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Mobile Generator

G 25

OPERATOR'S MANUAL

0158596EN

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.

Foreword

This manual provides information and procedures to safely operate and maintain this Wacker Neuson 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 Neuson 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 Neuson Corporation.

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

1 Safety Information

This manual contains DANGER, WARNING, CAUTION, *NOTICE,* 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 a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

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

CAUTION

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

NOTICE*:** Used without the safety alert symbol, ***NOTICE indicates a situation which, if not avoided, could result in property damage.

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

WARNING

Electrocution hazard!

Electrocution or severe electrical shock hazards are present throughout the generator any time the engine is running! Read all safety notes contained in this section before operating or servicing this equipment.

No one except a trained electrician, familiar with this equipment, should attempt repairs to the generator! Test procedures which require that the generator be running must be performed using extreme caution.

This machine is built with user safety in mind; however, like any electrical device it can present serious hazards if improperly operated and serviced. Follow instructions carefully! Should questions arise during operation or service of this equipment, contact Wacker Neuson Corporation.

1.1 Operating Safety

WARNING

Familiarity and proper training are required for the safe operation of the machine. Machines operated improperly or by untrained personnel can be hazardous. Read the operating instructions contained in 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 machine before being allowed to operate it.

1.1.1 NEVER operate the generator when open containers of fuel, paint, or other flammable liquids are near.

1.1.2 NEVER place flammable material or liquids near the generator.

1.1.3 NEVER operate the generator, or tools attached to the generator, with wet hands.

1.1.4 NEVER use worn electrical cords. Severe electrical shock and equipment damage may result.

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

1.1.6 NEVER overload the generator. The total amperage of the tools and equipment attached to the generator must not exceed the load rating of the generator.

1.1.7 NEVER allow untrained personnel to operate or service the generator. The generator set should be set up by a certified electrician.

1.1.8 NEVER operate generator in standing water.

1.1.9 NEVER touch the hot engine, exhaust, or generator components. Burns will result.

1.1.10 NEVER start a machine in need of repair.

1.1.11 Use the emergency stop button only in an actual emergency. DO NOT restart the engine until the cause of the trouble has been determined and fixed.

1.1.12 Wear hearing protection when operating equipment.

1.1.13 ALWAYS follow starting and stopping instructions described in this manual. Know how to operate and stop generator before starting it.

1.1.14 ALWAYS make a walk-around inspection of the generator set before starting it. Open side doors and visually inspect engine compartment for obvious damage or the presence of foreign objects which might affect operation.

1.1.15 ALWAYS keep the machine at least one meter (three feet) away from structures, buildings, and other equipment during use.

1.1.16 Store the machine properly when it is not being used. The machine should be stored in a clean, dry location out of the reach of children.

1.1.17 ALWAYS keep the area immediately surrounding and underneath the machine clean, neat, and free of debris and combustible materials. Make sure that the area overhead is clear of debris that could fall onto or into the machine or exhaust compartment.

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

1.1.19 ALWAYS remove all tools, cords, and other loose items from the generator before starting it.

1.1.20 ALWAYS make certain the machine is well-grounded and securely fastened to a good earthen ground per national and local regulations.

DANGER

BACKFEED FROM THE GENERATOR INTO THE PUBLIC POWER DISTRIBUTION SYSTEM CAN CAUSE SERIOUS INJURY OR DEATH TO UTILITY WORKERS!

Improper connection of generator to a building's electrical system can allow electrical current from the generator to backfeed into utility lines. This may result in electrocution of utility workers, fire, or explosion. Connections to a building's electrical system must be made by a qualified electrician and comply with all applicable laws and electrical codes.

If connected to a building's electrical system the generator must meet the power, voltage, and frequency requirements of the equipment in the building. Differences in power, voltage, and frequency requirements may exist and improper connection may lead to equipment damage, fire, and personal injury or death.

1.2 Service Safety

WARNING

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

1.2.1 **NEVER perform even routine service (oil/filter changes, cleaning, etc.) unless all electrical components are shut down.** Before servicing this machine, make sure the engine start switch is turned to off “O”, the circuit breakers are open (off), the emergency stop switch is closed (pushed in), and the negative terminal on battery is disconnected. Attach a “DO NOT START” sign to the control panel. This will notify everyone that the unit is being serviced and will reduce the chance of someone inadvertently trying to start the unit. If the unit is connected to a remote start or transfer switch, make sure the remote switch is also off and tagged.

1.2.2 **Ground Connection**

The generator must be connected to a good earthen ground for proper operating safety!

A central “equipment ground” is provided at the customer connection lugs. This point is connected directly to the generator set base. All other system grounds are connected to this central point. Ground the generator in accordance with the standards defined in national, state, and local regulations.

1.2.3 DO NOT attempt to open the radiator cap while the unit is running or before the engine has cooled down. Severe burns may result!

1.2.4 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.

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

1.2.6 DO NOT allow untrained personnel to service this equipment. Only trained electrical technicians should be allowed to service the electrical components of this equipment.

1.2.7 Do not modify the machine without the express written approval of the manufacturer.

1.2.8 DO NOT pressure wash the control panel, generator end, or any other electrical components when cleaning the machine. Never allow water to accumulate around the base of the generator set. If water is present, DO NOT service!

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

1.2.10 ALWAYS let the engine cool before transporting or servicing the machine.

1.2.11 ALWAYS remain aware of moving parts and keep hands, feet, and loose clothing away from the moving parts of the machine.

1.2.12 ALWAYS replace all guards, fasten doors, and make sure all safety devices operate properly after making repairs or servicing the equipment.

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

1.2.14 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.

1.2.15 ALWAYS check all external fasteners at regular intervals.

1.2.16 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 in the area when lifting the machine.

1.3 Operator Safety while using Internal Combustion Engines

WARNING

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 standards could result in severe injury or death.

1.3.1 Do not run engine indoors or in an area with poor ventilation unless exhaust hoses are used.

1.3.2 Do not fill or drain the fuel tank near an open flame, while smoking, or while the engine is running.

1.3.3 Do not refuel a hot or running engine.

1.3.4 Refill the fuel tank in a well-ventilated area.

1.3.5 Do not touch or lean against hot exhaust pipes.

1.3.6 Replace the fuel tank cap after refueling.

1.3.7 Do not start the engine if fuel has spilled or a fuel odor is present. Move the generator away from the spill and wipe the generator dry before starting.

1.3.8 Do not remove the radiator cap when the engine is running or hot. The radiator fluid is hot and under pressure and may cause severe burns!

1.4 Towing Safety

Towing a large trailer requires special care. Both the trailer and vehicle must be in good condition and securely fastened to each other to reduce the possibility of an accident.

1.4.1 ALWAYS check that the hitch and coupling on the vehicle are rated equal to, or greater than, the trailer's "gross vehicle weight rating" (GVWR).

1.4.2 ALWAYS inspect the hitch and coupling for wear or damage. DO NOT tow the trailer using defective parts.

1.4.3 ALWAYS make sure the coupling is securely fastened to the vehicle.

1.4.4 ALWAYS check the tires on the trailer for tread wear, inflation, and condition. Replace worn tires.

1.4.5 ALWAYS connect the safety chains.

1.4.6 ALWAYS connect the breakaway cable safety hook to the bumper or rear of the vehicle. DO NOT attach it to the hitch.

1.4.7 ALWAYS test the surge brakes on the trailer and the brakes on the vehicle that will be used for towing.

1.4.8 ALWAYS make sure directional and trailer lights are connected and working properly.

1.4.9 ALWAYS check that the lug nuts holding the wheels are tight and that none are missing.

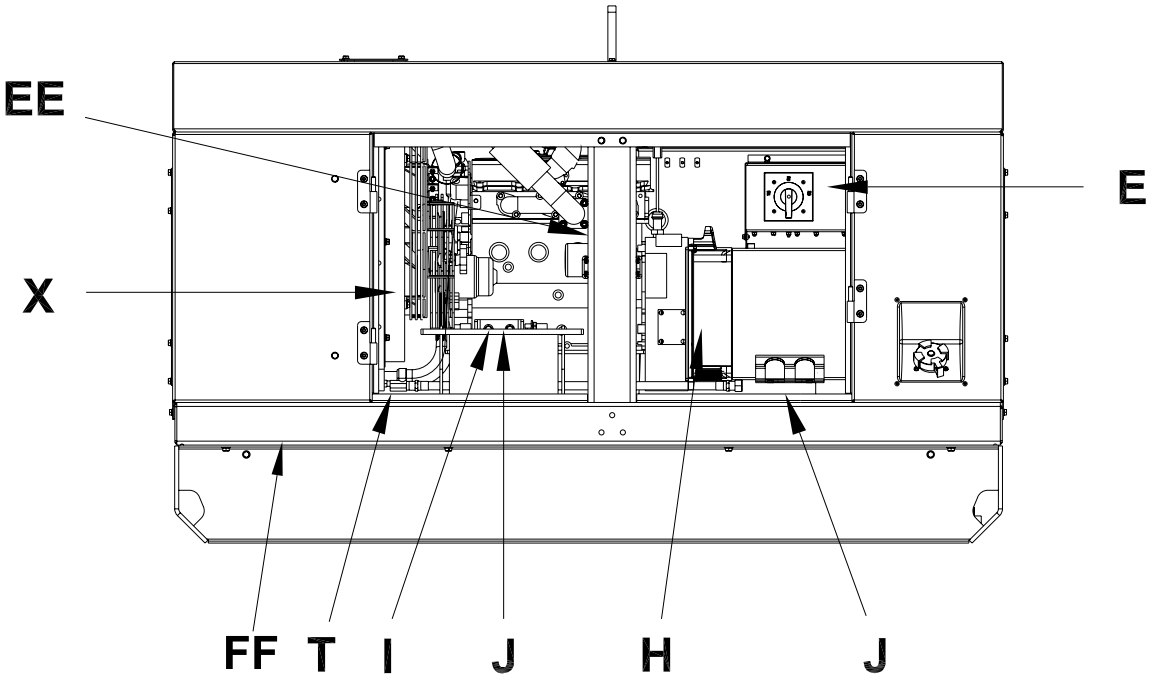
1.5 Reporting Trailer Safety Defects

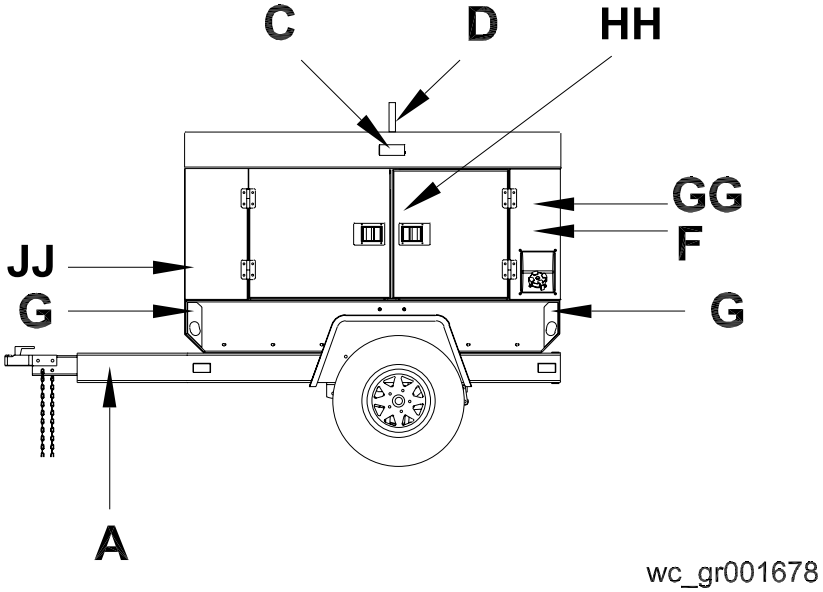
If you believe your trailer has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Wacker Neuson Corporation.

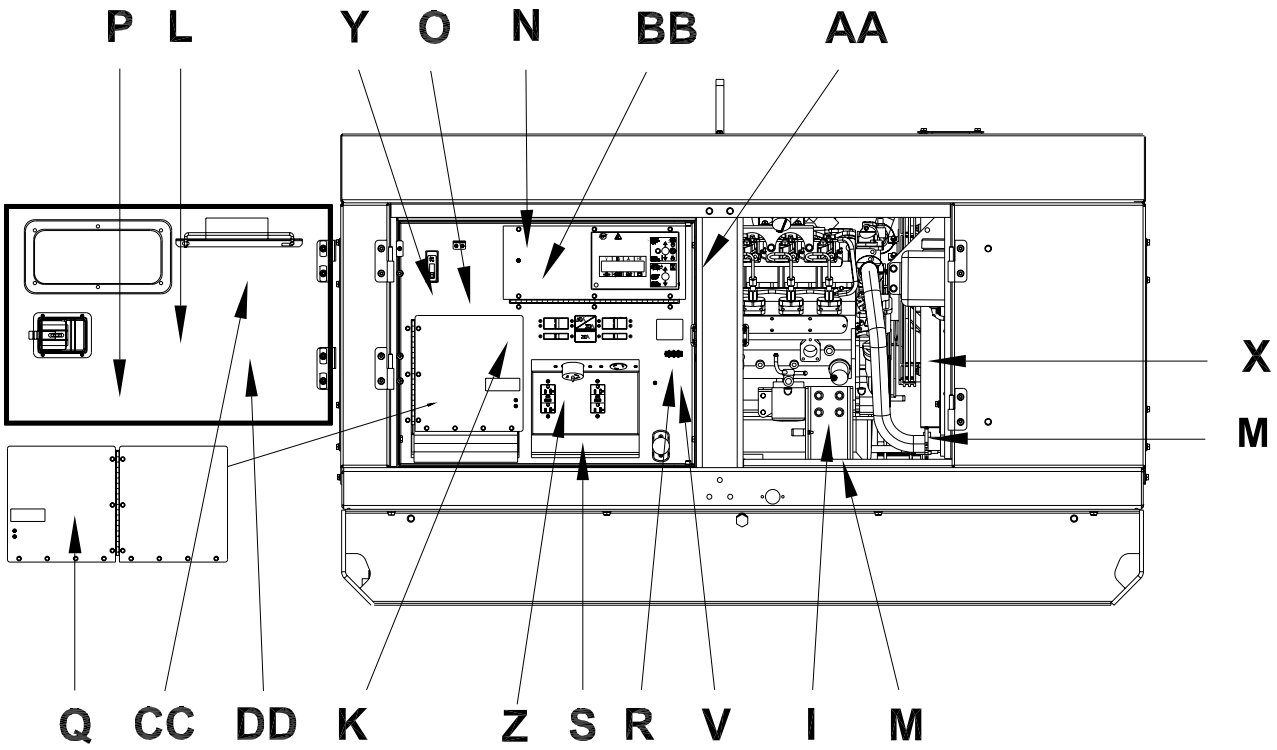
If NHTSA receives similar complaints, it may open an investigation; and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Wacker Neuson Corporation.

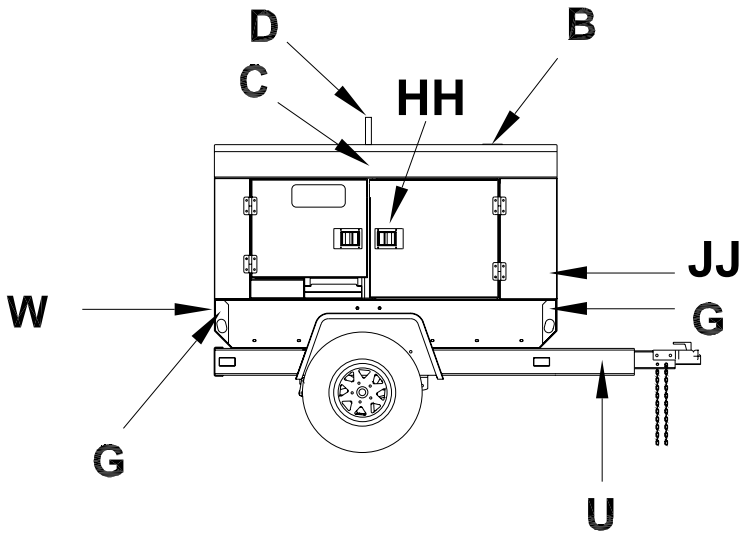
To contact NHTSA, you may either contact the Auto Safety Hotline toll-free at 1-800-424-9393 (or 366-0129 in Washington DC area), www.nhtsa.com, or write to NHTSA, U.S. Department of Transportation, 400 7th Street SW, (NSA-11), Washington, DC 20590. You can also obtain other information about motor vehicle safety from the Auto Safety Hotline.

1.6 Label Location









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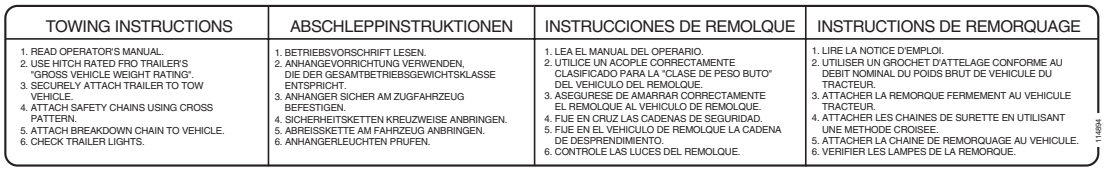
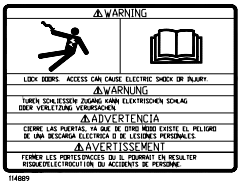
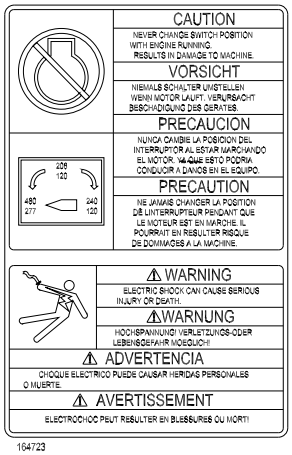
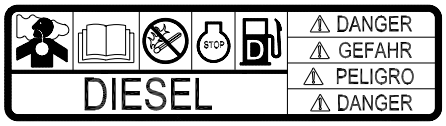
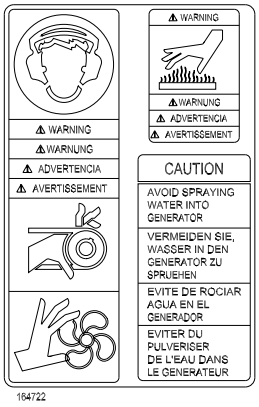
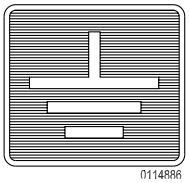
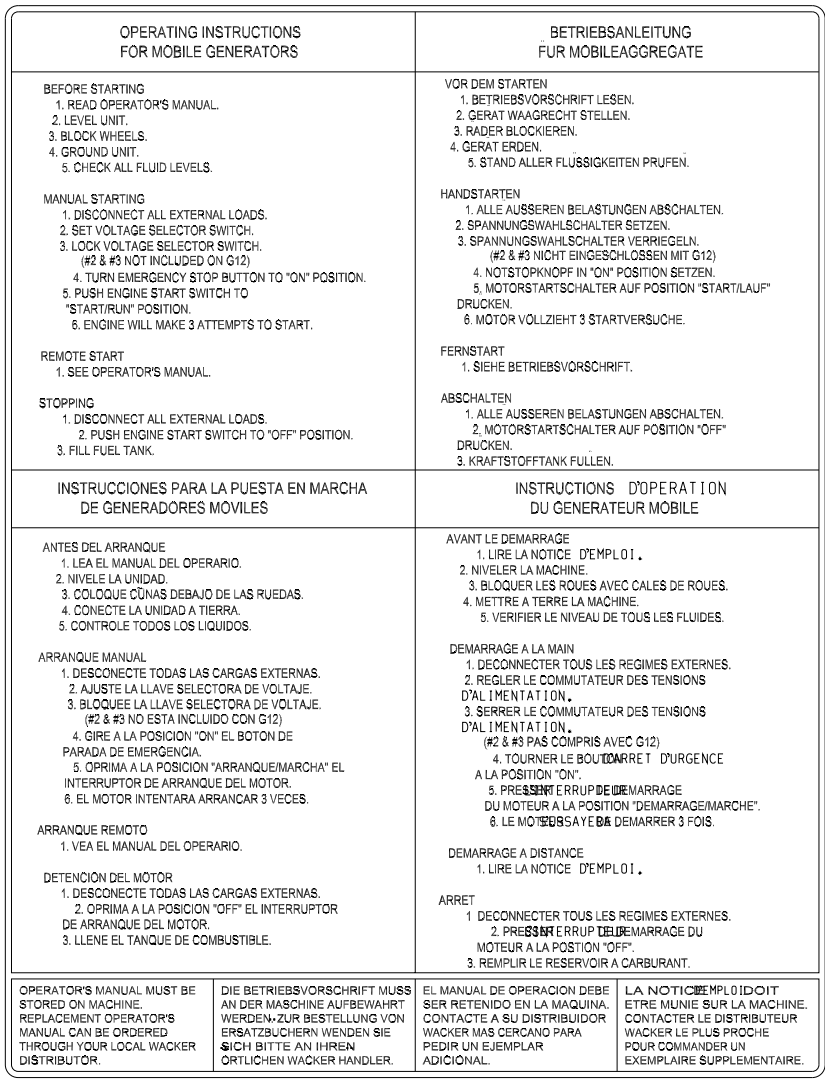
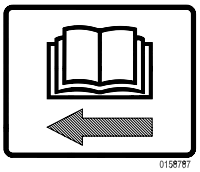
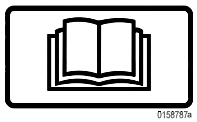
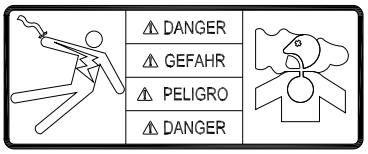
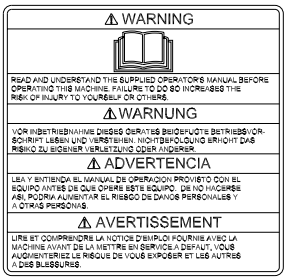
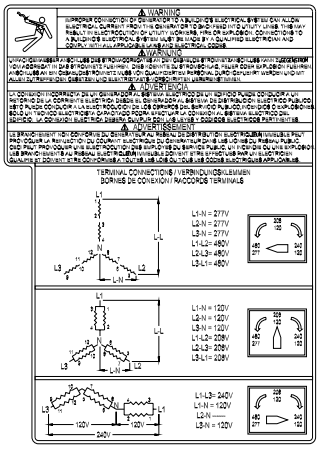
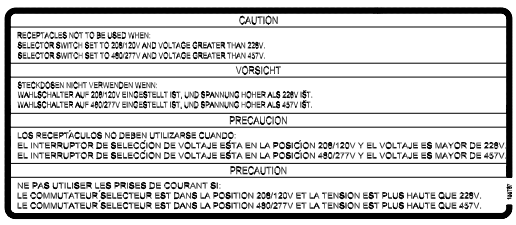
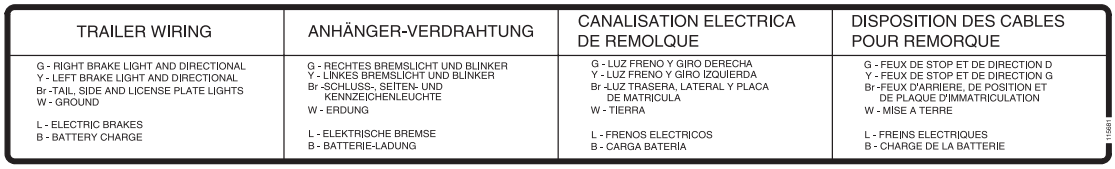
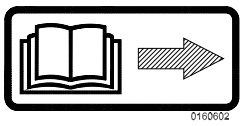
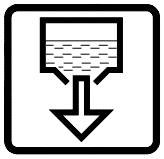
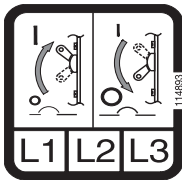
1.7 Safety and Operating Labels

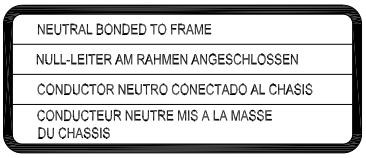
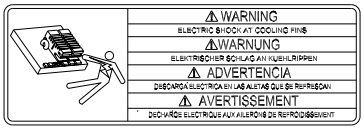
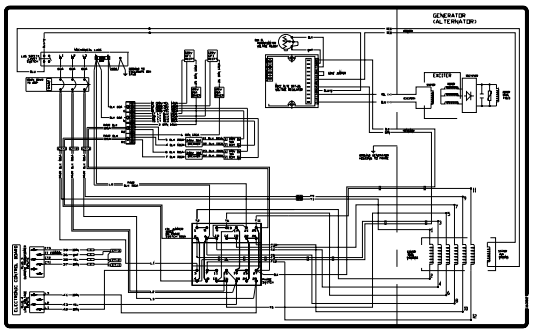
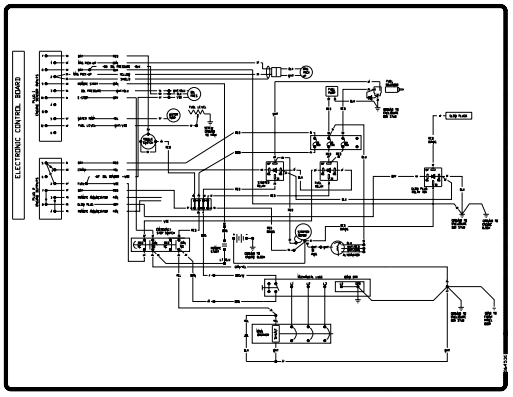
Ref.	Label	Meaning
A		
B		WARNING! Pressurized contents. Do not open when hot!
C		WARNING! Lock doors. Access can cause electric shock or injury.
D		CAUTION Lifting point.
E		NOTICE Never change switch position with engine running. Results in damage to machine. WARNING! Electric shock can cause serious injury or death.

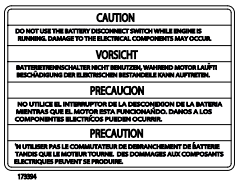
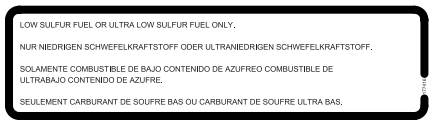
Ref.	Label	Meaning
F		DANGER! Asphyxiation hazard. Read the Operator's Manual for instructions. No sparks, flames, or burning objects near machine. Stop the engine before adding fuel. Use only diesel fuel.
G		Tie-down point.
H		WARNING! To prevent hearing loss, wear hearing protection. Hand injury if entangled in moving belt. Rotating machinery! Do not reach inside with engine running. WARNING! Hot surface! CAUTION! Avoid spraying water into generator.
I		WARNING! Hot surface!
J		Electrical ground
K		WARNING! Electric shock can cause serious injury or death.

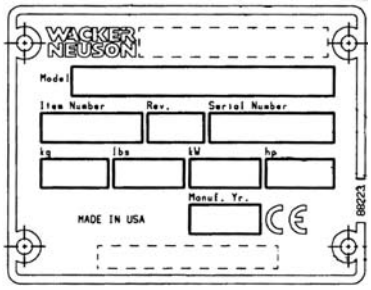
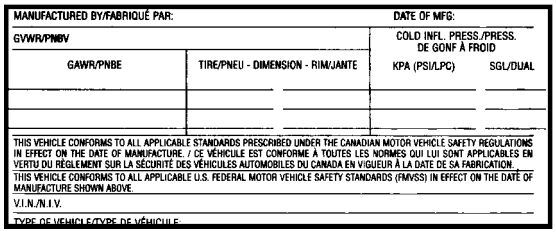
Ref.	Label	Meaning
L		
M	 	Operator's Manual must be stored on machine. Replacement Operator's Manual can be ordered through your local Wacker Neuson distributor.
N		DANGER! Electric shock will cause serious injury or death. Danger of asphyxiation!

Ref.	Label	Meaning
O		WARNING! Generator can automatically start which can cause serious injury. Disconnect battery before servicing.
P		WARNING! Read and understand the supplied Operator's Manual before operating the machine. Failure to do so increases the risk of injury to yourself or others.
Q		WARNING! To reduce the risk of electrical shock and arc flash, read the Operator's Manual. Improper connection of the generator to a building's electrical system can allow electrical current from the generator to backfeed into utility lines. This may result in electrocution of utility workers, fire, or explosion. Connections to a building's electrical system must be made by a qualified electrician and comply with all applicable laws and electrical codes.
R		Remote start operation. Read Operator's Manual for instructions.
S		CAUTION! Receptacles not to be used when: Selector switch set to 208/120V and voltage greater than 228V. Selector switch set to 480/277V and voltage greater than 457V.

Ref.	Label	Meaning
T		WARNING! Disconnect battery before servicing. Read the Operator's Manual.
U		
V		Operator's Manual must be stored on machine. Replacement Operator's Manual can be ordered through your local Wacker Neuson distributor.
W		Drain containment system.
X		WARNING! To prevent hearing loss, wear hearing protection when operating the machine. WARNING! Pressurized contents. Do not open when hot! WARNING! Hand injury if entangled in moving belt. WARNING! Rotating machinery! Do not reach inside machine with engine running.
Y		Operating the main circuit breaker supplies or interrupts power to the customer connection lugs.

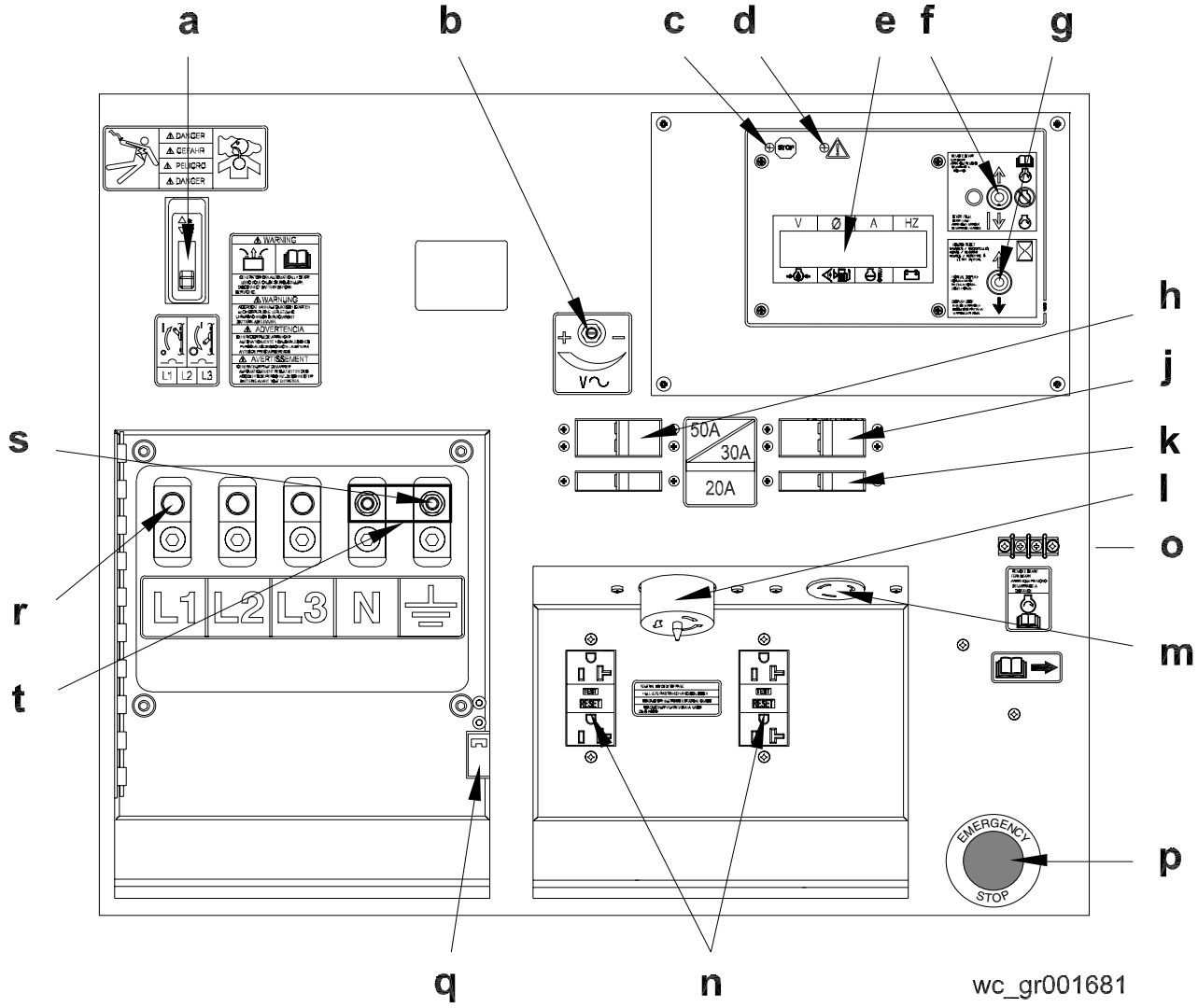
Ref.	Label	Meaning
Z		Neutral bonded to frame
AA		Fuses Read the Operator's Manual for machine information. 1 - Fuel Solenoid 2 - Fuel Pump 3 - Controller 4 - Not Used
BB		WARNING! Electric shock at cooling fins.
CC		G 25 Generator and Receptacle Wiring
DD		G 25 Engine Wiring

Ref.	Label	Meaning
EE		WARNING! Hot surface!
FF		(if equipped) CAUTION: Do not use battery disconnect switch while engine is running. Damage to electrical components may occur.
GG		Low sulfur fuel or ultra low sulfur fuel only.
HH		WARNING Lock doors. Access can cause electric shock, arc flash, or injury.
JJ		Protecting Our Environment Fluid containment system (if equipped)

Ref.	Label	Meaning
		\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 name-plate 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.
		This machine may be covered by one or more patents.
		Certification Label (VIN Number) Also attached to each unit is a Certification Label. This label specifies that the trailer conforms with all Federal Motor Vehicle Standards in effect at the time of manufacture. The label includes the Vehicle Identification Number (VIN) for the trailer.

2. Operation

2.1 Control Panels



Ref.	Description	Ref.	Description
a	Main Circuit Breaker	l	Twist-Lock Receptacle (120/240 VAC, 50Amp)
b	Voltage Adjustment Rheostat	m	Twist-Lock Receptacle (120/240 VAC, 30 Amp)
c	Shutdown LED	n	GFI Receptacle (120 VAC, 20 Amp) - two
d	Pre-alarm LED	o	Remote Run Terminal Block
e	LCD Panel	p	Emergency Stop Switch
f	Engine Start Switch	q	Interlock Switch
g	Engine Hours Switch	r	Customer Connection Terminal Lugs
h	Circuit Breaker (240V, 50 Amp)	s	Ground Connection
j	Circuit Breaker (240V, 30 Amp)	t	Bond bar
k	Circuit Breaker (120V, 20 Amp) - two		

2.2 Generator Monitoring

Generator information is displayed on the top line of the LCD panel and is scrolled continuously while the generator is operating, to show the voltage, amperage and frequency of each phase.

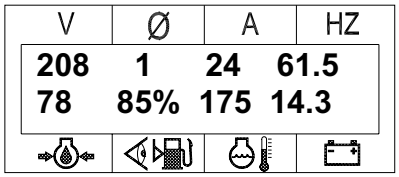
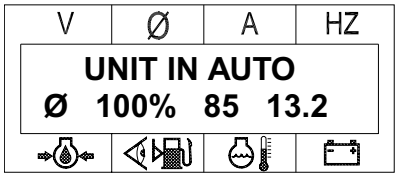
Note: *To prevent the display from scrolling, press the engine hours switch down.*

Volts "V"- Displays the AC output voltage being produced by the generator.

Phase "Ø" - Indicates which leg is currently being displayed.

Amps "A" - Displays the AC output amperage produced by the generator. If the generator is operating at no-load, output amperage will display a 0.

Hertz "Hz" - Displays output frequency. This gauge should read approximately 61.5 Hz under a no-load condition. If the frequency is too high, check the engine rpm.

	Sample display with engine running.
	Sample display in "Auto" mode.

Notes:

2.3 Engine Monitoring

With the engine start switch set to “RUN/START” or “REMOTE START”, engine information will be continuously displayed on the bottom line of the LCD panel.

OIL  - Displays engine oil pressure. The gauge registers oil pressure between 0–100 psi. Normal operating pressure is between 60–80 psi. If oil pressure drops below 15 psi, the engine will automatically shut down.

FUEL  - Indicates the relative fuel level in the fuel tank. If fuel level drops to 5% the engine will automatically shut down.

TEMPERATURE  - Displays the temperature of the engine's coolant. If the coolant temperature gets too high, the engine will automatically shut down.

BATTERY  - This gauge measures the engine starting battery voltage. A normal reading is 13.5–14.5V. If the gauge falls much below or above these values, the engine charging system should be checked. With the engine switch set to “REMOTE START” and the generator in stand-by mode, actual battery voltage is displayed.

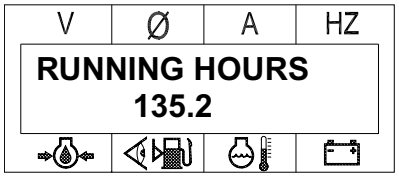
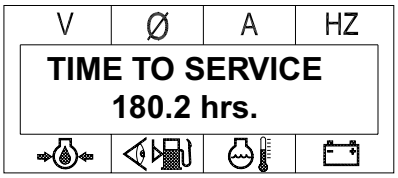
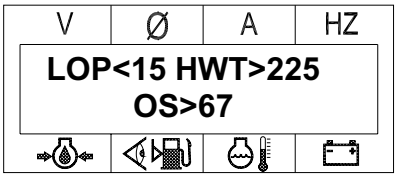
ENGINE HOURS  - Pressing the switch UP causes the engine’s running hours, the periodic maintenance timer, and the Engine Fault set points to be displayed. Engine hours are accumulated only while the engine is actually running.

Note: *When held down, this switch can be used to lock in a specific display for a single phase.*

SENDER FAILURE - Indicates that the coolant temperature sensor or the oil pressure sensor has failed. This fault will not be displayed unless the fault has occurred; also, this fault will not shut down the machine.

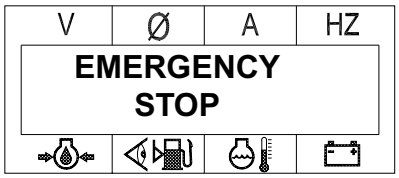
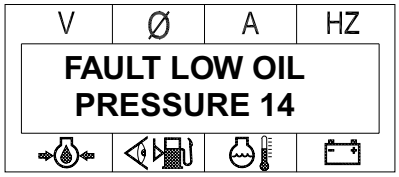
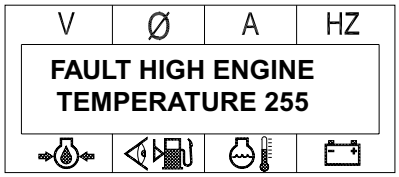
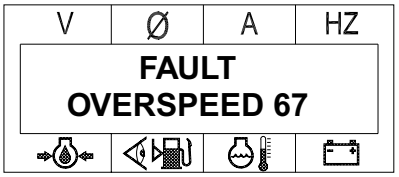
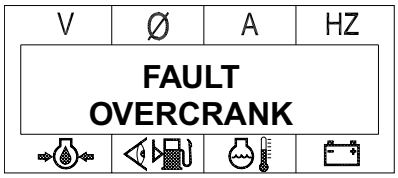
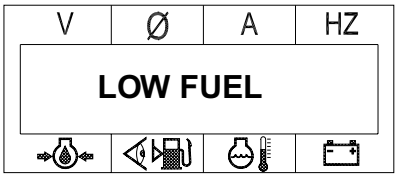
Engine Fault Set Points

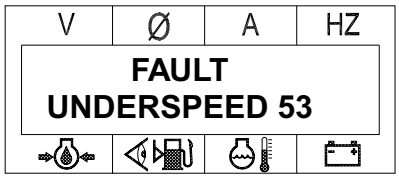
Low Oil Pressure = 15 psi
High Temperature = 221°F
Underspeed = 55Hz (1650 rpm)
Overspeed = 67Hz (2000 rpm)
Overcrank = Three 10-second crank/rest cycles
Fuel Level = 5%

	Sample display of engine hours.
	Sample display of periodic maintenance timer.
	Sample display showing engine fault set points.

2.4 Engine Shutdown Faults

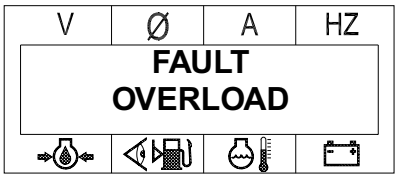
The Engine Control Module (ECM) continuously monitors vital engine functions for six fault conditions. When a fault condition occurs, the engine will shut down and the LCD panel will display the fault causing the shutdown. To reset the ECM and resume operation, return the engine start switch manually to off “O”. Also refer to Section *Warning Light..*

	Indicates that the emergency stop button has been depressed. This display will remain on until the emergency stop button is pulled back out.
	Indicates that the engine oil pressure dropped below 15 psi for more than 5 seconds and the ECM has shut the engine down.
	Indicates that the engine coolant temperature has exceeded 221°F for more than 5 seconds, and the ECM has automatically shut down the engine. Normal engine running temperature is 185°F±15°F (85°C±8°C).
	Indicates that the engine speed exceeded approximately 2000 rpm (110% of its rated speed of 1800 rpm) and the ECM has automatically shut the engine down.
	An overcrank fault is displayed when the engine fails to start after three cycles of the normal cranking cycle, and the ECM has automatically shut down the generator due to the overcrank condition.
	A low fuel fault condition will be displayed when the fuel tank drops to 5% and the ECM has shut down the engine. This fault condition prevents the fuel lines from running completely dry and avoids the need to bleed the lines when the tank is refilled.

	Indicates that the engine speed dropped below 55Hz (1650 rpm) for more than 15 seconds and the ECM has automatically shut down the engine.

2.5 Current Overload Fault

Along with engine functions the ECM continuously monitors the current load in each phase. The values for current overload are programmed into the ECM at the factory and are different for each generator size.



When an overload condition is sensed in any leg, the engine will shut down and the LCD panel will display the fault condition shown above.

Before restarting the generator, the cause of the overload should be determined and eliminated. Review all loads attached to the generator and make sure they do not exceed the power rating of the unit.

2.6 Application

This heavy-duty, compact, sound-attenuated generator is designed to provide single and three-phase power for construction, commercial, and industrial applications where reliable power is needed.

NOTICE: Do not exceed the power output of the generator. Damage to tools or generator will occur. Refer to *Technical Data*.

When using the generator as a stand-by or substitute power supply, make sure the voltage and phase rotation of the line connections match those of the utility lines or of any other power source normally used. **Failure to match phase rotation and voltage may cause equipment connected to the generator to operate incorrectly! This could create unsafe operating conditions.**

NOTICE: DO NOT exceed the rated current limit of any receptacle.

2.7 Voltage Selector Switch

See Graphic: wc_gr001682

The voltage selector switch is located in a separate enclosure on the generator on the opposite side of the machine.

The selector switch is a three-position switch which mechanically changes the connections between the generator output leads and the terminal lugs on the generator. This allows three different volt ranges to be selected.

120/240 VAC 1Ø

120/208 VAC 3Ø

139/240 VAC 3Ø (Refer to Section *Voltage Adjustment Rheostat*.)

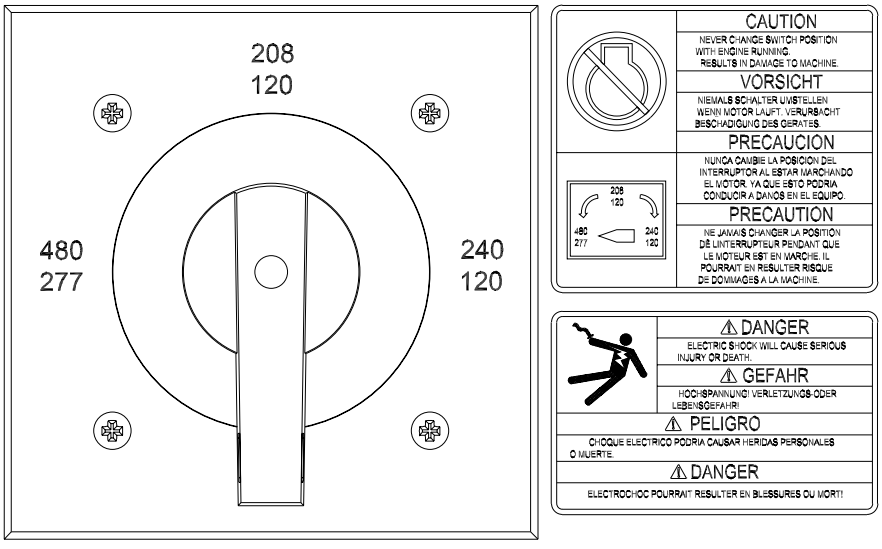
277/480 VAC 3Ø

Voltage ranges are selected by rotating the handle on the switch to the desired voltage. The switch is equipped with a locking mechanism. This allows the voltage setting to be locked in place to prevent unauthorized personnel from changing the voltage selection. To lock switch in position, push lock up and attach a padlock through the openings in the locking strip.

***NOTICE*: NEVER** CHANGE THE VOLTAGE SELECTOR SWITCH WITH THE ENGINE RUNNING. This can cause arcing and can severely damage the switch and the generator windings.

WARNING

ELECTROCUTION HAZARD! High voltage is present inside this panel when the generator is operating!



wc_gr001682

2.8 Emergency Stop Switch

See Graphic: wc_gr001677

The emergency stop switch **(p)** is the red button located below the receptacle panel and can be accessed with the panel doors closed.

Activate the emergency stop switch by pushing the red button in. Pushing the emergency stop switch opens the main circuit breaker and the fuel solenoid, and results in the engine shutting down. The switch will remain activated until the button is pulled out.

***NOTICE*:** PRESS THE EMERGENCY STOP BUTTON ONLY IN THE CASE OF AN ACTUAL EMERGENCY WHERE THE GENERATOR MUST BE STOPPED IMMEDIATELY! In all other instances, open the main line circuit breaker and then turn the engine start switch to off “O”.

wc_gr001677

2.9 Main Line Circuit Breaker

See Graphic: wc_gr001683

The main line circuit breaker **(c)** is located on the control panel.

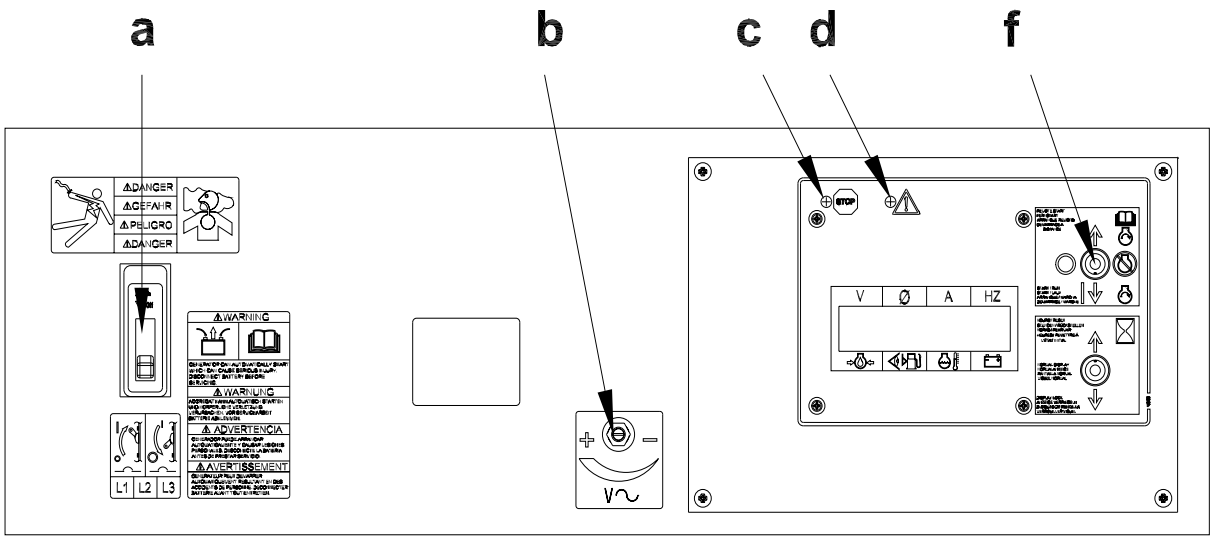
In the off “O” position, the main line circuit breaker interrupts power from the selector switch to the terminal lugs at the bottom of the generator panel. Power is also interrupted at the main line circuit breaker when the customer connection lug door is opened.

NOTICE: Before shutting down the generator or performing any service to the generator unit, make sure the main line circuit breaker is in the off “O” position.

NOTICE: The convenience receptacles are not connected through the main line circuit breaker but are connected directly to the generator windings. As a result, the receptacles are powered even with the main line circuit breaker in the off “O” position. To turn off power to receptacles, open the individual circuit breakers provided for each.

DANGER

DANGER OF ELECTROCUTION! High voltage is present inside this panel when the generator is operating! Never open the control panel while the generator is in use.



wc_gr001683

2.10 Engine Start Switch

See Graphic: wc_gr001683

The engine start switch **(f)** is a three-position switch: “REMOTE START”, off “O”, and “START/RUN”. The “REMOTE START” position is the normal setting used when using the generator as a back-up power supply connected to a remote switch. In the REMOTE START position, the generator is in stand-by mode and will not start until the remote switch closes. In the “START/RUN” position, the switch immediately starts the engine start cycle and activates the starter motor to crank the engine. When set in the “REMOTE START” or “START/RUN” position, the switch applies battery power to the control module to turn on the LCD panel, and also energizes the engine’s electrical system. In the off “O” position, power to the engine’s electrical system, including the fuel solenoid, is disconnected.

2.11 Voltage Adjustment Rheostat

See Graphic: wc_gr001683

Just left of the controller display window is the voltage adjustment rheostat **(b)**. Use the rheostat to adjust the AC voltage output. Loosen locking nut and turn adjusting screw clockwise to increase voltage, counter-clockwise to decrease voltage. The voltage can be monitored at the LCD panel.

2.12 Warning Light

See Graphic: wc_gr001683

The amber warning light **(d)** on the metering panel will turn on prior to an engine fault condition occurring. This acts as a pre-alarm to call attention to a potential fault condition. At the same time the warning light goes on, the LCD panel will begin blinking to indicate which engine function is approaching its fault value.

Engine Pre-alarm Set Points:

- Fuel Level = 15%
- High Temperature = 221°F
- Low Temperature = 70°F
- Low Oil Pressure = 20 psi
- Time to Service = 0 hours
- Sender Failure = engine coolant and oil pressure senders.

Note: *Time to Service and Sender Failure faults will not shut down the generator.*

2.13 Connection Lugs

See Graphic: wc_gr001684

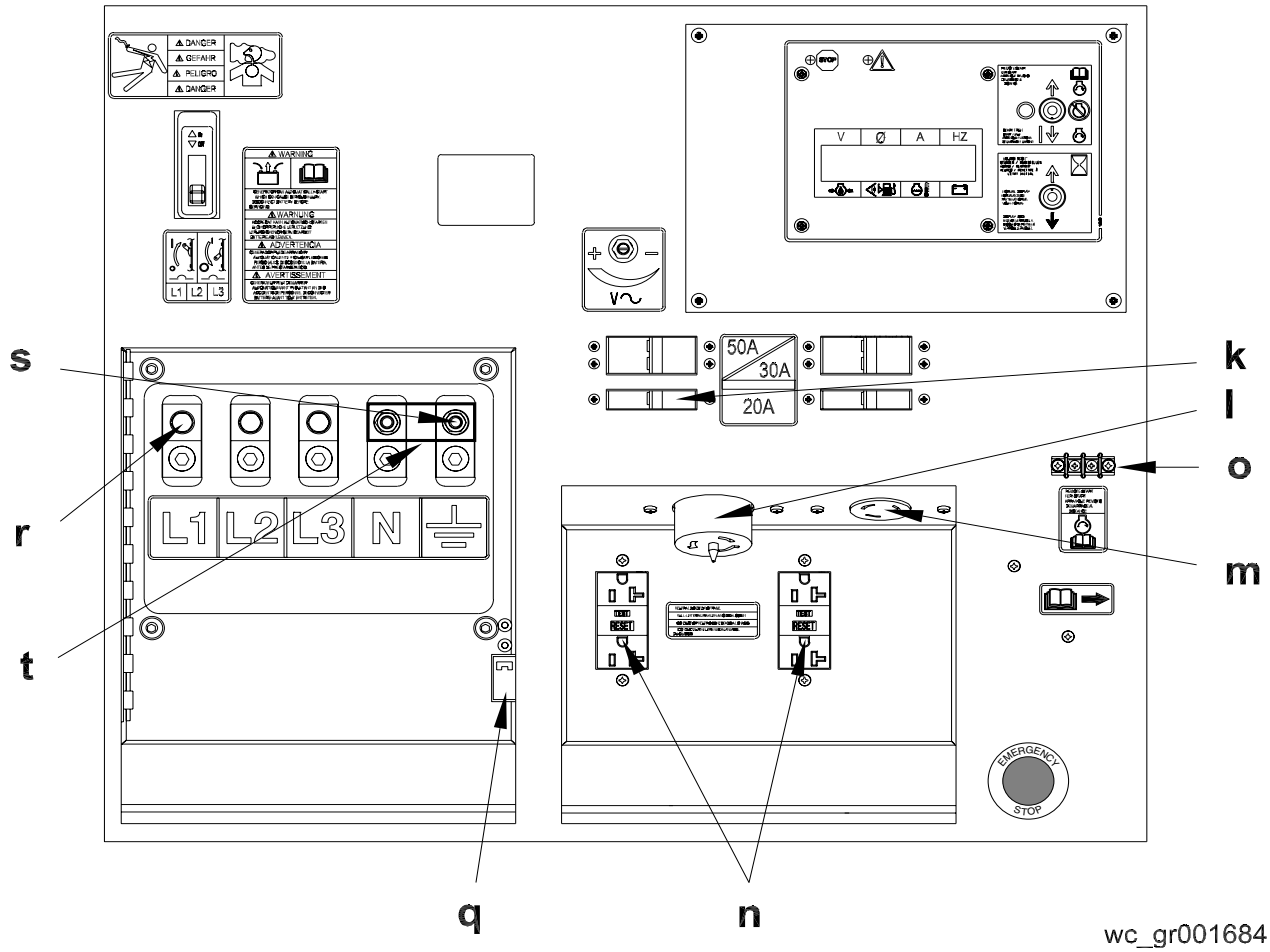
The customer connection lugs **(r)** are located on left at the bottom of the panel behind a hinged door. The lugs provide connection points for attachment of outside loads.

A large label like the one shown in section *Terminal Connections* is attached to the inside of the terminal door. It shows the correct terminal connections for selected voltages.

Connections to the lugs should be made by running the power cables up under the lug door in the bottom of the panel and into the lug. Use a 3/8 in. Allen wrench to tighten cable connections in place.

WARNING

ELECTROCUTION HAZARD! High voltage is present inside this panel when the generator is operating!



wc_gr001684

2.14 Ground Connection

See Graphic: wc_gr001684

A ground connection **(s)** is located next to the terminal lugs. The unit must have this ground lug connected to a good earthen ground for proper operating safety in compliance with NEC and local standards.

2.15 Convenience Receptacles

See Graphic: wc_gr001684

The generator is equipped with one 120V/240V twist lock receptacle **(m)** rated at 30A, and one 120V/240V twist lock receptacle **(l)** rated at 50A. The two 120V duplex receptacles **(n)** are equipped with ground fault interrupts (GFI). Receptacles **do not** connect through the main line circuit breaker. Each receptacle is protected by its own circuit breaker **(k)** which is located directly above it. Power to the receptacles is available any time the generator engine is running, even with the main line circuit breaker open.

Note: *For the G25, when the voltage selector switch is in the 480V/3Ø position, voltage at the duplex receptacles is 139V, and voltage at the 30/50A receptacles is 139/240V. When the voltage selector switch is in the 208V/3Ø position, voltage at the 30/50A receptacles is 120/208V. When the voltage selector switch is in the 208V/3Ø position, the voltage can be adjusted with the voltage adjustment rheostat **(f)** to 240V/3Ø. The voltage at the duplex receptacles is 139V, and voltage at the 30/50A receptacles is 139/240V.*

2.16 Remote Run Terminal Block

See Graphic: wc_gr001684

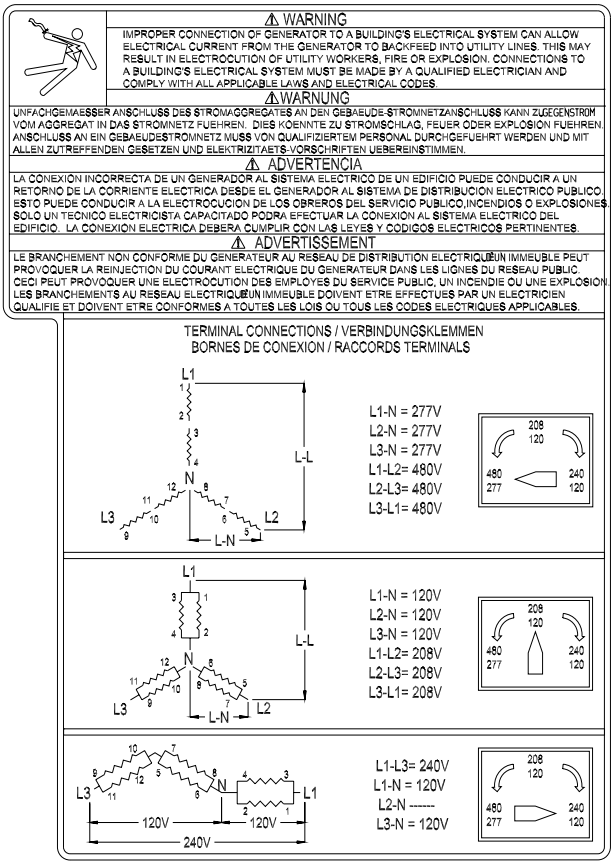
The remote run terminal block **(o)** is located just to the right of the 120V duplex receptacles. It provides connection points for installation of a remote start switch. When it is connected to a transfer switch, it allows the generator to be used as a standby power supply.

2.17 Panel Door Interlock Switch

See Graphic: wc_gr001684

The customer connection lugs panel access door is equipped with an interlock switch **(q)**. When the door is opened this switch automatically trips the main circuit breaker. Voltage to the receptacles will not be cut.

2.18 Terminal Connections



ALL CONNECTIONS TO THE TERMINALS MUST BE MADE BY A TRAINED ELECTRICIAN.

WARNING

BACKFEED FROM THE GENERATOR INTO THE UTILITY'S DISTRIBUTION SYSTEM CAN CAUSE A SERIOUS INJURY OR DEATH TO UTILITY WORKERS!

Improper connection of generator to a building's electrical system can allow electrical current from the generator to backfeed into utility lines. This may result in electrocution of utility workers, fire or explosion. Connections to a building's electrical system must be made by a qualified electrician and comply with all applicable laws and electrical codes.

WARNING

ELECTROCUTION HAZARD! ALWAYS OPEN MAIN CIRCUIT BREAKER AND SET ENGINE STOP SWITCH TO OFF "O" BEFORE INSPECTING OR ATTEMPTING ANY CONNECTIONS TO THE TERMINAL BLOCK! LETHAL VOLTAGE COULD BE PRESENT ON THE TERMINAL LUGS!

2.19 Before Starting

Before putting the generator into service, review each item on the following checklist. Because generators are often run for long periods of time unattended, it is important to make sure that the machine is set up properly to reduce possible problems.

WARNING

Failure to follow the procedures listed may cause injury to personnel or damage to the generator. Be certain that all persons setting up the generator are certified or fully trained on the installation of the generator.

- Check for any damage that might have been caused while towing to the job site.
- Check to make sure no debris has lodged in vents, near radiator or around fan. Check to make sure that the exhaust compartment is clean and nothing is touching the muffler or exhaust pipes.
- Check that generator is level.
- Chock trailer wheels.
- Check that generator is grounded to a good earthen ground per local regulations and NEC standards.
- Check engine oil, coolant and fuel levels, and fill as required.
- Determine voltage needs. Set voltage selector switch and make correct terminal connections.
- Check that all electrical connections were made in compliance with local regulations and NEC standards.
- Check fan belt and hoses on engine for loose connections or fraying. Tighten or replace as required.
- Close and secure side panel access doors.
- Review and follow safety instructions found in the front of this manual.

2.20 Manual Start-up

See Graphic: wc_gr001682, wc_gr001677, wc_gr001683

Before starting the generator set, thoroughly review the pre-start-up checklist in the previous section. Proceed with generator start-up only after checking each item in that section.

Thoroughly read and make sure you understand the engine Operator's Manual supplied with the generator. Follow the steps below and the illustration on the opposite page in the order listed.

WARNING

When using the generator as a standby or substitute power supply, make sure the voltage and phase rotation of the line connections match those of the utility lines or of any other power source normally used. **Failure to match phase rotation and voltage may cause equipment connected to the generator to operate incorrectly! This could create unsafe operating conditions.**

2.20.1 Check position of Voltage Selector Switch and make sure it is set for the desired voltage output. Lock the switch in place.

2.20.2 Make sure the Engine Start Switch **(f)** is in the off "O" position.

2.20.3 Turn main line circuit breaker **(a)** and convenience receptacle circuit breakers to off "O". This will disconnect all loads from the generator.

2.20.4 Move Engine Start Switch **(f)** to "REMOTE START" to check operation of engine control module. The LCD panel should momentarily display **"SYSTEM OK"** followed by **"UNIT IN AUTO"** and engine information. Check fuel level and battery values.

Note: *The amber Warning Light* **(d)** *will come on if the fuel level is below 25%, or engine temperature is below 70°F. This will not prevent the engine from starting.*

2.20.5 Press in the Emergency Stop Button **(p)**. The LCD panel should read **"EMERGENCY STOP"**. Release the stop button after verifying the display and return the Engine Start Switch to off "O".

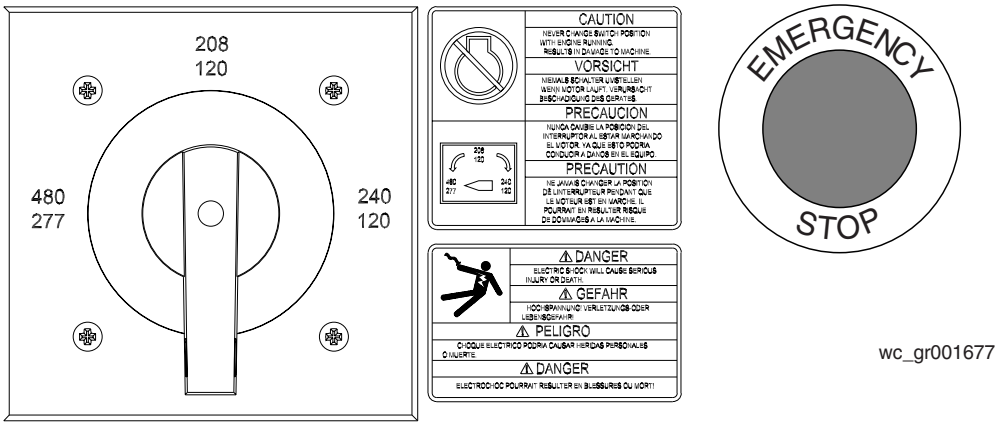
2.20.6 Start engine by moving the Engine Start Switch to the "START/RUN" position.

After displaying **"GLOW PLUG ON"** sequence, the LCD display will read **"STARTING ENGINE"** as the engine begins its crank cycle. The normal cycle is for the engine to crank for 15 seconds, then rest for 10 seconds. This cycle will repeat three (3) times. If the engine does not start within this time, the Engine Control Module will shut down the engine and "**FAULT OVERCRANK"** will be displayed on the LCD panel. To repeat crank cycle, return start switch to off "O" to reset Engine Control Module. Allow starter motor to cool between start-up attempts.

2.20.7 After engine starts, allow it to warm up for a few minutes and check readouts on LCD panel. The **"TIME TO SERVICE"** interval will be displayed. Make sure battery charging system, oil pressure and engine temperature readings are within normal ranges.

2.20.8 Check that AC voltage is correct. Voltage can be fine-adjusted by turning the voltage adjustment rheostat **(b)** on the metering panel.

2.20.9 Check frequency. Under no-load conditions, frequency should read around 61.5 Hz, dropping to near 60 Hz as the generator load is switched on.



wc_gr001677

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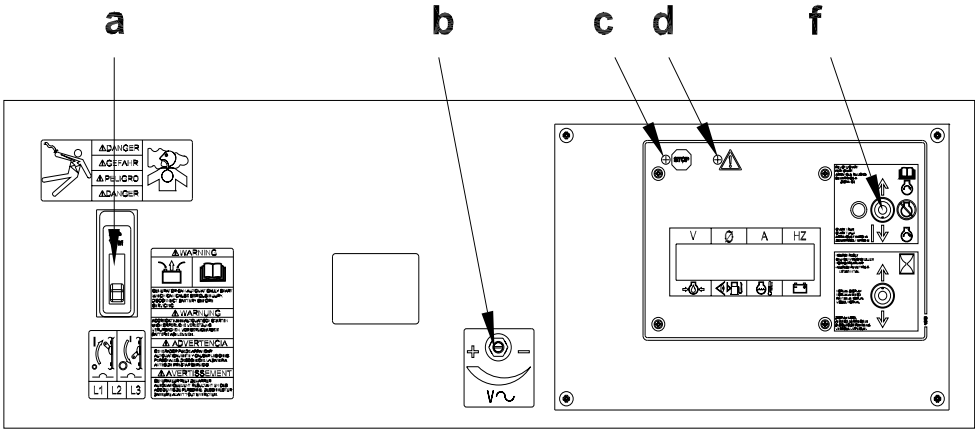


wc_gr001683

2.21 Running the Generator

See Graphic: wc_gr001683

Leave the engine start switch **(f)** in the “START/RUN” position while the generator is operating. If the generator was started using a remote switch, leave engine start switch in the “REMOTE START” position. Let the generator run for a few minutes to warm engine before closing main circuit breaker.

WARNING

Before closing breakers, make sure that any electrical devices attached downstream from the generator will not start up unexpectedly.

While the generator is running, check for excessive vibration, oil leaks, or coolant leaks.

WARNING

Before placing the engine start switch (f) in the “REMOTE START” position, verify that the contacts on any remote switch linked to the generator set are OPEN. This will prevent the generator from immediately starting when the engine start switch is moved to the “REMOTE START” position.

2.22 Engine Power Correction Factors

Performance data on Isuzu engines are measured at the following standard conditions:

- 29.31 inches of mercury dry air pressure
- 600 feet altitude
- 0 % relative humidity
- 77°F air intake temperature
- 104°F fuel inlet temperature

Refer to the table to estimate the engine power decrease in percent, as environmental factors vary from the standard conditions.

MODEL G 25	FUEL TEMP RISE of 1.8°F	AIR TEMP RISE of 10°F	ALTITUDE RISE of 305 m (1000 ft)	RELATIVE HUMIDITY RISE of 10%
Engine Power Decrease in %	0.17	1.50	3.00	0.10

2.23 Shutting Down Generator

Check with other personnel on the jobsite and let them know that power is being turned off. Make sure that the power shutdown will not create any hazards by turning off devices such as pumps, heaters, or lights that may need to be kept on.

2.23.1 Remove all loads from generator.

2.23.2 Open (turn to off “O”) main line circuit breaker.

2.23.3 Let engine run for approximately 5 minutes to allow it to cool down.

2.23.4 Move engine start switch to the off “O” position.

2.24 Cold Weather Start-up

Good cold weather starting requires that the battery be at peak power, the correct weight motor oil is used, and the starter motor is in good condition. The ECM will automatically activate the cold starting aid when the temperature is low enough and will display “GLOW PLUG ON”.

2.25 Lifting

A central lifting eye is located at the top of the generator and is attached to a lifting frame inside the housing.

WARNING

Crushing / machine damage hazard. Make sure the lifting devices have sufficient capacity to lift the unit safely. Refer to *Technical Data* for the proper operating weight of the generator.

When lifting the generator, attach a hook or sling securely to the lifting eye.

2.26 Overnight Storage

When storing unit overnight, make sure all access doors are closed and padlocked.

DO NOT store generator overnight in a low lying area that might fill with water during a heavy storm.

2.27 Long-term Storage

If the generator is being stored for several months, follow the engine manufacturer’s recommendations for long-term storage. These procedures are designed to help minimize engine corrosion.

2.28 Automatic/Remote Start-up

In the “REMOTE START” position the generator can be started remotely, either through a transfer switch or some other type of remote start switch. “REMOTE START” is the normal setting when using the generator as a standby power supply. Before placing the generator in the automatic start-up mode, review the pre-start and manual Start-up sections in this manual and follow procedure below.

Before placing the Engine Start Switch (f) in the “REMOTE START” position, verify that the contacts on any remote switch linked to the generator set are OPEN. This will prevent the generator from immediately starting when the Engine Start Switch is moved to the “REMOTE START” position.

2.28.1 Perform a manual start at least once to verify that the metering panel is operating correctly. Refer to Section *Before Starting* and *Manual Start-up* sections in this manual.

2.28.2 If a check of auto start-up circuit is desired, attach a short jumper wire (minimum 16 gauge insulated) between the two terminals on the remote run terminal block. This applies a ground to the Engine Control Module to complete the start circuit. The engine should crank, start and run.

Move the Engine Start Switch to off “O” to stop engine. Remove jumper from remote run terminals after testing is complete.

2.28.3 Secure generator by closing and locking all doors.

2.28.4 Set Engine Start Switch to “REMOTE START” and close main line circuit breaker.

The generator is now ready for automatic start-up.

If the generator is to be used as a stand-by power supply for more than a month, provisions must be made to maintain battery charge. This can be done either by attaching a battery charger to the battery or by starting generator manually and running engine periodically to maintain charge. See Section *Manual Start-up*.

2.29 Remote/Transfer Switch


WARNING

When the generator is used as a stand-by power supply, it must be equipped with a device which isolates it from the utility's distribution system.

Failure to isolate the generator from the utility's electrical distribution system could cause output from the generator to backfeed into the utility lines and cause injury or death to utility workers!

The same is true if using the generator as a backup to some other type of power supply system.

A transfer switch is designed to transfer electrical loads from the normal power source (utility) to the emergency power source (generator) when normal voltage falls below a prescribed level.

The transfer switch automatically returns the load back to the normal source when power is restored back to operating levels.

Installation of a transfer switch or other type of remote starting device is the responsibility of the generator user. Installation of such devices must be performed by a qualified electrician following all directions supplied by the manufacturer of the switch. If attaching generator to a power supply normally serviced by a utility company, notify the utility company and check local and state regulations. Familiarize yourself with all instructions and warning labels supplied with the switch.

The bond bar connecting the neutral and ground lugs may need to be removed for stand-by power applications. Check with NEC and local regulations for compliance requirements.


WARNING

When using the generator as a stand-by or substitute power supply, make sure the voltage and phase rotation of the line connections match those of the utility lines, or of any other power source normally used. **Failure to match phase rotation and voltage may cause equipment connected to the generator to operate incorrectly! This could create unsafe operating conditions.**


DANGER

Lethal voltage is always present in the transfer switch once it has been properly installed!

2.30 Towing

See Graphic: wc_gr000510

The generator trailer is equipped with brakes, lights, and coupler connection. Before towing the generator, perform the following:

2.30.1 Check that the towing vehicle and hitch have a rating equal to or greater than the GVWR. Refer to the Technical Data.

2.30.2 Check the condition of both the coupler and hitch. **DO NOT** tow the trailer if the coupler or hitch is damaged.

2.30.3 Make sure that the hitch and coupler are compatible. The generator trailer is equipped with either a pintle type coupler **(a)** or 50 mm (2 in.) ball coupler.

2.30.4 Check that the directional and running lights on the trailer are working.

2.30.5 Connect the safety chains **(c)** using a crossed pattern under the trailer tongue.

2.30.6 On trailers with surge or electric brakes, connect the breakaway cable **(b)** on the trailer coupler to the rear bumper or frame of the vehicle. This cable will actuate the brake system on the trailer if both the coupling and safety chains have failed. The breakaway cable is not a parking brake and should not be used as one.

2.30.7 Check that all fasteners on the coupling are secure.

2.30.8 Check the tread wear and inflation of tires. Make sure that all lug nuts are in place and are tight.

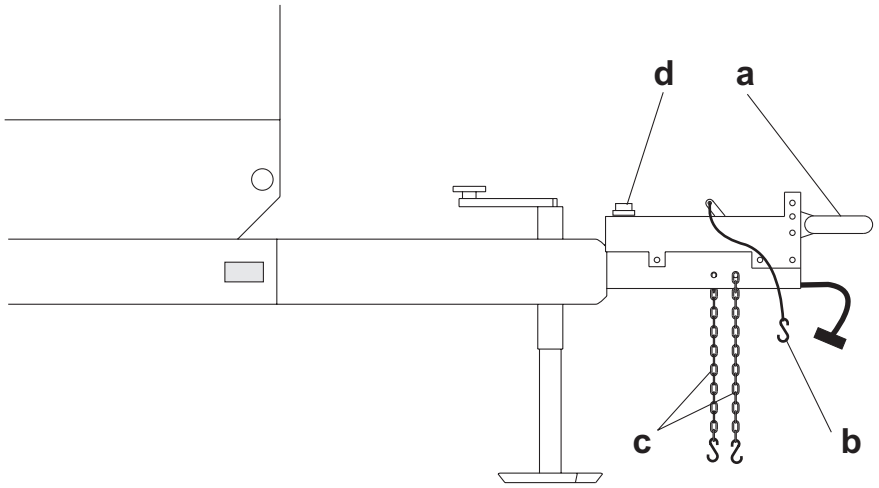
2.30.9 Check the operation of the optional surge brakes by braking the vehicle at a slow speed before entering traffic. Both the vehicle and the trailer should brake smoothly. If the trailer seems to be pushing, check the fluid level **(d)** in the surge brakes or the operation of the electric brakes.

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

***NOTICE*:** 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.

DO NOT exceed 55 mph when towing a trailer.

In most states, large trailers must be registered and licensed by the State Department of Transportation. Before towing, be sure to check licensing requirements.



wc_gr000510

3. Maintenance

3.1 Periodic Maintenance Schedule

The chart below lists basic machine and engine maintenance. Refer to your engine operator's manual for additional information on engine maintenance.

	Daily	50 hr or 2 weeks	250 hr	600 hr or 12 Mo	1200 hr or 24 Mo	2000 hr	Other
Check engine oil and coolant level.	■						
Check air dust cleaner valve and restriction indicator*.	■						
Visual walkaround inspection.	■						
Check tire inflation, tread wear and lug nuts before towing.	■						
Check exhaust system.	■						
Check fuel filter.	■						
Drain containment system.		■					
Service the battery.			■				
Change engine oil and replace oil filter**.			■				
Clean unit inside and out.			■				
Check air intake hoses, connections, and system.				■			
Replace fuel filter element.				■			
Check automatic belt tensioner and belt wear.				■			
Check cooling system.				■			
Perform coolant solution analysis and add SCA's (Supplemental Coolant Additives).				■			
Grease axle.				■			
Pressure test cooling system.					■		
Flush cooling system.					■		
Check and adjust engine valve clearance.						■	
Check brake fluid level in trailer at least monthly.							■

*Replace primary air cleaner when restriction indicator shows a vacuum of 20 in. H_2O.

**Change the oil after the first 50 hours, then every 250 hours.

3.2 New Machines

3.2.1 Run generator at least 60–100% of continuous load for the first 100 hours.

3.2.2 Change engine oil and replace oil filter after the first 50 hours.

3.3 Resetting the Periodic Maintenance Timer

After maintenance has been performed on the generator, it is necessary to reset the periodic maintenance timer.

• If the periodic maintenance timer is at zero, press the ENG. HRS switch UP and hold for 10 seconds until the “TIME TO SERVICE” resets to 250 hours.

• If the service time is greater than zero (maintenance was performed prior to the timer running out) press and hold the ENG. HRS switch UP and hold for 30 seconds. This will reset the “TIME TO SERVICE” to 250 hours.

3.4 Air Cleaner

See Graphic: wc_gr001685

Replace the air filter cartridge **(c)** when yellow indicator of the engine air filter gauge reaches the red line.

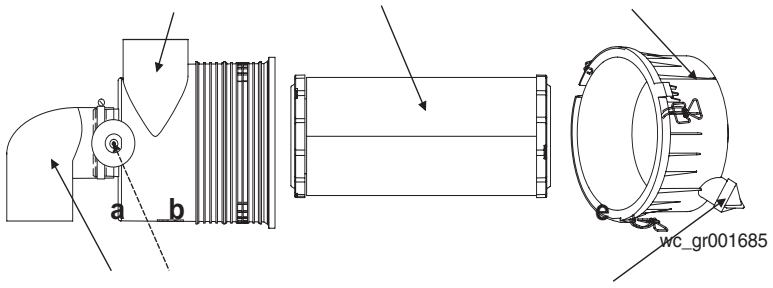
To replace the air filter cartridge:

- Remove the end cover **(d)**, then discard the entire air filter cartridge.
- Insert a new air filter cartridge, then
- Re-install the end cover, making sure that the dust cap **(e)** is clean and is pointing downward.

Periodically, make sure the inlet pipe **(f)** is free from obstructions.

Check all connections and make sure they are snug. An air leak at the neck clamp, gauge connection, or intake pipe can quickly lead to expensive engine repairs.

- Make sure that the intake piping **(a)** is fully engaged over the neck of the filter to ensure a good seal.
- If the filter housing, gauge connection **(b)**, neck, or inlet pipe are crushed or damaged, replace them immediately.



3.5 Engine Lubrication

Check engine oil daily before starting engine.

DO NOT operate engine if oil level is below ADD mark on dipstick. Always keep oil level within the crosshatch pattern or “full” mark on dipstick.

Change oil after first 50 hours of operation and every 250 hours thereafter. Refer to the engine manufacturer’s operator’s manual for lubrication specifications.

3.7 Engine Coolant

Check the coolant level of the radiator with the engine cold. After initial filling of radiator to 3/4 inch below bottom of filler neck, maintain proper level in overflow bottle daily.

WARNING

NEVER remove radiator cap or drain plug while engine is hot! Pressurized coolant can cause serious burns.

Shut off engine. Only remove radiator cap when it is cool enough to touch with bare hands. Slowly loosen cap to relieve pressure first, before removing it completely.

3.7 Trailer Maintenance

Tires - Keep tires inflated to the proper pressure as shown on the tire sidewall, and check tread periodically for wear. Replace tires as required.

Wheels - Check that lug nuts holding wheels are tight. Replace any missing nuts immediately.

Axle Hubs - Grease axle hubs through grease fittings using a good wheel bearing grease.

Brakes - Check operation of brakes before each trip.

Check level of brake fluid in actuator at front of trailer at regular intervals. Fill to approximately 25mm (1 in.) below top of reservoir using DOT-3 heavy-duty brake fluid. Tighten filler plug securely.

Note: *If fluid level has fallen too low, bleed brake lines to remove any air trapped in lines.*

3.8 Troubleshooting Automatic Shutdown

There are six automatic shutdown conditions: low oil pressure, high coolant temperature, engine overspeed, engine underspeed, engine overcrank and low fuel. When these occur, the operator can perform certain diagnostic tests to help identify the problem. Most of these diagnostics deal with the engine.

The generator, however, can also cause problems. Consult a qualified electrician or your nearest Wacker Neuson dealer for possible causes of generator problems.

WARNING

Anytime the generator is down for service, secure it by closing and locking all doors, and hang a "DO NOT RUN" sign on the metering panel.

Low Oil Pressure Shutdown

3.8.1 Check engine oil level using dipstick. Add oil if required.

3.8.2 Carefully inspect engine for oil leaks.

3.8.3 If oil level is good, start engine and verify loss of oil pressure. Shut down engine immediately if oil pressure value does not read at least 15 psi within 5 seconds.

Check the oil pressure shutdown sender and connecting wiring on the engine block. Check for continuity between sender and engine control module. *See wiring diagrams.*

3.8.4 If oil level, oil pressure sender and connecting wiring are good, the fault could be caused by an engine failure.

Note: *An engine failure caused by something other than one of the six shutdown conditions discussed will cause a low oil fault condition to be displayed.*

High Coolant Temperature Shutdown

3.8.1 Restart engine and read water temperature. Stop engine if temperature is above 221°F. Normal engine operating temperature is between 170°-190°F.

3.8.2 Allow engine to cool to a safe temperature and inspect coolant level in radiator. Add coolant as needed.

3.8.3 Carefully inspect coolant hoses and engine block for leaks.

3.8.4 Check that fan belt for water pump is tight.

3.8.5 Check the high temperature shutdown sender and connecting wiring on engine block. Check for continuity between sender on engine block and engine control module. See wiring diagrams.

3.8.6 If sender and wiring are good, consult engine manufacturer's Operator's Manual or Service Manual for possible causes of engine overheating.

Overspeed or Underspeed Shutdown

Restart engine and read the AC frequency meter. Meter should read aproximately 61.5 Hz under no-load condition.

If frequency is high, adjust engine rpm for correct frequency (approximately 1850 rpm).

Overcrank Shutdown

3.8.1 Check fuel level.

3.8.2 Check for proper operation of fuel pump.

3.8.3 If engine still does not start, refer to engine manufacturer's Operator's Manual or Service Manual for possible engine problems.

Low Fuel Level Shutdown

3.8.1 Check fuel level.

Note: *Warning light will come on when fuel level drops below 25%. Engine will shut down only when level drops below 5%.*

3.8.2 Check for leaks in fuel tank.

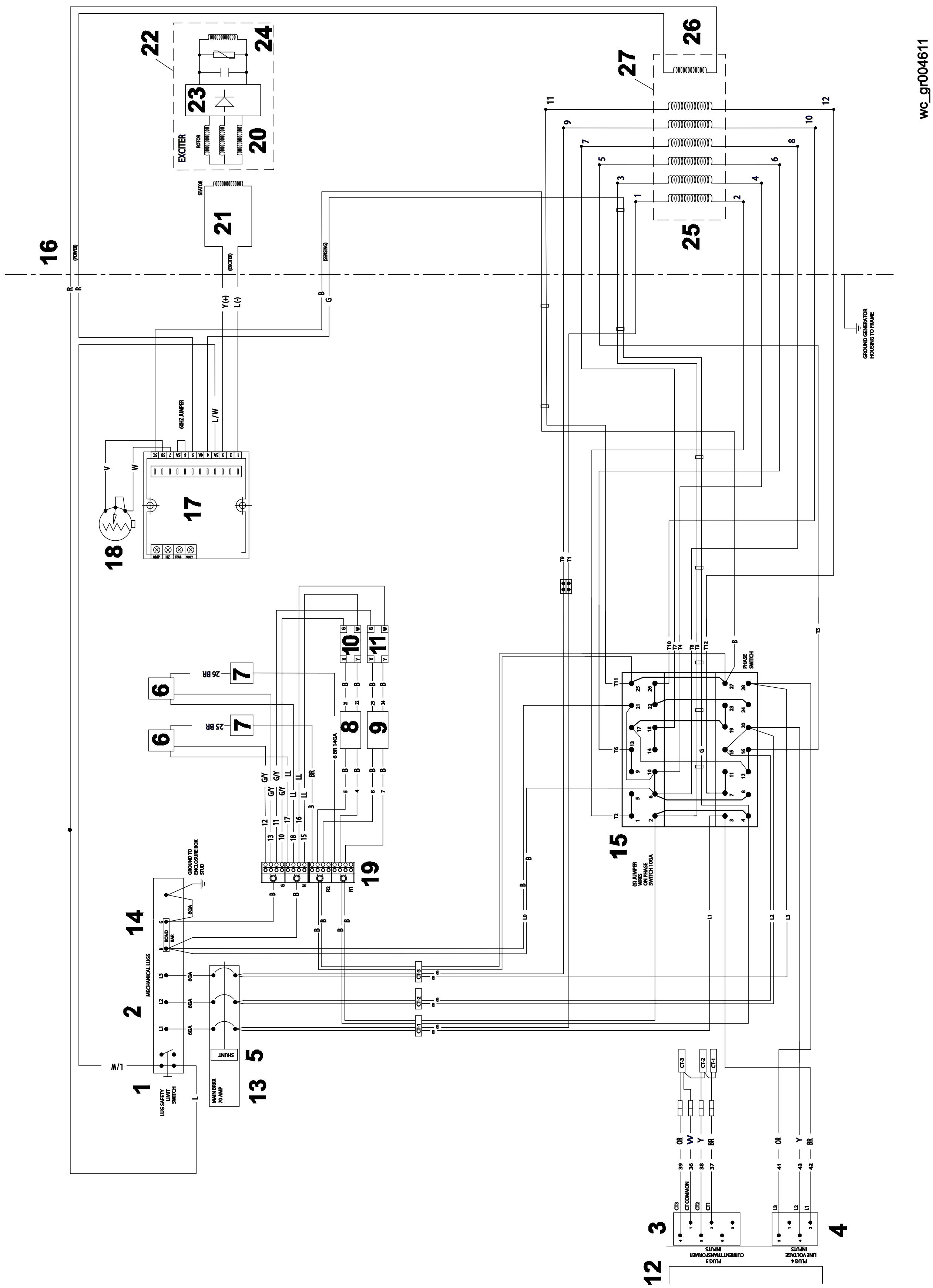
3.8.3 If fuel level is good, check fuel level sender and connecting wiring on engine. Check for continuity between sender on tank and engine control module. See wiring diagrams.

3.9 Generator and Receptacle Wiring

BOM	Revision	See Graphic:	Revision	See Graphic:
0009368	104–123	wc_gr003169	103 & lower	wc_gr001686
0009368	124 & higher	wc_gr004611	—	—
0009466	105–128	wc_gr003169	104 & lower	wc_gr001686
0009466	129 & higher	wc_gr004611	—	—
0620004	104–127	wc_gr003169	103 & lower	wc_gr001686
0620004	128 & higher	wc_gr004611	—	—
0620344 0620345 0620346 0620706	—	wc_gr004611		

Ref.	Description	Ref.	Description
1	Lug safety limit switch	14	Buss bar
2	Mechanical lugs	15	Voltage Selector Switch
3	Plug 3 - current transformer	16	Generator
4	Plug 4 - line voltage inputs	17	Voltage regulator with 4A fuse
5	Shunt	18	Voltage adjustment rheostat
6	120V GFI receptacle	19	Terminal Block
7	120V 20A breaker	20	Exciter rotor windings
8	240V 50A breaker	21	Exciter stator winding
9	240V 30A breaker	22	Rotor
10	240V 50A receptacle	23	Rectifier (diodes)
11	240V 30A receptacle	24	Main rotor winding
12	Engine control module	25	Main stator windings
13	Main Breaker	26	Auxiliary Stator Winding
–	—	27	Stator

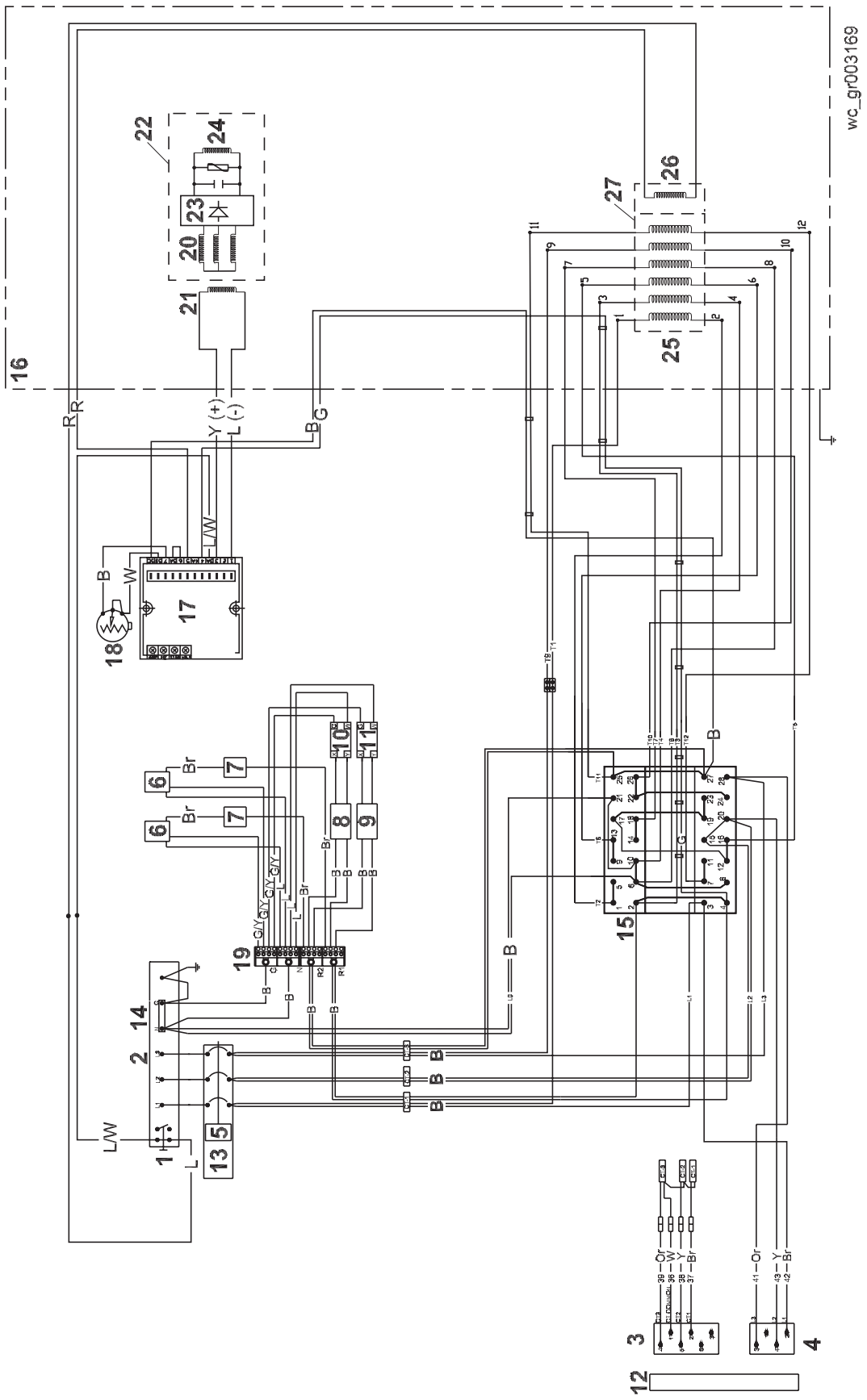
Wire Colors							
B	Black	R	Red	Y	Yellow	Or	Orange
G	Green	T	Tan	Br	Brown	Pr	Purple
L	Blue	V	Violet	Cl	Clear	Sh	Shield
P	Pink	W	White	Gr	Gray	LL	Light blue


wc_gr004611
EXCITER
ROTOR
STATOR
MECHANICAL LUGS
MAIN BRKR 70 AMP
SHUNT
LUG SAFETY LIMIT SWITCH
PHASE SWITCH
GROUND GENERATOR HOUSING TO FRAME

BOM	Revision	See Graphic:	Revision	See Graphic:
0009368	104–123	wc_gr003169	103 & lower	wc_gr001686
0009368	124 & higher	wc_gr004611	—	—
0009466	105–128	wc_gr003169	104 & lower	wc_gr001686
0009466	129 & higher	wc_gr004611	—	—
0620004	104–127	wc_gr003169	103 & lower	wc_gr001686
0620004	128 & higher	wc_gr004611	—	—
0620344 0620345 0620346 0620706	—	wc_gr004611		

Ref.	Description	Ref.	Description
1	Lug safety limit switch	14	Buss bar
2	Mechanical lugs	15	Voltage Selector Switch
3	Plug 3 - current transformer	16	Generator
4	Plug 4 - line voltage inputs	17	Voltage regulator with 4A fuse
5	Shunt	18	Voltage adjustment rheostat
6	120V GFI receptacle	19	Terminal Block
7	120V 20A breaker	20	Exciter rotor windings
8	240V 50A breaker	21	Exciter stator winding
9	240V 30A breaker	22	Rotor
10	240V 50A receptacle	23	Rectifier (diodes)
11	240V 30A receptacle	24	Main rotor winding
12	Engine control module	25	Main stator windings
13	Main Breaker	26	Auxiliary Stator Winding
–	—	27	Stator

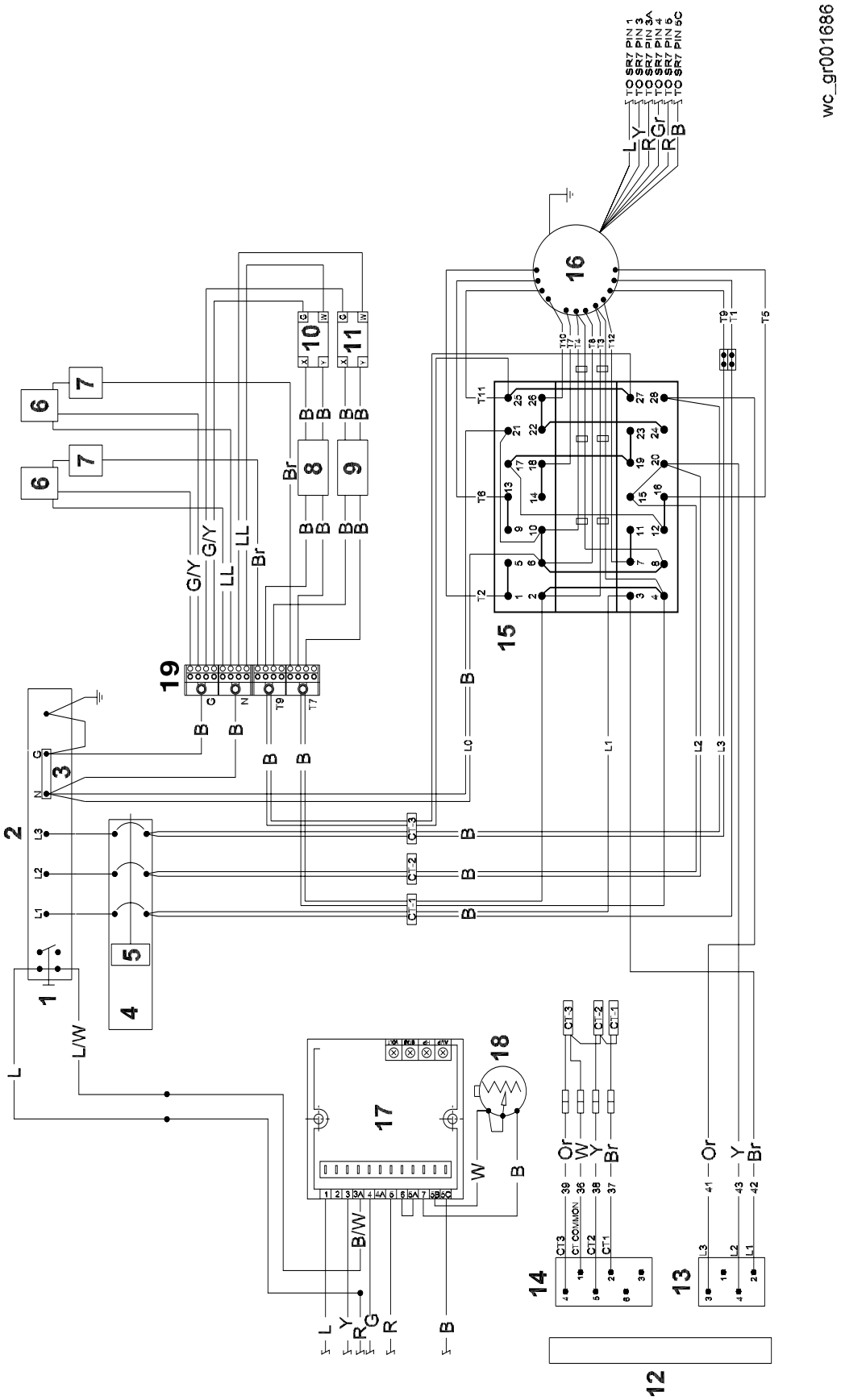
Wire Colors							
B	Black	R	Red	Y	Yellow	Or	Orange
G	Green	T	Tan	Br	Brown	Pr	Purple
L	Blue	V	Violet	Cl	Clear	Sh	Shield
P	Pink	W	White	Gr	Gray	LL	Light blue


wc_gr003169
16
22
24
23
20
21
26
27
25
R
Y (+)
L (-)
G
L/W
B
W
17
18
Br
GY
L
19
14
2
1
13
5
15
12
3
4
Or
W
Y
Br

BOM	Revision	See Graphic:	Revision	See Graphic:
0009368	104–123	wc_gr003169	103 & lower	wc_gr001686
0009368	124 & higher	wc_gr004611	—	—
0009466	105–128	wc_gr003169	104 & lower	wc_gr001686
0009466	129 & higher	wc_gr004611	—	—
0620004	104–127	wc_gr003169	103 & lower	wc_gr001686
0620004	128 & higher	wc_gr004611	—	—

Ref.	Description	Ref.	Description
1	Lug safety limit switch	11	240V 30A receptacle
2	Mechanical lugs	12	Engine control module
3	Buss bar	13	Plug 4 - line voltage inputs
4	Main breaker	14	Plug 3 - current transformer inputs
5	Shunt	15	Voltage Selector Switch
6	120V GFI receptacle	16	Generator
7	120V 20A breaker	17	Voltage regulator with 4A fuse
8	240V 50A breaker	18	Voltage adjustment rheostat
9	240V 30A breaker	19	Terminal Block
10	240V 50A receptacle	-	---

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

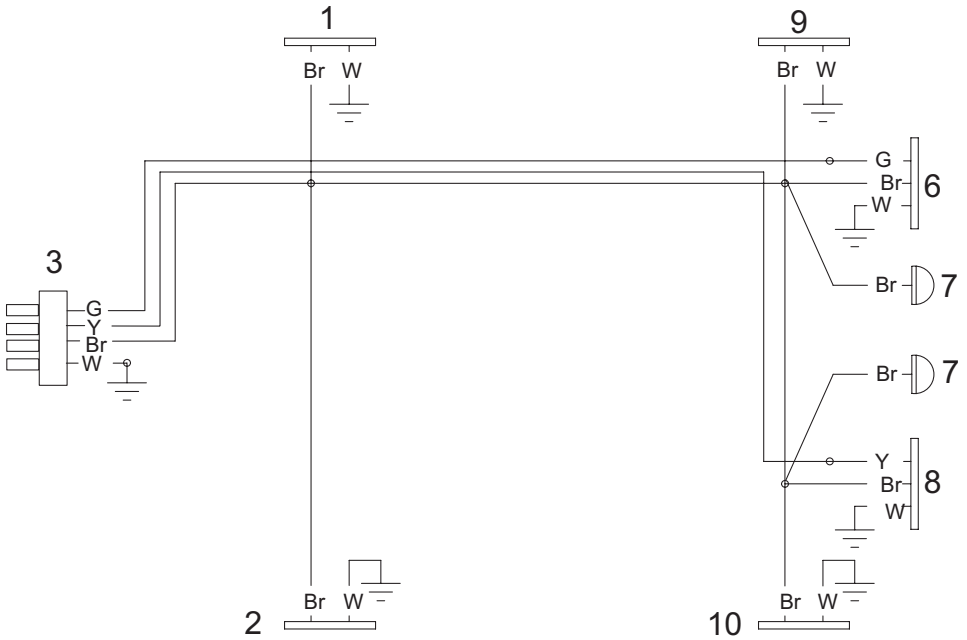

wc_gr001686
TO SR7 PIN 1
TO SR7 PIN 3
TO SR7 PIN 3A
TO SR7 PIN 4
TO SR7 PIN 5
TO SR7 PIN 5C
L
Y
R
Gr
R
B
16
15
19
10
11
8
9
7
6
3
2
1
5
4
17
18
14
13
12
G/Y
LL
Br
L/W
B/W
Or
W
Y
Br
L0
L1
L2
L3

3.10 Trailer Wiring

Ref.	Description
1	Front right side amber light
2	Front left side amber light
3	Trailer plug
4	Battery
5	Brake solenoid
6	Right tail light
7	License plate holder lights
8	Left tail light
9	Rear right side red light
10	Rear left side red light

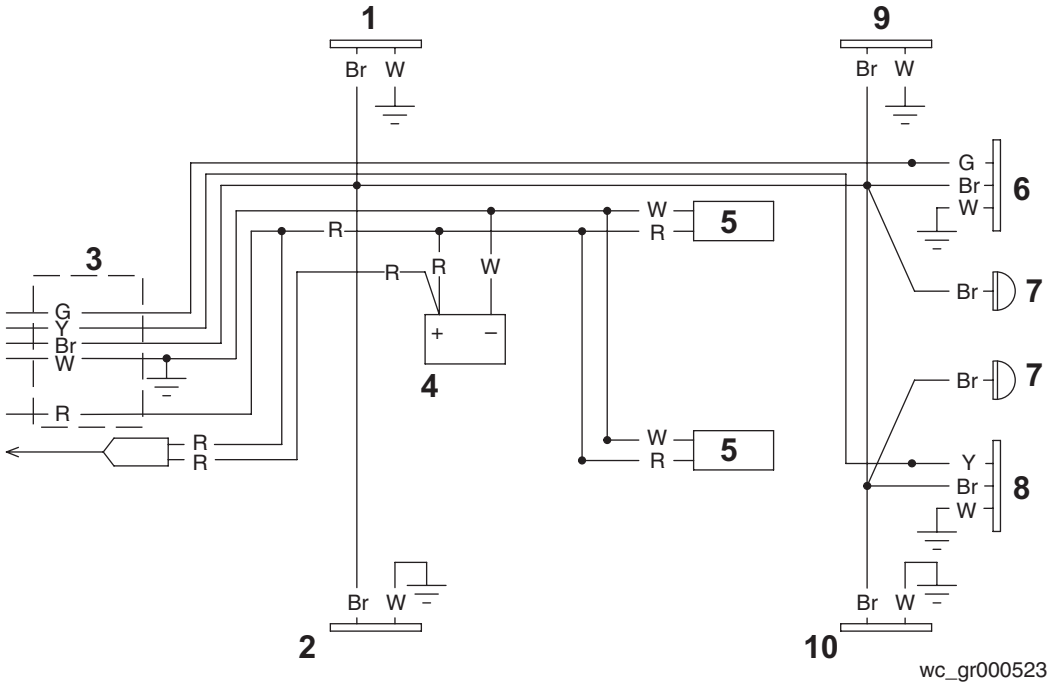
Ref.	Wire Colors	Rear Lights	Side Lights	Harness
B	BLACK	Ground	Ground	Battery charge
Br	BROWN	Tail light		Tail, side and license plate
L	BLUE			
R	RED	Brake light	Power	Electric brakes
Y	YELLOW			Left brake light and directional
G	GREEN			Right brake light and directional
W	WHITE			Ground

Standard and Hydraulic Brakes



wc_gr000522

Electric Brakes



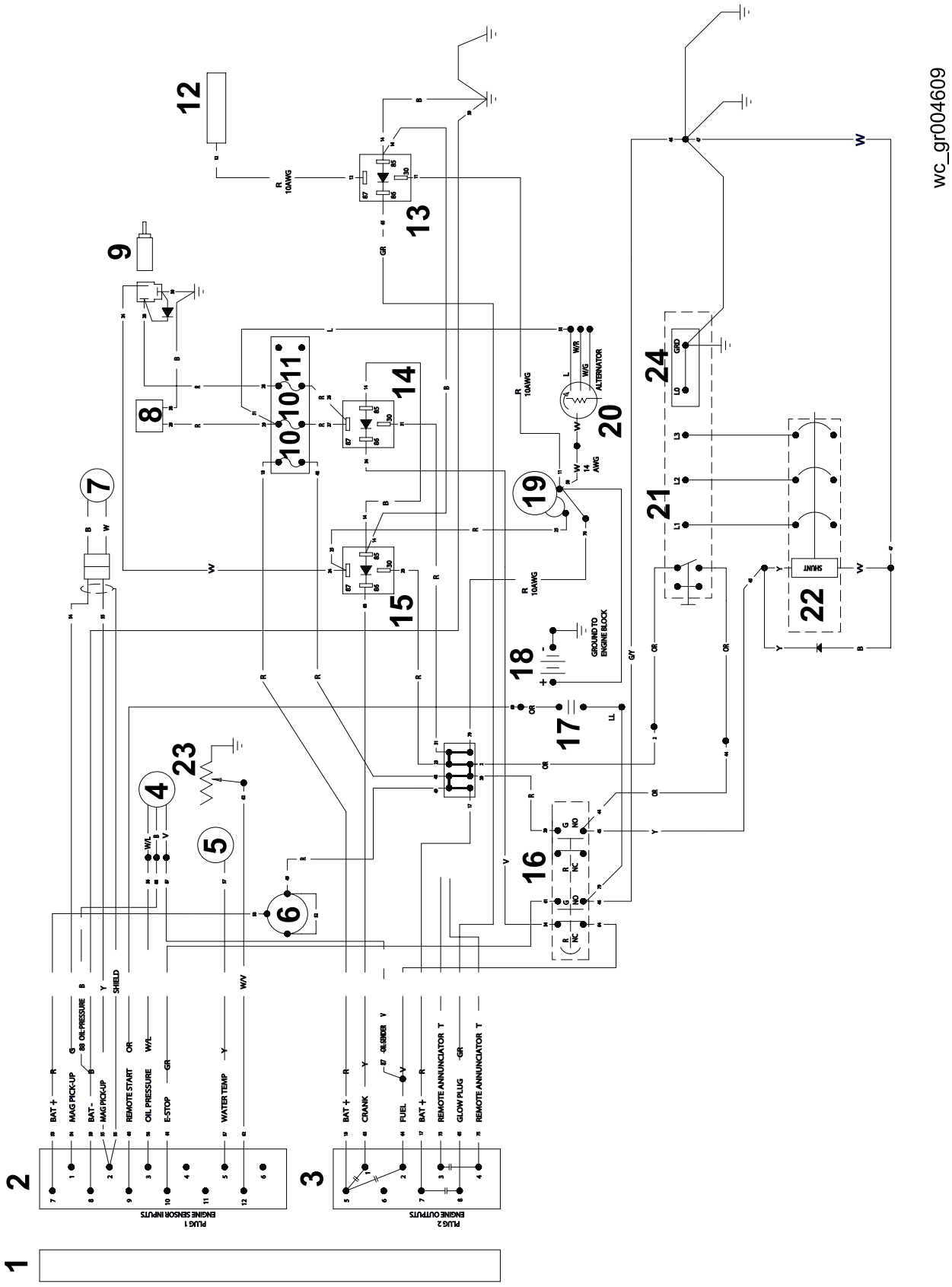
wc_gr000523

3.11 Engine Wiring

BOM	Revision	See Graphic:	Revision	See Graphic:	Revision	See Graphic:
0009368	107–123	wc_gr003217	106	wc_gr003170	105 & lower	wc_gr001687
0009368	124 & higher	wc_gr004609	–	–	–	–
0009466	111–128	wc_gr003217	110	wc_gr003170	109 & lower	wc_gr001687
0009466	129 & higher	wc_gr004609	–	–	–	–
0620004	108–127	wc_gr003217	107	wc_gr003170	106 & lower	wc_gr001687
0620004	128 & higher	wc_gr004609	–	–	–	–
0620344 0620345 0620346 0620706	—	wc_gr004609	–	–	–	–

Ref.	Description	Ref.	Description
1	Engine control module	13	Glow plug solenoid
2	Plug 1 - engine sender inputs	14	Fuel relay
3	Plug 2 - engine start outputs	15	Starter relay
4	Oil pressure sender	16	Emergency stop switch
5	Water temperature sender	17	Remote start terminals
6	Remote start-Off-Start/Run	18	Battery
7	Magnetic pickup	19	Starter motor
8	Fuel pump	20	Alternator
9	Fuel solenoid	21	Mechanical lugs
10	10A fuse	22	Main circuit breaker - Shunt trip
11	25A fuse	23	Fuel level sender
12	Glow plugs	24	Lug door interlock switch

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


wc_gr004609
PLUG 1
ENGINE SENSOR INPUTS
PLUG 2
ENGINE OUTPUTS
BAT +
MAG PICK-UP
BAT -
MAG PICK-UP
REMOTE START
OIL PRESSURE
E-STOP
WATER TEMP
SHIELD
88 OIL-PRESSURE
CRANK
FUEL
87 GLEANER
REMOTE ANNUNCIATOR
GLOW PLUG
ALTERNATOR
GROUND TO ENGINE BLOCK
SHUNT
10AWG
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

BOM	Revision	See Graphic:	Revision	See Graphic:	Revision	See Graphic:
0009368	107–123	wc_gr003217	106	wc_gr003170	105 & lower	wc_gr001687
0009368	124 & higher	wc_gr004609	–	–	–	–
0009466	111–128	wc_gr003217	110	wc_gr003170	109 & lower	wc_gr001687
0009466	129 & higher	wc_gr004609	–	–	–	–
0620004	108–127	wc_gr003217	107	wc_gr003170	106 & lower	wc_gr001687
0620004	128 & higher	wc_gr004609	–	–	–	–
0620344 0620345 0620346 0620706	—	wc_gr004609	–	–	–	–

Ref.	Description	Ref.	Description
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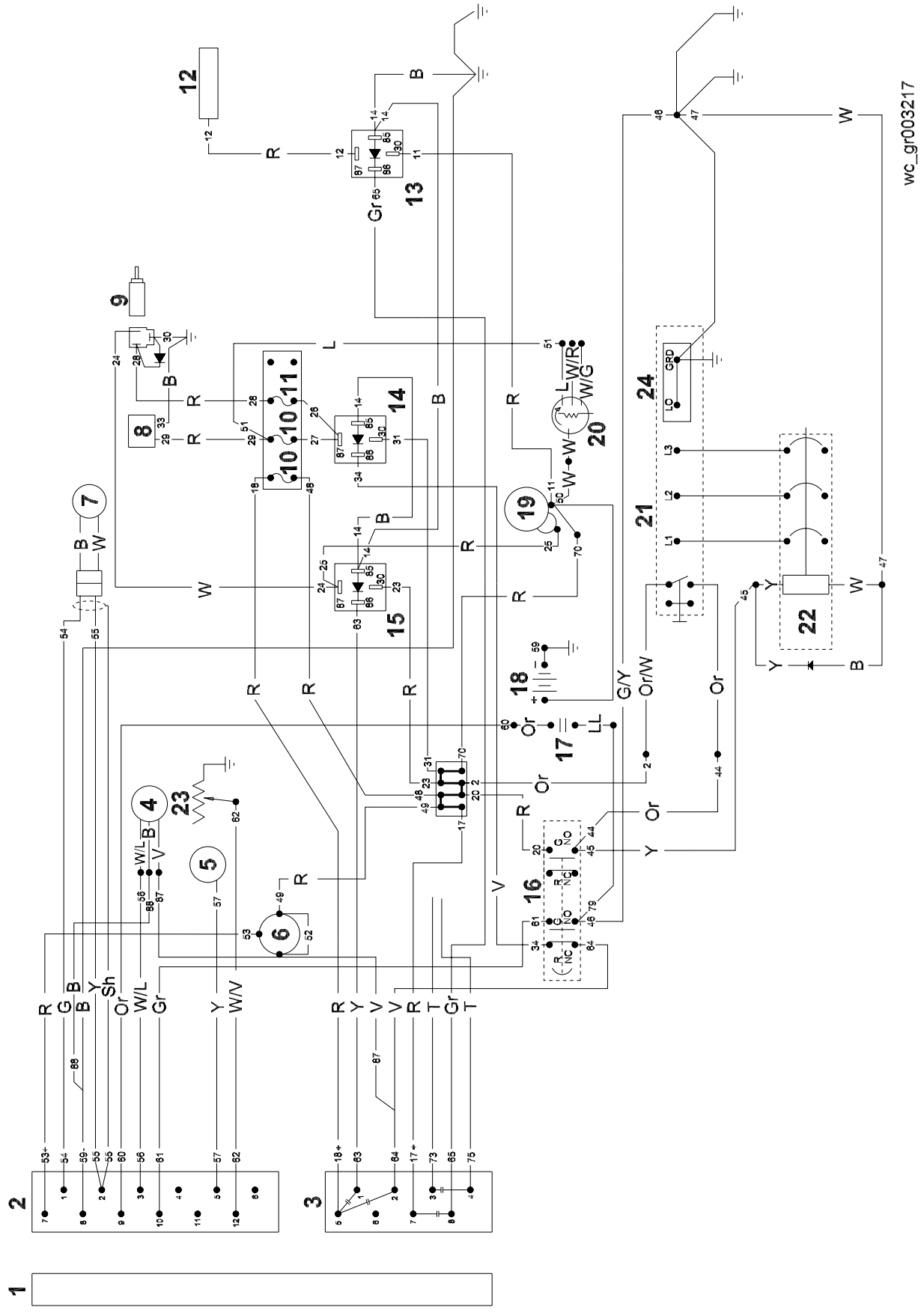
5	Water temperature sender	17	Remote start terminals
6	Remote start-Off-Start/Run	18	Battery
7	Magnetic pickup	19	Starter motor
8	Fuel pump	20	Alternator
9	Fuel solenoid	21	Mechanical lugs
10	10A fuse	22	Main circuit breaker - Shunt trip
11	25A fuse	23	Fuel level sender
12	Glow plugs	24	Lug door interlock switch

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


wc_gr003217

BOM	Revision	See Graphic:	Revision	See Graphic:	Revision	See Graphic:
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0009368	124 & higher	wc_gr004609	–	–	–	–
0009466	111–128	wc_gr003217	110	wc_gr003170	109 & lower	wc_gr001687
0009466	129 & higher	wc_gr004609	–	–	–	–
0620004	108–127	wc_gr003217	107	wc_gr003170	106 & lower	wc_gr001687
0620004	128 & higher	wc_gr004609	–	–	–	–
0620344 0620345 0620346 0620706	—	wc_gr004609	–	–	–	–

Ref.	Description	Ref.	Description
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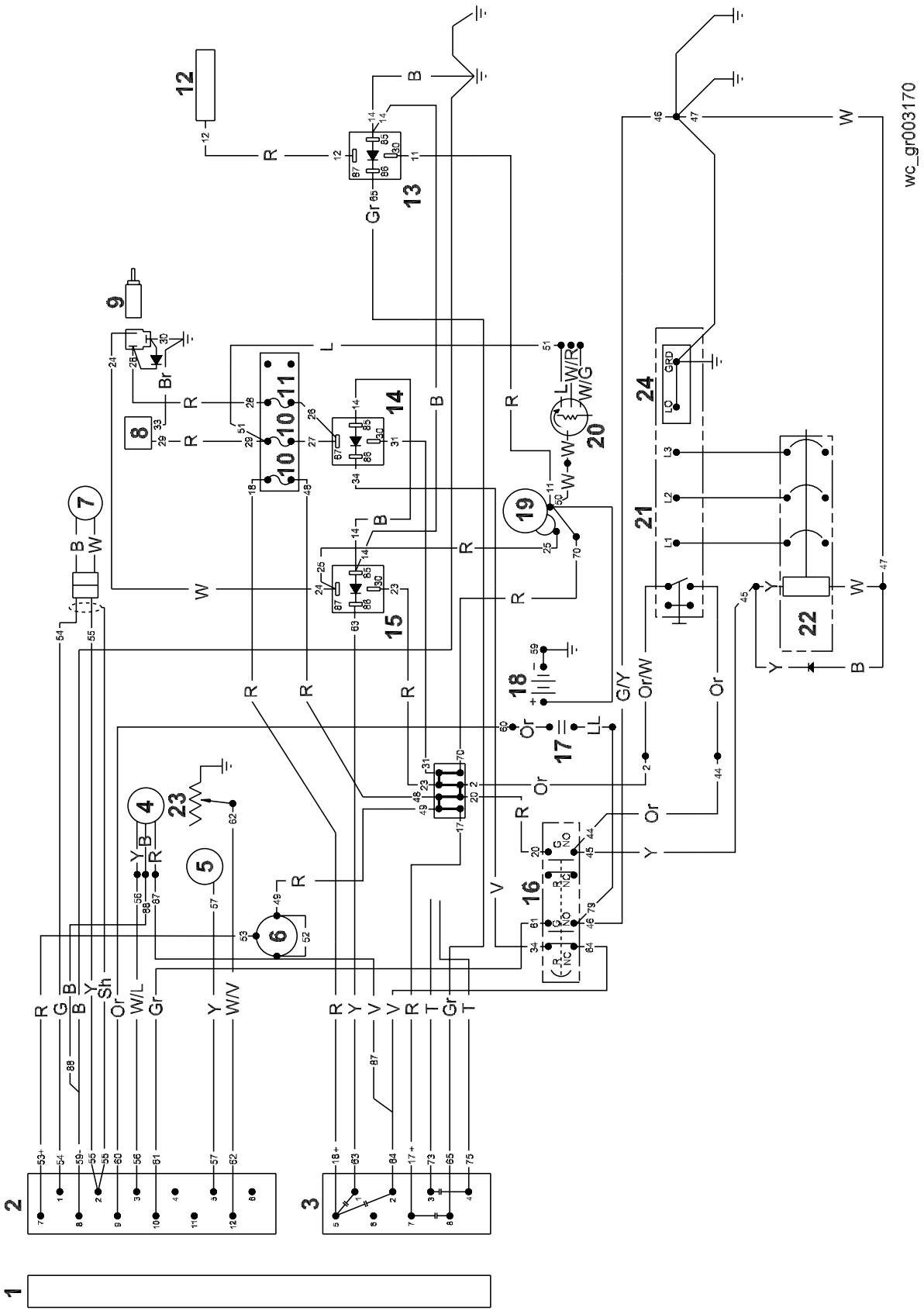
7	Magnetic pickup	19	Starter motor
8	Fuel pump	20	Alternator
9	Fuel solenoid	21	Mechanical lugs
10	10A fuse	22	Main circuit breaker - Shunt trip
11	25A fuse	23	Fuel level sender
12	Glow plugs	24	Lug door interlock switch

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


wc_gr003170

BOM	Revision	See Graphic:	Revision	See Graphic:	Revision	See Graphic:
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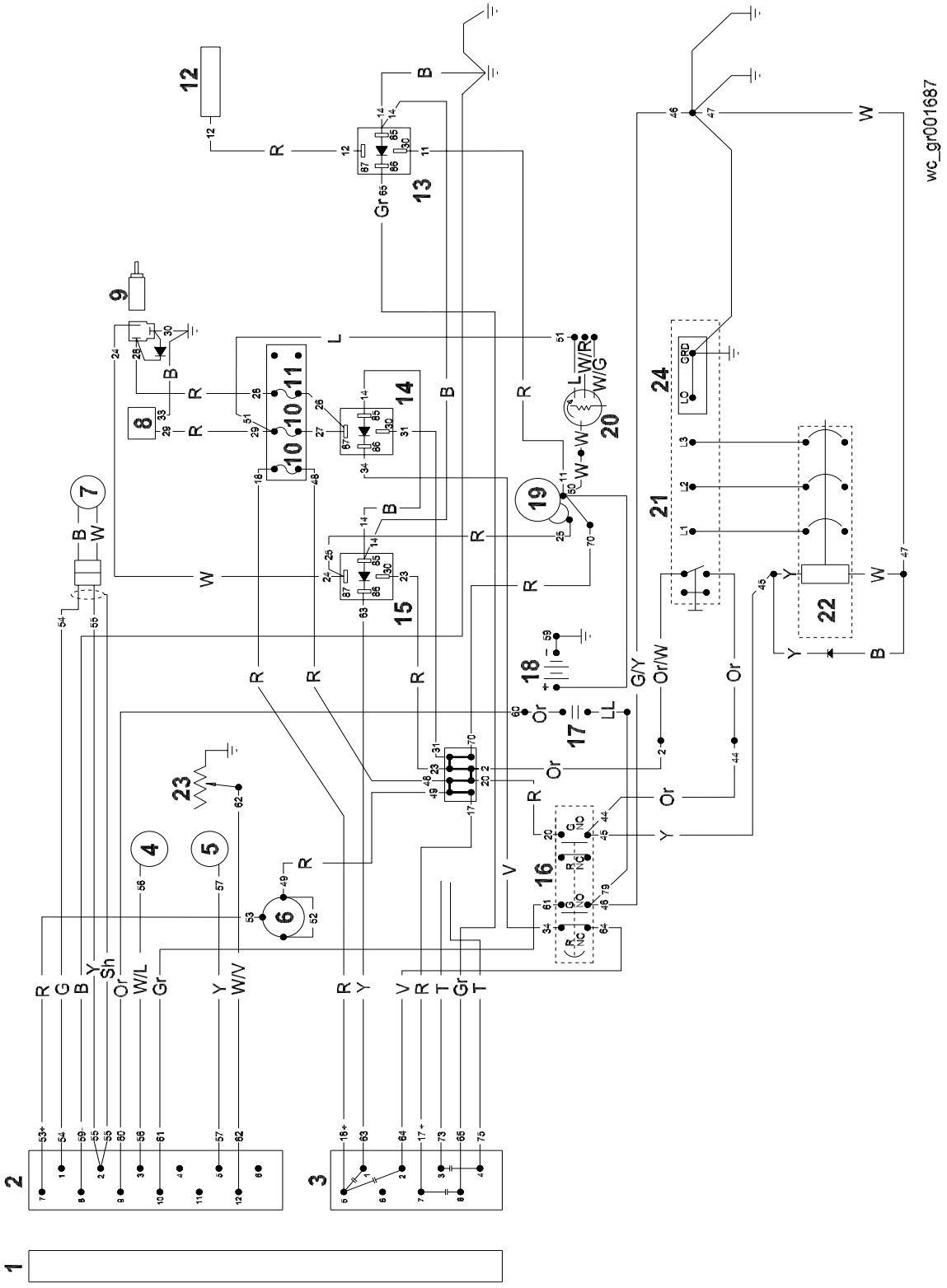
0009368	124 & higher	wc_gr004609	–	–	–	–
0009466	111–128	wc_gr003217	110	wc_gr003170	109 & lower	wc_gr001687
0009466	129 & higher	wc_gr004609	–	–	–	–
0620004	108–127	wc_gr003217	107	wc_gr003170	106 & lower	wc_gr001687
0620004	128 & higher	wc_gr004609	–	–	–	–
0620344 0620345 0620346 0620706	—	wc_gr004609	–	–	–	–

Ref.	Description	Ref.	Description
1	Engine control module	13	Glow plug solenoid
2	Plug 1 - engine sender inputs	14	Fuel relay
3	Plug 2 - engine start outputs	15	Starter relay
4	Oil pressure sender	16	Emergency stop switch
5	Water temperature sender	17	Remote start terminals
6	Remote start-Off-Start/Run	18	Battery
7	Magnetic pickup	19	Starter motor
8	Fuel pump	20	Alternator
9	Fuel solenoid	21	Mechanical lugs
10	10A fuse	22	Main circuit breaker - Shunt trip
11	25A fuse	23	Fuel level sender
12	Glow plugs	24	Lug door interlock switch

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


wc_gr001687

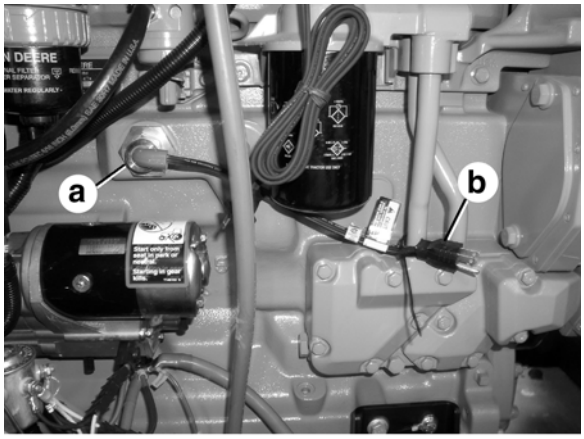
4 Factory-Installed Options

This machine may be equipped with one or more of the following factory-installed options. To verify if any of these options are installed on your machine, contact Wacker Neuson Corporation at 1-800-770-0957. A nameplate listing the Model Number, Item Number, Revision, and Serial Number is attached to each unit. Please have this information available when contacting Wacker Neuson Corporation.

4.1 Block Heater

See Graphic: wc_gr001709

The engine block heater option includes a block heater **(a)** with a cord **(b)**. The function of the block heater is to heat the engine coolant/ engine block to improve cold-weather engine starting. Plug the cord into a 120V power supply.



wc_gr001709

4.2 Fuel/Water Separator

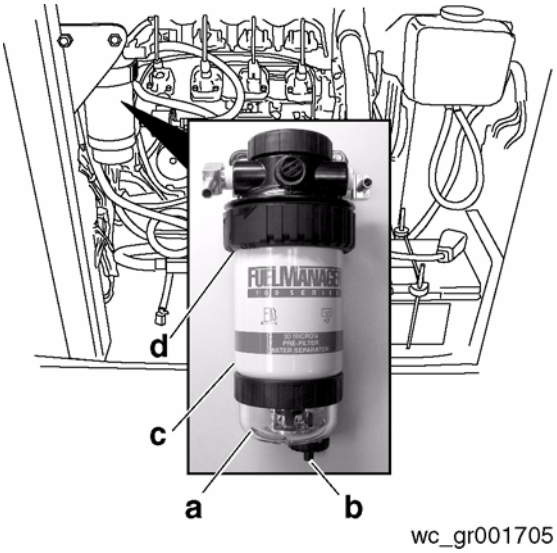
See Graphic: wc_gr001705

The fuel/water separator separates water from the fuel on models with Isuzu engines. Empty the separator water bowl **(a)** as needed by opening the water bowl drain **(b)**. The separator element should be changed each time the fuel filter is changed—approximately every 600 hours of operation.

To change the element:

4.2.1 Loosen the element retainer **(d)** and remove the retainer and element **(c)** from the separator head.

4.2.2 Unscrew the water bowl from the element.



wc_gr001705

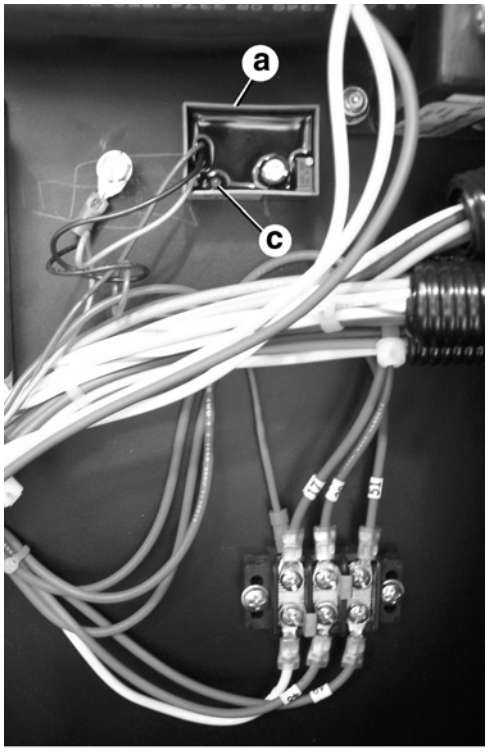
4.3 Automatic LCD Heat

See Graphic: wc_gr001723, wc_gr001724

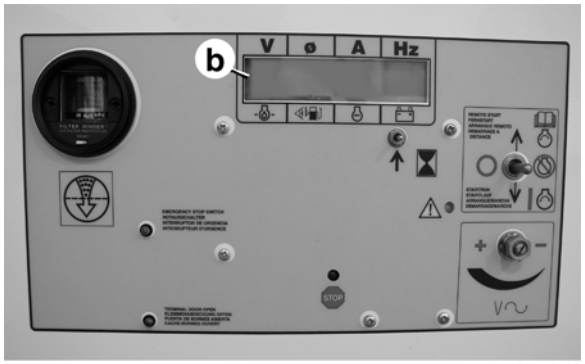
To improve the performance of the LCD panel in cold weather, the LCD panel control module is equipped with an LCD heater. The heater draws power from the panel control module and is active only when the panel control module is powered.

An optional thermostat can be installed if the machine is to be used in extremely cold weather. The thermostat automatically powers the panel control module when the temperature drops to approximately -30°C (-22° F). This activates the heater to prevent damage to the LCD panel.

It is important to note that the panel control module draws a small amount of power from the battery when turned on—even when the machine is not running. If the battery should fail, the heater will also fail. Be sure to keep the battery charged when the generator is not in use.



wc_gr001723



wc_gr001724

4.4 Low Coolant Shutdown

See Graphic: wc_gr001708

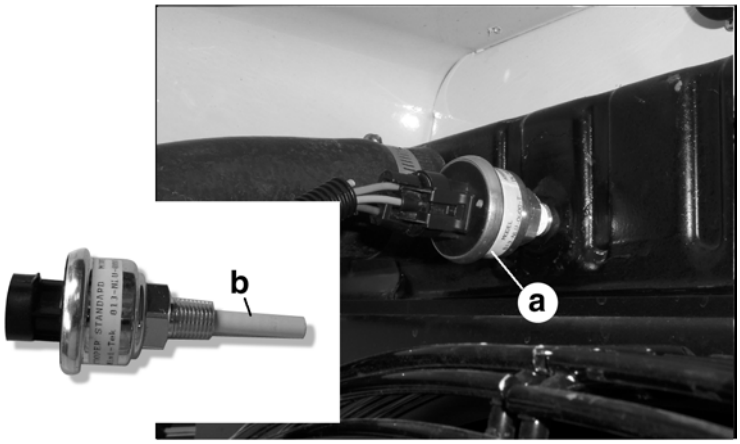
The low-coolant shutdown system consists of an electronic sensor that monitors coolant level. The sensor **(a)** is mounted to the radiator and wired into the ECM. The sensor probe **(b)** is submerged in radiator coolant. If the probe senses no coolant, it sends a signal to the ECM. The ECM program includes a 10-second timer to protect from nuisance shutdowns. If after the ten seconds coolant levels are still sensed as being low, the ECM shuts down the engine. The ECM will then display **LOW COOLANT LVL**. Allow the engine to cool before adding additional coolant.

WARNING

NEVER remove the radiator cap while the engine is hot! Pressurized coolant can cause serious burns.

If it is necessary to open the radiator, only do so with the engine off, and only when coolant is cool enough to touch with bare hands. Slowly loosen the radiator cap to relieve pressure first, before removing it completely.

Note: *The sensor may be disabled by unplugging the wire harness. This action will not shut down the machine.*

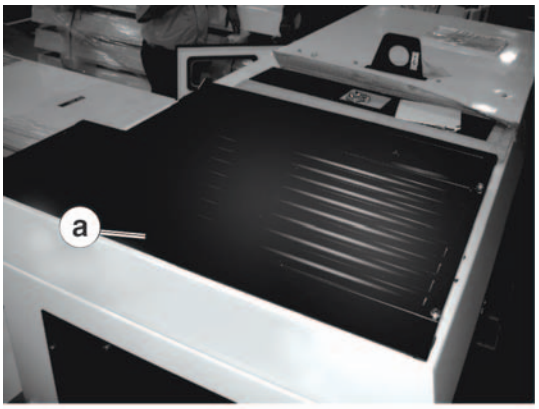


wc_gr001708

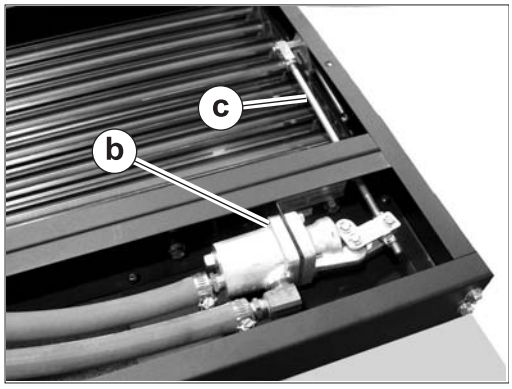
4.5 Temperature-Activated Shutters

See Graphic: wc_gr005770, wc_gr001707

The shutters **(a)** are mounted to the top of the generator enclosure. The shutters are designed to keep the engine compartment warm, thus increasing engine temperature during cold weather operation. The shutters are activated through a wax-pellet actuator **(b)** that is connected to the generator's cooling system. As radiator coolant warms, the wax-pellet actuator engages a linkage **(c)** that opens the shutters. As the coolant cools, the shutters close.



wc_gr001707



wc_gr005770

4.6 Lockable Battery Disconnect

See Graphic: wc_gr004338

A lockable ON/OFF switch is available which disconnects the battery. A padlock (not included) securely locks the switch in the OFF position. If equipped, the battery disconnect switch is mounted to the upper skid beneath the access door on either the right or left side of the machine.

NOTICE: Do not use the battery disconnect switch while the engine is running. Damage to electrical components may occur.

SWITCH

wc_gr004338

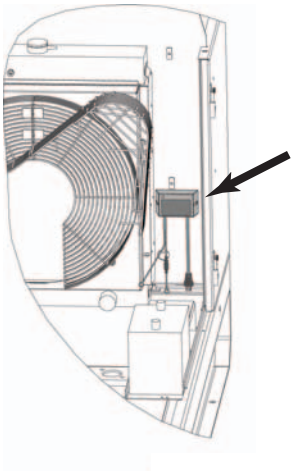
4.7 Extended Run Tank

An extended run, 135-gallon fuel tank provides a 70-hour run time under a continuous full load. The long run time eliminates the need for daily refueling, saving money on fuel deliveries. The tank is fully fluid-contained and is ideal for remote or weekend running of equipment such as dewatering submersible pumps.

wc_gr005734

4.8 Battery Charger

An optional battery charger maintains the battery at peak power while the machine is turned off. Use of a battery charger is recommended when the generator is not operated on a regular basis. The battery charger prevents voltage drain and reduces the possibility of having to jump-start the engine after long periods of inactivity.

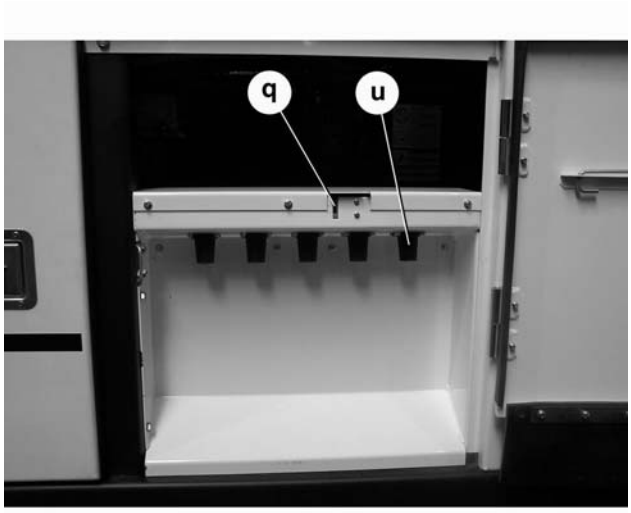


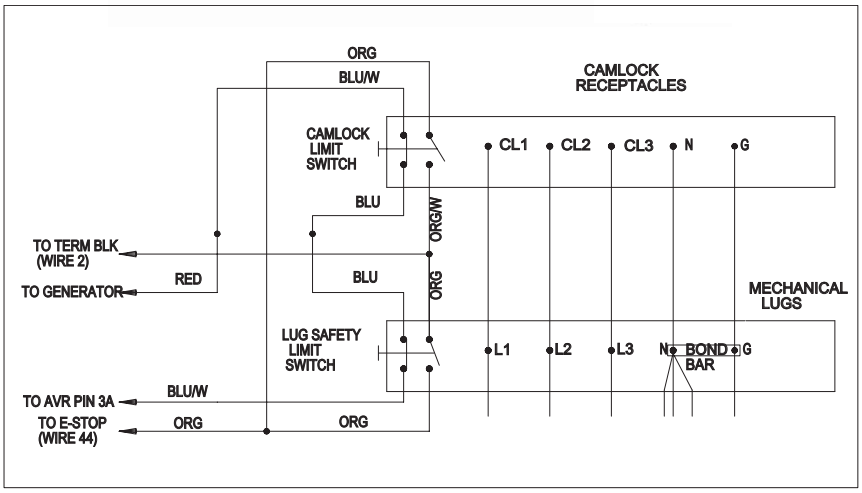
wc_gr005779

4.9 Cam-Lock

See Graphic: wc_gr002584

A second optional outlet panel features camlock connectors **(u)** for easy tool changes. The door is equipped with an interlock switch **(q)**. When the door is opened this switch automatically trips the main circuit breaker.





wc_gr002584

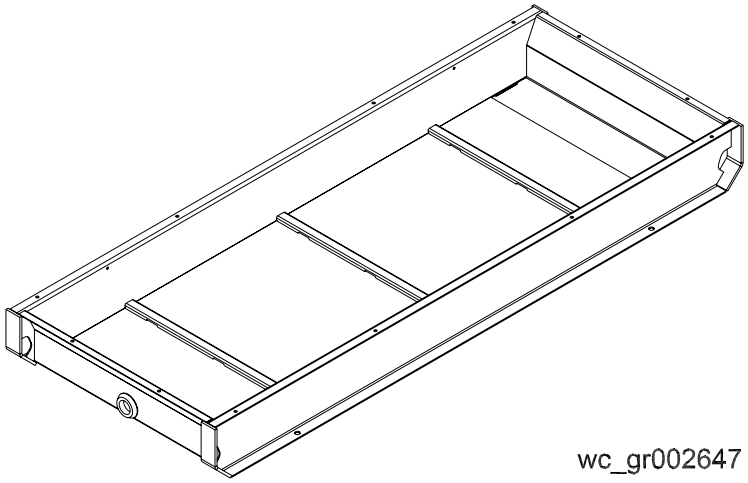
4.10 Containment System

See Graphic: wc_gr002647

Overspills and leaks are captured in the containment system. The containment system holds over 110% of the fluid contained in the machine.

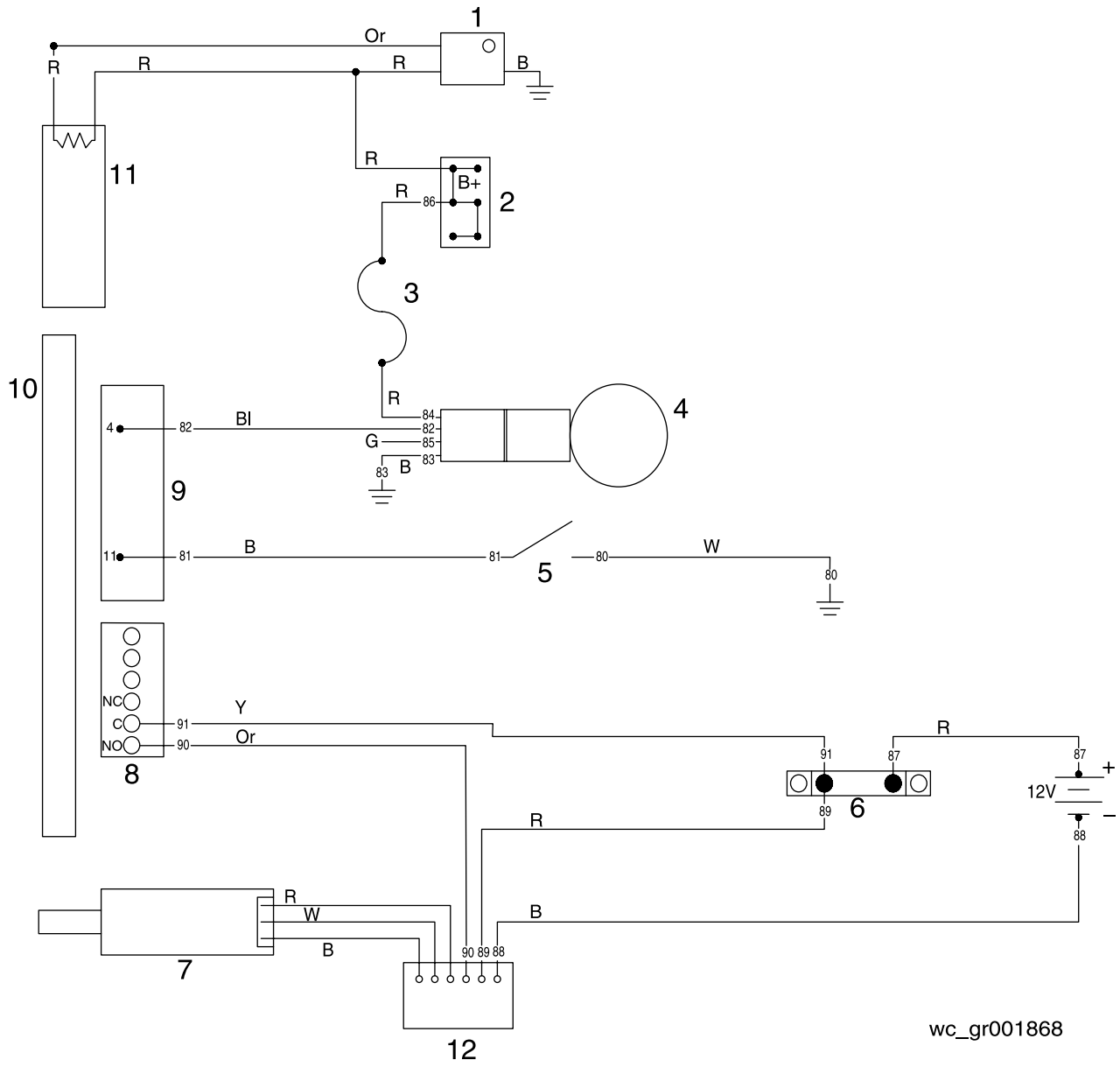
The containment system should be checked every 50 hours or 2 weeks and drained when necessary. If fluid is found in the containment tank, trace the cause of the leak and correct.

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



wc_gr002647

4.11 Wiring Diagram—Factory-Installed Options



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

4.12 Wiring Diagram Components—Factory-Installed Options

See Graphic: wc_gr001868

Ref	Description	Ref	Description
1	Thermostat module	7	Positive air shutoff solenoid actuator
2	Terminal block	8	Auxiliary relay terminals
3	1 Amp fuse	9	Plug 1, engine sensor inputs
4	Water level sensor	10	Electronic control board
5	Lube level maintainer low level switch	11	LCD heater
6	30 Amp circuit breaker	12	Positive air shutoff relay module

5. Technical Data

5.1 Engine Power Rating

Engine Power Rating

Gross standby power rating per ISO 8528-1 and SAE J1995. Actual power output may vary due to conditions of specific use.

5.2 Engine Data Table 1

		G 25 0009368, 0009466, 0620004 Rev. 114 & lower	**G 25** 0620004 Rev. 115 & higher
Engine			
Engine make / type		Isuzu	
Model		4LE2-PV	
Number of cylinders		4	
Displacement	cm^3 (in^3)	2179 (133)	
Engine speed	rpm	1800	
Rated standby power @ 1800 rpm	kW(Hp)	23.9 (32.1)	
Coolant capacity	l (qts.)	11.3 (11.9)	
Oil capacity	l (qts.)	8.0 (8.5)	
Battery	Volts/CCa	12/650	12/1000
Fuel type		Diesel	
Fuel tank capacity	l (gal.)	227 (60)	
Fuel consumption, continuous load	l/hr (gal./ hr)	6.8 (1.80)	
Running time, continuous load	Hours	33.3	

5.3 Engine Data Table 2

		G 25 0620344 0620346	G 25 0620345	G 25 0620706
Engine				
Engine make / type		Isuzu		
Model		4LE2-NYGV, Tier 4		
Number of cylinders		4		
Displacement	cm^3 (in^3)	2179 (133)		
Engine speed	rpm	1800		
Rated standby power @ 1800 rpm	kW(Hp)	26.4 (35.4)		25.6 (34.3)
Coolant capacity	l (qts.)	11.3 (11.9)		
Oil capacity	l (qts.)	8.0 (8.5)		
Battery	Volts/CCa	12/650	12/1000	12/650
Fuel type		Diesel		
Fuel tank capacity	l (gal.)	227 (60)		512 (135.4)
Fuel consumption, continuous load	l/hr (gal./ hr)	6.8 (1.80)		
Running time, continuous load	Hours	33.3		75.2

5.4 Generator Data

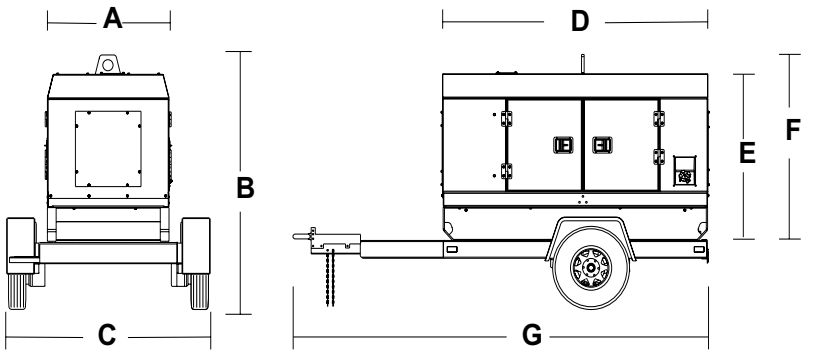
		G 25	
		0009368 Rev.126 & lower 0009466 Rev.131 & lower 0620004 Rev.130 & lower	0009368 Rev.127 & higher 0009466 Rev.131 & higher 0620004 Rev.130 & higher 0620344 0620345 0620346 0620706
Generator			
Make/Type		Mecc Alte / Brushless	
Model		ECO 28-1L/4	ECO 28-2LN/4
Generator speed	rpm	1800	
Voltage selector switch		3 position	
AC voltages available		120/240 zig-zag 120/208 low-wye 277/480 Hi-wye	
Frequency		60 Hz	
Power factor	1ø 3ø	1.0 0.8	
Voltage regulation		±1.00%	
Insulation class		H	
Sound level at 7 m (23 ft.)	dB(A)	65	
AC receptacles		2 duplex, 2 twist-lock	
1ø 120 GFI duplex	Amps	2-20	
1ø 120/240 V twist lock	Amps	1-30 1-50	
Standby Output	kW/kVA	20.4/25.5	
Continuous Output	kW/kVA	19.5/24.4	

5.5 Trailer and Skid Data

		G 25		
		0009368 Rev.126 & lower 0009466 Rev.131 & lower 0620004 Rev.130 & lower	0009368 Rev.127 & higher 0009466 Rev.131 & higher 0620004 Rev.130 & higher 0620344 0620345 0620346	0620706
Trailer and Skid				
Dry weight of skid	kg (lbs.)	862 (1900)	867 (1911)	950 (2094)
Operating weight of skid	kg (lbs.)	1054 (2325)	1058 (2333)	1392 (3069)
Trailer weight	kg (lbs.)	182 (400)		442 (975)
GVWR	kg (lbs.)	1338 (2995)		2304 (5080)
Surge brakes	Fluid type	DOT3		
Tires	size	ST205/75D-15C		

5.6 Dimensions

mm (in.)



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	G 25 0620344 0620346 0620345	G 25 0620706
Dimensions—mm (in.)		
A	890 (35)	
B	1620 (69)	
C	1700 (67)	
D	1945 (76.6)	
E	1130 (44.5)	1514 (59.6)
F	1260 (49.6)	1644 (64.9)
G	3920 (154.5)	

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