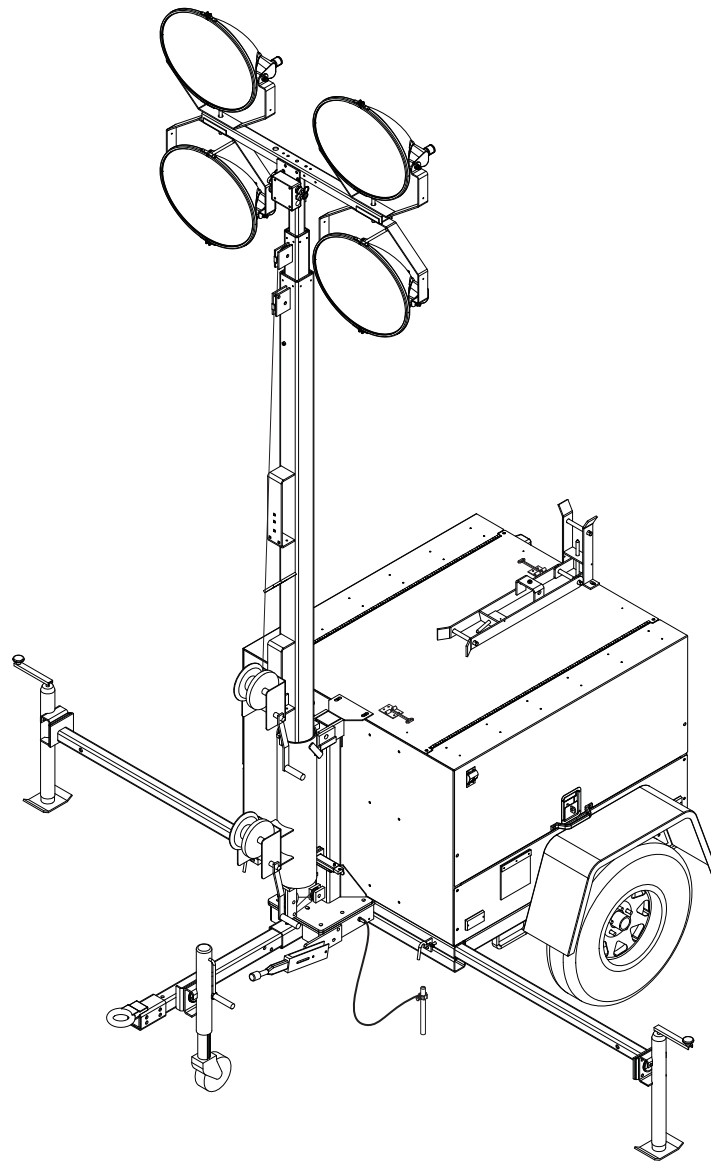




LIGHT CART
MLC4062AF



OPERATING MANUAL

INTRODUCTION

This manual provides information and procedures to safely operate and maintain the engine and generator. For your own safety and protection from physical injury, carefully read, understand, and observe the safety instructions described in this manual. *The information contained in this manual was based on machines in production at the time of publication. Magnum Products LLC reserves the right to change any portion of this information without notice.*

DO NOT MODIFY or use this equipment for any application other than which it was designed for.

Magnum Products LLC recommends that a trained and licensed professional perform all electrical wiring and testing functions. Any wiring should be in compliance with the United States National Electric Code (NEC), state and local codes and Occupational Safety and Health Association (OSHA) guidelines.

Keep a copy of this manual with the unit at all times. Additional copies are available from Magnum Products LLC. An engine operator's manual was also supplied with the unit at the time of shipment from the factory. The manual provides detailed operation and maintenance procedures for the engine. Additional copies of the engine operators manual are available from the engine manufacturer.

MAGNUM PRODUCTS LLC
215 Power Drive • Berlin, WI 54923
U.S.A.
Phone: 920-361-4442
FAX: 920-361-4416
Toll Free: 1-800-926-9768
www.m-p-llc.com

For technical or parts QUESTIONS, please contact Magnum Products' Customer Support or Technical Support team at 920-361-4442 or toll free at 1-800-926-9768. Please have your serial number available.

To ORDER SERVICE PARTS, please contact the dealer from which you purchased the unit, or call Magnum Products to locate a dealer in your area.

Engine Make: _____

Engine Serial Number: _____

Engine Model Number: _____

Generator Make: _____

Generator Model Number: _____

Generator Serial Number: _____

Unit Model Number: _____

Unit Serial Number: _____

▲ WARNING

CALIFORNIA PROPOSITION 65 WARNING: Diesel engine exhaust and some of its constituents are known to the state of California to cause cancer, birth defects and other reproductive harm.

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SAFETY NOTES



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

This manual contains DANGERS, WARNINGS, CAUTIONS, NOTICES and NOTES which must be followed to prevent the possibility of improper service, damage to the equipment, personal injury or death. The following formatting options will apply when calling the readers attention to the DANGERS, WARNINGS, CAUTIONS, NOTICES and NOTES.

▲ DANGER

INDICATES A HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.

▲ WARNING

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

▲ CAUTION

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

NOTICE

Indicates a hazardous situation which, if not avoided, may result in property or equipment damage.

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

OPERATING SAFETY



Before using the light cart be sure you read and understand all of the instructions! This equipment was designed for specific applications; DO NOT modify or use this equipment for any application other than which it was designed for. Equipment operated improperly or by untrained personnel can be dangerous! Read the operating instructions and familiarize yourself with the location and proper use of all instruments and controls. Inexperienced operators should receive instruction from someone familiar with the equipment before being allowed to operate or set up the light cart. The following points should be practiced at all times:

- The area immediately surrounding the light cart should be dry, clean, and free of debris.
- Position and operate the light cart on a firm, level surface.
- **NEVER** start a unit in need of repair.
- Lower mast when not in use, or if high winds or electrical storms are expected in the area.
- Make certain light cart is well grounded and securely fastened to a good earthen ground.
- The mast extends up to 30 ft. (9m). Make sure area above trailer is open and clear of overhead wires and obstructions.
- Bulbs become extremely hot in use! Allow bulb and light fixture to cool 10-15 minutes before handling.
- Keep area behind trailer clear of people while raising and lowering mast!
- Keep all body parts and other loose items clear of winch and cable during operation and while in tension.
- **NEVER** raise, lower or turn mast while unit is operating!
- Trailer must be leveled and outriggers extended before raising mast. Outriggers must remain extended while mast is up.
- If for any reason any part of mast hangs up or winch cable develops slack while raising or lowering mast, STOP immediately! Contact an authorized service representative.

- **NEVER** remove safety pin or pull mast lock while mast is up!
- **NEVER** use light cart if insulation on electrical cord is cut or worn through.
- **NEVER** operate lights without protective lens cover in place or with a lens cover that is cracked or damaged!
- Only use mild soap and water to clean the lens covers. Other chemicals may have an adverse effect on the glass.
- **NEVER** operate a unit while tired, distracted, or under the influence of drugs or alcohol.

ENGINE SAFETY



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

- **DO NOT** run engine indoors or in an area with poor ventilation unless exhaust hoses are used. Diesel engine exhaust contains carbon monoxide, a deadly, odorless and colorless gas which, if inhaled, can cause nausea, fainting or death. Make sure engine exhaust cannot seep into closed rooms or ventilation equipment.
- **DO NOT** operate the unit on a combustible surface.
- **DO NOT** fill fuel tank near an open flame, while smoking, or while engine is running. **DO NOT** fill tank in an enclosed area with poor ventilation.
- **DO NOT** operate with the fuel tank cap loose or missing.
- **DO NOT** touch or lean against hot exhaust pipes or engine cylinders.
- **DO NOT** clean air filter with gasoline or other types of low flash point solvents.
- **DO NOT** remove engine coolant cap while engine is hot.
- **DO NOT** operate the unit without a functional exhaust system. Prolonged exposure to sound levels in excess of 85dBA can cause permanent hearing loss. Wear hearing protection when working around a running engine.
- Keep area around exhaust pipes and air ducts free of debris to reduce the chance of an accidental fire.
- Batteries contain sulfuric acid which can cause severe injury or death. Sulfuric acid can cause eye damage, burn flesh or eat holes in clothing. Protective eye wear and clothing are necessary when working on or around the battery. Always disconnect the NEGATIVE (-) battery cable from the corresponding terminal before performing any service on the engine or other components.
- Shut the engine down if any of the following conditions exist during operation:
 1. Noticeable change in engine speed.
 2. Loss of electrical output.
 3. Equipment connected to the generator overheats.
 4. Sparking occurs.
 5. Engine misfires or there is excessive engine/generator vibration.
 6. Protective covers are loose or missing.
 7. If the ambient air temperature is above 120° F.

SERVICE SAFETY



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

- Before servicing light cart, make sure the engine start switch is turned to OFF, circuit breakers are open (off) and the negative terminal on the battery is disconnected. **NEVER** perform even routine service (oil/filter changes, cleaning, etc.) unless all electrical components are shut down.
- **NEVER** allow water to accumulate around the base of the light cart. If water is present, **DO NOT** service!
- **NEVER** service electrical components if clothing or skin is wet. If the unit is stored outside, check the engine and generator for any moisture and dry the unit before use.
- **NEVER** wash the unit with a power washer or high pressure hose.
- Open main circuit breaker before disconnecting battery cables.
- Keep hands, feet, and loose clothing away from moving parts on generator and engine.
- Wear heavy leather gloves when handling winch cables. Never let cables slip through bare hands.
- Make sure slings, chains, hooks, ramps, jacks, and other types of lifting devices are attached securely and have enough weight-bearing capacity to lift or hold the equipment safely. Always remain aware of the position of other people around you when lifting the equipment.

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. Also, 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.

- Check that the hitch and coupling on the towing vehicle are rated equal to, or greater than, the trailer's "gross vehicle weight rating" (GVWR).
- Check tires on trailer for tread wear, inflation, and condition.
- **DO NOT** tow trailer using defective parts! Inspect the hitch and coupling for wear or damage.
- Make sure the trailer hitch and the coupling are compatible. Make sure the coupling is securely fastened to the vehicle.
- Connect safety chains in a crossing pattern under the tongue and attach the breakaway cable **TO THE REAR BUMPER OF THE TOWING VEHICLE**. Do not attach the cable to the trailer hitch.
- Make sure directional and brake lights on the trailer are connected and working properly.
- Check that all lug nuts holding wheels on are tight and that none are missing.
- Maximum recommended speed for highway towing is 60 m.p.h. Recommended off-road towing speed is not to exceed 25 m.p.h. or less depending on terrain. Maximum Recommended speed for tandem towing is 20 m.p.h.
- **NEVER** tow more than two light carts at a time.

When towing, maintain extra space between vehicles and avoid soft shoulders, curbs and sudden lane changes. If you have not pulled a trailer before, practice turning, stopping, and backing up in an area away from heavy traffic.

When towing two light carts, avoid sharp turns and any ditches, curbs or depressions greater than 12" deep.

A film of grease on the coupler will extend coupler life and eliminate squeaking. Wipe the coupler clean and apply fresh grease each time the trailer is towed.

REPORTING TRAILER SAFETY DEFECTS

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

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

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

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

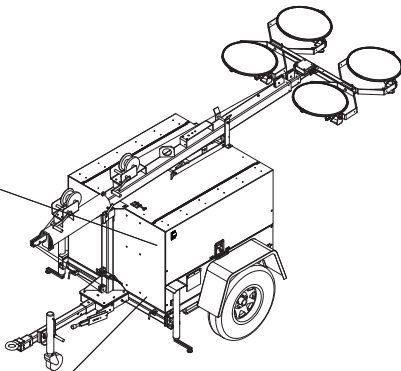
You can also obtain other information about motor vehicle safety from <http://www.safercar.gov>.

UNIT SERIAL NUMBER LOCATIONS

Refer to the locations illustrated to find the unit ID tag, and trailer ID tag on your unit. Important information, such as the unit serial number, model number and Vehicle Identification Number (V.I.N.) for your trailer 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 technical service information, you may be asked to specify this information.

Unit ID Tag

(Located inside front panel.)




MAGNUM 2011-2012 Model Mag. 30 Series 1500/2000 lbs	
Model Number: _____	
City Code: _____	
Date: _____	
Year: _____	Make: _____
Model: _____	Part: _____
RATING: <input type="checkbox"/> COUNT <input type="checkbox"/> STAND BY	
KVA: _____	KW: _____
V: _____	V: _____
A: _____	A: _____
LR 114880-1	

V.I.N. Tag

MANUFACTURED BY/FABRIQUE PAR:		DATE OF MFG.:	
GVWR/PNBV:		COLD INFL. PRESS./PRESS.	
GAWR/PNBE	TIRE/PNEU	RIM/JANTE	KPAPS/LPC)
<small>THIS VEHICLE CONFORMS TO ALL APPLICABLE STANDARDS PRESCRIBED UNDER THE CANADIAN MOTOR VEHICLE SAFETY REGULATIONS IN EXCEPT ON THE DATE OF MANUFACTURE. / CE VEHICULE EST CONFORME A TOUTES LES NORMES QUI LUI SONT APPLICABLES EN VERTU DU REGLEMENT SUR LA VEICULES DES AUTOMOBILES DU CANADA EN VIGUEUR A LA DATE DE FABRICATION.</small>			
<small>THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS (FMVSS) IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.</small>			
V.I.N./N.I.V.:		TYPE/TYPE DE VEHICULE:	

SAFETY SYMBOL SUMMARY

This equipment has been supplied with numerous safety and operating decals. These decals provide important operating instructions and warn of dangers and hazards. Replace any missing or hard-to-read decals and use care when washing or cleaning the unit. Decal placement and part numbers can be found in the parts manual. Below is a summary of the intended meanings for the symbols used on the decals.

 <p>Safety alert symbol; Used to alert you to potential personal injury hazards.</p>	 <p>Asphyxiation hazard; Operate in well ventilated area.</p>
 <p>Hot surface(s) nearby.</p>	 <p>Dangerous voltage may be present.</p>
 <p>Belt/entanglement hazard; Keep body parts clear of this area.</p>	 <p>Anchor/tie down point.</p>
 <p>Fan hazard; Keep body parts clear of this area.</p>	 <p>Forklift here only.</p>
 <p>Crush hazard; Keep body parts clear of this area.</p>	 <p>Use clean diesel fuel only.</p>
 <p>Ultraviolet radiation hazard; Operate only with lens intact.</p>	 <p>Burn/scald hazard; pressurized steam.</p>
 <p>Stop engine before fueling.</p>	 <p>Read and understand the supplied operator's manual before operating unit.</p>
 <p>Fire/explosion hazard; Keep open flames away from unit.</p>	 <p>Unit electrical ground.</p>
 <p>Lift here only.</p>	

SPECIFICATIONS

Read this manual carefully before attempting to use this light cart. The potential for property damage, personal injury or death exists if this equipment is misused or installed incorrectly. Read all of the manuals included with this unit. Each manual details specific information regarding items such as set up, use and service requirements. Specifications are subject to change without notice.

MAGNUM MODEL

MLC4062AF

Engine

Make/Brand.....	KUBOTA
Model	D1005-E3BG
Type	Diesel, liquid cooled, 4-stroke
Horsepower - prime hp (kW)	11.7 (8.7)
Horsepower - standby hp (kW)	13.1 (9.8)
Operating Speed rpm	1800
Displacement in³ (L)	61.08 (1.00)
Cylinders - qty	3
Fuel Consumption - 100% prime gph (Lph)	0.50 (1.89)
Battery Type - Group Number	24
Battery Voltage (Quantity per Unit)	12V (1)
Battery Rating	720 CCA

Generator

Make/Brand.....	Marathon Electric
Model	281PSL1763
Type, Insulation	Brushless, F

Generator Set (Engine/Generator)

Output kW (kVA)	6.0 (6.0)
Output Voltage V	120/240, single phase
Output Amperes 120V (240V) A	50 (25)
Frequency Hz	60
Power Factor.....	1 (1Ø)

Weights

Dry Weight lbs (kg)	1982 (899)
Operating Weight lbs (kg)	2195 (997)

Capacities

Fuel Tank Volume gal (L)	30 (114)
Usable Fuel Volume gal (L)	30 (114)
Maximum Run Time hrs	60

AC Distribution

Circuit Breaker Size	28
Voltage Regulation	+/-1%
Voltages Available 1Ø.....	120, 240

Lighting

Lighting Type.....	Metal Halide
Ballast Type	Coil & Core
Lumens	440,000
Coverage acres (m²)	5-7 (20,234 - 28,328)

Dimensions

Length w/ mast stowed in (m)	150 (3.81)
Width in (m)	67 (1.70)
Width w/ outriggers extended in (m)	140 (3.56)
Height w/ mast stowed in (m)	70 (1.78)
Maximum height of mast ft (m)	30 (9.14)

Trailer

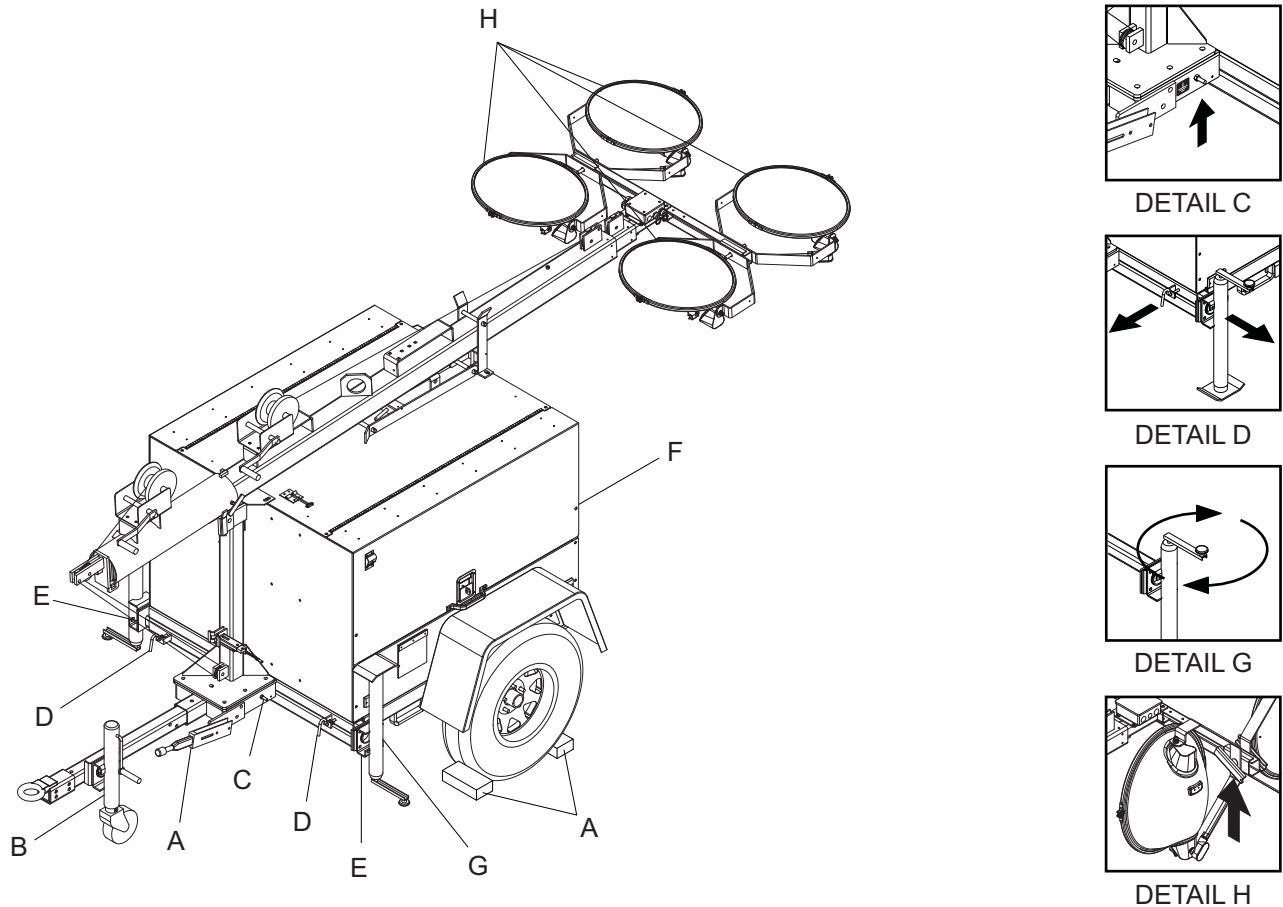
Number of Axles	1
Capacity - Axle Rating lbs (kg)	2500 (1134)
Tire Size in	15
Hitch - Standard	2.5" Ring
Maximum Tire Pressure psi	50

LIGHT CART SET UP

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

▲ WARNING

The mast extends up to 30 ft (9.14 m). Make sure area above the trailer is open and clear of overhead wires and obstructions.



2. Place the trailer on firm ground that is relatively flat. This will make it easier to level the unit. Block the wheels on the trailer and engage the parking brake to keep the unit from moving (A).
3. Pull the locking pin on the tongue jack and rotate it 90° until the spring loaded pin snaps back into place (B). Turn the jack handle clockwise to raise the trailer tongue off of the towing vehicle.
4. Connect a good earthen ground to the grounding stud on the frame of the trailer near the trailer tongue (C).
Note: Consult local codes for proper grounding requirements.
5. Pull the locking pins (D) on the outriggers (E) and pull the outriggers out until the spring loaded locking pin snaps back into place. Pull the locking pin on the outrigger jacks and rotate them 90° so the jack pads are facing down and the spring loaded pin snaps back into place.
6. Pull the locking pin on the rear jack (F) and rotate it 90° until the spring loaded pin snaps back into place. Turn the jack handle clockwise to start leveling the trailer. Adjust all four jacks by turning their handles clockwise until they are firmly in contact with the ground and the trailer is as level as possible (G).
7. Before raising the mast it may be necessary to adjust the lamps. The lamps may be adjusted up, down, left or right by loosening the wing nuts on the trunnion (H) and aiming the lamps in the desired direction. Tighten the hardware completely and make sure the lamps are connected to the junction box.

RAISING THE MAST

▲ WARNING

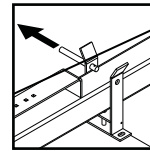
The trailer must be leveled with the outriggers extended before raising the mast. The outriggers must remain extended while the mast is up. Failure to level the trailer or extend the outriggers will severely reduce the stability of the unit and could allow the cart to tip and fall.

1. Remove the mast cradle locking pin from the mast cradle (I).
2. Check both sets of mast cables for excessive wear or damage. Make sure the cables are properly centered in each pulley (J). Check the electrical cord for damage.

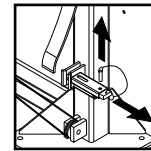
▲ WARNING

Do not start the unit if the insulation on the electrical cord is cut or worn through. Bare wires in contact with the mast or frame may energize the trailer and cause electrocution. Repair or replace cord.

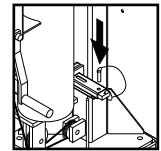
3. Make sure the area behind the unit is clear before raising the mast to the vertical position.
4. Remove the safety pin (K) from the mast lock bar (L). Using the handle for the lower mast winch (M), raise the mast until it is vertical and the tab on the mast is positioned into the mast lock. The mast lock bar should snap into place automatically. Secure the lock with the safety pin (N).
5. After the mast is up and locked into place, use the upper mast winch (O) to telescope the mast to the desired height. Extend the mast slowly, making sure that the electrical cord is extending at the top sections of the mast. If, for any reason, the winch cable begins to develop slack or any of the mast sections get stuck, STOP IMMEDIATELY and contact an authorized service center.



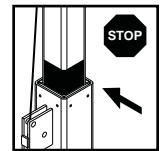
DETAIL I



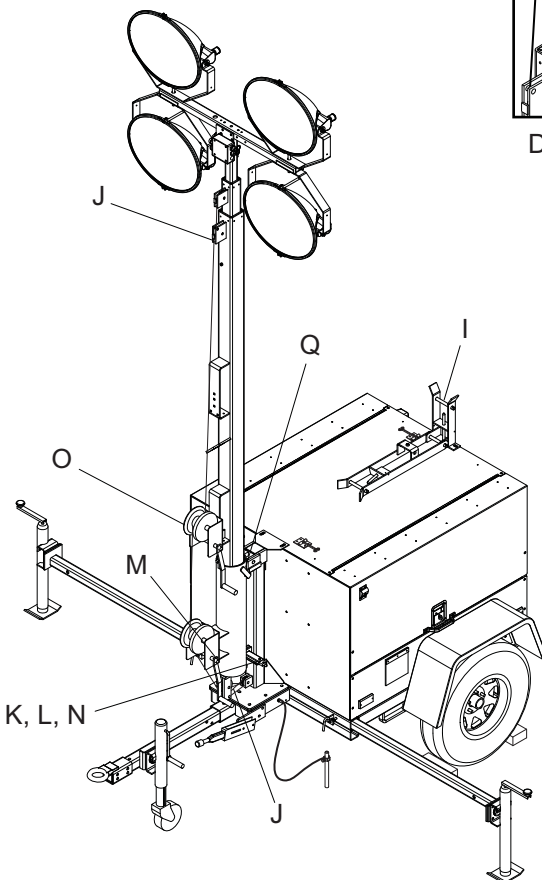
DETAIL K



DETAIL N



DETAIL P



▲ CAUTION

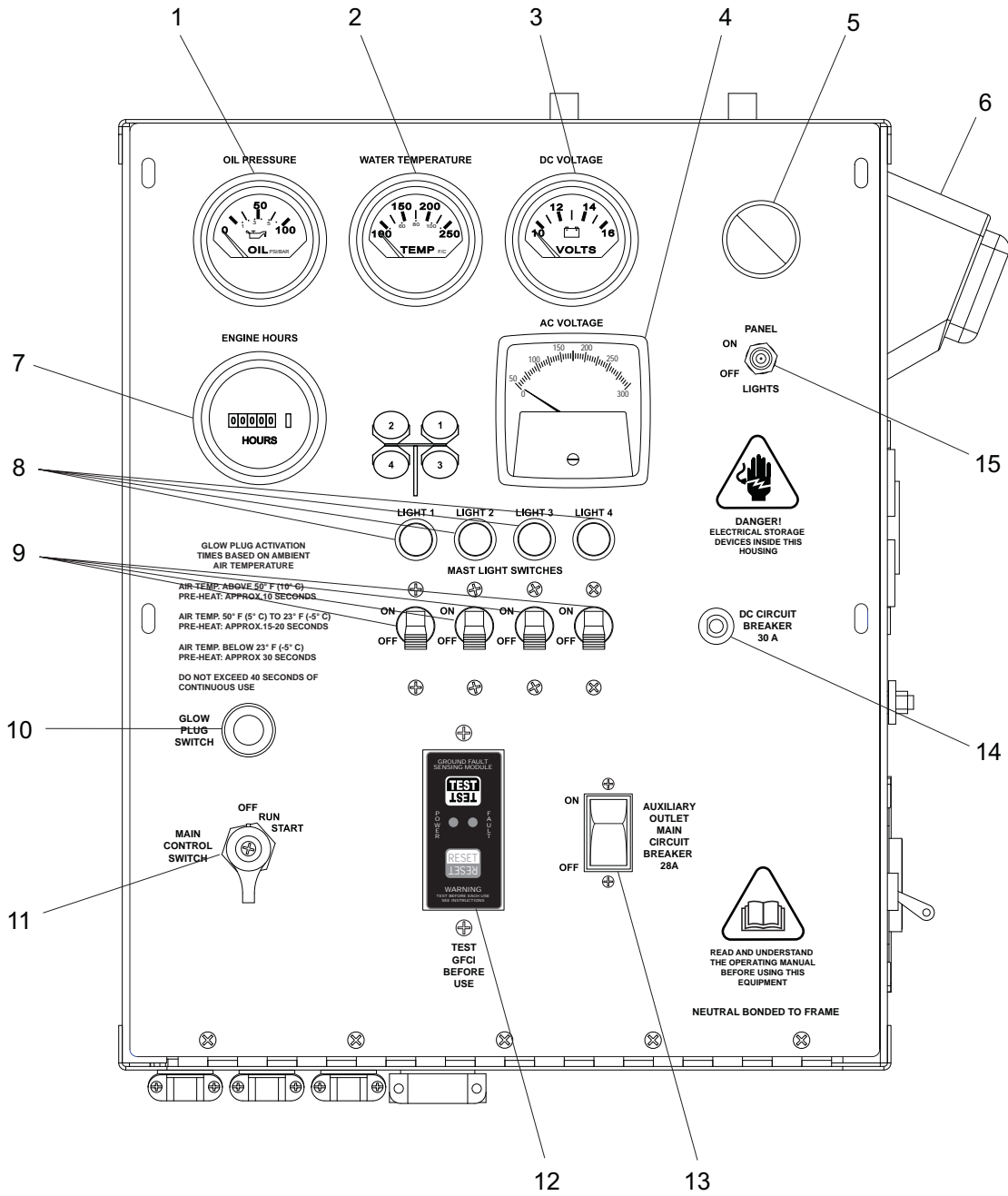
Do not extend the mast beyond the colored mark on the middle mast tube (P).

6. The mast can be rotated by loosening the locking knob at the bottom of the mast (Q). Turn the mast until the lights face in the desired direction and then tighten the knob.

▲ WARNING

Never raise or lower the mast while the unit is operating!
Never remove the safety pin or mast lock while the mast is up.
Releasing the lock will cause the mast to fall.

MAIN CONTROL PANEL COMPONENTS



1. **OIL PRESSURE GAUGE:** This analog gauge indicates the oil pressure.
2. **COOLANT TEMPERATURE GAUGE:** This analog gauge indicates the coolant temperature
3. **DC VOLTAGE GAUGE:** This analog gauge indicates the DC voltage.
4. **AC VOLTAGE GAUGE:** This analog gauge indicates the AC voltage.
5. **CONTROL PANEL LIGHT:** This light illuminates the control panel; it is toggled on and off by the "Panel Light Switch" (see item 15).
6. **INTERIOR HOUSING LIGHT:** This light illuminates the inside of the cabinet; it is toggled on and off by the "Panel Light Switch" (see item 15).
7. **ENGINE HOUR METER:** This meter tracks the amount of hours the engine has run.
8. **BALLAST INDICATOR LIGHTS:** Indicates power from the ballast to each light.
9. **MAST LIGHT SWITCHES:** One circuit breaker is supplied for each light.
10. **GLOW PLUG SWITCH:** This switch activates the glow plugs.
11. **MAIN CONTROL SWITCH:** This switch starts and stops engine.
12. **GFCI MODULE:** This module is the ground fault circuit interrupter to protect all electrical outlets.
13. **AUXILIARY OUTLET MAIN CIRCUIT BREAKER:** This 28A breaker will disconnect power to the lights and auxiliary outlets.
14. **DC CIRCUIT BREAKER:** Circuit breaker (30A) for the engine electrical system.
15. **PANEL LIGHT SWITCH:** Toggles the "Control Panel Light" and the "Interior Housing Light" on and off.

ENGINE STARTING AND OPERATION

1. Check engine oil, fuel and coolant levels. **Note:** *If the engine was run out of fuel or the fuel tank was drained, it may be necessary to bleed the fuel lines. Refer to the engine operation manual supplied with the unit.*
2. Check the condition of the electrical cord on the inside of the unit.

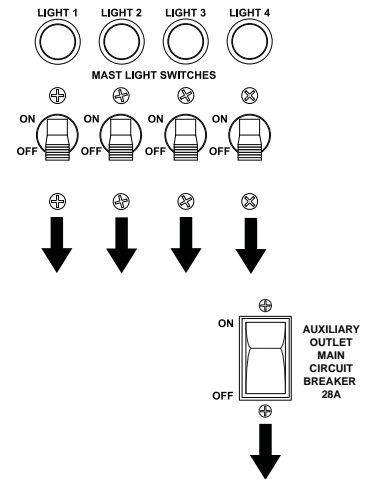
▲ WARNING

Do not start the unit if the insulation on the electrical cord is cut or worn through. Bare wires in contact with the mast or frame may energize the trailer and cause electrocution. Repair or replace cord.

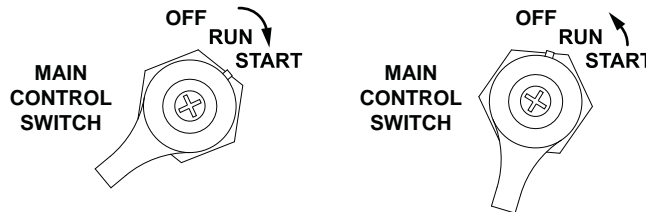
3. Check that the AUXILIARY OUTLET MAIN CIRCUIT BREAKER and individual circuit breakers for each of the lights are in the OFF "O" position.

▲ WARNING

NEVER START THE ENGINE WITH ANY OF THE CIRCUIT BREAKERS SWITCHED ON!
Any load on the generator during start up will cause severe damage or destroy the generator!



4. Press and hold the GLOW PLUG SWITCH for five seconds. Turn the key to the right START position and hold it until the engine cranks and starts running. Release the switch, it will move to the RUN position. **Note:** *For cold weather conditions hold the GLOW PLUG SWITCH for ten seconds.*



NOTICE

Do not crank the engine longer than 10 seconds at a time. If the engine will not start, wait 30 seconds to allow the starter motor to cool and then repeat the starting procedure. Excessive cranking will cause damage to the starter.

Note: *If oil pressure is not obtained within 30 seconds after the key is switched to the RUN position, the low-oil automatic shutdown will turn off the fuel supply, stopping the engine. Check the oil level and turn the key to the OFF position to reset the oil pressure timer before attempting to restart the engine.*

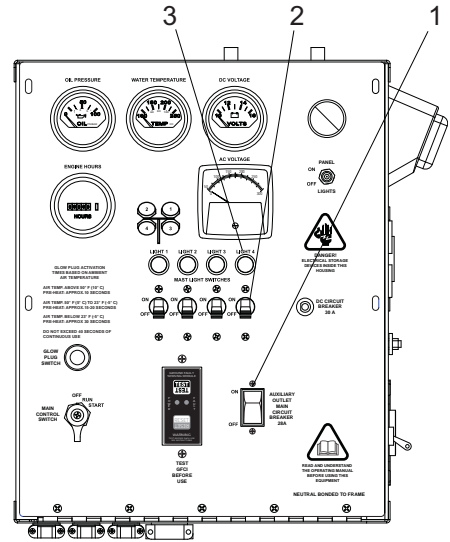
5. Once the engine is running, allow it to reach normal operating temperature before switching on any loads.

AUTOMATIC SHUTDOWN

This unit is equipped with a low oil pressure and high coolant temperature auto-shutdown system. This system will automatically shut off the fuel supply to stop the engine if oil pressure drops too low or the engine exceeds normal operating temperature. Return the switch to the OFF position to reset the unit after you have determined the cause of the shutdown.

LIGHT OPERATION

- Once the engine is up to temperature and running smoothly, switch main circuit breaker (1) to the ON "I" position.
- With main circuit breaker on, switch each individual circuit breaker for the lights (2) to ON "I", one at a time.
- The ballast indicator lights (3) will come on momentarily, then go dark as the lights strike. As the lights warm up, the ballast indicator lights will continue to get brighter and then remain on. This confirms that power is coming from the ballasts to the lights.
- If an indicator light does not come on, the ballast may need to be serviced. If the indicator light comes on and stays lit but the related light is not illuminated, check the bulb or the mast wiring.
- The lights require a warm up period of 5-15 minutes before they reach full output. If the lights are shut down, they require a cool-down period of approximately 10 minutes before they can be switched on again.
- The light cart uses four 1000W bulbs. When checking or replacing the bulbs, wipe them with a clean cloth to avoid leaving any grease, oil residue or fingerprints on the glass. Any residue can create a hot spot on the bulb, causing premature bulb failure.



▲ WARNING

NEVER OPERATE THE LIGHTS WITHOUT THE PROTECTIVE LENS COVER OR WITH A LENS COVER THAT IS CRACKED OR DAMAGED! The bulbs in the light fixtures produce high temperatures and operate under pressure. A broken or missing lens cover could cause the bulbs to shatter, causing injury.

▲ WARNING

Bulbs become extremely hot in use! Allow bulb fixture to cool 10-15 minutes before handling.

AUXILIARY OUTLETS

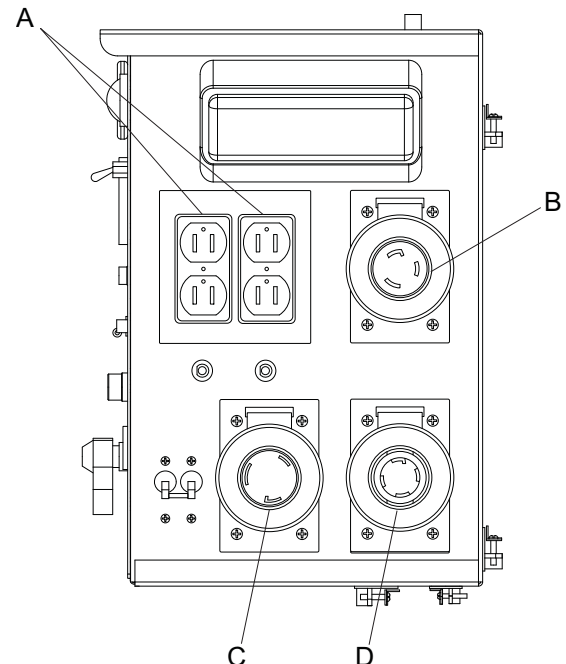
This unit is equipped with two 120VAC duplex outlets (A), one 120VAC twist-lock outlet (B), one 20A 240VAC twist-lock outlet (C) and one 30A 240VAC twist-lock outlet (D). These outlets are provided for running accessories or tools from the generator. Power is supplied to the outlets any time the engine is running and the AUXILIARY OUTLET MAIN CIRCUIT BREAKER is switched ON "I". A ground fault circuit interrupter (GFCI) module is located on the control panel to protect all electrical outlets, and should be tested before each use.

GFCI TEST INSTRUCTIONS

NOTICE

ALWAYS test GFCI outlets before connecting any loads to the generator.

Normal Operating State - The sensing device green LED is "ON" and the circuit breaker is in the "ON" position.



1. Press the “TEST” button. The green LED should go out and the red LED should come on. The circuit breaker should trigger to the “OFF” position.
2. If the LED does not change state, or the breaker does not trip, DO NOT USE! Consult an electrician for assistance.
3. Press the “RESET” button. The red LED should turn off and the green LED should turn on.
4. Manually reset the circuit breaker to the “ON” position to restore circuit power.

VOLTAGE REGULATION

This unit is equipped with an electronic voltage regulator. This voltage regulator controls the output of the generator by regulating the current into the exciter field. The voltage regulator on your unit is adjusted before shipment from the factory. Contact Magnum Products LLC for additional information before attempting to adjust the voltage regulator.

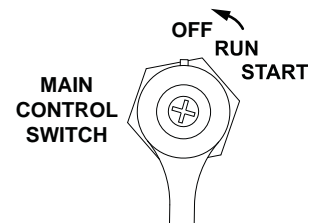
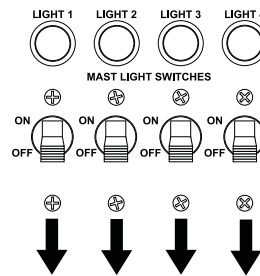
DERATING FOR ALTITUDE

All light carts are subject to derating for altitude and temperature. Although derating should not affect the operation of the lights, it will reduce the available power for operating tools and accessories connected to the auxiliary outlets. Typical reductions in performance are 2-4% for every 1000 ft. (305 m) of elevation and 1% per 10° F (3-5° C) increase in ambient air temperature over 72° F (22.2° C).

SHUTTING DOWN

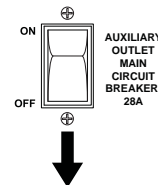
When you have finished using the light cart proceed with shut down as follows:

1. Remove any loads from the auxiliary outlets.
2. Switch the individual circuit breakers for each light to the OFF “O” position.
3. Switch the main circuit breaker to the OFF “O” position.
4. Turn the ENGINE START SWITCH to the OFF position.



LOWERING THE MAST

1. Shut down the lights and engine. Allow the lights to cool 10-15 minutes before lowering the mast.
2. Turn the upper mast winch handle to collapse the mast to its lowest position. Make sure the coiled electrical cord returns to the storage tube properly.



⚠ WARNING

If the mast hangs up or the winch cable begins to develop slack, STOP IMMEDIATELY! Excess slack in the cable could cause the mast to collapse should it free up without warning. Contact an authorized service center.

3. Loosen the mast rotation knob and rotate the mast so the mast mounted winches are aligned. The white alignment arrow points should line up on the mast sections and the metal stop tabs should be touching. Tighten the mast rotation knob.
4. Turn the upper mast winch handle counter-clockwise until all sections of the mast have been lowered completely.
Note: make sure the mast coil cord does not get caught in or pinched by the mast while it is being lowered.

5. Release the mast lock by pulling the safety pin on the mast lock and pulling the lock free. Turn the handle of the lower mast winch counter-clockwise until the mast rests in the cradle. **Note:** *If the mast lock does not pull free, operate lower winch slightly to relieve pressure on the mast lock.*
6. After the mast is completely down, insert the cradle lock pin and secure it with the safety pin.
7. If the trailer is going to be moved, Magnum Products LLC strongly recommends that the lights be removed from the mast and stowed for transportation. See REMOVING LIGHTS FOR TRANSPORTATION section on page 17.

REMOVING THE LIGHTS FOR TRANSPORTATION

1. Disconnect the power cords from the junction box at the top of the mast. Replace the dust caps on the junction box.
2. Remove the lights by removing the wing nut that holds the light fixture bracket to the mast cross bar. Attach the lights to the storage brackets located inside the doors, making sure the lenses face the foam cushion on the doors. Secure the lights with the wing nuts.

TOWING THE TRAILER

Once the engine is shut down and the mast and lights are properly stowed, the trailer can be made ready for transport.

1. Raise the rear jack completely and release the locking pin to rotate it up into the travel position. Make sure the locking pin snaps into place.
2. Raise the outrigger jacks completely and release the jack locking pin to swing the jacks up into the travel position. Make sure 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.
3. Release the parking brake. See Parking Brake Operation section on page 21.
4. 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. Release the jack locking pin and rotate the jack into the travel position. Make sure the locking pin snaps into place.
5. To ensure proper operation of the jacks, lube the grease fittings located on the leveling jacks.
6. Connect any trailer wiring to the tow vehicle. Check for proper operation of the stop and signal lights.
7. Make sure the mast cradle locking pin is in place.
8. Make sure the doors are properly latched.
9. If the trailer is going to be driven over rough ground, remove the bulbs from the light fixtures.
10. Check for proper inflation of the trailer tires. See pages 9 for the appropriate tire pressure.
11. Attach a red flag to the end of the mast before towing.
12. Maximum recommended speed for highway towing is 60 mph. Recommended off-road towing speed is not to exceed 25 mph or less depending on terrain.

TANDEM TOWING

▲ CAUTION

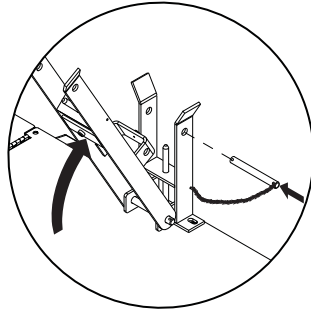
Never tow more than two light carts at the same time. Any extra light carts will be unstable and difficult to stop, resulting in possible equipment damage.

This unit is equipped with tandem towing capabilities. The following procedure gives step by step instructions on setting up the units for tandem towing.

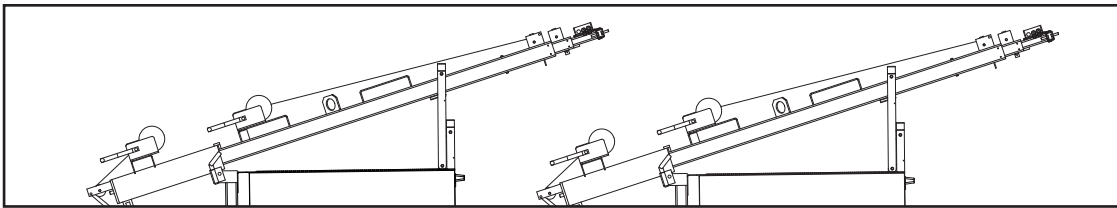
▲ CAUTION

Do not exceed 20 MPH when towing two light carts at the same time. At higher speeds the light carts will be unstable and difficult to stop, resulting in possible equipment damage. Do not cross any ditches, curbs or depressions greater than 12" deep. Steep angles may cause the masts to collide, causing equipment damage.

1. Remove the oval light fixtures from both light carts and attach them to their storage brackets inside the doors.
2. Slightly raise the mast on both units to allow for raising the tandem tow mast cradles.
3. Raise the tandem tow mast cradle on both units and secure them with the mast lock rods.



4. Lower the masts on both units so they are resting on the tandem tow cradles. Then secure the masts with the mast lock rods.

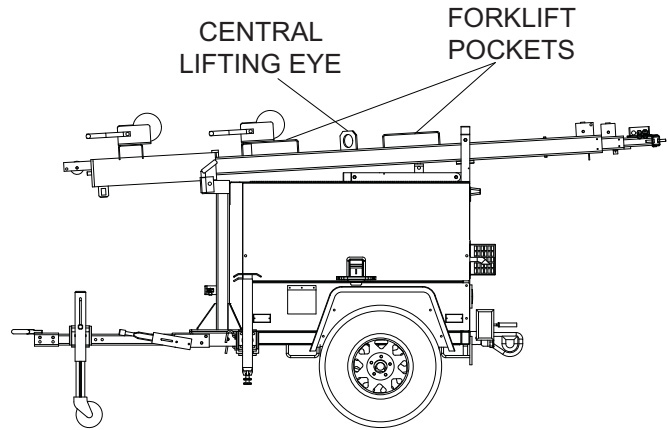


5. Connect all safety chains and trailer light wiring harnesses.
6. Follow all safety procedures for towing equipment.

LIFTING THE TRAILER

When lifting the light cart and trailer, attach any slings, chains or hooks directly to the central lifting eye. The lifting eye is located on the mast between the two forklift pockets.

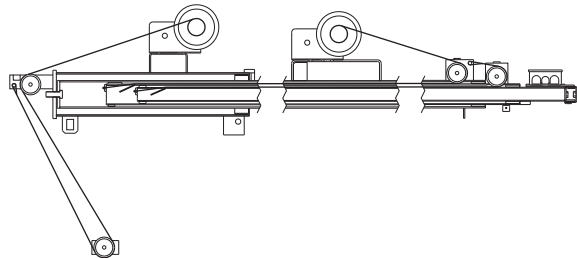
1. Make sure the equipment being used to lift the light cart has sufficient capacity. **Note:** See the unit specifications beginning on page 9 for approximate weights.
2. Make sure the mast cradle locking pin is in place.
3. Always remain aware of the position of other people and objects around you as you move the unit.
4. Use the upper or lower forklift pockets with care. Approach the unit as perpendicular as possible to avoid any damage to the unit. Make sure the mast winch handles or any other obstructions are clear of the forklift tines before lifting.



DAILY INSPECTION

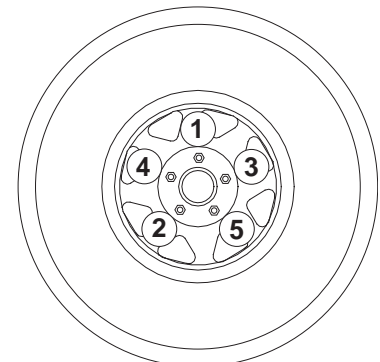
1. Inspect condition of electrical cords. **DO NOT** use light cart if insulation is cut or worn through.
2. Check that winch cables are in good condition and that they are centered on each pulley. **DO NOT** use a cable that is kinked or starting to unravel.

PROPER MAST CABLE ROUTING



3. Check that the safety pins for the mast lock rod and mast lock bar are present and secured with a chain. Check that the spring located in the mast lock bar is not broken or missing. Check the operation of the mast lock bar.
4. Check the fuel, oil and coolant levels.
5. Check the operation of the trailer parking brake. See operating and adjustment instructions on page 21.
6. Check the wheel lugs. Tighten or replace any 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:
 - A. Start all lug nuts by hand.
 - B. First pass tighten to 20-25 Ft-Lbs (27-33 Nm).
 - C. Second pass tighten to 50-60 Ft-Lbs (67-81 Nm).
 - D. Third pass tighten to 90-120 Ft-Lbs (122-162 Nm).

After the first road use, re-torque the lug nuts in sequence.



TRAILER WHEEL BEARINGS

The light cart is equipped with a grease zerk fitting to allow lubrication of the wheel bearings without the need to disassemble the axle hub. To lubricate the axle bearings, remove the small rubber plug on the grease cap, attach a standard grease gun fitting to the grease zerk fitting and pump grease into the fitting until new grease is visible around the nozzle of the grease gun. Use only a high quality grease made specifically for lubrication of wheel bearings. Wipe any excess grease from the hub with a clean cloth and replace the rubber plug when finished. The minimum recommended lubrication is every 12 months or 12,000 miles; more frequent lubrication may be required under extremely dusty or damp operating conditions.

ENGINE MAINTENANCE

Note: During the first 50 hours of operation, avoid long periods of no load or sustained maximum load operation. If the light cart is to run for longer than five minutes without a load, shut the engine down.

The periodic maintenance schedule below lists basic maintenance intervals for the engine. For detailed maintenance procedures refer to the engine operator's manual. A copy of this manual was supplied with the unit when it was shipped from the factory. For additional or replacement copies of the engine operator's manual, contact an authorized engine dealer in your area.

Maintenance Event	Check Daily	Every 50 Hours	Every 200 Hours	Every 250 Hours	Every 500 Hours	Every 1000 Hours	Every 2 Years
Check Tire Pressures	■						
Check Engine Oil Level	■						
Check Engine Coolant Level	■						
Check Fuel Level	■						
Check Alternator Belt	■						
Drain Fuel Filter		■*					
Check Radiator Hoses		■					
Change Engine Oil & Filter		■**	■				
Check All Electrical Connections				■			
Check For Fuel Leaks				■			
Replace Fuel Filter Element			■***				
Inspect and Clean Radiator Fins					■		
Lubricate Leveling Jacks					■		
Clean Air Filter Element, replace if necessary					■		
Replace Alternator Belt					■		
Inspect Engine Starting Battery						■	
Check Valve Clearance							■
Drain and Clean Fuel Tank							■
Change Engine Coolant							■
Replace Radiator Hoses							■

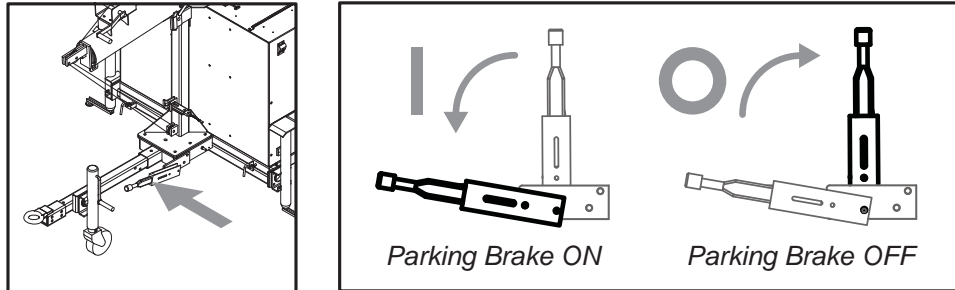
* Drain the fuel filter daily in rainy or humid conditions.

** Change the engine oil and filter after the first 50 hours of operation, then every 250 hours.

*** Replace the optional heated fuel filter every 1,000 hours.

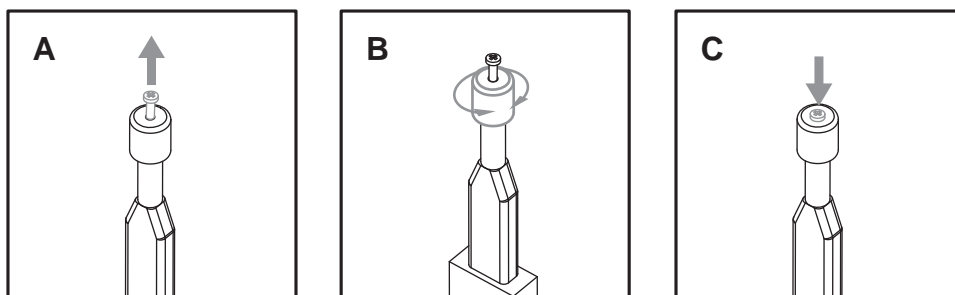
PARKING BRAKE OPERATION

1. Locate the parking brake.
2. Set the parking brake by pushing down on the handle until it locks into the down position.
3. Ensure the parking brake is set before starting the engine; before leaving the unit unattended; when the unit is parked on an incline; or while the unit is being serviced.
4. To release the parking brake, pull the handle until it is locked into the upright position.



PARKING BRAKE ADJUSTMENT

1. Disengage the parking brake.
2. To adjust the brake tension, loosen the screw at the end of the handle. See Figure A.
3. Turn the knob clockwise to tighten, or counter-clockwise to loosen. See Figure B.
4. With the light cart parked on a level surface, engage the parking brake and carefully attempt to roll the light cart. Proper tension has been attained when the light cart does not roll with the brake in the ON position. Repeat steps 1 - 3 as necessary.
5. While keeping the knob stationary, tighten the locking screw to secure the appropriate tension setting. See Figure C.
6. Test the brake operation again to ensure proper adjustment.



WINCH USE, OPERATION & MAINTENANCE

PRIOR TO USE:

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

OPERATION:

Take Line/Load In:

1. The cable must be securely fastened to the object being lifted and to the winch drum.
2. Always be sure that the cable and cable attachments are not damaged and are strong enough for the load. Assure there is adequate safety factor, of at least three times the maximum load for all components used.
3. Referring to the “Cable In/Cable Out” decal on the winch, turn handle according to the specified direction to lift. The ratchet **MUST** make a loud clicking sound while pulling line in.

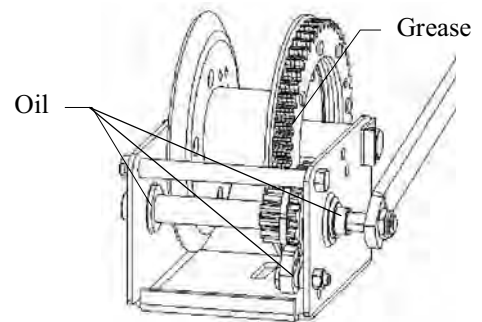
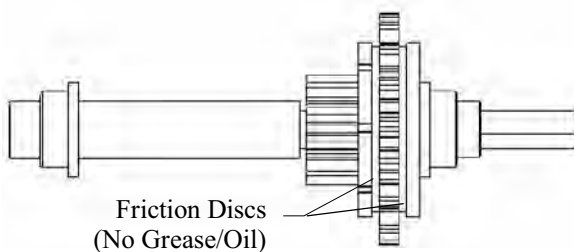
Let Line/Load Out:

1. Referring to the “Cable In/Cable Out” 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:

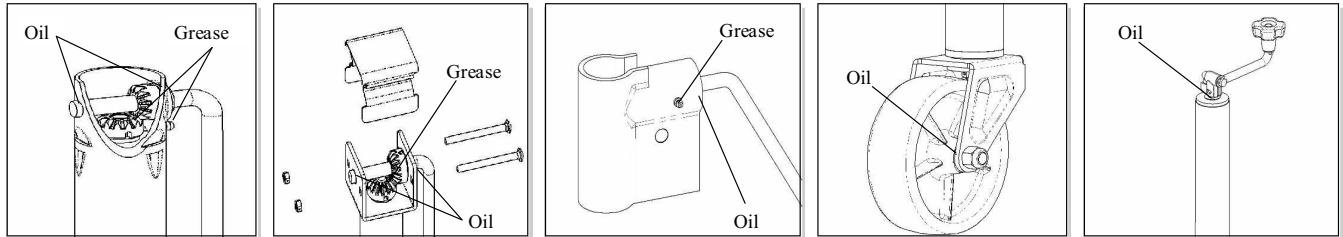
The following procedures should be performed at least annually:

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.
3. Do not get oil or grease on the friction discs.



JACK MAINTENANCE

The following procedures should be performed at least annually: For side-wind models, the internal gearing and bushings of the jack must be kept lubricated. Apply a small amount of automotive grease to the internal gearing by removing the jack cover, or if equipped, use a needle nose applicator or standard grease gun on the lubrication point found on the side of the jack near the crank. Rotate the jack handle to distribute the grease evenly. A lightweight oil must be applied to the handle unit at both sides of the tube for side-wind models. If equipped, the axle bolt and nut assembly of the caster wheel must also be lubricated with the same light weight oil. For top-wind models, apply a lightweight oil to the screw stem.



TROUBLESHOOTING THE LIGHTS

⚠ DANGER

HIGH VOLTAGE! THIS UNIT USES HIGH VOLTAGE CIRCUITS CAPABLE OF CAUSING SERIOUS INJURY OR DEATH. ONLY A QUALIFIED ELECTRICIAN SHOULD TROUBLESHOOT OR REPAIR ELECTRICAL PROBLEMS OCCURRING IN THIS EQUIPMENT.

MAST LIGHTS OFF BUT BALLAST INDICATORS ON CONTROL PANEL ARE ON:

1. Mast light is too hot. Allow light to cool 10-15 minutes before restarting.
2. Faulty bulb connection. Check that the bulb is tight in the socket.
3. Bulb broken. Check for broken arc tube or outer bulb jacket, broken or loose components in bulb envelope or blackening/deposits inside tube.
4. Check the connections inside the mast junction box and each mast light housing/socket.
5. Check the mast electrical cord for damage and check the cord connections inside the control box.

MAST LIGHTS OFF AND BALLAST INDICATORS ON CONTROL PANEL ARE OFF:

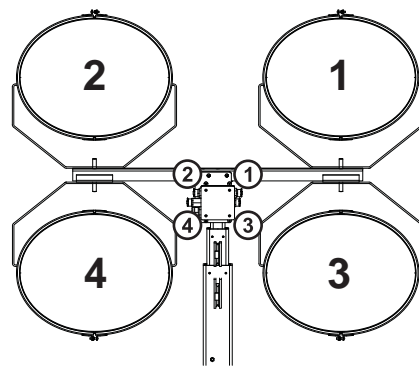
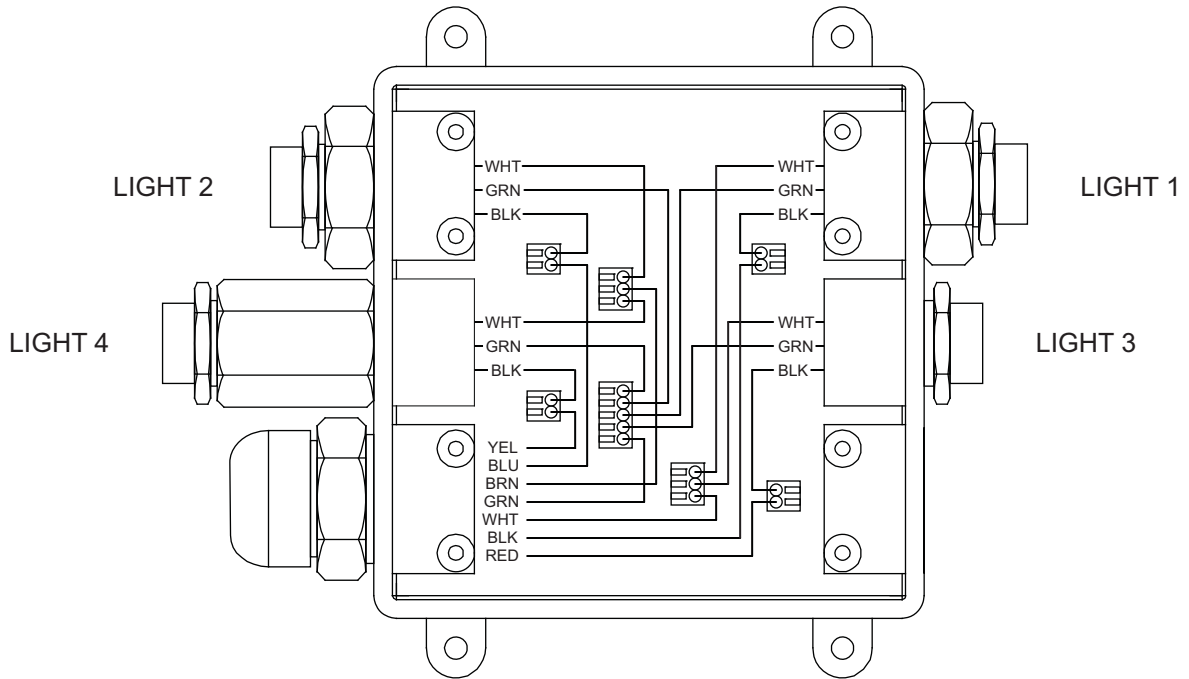
1. Check the connections inside the control box and inside each ballast box.
2. Generator output incorrect. Check the incoming voltage to the ballast by checking the available voltage on the duplex receptacle. Incoming voltage should be 120V +/- 5V. If voltage is incorrect engine speed may need to be adjusted or generator may require service. Contact Magnum Products Technical Service Department for more information.
3. Low transformer output. The voltage from the transformer should read approximately 400 VAC as the light "strikes" (induces an arc), then drop and slowly rise back up to stabilize at 240-260 VAC. Measure across the junction box terminals when the light is unplugged. If proper voltage is not achieved, perform a capacitor check to determine if the capacitor or coil needs to be replaced.

MAST LIGHTS ON BUT THE LIGHT OUTPUT IS LOW:

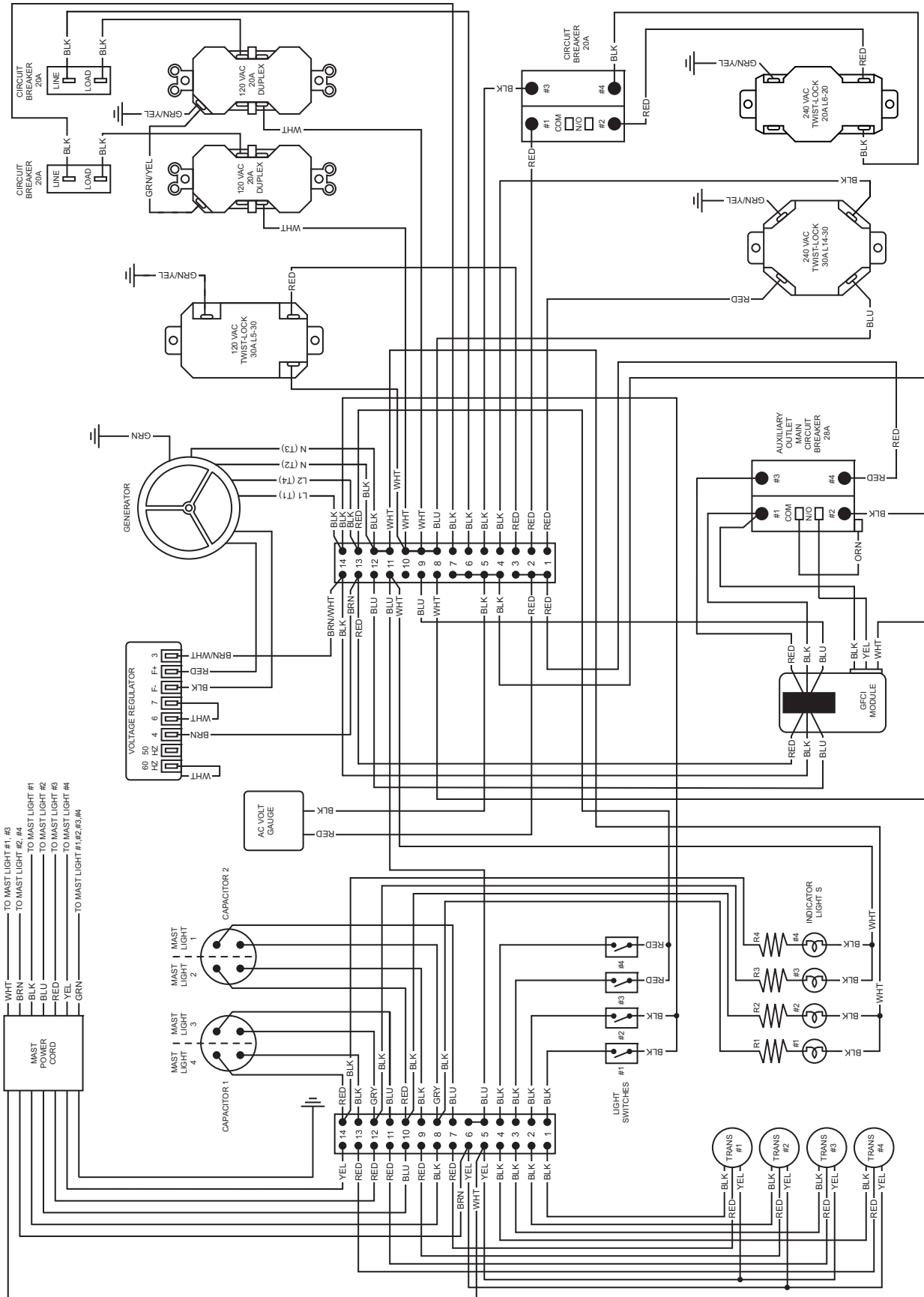
1. Fixture or lens dirty. Clean reflective surface inside fixture and both inside and outside surface of glass lens. Only use mild soap and water to clean the lens covers. Other chemicals may have an adverse effect on the glass.
2. Bulb worn. Replace bulb due to normal use.
3. Check the mast coil cord, mast junction box and mast light connections.
4. Generator output incorrect. Check the incoming voltage to the ballast. Incoming voltage should be 120V +/- 5V. If voltage is incorrect engine speed may need to be adjusted or generator may require service.
5. Low transformer output. Perform transformer check as described above.

If problems persist, contact Magnum Products Technical Service for assistance.

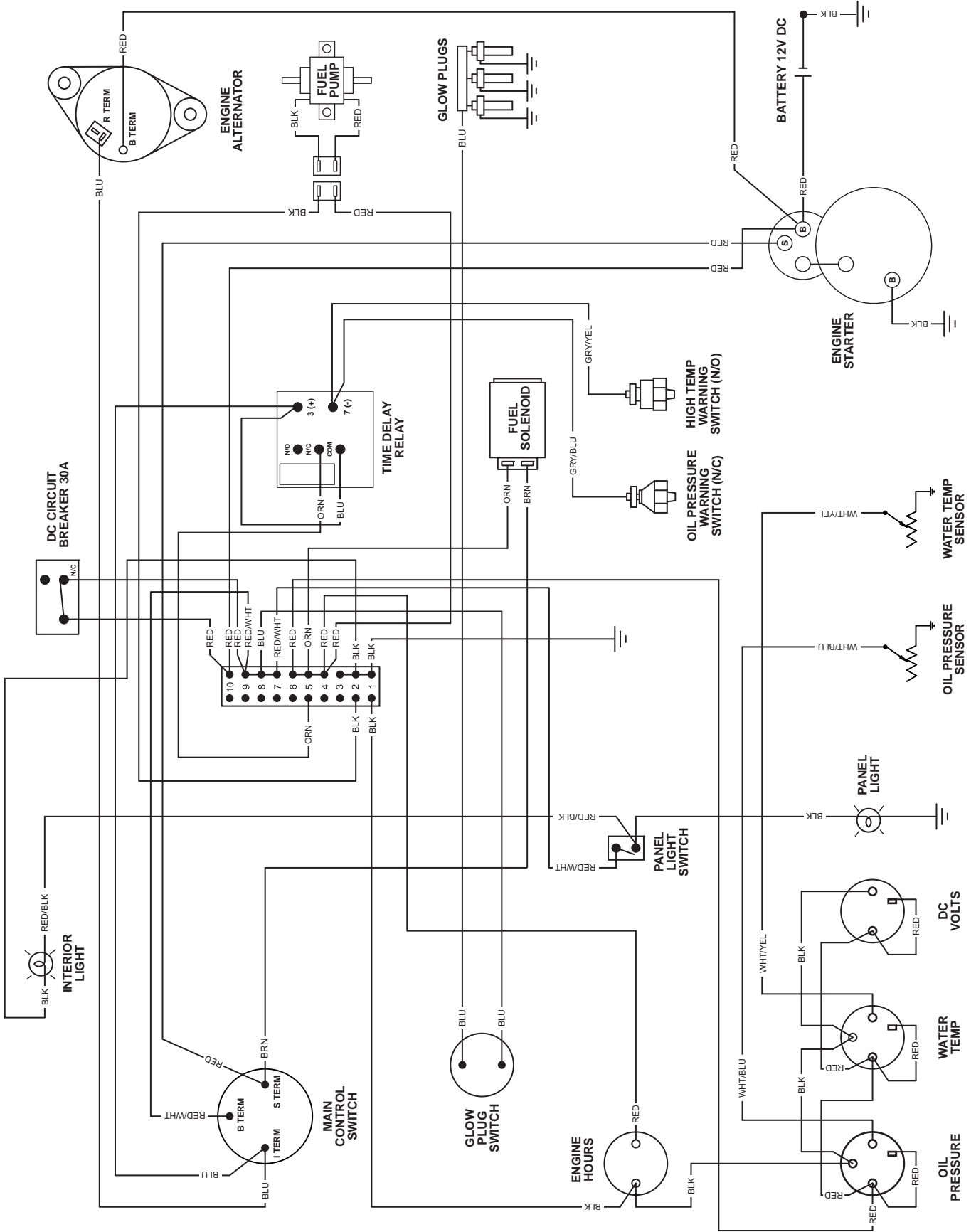
MAST JUNCTION BOX WIRING



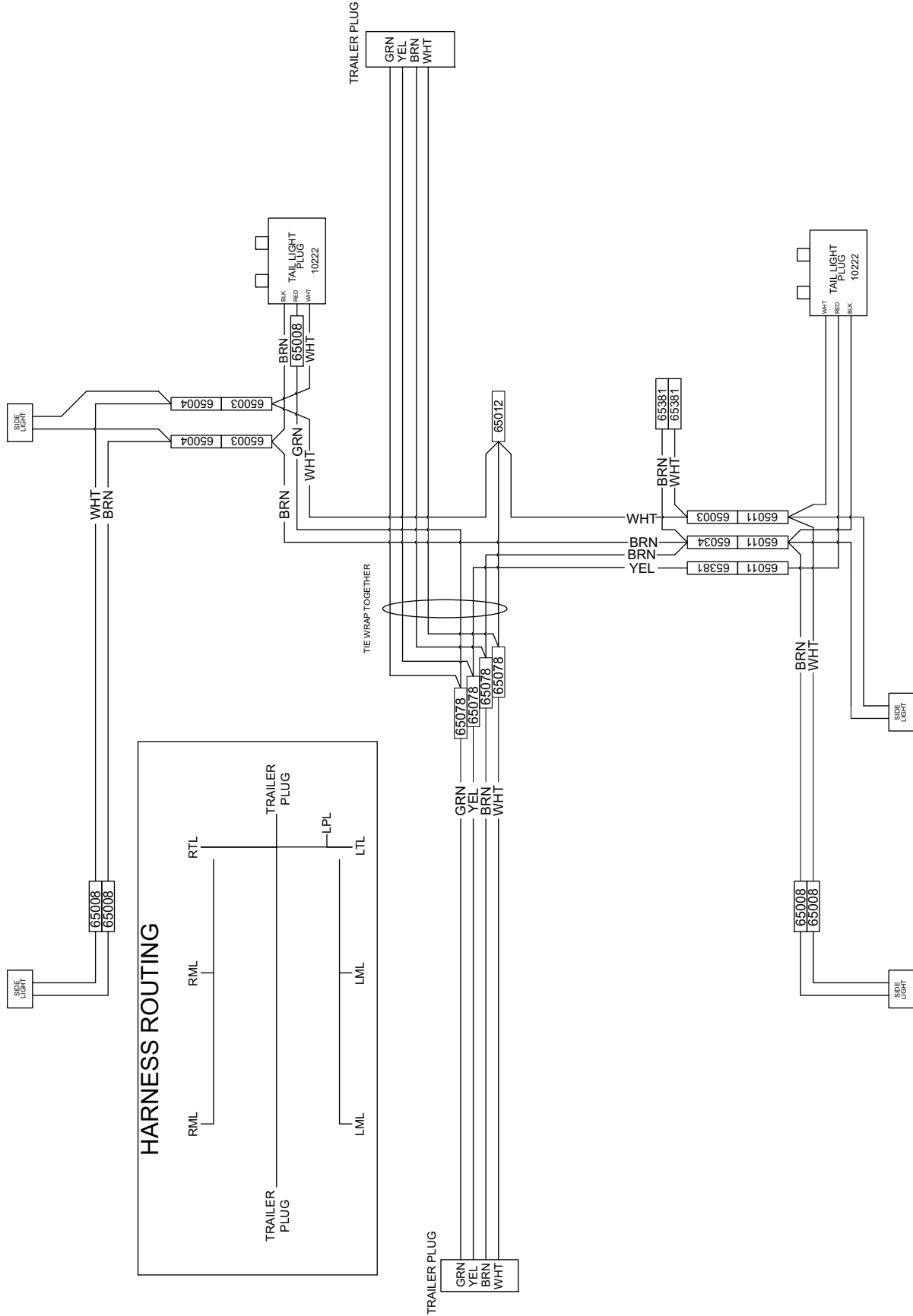
AC CIRCUIT WIRING DIAGRAM



DC CIRCUIT WIRING DIAGRAM



TRAILER LIGHTS WIRING



REV: A
PART NO: 10923
03.04.11