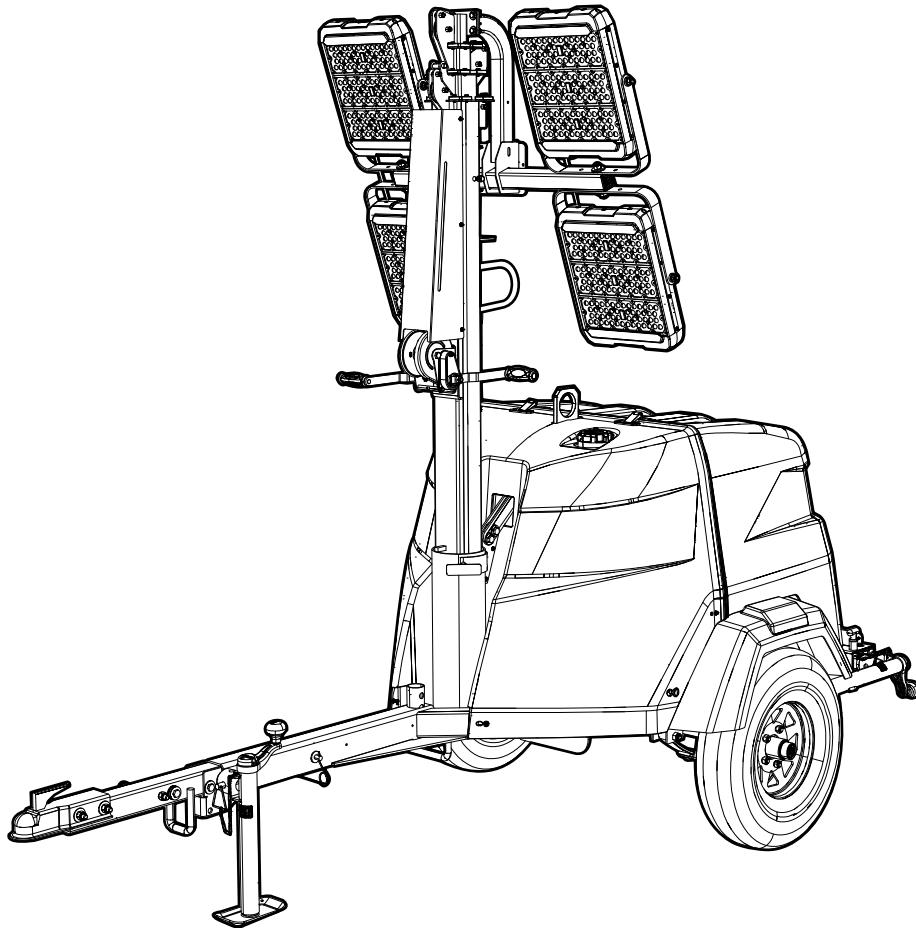


Owner's Manual

Light Tower

MLTB

SN _____ and higher



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 No.	
Unit Serial No.	
Battery Model No.	
Battery Serial No.	

Record the information found on your unit data label on this page. See unit serial number location (***Unit Serial Number Locations***). The label is affixed to the top of the control panel console.

Battery serial number is located on the battery.

When contacting a Generac Mobile Authorized Service Dealer (GMASD) about parts and service, supply the complete model number and serial number of the unit.

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 GMASD. Normal maintenance, service and replacement of parts are the responsibility of the 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.



CALIFORNIA WARNING

Can expose you to 1, 3-butadiene, a carcinogen
and reproductive toxicant

www.P65Warnings.ca.gov

(000764)

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Section 1: Introduction and Safety

Introduction

Thank you for purchasing a Generac Mobile 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



Read instruction manual.
Read and understand manual completely before using this equipment.

ISO000100a

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

The unit has been designed to be used by qualified operator and the content of this manual is intended for such operator.

The operator should receive training on the operation of this unit and be familiar with commonly used tools.

The operator must be aware of the operating modes of the unit, be able to follow the user instructions provided in the manual and pay utmost attention when using the unit. Besides hazards deriving from electricity, those related to explosive and flammable substances must be considered (gases and lubricating oils) as well as those related to moving parts, combustion gases, hot parts, and waste products one can come into contact with.

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 unit, and instruct them on how to correctly start, operate, and stop the unit in case of an emergency.

Safety Messages

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 the manufacturer does not specifically recommend, verify it is safe for others and does not render the equipment unsafe.

Throughout this publication and on tags and decals affixed to the unit, three types of safety messages are used to alert personnel to special instructions about a particular operation which may be hazardous if performed incorrectly or carelessly. Observe them carefully. Their definitions are as follows:

	HAZARD WARNING Yellow triangle with black border and black symbol; indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	MANDATORY ACTION Blue circle with white symbol; indicates an action required to safeguard personal health and / or avoid causing a hazardous situation which could result in death or serious injury.
	PROHIBITION Red ring with diagonal bar and black symbol; indicates a prohibited action. Performing the prohibited action may cause a hazardous situation which could result in death or serious injury.
—	NOTE Notes provide additional information important to a procedure or component.

These safety messages cannot eliminate the hazards they indicate. Observing safety precautions 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 GMASD for assistance. Service technicians are factory-trained and are capable of handling all service needs. For assistance locating a dealer, visit www.generacmobileproducts.com/parts-service/find-service. When contacting a GMASD 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.

Safety Rules

This manual contains main warnings that the operator must know in depth before using the unit.

This manual also provides a summary of the most important information that needs to be consulted for injury prevention: some of this information may be repeated in other documents included in the supply. In case of incomplete data, the references in this manual prevail over any others.

Study these SAFETY RULES carefully before installing, operating, or servicing this equipment. Become familiar with this manual and the unit. The unit can operate safely, efficiently, and reliably only if it is correctly installed, operated, and maintained. Many accidents are caused by failing to follow simple and fundamental rules or precautions.

General Safety



Hot surface. Keep equipment away from combustible materials during operation. Do not touch hot surfaces when operating equipment. After equipment shutdown, allow sufficient time for surfaces to cool prior to contact.

ISO000110



The unit provides protection against hot surfaces inside the unit. Hot surfaces may be present if the unit has been operating under a large load. Do not open the unit while the unit is running.

ISO000782



Do not attempt to start or operate a unit in need of repair or scheduled maintenance.

ISO000291



Do not obstruct cooling and ventilating airflow around the unit.

ISO000767



Do not stand on top of unit or use unit as a step.

ISO000780



Do not alter construction of, installation, or block ventilation for unit.

ISO000783



Read instruction manual. Read and understand manual completely before using this equipment.

ISO000100a



Refer to local codes and standards for safety equipment required when working with a live electrical system.

ISO000257



Follow all safety precautions in all documents included with this equipment.

ISO000531a



Verify the unit is installed in accordance with the manufacturer's instructions and recommendations.

ISO000784



Following proper installation, do nothing that might alter a safe installation and render the unit in noncompliance with locally applicable codes, standards, laws, and regulations.

ISO000540



Unit must be positioned in a manner that prevents combustible material accumulation underneath.

ISO000147



In the event of an electrical accident, immediately shut power OFF. Use non-conductive implements to free victim from live conductor. Apply first aid and get medical help.

ISO000145



Use only fully-charged fire extinguishers rated according to applicable industry standards.

ISO000252



Comply with regulations the local agency for workplace health and safety has established.

ISO000538



Only qualified service personnel may install, operate, and maintain this equipment.

ISO000182a



Comply with regulations the local agency for workplace health and safety has established.

ISO000538



This product is not intended to be used in a critical life support application.

ISO000209b

Explosion and Fire Hazards



Never attempt to fight a fire yourself. Evacuate the building and contact emergency services. Inform dispatcher that lithium-ion batteries are in the building.

ISO000768

Trailer Hazards



Trailer must be securely coupled to the hitch with the chains correctly attached.

ISO000233a



Do not operate unit during transport.

ISO000231a



Verify unit is properly secured and on level ground.

ISO000234a



Tighten wheel lug nuts after first 50 miles to factory specifications.

ISO000235

Electrical Hazards



In the event of an electrical accident, immediately shut power OFF. Use non-conductive implements to free victim from live conductor. Apply first aid and get medical help.

ISO000145



Avoid water contact with a power source.

ISO000104



Electricity Present. Potentially lethal voltages are generated by this equipment. Do not contact bare wires, terminals, and connections while unit is running.

ISO000785



Verify electrical system is properly grounded before applying power.

ISO000152



Do not wear jewelry while working on this equipment.

ISO000769



DO NOT use the unit if electrical cord is cut or worn through.

ISO000770

Battery Hazards



Do not wear jewelry while working on this equipment.

ISO000769



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.

ISO000162



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.

ISO000163a



Always recycle batteries at an official recycling center in accordance with all local laws and regulations.

ISO000228



Disconnect the negative battery cable, then the positive battery cable, when working on unit.

ISO000130



Wear rubber gloves and boots when working with batteries.

ISO000536



Wear full eye protection and protective clothing.

ISO000537

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>.

Operating Safety

Positioning the Unit



Verify area above unit is clear of overhead wires and obstructions.

ISO000771



Never operate lights with a damaged or missing lens cover.

ISO000772



Verify unit is properly secured and on level ground.

ISO000234a

- The area immediately surrounding the unit should be dry, clean, and free of debris.
- If the unit is equipped with a frame grounding stud, follow any local, state, and National Electrical Code (NEC) guidelines when connecting.
- Do not install the unit in low lying areas prone to flooding.
- For trailered units, once parked, use wheel chocks to prevent the unit from moving.
- Do not operate light tower in standing water.

Starting the Unit



DO NOT use the unit if electrical cord is cut or worn through.

ISO000770



Do not attempt to start or operate a unit in need of repair or scheduled maintenance.

ISO000291

Raising and Lowering the Mast



Do not set up or operate this unit if severe weather is expected.

ISO000773



Do not set up or operate unit in high winds.

ISO000774



Do not raise or lower the mast while the unit is operating.

ISO000775



Stop immediately if the mast hangs up or the winch cable develops slack.

ISO000776



Extend the outriggers and level the unit before raising the mast. Keep the outriggers extended while the mast is up.

ISO000777

- 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 the mast hangs up or winch cable develops slack while raising or lowering tower, stop immediately and contact a GMASD.
- **NEVER** remove safety pin or pull mast locking pin while tower is up.

Service Safety

NOTE: The unit inverter system has capacitors that could have stored energy with the battery negative disconnected. Treat all circuits as if they are live and test for voltage present prior to servicing.



Disconnect battery ground terminal before working on battery or battery wires.

ISO000164



Disconnect the negative battery cable, then the positive battery cable, when working on unit.

ISO000130



Electricity present. Keep positive terminal covered at all times when connected to battery.

ISO000530

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 disconnect negative battery terminal using battery disconnect switch. **DO NOT** perform even routine service 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. Always fully close the enclosure unless inspecting or performing regular maintenance.

- **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.

designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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 unit, verify 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.

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 in accordance with local traffic laws and ordinances. 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.

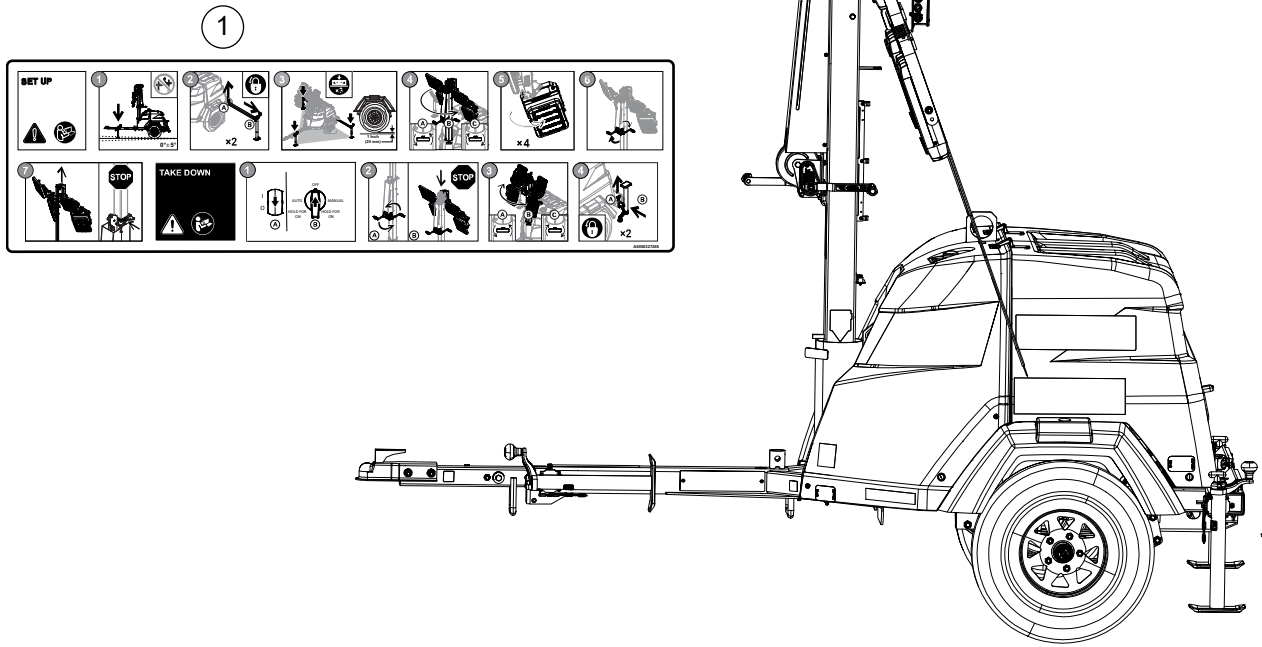
NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are

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	Operation-MLTB Manual	13	Electric Shock Hazard
2	Crush from RHT hazard Medium 55MM	14	Decal MLTB Operation
3	Mast Cable Winding	15	Prop 65 Butadiene
4	Overhead-Wind-Storm-Towing	16	Electrical Shock Hazard Medium 55MM
5	Stowed Position	17	Hazard Inverter
6	ISO Tie Down Point 35MM	18	Battery Disconnect MLTB
7	Operator Manual Storage	19	Connection Lug GND 32MM
8	Pressure Wash Hazard	20	Neg Battery Disconnect for Service
9	Forklift Pocket and Tie-Down Below	21	IEC PE Ground
10	GLT Towing Instructions	22	Consult OMNL
11	Do Not Step	23	Do Not Retract Outriggers W/Tower
12	Overhead Lift Point		



015122

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

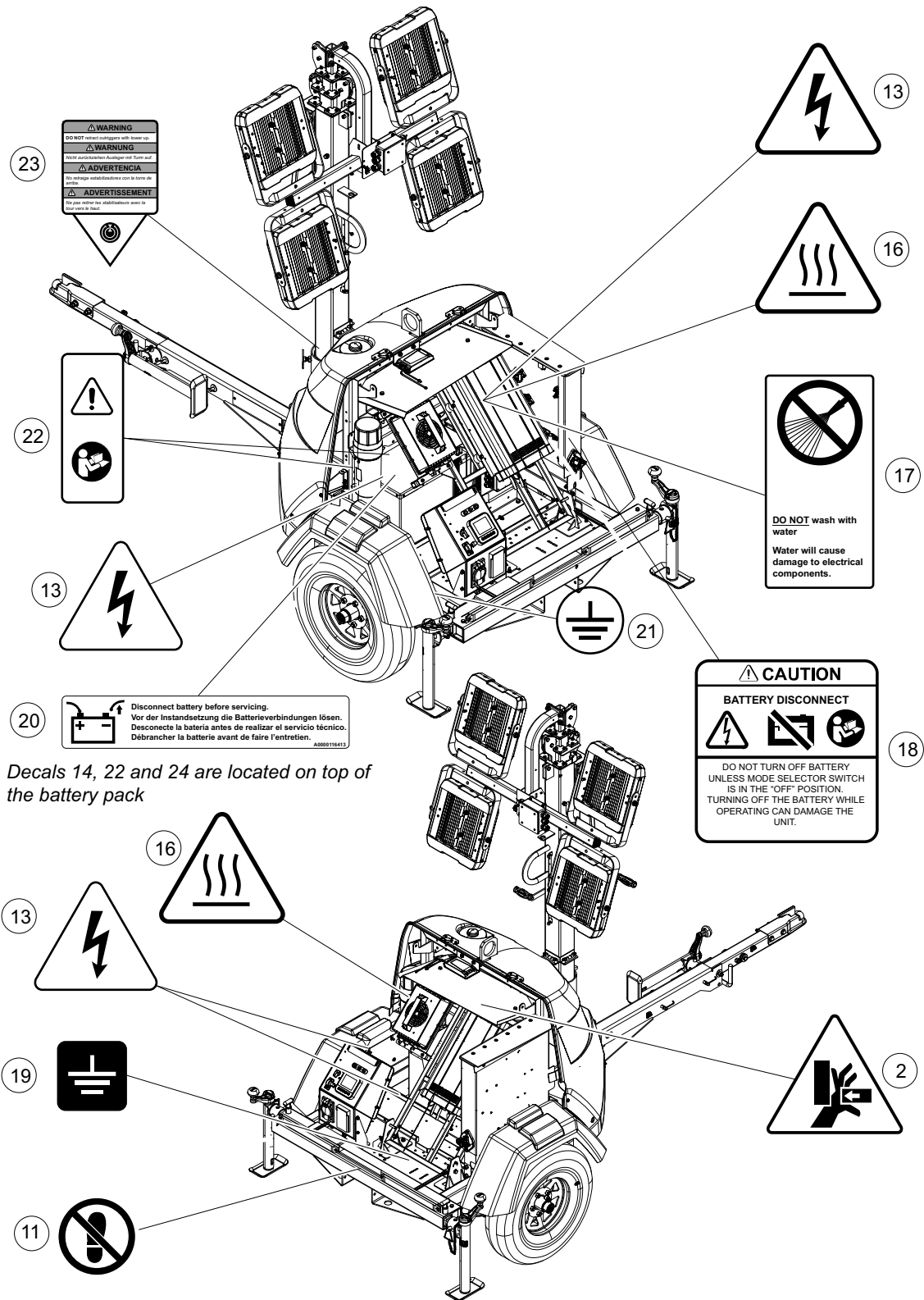


Figure 1-3. Decal Locations (3 of 3)

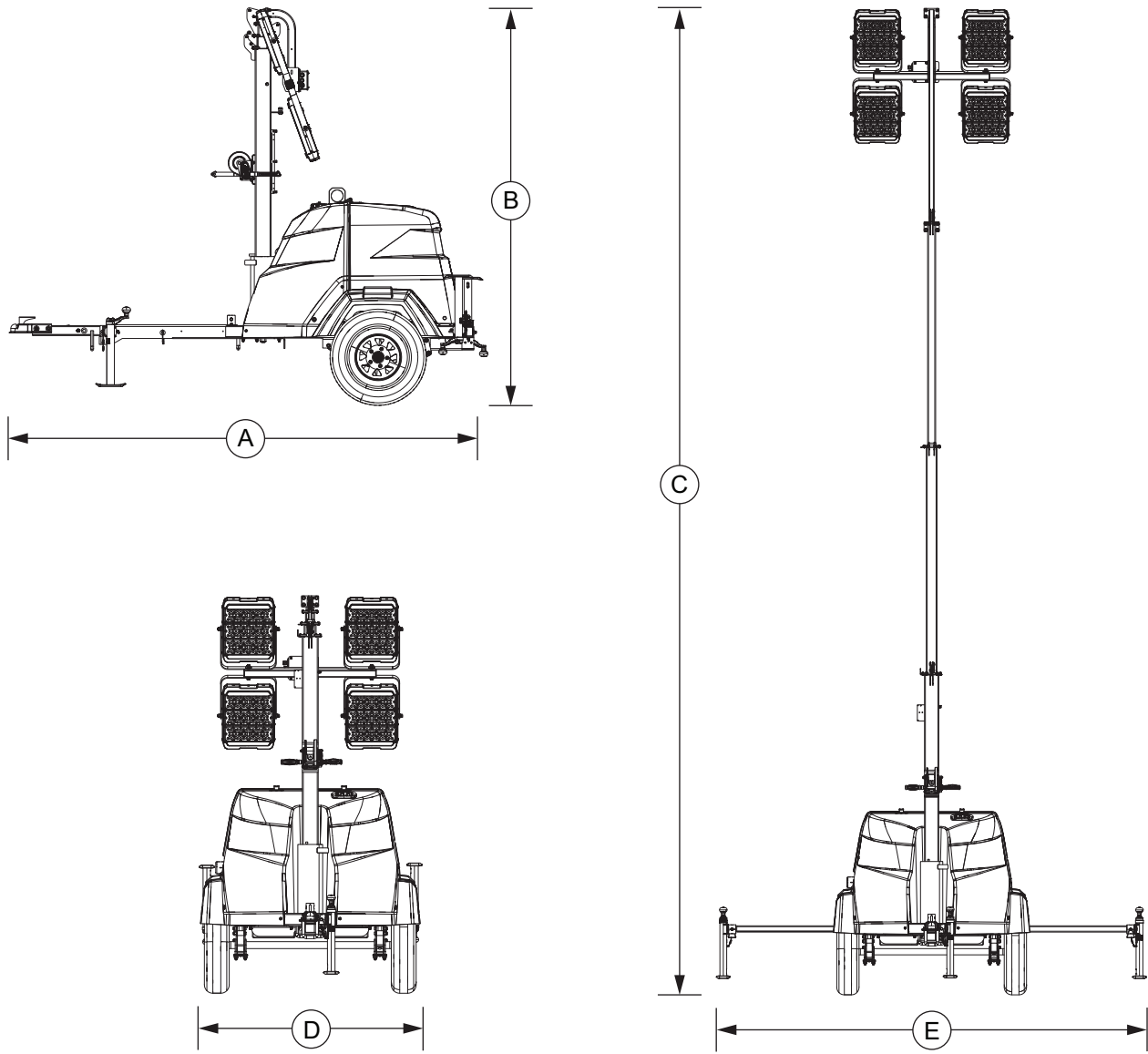
Section 2: General Information

Specifications

Description	Unit Of Measure	Standard Unit
Battery		
Type	—	Lithium-ion
Rating	Ah	355
Voltage	V	48
Unit Temperature Rating		
Discharge (operation)	F (C)	-4° F (-20° C) to 120° F (49° C)
Charge temperature	F (C)	41° F (5° C) to 113° F (45° C)
Capacities—Discharge		
25% brightness	hr	81.7
50% brightness	hr	40.8
75% brightness	hr	27.2
100% brightness	hr	21.5
Capacities—Charge		
Standard charger (23ADC) (0% to 100%)	hr	19
Standard charger (23ADC) (30% to 100%)	hr	13
AC Distribution		
Circuit Breaker Size	A	15
Frequency	Hz	60
Mast		
Winch	—	Manual
Sections	qty	4
Range of Motion—Rotation	degrees	360
Wind Rating	mph (km/h)	65 (105)
Lighting		
Lighting Type	—	G4 LED
Lights—Power	W	4×190
Total Brightness—25%	lm	27,450
Total Brightness—50%	lm	54,900
Total Brightness—75%	lm	82,350
Total Brightness—100%	lm	109,800
Trailer		
Axles	qty	1
Per-Axle Rating	lb (kg)	2,200 (1,000 kg)
Tires—Size		ST175/80D13
Maximum Tire Pressure	psi (kPA)	50 (345)
Hitch	size, type	2 in (51 mm) ball
Weight	lb (kg)	1,170 (531)

Specifications are subject to change without notice. See spec sheet for complete specifications.

Unit Dimensions



009807

Figure 2-1. Unit Dimensions

A	B	C	D	E
123 in (3.1 m)	100 in (2.5 m)	23 ft (7 m)	57 in (1.45 m)	10 ft (3.05 m)

Unit Serial Number Locations

See [Figure 2-2](#) 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.

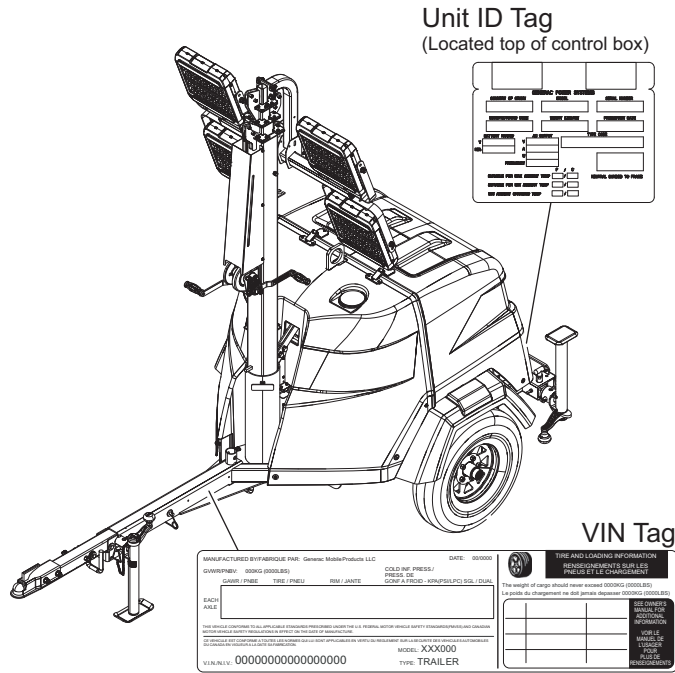


Figure 2-2. Serial Number Locations

Component Locations

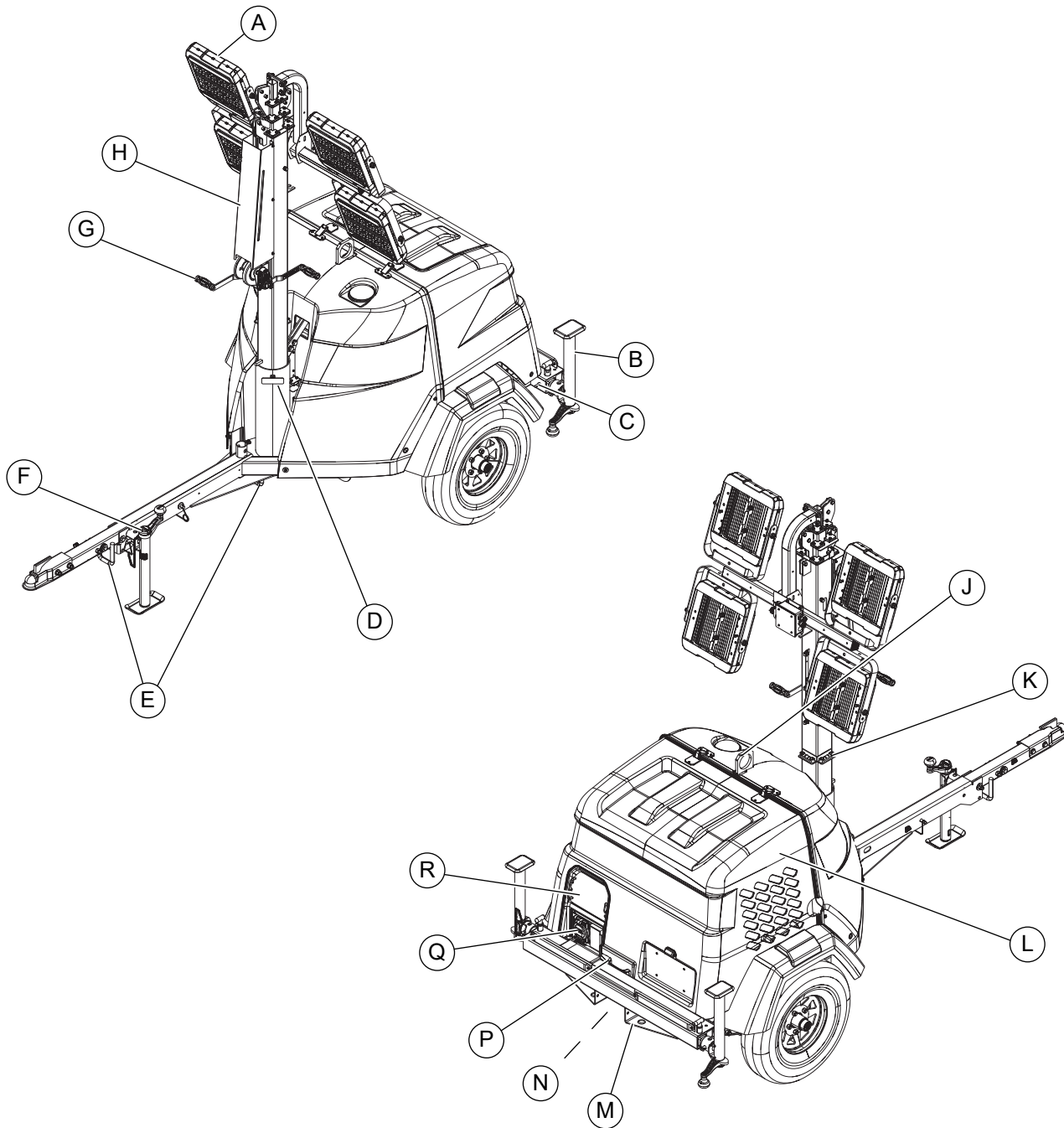


Figure 2-3. Components—Exterior

- | | |
|---|---|
| A Light (4 locations) | J Unit lift point |
| B Outrigger and jack (2 locations) | K Bubble levels |
| C Grounding stud | L Power center access hood |
| D Mast rotation knob | M Forklift pocket/tie-down point (2 locations) |
| E Tie-down points | N Tandem tow mount (if equipped) (not shown) |
| F Tongue jack | P Hood latch |
| G Winch | Q Receptacle panel |
| H Cable guard | R Control panel access door |

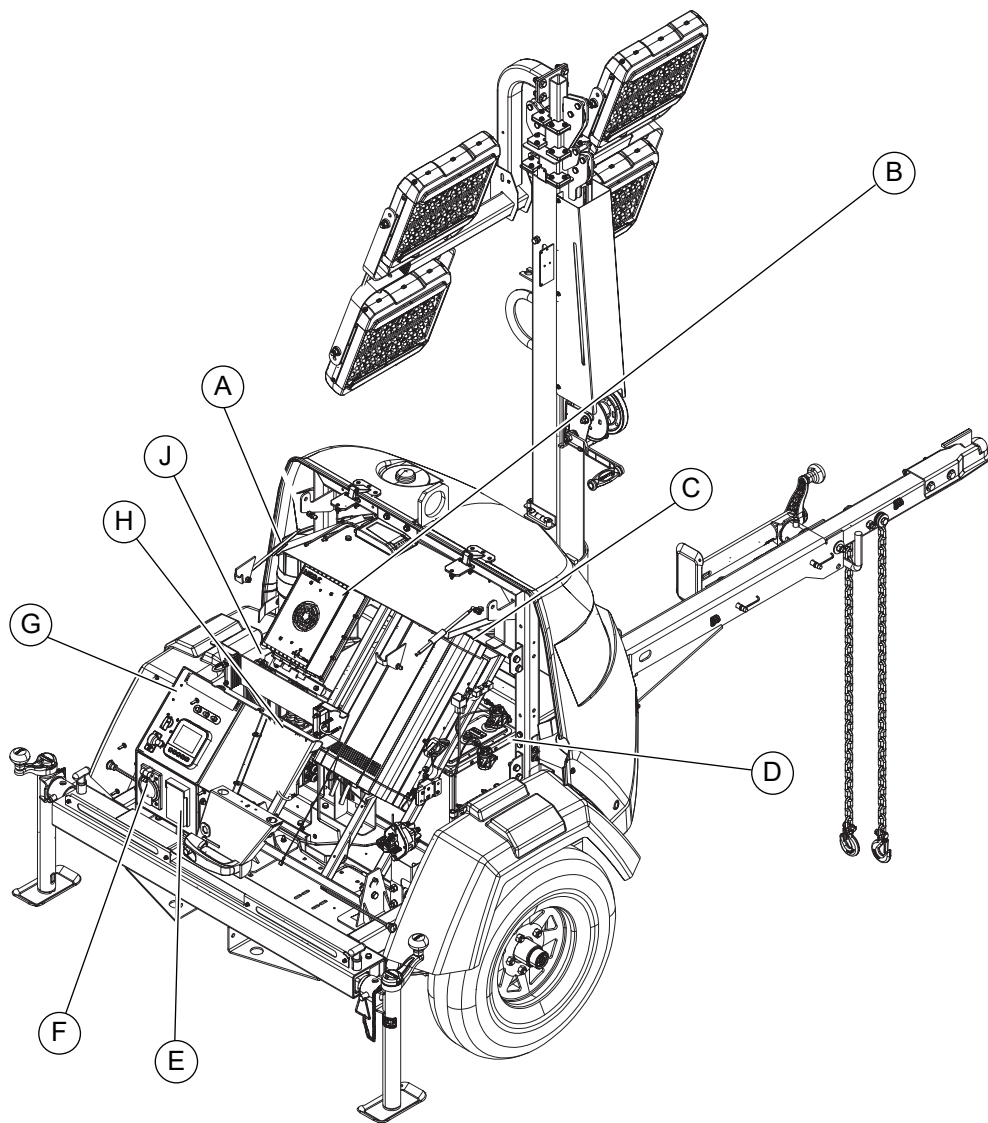
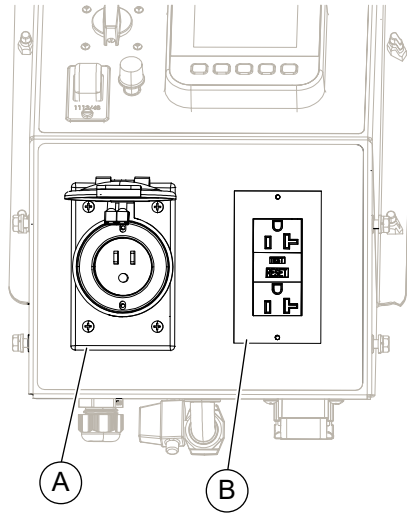


Figure 2-4. Components—Exterior

- | | |
|----------------------------|--------------------------------|
| A Document holder | F Battery charger inlet |
| B Battery charger | G Control panel |
| C Inverter | H Driver junction box |
| D Battery | J LED drivers |
| E Outlet receptacle | |

Receptacle Panels



015160

Figure 2-5. Receptacle Panel

A Battery charger inlet plug

B GFCI duplex outlet

Control Panel

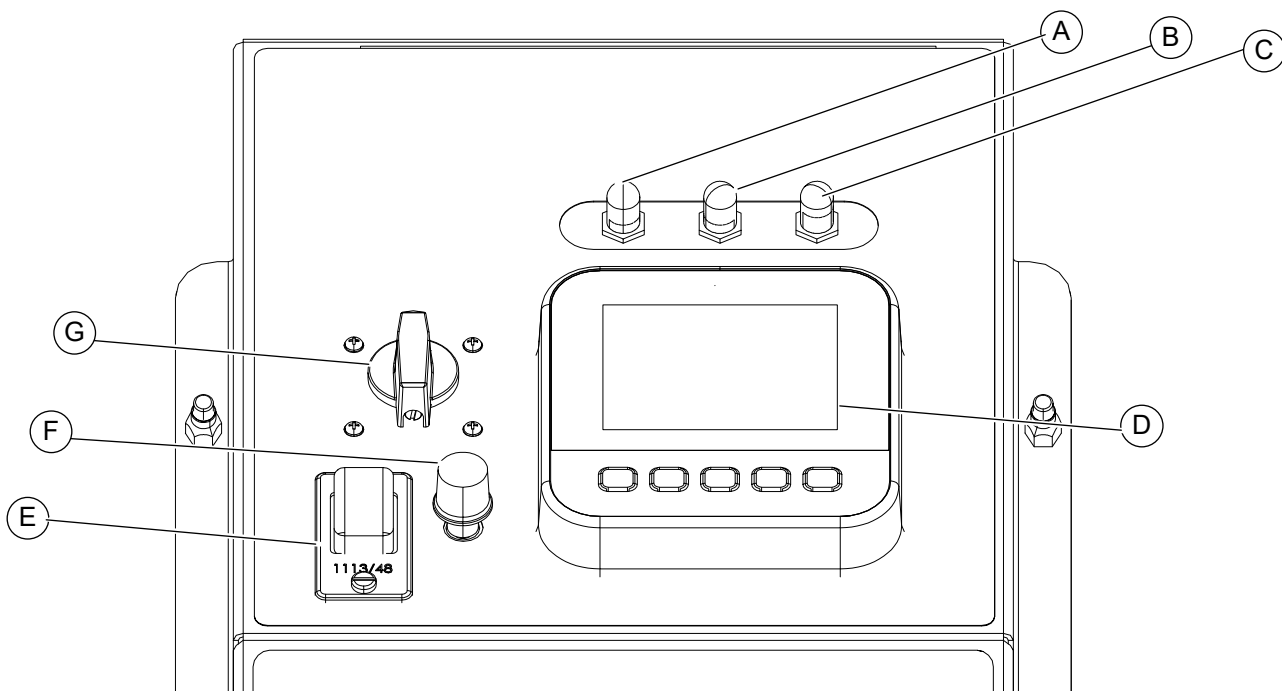


Figure 2-6. Control Panel

- | | |
|------------------------------|-------------------------------|
| A 3A Circuit Breaker | E Main Circuit Breaker |
| B 10A Circuit Breaker | F LED Light Dimmer |
| C 15A Circuit Breaker | G Mode Selector Switch |
| D Controller | |

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 2-7](#). Unit ships from factory with jack in the storage location (A).

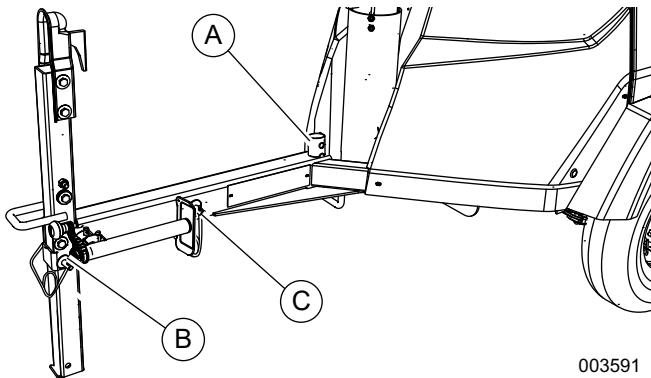


Figure 2-7. Jack and Pin Locations

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 2-8](#). Install jack and secure with clevis (D).

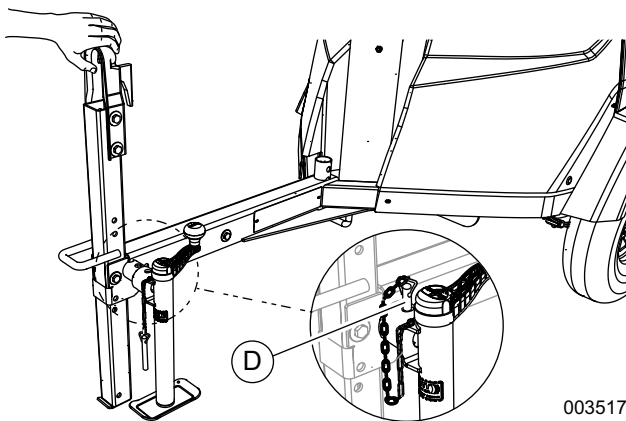


Figure 2-8. Jack Installed

5. See [Figure 2-7](#). Remove pins (B) and (C).



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

ISO000778

6. See [Figure 2-9](#). Using both hands, slowly lower trailer tongue into tow position.

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

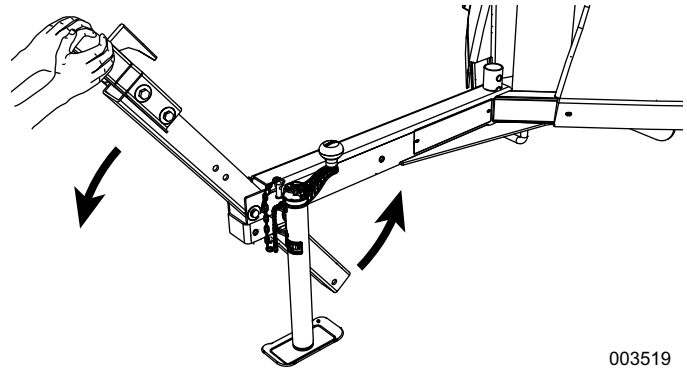


Figure 2-9. Lower Trailer Tongue into Tow Position

7. See [Figure 2-10](#). Install pins as shown to secure trailer tongue in tow position.

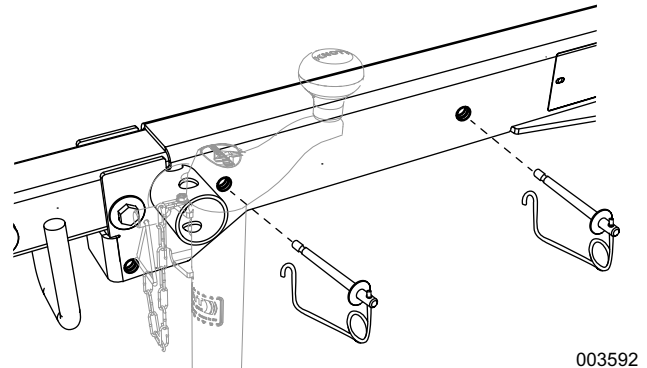


Figure 2-10. Install and Secure Pins

Place Trailer Tongue in Storage Position

1. Verify unit is on a level surface and wheels are blocked.
2. See **Figure 2-11**. Extend jack (A) enough to allow minimum effort to pivot trailer tongue into storage position.

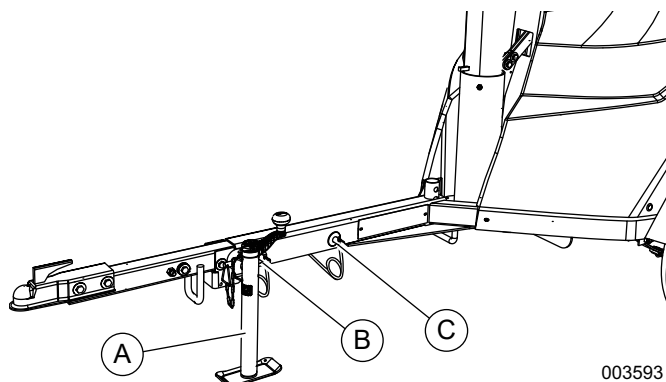


Figure 2-11. Extend Jack and Remove Pins

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



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

ISO000778

4. See **Figure 2-12**. Pivot trailer tongue into storage position.

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

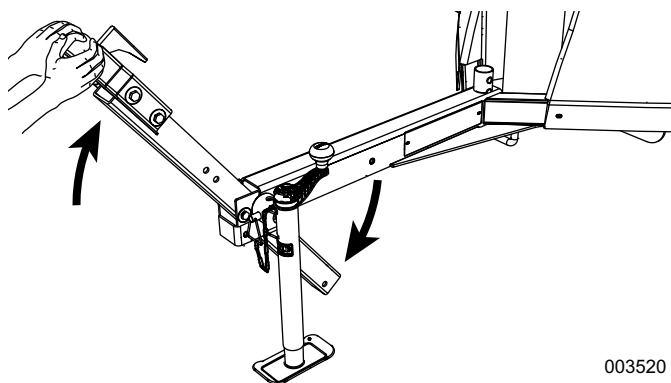
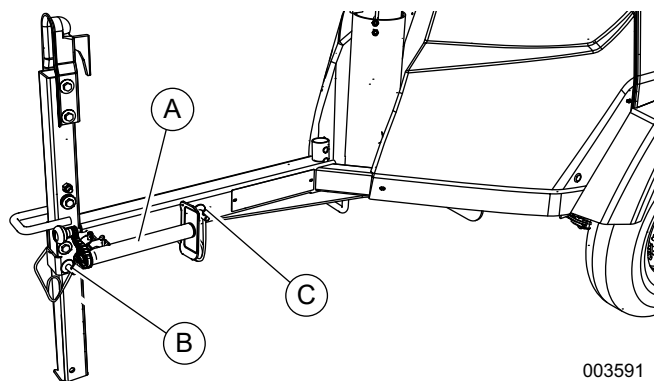


Figure 2-12. Pivot Trailer Tongue Into Storage Position

5. See **Figure 2-13**. Install pins (B) and (C) at locations shown to secure trailer tongue in storage position.



003591

Figure 2-13. 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.

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Section 3: Operation

Light Tower Setup

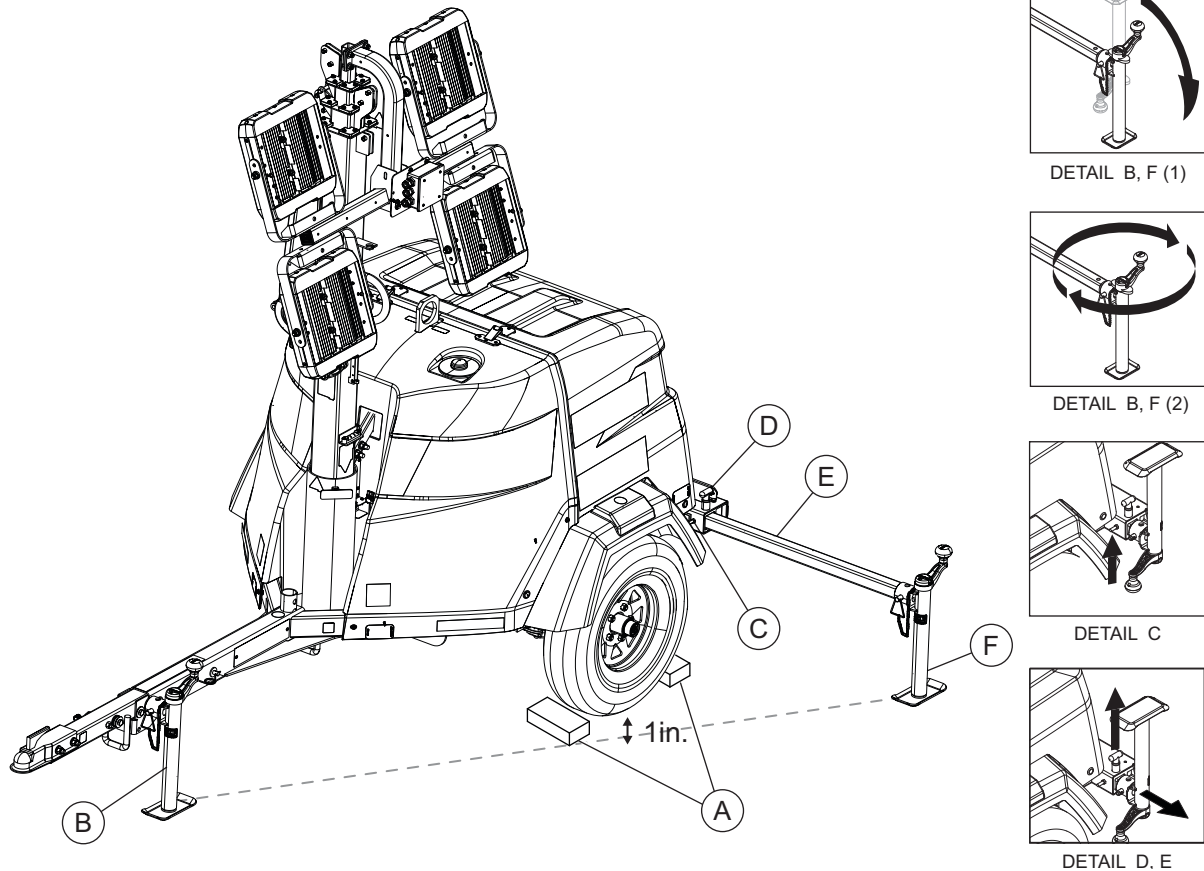


Figure 3-1. Setup Components



Verify area above unit is clear of overhead wires and obstructions.

ISO000771



Do not set up or operate unit in high winds.

ISO000774

NOTE: See [Specifications](#) for mast wind rating.



Verify ground is stable and can support unit stabilizers.

ISO000779

1. For maximum light coverage, position unit at ground level or higher than area being illuminated.

NOTE: See [Unit Dimensions](#) for unit heights.

2. See [Figure 3-1](#). Place unit on firm, relatively flat ground (less than 5° slope). Block wheels (A).
3. Remove locking pin from tongue jack (B). Rotate jack into operating position, as detailed. Install locking pin. Rotate jack handle until trailer hitch is lifted off towing vehicle.
4. A grounding stud (C) is installed to the trailer frame, near the left outrigger. For grounding requirements, follow local, state, or National Electrical Code (NEC) guidelines.
5. Pull—and hold—spring loaded pin (D) and pull outrigger (E) a few inches, as detailed. Release pin and continue pulling outrigger, until pin snaps into locked position. Repeat step for second outrigger.
6. Remove locking pin from outrigger jack (F). Rotate jack into operating position, as detailed. Install locking pin. Rotate jack handle until jack foot firmly

contacts ground. Repeat step for second outrigger jack.

7. Continue adjusting all jacks until both wheels are elevated approximately 1 in (2.5 cm) from ground.
8. Adjust position of each light, as desired—up, down, left, or right.

5. Using both hands, rotate the winch (B) to slowly extend the mast. Verify the coiled electrical cord is extending at the top sections of the mast. Stop extending the mast when the colored mark (D) on the second mast section is visible as seen in Detail D.

Raising the Mast



DO NOT use the unit if electrical cord is cut or worn through.

ISO000770



Extend the outriggers and level the unit before raising the mast. Keep the outriggers extended while the mast is up.

ISO000777



Stop immediately if the mast hangs up or the winch cable develops slack.

ISO000776

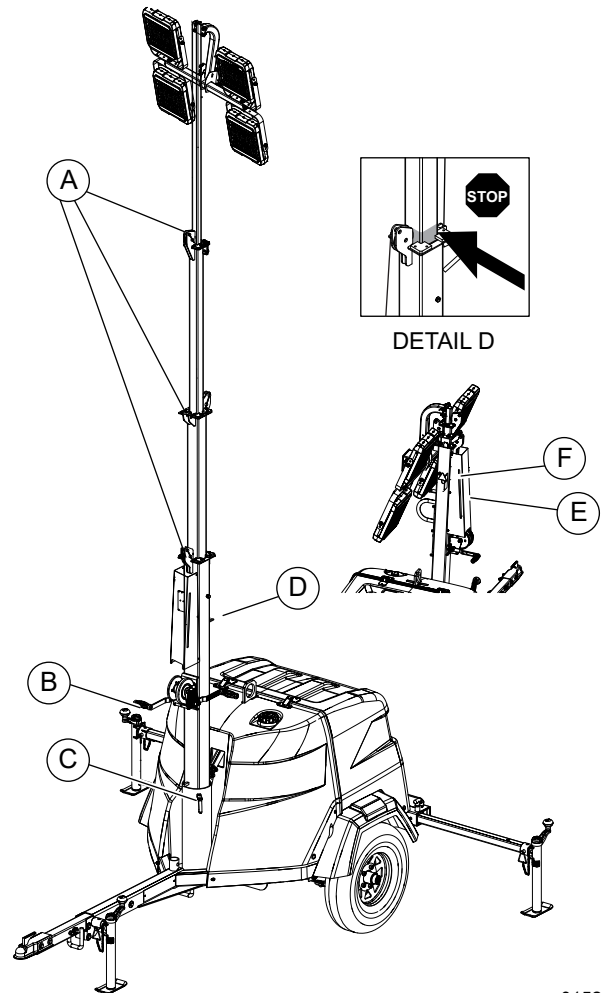


Do not raise or lower the mast while the unit is operating.

ISO000775

IMPORTANT NOTE: The mast is intended for use **ONLY** to support the light fixtures. Do not use the mast as a hoist or for any other purpose.

1. Verify light tower is correctly set up. 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.
3. Prior to raising the mast inspect all cables including at the winch cable guard (E) through the viewing holes (F) on side of the cable guard (E).
4. 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.



015268

Figure 3-2. Pulley Locations—Manual Winch

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

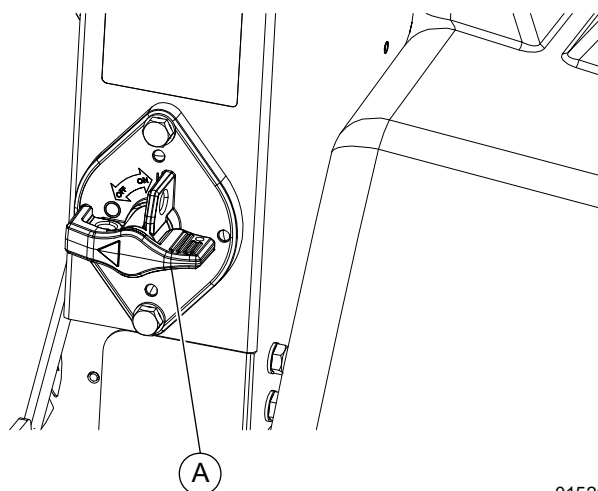
Prestart Checklist

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

- Verify all maintenance procedures are up to date. For more information, refer to [General Maintenance](#) and [Basic Maintenance Schedule](#).
- Perform a walk-around inspection. Refer to [Daily Walk-Around Inspection](#).
- The unit must be level.
- The unit must be dry. Inspect for water inside or near the unit; dry if needed.
- Always close the enclosure unless inspecting or regular maintenance.
- For grounding requirements, follow the National Electrical Code (NEC), state, and local regulations.
- Verify the mode selector switch is OFF (O).
- Verify main circuit breaker is 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.
- Verify battery connections are secure.
- Verify all covers are in place and secure.
- Verify all guards are installed and secured.

Starting the Unit

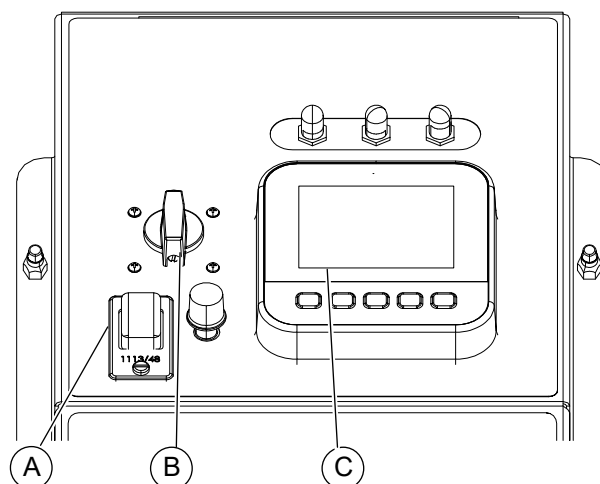
1. Verify battery disconnect switch (A) is ON.



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Figure 3-3. Battery Disconnect Switch

2. See [Figure 3-4](#). Verify main circuit breaker (A) is OFF.
3. Turn selector switch (B) beyond the chosen mode (Auto or Manual). Hold in momentary position until Generac Logo appears on controller screen (C) then release.
4. See [Figure 3-4](#). Switch main circuit breaker (A) up to ON (O) position.
5. Operate the lights. Operation varies according to mode selected in step 5.
 - See [Operating the Lights—MANUAL Mode](#) or
 - See [Operating the Lights—AUTO Mode](#).



015161

Figure 3-4. Starting Unit

Operating the Lights—MANUAL Mode

NOTE: The controller will display the mode above the battery graphic on the home screen.

1. Verify display on unit is ON and selector switch is set to MANUAL mode.
2. See **Figure 3-5**. Switch lights ON and OFF by pressing controller button (A).

NOTE: There is a delay while the system starts up and then the lights will become available.

3. Adjust brightness of lights by turning dimmer dial (B).

NOTE: If flicker is noticed on the lights slightly adjust dimmer dial (B) as needed.

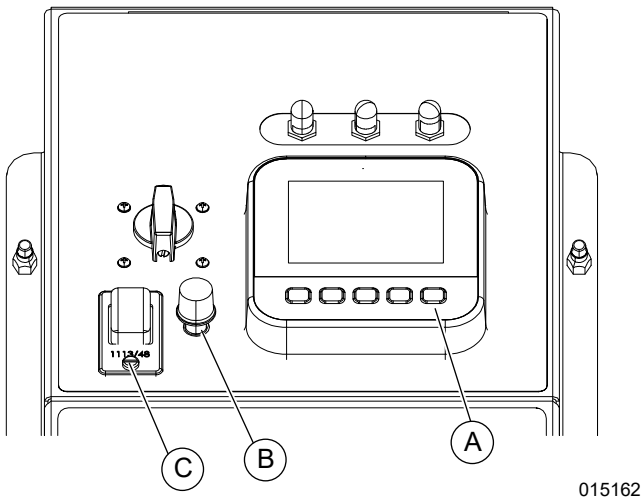


Figure 3-5. Manual Mode Operation

Operating the Lights—AUTO Mode

NOTE: The controller will display the mode above the battery graphic on the home screen.

1. Verify display on unit is ON and selector switch is set to AUTO mode.
2. See **Figure 3-6**. To navigate to dusk to dawn setting press button (A). Adjust dusk to dawn settings using buttons (B). Adjust dusk to dawn setting to the desired hours of operation after dusk to dawn sensor turns on lights. If full auto is desired, set the unit the max setting and the display will show "Auto". In full auto the unit will turn on at dusk and turn off at dawn.

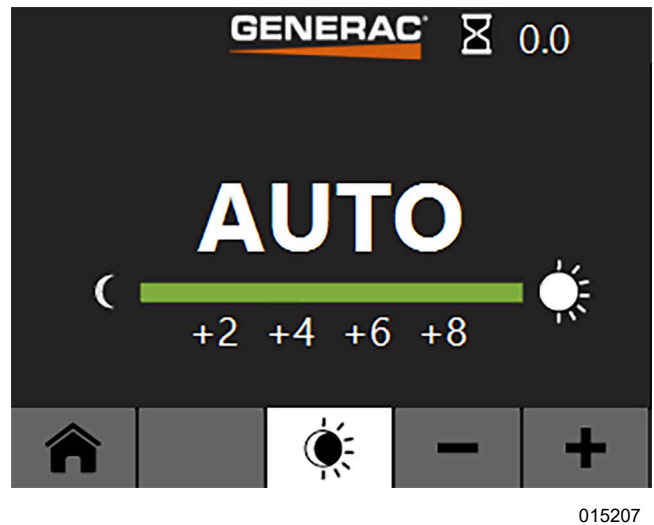


Figure 3-6. Dusk to Dawn Settings.

3. See [Figure 3-5](#). Verify main circuit breaker (C) is up to ON position before leaving light tower in Auto mode. Adjust brightness of lights by turning dimmer dial (B) to desired brightness.
4. See [Figure 3-7](#). Override AUTO mode dusk-to-dawn settings and manually control ON-OFF function of lights by pressing controller button (C).
5. See [Figure 3-7](#). Press button (C) to override auto mode and check brightness setting. Once brightness setting is verified, press button (C) again resume Auto mode.

NOTE: See [Figure 3-5](#). If flicker is noticed on the lights slightly adjust dimmer dial (B) as needed.



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Figure 3-7. Auto Override

Customer Convenience Receptacles (If Equipped)

See [Figure 3-8](#). The unit is equipped with one 120V, GFCI, 15A limited duplex receptacle for powering accessories or tools.

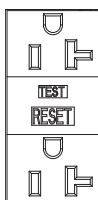


Figure 3-8. Customer Convenience Receptacle

The receptacle is available for use when the unit is powered and the main circuit breaker is ON (I) in manual mode. In auto mode GFCI receptacle is only available when the main lights are on.

Load Limit and Overload

- Lights on/off: Load limit = 1,800 W

Drawing more current than specified load limits results in overload, tripping the 15A outlet breaker. If the GFCI breaker trips, remove some load from the receptacle, then reset the breaker

Shutting Down the Unit

Shutting down the unit stops power to the customer convenience receptacles.

1. Notify personnel using unit-supplied power that shutdown is pending.
2. Verify shutdown will not create hazards (by turning off equipment that needs to remain running, such as pumps and compressors).
3. Remove loads from receptacles.
4. See [Figure 3-7](#). Switch lights OFF by pressing controller button.
5. Turn off main breaker.
6. Turn the selector switch to the OFF position.

Charging the Unit

1. Connect a 15 A rated extension cord to the charge input plug.

IMPORTANT NOTE: Use only an undamaged, outdoor rated, three prong grounded 120VAC extension cord with a minimum rating of 15A. Connect the cord to a properly grounded 120VAC GFCI outlet.

2. Once the charger is connected, turn on the unit in manual mode. Turn off lights on the controller and remove load off the outlet for faster charging. Turning off main circuit breaker will also remove all electrical loads from the unit.
3. See [Figure 3-9](#). If the charging current is more than the discharging current, the display shows the battery getting charged (A).

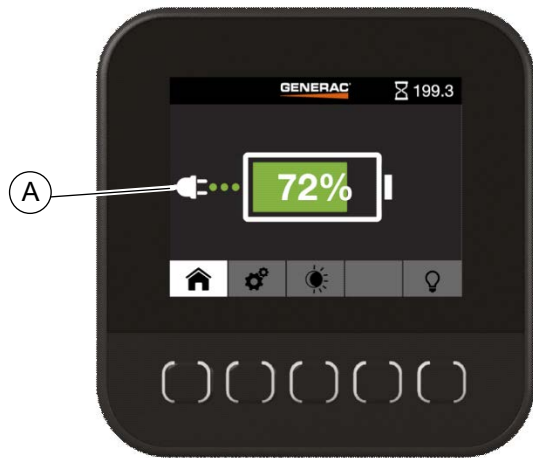


Figure 3-9. Charging Unit

- Do not charge battery below 41° F (5° C) or above 113° F (45° C). The battery management system monitors and prevents discharging outside the acceptable range. The controller will display the crossed out charge symbol shown in [Figure 3-10](#), when battery internal temperature is outside the acceptable temperature range.

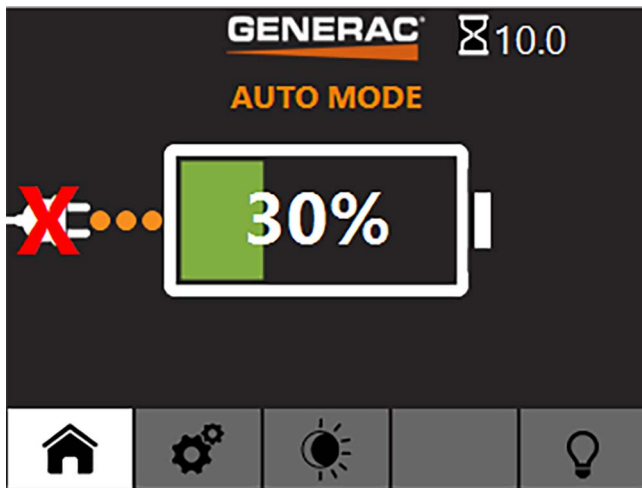


Figure 3-10. Battery Not Within Acceptable Charge Temperature Range Warning

Charging the Unit from 0%

NOTE: When the unit is discharged to 0% the unit will turn off the main lights and the GFCI receptacle output automatically.

- Once at 0% the unit will only allow charging until the unit is charged up to about 11% state of charge. See [Charging the Unit](#).

- Once at this stage the unit's GFCI receptacle and the main lights can be used after a restart of the unit. The controller will display "Restart Required" (A) under the battery graphic once this is available.
- Turn the mode selector switch to OFF.
- Turn the unit on with either mode desired (Manual or Auto) using the mode selector switch.
- Once unit has restarted, the unit can be used as normal or charged.

NOTE: In order for the unit to charge, the charge current must be greater than the discharge current from the main lights and the GFCI output.

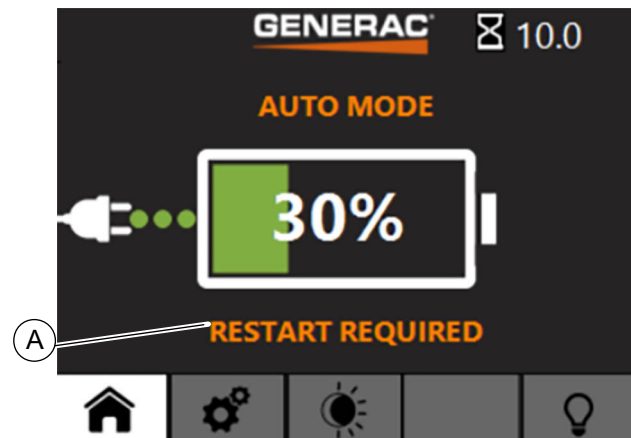


Figure 3-11. Charging the Unit from 0%

Recovering the Unit

NOTE: Recovering the unit means the unit has been discharged too far. You can only charge when this occurs. The unit will provide 30 seconds and unless it sees a charge input it will shutdown.

- Connect the extension cord to the charge input plug.
- Once the charger is connected, turn on the unit in manual mode. See [Starting the Unit](#).
- Unit will provide 30 seconds to attempt charging and it will shut down unless it detects charge current. Once charge current is detected the unit will remain on for charging. If time runs out, then restart in manual mode to attempt charging a second time.

Settings Menu

1. Press “Gear Icon” (A) to go to menu settings.



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2. Scroll up and down using the up (B) and down (C) arrow buttons.
3. Press button (D) to select the screen required.
4. Press the Home button (E) to return to the Home screen.

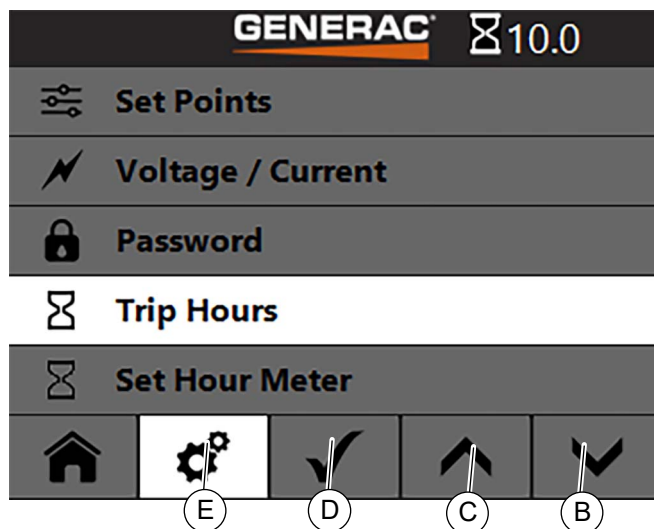


Figure 3-12. Settings Menu

Display Settings

5. Select the Display Brightness option to and press + (F) and – (G) buttons to increase or decrease brightness.
6. Press back button (H) to return to the previous settings menu page.



Figure 3-13. Brightness Settings Screen

Alarms/History

7. Scroll up and down using the up (K) and down (J) arrow buttons.
8. Press back button (L) to return to the previous settings menu page.
9. Select “Alarms” (N) to view current alarms.

NOTE: The last 20 alarms are recorded in “History”.

10. Select History” (M) to view recorded alarms.

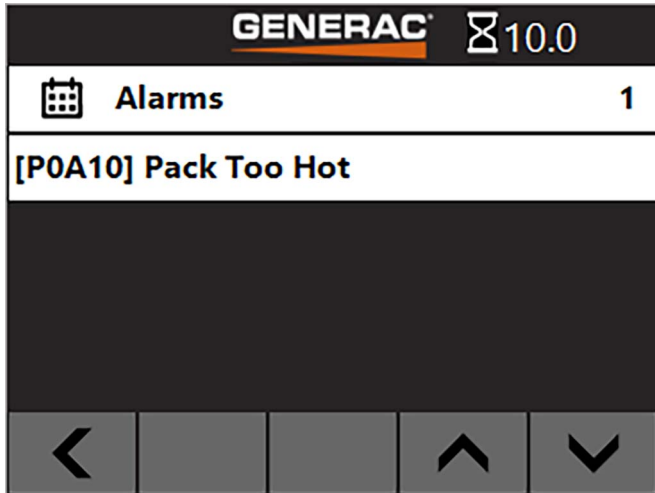
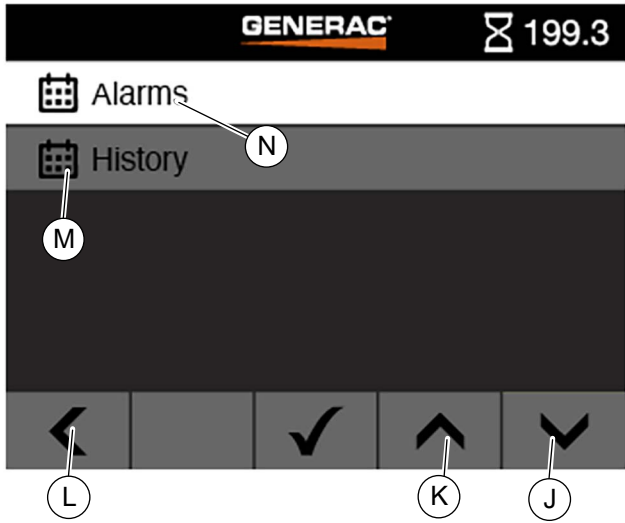


Figure 3-14. Alarms/History Screen

Set Points

11. To adjust Set Points, enter password first and then select the Set Points option in the settings menu.
12. Scroll up and down using the up (Q) and down (P) arrow buttons.
13. Select the setting that will be adjusted by selecting button (R) and adjust using the arrows.
14. Press the back arrow button (S) to go to previous screen.

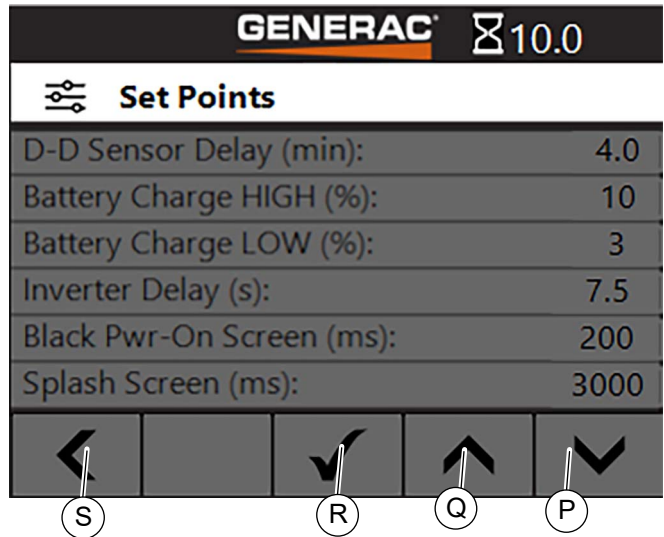


Figure 3-15. Set Points

Trip Hours

15. To reset Trip Hours, enter password first and then select Trip Hours option in the settings menu. select the RESET (T) button.
16. Press the back arrow button (U) to go to previous screen.

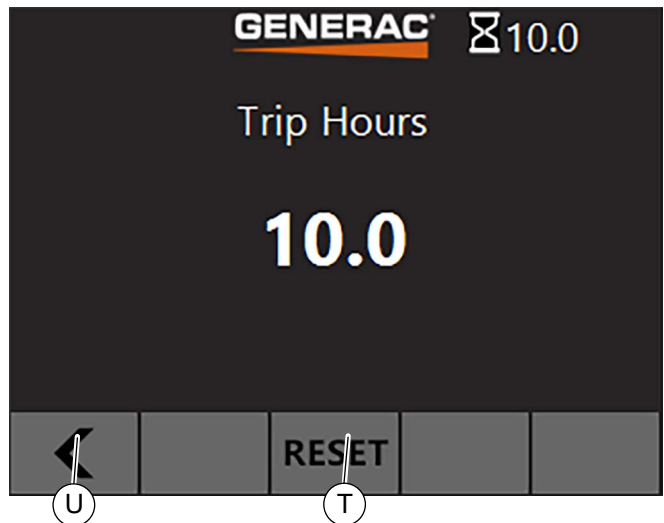


Figure 3-16. Trip Hours

Voltage/Current

17. Select the Voltage/ Current option to displaying the battery state of charge, voltage and current output of the battery.
18. Press the back arrow button (V) to go to previous screen.

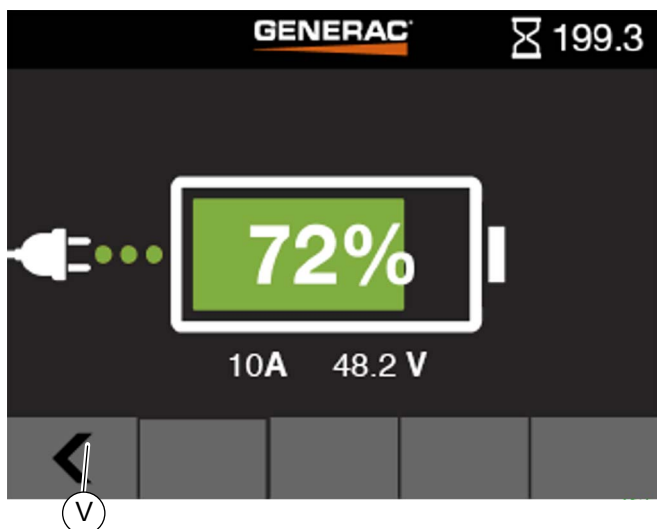


Figure 3-17. Voltage/Current

Password

19. To access locked settings first enter password by selecting the password option in the settings menu.
20. Enter the 4 digit password using the up (X) and down (Y) arrows to select the desired digit and press button (Y) to proceed to the next digit of the password.
21. Press the back arrow button (Z) to go to previous screen.

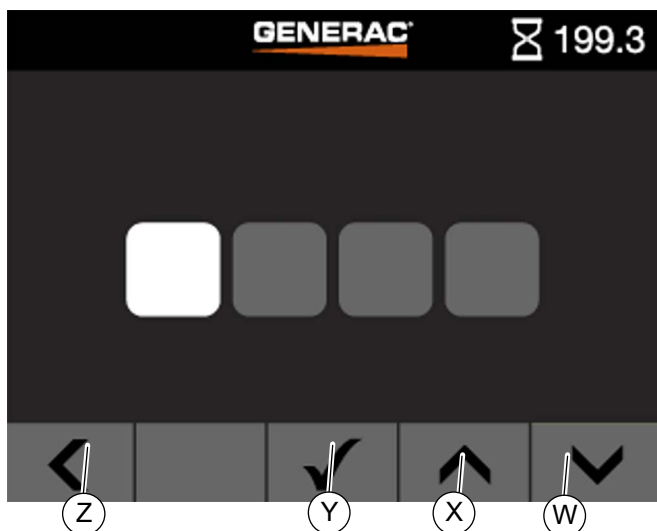


Figure 3-18. Password

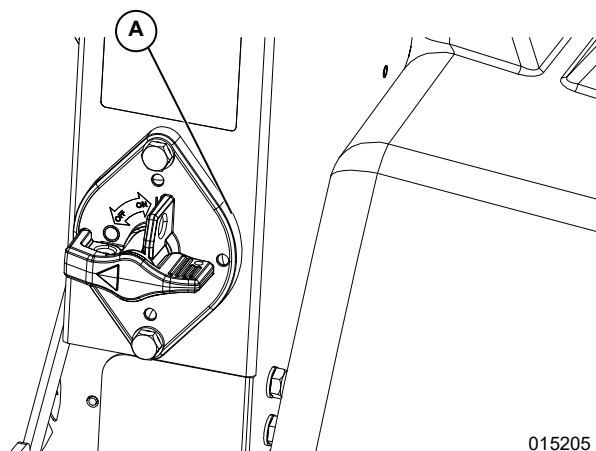
Storing the Unit

If the unit will be stored for an extended time frame, disconnect any charging devices. Verify selector switch is in the OFF position. Ensure unit battery disconnect switch (A) is turned to the OFF position. Store unit in a location that is free of water and dust.



Do not turn off battery disconnect switch unless mode selector switch is in the OFF position. Turning off the battery while operating can damage the unit.

ISO000801



015205

Figure 3-19. Battery Disconnect

IMPORTANT NOTE: In order to prolong the battery pack cycle life and make sure the battery pack stays in good condition, please read the following instructions:

1. When battery is fully discharged to 0% recharge battery as soon as possible. Even a 30 minute charge is beneficial to the battery health when a full charge isn't possible.

NOTE: Over discharge of the battery pack means the battery life will be shortened and the battery may become permanently damaged.

NOTE: It is best to recharge it within 24 hours.

2. If the battery will not be used for a long time (several weeks), disconnect battery from the machine by turning the battery disconnect switch to the OFF position.
3. Storage for long periods is acceptable between -10° F (-23° C) and 120° F (49° C), but SOC must be kept between 40% to 60%.

NOTE: Telemetry will be a parasitic load on the battery, if light tower is equipped with telemetry. Disconnect telemetry from unit, if telemetry is not required while in storage.

4. For long term storage, keep the battery between 40% to 60% SOC and cycle the unit within the above recommended SOC at least once per 3 month intervals.
5. Do not charge Battery below 41° F (5° C) or above 113° F (45° C). The battery management system monitors and prevents discharging outside the acceptable range.

6. Discharging is acceptable between -4° F (-20° C) and 120° F (49° C). The battery management system has internal protections to prevent discharge out of this range.
7. Avoid severe vibration. Do not throw or drop the battery pack.

Lowering the Mast—Manual Winch

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

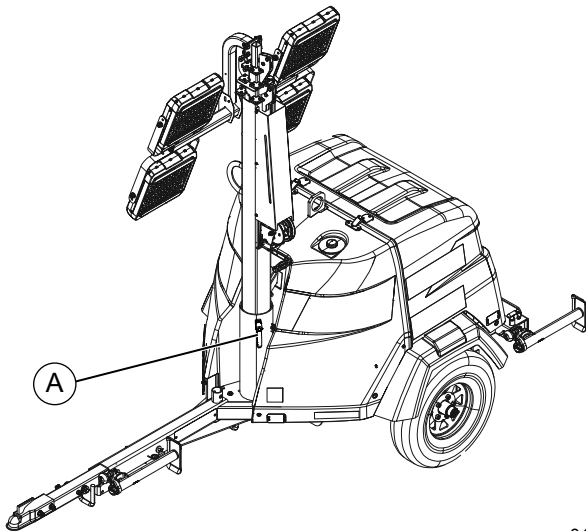


Stop immediately if the mast hangs up or the winch cable develops slack.

ISO000776

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

4. See [Figure 3-20](#). If the unit is going to be moved, rotate the mast so the lights face the left of the unit.



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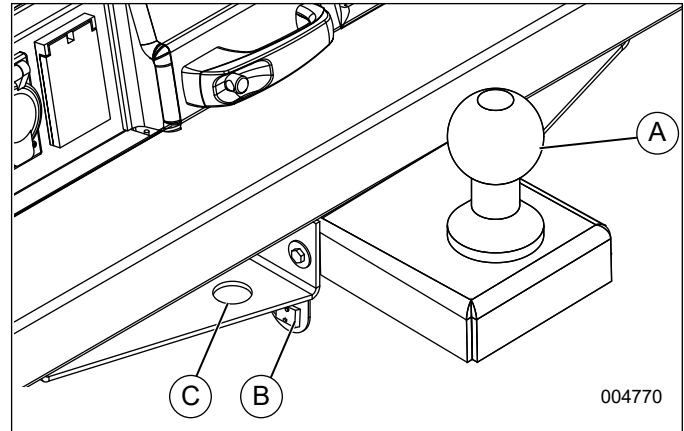
Figure 3-20. Stowed (Travel) Position

To rotate the mast:

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

Tandem Tow (If Equipped)

See [Figure 3-21](#). The tandem tow hitch option (A) allows the operator to tow a second MLTB in series behind the unit equipped with the hitch.



004770

Figure 3-21. Tandem Tow

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

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

Telemetry (If Equipped)

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

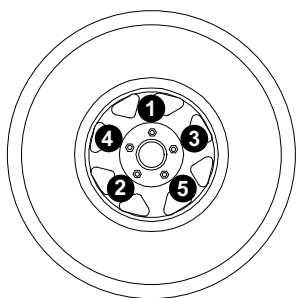
Towing the Unit

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

1. Raise the outrigger jacks completely and release the locking pins to rotate them up into the travel position. Verify the locking pins snap into place. Release the outrigger locking pins and slide the outriggers into the trailer frame until the locking pins snap into place.
2. Use the tongue jack to raise or lower the trailer onto the hitch of the towing vehicle. Lock the hitch coupling and attach the safety chains or cables to

the vehicle. Remove the tongue jack locking pin and rotate the jack into the travel position. Replace the locking pin.

3. To ensure correct operation of the jacks, refer to **Trailer Wheel Bearings**. For maintenance interval information, see **Basic Maintenance Schedule**.
4. Connect any trailer wiring to the tow vehicle. Inspect for correct operation of the directional and brake lights.
5. Verify the enclosure is correctly latched.
6. Check for correct inflation of the trailer tires. For maximum tire pressures, see **Specifications**.
7. See **Figure 3-22**. Inspect the wheel lugs. Tighten or replace any lugs that are loose or missing. If a tire has been removed for axle service or replaced, tighten the lugs, in the order shown, to the following specifications:



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Figure 3-22. Tightening Wheel Lugs

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

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

8. Maximum recommended speed for highway towing is 65 mph (105 km/h). Recommended off-road towing speed is not to exceed 10 mph (16 km/h) or less, depending on the terrain.

Lifting the Unit



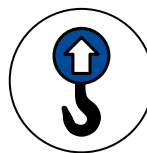
Properly connect lifting cables, chains, and straps.

ISO000346



Do not use lifting eye if there are signs of damage or corrosion.

ISO000433



Lift point. Install lifting attachments to this location and only locations identified as such. Do not connect lifting device directly to the lift point.

ISO000532



Comply with regulations the local agency for workplace health and safety has established.

ISO000538



Do not stand on top of unit or use unit as a step.

ISO000780



Do not use lifting eye other than as directed.

ISO000434



Only qualified service personnel may install, operate, and maintain this equipment.

ISO000182a

Proceed as follows to prepare the unit for lifting:

1. Verify the equipment being used to lift the unit is in good condition and has sufficient capacity. For approximate weights, see **Specifications**
2. Close and lock all hoods and doors.

IMPORTANT NOTE: Always remain aware of people and objects around the work site when moving or lifting the unit.

3. See **Component Locations** for lifting points. Lift unit in accordance with guidelines below.
 - Verify all walking and climbing surfaces are free from debris and obstructions.
 - When lifting the unit using the central lift point (A), attach slings, chains, or hooks to the central lift point.
 - When lifting the unit using the central lift point (A), do not climb on unit to attach lifting hook.
 - When lifting the unit using the fork pockets (B):

- Verify the forklift capacity is above the total weight to be lifted.
- Verify the length of the forks is equal to or greater than the width of the unit (measured on the fork insertion side).

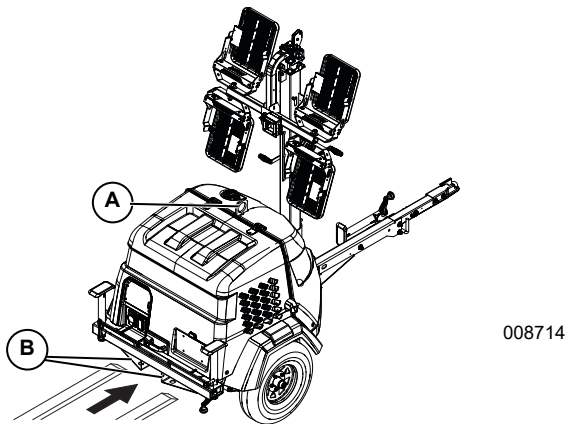


Figure 3-23. Lifting Points

Tying Down the Unit

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

See [Figure 3-24](#). Use the tie-down points (C) as shown.

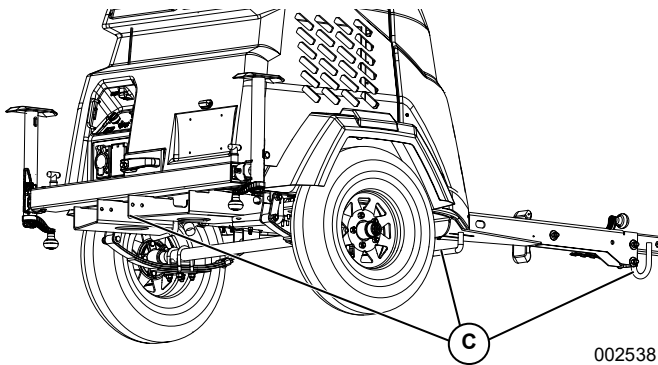


Figure 3-24. Tie-Down Points

Section 4: Maintenance

Daily Walk-Around Inspection



A daily inspection must be performed to prevent damage to the unit.

ISO000306

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

- Blocked vents
- Loose or missing hardware
- Loose or broken electrical connections
- Cracks or chips that would hinder enclosure structural integrity
- Water collecting inside enclosure

General Maintenance

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

Regular maintenance will improve performance and extend equipment life. Generac Mobile recommends that all maintenance work be performed by a GMASD. Regular maintenance may be performed by any repair shop or person of the owner's choosing.

Preparing for Service

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

1. Verify the circuit breakers are switched OFF (O).
2. Disconnect negative battery terminal using the battery disconnect switch.
3. Attach a "Do Not Start" sign to the control panel to signify that the unit is being serviced and reduce the chance of unauthorized use.

Cleaning the Unit



Avoid water contact with a power source.

ISO000104

IMPORTANT NOTE: Do not wash the unit with a high pressure hose or power washer.

IMPORTANT NOTE: Do not wash inverter with water.

- Clean unit after each use, removing substances such as dust, grease, and mud.
- Use soft, clean rags to wipe cabinet exterior and control panel.
- Low-pressure compressed air (less than 40 psi [276 kPa]) can be used to remove dust and debris from the cabinet interior.

NOTE: This unit contains sensitive electronic components that can be damaged by high pressure and heat.

Inspecting the Unit

- If the unit is stored outside, inspect for water inside the cabinet before each use. If wet, dry the unit thoroughly before starting.
- Inspect condition of electrical cords. **DO NOT** use the unit if insulation is cut or worn through.
- Verify winch cables are in good condition and centered on each pulley. **DO NOT** use a cable that is kinked or starting to unravel.
- Inspect cable at winch cable guard [Component Locations](#). Replace cable if more than four wires are broken in a 1.5 inch (3.8 cm) length section.
- Verify the wheel lugs are present and correctly tightened. Refer to [Towing Safety](#).
- If the unit is connected to a remote start or transfer switch, verify the remote switch is off and tagged.

Servicing Light or Mast Components



Comply with regulations the local agency for workplace health and safety has established.

ISO000538



Only qualified service personnel may install, operate, and maintain this equipment.

ISO000182a

1. Place unit on firm, relatively flat ground (less than 5° slope). Block wheels.
2. If ladder is required, place ladder on level ground and verify ladder is free of obstructions.

Basic Maintenance Schedule

Refer to the original equipment manufacturer’s operating manual for a complete list of maintenance requirements. Maintenance records may be required to complete a warranty request.

Use the schedule in the following table as a guide for regular maintenance intervals.

Basic Maintenance Schedule

Item	Daily
Check tire pressure	◆
Inspect wheel bearings	◆
Inspect all electrical connections	◆
Inspect battery condition	◆
Inspect unit hardware	◆
Check inverter vents for obstructions	◆
Check battery charger fans for obstructions	◆
Inspect mast cable	◆

Manual Winch: Use, Operation, and Maintenance

Prior to Use

- Inspect rope or cable and replace if damaged.

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

Operation

Raising the Lights:

1. The cable must be securely fastened to the winch drum.
2. Verify the cable and cable attachments are not damaged. Contact Generac Mobile 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.

Winch Mechanical Brake

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

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

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

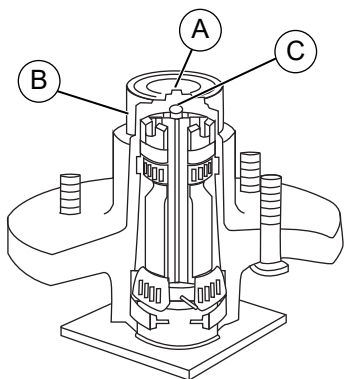
Winch Preventative Maintenance Schedule

Maintenance Activity	After First Operation	Before Each Use	Semi-Annually
Inspect fasteners	◆		◆
Inspect electrical connections	◆		◆
Clean and grease brake assembly			◆
Inspect 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 4-1](#). Proceed as follows to lubricate the wheel bearings:



002540

Figure 4-1. Wheel Bearing Cross Section

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

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

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

Jack Maintenance

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

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Section 5: Troubleshooting

General Troubleshooting



Follow proper shutdown procedure for cooling if unit is running. Failure to do so may create a burn hazard.

ISO000781

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. Procedures that require in-depth knowledge or skills should be referred to a GMASD.

General Troubleshooting Guide

Problem	Possible Causes	Solutions
Unit not charging	Charger fully charged unit once in this power cycle	Power cycle unit using the mode selector switch.
	Charger went into standby mode	Unplug charger extension cord and connect it again.
	Temperature below 41 °F (5 °C) or over 113 °F (45 °C)	Allow unit to warmup or cool down within 5°C to 45°C internal battery pack temperature.
Lights do not turn on	Main breaker tripped	Check wiring for shorts or water in enclosure, if no issues reset breaker.
	Driver's input breaker tripped (10A circuit break tripped)	
	Dimmer is at lowest setting	Turn dimmer knob to a higher brightness.
	Light tower is in auto mode waiting for lower light conditions	Attempt to turn on light tower in manual mode.
	Damaged or loose electrical cord	Inspect the mast electrical cord for damage and check the cord connections on the connector next to the drivers.
	Loose lighting connections	
Unit does not turn on	48VDC to 12VDC fuse tripped	Turn off unit at Mode selector switch. Check wiring for water ingress or shorts to ground then replace fuse.
	48VDC fuse from battery tripped	Turn off unit at Mode selector switch. Check wiring for water ingress or shorts to ground then replace fuse.
	Brightness on controller screen is set to lowest setting	Go into controller settings and increase display brightness.
	Battery disconnect is off	Turn off unit at Mode selector switch. Do all necessary pre-checks and then turn ON Battery disconnect.
	Battery pack state of charge is below safe discharge state	Contact GMASD.
	48VDC 100A breaker on side plate tripped	Turn off unit at Mode selector switch. Check wiring for water ingress or shorts to ground then reset breaker.
GFCI outlet has no power	GFCI tripped	Check for issues on the external load and then reset GFCI.
	15A breaker tripped	Check for issues on the external load and then reset GFCI.
	Unit is in auto mode (GFCI in auto mode only available when lights turn on)	Press manual override button on controller or switch to manual mode.

General Troubleshooting Guide

Problem	Possible Causes	Solutions
Unit will not turn on	Battery disconnect switch is off	Turn OFF unit at the mode selector switch. Do all necessary pre-checks and then turn ON Battery disconnect. Then turn ON the unit with the mode selector switch.
Unit turns on and shuts down 30 seconds later	Battery is discharged into a safety limit that only allows charging	Connect charger to charge and then turn on the unit. Unit is turning on and checking for the charge. If no charge is detected then the unit will automatically turn off.
If problems persist, contact Generac Mobile at 1-800-926-9768 for assistance.		

Troubleshooting the Lights



Electricity present. Potentially lethal voltages are generated by this equipment. Render the equipment safe before attempting repairs or maintenance.

ISO000187



Only qualified service personnel may install, operate, and maintain this equipment.

ISO000182a

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

NOTE: Mast is to be lowered to service mast cross member or parts on the cross member.

Lights Troubleshooting Guide

Problem	Possible Cause	Solution
Mast lights off, checking outside the control box	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.

Inverter Power Status Red Light

Problem	Possible Causes	Solutions
Power status red light blinking fast	Over input voltage (OVP)	Check input voltage
		Reduce input voltage
Power status red light blinking slowly	Low input voltage (UVP)	Recharge battery
		Check connections and cables
Power status red light blinking intermittently	Thermal shutdown (OTP)	Improve ventilation
		Ensure ventilation, shafts of inverter are not obscured
		Lower ambient temperature
Power status red light steady ON	Short circuit	Check AC wiring for short circuit
	Wiring error	Reduce load
	Over loading (OLP)	
If problems persist, contact Generac Mobile at 1-800-926-9768 for assistance.		

Inverter LED Indicators

Green LED	LED Signal	Status
Solid	—————	Power OK
Slow Blink	• - - - - •	Power Saving
Intermittent Blink	- - - - -	Bypass
Orange LED	LED Signal	Status
Fast Blink	- - - - -	OVP
Slow Blink	• - - - - •	UVP
Red LED	LED Signal	Status
Intermittent Blink	- - - - -	OTP
Fast Blink	- - - - -	OVP-Shut-down
Slow Blink	• - - - - •	UVP- Shut-down
Solid	—————	OLP
Intermittent Blink	- - - - -	Fan Failure
Intermittent Blink	- - - - -	Component Failure
No LED	LED Signal	Status
No Blink	None	Component Failure

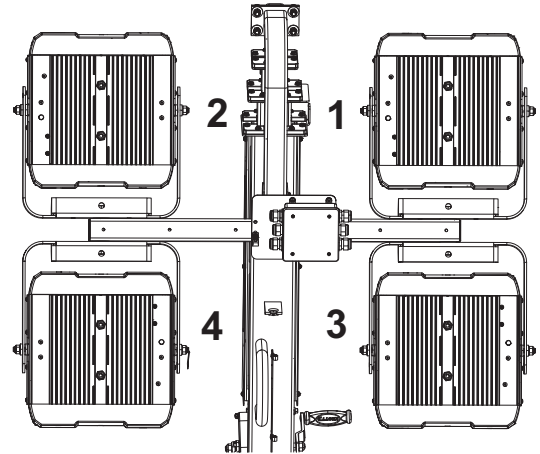
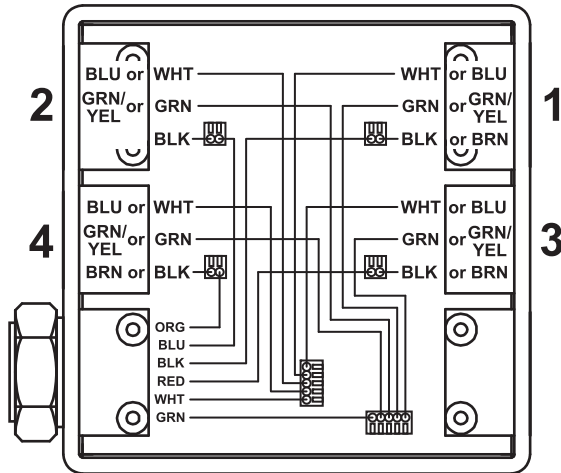
NOTE: If status displays anything other than "Power OK" than contact Generac Mobile at 1-800-926-9768 for assistance. The inverter has failed or there is something wrong with the system.

Inverter Protection Features

Model	DC Input (VDC)					
	Over Voltage		Over Voltage Alarm*	Under Voltage		Under Voltage Alarm
	Shut-down	Restart		Shutdown	Restart	
48V	64 ± 1	60 ± 1	62 ± 1	40 ±	50 ± 1	42 ± 1
*OVA only LED prompt, no beeper alarm						

Section 6: Wiring Diagrams

Mast Junction Box Wiring and Light Connections

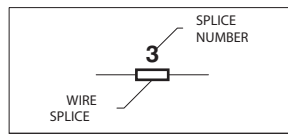
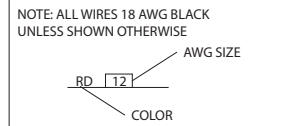


Wiring Diagrams (1 of 8)

GROUP G

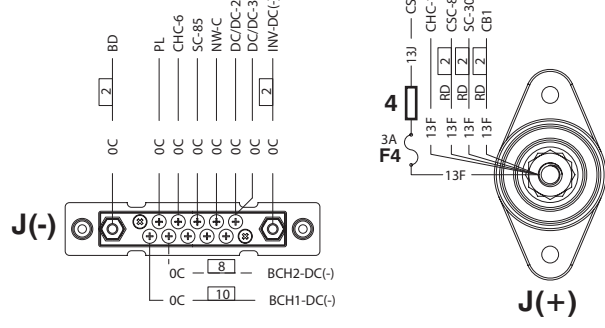
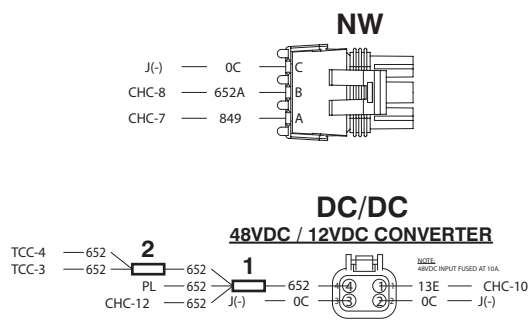
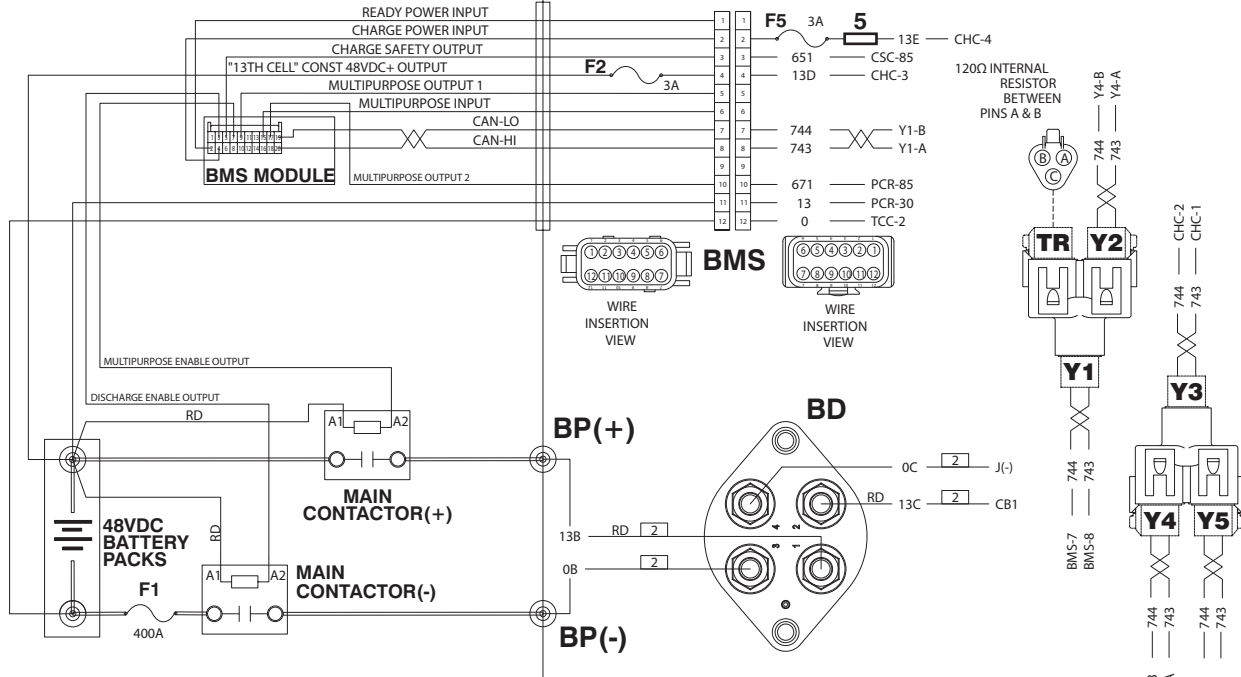
LEGEND

BATT - BATTERY	MC - MAIN CONTROLLER
BCR - BATTERY CHARGER RECEPTACLE	MLCB - MAIN LINE CIRCUIT BREAKER
BCH - BATTERY CHARGER	NW - NIGHTWATCHMAN
BD - BATTERY DISCONNECT	PCR - INVERTER PRE-CHARGE RELAY
BMS - BATTERY MANAGEMENT SYSTEM CONNECTOR	POT - 25 KOHM DIMMER POTENTIOMETER
BP - BATTERY PACK	PS - SELECTOR SWITCH
CB - CIRCUIT BREAKER	SC - SECONDARY CONTACTOR
CC - MAST COIL CORD CONNECTOR	TB - TERMINAL BLOCK
CHC - CONTROL BOX HARNESS CONNECTOR	TCC - TELEMETRY CONNECTOR
CSC - CHARGE SAFETY CONTACTOR (FOR BMS)	TR - J1939 TERMINATING RESISTOR (120 OHM)
CSR - CHARGER SELECT RELAY (OPTIONAL)	LBL - LEFT BRAKE LIGHT
DC/DC - 48VDC TO 12VDC CONVERTER	LPL - LICENSE PLATE LIGHT
DJB - LAMP DRIVER JUNCTION BOX	LSF - LEFT SIDE FORWARD LIGHT
F - FUSE	LSR - LEFT SIDE REARWARD LIGHT
FCB - FAST CHARGER BOX (OPTIONAL)	PCR - PRE-CHARGE RELAY
GFCI - 120VAC GFCI RECEPTACLE	PL - PANEL LIGHT
GND - GROUND	R1 - 50 OHM, 25W, PRE-CHARGE RESISTOR
INV - 48VDC/120VAC INVERTER	RBL - RIGHT BRAKE LIGHT
J - JUNCTION BLOCK BUSS	RSF - RIGHT SIDE FORWARD LIGHT
KL1 - LAMP AC RELAY	RSR - RIGHT SIDE REARWARD LIGHT
	TC - TRAILER CONNECTOR
	Y - J1939 CANBUS Y SPLITTER CONNECTIONS



BATTERY BOX

COMPONENTS LOCATED IN CABIN



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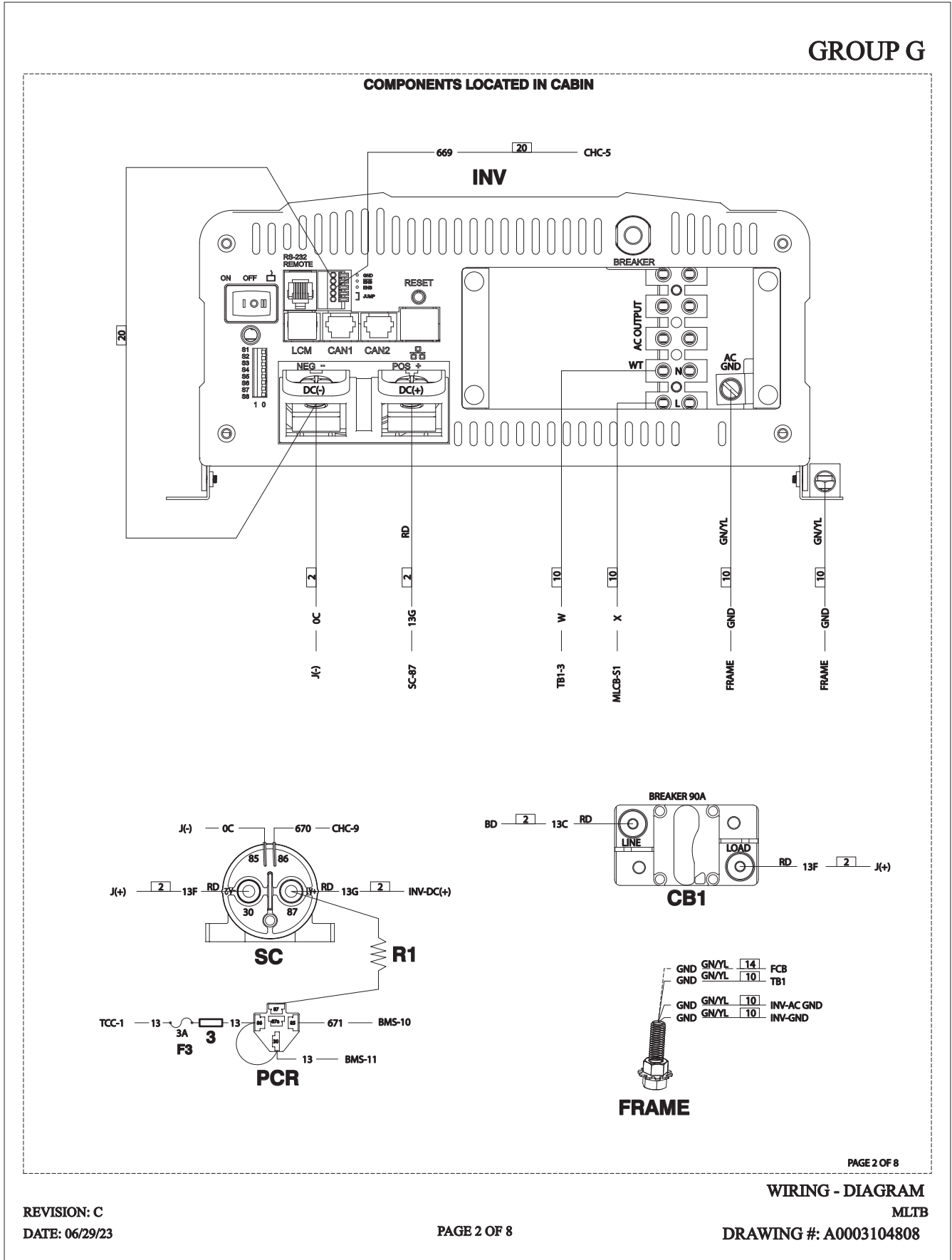
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WIRING - DIAGRAM

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Wiring Diagrams (2 of 8)



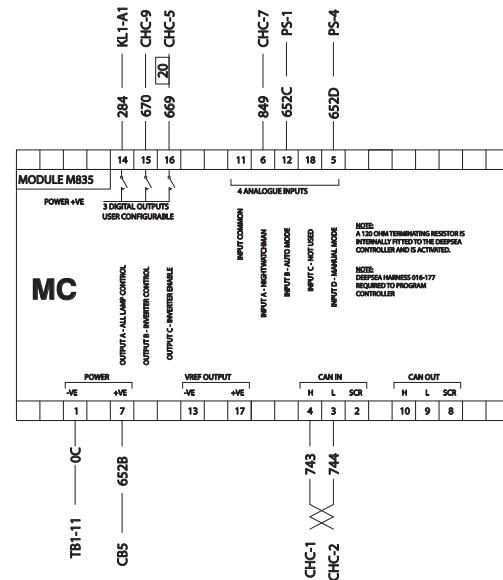
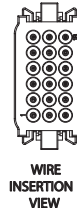
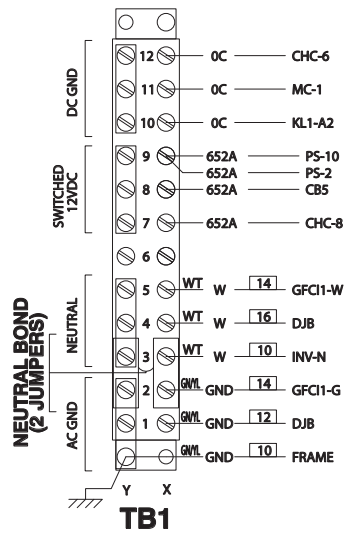
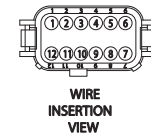
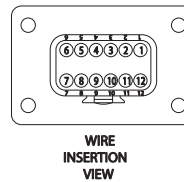
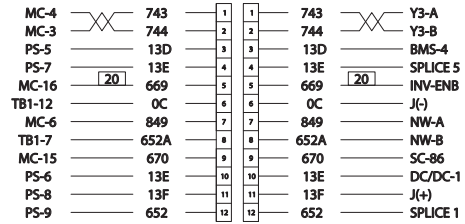
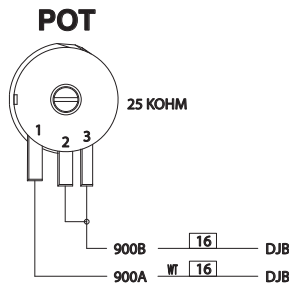
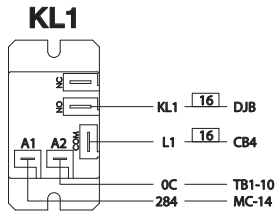
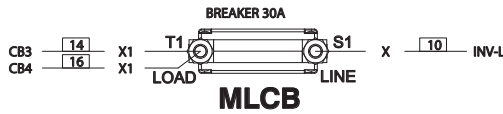
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Wiring Diagrams (3 of 8)

GROUP G

COMPONENTS LOCATED IN/ON CONTROL BOX



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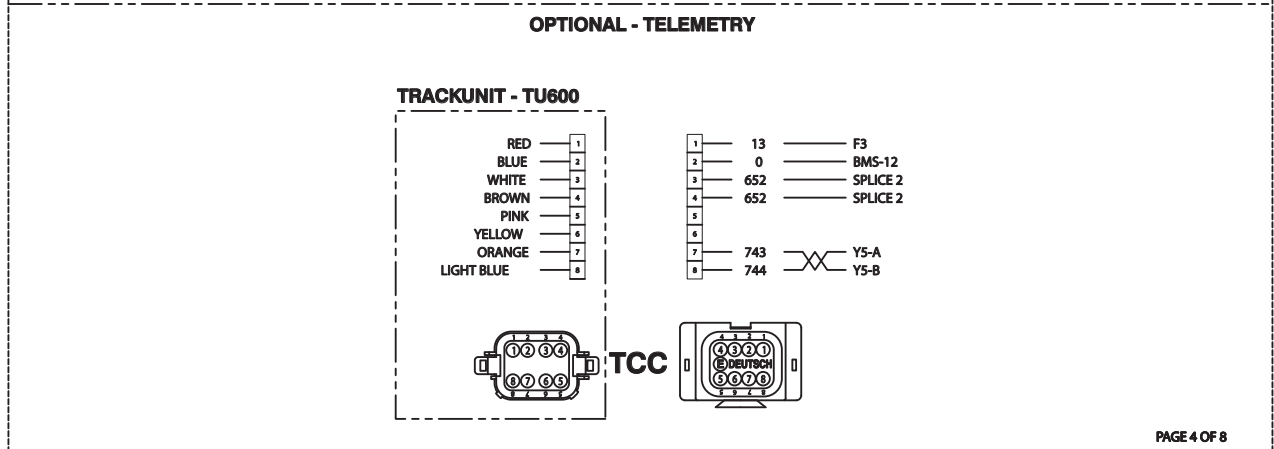
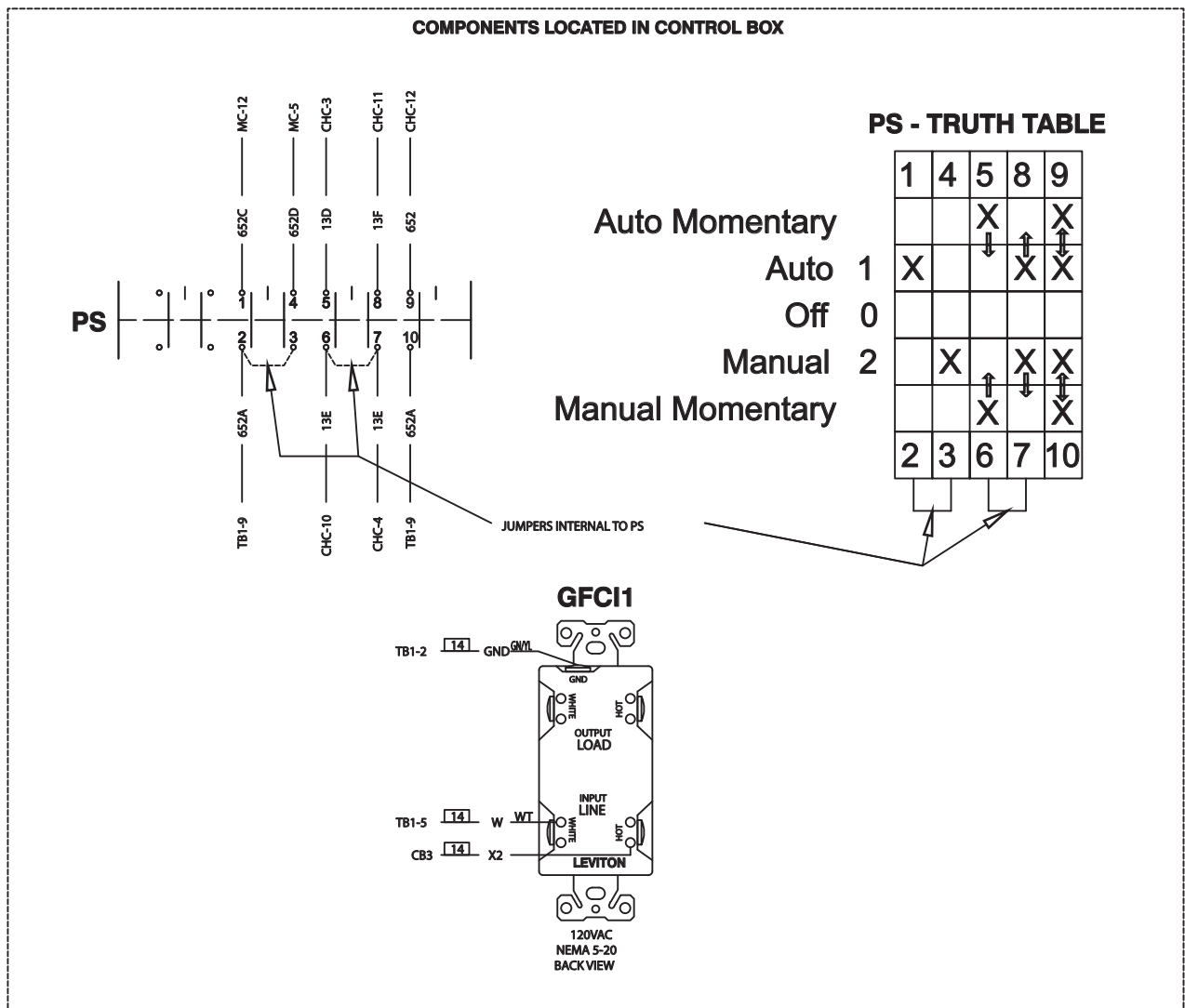
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Wiring Diagrams (4 of 8)

GROUP G



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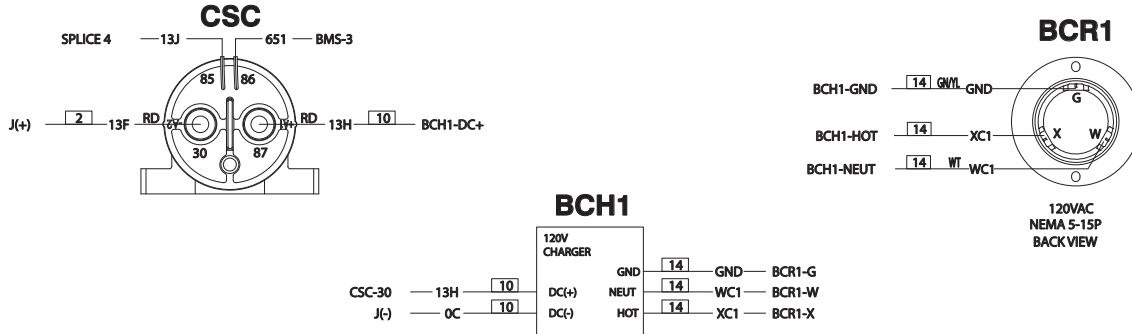
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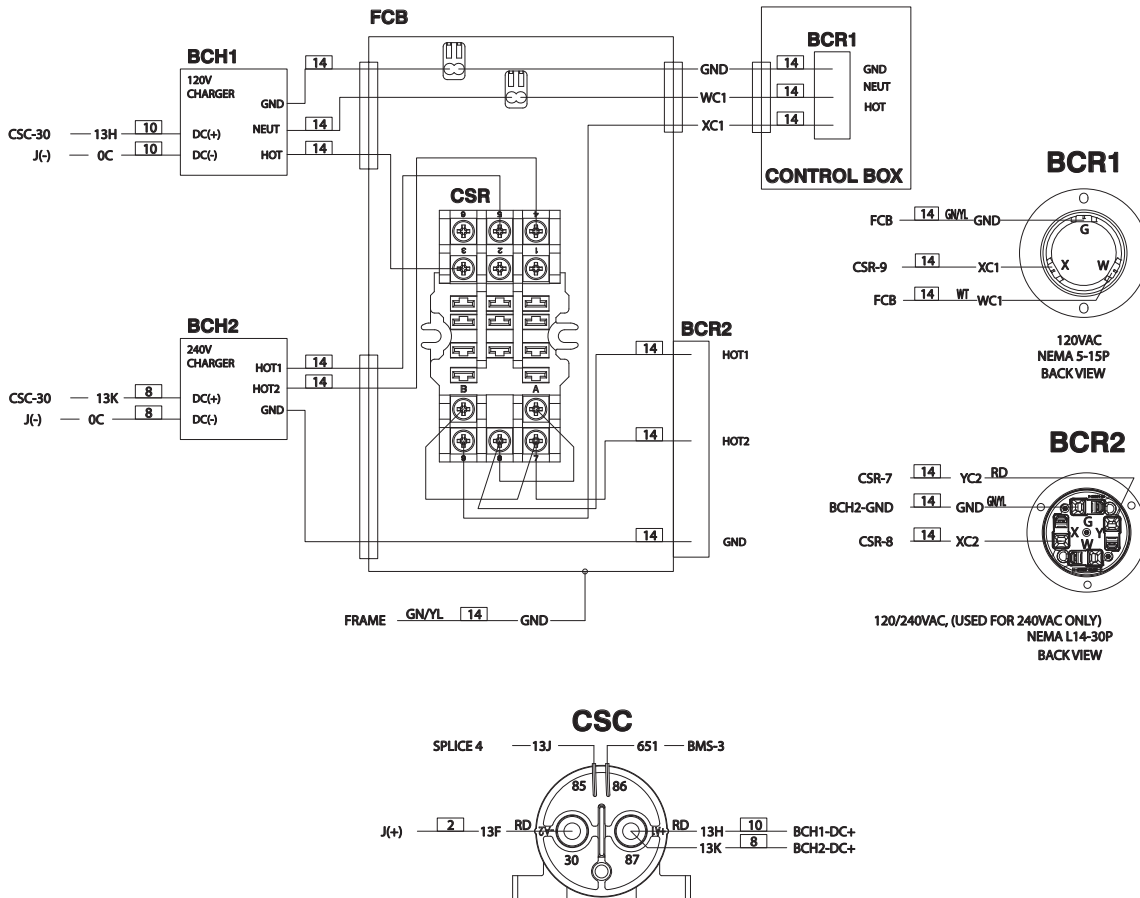
Wiring Diagrams (5 of 8)

GROUP G

DEFAULT SINGLE CHARGING SYSTEM



OPTIONAL - DUAL CHARGING SYSTEM



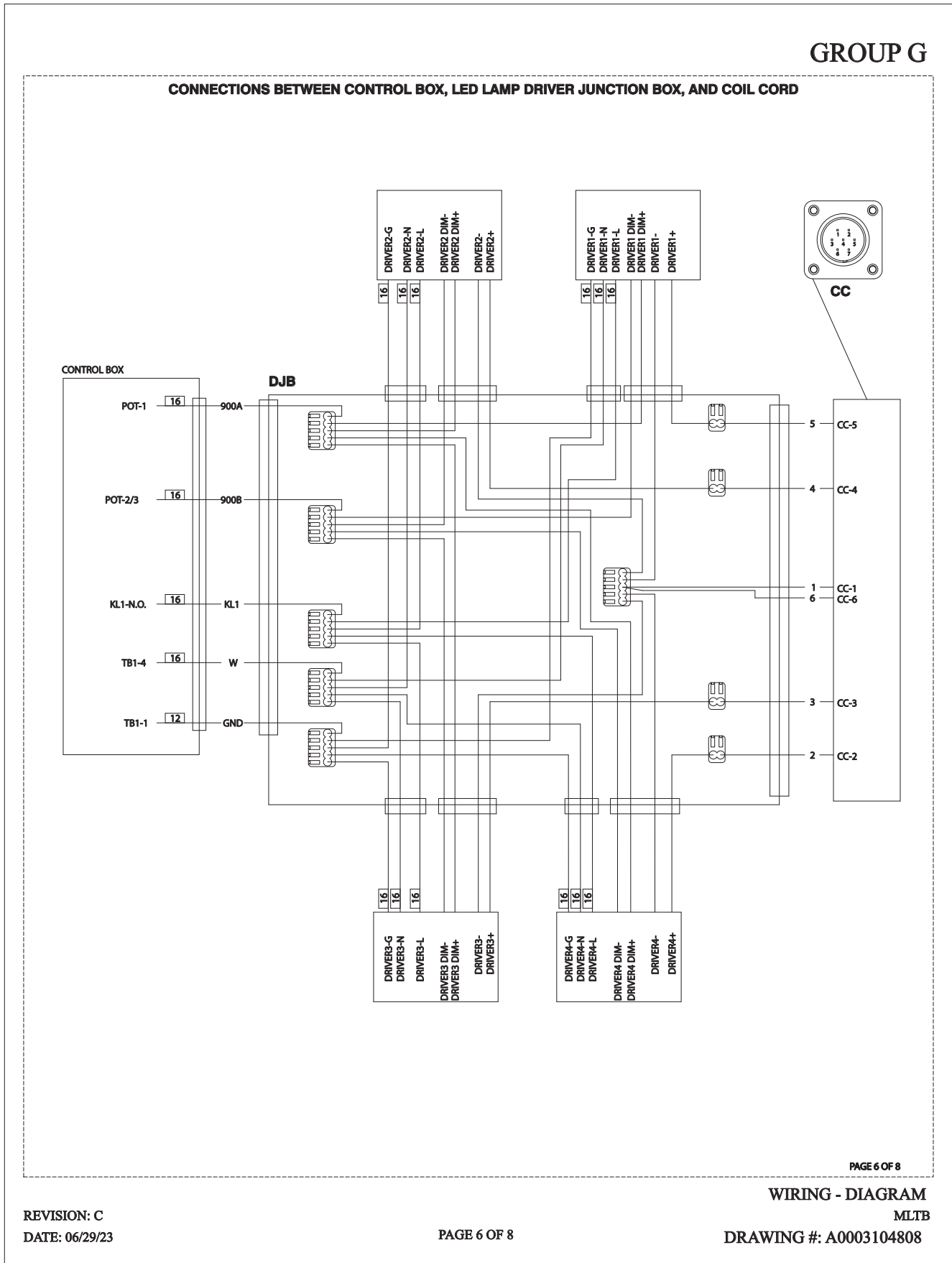
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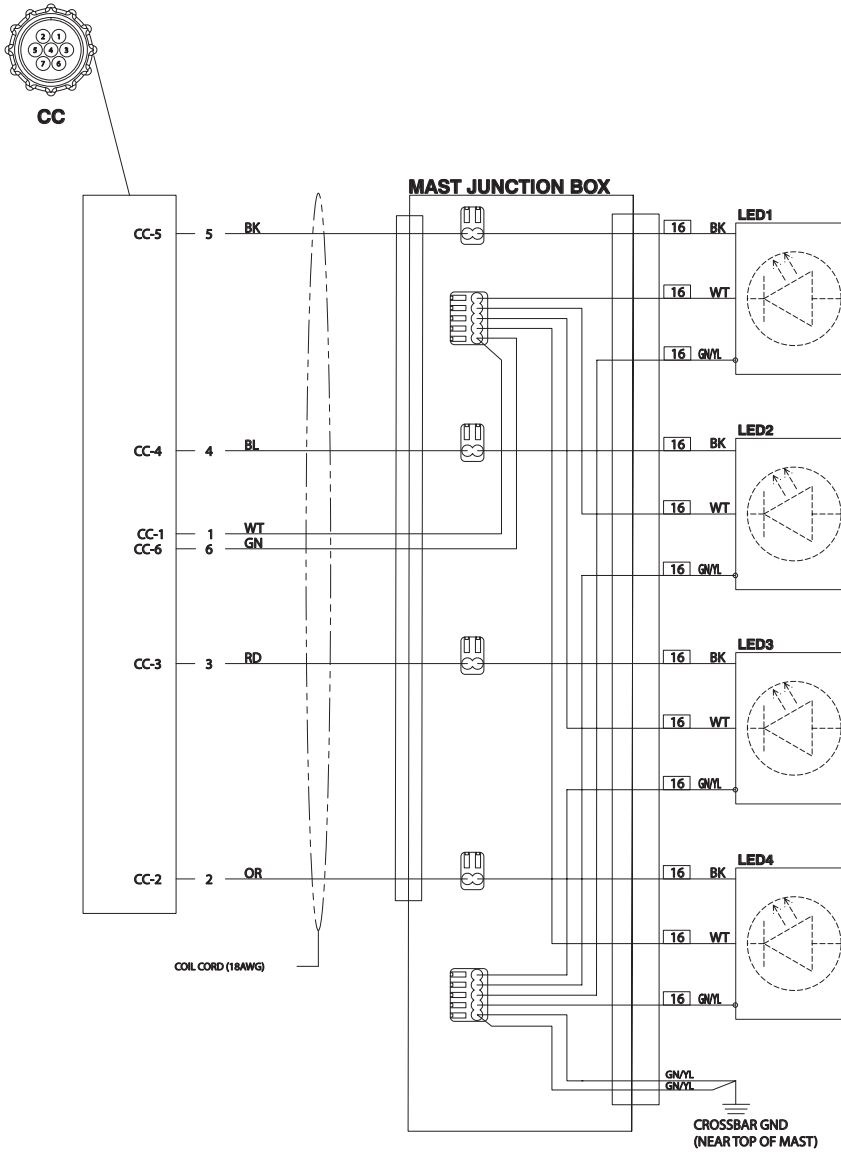
Wiring Diagrams (6 of 8)



Wiring Diagrams (7 of 8)

GROUP G

CONNECTIONS BETWEEN COIL CORD, MAST JUNCTION BOX, AND LED LAMPS ON MAST



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WIRING - DIAGRAM
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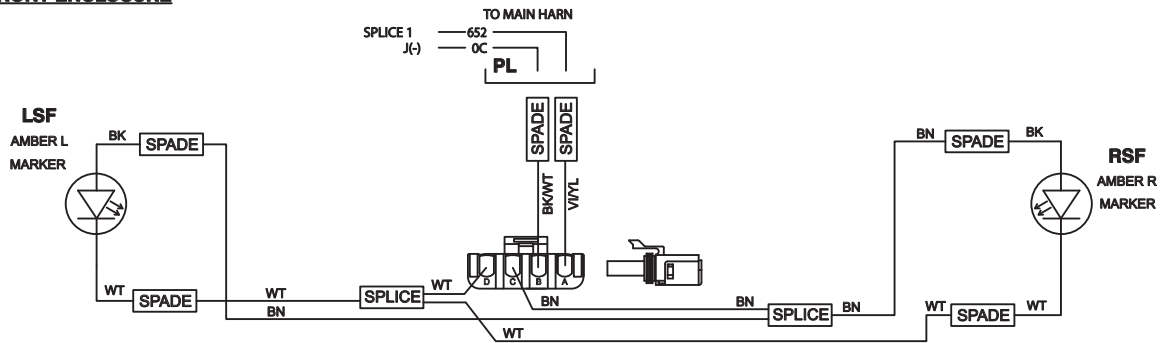
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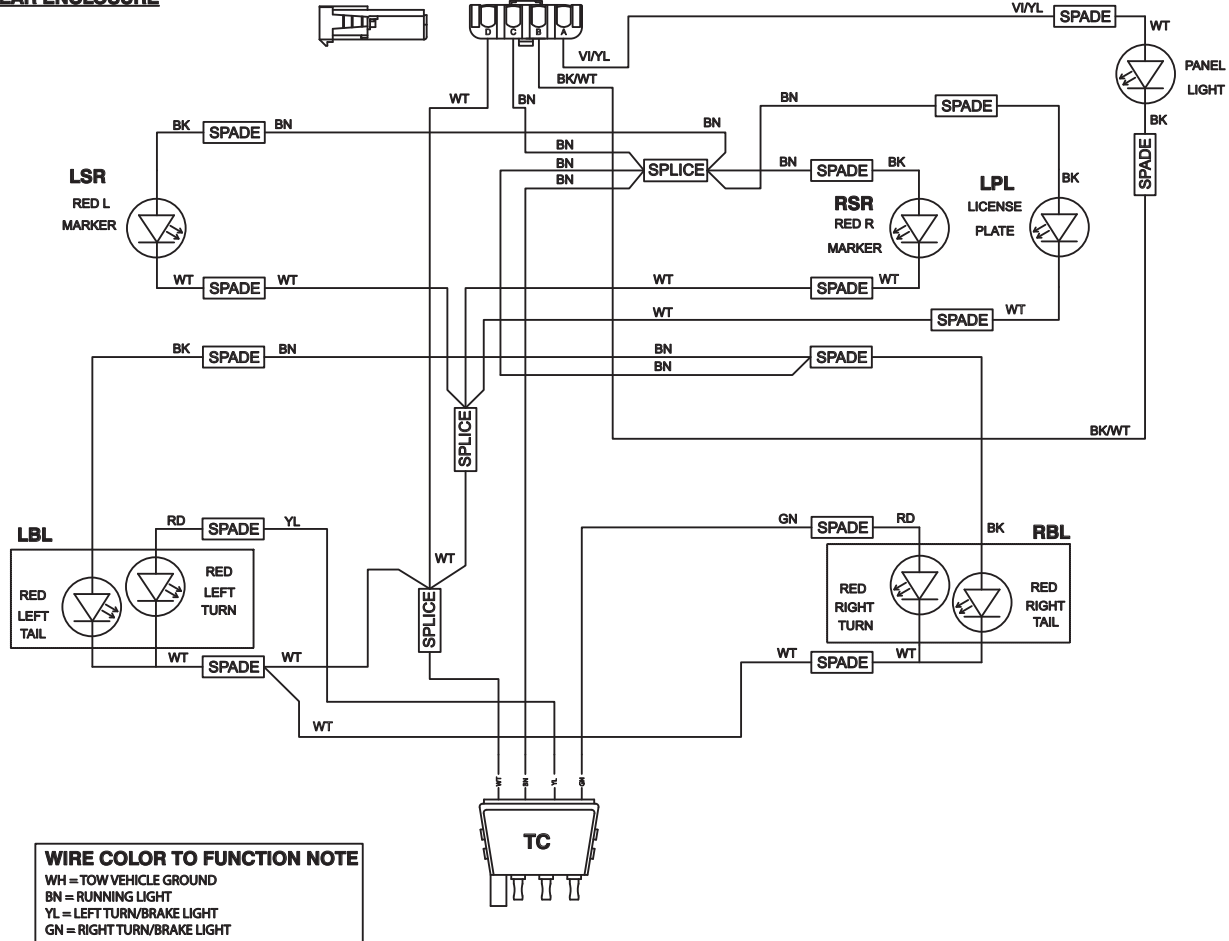
Wiring Diagrams (8 of 8)

GROUP G

TRAILER LIGHTS WIRING FRONT ENCLOSURE



TRAILER LIGHTS WIRING REAR ENCLOSURE



WIRE COLOR TO FUNCTION NOTE
 WH = TOW VEHICLE GROUND
 BN = RUNNING LIGHT
 YL = LEFT TURN/BRAKE LIGHT
 GN = RIGHT TURN/BRAKE LIGHT

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WIRING - DIAGRAM

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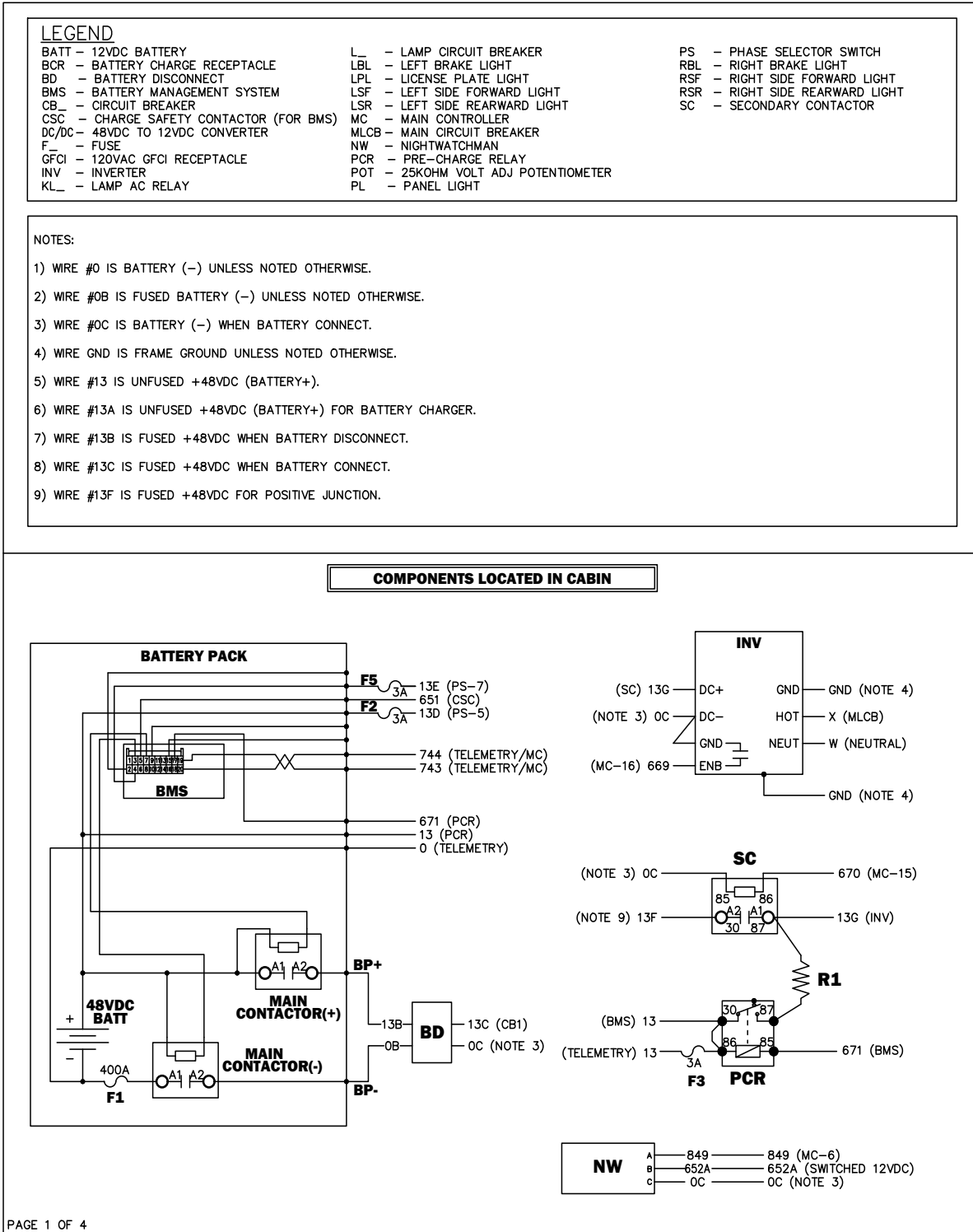
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Diagrams (1 of 4)

GROUP G



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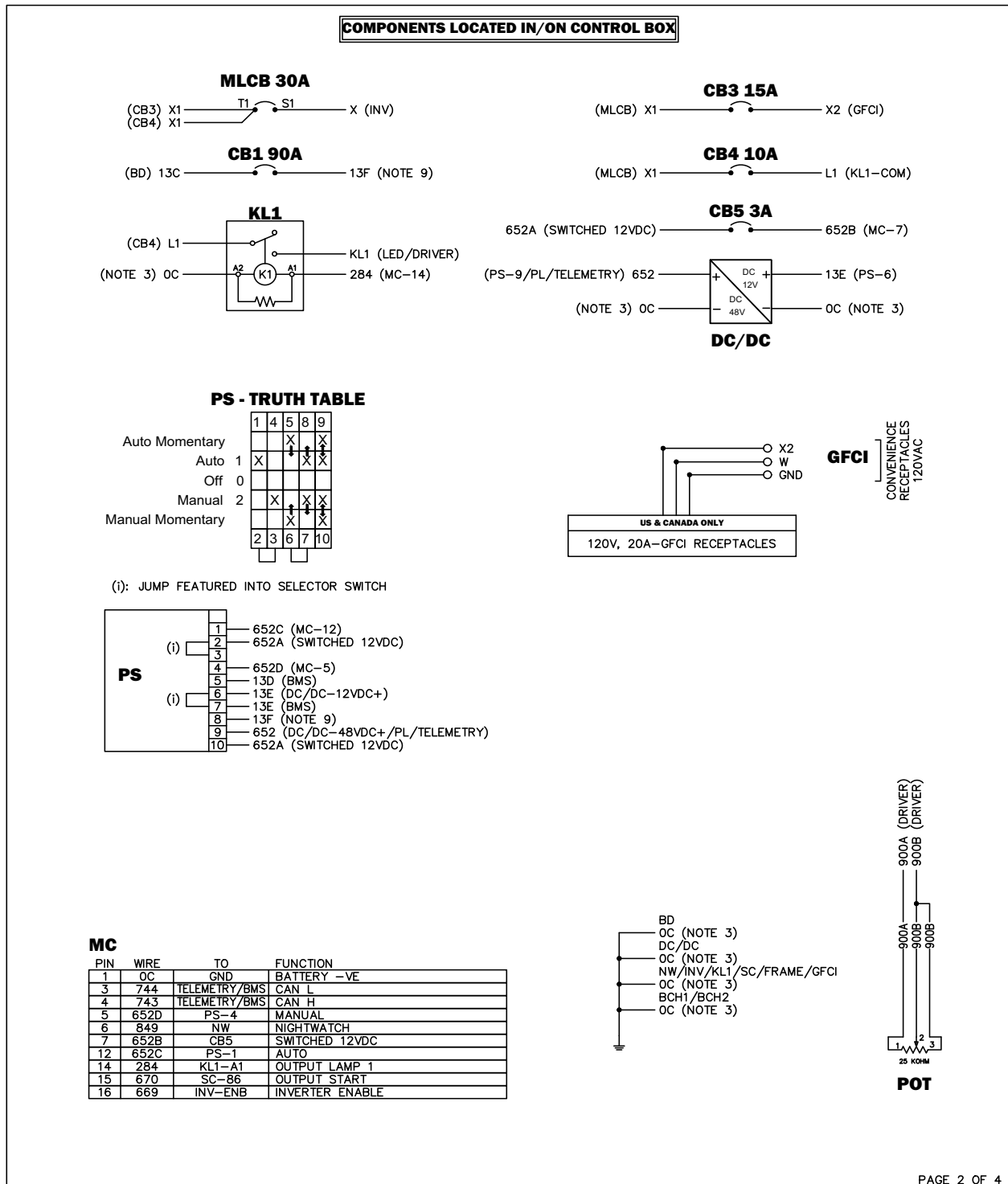
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Diagrams (2 of 4)

GROUP G



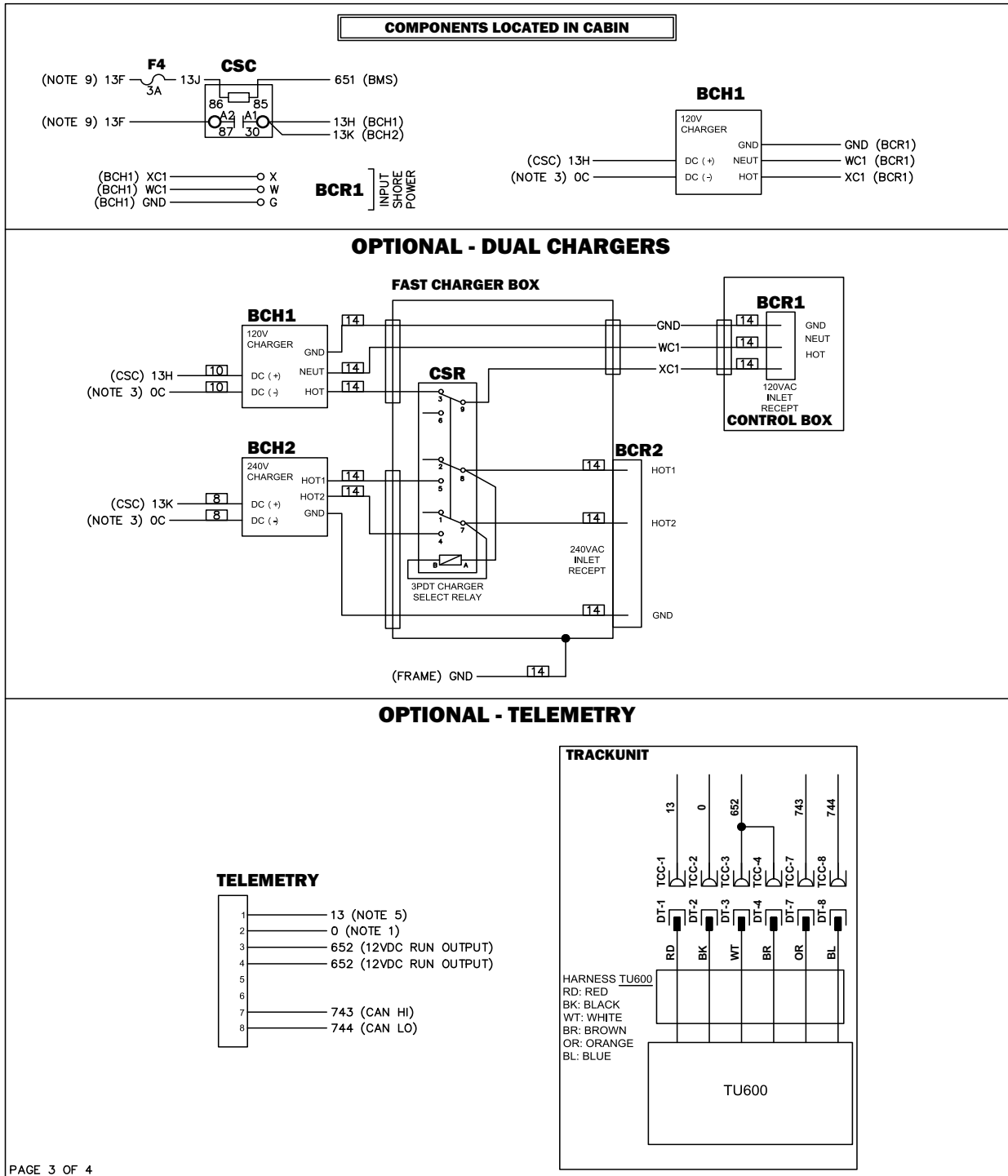
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GROUP G


OPTIONAL - TELEMETRY

TELEMETRY

1	13 (NOTE 5)
2	0 (NOTE 1)
3	652 (12VDC RUN OUTPUT)
4	652 (12VDC RUN OUTPUT)
5	
6	
7	743 (CAN HI)
8	744 (CAN LO)

TRACKUNIT

TU600

HARNESS TU600

RD: RED
BK: BLACK
WT: WHITE
BR: BROWN
OR: ORANGE
BL: BLUE

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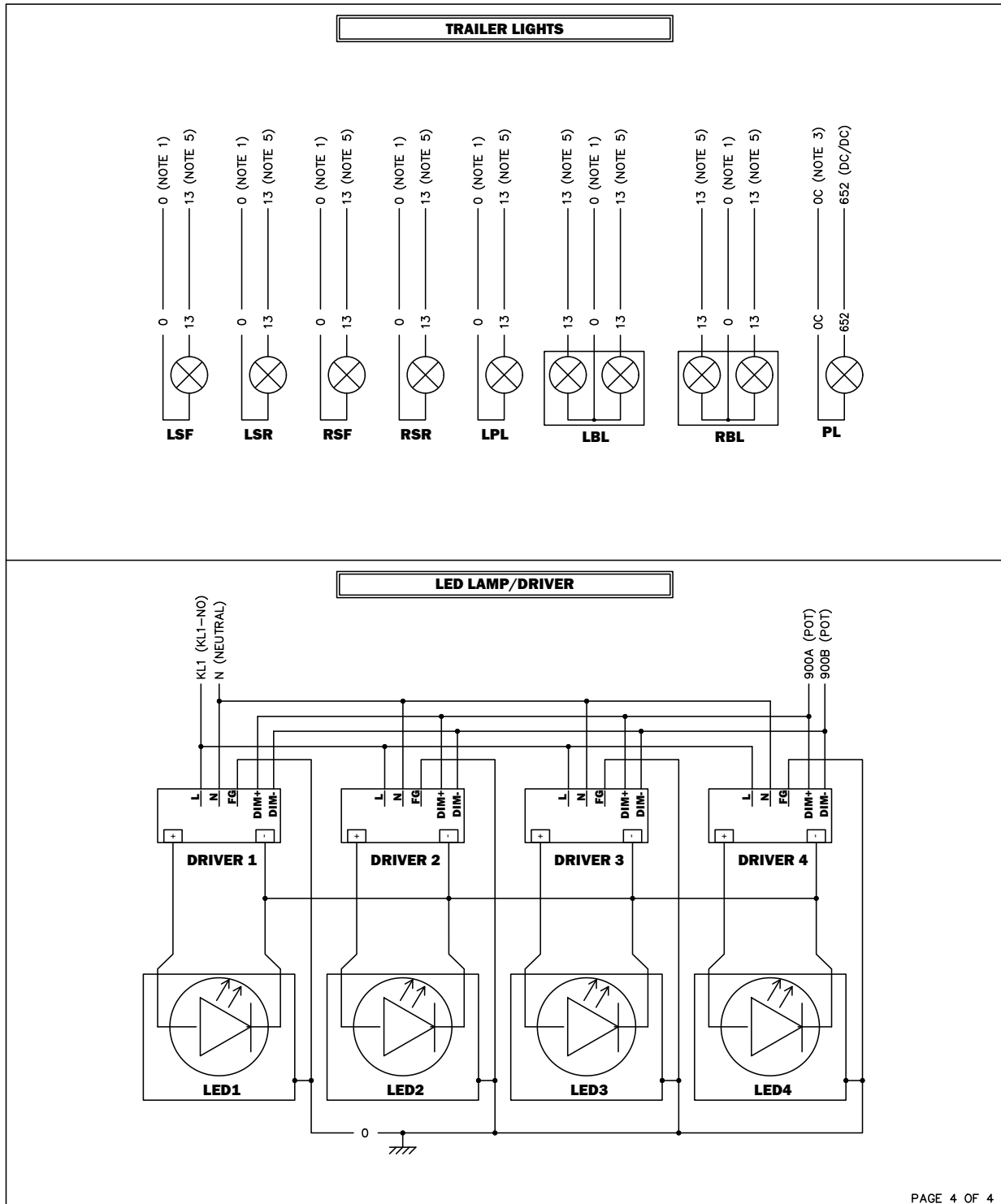
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GROUP G



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Section 7: NHTSA Trailer Equipment Requirements

Reporting Safety Defects to the United States Government

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.

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 GMASD, or Generac Mobile.

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
400 Seventh Street, SW.
Washington, DC 20590

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

Tire Safety Information

The following section contains tire safety information as required by 49 CFR 575.6. It will cover the following:

- Tire labeling, including a description and explanation of each marking on tires provided with the vehicle, and information about the location of the Tire Identification Number (TIN);
- Recommended tire inflation pressure, including a description and explanation of:
 - Recommended cold tire inflation pressure,
 - The vehicle placard and tire inflation pressure label and their location in the vehicle
 - Adverse safety consequences of underinflations (including tire failure), and
 - Measuring and adjusting air pressure to achieve proper inflation;
- Glossary of tire terminology, including “cold tire pressure”, “maximum inflation pressure,” and “recommended inflation pressure,” and other non-technical terms;
- Tire care, including maintenance and safety practices;
- Vehicle load limits, including a description and explanation of:
 - Locating and understanding load limit information, total load capacity, seating capacity, towing capacity, and cargo capacity,

- Calculating total and cargo load capacities with varying seating configurations including quantitative examples showing/illustrating how the vehicle’s cargo and luggage capacity decreases as the combined number and size of occupants increases,
- Determining compatibility of tire and vehicle load capabilities,
- Adverse safety consequences of overloading on handling and stopping and on tires.

Steps for Determining Correct Load Limit – Trailer

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

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

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

When loading your cargo, be sure it is distributed evenly to prevent overloading front to back and side to side. Heavy items should be placed low and as close to the axle positions as reasonable. Too many items on one side may overload a tire. The best way to know the actual weight of the vehicle is to weigh it at a public scale. Talk

to your dealer to discuss the weighing methods needed to capture the various weights related to the trailer. This would include the weight empty or unloaded, weights per axle, wheel, hitch or king-pin, and total weight.

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

Trailers 10,000 lbs (4,536 kg) GVWR or Less

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

Trailers over 10,000 lbs (4,536 kg) GVWR

NOTE: These trailers are not required to have a tire information placard on the vehicle.

4. Determine the empty weight of your trailer by weighing the trailer using a public scale or other means. This step does not have to be repeated.
5. Locate the GVWR of the trailer on your trailer's VIN (Certification) label.
6. Subtract the empty weight of your trailer from the GVWR stated on the VIN label. That weight is the maximum available cargo capacity of the trailer and may not be safely exceeded.

Steps for Determining Correct Load Limit – Tow Vehicle

1. Locate the statement "The combined weight of occupants and cargo should never exceed XXX kg or XXX lbs." on your vehicle's placard.
2. Determine the combined weight of the driver and passengers that will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kg or XXX lbs.
4. The resulting figure equals the available amount of cargo and luggage load capacity. For example, if the "XXX" amount equals 1400 lbs. and there will be five 150 lb passengers in your vehicle, the amount of available cargo and luggage load capacity is 650 lbs. (1400-750 (5x150) = 650 lbs.)

5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity calculated in Step 4.
6. If your vehicle will be towing a trailer, load from your trailer will be transferred to your vehicle. Consult the tow vehicle's manual to determine how this reduces the available cargo and luggage load capacity of your vehicle.

Glossary of Tire Terminology

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

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

Bead separation means a breakdown of the bond between components in the bead.

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

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

Chunking means the breaking away of pieces of the tread or sidewall.

Cord means the strands forming the plies in the tire.

Cord separation means the parting of cords from adjacent rubber compounds.

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

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

Cold inflation pressure means the tire pressure when the vehicle hasn't been driven for at least three hours.

Extra load tire means a tire designed to operate at higher loads and higher inflation pressure than the corresponding standard tire.

Groove means the space between two adjacent tread ribs.

Gross Axle Weight Rating or GAWR means the value specified by the vehicle manufacturer as the load-carrying capacity of a single axle system, as measure at the tire-ground interfaces.

Gross Vehicle Weight Rating or GVWR means the value specified by the manufacturer as the loaded weight of a single vehicle.

Hitch weight means the downward force exerted on the hitch ball by the trailer coupler.

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

Innerliner separation means the parting of the innerliner cord material in the carcass.

Light truck (LT) tire means a tire designated by its manufacturer as primarily intended for use on lightweight trucks or multipurpose passenger vehicles.

Load rating means the maximum load that a tire is rated to carry for a given inflation pressure.

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

Maximum permissible inflation pressure means the maximum cold inflation pressure to which a tire may be inflated.

Maximum loaded vehicle weight means the sum of (a) Curb weight; (b) Accessory weight; (c) Vehicle capacity weight; and (d) Production options weight.

Measuring rim means the rim on which a tire is fitted for physical dimension requirements.

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

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

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

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

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

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

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

Outer diameter means the overall diameter of an inflated new tire.

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

Passenger car tire means a tire intended for use on passenger cars, multipurpose passenger vehicles, and trucks, that have a gross vehicle weight rating (GVWR) of 10,000 pounds or less.

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

Ply means a layer of rubber-coated parallel cords.

Ply separation means a parting of rubber compound between adjacent plies.

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

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

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

Recommended inflation pressure means the proper Cold Inflation Pressure as shown on the Tire Information label.

Reinforced tire means a tire designed to operate at higher loads and at higher inflation pressures than the corresponding standard tire.

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

Rim diameter means nominal diameter of the bead seat.

Rim size designation means rim diameter and width.

Rim type designation means the industry or manufacturer's designation for a rim by style or code.

Rim width means nominal distance between rim flanges.

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

Sidewall means that portion of a tire between the tread and bead.

Sidewall separation means the parting of the rubber compound from the cord material in the sidewall.

ST tire means a tire designed for use only on trailers drawn on a road.

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

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

Tread rib means a tread section running circumferentially around a tire.

Tread separation means pulling away of the tread from the tire carcass.

Treadwear indicators (TWI) means the projections within the principal grooves designed to give a visual indication of the degrees of wear on the tread.

Vehicle capacity weight means the rated cargo and luggage load plus 68 kilograms times the vehicle's designated seating capacity.

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

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

Wheel center member means, in the case of a nonpneumatic tire assembly incorporating a wheel, a mechanical device which attaches, either integrally or separably, to the nonpneumatic rim and provides the connection between the nonpneumatic rim and the vehicle; or in the case of a nonpneumatic tire assembly not incorporating a wheel, a mechanical device which attaches, either integrally or separably, to the nonpneumatic tire and provides the connection between the tire and the vehicle.

Wheel-holding fixture means the fixture used to hold the wheel and tire assembly securely during testing.

Tire Safety

The National Traffic Safety Administration (NHTSA) has published a brochure (DOT HS 809 361) that discusses all aspects of Tire Safety, as required by 49 CFR 575.6. This brochure is reproduced in part below. It can be obtained and downloaded from NHTSA, free of charge, from the following website:

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

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

- Improve vehicle handling
- Help protect you and others from avoidable breakdowns and accidents

- Improve fuel economy
- Increase the life of your tires

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

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

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

Basic Tire Maintenance

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

Finding Your Vehicle's Recommended Tire Pressure And Load Limits

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

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

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

Understanding Tire Pressure And Load Limits

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

Manufacturers of passenger vehicles and light trucks determine this number based on the vehicle's design load limit, that is, the greatest amount of weight a vehicle can safely carry and the vehicle's tire size. The proper

tire pressure for your vehicle is referred to as the “recommended cold inflation pressure.” (As you will read below, it is difficult to obtain the recommended tire pressure if your tires are not cold.)

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

Checking Tire Pressure

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

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

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

The recommended tire inflation pressure that vehicle manufacturers provide reflects the proper psi when a tire is cold. The term cold does not relate to the outside temperature. Rather, a cold tire is one that has not been driven on for at least three hours.

When you drive, your tires get warmer, causing the air pressure within them to increase. Therefore, to get an accurate tire pressure reading, you must measure tire pressure when the tires are cold or compensate for the extra pressure in warm tires.

Steps For Maintaining Proper Tire Pressure

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

If you have been driving your vehicle and think that a tire is underinflated, fill it to the recommended cold inflation pressure indicated on your vehicle’s tire information

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

Tire Size

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

Tire Tread

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

Tire Balance And Wheel Alignment

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

Tire Repair

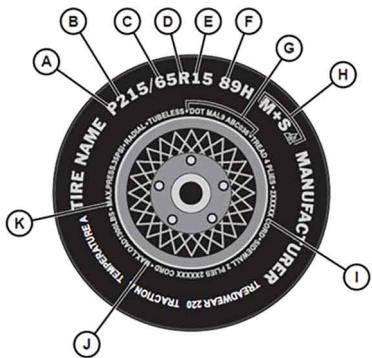
The proper repair of a punctured tire requires a plug for the hole and a patch for the area inside the tire that surrounds the puncture hole. Punctures through the tread can be repaired if they are not too large, but punctures to the sidewall should not be repaired. Tires must be removed from the rim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

Tire Fundamentals

Federal law requires tire manufacturers to place standardized information on the sidewall of all tires. This information identifies and describes the fundamental

characteristics of the tire and also provides a tire identification number for safety standard certification and in case of a recall.

Information on Passenger Vehicle Tires



014608

Figure 7-1. Passenger Vehicle Tires

A	"P" indicates the tire is for passenger vehicles.
B	This three-digit number gives the width in millimeters of the tire from sidewall edge to sidewall edge. In general, the larger the number, the wider the tire.
C	This two-digit number, known as the aspect ratio, gives the tire's ratio of height to width. Numbers of 70 or lower indicate a short sidewall for improved steering response and better overall handling on dry pavement.
D	"R" stands for radial. Radial ply construction of tires has been the industry standard for the past 20 years.
E	This two-digit number is the wheel or rim diameter in inches. If you change your wheel size, you will have to purchase new tires to match the new wheel diameter.
F	(Number) This two- or three-digit number is the tire's load index. It is a measurement of how much weight each tire can support. You may find this information in your owner's manual. If not, contact a local tire dealer. NOTE: You may not find this information on all tires because it is not required by law. (Letter) The speed rating denotes the speed at which a tire is designed to be driven for extended periods of time. The ratings range from 99 miles per hour (mph) to 186 mph. These ratings are listed below. NOTE: You may not find this information on all tires because it is not required by law. NOTE: See Figure 7-1 for complete list of letter and speed ratings.

G	U.S. DOT Tire Identification Number. This begins with the letters "DOT" and indicates that the tire meets all federal standards. The next two numbers or letters are the plant code where it was manufactured, and the last four numbers represent the week and year the tire was built. For example, the numbers 3197 means the 31st week of 1997. The other numbers are marketing codes used at the manufacturer's discretion. This information is used to contact consumers if a tire defect requires a recall.
H	The "M+S" or "M/S" indicates that the tire has some mud and snow capability. Most radial tires have these markings; hence, they have some mud and snow capability.
I	Tire Ply Composition and Materials Used. The number of plies indicates the number of layers of rubber-coated fabric in the tire. In general, the greater the number of plies, the more weight a tire can support. Tire manufacturers also must indicate the materials in the tire, which include steel, nylon, polyester, and others.
J	Maximum Load Rating. This number indicates the maximum load in kilograms and pounds that can be carried by the tire.
K	Maximum Permissible Inflation Pressure. This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

Table 7-1. Tire Letter and Speed Rating

Letter Rating	Speed Rating
Q	99 MPH
R	106 MPH
S	112 MPH
T	118 MPH
U	124 MPH
H	130 MPH
V	168 MPH
Y	186 MPH

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

Uniform Tire Quality Grading (UTQGS)

Quality grades can be found where applicable on the tire sidewall between tread shoulder and maximum section width. For example: TREADWEAR 200 TRACTION AA.

Temperature A

All passenger car tires must conform to federal safety requirements in addition to these grades.

Treadwear

The treadwear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test course. For example, a tire graded 150 would wear one and one-half (1.5) times as well on the government course as a tire graded 100. The relative performance of tires depends upon the actual conditions of their use, however, and may depart significantly from the norm due to variations in driving habits, service practices and differences in road characteristics and climate.

Traction

The traction grades, from highest to lowest, are AA, A, B, and C. Those grades represent the tire’s ability to stop on wet pavement as measured under controlled conditions on specified government test surfaces of asphalt and concrete. A tire marked C may have poor traction performance.

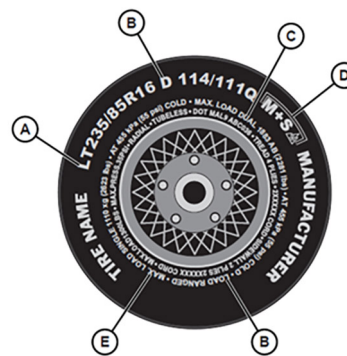
NOTE: The traction grade assigned to this tire is based on straight-ahead braking traction tests, and does not include acceleration, cornering, hydroplaning, or peak traction characteristics.

Temperature

The temperature grades are A (the highest), B, and C, representing the tire’s resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel. Sustained high temperature can cause the material of the tire to degenerate and reduce tire life, and excessive temperature can lead to sudden tire failure. The grade C corresponds to a level of performance which all passenger car tires must meet under the Federal Motor Safety Standard No. 109. Grades B and A represent higher levels of performance on the laboratory test wheel than the minimum required by law.

NOTE: The temperature grade for this tire is established for a tire that is properly inflated and not overloaded. Excessive speed, under-inflation, or excessive loading, either separately or in combination, can cause heat buildup and possible tire failure.

Additional Information on Light Truck Tires



014609

Figure 7-2. Light Truck Tires

A	The “LT” indicates the tire is for light trucks. An “ST” is an indication the tire is for trailer use only.
B	Load Range. This information identifies the tire’s load-carrying capabilities and its inflation limits.
C	Maximum Load Dual. This information indicates the maximum load and tire pressure when the tire is used as a dual, that is, when four tires are put on each rear axle (a total of six or more tires on the vehicle).*
D	The “M+S” or “M/S” indicates that the tire has some mud and snow capability. Most radial tires have these markings; hence, they have some mud and snow capability.
E	This information indicates the maximum load and tire pressure when the tire is used as a single.*

* Maximum load is presented in kilograms and pounds (kg/lbs). Maximum tire pressure is presented in kilopascals and pounds per square inch (kPa/psi) for when the tire is cold.

Preventing Tire Damage

- Slow down if you have to go over a pothole or other object in the road.
- Do not run over curbs of foreign objects in the roadway, and try not to strike the curb when parking.

Tire Safety Checklist

- Check tire pressure regularly (at least once a month), including the spare.

- Inspect tires for cracks, foreign objects, uneven wear patterns on the tread, or other signs of wear or trauma.
- Remove bits of glass and foreign objects wedged in the tread.
- Verify your tire valves have valve caps.
- Check tire pressure before going on a long trip.
- Do not overload your vehicle. Check the tire information placard or owner's manual for the maximum recommended load for the vehicle.

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