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Light Tower

LTC 4L

OPERATOR'S MANUAL

0160448EN

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CALIFORNIA

Proposition 65 Warning:

Engine exhaust, some of its constituents, and certain vehicle components, contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

1. Foreword

This manual provides information and procedures to safely operate and maintain this Wacker model. For your own safety and protection from injury, carefully read, understand and observe the safety instructions described in this manual.

Keep this manual or a copy of it with the machine. If you lose this manual or need an additional copy, please contact Wacker Corporation. This machine is built with user safety in mind; however, it can present hazards if improperly operated and serviced. Follow operating instructions carefully! If you have questions about operating or servicing this equipment, please contact Wacker Corporation.

The information contained in this manual was based on machines in production at the time of publication. Wacker Corporation reserves the right to change any portion of this information without notice.

2. Safety Information

This manual contains DANGER, WARNING, CAUTION, and NOTE callouts which must be followed to reduce the possibility of personal injury, damage to the equipment, or improper service.

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.

DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

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

CAUTION

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

CAUTION: Used without the safety alert symbol, CAUTION indicates a potentially hazardous situation which, if not avoided, may result in property damage.

Note: *Contains additional information important to a procedure*.

2.1 Laws Pertaining to Spark Arresters

Notice: State Health Safety Codes and Public Resources Codes specify that in certain locations spark arresters be used on internal combustion engines that use hydrocarbon fuels. A spark arrester is a device designed to prevent accidental discharge of sparks or flames from the engine exhaust. Spark arresters are qualified and rated by the United States Forest Service for this purpose.

In order to comply with local laws regarding spark arresters, consult the engine distributor or the local Health and Safety Administrator.

2.2 Operating Safety

WARNING Familiarity and proper training are required for the safe operation of equipment. Equipment operated improperly or by untrained personnel can be dangerous. Read the operating instructions contained in both this manual and the engine manual and familiarize yourself with the location and proper use of all controls. Inexperienced operators should receive instruction from someone familiar with the equipment before being allowed to operate the machine.

2.2.1 The area immediately surrounding the Light Tower should be clean, neat, and free of debris.

2.2.2 ALWAYS be sure the machine is on a firm, level surface and will not tip, roll, slide, or fall while operating.

2.2.3 NEVER start a unit in need of repair.

2.2.4 Lower the tower when not in use, or if high winds or electrical storms are expected in the area.

2.2.5 The tower extends up to 8.8 m (29 ft.). Make sure area above trailer is open and clear of overhead wires and obstructions.

2.2.6 The bulbs become extremely hot in use! Allow the bulb and fixture to cool 10–15 minutes before handling.

2.2.7 Keep the area behind the trailer clear of people while raising and lowering the mast! Never raise, lower or turn the mast while unit is operating!

2.2.8 The trailer must be leveled and the outriggers extended before raising the tower. The outriggers must remain extended while the tower is up.

2.2.9 If for any reason any part of the mast hangs up or the winch cable develops slack while raising or lowering the tower, STOP immediately! Contact an authorized WACKER service representative.

2.2.10 NEVER remove the mast locking pin while the tower is up!

2.2.11 NEVER use the machine if the insulation on the electrical cord is cut or worn through.

2.2.12 NEVER operate the lights without the protective lens cover in place or with a lens cover that is cracked or damaged!

2.2.13 NEVER adjust the mast while the unit is operating.

2.2.14 NEVER raise the mast or operate the Light Tower in high winds.

2.2.15 NEVER connect machine to other power sources, such as supply mains of power companies.

2.2.16 ALWAYS replace or repair electrical components with components that are identical in rating and performance as the original component.

2.3 Operator Safety while using Internal Combustion Engines

DANGER

Internal combustion engines present special hazards during operation and fueling. Read and follow the warning instructions in the engine owner's manual and the safety guidelines below. Failure to follow the warnings and safety guidelines could result in severe injury or death.

2.3.1 NEVER operate the machine indoors unless exhaust fumes can be adequately ventilated.

2.3.2 DO NOT fill or drain the fuel tank near an open flame, while smoking, or while the engine is running.

2.3.3 ALWAYS refill the fuel tank in a well-ventilated area.

2.3.4 DO NOT touch or lean against hot exhaust pipes.

2.3.5 ALWAYS replace the fuel tank cap after refueling.

2.3.6 DO NOT remove radiator cap when the engine is running or hot. The radiator fluid is hot and under pressure and may cause severe burns!

2.3.7 DO NOT use gasoline or other types of fuels or flammable solvents to clean parts, especially in enclosed areas. Fumes from fuels and solvents can become explosive.

2.3.8 ALWAYS keep the area around the muffler free of debris such as leaves, paper, cartons, etc. A hot muffler could ignite the debris and start a fire.

2.4 Service Safety

WARNING

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.

2.4.1 ALWAYS replace the safety devices and guards after repairs and maintenance.

2.4.2 Before servicing the Light Tower, make sure the engine start switch is turned to OFF, the circuit breakers are open (off), and the negative terminal on battery is disconnected. NEVER perform even routine service (oil/filter changes, cleaning, etc.) unless all electrical components are shut down.

2.4.3 DO NOT allow water to accumulate around the base of the machine. If water is present, move the machine and allow the machine to dry before servicing.

2.4.4 DO NOT service the machine if your clothing or skin is wet.

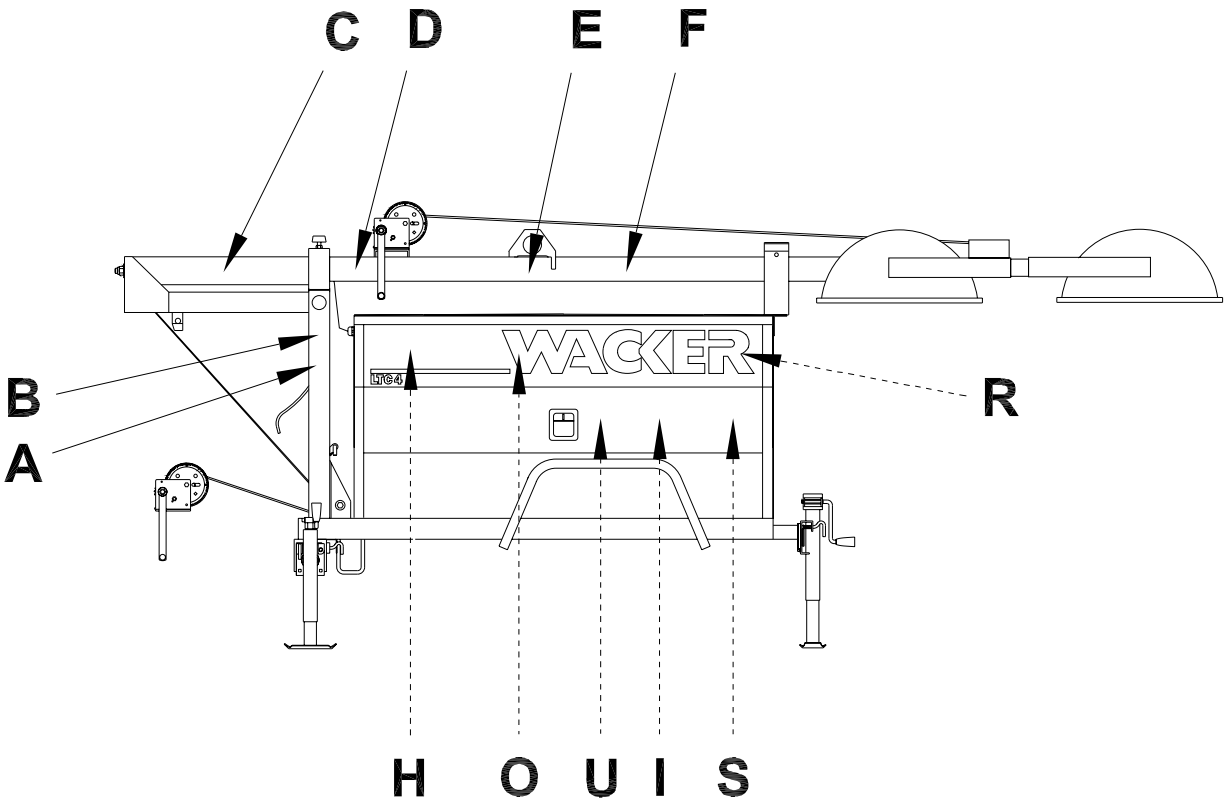
2.4.5 ALWAYS keep hands, feet, and loose clothing away from the moving parts on the generator and engine.

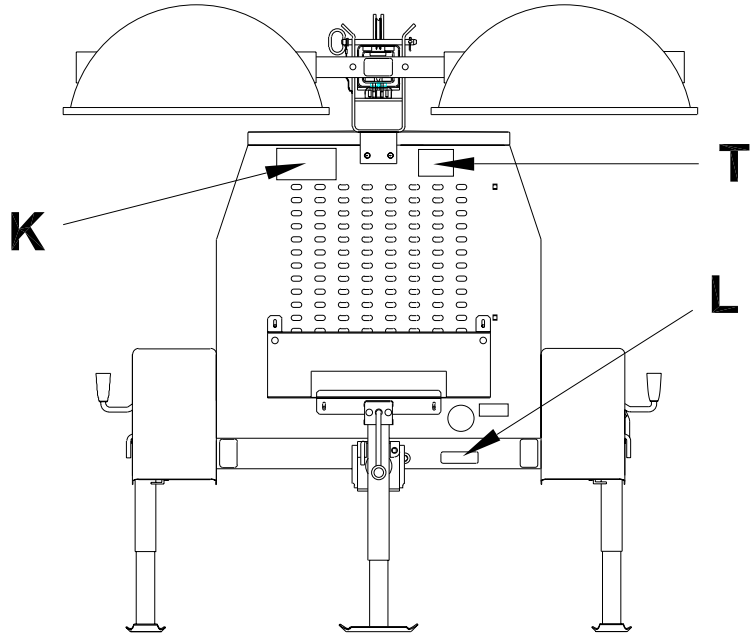
2.4.6 ALWAYS keep the machine clean and labels legible. Replace all missing and hard-to-read labels. Labels provide important operating instructions and warn of dangers and hazards.

2.4.7 ALWAYS 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 machine safely. Always remain aware of the location of other people around when lifting the machine.

2.4.8 ALWAYS turn off the light circuit breakers and shut down the engine before disconnecting the light fixtures or changing the light bulbs.

2.5 Label Locations





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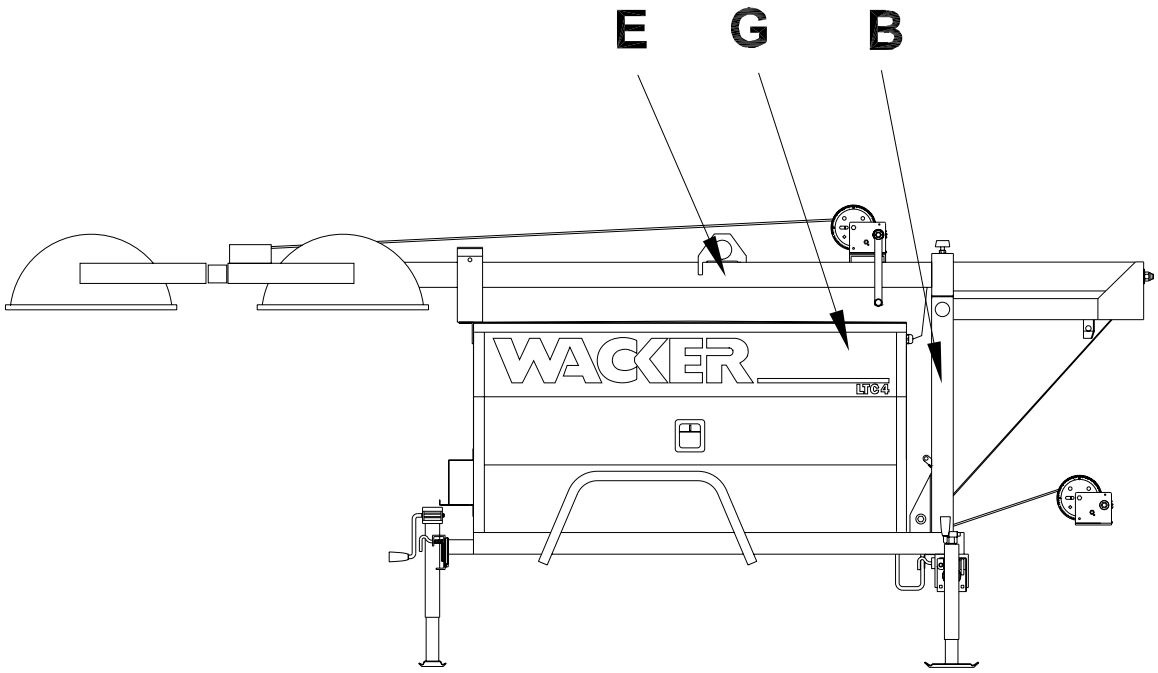

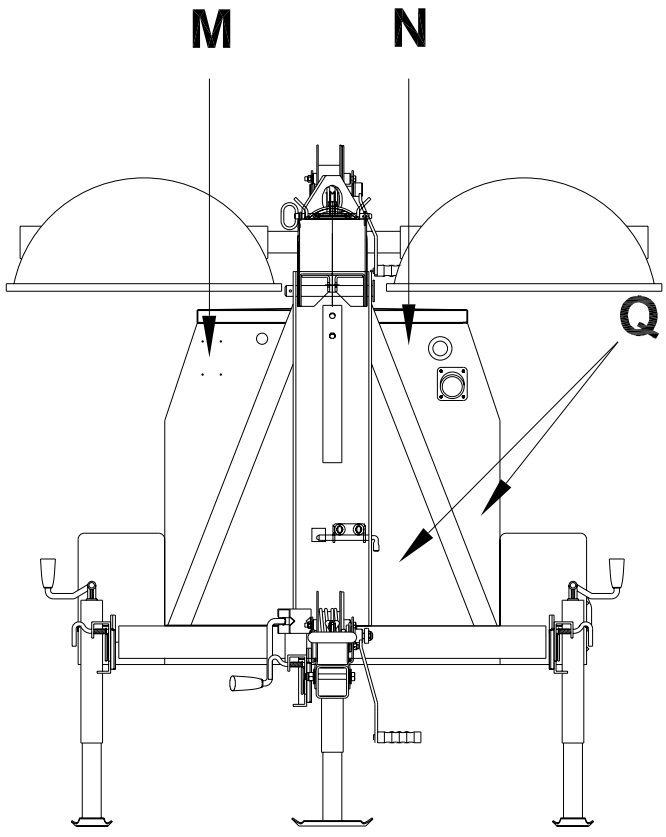

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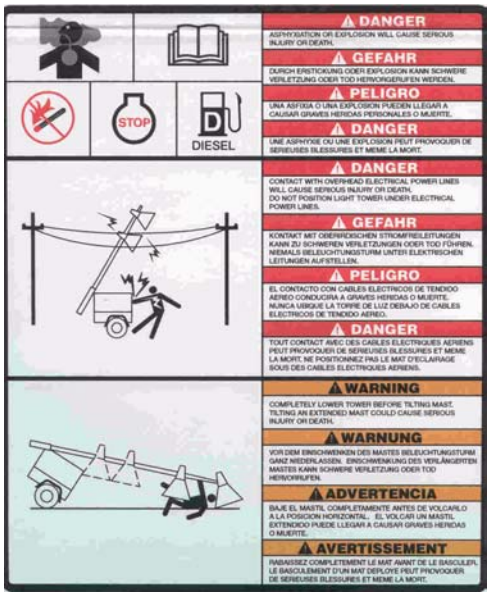
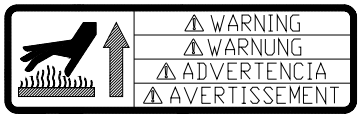
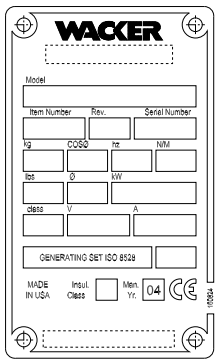
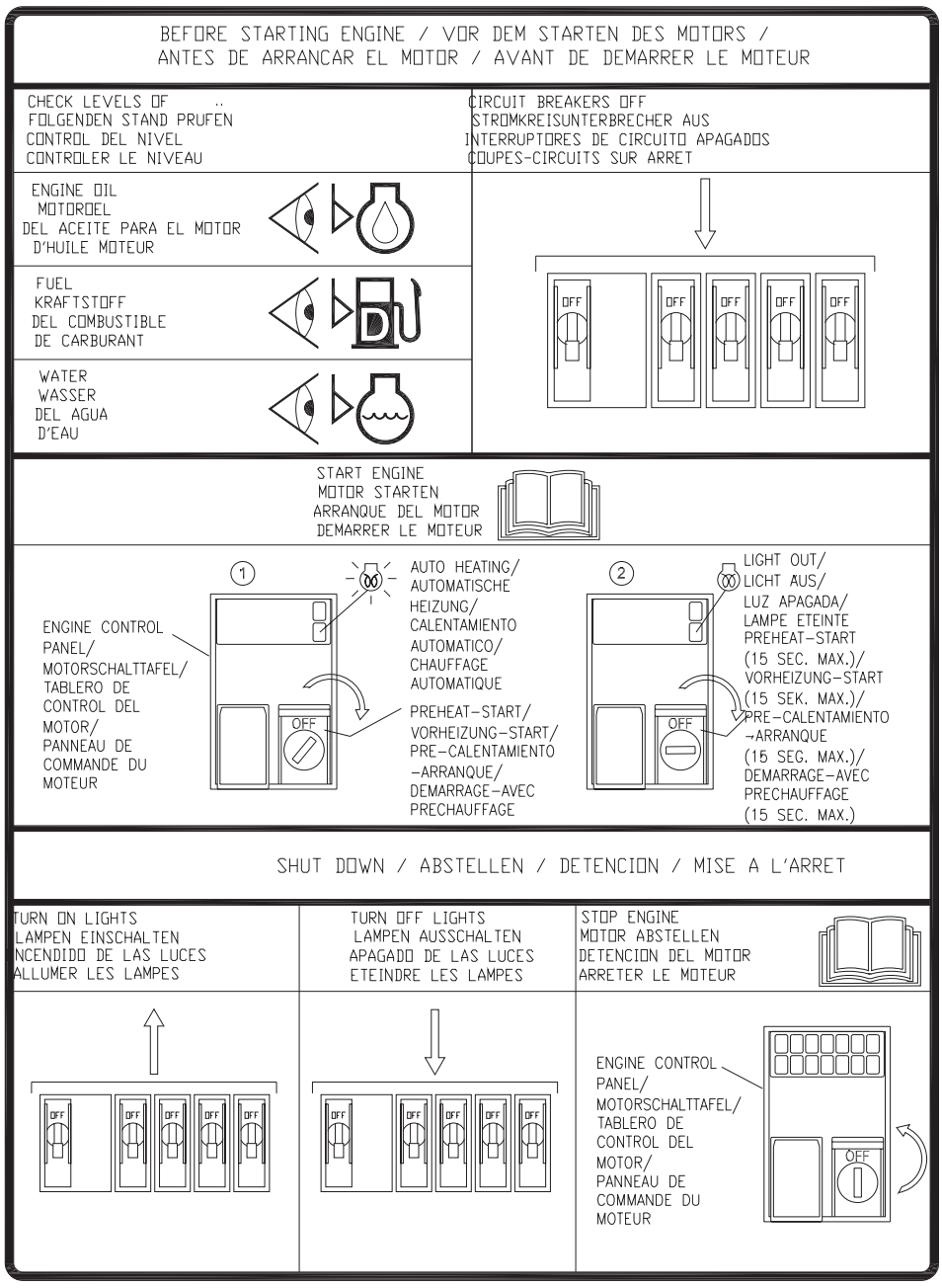
2.6 Safety and Operating Labels

Wacker machines use international pictorial labels where needed. These labels are described below:

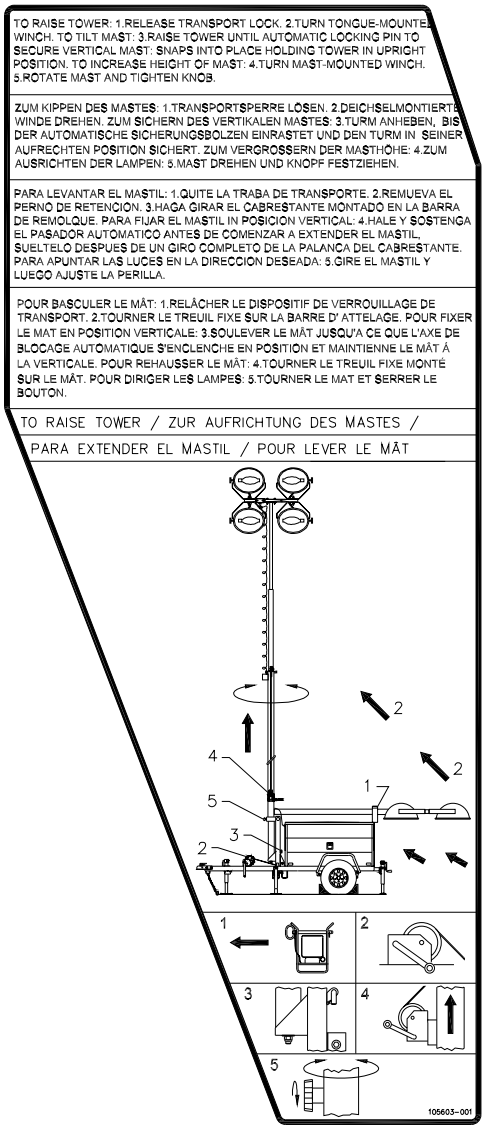
Ref.	Label	Meaning
A		DANGER! A non-secured, falling mast will cause serious injury or death if a person is hit. To secure mast, verify automatic locking pin has engaged to secure tower upright.
B		WARNING! Avoid crushing area.
C		WARNING! Completely lower tower before tilting mast. Tilting an extended mast could cause serious injury or death.
D		DANGER! Contact with overhead electrical power lines will cause serious injury or death. Do not position Light Tower under electrical power lines.

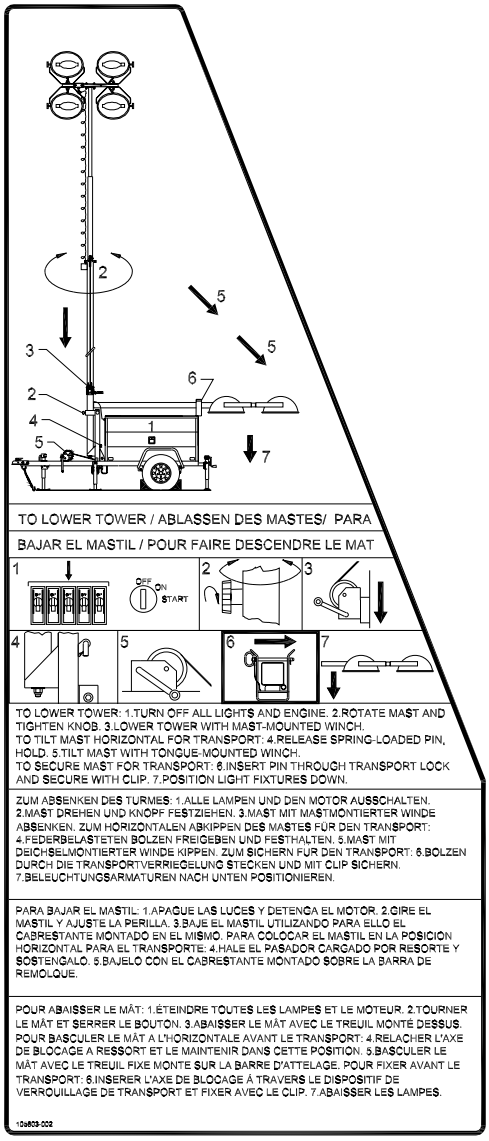
Ref.	Label	Meaning
E		CAUTION! Lifting point
F		WARNING! Secure mast in transport lock before lifting or towing. A loose swinging mast could cause personal injury or machine damage.
G		DANGER! Asphyxiation hazard. Read the Operator's Manual for instructions. No sparks, flames, or burning objects near machine. Stop the engine before adding fuel. Use only diesel fuel.
H		DANGER! Asphyxiation hazard. Read the Operator's Manual for instructions. No sparks, flames, or burning objects near machine. Stop the engine before adding fuel. Use only diesel fuel. DANGER! Contact with overhead electrical power lines will cause serious injury or death. Do not position Light Tower under electrical power lines. WARNING! Completely lower tower before tilting mast. Tilting an extended mast could cause serious injury or death.
I		DANGER! Electrical storage device within. Contact a qualified electrician for service or to open electrical box. Electric shock will cause serious injury or death.

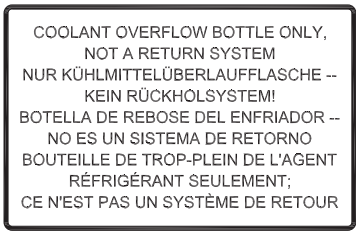
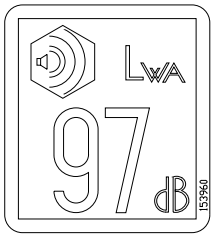
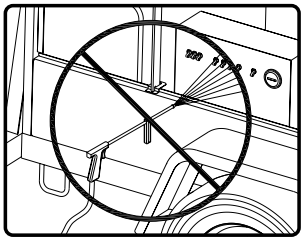
Ref.	Label	Meaning
K		WARNING! Stand clear of front and rear of machine when mast is being tilted up or down.
L		WARNING! Hot surface!
M		A nameplate listing the model number, item number, revision number, and serial number is attached to each unit. Please record the information found on this plate so it will be available should the nameplate become lost or damaged. When ordering parts or requesting service information, you will always be asked to specify the model number, item number, revision number, and serial number of the unit.
N		WARNING! Ultraviolet radiation from lamp can cause serious skin and eye irritation. Use only with provided undamaged lens cover and fixture.

Ref.	Label	Meaning
O		

Ref.	Label	Meaning
Q	**Manual Winch System**	





Ref.	Label	Meaning
R		Coolant overflow bottle only, not a return system.
S		WARNING! Pinching hazard. Rotating machinery.
T		Guaranteed sound power level in dB(A)
U		DO NOT pressure wash the control panel.

3. Technical Data

3.1 Engine

Item Number:		LTC 4L - 115V 0009379	LTC 4L - 230V 0009485
Engine			
Make		Lombardini	
Model		LDW1003	
Type		3-cylinder, 4-cycle, liquid-cooled diesel	
Maximum power rating	kW (Hp)	8.5 (11.4)	
Operating power rating	kW (Hp)	7.6 (10.2)	
Operating speed (no-load)	rpm	1500	
Alternator	V / A / W	12 / 45 / 540	
Battery	V/Ah/CCA	12 / 450	
Air cleaner	type	dry-type element	
Fuel	type	No. 2 diesel	
Fuel tank capacity	l (gal.)	114 (30)	
Fuel consumption	l (gal.) / hr.	1.71 (0.45)	
Running time	hours	67.7	
Coolant capacity	l (qts.)	4.7 (5.0)	
Oil capacity	l (qts.)	2.4 (2.5)	
Oil weight	SAE	15W40 CD or higher	

3.2 Generator

Item Number:		**LTC 4L - 115V** 0009379 Rev. 104 and higher	**LTC 4L - 115V** 0009379 Rev. 103 and lower	**LTC 4L - 230V** 0009485 Rev. 104 and higher	**LTC 4L - 230V** 0009485 Rev. 103 and lower
Generator					
Frequency	Hz	50 ± 2			
Continuous output	kW	6.0	5.0	6.0	5.0
Output	volts	115		230	
Amps	A	43.5		21.7	
Excitation type		Capacitor / Brushless			
Power factor		1.0			
Voltage regulation - no load to full load	%	± 5.0			
Speed	rpm	1500			

3.3 Machine

Item Number:		**LTC 4L - 115V** 0009379	**LTC 4L - 230V** 0009485
Machine			
Height - mast extended	m (ft.)	8.8 (29)	
Lighting system (1000W)		4 metal halide light	
Max. lighting coverage @ 0.5 ft. candles	m^2 (ft^2) acres	2824 (30,400) 7	
Sound level at 7 m (23 ft.)	dB(A)	67	
Sound pressure level at operator's location (L_{pA})	dB(A)	91	
Guaranteed sound power level (L_{WA})	dB(A)	97	

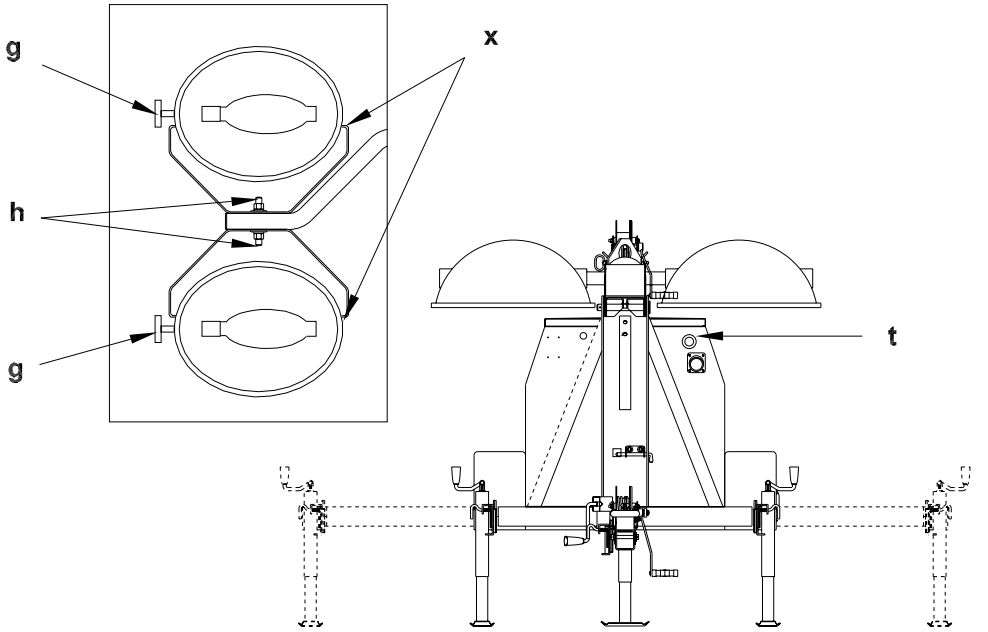
4. Operation

4.1 Adjusting Lights

See Graphic: wc_gr002090

Each light fixture can be aimed up, down, left or right. Position each fixture by loosening toolless light adjusters **(g)** and aiming light up or down. Do not loosen inside nut **(x)**. Loosening this nut can damage the light fixture. Loosen nut **(h)** to turn light fixtures left or right. Tighten adjusters and nuts after positioning lights.

Always return light fixtures to aim up or away from the ground when mast is in the cradle for towing.



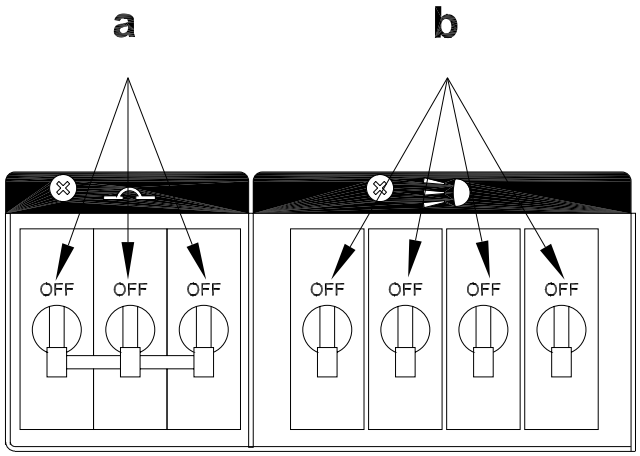
wc_gr002090

4.2 Operating Lights

See Graphic: wc_gr002934

Turn on circuit breaker **(a)** first, then turn each circuit breaker **(b)** “ON”, one at a time.

Metal halide floodlights require a warm-up of 5–15 minutes before they reach full output. If floodlights are shut down, a 10-minute cool-down period is required before turning them back on.



wc_gr002934

4.3 Raising Tower (Manual Winch System)

See Graphic: wc_gr002166

WARNING

NEVER raise the mast or operate the Light Tower in high winds.

NEVER raise the mast while the engine is running.

WARNING

HIGH VOLTAGE! DO NOT use the Light Tower if insulation on electrical cord is cut or worn through. Repair or replace the cord before using. Bare wires in contact with the metal frame of the trailer or tower can cause electrocution.

DO NOT position the Light Tower under electrical power lines.

WARNING

NEVER allow anyone to stand near the rear of the unit while raising the mast.

The Light Tower includes two separate winches. One for lifting the mast to the vertical position, the other for raising the tower. Each winch is an automatic brake-type winch that automatically brakes when the handle is released. The handle must be rotated to wind in cable as well as unwind cable.

WARNING

NEVER touch the winch pawl! Releasing the pawl may cause the mast or tower to fall.

4.3.1 Check winch cables **(n)** for wear or damage, and make sure they are resting properly in pulleys. Do not use the Light Tower if either winch cable is damaged.

4.3.2 Remove the cradle locking pin **(j)** from the cradle.

4.3.3 Check the operation of the tongue-mounted winch **(o)** by rotating the winch handle 1/4-turn clockwise (“cable in” direction). The winch pawl must engage winch gear teeth. When operating properly, the winch pawl will make a “clicking” sound when the winch handle is rotated clockwise. Do not attempt to raise the mast if the winch is damaged or not operating properly.

4.3.4 Continue to rotate the winch handle and raise the mast to the vertical position until the vertical mast locking pin **(p)** locks the mast in place. Be certain the vertical mast locking pin is fully engaged in the locking position before raising the tower.

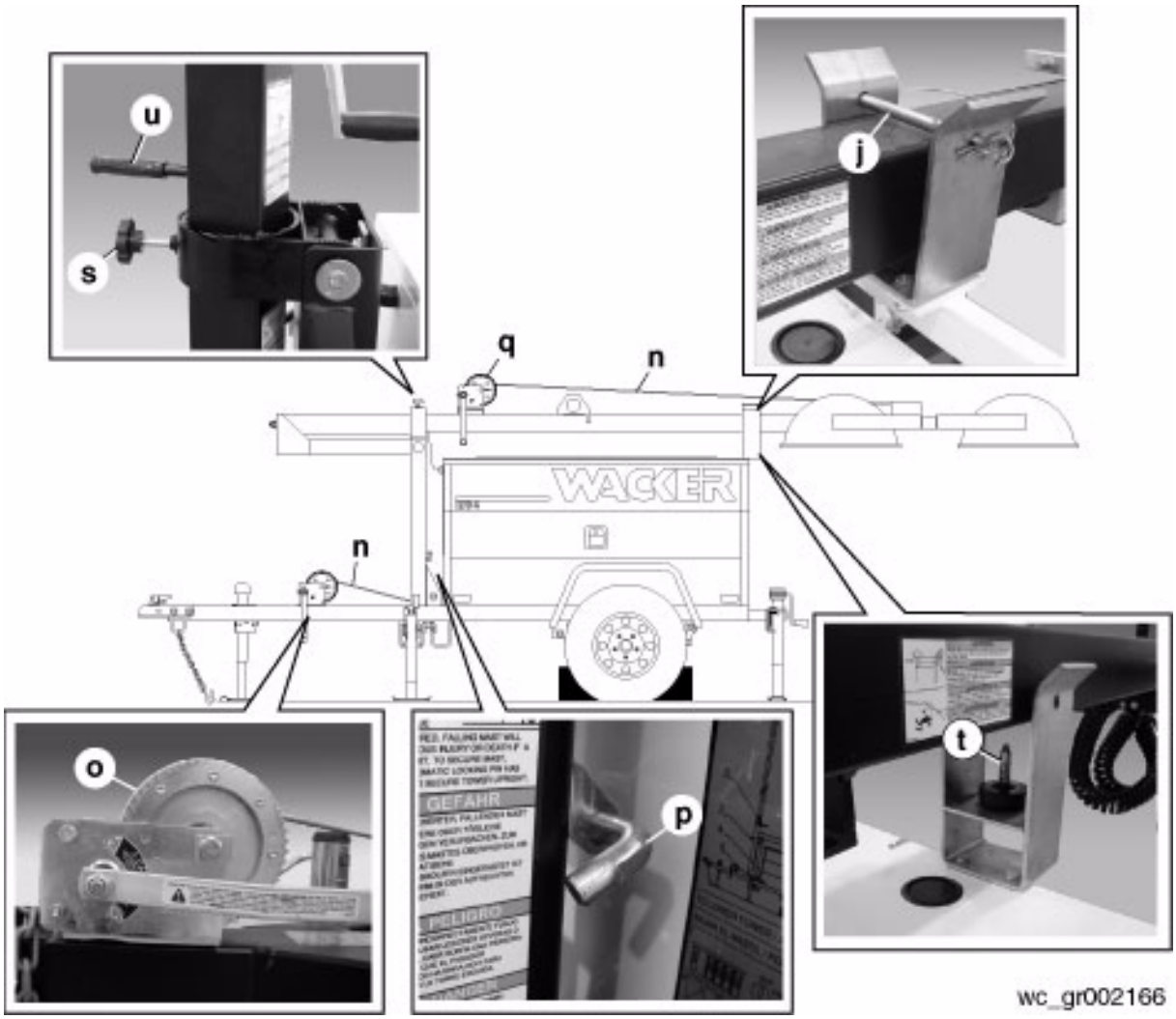
WARNING

NEVER pull the vertical mast locking pin (p) while the tower is raised! Releasing the vertical mast locking pin while the tower is raised may cause the tower to fall or the machine to tip over.

4.3.5 After the mast is in the vertical position, check the operation of the mast-mounted winch **(q)** by rotating the winch handle 1/4-turn clockwise ("cable in" direction). The winch pawl must engage winch gear teeth. When operating properly, it will make a "clicking" sound when the winch handle is rotated clockwise. Do not attempt to raise the mast if the winch is damaged or not operating properly. Continue rotating the winch handle until mast is at the desired height. Do not over crank the winch when the tower is fully extended.

CAUTION: Do not extend the tower beyond the red marking on the mast!

4.3.6 Once the tower is at the desired height, rotate the mast to the desired direction. To rotate, loosen rotation locking knob **(s)**. Then using the handle **(u)**, rotate the mast until the lights face the desired direction, and then retighten the rotation locking knob.



4.4 Lowering Tower (Manual Winch System)

See Graphic: wc_gr002166

Be sure to read and understand the operating instructions before lowering the tower!

WARNING

If for any reason a part of the mast hangs up or a winch cable develops slack before mast is fully lowered, **stop immediately!** Continuing to turn the winch handle will increase the slack in the cable. Too much slack could cause the mast to collapse should it suddenly free up. If the mast hangs up, level the trailer. Slightly shake or twist the tower assembly to free the bind. Contact an authorized WACKER service representative immediately.

WARNING

NEVER lower the mast while the unit is operating.

WARNING

NEVER allow anyone to stand near the rear of the unit while lowering the mast.

4.4.1 Turn the lights off. Shut down the engine.

CAUTION: Shutting down the engine before turning off the lights could damage floodlight ballasts or generator capacitor(s).

CAUTION: Observe power cord while lowering the tower. Make sure the coiled cord is not damaged during the lowering process.

4.4.2 Lower the tower by turning the handle on the mast-mounted winch **(q)** counterclockwise (“cable out” direction).

WARNING

NEVER touch the winch pawl! Releasing the winch pawl may cause the mast or tower to fall.

4.4.3 Loosen the rotation locking knob **(s)** and using the handle **(u)**, rotate the mast so the lights face the rear of the trailer and the mast-mounted winch is facing toward the trailer tongue.

4.4.4 Pull and hold the mast locking pin **(p)**. Rotate the handle on the tongue-mounted winch **(o)** counterclockwise (“cable out” direction) until the mast spring begins to pivot the mast down. Release the mast locking pin and continue to rotate the handle until the mast is resting in the transport cradle. Be sure that the secondary locking pin **(t)** penetrates all sections of the mast.

WARNING

NEVER pull the vertical mast locking pin (e) while the tower is raised! Releasing the locking pin while the tower is raised may cause the tower to fall or the machine to tip over.

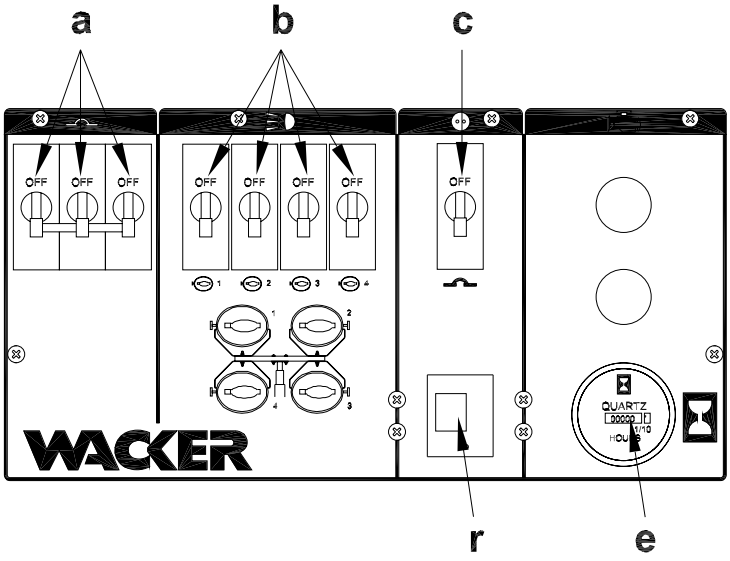
4.4.5 After the mast is down, secure it in the cradle by inserting the cradle lock pin **(j)**. Insert the clip through the pin to secure it in place.

4.4.6 Position the light fixtures to aim at the ground.

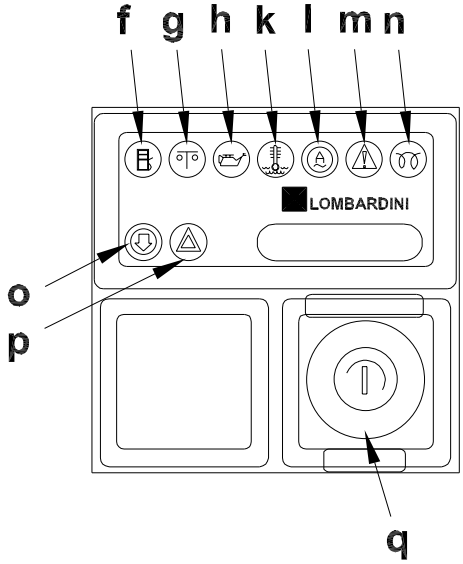
CAUTION: Allow the floodlights to cool 10–15 minutes before moving trailer. Moving the trailer while the lights are still hot could cause the bulbs to break.

4.5 Control Panels - 50 Hz - Manual Winch System (0009379, 0009485 Rev. 101 & lower)

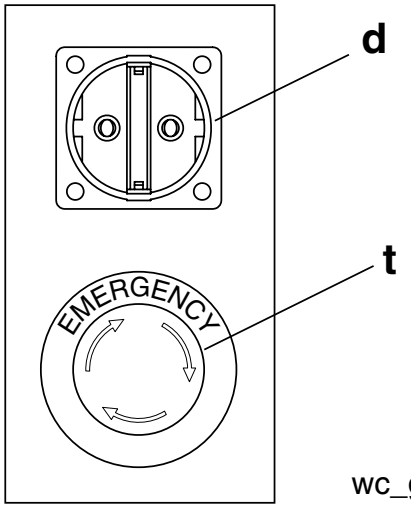
Floodlight Control Panel



Engine Control Panel



wc_gr002293

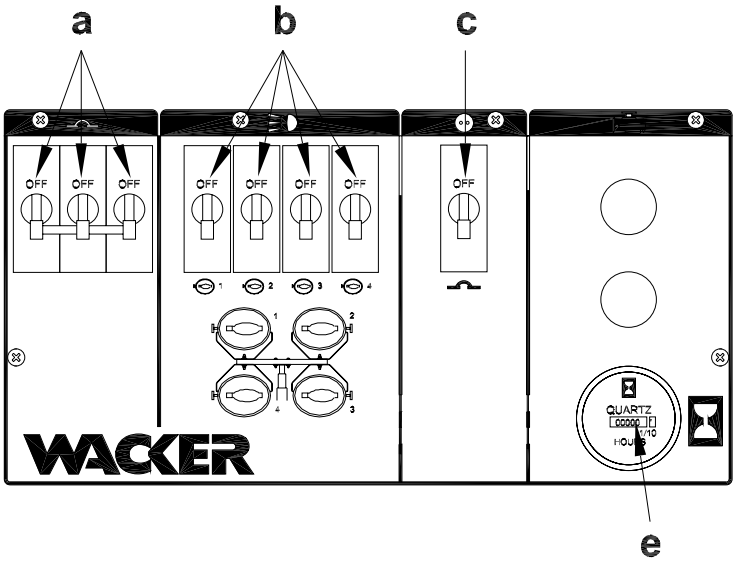


wc_gr002294

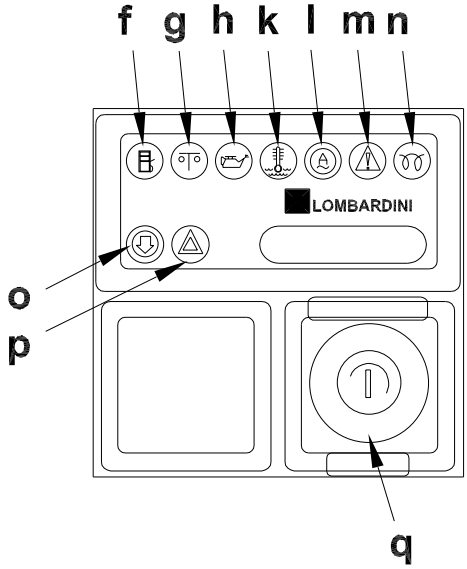
Ref.	Description	Ref.	Description
a	50 Amp circuit breaker	l	Alternator Indicator
b	15 Amp lights circuit breaker	m	Auxiliary lights (not used)
c	20 Amp GFI circuit breaker	n	Glow Plug Indicator
d	Receptacle	o	Air Filter Restriction Indicator
e	Hour Meter	p	Auxiliary lights (not used)
f	Low Fuel Indicator (not used)	q	Key Access Door
g	Safety Shutdown Indicator	r	25 Amp Earth-leakage circuit breaker
h	Low Oil Pressure Shutdown	t	Emergency stop switch
k	High Coolant Temperature Shutdown		

4.6 Control Panels - 50 Hz - Manual Winch System (0009485 Rev. 102 & higher)

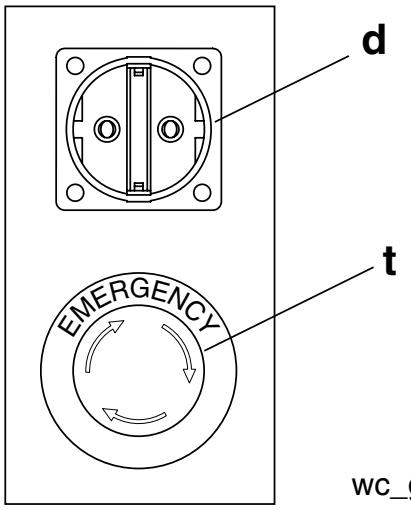
Floodlight Control Panel



Engine Control Panel



wc_gr002933



wc_gr002294

Note: *On machine Revisions 102 and higher, the generator neutral wire is not connected to the frame ground or Potential Earth (PE). Be informed that this machine is wired with an IT Network. Before connecting this machine to a distribution system, you must consult with a local electrician for wiring codes.*

Ref.	Description	Ref.	Description
a	50 Amp circuit breaker	k	High Coolant Temperature Shutdown
b	15 Amp lights circuit breaker	l	Alternator Indicator
c	20 Amp GFI circuit breaker	m	Auxiliary lights (not used)
d	Receptacle	n	Glow Plug Indicator
e	Hour Meter	o	Air Filter Restriction Indicator
f	Low Fuel Indicator (not used)	p	Auxiliary lights (not used)
g	Safety Shutdown Indicator	q	Key Access Door
h	Low Oil Pressure Shutdown	t	Emergency stop switch

4.7 Starting

See Graphic: wc_gr002293, wc_gr0002294

4.7.1 Check engine oil, fuel and coolant levels.

Note: *If fuel tank was drained or run dry it may be necessary to bleed fuel lines. Refer to Engine Operator's Manual.*

4.7.2 Check condition of electrical cable on mast. Do not start generator if insulation on cable is cut or worn through.

4.7.3 Check that the circuit breakers **(a, b, c)** are in their "OFF" position.

4.7.4 Check that the emergency stop switch **(t)** is pulled out.

CAUTION: Starting engine under load will damage the machine.

4.7.5 On machines equipped with the Lombardini engine, turn key **(q)** one click right. Glow plug indicator **(n)** will illuminate until engine is properly preheated. This is an automatic timer based on engine temperature. Crank engine immediately after glow plug light goes off.

4.7.6 Turn key **(q)** to "START" and hold until engine starts. Release key after engine starts.

CAUTION: Do not crank engine longer than 10 seconds. This could cause starter motor to overheat. Return switch to "OFF" and wait 15-30 seconds for starter motor to cool down before attempting to preheat and restart.

Note: *If oil pressure is not obtained within 30 seconds after key is turned to "RUN", the automatic shutdown system will shut off the fuel supply. You must return the key to the "OFF" position to restart the 30 second timer before attempting to restart the engine.*

4.7.7 Allow engine to warm up before operating floodlights.

CAUTION: Never use starting fluids to aid in starting of engine.

4.8 Automatic Shutdown

This unit is equipped with a low oil, high temperature auto-shutdown system. This system will automatically shut off the fuel supply to the engine if the oil pressure drops too low or the engine exceeds normal operating temperatures. Return the key switch to "OFF" to reset the unit after an engine shutdown.

4.9 Stopping

See Graphic: wc_gr002293

4.9.1 Turn the circuit breakers **(a, b, c)** off and remove any other loads from the generator.

CAUTION: Never shut down the engine without turning off the lights. Damage to the generator will occur.

4.9.2 Turn the key **(q)** to OFF.

4.10 Emergency Stop Switch

See Graphic: wc_gr002294

In case of emergency, push in the emergency stop switch **(t)** located on the front panel.

4.11 Derating

All generator sets are subject to derating for altitude and temperature. Although derating should not affect operation of the floodlights, it will reduce the available reserve power to the receptacle.

Ratings are typically reduced 3% per 300 m (1000 feet) elevation from sea level, and 2% per 10°F (5.5°C) increase in ambient temperature above 78°F (25°C).

4.12 Receptacle - 50 Hz

See Graphic: wc_gr002293, wc_gr002294

The machine is equipped with a convenience receptacle for running accessories and tools from the generator. Power to this receptacle is available any time the engine is running and the circuit breaker is “ON”.

CAUTION: With the lights on, do not draw more than 400 Watts from the 115V receptacle or 800 Watts from the 230V receptacle.

A circuit breaker **(c)** protects the receptacle **(d)**.

CAUTION: Do not use frayed or damaged cords or plugs with auxiliary outlet.

CAUTION: Use only tough rubber-sheathed flexible cable or equivalent. (per 1EC245-4).

CAUTION: When using extension cords or mobile distribution networks the total length of cords for a cross section of 1.5 mm^2 should not exceed 60 m. For a cross section of 2.5 mm^2, it should not exceed 100 m.

Note: *On machine Revisions 102 and higher, the generator neutral wire is not connected to the frame ground or Potential Earth (PE). Be informed that this machine is wired with an IT Network. Before connecting this machine to a distribution system, you must consult with a local electrician for wiring codes.*

5. Maintenance

5.1 Installing / Removing Light Fixtures

See Graphic: wc_gr002296

WARNING

ALWAYS turn off light circuit breakers and shut down engine before disconnecting light fixtures or changing light bulbs.

Remove fixtures by disconnecting electrical cords using the quick disconnects **(a)** or by disconnecting electrical cords at the junction box **(b)**. Remove nuts **(c)** from fixture mounting brackets and remove both fixture and bracket off stud.

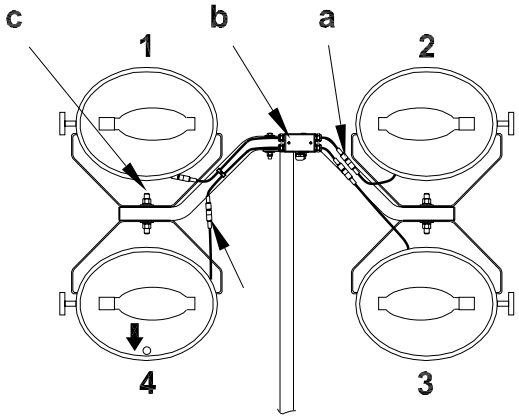
CAUTION: Only a trained technician should be allowed to install and remove fixture wiring.

Note: *When reinstalling the lamp fixtures, make sure the drain hole is pointing down.*

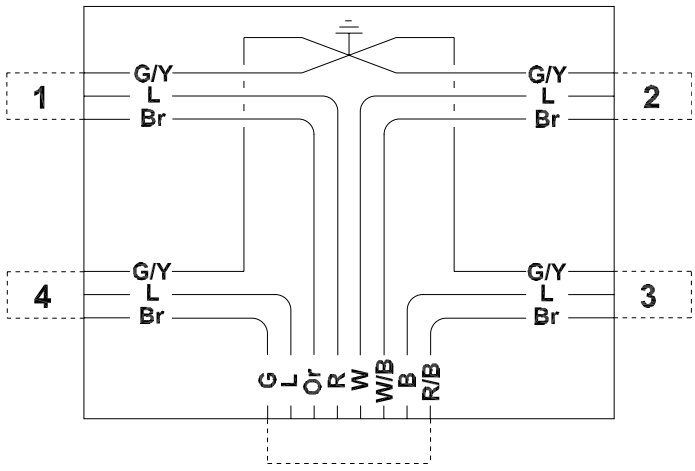
WARNING

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

Numbering Sequence of Floodlights



Junction Box Wiring for Floodlights



wc_gr002296

Wire Colors							
B	Black	R	Red	Y	Yellow	Or	Orange
G	Green	T	Tan	Br	Brown	Pr	Purple
L	Blue	V	Violet	Cl	Clear	Sh	Shield
P	Pink	W	White	Gr	Gray	LL	Light blue

5.2 Replacing / Removing Bulbs

The Light Tower uses four 1000W bulbs. When replacing or removing the bulbs, avoid leaving any grease or oil residue on the glass surface. This can create hot spots, reducing the service life of the bulb or causing the outer jacket to burst.

WARNING ALWAYS turn off the light circuit breakers and shut down the engine before disconnecting the light fixtures or changing the light bulbs.

WARNING **Bulbs become extremely hot in use!** Allow the bulb and fixture to cool 10–15 minutes before handling.

WARNING **NEVER operate the lights without the protective lens cover in place or with a lens cover that is cracked or damaged!** The lamps used in the floodlights produce high temperatures and operate under pressure. They are subject to failures where the outer jacket bursts and shatters, resulting in a discharge of extremely hot glass particles. These particles pose a risk of personal injury, property damage, burns and fire.

WARNING Ultraviolet radiation from the lamp can cause serious skin and eye irritation. Use the lamp only with provided undamaged lens cover and fixture.

5.3 Daily Inspection

5.3.1 Check for fluid leaks. Check fluid levels.

5.3.2 Inspect condition of electrical cords. Do not use light tower if insulation is cut or worn through.

5.3.3 Check that winch cables are in good condition. Do not use a cable that is kinked or starting to unravel.

5.3.4 Check that the vertical mast locking pin and its spring are secured, aligned, and operating properly.

5.4 Air Cleaner

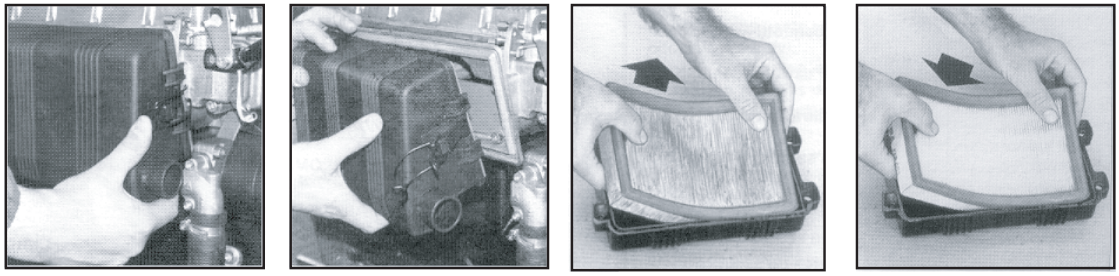
See Graphic: wc_gr000540, wc_gr002293

Replace the air filter cartridge when the indicator **(o)** mounted on the control panel appears.

5.4.1 Open air cleaner and remove element.

5.4.2 To clean the filter, lightly tap on a hard surface to eliminate all excess dirt. Do not blow the paper filter element with compressed air to clean. Clean the filter cover and support carefully.

5.4.3 Reassemble the filtering element and air cleaner.



wc_gr000540

5.5 Engine Oil

See Graphic: wc_gr000541

Drain the oil while the engine is still warm.

Note: *In the interests of environmental protection, place a plastic sheet and a container under the machine to collect any liquid which drains off. Dispose of this liquid in accordance with environmental protection legislation.*

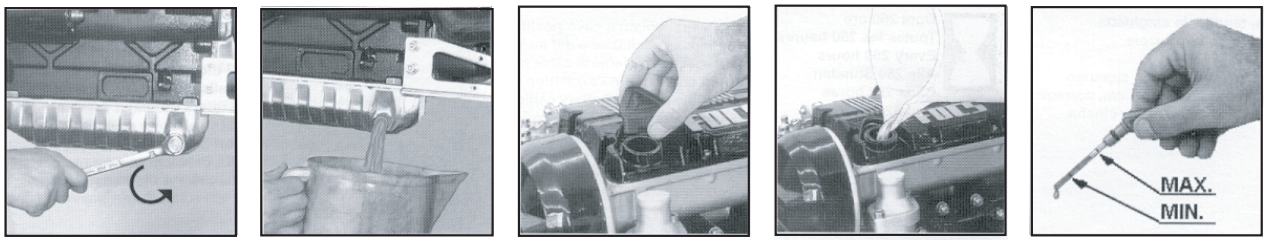
5.5.1 Remove the oil drain plug.

5.5.2 Allow the oil to drain.

5.5.3 Install the oil drain plug.

5.5.4 Fill the engine crankcase through the oil filler opening, to the upper mark on the dipstick. See *Technical Data* for oil quantity and type.

5.5.5 Install the oil filter cap.



wc_gr000541

5.6 Engine Maintenance

	Before each use	Every 125 hours	Every 250 hours	Every 500 hours	Every 1000 hours or two years
Check for fluid leaks.	■				
Check engine oil.	■				
Check fuel level.	■				
Replace air filter if indicator light is on.**	■				
Change engine oil.*		■			
Check level of battery electrolyte.		■			
Check condition and tension on fan belt.			■		
Check condition of radiator hoses.			■		
Replace oil filter.*			■		
Replace fuel filter.			■		
Flush radiator.				■	
Replace fan belt.				■	
Check valve clearance.				■	
Remove sediment in fuel tank.					■
Change radiator coolant.					■
Replace battery.					■
Replace radiator hoses and clamps.					■
Replace fuel pipes and clamps.					■

* Change engine oil and filter after first 50 hours of operation.

** Replace air filter after air filter restriction switch indication or one year. Lombardini does not recommend the removal of air filter elements for purposes of inspection.

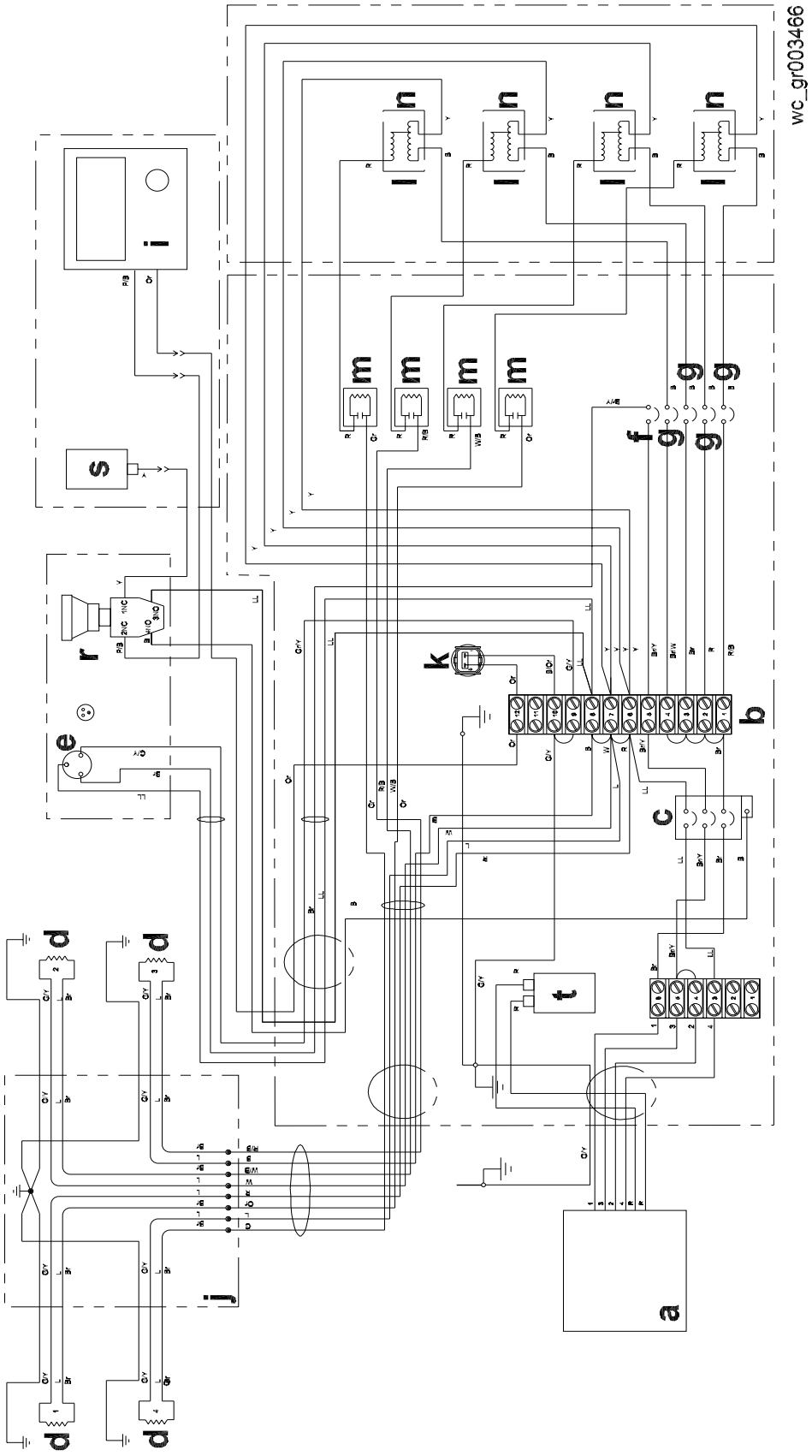
5.7 Troubleshooting

WARNING

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.

Problem / Symptom	Reason / Remedy
Lamp will not start	• Lamp is too hot. Allow lamp to cool 10–15 minutes before restarting. • Faulty lamp connection. Check that lamp is tight in socket. Check connections inside connection boxes on light fixtures and mast. • Plug connection at fixture is loose or damaged. • Lamp broken. Check for broken arc tube or outer lamp jacket, broken or loose components in lamp envelope, blackening or deposits inside lamp tube. • Circuit breaker loose or defective. • Generator output incorrect. Check incoming voltage to ballast. Incoming voltage should be 120V ± 5V. If voltage is incorrect, engine speed may need to be adjusted or generator may require service. • Low or no ballast output. With the fixture cord removed from its receptacle, the voltage should measure 400 to 445 VAC. If proper voltage is not achieved, perform capacitor check to determine if capacitor or coil needs to be replaced.
Low Light Output	• Lamp worn. Replace lamp due to normal lamp life. • Low ballast output. Check ballast for proper voltage output. • Fixture or lens dirty. Clean reflective surface inside fixture and both inside and outside surface of glass lens.

5.8 Schematic for 50 Hz Metal Halide 4-Light Units-115 V (0009379 Rev. 104 and higher)

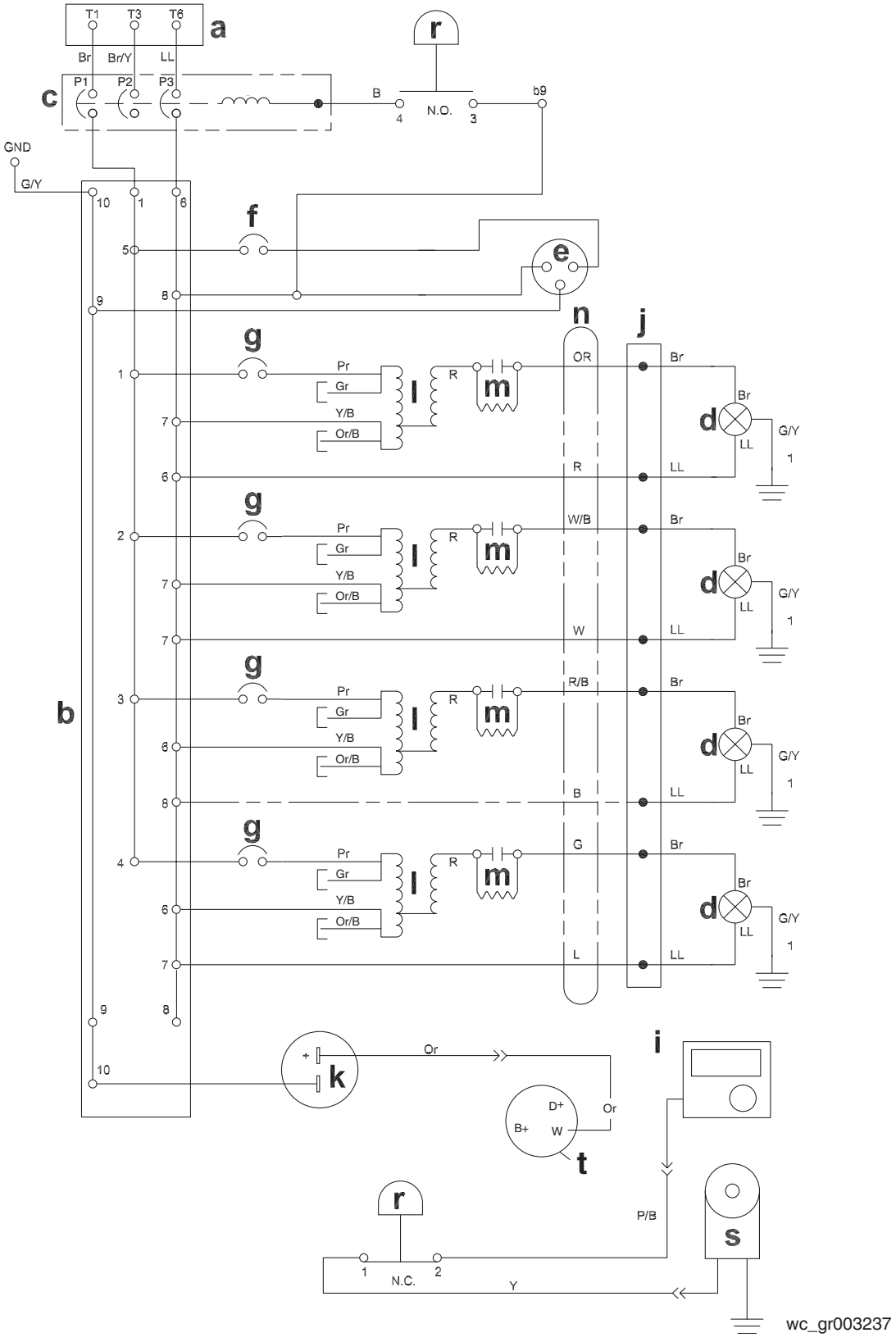


Ref.	Description	Ref.	Description
a	Generator	j	Junction box
b	Terminal strip	k	Hour meter
c	Main circuit breaker, 25 Amp	l	Transformer
d	Floodlight receptacles	m	Capacitor, 525V
e	Receptacle, 115V	n	Ballasts
f	Circuit breaker, 20 Amp	r	Emergency stop switch
g	Circuit breaker, 15 Amp	s	Solenoid
i	Engine control panel	t	Capacitor, 450V

Note: *On machine Revisions 102 and higher, the generator neutral wire is not connected to the frame ground or Potential Earth (PE). Be informed that this machine is wired with an IT Network. Before connecting this machine to a distribution system, you must consult with a local electrician for wiring codes.*

Wire Colors							
B	Black	R	Red	Y	Yellow	Or	Orange
G	Green	T	Tan	Br	Brown	Pr	Purple
L	Blue	V	Violet	Cl	Clear	Sh	Shield
P	Pink	W	White	Gr	Gray	LL	Light blue

5.9 Schematic for 50 Hz Metal Halide 4-Light Units-115 V (0009379 Rev. 102 and 103)

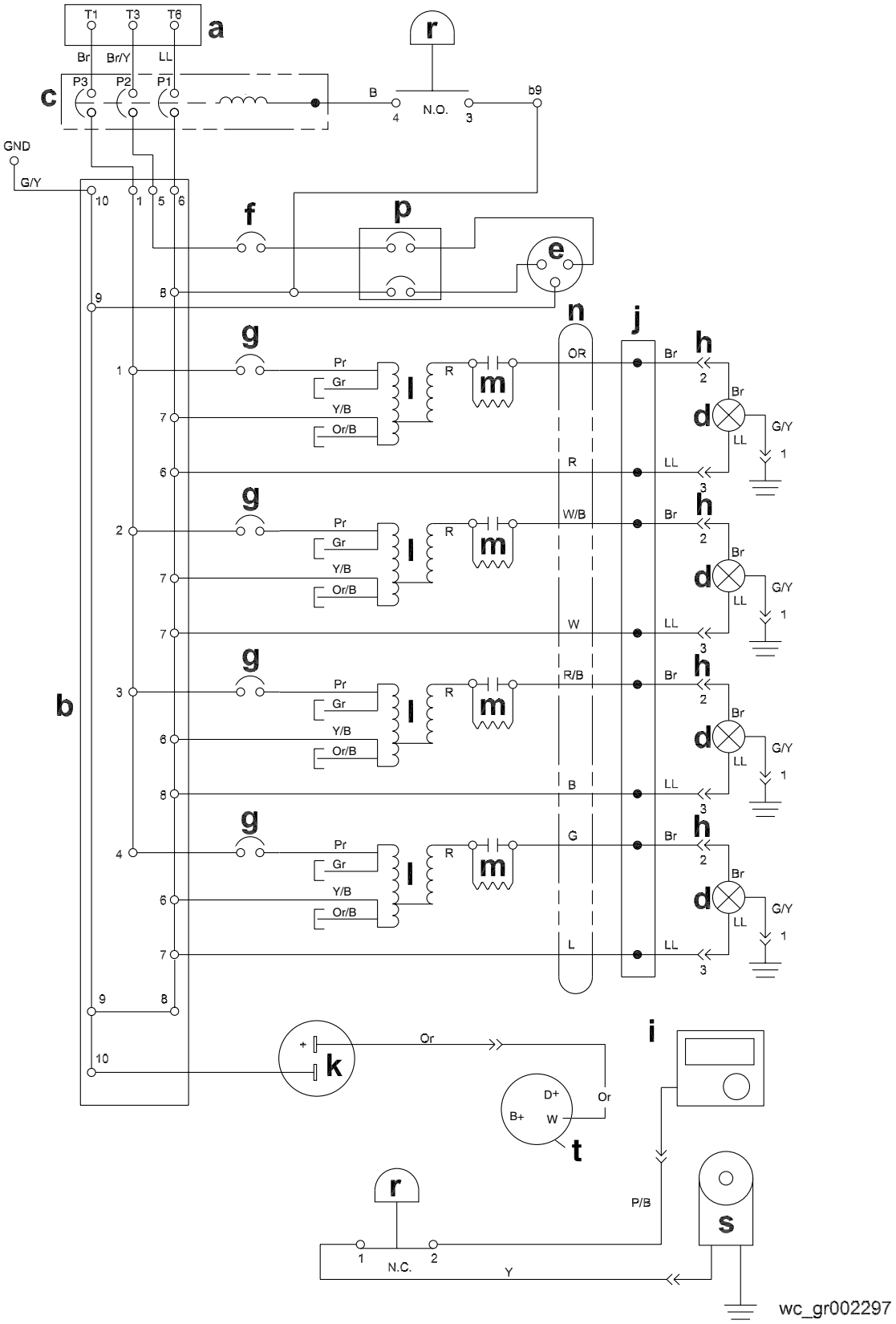


Ref.	Description	Ref.	Description
a	Generator	j	Junction box
b	Terminal strip	k	Hour meter
c	Main circuit breaker	l	Transformer
d	Floodlight receptacles	m	Capacitor
e	Receptacle, 115V	n	Coil cord
f	Circuit breaker, 20 Amp	r	Emergency stop switch
g	Circuit breaker, 15 Amp	s	Fuel solenoid
i	Engine control panel	t	Alternator

Note: *On machine Revisions 102 and higher, the generator neutral wire is not connected to the frame ground or Potential Earth (PE). Be informed that this machine is wired with an IT Network. Before connecting this machine to a distribution system, you must consult with a local electrician for wiring codes.*

Wire Colors							
B	Black	R	Red	Y	Yellow	Or	Orange
G	Green	T	Tan	Br	Brown	Pr	Purple
L	Blue	V	Violet	Cl	Clear	Sh	Shield
P	Pink	W	White	Gr	Gray	LL	Light blue

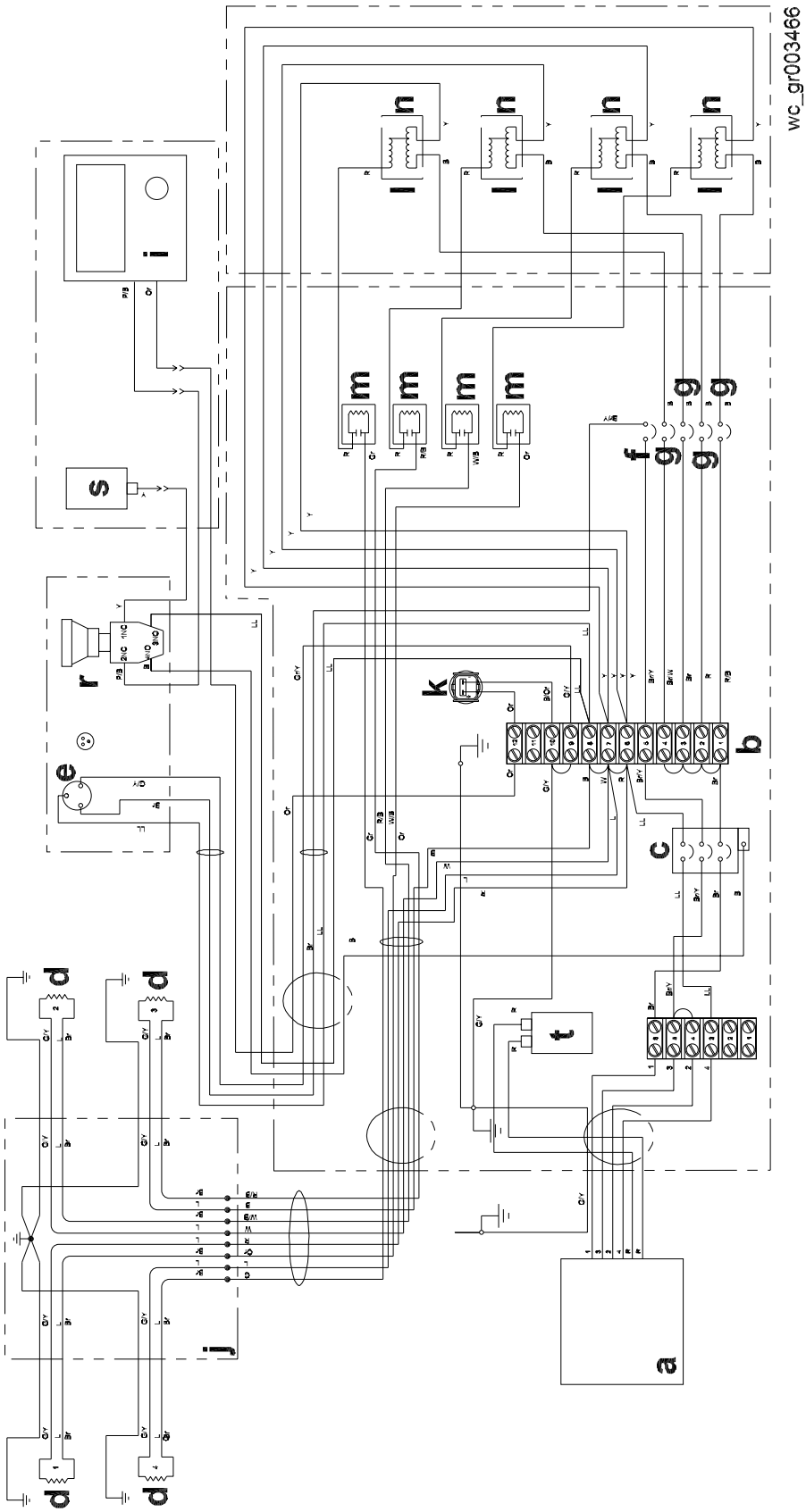
5.10 Schematic for 50 Hz Metal Halide 4-Light Units-115 V (0009379 Rev. 101 and lower)



Ref.	Description	Ref.	Description
a	Generator	j	Junction box
b	Terminal strip	k	Hour meter
c	Main circuit breaker	l	Transformer
d	Floodlight receptacles	m	Capacitor
e	Receptacle, 115V	n	Coil cord
f	Circuit breaker, 20 Amp	p	Earth-leakage circuit breaker, 25 Amp
g	Circuit breaker, 15 Amp	r	Emergency stop switch
h	Quick disconnect plugs	s	Fuel solenoid
i	Engine control panel	t	Alternator

Wire Colors							
B	Black	R	Red	Y	Yellow	Or	Orange
G	Green	T	Tan	Br	Brown	Pr	Purple
L	Blue	V	Violet	Cl	Clear	Sh	Shield
P	Pink	W	White	Gr	Gray	LL	Light blue

5.11 Schematic for 50 Hz Metal Halide 4-Light Units-230 V (0009485 Rev. 104 and higher)

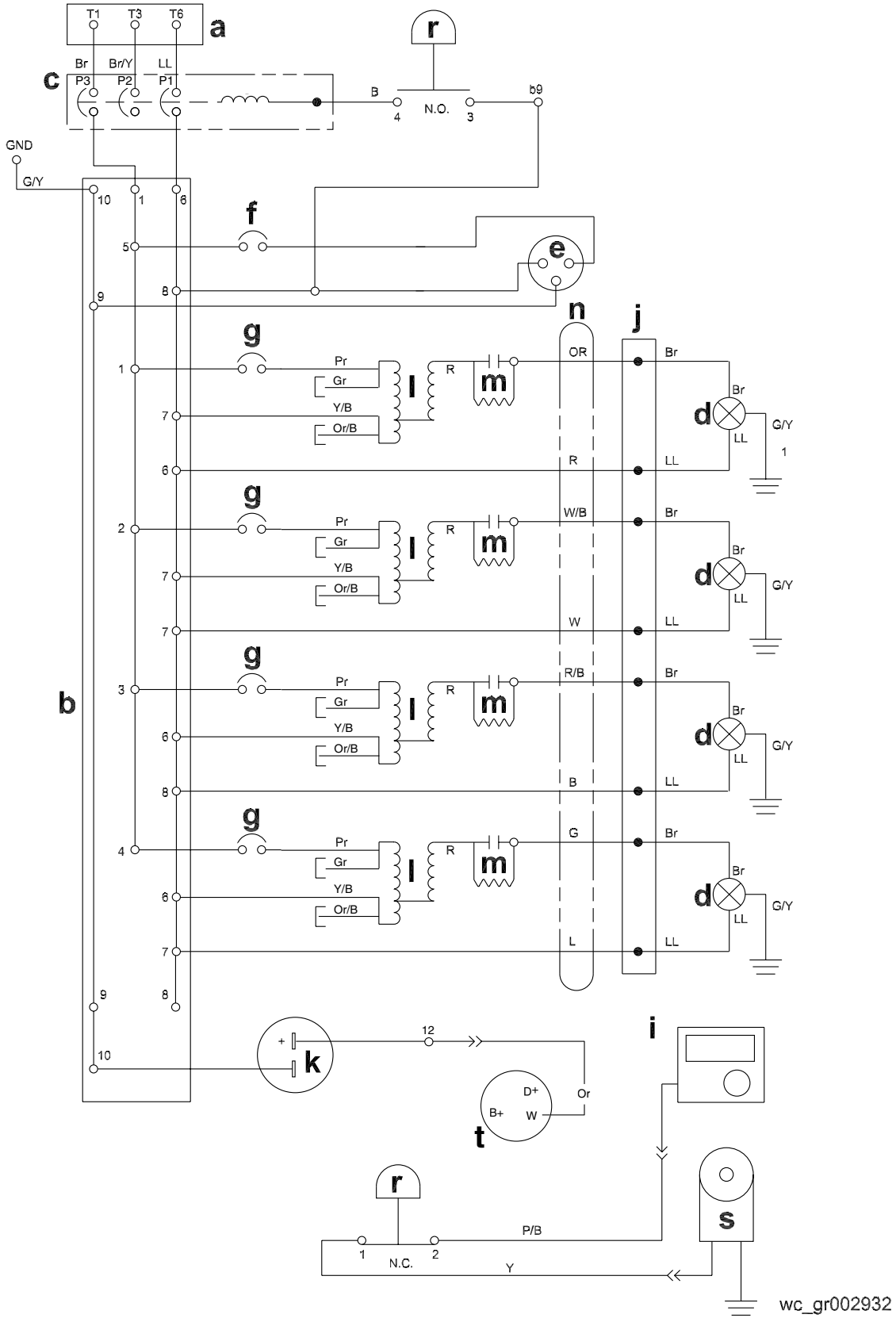


Ref.	Description	Ref.	Description
a	Generator	j	Junction box
b	Terminal strip	k	Hour meter
c	Main circuit breaker, 25 Amp	l	Transformer
d	Floodlight receptacles	m	Capacitor, 525V
e	Receptacle, 115V	n	Ballasts
f	Circuit breaker, 20 Amp	r	Emergency stop switch
g	Circuit breaker, 15 Amp	s	Solenoid
i	Engine control panel	t	Capacitor, 450V

Note: *On machine Revisions 102 and higher, the generator neutral wire is not connected to the frame ground or Potential Earth (PE). Be informed that this machine is wired with an IT Network. Before connecting this machine to a distribution system, you must consult with a local electrician for wiring codes.*

Wire Colors							
B	Black	R	Red	Y	Yellow	Or	Orange
G	Green	T	Tan	Br	Brown	Pr	Purple
L	Blue	V	Violet	Cl	Clear	Sh	Shield
P	Pink	W	White	Gr	Gray	LL	Light blue

5.12 Schematic for 50 Hz Metal Halide 4-Light Units-230 V (0009485 Rev. 102 and103)

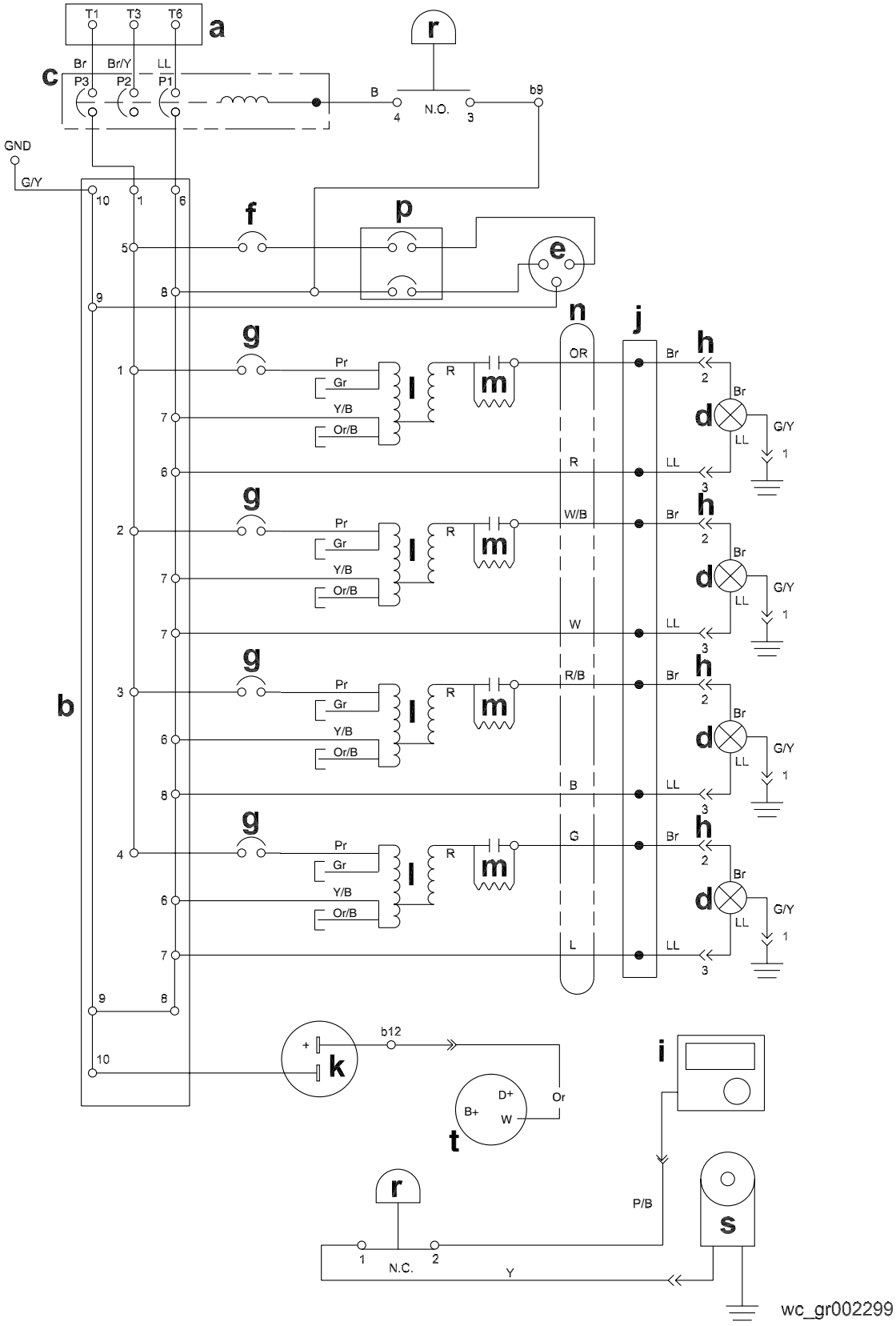


Ref.	Description	Ref.	Description
a	Generator	i	Auxiliary connection of engine control panel
b	Terminal strip	j	Junction box
c	Main circuit breaker	k	Hour meter
d	Floodlight receptacles	l	Transformer
e	230 V Receptacle	m	Capacitor
f	20 Amp circuit breaker	n	Coil cord
g	15 Amp circuit breaker	r	Emergency stop switch
h	Quick disconnect plugs	s	Fuel solenoid

Note: *On machine Revisions 102 and higher, the generator neutral wire is not connected to the frame ground or Potential Earth (PE). Be informed that this machine is wired with an IT Network. Before connecting this machine to a distribution system, you must consult with a local electrician for wiring codes.*

Wire Colors							
B	Black	R	Red	Y	Yellow	Or	Orange
G	Green	T	Tan	Br	Brown	Pr	Purple
L	Blue	V	Violet	Cl	Clear	Sh	Shield
P	Pink	W	White	Gr	Gray	LL	Light blue

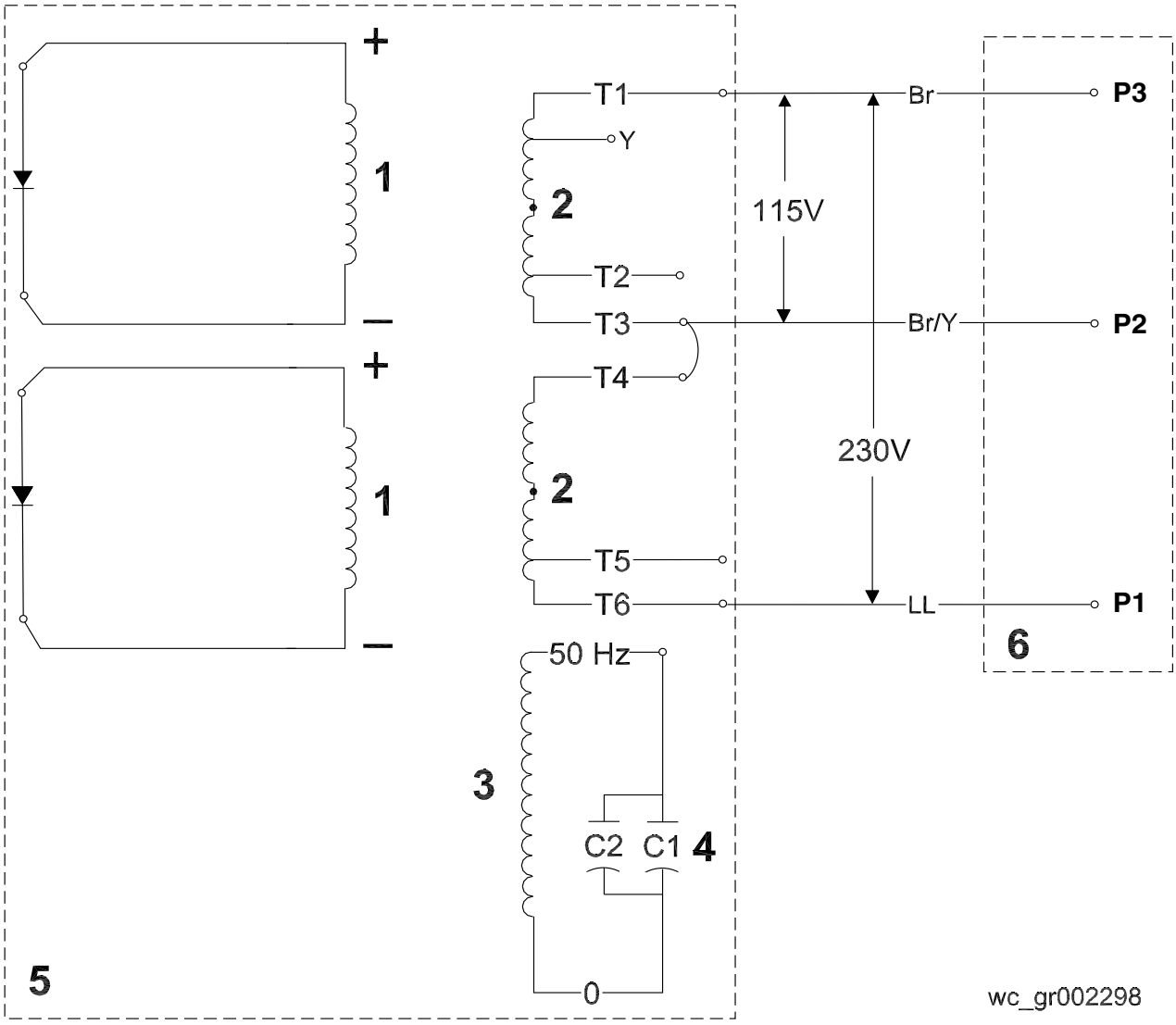
5.13 Schematic for 50 Hz Metal Halide 4-Light Units-230 V (0009485 Rev. 101 and lower)



Ref.	Description	Ref.	Description
a	Generator	j	Junction box
b	Terminal strip	k	Hour meter
c	Main circuit breaker	l	Transformer
d	Floodlight receptacles	m	Capacitor
e	Receptacle, 230V	n	Coil cord
f	Circuit breaker, 20 Amp	p	Earth-leakage circuit breaker, 25 Amp
g	Circuit breaker, 15 Amp	r	Emergency stop switch
h	Quick disconnect plugs	s	Fuel solenoid
i	Engine control panel	t	Alternator

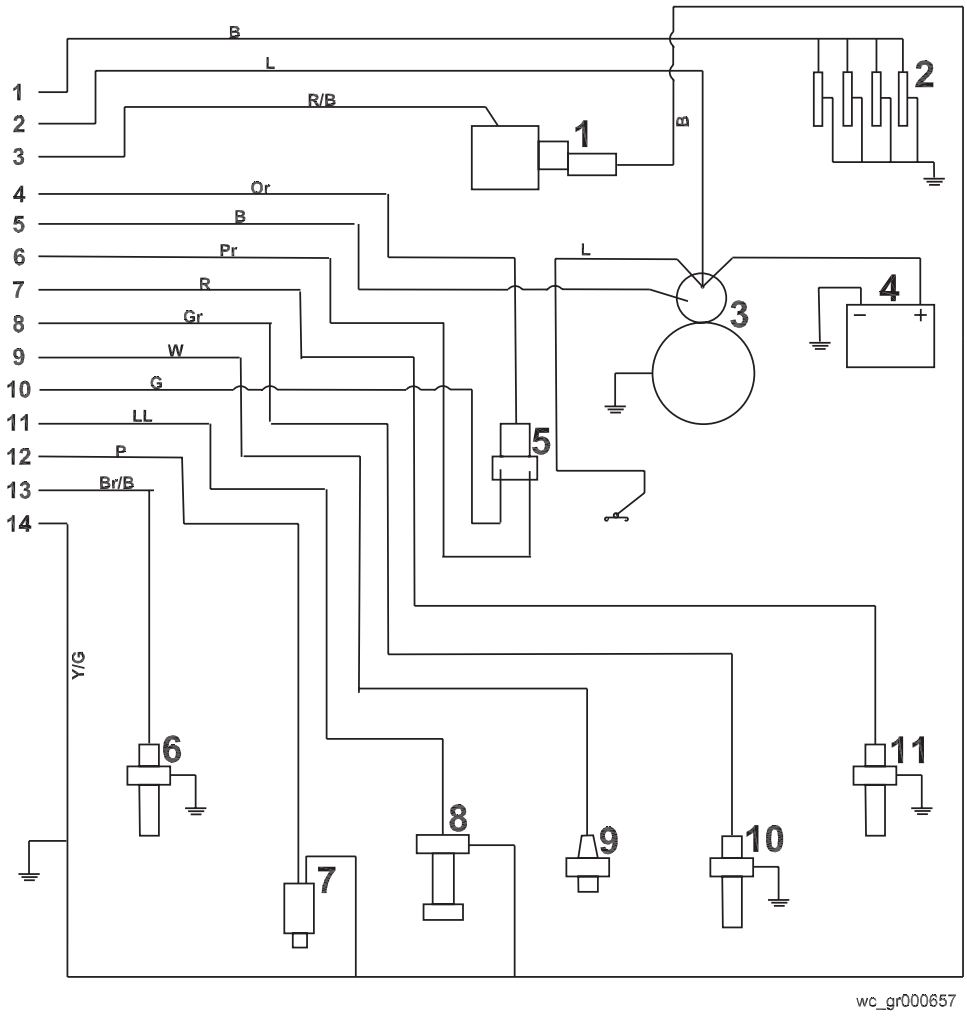
Wire Colors							
B	Black	R	Red	Y	Yellow	Or	Orange
G	Green	T	Tan	Br	Brown	Pr	Purple
L	Blue	V	Violet	Cl	Clear	Sh	Shield
P	Pink	W	White	Gr	Gray	LL	Light blue

5.14 Generator Capacitor Excitation Schematic 50 Hz



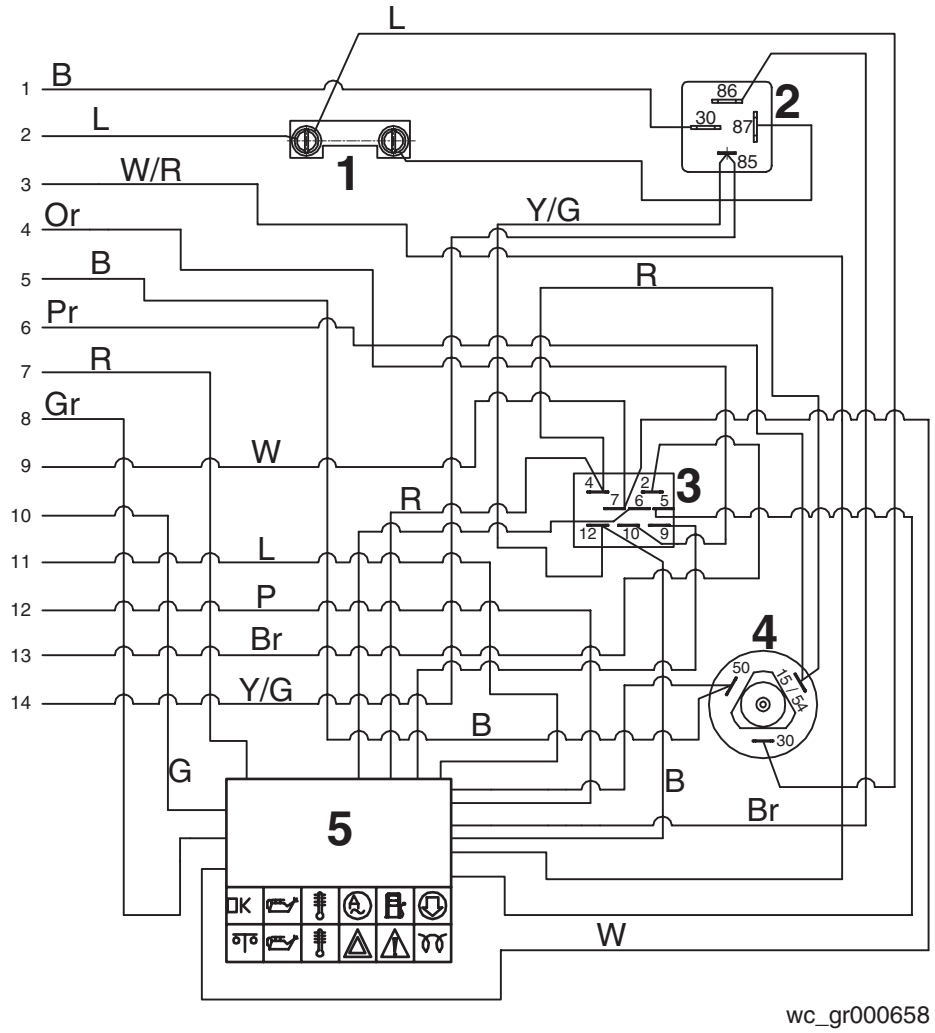
Ref.	Description	Ref.	Description
1	Rotor	4	Capacitor
2	Stator	5	Generator/Terminal block
3	Excitation coils	6	Control box-Main circuit breaker

5.15 Engine Wiring - Lombardini



Ref.	Description	Ref.	Description
1	Fuel Solenoid	7	Air Filter Restriction Indicator (normal open type)
2	Glow Plugs	8	Low Fuel Level Switch (not used, normal open type)
3	Starter Motor	9	Low Oil Pressure Switch (normal closed type)
4	Battery	10	Coolant High Temperature Switch (normal open type)
5	Alternator Connector	11	Coolant Temperature Thermistor (for preheat relay)
6	Coolant Temperature Sending Unit (not used, for remote temperature gauge or LED)		

5.16 Control Panel Wiring



Ref.	Description	Ref.	Description
1	System fuse, 50 Amp	4	Key switch
2	Glowplug load relay	5	L.E.D. Indicator lamp assembly
3	Auxiliary terminals (rear view)		

EC DECLARATION OF CONFORMITY
CE-KONFORMITÄTSERKLÄRUNG
DECLARACIÓN DE CONFORMIDAD DE LA CE
DÉCLARATION DE CONFORMITÉ C.E.

WACKER CORPORATION, N92 W15000 ANTHONY AVENUE, MENOMONEE FALLS, WISCONSIN USA

AUTHORIZED REPRESENTATIVE IN THE EUROPEAN UNION BEVOLLMÄCHTIGTER VERTRETER FÜR DIE EUROPÄISCHE GEMEINSCHAFT REPRESENTANTE AUTORIZADO EN LA UNIÓN EUROPEA REPRÉSENTANT AGRÉÉ AUPRÈS DE L'UNION EUROPÉENNE	**WACKER CONSTRUCTION EQUIPMENT AG** **Preußenstraße 41** **80809 München**

hereby certifies that the construction equipment specified hereunder / bescheinigt, daß das Baugerät / certifica que la máquina de construcción / atteste que le matériel :

1. Category / Art / Categoría / Catégorie

Power Generators (Light Towers)
Kraftstromerzeuger (Beleuchtungsanlagen)
Grupos Electrógenos (Torres de Iluminación)
Groupe Électrogènes de Puissance (Tours d'éclairage)

2. Type - Typ - Tipo - Type

LTC 4L

3. Item number of equipment / Artikelnummer / Número de referencia de la máquina / Numéro de référence du matériel :

0009379, 0009485

4. Electric power / Elektrische Leistung / Potencia eléctrica / Force motrice :

6,0 kW

Has been sound tested per Directive 2000/14/EC / In Übereinstimmung mit Richtlinie 2000/14/EG bewertet worden ist / Ha sido ensayado en conformidad con la norma 2000/14/CE / A été mis à l'épreuve conforme aux dispositions de la directive 2000/14/CEE :

Conformity Assessment Procedure / Konformitätsbewertungsverfahren / Procedimiento para ensayar conformidad / Procédé pour l'épreuve de conformité	Name and address of notified body / Bei folgender einbezogener Prüfstelle / Oficina matriculadora / Organisme agrée	Measured sound power level / Gemessener Schallleistungspegel / Nivel de potencia acústica determinado / Niveau de puissance acoustique fixé	Guaranteed sound power level / Garantierter Schallleistungspegel / Nivel de potencia acústica garantizado / Niveau de puissance acoustique garanti
Annex VI / Anhang VI **Anexo VI / Annexe VI**	**TUV** **Süddeutschland Bau und Betrieb GmbH** **(0036)** **Westendstr. 199** **D-80686 Munchen**	**91 dB(A)**	**97 dB(A)**

and has been produced in accordance with the following standards:
und in Übereinstimmung mit folgenden Richtlinien hergestellt worden ist:
y ha sido fabricado en conformidad con las siguientes normas:
et a été produit conforme aux dispositions des directives européennes ci-après :

2000/14/EC
89/336/EEC
98/37/EEC

William Lahner
Vice President of Engineering

Dan Domanski
Manager, Product Engineering

10.04.06
Date / Datum / Fecha / Date

WACKER CORPORATION

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