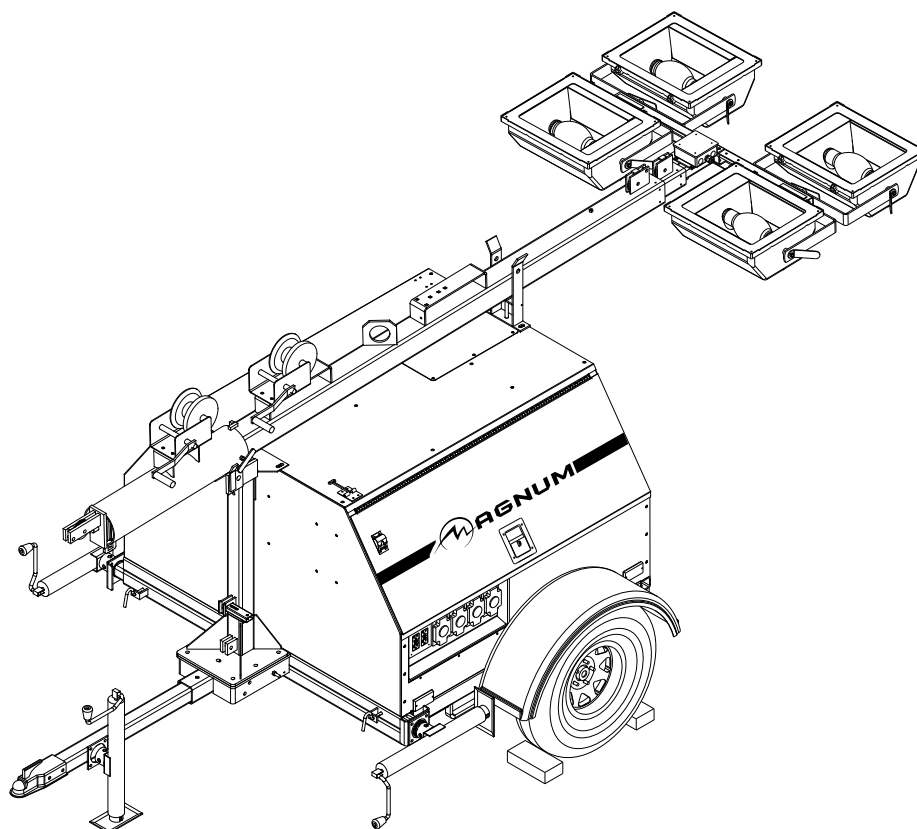




LIGHT TOWER
MLT 5150 • 5200



OPERATING/PARTS MANUAL

INTRODUCTION

This manual provides information and procedures to safely operate and maintain the light tower 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, or can be found at **www.m-p-llc.com**. An engine operators 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

**WHEN CALLING FOR PARTS OR TECHNICAL SERVICE INFORMATION,
PLEASE HAVE YOUR UNIT MODEL NUMBER AND SERIAL NUMBER READY.**

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 tower 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 tower. The following points should be practiced at all times:

- The area immediately surrounding the light tower should be dry, clean, and free of debris.
- Position and operate the light tower on a firm, level surface.
- **NEVER** start a unit in need of repair.
- Lower tower when not in use, or if high winds or electrical storms are expected in the area.
- Make certain light tower is well grounded and securely fastened to a good earthen ground.
- The tower extends up to 30 ft. (9 m). 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!
- **NEVER** raise, lower or turn mast while unit is operating!
- Trailer must be leveled and outriggers extended before raising tower. Outriggers must remain extended while tower is up.
- If for any reason any part of mast hangs up or winch cable develops slack while raising or lowering tower, STOP immediately! Contact an authorized service representative.
- **NEVER** remove safety pin or pull mast locking pin while tower is up!
- **NEVER** use tower 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!

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 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** 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 85 DBA 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. Operating on a combustible surface.
 7. Protective covers are loose or missing.
 8. If the ambient air temperature is above 110° 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 tower, 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 tower. 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.
- Replace all guards and safety devices immediately after servicing.
- 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.
- Inspect the hitch and coupling for wear or damage. **DO NOT** tow trailer using defective parts!
- 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 45 mph. Recommended off-road towing speed is not to exceed 10 mph or less depending on terrain.

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.

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.

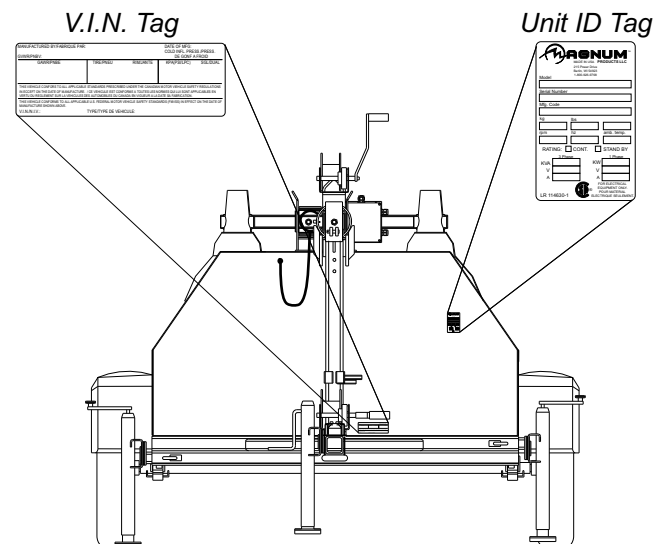
REPORTING TRAILER SAFETY DEFECTS

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 or by fax at: (202)-366-7882. Additional contact information can be found at: www.nhtsa.dot.gov.

UNIT SERIAL NUMBER LOCATIONS

Refer to the locations illustrated at right to find the unit ID tag, and V.I.N. 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.



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 beginning of the parts section of this manual. Below is a summary of the intended meanings for the symbols used on the decals.

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

SPECIFICATIONS

Read this manual carefully before attempting to use this light tower. 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

MLT 5150

MLT 5200

Engine

Make/Brand	Mitsubishi	Isuzu
Model	S4L2-W461ML	4LE1-PV05
Type	Diesel, liquid cooled, 4-stroke	Diesel, liquid cooled, 4-stroke
Horsepower - prime hp (kW)	23.5 (17.5)	31.5 (23.5)
Horsepower - standby hp (kW)	24.7 (18.4)	34.5 (25.7)
Operating Speed rpm	1800	1800
Displacement in³ (L)	107.40 (1.76)	134.25 (2.20)
Cylinders - qty	4	4
Fuel Consumption - 100% prime gph (Lph)	1.30 (4.92)	1.80 (6.81)
Battery Type - Group Number	24	24
Battery Voltage (Quantity per Unit)	12V (1)	12V (1)
Battery Rating	440 CCA	720 CCA

Generator

Make/Brand	Marathon Electric	Marathon Electric
Model	333CSA3024	333CSA3028
Type, Insulation	Brushless, F	Brushless, F

Generator Set (Engine/Generator)

Output kW (kVA)	15.0 (15.0)	20.0 (20.0)
Output Voltage V	120/240, single phase	120/240, single phase
Output Amperes 120V (240V) A	125 (63)	167 (83)
Frequency Hz	60	60
Power Factor	1 (1Ø)	1 (1Ø)

Weights

Dry Weight lbs (kg)	2153 (977)	2202 (999)
Operating Weight lbs (kg)	2551 (1157)	2600 (1179)

Capacities

Fuel Tank Volume gal (L)	56 (212)	56 (212)
Usable Fuel Volume gal (L)	56 (212)	56 (212)
Coolant (incl. engine) qt (L)	11.6 (11.0)	11.6 (11.0)
Oil (incl. filter) qt (L)	5.7 (5.4)	8.6 (8.1)
Maximum Run Time hrs	43	31

AC Distribution

Circuit Breaker Size	70	100
Voltage Regulation	+/-1%	+/-1%
Voltages Available 1Ø	120, 240	120, 240

SPECIFICATIONS

Read this manual carefully before attempting to use this light tower. 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

MLT 5150/5200

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)	170 (4.32)
Width in (m)	80 (2.03)
Width w/ outriggers extended in (m)	151 (3.84)
Height w/ mast stowed in (m)	70 (1.78)
Maximum height of tower ft (m)	30 (9.14)

Trailer

Number of Axles	1
Capacity - Axle Rating lbs (kg)	3500 (1588)
Tire Size in	15
Hitch - Standard	2" Ball
Maximum Tire Pressure psi	50

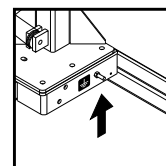
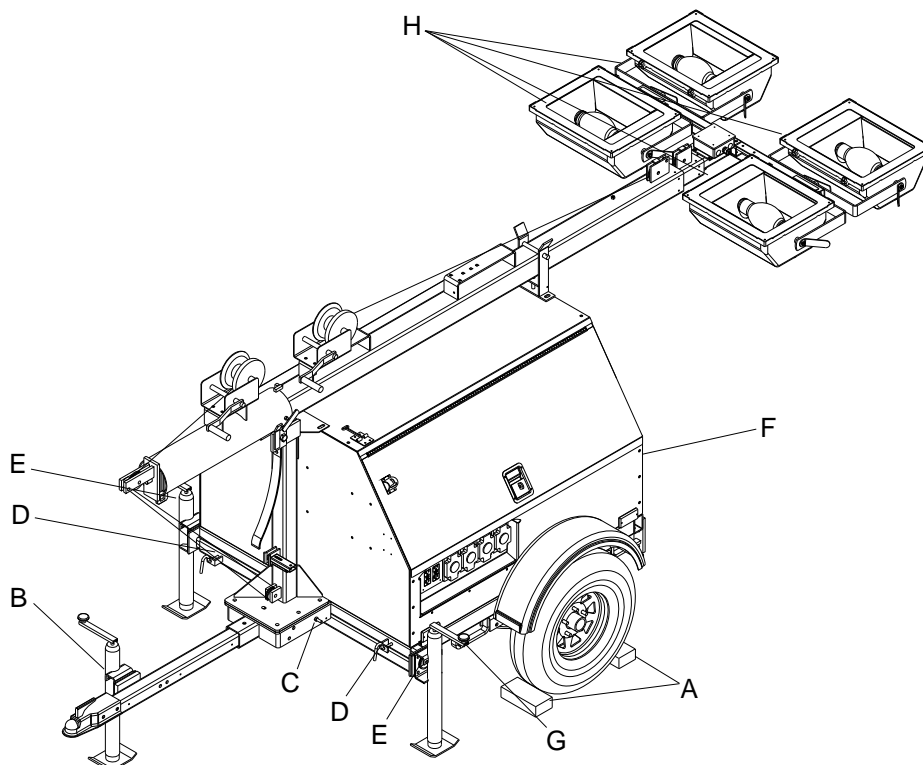
SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

LIGHT TOWER SET UP

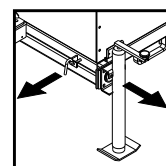
1. For maximum light coverage locate tower at ground level or in a spot higher than the area being illuminated by the lamps.

⚠ WARNING

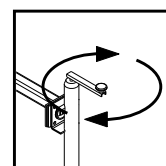
The tower extends up to 30 ft (9.14 m). Make sure area above the trailer is open and clear of overhead wires and obstructions.



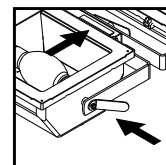
DETAIL C



DETAIL D



DETAIL G



DETAIL H

2. Place the trailer on firm ground that is relatively flat. This will make it easier to level the tower. Block the wheels on the trailer to keep it 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).
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° until 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 tower it may be necessary to adjust the lamps. The lamps may be adjusted up, down, left or right by loosening the wing bolts on the lamp fixture (H) and aiming them in the desired direction. Tighten the hardware completely and make sure the lamps are connected to the junction box.

RAISING THE TOWER

⚠ WARNING

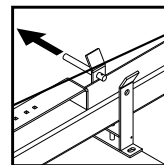
The trailer must be leveled with the outriggers extended before raising the tower. The outriggers must remain extended while the tower is up. Failure to level the trailer or extend the outriggers will severely reduce the stability of the unit and could allow the tower to tip and fall.

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.

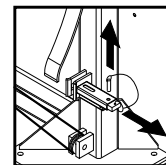
⚠ WARNING

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.

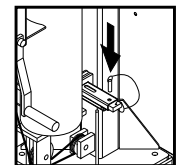
3. Make sure the area behind the unit is clear before raising the mast to the vertical position.
4. Remove the safety pin (K) from the mast lock bar (L). Using the handle for the lower mast winch (M), raise the mast until it is vertical and the tab on the mast is positioned into the mast lock. The mast 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 tower 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 tower sections get stuck, STOP IMMEDIATELY and contact an authorized service center.



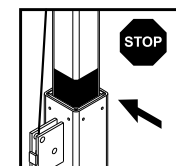
DETAIL I



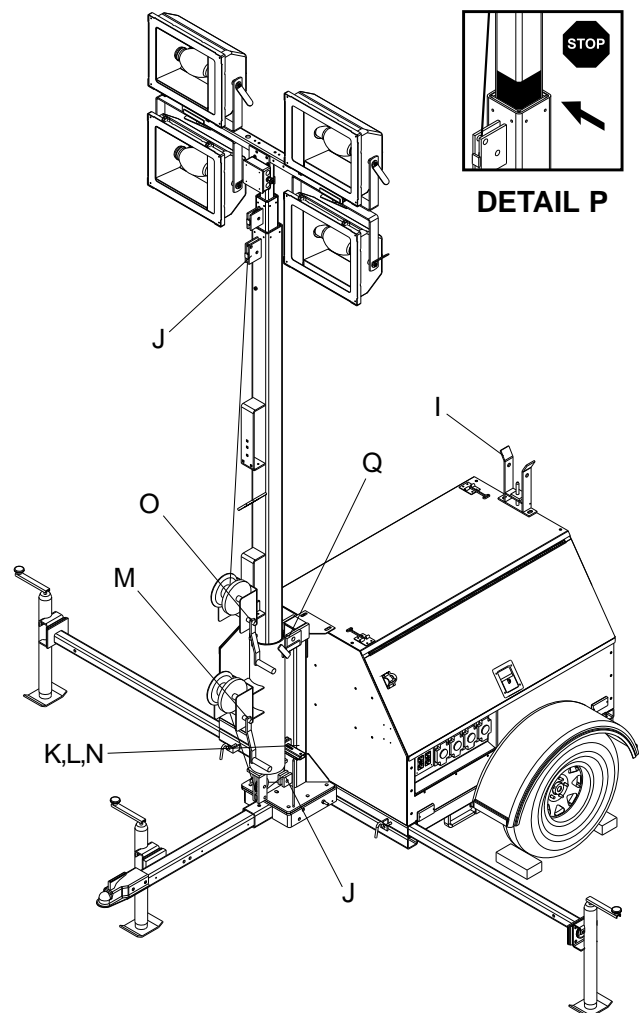
DETAIL K



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 tower is up. Releasing the lock will cause the mast to fall.

RAISING THE TOWER WITH THE OPTIONAL ELECTRIC WINCH

1. Set up and level the trailer as described on page 10, and follow steps 1-3 on page 11.

2. Remove the safety pin from the mast lock bar (R).

3. Press the lower winch control toggle switch upward to raise mast into the vertical position (S). Hold switch until the mast lock is engaged. The mast lock bar should snap into place automatically. **Note:** On light towers equipped with the electric winch option, a limit switch on the mast tube will disconnect power to the lower electric winch to prevent deadheading the winch.

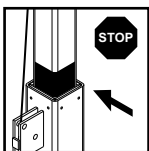
4. Secure the lock with the safety pin (T).

5. Press and hold the upper winch control toggle switch upward to telescope the mast to desired height (U). Extend the mast slowly, making sure that the coiled 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 tower sections get stuck, STOP IMMEDIATELY and contact an authorized service center.

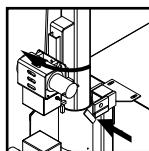
⚠ CAUTION

Do not extend the mast beyond the colored mark on top of the lower mast section (V). On light towers equipped with the electric winch option, a limit switch on the main mast section will disconnect power to the upper electric winch to prevent over extending the mast.

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



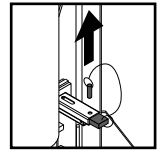
DETAIL V



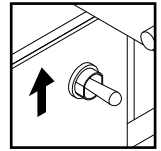
DETAIL W

⚠ WARNING

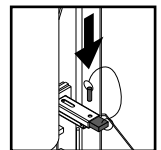
Never raise or lower the mast while the unit is operating! Never remove the safety pin or mast lock while the tower is up. Releasing the lock will cause the mast to fall.



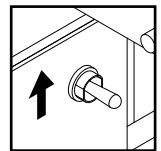
DETAIL R



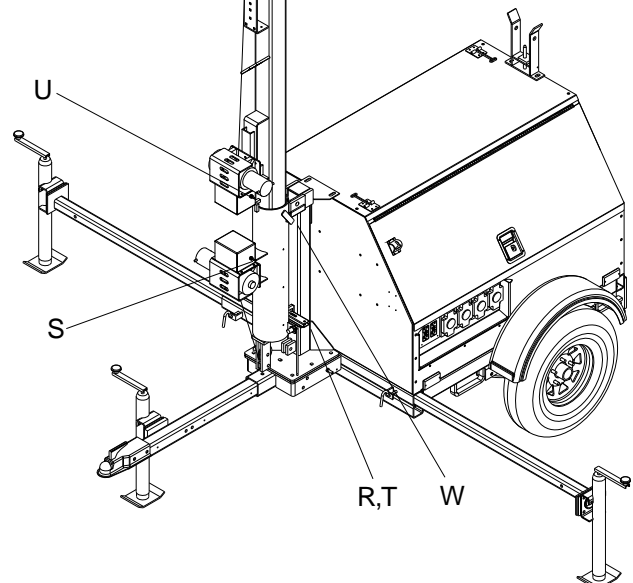
DETAIL S



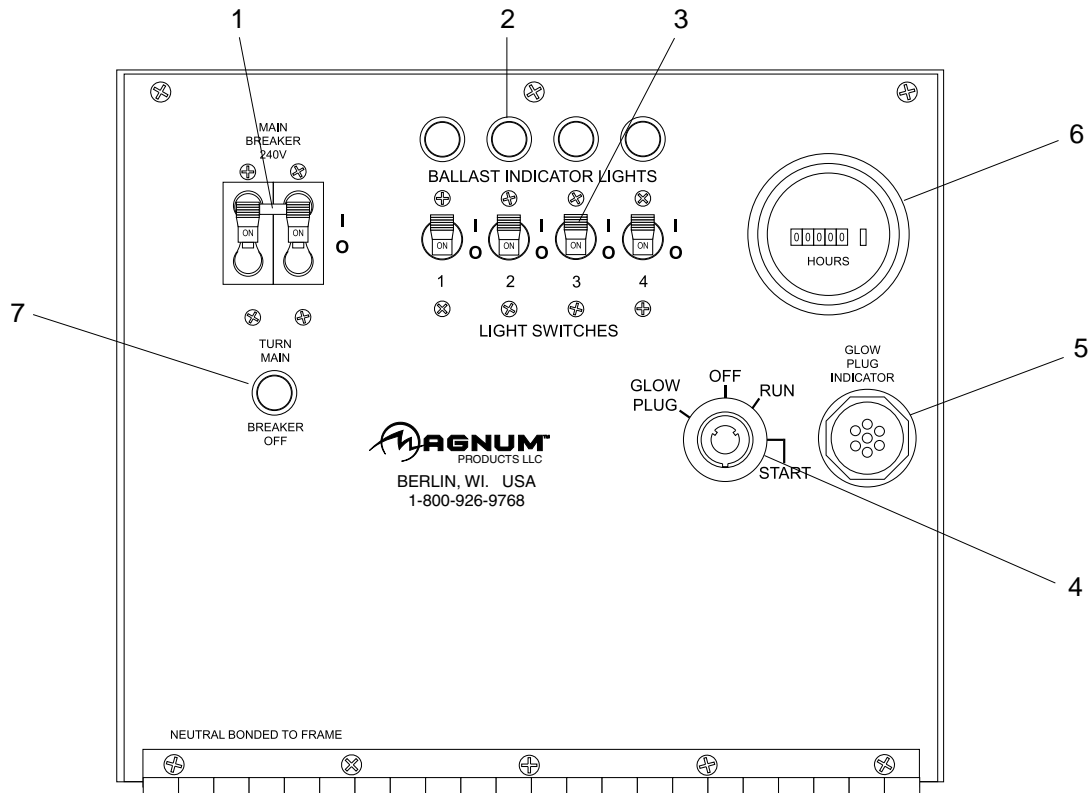
DETAIL T



DETAIL U



MAIN CONTROL PANEL COMPONENTS



1. **MAIN CIRCUIT BREAKER (70A or 100A):** This breaker will disconnect power to the lights and auxiliary outlets.
2. **BALLAST INDICATOR LIGHTS:** Indicates power from the ballast to each light.
3. **INDIVIDUAL CIRCUIT BREAKERS:** One breaker is supplied for each light.
4. **ENGINE STARTING SWITCH:** Keyed switch operates glow plugs, starts and stops engine.
5. **ENGINE GLOW PLUG INDICATOR:** Indicates operation of the engine glow plugs.
6. **ENGINE HOUR METER:** Keeps track of engine hours for service.
7. **CIRCUIT BREAKER INDICATOR LIGHT:** This light indicates that the main circuit breaker must be opened (switched off) before starting the engine.

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 operators manual supplied with the unit.
2. Check the condition of the electrical cord on the inside of the unit.

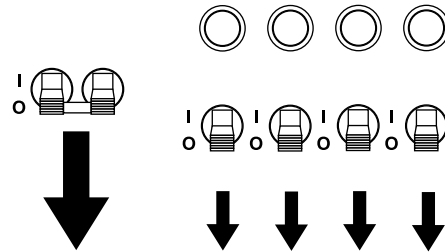
⚠ WARNING

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 main circuit breaker and individual circuit breakers for each of the lights are in the off "O" position. **Note:** If the red light on the control panel "TURN MAIN BREAKER OFF" is illuminated when the key is turned to the "START" position, the breaker is closed (switched on).

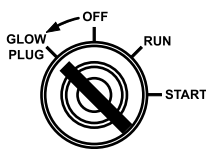
⚠ WARNING

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!

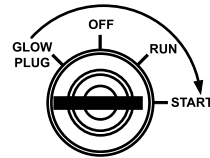


4. Turn the key on the engine start switch to the left "GLOW PLUG" position and hold the key in place until the glow plug indicator turns red. As soon as it's glowing turn the key to the right to the "START" position and hold it until the engine cranks and starts running. Release the key, it will move to the "RUN" position.

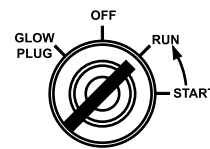
ACTIVATE GLOW PLUGS



CRANK ENGINE TO START



RELEASE KEY



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.

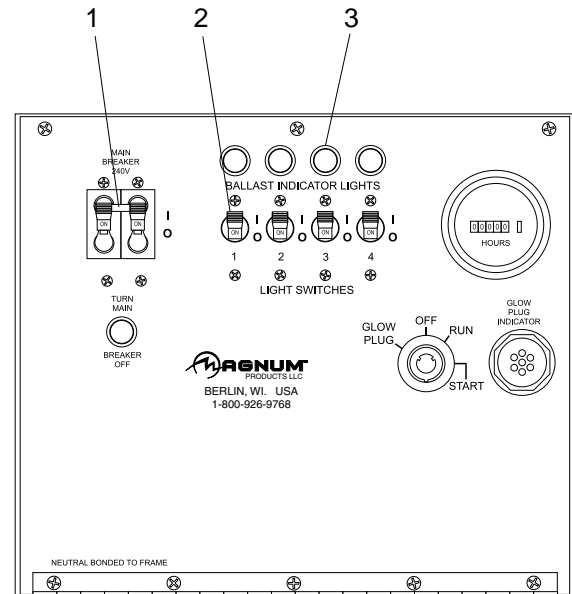
5. **Note:** If oil pressure is not obtained within 30 seconds after the key is switched to the "RUN" position, the low-oil automatic shutdown will turn off the fuel supply, stopping the engine. Check the oil level and turn the key to the "OFF" position to reset the oil pressure timer before attempting to restart the engine.
6. 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

1. Once the engine is up to temperature and running smoothly, switch main circuit breaker (1) to the ON "I" position.
2. With main circuit breaker on, switch each individual circuit breaker for the lights (2) to ON "I", one at a time.
3. The ballast indicator lights (3) will come on momentarily 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.
4. 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.
5. 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.
6. The light tower 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

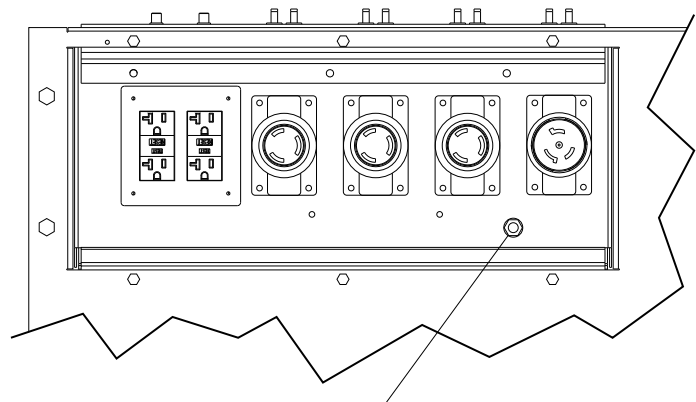
Bulbs become extremely hot in use! Allow bulb fixture to cool 10-15 minutes before handling.

AUXILIARY OUTLETS

The control panel is equipped with six outlets for running accessories or tools from the generator. Power is supplied to the outlets any time the engine is running and the main circuit breaker is switched ON "I". Each outlet has its own individual circuit breaker, located inside the cabinet under a flip-up cover. The circuit breakers correspond with each outlet located below on the outlet panel.

Should the main breaker trip, or if any of the individual circuit breakers trip, remove some of the load to the outlets before turning them back on. With all of the lights off, the full generator output may be used with the outlets.

Note: To ensure proper grounding, anytime the generator is providing power to any equipment or load panels that do not have a grounded plug, a ground wire must be added between the equipment and the grounding stud on the outlet panel per any local, state or NEC codes and guidelines.



**AUXILIARY OUTLET
GROUNDING STUD**

VOLTAGE REGULATION

The electronic voltage regulator controls the output of the generator by regulating the current into the exciter field. The regulator has three screwdriver adjustable potentiometers that may be adjusted for voltage, stability and under frequency (U/F). 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 towers 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 meters) 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 tower 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.

⚠ CAUTION

Always switch all circuit breakers to the OFF "O" position to prevent starting the generator under load.

LOWERING THE TOWER

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

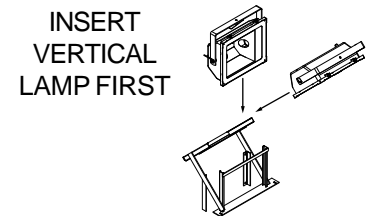
⚠ WARNING

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 tower so the mast mounted winches face the front of the unit. 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. 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 until the mast spring begins to pivot the tower down. Release the mast lock and continue to lower the tower until it rests in the cradle. **Note:** *If the mast lock does not pull free, operate lower winch slightly to relieve pressure on the mast lock.*
5. After the mast is completely down, insert the cradle lock pin and secure it with the safety pin.
6. Position lights to aim at the ground. 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. On units equipped with quick disconnect fittings for the lights, disconnect the power cords from the junction box at the top of the mast. Replace the dust caps on the junction box. On other units, remove the junction box cover on the top of the mast and disconnect the wires from the terminal blocks by clipping the wires as close as possible to the terminal blocks. **Note:** *Pull any excess wire strands from the terminal blocks. When reconnecting the lights the next time the light tower is used, strip 1/2" of the insulation from each wire and insert the bare wires into the correct terminal block until locked.*
7. Remove the lights by removing the wing nut that holds the light fixture bracket to the cross tube. Insert the lights into the storage brackets inside the unit, placing two lights into the roof mounted brackets first (see illustration on page 17). Then, place a light into the vertical bracket next to the engine with the last light going into the angled bracket.

LOWERING THE TOWER EQUIPPED WITH THE OPTIONAL ELECTRIC WINCH

1. Shut down the lights and engine. Allow the lights to cool 10-15 minutes before lowering the tower.
2. Loosen the mast rotation knob and rotate the tower so the mast mounted winches face the front of the unit. 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.
3. Press and hold the upper winch control toggle switch downward to collapse the mast to its lowest level. Make sure the coiled electrical cord on the top sections of the mast does not get tangled on the mast sections. **Note:** *Some electric winch models are equipped with an anti-backlash safety limit switch. This switch will disconnect power to the winch if excess cable slack is detected, preventing accidental lowering of the tower. If, for any reason, the cable begins to develop slack or any of the tower sections get stuck, **STOP IMMEDIATELY** and contact an authorized service center.*
4. Release the mast lock bar by pulling the safety pin on the mast lock and pulling the lock bar free. Lower the mast by holding the lower winch control toggle switch to the right until the mast is resting in the transport cradle. **Note:** *If the lock bar does not pull free, activate lower winch slightly to relieve pressure on the mast lock bar.*
5. After the mast is completely down, insert the cradle lock pin and secure it with the safety pin.
6. Position lights to aim at the ground. 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. On units equipped with quick disconnect fittings for the lights, disconnect the power cords from the junction box at the top of the mast. Replace the dust caps on the junction box. On other units, remove the junction box cover on the top of the mast and disconnect the wires from the terminal blocks by clipping the wires as close as possible to the terminal blocks. **Note:** *Pull any excess wire strands from the terminal blocks. When reconnecting the lights the next time the light tower is used, strip 1/2" of the insulation from each wire and insert the bare wires into the correct terminal block until locked.*
7. Remove the lights by removing the wing nut that holds the light fixture bracket to the cross tube. Insert the lights into the storage brackets inside the unit, placing two lights into the roof mounted brackets first. Then, place a light into the vertical bracket next to the engine with the last light going into the angled bracket.



TOWING THE TRAILER

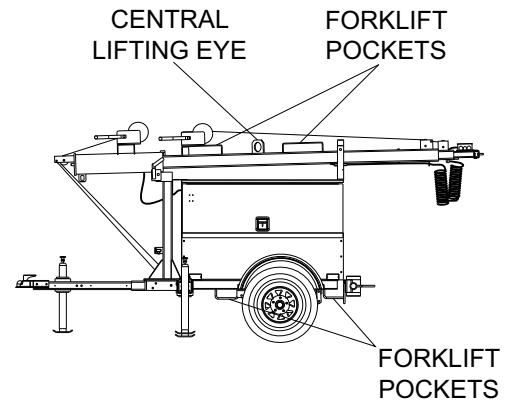
Once the engine is shut down and the mast and lights are properly stowed, the trailer can be made ready for transport.

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. 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.
4. To ensure proper operation of the jacks, lube the grease fittings located on the leveling jacks.
5. Connect any trailer wiring to the tow vehicle. Check for proper operation of the stop and signal lights.
6. Make sure the cradle locking pin is in place.
7. Make sure the doors are properly latched.
8. If the trailer is going to be driven over rough ground, remove the bulbs from the light fixtures.
9. Check for proper inflation of the trailer tires. The maximum tire inflation is 50 psi.
10. Attach a red flag to the end of the mast before towing.
11. Maximum recommended speed for highway towing is 45 mph. Recommended off-road towing speed is not to exceed 10 mph or less depending on terrain.

LIFTING THE TRAILER

When lifting the light tower 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 upper forklift pockets.

1. Make sure the equipment being used to lift the light tower has sufficient capacity. **Note:** See the unit specifications on pages 8 and 9 for approximate weights.
2. Make sure the 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.



OPTIONAL LOWER RADIATOR HOSE HEATER USE AND MAINTENANCE

The following points should be followed when operating a unit equipped with a lower radiator hose heater.

⚠ WARNING

Improper use of the lower radiator hose heater could result in serious personal injury.

- Ensure cooling system is full of proper mixture of water and engine coolant before each heater use.
- Heater is designed for all-night operation; however, 2-5 hours of heating just prior to starting is usually sufficient for proper engine starting.
- When heater is in operation, unit must be parked in a level position to maintain the proper orientation of the heater.
- Use only an undamaged extension cord, outdoors rated, three-prong grounded 120VAC cord with a minimum amperage rating of 10A. Connect to properly grounded 120VAC, GFCI outlet only.
- Unplug extension cord from power first; then unplug heater cordset from extension cord before starting the engine.

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.

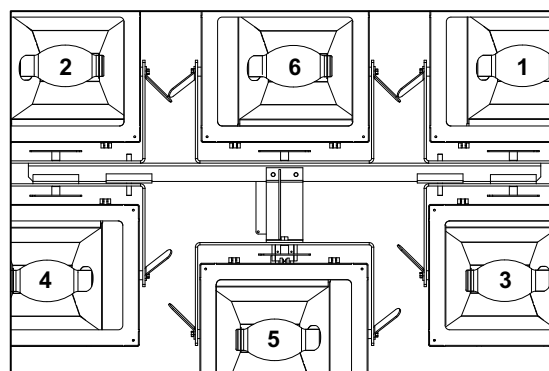
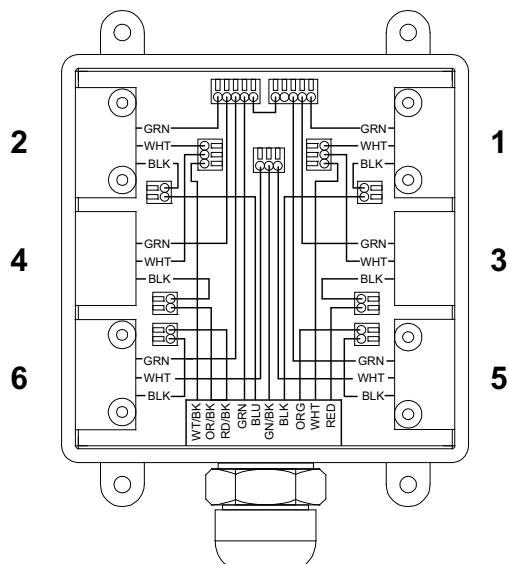
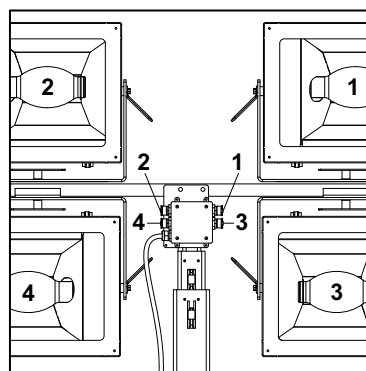
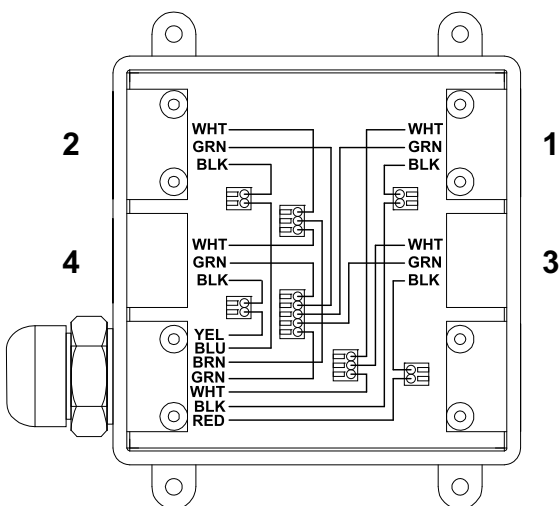
3. Low transformer output. The voltage from the transformer should read approximately 400 VAC as the light “strikes” (induces an arc), then drop and slowly rise back up to stabilize at 240-260 VAC. On quick disconnect models, measure across the junction box terminals when the light is unplugged. On hard wired models, remove the mast junction box cover and insert the wire probes into the connector blocks for the lights and ground. If proper voltage is not achieved, perform capacitor check to determine if the capacitor or coil needs to be replaced.

MAST LIGHTS ON BUT THE LIGHT OUTPUT IS LOW:

1. Fixture or lens dirty. Clean reflective surface inside fixture and both inside and outside surface of glass lens.
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.

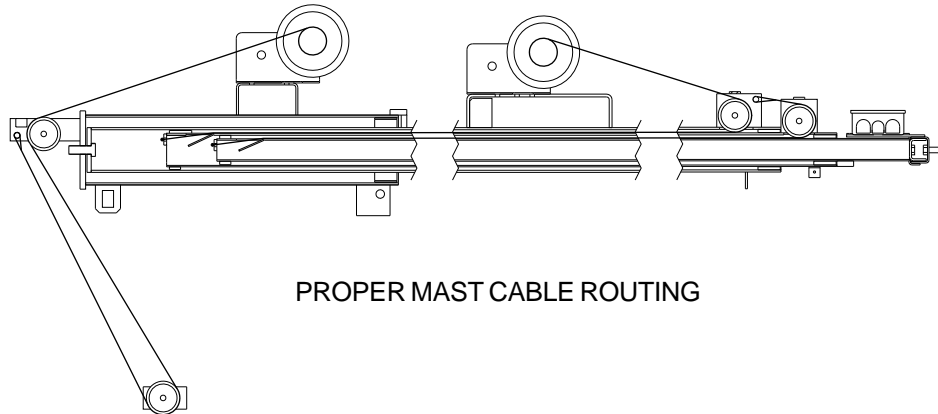
If problems persist, contact Magnum Products Technical Service for assistance.

MAST LIGHT CONNECTIONS

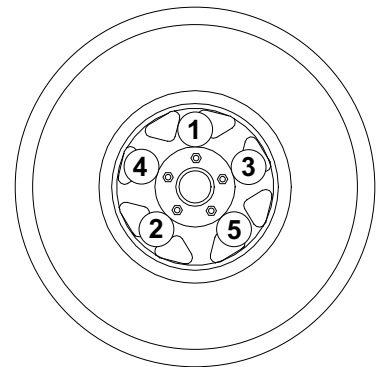


DAILY INSPECTION

1. Inspect condition of electrical cords. **DO NOT** use light tower 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.



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 (if equipped).
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, retorque the lug nuts in sequence.

TRAILER WHEEL BEARINGS

The light tower 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 tower is to run for longer than five minutes without a load, shut the engine down.

The engine is supplied with engine break-in oil from the factory. Extra care during the first 50 hours of engine operation will result in better performance and longer engine life. DO NOT exceed 50 hours of operation with the break-in oil. Operate the engine at lighter loads (50-75% of maximum) as much as possible. If the engine has spent significant time at idle, constant speeds and/or light load or if makeup oil is required, a longer break in period may be needed. Consult the engine OPERATION AND MAINTENANCE MANUAL for a full description of necessary procedures on the addition of break-in oil and extension of the break-in period.

The periodic maintenance schedule below lists basic maintenance intervals for the engine. For detailed maintenance procedures refer to the engine operators 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 operators manual, contact an authorized engine dealer in your area.

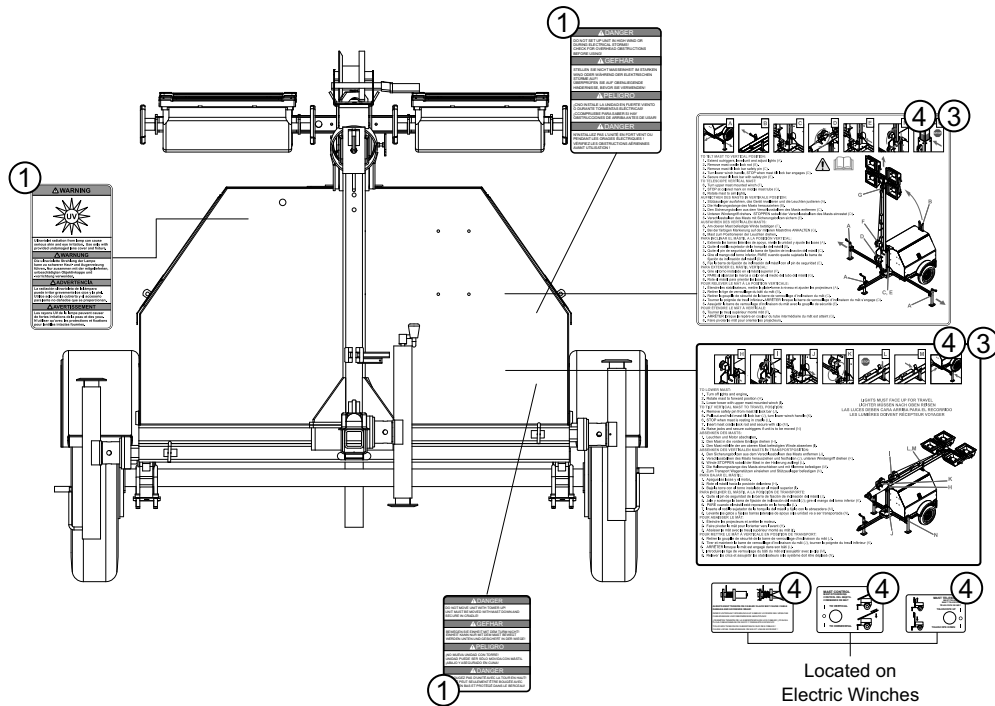
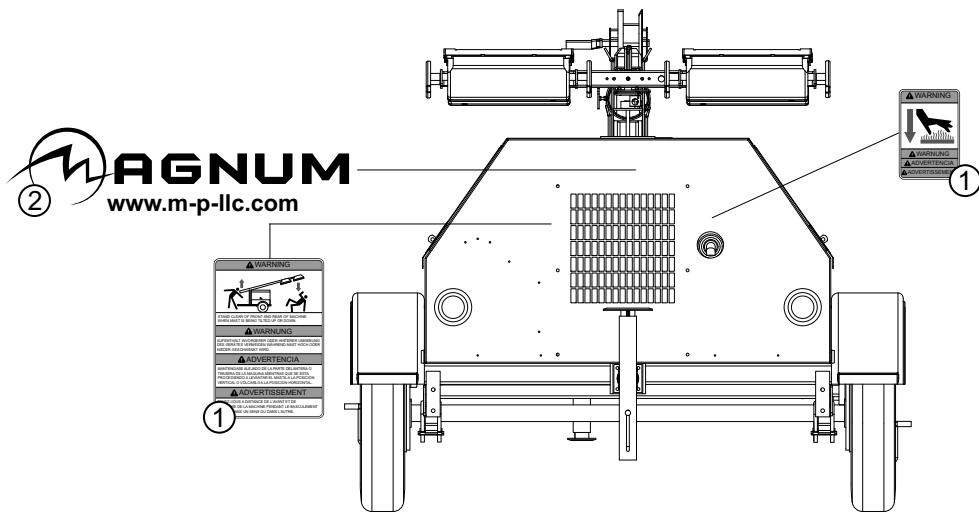
	Check Daily	Every 50 Hours	Every 250 Hours	Every 500 Hours	Every 1000 Hours	Every 2 Years
Check Tire Pressures	■					
Check Engine Oil Level	■					
Check Engine Coolant Level	■					
Check Fuel Level	■					
Check Alternator Belt	■					
Drain Fuel Filter*		■				
Check Radiator Hoses		■				
Change Engine 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.

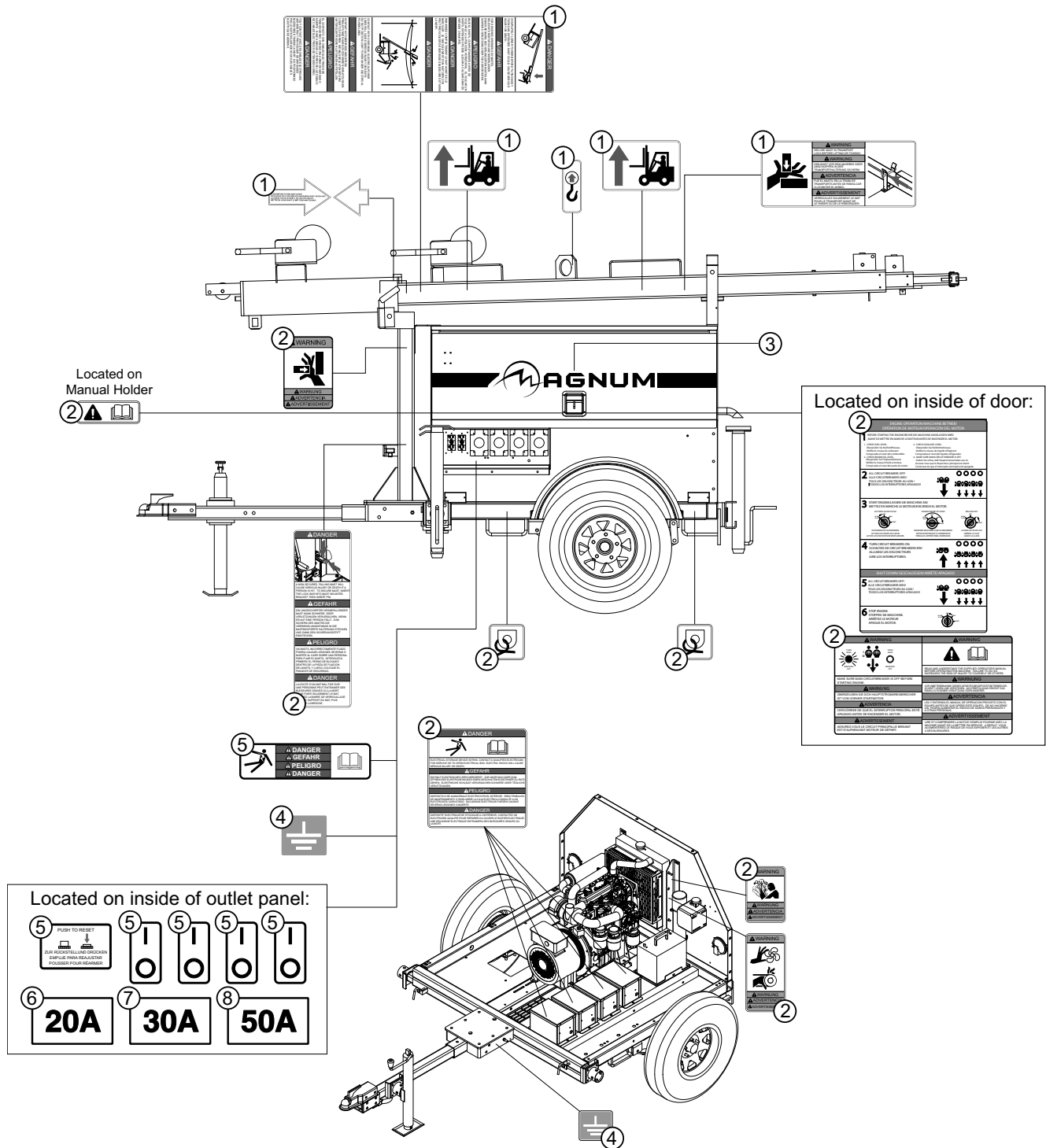
*** Replace the optional heated fuel filter every 1,000 hours (on MLT5200).

UNIT DECALS



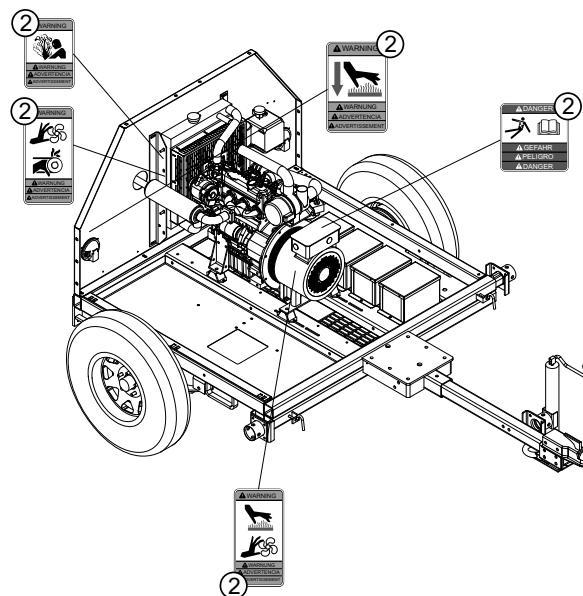
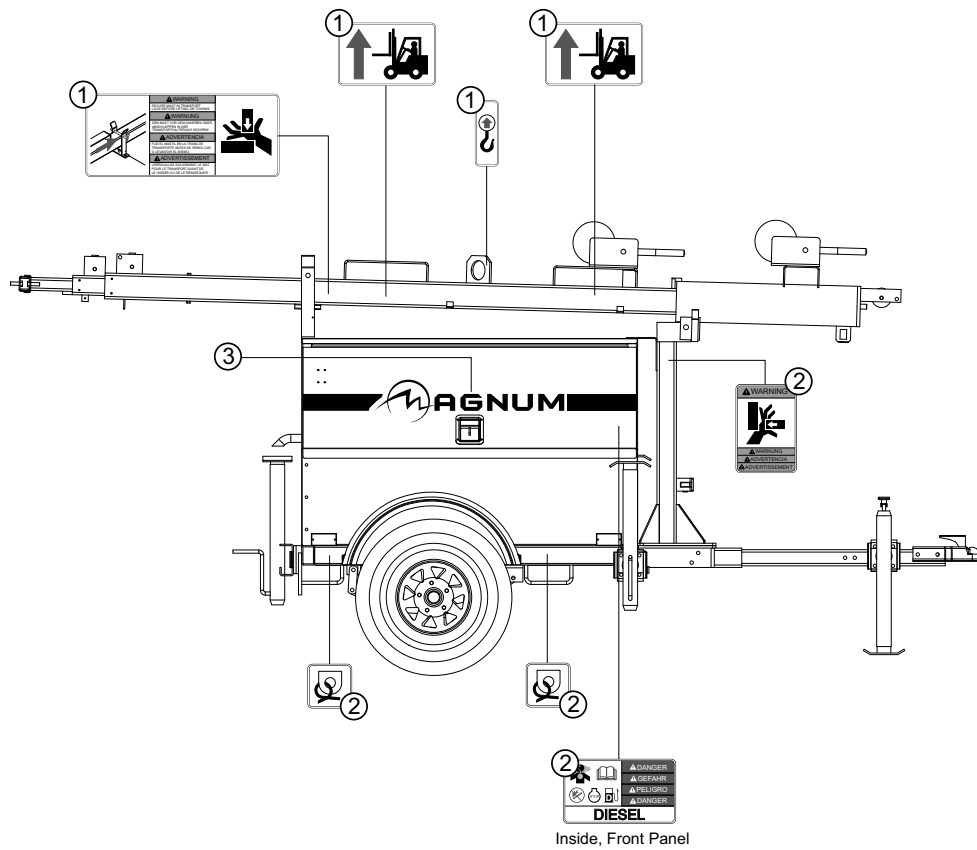
ITEM NO.	PART NO.	QTY	DESCRIPTION
1	12141	1	Decal set, LT eng/safety 4-lang
2	11275	1	Decal, Magnum logo w/ web - red vinyl
3	12262	1	Decal, 4000/5000 set up 4-lang (MW)
4	12880	1	Decal, instruction 4000/5000 4-lang (EW)

UNIT DECALS



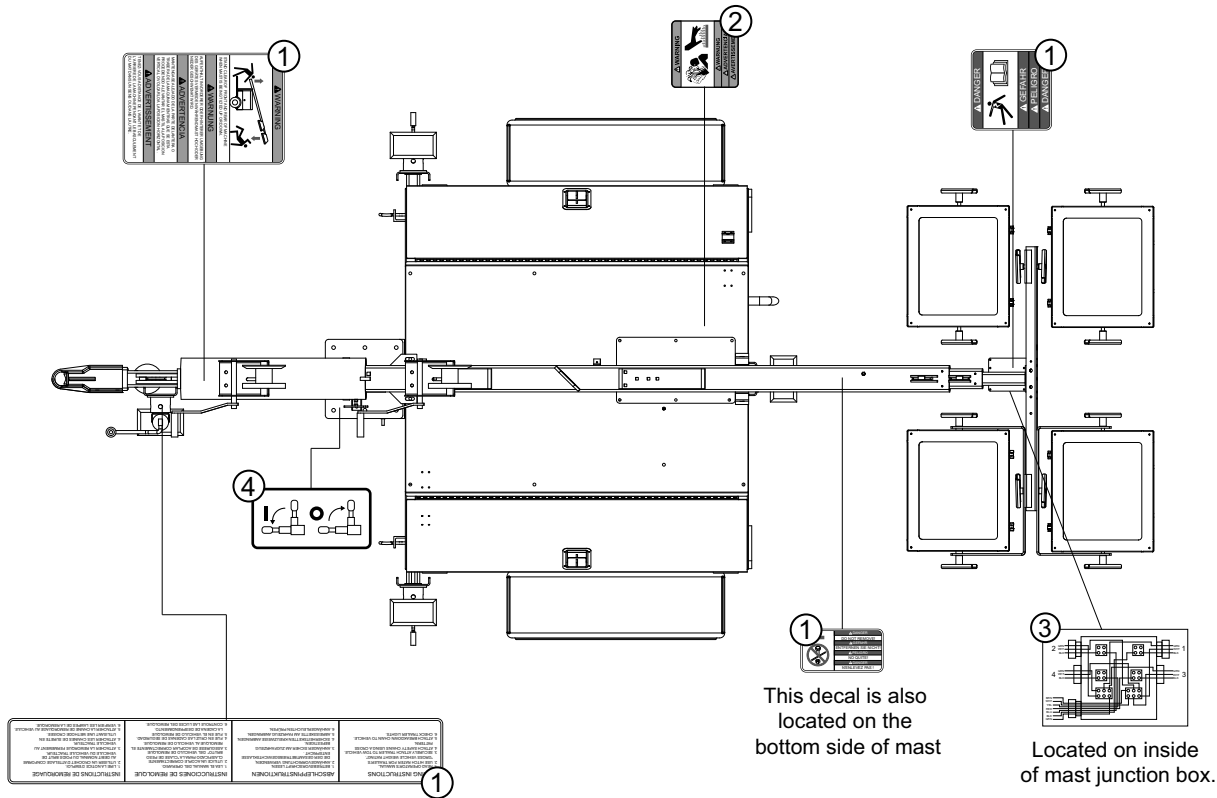
ITEM NO.	PART NO.	QTY	DESCRIPTION
1	12140	1	Decal set, common mast 4-lang
2	12141	1	Decal set, LT eng/safety 4-lang
3	16488	1	Decal, Magnum logo w/ red stripe
4	12142	2	Decal, ground
5	10420	1	Decal set, MLT4150-4200, MLT5150-5200
6	22960	--	Decal, breaker 20 amp
7	23203	--	Decal, breaker 30 amp
8	23204	--	Decal, breaker 50 amp

UNIT DECALS



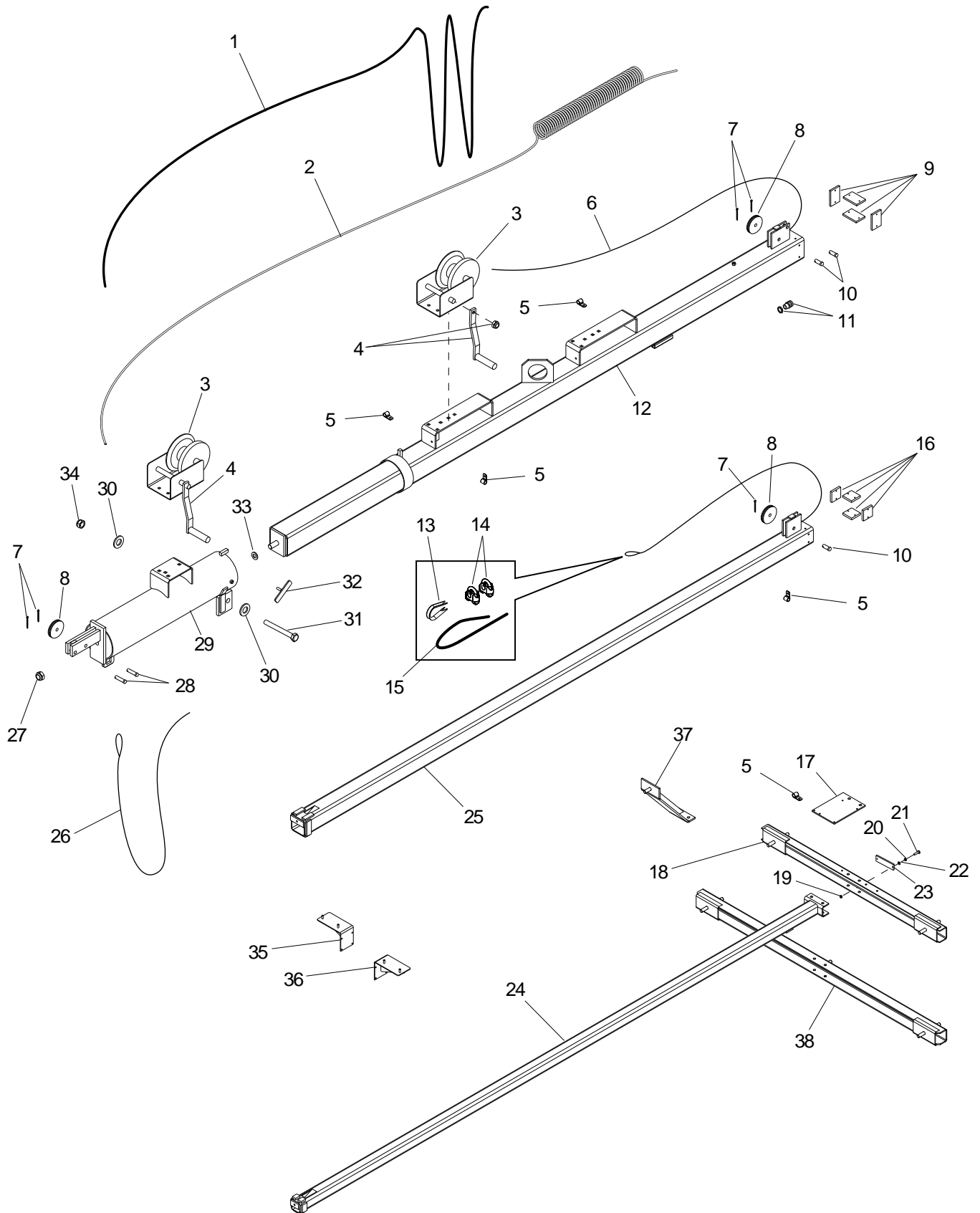
ITEM NO.	PART NO.	QTY	DESCRIPTION
1	12140	1	Decal set, common mast 4-lan
2	12141	1	Decal set, LT eng/safety 4-lan
3	16488	1	Decal, Magnum logo w/ red stripe

UNIT DECALS



ITEM NO.	PART NO.	QTY	DESCRIPTION
1	12140	1	Decal set, common mast 4-lang
2	12141	1	Decal set, LT eng/safety 4-lang
3	13614	1	Decal, mast junction box wiring - 4 light
--	13615	1	Decal, mast junction box wiring - 6 light (not shown)
4	12313	1	Decal, LT parking brake (if equipped)

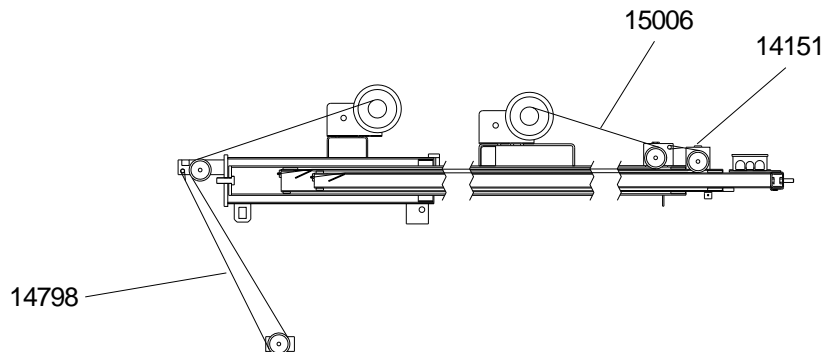
MANUAL WINCH MAST ASSEMBLY



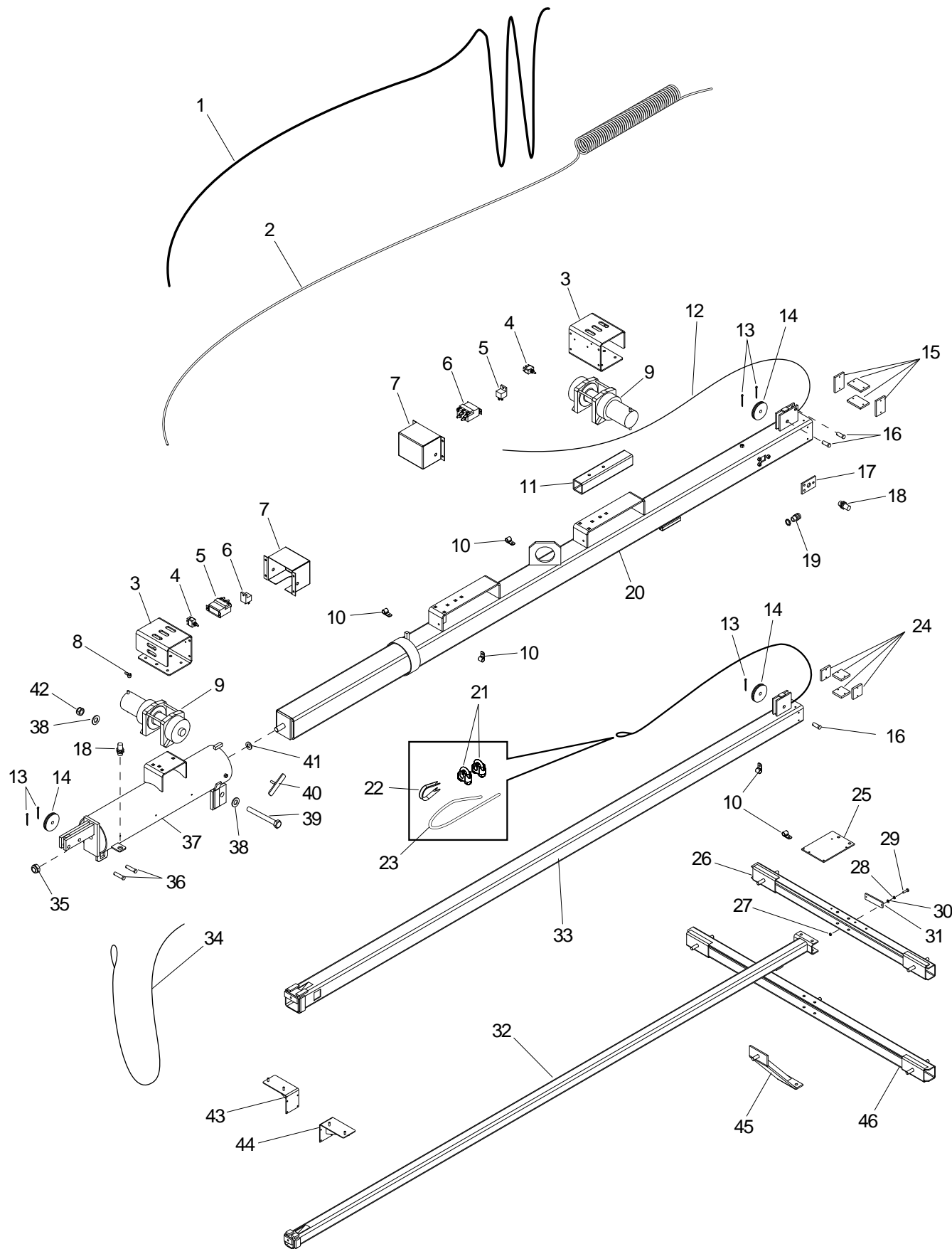
ITEM NO.	PART NO.	QTY	DESCRIPTION
1	15612	1	Cable, 16-7 cold mast drape (optional)
2	11954	1	Coil cord, mast
3	16600	2	Winch, manual
4	15623	2	Winch handle, 9" long with nut
5	16143	5	Clamp, tubing .500
6	15006	1	Cable, .188 in. x 27 ft. w/ball swedge
7	15380	4	Pin, cotter - .125 x 1.250
8	14262	2	Sheave, 3 in.
9	15014	4	Shim, 2 x 3 x .281 GSM
10	15015	3	Pin, clevis .500 x 1.25
11	14439	1	Grip, cord
12	11933B	1	Weldment, mast - 4.00
13	15003	1	Thimble, cable
14	15002	2	Clamp, cable - .188
15	14151	1	Cable - .188" X 11' w/ball swedge
16	15013	4	Shim, 2 x 2 x .344 GSM
17	12095B	1	Bracket, junction box
18	12751B	1	Weldment, mast crossbar
19	14231	2	Nut, 10-32 hx
20	60252	2	Washer, split lock #10
21	60397	2	Screw, 10-32X1.000 pan hd phil
22	60237	2	Washer, flat SAE #10
23	15829	1	Reflector, red
24	16257B	1	Weldment, mast - 2.00
25	11934B	1	Weldment, mast - 3.00
26	14798	1	Cable, .188 in. x 16 ft. w/teardrop
27	60308	1	Nut, nylock .750-10 nylock SS
28	14234	2	Pin, clevis .500 x 2.00
29	12876B	1	Weldment, mast tube - EW
30	60744	2	Washer, .750 flat 1.250/.060 delrin
31	15292	1	Screw, .750-10 x 6.50 SS
32	11649Z	1	Weldment, t-bolt
33	60247	1	Washer, flat .750 SS
34	60584	1	Nut, nylock .750-10 G5 yellow zinc

OPTIONAL FEATURES:

35	12456B	2	Bracket, light mounting, left (optional)
36	12457B	2	Bracket, light mounting, right (optional)
37	12543B	1	Weldment, mast crossarm (optional)
38	12551B	1	Weldment, light bracket (optional)
-	15701	-	Cable, 16 - 10 SEOW (optional)

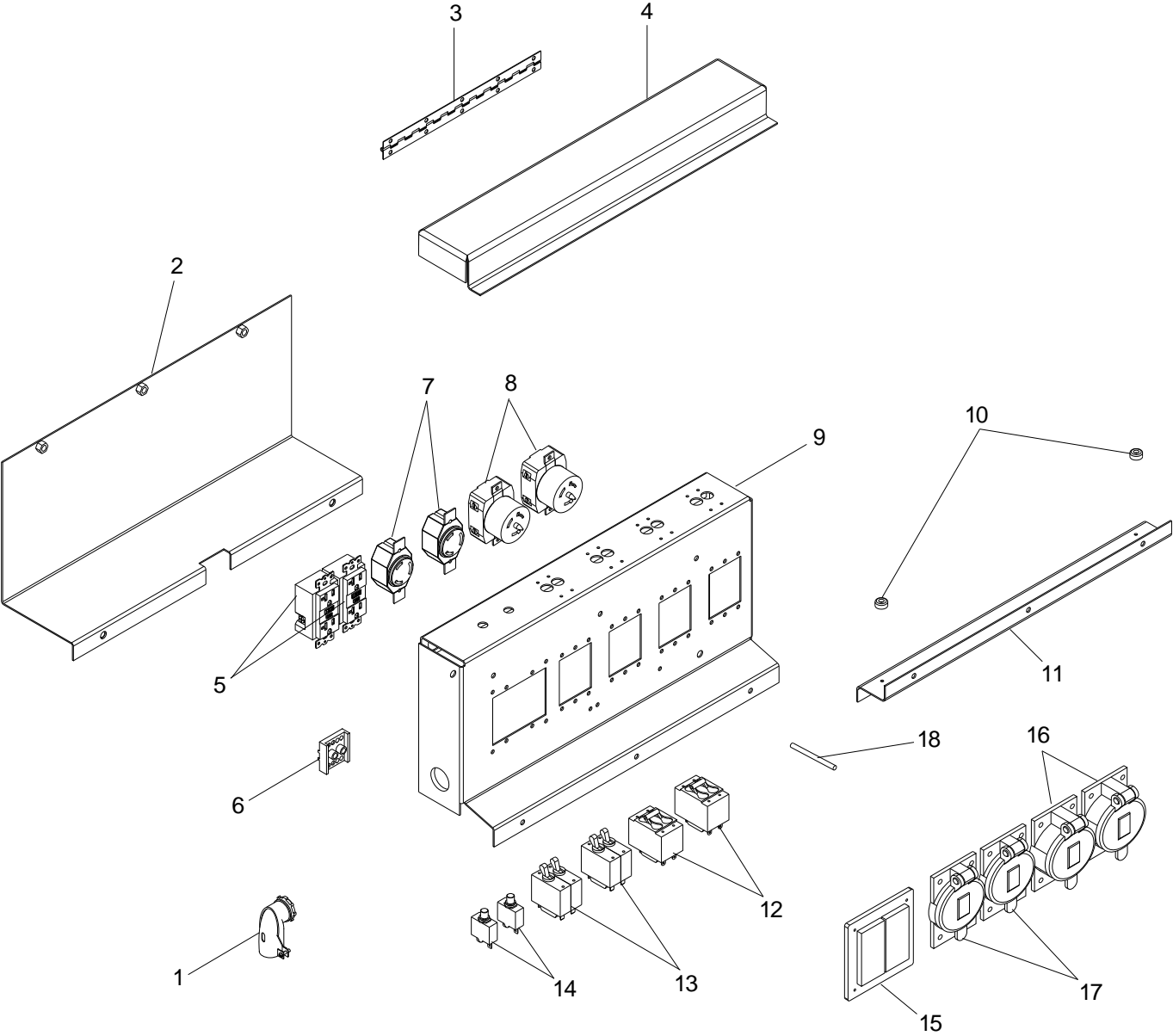


ELECTRIC WINCH MAST ASSEMBLY



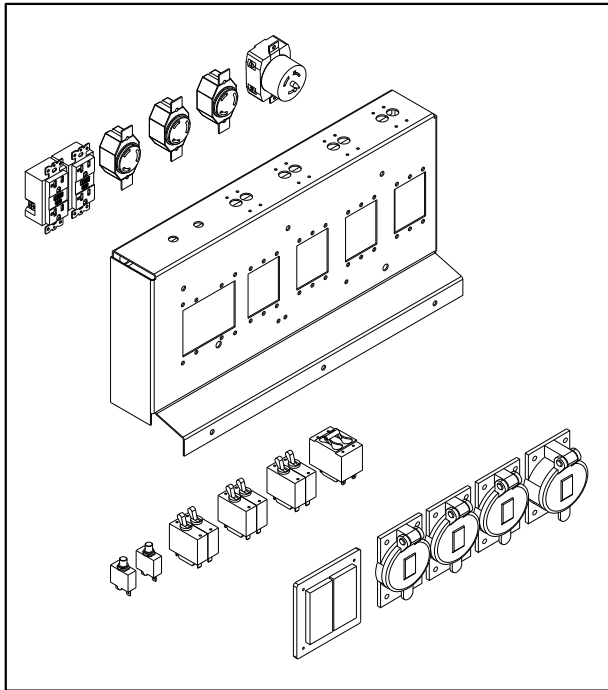
ITEM NO.	PART NO.	QTY	DESCRIPTION
1	15612	1	Cable, 16-7 cold mast drape (optional)
2	11954	1	Coil cord, mast
3	12872B	2	Bracket, winch mounting
4	65707	2	Switch, toggle - SPDT spring weatherproof
5	65049	2	Relay, 12V 30/40A N.O. w/diode
6	11293	2	Contactor, electric winch - warn
7	12875B	2	Cover, winch contactor
8	12292	4	Boot, battery cable red
9	12874	2	Winch, electric - 770LB hoist
10	16143	2	Clamp, tubing .500
11	11967B	1	Tube, electric winch mount
12	15006	1	Cable, .188 in. x 27 ft. w/ball swedge
13	15380	5	Pin, cotter - .125X1.250
14	14262	3	Sheave, 3 in.
15	15014	4	Shim, 2 x 3 x .281 GSM
16	15015	3	Pin, clevis .500 x 1.25
17	65510B	1	Bracket, sensor mtg
18	65511	2	Sensor, proximity
19	14439	1	Strain relief- .50 NPT, .50 cord
20	12085B	1	Weldment, 4.00 mast - EW
21	15002	2	Clamp, cable - .188
22	15003	1	Thimble, cable - .188
23	14151	1	Cable - .188" X 11' w/ball swedge
24	15013	4	Shim, 2 x 2 x .344 GSM
25	12095B	1	Bracket, junction box
26	12751B	1	Weldment, mast crossbar
27	14231	2	Nut, 10-32 hx
28	60252	2	Washer, split lock #10
29	60397	2	Screw, 10-32X1.000 pan hd phil
30	60237	2	Washer, flat SAE #10
31	15829	1	Reflector, red
32	16257B	1	Weldment, mast - 2.00
33	11934B	1	Weldment, mast - 3.00
34	14798	1	Cable, .188 in. x 16 ft. w/teardrop
35	60308	1	Nut, nylock .750-10 nylock SS
36	14234	2	Pin, clevis .500 x 2.00
37	12876B	1	Weldment, mast tube - EW
38	60744	2	Washer, .750 flat 1.250/.060 delrin
39	15292	1	Screw, .750-10 x 6.50 SS
40	11649Z	1	Weldment, t-bolt
41	60247	1	Washer, flat .750 SS
42	60584	1	Nut, nylock .750-10 G5 yellow zinc
OPTIONAL FEATURES:			
43	12456B	2	Bracket, light mounting, left (optional)
44	12457B	2	Bracket, light mounting, right (optional)
45	12543B	1	Weldment, mast crossarm (optional)
46	12551B	1	Weldment, light bracket (optional)
-	15701	-	Cable, 16 - 10 SEOW (optional)

AUXILIARY OUTLET PANEL ASSEMBLY

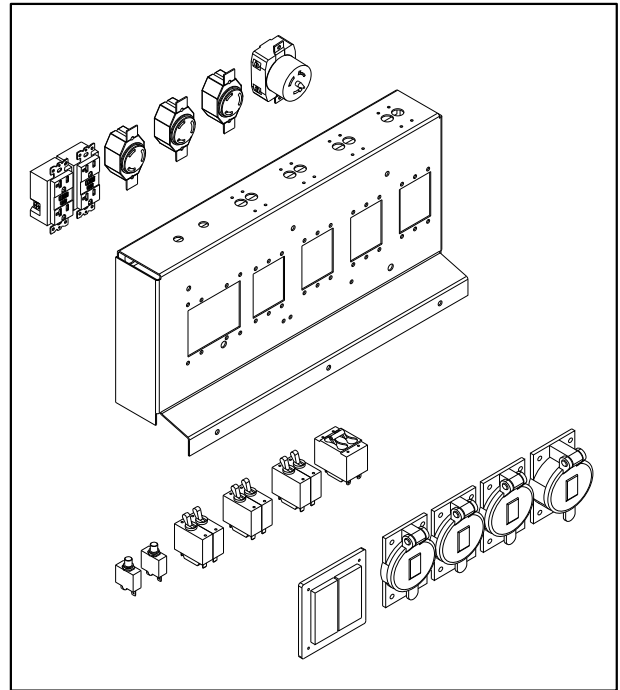


ITEM NO.	PART NO.	QTY	DESCRIPTION
1	65535	1	Clamp, 90° 3/4" 2 screw
2	12248B	1	Weldment, outlet cover
3	10081	1	Hinge, continuous - 11.00 in.
4	11484B	1	Cover, breaker
5	14130	2	Receptacle, 120V 20A GFCI
6	65530	2	Block, terminal - 2 pole lug type, 7 pos./pole
7	14137	2	Receptacle, 240V 30A twist lock
8	18089	2	Receptacle, 120/ 240V 50A twist lock
9	12246B	1	Weldment, outlet panel
10	15215	2	Bumper, rubber
11	11485B	1	Angle, mounting support
12	65492	2	Breaker, 50A 250V 2 pole aux contact
13	65851	2	Breaker, 30A, 250V, 2 pole, (JA) screw term, w/ aux
14	65849	2	Breaker, 20A, 120V, 1-pole push button (airpax)
15	15849	1	Cover, receptacle - weather proof
16	65467	2	Cover, receptacle 50A twist lock
17	65460	2	Cover, 20/30A 240V twist lock
18	18992	1	Stud, ground
-	12398	1	Receptacle panel (2x5-20R, 2xL6-30R, 2x50A)

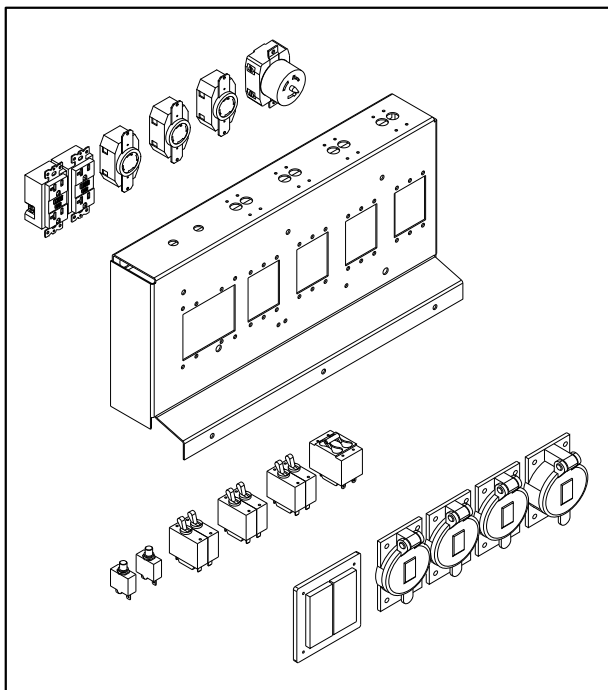
AUXILIARY OUTLET PANEL OPTIONS



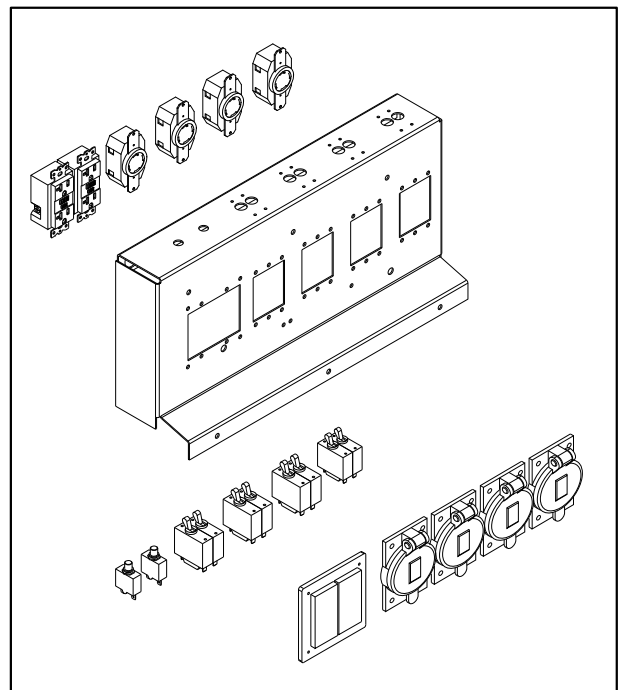
PART NUMBER 12399
Receptacle Panel (2x5-20R, 3xL6-30R, 1x50A)



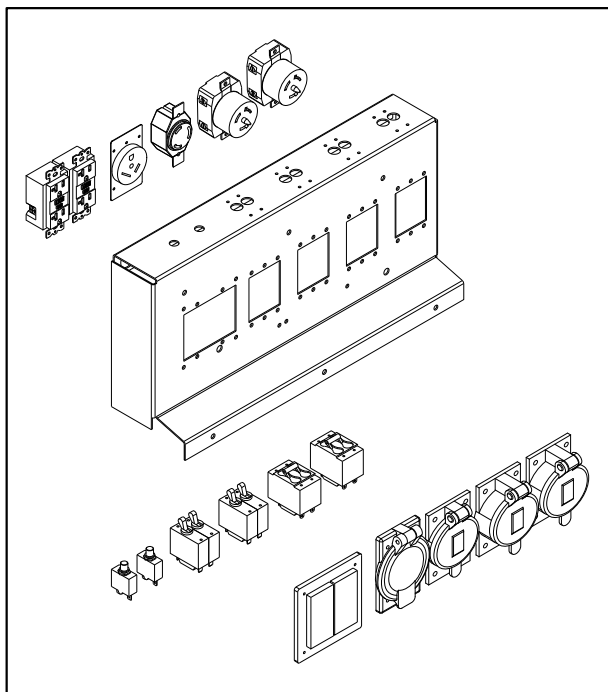
PART NUMBER 12402
Receptacle Panel (2x5-20R, 3xL6-20R, 1x50A)



PART NUMBER 12400
Receptacle Panel (2x5-20R, 3xL14-30R, 1x50A)

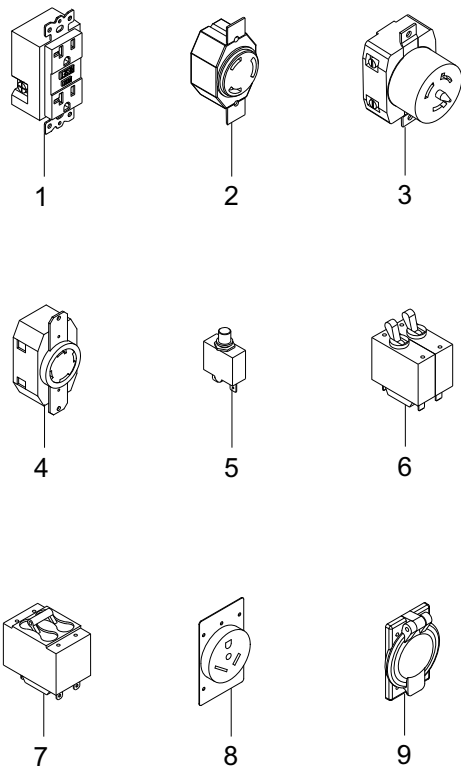


PART NUMBER 12401
Receptacle Panel (2x5-20R, 4xL14-30R)



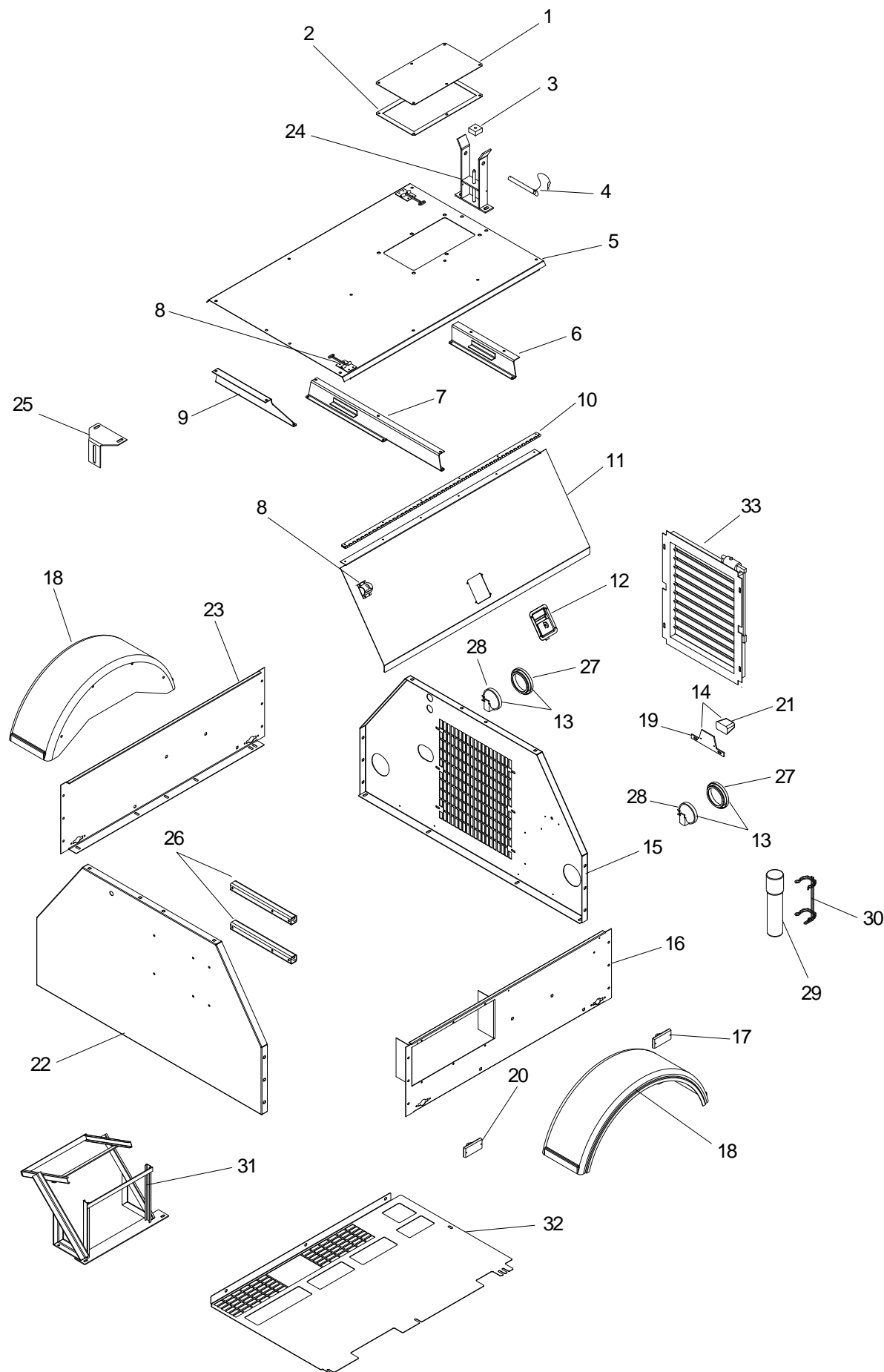
PART NUMBER 13540

Receptacle Panel (2x5-20R, 1xTT-30R, 1xL6-30R, 2x50A)



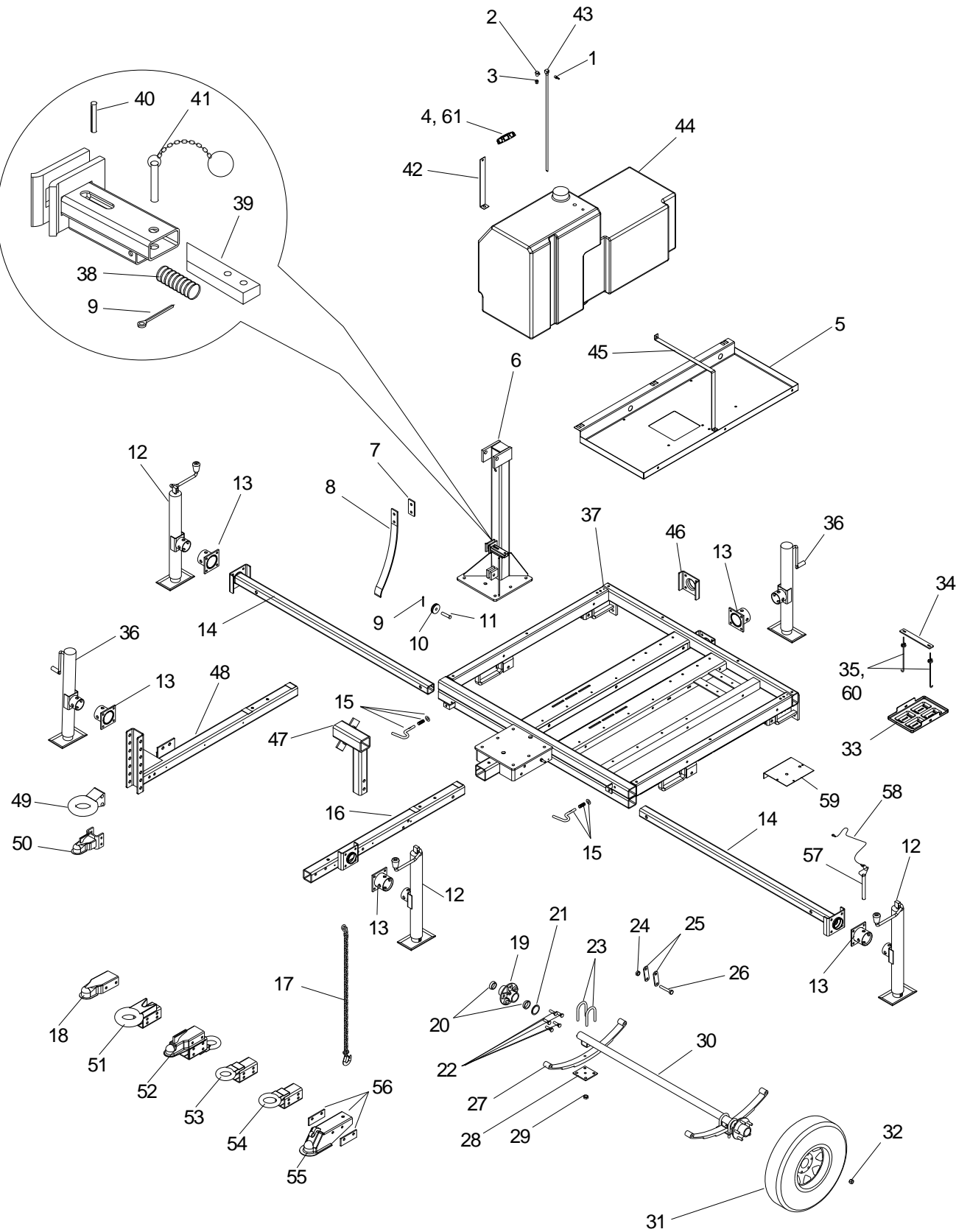
ITEM NO.	PART NO.	QTY	DESCRIPTION
1	14130	2	Receptacle, 120V 20A GFCI
2	14137	-	Receptacle, 240V 30A twist lock
3	18089	-	Receptacle, 125/250V 50A twist lock
4	65488	-	Receptacle, 240V 30A twist lock
5	65849	2	Breaker, 20A, 120V, 1 pole, push button
6	65851	2	Breaker, 30A 250V 2 pole (JA) screw term, w/aux
7	65492	-	Breaker, 50A 250V 2 pole aux contact
8	65489	1	Receptacle, 120V/30A (TT-30R) (RV)
9	65520	1	Cover, receptacle - weather proof 50A 3-wire

ENCLOSURE ASSEMBLY



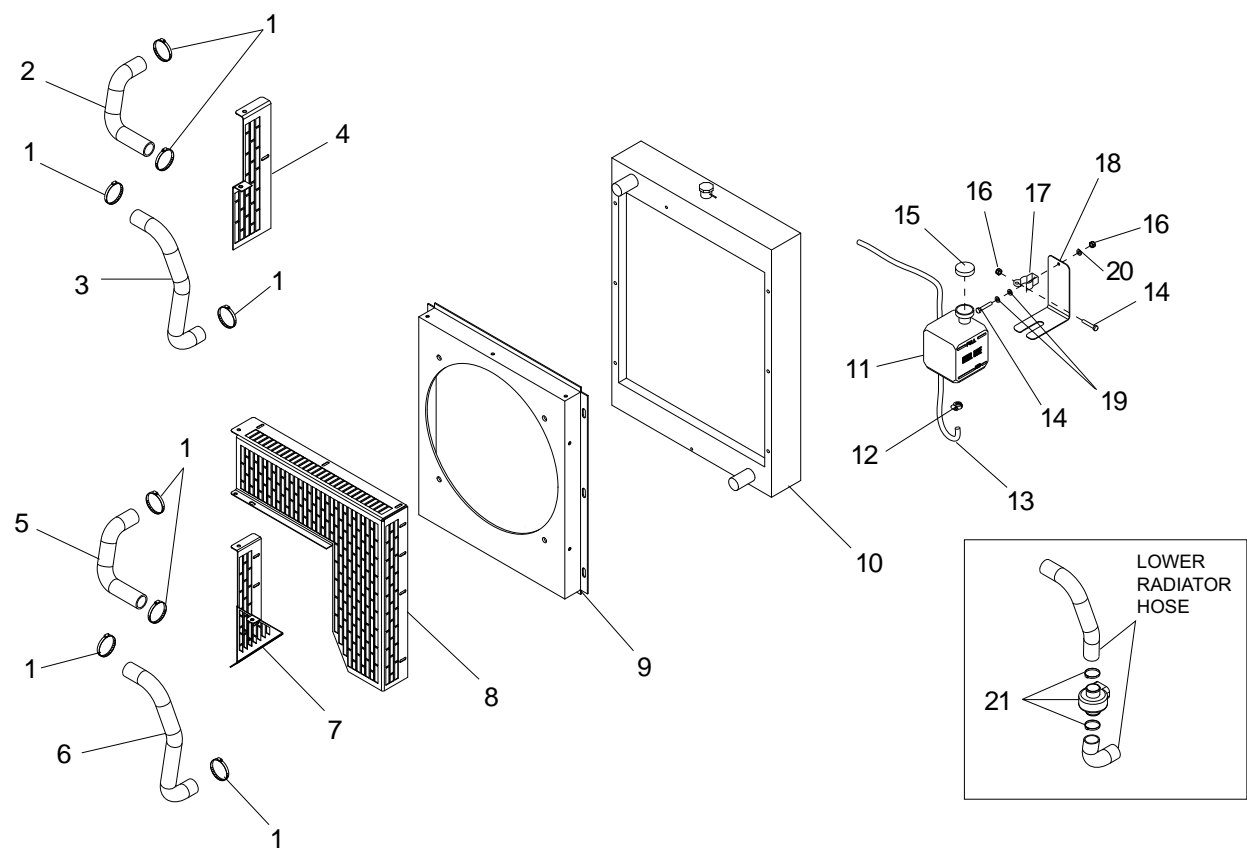
ITEM NO.	PART NO.	QTY	DESCRIPTION
1	25333W	1	Panel, back access
2	12195	1	Gasket, radiator access plate
3	11935	1	Pad, rubber 2.00 x 2.00 x 1.00
4	16099	1	Assembly, cradle pin
5	12119W	1	Panel, top - MLT5000
6	12253B	1	Weldment, light storage, upper rear
7	12252B	1	Weldment, light storage, upper middle
8	12605	2	Door latch SS - T-style
9	12251B	1	Weldment, light storage, upper front
10	16598	2	Hinge, door
11	16591W	2	Panel, door
12	15123	2	Latch, paddle
13	10219	2	Assembly, rear tail/turn light
14	10223	1	Assembly, license plate light/bracket
15	12118W	1	Panel, rear
16	11505W	1	Panel, side - LH MLT 5200
17	65406	2	Light, clearance marker red
18	11381	2	Fender, plastic
19	10224	1	Bracket, license plate
20	65407	2	Light, clearance marker amber
21	10225	1	Light, license bracket
22	12126W	1	Panel, front-MLT5000
23	11507W	1	Panel, side - RH MLT 5200
24	12344Z	1	Weldment, cradle - common mast
25	14459B	1	Bracket, door adjusting
26	11543B	2	Spacer, control box
27	10221	2	Grommet, rear light rubber 4.5"
28	10220	2	Light, rear tail/turn mlt no grommet
29	11121	1	Holder, manual black tube
30	11222	1	Bracket, manual holder
31	12146B	1	Weldment, light storage, lower
OPTIONAL FEATURES:			
32	12335	1	Panel, bellypan
33	12349	1	Shutters, thermostatically controlled group

FRAME ASSEMBLY



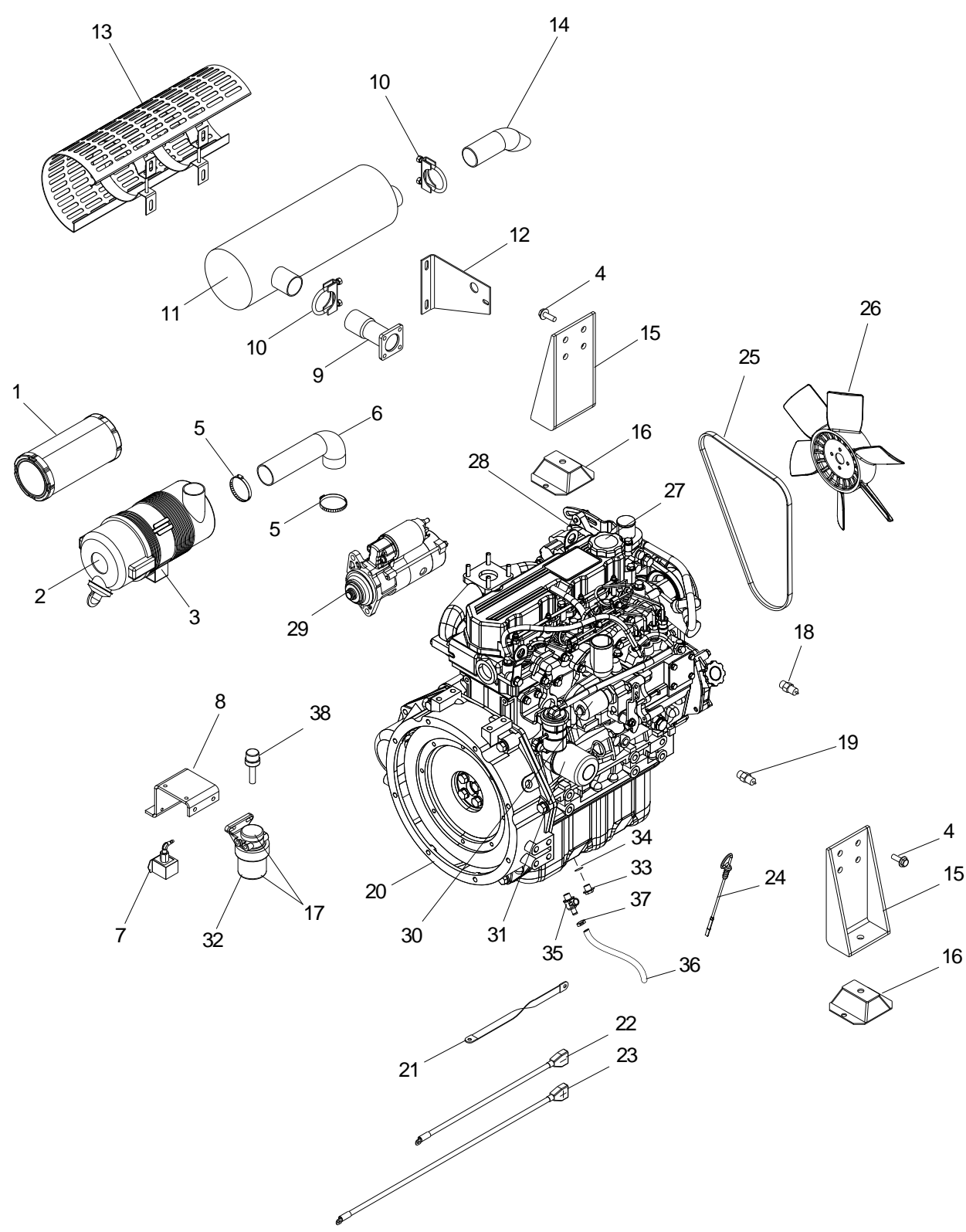
ITEM NO.	PART NO.	QTY	DESCRIPTION
1	15142	1	Fitting, .250NPT x .312 hose barb
2	16271	1	Fitting, .250NPT x .188 hose barb
3	16270	1	Fitting, .375NPT x .250FNPT
4	12137	1	Cap, fuel tank vent 3.5 dia. green w/lanyard
5	12120B	1	Panel, fuel tank support
6	11057B	1	Weldment, mast post
7	11554Z	1	Spacer plate, kickback spring
8	14845B	1	Spring, kickback
9	15380	2	Pin, cotter .125 x 1.250
10	14261	1	Sheave, 2 in.
11	15015	1	Pin, clevis .500 x 1.25
12	23254	3	Jack, 3000# top wind
13	11965Z	4	Weldment, jack adapter
14	12408Z	2	Weldment, outrigger
15	14324	2	Kit, plunger
16	12420B	1	Weldment, tongue
17	23367	2	Chain, safety - 7,800 lbs rating
18	16830	1	Coupler, 2 in. ball/2.5 in. channel
19	11276	2	Hub, axle (w/ wheel studs & bearings)
20	11511	4	Bearing, axle
21	11199	2	Seal, axle bearing
22	60674	10	Wheel stud, axle
23	11277	4	U-bolt, axle
24	60504	6	Nut, 9/16 - 18
25	19637	4	Plate, shackle bracket
26	60503	6	Screw, 9/16 - 18
27	11280	2	Spring, axle
28	11278	2	Tie plate, spring
29	11279	8	Nut, locking
30	12207	1	Axle, 3500 lb. 56SC 68.5TC
31	15540	2	Wheel, P205X75R15 radial w/rim
32	60096	10	Lug Nut, .500-20 (incl. w/axle)
33	14145	1	Tray, battery
34	14682	1	Bracket, battery hold down
35	60820	2	Bolt, J - .250-20 X 9.00
36	11978	1	Jack, 2000# side wind
37	12113B	1	Weldment, chassis MLT 5000
38	14275	1	Spring, compression
39	14663Z	1	Bar, latch
40	15165	1	Pin, roll - .250 x 1.250
41	14403	1	Pin, cotterless - .312 x 1.00
42	12361B	1	Weldment, fuel tank strap
43	12259	1	Tube, fuel pick up, 24 in.
44	12162	1	Tank, fuel - 56 gallon poly
45	12359B	1	Weldment, fuel tank strap
46	11221	1	Bracket, jack mounting
47	12235B	1	Weldment, spare tire holder
48	11368B	1	Weldment, tongue, adjustable hitch
49	19335B	1	Hitch, pintle eye 3.00", adjustable height
50	19518	1	Hitch, 2" ball, adjustable height
51	11672B	1	Weldment, hitch - 3.00x1.625 ring
52	16741B	1	Weldment, combo hitch - 2.5 in. tongue
53	16835B	1	Weldment, lunette ring - 3.00 ID/2.50 tongue
54	16999B	1	Weldment, lunette ring - 2.50 ID/2.50 tongue
55	12229	1	Coupler, 2 5/16 ball, 3" channel
56	12156	1	Kit, coupler, 2 5/16 ball/3" tongue w/spacers
57	23256	4	Pin, jack - 2000# tube mounted
58	12647	4	Cable, tether - jack pin & ground rod cover
59	12406B	1	Bracket, ballast support (for ext. oil pan option)
60	60984	2	Bolt, J - .250-20 x 7.00 (for gel cell battery option)
61	12080	1	Cap, fuel tank vented-3.5 dia grn diesel only(optional)

COOLING SYSTEM ASSEMBLY



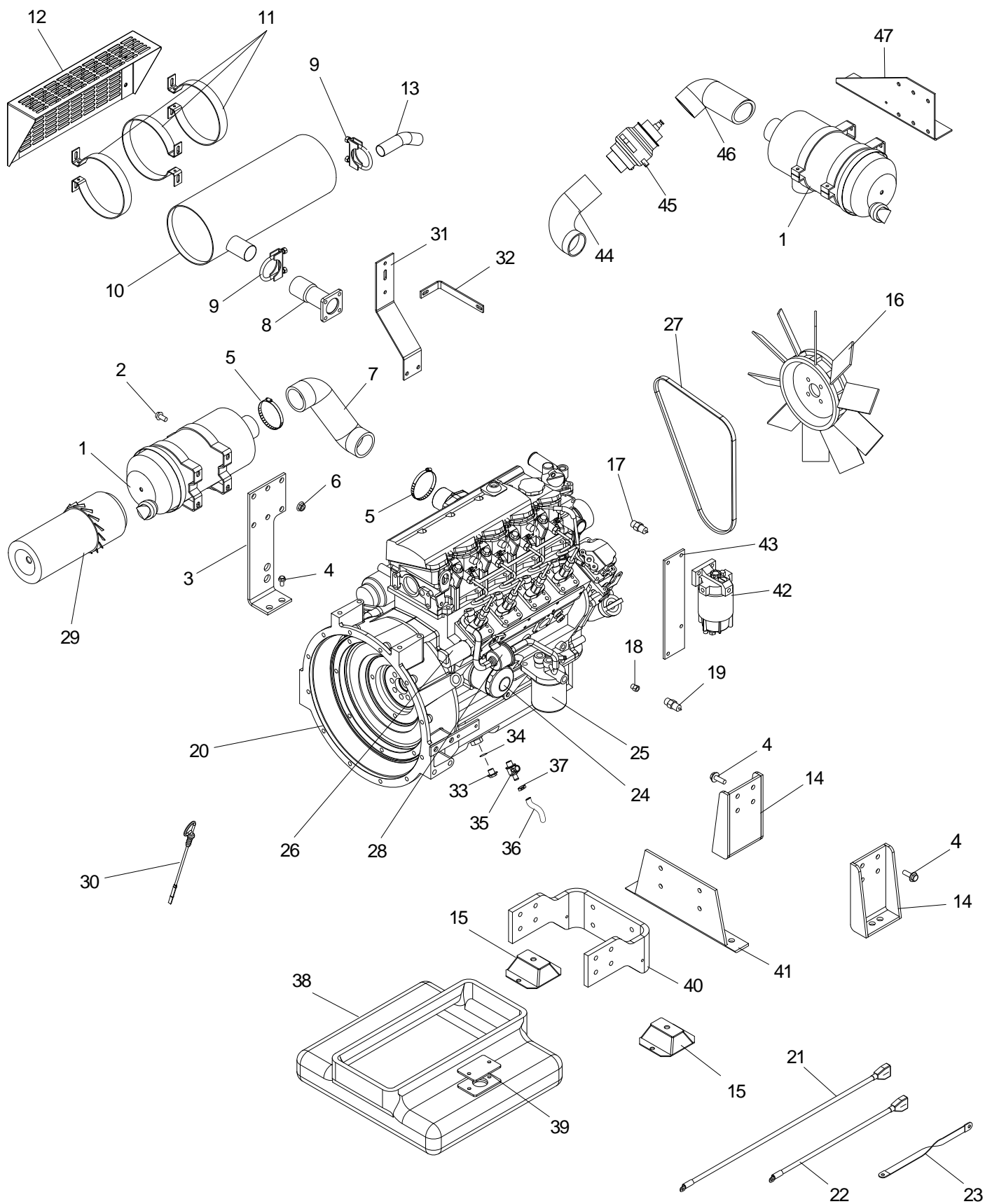
ITEM NO.	PART NO.	QTY	DESCRIPTION
1	15422	4	Clamp, hose - SAE 020 (.75-1.75)
2	11891	1	Hose, radiator - upper (MLT 5150 Only)
3	15185	1	Hose, lower radiator (MLT 5150 Only)
4	11767B	1	Weldment, fan guard- lft (MLT 5150 Only)
5	12064	1	Hose, top radiator (MLT 5200 Only)
6	12356	1	Hose, lower radiator (MLT 5200 Only)
7	11769B	1	Weldment, fan guard - lft (MLT 5200 Only)
8	11760B	1	Panel, fan guard (rht)
9	11626B	1	Weldment, fan shroud
10	26305	1	Radiator, aluminum
11	20287	1	Jug, overflow 2 qt. (.5 gal.)
12	14216	1	Clamp, hose - SAE 004 (.21-.62) mini
13	19220	1	Hose, overflow
14	60518	2	Screw, .250-20X1.500 hx hd G5 fully thd
15	19714	1	Cap, overflow bottle
16	60144	2	Nut, .250-20 nylock G5
17	19726	1	Clamp, overflow bottle
18	22419B	1	Bracket, support overflow jug .5 gal.
19	60067	2	Washer, #10 flat .435/.060 SS
20	60696	1	Washer, .250 flat .625/.050 SS USS
--	14410	1	Assembly, overflow jug (1.5 qt) (items 11-20)
OPTIONAL FEATURES:			
21	65650	1	Heater, engine - low rad hose (MLT 5200)
	65648	1	Heater, engine - low rad hose (MLT 5150)

ENGINE ASSEMBLY - MLT5150, Mitsubishi



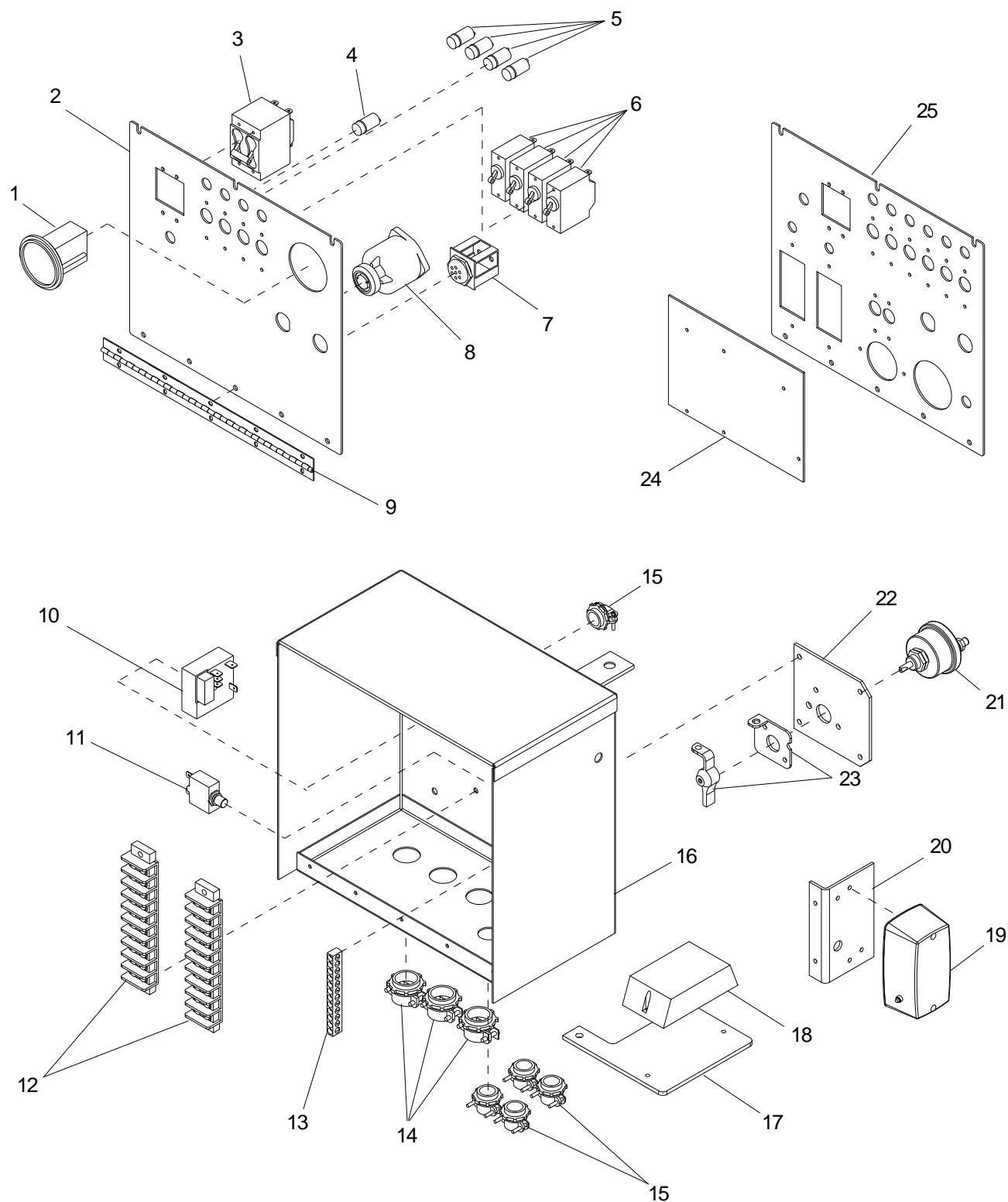
ITEM NO.	PART NO.	QTY	DESCRIPTION
1	19270	1	Element, air filter
2	16443	1	Assembly, air filter with bracket
3	16445	1	Bracket, air cleaner housing
4	60018	14	Screw, M10X1.25X20 hx ser flg
5	60316	2	Clamp, hose - SAE 032 (1.56-2.50)
6	12314	1	Hose, air cleaner
7	16684	1	Kit, fuel feed with fittings
8	11745B	1	Bracket, fuel/air filter
9	11821B	1	Weldment, exhaust flange
10	18823	2	Clamp, 2 - in. muffler
11	18814	1	Muffler, residential grade
12	11474B	1	Weldment, muffler bracket
13	12108B	1	Weldment, heat shield
14	11478B	1	Pipe, exhaust
15	11732B	2	Weldment, engine mount
16	11524	2	Compression mount, 4.38x4.00x1.50
17	16685	1	Fuel filter, head, element & fitting
18	16678	1	Switch, coolant temperature
19	16677	1	Switch, oil pressure
20	11697	1	Engine, Mitsubishi S4L2
21	22438	1	Strap, braided ground - 16 in.
22	12535	1	Cable, battery - 25" 4GA blk w/ boot 1/2" lug
23	15074	1	Cable, battery - 38" 4GA red 7/16" lug
24	12586	1	Mitsubishi, gauge, oil level
25	12746	1	Mitsubishi, V-belt, alternator
26	12648	1	Mitsubishi, fan - pusher
27	12582	1	Mitsubishi, cap, oil filler
28	12753	1	Mitsubishi, alternator assy, 12V
29	13266	1	Mitsubishi, starter assy
30	12829	1	Mitsubishi, solenoid, fuel shut-down
31	16691	1	Mitsubishi, filter, oil
32	16686	1	Mitsubishi, fuel filter element
33	13084	1	Mitsubishi, plug, oil drain
34	13085	1	Mitsubishi, gasket, oil drain
OPTIONAL FEATURES:			
35	60760	1	Valve, drain -14MMX1.5 w/nipple
36	12438	1	Hose, oil drain .375 x 30, 30R7
37	60777	1	Clamp, hose - .312 fuel hose crimp style
38	13876	1	Kit, heater - fuel filter

ENGINE ASSEMBLY - MLT 5200, Isuzu



ITEM NO.	PART NO.	QTY	DESCRIPTION
1	12969	1	Filter, air - metallic
2	61091	4	Screw, .312-18X1.000 ser flg hx G5
3	12990B	1	Bracket, air filter
4	60018	14	Screw, M10-1.25X20 ser flg hx G10.9
5	60316	2	Clamp, hose - SAE 32
6	60095	4	Nut, .312-18 ser flg G5 case hard
7	22320	1	Hose, air filter
8	12421B	1	Weldment, exhaust flange
9	25455	2	Clamp, muffler - 1.50
10	12608	1	Muffler
11	12606B	3	Bracket, muffler
12	12612B	1	Heat shield
13	12683B	1	Pipe, tail - 1.50 OD
14	11471B	2	Weldment, engine mount
15	12450	2	Compression mount, - silicone
16	19258	1	Fan, 15.75 in.
17	15370	1	Switch, water temp Isuzu
18	19232	1	Fitting, straight - .125FNPTX.125-28MBSP
19	16677	1	Switch, oil pressure
20	18064	1	Engine, Isuzu 4LEPVO5
21	15074	1	Cable, battery - 4 AWG X 38 in. red
22	15073	1	Cable, battery - 4 AWG X 25 in blk .38 lug
23	13083	1	Strap, braided ground - 10 in.
24	15183	1	Filter, oil - Isuzu
25	15331	1	Fuel filter element
26	22893	1	Solenoid, fuel shutdown
27	22258	1	Belt, fan - 4LE1-PV05
28	16205	1	Pump, fuel - Isuzu
29	12973	1	Element, air filter - metal
30	23899	1	Dipstick, oil, Isuzu 4LE PV05
31	12634B	1	Bracket, muffler mounting
32	12635B	1	Bracket, muffler support
33	11040	1	Isuzu, plug, oil pan
34	11041	1	Isuzu, oil plug gasket
-	11952	1	Valve, drain - 20X1.5mm thread/barb
OPTIONAL FEATURES:			
35	11952	1	Valve, drain - 20X1.5MM thread/barb
36	50051	.25 ft.	Hose, fuel - .375 ID 50 PSI SAE 30R7
37	60777	1	Clamp, hose - .312 fuel hose crimp style
38	12416	1	Oil pan, extended capacity, 18 qts.
39	12614B	1	Cover, port - ext. oil cap pan
40	12366B	1	Engine mount, ext oil capacity
41	12367B	1	Weldment, engine mount, ext oil capacity
42	11607	1	Filter, fuel - heated
43	11941B	1	Plate, fuel filter mount
44	12445	1	Hose, positive air shutdown
45	12352	1	Assy, air intake shutdown
46	12444	1	Hose, positive air shutdown
47	12433B	1	Bracket, air filter mount - pos air shutdown
-	12417	1	Gasket, oil pan, ext. capacity (not shown)
-	12441	1	Cable, battery - 4 AWG x 31" blk (not shown)
-	12442	1	Cable, battery - 2 AWGx58.5" blk (not shown)
-	22970	1	Cable, battery - red 50" (not shown)

CONTROL BOX AND PANEL ASSEMBLY

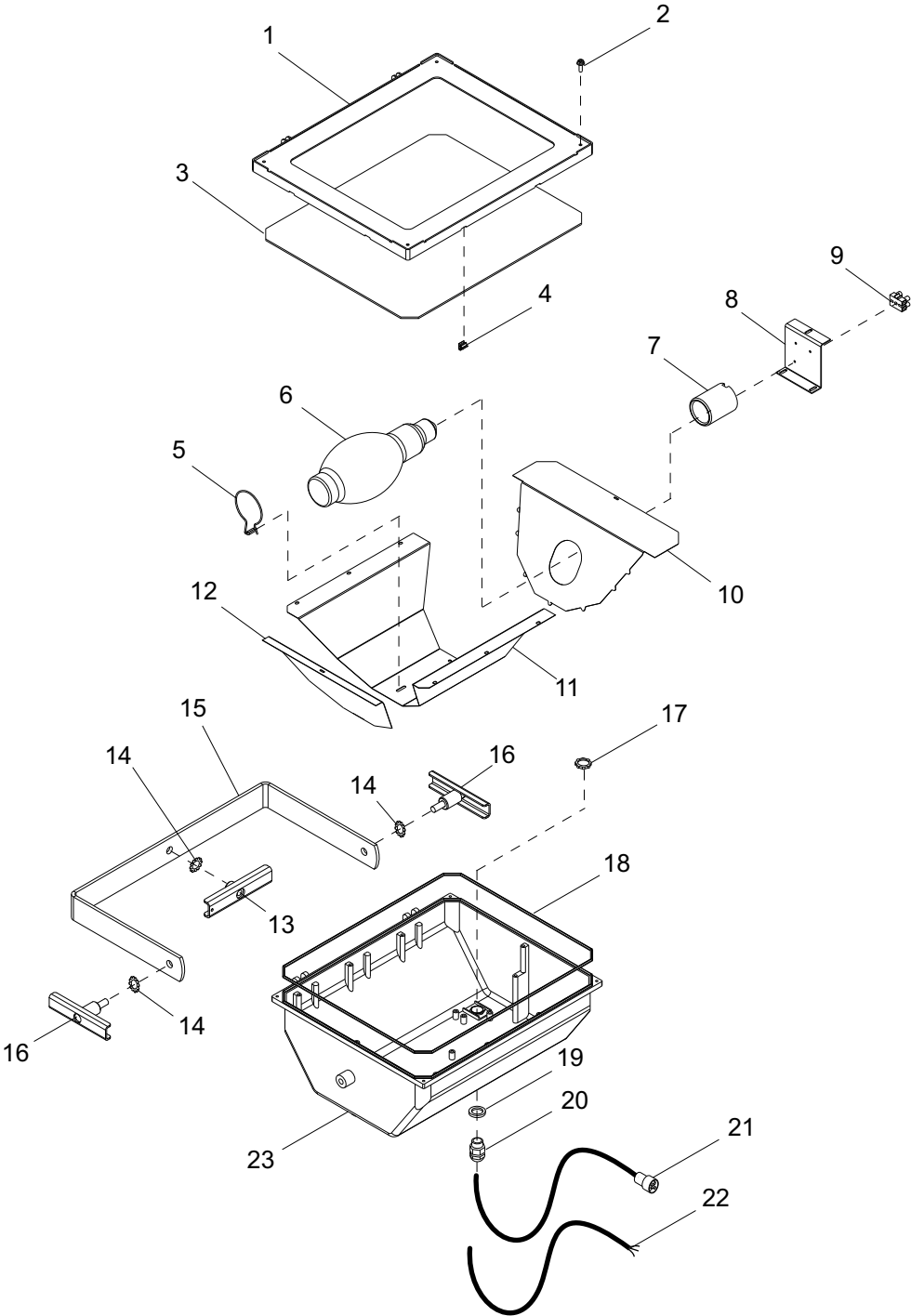


ITEM NO.	PART NO.	QTY	DESCRIPTION
1	15085	1	Gauge, hourmeter
2	11480	1	Panel, control (MLT 5200)
	11887	1	Panel, control (MLT 5150)
3	65429	1	Breaker, 100A 250V 2 pole (MLT 5200)
	60736	1	Breaker, 70A, 250V, 2 pole (MLT 5150)
4	65388	1	Light, indicator red - w/wire 12 VDC
5	65325	4*	Light, indicator green - w/wire 12 VDC
6	14249	4*	Breaker, 15A 250V 1pole
7	24008	1	Isuzu, glow plug indicator 4LE (MLT 5200)
8	15195	1	Switch, key Isuzu, Mitsu
9	10081	1	Hinge, 11 in.
10	14201	1	Relay, 15 sec. fixed time delay 12VDC
11	14841	1	Breaker, push-button 10A
12	14203	2**	Block, terminal 10 pos
13	14204	1	Kit, ground bar
14	14219	3	Strain relief, 3/4" Romex
15	14202	5	Strain relief, 3/8" Romex
16	14257B	1	Box, control
-	15309	1	Key - Mitsubishi/Isuzu (not shown)
OPTIONAL FEATURES:			
17	12429B	1	Bracket, battery charger
18	65326	1	Charger, battery - 2 AMP, 3 Stage
19	11947	1	Light, interior with switch
20	11949B	1	Bracket, control box light mount
21	65498	1	Switch, disconnect
22	11929B	1	Bracket, battery lock-out switch
23	65499	1	Switch, lock-out lever kit
24	12835B	1	Panel, outlet cover (for 6-light option)
25	11270	1	Panel, control (for 6-light option)

*Six switches and indicator lights are supplied with six-light units (optional panel shown).

**Six-light units are supplied with one 10-position terminal block (shown) and one 12-position terminal block (PN: 15465).

LIGHT ASSEMBLY

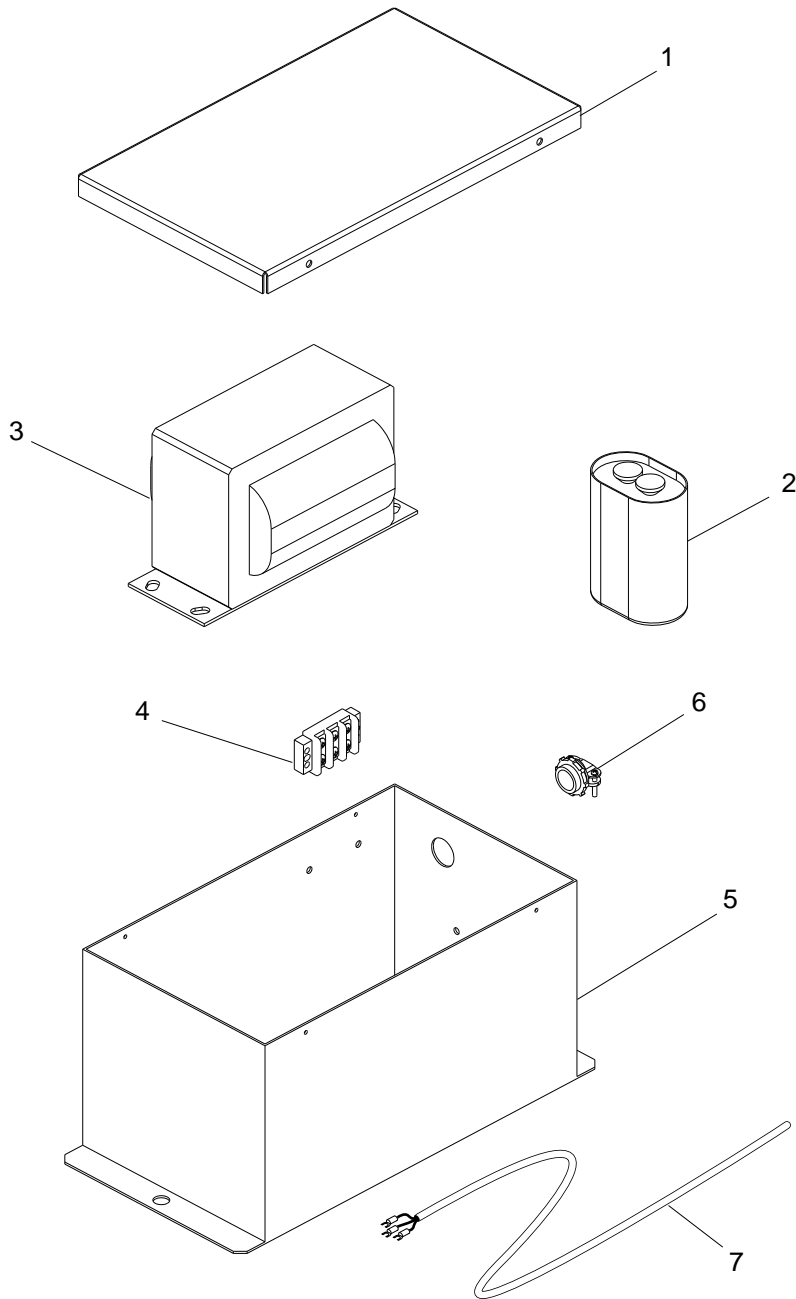


ITEM NO.	PART NO.	QTY	DESCRIPTION
1	11393	1	Cover, Magnum light
2	61059	4	Screw, 10-32X1 slot hex w/flange SS
3	11303	1	Lens, Magnum rectangular light
4	11392	8	Clip, glass Magnum light
5	11398	1	Support, bulb Magnum light
6	11391	1	Bulb - 1000W MH short length
	11465	1	Bulb - 1000W HPS short length
7	11394	1	Socket, Magnum light
8	11460	1	Bracket, light socket
9	65458	1	Block, terminal - 2 pos, 90A, 600V
10	11424	1	Reflector, end Magnum light
11	11399	1	Reflector, wrap around - Magnum light
12	11423	1	Reflector, hole in end - Magnum light
13	12993Z	1	Weldment, wing nut - Magnum light
14	60369	3	Washer, ext star lock M12
15	12991Z	1	Bracket, trunnion - Magnum light
16	12992Z	2	Weldment, wing bolt - Magnum light
17	15861	1	Nut, .500 NPT lock
18	11456	1	Gasket, lens
19	15697	1	Washer, rubber sealing - .500NPT
20	15864	1	Strain relief - .50NPT watertight
21	14166	1	Cord, 3 ft. w/quick disconnect plug
22	11457	1	Cable, light - hard wire
23	11400	1	Housing - Magnum light
-	65485	1	Kit, reflector 1000W (parts 10-12)
-	11402	1	Assy, light fixture - 1000W MH non quick-disc.
-	11790	1	Assy, light fixture - 1000W HPS non quick-disc.
-	12997	1	Assy, light fixture - 1000W MH quick disc.
-	11955	1	Assy, light fixture - 1000W HPS quick disc.

METAL HALIDE BALLAST BOX ASSEMBLY

⚠ WARNING

DO NOT mix metal halide and high pressure sodium ballast parts!

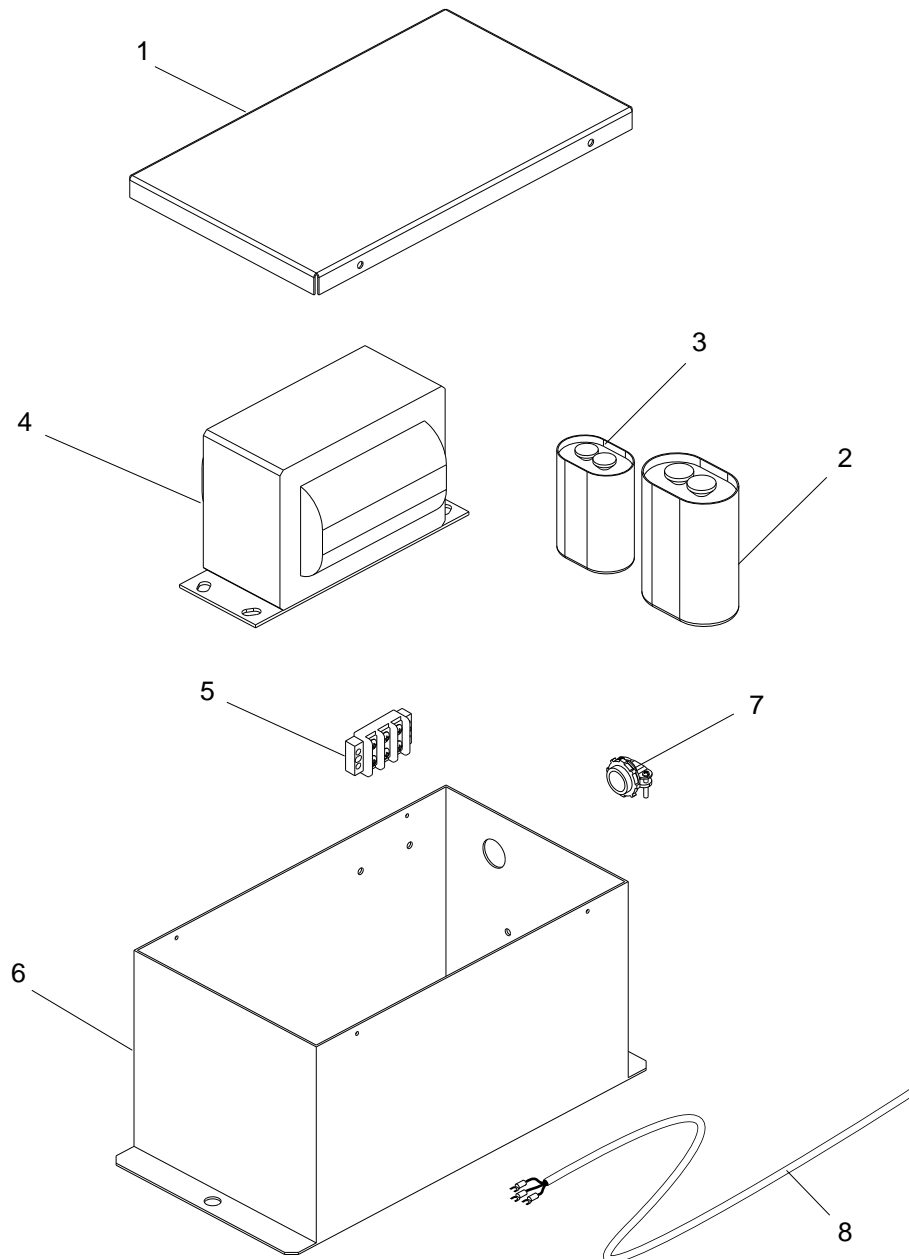


ITEM NO.	PART NO.	QTY	DESCRIPTION
1	11079	1	Cover, ballast box
2	14679	1	Capacitor, metal halide
3	11166	1	Transformer, metal halide
-	10227	1	Assembly, transformer & cap set
4	14158	1	Block, terminal
5	11078	1	Box, ballast
6	14202	1	Strain relief, .375 Romex w/nut
-	11144	1	Assembly, ballast box complete (Items 1-6)
7	16214	1	Assembly, ballast cable

HIGH PRESSURE SODIUM BALLAST BOX ASSEMBLY

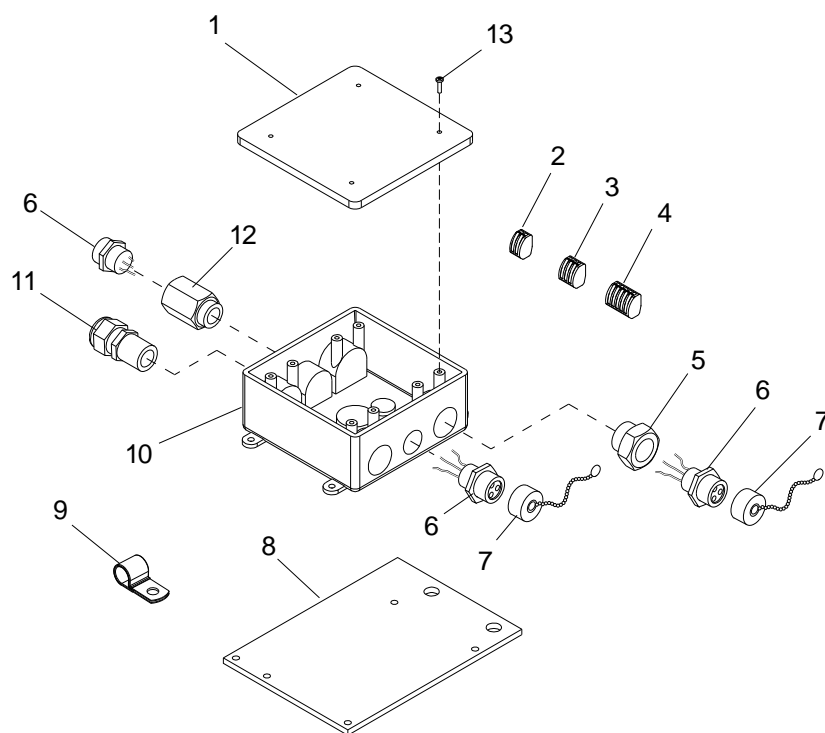
⚠ WARNING

DO NOT mix high pressure sodium and metal halide ballast parts!



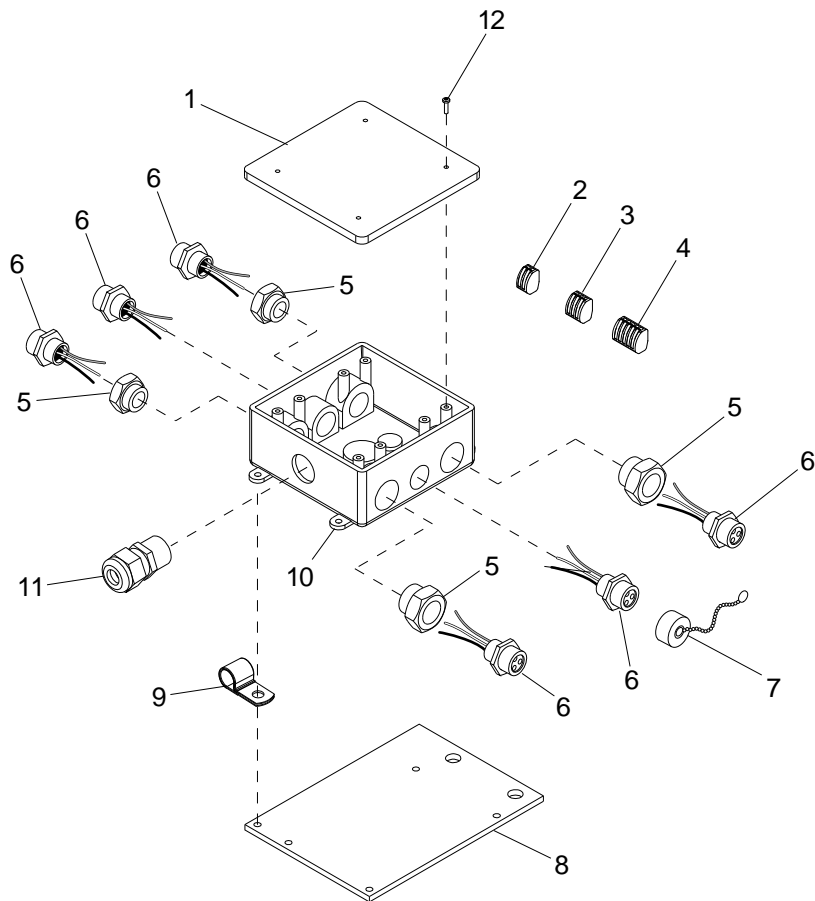
ITEM NO.	PART NO.	QTY	DESCRIPTION
1	11079	1	Cover, ballast box
2	14782	1	Capacitor, sodium light
3	14783	1	Ignitor, sodium light
4	11167	1	Transformer, sodium light
-	11168	1	Assembly, transformer & cap set
5	14158	1	Block, terminal
6	11078	1	Box, ballast
7	14202	1	Strain relief, .375 Romex w/nut
-	11326	1	Assembly, ballast box complete (Items 1-7)
8	16214	1	Assembly, ballast cable

MAST JUNCTION BOX ASSEMBLY - QUICK DISCONNECT LIGHTS



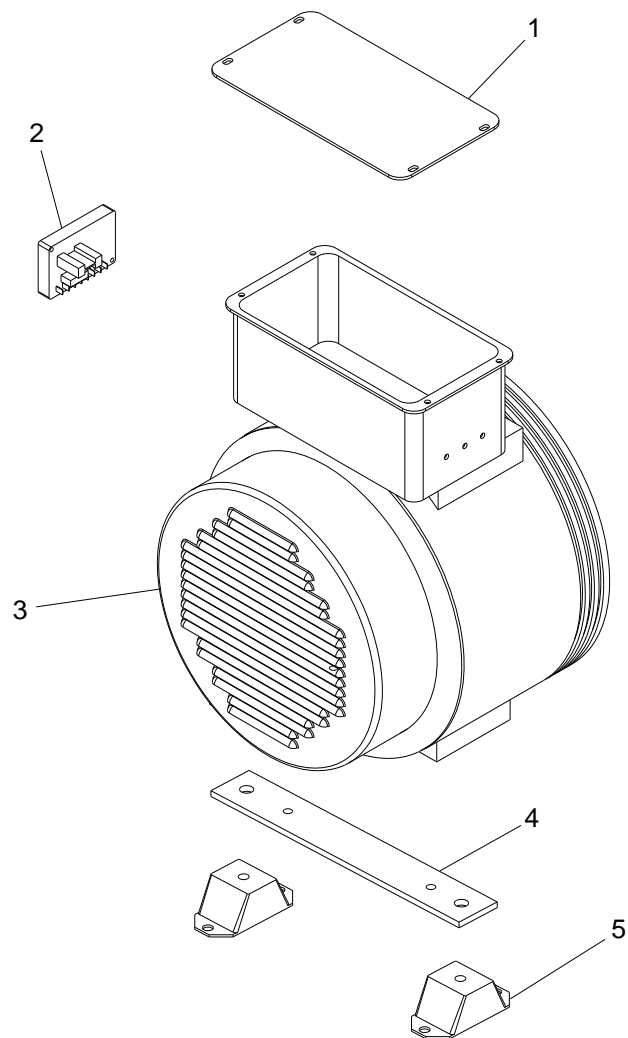
ITEM NO.	PART NO.	QTY	DESCRIPTION
1	12109	1	Box cover, 2-gang plastic
2	66100	4	Connector, 2 pos. Wago
3	66101	2	Connector, 3 pos. Wago
4	66102	1	Connector, 5 pos. Wago
5	60755	2	Fitting, .750MNPT x .500FNPT nylon
6	15403	4	Connector, quick disconnect (female)
7	15404	4	Cap, receptacle w/chain
8	12095B	1	Bracket, junction box
9	16143	1	Clamp, tubing .500
10	12094	1	Box, junction
11	14656	1	Strain relief, .750NPT water tight
12	12713	1	Fitting, adapter-1/2"-14 male to 1/2"-14 female
13	60424	4	Screw, 6-32X.750 pan phil G2 ZC self threading
-	11957	-	Assembly, mast junction box

MAST JUNCTION BOX ASSEMBLY - 6 LIGHT QUICK DISCONNECT



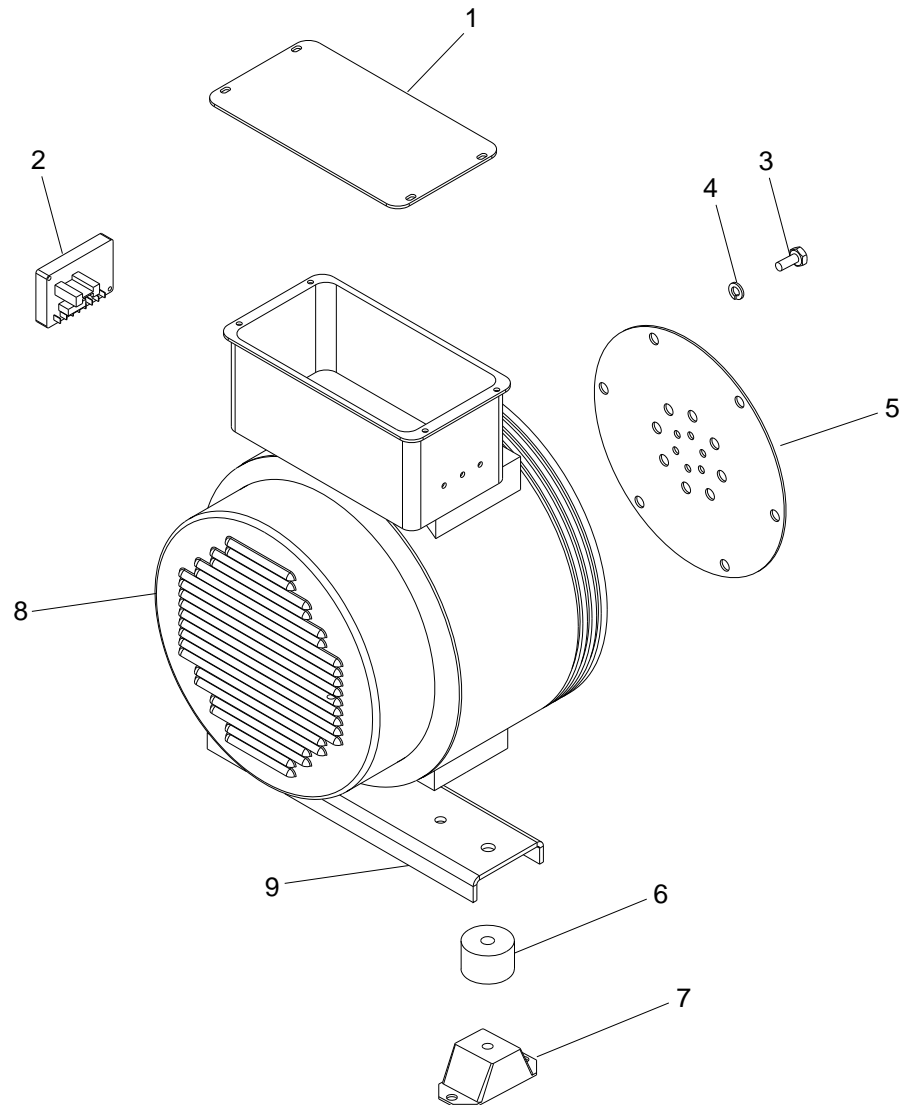
ITEM NO.	PART NO.	QTY	DESCRIPTION
1	12109	1	Box cover, 2-gang plastic
2	66100	6	Connector, 2 pos. Wago
3	66101	4	Connector, 3 pos. Wago
4	66102	2	Connector, 5 pos. Wago
5	60755	4	Fitting, .750MNPT x .500FNPT nylon
6	15403	6	Connector, quick disconnect (female)
7	15404	6	Cap, receptacle w/chain
8	12095B	1	Bracket, junction box
9	16143	1	Clamp, tubing .500
10	12094	1	Box, junction
11	14656	1	Strain relief, .750NPT water tight
12	60424	4	Screw, 6-32X.750 pan phil G2 ZC self threading
-	11957	-	Assembly, mast junction box

GENERATOR ASSEMBLY - MLT 5150



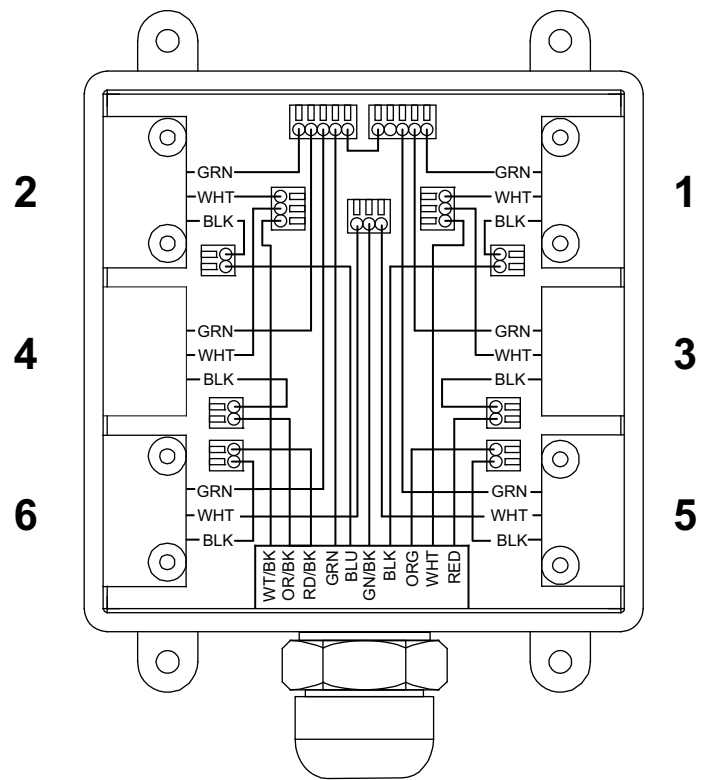
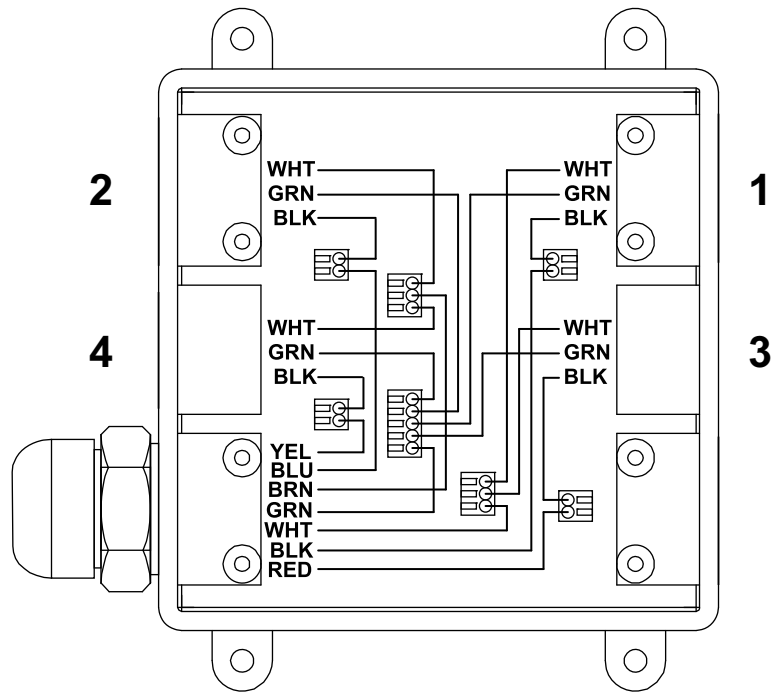
ITEM NO.	PART NO.	QTY	DESCRIPTION
1	12736	1	Cover, generator box
2	18556	1	Regulator, voltage - SE 350
3	11327	1	Generator, 15 kW, 60 Hz regulated
4	11597B	1	Bracket, gen mount
5	11524	2	Compression mount, 4.38x4.00x1.50

GENERATOR ASSEMBLY - MLT 5200



ITEM NO.	PART NO.	QTY	DESCRIPTION
1	12736	1	Cover, generator box
2	18556	1	Regulator, voltage - SE 350
3	60495	8	Screw, M10-1.25X16 hx hd G8.8
4	60026	8	Washer, split lock M10
5	11000	1	Plate, drive - SAE 7.5 (Isuzu 3LB1)
6	11515B	2	Spacer, 2.00 dia x 1.00
7	12469	2	Compression mount, 4.38X2.00X1.50
8	11481	1	Generator, 334CSA3028, 20kW pancake
9	11597B	1	Bracket, gen mount

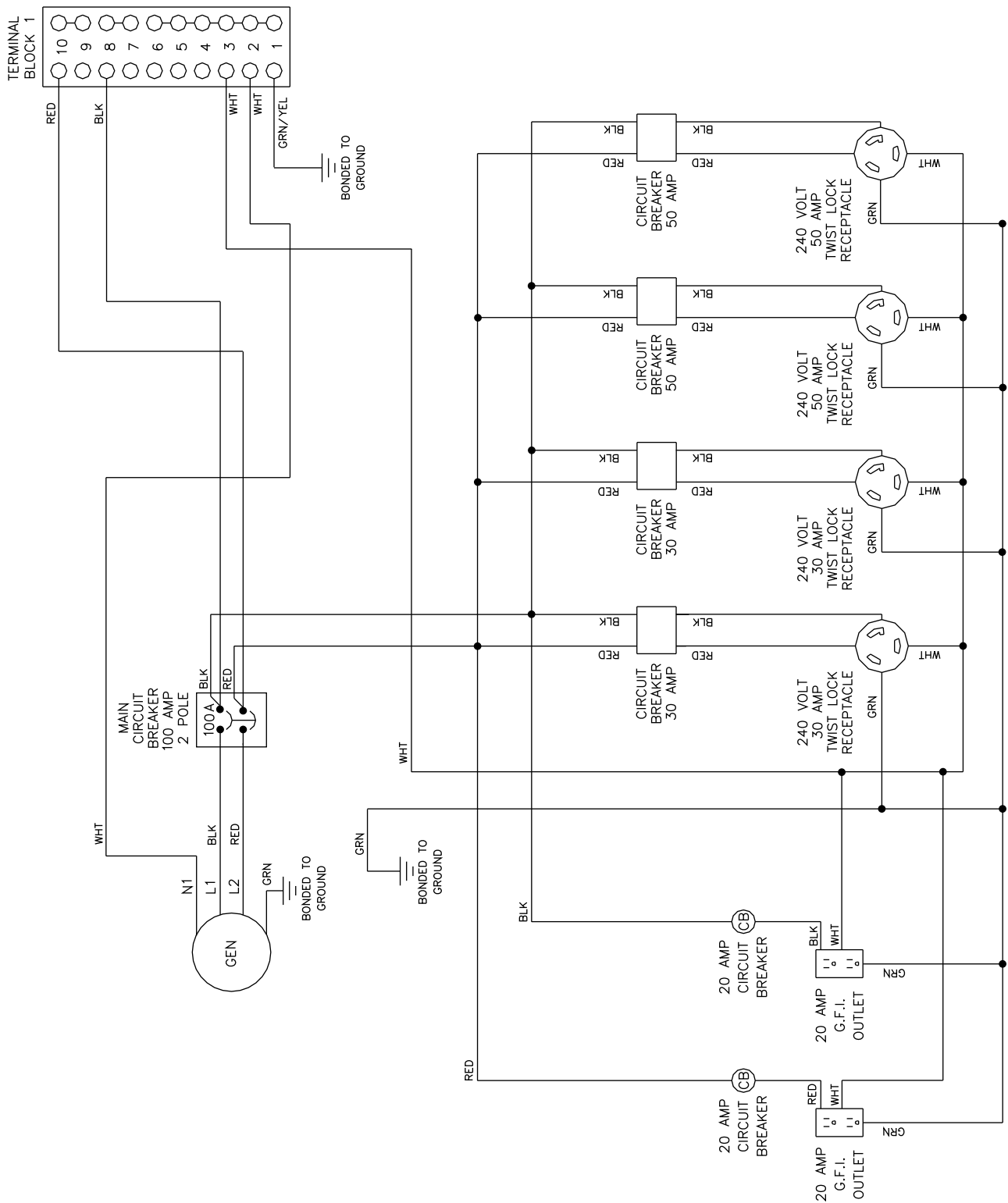
MAST JUNCTION BOX WIRING DIAGRAM



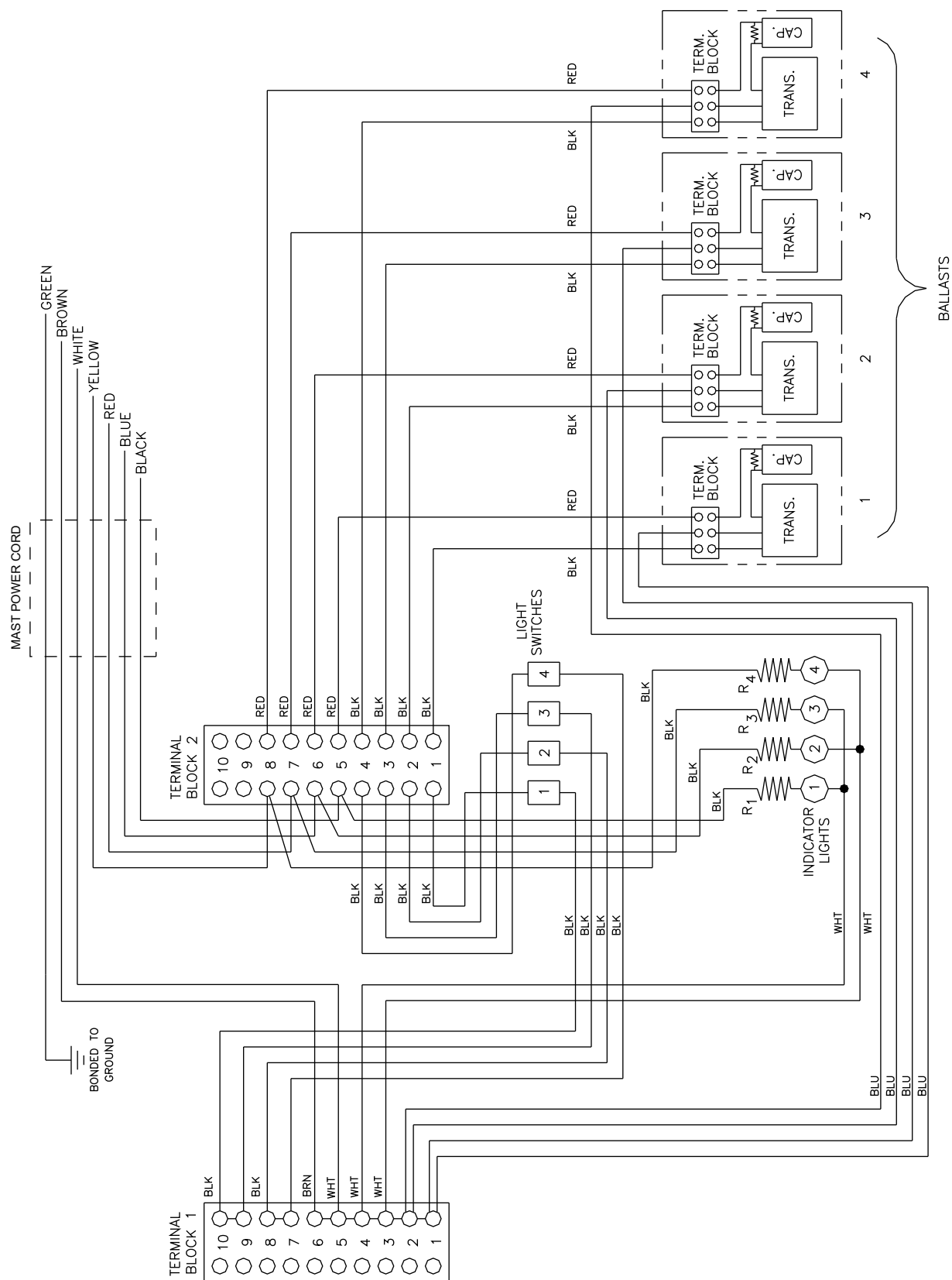
Receptacle panel part number 12398 shown (2x5-20R, 2xL6-30R, 2x50A).

Receptacle panel part number 12398 shown (2x5-20R, 2xL6-30R, 2x50A).

**CONNECTIONS TO TERMINAL
BLOCK 1 CONTINUED ON
FOLLOWING PAGES**

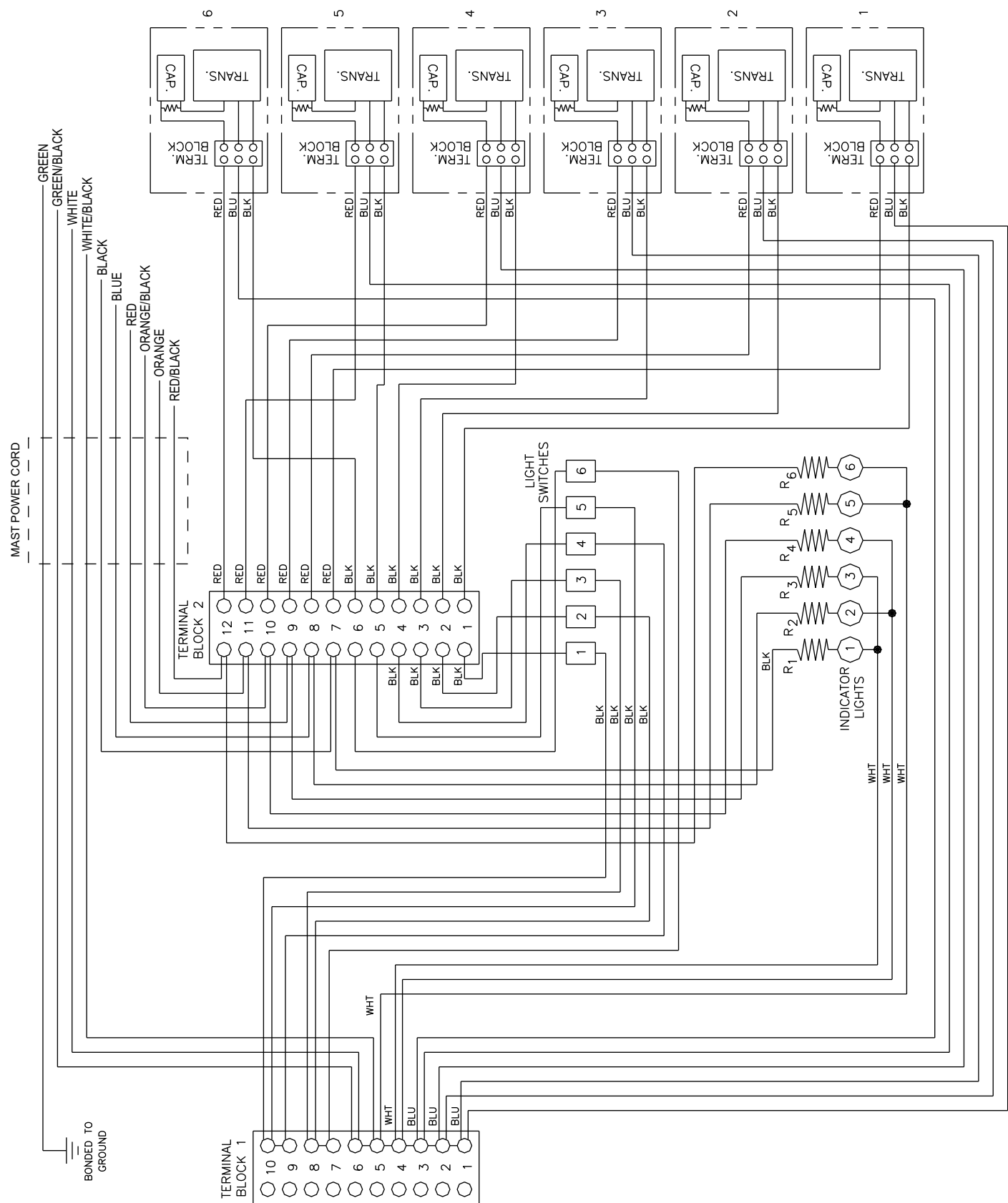


AC WIRING DIAGRAM - 4 LIGHT



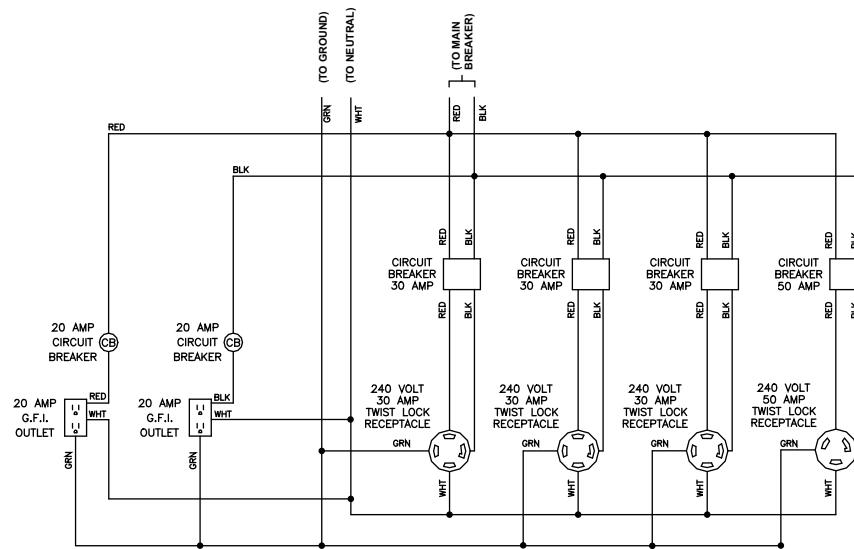
**CONNECTIONS TO TERMINAL
BLOCK 1 CONTINUED FROM
PAGE 55**

AC WIRING DIAGRAM - 6 LIGHT

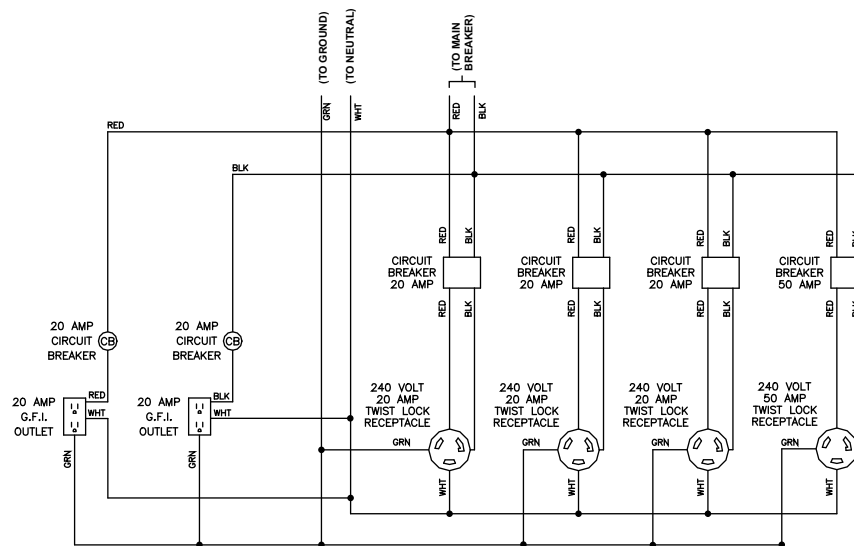


CONNECTIONS TO TERMINAL
BLOCK 1 CONTINUED FROM
PAGE 55

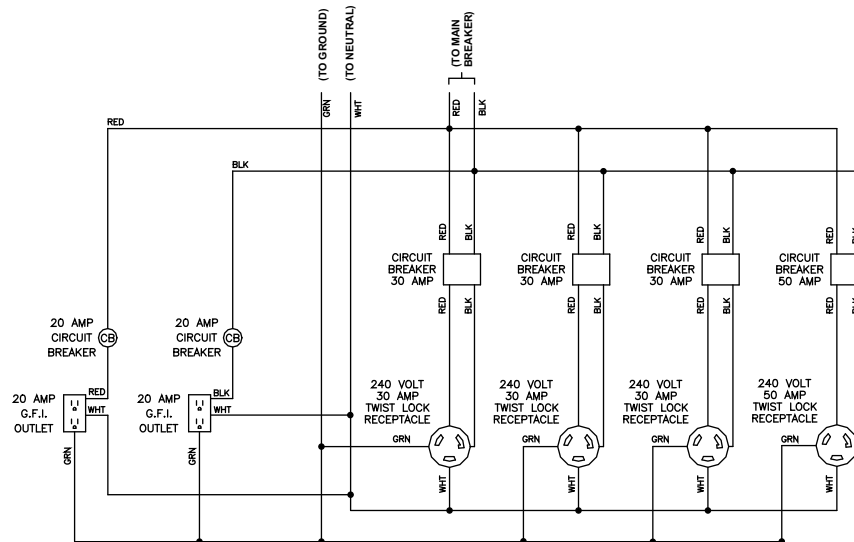
AC WIRING PANEL OPTIONS



PART NUMBER 12399; Receptacle Panel (2x5-20R, 3xL6-30R, 1x50A)

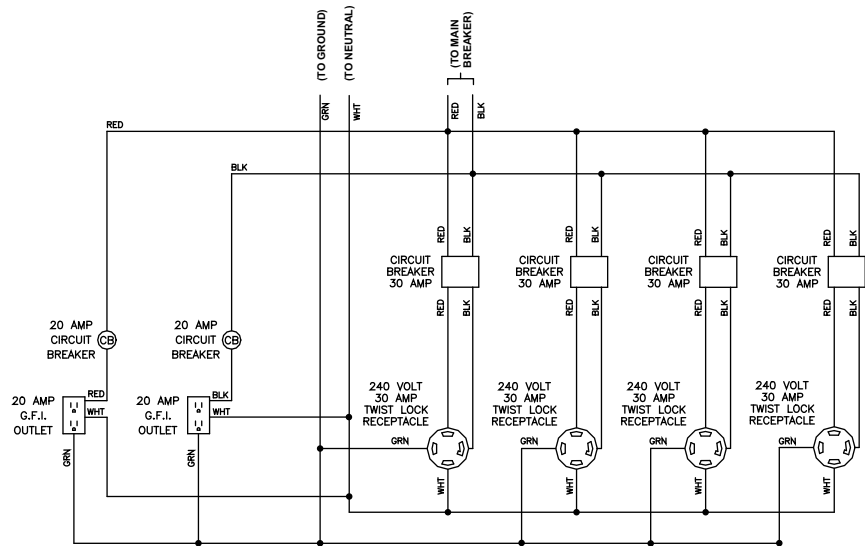


PART NUMBER 12402; Receptacle Panel (2x5-20R, 3xL6-20R, 1x50A)

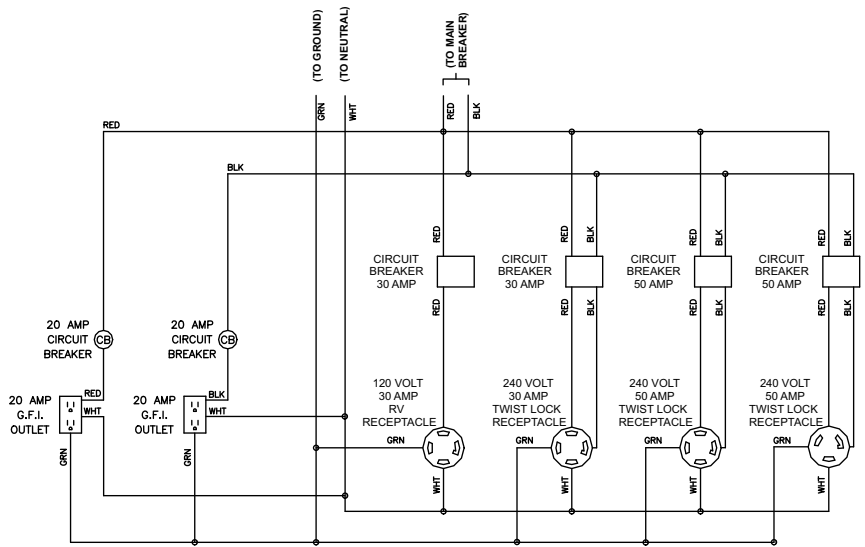


PART NUMBER 12400; Receptacle Panel (2x5-20R, 3xL14-30R, 1x50A)

AC WIRING PANEL OPTIONS

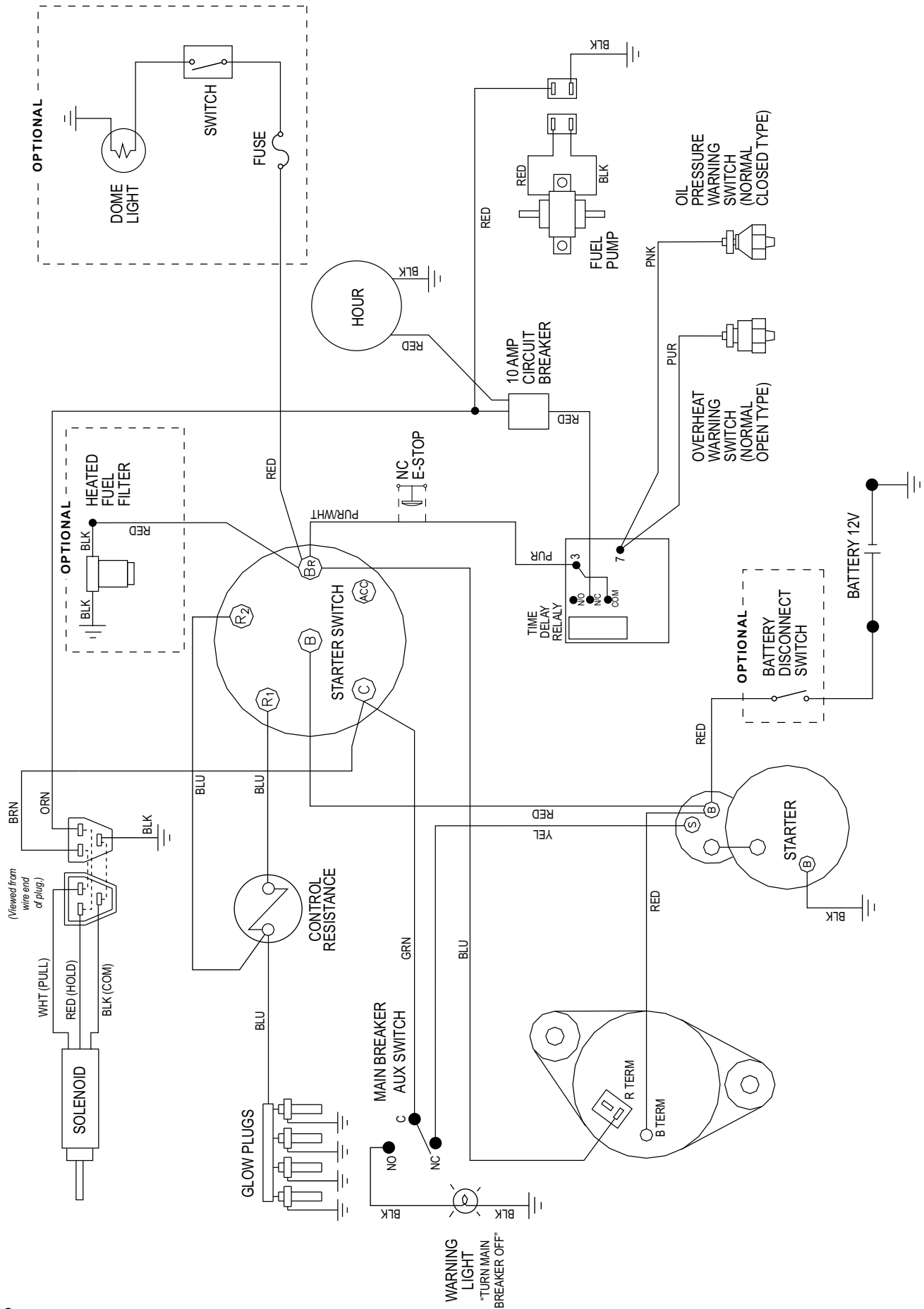


PART NUMBER 12401; Receptacle Panel (2x5-20R, 4xL14-30R)

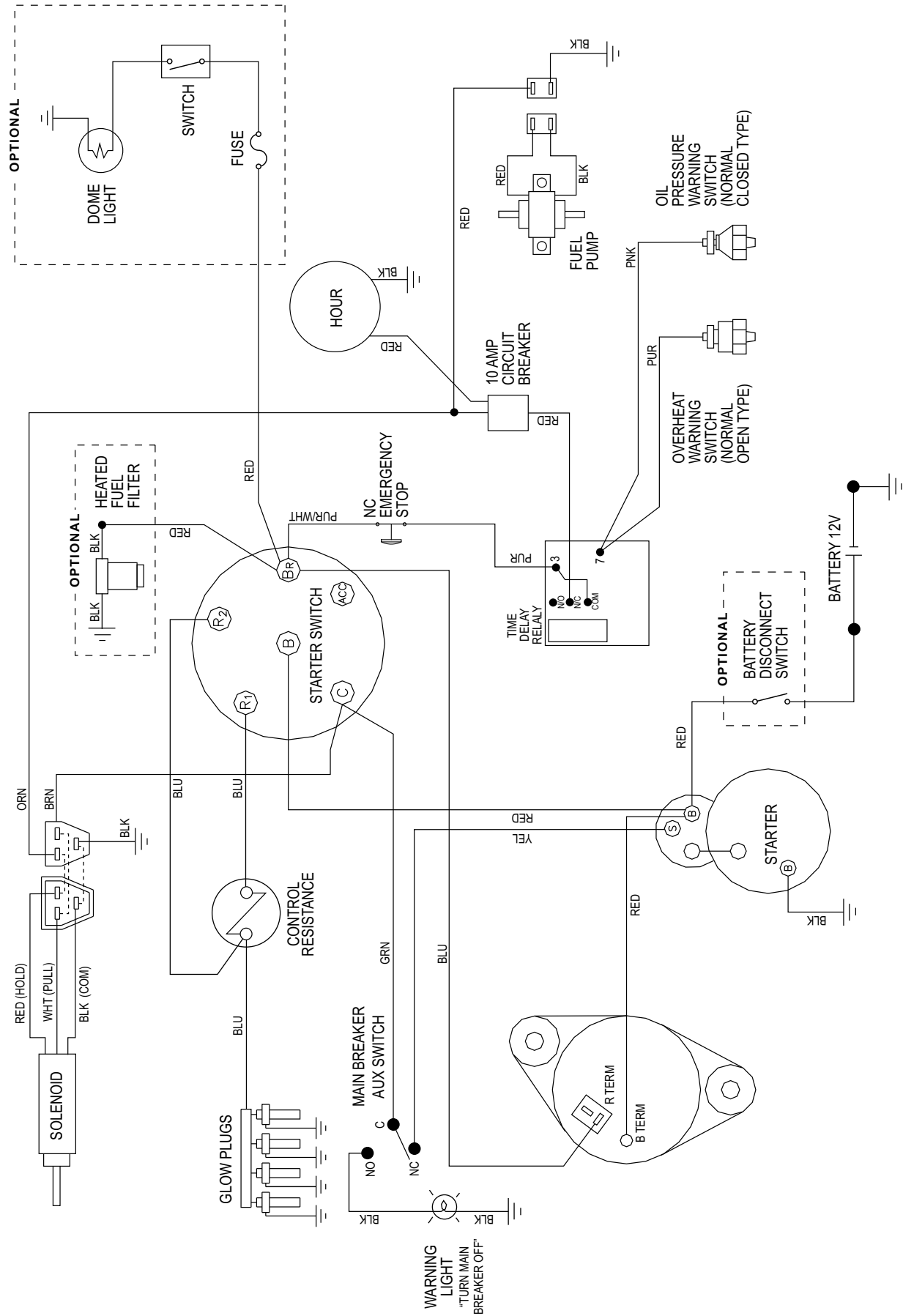


PART NUMBER 13540; Receptacle Panel (2x5-20R, 1xTT-30R, 1xL6-30R, 2x50A)

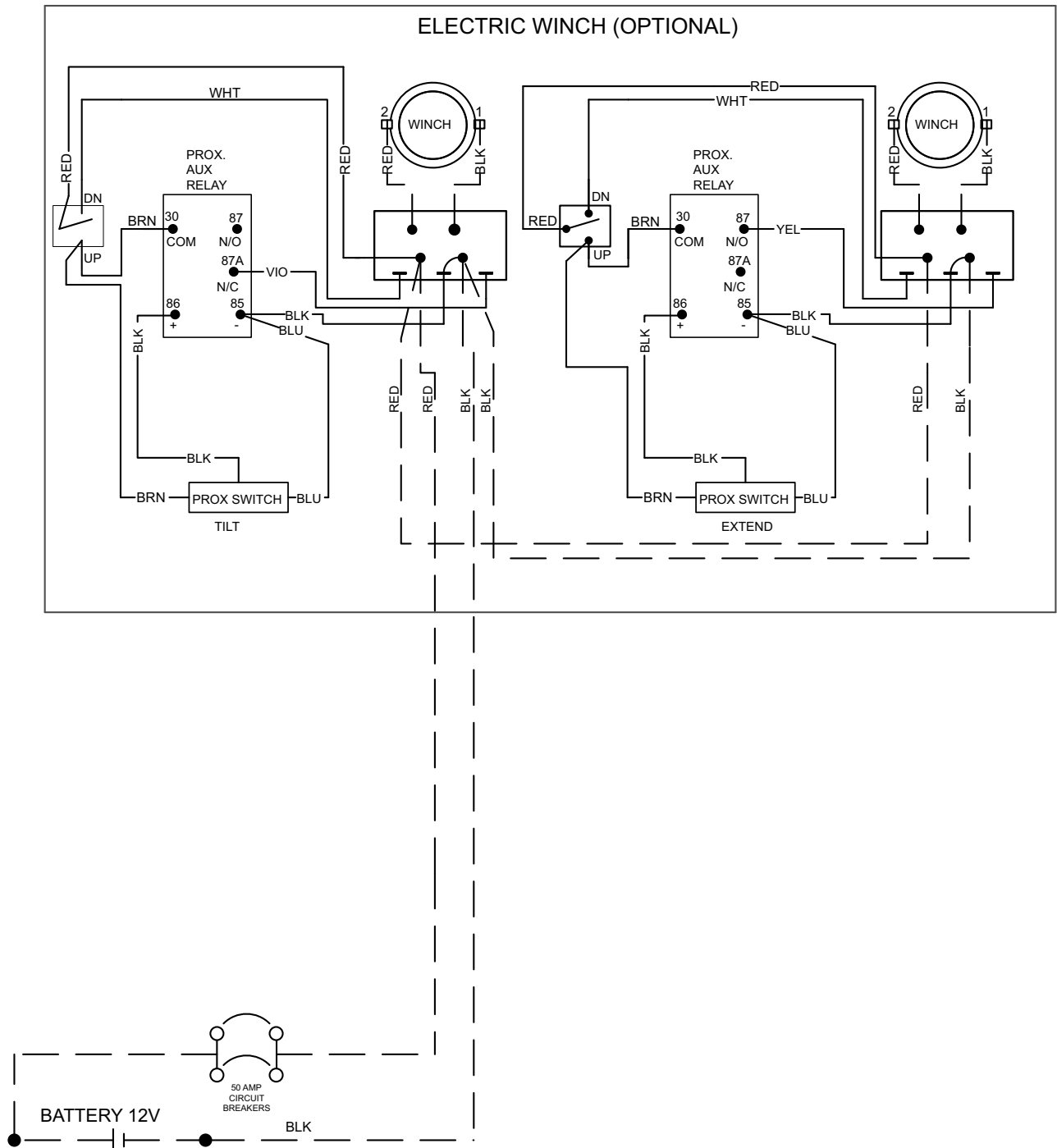
DC WIRING DIAGRAM - MLT 5150



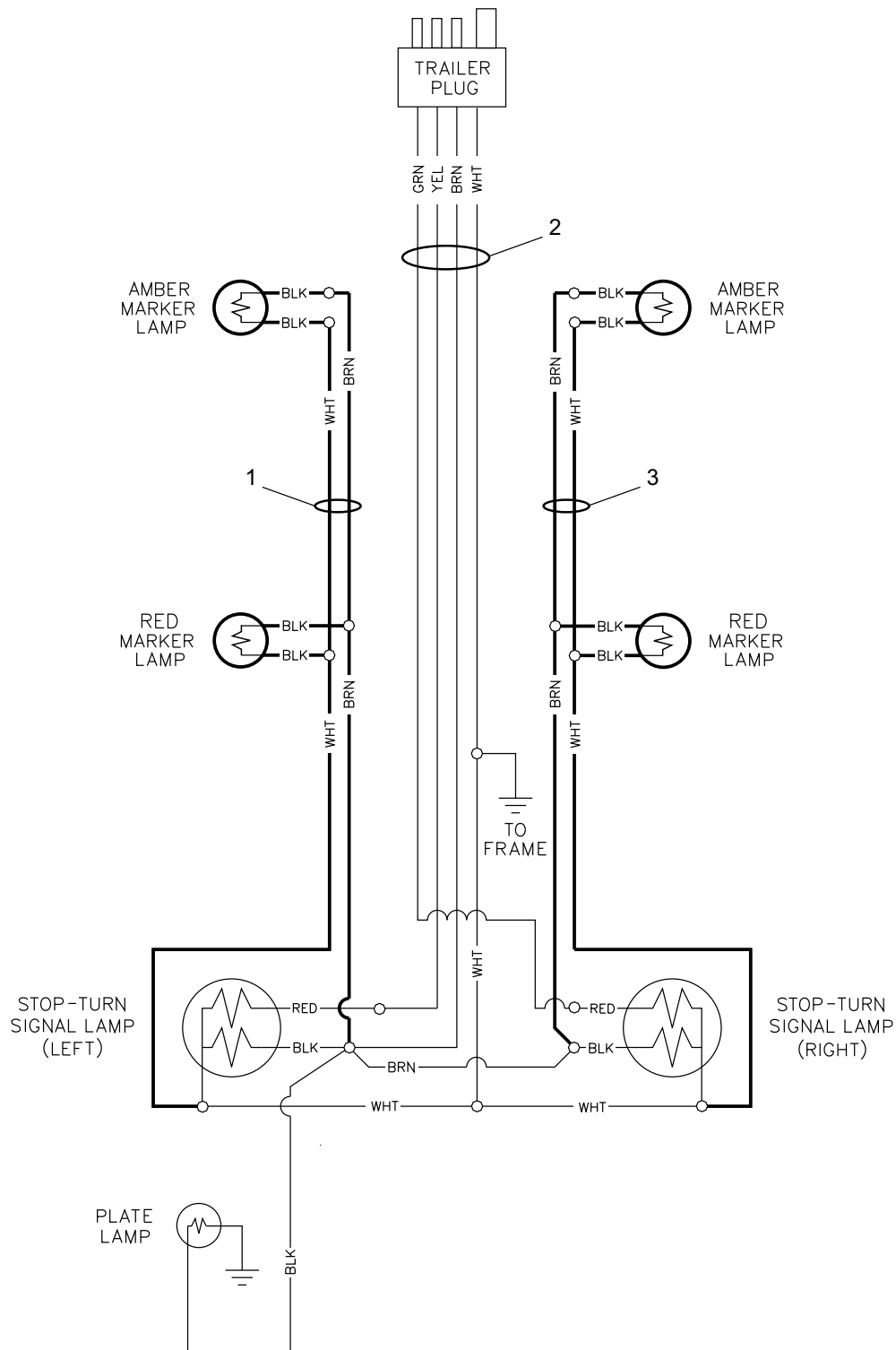
DC WIRING DIAGRAM - MLT 5200



DC CIRCUIT WIRING DIAGRAM - DUAL ELECTRIC WINCH



TRAILER LIGHTS WIRING DIAGRAM



ITEM NO.	PART NO.	QTY	DESCRIPTION
1	10264	1	Harness, left side trailer
2	12602	1	Assy, trailer light harness - 5000
3	10265	1	Harness, right side trailer
-	65441	-	Adapter, pig-tail trailer light 4-pin to 12-pin
-	65465	-	Adapter, trailer wiring flat 4 to rnd 7 blade
-	65464	-	Adapter, trailer wiring flat 4 to rnd 7 pin
-	65463	-	Adapter, trailer wiring flat 4 to rnd 6 pin
-	65548	-	Adapter, 4 pin flat to 4 pin flat X 12.00

REV: P
PART NO: 11632
09.16.08