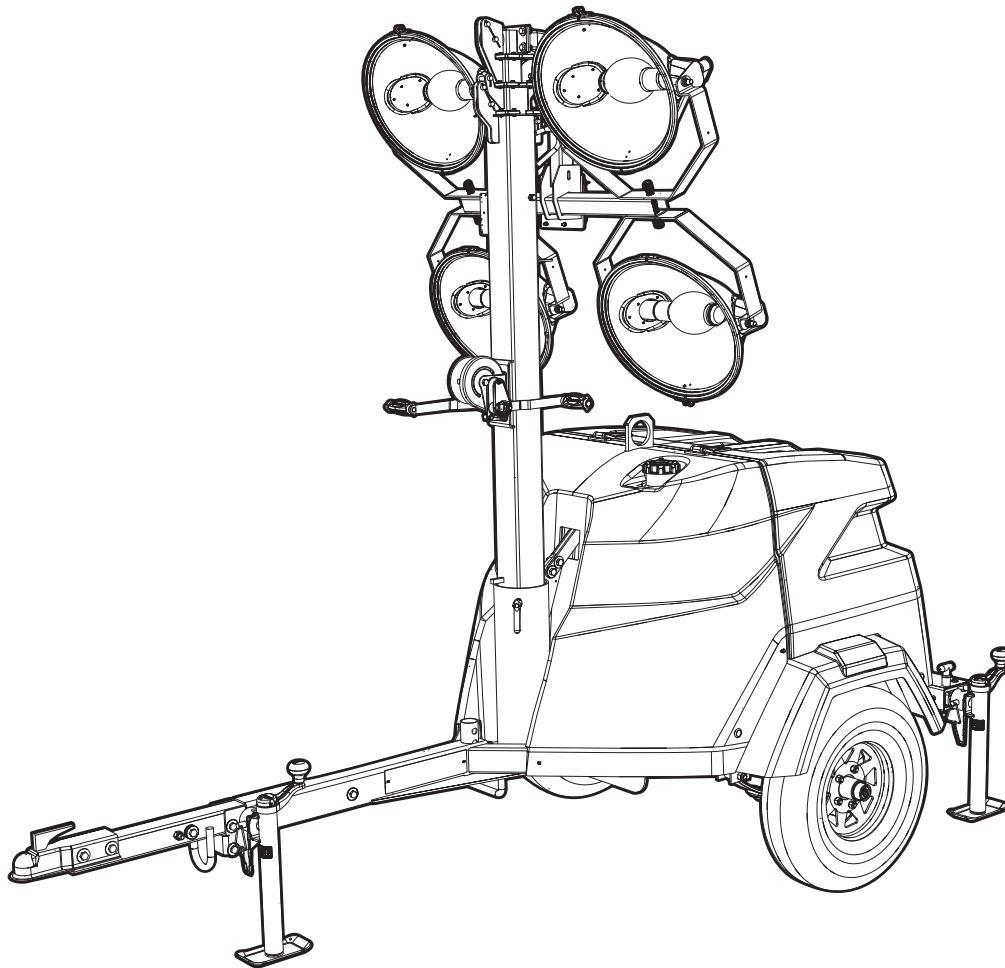


GENERAC[®]

MAGNUM

Owner's Manual
Light Tower

MLT6SC



For technical assistance contact:
www.generacmobileproducts.com
Technical Support
1-800-926-9768

SAVE THIS MANUAL FOR FUTURE REFERENCE

Use this page to record important information about your light tower.


Unit Model Number	
Unit Serial Number	
Engine Model Number	
Engine Serial Number	
Generator Model Number	
Generator Serial Number	

Record the information found on your unit data label on this page. See [Unit Serial Number Locations](#).

Engine and generator serial numbers are located on separate data plates affixed to the engine and generator respectively. When contacting a Generac Mobile Products Authorized Service Dealer (GMP ASD) about parts and service, always provide the unit model and serial number.

Operation and Maintenance: Proper maintenance and care of the light tower ensures a minimum number of problems and keeps operating expenses at a minimum. It is the operator's responsibility to perform all safety checks, to verify that all maintenance for safe operation is performed promptly, and to have the equipment checked periodically by a GMP ASD. Normal maintenance, service and replacement of parts are the responsibility of the owner/operator and, as such, are not considered defects in materials or workmanship within the terms of the warranty. Individual operating habits and usage may contribute to the need for additional maintenance or service.

 **WARNING**
CANCER AND REPRODUCTIVE HARM
www.P65Warnings.ca.gov
 (000393a)

 **WARNING**

Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system.
- Do not idle the engine except as necessary.

For more information go to www.P65Warnings.ca.gov/diesel. (000394)

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Section 1: Introduction and Safety

Introduction

Thank you for purchasing a Generac Mobile Products, LLC product. This unit has been designed to provide high performance, efficient operation, and years of use when maintained properly.

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

Read This Manual Thoroughly



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)

If any section of the manual is not understood, contact your nearest Generac Mobile Products Authorized Service Dealer, or contact Generac Mobile Products LLC at 1-800-926-9768, or www.generacmobileproducts.com with any questions or concerns.

The owner is responsible for proper maintenance and safe use of the equipment. Comply with regulations the Occupational Safety and Health Administration (OSHA) has established, or with equivalent standards. Also, verify that the unit is applied, used, and maintained in accordance with the manufacturer's instructions and recommendations. Do nothing that might alter safe application/usage and render the unit in noncompliance with the aforementioned codes, standards, laws, and regulations.

Save these instructions for future reference. This manual contains important instructions for the unit that should be followed during setup, operation and maintenance of the unit and battery. ALWAYS supply this manual to any individual that will use this machine.

Safety Rules

The manufacturer cannot anticipate every possible circumstance that might involve a hazard. The alerts in this manual, and on tags and decals affixed to the unit, are not all inclusive. If using a procedure, work method, or operating technique that the manufacturer does not specifically recommend, verify that it is safe for others and does not render the equipment unsafe.

Throughout this publication, and on tags and decals affixed to the unit, DANGER, WARNING, CAUTION, and NOTE blocks are used to alert personnel to special instructions about a particular operation that may be hazardous if performed incorrectly or carelessly. Observe them

carefully. Alert definitions are as follows:



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

(000001)



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

(000002)



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

(000003)

NOTE: Notes contain additional information important to a procedure and will be found within the regular text of this manual.

These safety alerts cannot eliminate the hazards that they indicate. Common sense and strict compliance with the special instructions while performing the action or service are essential to preventing accidents.

How to Obtain Service

When the unit requires servicing or repairs, contact a GMP ASD for assistance. Service technicians are factory-trained and are capable of handling all service needs. For assistance locating a dealer, go to www.generacmobileproducts.com/parts-service/find-service. When contacting a GMP ASD about parts and service, always supply the complete model number and serial number of the unit as given on its data decal located on the unit. Record the model number and serial numbers in the spaces provided on the inside front cover of this manual.

General Hazards



⚠ DANGER

Asphyxiation. Running engines produce carbon monoxide, a colorless, odorless, poisonous gas. Carbon monoxide, if not avoided, will result in death or serious injury. (000103)



⚠ WARNING

Hearing Loss. Hearing protection is recommended when using this machine. Failure to wear hearing protection could result in permanent hearing loss. (000107)



⚠ WARNING

Moving Parts. Keep clothing, hair, and appendages away from moving parts. Failure to do so could result in death or serious injury. (000111)



⚠ WARNING

Hot Surfaces. When operating machine, do not touch hot surfaces. Keep machine away from combustibles during use. Hot surfaces could result in severe burns or fire. (000108)

⚠ WARNING

Risk of injury. Do not operate or service this machine if not fully alert. Fatigue can impair the ability to service this equipment and could result in death or serious injury. (000215)



⚠ WARNING

Risk of burns. Allow engine to cool before draining oil or coolant. Failure to do so could result in death or serious injury. (000139)

Explosion and Fire Hazards



⚠ DANGER

Explosion and Fire. Fuel and vapors are extremely flammable and explosive. Add fuel in a well ventilated area. Keep fire and spark away. Failure to do so will result in death or serious injury. (000105)



⚠ WARNING

Risk of Fire. Unit must be positioned in a manner that prevents combustible material accumulation underneath. Failure to do so could result in death or serious injury. (000147)



⚠ WARNING

Risk of Fire. Hot surfaces could ignite combustibles, resulting in fire. Fire could result in death or serious injury. (000110)

Trailer Hazards

⚠ WARNING

Personal injury. Trailer must be securely coupled to the hitch with the chains correctly attached. Uncoupled or unchained towing could result in death or serious injury. (000233a)

⚠ WARNING

Personal injury. Do not operate unit during transport. Doing so could result in death, serious injury, or property damage. (000231a)

⚠ WARNING

Crushing hazard. Verify unit is properly secured and on level ground. An unsecured unit can suddenly roll or move, causing death or serious injury. (000234a)

⚠ WARNING

Property or Equipment Damage. Tighten wheel lug nuts after first 50 miles to factory specifications. Failure to do so could result in death, serious injury, property or equipment damage. (000235)

Electrical Hazards



⚠ DANGER

Electrocution. In the event of electrical accident, immediately shut power OFF. Use non-conductive implements to free victim from live conductor. Apply first aid and get medical help. Failure to do so will result in death or serious injury. (000145)



⚠ DANGER

Electrocution. Water contact with a power source, if not avoided, will result in death or serious injury.

(000104)



⚠ DANGER

Electrocution. Contact with bare wires, terminals, and connections while generator is running will result in death or serious injury.

(000144)



⚠ DANGER

Electrocution. Verify electrical system is properly grounded before applying power. Failure to do so will result in death or serious injury.

(000152)



⚠ DANGER

Electrocution. Do not wear jewelry while working on this equipment. Doing so will result in death or serious injury.

(000188)



⚠ DANGER

Electrocution. DO NOT use the unit if electrical cord is cut or worn through. Doing so will result in death or serious injury.

(000263a)

Battery Hazards



⚠ DANGER

Electrocution. Do not wear jewelry while working on this equipment. Doing so will result in death or serious injury.

(000188)



⚠ WARNING

Explosion. Batteries emit explosive gases while charging. Keep fire and spark away. Wear protective gear when working with batteries. Failure to do so could result in death or serious injury.

(000137a)



⚠ WARNING

Explosion. Do not dispose of batteries in a fire. Batteries are explosive. Electrolyte solution can cause burns and blindness. If electrolyte contacts skin or eyes, flush with water and seek immediate medical attention.

(000162)



⚠ WARNING

Risk of burn. Do not open or mutilate batteries. Batteries contain electrolyte solution which can cause burns and blindness. If electrolyte contacts skin or eyes, flush with water and seek immediate medical attention.

(000163a)

⚠ WARNING

Environmental Hazard. Always recycle batteries at an official recycling center in accordance with all local laws and regulations. Failure to do so could result in environmental damage, death or serious injury.

(000228)

Always recycle batteries in accordance with local laws and regulations. Contact your local solid waste collection site or recycling facility to obtain information on local recycling processes. For more information on battery recycling, visit the Battery Council International website at: <http://batteryCouncil.org>

Fuel Hazards



⚠ DANGER

Explosion and fire. Fuel and vapors are extremely flammable and explosive. No leakage of fuel is permitted. Keep fire and spark away. Failure to do so will result in death or serious injury. (000192)



⚠ DANGER

Risk of fire. Allow fuel spills to completely dry before starting engine. Failure to do so will result in death or serious injury. (000174)

- **DO NOT** fill fuel tank near an open flame, while smoking, or while engine is running. **DO NOT** fill tank in an enclosed area with poor ventilation.
- **DO NOT** operate with the fuel tank cap loose or missing.

Engine Safety

Internal combustion engines present special hazards during operation and fueling. Failure to follow the safety guidelines described below could result in severe injury or death. Read and follow all safety alerts described in the engine operator's manual. A copy of this manual was supplied with the unit when it was shipped from the factory.

- **DO NOT** run engine indoors or in an area with poor ventilation. Make sure engine exhaust cannot seep into closed rooms or ventilation equipment.
- **DO NOT** clean air filter with gasoline or other types of low flash point solvents.
- **DO NOT** operate the unit without a functional exhaust system.
- Shut the engine down if any of the following conditions exist during operation:
 - Noticeable change in engine speed.
 - Loss of electrical output.
 - Equipment connected to the unit overheats.
 - Sparking occurs.
 - Engine misfires or there is excessive engine/generator vibration.
 - Protective covers are loose or missing.
 - Ambient air temperature is above 120°F (49°C).

Operating Safety

Positioning the Unit



⚠ DANGER

High Voltage. Verify area above unit is clear of overhead wires and obstructions. Contact with high-voltage power lines will result in death or serious injury. (000260a)



⚠ 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. (000277)

- The area immediately surrounding the unit should be dry, clean, and free of debris.
- Position and operate the unit on a firm, level surface.
- If the unit is equipped with a frame grounding stud, follow the National Electrical Code (NEC), state, and local regulations when connecting.

Starting the Unit



⚠ DANGER

Electrocution. **DO NOT** use the unit if electrical cord is cut or worn through. Doing so will result in death or serious injury. (000263a)

⚠ WARNING

Equipment damage. Do not attempt to start or operate a unit in need of repair or scheduled maintenance. Doing so could result in serious injury, death, or equipment failure or damage. (000291)

Raising and Lowering the Mast



⚠️ WARNING

Electrocution. Do not set up or operate this unit if severe weather is expected. Lightning strikes can kill or cause severe injury even if you are not touching the unit. (000296)



> 60 mph

⚠️ WARNING

Do not set up the unit if high winds are expected. High winds can cause the unit to tip or fall, causing severe injury or machine damage. (000297)

⚠️ WARNING

Personal injury or equipment damage. Do not raise or lower the mast while the unit is operating. Doing so can break the lenses and cause the lamps to shatter. (000279)

⚠️ 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)

⚠️ WARNING

Tipping hazard. Extend the outriggers and level the unit before raising the mast. Keep the outriggers extended while the mast is up. Failure to do so could cause the unit to tip and fall and could result in death or serious injury. (000266)



⚠️ WARNING

Burn hazard. Lamps become extremely hot while in use. Allow 10–15 minutes for cooling before handling or lowering mast. Touching a hot lens or fixture can cause severe burns. (000278)

- Keep area around the unit clear of people while raising and lowering the mast.
- **ALWAYS** lower the mast when not in use.
- The tower extends up to 23 ft (7 m). Verify area above trailer is open and clear of overhead wires and obstructions.
- If for any reason any part of mast hangs up or winch cable develops slack while raising or lowering tower, stop immediately and contact a GMP ASD.
- **NEVER** remove safety pin or pull mast locking pin while tower is up.

Service Safety

⚠️ WARNING

Accidental start-up. Disconnect negative battery terminal before servicing to prevent accidental engine rotation. Failure to do so could result in death or serious injury. (000148a)

This unit uses high voltage circuits capable of causing serious injury or death. Only a qualified and licensed electrician should troubleshoot or repair problems occurring in this equipment.

- Before servicing the unit, verify the control power switch and circuit breakers are OFF (O), and the negative (-) terminal on the battery is disconnected. **DO NOT** perform even routine service (oil/filter changes, cleaning, etc.) unless all electrical components are shut down.
- **ALWAYS** use extreme caution when servicing this unit in damp conditions. Do not service the unit if skin or clothing is wet. Do not allow water to collect around the base of the unit.
- **DO NOT** wash the unit with high pressure hoses, power washers, or steam cleaners. Water may collect in the unit, causing damage to electrical parts.
- Replace all missing and hard to read decals. Decals provide important operating instructions and warn of dangers and hazards.
- Wear heavy leather gloves when handling winch cables. Never let cables slip through bare hands.
- Only use mild soap and water to clean the lens covers. Other chemicals may damage the lens covers.

Towing Safety

Towing a trailer requires care. Both the trailer and vehicle must be in good condition and securely fastened to each other to reduce the possibility of an accident. Some states require that large trailers be registered and licensed. Contact your local Department of Transportation office to check on license requirements for your particular unit.

Hitch and Coupling

- Verify the hitch and coupling on the towing vehicle are rated equal to, or greater than, the trailer's gross vehicle weight rating (GVWR).
- Verify the trailer hitch and the coupling are compatible. Verify the coupling is securely fastened to the vehicle.
- **DO NOT** tow trailer using defective parts. Inspect the hitch and coupling for wear or damage.
- Connect safety chains in a crossing pattern under the tongue.
- Before towing the trailer, verify that the weight of the trailer is equal across all tires. On trailers with adjustable height hitches, adjust the angle of the trailer tongue to keep the trailer as level as possible.

Running Lights

- Verify directional and brake lights on the trailer are connected and working properly.

Wheels and Tires

- Inspect trailer tires for wear and proper inflation.
- Verify wheel lug nuts are present and tightened to the specified torque.

Safe Towing Techniques

- Practice turning, stopping and backing up in an area away from heavy traffic prior to transporting the unit.
- Maximum recommended speed for highway towing is 45 mph (72 km/h). Recommended off-road towing speed is 10 mph (16 km/h) or less, depending on terrain.
- When towing, maintain extra space between vehicles and avoid soft shoulders, curbs, and sudden lane changes.

Reporting Trailer 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 Generac Mobile Products, LLC.

If NHTSA receives similar complaints, it may open an investigation; and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in an individual problem between you, your dealer, or Generac Mobile Products, LLC.

To contact NHTSA, you may either call the Auto 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

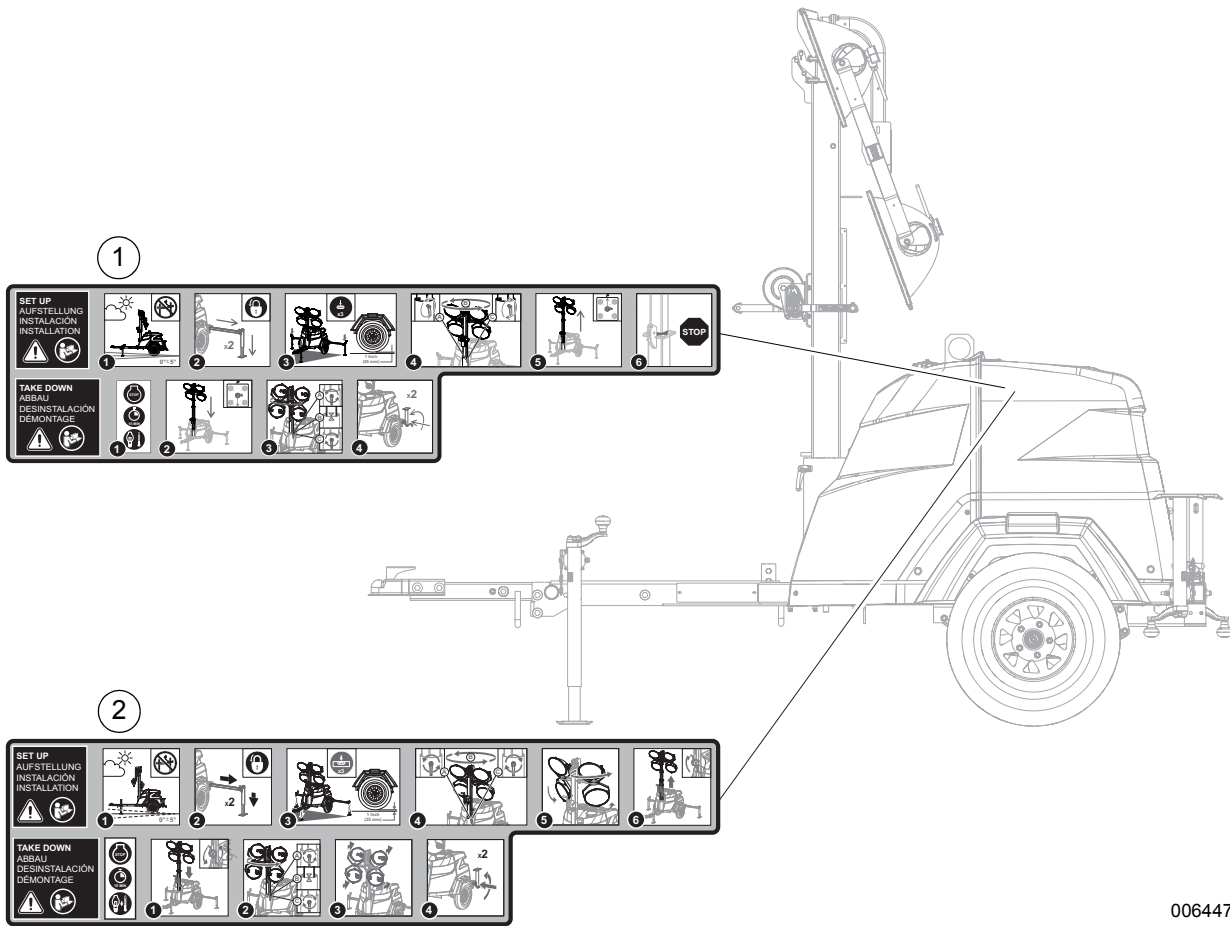
You can also obtain other information about motor vehicle safety from <http://www.safercar.gov>.

Safety and Operating Decals

See [Figure 1-1](#) through [Figure 1-3](#). This unit features numerous safety and operating decals. These decals provide important operating instructions and warn of dangers and hazards. The following diagrams illustrate decal locations and descriptions.

Replace any missing or hard-to-read decals and use care when washing or cleaning the unit. Decal part numbers can be found in the parts manual at www.generacmobileproducts.com.

ID	Description	ID	Description
1	Setup and Take-Down Instructions (Electric)	15	Control Panel Label (not shown)
2	Setup and Take-Down Instructions (Manual)	16	Neutral Bonded to Frame
3	Danger—Overhead Power Lines	17	Not A Step
4	Warning—Electrical Storms and High Wind	18	Warning—High Temperature: Do Not Remove Guard
5	Owner's Manual Location	19	Mast Junction Box Wiring (inside)
6	Electric Shock Hazard	20	Warning—Do Not Retract Outriggers With Tower Up
7	Warning—Pressurized Liquid	21	Stowed Position
8	Warning—Hot Surface	22	Lifting Point
9	Warning—Entanglement Hazard	23	Forklift and Tie-Down Point
10	Warning—Cutting Hazard	24	Engine Operation
11	Disconnect Battery Before Servicing	25	Ultra Low Sulfur Diesel Fuel Only
12	Danger—Carbon Monoxide	26	Danger—Fuel and Fueling Hazards
13	Electrical Ground Connection	27	Tie-Down Point
14	Danger—Ultraviolet Radiation / Winch Operation	28	Towing Instructions



006447

Figure 1-1. Decal Locations (1 of 3)

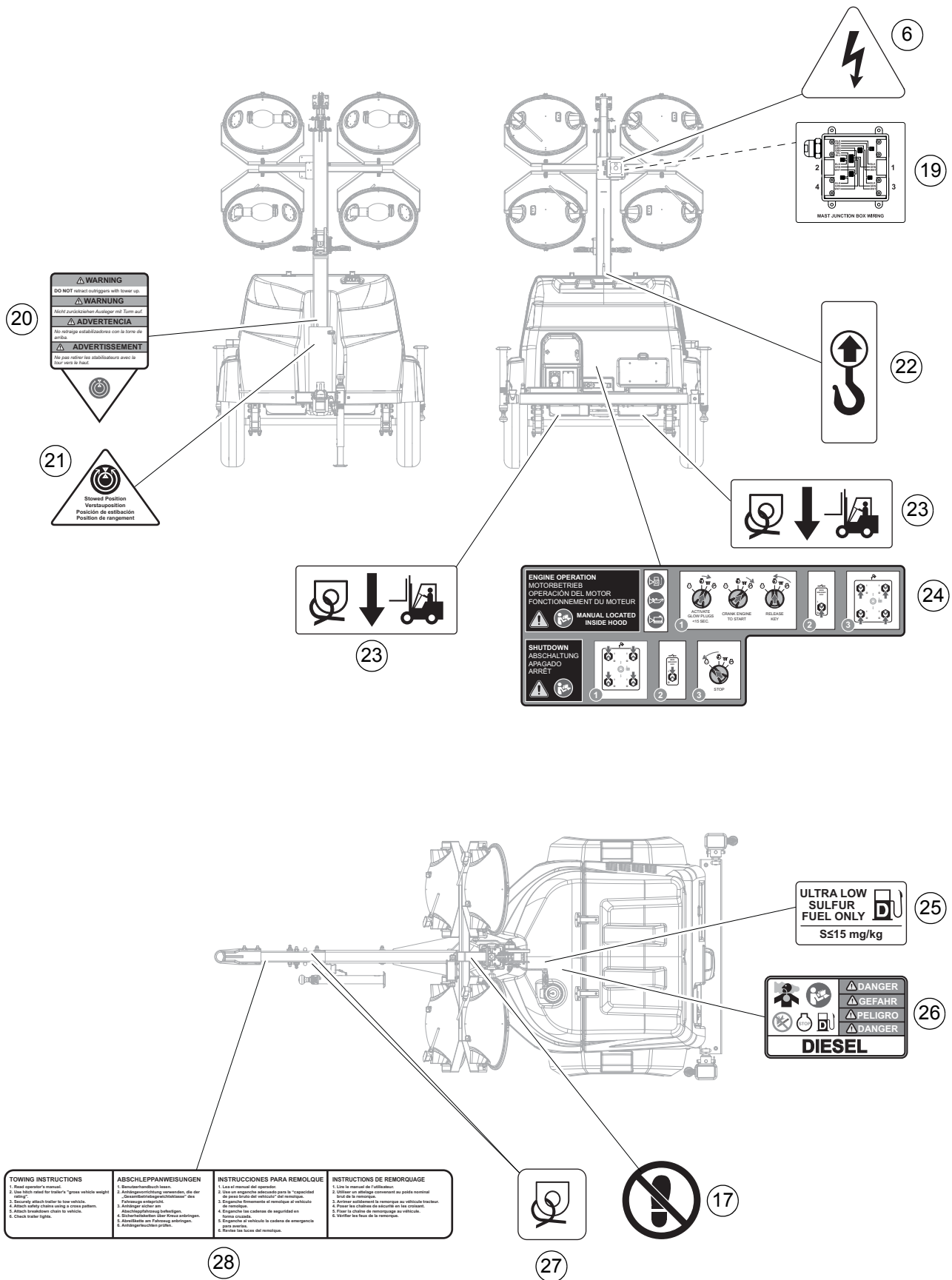


Figure 1-3. Decal Locations (3 of 3)

006449

Section 2: General Information

Specifications

DESCRIPTION	UNITS	MLT6SC
Engine		
Make	—	Caterpillar
Model	—	C1.1-EJ501-2055
EPA Tier	—	Tier 4 Final
Fuel Consumption—100% Prime	gph (Lph)	0.58 (2.18)
Horsepower—Prime	hp (kW)	13.1 (9.8)
Operating Speed	rpm	1,800
Displacement	in ³ (L)	68.96 (1.13)
Battery Type—Group Number	—	24
Battery Voltage	quantity per unit	12 (1)
Battery Rating	cold cranking amps (CCA)	440
Generator		
Make	—	Marathon®
Model	—	201CSA5423
Output - Standby	kW (kVA)	6.0 (6.0)
Output Voltage	volts	120/240, 1-phase
Output Amperes 120V (240V)	amperes	50 (25)
Frequency Hz	Hertz	60
Weights		
Dry Weight	lbs (kg)	1316 (597)
Operating Weight	lbs (kg)	1586 (719)
Capacities		
Fuel Tank Volume	gal (L)	40.75 (154.26)
Usable Fuel Volume	gal (L)	39.9 (151.04)
Coolant (including engine)	qt (L)	5.0 (4.7)
Oil (including filter)	qt (L)	4.6 (4.4)
Maximum Run Time at Full Load	hours	69
AC Distribution		
Circuit Breaker Size	amperes	30
Voltage Regulation	—	Capacitor ± 6%
Voltages Available	—	1-Phase: 120, 240VAC
Trailer		
Hitch—Standard	—	2 in (51 cm) ball
Maximum Tire Pressure	psi (kPA)	50 (345)
<i>Specifications are subject to change without notice.</i>		

Unit Serial Number Locations

Refer to the illustration to locate the unit ID tag and Vehicle Identification Number (VIN) tag on the unit. Important information, such as the unit serial number, model number, VIN, and tire loading information are found on these tags. Record the information from these tags so it is available if the tags are lost or damaged. When ordering parts or requesting assistance, you may be asked to provide this information.

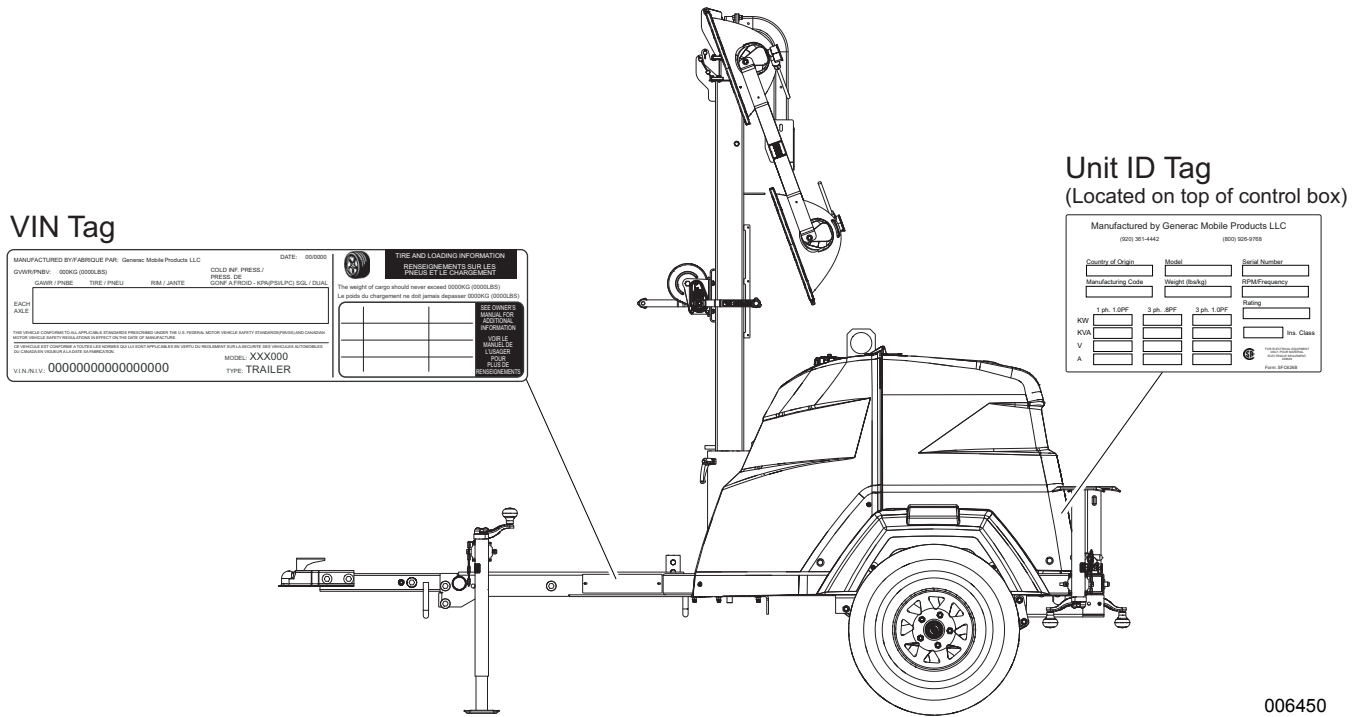


Figure 2-1. Serial Number Locations

006450

Trailer Tongue Storage and Tow Positions

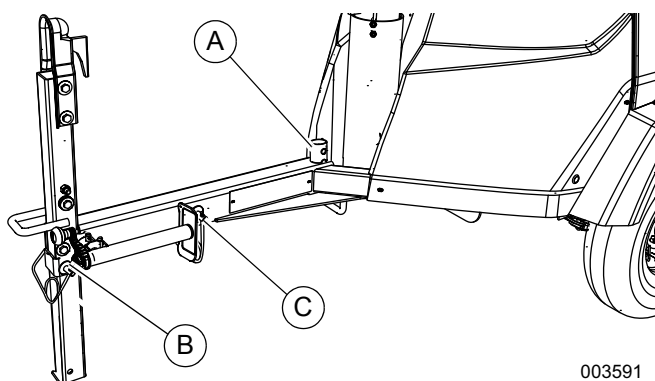
The trailer tongue is designed to fold upright for shipping and storage.

IMPORTANT NOTE: Do not attempt to tow the unit with trailer tongue in the storage position.

Place Trailer Tongue in Tow Position

1. Verify unit is on a level surface and wheels are blocked.

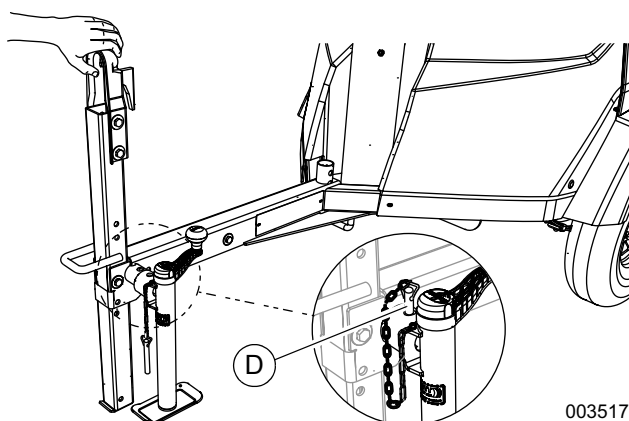
NOTE: See [Figure 2-2](#). Unit ships from factory with jack in the storage location (A).



003591

Figure 2-2. Jack and Pin Locations

2. Remove clevis securing jack parallel to ground.
3. Remove jack from tongue weldment. Hold jack vertically and extend until weldment on jack is aligned with tongue weldment.
4. See [Figure 2-3](#). Install jack and secure with clevis (D).



003517

Figure 2-3. Jack Installed

5. See [Figure 2-2](#). Remove pins (B) and (C).



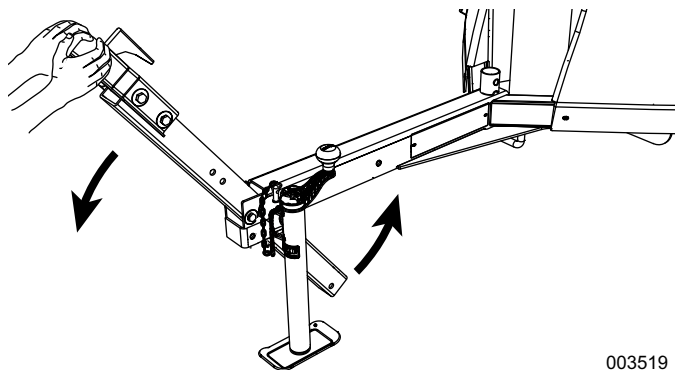
CAUTION

Pinching and crushing hazard. To avoid possible injury, keep fingers away from pivot point when folding or unfolding trailer tongue.

(000313)

6. See [Figure 2-4](#). Using both hands, slowly lower trailer tongue into tow position.

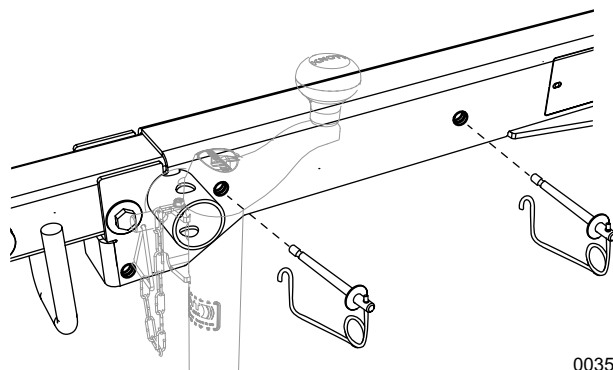
NOTE: Varying levels of effort may be required depending on terrain.



003519

Figure 2-4. Lower Trailer Tongue into Tow Position

7. See [Figure 2-5](#). Install pins as shown to secure trailer tongue in tow position.



003592

Figure 2-5. Install and Secure Pins

Place Trailer Tongue in Storage Position

1. Verify unit is on a level surface and wheels are blocked.
2. See **Figure 2-6**. Extend jack (A) enough to allow minimum effort to pivot trailer tongue into storage position.

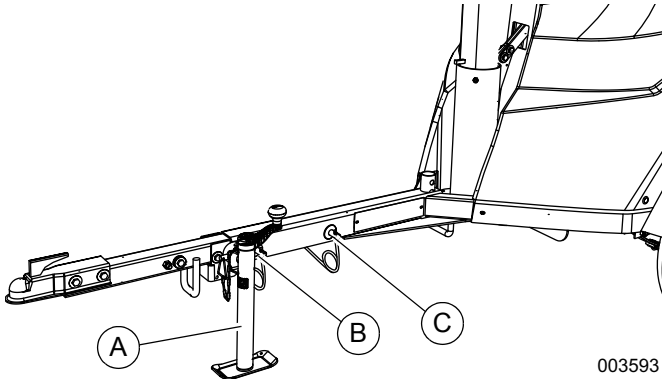


Figure 2-6. Extend Jack and Remove Pins

3. Remove pins (B) and (C) from trailer tongue.



CAUTION

Pinching and crushing hazard. To avoid possible injury, keep fingers away from pivot point when folding or unfolding trailer tongue.

(000313)

4. See **Figure 2-7**. Pivot trailer tongue into storage position.

NOTE: Varying levels of effort may be required depending on terrain.

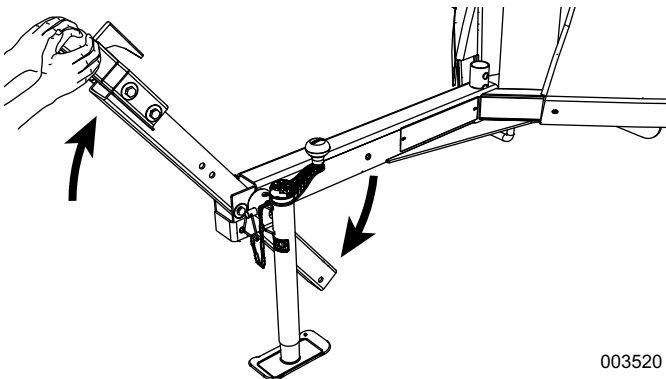


Figure 2-7. Pivot Trailer Tongue Into Storage Position

5. See **Figure 2-8**. Install pins (B) and (C) at locations shown to secure trailer tongue in storage position.

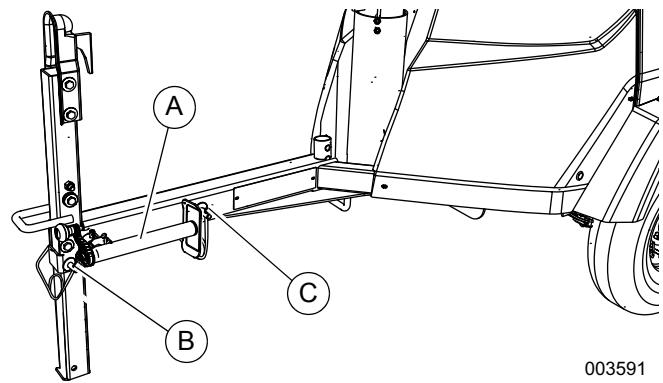
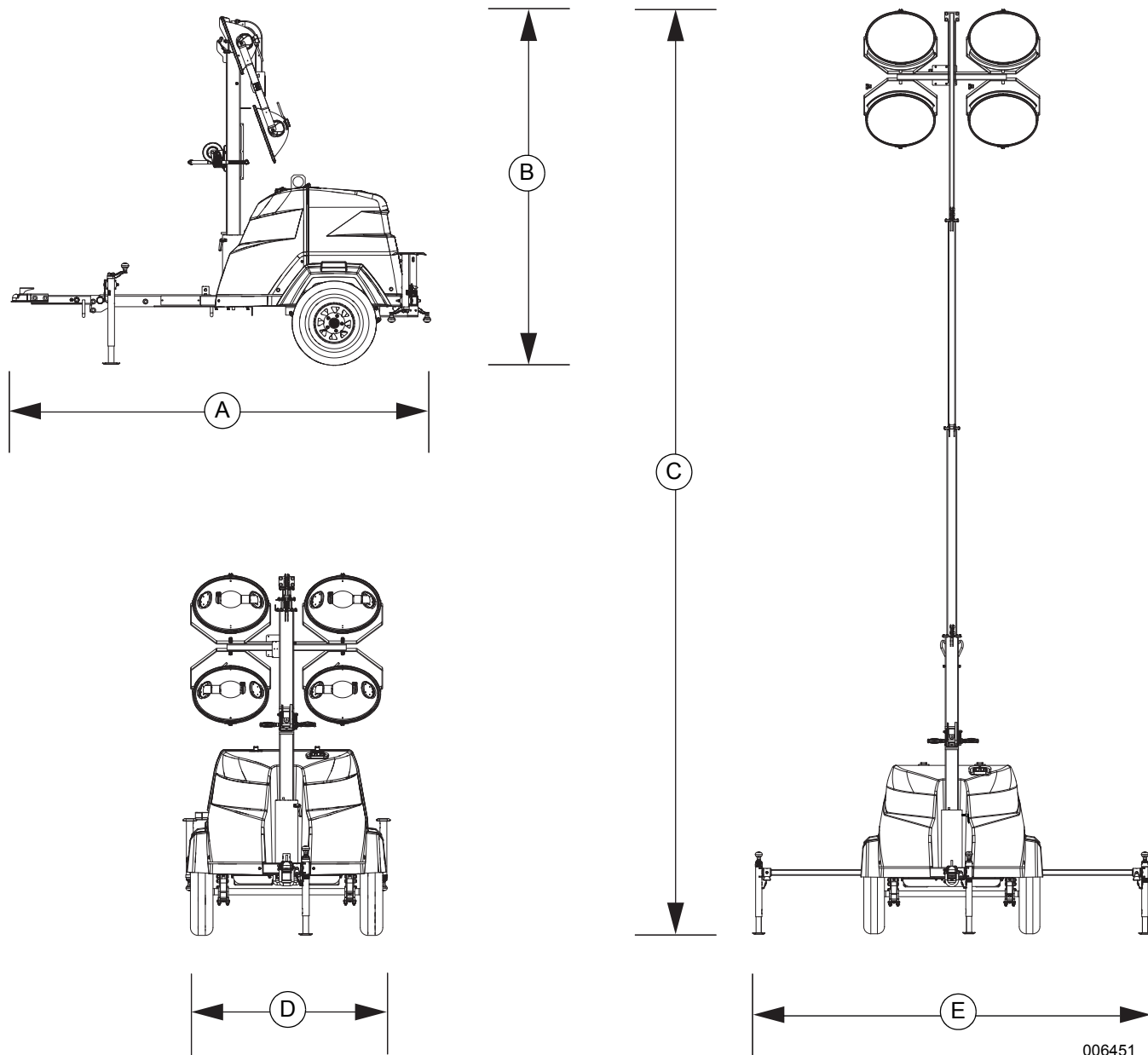


Figure 2-8. Install Pins and Rotate Jack

6. Remove clevis and remove jack (A) from tongue weldment.
7. Completely retract jack.
8. Rotate jack 90° counterclockwise, place jack on tongue weldment, and install clevis to secure jack parallel to ground.

Unit Dimensions



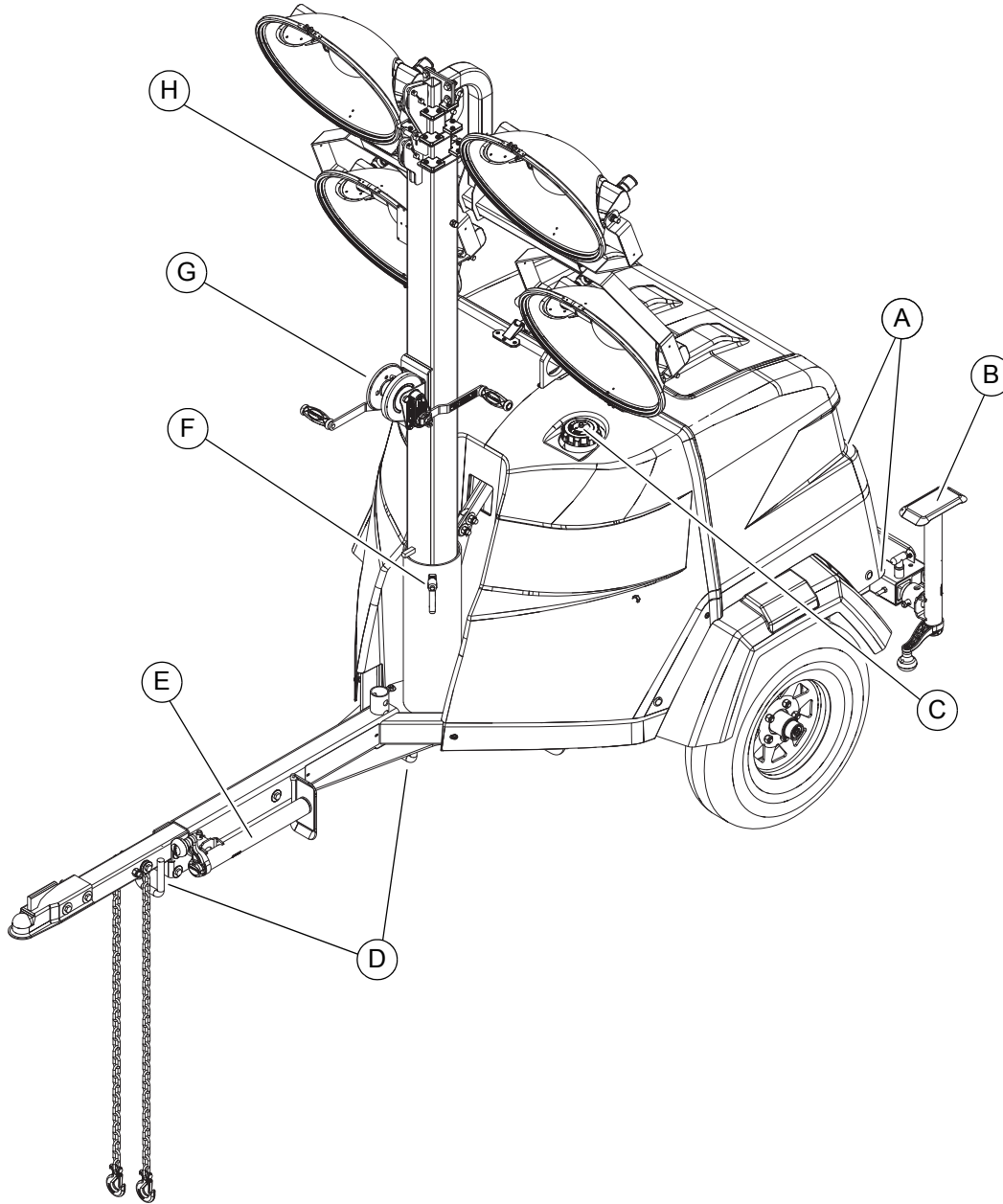
006451

Figure 2-9. Unit Dimensions

	A	B	C	D	E
MLT6SC	118 in (3 m)	101 in (2.6 m)	23 ft (7 m)	57 in (1.5 m)	120.5 in (3.1 m)

Specifications are subject to change without notice.

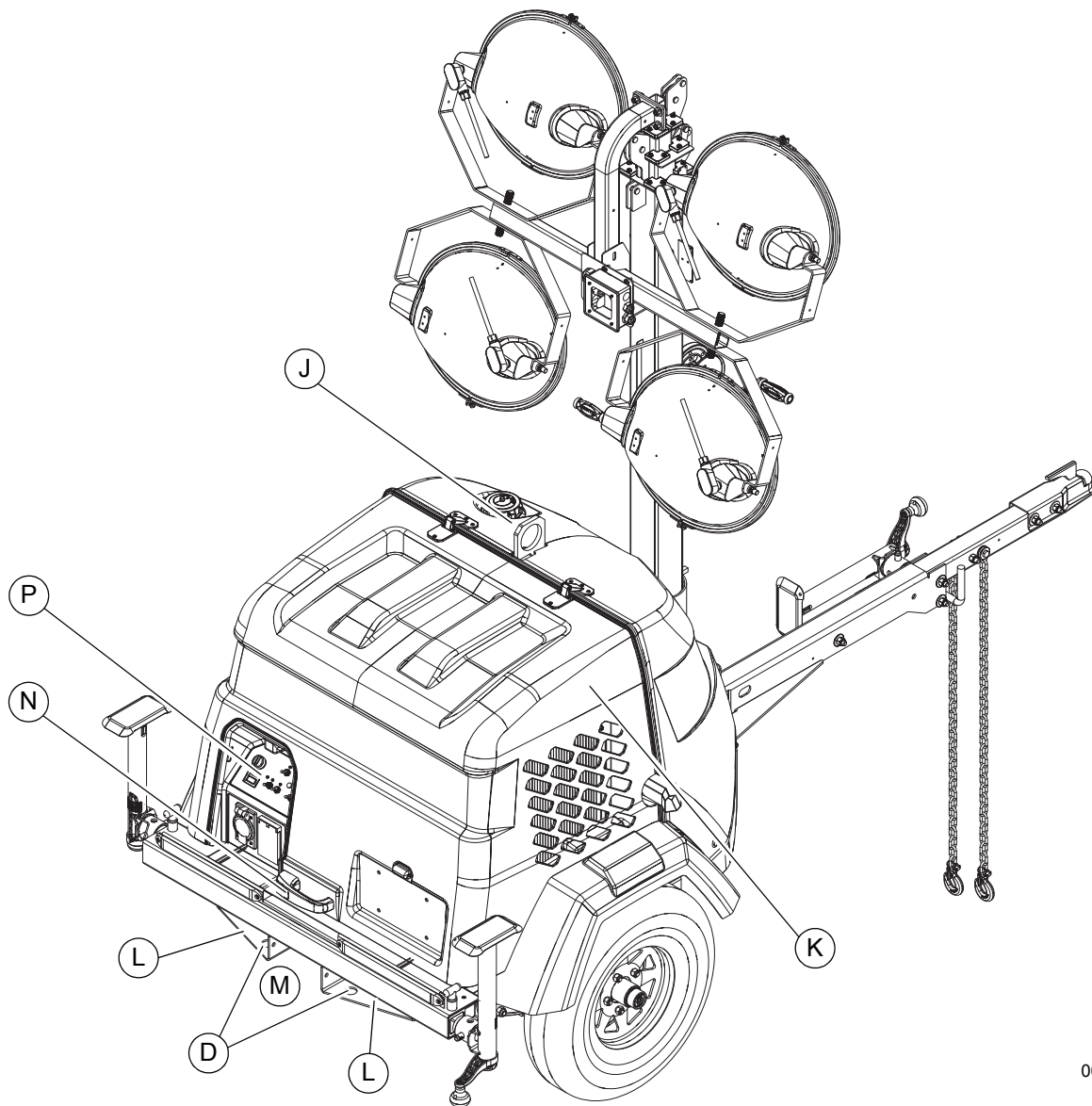
Component Locations



008096

Figure 2-10. Component Locations—Front and Left Side

- | | | | |
|---|---|---|--------------------|
| A | Grounding studs:
Interior: On enclosure floor behind controller
Exterior: On bumper | E | Tongue jack |
| B | Outriggers and jacks (2) | F | Mast rotation knob |
| C | Fuel fill | G | Winch |
| D | Tie-down location | H | Lights (4) |



006453

Figure 2-11. Component Locations—Rear and Right Side

- | | | | |
|---|-----------------------------|---|--|
| J | Central lift point | M | Tandem tow mount (optional—not shown) |
| K | Engine/radiator access hood | N | Hood latch |
| L | Forklift pocket | P | Key start controller or PowerZone™-DLA controller (optional—not shown) |

Control Panel

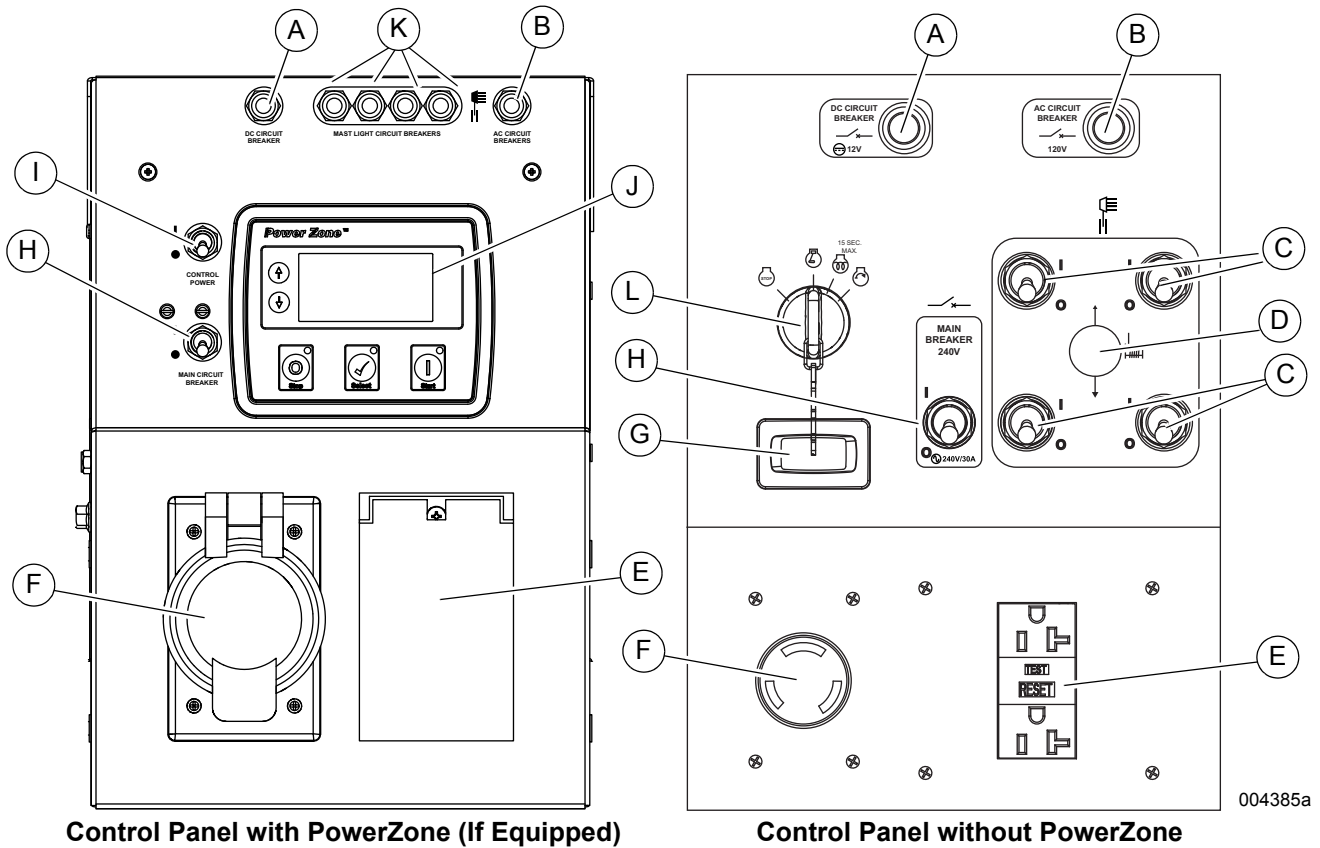


Figure 2-12. Control Panel

Control Panel Features and Functions

(A) DC circuit breaker

Resets the DC electrical circuit that powers the control panel and engine components.

(B) AC circuit breaker

Resets the AC electrical circuit that powers the control panel.

(C) Mast light toggle switch/circuit breakers (4)

Power switches with internal breakers dedicated to individual lights.

(D) Mast switch (if equipped)

Raises and lowers the mast on units equipped with an electric winch.

(E) 120V/20A GFCI receptacle

Customer convenience receptacle for use in connecting auxiliary equipment such as fans, pumps, or drills. Includes a ground fault circuit interrupter (GFCI) test and reset button.

(F) 240VAC/30A twist-lock receptacle

Customer convenience receptacle for use in connecting auxiliary equipment such as fans, pumps, drills.

(G) Engine hour meter

Displays number of hours the engine has run.

(H) Main circuit breaker

240V/30A breaker which disconnects power from the lights and control panel.

(I) Control power switch

Turns the controller ON and OFF.

(J) PowerZone controller

Monitors the unit and indicates operational status and fault conditions.

(K) Mast light circuit breakers (4)

Light circuit breakers with internal breakers dedicated to individual lights.

(L) 4-Position key switch

Operates the engine.

PowerZone–DLA (If Equipped)

The PowerZone–DLA is an AUTO start controller that monitors the unit and indicates operational status and fault conditions. The controller can be programmed to automatically start or stop based on time schedule, fault condition, or load demand.

The controller constantly monitors vital generator and engine functions for a number of preprogrammed alarm and fault conditions. When a fault condition occurs, the

engine will be shut down automatically and the LCD window will show the fault that caused the shutdown. To resume operation, the fault condition must be corrected.

This controller also records a history of unit performance, which may be viewed at any time and will not be lost when the controller is powered down.

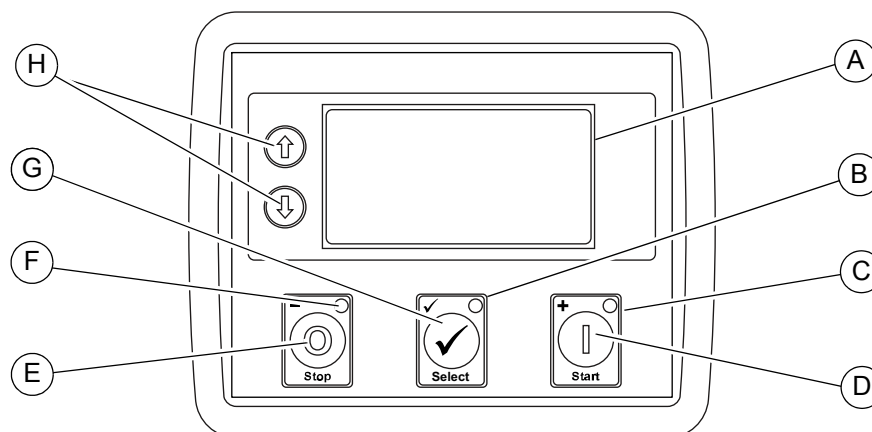


Figure 2-13. PowerZone–DLA Layout

002353

Controller Features and Functions

(A) The Liquid Crystal Display (LCD) Window

Displays the various operating screens. By viewing these screens, the operator can monitor both the engine and generator status while the unit is running.

(B) Select LED

Illuminates when the unit is running in AUTO mode.

(C) Start LED

Illuminates when the unit is running in MANUAL mode.

(D) Start Button

Starts the engine if there are no shutdown errors and the engine is in “ready to start” status.

(E) Stop Button

Shuts down the unit and puts the controller into STOP mode, whether in MANUAL mode or AUTO mode.

NOTE: To prevent damage to the generator and connected equipment, remove all loads from the generator by opening all circuit breakers (turn OFF [O]) before pressing the STOP button.

(F) Stop LED

Illuminates when the unit is in STOP mode and flashes when an Electrical Trip and Shutdown Fault has occurred.

(G) Select Button

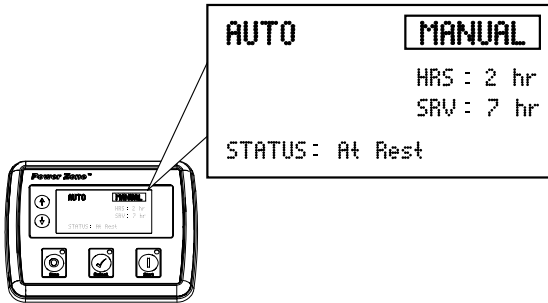
Confirms entries chosen in the various edit menus and screens.

(H) Menu Navigation

Up/down arrows (↑, ↓) used to navigate through various operator screens. They also raise and lower the mast on units equipped with an electric winch.

Operator Screens

See [Figure 2-14](#). The operator screens display the most relevant and critical information an operator will need to properly configure and use the unit. From these six screens, the operator can access information necessary to operate the unit under normal conditions.

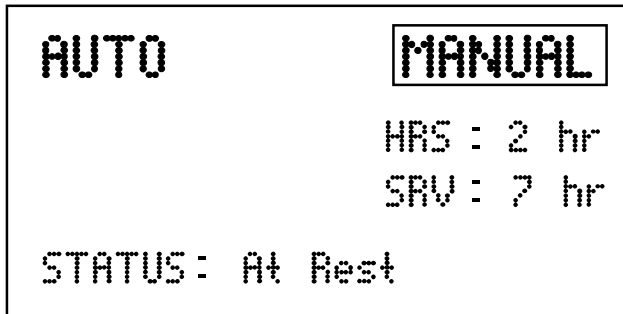


002354

Figure 2-14. Operator Screens Location

Home Screen

See [Figure 2-15](#). The Home screen is the default screen of the controller and displays after the controller is powered up and the unit management software is loaded. It displays the controller mode, total operating hours, hours left until the next service interval, engine operating status, and engine rpm. If the unit is in AUTO mode, the Home screen may also display whether the scheduler or “dusk to dawn” are enabled.

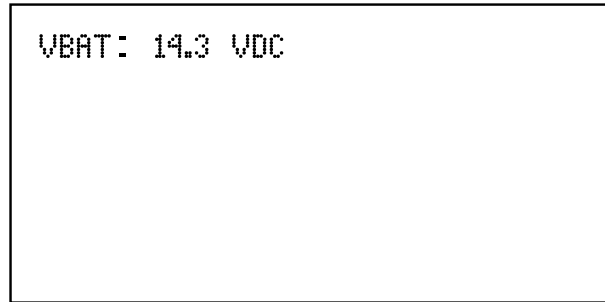


002544

Figure 2-15. Home Screen

Battery Voltage Screen

See [Figure 2-16](#). Displays the engine battery voltage. A normal reading is 13.5–14.8V on 12 volt systems (with the engine running).

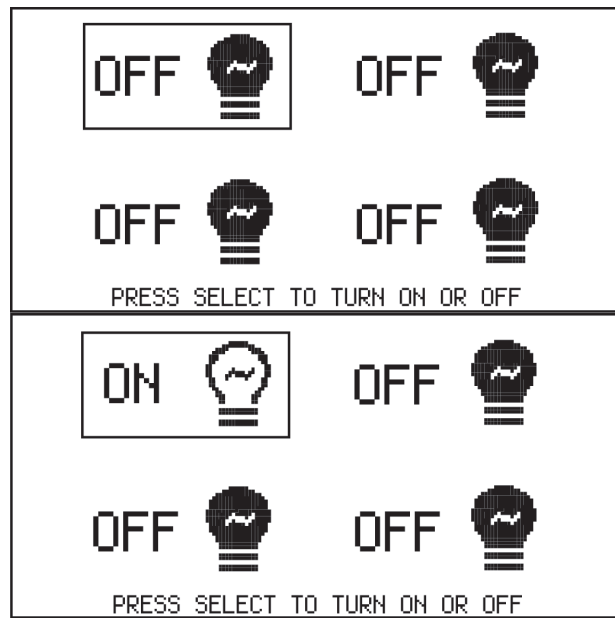


002990

Figure 2-16. Battery Voltage Screen

Lights Screen

See [Figure 2-17](#). The Lights screen enables the operator to turn the lights on and off. Refer to [Light Operation](#) for more information.

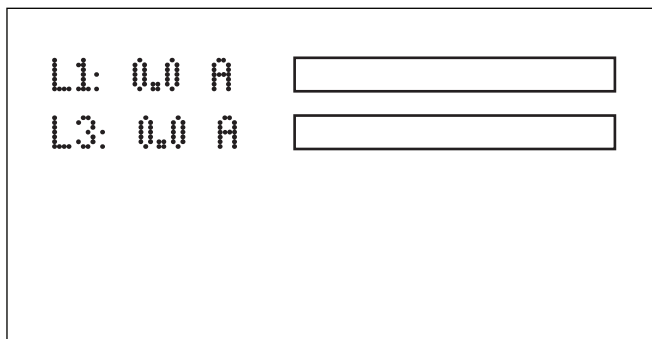


002327

Figure 2-17. Lights Screen

Line Amperage Screen

See [Figure 2-18](#). The Line Amperage screen displays the AC output amperage produced by the load connected to the generator in amps (A). The load balance for each line (L1 and L3) is displayed in both numerical and graphical form. It is important to maintain a balanced load distribution between lines for optimum generator performance.

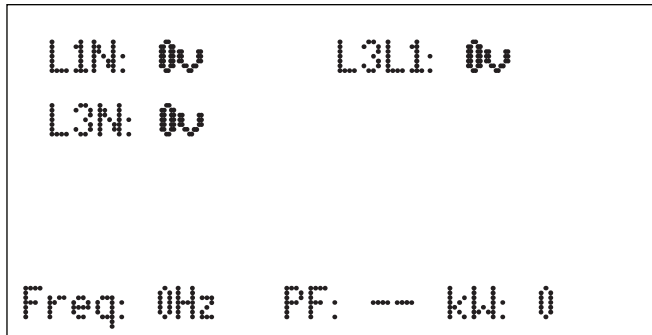


002980

Figure 2-18. Line Amperage Screen

Generator Screen

See [Figure 2-19](#). The Generator screen displays the average line voltage, frequency (in Hertz), and power factor for the generator while in operation.



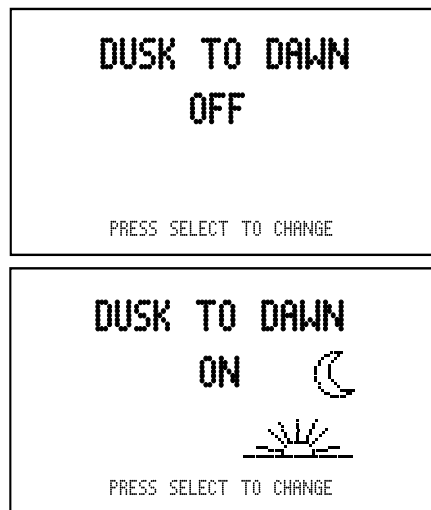
002981

Figure 2-19. Generator Screen

Dusk to Dawn Screen

NOTE: This feature will only work in AUTO mode.

See [Figure 2-20](#). The Dusk to Dawn screen enables or disables the “dusk to dawn” function. This function uses a photo sensor 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.



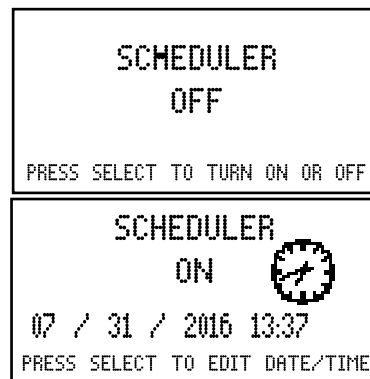
002328

Figure 2-20. Dusk to Dawn Screen

Scheduler Screen

NOTE: This feature will only work in AUTO mode.

See [Figure 2-21](#). The Scheduler screen enables the operator to program specific times for the lights to turn on and off. Once programmed, the Scheduler will start the engine and illuminate the lights until the designated shutdown time.

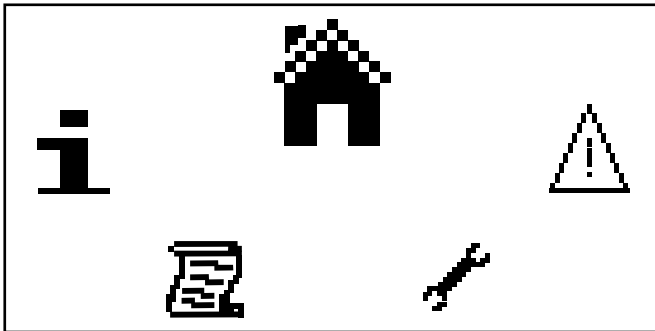


002329

Figure 2-21. Scheduler Screen

Maintenance Screens

See [Figure 2-22](#). The information displayed on the maintenance screens can be used to identify, diagnose, and troubleshoot unit shutdown conditions and poor unit performance.



003779

Figure 2-22. Maintenance Screens

Icon	Description
	Home screen
	Alarms screen
	Maintenance screen
	Event log screen
	About screen

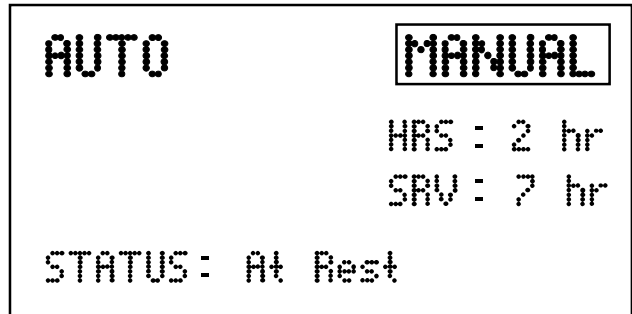
Proceed as follows to enter the navigation menu:

1. Press both the ↑ and ↓ buttons simultaneously.
2. To select the required icon, press the ↑ button to cycle right and the ↓ button to cycle left until the desired operator screen section is reached.
3. Once the desired icon is at the top, press the Select (✓) button to enter that operator screen section.

NOTE: Every time the operator screens are entered, the home icon will be located at the top of the screen.

Home Screen

See [Figure 2-23](#). The Home (🏠) screen is the default screen of the controller and displays after the controller has powered up. The controller automatically returns to Home from any other screen after a period of inactivity.

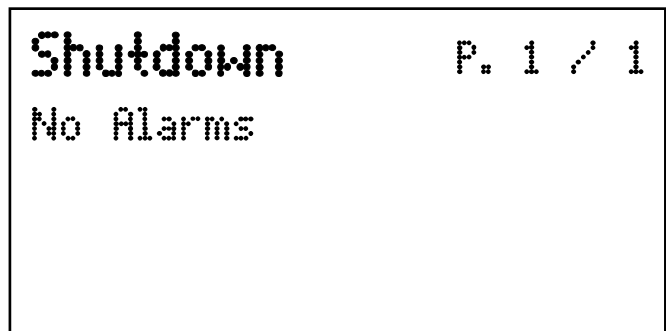


002544

Figure 2-23. Home Screen (MANUAL Mode Shown)

Alarms Screen

See [Figure 2-24](#). The Alarms (⚠️) screen displays all the alarms, warnings, and engine Diagnostic Trouble Code (DTC) faults. When an alarm occurs, the controller automatically switches to this screen and remains there until the alarm is cleared. The Stop LED also flashes.



003780

Figure 2-24. Alarms Screen

- **Warnings** are non-critical alarm conditions and do not affect the operation of the generator system. They serve to draw the operator’s attention to an undesirable condition. By default, warning alarms are self-resetting when the fault condition is removed.
- **Electrical trips** stop the generator in a controlled manner. On initiation of the electrical trip condition, the controller de-energizes all the outputs, including the lights, to remove the load from the generator. Once this has occurred, the controller starts the cooling timer and allows the engine to cool off-load before shutting down the engine.
- **Shutdown alarms** stop the generator immediately. On initiation of the shutdown condition, the controller de-energizes all the outputs, including the lights, to remove the load from the generator. Once this

has occurred, the controller shuts the generator set down immediately to prevent further damage.

- **DTC faults** are displayed by the controller.

Fault	DTC Description
Check Engine Fault	A fault not recognized by the controller has been detected. Contact the engine manufacturer for support.
Low Oil Pressure	Engine oil pressure has fallen below its configured low oil pressure alarm level.
Underspeed	Engine speed has fallen below its configured underspeed alarm level.
Overspeed	Engine speed has risen above its configured overspeed alarm level.
Low Fuel Level	Engine's fuel level has fallen below its configured low fuel level alarm.
Battery Under/Over Voltage	Engine's DC supply has fallen below or risen above its configured alarm level.

To view the active alarms, repeatedly press the ↑ and ↓ buttons until the LCD window displays the alarm.

Continue to press the ↑ and ↓ buttons to cycle through the alarms.

To exit the alarm screen, press the ↑ and ↓ buttons simultaneously to enter the navigation menu. Once entered, cycle to the desired operator screen.

NOTE: The alarm condition must be corrected before a reset will take place. If the alarm condition remains, it is not possible to reset the unit. The exception to this is the Low Oil Pressure alarm and similar 'active from safety on' alarms, as the oil pressure is low with the engine at rest.

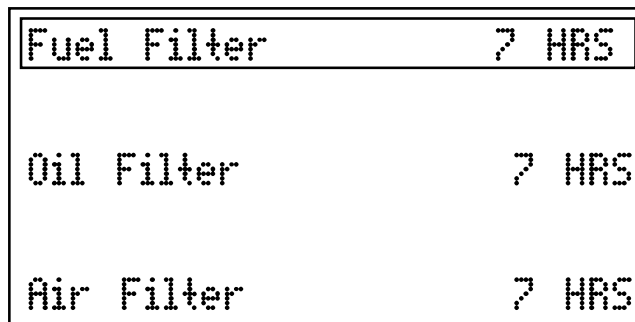
To clear alarms that stop the generator, refer to [Resetting Maintenance Alarms \(If Equipped\)](#).

NOTE: The LCD backlight is on if the unit has sufficient voltage while the unit is turned on, unless the unit is cranking. In this case, the backlight is turned off.

If the controller is left in STOP mode for a period of inactivity, the controller enters POWER SAVE mode. To 'wake' the controller, press the Stop (O) button.

Maintenance Screen

See [Figure 2-25](#). The Maintenance screen (🔧) displays the maintenance alarms configured into the controller. The three alarms are for servicing the fuel filter, oil filter, and air filter.

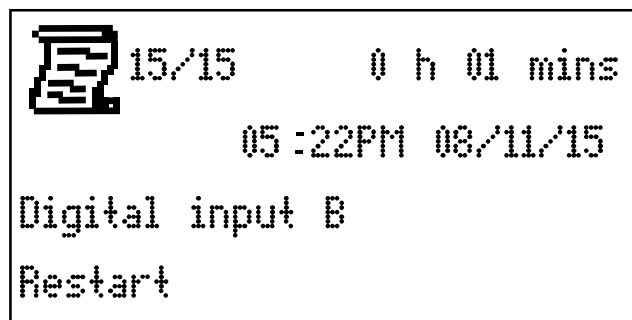


003781

Figure 2-25. Maintenance Screen

Event Log Screen

See [Figure 2-26](#). The controller's event log (📄) displays a list of the last 15 recorded electrical trips or shutdown events and the engine hours at which they occurred. Once the log is full, any subsequent electrical trip or shutdown alarm overwrites the oldest entry in the log. The log always contains the most recent shutdown alarms.



003782

Figure 2-26. Event Log Screen

To view the event log:

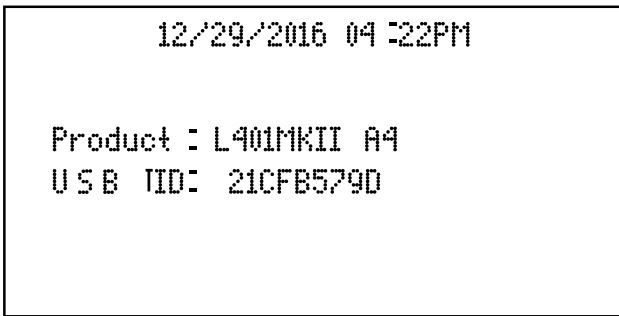
1. Press both ↑ and ↓ buttons simultaneously to display the navigation menu.
2. Cycle to the event log section and press the Auto button to enter.
3. Repeatedly press the ↑ or ↓ buttons until the LCD window displays the desired event.

Continuing to press down the ↑ or ↓ buttons will cycle through past alarms. Eventually the most recent alarm will display and the cycle begins again.

To exit the event log, press the ↑ and ↓ buttons simultaneously to enter the navigation menu. Once entered, cycle to the desired operator screen.

About Screen

See [Figure 2-27](#). The About (i) screen contains information about the controller such as the controller's date and time, the product and USB identification number, and the application and engine version.



003783

Figure 2-27. About Screen

Section 3: Operation

Light Tower Setup

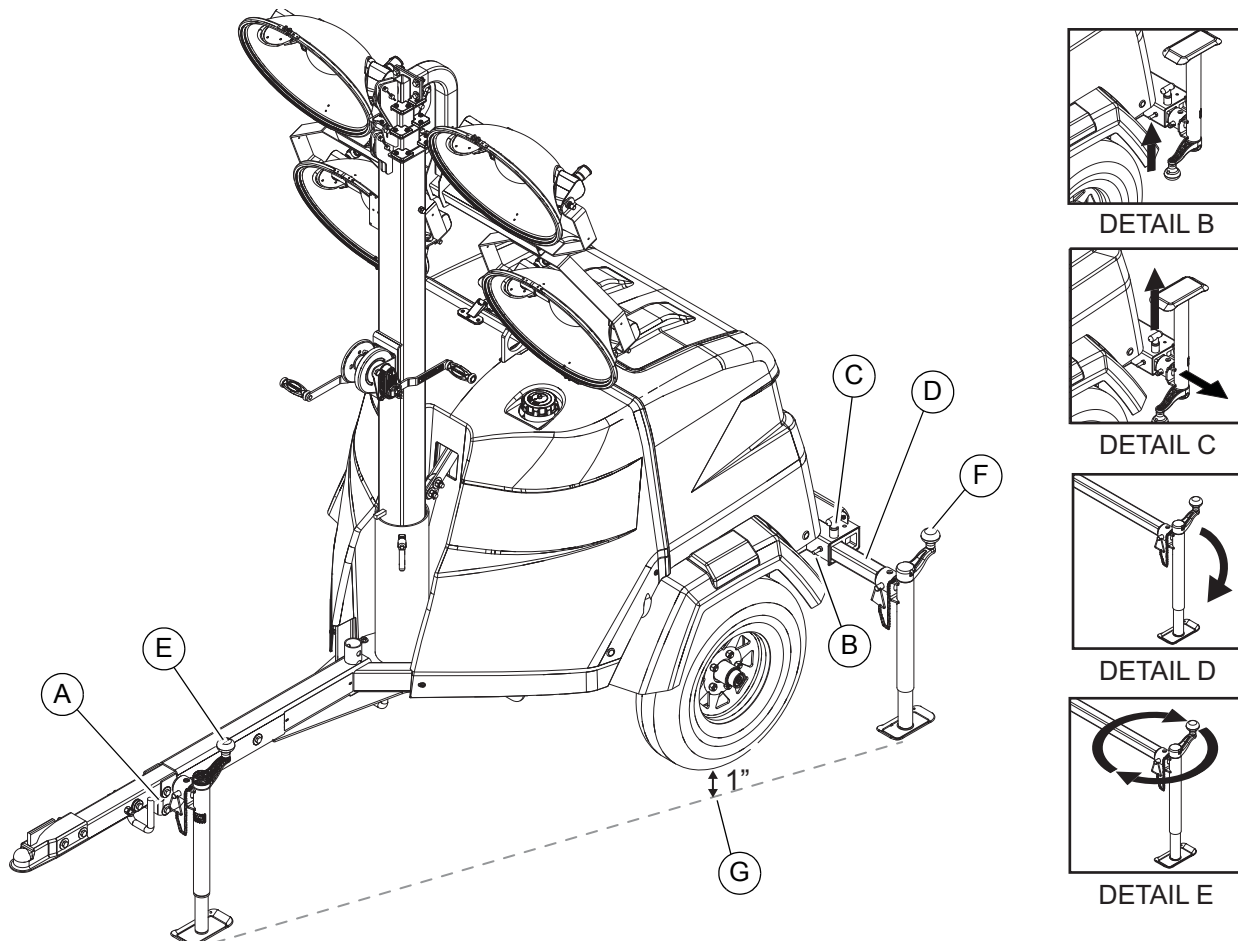


Figure 3-1. Set Up Outriggers and Jacks

006454



⚠ DANGER

High Voltage. Verify area above unit is clear of overhead wires and obstructions. Contact with high-voltage power lines will result in death or serious injury. (000260a)



⚠ WARNING

> 60 mph Do not set up the unit if high winds are expected. High winds can cause the unit to tip or fall, causing severe injury or machine damage. (000297)

1. For maximum light coverage, position the unit at ground level or in a spot higher than the area being illuminated by the lamps.

NOTE: The mast extends up to 23 ft (7 m).

2. See [Figure 3-1](#). Place the unit on firm ground that is relatively flat (less than 5° slope), and block the wheels to keep it from moving. This will make it easier to level the unit.
3. Pull the locking pin (A) on the tongue jack (E) and rotate the jack 90°. Install the locking pin. Rotate the jack handle clockwise to raise the trailer tongue off the towing vehicle.
4. A grounding stud (B) is located on the rear frame of the trailer near the left side outrigger. For grounding requirements, follow local, state, and National Electrical Code (NEC) regulations.
5. See Details C–D. Pull the locking pins (C) on the outriggers (D) and pull each outrigger out until the spring loaded locking pin snaps back into place. Pull the locking pin on each outrigger jack (F) and rotate each jack 180° until the jack pad is facing down. Install the locking pin.

6. See Detail E. Rotate each jack handle clockwise to start leveling the trailer. Adjust all three jacks by rotating the handles clockwise until they are firmly in contact with the ground. Continue until the wheels are approximately 1 in (2.5 cm) off the ground (G).
7. Before raising the mast, it may be necessary to adjust the lamps. The lamps may be adjusted up, down, left or right by simply aiming them in the desired direction.

Prestart Checklist



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)

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.

- Verify all maintenance procedures are up to date. For more information, refer to [General Maintenance](#) and [Basic Maintenance Schedule](#).
- 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 local, state, or National Electrical Code (NEC) 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.

Raising the Mast—Manual Winch



DANGER

Electrocution. DO NOT use the unit if electrical cord is cut or worn through. Doing so will result in death or serious injury.

(000263a)

WARNING

Tipping hazard. Extend the outriggers and level the unit before raising the mast. Keep the outriggers extended while the mast is up. Failure to do so could cause the unit to tip and fall and could result in death or serious injury.

(000266)

WARNING

Tipping hazard. Do not extend the mast beyond the colored mark on the second mast section. The unit can become unstable and tip or fall, causing injury.

(000262)

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)

WARNING

Personal injury or equipment damage. Do not raise or lower the mast while the unit is operating. Doing so can break the lenses and cause the lamps to shatter.

(000279)

1. Set up and level the unit. See [Light Tower Setup](#).
2. See [Figure 3-2](#). Inspect the mast cables for excessive wear or damage. Verify the cables are properly centered in each pulley (A). Inspect the electrical cord for damage.

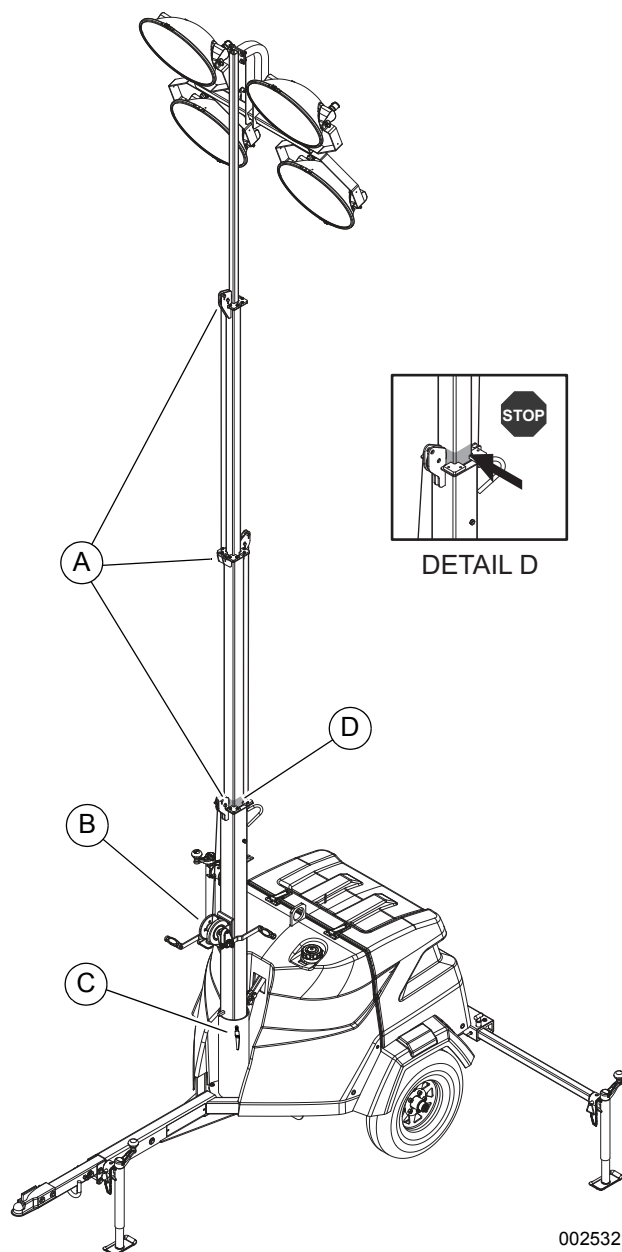


Figure 3-2. Pulley Locations—Manual Winch

3. Rotate the mast by loosening the mast rotation knob (C) at the bottom of the mast. Turn the mast until the lights face in the desired direction. Tighten the mast rotation knob to secure the mast in position.
4. Using both hands, rotate winch (B) to slowly extend the mast. Verify the coiled electrical cord is extending at top sections of mast. Stop extending the mast when the colored mark (D) on the second mast section is visible as seen in Detail D.

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

Raising the Mast—Electric Winch (If Equipped)



⚠ DANGER

Electrocution. DO NOT use the unit if electrical cord is cut or worn through. Doing so will result in death or serious injury.

(000263a)

⚠ WARNING

Tipping hazard. Extend the outriggers and level the unit before raising the mast. Keep the outriggers extended while the mast is up. Failure to do so could cause the unit to tip and fall and could result in death or serious injury.

(000266)

⚠ WARNING

Tipping hazard. Do not extend the mast beyond the colored mark on the second mast section. The unit can become unstable and tip or fall, causing injury.

(000262)

⚠ 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)

⚠ WARNING

Personal injury or equipment damage. Do not raise or lower the mast while the unit is operating. Doing so can break the lenses and cause the lamps to shatter.

(000279)

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

1. Set up and level the unit. See [Light Tower Setup](#).
2. See [Figure 3-3](#). Inspect the mast cables for excessive wear or damage. Verify the cables are properly centered in each pulley (A). Inspect the electrical cord for damage.

Starting the Unit

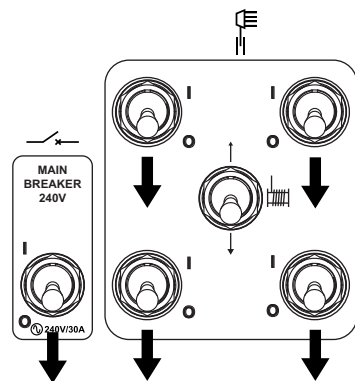
CAUTION

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

(000230)

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.

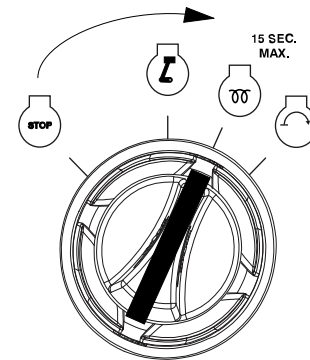
1. See [Figure 3-4](#). Verify the main circuit breaker and individual circuit breakers for each of the lights are OFF (O).



004386a

Figure 3-4. Circuit Breakers in OFF (O) Position

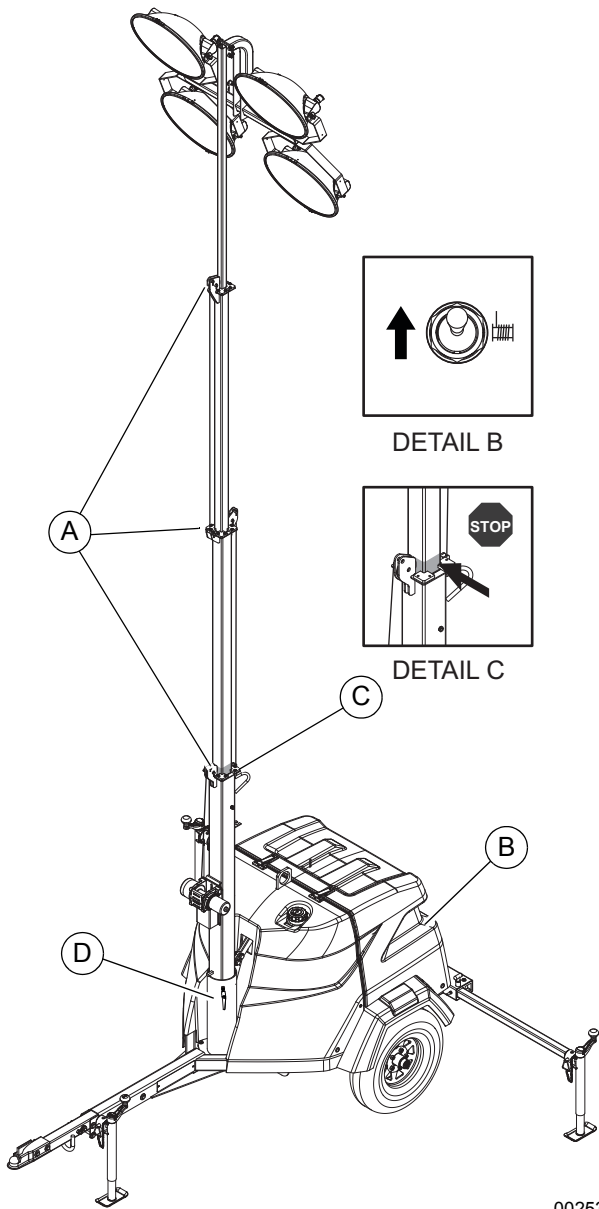
2. See [Figure 3-5](#). Turn key on engine start switch to the right GLOW PLUG position and hold key in place for 5–10 seconds.



008484

Figure 3-5. Activate Glow Plug

3. See [Figure 3-6](#). Turn key to the right START position and hold until engine cranks and starts running.

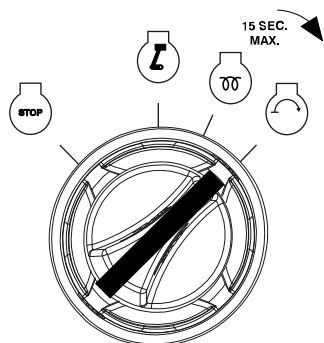


002533

Figure 3-3. Switch & Pulley Locations - Electric Winch

3. Rotate the mast by loosening the mast rotation knob at the bottom of the mast (D). Turn the mast until the lights face in the desired direction. Tighten the mast rotation knob to secure the mast in position.
4. Start unit according to [Manually Starting the Unit](#).
5. Press and hold the winch control switch (Detail B) upward to telescope the mast to the desired height. While doing so, verify that the coiled electrical cord is extending at the top sections of the mast. Stop extending the mast when the colored mark (C) on the second mast section is visible as seen in Detail C.

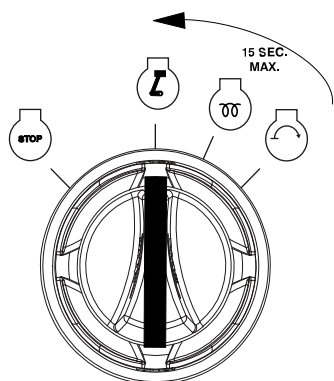
IMPORTANT NOTE: A limit switch on the main mast section will disconnect power to the upper electric winch to prevent overextending the mast.



008485

Figure 3-6. Crank Engine

- See Figure 3-7. Release key; it will move to RUN.



008486

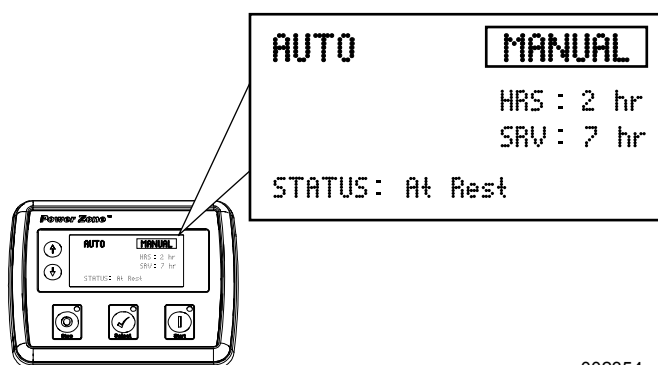
Figure 3-7. Release Key

Preparing for Start-Up (with PowerZone™ Controller, If Equipped)

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

Select AUTO or MANUAL Mode

See Figure 3-8. Using arrows on the PowerZone–DLA, select AUTO or MANUAL on Home screen and press select button to select the desired mode.



002354

Figure 3-8. Select AUTO or MANUAL Mode

- 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](#)).
- MANUAL mode is used for on-demand control of the lights and convenience outlets.

Manually Starting the Unit

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

- Verify the 240VAC outlet breaker is switched OFF (O).
- Switch the main circuit breaker ON (I).
- Verify that the load sense switch is OFF.
- 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.

- 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.
- 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



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. (000277)



WARNING

Burn hazard. Lamps become extremely hot while in use. Allow 10–15 minutes for cooling before handling or lowering mast. Touching a hot lens or fixture can cause severe burns. (000278)

- Verify the unit is ON and running smoothly.

- See **Figure 3-9**. Switch the main circuit breaker (A) ON (I).

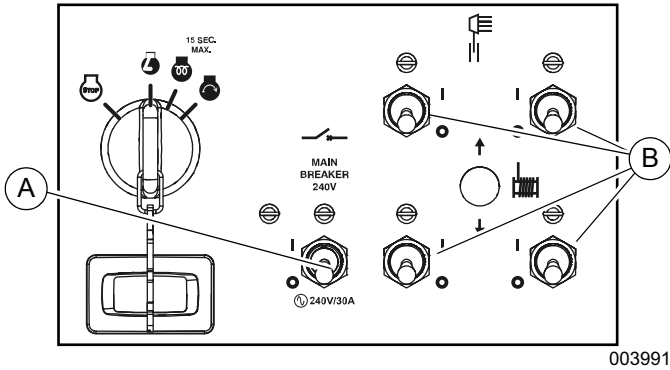


Figure 3-9. Light Switches and Breaker

- Switch the individual circuit breakers for the lights (B) ON (I), one at a time.

NOTE: If an indicator light does not turn on, see **Troubleshooting** or contact a GMP ASD.

NOTE: The lights require a warm up period of 5-15 minutes before they reach full output. If the lights are shut down, they require a cool down period of approximately 10 minutes before they can be switched on again.

NOTE: The light tower uses four 1000W, 1050W, or 1100W bulbs. When checking or replacing the bulbs, wipe them with a clean cloth to avoid leaving any grease, oil residue, or fingerprints on the glass. Any residue can create a hot spot on the bulb, causing premature bulb failure.

NOTE: Parts for different watt lights are not compatible with each other.

Light Operation (with PowerZone Controller, If Equipped)



WARNING

Burn hazard. Lamps become extremely hot while in use. Allow 10–15 minutes for cooling before handling or lowering mast. Touching a hot lens or fixture can cause severe burns.

(000278)

See **Figure 3-10**. The lights are turned on and off using the PowerZone–DLA. To view the light screen, press the **↑** button three times from the Home screen.

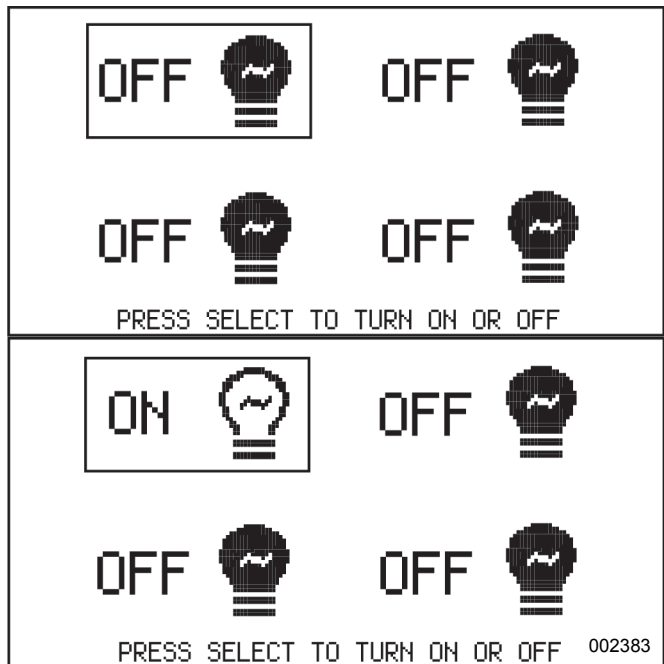


Figure 3-10. Lights Screen

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

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

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 outlets. For every increase in 1,000 ft (305 m) of elevation, engine performance for this unit typically drops between 2–4%. Engine performance decreases approximately 1% for every 10 °F (5.6 °C) increase in ambient air temperature over 72 °F (22 °C).

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

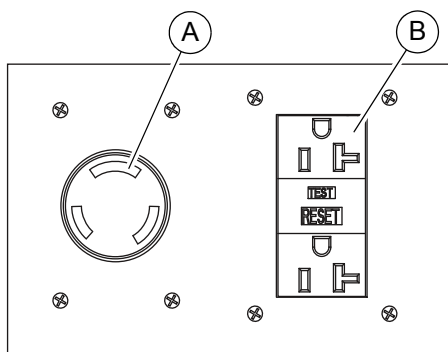
This unit is equipped with a “dusk to dawn” photo sensor to detect the surrounding light level, automatically starting the engine and turning the lights on at dusk. The engine will run and the lights will remain illuminated until dawn.

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 PowerZone–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.

Customer Convenience Receptacles

See [Figure 3-11](#). 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 ON (I). Each receptacle has an individual circuit breaker, located on the control box. Refer to [Control Panel](#).



002535

Figure 3-11. 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)
- One 120V/20A GFCI (B)

NOTE: Do not draw more than 800W from each receptacle when using 1100W bulbs, 1000W when using 1000W bulbs, and 900W when using 1100W bulbs when the lights are on. This will overload the generator and cause the main circuit breaker to trip. Should the breaker trip, switch off the lights, remove some of the loads connected to the receptacles and wait 10 minutes for the bulbs to cool before turning them back on.

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

Shutting Down the Unit

Check 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 individual circuit breakers for each light OFF (O).
3. Switch the main circuit breaker OFF (O).
4. Set the control power switch to STOP.

Shutting Down the Unit (with PowerZone Controller, If Equipped)

Check with personnel using power supplied by the unit and notify them power is going to 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 outlet breaker OFF (O).
4. Press the Stop (O) button.
5. After the unit shuts down, switch the main circuit breaker OFF (O).

NOTE: Disconnect the battery if the unit is to 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 engine if oil pressure drops too low or engine exceeds normal operating temperature. Return the main circuit breaker to OFF to reset the unit after the cause of shutdown has been determined.

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 prior to starting is usually sufficient for proper engine starting.

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

Tandem Tow (If Equipped)

See [Figure 3-12](#). The tandem tow hitch option (A) allows the operator to tow a second MLT6 Light Tower in series behind a unit equipped with a hitch.

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

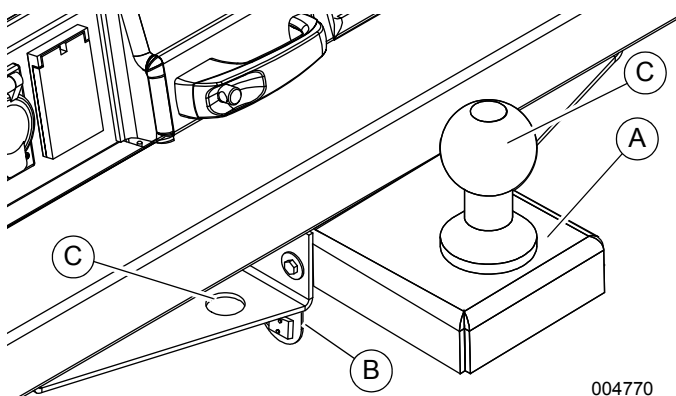


Figure 3-12. Tandem Tow

- Connect any trailer wiring to the unit in front (B). Check 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—15 mph (24 km/h)

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

Lowering the Mast—Manual Winch



WARNING

Burn hazard. Lamps become extremely hot while in use. Allow 10–15 minutes for cooling before handling or lowering mast. Touching a hot lens or fixture can cause severe burns.

(000278)

WARNING

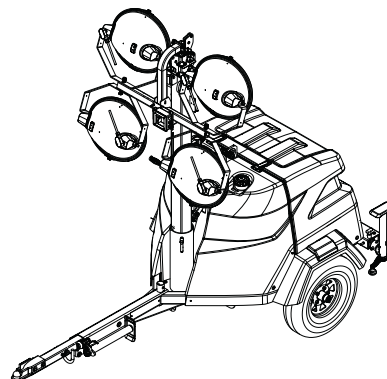
Personal Injury. Stop immediately if the mast hangs up or the winch cable develops slack. Excess slack could cause the mast to collapse, resulting in personal injury or equipment damage.

(000265)

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

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

4. See [Figure 3-13](#). If unit will be moved, rotate mast so lights face rear of the unit.



003990

Figure 3-13. Stowed (Travel) Position

To rotate mast:

- a. Loosen mast rotation knob.
- b. Rotate mast until white arrows are aligned and metal stop tabs are touching.
- c. Tighten mast rotation knob.

Lowering the Mast—Electric Winch (If Equipped)



WARNING

Burn hazard. Lamps become extremely hot while in use. Allow 10–15 minutes for cooling before handling or lowering mast. Touching a hot lens or fixture can cause severe burns.

(000278)

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)

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

NOTE: Some electric winch models are equipped with an anti-backlash safety limit switch. This switch disconnects power to the winch after mast is completely lowered. This prevents the cable from continuing to unwind and becoming entangled around the winch drum.

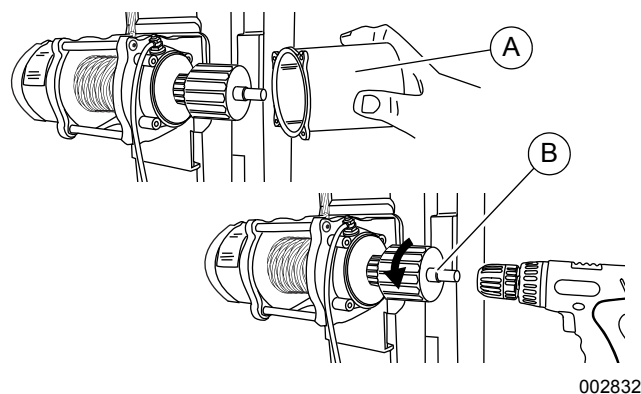
IMPORTANT NOTE: Contact an GMP ASD immediately if the mast hangs up or the winch cable develops slack.

NOTE: If the generator 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 3-14](#). Remove the motor cover (A).



002832

Figure 3-14. Manually Lowering the Mast

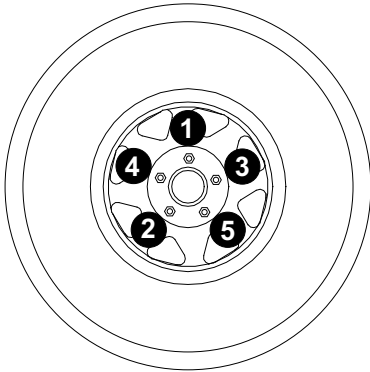
2. Attach drill chuck firmly to exposed motor shaft (B).
3. Using drill, slowly rotate motor shaft counterclockwise to lower mast.
4. Detach drill chuck and install motor cover after mast is completely lowered.

Towing the Unit

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

1. Raise outrigger jacks completely and release locking pins to rotate them up into travel position. Verify locking pins snap into place. Release outrigger locking pins and slide outriggers into trailer frame until locking pins snap into place.
2. Use the tongue jack to raise or lower trailer onto hitch of tow vehicle. Lock the hitch coupling and attach safety chains or cables to tow vehicle. Remove tongue jack locking pin and rotate jack into travel position. Install locking pin.
3. To ensure proper operation of the jacks, lubricate the grease fittings located on the leveling jacks. Refer to [Jack Maintenance](#). For maintenance interval information, refer to [Basic Maintenance Schedule](#).
4. Connect any trailer wiring to the tow vehicle. Check for proper operation of the directional and brake lights.
5. Verify the enclosure is properly latched.
6. Check for proper inflation of the trailer tires. For maximum tire pressures, refer to [Specifications](#).

7. See **Figure 3-15**. Inspect wheel lugs. Tighten or replace any loose or missing lugs. If a tire has been removed for axle service or replaced, tighten lugs in the order shown to the following specifications:



003754

Figure 3-15. 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).

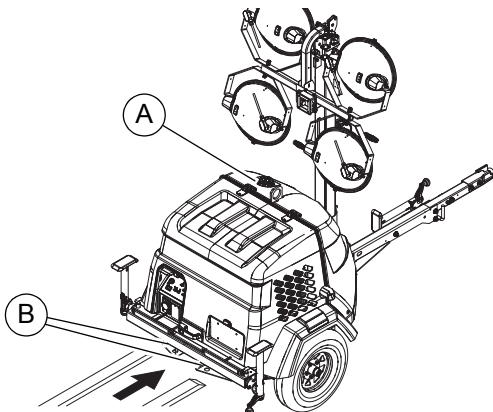
NOTE: After first road use, torque lug nuts in sequence.

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 terrain.

Lifting the Unit

Proceed as follows to prepare unit for lifting:

1. Verify equipment being used to lift 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 3-16**. Stow mast and lights in travel position as shown.



006456

Figure 3-16. Lifting Points

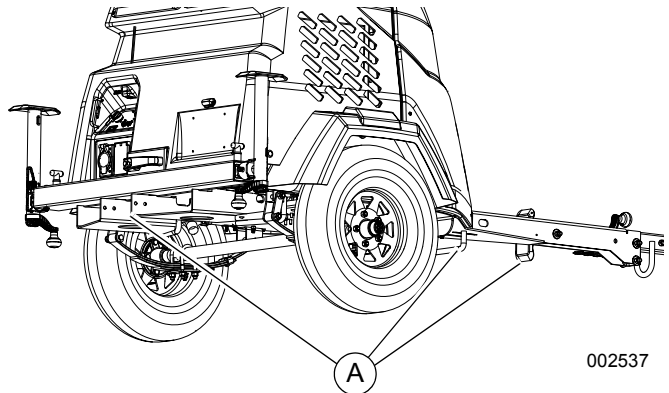
IMPORTANT NOTE: Always remain aware of people and objects around the unit while preparing, maneuvering, and lifting the unit.

NOTE: 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.

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

Tying the Unit Down

1. Verify equipment being used to fasten unit is in good condition and has sufficient strength to hold unit in place during transport.
2. See **Figure 3-17**. Use tie-down points (A) as shown.



002537

Figure 3-17. Tie-Down Points

Section 4: Maintenance

Emissions Information

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

Daily Walk-Around Inspection



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

(000306)

Perform a walk-around inspection every day before starting 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 fan belt for cracks, fraying, or stretching. Verify belt is properly seated in pulley grooves. Replace belt according to the manufacturer's recommendations.

General Maintenance



Accidental start-up. Disconnect negative battery terminal before servicing to prevent accidental engine rotation. Failure to do so could result in death or serious injury.

(000148a)

Poorly maintained equipment can become a safety hazard. In order for the equipment to operate safely and properly over a long period of time, periodic maintenance and occasional repairs are necessary.

IMPORTANT NOTE: 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 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, 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 PowerZone™ controller, verify main circuit breaker is OFF. Otherwise, verify key switch is set to OFF.
2. Verify circuit breakers are switched OFF (O).
3. Disconnect negative (–) terminal on battery.
4. Attach a “Do Not Start” sign to control panel. This will notify others the unit is being serviced and reduce the chance of others inadvertently trying to operate the unit.

Cleaning the Unit



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

(000325a)

Always clean unit after each use to remove dust, grease, mud, or spilled fuel or oil. Use soft, clean rags to wipe 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 cabinet interior.

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

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

Inspecting the Unit

- If stored outside, inspect for water inside cabinet and generator before each use. If wet, dry thoroughly before starting.
- Inspect condition of electrical cords. **DO NOT** use 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 safety pins for the mast lock rod and mast lock bar are present and secured with a chain. Verify spring located in the mast lock bar is not broken or missing. Check operation of the mast lock bar.
- Verify wheel lugs are present and properly tightened. Refer to **Towing Safety**.
- Check coolant level daily by inspecting the level in coolant overflow jug located near 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 coolant overflow jug.
- Check oil level daily. Refer to the engine operator's manual for the appropriate oil specification. Verify oil is correct for special operating conditions such as a change in season or climate.
 - **DO NOT** start unit if engine oil level is below the ADD mark on the oil dipstick.
 - Normal operating level is within the cross-hatch pattern between the FULL and ADD markings on the oil dipstick.
 - Only add oil if oil level is below the ADD mark on the bottom of the cross-hatch pattern on the oil dipstick. **DO NOT OVERFILL** the crankcase.
- Check fuel level.
- If unit is connected to a remote start or transfer switch, verify the remote switch is also off and tagged.

NOTE: If engine was run out of fuel, or fuel tank was 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.

Item	Daily	Every 50 Hours	Every 250 Hours	Every 500 Hours	Every 1000 Hours	Every 2000 Hours
Check oil level	◆					
Check coolant level	◆					
Check fuel level	◆					
Check tire pressure	◆					
Inspect wheel bearings	◆					
Inspect belt for wear and looseness	◆					
Inspect all electrical connections	◆					
Inspect radiator fins for debris; clean as required	◆					
Inspect light tower winch for proper operation	◆					
Check fuel and coolant clamps for tightness		◆*				
Drain water separator		◆				
Sample coolant			◆			
Inspect and adjust fan belt			◆			
Sample engine oil			◆			
Clean / replace air filter element			◆			
Replace fuel system secondary filter				◆		
Change engine oil and filter				◆		
Check engine sensors (oil pressure and coolant temperature)				◆		
Lubricate leveling jacks				◆		
Inspect hoses and clamps				◆		
Clean radiator				◆		
Replace alternator and fan belts					◆	
Adjust valve clearance					◆	
Inspect engine mounts						◆
Replace engine breather						◆
Inspect alternator						◆
Inspect starter						◆

* *Inspect after first 50 hours*

Resetting Maintenance Alarms (If Equipped)

The PowerZone 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. The following procedure demonstrates how to reset the maintenance alarms:

1. With the unit shut down, move 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. See 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. See [Figure 4-1](#). 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.



003784

Figure 4-1. Entering Maintenance Pin

Manual Winch: Use, Operation, and Maintenance

Prior to Use

- Inspect rope or cable and replace if damaged.
- Check mounting hardware for proper 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 a GMP ASD 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: Use, Operation, and Maintenance

- Keep the winch free of dirt, oil, grease, water, and other substances.
- Inspect all mounting bolts and verify they are tightened to the recommended torque values. Replace any damaged fasteners.
- Periodically inspect all connections to be sure 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 proper performance and extend the life of the winch. If the 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.

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

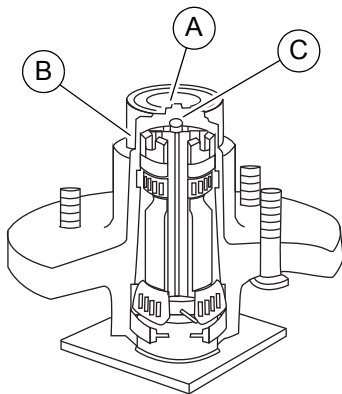
The trailer axles are equipped with a Zerk grease fitting to allow lubrication of the wheel bearings without the need to disassemble the axle hub. Use only a high quality grease made specifically for lubrication of wheel bearings, such as Valvoline® W615 or equivalent.

See [Figure 4-2](#). Proceed as follows to lubricate the wheel bearings:

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 properly support the unit.



002540

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.

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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.

(000139)

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 Generac Mobile Products Authorized Service Dealer.

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.
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.

If problems persist, contact Generac Mobile Products, LLC at 1-800-926-9768 for assistance.

Troubleshooting the Lights



WARNING

Burn hazard. Lamps become extremely hot while in use. Allow 10–15 minutes for cooling before handling or lowering mast. Touching a hot lens or fixture can cause severe burns.

(000278)

IMPORTANT NOTE: Only a qualified electrician should troubleshoot or repair electrical problems occurring in this equipment. Contact Generac Mobile Products Technical Service at 1-800-926-9768 for assistance if you have any questions, or if problems persist.



WARNING

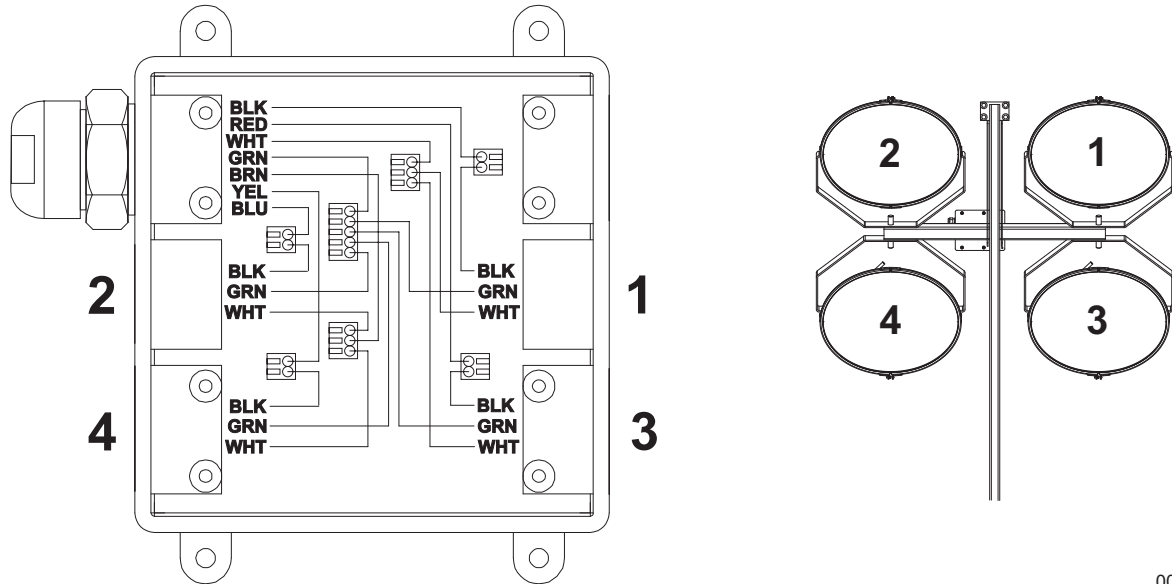
Electrocution. Potentially lethal voltages are generated by this equipment. Render the equipment safe before attempting repairs or maintenance. Failure to do so could result in death or serious injury.

(000187)

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.
	Faulty lamp connection	Verify that the lamp is tight in the socket.
	Lamp broken	Inspect for broken arc tube or outer lamp jacket, broken or loose components in lamp envelope, or blackening/deposits inside tube.
	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.
Mast lights off, checking inside the control box	Loose lighting connections	Inspect the connections inside the control box and inside each ballast box.
	Generator output incorrect	Check the incoming voltage to the ballast by checking the available voltage on the GFCI receptacle. Incoming voltage should be 120V ± 5V. If voltage is incorrect, the engine speed may need to be adjusted or generator may require service.
	Low transformer output	The voltage from the transformer should read approximately 400VAC as the light “strikes” (induces an arc), then drop and slowly rise back up to stabilize at 240–260VAC. On hard wired models, remove the mast junction box cover and insert the wire probes into the connector blocks for the light and ground. If correct voltage is not achieved, perform capacitor check to determine if the capacitor or coil needs to be replaced.
Mast lights on but the light output is low	Fixture and/or lens is dirty	Clean reflective surface inside fixture and both inside and outside surface of glass lens. Use mild soap and water to clean lens. Other chemicals may have an adverse effect on the glass.
	Lamp worn due to normal use	Replace lamp.
	Damaged or loose electrical connections	Inspect the mast coil cord, mast junction box, and mast light connections.
	Generator output incorrect	Check the incoming voltage to the ballast. Incoming voltage should be 120V ± 5V. If the voltage is incorrect, the engine speed may need to be adjusted or the generator may require service.
	Low transformer output	The voltage from the transformer should read approximately 400VAC as the light “strikes” (induces an arc), then drop and slowly rise back up to stabilize at 240–260VAC. On hard wired models, remove the mast junction box cover and insert the wire probes into the connector blocks for the light and ground. If correct voltage is not achieved, perform capacitor check to determine if the capacitor or coil needs to be replaced.

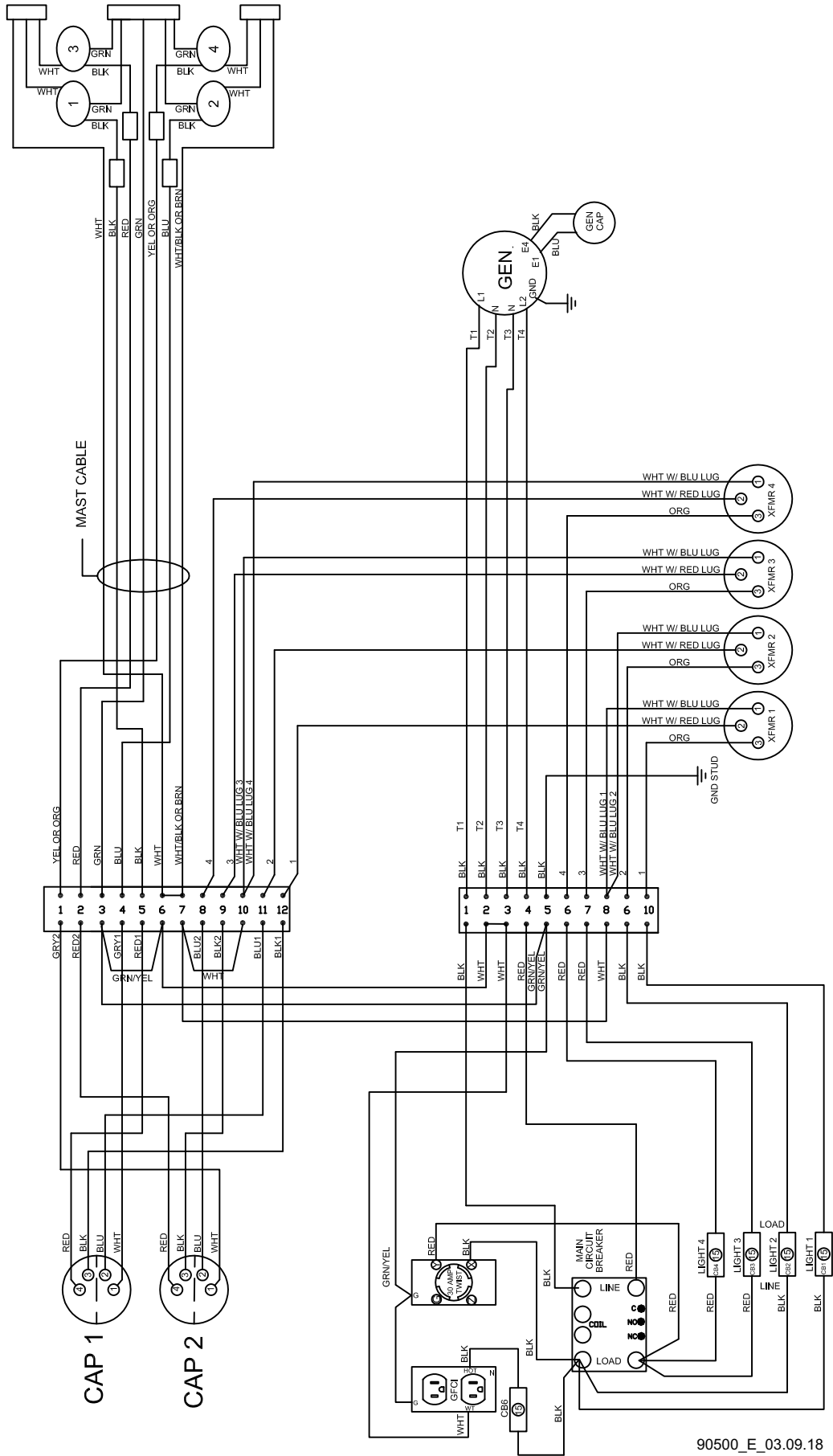
Section 6: Wiring Diagrams

Mast Junction Box Wiring and Light Connections



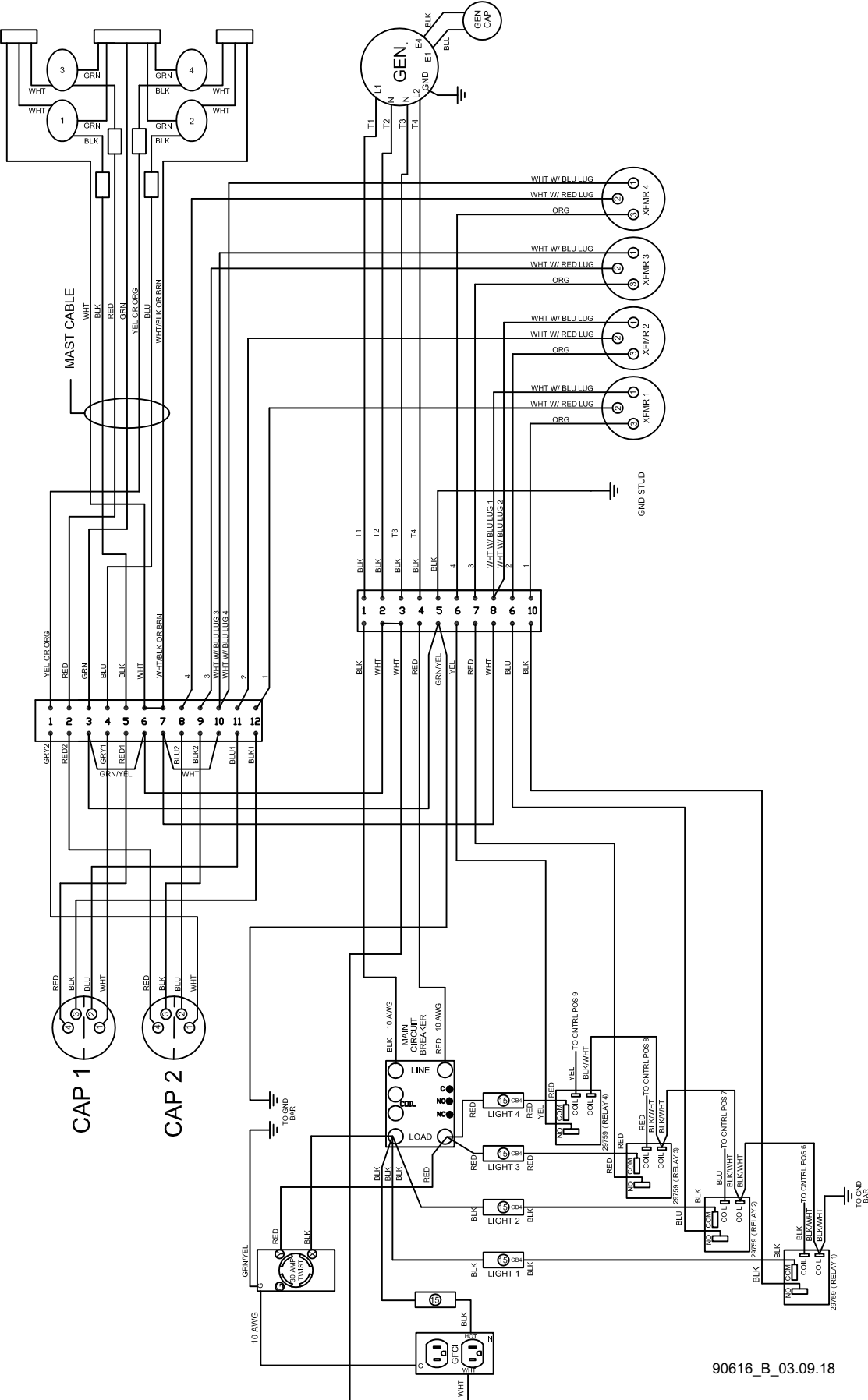
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AC Wiring Diagram



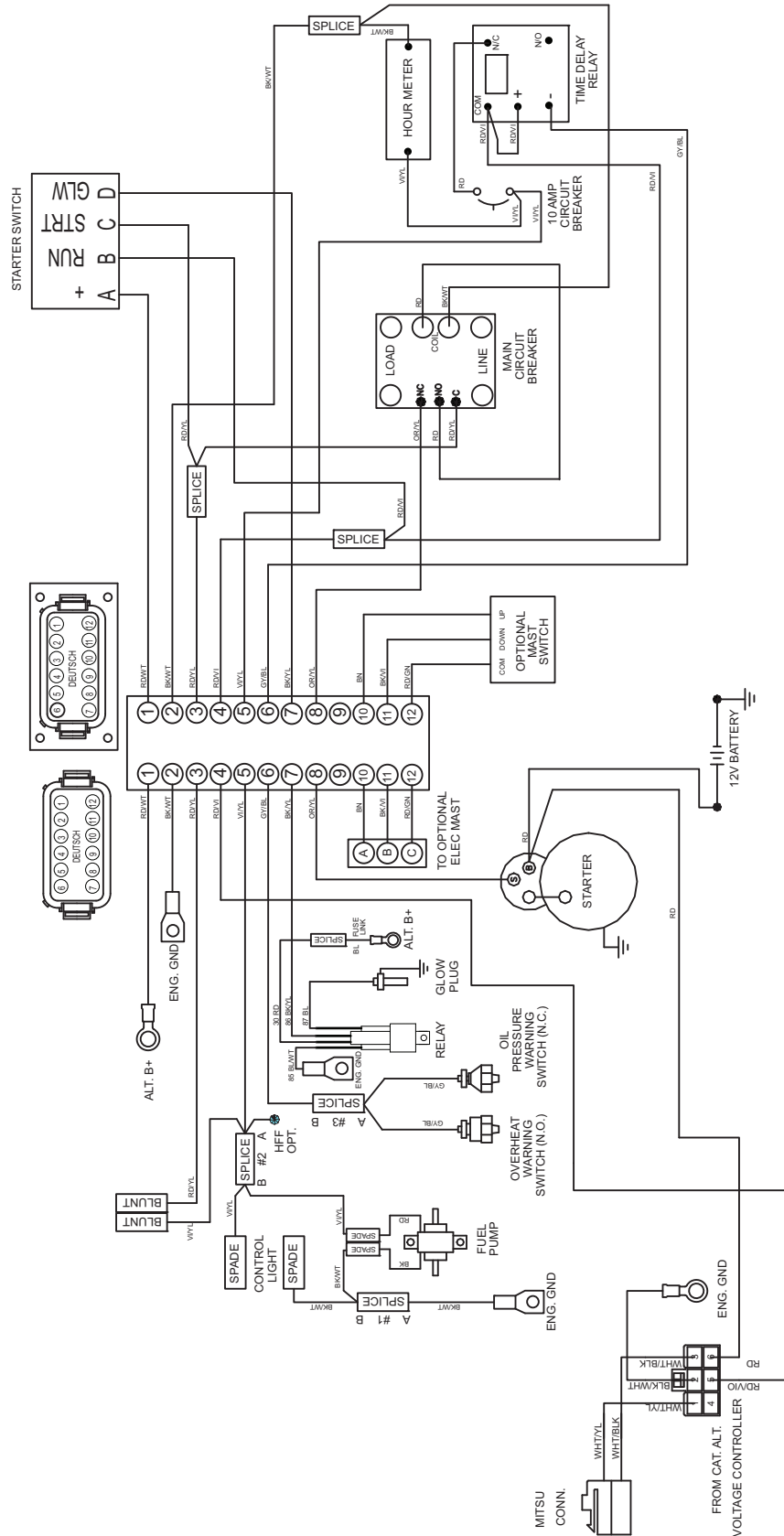
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AC Wiring—PowerZone (If Equipped)



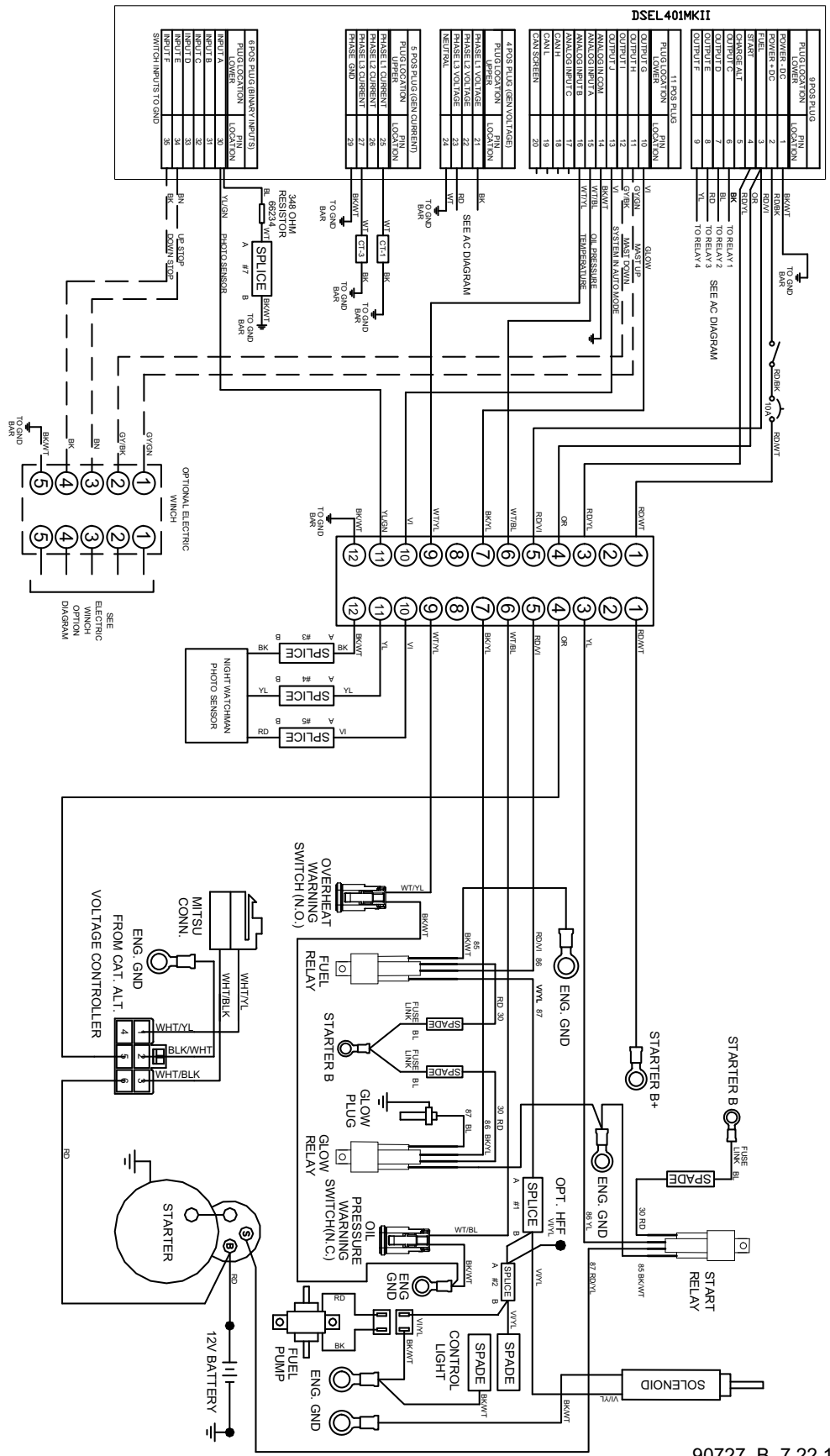
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DC Wiring Diagram

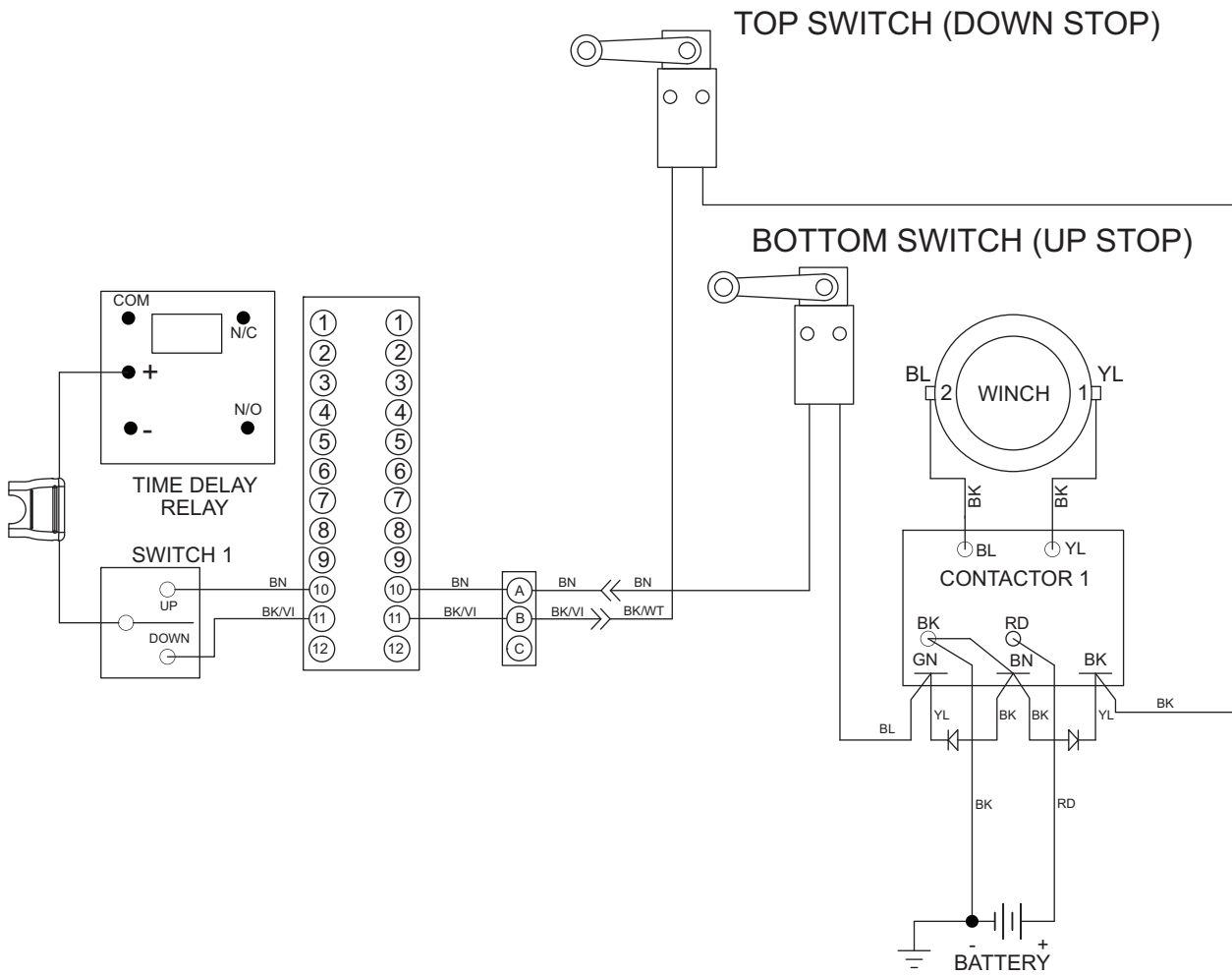


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DC Wiring—PowerZone (If Equipped)

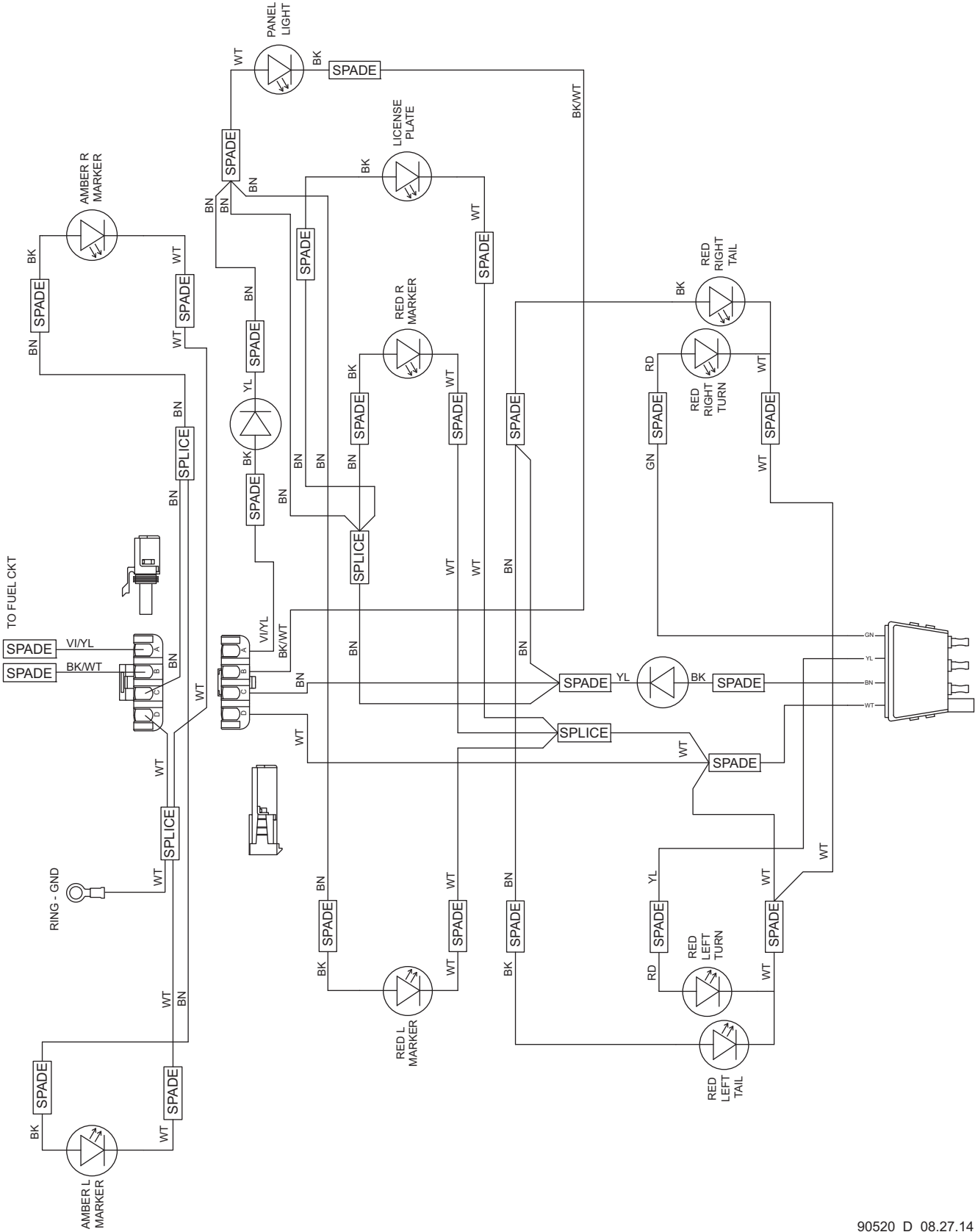


DC Wiring—Electric Winch Option



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Trailer Lights Wiring



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