



Commercial Series Generator Operator Manual

(with Kohler Command series engines)



PN: 220880

PREFACE

Thank you for purchasing a Wanco Commercial Series portable generator set. This manual contains important safety and operating information - please read the complete manual before attempting to operate the generator.

All information in this publication is based on the latest product information available at the time of approval for printing. We reserve the right to make changes at any time without notice.

No part of this publication may be reproduced without written permission.

Throughout this manual pay special attention to statements preceded by the following signal words:

 **DANGER**

Failure to properly follow these precautions is likely to result in property damage, serious injury or death

 **WARNING**

Failure to properly follow these precautions can result in property damage, serious injury or death

 **CAUTION**

Indicates a possibility of personal injury or equipment damage if instructions are not followed

NOTICE

Gives helpful information.

If you need assistance with your generator set, please contact our service department:

Wanco Inc.

5870 Tennyson Street
Arvada, Colorado 80003
303-427-5700
fax 303-427-5725
www.wanco.com
info@wanco.com

If you need assistance with the Kohler engine, we recommend contacting Kohler directly at www.kohlerengines.com, or by calling 1-800-544-2444.

CONTENTS

1. SAFETY INSTRUCTIONS	4
2. UNBOXING AND ASSEMBLY	5
3. COMPONENT LOCATIONS	8
4. PRE-OPERATION CHECK.....	9
5. GENERATOR USE	11
6. MAINTENANCE	14
7. TRANSPORTING/STORAGE	18
8. TROUBLESHOOTING	18
9. SPECIFICATIONS	19
10. WIRING DIAGRAMS.....	20

**Read and understand this Operator Manual before starting the generator.
Failure to do so could result in personal injury or equipment damage**

SAFETY INSTRUCTIONS

⚠ DANGER

Using a generator indoors CAN KILL YOU IN MINUTES.

Generator exhaust contains carbon monoxide. This is a poison you cannot see or smell.



NEVER use inside a home or garage, EVEN IF doors and windows are open.

Only use OUTSIDE and far away from windows, doors, and vents.

CALIFORNIA PROPOSITION 65

⚠ WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

⚠ ADVERTENCIA

El escape del motor de este producto contiene elementos químicos reconocidos en el Estado de California por producir cáncer, defectos de nacimiento u otros daños de tipo reproductivo.

215381

⚠ DANGER

Exhaust gas contains invisible but poisonous carbon monoxide. Never run the generator in an enclosed area.

Gasoline vapor is invisible but extremely flammable and explosive under certain conditions. Shut the engine OFF and allow the generator to cool for two minutes before refueling. Never refuel while the engine is running.

Keep away from smoking materials, sparks and other sources of combustion when refueling the generator.

Never attempt to “backfeed” or power a building through an installed receptacle. Backfeeding creates a dangerous shock hazard for the user and for utility personnel working on power lines.

WARNING

Engine exhaust is very hot. Place the generator at least three feet or one meter away from buildings or other equipment during operation.

The muffler becomes very hot during operation and remains hot for several minutes after stopping the engine. Be careful not to touch the muffler while it is hot.

CAUTION

Let the engine cool before storing the generator indoors.

Always make a pre-operation inspection before you start the engine.

Operate the generator on a level surface to prevent fuel spillage or oil starvation.

Know how to stop the generator quickly and understand operation of all controls.

Never permit anyone to operate the generator without proper instructions. Keep children and pets away from the generator when it is in operation.

Do not operate the generator in rain or snow and do not operate when wet.

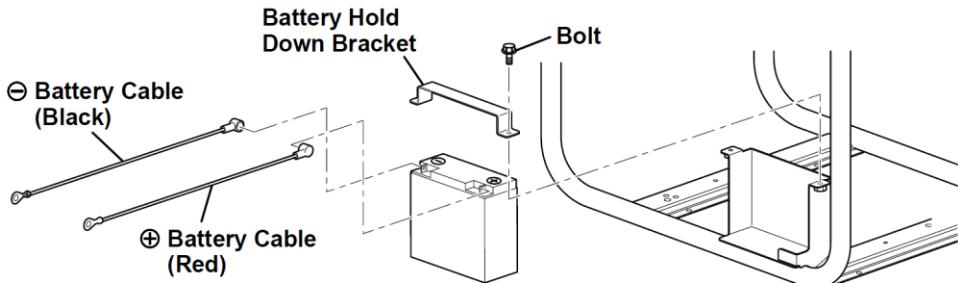
UNBOXING AND ASSEMBLY

Removing the Generator from the Box

The generator is heavy and care must be taken when removing it from the carton. The simplest method is described here:

- Open the box at the top.
- Remove all loose packing material, manuals, etc.
- Carefully tip the box onto its side on the ground.
- Slide the generator out of the box, then place it upright.

Connecting the Battery (WGC7500E Only)



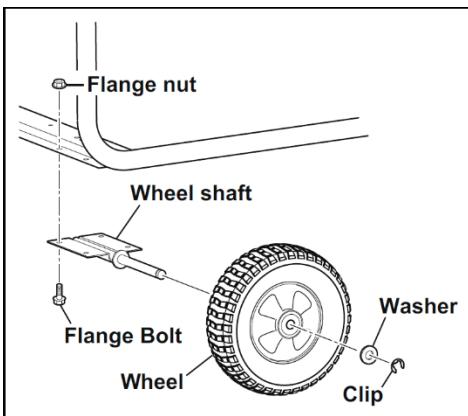
Installing the Wheels and Handles

Remove the box containing parts from the carton. Be careful not to lose any of the small fasteners in the hardware bag.

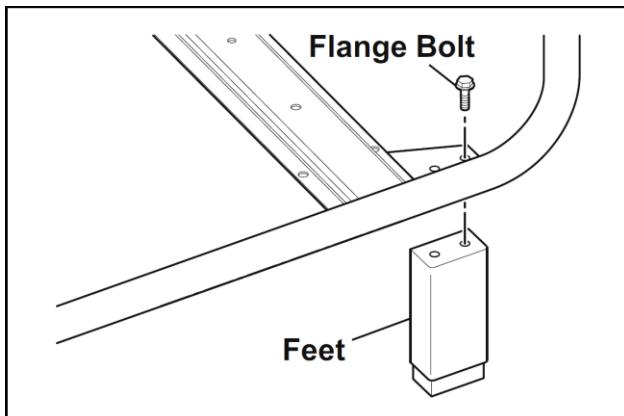
NOTICE

It is easiest to install the wheels before oil and fuel have been added - do not tip the unit on end with oil in the crankcase or fuel in the fuel tank.

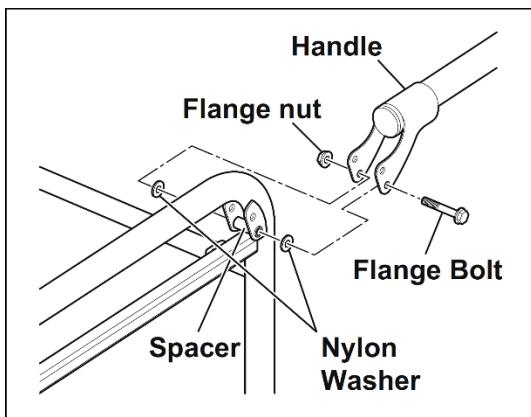
1. Tip the unit onto its end so that the engine recoil is facing down.
2. Install the wheel axle brackets onto the support bracket under the alternator (the end opposite the engine) using four screws, nuts and washers for each bracket.
3. Install a wheel onto each axle, placing a washer on either side of the wheel and a large "C" clip onto the end of the axle to hold the wheel in place.



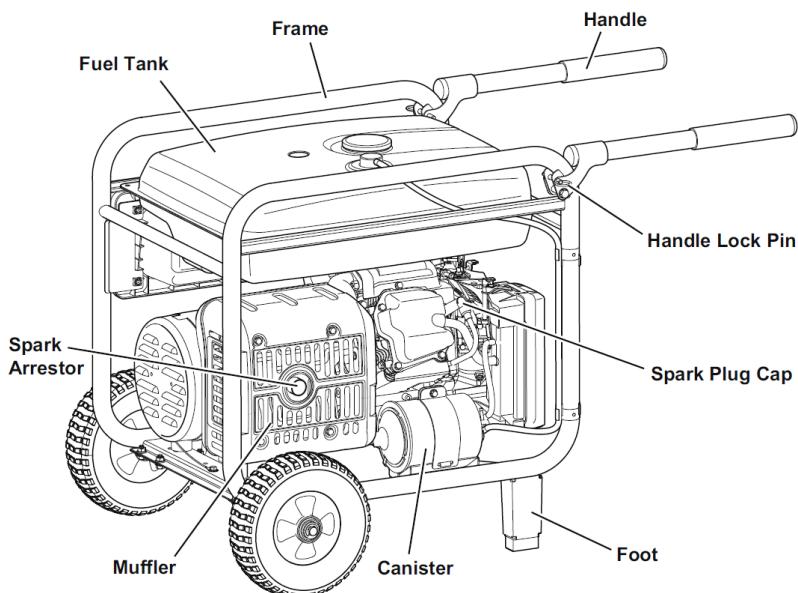
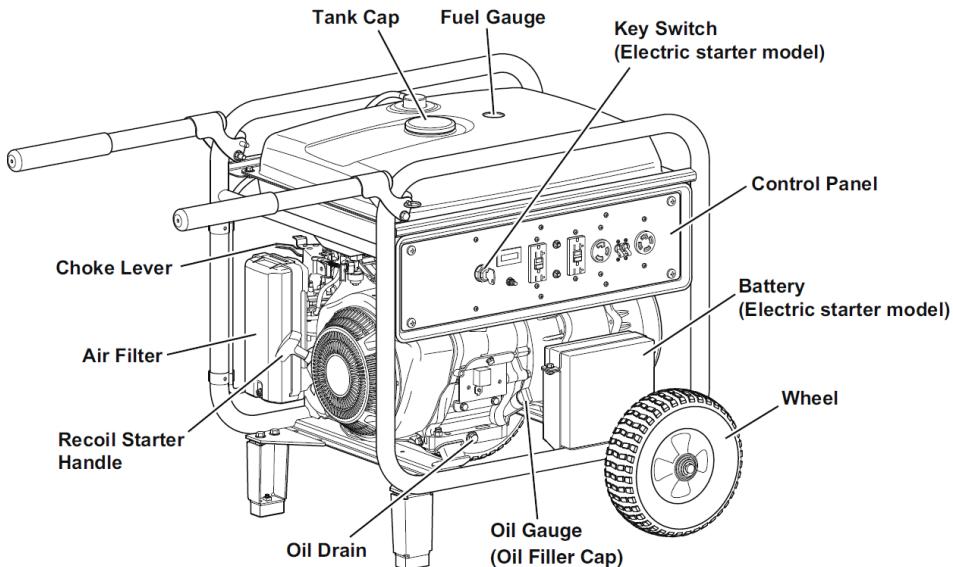
4. Carefully tip the generator back to level, then tip it on the opposite end.
5. Install the two foot brackets using two screws per bracket.



6. Carefully tip the unit onto the wheels and feet.
7. Install the handles on the end above the feet.



COMPONENT LOCATIONS



Unit Identification:

The product identification label located on the end of the fuel tank notes the Model Number (WGCnnnn). Below this label on the plastic control panel cover is a label with the nine-digit Serial Number (SN Jnnnnnnnn). We recommend that you record these in case you need to contact Wanco Technical Support in the future.

Model Number: WGC_____

Serial Number: J_____

Date of Purchase: _____

Place of Purchase: _____

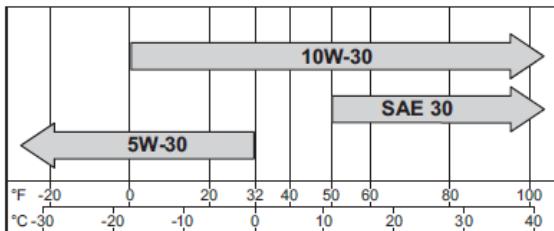
PRE-OPERATION CHECK

Be sure to check the generator on a level surface with the engine stopped. Allow the engine to cool to avoid burns.

Check The Engine Oil Level.

Use a premium-quality 4-stroke engine oil certified to meet or exceed the API Service Classification SJ or higher. Select the appropriate viscosity for the expected temperature in your area. 10W – 30 oil is suitable for most climates.

SAE Viscosity Grades vs Temperature



- Remove and wipe the oil dipstick with a clean rag.
- Insert the dipstick in the filler hole – but do not screw it in.
- Remove and carefully read the oil level.
- Add oil if necessary until the oil level is at the top of the dipstick marking.
- Reinstall the dipstick, securely screwing it until tight.

CAUTION

Running the engine with insufficient oil can cause serious engine damage. The Low Oil Alarm Shutdown will automatically stop the engine before the oil level falls below a safe limit. However it is still advisable to visually inspect the oil level regularly.

Fuel

Use regular automotive gasoline with no more than 10% ethanol.

Never use an oil/gasoline mixture or dirty gasoline.

Avoid getting dirt, dust or water in the fuel tank.

After refueling, tighten the fuel filler cap securely

DANGER

Gasoline vapor is invisible but is extremely flammable and is explosive under certain conditions.

Refuel in a well-ventilated area with the engine stopped. Keep all smoking materials, sparks, and any other source of combustion away from the generator during refueling.

Do not overfill the fuel tank, and allow for fuel to expand as it warms. After refueling, make sure the tank cap is closed properly and securely.

Be careful not to spill fuel when refueling. Spilled fuel or fuel vapor may ignite, If any fuel is spilled, wipe the area is dry before starting the engine.

Avoid repeated or prolonged contact with skin or breathing of vapor.

KEEP OUT OF REACH OF CHILDREN.

Air Cleaner

Remove the air cleaner cover and inspect the foam element. If the element appears dirty, wash it in warm soapy water, rinse and squeeze dry. Apply a small amount of clean engine oil before reinstalling.

CAUTION

Never run the engine without the air cleaner. Rapid engine wear will result from contaminants such as dust and dirt being drawn through the carburetor into the engine.

GENERATOR USE

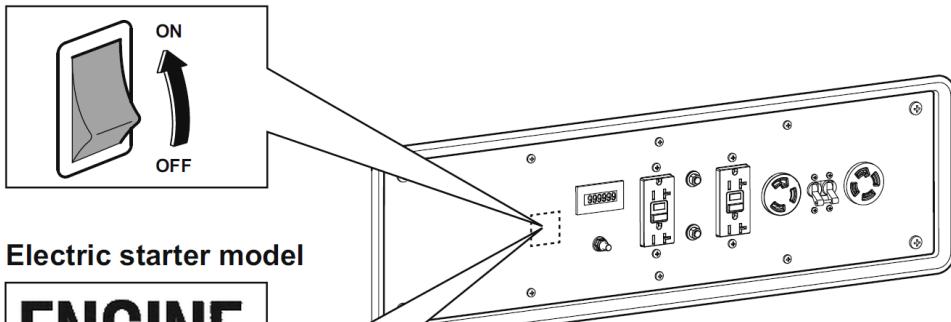
Starting the Engine:

Turn the control panel switch to the "ON" (I) position.

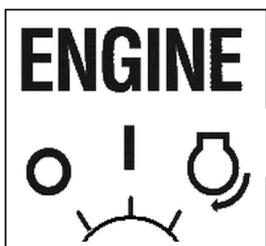
NOTICE

The red engine ON/OFF switch (if present) may be left in the ON position when using the control panel switch to start and stop the engine.

Recoil starter model

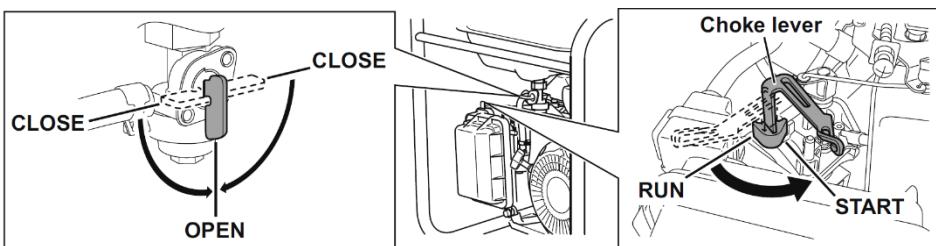


Electric starter model



When starting the engine after adding fuel for the first time, after long term storage or after running out of fuel, turn the fuel valve lever to the "ON" position, then wait for 10 to 20 seconds before starting the engine.

Open the Fuel Valve and move the choke lever to the START position



Do not use the choke if the engine is already warm or the ambient air temperature is high.

Electric Start: turn the control panel switch to the START position (full clockwise) until the engine has started, then release. Do not engage the starter for more than 10 seconds. If the engine does not start, wait 10 seconds before attempting another start.

Manual Start: pull the starter grip lightly until resistance is felt then pull the starter grip briskly toward the arrow as shown below. Do not allow the starter grip to snap back. Return it slowly by hand.

Connecting Loads to the Generator.



WARNING Never connect a portable generator directly to any building service wiring through an installed receptacle. "Backfeeding" creates a risk of severe shock for the user and for utility personnel who may be working on power lines.

Connect to a building through a Double Throw Transfer Switch (installed in advance by a qualified electrician) or connect loads directly to the generator using extension cords.

The neutral conductor in this generator is bonded to the generator frame ("bonded neutral"). Follow local codes regarding grounding of portable generator sets, depending on how it is used.



CAUTION The total wattage of all appliances connected must be considered.
Do not exceed the current limit specified for any one receptacle.

Do not exceed the total power available from the generator.

When an extension cord is required, make sure you use the proper size and length.

- 16 gauge cords up to 100 feet long will adequately handle loads up to 10 amps.
- 14 Gauge Cords up to 50 feet long will adequately handle loads up to 15 amps.
- 12 Gauge Cords up to 100 feet long will adequately handle loads up to 15 amps.

Start the engine

Confirm that the appliance to be used is switched off, and plug in the appliance.

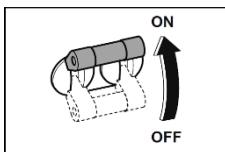


CAUTION Before connecting an appliance to the generator, check that its electrical rating does not exceed that of the generator.

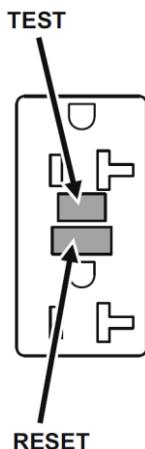
Be sure that all appliances are in good working order before connecting them to the generator. If an appliance begins to operate abnormally, becomes sluggish, or stops suddenly, turn off the generator immediately. Disconnect the appliance and examine it for signs of malfunction.

Turn on the appliance and observe the generator for any abnormal operation.

Electrical Overload and Fault Protection



All WGC generators include a 2-pole magnetic circuit breaker to protect the generator windings in case of overload. If the magnetic breaker trips, it will disconnect all receptacles - no voltage will be present at any receptacle. If the breaker trips, check all extension cords and appliances for damage or short circuits. Then cycle the circuit breaker OFF and back ON to reset.



All WGC generators include GFCI-protected duplex receptacles. The GFCI protection will trip if there is any fault current to ground, which is usually caused by faulty appliances or water entering into electrical devices – If the GFCI breaker trips, it is very important to locate and resolve the ground fault before resetting. Press the extended reset button located in the center of the receptacle to reset.

A GFCI trip will only affect one receptacle – voltage will still be present at the other receptacles.

GFCI protects against ground faults and is completely unrelated to overloads.



Some WGC generator models also include thermal type circuit breakers to protect individual receptacles if the magnetic breaker is rated higher than the receptacle current rating. These breakers have a small round button that extends when an overload condition is detected.

An overload trip of one thermal breaker will only affect one receptacle – voltage will still be present at the other receptacles.

Low-Oil Protection System

The low-oil level protection system is designed to **prevent starting** of the engine when there is an insufficient amount of oil in the crankcase. This system may not prevent damage due to low oil levels after the engine is started - always be sure the engine crankcase has sufficient oil before starting. Damage caused by running the engine with insufficient oil is not covered under warranty.

High Altitude Operation

The reduced oxygen available at higher altitudes will reduce the maximum power available from the

engine. High altitude performance can be improved somewhat by installing a special high-altitude jet in the carburetor. If you operate the generator at altitudes higher than about 4000 feet above sea level for extended periods, have your authorized dealer install a high altitude main jet.

Even with suitable carburetor jetting, engine horsepower will decrease approximately 3.5% for each 1000 feet or 305 meter increase in altitude. The effect of altitude on the horsepower will be greater than this if the carburetor is not re-jetted.

Be sure to restore the original jet before operating at lower elevation or engine damage due to an excessively lean fuel mixture may occur.

Ambient Temperature

Generator power generally degrades 1% for every 10° F (5.5° C) above 85° F (29° C). The normal operating range of the generator is -20° to 113° F (-29° to 45° C).



Do not operate the generator when the ambient temperature is above 113° F (45° C)

Shutting Down the Engine.

To stop the engine in an emergency, turn the engine switch to the OFF (O) position.

1. Switch off the connected equipment and pull the inserted plug out.
2. Turn the engine switch to the OFF (O) position

MAINTENANCE

The purpose of the maintenance and adjustment schedule is to keep the generator in optimum operating condition.

Shut off the engine before performing any maintenance.

Maintenance Schedule

REGULAR SERVICE PERIOD Perform at every indicated monthly or operating hour interval whichever occurs first		EAC H USE	50H	100H	200H	300H
ITEM						
Engine oil	Check	O				
	Change			O		
Air cleaner	Clean			O		
	Replace					O
Spark plug	Clean/Gap					O
Spark arrester	Clean				O	

Fuel sediment cup	Clean				<input type="radio"/>	
Valve clearance	Check/adjust				<input type="radio"/>	
Fuel tank and strainer	Clean				<input type="radio"/>	
Fuel lines	Check	Every 2 years (Replace as necessary)				

NOTE: Service filters more frequently when used heavily or in dusty areas.

Valve clearance is best adjusted by a Kohler service dealer.

Refer to the Kohler engine manual for additional information.

Changing Engine Oil

NOTICE

Drain the oil while the engine is still warm to assure rapid and complete drainage.

1. Remove the oil dipstick and wipe the oil dipstick with a clean rag.
2. Remove the drain bolt and drain the oil into a suitable container.
3. Retighten the drain bolt securely.
4. Refill with the recommended oil.
5. Insert the dipstick in the filler hole – but do not screw it in.
6. Remove and carefully read the oil level.
7. Add oil if necessary until the oil level is at the top of the dipstick marking.
8. Reinstall the dipstick, securely screwing it until tight.

Dispose of used motor oil in a responsible manner. Do not throw it in the trash or pour it on the ground.

Air Cleaner Service

A dirty air cleaner will restrict airflow to the carburetor and allow dirt into the engine. Service more frequently when operating the generator in extremely dusty areas.

CAUTION

Never run the generator without the air cleaner. Rapid engine wear may result.

Remove the air cleaner cover and inspect the foam element. If the element appears dirty, wash it in warm soapy water, rinse and squeeze dry. Apply a small amount of clean engine oil before reinstalling.

Spark Plug Service

To ensure proper engine operation, the spark plug must be the correct part, properly gapped and free of deposits.

1. Remove the spark plug cap.
2. Clean any dirt from around the spark plug base.
3. Use the wrench to remove the spark plug.
4. Visually inspect the spark plug. Discard it if the insulator is cracked or chipped.

- Clean the spark plug with a wire brush if it is to be reused.
5. Measure the plug gap with a feeler gauge. The gap should be 0.028-0.031in (0.7-0.8mm). Correct as necessary by carefully bending the side electrode.
 6. Install the spark plug carefully by hand to avoid cross-threading.
 7. After a new spark plug has been seated by hand, it should be tightened 1/2 turn with a wrench to compress the sealing washer. If a used plug is being reinstalled, it should only require 1/8 to 1/4 turn after being seated.
 8. Reinstall the spark plug cap.

The spark plug must be securely tightened.

Spark Arrester Maintenance

1. Locate the muffler exit.
2. Remove the spark arrestor from the muffler by unscrewing the clamp.
3. Clean the spark arrestor screen with a stiff wire brush.
4. Replace if the wire mesh is perforated or torn.
5. Reinstall the spark arrester.

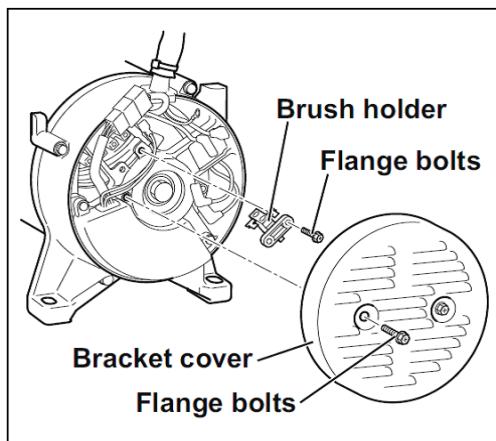
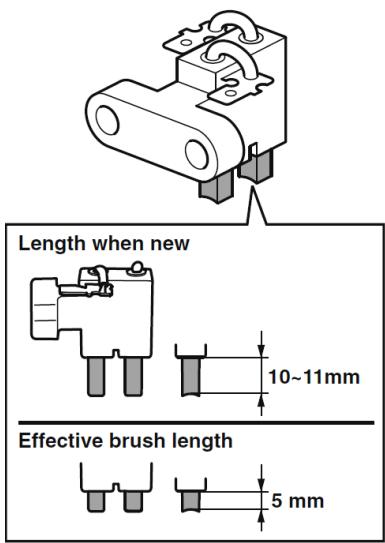


If the generator has been running, the muffler will be very hot. Allow it to cool before proceeding.

The spark arrester must be serviced every 100 hours to maintain engine performance.

Inspecting and Replacing the Alternator Brush Module

Carbon brushes connect the AVR to the rotor and are subject to wear. If electrical output seems erratic or ceases, confirm that the brushes have not worn down. Under normal conditions, brushes last approximately 1000 hours.



TRANSPORTATION AND STORAGE

If you transport the generator in a vehicle, drain all fuel from the generator.

The generator should be secured to prevent damage.

Do not operate the generator while it is on or in a vehicle. Take the generator away from the vehicle and use it in a well ventilated area.

If the generator is left in an enclosed vehicle for many hours, high temperature inside the vehicle may cause residual fuel to vaporize resulting in a possible explosion.

Extended Storage

Drain the fuel before storing the unit for an extended period. Carburetor fouling from stale or evaporated gasoline is a leading cause of engine starting problems.

1. Drain all gasoline from the fuel tank into an approved gasoline container.
2. Loosen the carburetor drain screw and drain the gasoline from the carburetor and fuel line into a suitable container.
3. Tighten the drain screw securely.
4. Change the engine oil.

TROUBLESHOOTING

Basic troubleshooting steps are outlined below. If your generator still does not perform correctly after confirming these steps, you should contact an outdoor power equipment service dealer.

If the engine will not start or will not run correctly, confirm the following:

- The fuel tank has plenty of gasoline and is free of debris and water.
- The oil level is at the Full mark according to the engine manual instructions.
- The fuel shutoff valve is ON.
- The control panel switch is ON (I) and the engine switch is also ON..
- The engine choke is in the correct (Start or Run) position.
- The sparkplug wire is securely connected to the sparkplug.
- The spark arrestor in the muffler is clean.

If there is no voltage at the receptacles, confirm the following:

- All circuit breakers have been inspected and reset if necessary.
- All GFCI breakers have been inspected and reset if necessary.
- The brushes inside the alternator end cover have not been consumed.

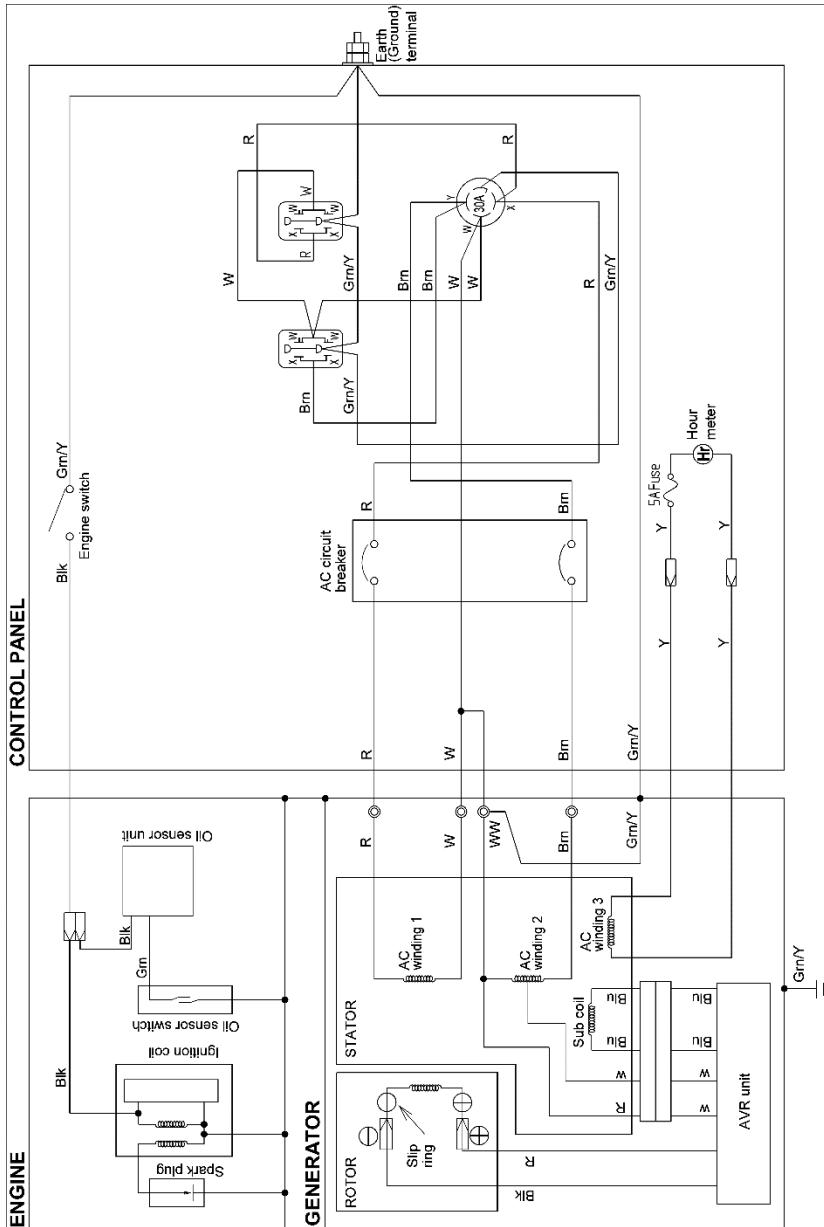
SPECIFICATIONS

All Models: Brush-Type, Single-Phase, 120/240VAC, 60Hz, 3600rpm with Automatic Voltage Regulation (AVR).

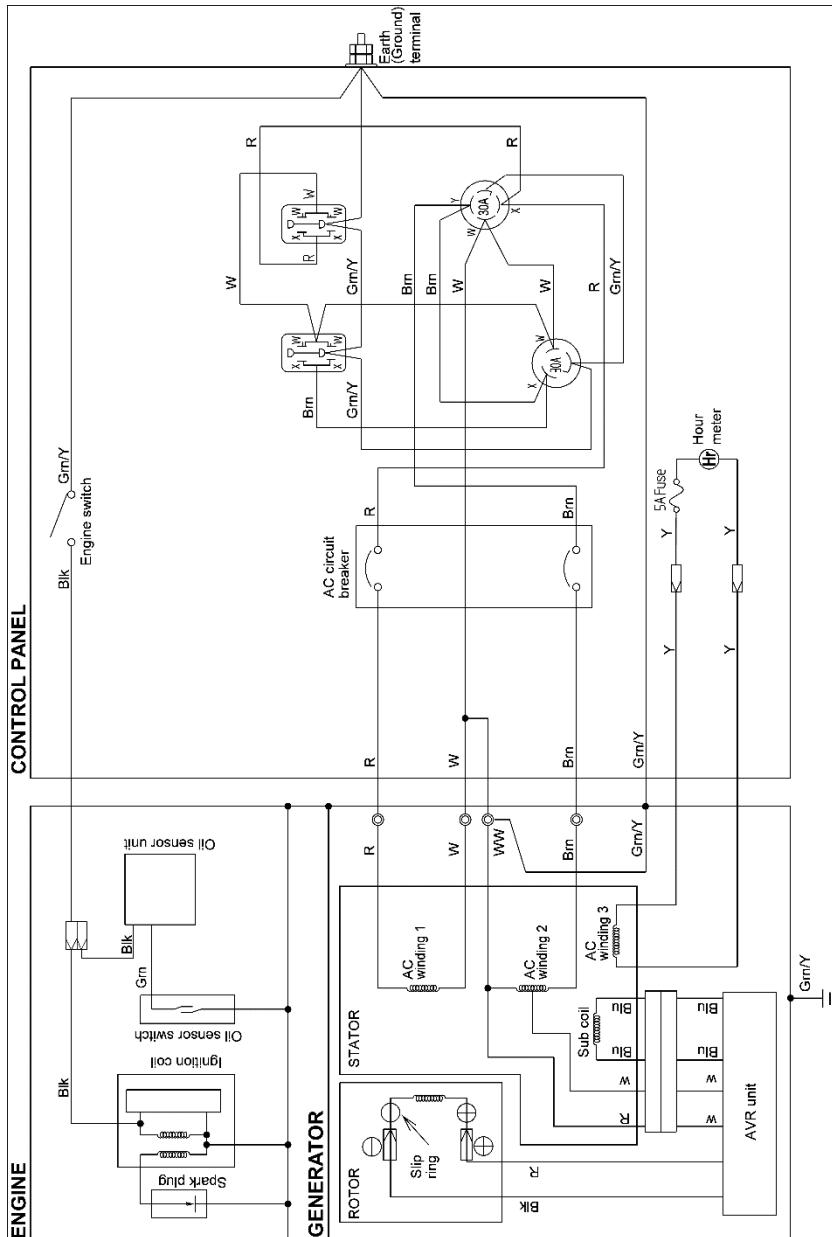
Model	WGC3800	WGC5300	WGC7500E
Maximum Power (W)	3800	5300	7500
Rated Power (W)	3500	4800	7000
Rated Current (A)	29.2/14.6	40.0/20.0	58.3/29.2
Kohler Engine Model	CH270	CH395	CH440
Displacement (cc)	208	277	429
Starting	Recoil	Recoil	Recoil/Electric
Oil Capacity (qt)	.63	1.16	1.16
Fuel Tank Capacity	4.0 gal	8.0 gal	8.0 gal
Rated Load Run Time	6.4 hrs	9.3 hrs	6.4 hrs
Sound level (at 7m)	72 dBA	72 dBA	76 dBA
Spark Plug	RC12YC	RC12YC	RC12YC
Length (inch)	25.1	27.6	27.6
Width (inch)	16.6	20.6	20.6
Height (inch)	20.1	23.6	23.6
Weight (lbs)	137	215	227

WIRING DIAGRAMS

WGC3800



WGC5300



WGC7500E

