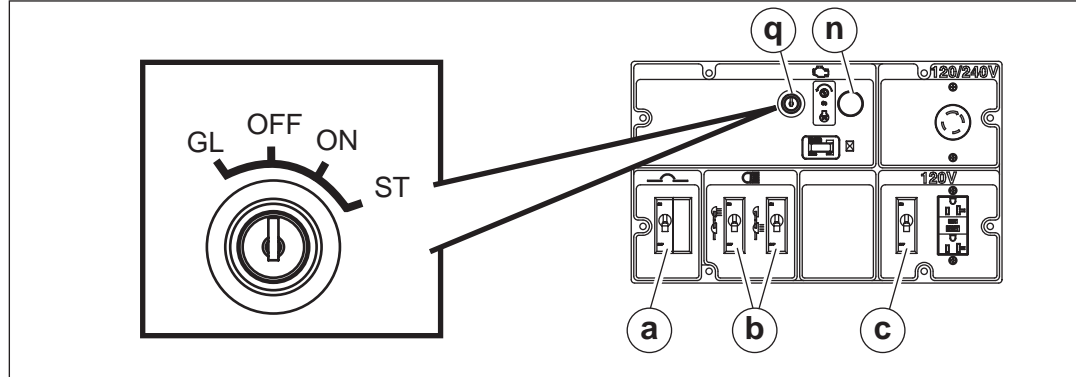
- Review and follow instructions provided in the “Safety Information” chapter at the beginning of this Operator’s Manual.

4.11 Starting the Machine - LTN 6K-V, LTN 8K-V

Requirements ■ Before starting checks completed. See *Before Starting*

NOTICES

- Do not use evaporative starting fluids (for example, ether) to start the engine.
- Do not start the engine under load.



wc_gr009978

Procedure Perform the procedure below to start the machine.

1. Rotate the key (**q**) counter-clockwise to the glow plug position (GL).
 - The glow plug indicator (**n**) will illuminate.
 - The glow plug indicator will turn off when the engine is preheated.

NOTICE: Cranking the engine longer than 20 seconds could cause damage.

- ▶ If the engine does not start, return the key to the “OFF” position and wait 1 minute for the starter to cool before proceeding.

2. Immediately rotate and hold the key to the start (ST) position until the engine starts then release the key.

3. Allow the engine to warm up before operating the lights.

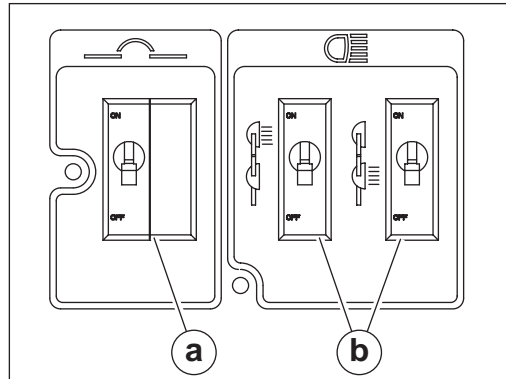
Note: *If the oil does not reach operating pressure within 30 seconds, the engine will stop. You must return the key to the “OFF” for 30 seconds before restarting the engine.*

4.12 Operating the Lights

- Requirements**
- All items in “Before Starting” checklist have been checked
 - Tower is raised to the desired height
 - Engine is running and has warmed up

Procedure Perform the procedure below to operate the lights.

1. Turn on the main circuit breaker **(a)**.



2. Turn on individual circuit breakers **(b)** one at a time.

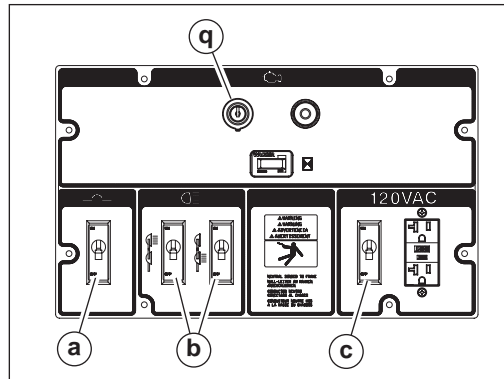
- Notes**
- Metal halide floodlights require a warm-up time of 5–15 minutes before they reach full brightness.
 - After turning the lights off, a cool-down time of 10 minutes is necessary before they can be turned on again.

4.13 Stopping the Machine

NOTICE: Do not stop the machine without turning off the lights. Damage to the electrical generator will occur.

Procedure Follow the procedure below to stop the machine.

1. Remove all connected loads from the machine.
2. Turn the circuit breakers **(a, b, c)** off.



wc_gr011039

3. Rotate the starting key **(q)** to the "OFF" position.

4.14 Aiming the Lights - LTN

Overview ■ Each individual light fixture can be aimed up, down, left, or right independent of one another. There are four total light fixtures on each machine.

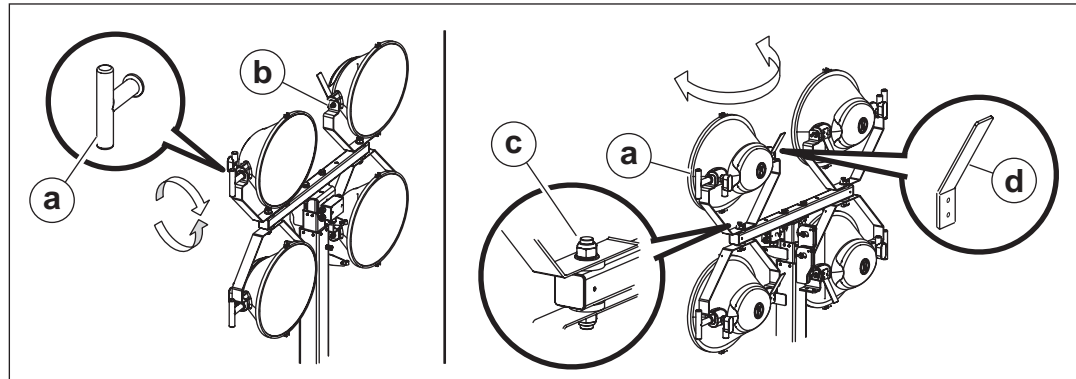
Requirements Before adjusting the lights, make sure that the following conditions have been met.

- Machine is stopped
- Tower is completely lowered
- Lights are cool to the touch

Aiming up or down Perform the procedure below to aim an individual light fixture up or down.

1. Loosen the T-handle **(a)**. Grasp the light fixture by the adjusting handle **(d)** and aim the light fixture up or down.

NOTICE: Do not loosen the nut **(b)**. Damage to the light fixture may occur.



wc_gr011250

2. Tighten the T-handle **(a)** when the light is aimed as desired.
3. Repeat steps 1–2 for each remaining light fixture if desired.

Aiming left or right Perform the procedure below to aim an individual light fixture up or down.

1. Grasp the light fixture by the adjusting handle **(d)** and the T-handle, then aim the light fixture to the light left or right. If necessary, loosen the bracket nut **(c)** to allow movement of the fixture.

2. If loosened, tighten the bracket nut **(c)** after the light is aimed.

Note: The bracket nut **(c)** should be only tight enough so that slight resistance is present when aiming the fixture.

3. Repeat steps 1–2 for each remaining light fixture if desired.

4.15 Raising the Tower (Manual Winch System)

Background The Light Tower includes two separate winches: the tilting winch for lifting the tower to the vertical position; and the telescoping winch for raising the tower. Each winch is an automatic brake-type winch that automatically brakes when the handle is released. The handle must be rotated to wind in the cable as well as to unwind the cable.

- Requirements**
- Engine is stopped
 - Light Tower is located on a firm, flat surface clear of overhead wires and obstructions
 - Winch cables are in serviceable condition and resting properly in pulleys
 - Light tower has been leveled, with all outriggers extended and locked
-

**WARNING**

Electric shock hazard! Do not use the Light Tower if insulation on any of the electrical cords is cut or worn through. Bare wires in contact with the metal frame of the trailer or tower can cause electrocution.

- ▶ Repair or replace the cord before using the machine.
-

**WARNING**

Electrocution hazard.

- ▶ Do not position the Light Tower under electrical power lines.
-

**WARNING**

Tipping/falling hazards. Certain actions may cause the tower to fall or the Light Tower to tip over.

- ▶ Do not extend the tower beyond the red marking on the tower shaft.
 - ▶ Do not raise the tower or operate the Light Tower in high winds.
 - ▶ Do not touch the winch pawl while the tower is raised!
 - ▶ Do not pull the vertical tower locking pin while the tower is raised.
-

**WARNING**

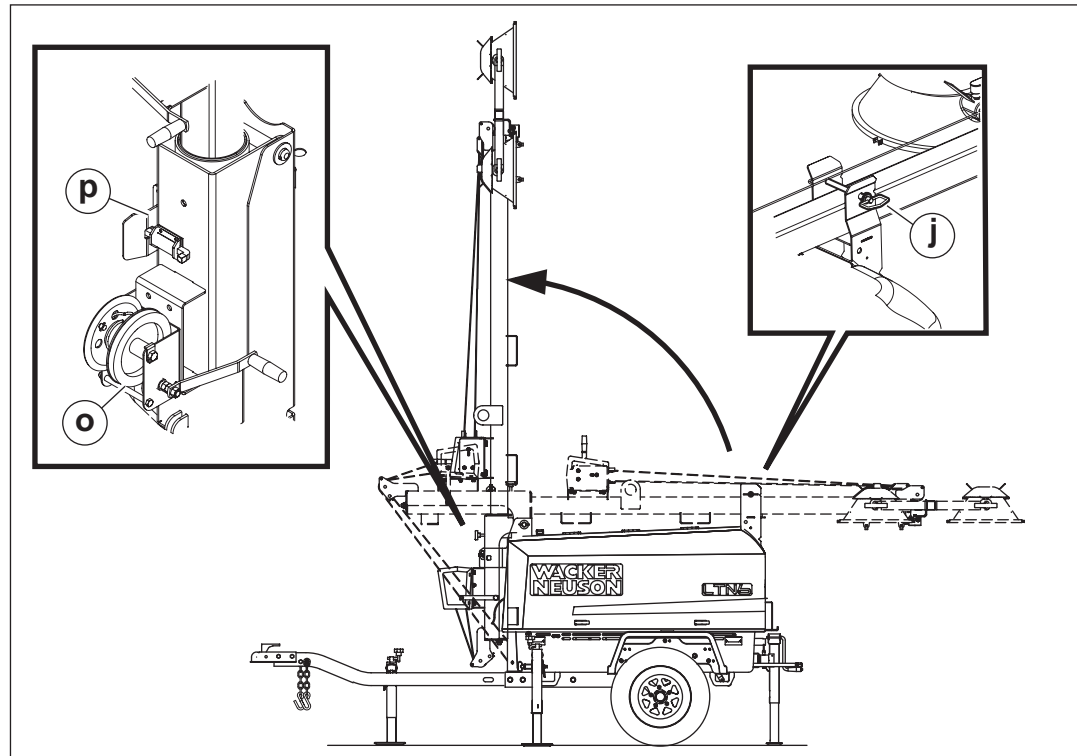
Personal injury hazard. Bystanders can be struck by the tower as it is being raised or lowered.

- ▶ Do not allow anyone to stand near the rear of the machine while raising or lowering the tower.
-

This procedure continues on the next page.

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Reference graphic



wc_gr010906

Procedure Perform the procedure below to raise the tower.

Tilting the tower

1. Remove the cradle locking pin **(j)** from the cradle.
2. Check the operation of the tilt winch **(o)** by rotating the its handle 1/4 turn clockwise (“cable in” direction). The winch pawl must engage the winch gear teeth. When operating properly, the winch pawl will make a “clicking” sound when its handle is rotated clockwise.

NOTICE: Do not attempt to tilt the tower if the winch is damaged or not operating properly, or if the winch cables are worn or damaged.

3. Continue to rotate the winch handle and tilt the tower to the vertical position until the vertical tower locking pin **(p)** locks the tower in place. Be certain the vertical tower locking pin is fully engaged in the locking position before raising the tower.

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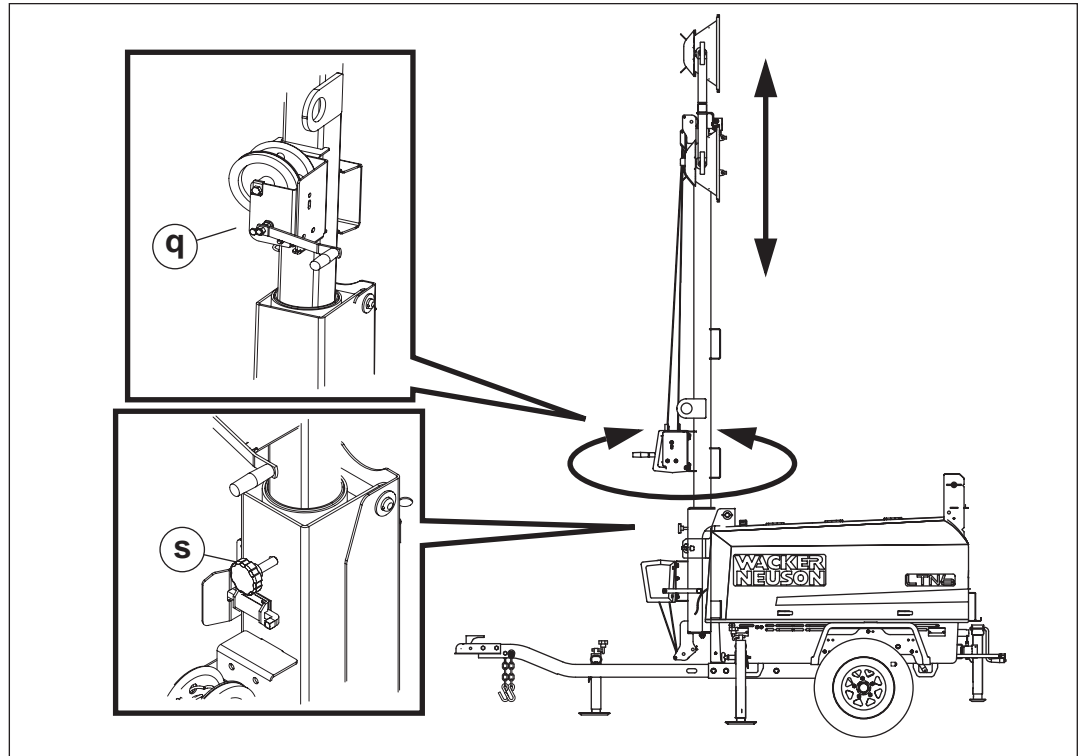
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Raising the tower

4. After the tower is vertical, check the operation of the telescoping winch (**q**) by rotating the its handle 1/4 turn clockwise (“cable in” direction). The winch pawl must engage the winch gear teeth. When operating properly, the winch pawl will make a “clicking” sound when its handle is rotated clockwise.

NOTICE: Do not attempt to raise the tower if the winch is damaged or not operating properly, or if the winch cables are worn or damaged.

5. Continue rotating the winch handle until the tower is at the desired height. Do not overcrank the winch when the tower is fully extended.



wc_gr010907

Rotating the tower

Once the tower is at the desired height, rotate the tower to the desired direction.

1. Loosen the rotation locking knob (**s**).
2. Rotate the tower until the lights face the desired direction.
3. Retighten the rotation locking knob.

4.16 Lowering the Tower (Manual Winch System)

- Requirements**
- Lights are turned off
 - Engine is stopped
 - Outriggers are extended and locked in place

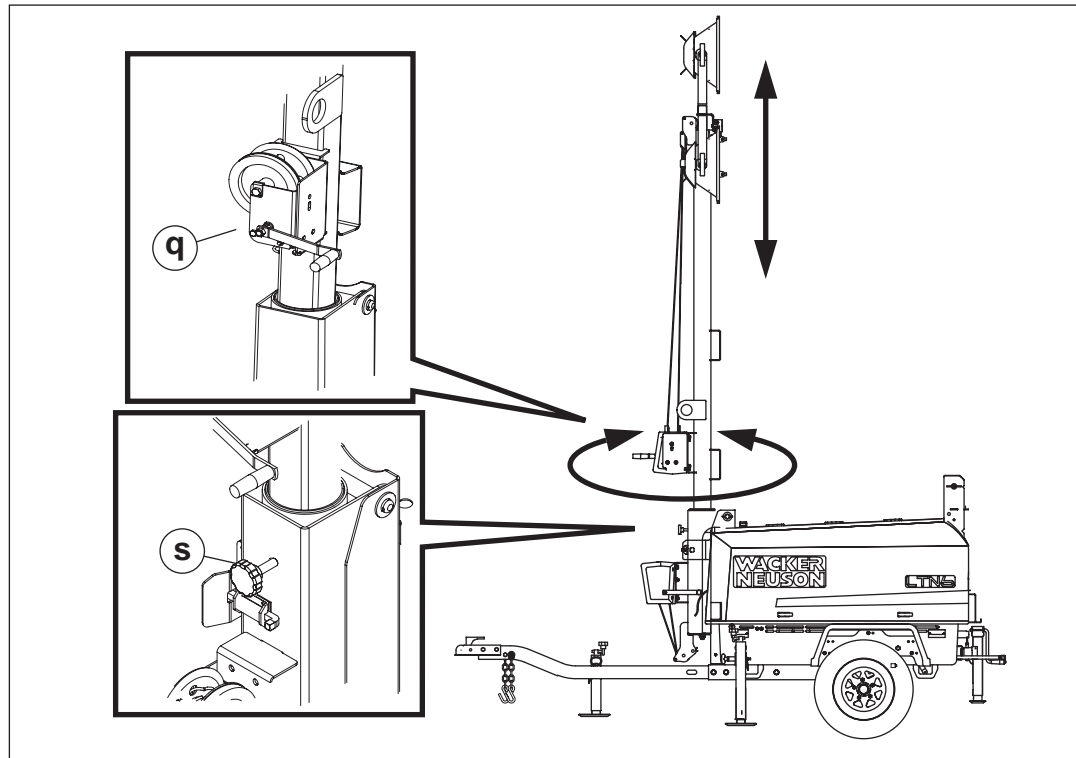


WARNING

Tipping/falling hazards. Certain actions may cause the tower to fall or the machine to tip over.

- ▶ Do not extend the tower beyond the red marking on the tower shaft.
- ▶ Do not raise the tower or operate the Light Tower in high winds.
- ▶ Do not touch the winch pawl while the tower is raised!
- ▶ Do not pull the vertical tower locking pin while the tower is raised.

Reference graphic



wc_gr010907

Procedure Follow the procedure below to lower the tower.

1. Loosen the rotation locking knob **(s)** and rotate the tower so the lights face the rear of the trailer and the winches are facing toward the trailer tongue.

This procedure continues on the next page.

Continued from the previous page.



WARNING

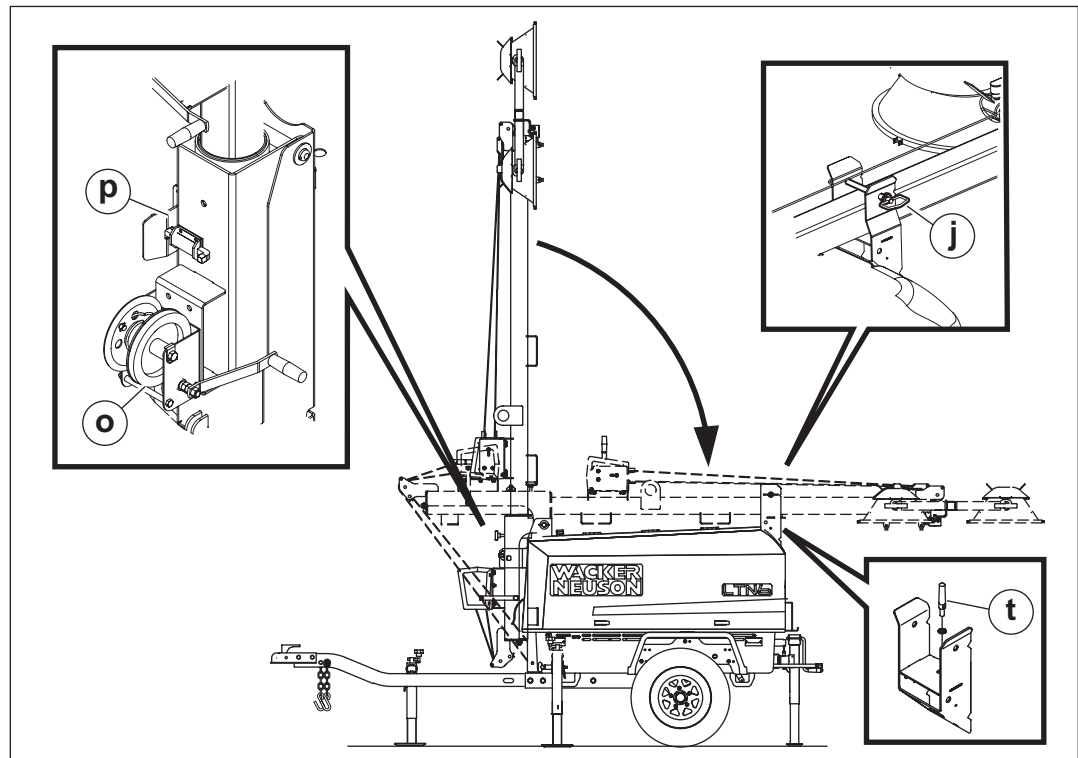
Personal injury hazard. Bystanders can be struck by the tower as it is being raised or lowered.

- ▶ Do not allow anyone to stand near the rear of the machine while raising or lowering the tower.

2. Turn the handle on the telescoping winch **(q)** counterclockwise (“cable out” direction) until the tower is lowered completely.
3. Pull and hold the tower locking pin **(p)**; rotate the handle on the tilt winch **(o)** counterclockwise (“cable out” direction) until the tower spring begins to pivot the tower down.

Note: If the tower hangs up, level the trailer, and slightly shake or twist the tower assembly to free the bind. Contact an authorized Wacker Neuson service center immediately if this procedure does not correct the problem.

4. Release the tower locking pin and continue to rotate the handle until the tower is resting in the transport cradle. Make sure that the secondary locking pin **(t)** penetrates all sections of the tower.



5. After the tower is down, secure it in the cradle by inserting the cradle lock pin **(j)**. Insert the clip through the pin to lock it in place.
6. Position the light fixtures to aim at the ground.

4.17 Raising the Tower (Power Winch System)

Background The Light Tower includes two separate winches: the tilting winch for lifting the tower to the vertical position; and the telescoping winch for raising the tower.

- Requirements**
- Machine is shut down
 - Light Tower is located on a firm, flat surface clear of overhead wires and obstructions
 - Winch cables are in serviceable condition and resting properly in pulleys
 - Light Tower has been leveled, with all outriggers extended and locked
-



WARNING

Electric shock hazard! Do not use the Light Tower if insulation on any of the electrical cords is cut or worn through. Bare wires in contact with the metal frame of the trailer or tower can cause electrocution.

- ▶ Repair or replace the cord before using the machine.
-



WARNING

Electrocution hazard.

- ▶ Do not position the Light Tower under electrical power lines.
-



WARNING

Tipping/falling hazards. Certain actions may cause the tower to fall or the Light Tower to tip over.

- ▶ Do not extend the tower beyond the red marking on the tower shaft.
 - ▶ Do not raise the tower or operate the Light Tower in high winds.
 - ▶ Do not pull the vertical tower locking pin while the tower is raised.
-



WARNING

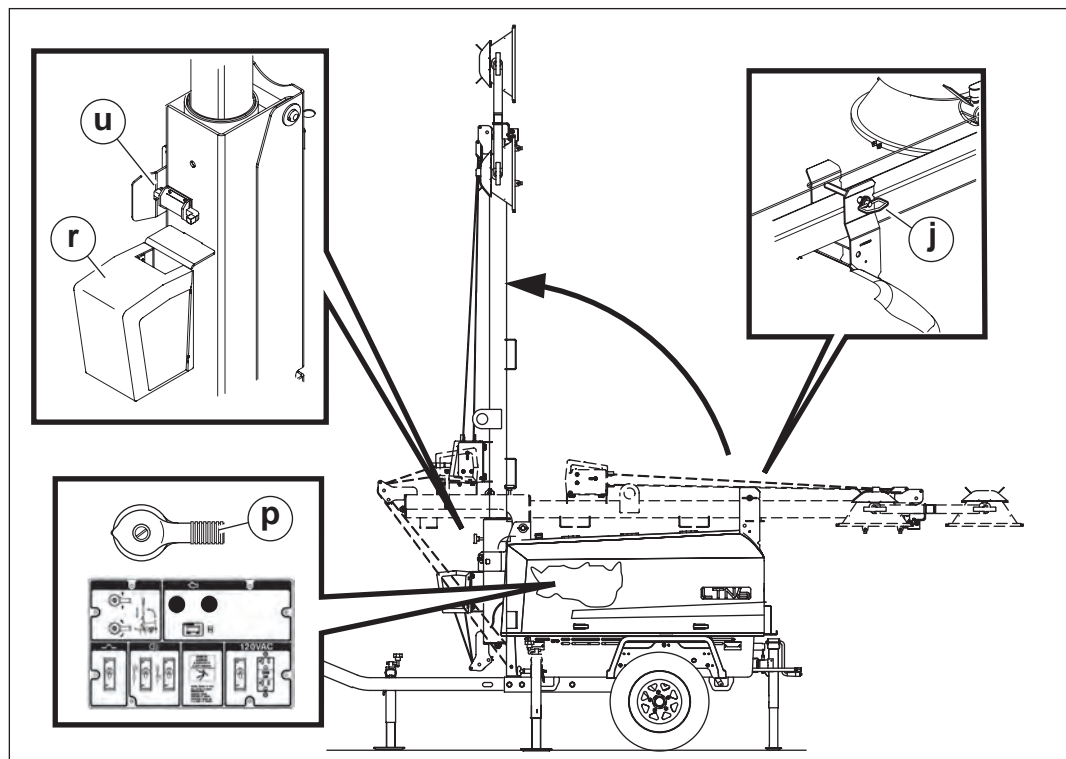
Personal injury hazard. Bystanders can be struck by the tower as it is being raised.

- ▶ Do not allow anyone to stand near the rear of the machine while raising the tower.
-

This procedure continues on the next page.

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Reference graphic



wc_gr010911

Procedure

Perform the procedure below to raise the tower.

Tilting the tower

1. Remove the cradle locking pin **(j)** from the cradle.
2. Check the operation of the tilt winch **(r)**. Turn the tilt rotary switch **(p)** on the control panel to the up position. The tower should begin to tilt.

NOTICE: Do not attempt to lift or raise the tower if the winch is damaged or not operating properly, or if the winch cables are worn or damaged. Continuous running of the winch in excess of four minutes will damage the winch motor.

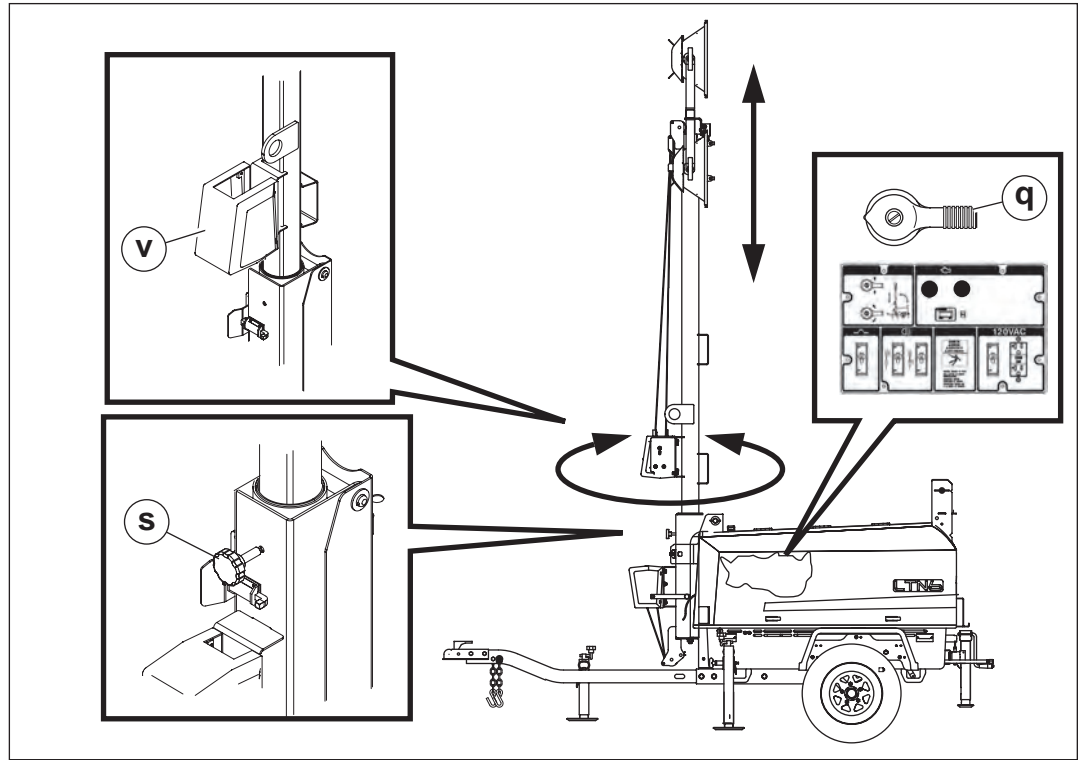
3. Hold the tilt rotary switch in the up position and raise the tower to the vertical position until the vertical tower locking pin **(u)** locks the tower in place. Be certain the vertical tower locking pin is fully engaged in the locking position before raising the tower.

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Raising the tower

4. After the tower is vertical, check the operation of the telescoping winch **(v)**. Turn the telescope rotary switch **(q)** on the control panel to the up position.



wc_gr010912

5. Continue to hold the telescope rotary switch until the tower is at the desired height. Release the switch when the tower is at the desired height.

Rotating the tower

Once the tower is at the desired height, rotate the tower to the desired direction.

1. Loosen the rotation locking knob **(s)**.
2. Rotate the tower until the lights face the desired direction.
3. Retighten the rotation locking knob.

4.18 Lowering the Tower (Power Winch System)

- Requirements
- Lights are turned off
 - Engine is stopped
 - Outriggers are extended and locked in place



WARNING

Tipping/falling hazards. Certain actions may cause the tower to fall or the machine to tip over.

- ▶ Do not extend the tower beyond the red marking on the tower shaft.
- ▶ Do not pull the vertical tower locking pin while the tower is raised.

Procedure Perform the procedure below to lower the tower.

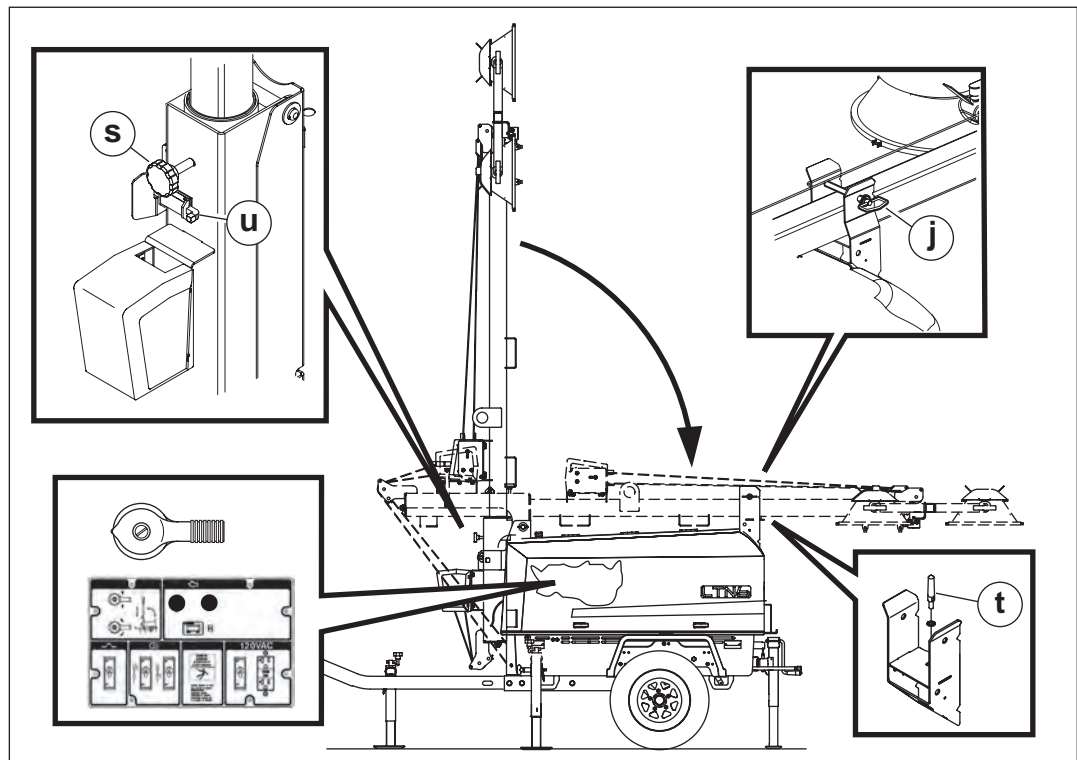


WARNING

Personal injury hazard. Bystanders can be struck by the tower as it is being raised or lowered.

- ▶ Do not allow anyone to stand near the rear of the machine while raising or lowering the tower.

1. Loosen the rotation locking knob (s) and rotate the tower so that the lights face the rear of the trailer and the winches are face toward the trailer tongue.

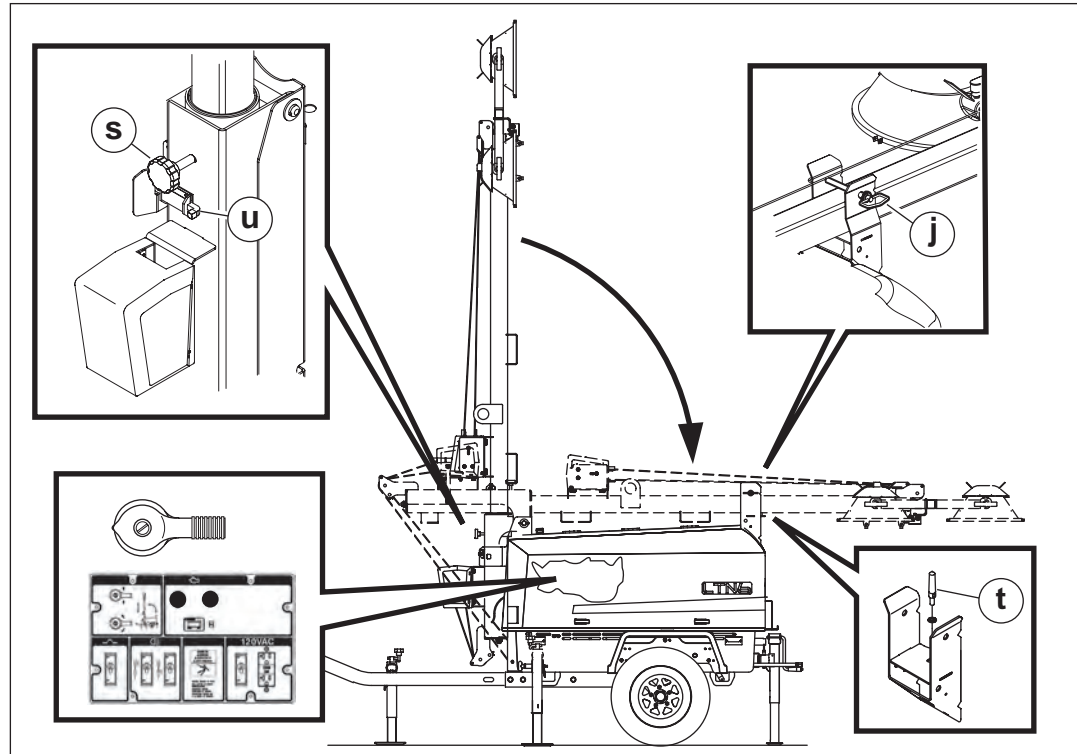


wc_gr010924

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2. Hold the rotary switch in the down position (“cable out” direction) until the tower is completely lowered.
3. Pull and hold the tower locking pin (**u**): hold the tilt-winch rotary switch in the down position until the tower spring begins to pivot the tower down. Release the tower locking pin. Continue to hold the tilt-winch rotary switch in the down position until the tower is resting in the transport cradle. Make sure that the secondary locking pin (**t**) penetrates all sections of the tower.



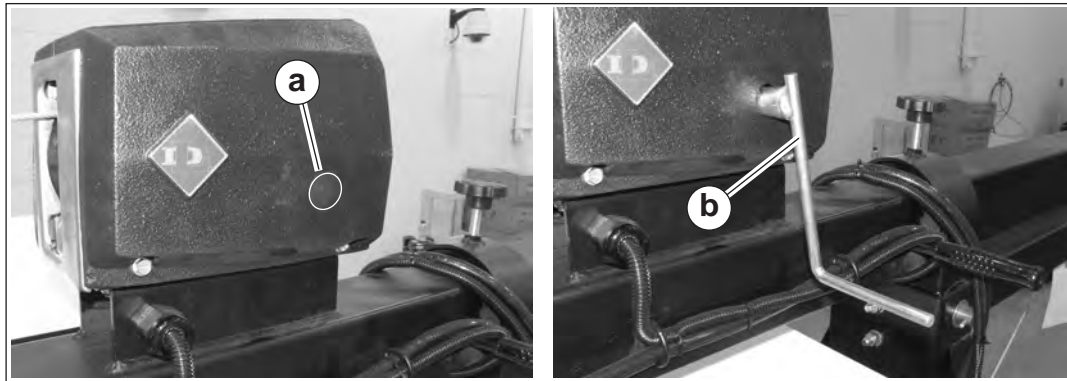
wc_gr010924

4. After the tower is down, secure it in the cradle by inserting the cradle locking pin (**j**). Insert the clip through the cradle locking pin.
5. Position the light fixtures to aim at the ground.

4.19 Emergency Crank Handle (Power Winch System)

An emergency crank handle is provided for use in the event of a power failure.

1. Disconnect the the electrical power from the winch.
2. Remove the plug **(a)** from the side of the winch cover. Insert the handle **(b)** so that it completely engages the drive shaft. The handle can be cranked in either direction.



wc_gr011033

3. Always remove the handle from the winch after use and replace the plug.



WARNING

Rotating parts can cause severe injury.

- ▶ Never operate the winch electrically with the emergency crank handle in position.

4.20 Automatic Shutdown

This unit is equipped with a low oil, high temperature auto-shutdown system. This system will automatically shut off the fuel supply to the engine if the oil pressure drops too low or the engine exceeds normal operating temperatures. Return the key switch to the off position to reset the unit after an engine shutdown.

4.21 Emergency Shutdown Procedure

Procedure If a breakdown or accident occurs while the machine is operating, follow the procedure below:

1. Press the emergency stop button (if equipped).
2. Stop the engine.
3. Disconnect tools.
4. Lower the tower.
5. Allow the machine to cool before opening the cabinet.
6. Contact the rental yard or machine owner for further instructions.

4.22 Derating

All generator sets are subject to derating for altitude and temperature. Although derating should not affect operation of the floodlights, it will reduce the available reserve power to the receptacle.

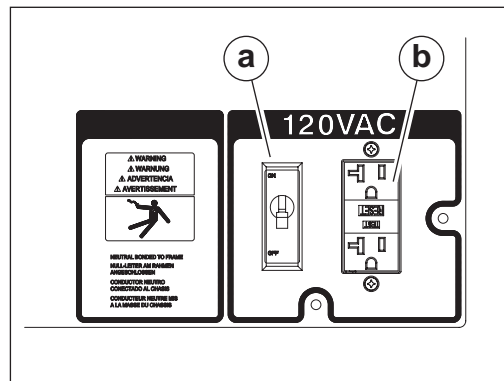
Ratings are typically reduced 3% per 300 m (1000 feet) elevation from sea level, and 2% per 10°F (5.5°C) increase in ambient temperature above 78°F (25°C).

4.23 Convenience Receptacles

Depending on your machine, the control panel is equipped with one or more convenience receptacles for running accessories and tools from the generator. Power to these receptacles is available any time the engine is running and the circuit breakers are on.

NOTICE: Do not draw more than 1660 Watts (LTN 6K) or 3660 Watts (LTN 8K) from the convenience receptacle(s) with all of the lights on or the lights will turn off.

Each 120V GFI receptacle **(b)** is protected by a 20A circuit breaker **(a)**. The 120V GFI receptacle(s) should be tested for proper operation before each use.



wc_gr011034

To test a GFI Push the test button in. The reset button should pop out. Power to the receptacle is now off. To restore power to receptacle, push reset button in.

NOTICE: If the reset button does not pop out, the GFI is faulty. **Do not** use the receptacle until the problem can be corrected.

If the reset button pops out during use, check the generator and attachments for defects.

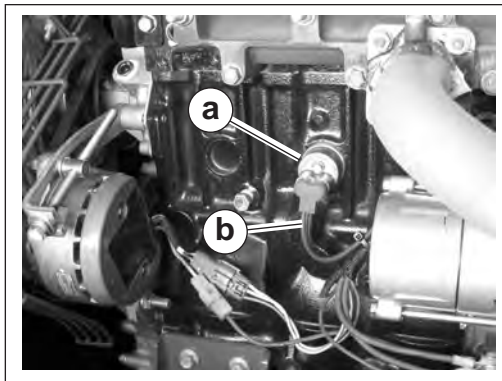
5 Factory-Installed Options

This machine may be equipped with one or more of the following factory-installed options. To verify if any of these options are installed on your machine, contact Wacker Neuson Corporation at 1-800-770-0957. A nameplate listing the Model Number, Item Number, Revision, and Serial Number is attached to each unit. Please have this information available when contacting Wacker Neuson Corporation.

The illustrations shown in this chapter represent typical installations. The factory-installed options on your machine may look different.

5.1 Engine Block Heater

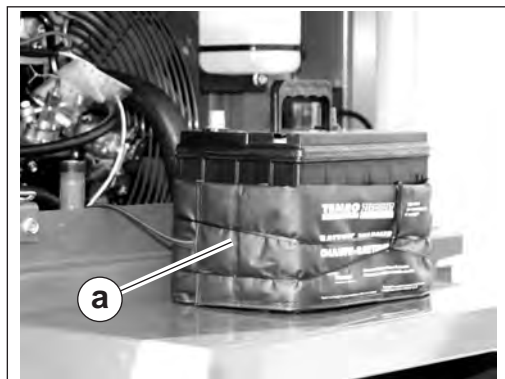
The engine block heater includes a block heater **(a)** with a cord **(b)**. The function of the block heater is to heat the engine coolant/ engine block to improve cold-weather engine starting. Plug the cord into a 120V power supply.



wc_gr006975

5.2 Battery Blanket

An electrically powered blanket **(a)** warms the battery while the machine is not in use. The blanket eliminates engine starting difficulties caused by a cold or frozen battery. Plug the cord into a 120V power supply.



wc_gr007422

5.3 Oil Pan Heater

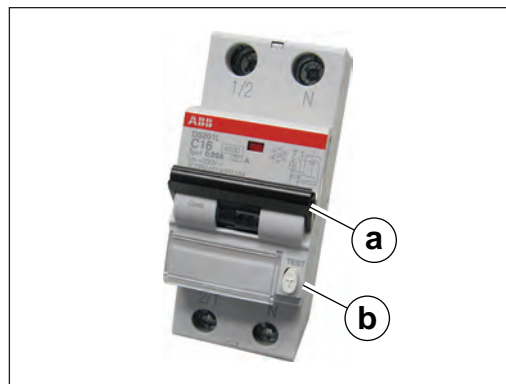
Cold, thick engine oil does not flow freely and may cause engine starting difficulties. An oil pan heater installed on the engine oil pan keeps the oil warm and flowing. Heat from this electrical device warms the supply of engine oil contained in the pan while the machine is not in use. Plug the cord into a 120V power supply.

5.4 RCBO Circuit Breaker

Available for 50 Hz machines is an Residual Current Circuit Breaker with Overcurrent Protection (RCBO). On these machines, the RCBO takes the place of the standard receptacle circuit breaker. Machines with RCBOs have neutral bonded to ground and thus these machines require grounding.

The RCBO functions as an overcurrent protection device and a current leakage detection device.

Whenever an overcurrent condition or a current leakage condition exists, the RCBO's activation lever springs to the OFF position. This opens the circuit. If the activation lever springs to the OFF position during use, there is a problem. **Do not** use the receptacle until the problem is corrected.



wc_gr011379

Test the RCBO every 6 months.

Note: The RCBO must be connected and the main circuit breaker must be in the ON position when testing.

To test:

1. Set the activation lever **(a)** to the ON position.
2. Press the "TEST" button **(b)**. The activation lever must spring to the OFF position. If it does not, the RCBO has failed. Replace it.

5.5 LED Lights

The LED light option includes 4 X 320 Watt LED fixtures that require less than 1 second warm-up time, no maintenance, and 100-264 VAC. The LED fixtures are rated for use in extreme cold temperatures to -40° F and offer voltage and current protection. This feature is offered as a retrofit kit or as a factory-installed option.



wc_gr011912

6 Maintenance



WARNING

A poorly maintained machine can malfunction, causing injuries or permanent damage to the machine.

- ▶ Keep the machine in safe operating condition by performing periodic maintenance and making repairs as needed.
-

6.1 Preparing for Maintenance

Do not perform even routine service (oil/filter changes, cleaning, etc.) unless all electrical components are shut down. Use the checklist below to prepare this machine for maintenance.

- Key switch in the “OFF” position.
- Circuit breakers in the “OFF” position.
- Negative terminal on the battery disconnected.
- “DO NOT START” sign attached to the control panel.

6.2 Periodic Maintenance Schedule

The table below lists basic machine maintenance. Tasks designated with check marks may be performed by the operator. Tasks designated with square bullet points require special training and equipment.

Item	Task	Before each use	Interval (hours of service)						
			100	200	400	500	800	1 yr	2 yr
Fluids	Check for leaks.	✓							
Engine oil	Check level.	✓							
Fuel	Check level.	✓							
Coolant	Check level.	✓							
Air filter dust cup	Empty dust.	✓							
Battery electrolyte	Check level.		✓						
Fan belt	Check condition and tension.		✓						
Air filter element	Clean.		■						
Radiator hoses	Check condition.			✓					
Intake air hose	Check condition and clear obstructions.			✓					
Fuel filter	Replace.	<i>Replace after every 250 hours of operation.</i>							
Engine oil	Change.*	<i>Replace after every 250 hours of operation.</i>							
Oil filter	Replace.					■			
Radiator	Flush.					■			
Fan belt	Replace.					■			
Fuel tank	Remove sediment.					■			
Valve clearance	Check and adjust as needed.						■		
Air filter element	Replace.							■	
Radiator coolant	Change.								■

Item	Task	Interval (hours of service)							
		Before each use	100	200	400	500	800	1 yr	2 yr
Battery	Replace.								■
Radiator hoses and clamps	Replace.								■
Fuel pipes and clamps	Replace.								■

* Change engine oil and filter after first 50 hours of operation.

6.3 Cleaning the Machine

When As needed

- Requirements**
- Clean water supply
 - Mild detergent
 - Clean, dry cloths

NOTICE: Do not use a pressure washer to clean this machine. Pressurized water can severely damage the generator and sensitive electronic components.

- Interior** Clean the interior of the machine.
- Remove rags, containers, or other debris from the cabinet. Nothing should be stored inside the machine.
 - Remove leaves and twigs from the exhaust pipe.
 - Wipe interior surfaces clean of oil, dust, and dirt.

Exterior Clean the exterior of the machine with clean water and a mild detergent.

6.4 Inspecting the Machine

When Daily

Overview Inspect the machine before each use. A thorough inspection will help to identify mechanical faults or potentially unsafe operating conditions. Correct these problems before operating the machine.

External inspection Perform an external inspection of the machine. Check for:

- External damage (dents, cracks, broken door latches, etc.)
- Loose or missing fasteners
- Loose or missing parts
- Cut or worn insulation on electrical cords
- Damaged light fixtures or lamps
- Fluid leaks
- Restricted air flow at the engine exhaust
- Problems with the trailer (if equipped)—see “Maintaining the Trailer”

Internal inspection Open the access doors on both sides of the machine. Check for:

- Damage to control panels, switches, or convenience receptacles
- Loose or missing fasteners
- Loose or missing parts
- Loose or damaged hoses
- Fluid leaks
- Rags, containers, or other debris inside the cabinet

Additional checks

- Check that winch cables are in good condition. Do not use a cable that is kinked or starting to unravel.
- Check that the vertical tower locking pin and its spring are secured, aligned, and operating properly.

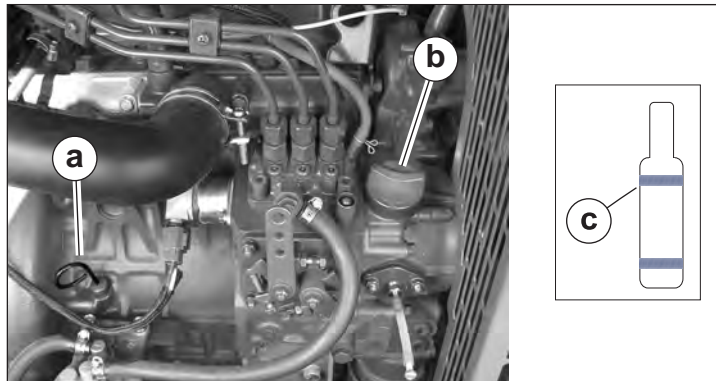
6.5 Checking the Engine Oil

- Requirements**
- Park the machine on a level surface
 - Shut down the machine

When Every 10 hours of service or daily

Procedure Perform the procedure below to check the engine oil.

1. Clean around the dipstick **(a)**.
2. Extract the dipstick and check the oil level. Maintain the oil level between the two markings on the dipstick.



wc_gr011091

3. Remove the oil filler cap **(b)** and add oil as needed. When full, the oil level will reach the upper mark on the dipstick **(c)**.

NOTICE: Do not overfill the machine with oil. Overfilling the engine with oil may lead to excessively high operating temperatures.

4. Reinstall the oil filler cap after adding oil.

6.6 Checking the Engine Coolant Level

When Daily

- Requirements**
- Machine shut down
 - Engine cool
 - 50/50 coolant/water solution (as needed)

NOTICE: Use a long-life ethylene glycol coolant/water solution in this engine. Refer to the engine owner's manual for more information.

Procedure Perform the procedure below to check the engine coolant level.



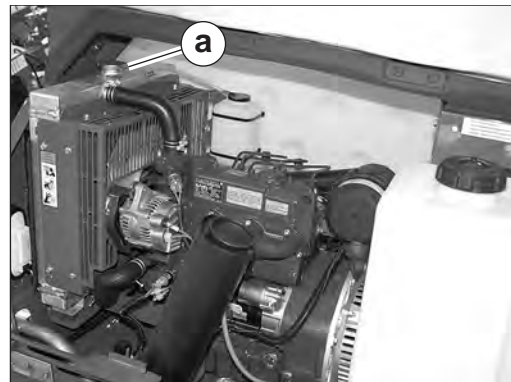
WARNING

Burn hazard. Engine coolant is hot and under pressure at operating temperature.

- ▶ Check the coolant level only after the engine has been shut down and is cool.

NOTICE: Do not add fluid to the over-flow reservoir.

1. Open one of the cabinet doors.
2. Slowly rotate the radiator cap (**a**) counterclockwise to release any remaining system pressure. Unscrew and remove the radiator cap after the pressure has been released.
3. Verify that the coolant level of the radiator is 19 mm (3/4 in.) below the bottom of the filler neck. Add more coolant if necessary to maintain this level.



wc_gr009992



WARNING

Burn hazard. Coolant can contain alkali.

- ▶ Avoid coolant contact with skin and eyes.

NOTICE: Do not overfill the radiator. The machine will be damaged.

4. Inspect the radiator filler cap and seal for damage. Clean the radiator filler cap or replace it if necessary.
5. Reinstall the radiator filler cap.

Result The coolant level has been checked.

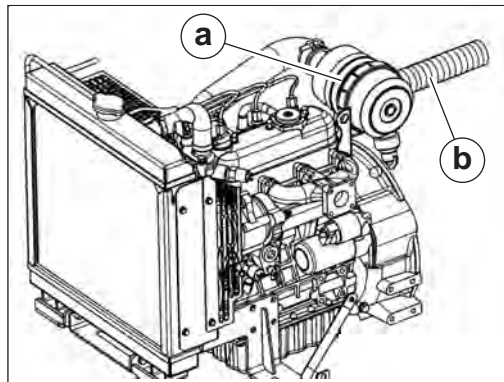
6.7 Checking the Air Cleaning System

When Daily

Overview The air cleaning system consists of an air cleaner with a pleated element and inlet pipe.

Procedure Perform the procedure below to check the air cleaning system.

1. Make sure the cover on the air cleaner (**a**) is installed and securely latched.



wc_gr011092

2. Make sure the inlet (**b**) is free from obstructions.
3. Check all hoses and connections. Replace any damaged components.
4. If the air cleaner or inlet are crushed or damaged, replace them immediately.

Result The air cleaning system has now been checked.

6.8 Servicing the Air Cleaner

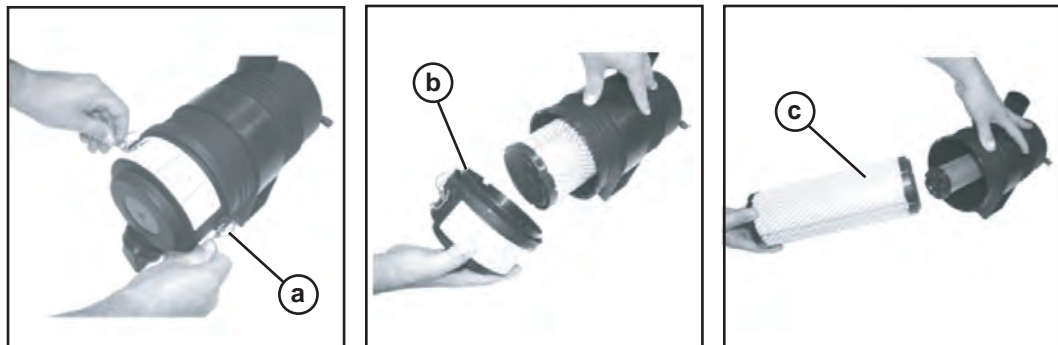
When Clean the air cleaner every 50 hours or as needed. Service more frequently in dusty or dirty conditions.

NOTICE: Never operate the machine without the air cleaner or a filter element. Severe engine damage will occur.

-
- Requirements**
- Engine is stopped and machine is cool
 - Compressed air source
 - Replacement filter element (as needed)
-

Procedure To service the air cleaner, do the following steps:

1. Unlock the clamps **(a)** and remove the cover **(b)**.



wc_gr003776

2. Remove the filter element **(c)** from the air cleaner body.
 3. Clean the filter element using one of two methods:
 - Blow compressed air sideways outside and inside the filter element, at a pressure not greater than 4.9 bar (70 psi).
 - Tap the front of the filter element several times against a flat surface.
-



WARNING

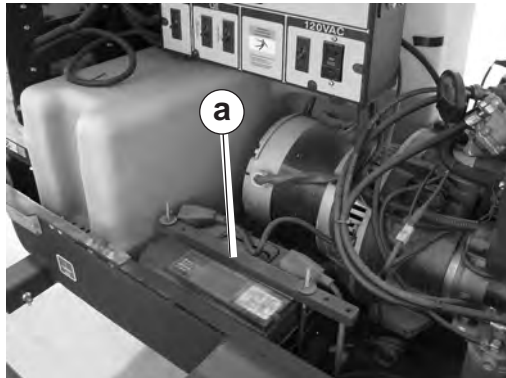
Fire and explosion hazards.

- ▶ Do not use gasoline or other types of low flash point solvents for cleaning the air cleaner.
-

4. Replace the filter element if it appears heavily soiled or damaged.
5. Carefully clean out the cover.
6. Re-install filter in body.
7. Re-install the cover, and lock the clamps.

6.9 Maintaining the Battery

Location The battery (a) is located beneath the control panel.



wc_gr009366



WARNING

Explosion hazard. Batteries can emit explosive hydrogen gas.

- ▶ Keep all sparks and flames away from the battery.
- ▶ Do not short-circuit battery posts.

Safety precautions

Observe the following safety precautions to prevent serious damage to the electrical system.

- Do not disconnect the battery while the machine is running.
- Do not attempt to run the machine without the battery.
- Do not attempt to jump-start the machine.
- In the event that the machine has a discharged battery, either replace the battery with a fully charged battery or charge the battery using an appropriate battery charger.
- Dispose of waste batteries in accordance with local environmental regulations.

Battery connections

To connect the battery:

- Connect the red positive (+) battery cable to the battery.
- Connect the black negative (-) battery cable to the battery.

To disconnect the battery:

- Stop the engine.
- Place all electrical switches in the OFF position.
- Disconnect the black negative (-) battery cable from the battery.
- Disconnect the red positive (+) battery cable from the battery.

Maintaining battery condition

- Follow the battery manufacturer's maintenance recommendations.
- Keep battery terminals clean and connections tight.
- When necessary, tighten the cables and grease the cable clamps with petroleum jelly.
- Maintain the battery at full charge to improve cold weather starting.

6.10 Changing Engine Oil

**WARNING**

Most used oil contains small amounts of materials that can cause cancer and other health problems if inhaled, ingested, or left in contact with skin for prolonged periods of time.

- ▶ Take steps to avoid inhaling or ingesting used engine oil.
- ▶ Wash skin thoroughly after exposure to used engine oil.

When Change the engine oil every 250 hours.

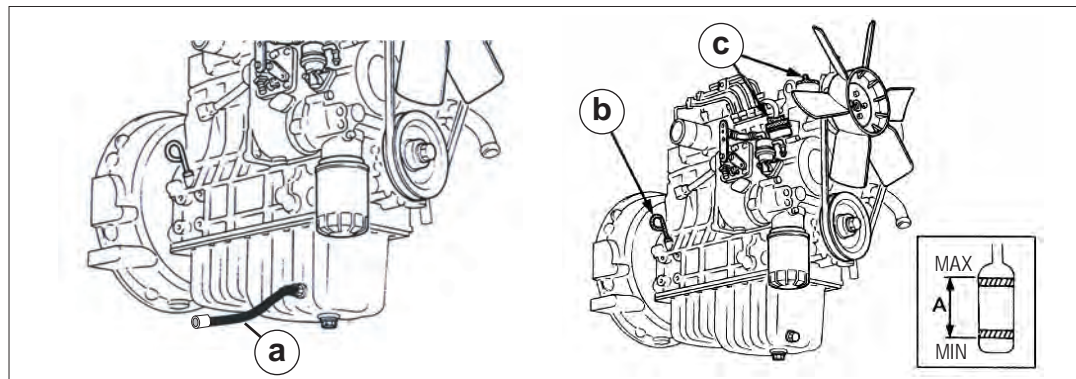
Prerequisites

- Warm engine
- Plastic sheet and container of suitable size to collect drained oil
- Replacement oil (see *Technical Data* for oil quantity and type)

Note: *In the interests of environmental protection, place a plastic sheet and a container under the machine to collect any liquid which drains off. Dispose of this liquid in accordance with environmental protection legislation.*

Procedure Follow the procedure below to change the engine oil.

1. Locate the oil drain hose (**a**) at the base of the engine and feed it through the opening at the rear of the light tower cabinet.



wc_gr007339

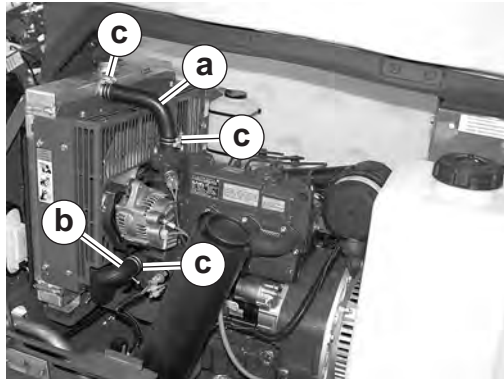
2. Remove the cap from the oil drain hose.
3. Allow the oil to drain into a suitable container.
4. Replace the cap on the oil drain hose. Return the hose to its stored location.
5. Fill the engine crankcase through one of the oil filler plugs (**c**) to the upper mark on the dipstick (**b**). Engine oil level should fall within the "A" range on the graphic. See *Technical Data* for oil quantity and type.
6. Reinstall the oil filler plug.

Result The procedure is now complete.

6.11 Checking Radiator Hoses

When Check the condition of the radiator hoses every 250 hours.

Overview Dry, cracked radiator hoses or loose clamps can cause a coolant leak. A coolant leak will cause the engine to overheat, possibly leading to permanent damage. Regular inspection of the radiator hoses will help to identify coolant leaks. There are two radiator hoses on the LTN. The upper hose **(a)** supplies coolant to the engine. The lower hose **(b)** returns coolant to the radiator.



wc_gr009991

Procedure Perform the procedure below to check the radiator hoses.

1. Inspect each hose for cuts, cracks, abrasions, or bulges. Replace the hose if any of these conditions exist.
2. Squeeze each hose to check the elasticity. A hose in serviceable condition will yield to slight pressure. Replace the hose if it appears to be stiff or brittle.
3. Check the hose clamps **(c)** to make sure that they are tight. Check for coolant leaks at the hose connections. Tighten loose clamps as needed.

Result The radiator hoses have now been checked.

6.12 Checking Fan Belt Tension

When Check the fan belt for proper tension and wear every 100 hours.

Overview Correct fan belt tension is critical to proper engine operation. An over-tensioned fan belt can damage the belt and bearings. A fan belt that is too loose or worn may slip, resulting in shortened belt life, increased noise, and loss of power to the fan.



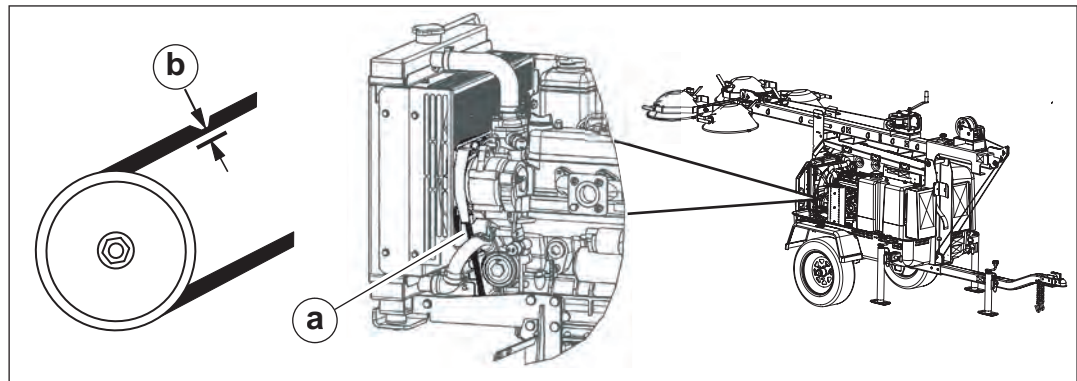
WARNING

Pinching and crushing hazards.

- ▶ Stop the engine before checking the fan belt tension.

Procedure Perform the procedure below to check the fan belt tension and wear.

1. Open the access door on the fuel tank side of the machine
2. Inspect the fan belt **(a)** for cuts, frayed edges, tears, or glazed surfaces.



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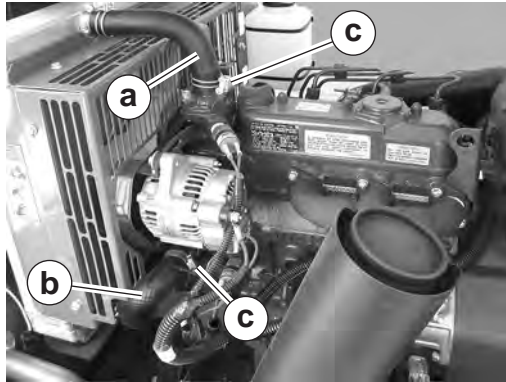
3. Apply 10 kg (22 lb) of force between the fan pulley and alternator. If the deflection **(b)** is greater than 7–9 mm (0.28—0.35 in.), the belt tension must be adjusted.
4. Replace the fan belt if it is damaged, worn, or deflects more than the maximum acceptable distance.

Result The fan belt tension has now been checked.

6.13 Checking Radiator Hoses

When Check the condition of the radiator hoses every 250 hours.

Overview Dry, cracked radiator hoses or loose clamps can cause a coolant leak. A coolant leak will cause the engine to overheat, possibly leading to permanent damage. Regular inspection of the radiator hoses will help to identify coolant leaks. There are two radiator hoses on the LTN. The upper hose **(a)** supplies coolant to the engine. The lower hose **(b)** returns coolant to the radiator.



wc_gr011096

Procedure Perform the procedure below to check the radiator hoses.

1. Inspect each hose for cuts, cracks, abrasions, or bulges. Replace the hose if any of these conditions exist.
 2. Squeeze each hose to check the elasticity. A hose in serviceable condition will yield to slight pressure. Replace the hose if it appears to be stiff or brittle.
 3. Check the hose clamps **(c)** to make sure that they are tight. Check for coolant leaks at the hose connections. Tighten loose clamps as needed.
-

Result The radiator hoses have now been checked.

6.14 Performing Coolant Solution Analysis

When Every 500 hours or 12 months, whichever comes first.

Overview Engine coolant must be regularly tested to ensure that it remains at an acceptable pH level. Unacceptably low pH levels in coolant create an acidic mixture that will permanently damage the radiator, engine, and engine-related components.

- Requirements**
- Machine shut down
 - Engine cool
 - Coolant test strips (provided by owner/operator)

Procedure Perform the procedure below to check the engine coolant level.

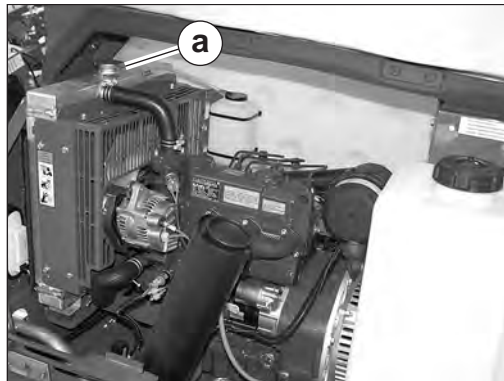


WARNING

Burn hazard. Engine coolant is hot and under pressure at operating temperature.

- ▶ Test the coolant pH level only after the engine has been shut down and is cool.

1. Slowly rotate the radiator cap (a) counterclockwise to release any remaining system pressure. Unscrew and remove the radiator cap after the pressure has been released.



wc_gr009992

2. Dip a coolant test strip into the filler neck and read the pH level.

If	Then
Coolant pH level tests below 8.5 or above 10.5,	the coolant is not acceptable for use. Drain, flush, and refill the system with a new ethylene glycol solution (50/50).
Coolant pH level tests between 8.5 and 10.5,	the coolant is acceptable for use.

NOTICE: Do not use plain water or any other liquid as engine coolant. Doing so will quickly corrode and permanently damage the coolant system. Damage caused by incorrect coolant will not be covered under warranty.

Result The coolant solution has now been analyzed.

6.15 Testing the Cooling System Pressure

When Test the cooling system pressure every 1200 hours, or 24 months (whichever comes first).

Background The cooling system is under pressure while the engine is operating. Internal or external leaks will cause the cooling system to lose pressure. These leaks can be detected by forcing pressurized air into the radiator cap and cooling system while the engine is stopped.



WARNING

Burn hazard. Engine coolant is hot and under pressure at operating temperature.

- ▶ Test the cooling system pressure only when the engine is stopped and the radiator is cool to the touch.



WARNING

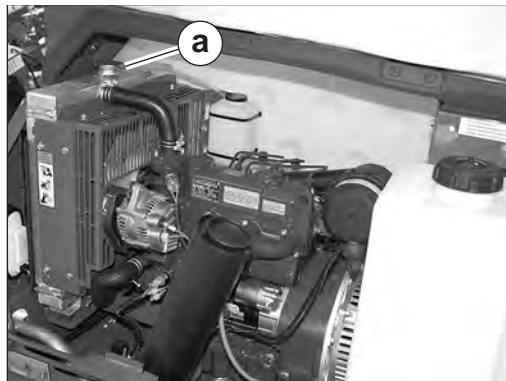
Burn hazard. Engine coolant may contain alkali.

- ▶ Avoid coolant contact with skin and eyes.

- Requirements**
- Engine is stopped and cool to the touch
 - Pressure test kit
 - Cooling system filled (see *Checking the Engine Coolant Level*)

Procedure Perform the following procedure to test the cooling system pressure.

1. Slowly rotate the radiator cap **(a)** counterclockwise to release any remaining system pressure. Unscrew and remove the radiator cap after the pressure has been released.



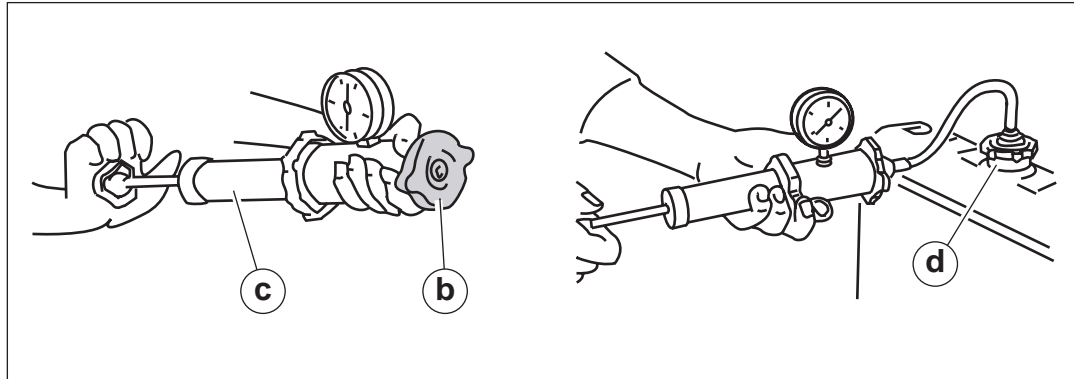
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2. Note the rated operating pressure marked on the outside of the radiator cap. When this pressure level is reached, a relief valve in the cap discharges coolant into the overflow bottle.

This procedure continues on the next page.

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3. Attach the radiator cap (b) to the pressure tester (c) according to the instructions provided by the manufacturer.
4. Pressure test the radiator cap, observing the pressure reading on the tester.



wc_gr009025

If	Then
Pressure holds just below the rated operating pressure marked on the cap,	radiator cap is acceptable for use.
Pressure drops, or the rated operating pressure cannot be reached,	radiator cap must be replaced. Contact your Wacker Neuson dealer.

5. Attach the pressure tester to the radiator filler neck (d).
6. Pressure test the cooling system at slightly above the rated operating pressure marked on the radiator cap. Observe the pressure reading.

If	Then
Pressure holds steady,	there are no leaks in the cooling system.
Pressure drops, or the rated operating pressure cannot be reached,	there is an internal or external leak in the cooling system. Repair the leak before putting the machine back into service.

Result The cooling system pressure has now been tested.

6.16 Flushing the Radiator

When Every 500 hours

- Requirements**
- Engine is stopped and cool to the touch
 - Plastic sheet
 - Container of suitable size to collect drained coolant
 - Fresh 50/50 coolant/water solution

NOTICE: Use a long-life ethylene glycol coolant/water solution in this engine. Refer to the engine owner’s manual for more information.

Procedure Perform the procedure below to flush the radiator.



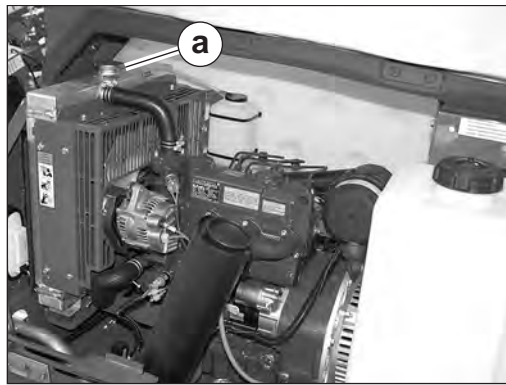
WARNING

Burn hazard. Engine coolant is hot and under pressure at operating temperature.

- ▶ Stop the engine and let it cool before flushing the radiator.

NOTICE: Do not add fluid to the over-flow reservoir.

1. Open one of the cabinet doors.



wc_gr009992

2. Slowly rotate the radiator cap **(a)** counterclockwise to release any remaining system pressure. Unscrew and remove the radiator cap after the pressure has been released.
3. Place a plastic sheet and container under the radiator.

This procedure continues on the next page.

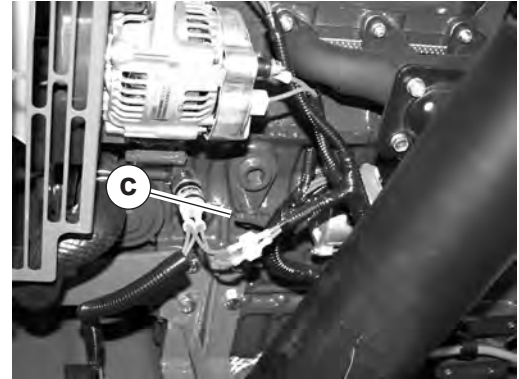
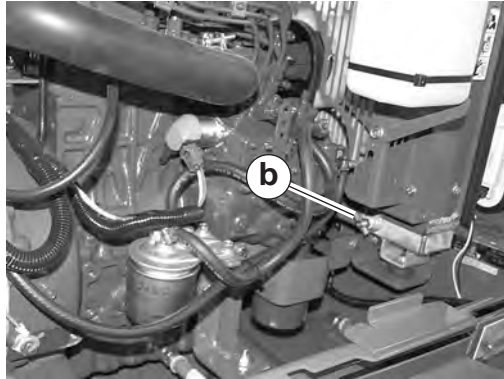
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**WARNING**

Burn hazard. Coolant can contain alkali.

- ▶ Avoid contact with skin and eyes.

4. Open the radiator drain cock **(b)** and let the coolant drain into the container.



wc_gr009990

5. Open the engine block coolant drain cock **(c)** and let the remaining coolant drain into the container.
6. Close both drain cocks.
7. Inspect the radiator filler cap and seal, hoses, clamps and plugs for damage. Replace any damaged parts.
8. Fill the radiator to approximately 19 mm (3/4 in.) below the bottom of the filler neck.

NOTICE: Do not overfill the radiator. The machine will be damaged.

9. Clean and reinstall the radiator filler cap.

Result

The radiator has now been flushed.

6.17 Installing / Removing Light Fixtures

- Requirements**
- Circuit breakers are turned OFF
 - Engine is shut down



WARNING

Electric shock hazard.

- ▶ Turn off all light circuit breakers and shut down engine before disconnecting light fixtures or changing lamps.



WARNING

Burn hazard. Lamps and fixtures become extremely hot in use.

- ▶ Allow lamps and fixtures to cool 10–15 minutes before handling.

NOTICE: Only a trained technician should be allowed to install and remove fixture wiring.

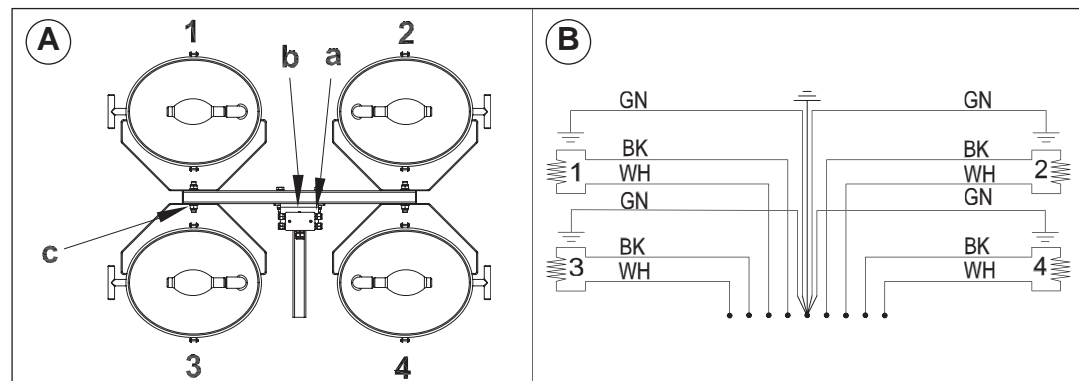
Procedure

Follow the procedure below to remove the light fixtures.

1. Disconnect the electrical cords at the junction box **(a)**.
2. Remove the nuts **(b)** from the fixture mounting brackets.
3. Remove both the fixtures and the brackets from the mounting studs.

A: Numbering sequence of lights

B: Junction box wiring for lights



wc_gr005376

Wire Colors							
BK	Black	RD	Red	YL	Yellow	OR	Orange
GN	Green	TN	Tan	BR	Brown	PU	Purple
BU	Blue	VIO	Violet	CL	Clear	SH	Shield
PK	Pink	WH	White	GY	Gray	LB	Lt. blue



6.18 Removing and Replacing Lamps

- Prerequisites**
- Engine shut down
 - Light circuit breakers turned OFF
 - Lamps and fixtures cool to the touch
 - Eye and hand protection

**WARNING**

Burn hazard. Lamps become extremely hot in use.

- ▶ Allow lamps and fixtures to cool 10–15 minutes before handling.
-

**WARNING**

Personal injury hazard. Ultraviolet radiation from the lamps can cause serious skin and eye irritation.

- ▶ Use only undamaged lamps.
 - ▶ Use the lamps only with undamaged original equipment lenses and fixtures.
-

**WARNING**

Explosion hazard. Grease or oil residue on the lamp can cause the outer jacket to burst or shatter. Hot flying glass particles can cause personal injury, property damage, burns, or fire.

- ▶ Do not operate the lights with a lens that is cracked, damaged, or missing.
 - ▶ Do not scratch the lamp or subject the lamp to excess pressure.
 - ▶ Wear eye and hand protection when removing or replacing lamps.
-

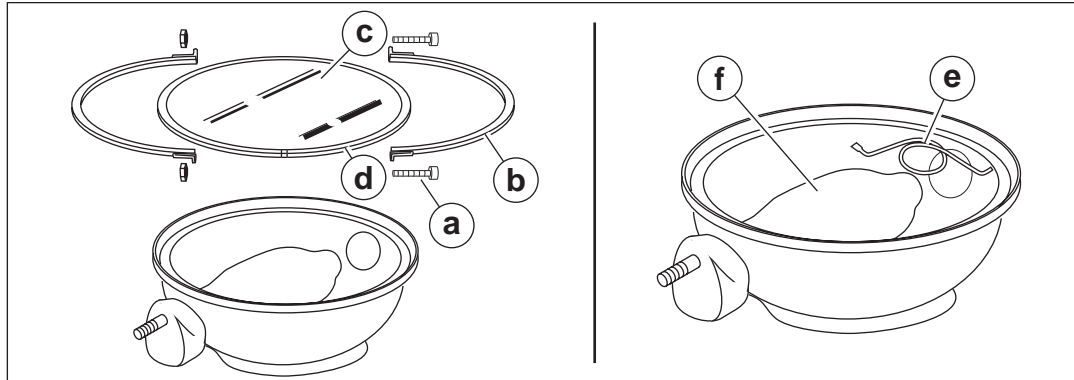
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Perform the procedures below to remove and install the lamp.

Removing the lamp

1. Remove the screws **(a)** securing the flange rings **(b)** and remove the flange rings.



wc_gr005881

2. Remove the lens **(c)** with the gasket **(d)** attached.
3. Remove the hardware securing one side of the lamp stabilizer **(e)**. Once removed, swing the lamp stabilizer to the side and unscrew the lamp **(f)**.

Installing the lamp

1. Screw the lamp in firmly, but not forcibly, to minimize loosening due to vibration. Secure it with the lamp stabilizer.
2. Install the gasket around the lens and secure the lens to the reflector with the flange rings and screws.

6.19 Long-Term Storage

Introduction Extended storage of equipment requires preventive maintenance. Performing these steps helps to preserve machine components and ensures the machine will be ready for future use. While not all of these steps necessarily apply to this machine, the basic procedures remain the same.

When Prepare your machine for extended storage if it will not be operated for 30 days or more.

Preparing for storage Follow the procedures below to prepare your machine for storage.

- Complete any needed repairs.
- Replenish or change oils (engine, exciter, hydraulic, and gearcase) per the intervals specified in the Scheduled Maintenance table.
- Grease all fittings and, if applicable, repack bearings.
- Inspect engine coolant. Replace coolant if it appears cloudy, is more than two seasons old, or does not meet the average lowest temperature for your area.
- If your machine has an engine equipped with a fuel valve, start the engine, close the fuel valve, and run the engine until it stops.
- Consult the engine owner's manual for instructions on preparing the engine for storage.

Stabilizing the fuel After completing the procedures listed above, fill the fuel tank completely and add a high-quality stabilizer to the fuel.

- Choose a stabilizer that includes cleaning agents and additives designed to coat/protect the cylinder walls.
- Make sure the stabilizer you use is compatible with the fuel in your area, fuel type, grade and temperature range. Do not add extra alcohol to fuels which already contain it (for example, E10).
- For engines with diesel fuel, use a stabilizer with a biocide to restrict or prevent bacteria and fungus growth.
- Add the correct amount of stabilizer per the manufacturer's recommendations.

Storing the machine Perform these remaining steps to store your machine.

- Wash the machine and allow it to dry.
- Move the machine to a clean, dry, secure storage location. Block or chock wheels to prevent machine movement.
- Use touch-up paint as needed to protect exposed metal against rust.
- If the machine has a battery, either remove or disconnect it.

NOTICE: Allowing the battery to freeze or completely discharge is likely to cause permanent damage. Periodically charge the battery while the machine is not in use. In cold climates, store and charge the battery indoors or in a warm location.

- Cover the machine. Tires and other exposed rubber items should be protected from the weather. Either cover them or use a readily available protectant.

6.20 Machine Disposal / Decommissioning

Introduction This machine must be properly decommissioned at the end of its service life. Responsible disposal of recyclable components, such as plastic and metal, ensures that these materials can be reused—conserving landfill space and valuable natural resources.

Responsible disposal also prevents toxic chemicals and materials from harming the environment. The operating fluids in this machine, including fuel, engine oil, and grease, may be considered hazardous waste in many areas. Before decommissioning this machine, read and follow local safety and environmental regulations pertaining to the disposal of construction equipment.

Preparation Perform the following tasks to prepare the machine for disposal.

- Move the machine to a protected location where it will not pose any safety hazards and cannot be accessed by unauthorized individuals.
- Ensure that the machine cannot be operated from the time of final shutdown to disposal.
- Drain all fluids, including fuel, engine oil, and coolant.
- Seal any fluid leaks.

Disposal Perform the following tasks to dispose of the machine.

- Disassemble the machine and separate all parts by material type.
- Dispose of recyclable parts as specified by local regulations.
- Dispose of all non-hazardous components that cannot be recycled.
- Dispose of waste fuel, oil, and grease in accordance with local environmental protection regulations.

7 Troubleshooting



UYARI

HIGH VOLTAGE! This unit uses high voltage circuits capable of causing serious injury or death.

- ▶ Only a qualified electrician should troubleshoot or repair electrical problems occurring in this equipment.

Problem	Cause	Remedy
Engine doesn't start	Battery discharged	Charge battery.
	Battery connections corroded	Clean battery connections.
	Blown fuse	Replace fuse.
	Faulty starter	Replace starter.
Engine tries to start but stops	No fuel	Fill tank with fuel. Bleed fuel lines.
	Clogged fuel filter	Replace fuel filter.
	Fuel circuit failure	Check fuel lines.
No generator output	Main circuit breaker open	Close main circuit breaker.
	Voltage regulator malfunction	Call Wacker Neuson for service.
Low oil pressure	Low oil level	Fill engine sump with oil.
	Clogged oil filter	Replace oil filter.
	Oil pump failure	Call Wacker Neuson for service.
High coolant temperature	Electrical overload	Reduce load.
	Low coolant level	Fill with coolant.
	Low oil level	Fill sump with oil.
	Clogged oil filter	Replace oil filter.
Engine emits black smoke	Clogged air filter	Clean/replace air filter cartridges.
	Electrical overload	Reduce load.
	High oil level	Remove excess oil.
	Fuel circuit failure	Call Wacker Neuson for service.

Problem	Cause	Remedy
Lamp will not light	Lamp is too hot	Allow lamp to cool 10–15 minutes before restarting.
	Faulty lamp connection	Check that lamp is tight in socket. Check connections inside connection boxes on light fixtures and tower.
	Lamp broken or burned out	Check for: <ul style="list-style-type: none"> ■ broken arc tube or outer lamp jacket, ■ broken or loose components in lamp envelope, ■ or blackening or deposits inside lamp tube.
	Circuit breaker turned off	Turn on circuit breaker.
	Circuit breaker loose or faulty	Repair or replace the circuit breaker.
Low light output	Lamp degraded	Replace lamp due to normal lamp life.
	Fixture or lens dirty	Clean reflective surface inside fixture and both inside and outside surface of glass lens.

Tire Safety Information

Tire Safety Information

Introduction to Tire Safety Information

Federal Regulation 49 CFR 575 requires trailer manufacturers to include certain tire information in the owner's manuals for the trailers they manufacture. This regulation requires that the information be in the English language. This chapter includes all the information required by Federal Regulation 49 CFR 575.

1. TIRE SAFETY INFORMATION

This portion of the User's Manual contains tire safety information as required by 49 CFR 575.6.

Section 1.1 contains "Steps for Determining Correct Load Limit - Trailer".

Section 1.2 contains "Steps for Determining Correct Load Limit – Tow Vehicle".

Section 1.3 contains a Glossary of Tire Terminology, including "cold inflation pressure", "maximum inflation pressure", "recommended inflation pressure", and other non-technical terms.

Section 1.4 contains information from the NHTSA brochure entitled "Tire Safety – Everything Rides On It". This brochure, as well as the preceding subsections, describes the following items;

- Tire labeling, including a description and explanation of each marking on the tires, and information about the DOT Tire Identification Number (TIN).
- Recommended tire inflation pressure, including a description and explanation of:
 - A. Cold inflation pressure.
 - B. Vehicle Placard and location on the vehicle.
 - C. Adverse safety consequences of under inflation (including tire failure).
 - D. Measuring and adjusting air pressure for proper inflation.
- Tire Care, including maintenance and safety practices.
- Vehicle load limits, including a description and explanation of the following items:
 - A. Locating and understanding the load limit information, total load capacity, and cargo capacity.
 - B. Calculating total and cargo capacities with varying seating configurations including quantitative examples showing / illustrating how the vehicles cargo and luggage capacity decreases as combined number and size of occupants' increases. This item is also discussed in Section 3.
 - C. Determining compatibility of tire and vehicle load capabilities.
 - D. Adverse safety consequences of overloading on handling and stopping on tires.

1.1. STEPS FOR DETERMINING CORRECT LOAD LIMIT – TRAILER

Determining the load limits of a trailer includes more than understanding the load limits of the tires alone. On all trailers there is a Federal certification/VIN label that is located on the forward half of the left (road) side of the unit. This certification/VIN label will indicate the trailer's Gross Vehicle Weight Rating (GVWR). This is the most weight the fully loaded trailer can weigh. It will also provide the Gross Axle Weight Rating (GAWR). This is the most a particular axle can weigh. If there are multiple axles, the GAWR of each axle will be provided.

If your trailer has a GVWR of 10,000 pounds or less, there is a vehicle placard located in the same location as the certification label described above. This placard provides tire and loading information. In addition, this placard will show a statement regarding maximum cargo capacity. Cargo can be added to the trailer, up to the maximum weight specified on the placard. The combined weight of the cargo is provided as a single number. In any case, remember: the total weight of a fully loaded trailer can not exceed the stated GVWR.

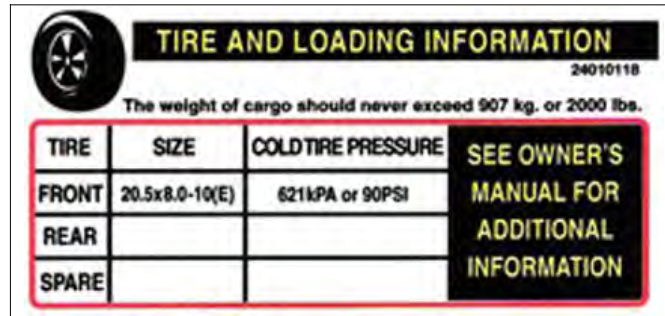
For trailers with living quarters installed, the weight of water and propane also need to be considered. The weight of fully filled propane containers is considered part of the weight of the trailer before it is loaded with cargo, and is not considered part of the disposable cargo load. Water however, is a disposable cargo weight and is treated as such. If there is a fresh water storage tank of 100 gallons, this tank when filled would weigh about 800 pounds. If more cargo is being transported, water can be off-loaded to keep the total amount of cargo added to the vehicle within the limits of the GVWR so as not to overload the vehicle. Understanding this flexibility will allow you, the owner, to make choices that fit your travel needs.

When loading your cargo, be sure it is distributed evenly to prevent overloading front to back and side to side. Heavy items should be placed low and as close to the axle positions as reasonable. Too many items on one side may overload a tire. The best way to know the actual weight of the vehicle is to weigh it at a public scale. Talk to your dealer to discuss the weighing methods needed to capture the various weights related to the trailer. This would include the weight empty or unloaded, weights per axle, wheel, hitch or king-pin, and total weight.

Tire Safety Information

Excessive loads and/or underinflation cause tire overloading and, as a result, abnormal tire flexing occurs. This situation can generate an excessive amount of heat within the tire. Excessive heat may lead to tire failure. It is the air pressure that enables a tire to support the load, so proper inflation is critical. The proper air pressure may be found on the certification/VIN label and/or on the Tire Placard. This value should never exceed the maximum cold inflation pressure stamped on the tire.

1.1.1. TRAILERS 10,000 POUNDS GVWR OR LESS



The image shows a placard titled "TIRE AND LOADING INFORMATION" with a tire icon and the number "24010118". Below the title, it states "The weight of cargo should never exceed 907 kg. or 2000 lbs." The placard contains a table with three columns: "TIRE", "SIZE", and "COLD TIRE PRESSURE". The rows are "FRONT", "REAR", and "SPARE". The "FRONT" row has "20.5x8.0-10(E)" under "SIZE" and "621kPa or 90PSI" under "COLD TIRE PRESSURE". To the right of the table, it says "SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION".

TIRE	SIZE	COLD TIRE PRESSURE
FRONT	20.5x8.0-10(E)	621kPa or 90PSI
REAR		
SPARE		

Tire and Loading Information Placard – Figure 1-1

1. Locate the statement, “The weight of cargo should never exceed XXX kg or XXX lbs.,” on your vehicle’s placard. See figure 1-1.
2. This figure equals the available amount of cargo and luggage load capacity.
3. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity.

The trailer’s placard refers to the Tire Information Placard attached adjacent to or near the trailer’s VIN (Certification) label at the left front of the trailer.

1.1.2. TRAILERS OVER 10,000 POUNDS GVWR (NOTE: THESE TRAILERS ARE NOT REQUIRED TO HAVE A TIRE INFORMATION PLACARD ON THE VEHICLE)

1. Determine the empty weight of your trailer by weighing the trailer using a public scale or other means. This step does not have to be repeated.
2. Locate the GVWR (Gross Vehicle Weight Rating) of the trailer on your trailer’s VIN (Certification) label.
3. Subtract the empty weight of your trailer from the GVWR stated on the VIN label. That weight is the maximum available cargo capacity of the trailer and may not be safely exceeded.

1.2. STEPS FOR DETERMINING CORRECT LOAD LIMIT – TOW VEHICLE

1. Locate the statement, “The combined weight of occupants and cargo should never exceed XXX lbs.,” on your vehicle’s placard.
2. Determine the combined weight of the driver and passengers who will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kilograms or XXX pounds.
4. The resulting figure equals the available amount of cargo and luggage capacity. For example, if the “XXX” amount equals 1400 lbs. and there will be five 150 lb. passengers in your vehicle, the amount of available cargo and luggage capacity is 650 lbs. (1400-750 (5 x 150) = 650 lbs.).
5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage capacity calculated in Step # 4.
6. If your vehicle will be towing a trailer, load from your trailer will be transferred to your vehicle. Consult the tow vehicle’s manual to determine how this weight transfer reduces the available cargo and luggage capacity of your vehicle.

1.3. GLOSSARY OF TIRE TERMINOLOGY

Accessory weight

The combined weight (in excess of those standard items which may be replaced) of automatic transmission, power steering, power brakes, power windows, power seats, radio and heater, to the extent that these items are available as factory-installed equipment (whether installed or not).

Tire Safety Information

Bead

The part of the tire that is made of steel wires, wrapped or reinforced by ply cords and that is shaped to fit the rim.

Bead separation

This is the breakdown of the bond between components in the bead.

Bias ply tire

A pneumatic tire in which the ply cords that extend to the beads are laid at alternate angles substantially less than 90 degrees to the centerline of the tread.

Carcass

The tire structure, except tread and sidewall rubber which, when inflated, bears the load.

Chunking

The breaking away of pieces of the tread or sidewall.

Cold inflation pressure

The pressure in the tire before you drive.

Cord

The strands forming the plies in the tire.

Cord separation

The parting of cords from adjacent rubber compounds.

Cracking

Any parting within the tread, sidewall, or inner liner of the tire extending to cord material.

CT

A pneumatic tire with an inverted flange tire and rim system in which the rim is designed with rim flanges pointed radially inward and the tire is designed to fit on the underside of the rim in a manner that encloses the rim flanges inside the air cavity of the tire.

Curb weight

The weight of a motor vehicle with standard equipment including the maximum capacity of fuel, oil, and coolant, and, if so equipped, air conditioning and additional weight optional engine.

Extra load tire

A tire designed to operate at higher loads and at higher inflation pressures than the corresponding standard tire.

Groove

The space between two adjacent tread ribs.

Gross Axle Weight Rating

The maximum weight that any axle can support, as published on the Certification / VIN label on the front left side of the trailer. Actual weight determined by weighing each axle on a public scale, with the trailer attached to the towing vehicle.

Gross Vehicle Weight Rating

The maximum weight of the fully loaded trailer, as published on the Certification / VIN label. Actual weight determined by weighing trailer on a public scale, without being attached to the towing vehicle.

Hitch Weight

The downward force exerted on the hitch ball by the trailer coupler.

Innerliner

The layer(s) forming the inside surface of a tubeless tire that contains the inflating medium within the tire.

Innerliner separation

The parting of the innerliner from cord material in the carcass.

Tire Safety Information

Intended outboard sidewall

The sidewall that contains a white-wall, bears white lettering or bears manufacturer, brand, and/or model name molding that is higher or deeper than the same molding on the other sidewall of the tire or the outward facing sidewall of an asymmetrical tire that has a particular side that must always face outward when mounted on a vehicle.

Light truck (LT) tire

A tire designated by its manufacturer as primarily intended for use on lightweight trucks or multipurpose passenger vehicles.

Load rating

The maximum load that a tire is rated to carry for a given inflation pressure.

Maximum load rating

The load rating for a tire at the maximum permissible inflation pressure for that tire.

Maximum permissible inflation pressure

The maximum cold inflation pressure to which a tire may be inflated.

Maximum loaded vehicle weight

The sum of curb weight, accessory weight, vehicle capacity weight, and production options weight.

Measuring rim

The rim on which a tire is fitted for physical dimension requirements.

Pin Weight

The downward force applied to the 5th wheel or gooseneck ball, by the trailer kingpin or gooseneck coupler.

Non-pneumatic rim

A mechanical device which, when a non-pneumatic tire assembly incorporates a wheel, supports the tire, and attaches, either integrally or separably, to the wheel center member and upon which the tire is attached.

Non-pneumatic spare tire assembly

A non-pneumatic tire assembly intended for temporary use in place of one of the pneumatic tires and rims that are fitted to a passenger car in compliance with the requirements of this standard.

Non-pneumatic tire

A mechanical device which transmits, either directly or through a wheel or wheel center member, the vertical load and tractive forces from the roadway to the vehicle, generates the tractive forces that provide the directional control of the vehicle and does not rely on the containment of any gas or fluid for providing those functions.

Non-pneumatic tire assembly

A non-pneumatic tire, alone or in combination with a wheel or wheel center member, which can be mounted on a vehicle.

Normal occupant weight

This means 68 kilograms (150 lbs.) times the number of occupants specified in the second column of Table I of 49 CFR 571.110.

Occupant distribution

The distribution of occupants in a vehicle as specified in the third column of Table I of 49 CFR 571.110.

Open splice

Any parting at any junction of tread, sidewall, or innerliner that extends to cord material.

Outer diameter

The overall diameter of an inflated new tire.

Overall width

The linear distance between the exteriors of the sidewalls of an inflated tire, including elevations due to labeling, decorations, or protective bands or ribs.

Ply

A layer of rubber-coated parallel cords.

Ply separation

A parting of rubber compound between adjacent plies.

Pneumatic tire

A mechanical device made of rubber, chemicals, fabric and steel or other materials, that, when mounted on an automotive wheel, provides the traction and contains the gas or fluid that sustains the load.

Production options weight

The combined weight of those installed regular production options weighing over 2.3 kilograms (5 lbs.) in excess of those standard items which they replace, not previously considered in curb weight or accessory weight, including heavy duty brakes, ride levelers, roof rack, heavy duty battery, and special trim.

Radial ply tire

A pneumatic tire in which the ply cords that extend to the beads are laid at substantially 90 degrees to the centerline of the tread.

Recommended inflation pressure

This is the inflation pressure provided by the vehicle manufacturer on the Tire Information label and on the Certification / VIN tag.

Reinforced tire

A tire designed to operate at higher loads and at higher inflation pressures than the corresponding standard tire.

Rim

A metal support for a tire or a tire and tube assembly upon which the tire beads are seated.

Rim diameter

This means the nominal diameter of the bead seat.

Rim size designation

This means the rim diameter and width.

Rim type designation

This means the industry of manufacturer's designation for a rim by style or code.

Rim width

This means the nominal distance between rim flanges.

Section width

The linear distance between the exteriors of the sidewalls of an inflated tire, excluding elevations due to labeling, decoration, or protective bands.

Sidewall

That portion of a tire between the tread and bead.

Sidewall separation

The parting of the rubber compound from the cord material in the sidewall.

Special Trailer (ST) tire

The "ST" is an indication the tire is for trailer use only.

Test rim

The rim on which a tire is fitted for testing, and may be any rim listed as appropriate for use with that tire.

Tread

That portion of a tire that comes into contact with the road.

Tire Safety Information

Tread rib

A tread section running circumferentially around a tire.

Tread separation

Pulling away of the tread from the tire carcass.

Treadwear indicators (TWI)

The projections within the principal grooves designed to give a visual indication of the degrees of wear of the tread.

Vehicle capacity weight

The rated cargo and luggage load plus 68 kilograms (150 lbs.) times the vehicle's designated seating capacity.

Vehicle maximum load on the tire

The load on an individual tire that is determined by distributing to each axle its share of the maximum loaded vehicle weight and dividing by two.

Vehicle normal load on the tire

The load on an individual tire that is determined by distributing to each axle its share of the curb weight, accessory weight, and normal occupant weight (distributed in accordance with Table I of CRF 49 571.110) and dividing by 2.

Weather side

The surface area of the rim not covered by the inflated tire.

Wheel center member

In the case of a non-pneumatic tire assembly incorporating a wheel, a mechanical device which attaches, either integrally or separably, to the non-pneumatic rim and provides the connection between the non-pneumatic rim and the vehicle; or, in the case of a non-pneumatic tire assembly not incorporating a wheel, a mechanical device which attaches, either integrally or separably, to the non-pneumatic tire and provides the connection between tire and the vehicle.

Wheel-holding fixture

The fixture used to hold the wheel and tire assembly securely during testing.

1.4. TIRE SAFETY - EVERYTHING RIDES ON IT

The National Traffic Safety Administration (NHTSA) has published a brochure (DOT HS 809 361) that discusses all aspects of Tire Safety, as required by CFR 575.6. This brochure is reproduced in part below. It can be obtained and downloaded from NHTSA, free of charge, from the following web site:

http://www.nhtsa.dot.gov/cars/rules/TireSafety/ridesonit/tires_index.html

Studies of tire safety show that maintaining proper tire pressure, observing tire and vehicle load limits (not carrying more weight in your vehicle than your tires or vehicle can safely handle), avoiding road hazards, and inspecting tires for cuts, slashes, and other irregularities are the most important things you can do to avoid tire failure, such as tread separation or blowout and flat tires. These actions, along with other care and maintenance activities, can also:

- Improve vehicle handling
- Help protect you and others from avoidable breakdowns and accidents
- Improve fuel economy
- Increase the life of your tires.

This booklet presents a comprehensive overview of tire safety, including information on the following topics:

- Basic tire maintenance
- Uniform Tire Quality Grading System
- Fundamental characteristics of tires

Use this information to make tire safety a regular part of your vehicle maintenance routine. Recognize that the time you spend is minimal compared with the inconvenience and safety consequences of a flat tire or other tire failure.

1.5. SAFETY FIRST—BASIC TIRE MAINTENANCE

Properly maintained tires improve the steering, stopping, traction, and load-carrying capability of your vehicle. Underinflated tires and overloaded vehicles are a major cause of tire failure. Therefore, as mentioned above, to avoid flat tires and other types of tire failure, you should maintain proper tire pressure, observe tire and vehicle load limits, avoid road hazards, and regularly inspect your tires.

1.5.1. FINDING YOUR VEHICLE'S RECOMMENDED TIRE PRESSURE AND LOAD LIMITS

Tire information placards and vehicle certification labels contain information on tires and load limits. These labels indicate the vehicle manufacturer's information including:

- Recommended tire size
- Recommended tire inflation pressure
- Vehicle capacity weight (VCW—the maximum occupant and cargo weight a vehicle is designed to carry)
- Front and rear gross axle weight ratings (GAWR—the maximum weight the axle systems are designed to carry).

Both placards and certification labels are permanently attached to the trailer near the left front.

1.5.2. UNDERSTANDING TIRE PRESSURE AND LOAD LIMITS

Tire inflation pressure is the level of air in the tire that provides it with load-carrying capacity and affects the overall performance of the vehicle. The tire inflation pressure is a number that indicates the amount of air pressure—measured in pounds per square inch (psi)—a tire requires to be properly inflated. (You will also find this number on the vehicle information placard expressed in kilopascals (kpa), which is the metric measure used internationally.)

Manufacturers of passenger vehicles and light trucks determine this number based on the vehicle's design load limit, that is, the greatest amount of weight a vehicle can safely carry and the vehicle's tire size. The proper tire pressure for your vehicle is referred to as the "recommended cold inflation pressure." (As you will read below, it is difficult to obtain the recommended tire pressure if your tires are not cold.)

Because tires are designed to be used on more than one type of vehicle, tire manufacturers list the "maximum permissible inflation pressure" on the tire sidewall. This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

1.5.3. CHECKING TIRE PRESSURE

It is important to check your vehicle's tire pressure at least once a month for the following reasons:

- Most tires may naturally lose air over time.
- Tires can lose air suddenly if you drive over a pothole or other object or if you strike the curb when parking.
- With radial tires, it is usually not possible to determine underinflation by visual inspection.

For convenience, purchase a tire pressure gauge to keep in your vehicle. Gauges can be purchased at tire dealerships, auto supply stores, and other retail outlets.

The recommended tire inflation pressure that vehicle manufacturers provide reflects the proper psi when a tire is cold. The term cold does not relate to the outside temperature. Rather, a cold tire is one that has not been driven on for at least three hours. When you drive, your tires get warmer, causing the air pressure within them to increase. Therefore, to get an accurate tire pressure reading, you must measure tire pressure when the tires are cold or compensate for the extra pressure in warm tires.

Tire Safety Information

1.5.4. STEPS FOR MAINTAINING PROPER TIRE PRESSURE

- Step 1: Locate the recommended tire pressure on the vehicle's tire information placard, certification label, or in the owner's manual.
- Step 2: Record the tire pressure of all tires.
- Step 3: If the tire pressure is too high in any of the tires, slowly release air by gently pressing on the tire valve stem with the edge of your tire gauge until you get to the correct pressure.
- Step 4: If the tire pressure is too low, note the difference between the measured tire pressure and the correct tire pressure. These "missing" pounds of pressure are what you will need to add.
- Step 5: At a service station, add the missing pounds of air pressure to each tire that is underinflated.
- Step 6: Check all the tires to make sure they have the same air pressure (except in cases in which the front and rear tires are supposed to have different amounts of pressure).

If you have been driving your vehicle and think that a tire is underinflated, fill it to the recommended cold inflation pressure indicated on your vehicle's tire information placard or certification label. While your tire may still be slightly underinflated due to the extra pounds of pressure in the warm tire, it is safer to drive with air pressure that is slightly lower than the vehicle manufacturer's recommended cold inflation pressure than to drive with a significantly underinflated tire. Since this is a temporary fix, don't forget to recheck and adjust the tire's pressure when you can obtain a cold reading.

1.5.5. TIRE SIZE

To maintain tire safety, purchase new tires that are the same size as the vehicle's original tires or another size recommended by the manufacturer. Look at the tire information placard, the owner's manual, or the sidewall of the tire you are replacing to find this information. If you have any doubt about the correct size to choose, consult with the tire dealer.

1.5.6. TIRE TREAD

The tire tread provides the gripping action and traction that prevent your vehicle from slipping or sliding, especially when the road is wet or icy. In general, tires are not safe and should be replaced when the tread is worn down to 1/16 of an inch. Tires have built-in treadwear indicators that let you know when it is time to replace your tires. These indicators are raised sections spaced intermittently in the bottom of the tread grooves. When they appear "even" with the outside of the tread, it is time to replace your tires. Another method for checking tread depth is to place a penny in the tread with Lincoln's head upside down and facing you. If you can see the top of Lincoln's head, you are ready for new tires.

1.5.7. TIRE BALANCE AND WHEEL ALIGNMENT

To avoid vibration or shaking of the vehicle when a tire rotates, the tire must be properly balanced. This balance is achieved by positioning weights on the wheel to counterbalance heavy spots on the wheel-and-tire assembly. A wheel alignment adjusts the angles of the wheels so that they are positioned correctly relative to the vehicle's frame. This adjustment maximizes the life of your tires. These adjustments require special equipment and should be performed by a qualified technician.

1.5.8. TIRE REPAIR

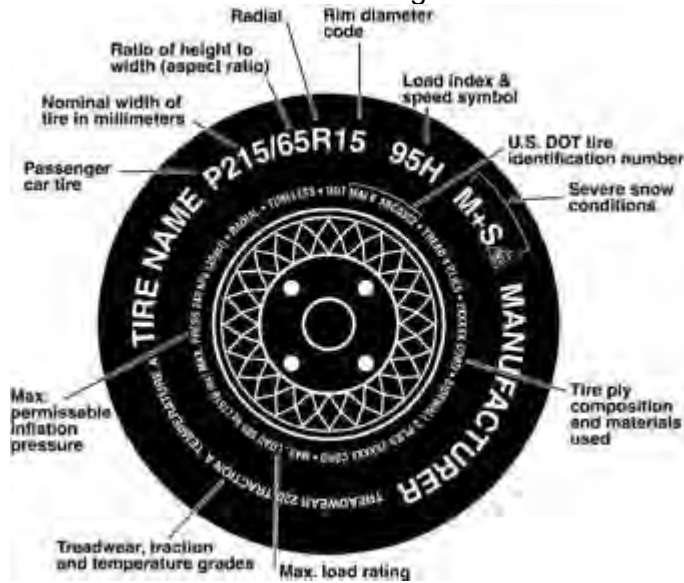
The proper repair of a punctured tire requires a plug for the hole and a patch for the area inside the tire that surrounds the puncture hole. Punctures through the tread can be repaired if they are not too large, but punctures to the sidewall should not be repaired. Tires must be removed from the rim to be properly inspected before being plugged and patched.

1.5.9. TIRE FUNDAMENTALS

Federal law requires tire manufacturers to place standardized information on the sidewall of all tires. This information identifies and describes the fundamental characteristics of the tire and also provides a tire identification number for safety standard certification and in case of a recall.

1.5.9.1. Information on Passenger Vehicle Tires

Please refer to the diagram below.



P

The "P" indicates the tire is for passenger vehicles.

Next number

This three-digit number gives the width in millimeters of the tire from sidewall edge to sidewall edge. In general, the larger the number, the wider the tire.

Next number

This two-digit number, known as the aspect ratio, gives the tire's ratio of height to width. Numbers of 70 or lower indicate a short sidewall for improved steering response and better overall handling on dry pavement.

R

The "R" stands for radial. Radial ply construction of tires has been the industry standard for the past 20 years.

Next number

This two-digit number is the wheel or rim diameter in inches. If you change your wheel size, you will have to purchase new tires to match the new wheel diameter.

Next number

This two- or three-digit number is the tire's load index. It is a measurement of how much weight each tire can support. You may find this information in your owner's manual. If not, contact a local tire dealer. Note: You may not find this information on all tires because it is not required by law.

M+S

The "M+S" or "M/S" indicates that the tire has some mud and snow capability. Most radial tires have these markings; hence, they have some mud and snow capability.

Speed Rating

The speed rating denotes the speed at which a tire is designed to be driven for extended periods of time. The ratings range from 99 miles per hour (mph) to 186 mph. These ratings are listed below. Note: You may not find this information on all tires because it is not required by law.

Tire Safety Information

Letter Rating	Speed Rating
Q	99 mph
R	106 mph
S	112 mph
T	118 mph
U	124 mph
H	130 mph
V	149 mph
W	168* mph
Y	186* mph

* For tires with a maximum speed capability over 149 mph, tire manufacturers sometimes use the letters ZR. For those with a maximum speed capability over 186 mph, tire manufacturers always use the letters ZR.

U.S. DOT Tire Identification Number

This begins with the letters "DOT" and indicates that the tire meets all federal standards. The next two numbers or letters are the plant code where it was manufactured, and the last four numbers represent the week and year the tire was built. For example, the numbers 3197 means the 31st week of 1997. The other numbers are marketing codes used at the manufacturer's discretion. This information is used to contact consumers if a tire defect requires a recall.

Tire Ply Composition and Materials Used

The number of plies indicates the number of layers of rubber-coated fabric in the tire. In general, the greater the number of plies, the more weight a tire can support. Tire manufacturers also must indicate the materials in the tire, which include steel, nylon, polyester, and others.

Maximum Load Rating

This number indicates the maximum load in kilograms and pounds that can be carried by the tire.

Maximum Permissible Inflation Pressure

This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

1.5.9.2. UTQGS Information

Treadwear Number

This number indicates the tire's wear rate. The higher the treadwear number is, the longer it should take for the tread to wear down. For example, a tire graded 400 should last twice as long as a tire graded 200.

Traction Letter

This letter indicates a tire's ability to stop on wet pavement. A higher graded tire should allow you to stop your car on wet roads in a shorter distance than a tire with a lower grade. Traction is graded from highest to lowest as "AA", "A", "B", and "C".

Temperature Letter

This letter indicates a tire's resistance to heat. The temperature grade is for a tire that is inflated properly and not overloaded. Excessive speed, underinflation or excessive loading, either separately or in combination, can cause heat build-up and possible tire failure. From highest to lowest, a tire's resistance to heat is graded as "A", "B", or "C".

8 Technical Data—LTN 6/8K

8.1 Engine

Engine Power Rating

Net power rating per ISO 3046 IFN. Actual power output may vary due to conditions of specific use.

Machine		LTN 6K, LTN 6K-V	LTN 8K, LTN 8K-V
Engine			
Make		Kubota	
Model		D1005	D1105
Type		3-cylinder, 4-cycle, liquid-cooled diesel	
Max. rated power @ rated speed	kW (hp)	9.8 (13.1) @ 1800 rpm	11.5 (15.4) @ 1800 rpm
Operating speed (no-load)	rpm	1800	
Alternator	V / A / W	12 / 15 / 180	
Battery	V/Ah/ccA	12 / 650	
Air cleaner	type	Dry-type element	
Fuel	type	No. 2 diesel	
Fuel tank capacity	L (gal)	123 (32.5)	
Fuel consumption	L (gal) / hr	2.35 (0.61)	3.07 (0.80)
Running time	hours	53.3	40.6
Coolant capacity	L (qt)	5.78 (4.7)	
Oil capacity	L (qt)	3.5 (3.7)	
Oil grade	SAE / API	15W40 / CF or higher	

8.2 Generator

Machine:		LTN 6	LTN 8
Frequency	Hz	60	
Continuous output	kW	6.0	8.0
Output	volts/phase	120/240, 1Ø	
Amps	A	50	
Excitation type		Capacitor / Brushless	
Power factor		1.0	
Voltage regulation - No load to full load	%	± 6.0	
Speed (no-load)	rpm	1800	

8.3

8.4 Machine

Model:		LTN 6K	LTN 8K
Operating weight (GVWR)	kg (lbs)	804 (1772))	825 (1820)
Travel dimensions (l x w x h)	mm (in.)	4600 x 1500 x 1900 (180.4 x 59.3 x 72.3)	
Height - tower extended	m (ft)	9 (30)	
Lighting system (1000W)		4	
Ballast		Coil and core	
Max. lighting coverage @ 5 ft. candles (54 lux)	m ² (ft ²)	1204 (12,960)	
Sound level at 7 m (23 ft.)	db(A)	68	70
Tires	size	ST175 / 80D13	

8.5 Radiation Compliance

This machine meets the radio interference radiated emission requirements of European Standard EN 13309 for Construction Machinery.

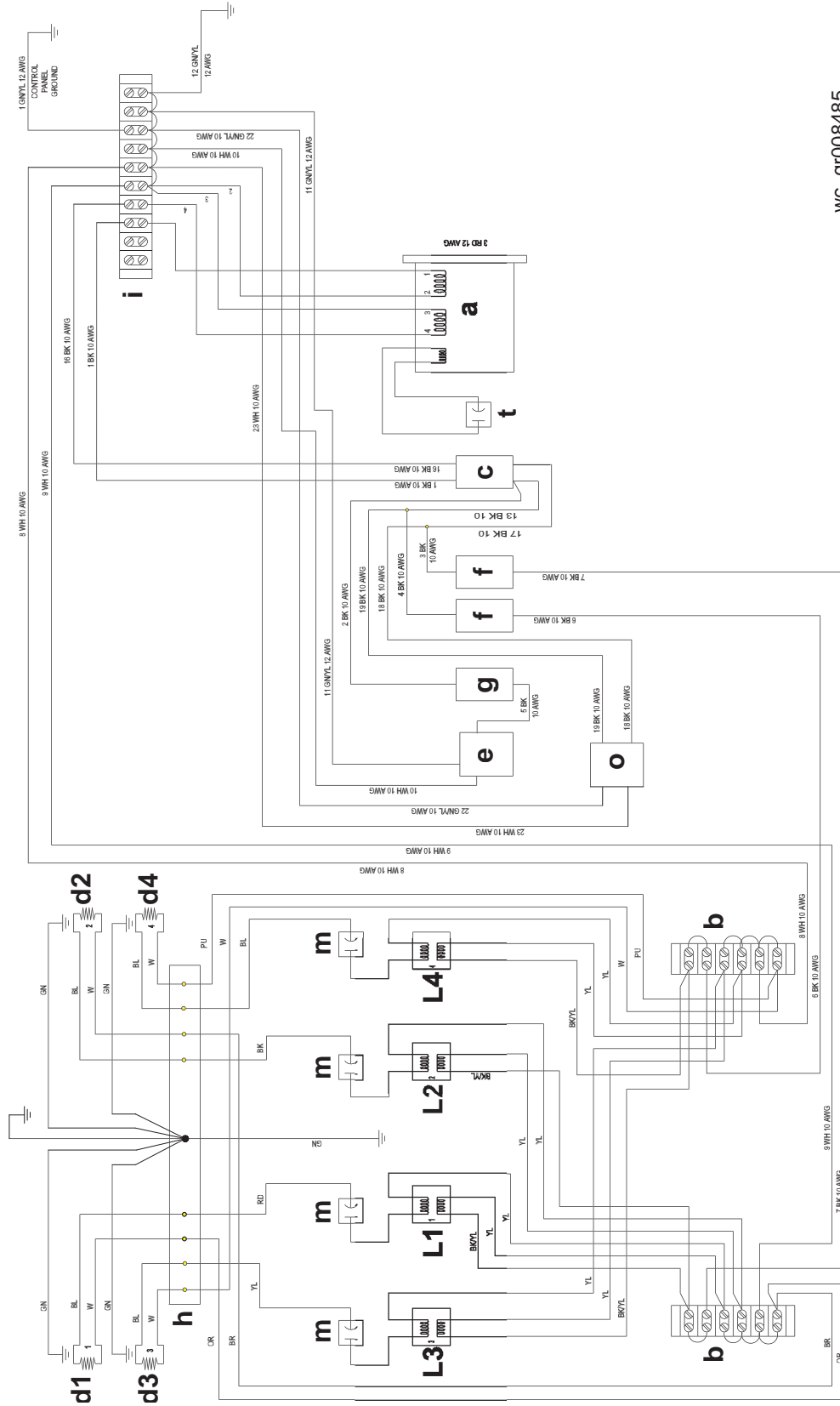
The lamps provided with this machine are electric discharge lamps. They are designed for use with metal halide ballasts only, and require time to reach full brightness on initial startup and after a power interruption. These lamps comply with FDA regulation performance standards 21 CFR 1040-30.





9 Schematics

9.1 Lighting Schematic—LTN 6K



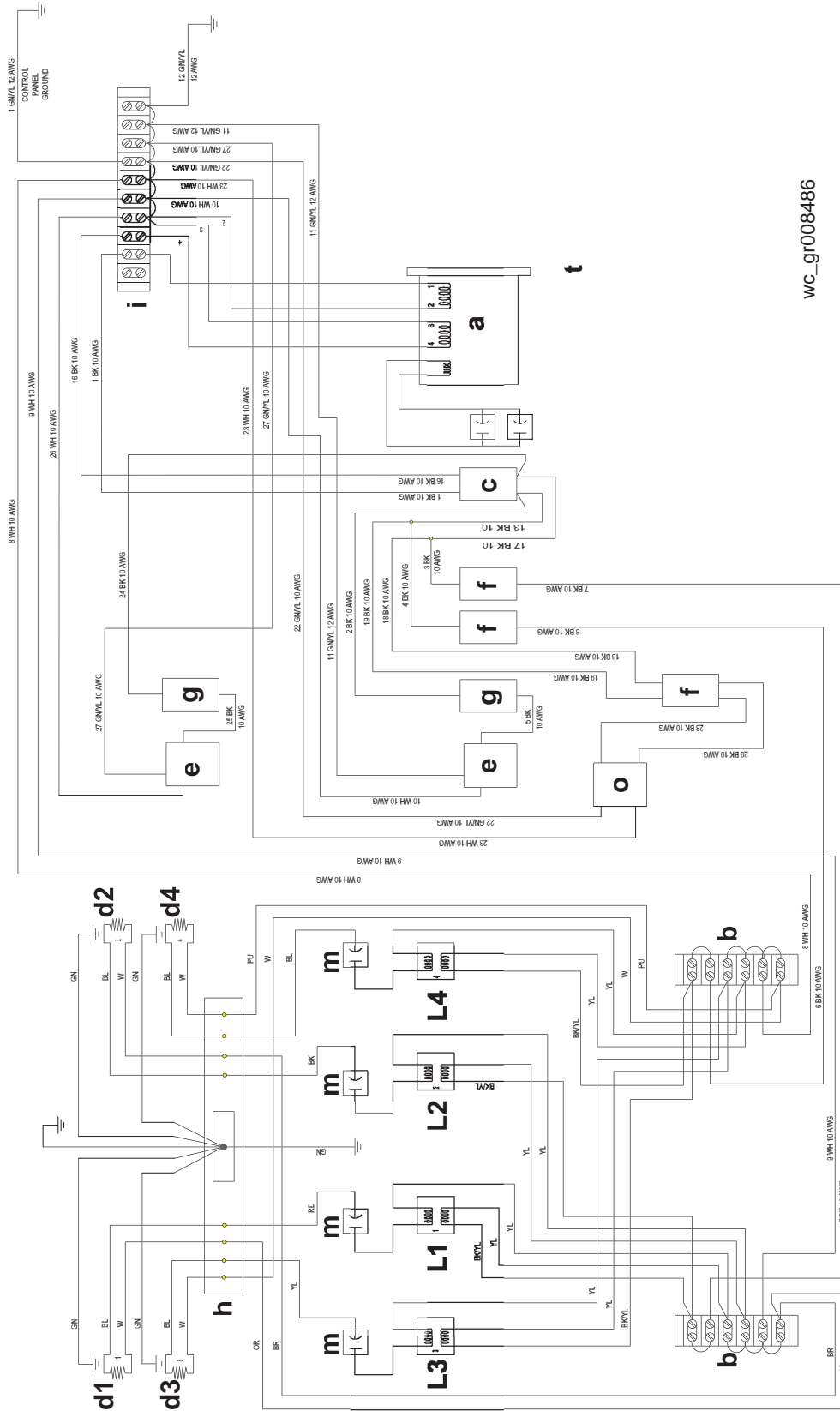
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9.2 Components—LTN 6K

Ref.	Description	Ref.	Description
a	Generator	h	Junction box
b	Terminal strip (short)	i	Terminal strip (long)
c	Main circuit breaker	L	Transformers
d	Floodlights	m	Capacitors, 24 mF
e	Receptacle, 120V GFI	o	Receptacle, 120/240V 30A
f	Circuit breaker, 30A	t	Capacitor, generator excitation
g	Circuit breaker, 20A	—	—

Wire Colors							
BK	Black	RD	Red	YL	Yellow	OR	Orange
GN	Green	TN	Tan	BR	Brown	PU	Purple
BU	Blue	VIO	Violet	CL	Clear	SH	Shield
PK	Pink	WH	White	GY	Gray	LB	Lt. blue

9.3 Lighting Schematic—LTN 8K



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9.4 Components—LTN 8K

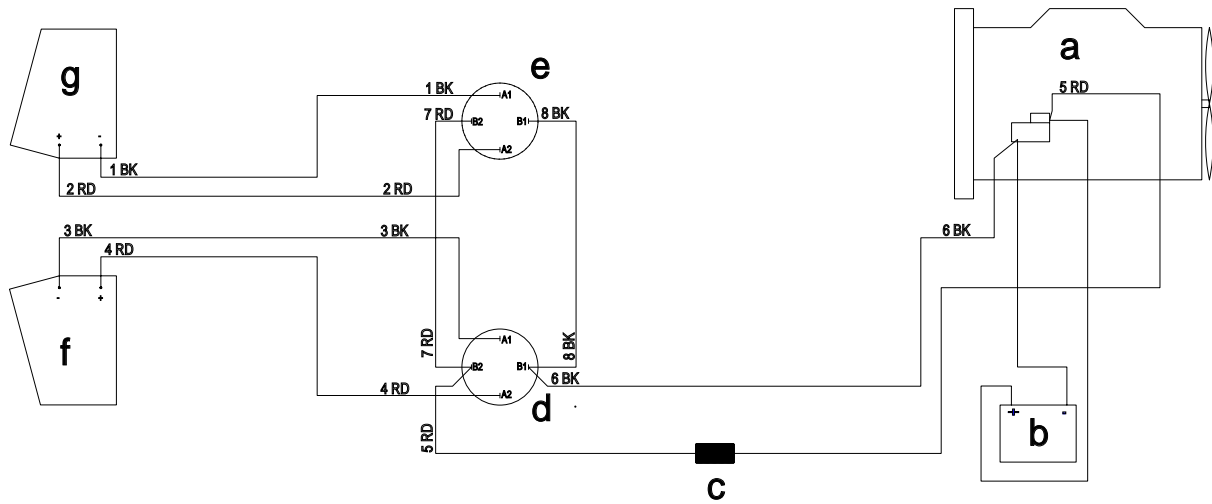
Ref.	Description	Ref.	Description
a	Generator	h	Junction box
b	Terminal strip (short)	i	Terminal strip (long)
c	Main circuit breaker	L	Transformers
d	Floodlights	m	Capacitors, 24 mF
e	Receptacle, 120V GFI	o	Receptacle, 120/240V 30A
f	Circuit breaker, 30A	t	Capacitor, generator excitation
g	Circuit breaker, 20A	—	—

Wire Colors							
BK	Black	RD	Red	YL	Yellow	OR	Orange
GN	Green	TN	Tan	BR	Brown	PU	Purple
BU	Blue	VIO	Violet	CL	Clear	SH	Shield
PK	Pink	WH	White	GY	Gray	LB	Lt. blue

9.6 Components

Ref.	Component	Ref.	Component
a	Shut-down relay	h	Coolant sensor
b	Diode	i	Fuel solenoid
c	Glow plug timer	j	15A fuse
d	Glow plugs	k	Hour meter
e	Starter	m	Battery
f	Alternator	n	Glow plug indicator
g	Oil switch	o	Key switch

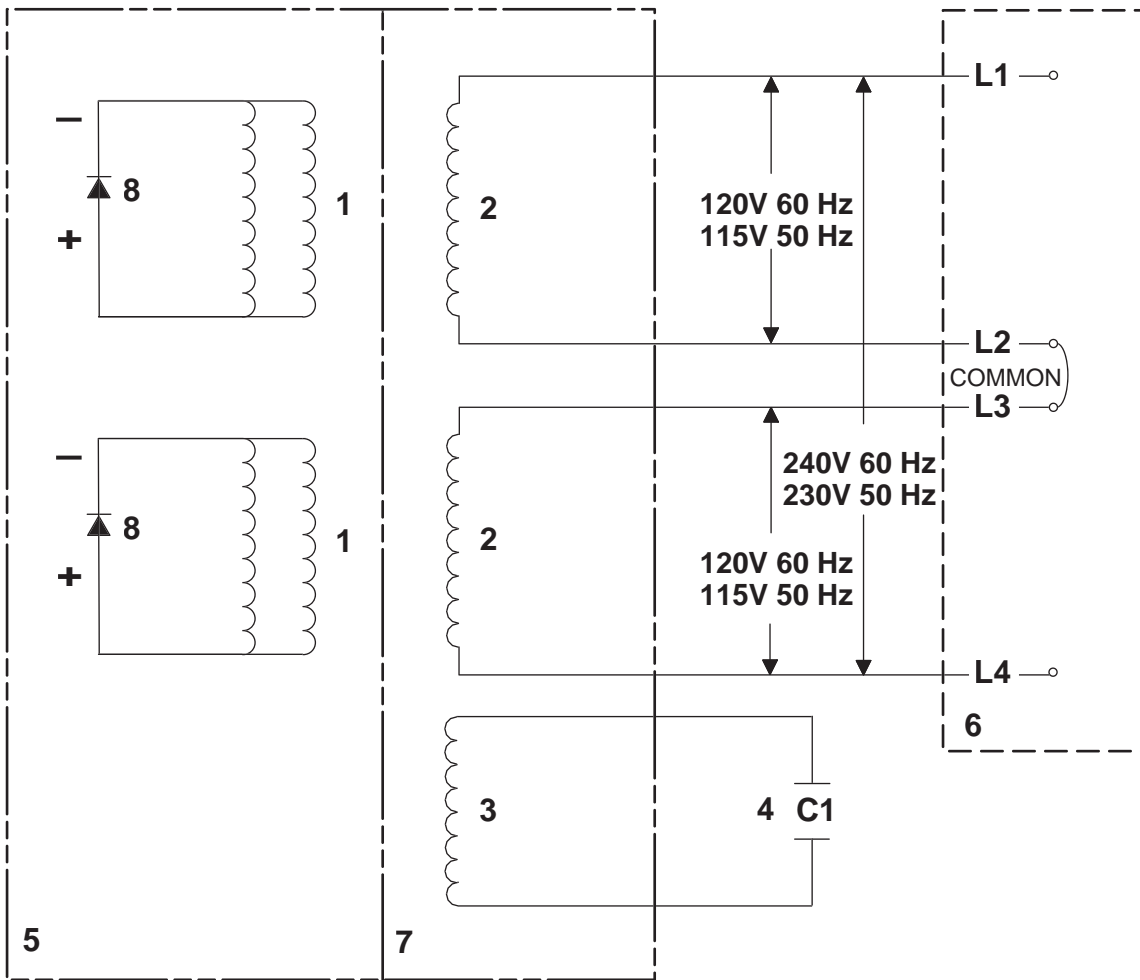
9.7 Power Winch Schematic



wc_gr005371

Ref.	Description	Ref.	Description
a	Engine	e	Telescope switch
b	Battery	f	Tilt winch
c	70A blade fuse	g	Telescope winch
d	Tilt switch		

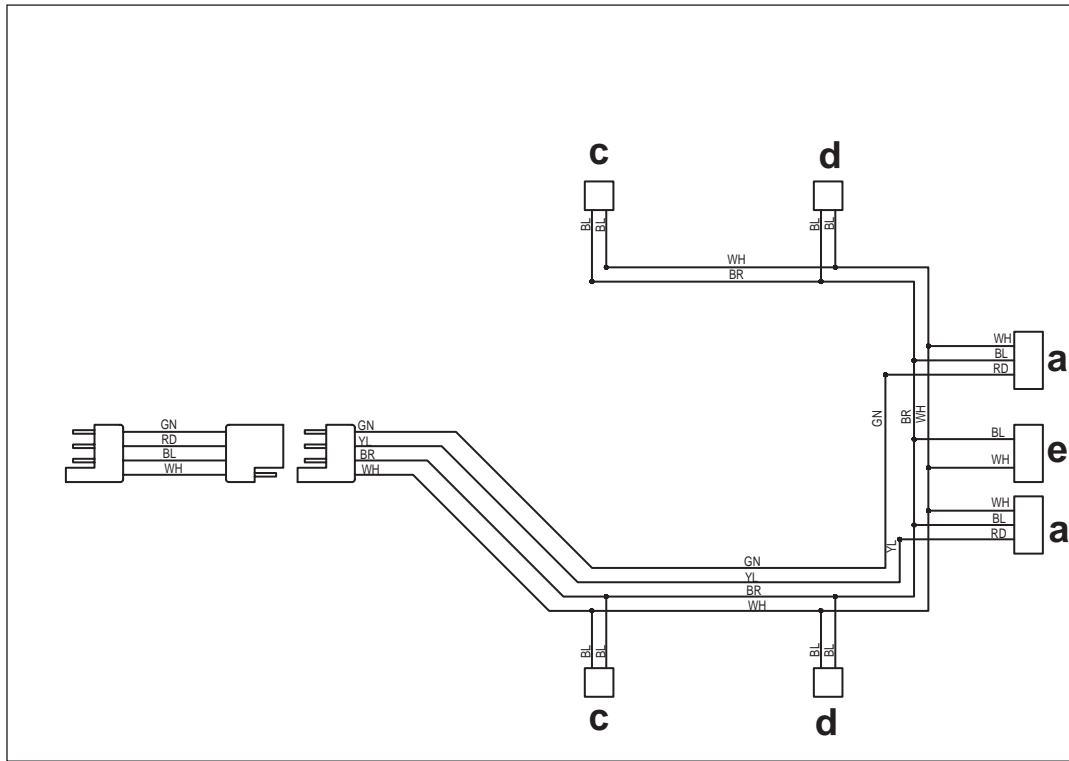
9.8 Generator Capacitor Excitation Schematic



wc_gr011005

Ref.	Description	Ref.	Description
1	Rotor	4	Capacitor
2	Stator	5	Generator/Terminal block
3	Excitation coils	6	Control box, lights

9.9 Trailer Wiring

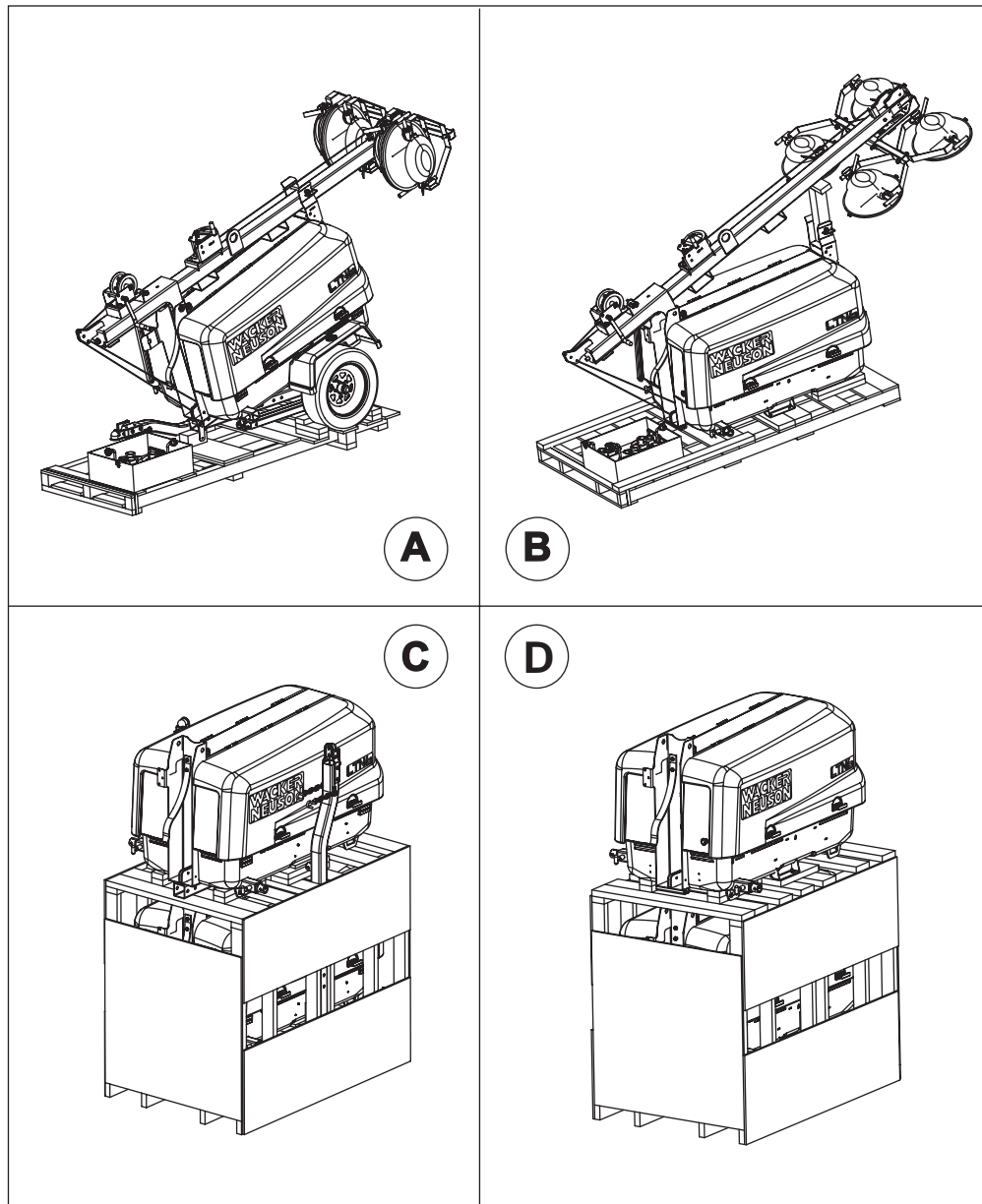


wc_gr005372

Ref.	Description	Ref.	Description
a	Right stop, turn and tail light	d	Side light, red
b	Left stop, turn and tail light	e	License plate light
c	Side light, amber		

Wire Colors							
BK	Black	RD	Red	YL	Yellow	OR	Orange
GN	Green	TN	Tan	BR	Brown	PU	Purple
BU	Blue	VIO	Violet	CL	Clear	SH	Shield
PK	Pink	WH	White	GY	Gray	LB	Lt. blue

Illustrations



wc_gr006517

11 Appendix II—Assembly Safety

11.1 Signal Words Used in this Manual



This is the safety alert symbol. It is used to alert you to potential personal hazards.

- ▶ Obey all safety messages that follow this symbol.



DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

- ▶ To avoid death or serious injury from this type of hazard, obey all safety messages that follow this signal word.
-



WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

- ▶ To avoid possible death or serious injury from this type of hazard, obey all safety messages that follow this signal word.
-



CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

- ▶ To avoid possible minor or moderate injury from this type of hazard, obey all safety messages that follow this signal word.
-

NOTICE: Used without the safety alert symbol, NOTICE indicates a situation which, if not avoided, could result in property damage.

Note: A Note contains additional information important to a procedure.

11.2 Lifting Safety

Overview Some of the assembly procedures in this Manual require the machine to be lifted or supported by slings, chains, hooks, ramps, jacks, or other types of mechanical devices. Follow the guidelines below to avoid personal injury or machine damage.



WARNING

Crushing hazard.

- ▶ Use OSHA-rated and -approved lifting devices capable of lifting the machine. Refer to the general weight guidelines in the *Technical Data* chapter of the Operator's Manual.
-

Safety guidelines

When lifting the machine:

- Make sure slings, chains, hooks, ramps, jacks and other types of lifting devices are attached securely and have enough weight-bearing capacity to lift or support the machine safely.
- Remain aware of the location of other people when lifting the machine.

To reduce the possibility of injury:

- Do not stand under the machine while it is being lifted or moved.
- Do not get onto the machine while it is being lifted or moved.

11.3 Pre-Assembly Checklist

Before assembling the Light Tower, take the following precautions:

Preparing the assembly area

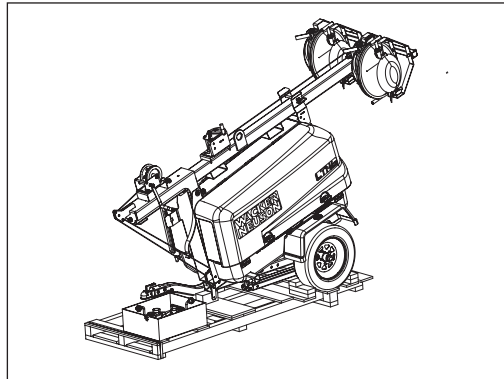
- Make sure the area immediately surrounding the Light Tower is clean, neat, and free of debris.
 - The tower extends up to 9 m (30 ft). Make sure the area above the machine is open and clear of overhead wires and obstructions.
 - Make sure the machine is on a firm, level surface and will not tip, roll, slide, or fall during the assembly process.
-

Before assembly

- Make sure the engine start switch is turned to OFF.
- Make sure the circuit breakers are OFF (open).
- Make sure the negative terminal on the battery is disconnected.
- Make sure water has not accumulated around the base of the machine. If water is present, move the machine to a dry area and allow all components to dry thoroughly before assembly.

12 Appendix III—Standard Pallet Assembly

Scope This set of assembly instructions applies to standard machines shipped on a pallet as shown below.



wc_gr006467

If your machine does not look like the one shown in the illustration, refer to *Machine Identification* in the *Introduction* chapter to identify the appropriate set of assembly instructions.

Tasks To complete the assembly of your Light Tower, the following tasks must be performed in the order listed:

Task	Description	See topic
Outriggers and jacks assembly		
1	Install the outriggers	12.1
2	Install the outrigger jacks	12.1
3	Install the rear jack	12.2
Tongue assembly		
4	Install the tongue	12.3
5	Install the tongue jack	12.3
Upper light installation		
6	Install the upper light fixtures	12.4

Tools and materials

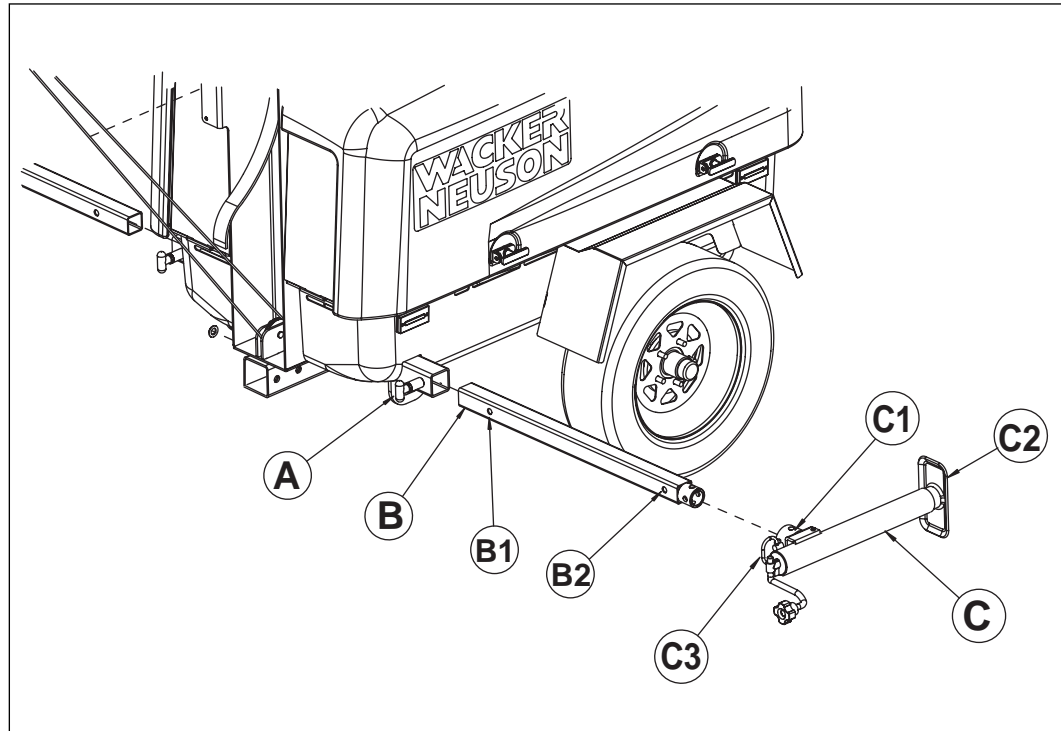
- The following tools and materials are needed:
- Basic hand tools (wrenches, screwdrivers, etc.)
 - Torque wrench
 - Hardware bag: 7

12.1 Installing the Outriggers and Outrigger Jacks

Installing the outriggers

Follow the procedure below to Install the two outriggers. (Use the same procedure for each side of the Light Tower.)

1. Locate the locking pin **(A)** at the outrigger socket.



wc_gr006520

2. Position the outrigger **(B)** so that the holes **(B1** and **B2)** face the same direction as the locking pin.
3. Pull the locking pin and insert the square end of the outrigger into the outrigger socket.
4. Align hole **(B1)** in the outrigger with the locking pin. When hole **(B1)** is aligned, release the locking pin to fasten the outrigger in place.

Installing the outrigger jacks

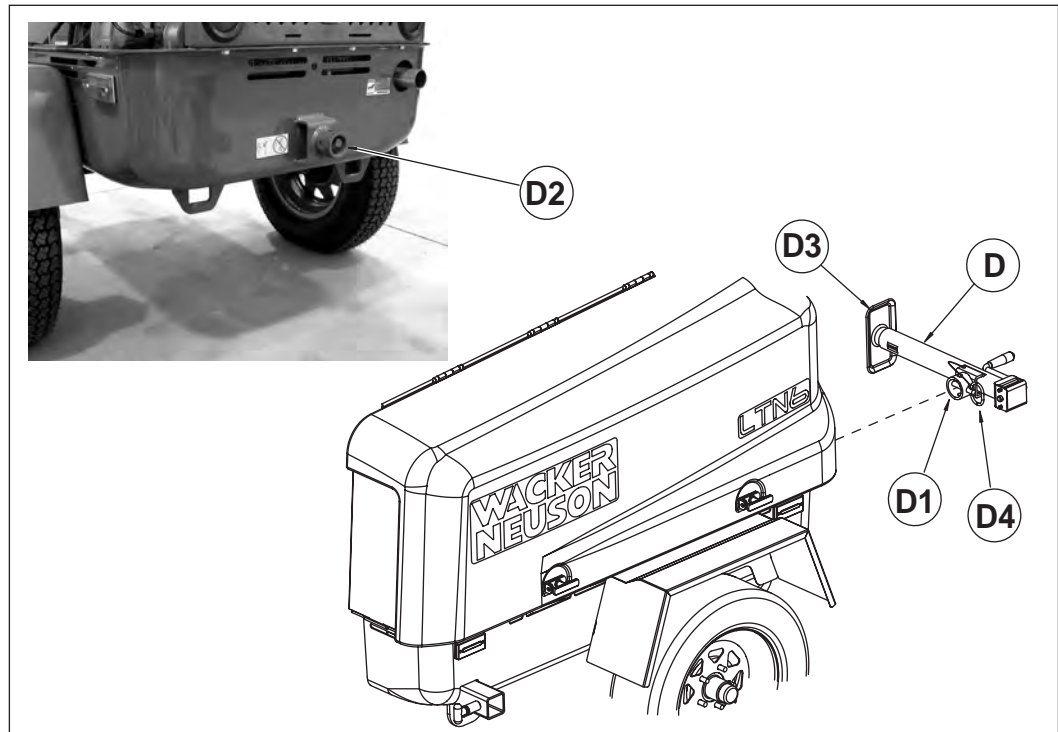
Follow the procedure below to Install the two outrigger jacks. (Use the same procedure for each outrigger jack.)

1. Locate the two 15-inch travel jacks (“outrigger jacks”) **(C)**.
2. If necessary, remove the locking pin **(C3)** from the holes in the outrigger jack.
3. Fit the socket **(C1)** on the outrigger jack over the circular end of the outrigger **(B)**.
4. Rotate the outrigger jack so that the foot **(C2)** rests on the ground.
5. Align the top hole in the outrigger jack socket with the top hole on the outrigger.
6. Insert the locking pin into the holes. Push the locking pin through both sets of holes (top and bottom) to fasten the outrigger jack in place.

12.2 Installing the Rear Jack

Procedure Follow the procedure below to install the rear jack.

1. Locate the 5000 lb.10-inch side crank jack (**D**).



wc_gr006522

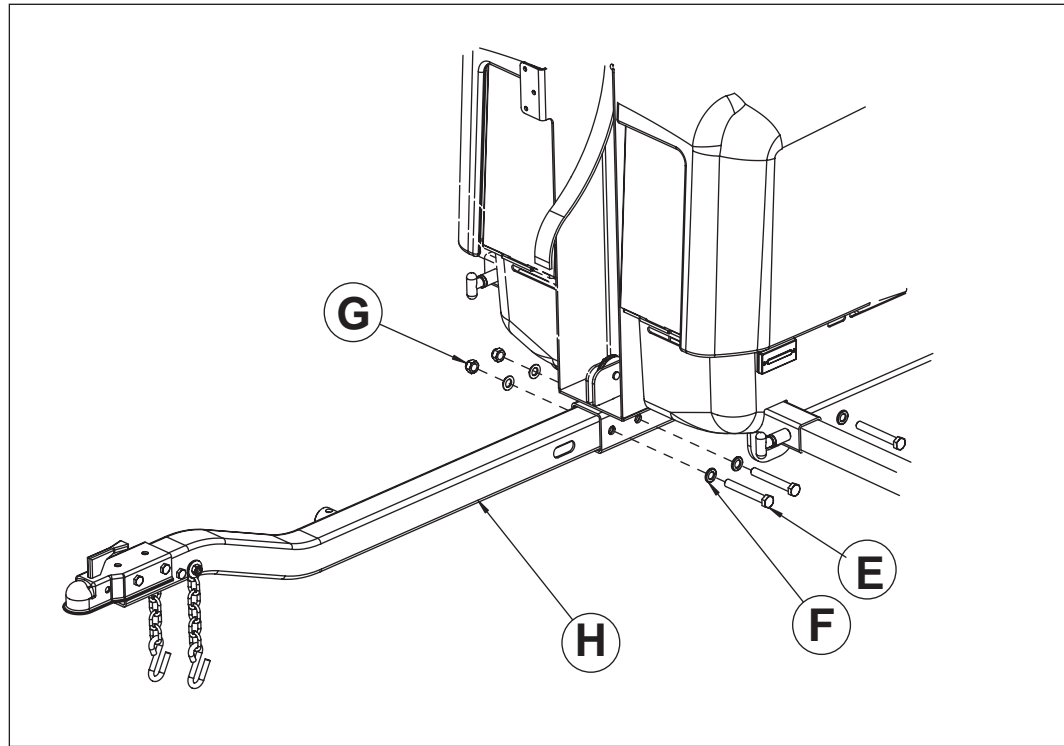
2. If necessary, remove the locking pin (**D4**) from the holes in the jack.
3. Fit the socket (**D1**) over the circular boss (**D2**) on the rear of the machine.
4. Rotate the jack so that the foot (**D3**) rests on the ground.
5. Align the top hole in the socket with the top hole on the circular boss.
6. Insert the locking pin into the holes. Push the locking pin through both sets of holes (top and bottom) to fasten the outrigger jack in place.

12.3 Installing the Tongue Assembly

Scope Installing the tongue assembly consists of installing the tongue and the tongue jack, and connecting the trailer wiring.

Installing the tongue Follow the procedure below to Install the tongue.

1. Insert the tongue (**H**) into the sleeve at the front of the trailer.



wc_gr006523

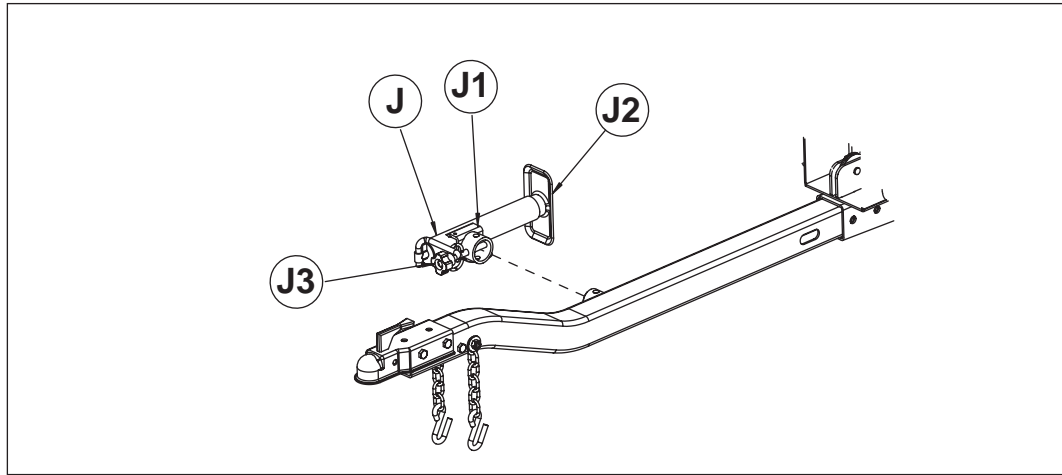
2. Fasten the tongue to the sleeve using the following hardware from Bag 7:
 - (3) M16 x 120 screws (**E**)
 - (6) B17 flat washers (**F**)
 - (3) M16 lock nuts (**G**)

Torque the fasteners to 200 Nm (145 ft.lbs.)

Installing the tongue jack

Follow the procedure below to Install the tongue jack.

1. Locate the 2000 lb. 10-inch travel jack (“tongue jack”) (**J**).

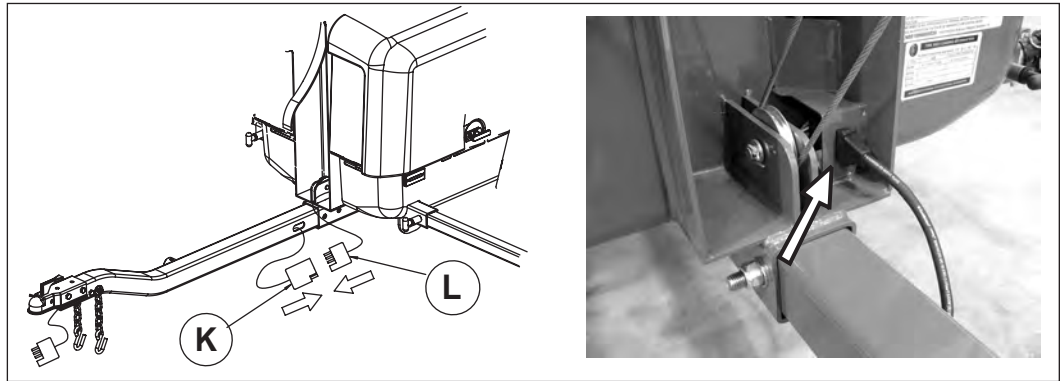


wc_gr006524

2. If necessary, remove the locking pin (**J3**) from the holes in the tongue jack.
3. Fit the socket (**J1**) over the circular boss on the tongue assembly.
4. Rotate the tongue jack so that the foot (**J2**) rests on the ground.
5. Align the top hole in the socket with the top hole on the circular boss.
6. Insert the locking pin into the holes. Push the locking pin through both sets of holes (top and bottom) to fasten the tongue jack in place.

Connecting the trailer wiring

1. Locate connectors (**K**) and (**L**).



wc_gr006525

2. Plug the tongue wiring harness connector (**K**) into tongue wiring harness connector (**L**).
3. Insert connector plug body into the hole on the skid bracket. (See arrow.)

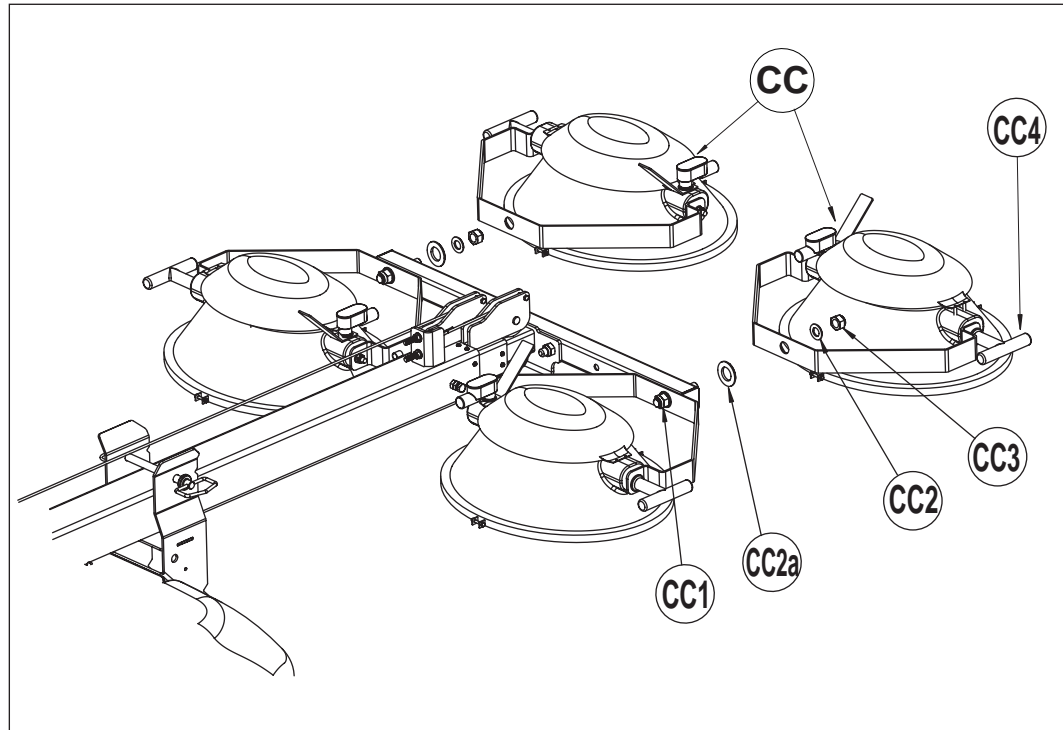
12.4 Installing the Upper Light Fixtures

Materials needed

- Light fixtures (2)
- Hardware bag 6 (tower lights hardware)

Procedure

Follow the procedure below to install the upper light fixtures.



wc_gr007981

Install the two upper light fixtures (**CC**) on the light tube as follows:

1. Position each light fixture on the mounting bolt (**CC1**) so that the lamp is facing downward. Make sure that the “T” handle (**CC4**) faces outward.
2. Fasten each light fixture to the light tube using an M18 lock nut (**CC3**), disk (**CC2a**), and a B19 flat washer (**CC2**).

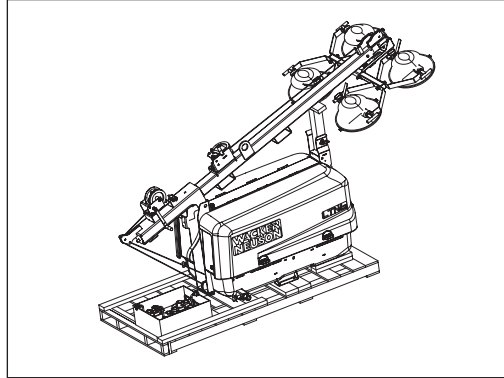
12.5 Conclusion

This completes the assembly procedure for your Light Tower. Refer to your Operator's Manual for instructions on setting up, operating, maintaining, and storing the machine.

13 Appendix IV—CE Pallet Assembly

Overview

This set of assembly instructions applies to CE machines shipped on a pallet as shown below. A palletized CE machine is intended to be mounted on a trailer that meets local regulations. This Manual does not include instructions for mounting a palletized CE machine on a trailer.



wc_gr006468

If your machine does not look like the one shown in the illustration, refer to *Machine Identification* in the *Introduction* chapter to identify the appropriate set of assembly instructions.

Tasks

To complete the assembly of your Light Tower, the following tasks must be performed in the order listed:

Task	Description	See topic
Lift the machine		
1	Lift the machine using appropriate lifting gear	—
Install the jacks		
2	Install the side jacks	13.1
3	Install the rear jack	13.2

Tools and materials

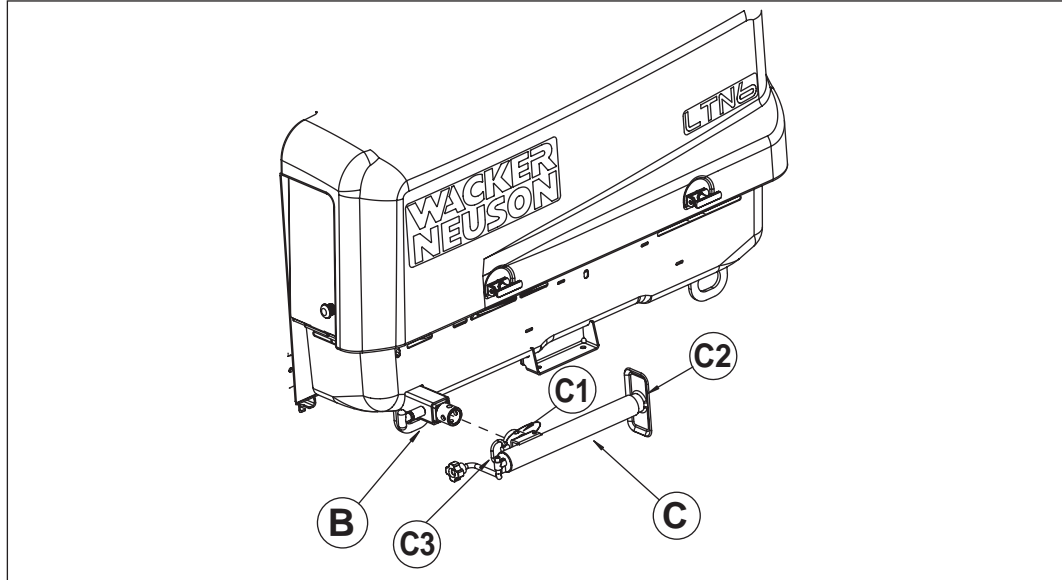
The following tools and materials are needed:

- Appropriate machine lifting gear
- Basic hand tools (wrenches, screwdrivers, etc.)

13.1 Installing the Side Jacks

Procedure Follow the procedure below to attach the two side jacks. (Use the same procedure for each side jack.)

1. Locate the two 15-inch travel jacks **(C)**.



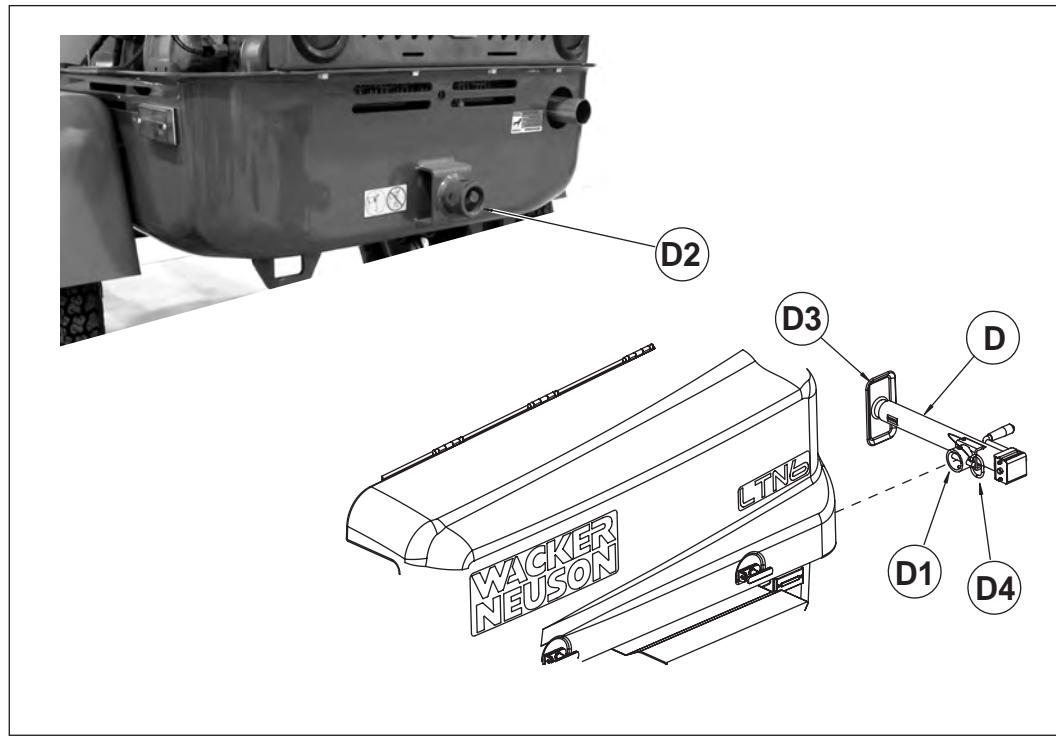
wc_gr006710

2. If necessary, remove the locking pin **(C3)** from the holes in the jack.
3. Fit the jack socket **(C1)** over the circular end of the outrigger **(B)**.
4. Rotate the jack so that the foot **(C2)** rests on the ground.
5. Align the top hole in the socket with the top hole on the outrigger.
6. Insert the locking pin into the holes. Push the locking pin through both sets of holes (top and bottom) to fasten the jack in place.

13.2 Installing the Rear Jack

Procedure Follow the procedure below to install the rear jack.

1. Locate the 5000 lb.10-inch side crank jack (**D**).



wc_gr006711

2. If necessary, remove the locking pin (**D4**) from the holes in the jack.
3. Fit the socket (**D1**) over the circular boss (**D2**) on the rear of the machine.
4. Rotate the jack so that the foot (**D3**) rests on the ground.
5. Align the top hole in the socket with the top hole on the circular boss.
6. Insert the locking pin into the holes. Push the locking pin through both sets of holes (top and bottom) to fasten the outrigger jack in place.

13.3 Conclusion

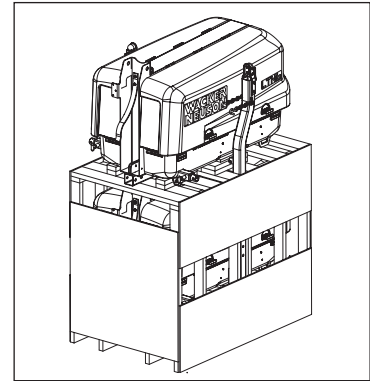
This completes the assembly procedure for your Light Tower. Refer to your Operator's Manual for instructions on setting up, operating, maintaining, and storing the machine.

14 Appendix V—Standard Racked Assembly

Overview

This set of assembly instructions applies to standard machines shipped on a container rack as shown below.

If your machine does not look like the one shown in the illustration, refer to *Machine Identification* in the *Introduction* chapter to identify the appropriate set of assembly instructions.



wc_gr006469

Tasks

To complete the assembly of your Light Tower, the following tasks must be performed in the order listed:

Task	Description	See topic
Chassis assembly		
1	Install the axle	14.1
2	Install the fenders	14.2
3	Install the wheels	14.3
4	Install the outriggers and outrigger jacks	14.4
5	Install the rear jack	14.5
6	Install the tongue assembly	14.6
Tower assembly		
7	Install the tower lock bracket	14.7
8	Install the tower cradle	14.8
9	Install the tower	14.9
10	Install the tower pivot cable	14.10
Lights assembly		
11	Install the lights	14.11
Electrical assembly		
12	Wire the junction box	14.12
13	Route the coil cord	14.13
14	Wire the ballasts and terminal strips	14.14

Tools and materials

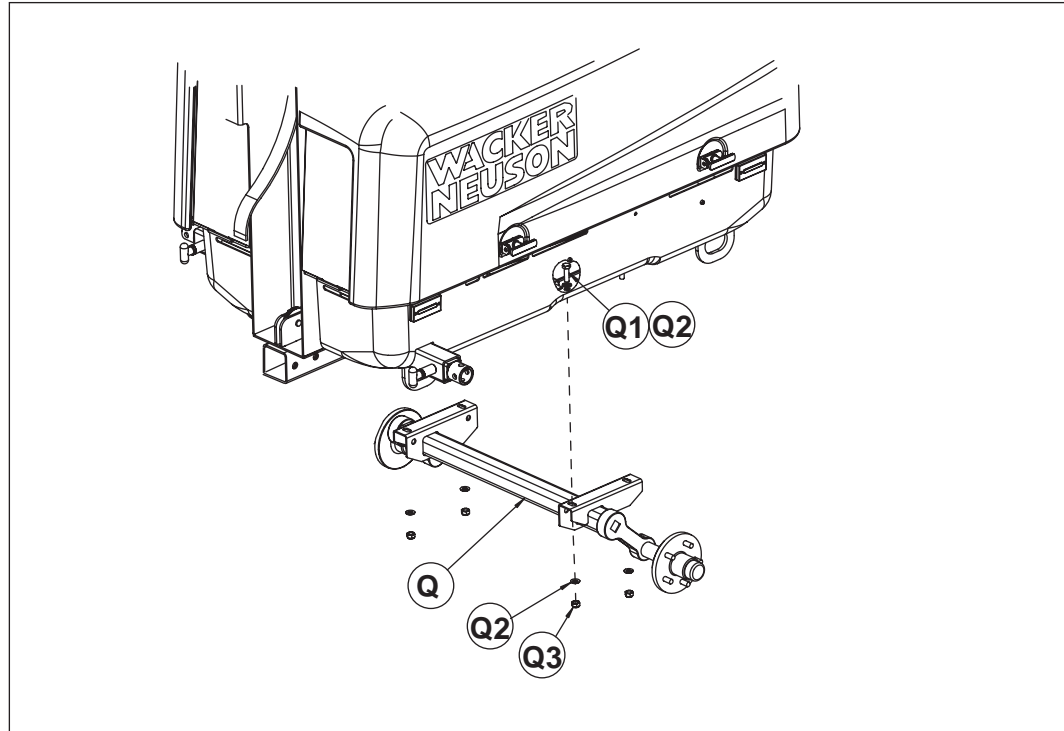
The following tools and materials are needed:

- Basic hand tools (wrenches, screwdrivers, etc.)
- Torque wrench
- Hardware bags: 1, 2, 3, 4, 5, 6, 8, and fabricated parts

14.1 Installing the Axle

Procedure Follow the procedure below to install the axle:

1. Lift the machine using appropriate lifting gear. Refer to topic *Lifting the Machine* in the *Safety Information* chapter.
2. Locate the axle (**Q**) and hardware bag 1.



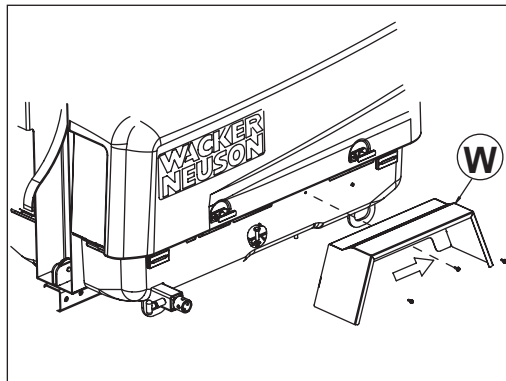
wc_gr006527

3. Install the axle on the trailer using the following hardware:
(4) Bolts (**Q1**), (8) Washers (**Q2**), (4) Nuts (**Q3**).
4. Torque the fasteners to 115 Nm (85 ft.lbs.).

14.2 Installing the Fenders

Procedure Follow the procedure below to Install the fenders.

1. Locate the two fenders **(W)** and hardware bag 2.



wc_gr006528

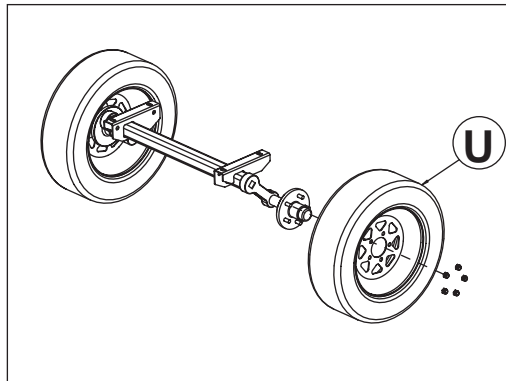
2. Align each fender as shown in the illustration.
3. Install each fender on the Light Tower using (3) M6 x 16 serrated flange screws—but do not tighten the screws until the next step.
4. Slide each fender backward until the mounting screws are located at the front end of the slots. Torque the screws to 16 Nm (11.5 ft.lbs.).

14.3 Installing the Wheels

Installing the wheels

Follow the procedure below to Install the wheels:

1. Locate the two wheels (**U**) and hardware bag 3.



wc_gr006529

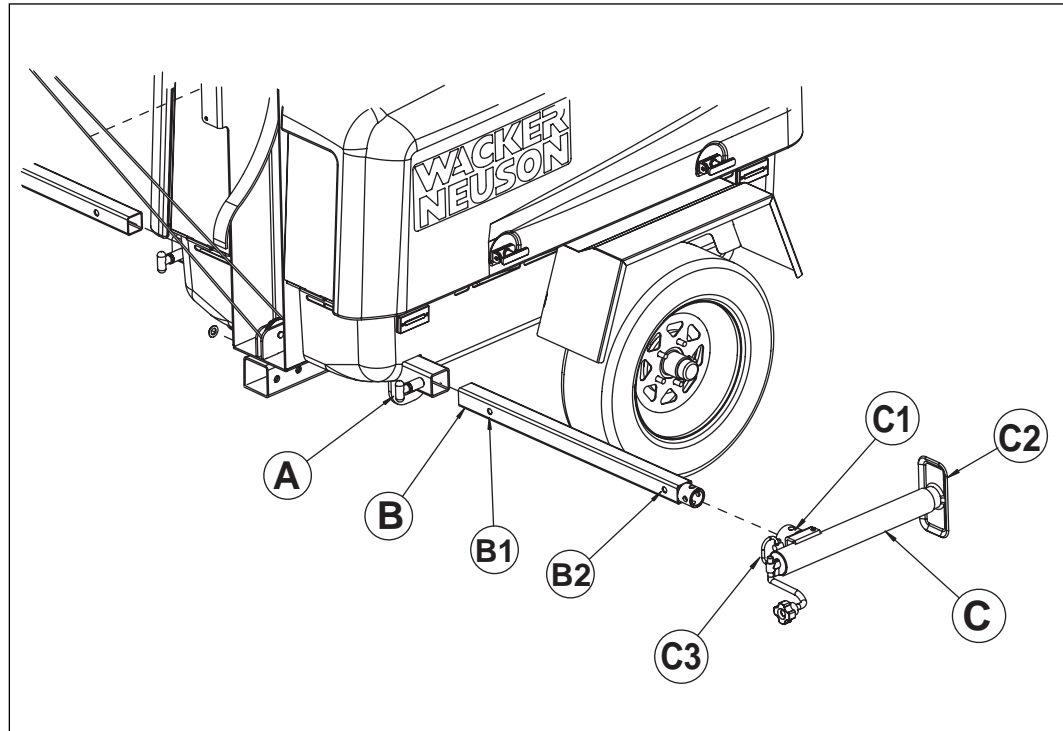
2. Install the wheels on the axle using five lug nuts per wheel. Torque the lug nuts to 115 Nm (85 ft.lbs.).

14.4 Installing the Outriggers and Outrigger Jacks

Installing the outriggers

Follow the procedure below to Install the two outriggers. (Use the same procedure for each side of the Light Tower.)

1. Locate the locking pin **(A)** at the outrigger socket.



wc_gr006520

2. Position the outrigger **(B)** so that the holes **(B1 and B2)** face the same direction as the locking pin.
3. Pull the locking pin and insert the square end of the outrigger into the outrigger socket.
4. Align hole **(B1)** in the outrigger with the locking pin. When hole **(B1)** is aligned, release the locking pin to fasten the outrigger in place.

Installing the outrigger jacks

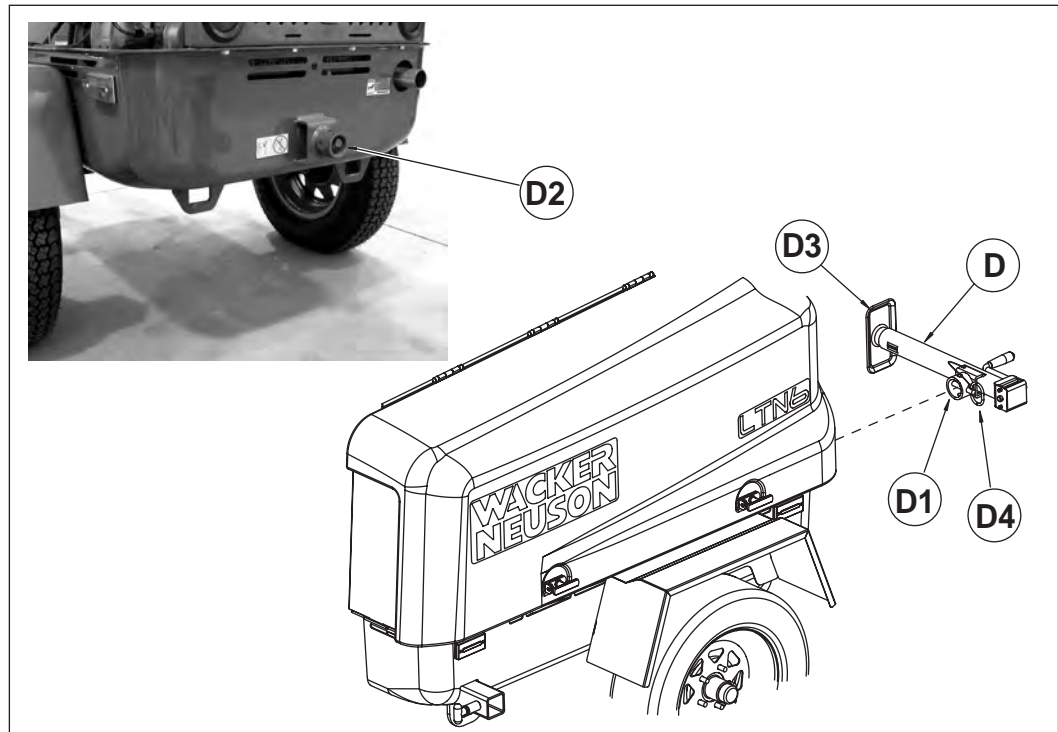
Follow the procedure below to Install the two outrigger jacks. (Use the same procedure for each outrigger jack.)

1. Locate the two 15-inch travel jacks (“outrigger jacks”) **(C)**.
2. If necessary, remove the locking pin **(C3)** from the holes in the outrigger jack.
3. Fit the socket **(C1)** on the outrigger jack over the circular end of the outrigger **(B)**.
4. Rotate the outrigger jack so that the foot **(C2)** rests on the ground.
5. Align the top hole in the outrigger jack socket with the top hole on the outrigger.
6. Insert the locking pin into the holes. Push the locking pin through both sets of holes (top and bottom) to fasten the outrigger jack in place.

14.5 Installing the Rear Jack

Procedure Follow the procedure below to install the rear jack.

1. Locate the 5000 lb.10-inch side crank jack (**D**).



wc_gr006522

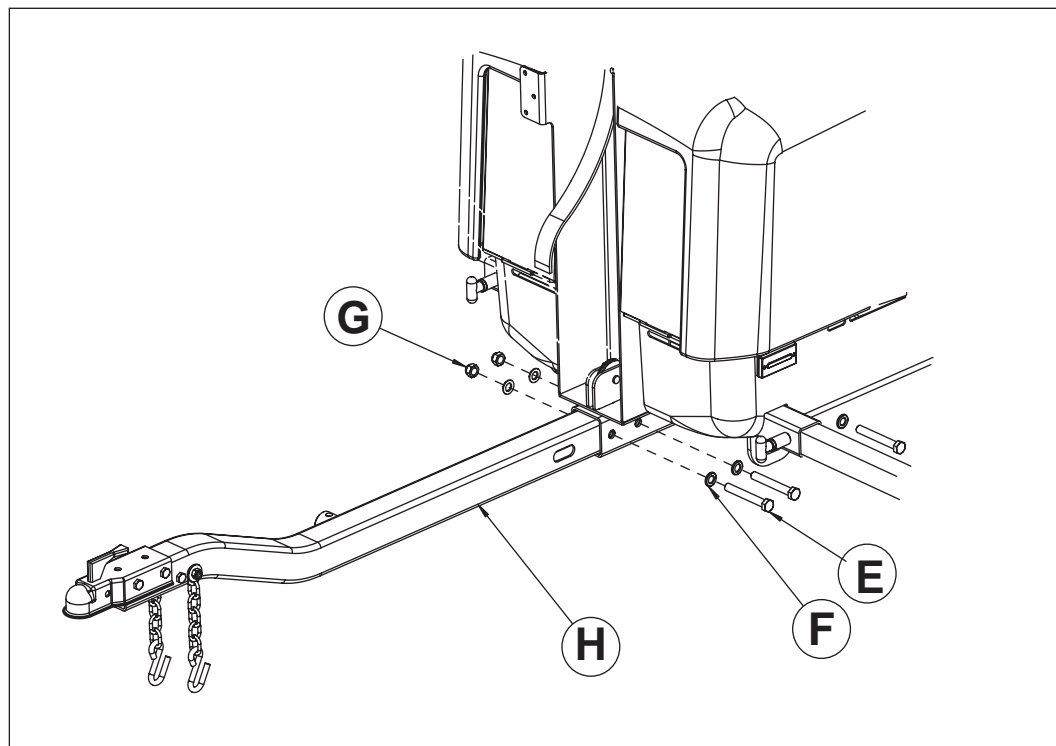
2. If necessary, remove the locking pin (**D4**) from the holes in the jack.
3. Fit the socket (**D1**) over the circular boss (**D2**) on the rear of the machine.
4. Rotate the jack so that the foot (**D3**) rests on the ground.
5. Align the top hole in the socket with the top hole on the circular boss.
6. Insert the locking pin into the holes. Push the locking pin through both sets of holes (top and bottom) to fasten the outrigger jack in place.

14.6 Installing the Tongue Assembly

Scope Installing the tongue assembly consists of installing the tongue and the tongue jack, and connecting the trailer wiring.

Installing the tongue Follow the procedure below to Install the tongue.

1. Insert the tongue (**H**) into the sleeve at the front of the trailer.



wc_gr006523

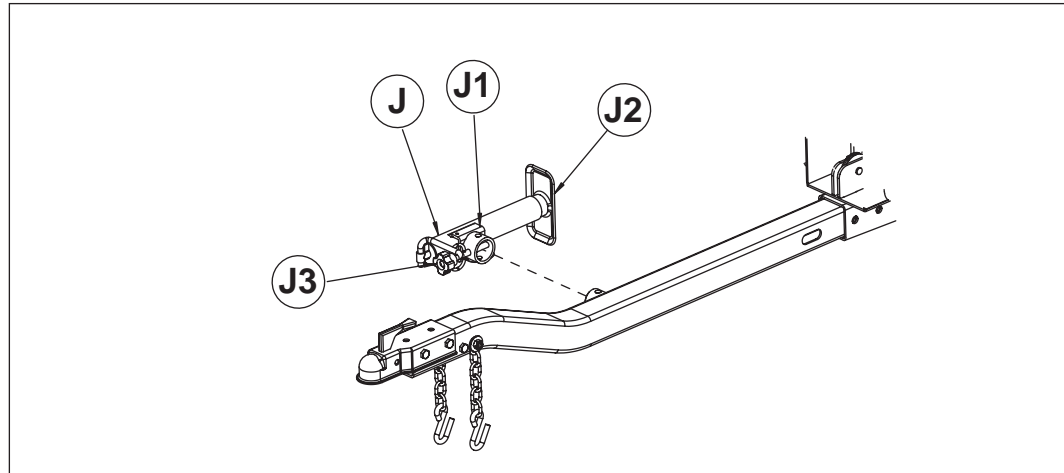
2. Fasten the tongue to the sleeve using the following hardware from Bag 7:
 - (3) M16 x 120 screws (**E**)
 - (6) B17 flat washers (**F**)
 - (3) M16 lock nuts (**G**)

Torque the fasteners to 200 Nm (145 ft.lbs.)

Installing the tongue jack

Follow the procedure below to Install the tongue jack.

1. Locate the 2000 lb. 10-inch travel jack (“tongue jack”) (**J**).

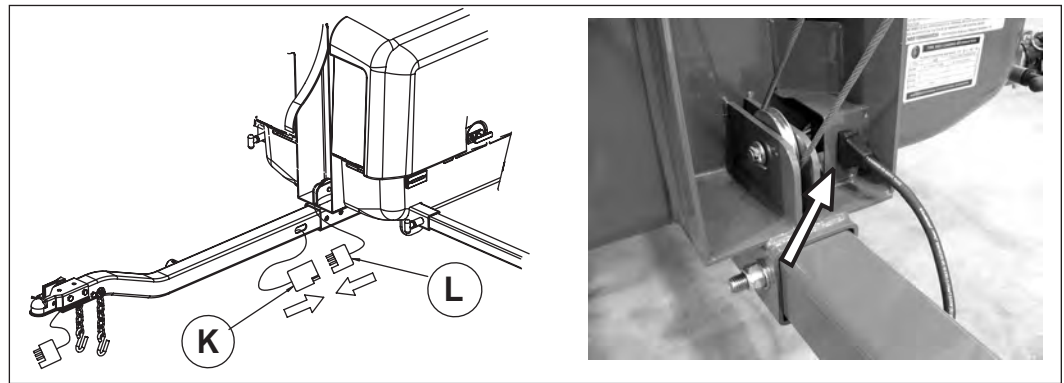


wc_gr006524

2. If necessary, remove the locking pin (**J3**) from the holes in the tongue jack.
3. Fit the socket (**J1**) over the circular boss on the tongue assembly.
4. Rotate the tongue jack so that the foot (**J2**) rests on the ground.
5. Align the top hole in the socket with the top hole on the circular boss.
6. Insert the locking pin into the holes. Push the locking pin through both sets of holes (top and bottom) to fasten the tongue jack in place.

Connecting the trailer wiring

1. Locate connectors (**K**) and (**L**).



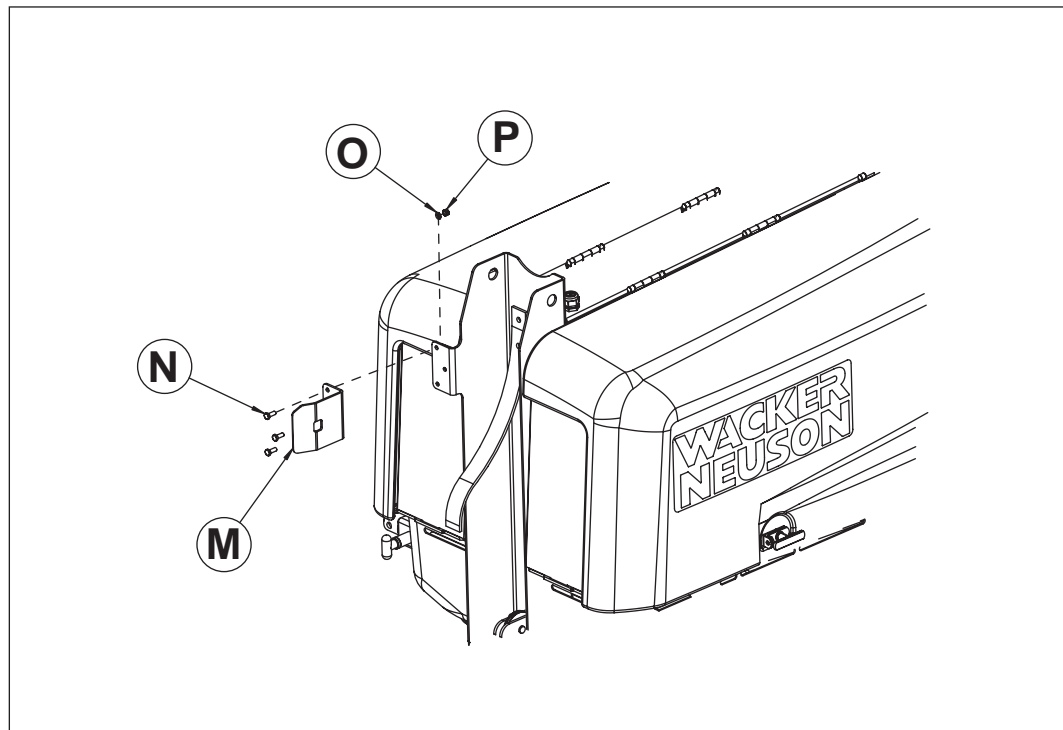
wc_gr006525

2. Plug the tongue wiring harness connector (**K**) into tongue wiring harness connector (**L**).
3. Insert connector plug body into the hole on the skid bracket. (See arrow.)

14.7 Installing the Tower Lock Bracket

Procedure Follow the procedure below to install the tower lock bracket.

1. Locate the following in hardware bag 5:
 - (1) tower lock bracket (**M**)
 - (3) M8 x 20 hex head mounting screws (**N**)
 - (3) M8 flat washers (**O**)
 - (3) M8 lock nuts (**P**)



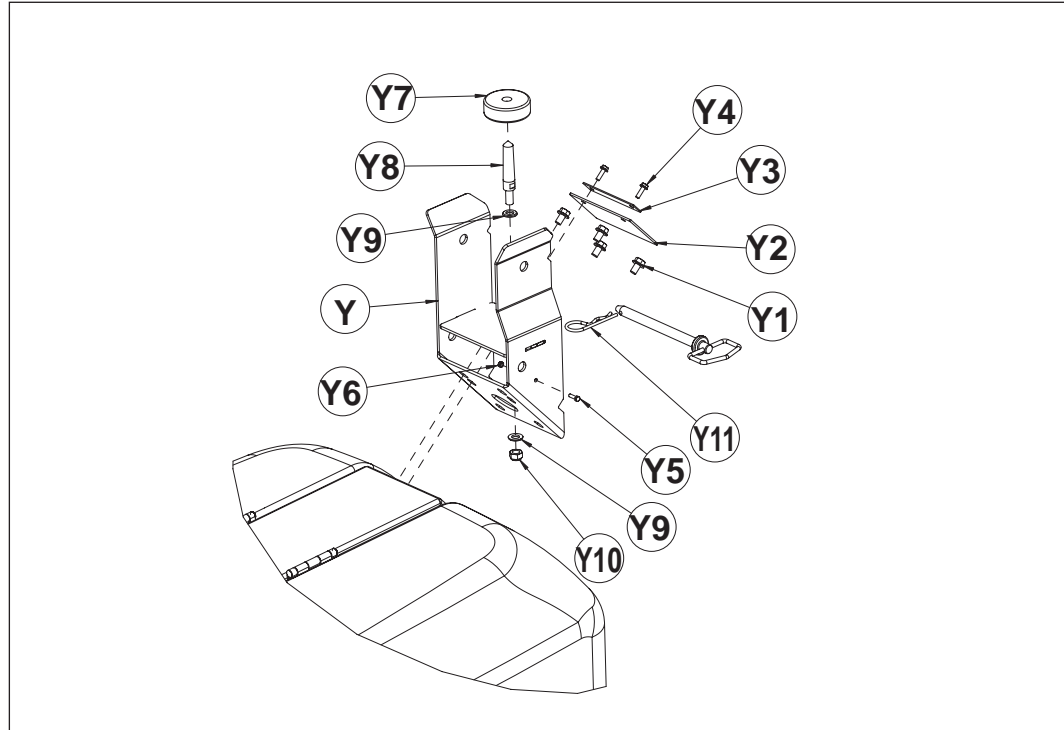
wc_gr006526

2. Install the tower lock bracket on the tower as shown.
3. Torque the mounting screws to 35 Nm (25 ft.lbs.).

14.8 Installing the Tower Cradle

- Materials needed**
- Tower cradle
 - Hardware bag 4 (tower cradle hardware)

Procedure Follow the procedure below to assemble the tower cradle (Y).



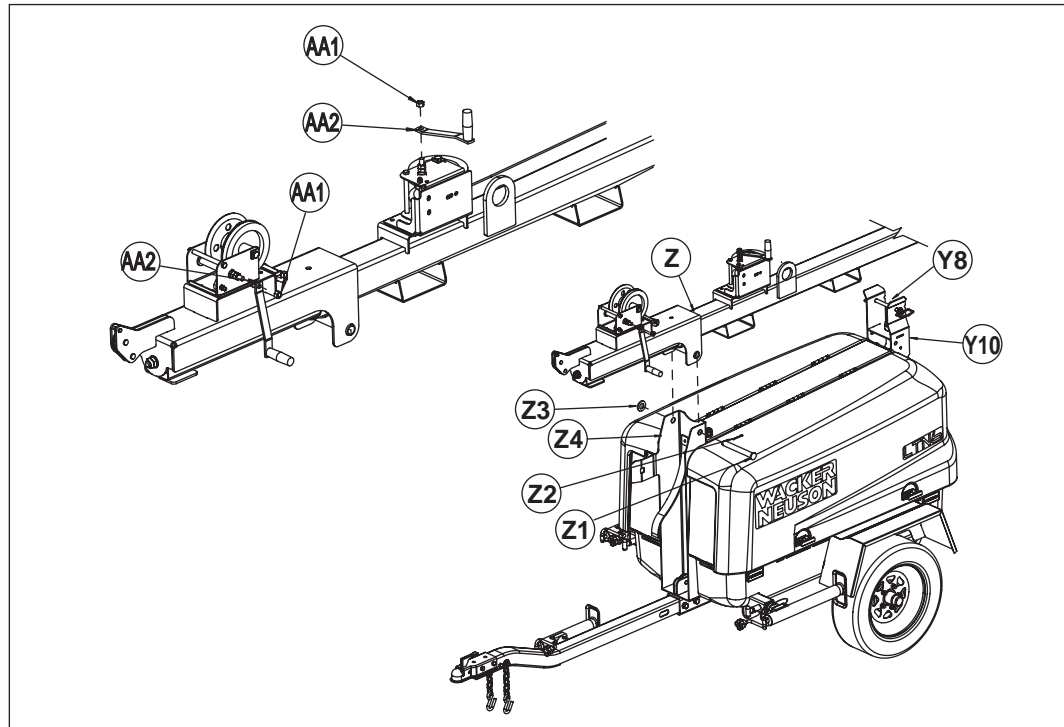
wc_gr006530

1. Using (4) M10 x 16 serrated flange screws (Y1), install the tower cradle to the Light Tower upper frame. Torque the screws to 58 Nm (42.8 ft.lbs.)
2. Using (2) M6 x 20 serrated flange screws (Y4), install the radiator access cover (Y2) and radiator cover plate (Y3) to the tower cradle. Torque the screws to 16 Nm (11.5 ft.lbs.).
3. Using (2) M12 washers (Y9) and the M12 locknut (Y10), install the tower lock pin (Y8) on the tower cradle
Note: Do not tighten locknut Y10 until the next assembly topic (“Installing the Tower”).
4. Place the tower damper (Y7) over the tower lock pin.
Note: The large hole on the tower damper must face down.
5. Install the hitch pin assembly (Y11) to the tower cradle using the M5 x 16 screw (Y5) and the M5 locknut (Y6).

14.9 Installing the Tower

- Materials needed**
- Tower assembly
 - Hardware bag 8 (tower install assembly)

Installing the tower Follow the procedure below to install the tower.



wc_gr006531

1. Align the tower assembly (**Z**) on top of the Light Tower enclosure as shown.
2. Place the tower assembly over the tower lock pin (**Y8**) and secure it with the hitch pin. This will help to keep the tower in alignment for the next step.
3. Insert the clevis pin (**Z1**) through the holes in the tower support (**Z4**) and the tower.
4. Place the 1-inch flat washer (**Z3**) over the end of the clevis pin. Fasten the tower in place with the 3/16-x-2 cotter pin (**Z2**).
5. Adjust the alignment of the tower lock pin (**Y8**) if necessary. Torque lock nut (**Y10**) to 48 Nm (35 ft.lbs.).

Reversing the winch handles The winch handles (**AA2**) are installed backward to protect them from shipping damage. Reverse each handle orientation as follows:

1. Remove the nut (**AA1**) and remove the winch handle from the stem.
2. Turn the winch handle so that the handgrip is oriented as shown in the illustration.
3. Re-install the winch handle and the nut.

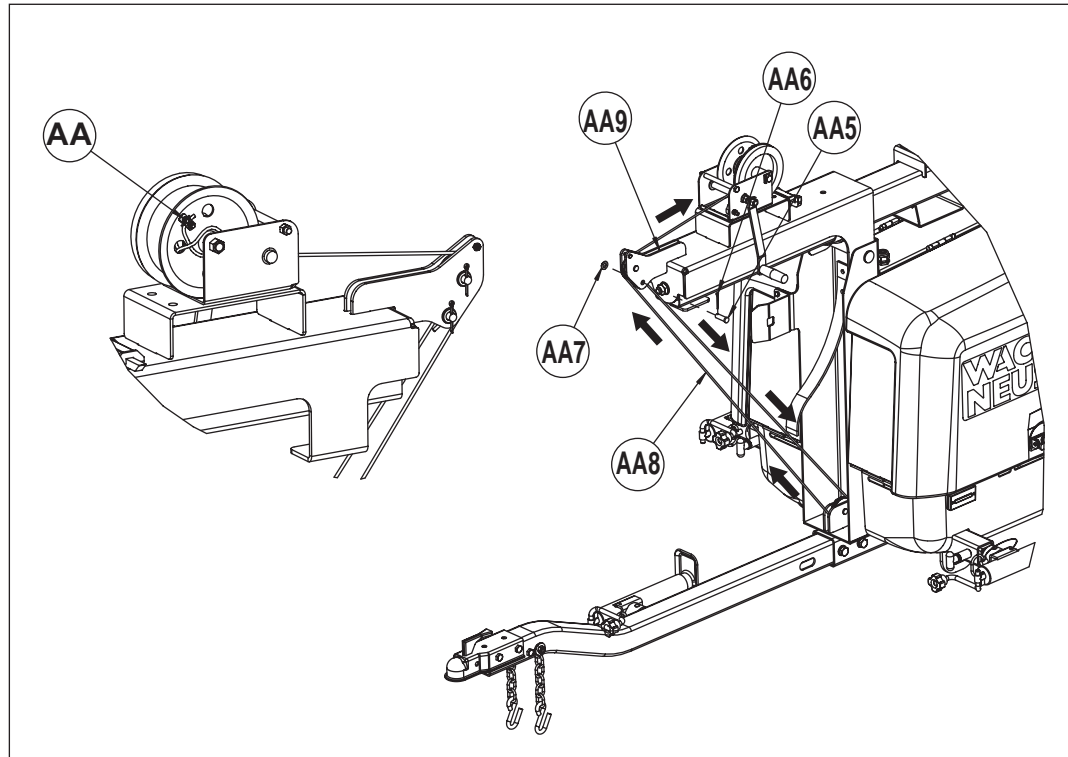
14.10 Installing the Tower Pivot Cable

Materials needed

- Tower pivot cable (**AA8**)
- Hardware Bag 8 (Tower Install Assembly)

Installing the tower

Follow the procedure below to install the tower pivot cable.



wc_gr00653;

1. One end of the tower pivot cable has a loop. Insert the retainer pin (**AA5**) through the hole in the upper pulley mount (**AA9**) and pass it through the cable loop.
2. Place the M12 washer (**AA7**) over the end of the retainer pin and secure it with the cotter pin (**AA6**).
3. Route the free end of the cable around the lower pulley and over the top of the upper pulley. Refer to the directional arrows in the illustration above.
4. Pass the cable below the winch drum and wind it two or three times around the winch drum.
5. Pass the free end of the cable through the hole in the winch drum. Wind the cable once around the bearing drum axle.
6. Loosen the two nuts on the cable retainer (**AA**) and insert the free end of the cable through the retainer so that approximately 1 cm (3/8 in.) of cable extends beyond the retainer. Torque the nuts to 3 Nm (20-30 in.lbs.).
7. Rotate the winch counter-clockwise to take up any slack in the cable.

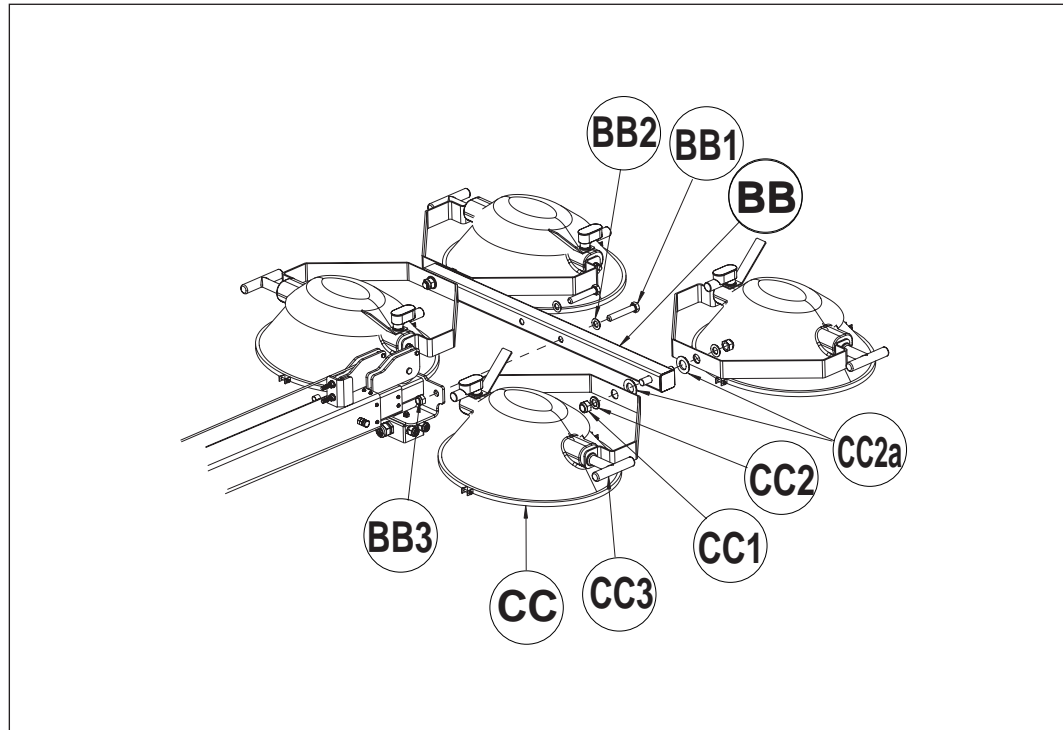
14.11 Installing the Lights

Materials needed

- Light fixtures (4)
- Hardware bag 6 (tower lights hardware)

Procedure

Follow the procedure below to install the lights.



wc_gr006533

1. Install the light mount tube (**BB**) on the tower using (2) M16 x 90 screws (**BB1**), (2) B17 flat washers (**BB2**), and (2) M16 lock nuts (**BB3**). Torque the screws to 83 Nm (60 ft.lbs.)

Install the four light fixtures (**CC**) on the light tube as follows:

1. Position each light fixture so that the lamp is facing downward. Make sure that the “T” handle (**CC3**) faces outward.
2. Install each light fixture on the light mount tube using an M18 lock nut (**CC1**), disk (**CC2a**), and a B19 flat washer (**CC2**).

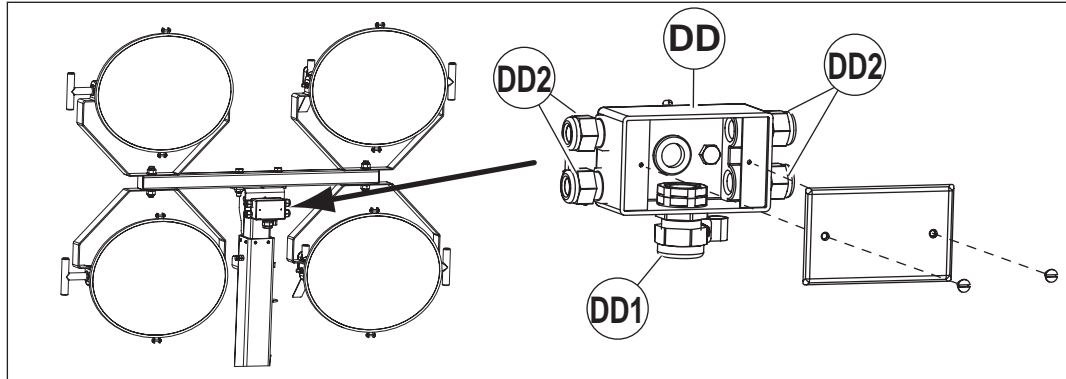
14.12 Connecting the Wiring at the Junction Box

Special tools and materials needed

- Coil cord (GG)
- Panduit® crimper CT-100
- Panduit® crimper CT-1550
- Hardware bag 6

Procedure

Follow the procedure below to connect the wiring at the junction box.



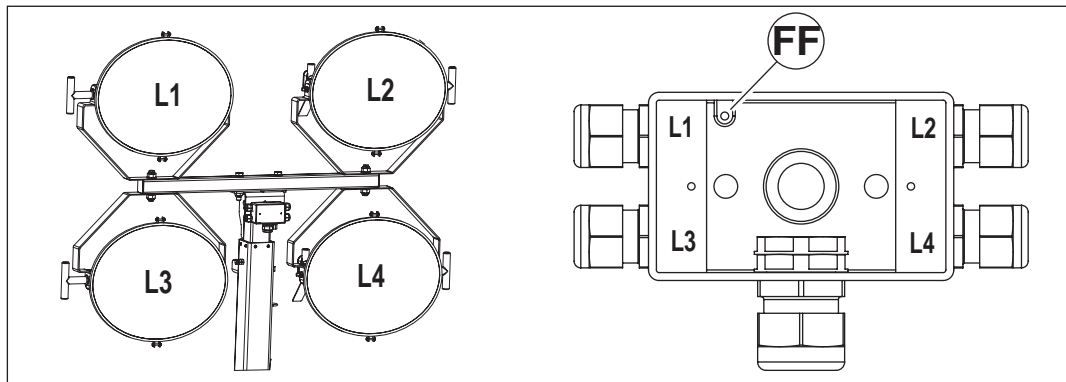
wc_gr006534

Installing the coil cord

1. Remove the screws and the cover plate from the junction box (**DD**).
2. Use two wrenches to loosen the connector (**DD1**) at the bottom of the junction box.
3. Insert the end of the coil cord through the connector so that approximately 1 cm (3/8 in.) of coil cord jacket extends into the junction box. Retighten connector **DD1**.

Installing the fixture cords

4. Use two wrenches to loosen the four connectors (**DD2**) on the sides of the junction box.
5. Refer to the diagram below and insert the fixture cords through the appropriate connectors. Approximately 1 cm (3/8 in.) of each fixture cord jacket should extend into the junction box. Retighten connectors **DD2**.



wc_gr006535

This procedure continues on the next page.

Connecting the wires

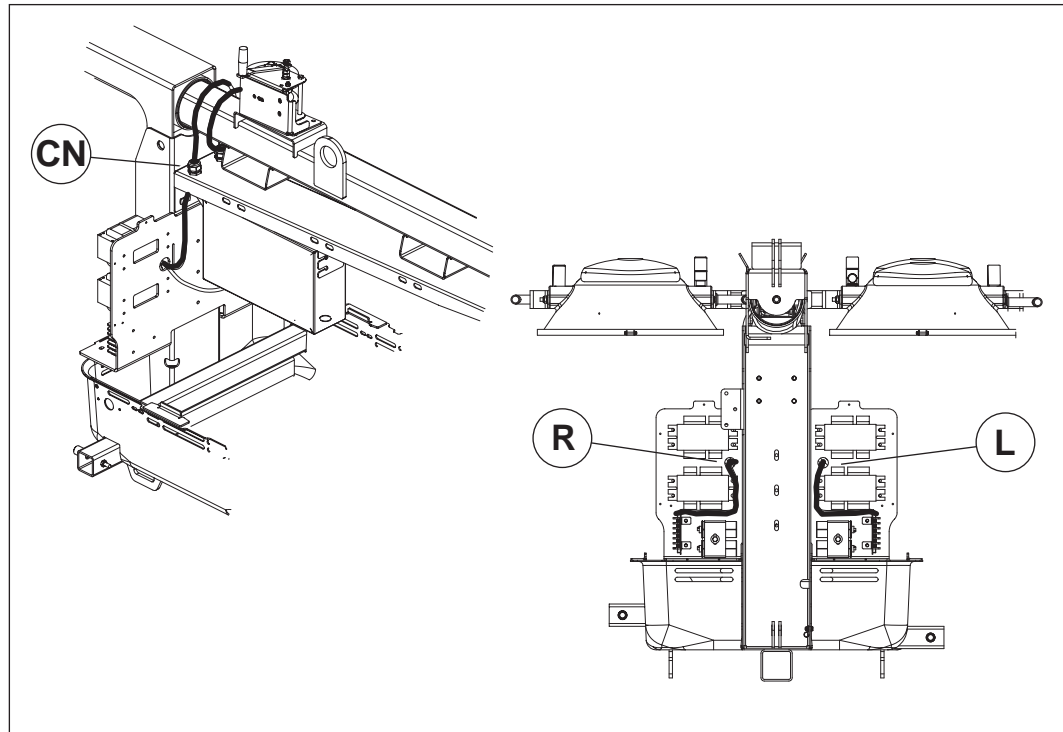
- Refer to the table below and connect the light fixture wires to the coil cord wires. Use the small connectors and Panduit wire crimper CT-100.

Position	Light wire	Coil cord wire
L1	Black	Red
	White	Orange
	Green	—
L2	Black	Black
	White	Brown
	Green	—
L3	Black	Yellow
	White	White
	Green	—
L4	Black	Blue
	White	Purple
	Green	—

- Connect the green wires from the fixture cords and coil cord, along with the green/yellow ground wire, using the large connector and Panduit wire crimper CT-1500.
- Install the ring terminal on the ground wire to the ground screw **(FF)** in the junction box.

14.13 Routing the Coil Cord

Procedure Follow the procedure below to route the coil cord.



wc_gr006536

1. At the base of the tower, wrap the coil cord around the tower twice, creating loops of about 25 cm (10 in.) in diameter.
2. Loosen the connector **(CN)**. Pass the end of the coil cord through the connector so that approximately 1 m (3 ft) of wires extend inside the Light Tower cabinet, and re-tighten the connector **(CN)**.
3. Insert the red, black, brown, and orange wires from the coil cord into one of the supplied looms. Pass this loom through the ballast bracket on the right side of the machine **(R)**.
4. Insert the yellow, blue, white, purple, and green wires from the coil cord into the second loom. Pass this loom through the ballast bracket on the left side of the machine **(L)**.

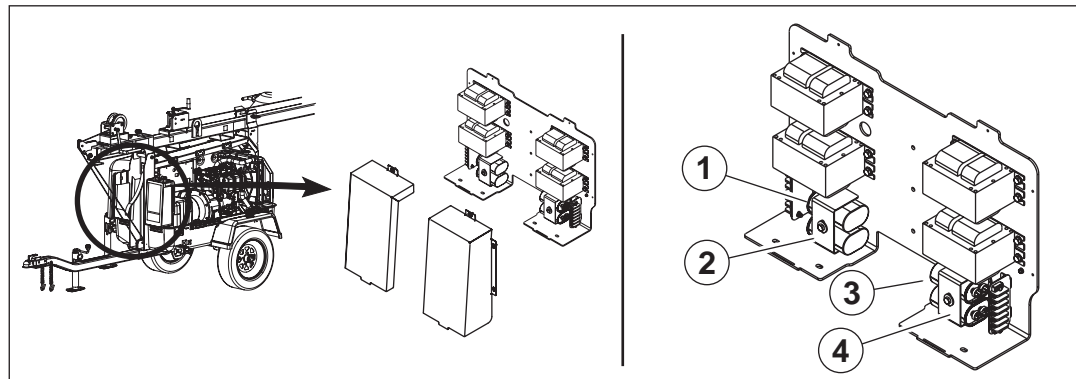
14.14 Wiring the Ballasts and Terminal Strips

Procedure Follow the procedure below to wire the ballasts and terminal strips.



wc_gr011213

1. Remove the two ballast covers **(BC)** from the left and right sides of the Light Tower.
2. Connect the green wire from the coil cord to the hexagonal grounding screw **(G)**.
3. Locate the four capacitors as shown below.

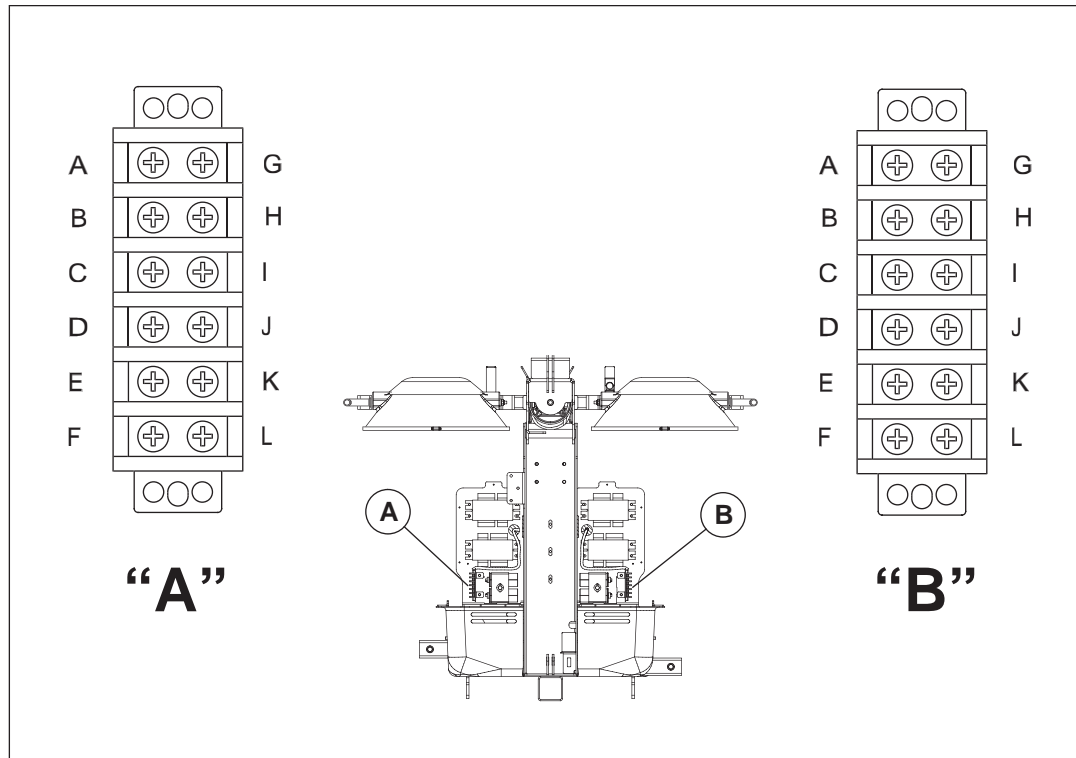


wc_gr011214

4. Connect four wires from the coil cord to the capacitors as follows:

Capacitor	Wire from coil cord
1	Red
2	Black
3	Yellow
4	Blue

5. Connect the remaining wires to terminal strips “A” and “B” according to the diagram and tables on the next page. Torque all screws to 2.25 Nm (20 in.lbs.).
6. When all wires are connected to terminal strips “A” and “B,” re-install the ballast covers. Torque the ballast cover mounting screws to 5.0 Nm (3.5 ft.lbs.).



wc_gr006538

Terminal strip “A” (right side of machine)

Position	Wire description
A–F	Not used
G	Black / yellow from ballasts #1 and #2
H	Black (#7) from control box
I	Yellows (2) from ballast #1
J	Yellows (2) from ballast #2
K	White (#9) from control box
L	Brown and orange from coil cord

Terminal strip “B” (left side of machine)

Position	Wire description
A	Black / yellow from ballasts #3 and #4
B	Black (#6) from control box
C	Yellows (2) from ballast #3
D	Yellows (2) from ballast #4
E	White (#8) from control box
F	White and purple from coil cord
G–L	Not used

14.15 Conclusion

This completes the assembly procedure for your Light Tower. Refer to your Operator's Manual for instructions on setting up, operating, maintaining, and storing the machine.

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