GENERAC® | MAGNUM

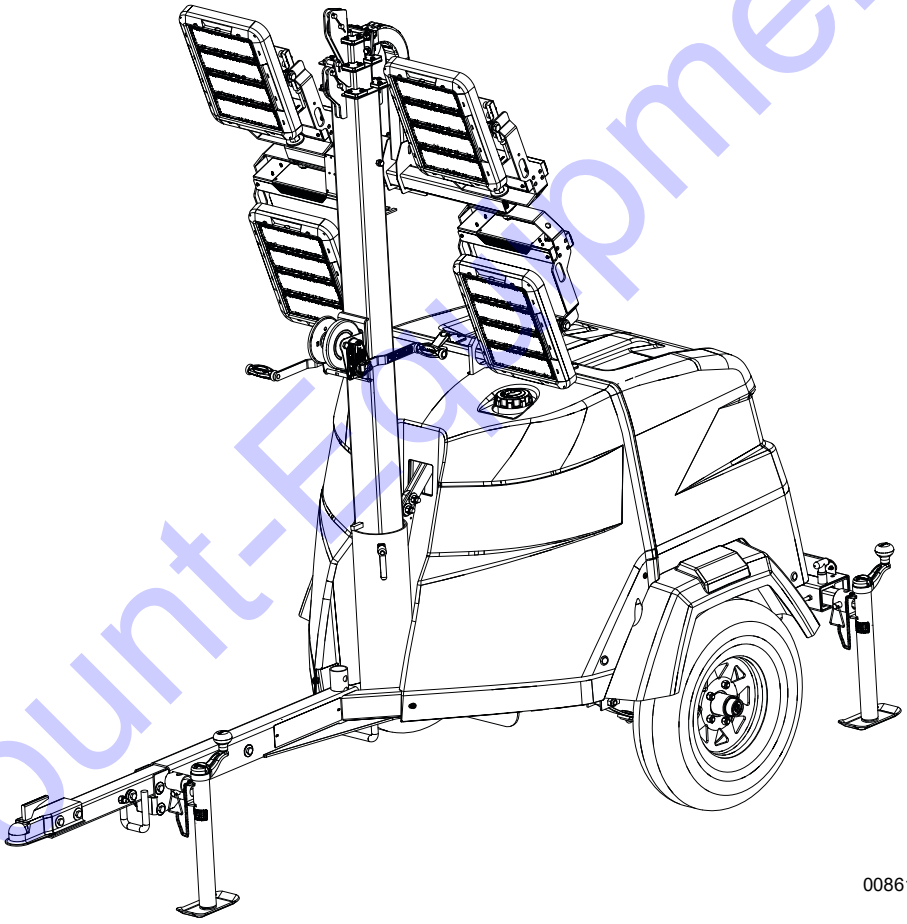
Owner's Manual

Light Tower

MLT6SMDS • MLT6SKDS

S/N 3002908801 and above

PART 3



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SAVE THIS MANUAL FOR FUTURE REFERENCE

Prestart Checklist

Before starting the unit, all items in the prestart checklist must be completed. This checklist applies to both manual and remote starting of the unit.

⚠WARNING

Consult Manual. Read and understand manual completely before using product. Failure to completely understand manual and product could result in death or serious injury.

(000100a)

- ❒ Verify all maintenance procedures are up to date. For more information, refer to ***General Maintenance*** and ***Basic Maintenance Schedule***.
- ❒ Perform a walk-around inspection. Refer to ***Daily Walk-Around Inspection***.
- ❒ The unit must be level.
- ❒ The unit must be dry. Inspect for water inside or near the unit; dry if needed.
- ❒ For grounding requirements, follow the National Electrical Code (NEC), state, and local regulations.
- ❒ Verify the control power switch is OFF (O).
- ❒ Verify all circuit breakers are OFF (O).
- ❒ Inspect all electrical cords; repair or replace any that are cut, worn, or bare.
- ❒ Verify all winch cables are in good condition and centered on each pulley. Do not use if cables are kinked or beginning to unravel.
- ❒ Check oil, coolant, and fuel levels. For more information, refer to ***General Maintenance***.
- ❒ Verify battery connections are secure.
- ❒ Turn the battery disconnect switch on, if equipped.
- ❒ Inspect the engine fan belt tension and condition.
- ❒ Inspect the engine fan belt guard.
- ❒ Inspect the engine exhaust system for loose or rusted components.
- ❒ Verify all covers are in place and secure.

Starting the Unit (Key Switch Models)

⚠CAUTION

Equipment Damage. Do not continuously crank engine for more than ten seconds. Doing so will lead to overdischarge of batteries and starter seizure.

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NOTE: If the engine was run out of fuel or the fuel tank was drained, it may be necessary to purge the fuel lines. Refer to the engine operator's manual supplied with the unit.

1. See ***Figure 3-6***. Verify main circuit breaker and circuit breaker for lights are OFF (O).

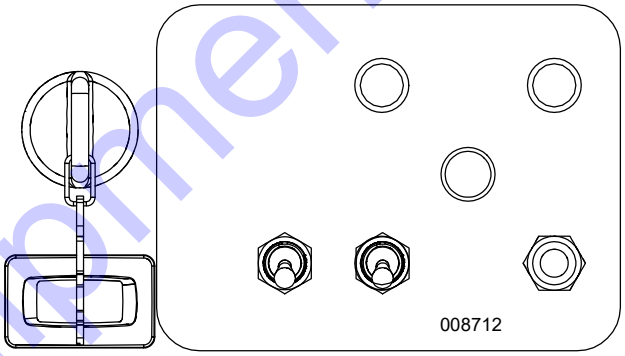

Figure 3-6. Circuit Breakers in OFF (O) Position

2. See ***Figure 3-7***. Turn the key on the Engine Start switch to the right GLOW PLUG position and hold the key in place for five seconds.

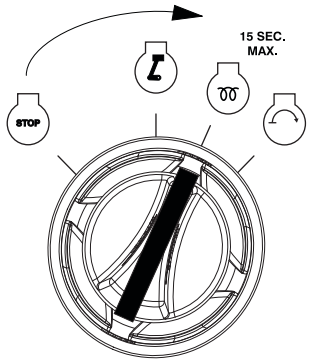

Figure 3-7. Activate Glow Plug

3. See ***Figure 3-8***. Turn the key to the right START position and hold it until the engine cranks and starts running.

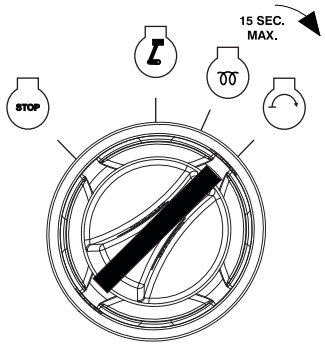

Figure 3-8. Crank Engine

4. See ***Figure 3-9***. Release the key, it will move to the RUN position.

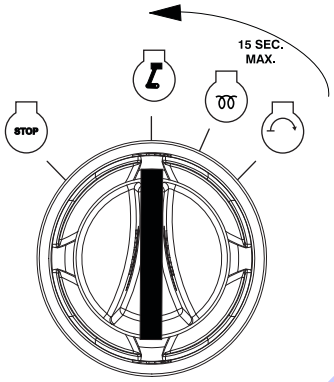

Figure 3-9. Release Key

Preparing for Start-Up (Power Zone–DLA)

NOTE: If the engine was run out of fuel or the fuel tank was drained, it may be necessary to purge the fuel lines before starting. Refer to the engine manual supplied with the unit.

Select AUTO or MANUAL Mode

See ***Figure 3-10***. Use the select button to select AUTO or MANUAL on the Home screen.

- AUTO mode is required for programming automatic start and stop times (see ***Scheduler Screen***), or enabling the “dusk to dawn” sensor (see ***Dusk to Dawn Sensor (Power Zone–DLA) (If Equipped)***).
- MANUAL mode is used for on-demand control of the lights and convenience receptacles.

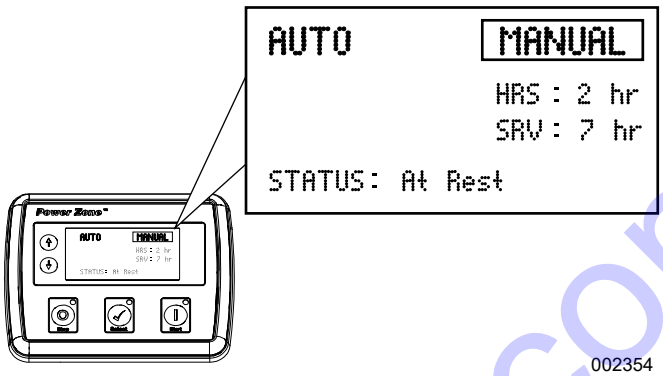

Figure 3-10. Select AUTO or MANUAL Mode

Manually Starting the Unit

STOP mode is the default start-up setting for all units equipped with the Power Zone–DLA. Proceed as follows to start the generator in MANUAL mode.

1. Verify the 240VAC outlet breaker is set to OFF (O).
2. Set the main circuit breaker OFF (I).
3. When the controller powers up, the Home screen displays on the LCD screen and the Stop LED illuminates to indicate that the controller is in STOP mode. Press the Start button to initiate the startup procedure. If there are no existing engine faults, the engine will start and the Start LED will illuminate.

NOTE: The engine can be started from any screen. It may take a few seconds for the engine to run smoothly and reach its governed operating speed.

4. If the engine does not start after the first cranking attempt, the engine will pause for 15 seconds to allow the starter to cool. The controller backlight will go out. The engine will make two more attempts to start for a total of three crank cycles.
5. If the engine does not start and run within three starting cycles, the LCD screen will display the “Fail to Start” alarm. The starting sequence can be repeated after the starter cools for at least two minutes. Pressing the Stop (O) button will clear the alarm and reset the controller.

Light Operation (Key Switch Models)

⚠WARNING

Burn hazard. Never operate lights with a damaged or missing lens cover. Lamps are hot and pressurized while in use. Unprotected lamps can shatter, causing severe injury.

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1. Verify the unit is ON and running smoothly.
2. See ***Figure 3-11***. Switch main circuit breaker (A) ON (I).
3. Switch light circuit breaker (B) ON (I).

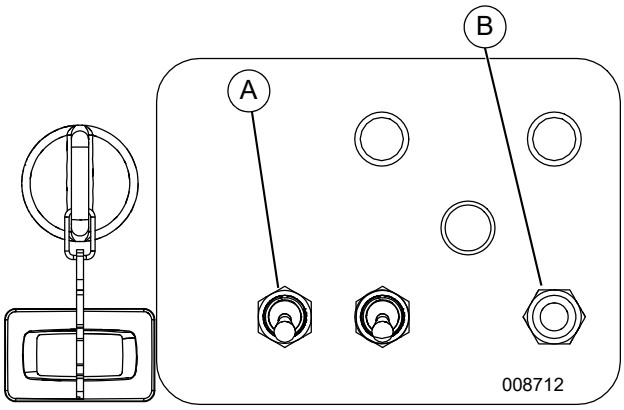

Figure 3-11. Light Switches and Breaker

Light Operation (Power Zone–DLA) (If Equipped)

See ***Figure 3-12***. The lights are turned on and off using the Power Zone–DLA. To view the light screen, press the ↑ button three times from the Home screen.

NOTE: The lights can only be turned ON and OFF while the unit is running in MANUAL mode. They operate automatically in AUTO mode.

NOTE: The light tower can only be run with all four fixtures ON. The upper left light controls all four lights ON and OFF.

1. Once the engine is up to temperature and running smoothly, switch the main circuit breaker ON (I).
2. To turn the light(s) ON, press the Select (✓) button. To turn the light(s) OFF, press the Select (✓) button.

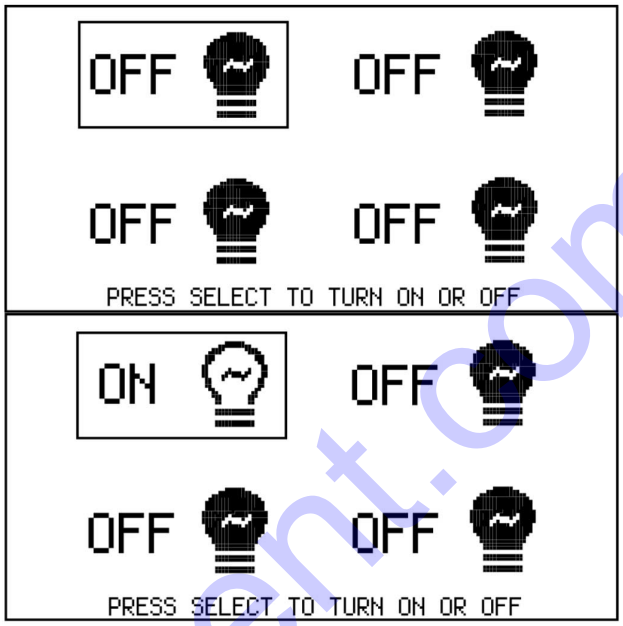

Figure 3-12. Lights Screen

Engine Derating

All units are subject to derating for altitude and temperature. Derating reduces the available power for operating tools and accessories connected to the receptacles. For every increase in 1,000 ft (305 m) of elevation, engine performance for this unit typically drops between 2–4%. Also, engine performance decreases about 1% for every 10 °F (5.6 ºC) increase in ambient air temperature over 72 ºF (22 ºC).

Wet Stacking

The unit is powered by a diesel engine. Diesel engines are subject to “wet stacking” if lightly loaded. Wet stacking occurs when an engine is run at less than 30% of its full load capacity, causing unburned fuel to accumulate in the exhaust system. Wet stacking can be detected by continuous black exhaust when the unit is under a constant load. It can also cause fouling of injectors and buildup on engine valves. Diesel engines operate properly when applied loads are between 30–100% capacity. Appropriate generator sizing is determined by the anticipated load. If the unit is in a wet stack condition, load the unit heavily for five hours or until the exhaust is clear.

Dusk to Dawn Sensor (Power Zone–DLA) (If Equipped)

See ***Figure 3-13***. If equipped with the Power Zone-DLA controller, this unit includes a “dusk to dawn” nightwatchman sensor (A) to detect the surrounding light level, automatically starting the engine and turning the lights on at dusk. The engine will run and the lights will remain illuminated until dawn.

To prepare the sensor for use, perform the following procedure at the time of day you want the lights to turn on:

1. Verify the Power Zone–DLA is set up and the unit is on.
2. Slide the light shield bracket up, decreasing the sensor’s exposure to light, until the lights turn on.
3. Tighten screws on shield.

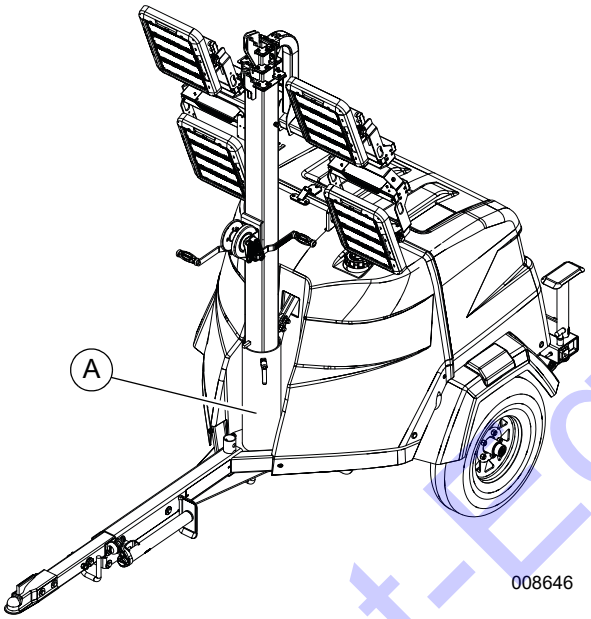

Figure 3-13. Dusk to Dawn Sensor

Customer Convenience Receptacles

See ***Figure 3-14***. The unit is equipped with convenience receptacles for powering accessories or tools from the generator. Power is supplied to the receptacles any time the engine is running and the main circuit breaker is switched to the ON (I) position. Each receptacle has an individual circuit breaker, located on the control box. Refer to ***Control Panel***.

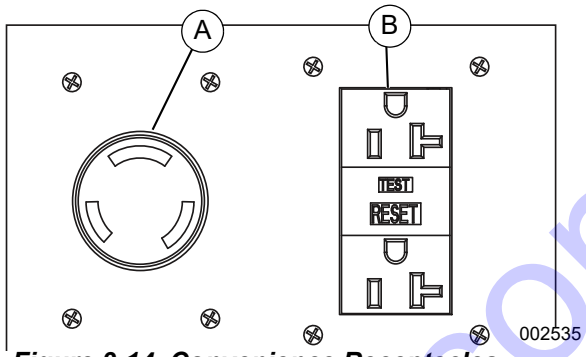

Figure 3-14. Convenience Receptacles

The circuit breakers are labeled with the corresponding voltage for the receptacle they protect. The standard receptacle panel is equipped with the following receptacles:

- One 240V/30A Twist-lock (A)
- One120V/20A GFCI (B)

NOTE: Do not draw more than a combined total of 4,800W from the receptacles with the lights on. This will overload the generator and cause the main circuit breaker to trip. If the breaker trips, switch off the lights, remove some of the loads connected to the receptacles.

With the lights off, the full generator output may be used with the 240V twist-lock receptacle.

Shutting Down the Unit

Verify with personnel using power supplied by the unit and notify them power will be turned off. Verify the power shutdown will not create any hazards by accidentally turning off equipment that needs to remain running (pumps, compressors, lights, etc.).

1. Remove all loads from the receptacles.
2. Switch the light circuit breaker to OFF (O).
3. Switch the main circuit breaker OFF (O).
4. Move the control power switch to STOP.

Shutting Down the Unit (Power Zone–DLA) (If Equipped)

Verify with personnel using power supplied by the unit and notify them power will be turned off. Verify the power shutdown will not create any hazards by accidentally turning off equipment that needs to remain running (pumps, compressors, lights, etc.).

1. Remove all loads from the receptacles.
2. Turn the lights off using the controller.
3. Switch the main circuit breaker OFF (O).
4. Press the Stop (O) button.
5. After the unit shuts down, switch the control power switch OFF (O).

NOTE: Disconnect the battery if the unit will be stored for an extended period. Refer to the engine operator's manual for additional extended storage procedures.

Automatic Shutdown

This unit is equipped with a low oil pressure and high coolant temperature automatic shutdown system. This system automatically shuts off the fuel supply to stop the engine if oil pressure drops too low, or the engine exceeds normal operating temperature. Return the main circuit breaker to STOP to reset the unit after the cause of shutdown has been determined.

Lowering the Mast—Manual Winch

1. Shut down the lights and engine. See ***Shutting Down the Unit***.
2. Lower the mast.
3. Use the winch handles to collapse the mast to its lowest position. Verify the electrical cord does not get caught in, or pinched by, the mast while it is being lowered.

⚠WARNING

Personal Injury. Stop immediately if the mast hangs up or the winch cable develops slack. Excess slack could cause the mast to collapse, resulting in personal injury or equipment damage.

(000265)

IMPORTANT NOTE: Contact a GMP ASD immediately if the mast hangs up or the winch cable develops slack.

4. See ***Figure 3-15***. If the unit is going to be moved, rotate the mast so the lights face the rear of the unit.

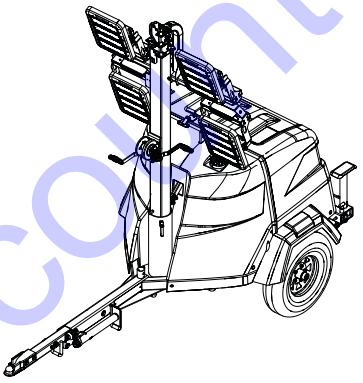

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Figure 3-15. Stowed (Travel) Position

To rotate the mast:

a. Loosen the mast rotation knob.

b. Rotate the mast until the white arrows are aligned and the metal stop tabs are touching.

c. Tighten the mast rotation knob.

Lowering the Mast—Electric Winch (If Equipped)

NOTE: On key switch models, key must be in RUN to operate electric winch.

1. Press and hold the upper winch control switch downward to collapse the mast to its lowest position. Verify the electrical cord does not get caught in, or pinched by, the mast while it is being lowered.
2. Shut down the engine. See ***Shutting Down the Unit***.
3. If the unit is going to be moved, rotate the mast so the lights face the rear of the unit. To rotate the mast:
   a. Loosen the mast rotation knob.
   b. Rotate the mast until the white arrows are aligned and the metal stop tabs are touching.
   c. Tighten the mast rotation knob.

NOTE: The electric winch models are equipped with a safety limit switch. This switch disconnects power to the winch after the mast is completely raised or lowered. This prevents the cable from continuing to unwind and becoming entangled around the winch drum.

⚠WARNING

Personal Injury. Stop immediately if the mast hangs up or the winch cable develops slack. Excess slack could cause the mast to collapse, resulting in personal injury or equipment damage.

(000265)

IMPORTANT NOTE: Contact a GMP ASD immediately if the mast hangs up or the winch cable develops slack.

NOTE: If the light tower is not operational, and the batteries do not have enough power to lower the mast, it may be necessary to lower the mast manually. Always attempt to recharge the batteries and lower the mast electrically before proceeding.

Manually Lowering the Mast

IMPORTANT NOTE: Do not use this procedure unless it is absolutely necessary. Frequent use of this procedure could damage the motor shaft.

1. See ***Figure 3-16***. Remove the motor cover (A).

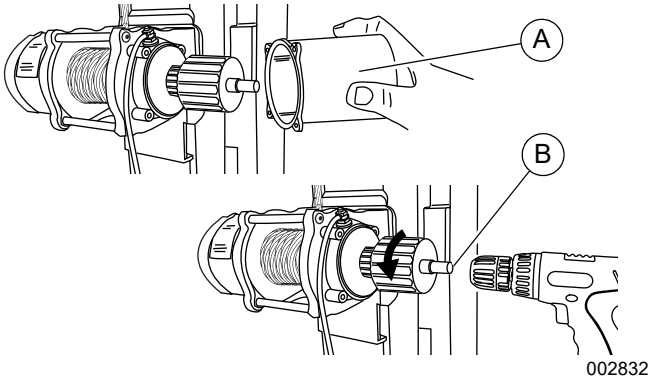

Figure 3-16. Manually Lowering the Mast

2. Attach a drill chuck firmly to the exposed motor shaft (B).
3. Using the drill, slowly rotate the motor shaft counterclockwise to lower mast.
4. Detach the drill chuck and install the motor cover after the mast is completely lowered.

Lowering the Mast—Power Zone-DLA (If Equipped)

NOTE: Units with the Power Zone-DLA do not have a mast switch for the electric winch.

1. Verify Power Zone-DLA controller is powered on.
2. Press the up/down arrows next to the controller display until the mast screen is shown. See ***Figure 3-17***.

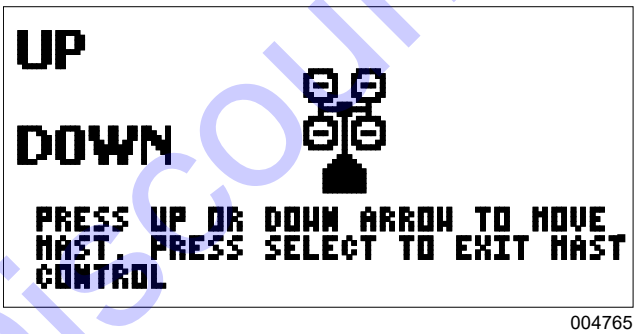

Figure 3-17. Lowering the Mast Screen

3. Press the SELECT button; the UP/DOWN on the display will begin to flash. Press the down arrow as needed until the mast is lowered.
4. Press SELECT again to exit the mast control screen.

⚠WARNING

Personal Injury. Stop immediately if the mast hangs up or the winch cable develops slack. Excess slack could cause the mast to collapse, resulting in personal injury or equipment damage. (000265)

IMPORTANT NOTE: Contact a GMP ASD immediately if the mast hangs up or the winch cable develops slack.

5. If the unit is going to be moved, rotate the mast so the lights face the rear of the unit. See ***Raising the Mast—Manual Winch***.

Positive Air Shutdown (PAS) (If Equipped)

See ***Figure 3-18***. This unit may be equipped with a positive air shutdown (A) on the air intake. The PAS system automatically stops the engine if an overspeed is detected. Engine overspeed can occur if the atmosphere contains elevated levels of combustible propane or natural gas.

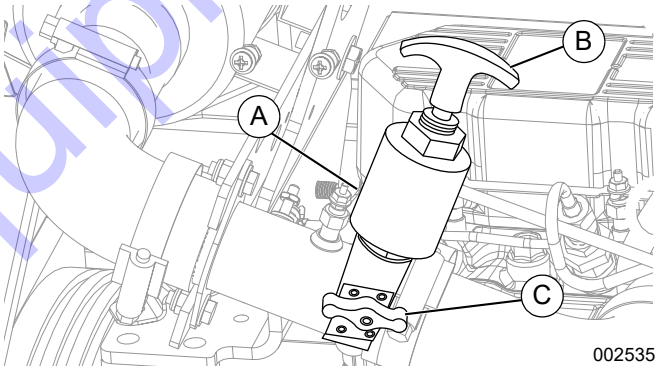

Figure 3-18. Positive Air Shutdown

The PAS system stops the engine by closing an internal valve and obstructing intake air. Shutdown is triggered automatically by an output from the controller or manually by pulling the T-handle (B).
The reset knob (C) rotates 90° to block airflow. If the knob is parallel to the pipe centerline (as shown), the valve is open. If the knob is perpendicular to the pipe centerline, the valve is closed and airflow is blocked.

Test the PAS

Test the PAS at least once a month to ensure optimal valve performance. There are two methods:

1. Pull the T-handle. (**NOTE**: The valve must be open before testing.)
2. Press the emergency stop button.

Testing the PAS triggers an actuator, closing the butterfly valve inside the valve body. An audible click can be heard when the actuator engages. Confirm that the valve

is closed by verifying that the knob has rotated perpendicular to the pipe centerline. If valve does not close, contact Generac Mobile Products Technical Support.

Reset the PAS

IMPORTANT NOTE: Before resetting the PAS, turn the control power switch OFF (O). This will prevent unexpected engine start-up during the procedure.

1. Rotate the reset knob and hold it in place while pulling the T-handle until reset knob rotates counterclockwise into plunger detent. An audible “click” indicates the reset knob has seated properly.
2. Verify that the reset knob is parallel to the intake pipe centerline.
3. Release T-handle, and then release reset knob. The reset knob should remain parallel to the intake pipe centerline.

Lower Radiator Hose Heater (If Equipped)

The lower radiator hose heater is designed to prevent engine coolant from freezing in extreme cold weather conditions. While the heater is designed to be operated overnight if necessary, 2–5 hours of heating just prior to starting is usually sufficient for proper engine starting.

NOTE: Use the lower radiator hose heater only in its designated location. Incorrect use can damage the engine.

Proceed as follows when operating a unit equipped with a lower radiator hose heater.

1. Verify the unit is level to maintain correct orientation of the heater while it is in operation.
2. Verify the cooling system is full of the correct mixture of water and engine coolant before each heater use.
3. Use only an undamaged, outdoor rated, three-prong grounded 120VAC extension cord with a minimum amperage rating of 10A. Connect the cord to a properly grounded 120VAC GFCI outlet.
4. Before starting the engine, unplug the extension cord from the power first, then unplug the heater cord set from the extension cord.

Tandem Tow (If Equipped)

See ***Figure 3-19***. The tandem tow hitch option (A) allows the operator to tow a second MLT6 Light Tower in series behind the unit equipped with the hitch.

IMPORTANT NOTE: Never tow more than two units at once.

- Connect any trailer wiring to the unit in front (B). Inspect for proper operation of the directional and brake lights.
- Connect the towing chains to the tie down locations (C).
- Avoid sharp turns when towing. **Do not** cross any obstacles more than 12 in (30.5 cm) deep.
- Tandem tow speeds:
  a. Paved highway—45 mph (72 km/h)
  b. Graded gravel—25 mph (40 km/h)
  c. Cross country—10 mph (16 km/h)

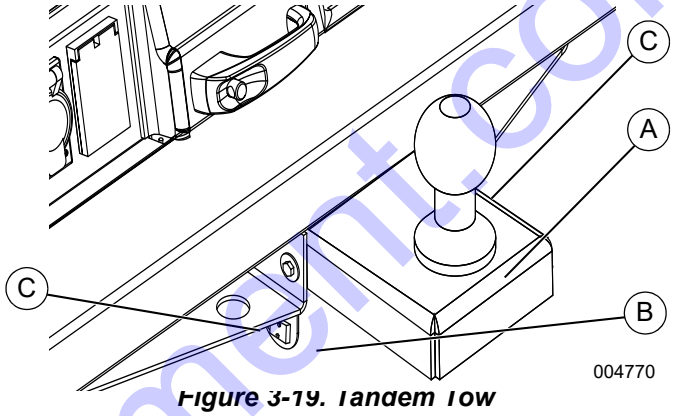

Figure 3-19. Tandem Tow

Telemetry (If Equipped)

The digital telemetry option enables the operator to remotely monitor the unit fuel level. A transmitter inside the engine compartment sends real time equipment status information to the user via cellular or satellite connection.

Spark Arrester (If Equipped)

A spark arrester, installed on the unit exhaust, may be required by code in certain municipalities. Contact the local authority having jurisdiction to determine if a spark arrester must be installed on the unit before operation.

Heated Fuel Filter (If Equipped)

See ***Figure 3-20***. An optional heated fuel filter (A) prevents diesel fuel from gelling in extremely cold temperatures. Heating cycles are automatically controlled by the Power Zone–DLA.

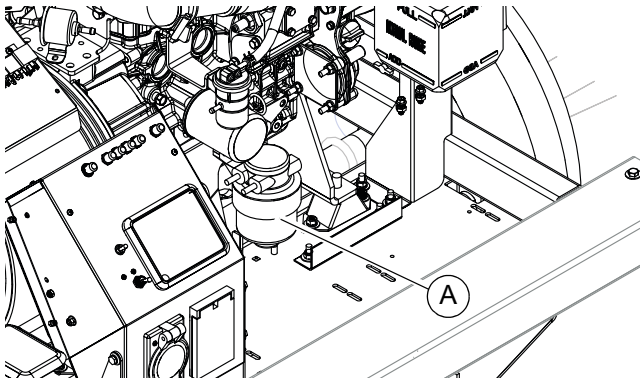

Figure 3-20. Heated Fuel Filter

Towing the Unit

Once the engine is shut down and the mast and lights are correctly stowed, proceed as follows to prepare the unit for towing.

1. Raise the outrigger jacks completely and release the locking pins to rotate them up into the travel position. Verify the locking pins snap into place. Release the outrigger locking pins and slide the outriggers into the trailer frame until the locking pins snap into place.
2. Use the tongue jack to raise or lower the trailer onto the hitch of the towing vehicle. Lock the hitch coupling and attach the safety chains or cables to the vehicle. Remove the tongue jack locking pin and rotate the jack into the travel position. Replace the locking pin.
3. To ensure correct operation of the jacks, refer to ***Trailer Wheel Bearings***. For maintenance interval information, refer to ***Basic Maintenance Schedule***.
4. Connect any trailer wiring to the tow vehicle. Inspect for correct operation of the directional and brake lights.
5. Verify the enclosure is correctly latched.
6. Check for correct inflation of the trailer tires. For maximum tire pressures, refer to ***Specifications***.
7. See ***Figure 3-21***. Inspect the wheel lugs. Tighten or replace any lugs that are loose or missing. If a tire has been removed for axle service or replaced, tighten the lugs, in the order shown, to the following specifications:

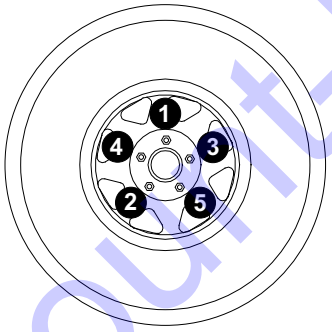

Figure 3-21. Tightening Wheel Lugs

   a. Start all lug nuts by hand.
   b. First pass: tighten to 20-25 ft-lbs (27-33 Nm).
   c. Second pass: tighten to 50-60 ft-lbs (67-81 Nm).
   d. Third pass: tighten to 90-120 ft-lbs (122-162 Nm).

NOTE: After the first road use, torque the lug nuts in sequence.

8. Maximum recommended speed for highway towing is 45 mph (72 km/h). Recommended off-road towing speed is not to exceed 10 mph (16 km/h) or less, depending on the terrain.

Lifting the Unit

Proceed as follows to prepare the unit for lifting:

1. Verify the equipment being used to lift the unit is in good condition and has sufficient capacity. For approximate weights, refer to ***Specifications***.
2. Close and lock all hoods and doors.
3. See ***Figure 3-22***. Stow the mast and lights in the travel position as shown.
4. Always remain aware of people and objects around the unit while preparing, maneuvering, and lifting the unit.

- When lifting the unit, attach any slings, chains, or hooks directly to the central lift point (A). The central lift point is located on top of the enclosure, connected to a lift structure inside the unit.

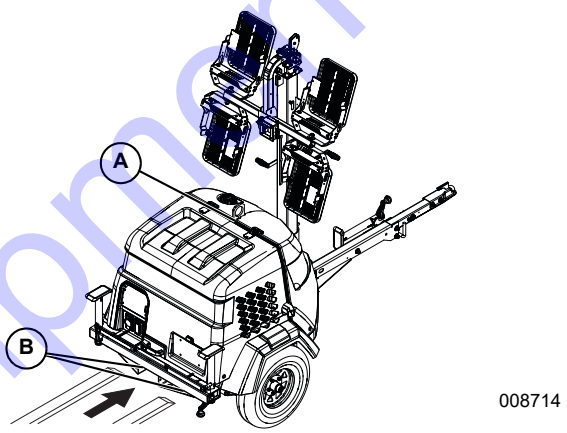

Figure 3-22. Lifting Points

- Use the forklift pockets (B) with care. Lift directly from the rear. Avoid approaching the unit at an angle, as this can permanently damage the forklift pockets, tires, or cabinet. Verify any obstructions are clear of the forklift tines before lifting.

Tying the Unit Down

When securing the unit for transportation, verify the equipment being used to fasten the unit is in good condition and has sufficient strength to hold the unit in place during transport.

See ***Figure 3-23***. Use the tie-down points (C) as shown.

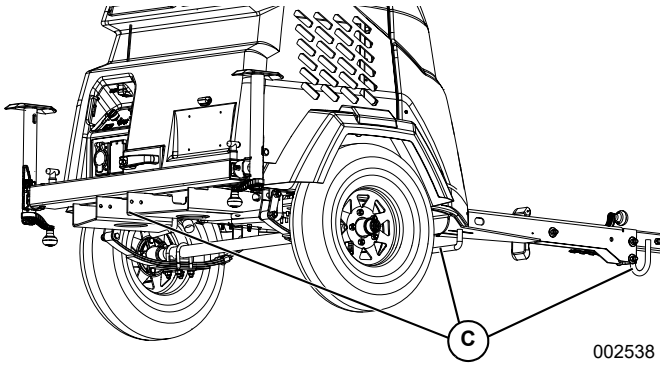

Figure 3-23. Tie-Down Points

Section 4: Maintenance

Emissions Information

For warranty information, please refer to the diesel engine manual supplied with this unit.

Daily Walk-Around Inspection

⚠CAUTION

Equipment Damage. Failure to perform a daily inspection could result in damage to the unit.

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Perform a walk-around inspection of the unit every day before starting the unit. Look for conditions that could hinder performance or safety, such as (but not limited to):

- Oil, coolant, and fuel leakage
- Blocked vents
- Loose or missing hardware
- Loose or broken electrical connections

Inspect the fan belt for cracks, fraying, or stretching. Verify the belt is correctly seated in the pulley grooves. Replace the belt according to the manufacturer's recommendations.

General Maintenance

Poorly maintained equipment can become a safety hazard. In order for the equipment to operate safely and correctly over a long period of time, periodic maintenance and occasional repairs are necessary. **DO NOT** perform routine service (oil and filter changes, cleaning, etc.) unless all electrical components are shut off.

Regular maintenance will improve performance and extend engine/equipment life. Generac Mobile Products, LLC recommends that all maintenance work be performed by a GMP ASD. Regular maintenance, replacement or repair of the emissions control devices and systems may be performed by any repair shop or person of the owner's choosing. However, to obtain emissions control warranty service free of charge, the work must be performed by a GMP ASD or authorized Mitsubishi® engine dealer depending on the repair. See the emissions warranty.

Preparing for Service

Before servicing the unit, always follow the instructions listed below.

1. If unit is equipped with the Power Zone™-DLA controller, verify the main circuit breaker is OFF. Otherwise, verify the key switch is OFF.
2. Verify the circuit breakers are switched OFF (O).
3. Disconnect the negative (–) terminal on the battery.
4. Attach a "Do Not Start" sign to the control panel to signify that the unit is being serviced and reduce the chance of unauthorized use.

Cleaning the Unit

⚠CAUTION

Equipment damage. Never spray water to clean unit. Do not introduce water into generator widings, terminals, or fuel system during the cleaning process. Doing so will result in equipment damage.

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Always clean the unit after each use to remove dust, grease, mud, or spilled fuel or oil. Use soft, clean rags to wipe the cabinet exterior and control panel. Low-pressure compressed air (less than 40 psi [276 kPa]) can also be used to remove dust and debris from the cabinet interior.

This unit contains sensitive electronic components that can be damaged by high pressure and heat. **Do not**:

- wash the unit with a high pressure hose or power washer.
- wash the engine block or fuel tank with a power washer or steam cleaner. Water may enter the cabinet and collect in the generator windings or other electrical parts, causing damage.

Inspecting the Unit

- If the unit is stored outside, inspect for water inside the cabinet and generator before each use. If wet, dry the unit thoroughly before starting.
- Inspect condition of electrical cords. **DO NOT** use the unit if insulation is cut or worn through.
- Verify winch cables are in good condition and centered on each pulley. **DO NOT** use a cable that is kinked or starting to unravel.
- Verify the wheel lugs are present and correctly tightened. Refer to ***Towing Safety***.
- Check the coolant level daily by inspecting the level in coolant overflow jug located near the radiator. Refer to the engine operator's manual for coolant recommendations and proper mixture. Normal operating level is between the 'full' and 'add' markings on the overflow jug.
- After engine is stopped and completely cool, coolant may be added directly to the coolant overflow jug.
- Check the oil level daily. Refer to the engine operator's manual for the appropriate oil specification.
- Verify the oil is correct for special operating conditions such as a change in season or climate.

- **DO NOT** start the unit if the engine oil level is below the ADD mark on the dipstick.
- Normal operating level is in the cross-hatch pattern between the full and add markings on the dipstick.
- Add oil only if the oil level is below the add mark on the bottom of the cross-hatch pattern on the dipstick. **DO NOT OVERFILL**.

- Check the fuel level.
- If the unit is connected to a remote start or transfer switch, verify the remote switch is off and tagged.

NOTE: If the engine was run out of fuel or the fuel tank drained, it may be necessary to purge the fuel lines. Refer to the engine operator's manual supplied with the unit.

Basic Maintenance Schedule

Refer to the original equipment manufacturer's operating manual for a complete list of maintenance requirements. Failure to comply with the procedures as described in the engine operator's manual will nullify the warranty, decrease performance, and cause equipment damage or premature equipment failure. Maintenance records may be required to complete a warranty request.

Use the schedule in the following table as a guide for regular maintenance intervals. For additional or replacement copies of the engine operator's manual, contact a GMP ASD.

Table 4-1. Basic Maintenance Schedule—MLT6SM (Mitsubishi)

Item	Daily	First 50 Hours	Every 750 Hours	As Required
Check oil level	♦			
Check coolant level	♦			
Check fuel level	♦			
Check tire pressure	♦			
Inspect wheel bearings	♦			
Inspect all electrical connections	♦			
Inspect radiator fins for debris; clean as required	♦			
Inspect light tower winch for proper operation	♦			
Inspect Resistor bank for debris; clean as required				♦
Inspect fan belt for tightness	♦			
Inspect radiator hoses and clamp bands	♦			
Replace fan belt			♦	
Check Resistance on Load Bank Resistor (30 Ohm +/- 10%)		♦	♦	
Replace engine oil and oil filter		♦	♦*	
Inspect and adjust belt and belt tension		♦	♦*	
Replace fuel filter element			♦	
Inspect battery condition			♦	
Replace air filter element			♦	
Lubricate leveling jacks				♦
Purge air from fuel system				♦
Drain residual water from fuel filter				♦

* *Generac Mobile Products, LLC recommends oil change intervals on the MLT6SM equipped with the Mitsubishi L3E-W461ML Tier 4 engine be extended to 750 hours after initial break-in. The engine comes from the factory with a larger sump that holds 5.5 qts (5.2 L) of engine oil. After the initial 50 hour break-in and oil change, the sump, coupled with the larger oil filter, allows the engine to operate up to 750 hours between routine oil changes. Hot, humid, or dusty conditions can shorten engine oil service life, regardless of suggested oil change intervals. Always follow the recommendations of the OEM engine manual that was shipped with the unit for specific operating instructions.*

Table 4-2. Basic Maintenance Schedule—MLT6SK (Kubota®)

Item	Daily	First 50 Hours	Every 500 Hours	Every 750 Hours	As Required
Check oil level	♦				
Check coolant level	♦				
Check fuel level	♦				
Check tire pressure	♦				
Inspect wheel bearings	♦				
Inspect all electrical connections	♦				
Inspect radiator fins for debris; clean as required	♦				
Inspect light tower winch for correct operation	♦				
Inspect fan belt for tightness	♦				
Inspect radiator hoses and clamp bands	♦				
Replace fan belt			♦		
Replace fuel filter element				♦	
Replace air filter element				♦*	
Replace engine oil and oil filter		♦		♦**	
Lubricate leveling jacks					♦
Remove sediment in fuel tank					♦
Clean air filter element					♦
Purge air from fuel system				♦	
Drain residual water from fuel filter				♦	

* *Replace the air cleaner element yearly, or after six cleanings, whichever occurs first.*

** *Generac Mobile Products, LLC recommends that oil change intervals on the MLT6SK equipped with the Kubota engine be extended to 750 hours after initial break-in. The engine comes from the factory with a larger sump that holds 5.5 qts (5.2 L) of engine oil. After the initial 50 hour break-in and oil change, the sump, coupled with the larger oil filter, allows the engine to operate up to 750 hours between routine oil changes. Hot, humid, or dusty conditions can shorten engine oil service life, regardless of suggested oil change intervals. Always follow the recommendations of the OEM engine manual that was shipped with the unit for specific operating instructions.*

Resetting the Maintenance Alarms (If Equipped)

The Power Zone-DLA controller will display a warning message when the unit is due for maintenance or service. The maintenance or service interval is set at 750 hours of engine running time. Once the unit has been serviced, the appropriate maintenance alarm reminder needs to be reset. Proceed as follows to reset the maintenance alarms:

1. With the unit shut down, set the control power switch to ON (I). After initialization, the controller will toggle automatically to the Home screen.
2. Press ↑ and ↓ simultaneously to enter the navigation menu.
3. Press ↑ or ↓ to move 🔧 to the top of the screen. Press ✓ to enter the Maintenance screen.
4. Press ↑ or ↓ to highlight the desired alarm that needs to be reset. Press ✓ to start reset.
5. Enter the pin 4444. To do this, press ✓ and then ↑ or ↓ to adjust the first number of the maintenance pin. Press ✓ to continue to the next number.

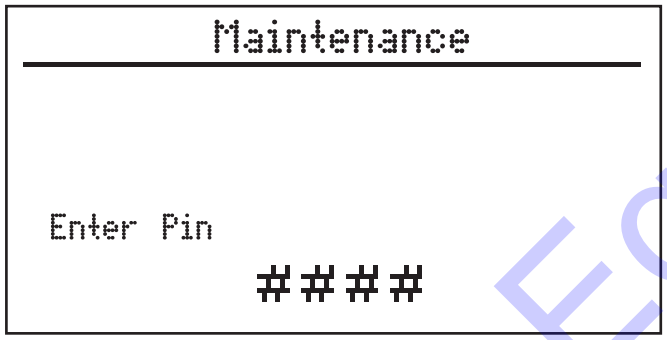

Figure 4-1. Entering Maintenance Pin

Manual Winch: Use, Operation, and Maintenance

Prior to Use

- Inspect rope or cable and replace if damaged.
- Inspect mounting hardware for correct tightness and torque if necessary.
- Gears, ratchet pivot point, and shaft bushings must be kept lubricated with a thin film of oil or grease.

Operation

Raising the Lights:

1. The cable must be securely fastened to the winch drum.
2. Verify the cable and cable attachments are not damaged. Contact Generac Mobile Products, LLC to order a replacement cable if necessary.
3. Referring to the “Lift / Let Down” decal on the winch, turn handle according to the specified direction to lift. The ratchet MUST make a loud clicking sound while winding the cable.

Lowering the Lights:

Referring to the “Lift / Let Down” decal on the winch, turn handle according to the specified direction to lower. No clicking will be heard because the brake system is activated.

Maintenance

The following procedures should be performed at least annually:

1. The gears and bushings of the winch must be kept lubricated. Apply a thin film of grease to the gear teeth, and oil the bushings as needed.
2. The ratchet pawl pivot point must be kept lubricated with a thin oil.

NOTE: Do not get oil or grease on the brake mechanism.

Electric Winch (If Equipped): Use, Operation, and Maintenance

- Keep the winch free of dirt, oil, grease, water, and other substances.
- Check all mounting bolts and verify they are tightened to the recommended torque values. Replace any damaged fasteners.
- Periodically inspect all connections to verify they are tight and free of corrosion.
- Inspect the cable for visible damage every time the winch is operated. Examples of damage are: cuts, knots, crushed or frayed portions, and broken strands. Replace cable immediately if damaged. Failure to replace a damaged cable could result in breakage.
- Regularly inspect the brake for slippage or drift. This is detected visually when winch is under load. If winch drum continues to turn after controls are released, the brake may need to be replaced.
- Periodically clean and grease the brake assembly. This will ensure correct performance and extend the life of the winch. If winch seems to labor or get excessively hot during the lowering of loads, the brake will need to be serviced or replaced.
- Inspect motor brushes periodically and replace when necessary.

NOTE: Only the motor brushes and brake assembly require periodic replacement.

Winch Mechanical Brake

The mechanical brake generates heat when loads are lowered and the wire cable is powered out. Avoid overheating the mechanical brake. Overheating the mechanical brake may result in permanent damage to, or failure of, the brake. Replace any damaged brake components before resuming use of the winch.

Whine or chatter associated with a new mechanical brake is normal and typically disappears with use.

Overheating the mechanical brake may result in permanent damage to, or failure of, the brake. Replace any damaged brake components before resuming use of the winch.

Table 5: Winch Preventative Maintenance Schedule

Maintenance Activity	After First Operation	Before Each Use	Semi-Annually
Inspect fasteners	♦		♦
Inspect electrical connections	♦		♦
Clean and grease brake assembly			♦
Inspect motor brushes			♦
Inspect winch and control	♦	♦	♦

Trailer Wheel Bearings

The trailer axles are equipped with a Zerk grease fitting to allow lubrication of the wheel bearings without the need to disassemble the axle hub. Use only a high quality grease made specifically for lubrication of wheel bearings, such as Valvoline W615 or equivalent.

See ***Figure 4-2***. Proceed as follows to lubricate the wheel bearings:

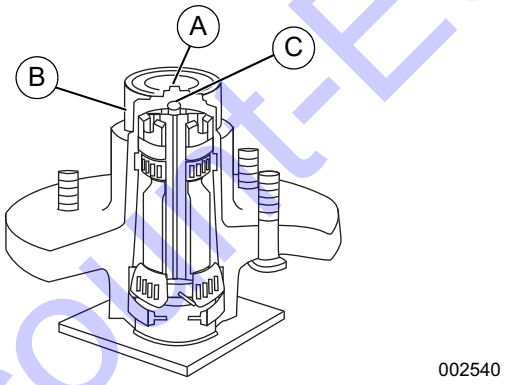

Figure 4-2. Wheel Bearing Cross Section

1. Remove the small rubber plug (A) from the metal end cap (B).
2. Attach a standard grease gun fitting to the Zerk grease fitting (C).
3. Pump grease into the Zerk fitting until fresh grease is visible around the nozzle of the grease gun.
4. Wipe any excess grease from the axle hub with a clean cloth and replace the rubber plug.

The minimum recommended lubrication is every 12 months or 12,000 miles (19,312 km). More frequent lubrication may be required under extremely dusty or damp operating conditions.

Every six months, or depending on usage, check for play in each bearing by jacking up the trailer, then trying to rock the wheel. If further assistance is required, contact Generac Mobile Products Technical Service at 1-800-926-9768.

Jack Maintenance

Before each use, inspect each jack foot for damage and remove any mud or debris. The jacks must be clean and in good operating condition to correctly support the unit.

Section 5: Troubleshooting

General Troubleshooting

⚠WARNING

Risk of burns. Allow engine to cool before draining oil or coolant. Failure to do so could result in death or serious injury.

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Some of the more common problems are listed in the table below. This information is intended to be a check or verification that simple causes can be located and fixed. It does not cover all types of problems. Refer to the OEM engine operator's manual for additional troubleshooting information. Procedures that require in-depth knowledge or skills should be referred to a GMP ASD.

Table 5-1. General Troubleshooting Guide

Problem	Possible Cause	Solution
Low oil pressure shutdown	Low oil level	Verify oil level on dipstick. Add oil, if needed.
	Oil leaking from engine	Inspect the engine for leaks.
	Oil pressure switch failure	Refer to OEM engine operator's manual to identify corrective action.
High coolant temperature shutdown	Low coolant level	Add coolant if needed. Allow engine to cool, then check coolant level in radiator. Restart engine and check coolant temperature. Stop engine immediately if coolant temperature is 210 °F (99 °C) or more.
	Blockage in radiator	Inspect radiator shroud and ducting for blockage and remove any foreign matter.
	Leakage in coolant hoses, engine block, or water pump	Inspect for visible leaks. Verify tension of water pump serpentine drive belt. Remove load on generator and restart engine. Verify coolant temperature and shut engine down immediately if it starts to overheat. Refer to the OEM engine operator's manual for additional information on engine overheating.
	Faulty thermostat	Contact a GMP ASD to replace.
	Water pump failure	Contact a GMP ASD to replace.
	Incorrect mix/frozen radiator	Thaw the radiator with an external heat source and flush the coolant system with the correct coolant mixture.
Unit cranks, but will not start	Low fuel level	Check fuel level in tank. Verify fuel pump operation.
	Restricted air filter	Inspect air filter for blockage. Refer to OEM engine operator's manual for additional information.
	PAS engaged	Verify PAS is off.

Troubleshooting the Lights

⚠WARNING

Electrocution. Potentially lethal voltages are generated by this equipment. Render the equipment safe before attempting repairs or maintenance. Failure to do so could result in death or serious injury.

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IMPORTANT NOTE: Only a qualified electrician should troubleshoot or repair electrical problems occurring in this equipment.

Problem	Possible Cause	Solution
Mast lights off, checking outside the control box	Light fixture is too hot	Allow light to cool 10–15 minutes before restarting.
	Loose lighting connections	Inspect the connections inside the mast junction box and each mast light housing/socket.
	Damaged or loose electrical cord	Inspect the mast electrical cord for damage and check the cord connections inside the control box.
	Faulty fuel filter	With engine running and lights off, measure voltage and frequency at the GFCI receptacle. Voltage should indicate 120VAC ± 5%, and frequency should indicate 60.7 Hz ± 5%. If frequency and voltage are both low (<114VAC, <58 Hz), replace the fuel filter.
	Faulty generator capacitor	Measure the capacitance of the generator capacitor. If measurement is outside rating (as indicated on the capacitor), replace the capacitor.
Mast lights off, checking inside the control box	Loose lighting connections	Inspect the connections inside the control box.
	Generator output incorrect	Check the incoming voltage to the ballast driver by checking the available voltage on the GFCI receptacle. Incoming voltage should be 120V ± 5V. If voltage is incorrect, the generator may require service.

Section 6: Wiring Diagrams

Mast Junction Box Wiring and Light Connections