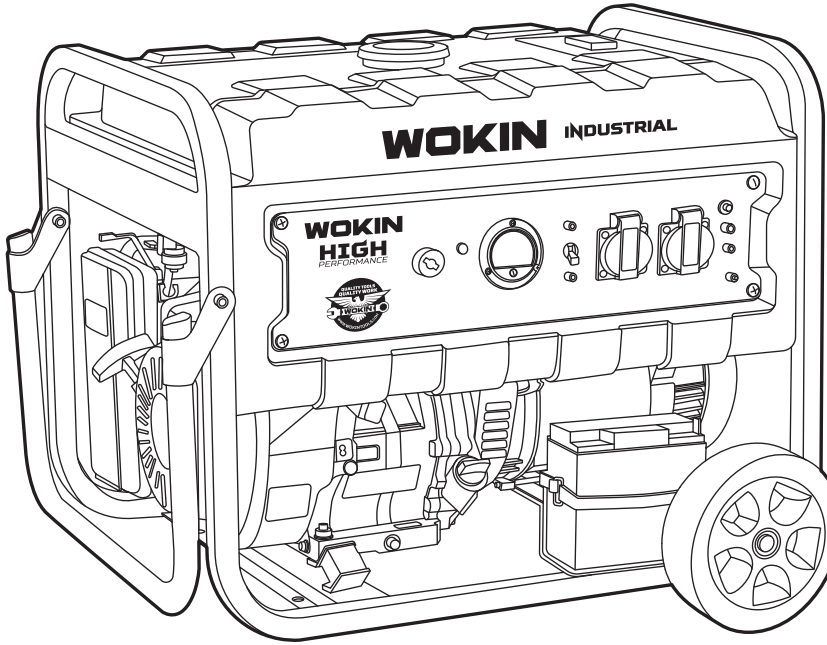
WOKIN

791230
791255
791280

GASOLINE GENERATOR

INSTRUCTION MANUAL

INDUSTRIAL



SAVE THIS MANUAL!
You will need this manual for safety instructions, operating procedures and warranty.
Put it and the original sales receipt in a safe dry place for future reference.

IMPORTANT SAFETY INFORMATION

SAVE THESE INSTRUCTIONS

This manual contains important instructions that should be followed during installation and maintenance of the Generator and any batteries.

Set up precautions

1. This unit is to be installed so that access is restricted to only qualified service personnel who have been instructed of the reasons for the restrictions applied to the location and about any precautions that must be taken. Access shall be through the use of a special tool, or lock and key, or other means of security and shall be controlled by the authority responsible for the location.
2. Gasoline fuel and fumes are flammable, and potentially explosive. Use proper fuel storage and handling procedures. Do not store fuel or other flammable materials nearby.
3. Have multiple ABC class fire extinguishers nearby
4. Operation of this equipment may create sparks that can start fires around dry vegetation. A spark arrestor may be required. The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.
5. Set up and use only on a flat, level, well-ventilated surface.
6. All connections and conduits from the Generator to the load must only be installed by trained and licensed electricians, and in compliance with all relevant local, state, and federal electrical codes and standards, and other regulations where applicable.
7. Connections for standby power to a building electrical system must be made by a qualified electrician. The connection must isolate the Generator power from utility power, and must comply with all applicable laws and electrical codes.
8. Wear ANSI-approved safety goggles, heavy-duty work gloves, and dust mask/respirator during set up.
9. Use only lubricants and fuel recommended in this manual.
10. Improper connections to a building electrical system can allow electrical current from the Generator to backfeed into the utility lines. Such backfeed may electrocute utility company workers or otherswho contact the lines during a power outage, and the Generator may explode, burn, or cause fires when utility power is restored. Consult the utility company and a qualified electrician if intending to use the Generator for back up power.
11. Do not operate the Generator before grounding. The Generator must be earth-grounded in accordance with all relevant electrical codes and standards before operation.

Operating precautions

1. CARBON MONOXIDE HAZARD 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.

2. Never use a generator indoors, including in garages, basements, crawlspaces and sheds. Opening doors and windows or using fans will NOT prevent carbon monoxide build up in the home.
3. When using generators, keep them outdoors and far away from open doors, windows, and vents to avoid toxic levels of carbon monoxide from building up indoors.
4. If you start to feel sick, dizzy, or weak while using a generator, get to fresh air right away. The carbon monoxide from generators can quickly lead to full incapacitation and death.
5. Keep children away from the equipment, especially while it is operating.
6. Keep all spectators at least six feet from the Engine during operation.
7. Do not touch engine during use. Let engine cool down after use.
8. Never store fuel or other flammable materials near the engine.
9. Fire Hazard! Do not fill gas tank while engine is running. Do not operate if gasoline has been spilled. Clean spilled gasoline before starting engine. Do not operate near pilot light or open flame.
10. If the plugged-in product operates abnormally or unusually slow, immediately stop using the Generator as a power source. Always read and adhere to the instruction manual of the product to be powered, to make sure that it can be safely and efficiently powered by a portable generator.
11. Before connecting an appliance or power cord to the Generator: Make sure that it is in good working order. Faulty appliances or power cords can create a potential for electrical shock.
12. Do not exceed the maximum power rating of the Generator. Make sure that the total electrical rating of the all of the tools or appliances plugged into the Generator at the same time does not exceed that of the Generator. Check that the startup surge will not be beyond the limit of the Generator. Power levels between rated and maximum may be used for no more than 30 minutes.
13. Avoid substantially overloading which will trip the circuit breaker. Exceeding the time limit for maximum power operation or slightly overloading the Generator may not switch the circuit breaker or circuit protector OFF, but will shorten the service life of the Generator.
14. Do not attempt to connect or disconnect load connections while standing in water, or on wet or soggy ground.
15. Do not touch electrically energized parts of the Generator and interconnecting cables or conductors with any part of the body, or with any non-insulated conductive object.
16. Connect the Generator only to a load or electrical system (230 volt) that is compatible with the electrical characteristics and rated capacities of the Generator.
17. GFCI PRECAUTIONS Test Ground Fault Circuit Interrupter (GFCI) receptacles before each use as follows: a. Disconnect all devices from the Generator. b. Start the engine. c. Press Test button on receptacle to trip the GFCI device. d. The Reset button should extend, cutting off electricity to the receptacle. e. If above test fails, do not use receptacle until it is repaired or replaced. f. Press Reset button in for use. GFCI receptacles will not protect against electric shock if Generator is not grounded. Refer to Grounding on page 8.
18. Insulate all connections and disconnected wires.
19. Guard against electric shock. Prevent body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerators.
20. Only use a suitable means of transport and lifting devices with sufficient weight bearing capacity when transporting the Generator.
21. Secure the Generator on transport vehicles to prevent the tool from rolling, slipping, and tilting.
22. Industrial applications must follow OSHA requirements.

23. Do not leave the Generator unattended when it is running. Turn off the Generator (and remove safety keys, if available) before leaving the work area.
24. The Generator engine can produce high noise levels. Prolonged exposure to noise levels above 85 dBA is hazardous to hearing. Always wear ear protection when operating or working around the gas engine while it is operating.
25. Wear ANSI-approved safety glasses, hearing protection, and NIOSH-approved dust mask/respirator during use.
26. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to a heart pacemaker could cause pacemaker interference or pacemaker failure. Caution is necessary when near the engine's magneto or recoil starter.
27. Use only accessories that are recommended by tolsen Tools for your model. Accessories that may be suitable for one piece of equipment may become hazardous when used on another piece of equipment.
28. Do not operate in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Gasoline-powered engines may ignite the dust or fumes.
29. Keep grounded conductive objects, such as tools, away from exposed, live electrical parts and connections to avoid sparking or arcing. These events could ignite fumes or vapors.
30. Stay alert, watch what you are doing and use common sense when operating this piece of equipment. Do not use this piece of equipment while tired or under the influence of drugs, alcohol or medication.
31. Dress properly. Do not wear loose clothing or jewelry. Keep hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.
32. Parts, especially exhaust system components, get very hot during use. Stay clear of hot parts.
33. Do not cover the Generator or its engine during operation.
34. Keep the Generator, its engine, and surrounding area clean at all times.
35. Do not smoke, or allow sparks, flames, or other sources of ignition around the equipment, especially when refuelling.
36. Use the Generator, accessories, etc., in accordance with these instructions and in the manner intended for the particular type of equipment, taking into account the working conditions and the work to be performed. Use of the equipment for operations different from those intended could result in a hazardous situation.
37. Do not operate the Generator with known leaks in the engine's fuel system.
38. When spills of fuel or oil occur, they must be cleaned up immediately. Dispose of fluids and cleaning materials as per any local, state, or federal codes and regulations. Store oil rags in a bottom-ventilated, covered, metal container.
39. Keep hands and feet away from moving parts. Do not reach over or across Generator while operating.
40. Before use, check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the Generator's operation. If damaged, have the Generator serviced before using. Many accidents are caused by poorly maintained equipment.
41. Use the correct generator for the application. Do not modify the generator or its engine, and do not use the generator for a purpose for which it is not intended.

Service precautions

1. Before service, maintenance, or cleaning: a. Unplug all devices from the Generator. b. Turn the engine switch to its "OFF" position. c. Allow the engine to completely cool. d. Then, remove the spark plug cap from the spark plug.
2. Keep all safety guards in place and in proper working order. Safety guards include muffler, air cleaner, mechanical guards, and heat shields, among other guards.
3. Make sure the Engine Switch is in its "OFF" position before moving the Generator and before performing any service, maintenance, or cleaning procedures on the unit.
4. Keep all electrical equipment clean and dry. Replace any wiring where the insulation is cracked, cut, abraded, or otherwise degraded. Replace terminals that are worn, discolored, or corroded. Keep terminals clean and tight.
5. Do not alter or adjust any part of the equipment or its engine that is sealed by the manufacturer or distributor. Only a qualified service technician may adjust parts that may increase or decrease governed engine speed.
6. Wear ANSI-approved safety goggles, heavy-duty work gloves, and dust mask/respirator during service.
7. Maintain labels and nameplates on the equipment. These carry important information. If unreadable or missing, contact tolsen Tools for a replacement.
8. Have the equipment serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the equipment is maintained. Do not attempt any service or maintenance procedures not explained in this manual or any procedures that you are uncertain about your ability to perform safely or correctly.
9. Store equipment out of the reach of children.
10. Follow scheduled engine and equipment maintenance.

GFCI Protection: This Generator is equipped with two 3-Prong, duplex 230 V ground fault circuit interrupter (GFCI) receptacles. These outlets provide additional protection from the risk of electric shock. Should replacement of the receptacles become necessary, use only identical replacement parts that include GFCI protection.

Refueling:

1. Do not refill the fuel tank while the engine is running or hot.
2. Do not smoke, or allow sparks, flames, or other sources of ignition around the equipment, especially when refuelling.
3. TO PREVENT FUEL LEAKAGE AND FIRE HAZARD, Do not overfill with fuel. Fill with fuel according to the Fuel Level information below the Specification chart for your model.
4. Do not fill fuel tank to the top. Leave a little room for the fuel to expand as needed.
5. Refuel in a well-ventilated area only.
6. Wipe up any spilled fuel and allow excess to evaporate before starting engine.
   To prevent FIRE, do not start the engine while the smell of fuel hangs in the air.

FUNCTIONAL DESCRIPTION

ITEM No.: 791230(CE)

Generator	Output	230 VAC, 50 Hz, 3000W, 1 Phase; 12 VDC 8.3 A; 2800 Running Watts; 3000 Maximum Starting Watts
	Receptacles	2 x VDE PLUG (Earthing); 1 x 12 V DC Connection terminal
Displacement		212cc
Engine Type		Horizontal Single Cylinder 4-stroke, OHV
Cooling System		Forced air cooled
Fuel	Type	87+ octane, stabilizer-treated unleaded gasoline
	Capacity	16L
Engine Oil	Type SAE	10W-30
	Capacity	600ml
Bore x Stroke		70mm x 54mm

ITEM No.: 791255(CE)

Generator	Output	230 VAC, 50 Hz, 5500W, 1 Phase; 12 VDC 8.3 A; 5000 Running Watts; 5500 Maximum Starting Watts
	Receptacles	2 x VDE PLUG (Earthing); 1 x 12 V DC Connection terminal
Displacement		420cc
Engine Type		Horizontal Single Cylinder 4-stroke, OHV
Cooling System		Forced air cooled
Fuel	Type	87+ octane, stabilizer-treated unleaded gasoline
	Capacity	27L
Engine Oil	Type SAE	10W-30
	Capacity	1100ml
Bore x Stroke		90mm x 64mm

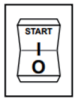
ITEM No.: 791280

Generator	Output	230 VAC, 50 Hz, 8000W, 1 Phase; 12 VDC 8.3 A; 7500 Running Watts; 8000 Maximum Starting Watts
	Receptacles	2 x VDE PLUG (Earthing); 1 x 12 V DC Connection terminal
Displacement		460cc
Engine Type		Horizontal Single Cylinder 4-stroke, OHV
Cooling System		Forced air cooled
Fuel	Type	87+ octane, stabilizer-treated unleaded gasoline
	Capacity	27L
Engine Oil	Type SAE	10W-30
	Capacity	1100ml
Bore x Stroke		92mm x 69mm

COMPONENTS AND CONTROLS

The following are descriptions of the controls on the power panel. Your Generator has sockets to power your products with circuit breakers to protect the voltage flow.

1. I O START Engine Switch: Used to start and stop the Engine.
2. AC Receptacles: The Generator contains several AC Receptacles to power tools and equipment.



3. ON OFF Circuit Breakers: The circuit breaker protects the Generator from overloading. The rating of the breaker and the load it protects are marked near the breaker. Should any of the Circuit Breakers trip, the Generator will stop the electricity output. If this happens, unplug all loads from the Generator. Allow the Generator to cool down. Then, press the tripped Circuit Breaker, restart the Engine, and re-attach loads.

4. Grounding Terminal: Prior to each use, set up the ground wire (not included) connection to the Grounding Terminal to properly ground the Generator. Refer to Grounding on page 8 for instructions on grounding the Generator

5. Grounding Terminal: Prior to each use, set up the ground wire (not included) connection to the Grounding Terminal to properly ground the Generator.

⚠ WARNING!

Warning: Connect tools and equipment only to the Receptacle (230volt) that is compatible with the electrical characteristics and rated capacities of the tools and equipment being used.

INITIAL TOOL SET UP/ASSEMBLY

⚠ Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

⚠ WARNING!

TO PREVENT SERIOUS INJURY: Operate only with proper spark arrestor installed. Operation of this equipment may create sparks that can start fires around dry vegetation. A spark arrestor may be required. The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.

At high altitudes, the engine's carburetor, governor, and any other parts that control the fuelair ratio will need to be adjusted by a qualified mechanic to allow efficient high-altitude use and to prevent damage to the engine and any other devices used with this product.

Note: For additional information regarding the parts listed in the following pages, refer to the Assembly Diagram near the end of this manual.

Grounding

The Generator must be properly grounded before use. Have the unit grounded by a qualified electrician if you are not qualified to do so.

To ground the Generator, connect a 13.3mm² grounding wire (not included) from the Grounding Terminal on the Control Panel to a grounding rod (not included) that has been driven at least 24 inches deep into the earth. The grounding rod must be an earth-driven copper or brass rod (electrode) which can adequately ground the Generator.

High Altitude Operation Above 3000 feet

⚠ WARNING!

TO PREVENT SERIOUS INJURY FROM FIRE:

Follow instructions in a well-ventilated area away from ignition sources. If the engine is hot from use, shut the engine off and wait for it to cool before proceeding. Do not smoke. NOTICE: Warranty void if necessary adjustments are not made for high altitude use.

At high altitudes, the engine's carburetor, governor, and any other parts that control the fuel-air ratio will need to be adjusted by a qualified mechanic to allow efficient high-altitude use and to prevent damage to the engine and any other devices used with this product. The fuel system on this engine may be influenced by operation at higher altitudes. Proper operation can be ensured by installing an altitude kit at altitudes higher than 3000 ft. above sea level. At elevations above 8000 ft, the engine may experience decreased performance, even with the proper main jet. Operating this engine without the proper altitude kit installed may increase the engine's emissions and decrease fuel economy and performance. The kit should be installed by a qualified mechanic.

Operating Instructions

⚠ Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this manual including all text under subheadings therein before set up or use of this product. Inspect tool before use, looking for damaged, loose, and missing parts. If any problems are found, do not use tool until repaired.

Generator Pre-Start Checks

Inspect engine and equipment, looking for damaged, loose, and missing parts before set up and starting. If any problems are found, do not use equipment until fixed properly.

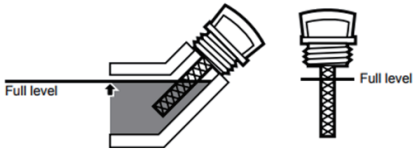
Checking and Filling Engine Oil

CAUTION! Your Warranty is VOID if the engine's crankcase is not properly filled with oil before each use. Before each use, check the oil level. Engine will not start with low or no engine oil.

1. Make sure the engine is stopped and is level.

2. Close the Fuel Valve.

3. Clean the top of the Dipstick and the area around it. Remove the Dipstick by threading it counterclockwise, and wipe it off with a clean lint free rag.



4. Full level Full level Reinsert the Dipstick without threading it in and remove it to check the oil level. the oil level should be up to the full level as shown above.

5. If the oil level is at or below the low mark add the appropriate type of oil until the oil level is at the proper level. SAE 10W-30 oil is recommended for general use.

6. Thread the dipstick back in clockwise.

NOTICE: Do not run the engine with too little oil. Engine will shut off if engine oil level is too low.

Checking and Filling Fuel

WARNING! TO PREVENT SERIOUS INJURY FROM FIRE:

Fill the fuel tank in a well-ventilated area away from ignition sources. If the engine is hot from use, shut the engine off and wait for it to cool before adding fuel. Do not smoke.

1 . Clean the Fuel Cap and the area around it.

2. Unscrew and remove the Fuel Cap.

3. If needed, fill the Fuel Tank to about 1 inch under the fill neck with 87 octane or higher unleaded gasoline that has been treated with a fuel stabilizer additive. Follow fuel stabilizer manufacturer's recommendations for use.

Note: Do not use gasoline containing more than 10% ethanol (E10). Do not use E85 ethanol.

Note: Do not use gasoline that has been stored in a metal fuel container or a dirty fuel container. It can cause particles to enter the carburetor, effecting engine performance and/or causing damage.

4. Then replace the Fuel Cap.

5. Wipe up any spilled fuel and allow excess to evaporate before starting engine. To prevent FIRE, do not start the engine while the smell of fuel hangs in the air.

Using the Generator

⚠ Before Starting the Generator Engine

Before starting the engine:

a. Follow the Set Up Instructions to prepare the Generator.

b. Unplug all loads from the Generator.

c. Inspect the Generator and engine.

d. Fill the engine with the proper amount and type of both stabilizer-treated fuel and oil.

Basic Generator Use Procedure - See following pages for specific instructions

1. Check that the Generator can handle the wattage needed to power your products.
2. Start the Engine, and allow the Engine and Generator to run and warm up for five minutes after starting with no electrical load.
3. With the engine running, test GFCI receptacles before each use as follows:

a. Press Test button on receptacle to trip the GFCI device.

b. The Reset button should extend, cutting off electricity to the receptacle.

c. If above test fails, do not use receptacle until it is repaired or replaced.

d. Press Reset button in for use.

4. Plug in products.
5. When finished using the Generator, disconnect all electrical loads.

Note: Do not allow Generator to run out of fuel with loads attached.

6. Turn off the Engine.
7. Allow the Generator and its Engine to completely cool. Then store the unit in a clean, dry, safe location out of reach of children and other unauthorized people.

IMPORTANT: After starting the engine, allow it to run at no load for five minutes with no load after each start-up so that the engine can stabilize.

8. Break-in Period:

a. Breaking-in the engine will help to ensure proper equipment and engine operation.

b. The operational break-in period will last about 3 hours of use. During this period:

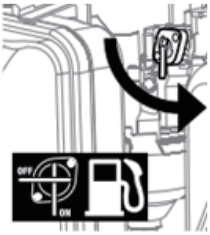
· Do not apply a heavy load to the equipment.

c. The maintenance break-in period will last about 20 hours of use. After this period:

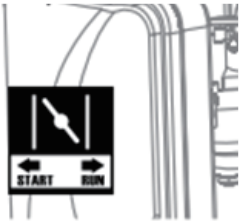
· Change the engine oil.

Starting the Engine

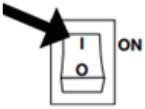
1. Open the Fuel Valve



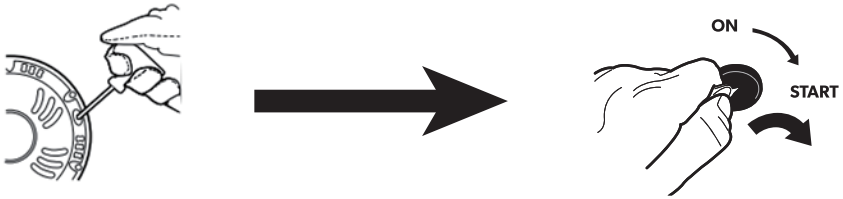
2. To start a cold engine, move the Choke to the START position. To restart a warm engine, leave the Choke in the RUN position.



3. Urn the Engine Switch to ON.



4. Grip the Starter Handle of the Engine loosely and pull it slowly several times to allow the gasoline to flow into the Engine's carburetor. Then pull the Starter Handle gently until resistance is felt. Allow Cable to retract fully and then pull it quickly. Repeat until the engine starts. Note: Do not let the Starter Handle snap back against the engine. Hold it as it recoils so it doesn't hit the engine. If the engine is electrically started, please follow step 1,2,3, and then turn the start knob to "START". Release the knob when the engine start to run and then the knob will return to "ON" automatically



Note: If engine does not start, check engine oil level. Engine will not start with low or no engine oil.

5. Allow the Engine to run for several seconds. Then, if the Choke lever is in the START position, move

the Choke Lever very slowly to its RUN position.

Note: Moving the Choke Lever too fast could stall the engine.

IMPORTANT: Allow the engine to run at no load for five minutes with no load after each start-up so that the engine can stabilize.

Connecting Electrical Loads

Familiarize yourself with the engine controls, power panel and how to start the engine before using the Generator. Calculate the wattage of the products you will use with the Generator and verify that the Generator can handle the total load.

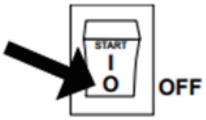
⚠ WARNING! Connect only properly wired plugs to the Generator. A plug that is spliced onto a different cord may be hazardous. Only a qualified electrician should wire a plug onto a cord. CAUTION Never exceed the rated capacity for this Generator, as serious damage to the Generator and/or appliances, tools, and equipment could result from an overload. Starting and running wattage requirements should always be calculated when matching this Generator's wattage capacity to the appliance, tool, or equipment.

⚠ WARNING! Do not charge batteries without a proper charge controller. Do not overcharge. a. Connect the items that require the most wattage first. b. Connect "inductive" load appliances, tools, and equipment next. Inductive loads are small hand tools and some small appliances. c. Connect any lights next. d. Voltage sensitive appliances, tools, and equipment should be the last to be connected to the Generator. Plug voltage sensitive items such as TVs, DVD players, microwaves, and cordless telephones into a CE® Listed voltage surge protector (not included). Then, connect the surge protector into the Generator.

IMPORTANT! Failure to connect and operate appliances, tools, and equipment in this sequence can cause damage to the Generator, appliances, tools, and equipment and will void the Warranty of this Generator.

Stopping the Engine in an Emergency

To stop the engine in an emergency, turn the Engine Switch off.



NOTICE: Generator shut-off under load may damage the Generator and attached equipment.

User-Maintenance Instructions

⚠ Procedures not specifically explained in this manual must be performed only by a qualified technician.

⚠ WARNING!

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION: Turn the Power Switch of the Generator to its "OFF" position, wait for the engine to cool, and disconnect the spark plug cap before performing any inspection, maintenance, or cleaning procedures. **TO PREVENT SERIOUS INJURY FROM EQUIPMENT FAILURE:** Do not use damaged equipment. If abnormal noise, vibration, or excess smoking occurs, have the problem corrected before further use. Follow all service instructions in this manual. The engine may fail critically if not serviced properly.

⚠ Many maintenance procedures, including any not detailed in this manual, will need to be performed by a qualified technician for safety. If you have any doubts about your ability to safely service the equipment or engine, have a qualified technician service the equipment instead.

Cleaning, Maintenance, and Lubrication

Note: This maintenance schedule is intended solely as a general guide. If performance decreases or if equipment operates unusually, check systems immediately. The maintenance needs of each piece of equipment will differ depending on factors such as duty cycle, temperature, air quality, fuel quality, and other factors.

Note: The following procedures are in addition to the regular checks and maintenance explained as part of the regular operation of the engine and equipment.

Procedure	Before Each Use	Monthly or every 20hr. of use	Monthly or every 20hr. of use	Monthly or every 20hr. of use	Yearly or every 300hr. of use	Every 2 Years
Brush off outside of engine	☒	☒	☒	☒	☒	☒
Check engine oil level	☒	☒	☒	☒	☒	☒
Check air cleaner	☒		☒	☒	☒	☒
Check deposit cup	☒			☒	☒	☒
		☒		☒	☒	☒
Clean/replace air cleaner			☒☒	☒	☒	☒
Check and clean spark plug				☒	☒	☒
1. Check/adjust idle speed 2. Check/adjust valve clearance 3. Clean fuel tank, strainer and carburetor 4. Clean carbon build-up from				☒☒☒	☒☒☒	☒☒☒
Replace fuel line if necessary						☒☒☒

*Service more frequently when used in dusty areas.

**These items should be serviced by a qualified technician.

Checking and Filling Fuel

⚠ WARNING! TO PREVENT SERIOUS INJURY FROM FIRE:

Fill the fuel tank in a well-ventilated area away from ignition sources. If the engine is hot from use, shut the engine off and wait for it to cool before adding fuel. Do not smoke.

1. Clean the Fuel Cap and the area around it.
2. Unscrew and remove the Fuel Cap.

Note: Do not use gasoline containing more than 10% ethanol (E10). Do not use E85 ethanol.

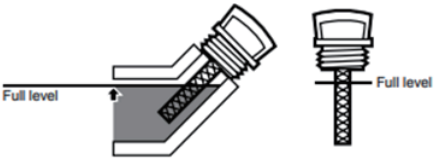
Note: Do not use gasoline that has been stored in a metal fuel container or a dirty fuel container. It can cause particles to enter the carburetor, effecting engine performance and/or causing damage.

3. If needed, fill the Fuel Tank to about 1 inch under the fill neck with 87 octane or higher unleaded gasoline that has been treated with a fuel stabilizer additive. Follow fuel stabilizer manufacturer's recommendations for use.
4. Replace the Fuel Cap.
5. Wipe up any spilled fuel and allow excess to evaporate before starting engine. To prevent FIRE, do not start the engine while the smell of fuel hangs in the air.

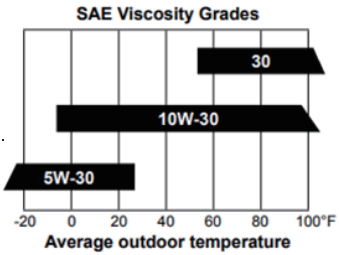
Engine Oil Change

CAUTION! Oil is very hot during operation and can cause burns. Wait for engine to cool before changing oil.

1. Make sure the engine is stopped and is level.
2. Close the Fuel Valve.
3. Place a drain pan (not included) underneath the crankcase's drain plug.
4. Remove the drain plug and, if possible, tilt the crankcase slightly to help drain the oil out. Recycle used oil.
5. Replace the drain plug and tighten it.
6. Clean the top of the Dipstick and the area around it. Remove the Dipstick by threading it counterclockwise, and wipe it off with a clean lint free rag.



7. Add the appropriate type of oil until the oil level is at the full level. SAE 10W-30 oil is recommended for general use.



The SAE Viscosity Grade chart shows other viscosities to use in different average temperatures.

NOTICE: Do not run the engine with too little oil.

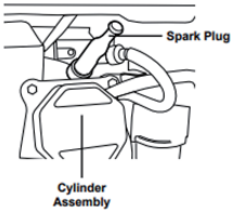
Engine will not start with low or no engine oil.

MAINTENANCE

Air Filter Element Maintenance

1. Remove the air filter cover and the air filter elements and check for dirt.
2. Install the cleaned filter. Secure the Air Cleaner Cover before use.

Spark Plug Maintenance



1. Disconnect spark plug cap from end of plug. Clean out debris from around spark plug.
2. Using a spark plug wrench, remove the spark plug.
3. Inspect the spark plug: If the electrode is oily, clean it using a clean, dry rag. If the electrode has deposits on it, polish it using emery paper. If the white insulator is cracked or chipped, the spark plug needs to be replace.

NOTICE: Using an incorrect spark plug may damage the engine. See the Specifications chart for your Generator for the type and gap required.

4. When installing a new spark plug, adjust the plug's gap to the specification on the Specifications chart. Do not pry against the electrode, the spark plug can be damaged.
5. Install the new spark plug or the cleaned spark plug into the engine. Gasket-style: Finger-tighten until the gasket contacts the cylinder head, then about 1/2-2/3 turn more. Non-gasket-style: Finger-tighten until the plug contacts the head, then about 1/16 turn more.

NOTICE: Tighten the spark plug properly. If loose, the spark plug will cause the engine to overheat. If overtightened, the threads in the engine block will be damaged.

6. Apply dielectric spark plug boot protector (not included) to the end of the spark plug and reattach the wire securely.

Long-Term Storage

When the equipment is to remain idle for longer than 20 days, prepare the Engine for storage as follows:

1. CLEANING:

Wait for Engine to cool, then clean Engine with dry cloth.

NOTICE: Do not clean using water. The water will gradually enter the Engine and cause rust damage.

Apply a thin coat of rust preventive oil to all metal parts.

2. FUEL:

To protect the fuel tank during storage, fill the tank with gasoline that has been treated with a fuel stabilizer additive. Follow fuel stabilizer manufacturer's recommendations for use.

⚠ WARNING! TO PREVENT SERIOUS INJURY FROM FIRE:

Fill tank in a well-ventilated area away from ignition sources. If the engine is hot from use, shut the engine off and wait for it to cool before adding fuel. Do not smoke.

3. LUBRICATION: a. Change engine oil. b. Clean out area around spark plug. Remove spark plug and pour one tablespoon of engine oil into cylinder through spark plug hole. c. Replace spark plug, but leave spark plug cap disconnected. d. Pull Starter Handle to distribute oil in cylinder. Stop after one or two revolutions when you feel the piston start the compression stroke (when you start to feel resistance).

4. STORAGE AREA:

Cover and store in a dry, level, well-ventilated area out of reach of children. Storage area should also be away from ignition sources, such as water heaters, clothes dryers, and furnaces.

NOTICE: During extended storage periods the Engine must be started every 3 months and allowed to run for 15–20 minutes or the Warranty is VOID.

5. AFTER STORAGE:

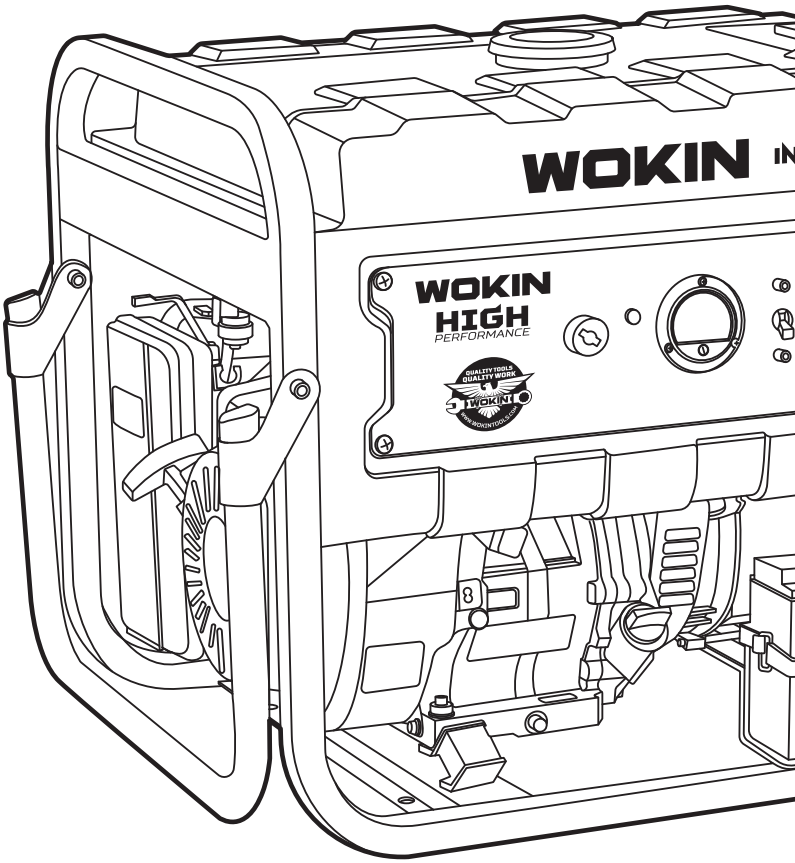
Before starting the Engine during or after storage, keep in mind that untreated gasoline will deteriorate quickly. Drain the fuel tank and change to fresh fuel if untreated gasoline has been sitting for a month, if treated gasoline has been sitting beyond the fuel stabilizer's recommended time period, or if the Engine does not start.

TROUBLE SHOOTING

Problem	Possible Causes	Probable Solutions
Engine will not start	Engine will not start FUEL RELATED: 1. No fuel in tank or fuel valve closed. 2. Choke not in START position, cold engine. 3. Gasoline with more than 10% ethanol used. (E15, E20, E85, etc.) 4. Low quality or deteriorated, old gasoline. 5. Carburetor not primed. 6. Dirty fuel passageways. 7. Carburetor needle stuck. Fuel can be smelled in the air. 8. Too much fuel in chamber. This can be caused by the carburetor needle sticking. 9. Clogged Fuel Filter.	FUEL RELATED: 1. Fill fuel tank with fresh 87+ octane stabilizer treated unleaded gasoline and open fuel valve. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 2. Move Choke to START position. 3. Clean out ethanol rich gasoline from fuel system. Replace components damaged by ethanol. Use fresh 87+ octane stabilizer treated unleaded gasoline only. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 4. Use fresh 87+ octane stabilizer treated unleaded gasoline. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 5. Pull on Starter Handle to prime. 6. Clean out passageways using fuel additive. Heavy deposits may require further cleaning. 7. Gently tap side of carburetor float chamber with screwdriver handle. 8. Turn Choke to RUN position. Remove spark plug and pull the start handle several times to air out the chamber. Reinstall spark plug and set Choke to START position. 9. Replace Fuel Filter.
	IGNITION (SPARK) RELATED: 1. Spark plug cap not connected securely. 2. Spark plug electrode wet or dirty. 3. Incorrect spark plug gap. 4. Spark plug cap broken. 5. Circuit breaker tripped (electric start models only). 6. Incorrect spark timing or faulty ignition system.	IGNITION (SPARK) RELATED: 1. Connect spark plug cap properly. 2. Clean spark plug. 3. Correct spark plug gap. 4. Replace spark plug cap. 5. Reset circuit breaker. Check wiring and starter motor if breaker continues to trip. 6. Have qualified technician diagnose/ repair ignition system.
	COMPRESSION RELATED: 1. Cylinder not lubricated. Problem after long storage periods. 2. Loose or broken spark plug. (Hissing noise will occur when trying to start.) 3. Loose cylinder head or damaged head gasket. (Hissing noise will occur when trying to start.) 4. Engine valves or tappets mis-adjusted or stuck.	COMPRESSION RELATED: 1. Pour tablespoon of oil into spark plug hole. Crank engine a few times and try to start again. 2. Tighten spark plug. If that does not work, replace spark plug. If problem persists, may have head gasket problem, see #3. 3. Tighten head. If that does not remedy problem, replace head gasket. 4. Have qualified technician diagnose/ repair ignition system.
	OIL RELATED: 1. Low engine oil. 2. Engine mounted on slope, triggering low oil shutdown.	OIL RELATED: 1. Fill engine oil to proper level. Check engine oil before EVERY use. 2. Operate engine on level surface. Check engine oil level.

Problem	Possible Causes	Probable Solutions
Engine stops when under heavy load	1. Dirty air filter. 2. Engine running cold.	1. Clean or replace element. 2. Allow engine to warm up prior to operating equipment.
Engine misfires	1. Spark plug cap loose. 2. Incorrect spark plug gap or damaged spark plug. 3. Defective spark plug cap. 4. Old or low quality gasoline. 5. Incorrect compression.	1. Check wire connections. 2. Re-gap or replace spark plug. 3. Replace spark plug cap. 4. Use only fresh 87+ octane stabilizer treated unleaded gasoline. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 5. Diagnose and repair compression. (Use Engine will not start: COMPRESSION RELATED section.)
Engine stops suddenly	1. Low oil shutdown. 2. Fuel tank empty or full of impure or low quality gasoline. 3. Defective fuel tank cap creating vacuum, preventing proper fuel flow. 4. Faulty magneto. 5. Disconnected or improperly connected spark plug cap.	1. Fill engine oil to proper level. Check engine oil before EVERY use. 2. Fill fuel tank with fresh 87+ octane stabilizer treated unleaded gasoline. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 3. Test/replace fuel tank cap. 4. Have qualified technician service magneto. 5. Secure spark plug cap.
Engine knocks	1. Old or low quality gasoline. 2. Engine overloaded. 3. Incorrect spark timing, deposit buildup, worn engine, or other mechanical problems.	1. Fill fuel tank with fresh 87+ octane stabilizer treated unleaded gasoline. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 2. Do not exceed equipment's load rating. 3. Have qualified technician diagnose and service engine.
Engine backfires	1. Impure or low quality gasoline. 2. Engine too cold. 3. Intake valve stuck or overheated engine.	1. Fill fuel tank with fresh 87+ octane stabilizer treated unleaded gasoline. Do not use gasoline with more than 10% ethanol (E15, E20, E85, etc.). 2. Use cold weather fuel and oil additives to prevent backfiring. 3. Have qualified technician diagnose and service engine.
Product doesn't have power.	1. Product not plugged in properly. 2. Circuit Breaker tripped. 3. GFCI activated. 4. Product needs service.	1. Turn off and unplug the product, then plug it back in again and turn on. 2. Turn off and unplug product. Reset Circuit Breaker. Plug in product and turn on. 3. Turn off and unplug product. Test GFCI receptacle. If functioning properly reset GFCI, plug in product and turn on. 4. Have product repaired.
Product begins to operate abnormally.	1. Problem with appliance. 2. Rated load capacity exceeded.	1. Immediately unplug appliance. Have appliance repaired by a qualified technician, or replace appliance. 2. Lower the number of items plugged into the Generator to stay within the rated capacity, or use a more powerful generator.

⚠ Follow all safety precautions whenever diagnosing or servicing the equipment or engine.



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