

Draft

YARA Comms Trailer Policy and Operations

Power Generation Trailer

This section is sub divided into 1) **Rapid deployment/regression** 2) **Setup** and 3) **Regular maintenance** of the unit. Rapid deployment/regression describes in short form, the requirements to safely prepare the trailer for towing. More detail on Section 1 can be found on pages 7&8, 12&13 for Section 2 pages 18 - 22 and for Section 3 on pages 25 - 30

Section 1- Rapid Deployment/regression

Trailer Checks

- ✓ Hitch mechanism on the trailer opens and closes freely and is securely fastened to the trailer tongue.
- ✓ Safety chains are securely fastened to the trailer tongue.
- ✓ Trailer lights are not broken or damaged.
- ✓ Trailer tires are properly inflated (32 psi).
- ✓ Inspect tires for damage (bulges or thread showing)
- ✓ Verify that the lug nuts for each wheel have been properly torqued regular maintenance



If no verification found in maintenance check sheet – **check the tightness of the lug nuts as would on car tires** and have torque check after use of trailer.

Trailer Stabilization Checks

Consists of 2 rear mounted outrigger assemblies and the jack on the trailer tongue.

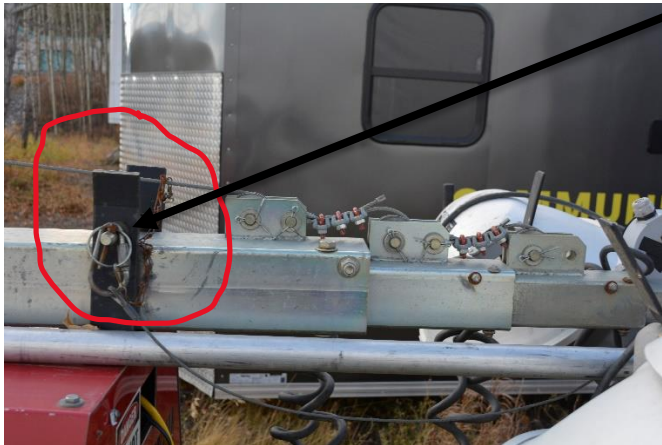
- ✓ Ensure that the jack rotates and locks into storage position and extended position
- ✓ Ensure that all bolts, nuts and other hardware are tight and not missing.
- ✓ Ensure that the rear outriggers extend and rotate into position.
- ✓ Ensure that the lock mechanisms operate correctly.

Light Mast Checks

- ✓ Visualize that all bolts, nuts, and other hardware are tight and not missing.
- ✓ Visualize that the cables for Tilt and Lift winches are not frayed or damaged.
- ✓ Visualize that the Tilt and Lift winches are not damaged.
- ✓ Visualize that the Tilt Lock and Mast Lock hardware is present and not damaged
- ✓ Inspect both winches, cables, cable clamps, and pulleys for damage and proper operation

Towing the Trailer

- ✓ Mast must be stowed and locked (mast lock pin installed).



- ✓ If the light fixtures are mounted on the mast, reposition the light fixtures on the stowed mast so the four light glass fronts are tilted away from the objects that may be propelled from the tires during transportation.



- ✓ Ensure that all light fixtures are secured to the mast.
- ✓ If outrigger jacks are extended, retract the jacks, and rotate rear jacks up 90 degrees and lock into position.



- ✓ Shut all doors on the engine compartment housing and latch the locks.
- ✓ Once coupler is on the ball hitch move the Coupler Handle to the horizontal position and lock it in place to securely hold the ball hitch of the tow vehicle.
- ✓ Retract the front jack, pull the jack pin, and rotate the jack 90 degrees from vertical to the horizontal position, making sure the self-locking pin reseats and the jack is secured to the tow bar (stowed position).
- ✓ Connect safety chains, making sure to cross them.
- ✓ Connect the trailer light connector to the tow vehicle.
- ✓ Test the trailer lights to ensure they are operational.

See pages 26 and 27 of Baldor PL6000K Operations Manual for detailed list of actions to take before towing.

Section 2 - Setup

Trailer Setup

- ✓ Locate a suitable, level location where there are **no overhead wires or obstructions**.
- ✓ If must be on an incline, position the trailer with the front Jack down the incline.
- ✓ Block the wheels for added stability while first setting up,

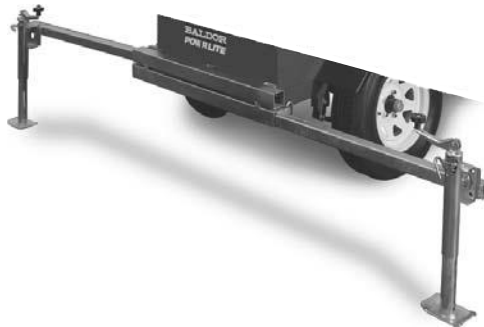


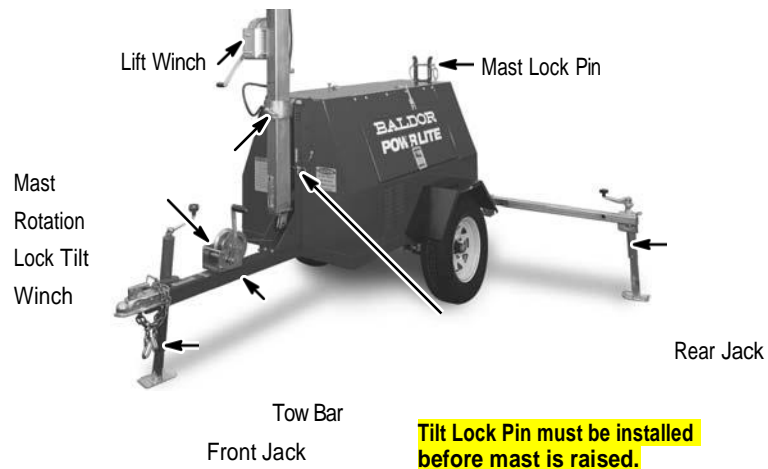
Figure 4-3 Trailer Outrigger

- ✓ Pull the **right** Outrigger Lock and **fully extend** the right outrigger. Lock the outrigger into position.
- ✓ Pull the **right** Jack Lock Pin and rotate the jack to the vertical position. Lock the jack in its vertical position using the Jack Lock Pin.
- ✓ Pull the **left** Outrigger Lock and **fully extend** the left outrigger. Lock the outrigger into position.
- ✓ Pull the **left** Jack Lock Pin and rotate the jack to the vertical position. Lock the jack in its vertical position using the Jack Lock Pin.
- ✓ Adjust the three jacks to level the trailer.

Light_Tower Setup

- ✓ Install or reposition the four light fixtures to the desired placement when the tower is raised.
- ✓ Pull the Mast Lock pin so the mast is no longer secured in the stowed position.
- ✓ Pull the Tilt Lock pin so it is not in the way when the mast is raised.
- ✓ Use the Tilt Winch to raise the mast to the vertical position.

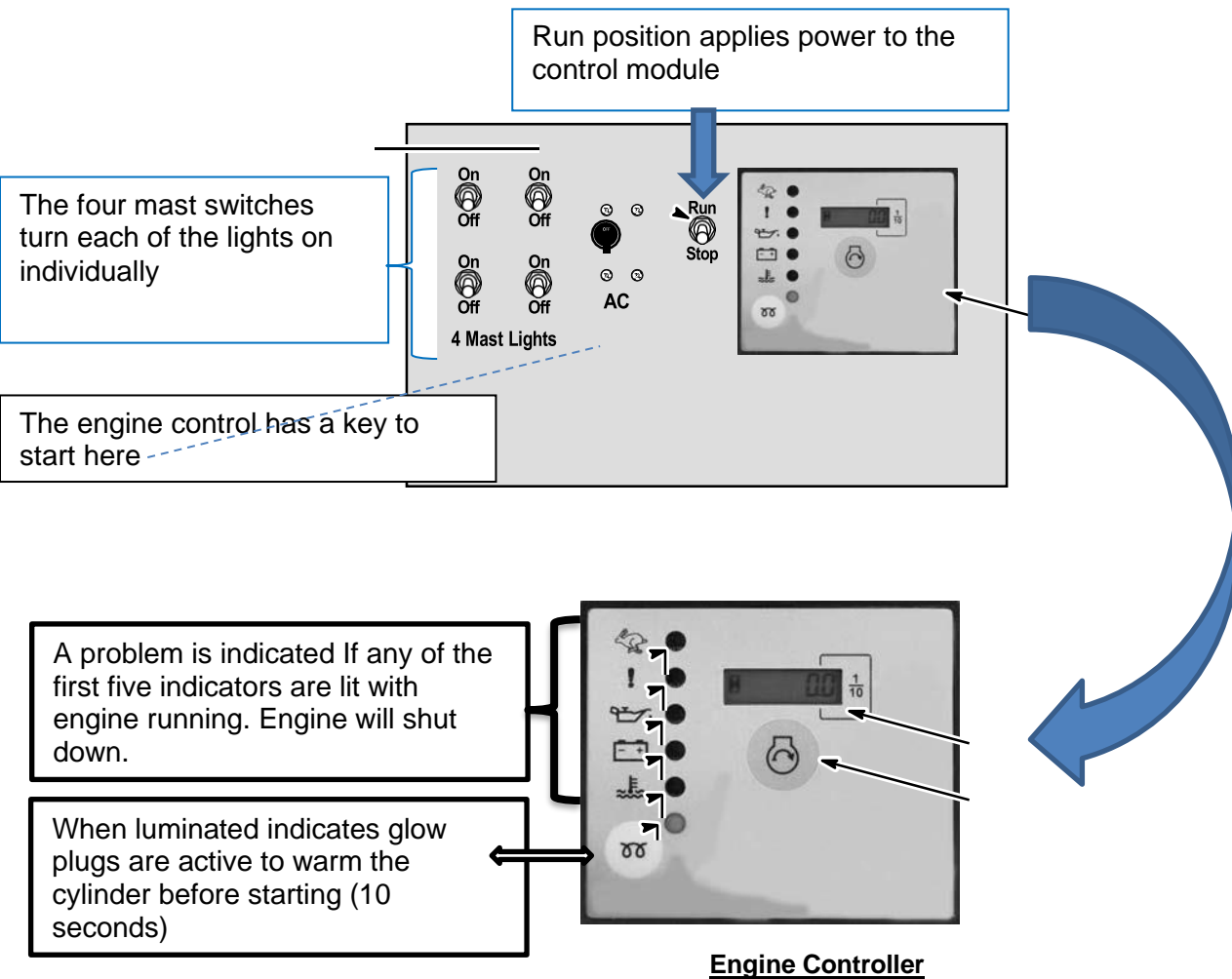
Figure 4-4



- ✓ **The Tilt Lock pin must be installed, and the mast secured in the vertical position before the mast is raised.**
- ✓ Use the Lift Winch to raise the mast to the desired height
- ✓ To rotate the lights to the desired position:
 - loosen the Mast Rotation Lock on the collar of the mast,
 - rotate the mast to the desired position
 - tighten the Mast Rotation Lock



Engine



The Engine Control panel is used to start and stop the engine and indicate fault conditions, automatically shutting down the engine and indicating the failure by LED.

Operation of any alarm (Low Oil Pressure, High Engine Temperature, Aux Input or Overspeed) will cause the run output to de-energize and stop engine operation:

Panel Description

Over Speed	Overspeed is an immediate shutdown.
Fail To Start	If the engine fails to start after 3 attempts a Shutdown is initiated.
Low Oil Pressure	On displays low oil pressure condition causing a shutdown
Charge Failure	On displays low battery voltage condition at the battery.
High Coolant Temp	On indicates engine coolant temperature has exceeded the high engine temperature causing a shutdown will occur.
Pre-Heat Switch is depressed.	LED lights for 10 seconds when the Engine Start
Engine Hours Display	Displays total hours of engine operation

Engine Start Switch	Press to Start Motor -The switch should be pressed for the duration of the crank period.
Run/Stop Switch	Run Position applies power to the control module and allows Start/Run operation.
Mast Light Switches	Four switches allow each of the four mast lights to be turned on individually.
AC	Breaker that tripped first clear the overload condition then reset the breaker, place it first in the off position then to the ON position. If breaker trips again – put out of service 'til qualified personnel can inspect.

Prestart Checklist:

- ✓ Check the engine oil and add oil if required. Do not overfill.
- ✓ Check **diesel fuel** level and add if necessary.

Caution: Never start the engine with any of the lights on, or with any electrical load connected

Engine Start Procedure:

- ✓ Make sure all light and auxiliary switches are in the OFF position and that all loads are disconnected.
- ✓ Place the Run/Stop switch in the Run Position. This applies power to the control.
- ✓ Observe the LEDs, they should be off.
- ✓ Press and hold the Engine Start switch to start the engine
 - There is a 10 second pre-heat delay before cranking begins.
Hold the switch for the duration of the crank period

If the generator will not start engine started and then stopped, the Run/Start switch **must be turned to STOP then back to the Run position** before another start cycle can be performed.

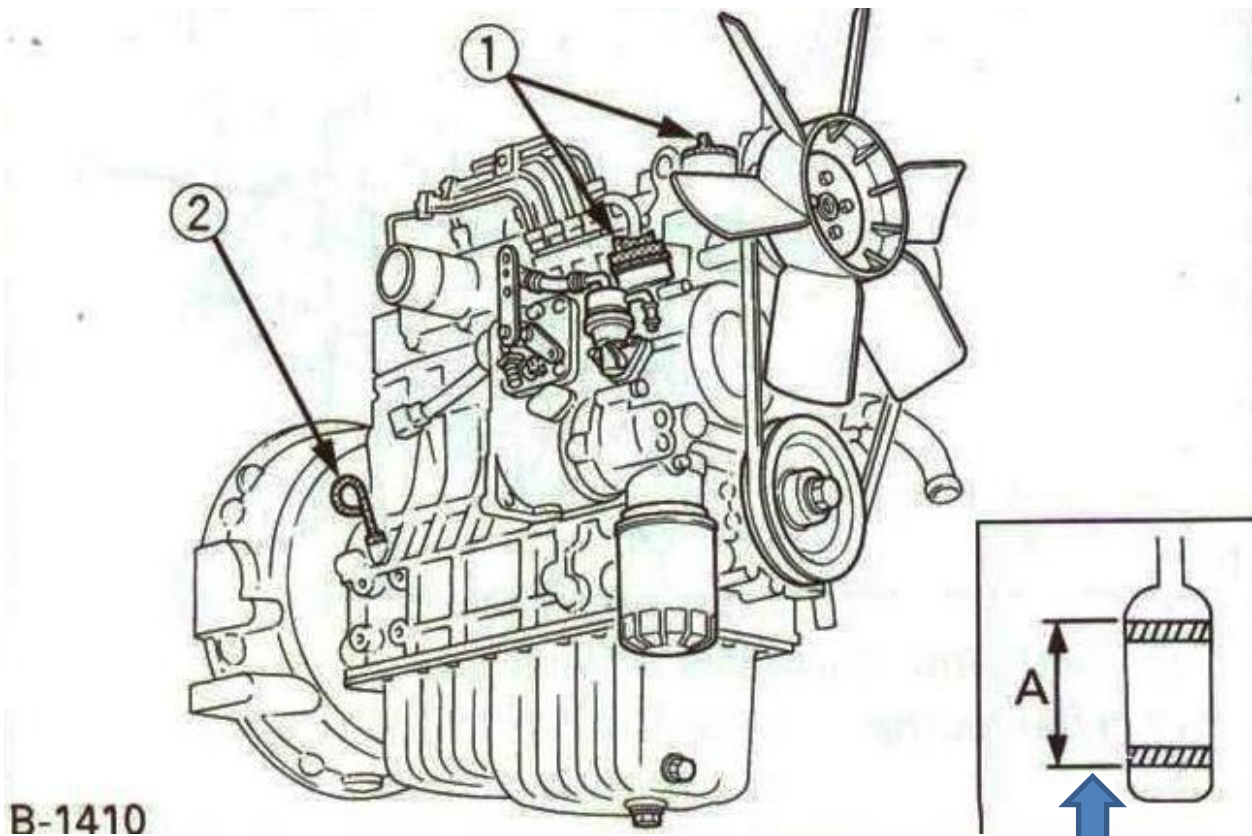
- ✓ After the engine starts, listen for unusual noises, “knocks”, or vibration. **If anything appears to be operating abnormally, shut the engine down immediately.**
- ✓ The lights may be turned on, one at a time, allowing a second between each switch once the engine reaches operating speed and is operating smoothly,

Regular maintenance is vital to the rapid deployment of the generator and within the rapid deployment check sheet are areas linked to the regular maintenance check sheet which, as protection of personnel and equipment.

Section 3 - Maintenance Check Sheet

Maintenance	Date	Initials	Date	Initials	Date	Initials
Oil level						
Oil change 10W-30 Semi Synthetic						
Oil Filter Changed						
Coolant Level Check						
Coolant Changed (-40C)						
Inspect Radiator Core						
Inspect Radiator Hoses						
Replaced Radiator Hoses						
Fuel Filter Replaced						
Fan/Alternator Belt Checked						
Fan/Alternator Belt Changed						
Air Filter Checked						
Air Filter Changed						
Mast Collar Greased						
Check Mast Cables						
Replace Mast Cables						
Repack the Wheel Bearings						
Check Lug Nuts 90-Ft/Lbs						
Check Timing Belt						
Replaced Timing Belt						
Valves Adjusted						
Tire Pressure (32 psi)						
Tire Condition -Replaced (?)						
Spare Tire						

- Copy reprint as required -



B-1410

Oil level in between A
is acceptable

1 are oil filling plugs
#2 Dip stick

Note: In addition to the Baldor PL600K Operations Manual the PDF Icon and Word Icon below has a [Service Manual for the Kubota engine](#) that drives the generator



POW'R LITE PL6000K

Portable Light Tower

Installation & Operating Manual

Abbreviated Version

Table of Contents

Receiving

- Lift the Mast
- Trailer Checks
- Engine/Generator Checks
- Trailer Stabilization Checks
- Light Mast Checks
- Light Fixtures Checks
- Electrical Systems Checks
- Electrical Connections

Operation

- Preoperational Checklist
- Towing Instructions

Light Tower Setup

- Engine Controller
- POW'R LITE Operation
- Light Tower Stow Procedure
- Trailer Setup for Towing

Troubleshooting and Maintenance

- Maintenance
 - General Checks
 - Change Engine Oil
 - Check Air Cleaner
- Flood Light Bulb Replacement.
- Cleaning
- POW'R LITE Troubleshooting Guide

Symbols



This symbol is shown throughout the manual to indicate a connection to ground reference point.



Indicates a potentially hazardous situation which, if not avoided, could result in injury or



death. Indicates a potentially hazardous situation which, if not avoided, could result in injury or death.

Precaution Statements Used In This Manual

There are three classifications of precautionary statements used in this manual. The most critical is a **WARNING** statement, then the **Caution** statement and the least critical is the Note statement. The usage of each statement is as follows:

WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in injury or death.

Caution: Indicates a potentially hazardous situation which, if not avoided, could result in damage to property.

Note: Additional information that is not critical to the installation or operation.

Lifting the Light Tower

When lift or hoist equipment is used to lift the light tower and move it to position, be careful not to contact overhead wires or other obstacles. The unit can weigh as much as 2,000 lbs. Be sure lift or hoist equipment has appropriate tires for the terrain to avoid becoming stuck or tipping over. The lift slots are designed for use with a forklift. A spreader bar and chains (see Figure 3-1) can also be used.

Installation

The light tower is delivered completely assembled, tested and ready for use. No assembly is required. However, before putting the light tower to use the system should be completely checked to ensure it is ready for operation. See Figure 3-1.

The light tower (unit) has six major systems that will be checked individually before use, these are:

1. Trailer
2. Engine/Generator
3. Trailer Stabilization System
4. Light Mast
5. Light Fixtures
6. Electrical Systems

These checks should be performed before first service, after 25 hours of operation and every 100 operating hours thereafter.

Trailer Checks

1. Verify that the hitch mechanism on the trailer opens and closes freely and is securely fastened to the trailer tongue.
2. Verify that the safety chains are securely fastened to the trailer tongue.
3. Verify that the trailer lighting connector and harness are present and are not damaged (see Figure 3-3).
4. Verify that trailer lights are not broken or damaged.
5. Verify that the trailer tires are properly inflated (32 psi).
6. Verify that the lug nuts for each wheel are properly torqued to 90 lb-ft.
7. Verify that the enclosure is securely fastened to the trailer frame.
Ensure that all bolts, nuts and other hardware are tight and not missing.

Engine/Generator Checks A 3-cylinder liquid cooled diesel engine and 4 pole, brushless, 6,000 watt generator.

1. Refer to the engine manual for maintenance check procedures to ensure all fluid levels are correct before each use.
2. Verify that electrical receptacles, switches and circuit breakers are not damaged.

Trailer Stabilization Checks Consists of 2 rear mounted outrigger assemblies and the jack on the trailer tongue.

1. Verify that the jack rotates and locks into position.
2. Ensure that all bolts, nuts and other hardware are tight and not missing.
3. Verify that the rear outriggers extend and rotate into position.
4. Ensure that the lock mechanisms operate correctly.

Light Mast Checks A 4 section 30 foot mast can be rotated 360 degrees.

1. Ensure that all bolts, nuts and other hardware are tight and not missing.

2. Verify that the cables for Tilt and Lift winches are not frayed or damaged.
3. Verify that the Tilt and Lift winches are not damaged.
4. Verify that the Tilt Lock and Mast Lock hardware is present and not damaged.

Light Fixtures Checks

1. Ensure that all bolts, nuts and other hardware are tight and not missing.
2. Verify that the electrical cables are not frayed or damaged.
3. Verify that the light bulbs, covers and other hardware are not damaged.

Electrical Systems Checks

Verify that the wiring cables, switches etc. are not damaged.

Warning: Never connect this light tower to the electrical system of any building unless a licensed electrician has installed an approved transfer switch. The national electrical code (NEC) requires that connection of a generator to any electrical circuit normally powered by means of an electric utility must be connected by means of approved transfer switch equipment to isolate the electrical circuit from the utility distribution system when the unit is operating.

Failure to isolate the electrical circuits by such means may result in injury or death to utility power workers due to back feed of electrical energy onto the utility lines.

Intended Use

The intended purpose of this light tower is to provide portable lighting where main utility power supply is not available. It is not intended to connect to a building's wiring system.

Protection

Single Phase circuit protection is provided within the light tower.

Electrical Outlets

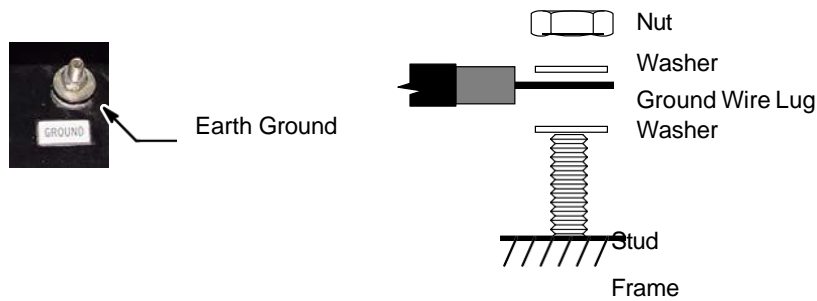
The electrical panel provides a duplex 120V, 20A GFCI receptacle and a 240V, 30A twist lock receptacle. Both receptacles may be used at the same time as the Light Mast provided the total electrical load does not exceed the generators rated output. GFCI (Ground Fault Circuit Interrupter) provides ground fault protection.

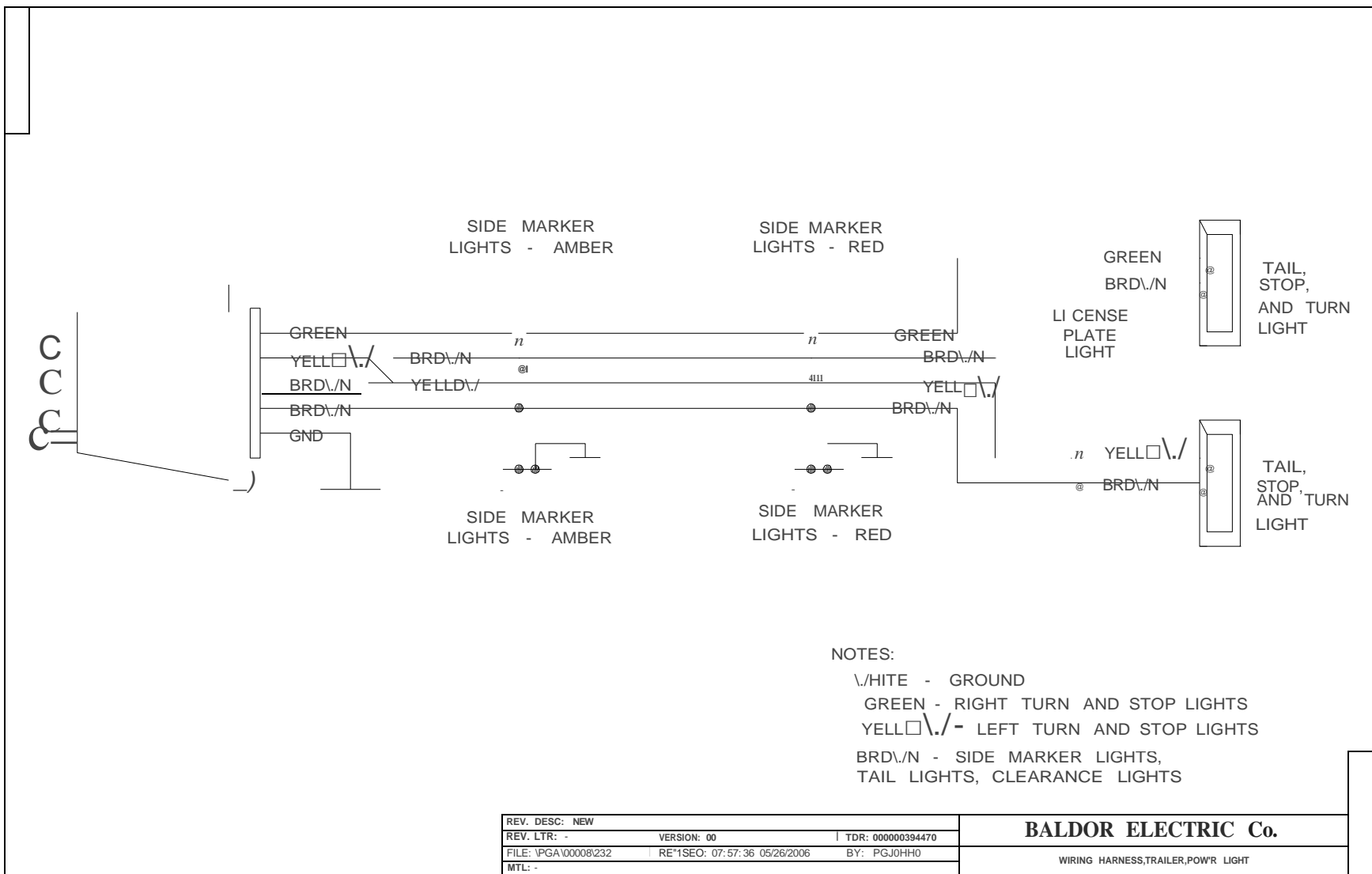
Frame Ground Connection

WARNING: Be sure the system is properly grounded before applying power. Do not apply AC power before you ensure that grounds are connected. Electrical shock can cause serious or fatal injury. NEC requires that the frame and exposed conductive surfaces (metal parts) be connected to an approved earth ground. Local codes may also require proper grounding of light tower systems.

The NEC requires that the frame and exposed metal surfaces be at local ground reference potential to avoid electrical shock hazard. A local ground reference may require a driven earth ground conductor at the job site. Make the ground connection as shown in Figure 3-2. Use the appropriate size wire as required by NEC and local codes.

Figure 3-2 Frame Ground Connection





Section 4 Operation

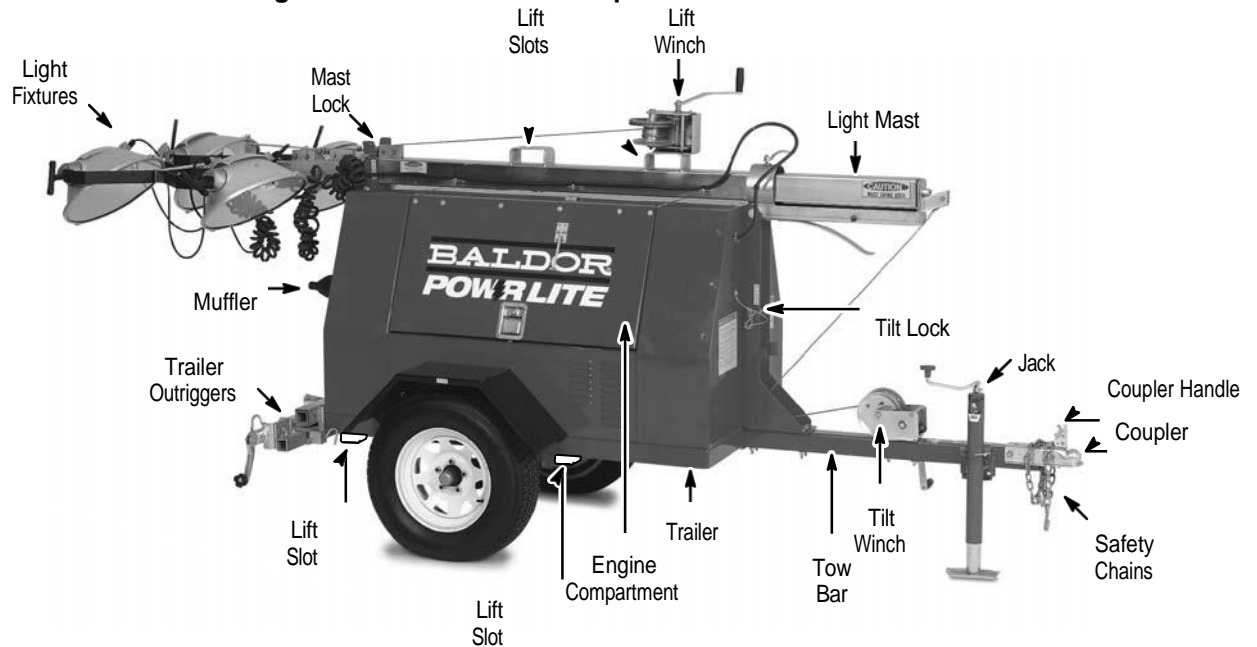
Preoperative Checklist

Before the POW'R LITE is put into service, the items in Table 4-1 must be checked.

Table 4-1 Pre-Operation Checklist

D	Check unit for obvious structural damage.
D	Make sure light mast is secure.
D	Check that light fixtures are secured in place.
D	Check that front and rear jacks are secure into position and operate properly.
D	Inspect tires for damage.
D	Make sure tires are properly inflated and that lug bolts are correctly tightened.
D	Inspect engine/generator parts for any obvious damage or loose parts.
D	Inspect control panel for damage or loose fasteners.
D	Inspect mast wiring for cuts, abrasions, and loose connections.
D	Check light fixtures for lamp, reflectors, and lens damage.
D	Inspect both winches, cables, cable clamps, and pulleys for damage and proper operation.

Figure 4-1 POW'R LITE Component Identification

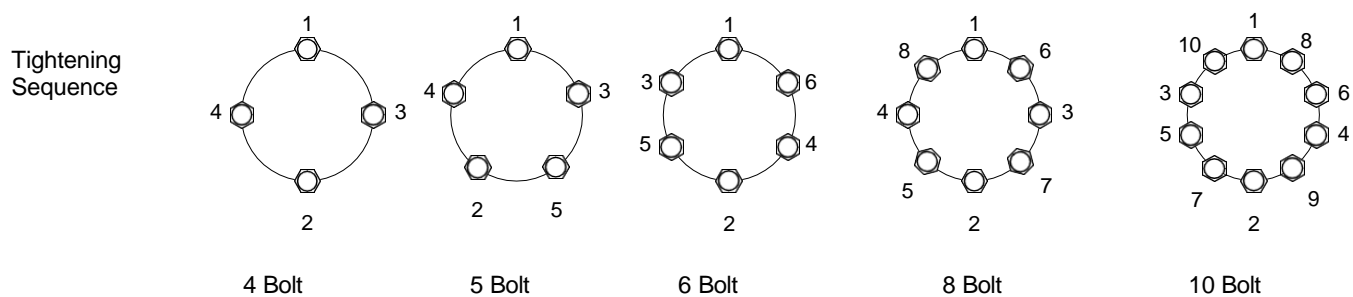


Towing Instructions

See Figure 4-1 for component identification.

1. Mast must be stowed and locked (mast lock pin installed).
2. If the light fixtures are mounted on the mast, reposition the light fixtures on the stowed mast so the four light glass fronts are tilted away from the objects that may be propelled from the tires during transportation.
3. Ensure that all light fixtures are properly secured to the mast.
4. If outrigger jacks are extended, retract the jacks and rotate rear jacks up 90 degrees and lock into position. Pull Outrigger Locks and slide outriggers in all the way until Outrigger Locks are locked.
5. Shut all doors on the engine compartment housing and latch the locks.
6. Back the tow vehicle to within a few inches of the trailer coupler.
7. Be sure the Coupler Handle is in the "UP" (open) position.
8. Adjust the trailer jack for the height of the ball hitch on the tow vehicle.
9. Back the tow vehicle so the trailer coupler is directly over the tow vehicle ball hitch.
10. Lower the trailer so the trailer coupler rests securely on the ball hitch of the tow vehicle.
11. Move the Coupler Handle to the horizontal position and lock it in place to securely hold the ball hitch of the tow vehicle. If this is not done properly, the trailer may become unhitched when it is towed.
12. Retract the front jack, pull the jack pin and rotate the jack 90 degrees from vertical to the horizontal position, making sure the self-locking pin reseats and the jack is secured to the tow bar (stowed position).
13. Connect safety chains, making sure to cross them. If a safety chain is too long, simply twist it a few turns to shorten the chain before attaching to the tow vehicle.
14. Connect the trailer light connector to the tow vehicle.
15. Test the trailer lights to ensure they are operational.
16. Check tires for proper inflation.
17. Check wheel lug nuts for correct tightness (see Figure 4-2).
Wheel nuts/bolts should be torqued before the first road use and after each wheel removal. Check and re-torque after the first 50 miles and again at 100 miles. Check periodically thereafter.
18. Verify that all jacks, outriggers, pins, cables, and light fixtures are in their proper place and/or are secured.
19. Release the trailer wheel parking brake if equipped (optional equipment) and if set.

Figure 4-2 Lug Nut Tightening Specifications



Torque Specification

Description	Application	Minimum Torque (ft-lbs.)	Maximum Torque (ft-lbs.)
1/2" Cone nut	12" – 13" Wheel	50	65
	14" – 16" Wheel	90	120
5/8" Cone nut	Flat Disc Wheel	175	225
5/8" Cone nut	Clamp Ring	190	210
3/4" Hex nut	Demountable Ring Clamp	210	260

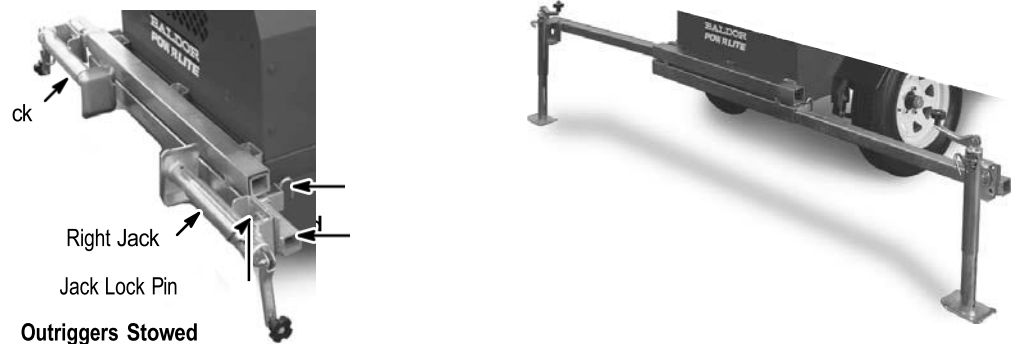
WARNING: The mast assembly must remain in the stowed position until the outriggers are properly set to stabilize the trailer. Erecting the mast without setting the outriggers can cause the light tower to set to tip over when raising the mast.

Trailer Setup starting.

See Figure 4-1 for component identification. Carefully read all instructions before

1. Locate a suitable, level location ($\pm 5\%$ incline maximum). Do not use the POW'R LITE on grades that are greater than 5%. Also be sure there are no overhead wires or obstructions.
2. The POW'R LITE is balanced so most of the weight rests on the tow bar (front Jack). If on an incline, the safest way to position the trailer is to have the tow bar facing down the incline (front of the trailer lower than the rear of the trailer).
3. Apply and check the parking brake if equipped (optional equipment).
4. Disconnect the safety chains and the trailer light connector from the tow vehicle.
5. Pull the pin on the front jack and rotate the jack 90 degrees to the vertical position. Lock the jack in the vertical position using the pin to secure it.
6. Move the Coupler Handle to the vertical position to release the ball hitch.
7. Use the jack to raise the trailer coupler from the ball hitch of the tow vehicle.
8. The tow vehicle can now be moved away from the POW'R LITE.

Figure 4-3 Trailer Outrigger



9. Pull the Outrigger Lock for the right jack and fully extend the right outrigger. Lock the outrigger into position using the Outrigger Lock.
10. Pull the Jack Lock Pin for the right jack and rotate the jack to the vertical position. Lock the jack in its vertical position using the Jack Lock Pin.
11. Repeat steps 8 and 9 for the left outrigger and jack.
12. With the rear trailer stabilization in its fully extended position (Figure 4-3 right view), adjust the three jacks to level the trailer. All three jacks must be in firm contact with the ground and the trailer must be level so the light tower will be vertical when raised.

Light Tower Setup See Figure 4-1 for component identification.

WARNING: When erecting or stowing the mast assembly, be aware of the pinch points such as where the tower structures join or where the cable and winch are located. Careless operation can result in injury. Keep extremities away from moving parts to avoid injury.

WARNING: Before erecting the mast assembly, be certain that the outriggers are properly

set to stabilize the unit and that they are secure and are not damaged. Erecting the mast without setting the outriggers can cause the unit to tip over when raising the mast.

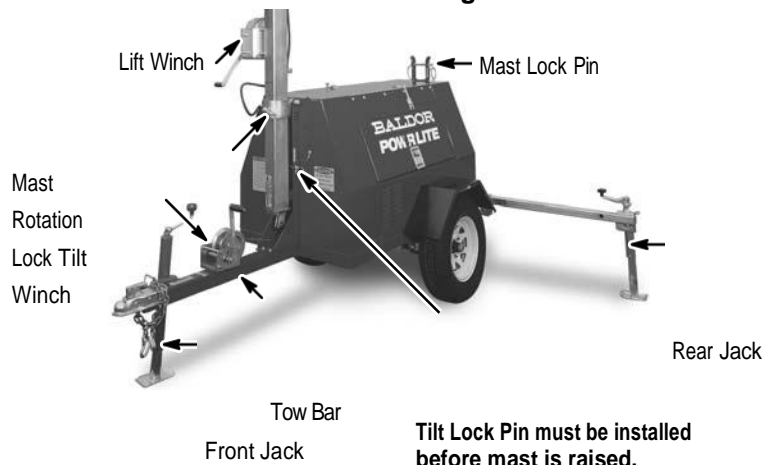
WARNING: Before erecting the mast assembly, be certain that there are no overhead wires. Contact with overhead wiring presents an electrical shock hazard that may cause severe injury or death.

WARNING: Before erecting the mast assembly, be certain that there are no overhead obstructions that the mast will hit when raising it. Hitting an object (tree limb etc.) may damage the mast or cause the unit to tip over and may result in injury or property damage.

WARNING: Never move or reposition a light tower when the mast is extended or in the vertical position. Unless the mast is in its stowed position, it may contact overhead wires or cause the light tower to be unbalanced or tip over.

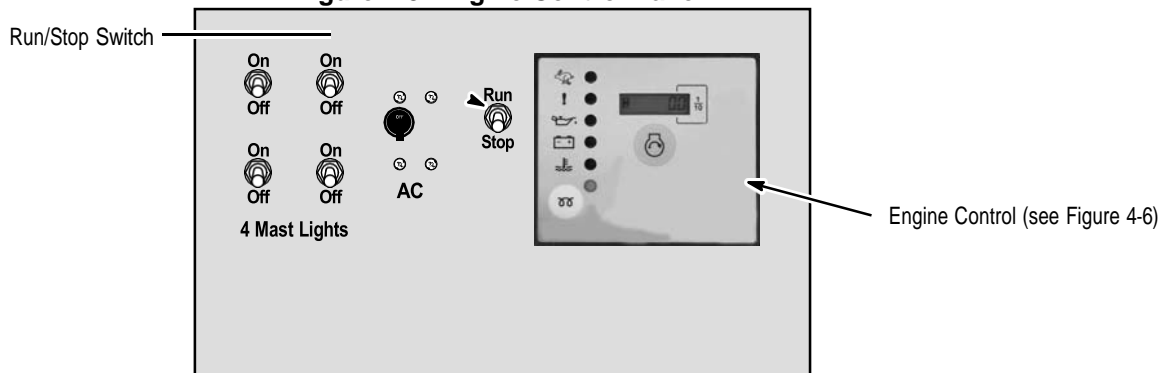
1. With the Light Mast in its' stowed position, install or reposition the four light fixtures to the desired placement when the tower is raised.
2. Pull the Mast Lock pin so the mast is no longer secured in the stowed position.
3. Pull the Tilt Lock pin so it is not in the way when the mast is raised.
4. Use the Tilt Winch to raise the mast to the vertical position.

Figure 4-4



5. Secure the mast in the vertical position by inserting and locking the Tilt Lock pin, Figure 4-4. **The Tilt Lock pin must be installed, and the mast secured in the vertical position before the mast is raised.**
6. Use the Lift Winch to raise the mast to the desired height. The winch is self-braking and will lock in place automatically.
7. To rotate the lights to the desired position, loosen the Mast Rotation Lock on the collar of the mast, rotate the mast to the desired position and tighten the Mast Rotation Lock. The light tower is now setup for operation.

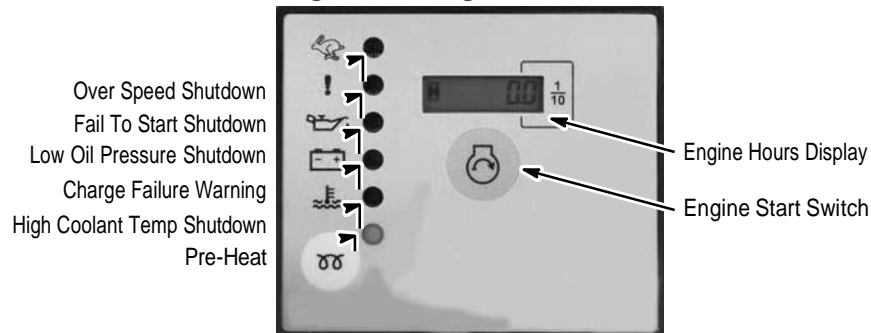
Figure 4-5 Engine Control Panel



Engine Controller

The Engine Control panel is shown in Figure 4-6. The control is used to start and stop the engine and indicate fault conditions, automatically shutting down the engine and indicating the failure by LED. An integral anti-tamper engine hours counter and LCD display is also provided.

Figure 4-6 Engine Controller



Note: Operation of any alarm (Low Oil Pressure, High Engine Temperature, Aux Input or Overspeed) will cause the run output to de-energize and stop engine operation:

Panel Description (see Figure 4-5 and 4-6)

Over Speed	On indicates engine speed exceeds the preset trip (14% above nominal frequency) and shutdown is initiated. Overspeed is not delayed, it is an immediate shutdown.
Fail To Start	If the engine fails to start after 3 attempts (user settable), a Shutdown is initiated.
Low Oil Pressure	On displays low oil pressure condition. After the Safety On timer has expired, a shutdown will occur.
Charge Failure	On displays low battery voltage condition at the battery.
High Coolant Temp	On indicates engine coolant temperature has exceeded the high engine temperature switch setting, after the Safety On timer has expired, a shutdown will occur.
Pre-Heat depressed.	LED lights for 10 seconds when the Engine Start Switch is depressed.
Engine Hours Display	This is the pre heat time before engine cranking begins. Displays total hours of engine operation. Only displayed in Run Position of Run/Stop switch.
Engine Start Switch output.	Press to energize the Fuel Solenoid and the Starter Motor output. The switch should be pressed for the duration of the crank period. The starter motor is disengaged and locked out at 20 Hz measured from the Alternator output.
Run/Stop Switch	Run Position applies power to the control module and allows Start/Run operation. Stop Position de-energizes the Fuel Solenoid, bringing the generator to a stop.
Mast Light Switches	Four switches allow each of the four mast lights to be turned on individually.
AC	Breaker that when tripped turns off all AC power to Mast Lights and AC Receptacles. Manually trip the breaker "Off" to immediately interrupt all AC power. If breaker trips due to overload, first clear the overload condition. To reset the breaker, place it first in the off position then to the ON position.

Note: The Safety On time (used for delayed alarms) is preset to 12 seconds.

POW'R LITE Operation

To prevent engine damage, the following checklist should be followed before starting the unit.

Caution: Do not overfill the engine oil. Serious damage to the engine can result from overfilling the oil.

Prestart Checklist:

1. Unlock and open the engine compartment doors.
2. Check the engine crankcase oil and add oil if required. Do not overfill. Overfilling engine crankcase with oil can cause serious engine damage.

WARNING: Engine coolant is under pressure and is near the boiling point of water when engine is hot. Do not open the coolant system until the engine has completely cooled. Hot coolant can cause severe burns and other injuries. When engine is cool, coolant level can be checked.

3. Check the radiator coolant level and coolant if required. The radiator cap is accessible by an opening in the rear panel of the engine compartment just below the Mast Lock.
4. Check and verify that battery cables are not corroded, not frayed and secure.
5. Check diesel fuel level and add if necessary. Never allow the engine to run out of fuel.

Caution: Never start the engine with any of the lights on, or with any electrical load connected, as damage to the light tower may result.

Caution: Do not operate preheat for more than 30 seconds or the heating element may be damaged.

Caution: Do not engage the starter motor for more than 60 seconds at a time or damage may result.

Caution: Never use explosive engine starting fluids. Please read the engine manual and unit placards carefully before starting the engine. Starting fluids are not compatible with the preheat cycle.

Engine Start Procedure: (see Figure 4-6)

1. Make sure all light and auxiliary switches are in the OFF position and that all loads are disconnected.
2. Place the Run/Stop switch in the Run Position. This applies power to the control.
3. Observe the LEDs, they should be off. If Aux Input LED is on, the engine will not start.
4. Press and hold the Engine Start switch to start the engine (energize the Fuel Solenoid output, then the Starter Motor output.) There is a 10 second pre-heat delay before cranking begins. Hold the switch for the duration of the crank period (until the engine has started. The starter motor is disengaged and locked out when a 20 Hz signal is measured from the Alternator output). After the starter motor has disengaged, the Safety On timer is activated (12 seconds), allowing Oil Pressure, High Engine Temperature and Charge Fail to stabilize without triggering the fault.

Note: If the generator has not started when the Engine Start switch is released or the engine stops after it was running, the Run/Start switch must be turned to STOP then back to the Run position before another start cycle can be performed.

5. After the engine starts, listen for unusual noises, "knocks", or vibration. If anything appears to be operating abnormally, shut the engine down immediately.
6. When the engine reaches operating speed and is operating smoothly, the lights may be turned on, one at a time, allowing a second between each switch.
7. Observe each floodlight for proper operation.

Flood Light Operation:

1. When the engine reaches operating speed and is operating smoothly, turn on one light and wait one second turn on another light and wait one second etc. until the flood lights are all on.
2. Observe the operation of each flood light and replace defective bulbs if required. To change a bulb, refer to Section 5 of this manual.

Note: Vaporous flood lights may require 5 to 15 minutes to warm up and produce full light output.

Operating Checks:

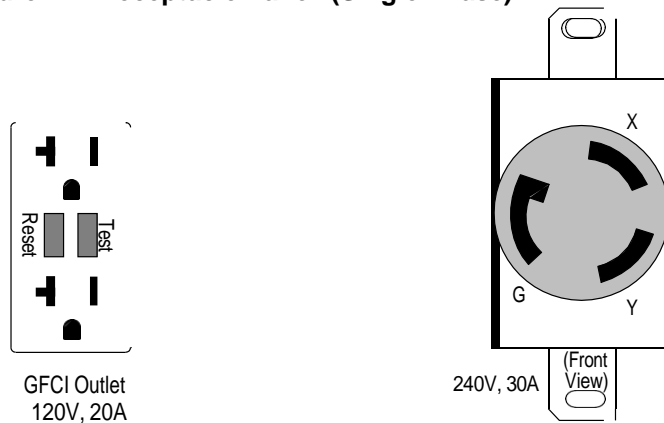
3. Check diesel fuel level and shut off the engine and add if necessary. Check engine oil each time fuel is added. Never allow the engine to run out of fuel or to run low of oil.

Receptacle Panel Load Connections, see Figure 4-7.

1. 120/240VAC voltage is present at the receptacle panel only when the light tower is running.
2. Carefully inspect all Individual load cables for broken insulation or other signs of damage. Never use a damaged cable. Replace it before usage.
3. Individual load cables may be routed to the receptacle compartment.
4. Individual load cables may be connected or disconnected while generator is running. Use extreme care not to touch any electrical wire or terminal to avoid shock hazard.
5. Keep Engine Compartment doors closed at all times. This prevents rain or other harmful elements from entering the compartment.

AC Breaker (on panel) that when tripped turns off all AC power to Mast Lights and AC Receptacles. Manually trip the breaker "Off" to immediately interrupt all AC power. If breaker trips due to overload, first clear the overload condition.
To reset the breaker, place it first in the off position then to the ON position.

Figure 4-7 Receptacle Panel (Single Phase)



○

Engine Stop Procedure: (see Figure 4-6)

Caution: Never stop the engine with any of the lights on, or with any electrical load connected, as damage may result.

1. Turn OFF all floodlight switches and unplug all loads from receptacle panel.

Note: After turning OFF a light, do not attempt to turn the light ON until after a 10–25-minute cool down period. Turning a light OFF then ON may damage the light bulb.

2. If the engine has been operating for several hours under load, allow it to operate unloaded for at least five minutes to reduce coolant temperature.
3. Place the key switch in the STOP Position. This de-energizes the Fuel Solenoid, bringing the generator to a stop and removes power from the control.

WARNING: When erecting or stowing the mast assembly, be aware of the pinch points such as where the tower structures join or where the cable and winch are located. Careless operation can result in injury. Keep extremities away from moving parts to avoid injury.

WARNING: The mast should come down slowly and smoothly. If slack develops in the cable or the mast “hangs up”, stop immediately. Crank the winch in the reverse direction to take up slack in the cable and determine the cause of the problem if possible. Try to lower the mast again. If the problem persists do not continue, seek expert advice. Cable slack can allow the light tower to fall unexpectedly which may result in injury or damage.

Light Tower Stow Procedure See Figure 4-1 for component identification.

1. Use the Lift Winch to lower the light tower to its' lowest vertical position. The mast should come down slowly and smoothly. If slack develops in the cable or the mast “hangs up”, stop immediately. Crank the winch in the reverse direction to take up slack in the cable and determine the cause of the problem if possible. Try to lower the mast again. If the problem persists do not continue, seek expert advice.
2. Loosen the Mast Rotation Lock and rotate the light mast so the lights face the rear of the trailer. Tighten the Mast Rotation Lock. (There is an indicator mark on the mast that will line up with the mast bracket indicator when the light fixtures are in the transport position. This allows the mast, when lowered to the horizontal transport mode, to rest on the brackets on the top of the engine compartment.)
3. Remove the Mast Lock pin so it will not interfere with the mast when it is tilted.
4. Make sure the Tilt Winch cable is tight.
5. Remove the Tilt Lock pin.
6. Use the Tilt Winch to lower the mast to the horizontal position being careful not to pinch the electrical light cables.
7. Install the Mast Lock pin.
8. Install the Tilt Lock pin.
9. Adjust the light fixtures as needed for transport so the four light glass fronts are tilted away from the objects that may be propelled from the tires during transportation.

The mast is now in the stowed position for transport.

Trailer Setup for Towing

1. Adjust the two rear jacks to their shortest length.
2. Pull the Jack Lock Pin for the right jack and rotate the jack to the

horizontal position. Lock the jack in this position using the Jack Lock Pin.

3. Pull the Outrigger Lock for the right jack and push the right outrigger fully in. Lock the outrigger using the Outrigger Lock.
4. Repeat steps 2 and 3 for the left outrigger and jack.
5. Shut all doors on the engine compartment housing and latch the locks.
6. The Trailer Outriggers are stowed and should appear as shown in Figure 4-3 left view
7. Refer to **Towing Instructions** at the beginning of this section to connect the POW'R LITE to the tow vehicle.

Section 5

Troubleshooting and Maintenance

Maintenance

The following are general maintenance recommendations. The engine must be stopped, and all electrical load devices removed from the light tower plugs or terminals before any maintenance is performed.

General Checks immediately.

1. Inspect the fuel system for leaks. Replace defective components
2. Inspect and replace any fuel line that shows signs of deterioration.
3. Inspect all fuel clamps to ensure they are tight, and no leaks exist.
4. Make sure the fuel cap fits snugly on the fuel tank and that the fuel tank does not leak.
5. Inspect the condition of AC outlets for damage and replace if damaged.
6. Test all GFCI (Ground Fault Circuit Interrupter) receptacles daily by pressing the test button on the receptacle during operation. Ensure that the GFCI trips and no voltage is present at the receptacle. Replace any GFCI receptacle that fails the test.
7. Inspect the external wire cables (extension cords) and connectors to be used for cuts, frayed insulation, or loose connections. Repair or replace any problems prior to using the unit.
8. Inspect bolts and nuts for tightness. Vibration can cause nuts or bolts to loosen.

Flood Light Bulb Replacement

WARNING: Light fixtures become extremely hot during use. To prevent severe burns, do not touch light fixtures, bulbs or other components until they have cooled and no longer present a burn hazard. Wear protective clothing when placing the tower in the stowed position after use and do not allow any person to touch the light fixtures.

Refer to Section 4 of this manual for the procedures if you are not familiar with these steps.

1. Stop the generator.
2. Lower the mast.
3. Tilt the mast down to the stowed position.
4. Wait until the fixtures and bulbs have cooled sufficiently and replace the defective bulb.

Cleaning

Keeping the light tower clean is an important part of good operation. If dirt buildup is not removed, the light tower will run hotter than normal and its life is reduced.

The following are general guidelines for cleaning.

1. Clean the light tower and remove any and all dust, dirt, or other foreign material.
2. Inspect and clean the cooling air intake and exhaust louvers of the enclosure. Make sure they are clean. Remove dirt or any buildup that may restrict the cooling air flow.
3. Clean the light tower and its components with a damp cloth or sponge. Never use a water hose or pressure washer as this may damage electrical components.
4. Inspect and replace any control panel components that are broken or not working properly (receptacles, circuit breakers, switches, etc.)
5. Inspect and clean all engine linkages so they operate properly.

Maintenance Schedule

Maintenance Operation	Maintenance Interval						
	10 Hrs (Daily)	50 Hrs.	125 Hrs.	250 Hrs.	500 Hrs.	1000 Hrs.	2500 Hrs.
Safety Guard Inspection [I]	•						
Fluid Leak Inspection – General [I]	•						
Check lug nuts – torque 90ft/lbs							
Oil Level Check [I]	•						
Coolant Level Check [I]	•						
Fan/Alternator Belt Inspection [z]	•						
Radiator Core Inspection [3]	•						
Air Filter Element Check (Dry Type) [1]	[1]						
Air Filter Check (Oil Bath Type) ffj	•						
Oil Replacement – Initial only Ili]		•					
Oil Filter Replacement – Initial only Ili]		•					
Oil Replacement Ili]			•				
Check mast cables. Check lighting lead wires			•				
Oil Filter Replacement				•			
Fuel Filter Replacement				•			
Coolant Hose Replacement				•			
Fan/Alternator Belt Tension Adjustment				•			
Valve Adjustment					•		
Fan/Alternator Belt Replacement					•		
Fuel Injection System Adjustments					•		
Grease the mast collar grease fitting					•		
Clean Fuel Tank [3]						•	
Grease trailer bearings						•	
Coolant Replacement !I]							•
Replace Timing Belt							•

[I] Add fluid(s) as needed.

[z] After inspection, adjust, repair or replace as needed.

[3] Clean as often as needed.

[1] Replace air filter if air flow is restricted or one (1) year.

ffj Service oil bath filter element (upper and lower) as needed. Replace reservoir oil as needed.

Note: In dusty conditions, service the oil bath air filter every four (4) hours of operation.

Ili] See engine manufactures recommendation.

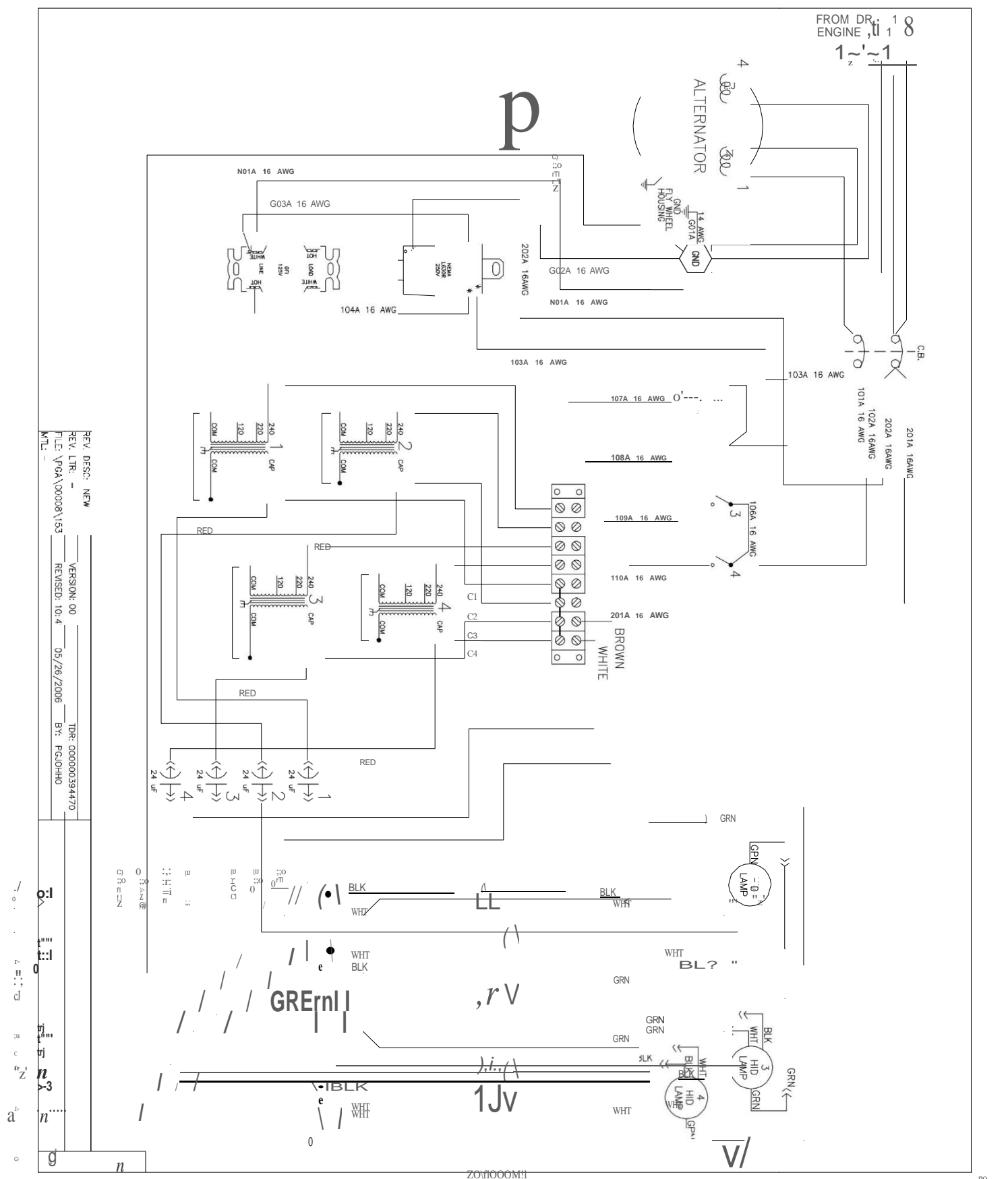
!I] Replace coolant every 2500 hours or 2 years.

POW'R LITE Troubleshooting Guide

Table 5-1 Troubleshooting Guide

Problem	Possible Cause	Remedy
Mast will not raise to operating position.	Mast Lock Pin still in place. Defective winch or cable.	Remove pin. Have winch and cable examined by a qualified mechanic. Replace if required.
Mast will not telescope to desired height.	Defective winch or broken cable.	Have winch and cable examined by a qualified mechanic. Replace if required.
Mast will not rotate.	Bolt/nut on bottom of mast may be too tight. Mast rotation collar needs to be greased.	Back off on nut setting slightly and try to rotate mast. Apply grease to grease fitting.
Engine will not turn over.	Loose battery cables or dead battery. Engine seized due to loss of oil.	Recharge or replace battery. Check battery cable at battery terminals and starter for tightness. Have unit inspected by qualified mechanic.
Engine turns over but will not start.	Fuel tank empty. Clogged fuel filter. Fuel line connections leaking. Heater plug element burned out. Suspect contaminated fuel.	Fill tank and bleed fuel system. Replace filter, use winter grade fuel (weather cold). Bleed out air. Tighten all fuel fittings and bleed air from fuel system. Replace heater plug. The fuel tank has a drain valve on the bottom side of the trailer. Drain and replace the fuel.
Engine difficult to start.	Battery charge low or cables loose. Motor oil too thick in cold winter. Clogged fuel filter or fuel cloudy in cold weather. Fuel line connections leaking.	Replace/recharge battery. Tighten cable connections. Use proper winter grade oil. Replace filter and bleed air from System. Use winter grade diesel in cold weather. Tighten all fuel fittings and bleed air from fuel system.
Rough running engine with low power output.	Clogged fuel filter or leaking fuel line connections. Exhaust system clogged. Air filter clogged. Fuel injectors nozzles clogged or stuck. Valve clearance needs adjusting or valve springs broken. Governor or injector pump defective.	Tighten all fuel fittings and bleed air from fuel system. Check muffler and exhaust manifold, clear any obstructions. Replace air filter. Have unit checked by qualified mechanic. Have unit checked by qualified mechanic. Have unit checked by qualified mechanic.
Engine runs but produces excessive thick smoke.	Crankcase oil level too high. Compression low.	Drain oil level to full mark on dipstick. Have qualified mechanic check unit for broken or seized rings or improper valve clearances.
Engine runs but battery voltage low.	Battery charger or alternator failure.	Have qualified mechanic repair or replace.
Engine runs but lights do not come on.	Circuit breakers tripped or light switches in "OFF" position. Loose connections in light wiring. Loose connection in ballast box wiring. Bulbs burned out. Defective AC generator. Engine speed too low. Defective ballast.	Check circuit breaker, press reset button if tripped, turn on light switches. Check junction box connections for security. Have a trained electrician inspect ballast box and wiring. Replace bulbs. Have a trained electrician inspect generator. Have a qualified mechanic check unit and, if necessary, reset engine speed to 1800 RPM or 60 HZ. Have a trained electrician inspect the ballast system.
Unusual noises coming from the generator.	Generator bearing or cooling fan defective.	Have a qualified mechanic inspect the generator.
An electric shock occurs when the light tower or housing is touched.	Short circuit in wiring system.	IMMEDIATELY stop using the light tower. IMMEDIATELY have the unit inspected by a qualified mechanic.
Control panel does not illuminate	Battery power failure	Check control fuse, replace if necessary. Replace or recharge battery. Tighten cable connections.

Figure 5-8 Flood Light Mast Wiring



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BALDOR ELECTRIC COMPANY
P.O. Box 2400
Ft. Smith, AR 72901-2400
(479) 646-4711



Fax (479) 648-5792

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